

# *Planck* 2014 Results: Cosmological Parameter Tables

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## **Abstract**

These tables summarize the results of *Planck* 2014 parameter estimation exploration results. They include *Planck* HFI data in combination with LFI polarization, *Planck* lensing, as well as additional non-CMB data as detailed in the main parameter papers.

# 1 Introduction

The tables are arranged grouped firstly by cosmological model, and then by data combination. The name tags match those of the full chains also provided on the PLA. They all start with **base** to denote the baseline model, followed by the parameter tags of any additional parameters that are also varied (as defined in the parameter paper). Data combination tags are as follows (see the parameters paper for full description and references):

Data tag	Data used
<code>plikHM</code>	baseline high- $l$ <i>Planck</i> power spectra ( <code>plik</code> cross half-mission, $30 \leq l \leq 2508$ )
<code>plikDS</code>	high- $l$ <i>Planck</i> ( <code>plik</code> cross detsets, $30 \leq l \leq 2508$ )
<code>CamSpecHM</code>	alternative high- $l$ <i>Planck</i> ( <code>CamSpec</code> cross half-mission, $30 \leq l \leq 2500$ )
<code>CamSpecDS</code>	high- $l$ <i>Planck</i> ( <code>CamSpec</code> cross detsets, $30 \leq l \leq 2500$ )
<code>lowl</code>	low- $l$ <i>Planck</i> temperature (Commander, $2 \leq l \leq 29$ )
<code>lowTEB</code>	low- $l$ temperature and LFI polarization (bflike, $2 \leq l \leq 29$ )
<code>lowEB</code>	low- $l$ LFI polarization only (bflike, $2 \leq l \leq 29$ )
<code>WMAPTEB</code>	low- $l$ LFI +WMAP temperature+polarization (bflike, $2 \leq l \leq 29$ )
<code>lensing</code>	<i>Planck</i> lensing power spectrum reconstruction
<code>lensonly</code>	<i>Planck</i> lensing power spectrum reconstruction only; T,E fixed to best-fit spectrum + priors
<code>zre6p5</code>	A hard prior $z_{\text{re}} > 6.5$
<code>tau07</code>	A Gaussian prior $\tau = 7 \pm 0.02$
<code>reion</code>	A hard prior $z_{\text{re}} > 6.5$ , combined with Gaussian prior $z_{\text{re}} = 7 \pm 1$
<code>BAO</code>	Baryon oscillation data from DR11LOWZ, DR11CMASS, MGS and 6DF
<code>JLA</code>	Supernova data from the SDSS-II/SNLS3 Joint Light-curve Analysis
<code>H070p6</code>	A conservative Hubble parameter constraint, $H_0 = 70.6 \pm 3.3$ (Efstathiou; arXiv:1311.3461)
<code>WMAP</code>	The full WMAP (temperature and polarization) 9 year data
<code>WLHeymans</code>	Conservative cut of the CFHTLenS weak lensing data

The high- $l$  *Planck* likelihoods have TT, TE, EE variants from each spectrum alone, plus the TTTEEE joint constraint.

Data likelihoods are either included when running the chains, or by importance sampling. Data combinations that are added by importance sampling appear at the end of the list, following the `post_` tag. Note that the best fits are merely examples of parameter combinations that fit the data well, due to parameter degeneracies there may be other combinations of parameters that fit the data nearly equally well.

Beneath each table is the minus log Likelihood  $\chi_{\text{eff}}^2$  for each best fit model, and also the contributions coming from each separate part of the likelihood. Mean minus log likelihoods are also given,  $\bar{\chi}_{\text{eff}}^2$ . The tables also give the minus log Likelihood of the various component parts of the likelihood, where quoted values are the best-fit and mean, standard deviation (in the case of 1-sigma tables), or effective degrees of freedom ( $\nu$ , defined by  $\sigma^2/2$ ).

The  $R - 1$  value is also given, which measures the convergence of the sampling chains, with small values being better converged. The sampling uncertainty on quoted mean values are typically of order  $R - 1$  in units of the standard deviation.

# Contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
<b>2</b>	<b>Baseline model</b>	<b>12</b>
2.1	base_plikHM_TT_lowTEB . . . . .	12
2.2	base_plikHM_TT_lowTEB_post_BAO . . . . .	13
2.3	base_plikHM_TT_lowTEB_post_JLA . . . . .	14
2.4	base_plikHM_TT_lowTEB_post_H070p6 . . . . .	15
2.5	base_plikHM_TT_lowTEB_post_zre6p5 . . . . .	16
2.6	base_plikHM_TTTEEE_lowTEB . . . . .	17
2.7	base_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	18
2.8	base_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	19
2.9	base_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	20
2.10	base_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	21
2.11	base_plikHM_TE_lowTEB . . . . .	22
2.12	base_plikHM_EE_lowTEB . . . . .	23
2.13	base_plikHM_TE_lowEB . . . . .	24
2.14	base_plikHM_EE_lowEB . . . . .	25
2.15	base_plikHM_TT_lowEB . . . . .	26
2.16	base_plikHM_TTTEEE_lowEB . . . . .	27
2.17	base_plikHM_TT_tau07 . . . . .	28
2.18	base_plikHM_TTTEEE_tau07 . . . . .	29
2.19	base_plikHM_TT_lowl . . . . .	30
2.20	base_plikHM_TT_lowl_post_BAO . . . . .	31
2.21	base_plikHM_TT_lowl_post_BAO_H070p6_JLA . . . . .	32
2.22	base_plikHM_TT_lowl_post_zre6p5 . . . . .	33
2.23	base_plikHM_TT_lowl_post_BAO_zre6p5 . . . . .	34
2.24	base_plikHM_TTTEEE_lowl . . . . .	35
2.25	base_plikHM_TTTEEE_lowl_post_BAO . . . . .	36
2.26	base_plikHM_TTTEEE_lowl_post_BAO_H070p6_JLA . . . . .	37
2.27	base_plikHM_TTTEEE_lowl_post_zre6p5 . . . . .	38
2.28	base_plikHM_TTTEEE_lowl_post_BAO_zre6p5 . . . . .	39
2.29	base_plikHM_TT_lowl_lensing . . . . .	40
2.30	base_plikHM_TT_lowl_lensing_post_BAO . . . . .	41
2.31	base_plikHM_TT_lowl_lensing_post_BAO_H070p6_JLA . . . . .	42
2.32	base_plikHM_TT_lowl_lensing_post_zre6p5 . . . . .	43
2.33	base_plikHM_TT_lowl_lensing_post_BAO_zre6p5 . . . . .	44
2.34	base_plikHM_TT_lowl_lensing_post_reion . . . . .	45
2.35	base_plikHM_TTTEEE_lowl_lensing . . . . .	46
2.36	base_plikHM_TTTEEE_lowl_lensing_post_BAO . . . . .	47
2.37	base_plikHM_TTTEEE_lowl_lensing_post_BAO_H070p6_JLA . . . . .	48
2.38	base_plikHM_TTTEEE_lowl_lensing_post_zre6p5 . . . . .	49
2.39	base_plikHM_TTTEEE_lowl_lensing_post_BAO_zre6p5 . . . . .	50
2.40	base_plikHM_TTTEEE_lowl_lensing_post_reion . . . . .	51
2.41	base_plikHM_TT_lowl_reion . . . . .	52
2.42	base_plikHM_TT_lowl_reion_post_BAO . . . . .	53
2.43	base_plikHM_TT_lowl_reion_post_BAO_H070p6_JLA . . . . .	54
2.44	base_plikHM_TTTEEE_lowl_reion . . . . .	55
2.45	base_plikHM_TTTEEE_lowl_reion_post_BAO . . . . .	56
2.46	base_plikHM_TTTEEE_lowl_reion_post_BAO_H070p6_JLA . . . . .	57

2.47	base_plikHM_TE . . . . .	58
2.48	base_plikHM_TE_post_BAO . . . . .	59
2.49	base_plikHM_TE_post_BAO_H070p6_JLA . . . . .	60
2.50	base_plikHM_EE . . . . .	61
2.51	base_plikHM_EE_post_BAO . . . . .	62
2.52	base_plikHM_EE_post_BAO_H070p6_JLA . . . . .	63
2.53	base_plikHM_TE_lensing . . . . .	64
2.54	base_plikHM_TE_lensing_post_BAO . . . . .	65
2.55	base_plikHM_TE_lensing_post_BAO_H070p6_JLA . . . . .	66
2.56	base_plikHM_EE_lensing . . . . .	67
2.57	base_plikHM_EE_lensing_post_BAO . . . . .	68
2.58	base_plikHM_EE_lensing_post_BAO_H070p6_JLA . . . . .	69
2.59	base_plikHM_TT_lowTEB_lensing . . . . .	70
2.60	base_plikHM_TT_lowTEB_lensing_post_BAO . . . . .	71
2.61	base_plikHM_TT_lowTEB_lensing_post_JLA . . . . .	72
2.62	base_plikHM_TT_lowTEB_lensing_post_H070p6 . . . . .	73
2.63	base_plikHM_TT_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	74
2.64	base_plikHM_TT_lowTEB_lensing_post_zre6p5 . . . . .	75
2.65	base_plikHM_TT_lowTEB_lensing_post_BAO_zre6p5 . . . . .	76
2.66	base_plikHM_TT_lowTEB_lensing_post_reion . . . . .	77
2.67	base_plikHM_TTTEEE_lowTEB_lensing . . . . .	78
2.68	base_plikHM_TTTEEE_lowTEB_lensing_post_BAO . . . . .	79
2.69	base_plikHM_TTTEEE_lowTEB_lensing_post_JLA . . . . .	80
2.70	base_plikHM_TTTEEE_lowTEB_lensing_post_H070p6 . . . . .	81
2.71	base_plikHM_TTTEEE_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	82
2.72	base_plikHM_TTTEEE_lowTEB_lensing_post_zre6p5 . . . . .	83
2.73	base_plikHM_TTTEEE_lowTEB_lensing_post_BAO_zre6p5 . . . . .	84
2.74	base_plikHM_TTTEEE_lowTEB_lensing_post_reion . . . . .	85
2.75	base_lensonly . . . . .	86
2.76	base_lensonly_BAO . . . . .	87
2.77	base_lensonly_theta . . . . .	88
2.78	base_lensonly_BAO_theta . . . . .	89
2.79	base_WMAP . . . . .	90
2.80	base_WMAP_post_BAO . . . . .	91
2.81	base_plikHM_TT_WMAPTEB . . . . .	92
2.82	base_plikHM_TT_WMAPTEB_post_lensing . . . . .	93
2.83	base_plikHM_TT_WMAPTEB_post_BAO . . . . .	94
2.84	base_plikHM_TT_WMAPTEB_post_BAO_lensing . . . . .	95

**3 Alens 96**

3.1	base_Alens_plikHM_TT_lowTEB . . . . .	96
3.2	base_Alens_plikHM_TT_lowTEB_post_BAO . . . . .	97
3.3	base_Alens_plikHM_TT_lowTEB_post_JLA . . . . .	98
3.4	base_Alens_plikHM_TT_lowTEB_post_H070p6 . . . . .	99
3.5	base_Alens_plikHM_TT_lowTEB_post_zre6p5 . . . . .	100
3.6	base_Alens_plikHM_TTTEEE_lowTEB . . . . .	101
3.7	base_Alens_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	102
3.8	base_Alens_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	103
3.9	base_Alens_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	104
3.10	base_Alens_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	105

3.11	base_Alens_plikHM_TE_lowTEB	106
3.12	base_Alens_plikHM_EE_lowTEB	107
3.13	base_Alens_plikHM_TE_lowEB	108
3.14	base_Alens_plikHM_EE_lowEB	109
3.15	base_Alens_plikHM_TT_lowEB	110
3.16	base_Alens_plikHM_TTTEEE_lowEB	111
3.17	base_Alens_plikHM_TT_tau07	112
3.18	base_Alens_plikHM_TTTEEE_tau07	113
3.19	base_Alens_plikHM_TT_lowTEB_lensing	114
3.20	base_Alens_plikHM_TT_lowTEB_lensing_post_BAO	115
3.21	base_Alens_plikHM_TTTEEE_lowTEB_lensing	116
3.22	base_Alens_plikHM_TTTEEE_lowTEB_lensing_post_BAO	117
3.23	base_Alens_plikHM_TT_WMAPTEB	118
3.24	base_Alens_plikHM_TT_WMAPTEB_post_BAO	119
<b>4</b>	<b>Alensf</b>	<b>120</b>
4.1	base_Alensf_plikHM_TT_lowTEB	120
4.2	base_Alensf_plikHM_TTTEEE_lowTEB	121
4.3	base_Alensf_plikHM_TT_lowTEB_lensing	122
4.4	base_Alensf_plikHM_TTTEEE_lowTEB_lensing	123
<b>5</b>	<b>Ahiphi</b>	<b>124</b>
5.1	base_Ahiphi_plikHM_TT_lowTEB_lensing	124
5.2	base_Ahiphi_plikHM_TTTEEE_lowTEB_lensing	125
<b>6</b>	<b>alpha1</b>	<b>126</b>
6.1	base_alpha1_plikHM_TT_lowTEB	126
6.2	base_alpha1_plikHM_TT_lowTEB_post_BAO	127
6.3	base_alpha1_plikHM_TT_lowTEB_post_JLA	128
6.4	base_alpha1_plikHM_TT_lowTEB_post_lensing	129
6.5	base_alpha1_plikHM_TT_lowTEB_post_H070p6	130
6.6	base_alpha1_plikHM_TT_lowTEB_post_lensing_BAO_H070p6_JLA	131
6.7	base_alpha1_plikHM_TT_lowTEB_post_zre6p5	132
6.8	base_alpha1_plikHM_TTTEEE_lowTEB	133
6.9	base_alpha1_plikHM_TTTEEE_lowTEB_post_BAO	134
6.10	base_alpha1_plikHM_TTTEEE_lowTEB_post_JLA	135
6.11	base_alpha1_plikHM_TTTEEE_lowTEB_post_lensing	136
6.12	base_alpha1_plikHM_TTTEEE_lowTEB_post_H070p6	137
6.13	base_alpha1_plikHM_TTTEEE_lowTEB_post_lensing_BAO_H070p6_JLA	138
6.14	base_alpha1_plikHM_TTTEEE_lowTEB_post_zre6p5	139
<b>7</b>	<b>mnu</b>	<b>140</b>
7.1	base_mnu_plikHM_TT_lowTEB	140
7.2	base_mnu_plikHM_TT_lowTEB_post_JLA	141
7.3	base_mnu_plikHM_TT_lowTEB_post_H070p6	142
7.4	base_mnu_plikHM_TT_lowTEB_post_zre6p5	143
7.5	base_mnu_plikHM_TTTEEE_lowTEB	144
7.6	base_mnu_plikHM_TTTEEE_lowTEB_post_JLA	145
7.7	base_mnu_plikHM_TTTEEE_lowTEB_post_H070p6	146
7.8	base_mnu_plikHM_TTTEEE_lowTEB_post_zre6p5	147
7.9	base_mnu_plikHM_TE_lowTEB	148

7.10	base_mnu_plikHM_EE_lowTEB . . . . .	149
7.11	base_mnu_plikHM_TE_lowEB . . . . .	150
7.12	base_mnu_plikHM_EE_lowEB . . . . .	151
7.13	base_mnu_plikHM_TT_lowl_lensing . . . . .	152
7.14	base_mnu_plikHM_TT_lowl_lensing_post_BAO . . . . .	153
7.15	base_mnu_plikHM_TT_lowl_lensing_post_BAO_H070p6_JLA . . . . .	154
7.16	base_mnu_plikHM_TTTEEE_lowl_lensing . . . . .	155
7.17	base_mnu_plikHM_TTTEEE_lowl_lensing_post_BAO . . . . .	156
7.18	base_mnu_plikHM_TTTEEE_lowl_lensing_post_BAO_H070p6_JLA . . . . .	158
7.19	base_mnu_plikHM_TT_lowTEB_lensing . . . . .	159
7.20	base_mnu_plikHM_TTTEEE_lowTEB_lensing . . . . .	160
7.21	base_mnu_plikHM_TT_lowTEB_BAO . . . . .	161
7.22	base_mnu_plikHM_TT_lowTEB_BAO_post_H070p6 . . . . .	162
7.23	base_mnu_plikHM_TT_lowTEB_BAO_post_H070p6_JLA . . . . .	163
7.24	base_mnu_plikHM_TTTEEE_lowTEB_BAO . . . . .	164
7.25	base_mnu_plikHM_TTTEEE_lowTEB_BAO_post_H070p6 . . . . .	165
7.26	base_mnu_plikHM_TTTEEE_lowTEB_BAO_post_H070p6_JLA . . . . .	167
7.27	base_mnu_plikHM_TT_lowTEB_lensing_BAO . . . . .	168
7.28	base_mnu_plikHM_TT_lowTEB_lensing_BAO_post_H070p6 . . . . .	169
7.29	base_mnu_plikHM_TT_lowTEB_lensing_BAO_post_H070p6_JLA . . . . .	170
7.30	base_mnu_plikHM_TTTEEE_lowTEB_lensing_BAO . . . . .	171
7.31	base_mnu_plikHM_TTTEEE_lowTEB_lensing_BAO_post_H070p6 . . . . .	172
7.32	base_mnu_plikHM_TTTEEE_lowTEB_lensing_BAO_post_H070p6_JLA . . . . .	174
7.33	base_mnu_lensonly . . . . .	175
7.34	base_mnu_lensonly_BAO . . . . .	176
7.35	base_mnu_lensonly_theta . . . . .	177
7.36	base_mnu_lensonly_BAO_theta . . . . .	178
7.37	base_mnu_plikHM_TT_WMAPTEB . . . . .	179
7.38	base_mnu_plikHM_TT_WMAPTEB_post_lensing . . . . .	180
7.39	base_mnu_plikHM_TT_WMAPTEB_post_BAO . . . . .	181
<b>8</b>	<b>mnu+Alens</b>	<b>182</b>
8.1	base_mnu_Alens_plikHM_TT_lowTEB_lensing_BAO . . . . .	182
<b>9</b>	<b>mnu+omegak</b>	<b>183</b>
9.1	base_mnu_omegak_plikHM_TT_lowTEB_lensing_BAO . . . . .	183
<b>10</b>	<b>mnu+w</b>	<b>184</b>
10.1	base_mnu_w_plikHM_TT_lowTEB_lensing_BAO . . . . .	184
<b>11</b>	<b>nnu</b>	<b>185</b>
11.1	base_nnu_plikHM_TT_lowTEB . . . . .	185
11.2	base_nnu_plikHM_TT_lowTEB_post_JLA . . . . .	186
11.3	base_nnu_plikHM_TT_lowTEB_post_lensing . . . . .	187
11.4	base_nnu_plikHM_TT_lowTEB_post_H070p6 . . . . .	188
11.5	base_nnu_plikHM_TT_lowTEB_post_zre6p5 . . . . .	189
11.6	base_nnu_plikHM_TTTEEE_lowTEB . . . . .	190
11.7	base_nnu_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	191
11.8	base_nnu_plikHM_TTTEEE_lowTEB_post_lensing . . . . .	192
11.9	base_nnu_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	193
11.10	base_nnu_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	194

11.11	base_nnu_plikHM_TE_lowTEB	195
11.12	base_nnu_plikHM_EE_lowTEB	196
11.13	base_nnu_plikHM_TE_lowEB	197
11.14	base_nnu_plikHM_EE_lowEB	198
11.15	base_nnu_plikHM_TT_lowEB	199
11.16	base_nnu_plikHM_TTTEEE_lowEB	200
11.17	base_nnu_plikHM_TT_tau07	201
11.18	base_nnu_plikHM_TTTEEE_tau07	202
11.19	base_nnu_plikHM_TT_lowTEB_BAO	203
11.20	base_nnu_plikHM_TT_lowTEB_BAO_post_H070p6_JLA	204
11.21	base_nnu_plikHM_TT_lowTEB_BAO_post_lensing_H070p6_JLA	205
11.22	base_nnu_plikHM_TT_lowTEB_BAO_post_lensing	206
11.23	base_nnu_plikHM_TTTEEE_lowTEB_BAO	207
11.24	base_nnu_plikHM_TTTEEE_lowTEB_BAO_post_H070p6_JLA	208
11.25	base_nnu_plikHM_TTTEEE_lowTEB_BAO_post_lensing_H070p6_JLA	209
11.26	base_nnu_plikHM_TTTEEE_lowTEB_BAO_post_lensing	211
11.27	base_nnu_plikHM_TT_lowTEB_nnup39	212
11.28	base_nnu_plikHM_TTTEEE_lowTEB_nnup39	213
11.29	base_nnu_plikHM_TT_lowTEB_nnup57	214
11.30	base_nnu_plikHM_TTTEEE_lowTEB_nnup57	215
11.31	base_nnu_plikHM_TT_lowTEB_nnu1	216
11.32	base_nnu_plikHM_TTTEEE_lowTEB_nnu1	217
11.33	base_nnu_plikHM_TT_lowTEB_nnup39_BAO	218
11.34	base_nnu_plikHM_TT_lowTEB_nnup39_BAO_post_lensing_H070p6_JLA	219
11.35	base_nnu_plikHM_TTTEEE_lowTEB_nnup39_BAO	220
11.36	base_nnu_plikHM_TTTEEE_lowTEB_nnup39_BAO_post_lensing_H070p6_JLA	221
11.37	base_nnu_plikHM_TT_lowTEB_nnup57_BAO	222
11.38	base_nnu_plikHM_TT_lowTEB_nnup57_BAO_post_lensing_H070p6_JLA	223
11.39	base_nnu_plikHM_TTTEEE_lowTEB_nnup57_BAO	224
11.40	base_nnu_plikHM_TTTEEE_lowTEB_nnup57_BAO_post_lensing_H070p6_JLA	225
11.41	base_nnu_plikHM_TT_lowTEB_nnup39_lensing	226
11.42	base_nnu_plikHM_TTTEEE_lowTEB_nnup39_lensing	227
11.43	base_nnu_plikHM_TT_lowTEB_nnup57_lensing	228
11.44	base_nnu_plikHM_TTTEEE_lowTEB_nnup57_lensing	229
11.45	base_nnu_plikHM_TT_lowTEB_nnu1_lensing	230
11.46	base_nnu_plikHM_TTTEEE_lowTEB_nnu1_lensing	231
11.47	base_nnu_lenonly	232
11.48	base_nnu_lenonly_BAO	233
11.49	base_nnu_lenonly_theta	234
11.50	base_nnu_lenonly_BAO_theta	235
11.51	base_nnu_plikHM_TT_WMAPTEB	236
11.52	base_nnu_plikHM_TT_WMAPTEB_post_lensing	237
11.53	base_nnu_plikHM_TT_WMAPTEB_post_BAO	238
<b>12</b>	<b>nnu+meffsterile</b>	<b>239</b>
12.1	base_nnu_meffsterile_plikHM_TT_lowTEB	239
12.2	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB	240
12.3	base_nnu_meffsterile_plikHM_TT_lowTEB_lensing	241
12.4	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_lensing	242
12.5	base_nnu_meffsterile_plikHM_TT_lowTEB_BAO	243

12.6	base_nnu_meffsterile_plikHM_TT_lowTEB_BAO_post_H070p6	244
12.7	base_nnu_meffsterile_plikHM_TT_lowTEB_BAO_post_H070p6_JLA	245
12.8	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_BAO	246
12.9	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_BAO_post_H070p6	247
12.10	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_BAO_post_H070p6_JLA	249
12.11	base_nnu_meffsterile_plikHM_TT_lowTEB_lensing_BAO	250
12.12	base_nnu_meffsterile_plikHM_TT_lowTEB_lensing_BAO_post_H070p6	251
12.13	base_nnu_meffsterile_plikHM_TT_lowTEB_lensing_BAO_post_H070p6_JLA	252
12.14	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_lensing_BAO	253
12.15	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_lensing_BAO_post_H070p6	255
12.16	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_lensing_BAO_post_H070p6_JLA	257
<b>13</b>	<b>nnu+meffsterile+r</b>	<b>259</b>
13.1	base_nnu_meffsterile_r_plikHM_TT_lowTEB_lensing	259
13.2	base_nnu_meffsterile_r_plikHM_TTTEEE_lowTEB_lensing	260
<b>14</b>	<b>nnu+mnu</b>	<b>262</b>
14.1	base_nnu_mnu_plikHM_TT_lowTEB	262
14.2	base_nnu_mnu_plikHM_TT_lowTEB_post_BAO	263
14.3	base_nnu_mnu_plikHM_TT_lowTEB_post_H070p6	264
14.4	base_nnu_mnu_plikHM_TT_lowTEB_post_BAO_H070p6_JLA	265
14.5	base_nnu_mnu_plikHM_TTTEEE_lowTEB	266
14.6	base_nnu_mnu_plikHM_TTTEEE_lowTEB_post_BAO	267
14.7	base_nnu_mnu_plikHM_TTTEEE_lowTEB_post_H070p6	268
14.8	base_nnu_mnu_plikHM_TTTEEE_lowTEB_post_BAO_H070p6_JLA	270
14.9	base_nnu_mnu_plikHM_TT_lowTEB_lensing	271
14.10	base_nnu_mnu_plikHM_TT_lowTEB_lensing_post_BAO	272
14.11	base_nnu_mnu_plikHM_TTTEEE_lowTEB_lensing	273
14.12	base_nnu_mnu_plikHM_TTTEEE_lowTEB_lensing_post_BAO	274
<b>15</b>	<b>nnu+r</b>	<b>276</b>
15.1	base_nnu_r_plikHM_TT_lowTEB_nnup39	276
15.2	base_nnu_r_plikHM_TTTEEE_lowTEB_nnup39	277
15.3	base_nnu_r_plikHM_TT_lowTEB_nnup57	278
15.4	base_nnu_r_plikHM_TTTEEE_lowTEB_nnup57	279
15.5	base_nnu_r_plikHM_TT_lowTEB_nnup39_lensing	280
15.6	base_nnu_r_plikHM_TTTEEE_lowTEB_nnup39_lensing	281
15.7	base_nnu_r_plikHM_TT_lowTEB_nnup57_lensing	282
15.8	base_nnu_r_plikHM_TTTEEE_lowTEB_nnup57_lensing	283
<b>16</b>	<b>nnu+yhe</b>	<b>284</b>
16.1	base_nnu_yhe_plikHM_TT_lowTEB	284
16.2	base_nnu_yhe_plikHM_TT_lowTEB_post_BAO	285
16.3	base_nnu_yhe_plikHM_TT_lowTEB_post_H070p6	286
16.4	base_nnu_yhe_plikHM_TT_lowTEB_post_BAO_H070p6_JLA	287
16.5	base_nnu_yhe_plikHM_TT_lowTEB_post_lensing	288
16.6	base_nnu_yhe_plikHM_TTTEEE_lowTEB	289
16.7	base_nnu_yhe_plikHM_TTTEEE_lowTEB_post_BAO	290
16.8	base_nnu_yhe_plikHM_TTTEEE_lowTEB_post_H070p6	291
16.9	base_nnu_yhe_plikHM_TTTEEE_lowTEB_post_BAO_H070p6_JLA	292
16.10	base_nnu_yhe_plikHM_TTTEEE_lowTEB_post_lensing	293



<b>17 nrun</b>	<b>294</b>
17.1 base_nrun_plikHM_TT_lowTEB . . . . .	294
17.2 base_nrun_plikHM_TT_lowTEB_post_BAO . . . . .	295
17.3 base_nrun_plikHM_TT_lowTEB_post_JLA . . . . .	296
17.4 base_nrun_plikHM_TT_lowTEB_post_lensing . . . . .	297
17.5 base_nrun_plikHM_TT_lowTEB_post_H070p6 . . . . .	298
17.6 base_nrun_plikHM_TT_lowTEB_post_lensing_BAO_H070p6_JLA . . . . .	299
17.7 base_nrun_plikHM_TT_lowTEB_post_zre6p5 . . . . .	300
17.8 base_nrun_plikHM_TTTEEE_lowTEB . . . . .	301
17.9 base_nrun_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	302
17.10 base_nrun_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	303
17.11 base_nrun_plikHM_TTTEEE_lowTEB_post_lensing . . . . .	304
17.12 base_nrun_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	305
17.13 base_nrun_plikHM_TTTEEE_lowTEB_post_lensing_BAO_H070p6_JLA . . . . .	306
17.14 base_nrun_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	307
17.15 base_nrun_plikHM_TE_lowTEB . . . . .	308
17.16 base_nrun_plikHM_EE_lowTEB . . . . .	309
17.17 base_nrun_plikHM_TE_lowEB . . . . .	310
17.18 base_nrun_plikHM_EE_lowEB . . . . .	311
17.19 base_nrun_plikHM_TT_tau07 . . . . .	312
17.20 base_nrun_plikHM_TTTEEE_tau07 . . . . .	313
<b>18 nrun+r</b>	<b>314</b>
18.1 base_nrun_r_plikHM_TT_lowTEB . . . . .	314
18.2 base_nrun_r_plikHM_TT_lowTEB_post_BAO . . . . .	315
18.3 base_nrun_r_plikHM_TT_lowTEB_post_JLA . . . . .	316
18.4 base_nrun_r_plikHM_TT_lowTEB_post_H070p6 . . . . .	317
18.5 base_nrun_r_plikHM_TT_lowTEB_post_zre6p5 . . . . .	318
18.6 base_nrun_r_plikHM_TTTEEE_lowTEB . . . . .	319
18.7 base_nrun_r_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	321
18.8 base_nrun_r_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	323
18.9 base_nrun_r_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	324
18.10 base_nrun_r_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	325
18.11 base_nrun_r_plikHM_TT_lowTEB_lensing . . . . .	326
18.12 base_nrun_r_plikHM_TT_lowTEB_lensing_post_BAO . . . . .	327
18.13 base_nrun_r_plikHM_TT_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	328
18.14 base_nrun_r_plikHM_TT_lowTEB_lensing_post_zre6p5 . . . . .	329
18.15 base_nrun_r_plikHM_TTTEEE_lowTEB_lensing . . . . .	330
18.16 base_nrun_r_plikHM_TTTEEE_lowTEB_lensing_post_BAO . . . . .	332
18.17 base_nrun_r_plikHM_TTTEEE_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	335
18.18 base_nrun_r_plikHM_TTTEEE_lowTEB_lensing_post_zre6p5 . . . . .	337
18.19 base_nrun_r_plikHM_TT_WMAPTEB . . . . .	338
18.20 base_nrun_r_plikHM_TT_WMAPTEB_post_lensing . . . . .	339
18.21 base_nrun_r_plikHM_TT_WMAPTEB_post_BAO . . . . .	340
<b>19 omegak</b>	<b>341</b>
19.1 base_omegak_plikHM_TT_lowTEB . . . . .	341
19.2 base_omegak_plikHM_TTTEEE_lowTEB . . . . .	342
19.3 base_omegak_plikHM_TT_lowTEB_BAO . . . . .	343
19.4 base_omegak_plikHM_TT_lowTEB_BAO_post_lensing . . . . .	344
19.5 base_omegak_plikHM_TTTEEE_lowTEB_BAO . . . . .	345

19.6	base_omegak_plikHM.TTTEEE_lowTEB_BAO_post_lensing . . . . .	346
19.7	base_omegak_plikHM.TT_lowTEB_BAO_H070p6_JLA . . . . .	347
19.8	base_omegak_plikHM.TT_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	348
19.9	base_omegak_plikHM.TTTEEE_lowTEB_BAO_H070p6_JLA . . . . .	349
19.10	base_omegak_plikHM.TTTEEE_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	351
19.11	base_omegak_plikHM.TT_lowTEB_lensing . . . . .	352
19.12	base_omegak_plikHM.TTTEEE_lowTEB_lensing . . . . .	353
<b>20</b>	<b>r</b>	<b>354</b>
20.1	base_r_plikHM.TT_lowTEB . . . . .	354
20.2	base_r_plikHM.TT_lowTEB_post_BAO . . . . .	355
20.3	base_r_plikHM.TT_lowTEB_post_JLA . . . . .	356
20.4	base_r_plikHM.TT_lowTEB_post_H070p6 . . . . .	357
20.5	base_r_plikHM.TT_lowTEB_post_zre6p5 . . . . .	358
20.6	base_r_plikHM.TTTEEE_lowTEB . . . . .	359
20.7	base_r_plikHM.TTTEEE_lowTEB_post_BAO . . . . .	360
20.8	base_r_plikHM.TTTEEE_lowTEB_post_JLA . . . . .	362
20.9	base_r_plikHM.TTTEEE_lowTEB_post_H070p6 . . . . .	363
20.10	base_r_plikHM.TTTEEE_lowTEB_post_zre6p5 . . . . .	364
20.11	base_r_plikHM.TE_lowTEB . . . . .	365
20.12	base_r_plikHM.EE_lowTEB . . . . .	366
20.13	base_r_plikHM.TE_lowEB . . . . .	367
20.14	base_r_plikHM.EE_lowEB . . . . .	368
20.15	base_r_plikHM.TT_lowTEB_lensing . . . . .	369
20.16	base_r_plikHM.TT_lowTEB_lensing_post_BAO . . . . .	370
20.17	base_r_plikHM.TT_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	371
20.18	base_r_plikHM.TT_lowTEB_lensing_post_zre6p5 . . . . .	372
20.19	base_r_plikHM.TTTEEE_lowTEB_lensing . . . . .	373
20.20	base_r_plikHM.TTTEEE_lowTEB_lensing_post_BAO . . . . .	375
20.21	base_r_plikHM.TTTEEE_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	378
20.22	base_r_plikHM.TTTEEE_lowTEB_lensing_post_zre6p5 . . . . .	380
20.23	base_r_plikHM.TT_WMAPTEB . . . . .	381
20.24	base_r_plikHM.TT_WMAPTEB_post_lensing . . . . .	382
20.25	base_r_plikHM.TT_WMAPTEB_post_BAO . . . . .	383
<b>21</b>	<b>w</b>	<b>384</b>
21.1	base_w_plikHM.TT_lowTEB . . . . .	384
21.2	base_w_plikHM.TT_lowTEB_post_JLA . . . . .	385
21.3	base_w_plikHM.TT_lowTEB_post_lensing . . . . .	386
21.4	base_w_plikHM.TT_lowTEB_post_H070p6 . . . . .	387
21.5	base_w_plikHM.TT_lowTEB_post_zre6p5 . . . . .	388
21.6	base_w_plikHM.TTTEEE_lowTEB . . . . .	389
21.7	base_w_plikHM.TTTEEE_lowTEB_post_lensing . . . . .	390
21.8	base_w_plikHM.TTTEEE_lowTEB_post_H070p6 . . . . .	391
21.9	base_w_plikHM.TTTEEE_lowTEB_post_zre6p5 . . . . .	392
21.10	base_w_plikHM.TT_lowTEB_BAO . . . . .	393
21.11	base_w_plikHM.TT_lowTEB_BAO_post_lensing . . . . .	394
21.12	base_w_plikHM.TTTEEE_lowTEB_BAO . . . . .	395
21.13	base_w_plikHM.TTTEEE_lowTEB_BAO_post_lensing . . . . .	396
21.14	base_w_plikHM.TT_lowTEB_BAO_H070p6_JLA . . . . .	397
21.15	base_w_plikHM.TT_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	398

21.16	base_w_plikHM_TTTEEE_lowTEB_BAO_H070p6_JLA . . . . .	399
21.17	base_w_plikHM_TTTEEE_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	401
<b>22</b>	<b>w+wa</b>	<b>403</b>
22.1	base_w_wa_plikHM_TT_lowTEB_BAO . . . . .	403
22.2	base_w_wa_plikHM_TT_lowTEB_BAO_post_lensing . . . . .	404
22.3	base_w_wa_plikHM_TTTEEE_lowTEB_BAO . . . . .	405
22.4	base_w_wa_plikHM_TTTEEE_lowTEB_BAO_post_lensing . . . . .	406
22.5	base_w_wa_plikHM_TT_lowTEB_BAO_H070p6_JLA . . . . .	407
22.6	base_w_wa_plikHM_TT_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	408
22.7	base_w_wa_plikHM_TTTEEE_lowTEB_BAO_H070p6_JLA . . . . .	409
22.8	base_w_wa_plikHM_TTTEEE_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	411
<b>23</b>	<b>yhe</b>	<b>413</b>
23.1	base_yhe_plikHM_TT_lowTEB . . . . .	413
23.2	base_yhe_plikHM_TT_lowTEB_post_BAO . . . . .	414
23.3	base_yhe_plikHM_TT_lowTEB_post_JLA . . . . .	415
23.4	base_yhe_plikHM_TT_lowTEB_post_lensing . . . . .	416
23.5	base_yhe_plikHM_TT_lowTEB_post_H070p6 . . . . .	417
23.6	base_yhe_plikHM_TT_lowTEB_post_lensing_BAO_H070p6_JLA . . . . .	418
23.7	base_yhe_plikHM_TT_lowTEB_post_zre6p5 . . . . .	419
23.8	base_yhe_plikHM_TTTEEE_lowTEB . . . . .	420
23.9	base_yhe_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	421
23.10	base_yhe_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	422
23.11	base_yhe_plikHM_TTTEEE_lowTEB_post_lensing . . . . .	423
23.12	base_yhe_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	424
23.13	base_yhe_plikHM_TTTEEE_lowTEB_post_lensing_BAO_H070p6_JLA . . . . .	425
23.14	base_yhe_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	426
23.15	base_yhe_plikHM_TE_lowTEB . . . . .	427
23.16	base_yhe_plikHM_EE_lowTEB . . . . .	428
23.17	base_yhe_plikHM_TE_lowEB . . . . .	429
23.18	base_yhe_plikHM_EE_lowEB . . . . .	430
23.19	base_yhe_plikHM_TT_WMAPTEB . . . . .	431
23.20	base_yhe_plikHM_TT_WMAPTEB_post_lensing . . . . .	432
23.21	base_yhe_plikHM_TT_WMAPTEB_post_BAO . . . . .	433

## 2 Baseline model

### 2.1 base\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022242	$0.02222^{+0.00045}_{-0.00043}$	$\Omega_m$	0.3149	$0.315^{+0.027}_{-0.025}$	$100\theta_*$	1.04106	$1.04105^{+0.00088}_{-0.00090}$
$\Omega_c h^2$	0.11977	$0.1197^{+0.0043}_{-0.0042}$	$\Omega_m h^2$	0.14266	$0.1426^{+0.0040}_{-0.0040}$	$D_A/\text{Gpc}$	13.889	$13.891^{+0.089}_{-0.090}$
$100\theta_{\text{MC}}$	1.04086	$1.04085^{+0.00090}_{-0.00091}$	$\Omega_m h^3$	0.09602	$0.09597^{+0.00090}_{-0.00089}$	$z_{\text{drag}}$	1059.63	$1059.57^{+0.93}_{-0.89}$
$\tau$	0.0781	$0.078^{+0.038}_{-0.036}$	$\sigma_8$	0.8301	$0.829^{+0.028}_{-0.028}$	$r_{\text{drag}}$	147.29	$147.33^{+0.96}_{-0.96}$
$\ln(10^{10} A_s)$	3.090	$3.089^{+0.072}_{-0.069}$	$\sigma_8 \Omega_m^{0.5}$	0.4658	$0.466^{+0.026}_{-0.025}$	$k_D$	0.14055	$0.1405^{+0.0010}_{-0.0010}$
$n_s$	0.9658	$0.966^{+0.012}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	0.6218	$0.621^{+0.025}_{-0.025}$	$100\theta_D$	0.16093	$0.16097^{+0.00052}_{-0.00052}$
$y_{\text{cal}}$	1.00030	$1.0004^{+0.0049}_{-0.0048}$	$\sigma_8/h^{0.5}$	1.0118	$1.011^{+0.038}_{-0.037}$	$z_{\text{eq}}$	3394	$3393^{+97}_{-96}$
$A_{217}^{\text{CIB}}$	66.6	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.499	$2.499^{+0.088}_{-0.088}$	$k_{\text{eq}}$	0.010358	$0.01035^{+0.00029}_{-0.00029}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$z_{\text{re}}$	9.999	$9.89^{+3.4}_{-3.4}$	$100\theta_{\text{eq}}$	0.8144	$0.815^{+0.018}_{-0.018}$
$A_{143}^{\text{tSZ}}$	7.14	$5.17^{+3.6}_{-3.7}$	$10^9 A_s$	2.199	$2.20^{+0.16}_{-0.15}$	$100\theta_{s,\text{eq}}$	0.4501	$0.4502^{+0.0094}_{-0.0092}$
$A_{100}^{\text{PS}}$	252	$257^{+50}_{-50}$	$10^9 A_s e^{-2\tau}$	1.8804	$1.880^{+0.027}_{-0.027}$	$r_{\text{drag}}/D_V(0.57)$	0.07139	$0.0714^{+0.0015}_{-0.0014}$
$A_{143}^{\text{PS}}$	39.2	$44^{+20}_{-20}$	$D_{40}$	1235.8	$1237^{+29}_{-29}$	$H(0.57)$	92.88	$92.88^{+0.83}_{-0.76}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{220}$	5716	$5717^{+82}_{-78}$	$D_A(0.57)$	1391.6	$1392^{+25}_{-25}$
$A_{217}^{\text{PS}}$	97.8	$97^{+20}_{-20}$	$D_{810}$	2534.5	$2534^{+27}_{-26}$	$F_{\text{AP}}(0.57)$	0.6769	$0.6769^{+0.0067}_{-0.0065}$
$A^{\text{kSZ}}$	0.00	$< 8.25$	$D_{1420}$	814.9	$814^{+10}_{-9.6}$	$f\sigma_8(0.57)$	0.4835	$0.483^{+0.018}_{-0.018}$
$A_{100}^{\text{dustTT}}$	7.41	$7.40^{+3.7}_{-3.7}$	$D_{2000}$	230.49	$230.3^{+3.8}_{-3.5}$	$\sigma_8(0.57)$	0.6167	$0.616^{+0.022}_{-0.021}$
$A_{143}^{\text{dustTT}}$	8.98	$8.95^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9658	$0.966^{+0.012}_{-0.012}$	$f_{2000}^{143}$	29.5	$30^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.1^{+8.2}_{-8.1}$	$Y_{\text{P}}$	0.245336	$0.24532^{+0.00020}_{-0.00019}$	$f_{2000}^{143 \times 217}$	32.15	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246663	$0.24665^{+0.00020}_{-0.00019}$	$f_{2000}^{217}$	105.77	$106.0^{+3.9}_{-4.0}$
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.616	$2.620^{+0.083}_{-0.085}$	$\chi_{\text{lowTEB}}^2$	10496.47	$10497.4 (\nu: 2.5)$
$c_{217}$	0.99593	$0.9959^{+0.0029}_{-0.0029}$	Age/Gyr	13.811	$13.813^{+0.071}_{-0.075}$	$\chi_{\text{plik}}^2$	763.4	$777.1 (\nu: 16.1)$
$H_0$	67.31	$67.3^{+1.9}_{-1.8}$	$z_*$	1090.06	$1090.09^{+0.81}_{-0.84}$	$\chi_{\text{prior}}^2$	2.08	$7.32 (\nu: 6.4)$
$\Omega_\Lambda$	0.6851	$0.685^{+0.025}_{-0.027}$	$r_*$	144.59	$144.61^{+0.96}_{-0.96}$	$\chi_{\text{CMB}}^2$	11259.8	$11274.5 (\nu: 15.2)$

Best-fit  $\chi_{\text{eff}}^2 = 11261.93$ ;  $\bar{\chi}_{\text{eff}}^2 = 11281.82$ ;  $R - 1 = 0.01034$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.47 plik\_dx11dr2\_HM\_v18\_TT: 763.37

## 2.2 base\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022290	$0.02226^{+0.00040}_{-0.00039}$	$\Omega_m h^3$	0.09603	$0.09597^{+0.00090}_{-0.00087}$	$k_D$	0.14044	$0.14038^{+0.00086}_{-0.00086}$
$\Omega_c h^2$	0.11901	$0.1190^{+0.0025}_{-0.0025}$	$\sigma_8$	0.8295	$0.829^{+0.028}_{-0.027}$	$100\theta_D$	0.16091	$0.16094^{+0.00051}_{-0.00050}$
$100\theta_{MC}$	1.04098	$1.04095^{+0.00079}_{-0.00080}$	$\sigma_8 \Omega_m^{0.5}$	0.4619	$0.462^{+0.019}_{-0.019}$	$z_{eq}$	3377	$3376^{+56}_{-58}$
$\tau$	0.0809	$0.080^{+0.035}_{-0.034}$	$\sigma_8 \Omega_m^{0.25}$	0.6190	$0.619^{+0.022}_{-0.022}$	$k_{eq}$	0.010306	$0.01030^{+0.00017}_{-0.00018}$
$\ln(10^{10} A_s)$	3.094	$3.093^{+0.069}_{-0.066}$	$\sigma_8/h^{0.5}$	1.0084	$1.008^{+0.035}_{-0.035}$	$100\theta_{eq}$	0.8177	$0.818^{+0.011}_{-0.010}$
$n_s$	0.9675	$0.9673^{+0.0090}_{-0.0088}$	$\langle d^2 \rangle^{1/2}$	2.492	$2.492^{+0.086}_{-0.082}$	$100\theta_{s,eq}$	0.4517	$0.4518^{+0.0056}_{-0.0054}$
$y_{cal}$	1.00027	$1.0004^{+0.0049}_{-0.0049}$	$z_{re}$	10.22	$10.1^{+3.2}_{-3.1}$	$r_{drag}/D_V(0.57)$	0.07166	$0.07165^{+0.00086}_{-0.00081}$
$A_{217}^{CIB}$	66.7	$64^{+10}_{-10}$	$10^9 A_s$	2.207	$2.21^{+0.16}_{-0.14}$	$H(0.57)$	93.02	$93.00^{+0.55}_{-0.52}$
$\xi^{tSZ \times CIB}$	0.05	—	$10^9 A_s e^{-2\tau}$	1.8772	$1.877^{+0.022}_{-0.022}$	$D_A(0.57)$	1387.0	$1388^{+15}_{-15}$
$A_{143}^{tSZ}$	7.16	$5.21^{+3.6}_{-3.8}$	$D_{40}$	1233.4	$1234^{+26}_{-26}$	$F_{AP}(0.57)$	0.67568	$0.6758^{+0.0038}_{-0.0039}$
$A_{100}^{PS}$	252	$257^{+60}_{-50}$	$D_{220}$	5720	$5719^{+79}_{-78}$	$f\sigma_8(0.57)$	0.4819	$0.482^{+0.017}_{-0.017}$
$A_{143}^{PS}$	39.0	$43^{+20}_{-20}$	$D_{810}$	2533.7	$2533^{+27}_{-26}$	$\sigma_8(0.57)$	0.6174	$0.617^{+0.021}_{-0.020}$
$A_{143 \times 217}^{PS}$	33	$39^{+20}_{-20}$	$D_{1420}$	815.1	$814.8^{+9.9}_{-9.7}$	$f_{2000}^{143}$	29.4	$30^{+6}_{-6}$
$A_{217}^{PS}$	97.2	$97^{+20}_{-20}$	$D_{2000}$	230.63	$230.5^{+3.6}_{-3.3}$	$f_{2000}^{143 \times 217}$	31.99	$32^{+4}_{-4}$
$A^{kSZ}$	0.01	$< 8.16$	$n_{s,0.002}$	0.9675	$0.9673^{+0.0090}_{-0.0088}$	$f_{2000}^{217}$	105.58	$105.8^{+3.9}_{-4.0}$
$A_{100}^{dustTT}$	7.29	$7.41^{+3.6}_{-3.7}$	$Y_P$	0.245357	$0.24534^{+0.00018}_{-0.00018}$	$\chi_{lowTEB}^2$	10496.42	10497.1 ( $\nu: 2.6$ )
$A_{143}^{dustTT}$	8.99	$8.98^{+3.8}_{-3.7}$	$Y_P^{BBN}$	0.246684	$0.24667^{+0.00018}_{-0.00018}$	$\chi_{plik}^2$	763.6	776.8 ( $\nu: 16.1$ )
$A_{143 \times 217}^{dustTT}$	17.6	$17.1^{+8.1}_{-8.1}$	$10^5 D/H$	2.607	$2.612^{+0.075}_{-0.074}$	$\chi_{6DF}^2$	0.023	0.064 ( $\nu: 0.0$ )
$A_{217}^{dustTT}$	82.1	$82^{+10}_{-10}$	Age/Gyr	13.800	$13.803^{+0.054}_{-0.056}$	$\chi_{MGS}^2$	1.28	1.33 ( $\nu: 0.1$ )
$c_{100}$	0.99789	$0.9979^{+0.0016}_{-0.0016}$	$z_*$	1089.93	$1089.97^{+0.59}_{-0.59}$	$\chi_{DR11CMass}^2$	2.45	2.91 ( $\nu: 0.2$ )
$c_{217}$	0.99588	$0.9959^{+0.0028}_{-0.0029}$	$r_*$	144.75	$144.77^{+0.63}_{-0.61}$	$\chi_{DR11LOWZ}^2$	0.61	0.77 ( $\nu: 0.2$ )
$H_0$	67.65	$67.6^{+1.1}_{-1.1}$	$100\theta_*$	1.04117	$1.04114^{+0.00078}_{-0.00079}$	$\chi_{prior}^2$	2.05	7.34 ( $\nu: 6.5$ )
$\Omega_\Lambda$	0.6899	$0.690^{+0.015}_{-0.015}$	$D_A/Gpc$	13.902	$13.905^{+0.061}_{-0.061}$	$\chi_{CMB}^2$	11260.0	11274.0 ( $\nu: 14.8$ )
$\Omega_m$	0.3101	$0.310^{+0.015}_{-0.015}$	$z_{drag}$	1059.67	$1059.62^{+0.89}_{-0.87}$	$\chi_{BAO}^2$	4.37	5.07 ( $\nu: 0.5$ )
$\Omega_m h^2$	0.14195	$0.1419^{+0.0024}_{-0.0024}$	$r_{drag}$	147.44	$147.47^{+0.67}_{-0.68}$			

Best-fit  $\chi_{eff}^2 = 11266.44$ ;  $\bar{\chi}_{eff}^2 = 11286.37$ ;  $R - 1 = 0.01395$

$\chi_{eff}^2$ : BAO - 6DF: 0.02 MGS: 1.28 DR11CMass: 2.45 DR11LOWZ: 0.61 CMB - lowl.SMW\_70\_dx11d\_2014.10.03\_v5c\_Ap: 10496.42 plik\_dx11dr2\_HM\_v18\_TT: 763.60

### 2.3 base\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022270	$0.02225^{+0.00045}_{-0.00042}$	$\Omega_m h^2$	0.14222	$0.1422^{+0.0038}_{-0.0036}$	$z_{\text{drag}}$	1059.67	$1059.61^{+0.94}_{-0.90}$
$\Omega_c h^2$	0.11930	$0.1193^{+0.0040}_{-0.0038}$	$\Omega_m h^3$	0.09601	$0.09598^{+0.00090}_{-0.00087}$	$r_{\text{drag}}$	147.39	$147.41^{+0.89}_{-0.92}$
$100\theta_{\text{MC}}$	1.04091	$1.04090^{+0.00086}_{-0.00090}$	$\sigma_8$	0.8301	$0.829^{+0.028}_{-0.027}$	$k_{\text{D}}$	0.14048	$0.1404^{+0.0010}_{-0.00099}$
$\tau$	0.0804	$0.079^{+0.037}_{-0.036}$	$\sigma_8 \Omega_m^{0.5}$	0.4637	$0.463^{+0.025}_{-0.024}$	$100\theta_{\text{D}}$	0.16092	$0.16095^{+0.00052}_{-0.00051}$
$\ln(10^{10} A_s)$	3.094	$3.092^{+0.071}_{-0.069}$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.620^{+0.025}_{-0.025}$	$z_{\text{eq}}$	3383	$3383^{+91}_{-87}$
$n_s$	0.9670	$0.967^{+0.012}_{-0.011}$	$\sigma_8/h^{0.5}$	1.0103	$1.009^{+0.037}_{-0.036}$	$k_{\text{eq}}$	0.010326	$0.01033^{+0.00028}_{-0.00026}$
$y_{\text{cal}}$	1.00026	$1.0004^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.496	$2.495^{+0.088}_{-0.087}$	$100\theta_{\text{eq}}$	0.8164	$0.816^{+0.017}_{-0.017}$
$A_{217}^{\text{CIB}}$	66.9	$64^{+10}_{-10}$	$z_{\text{re}}$	10.19	$10.0^{+3.3}_{-3.3}$	$100\theta_{\text{s,eq}}$	0.4511	$0.4511^{+0.0086}_{-0.0086}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$10^9 A_s$	2.206	$2.20^{+0.16}_{-0.15}$	$r_{\text{drag}}/D_V(0.57)$	0.07155	$0.0716^{+0.0013}_{-0.0013}$
$A_{143}^{\text{tSZ}}$	7.23	$5.19^{+3.6}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8781	$1.879^{+0.026}_{-0.026}$	$H(0.57)$	92.96	$92.95^{+0.79}_{-0.73}$
$A_{100}^{\text{PS}}$	252	$257^{+50}_{-50}$	$D_{40}$	1233.9	$1236^{+28}_{-28}$	$D_A(0.57)$	1388.9	$1389^{+23}_{-23}$
$A_{143}^{\text{PS}}$	38.3	$43^{+20}_{-20}$	$D_{220}$	5717	$5719^{+81}_{-78}$	$F_{\text{AP}}(0.57)$	0.6762	$0.6762^{+0.0062}_{-0.0059}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2533.6	$2534^{+27}_{-26}$	$f\sigma_8(0.57)$	0.4828	$0.482^{+0.018}_{-0.018}$
$A_{217}^{\text{PS}}$	97.3	$97^{+20}_{-20}$	$D_{1420}$	814.9	$815^{+10}_{-9.6}$	$\sigma_8(0.57)$	0.6174	$0.617^{+0.022}_{-0.021}$
$A^{\text{kSZ}}$	0.00	< 8.22	$D_{2000}$	230.57	$230.4^{+3.7}_{-3.5}$	$f_{2000}^{143}$	29.3	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.44	$7.40^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	0.9670	$0.967^{+0.012}_{-0.011}$	$f_{2000}^{143 \times 217}$	32.03	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.08	$8.97^{+3.7}_{-3.6}$	$Y_{\text{P}}$	0.245349	$0.24534^{+0.00020}_{-0.00019}$	$f_{2000}^{217}$	105.70	$105.9^{+3.9}_{-4.1}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.0^{+8.1}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246675	$0.24666^{+0.00020}_{-0.00019}$	$\chi_{\text{lowTEB}}^2$	10496.45	10497.3 ( $\nu$ : 2.6)
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 \text{D}/\text{H}$	2.610	$2.614^{+0.082}_{-0.084}$	$\chi_{\text{plik}}^2$	763.4	777.1 ( $\nu$ : 16.4)
$c_{100}$	0.99790	$0.9979^{+0.0016}_{-0.0016}$	Age/Gyr	13.805	$13.807^{+0.069}_{-0.072}$	$\chi_{\text{JLA}}^2$	706.76	706.90 ( $\nu$ : 0.1)
$c_{217}$	0.99592	$0.9959^{+0.0029}_{-0.0029}$	$z_*$	1089.99	$1090.01^{+0.78}_{-0.80}$	$\chi_{\text{prior}}^2$	2.11	7.30 ( $\nu$ : 6.3)
$H_0$	67.51	$67.5^{+1.7}_{-1.7}$	$r_*$	144.69	$144.70^{+0.88}_{-0.91}$	$\chi_{\text{CMB}}^2$	11259.9	11274.4 ( $\nu$ : 15.1)
$\Omega_\Lambda$	0.6880	$0.688^{+0.023}_{-0.025}$	$100\theta_*$	1.04110	$1.04110^{+0.00085}_{-0.00090}$			
$\Omega_m$	0.3120	$0.312^{+0.025}_{-0.023}$	$D_A/\text{Gpc}$	13.898	$13.899^{+0.082}_{-0.084}$			

Best-fit  $\chi_{\text{eff}}^2 = 11968.74$ ;  $\bar{\chi}_{\text{eff}}^2 = 11988.60$ ;  $R - 1 = 0.01407$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c.Ap: 10496.44 plik\_dx11dr2\_HM\_v18\_TT: 763.42 SN - JLA December\_2013: 706.76

## 2.4 base\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022292	$0.02226^{+0.00045}_{-0.00043}$	$\Omega_m h^2$	0.14217	$0.1421^{+0.0039}_{-0.0037}$	$z_{\text{drag}}$	1059.70	$1059.63^{+0.92}_{-0.88}$
$\Omega_c h^2$	0.11923	$0.1192^{+0.0041}_{-0.0040}$	$\Omega_m h^3$	0.09607	$0.09599^{+0.00089}_{-0.00088}$	$r_{\text{drag}}$	147.38	$147.42^{+0.91}_{-0.95}$
$100\theta_{\text{MC}}$	1.04096	$1.04093^{+0.00086}_{-0.00091}$	$\sigma_8$	0.8294	$0.829^{+0.028}_{-0.027}$	$k_{\text{D}}$	0.14050	$0.1404^{+0.0010}_{-0.0010}$
$\tau$	0.0798	$0.080^{+0.037}_{-0.036}$	$\sigma_8 \Omega_m^{0.5}$	0.4628	$0.463^{+0.025}_{-0.025}$	$100\theta_{\text{D}}$	0.16090	$0.16094^{+0.00052}_{-0.00051}$
$\ln(10^{10} A_s)$	3.092	$3.092^{+0.071}_{-0.069}$	$\sigma_8 \Omega_m^{0.25}$	0.6196	$0.620^{+0.025}_{-0.025}$	$z_{\text{eq}}$	3382	$3381^{+94}_{-90}$
$n_s$	0.9673	$0.967^{+0.012}_{-0.012}$	$\sigma_8/h^{0.5}$	1.0090	$1.009^{+0.037}_{-0.037}$	$k_{\text{eq}}$	0.010322	$0.01032^{+0.00029}_{-0.00027}$
$y_{\text{cal}}$	1.00030	$1.0004^{+0.0050}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.493	$2.494^{+0.089}_{-0.087}$	$100\theta_{\text{eq}}$	0.8167	$0.817^{+0.018}_{-0.017}$
$A_{217}^{\text{CIB}}$	66.3	$64^{+10}_{-10}$	$z_{\text{re}}$	10.12	$10.1^{+3.3}_{-3.4}$	$100\theta_{\text{s,eq}}$	0.4512	$0.4513^{+0.0090}_{-0.0089}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.09	—	$10^9 A_s$	2.203	$2.20^{+0.16}_{-0.15}$	$r_{\text{drag}}/D_V(0.57)$	0.07159	$0.0716^{+0.0014}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	7.08	$5.20^{+3.6}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8783	$1.878^{+0.027}_{-0.027}$	$H(0.57)$	93.00	$92.98^{+0.80}_{-0.75}$
$A_{100}^{\text{PS}}$	252	$257^{+50}_{-50}$	$D_{40}$	1233.5	$1235^{+29}_{-29}$	$D_A(0.57)$	1388.1	$1389^{+24}_{-24}$
$A_{143}^{\text{PS}}$	39.4	$43^{+20}_{-20}$	$D_{220}$	5719	$5719^{+81}_{-78}$	$F_{\text{AP}}(0.57)$	0.6760	$0.6761^{+0.0064}_{-0.0062}$
$A_{143 \times 217}^{\text{PS}}$	35	$39^{+20}_{-20}$	$D_{810}$	2534.4	$2534^{+27}_{-26}$	$f\sigma_8(0.57)$	0.4822	$0.482^{+0.018}_{-0.018}$
$A_{217}^{\text{PS}}$	98.2	$97^{+20}_{-20}$	$D_{1420}$	815.4	$815^{+10}_{-9.6}$	$\sigma_8(0.57)$	0.6170	$0.617^{+0.022}_{-0.021}$
$A^{\text{kSZ}}$	0.00	$< 8.21$	$D_{2000}$	230.73	$230.5^{+3.7}_{-3.5}$	$f_{2000}^{143}$	29.2	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.42	$7.40^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	0.9673	$0.967^{+0.012}_{-0.012}$	$f_{2000}^{143 \times 217}$	31.94	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.04	$8.96^{+3.7}_{-3.6}$	$Y_{\text{P}}$	0.245359	$0.24534^{+0.00020}_{-0.00020}$	$f_{2000}^{217}$	105.58	$105.8^{+3.9}_{-4.1}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.0^{+8.1}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246685	$0.24667^{+0.00020}_{-0.00020}$	$\chi_{\text{lowTEB}}^2$	10496.32	$10497.3 (\nu: 2.7)$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^5 \text{D}/\text{H}$	2.606	$2.612^{+0.083}_{-0.084}$	$\chi_{\text{plik}}^2$	763.7	$777.2 (\nu: 16.6)$
$c_{100}$	0.99790	$0.9979^{+0.0016}_{-0.0016}$	Age/Gyr	13.801	$13.805^{+0.071}_{-0.073}$	$\chi_{\text{H070p6}}^2$	0.83	$0.91 (\nu: 0.1)$
$c_{217}$	0.99588	$0.9959^{+0.0029}_{-0.0029}$	$z_*$	1089.95	$1089.99^{+0.80}_{-0.81}$	$\chi_{\text{prior}}^2$	2.01	$7.30 (\nu: 6.3)$
$H_0$	67.57	$67.5^{+1.8}_{-1.8}$	$r_*$	144.69	$144.72^{+0.92}_{-0.94}$	$\chi_{\text{CMB}}^2$	11260.0	$11274.5 (\nu: 15.3)$
$\Omega_\Lambda$	0.6886	$0.688^{+0.024}_{-0.026}$	$100\theta_*$	1.04115	$1.04112^{+0.00085}_{-0.00090}$			
$\Omega_m$	0.3114	$0.312^{+0.026}_{-0.024}$	$D_A/\text{Gpc}$	13.897	$13.900^{+0.084}_{-0.087}$			

Best-fit  $\chi_{\text{eff}}^2 = 11262.82$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.70$ ;  $R - 1 = 0.01476$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c.Ap: 10496.32 plik\_dx11dr2\_HM\_v18\_TT: 763.66 Hubble - H070p6: 0.83

## 2.5 base\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02223^{+0.00045}_{-0.00043}$	$\Omega_m$	$0.315^{+0.026}_{-0.025}$	$100\theta_*$	$1.04106^{+0.00086}_{-0.00089}$
$\Omega_c h^2$	$0.1197^{+0.0042}_{-0.0041}$	$\Omega_m h^2$	$0.1426^{+0.0040}_{-0.0039}$	$D_A/\text{Gpc}$	$13.892^{+0.086}_{-0.090}$
$100\theta_{\text{MC}}$	$1.04086^{+0.00089}_{-0.00091}$	$\Omega_m h^3$	$0.09598^{+0.00090}_{-0.00087}$	$z_{\text{drag}}$	$1059.58^{+0.92}_{-0.87}$
$\tau$	$0.079^{+0.035}_{-0.034}$	$\sigma_8$	$0.830^{+0.027}_{-0.025}$	$r_{\text{drag}}$	$147.33^{+0.92}_{-0.95}$
$\ln(10^{10} A_s)$	$3.091^{+0.066}_{-0.065}$	$\sigma_8 \Omega_m^{0.5}$	$0.466^{+0.026}_{-0.025}$	$k_D$	$0.1405^{+0.0010}_{-0.0010}$
$n_s$	$0.966^{+0.012}_{-0.011}$	$\sigma_8 \Omega_m^{0.25}$	$0.622^{+0.026}_{-0.024}$	$100\theta_D$	$0.16096^{+0.00052}_{-0.00051}$
$y_{\text{cal}}$	$1.0004^{+0.0050}_{-0.0048}$	$\sigma_8/h^{0.5}$	$1.012^{+0.038}_{-0.035}$	$z_{\text{eq}}$	$3392^{+95}_{-92}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	$2.500^{+0.087}_{-0.084}$	$k_{\text{eq}}$	$0.01035^{+0.00029}_{-0.00028}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$z_{\text{re}}$	$10.0^{+2.9}_{-3.2}$	$100\theta_{\text{eq}}$	$0.815^{+0.018}_{-0.017}$
$A_{143}^{\text{tSZ}}$	$5.19^{+3.6}_{-3.8}$	$10^9 A_s$	$2.20^{+0.15}_{-0.14}$	$100\theta_{\text{s,eq}}$	$0.4503^{+0.0090}_{-0.0090}$
$A_{100}^{\text{PS}}$	$257^{+50}_{-50}$	$10^9 A_s e^{-2\tau}$	$1.880^{+0.027}_{-0.027}$	$r_{\text{drag}}/D_V(0.57)$	$0.0714^{+0.0014}_{-0.0014}$
$A_{143}^{\text{PS}}$	$44^{+20}_{-20}$	$D_{40}$	$1237^{+29}_{-29}$	$H(0.57)$	$92.89^{+0.82}_{-0.75}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{220}$	$5717^{+81}_{-78}$	$D_A(0.57)$	$1391^{+24}_{-25}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$D_{810}$	$2534^{+27}_{-26}$	$F_{\text{AP}}(0.57)$	$0.6768^{+0.0065}_{-0.0063}$
$A^{\text{kSZ}}$	$< 8.21$	$D_{1420}$	$814^{+10}_{-9.5}$	$f\sigma_8(0.57)$	$0.483^{+0.018}_{-0.017}$
$A_{100}^{\text{dustTT}}$	$7.42^{+3.6}_{-3.6}$	$D_{2000}$	$230.3^{+3.8}_{-3.5}$	$\sigma_8(0.57)$	$0.617^{+0.020}_{-0.020}$
$A_{143}^{\text{dustTT}}$	$8.95^{+3.7}_{-3.6}$	$n_{\text{s},0.002}$	$0.966^{+0.012}_{-0.011}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0^{+8.2}_{-8.1}$	$Y_{\text{P}}$	$0.24533^{+0.00020}_{-0.00019}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24665^{+0.00020}_{-0.00020}$	$f_{2000}^{217}$	$105.9^{+3.9}_{-4.1}$
$c_{100}$	$0.9979^{+0.0015}_{-0.0016}$	$10^5 D/H$	$2.619^{+0.083}_{-0.085}$	$\chi_{\text{lowTEB}}^2$	$10497.3 (\nu: 2.5)$
$c_{217}$	$0.9959^{+0.0029}_{-0.0029}$	$\text{Age}/\text{Gyr}$	$13.812^{+0.071}_{-0.074}$	$\chi_{\text{plik}}^2$	$777.0 (\nu: 15.8)$
$H_0$	$67.3^{+1.8}_{-1.8}$	$z_*$	$1090.08^{+0.79}_{-0.84}$	$\chi_{\text{prior}}^2$	$7.29 (\nu: 6.2)$
$\Omega_\Lambda$	$0.685^{+0.025}_{-0.026}$	$r_*$	$144.62^{+0.93}_{-0.95}$	$\chi_{\text{CMB}}^2$	$11274.4 (\nu: 14.8)$

$$\bar{\chi}_{\text{eff}}^2 = 11281.64; R - 1 = 0.01217$$



## 2.6 base\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022252	$0.02225^{+0.00032}_{-0.00030}$	$A_{100 \times 217}^{\text{dustTE}}$	0.307	$0.30^{+0.17}_{-0.17}$	$10^5 \text{D/H}$	2.614	$2.614^{+0.057}_{-0.060}$
$\Omega_c h^2$	0.11987	$0.1198^{+0.0029}_{-0.0029}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	Age/Gyr	13.813	$13.813^{+0.051}_{-0.052}$
$100\theta_{\text{MC}}$	1.04078	$1.04077^{+0.00064}_{-0.00063}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$z_*$	1090.06	$1090.06^{+0.58}_{-0.58}$
$\tau$	0.0789	$0.079^{+0.034}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.667	$1.67^{+0.50}_{-0.49}$	$r_*$	144.56	$144.57^{+0.62}_{-0.63}$
$\ln(10^{10} A_s)$	3.093	$3.094^{+0.066}_{-0.066}$	$c_{100}$	0.99818	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04097	$1.04096^{+0.00063}_{-0.00061}$
$n_s$	0.9648	$0.9645^{+0.0098}_{-0.0096}$	$c_{217}$	0.99598	$0.9960^{+0.0028}_{-0.0028}$	$D_A/\text{Gpc}$	13.887	$13.888^{+0.057}_{-0.059}$
$y_{\text{cal}}$	1.00029	$1.0004^{+0.0049}_{-0.0049}$	$H_0$	67.25	$67.3^{+1.3}_{-1.3}$	$z_{\text{drag}}$	1059.67	$1059.65^{+0.63}_{-0.59}$
$A_{217}^{\text{CIB}}$	66.4	$64^{+10}_{-10}$	$\Omega_\Lambda$	0.6844	$0.684^{+0.017}_{-0.018}$	$r_{\text{drag}}$	147.26	$147.27^{+0.61}_{-0.62}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\Omega_m$	0.3156	$0.316^{+0.018}_{-0.017}$	$k_D$	0.14060	$0.14059^{+0.00064}_{-0.00064}$
$A_{143}^{\text{tSZ}}$	7.17	$5.38^{+3.6}_{-3.8}$	$\Omega_m h^2$	0.14276	$0.1427^{+0.0027}_{-0.0027}$	$100\theta_D$	0.160904	$0.16091^{+0.00035}_{-0.00036}$
$A_{100}^{\text{PS}}$	255	$260^{+50}_{-50}$	$\Omega_m h^3$	0.09601	$0.09601^{+0.00058}_{-0.00056}$	$z_{\text{eq}}$	3396	$3395^{+66}_{-64}$
$A_{143}^{\text{PS}}$	40.1	$43^{+10}_{-20}$	$\sigma_8$	0.8310	$0.831^{+0.026}_{-0.026}$	$k_{\text{eq}}$	0.010365	$0.01036^{+0.00020}_{-0.00019}$
$A_{143 \times 217}^{\text{PS}}$	36.4	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4668	$0.467^{+0.019}_{-0.019}$	$100\theta_{\text{eq}}$	0.8139	$0.814^{+0.012}_{-0.012}$
$A_{217}^{\text{PS}}$	98.7	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6228	$0.623^{+0.021}_{-0.021}$	$100\theta_{s,\text{eq}}$	0.4498	$0.4499^{+0.0063}_{-0.0063}$
$A^{\text{kSZ}}$	0.00	$< 7.81$	$\sigma_8/h^{0.5}$	1.0133	$1.013^{+0.033}_{-0.032}$	$r_{\text{drag}}/D_V(0.57)$	0.07134	$0.07136^{+0.00097}_{-0.00096}$
$A_{100}^{\text{dustTT}}$	7.34	$7.42^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.506	$2.507^{+0.078}_{-0.077}$	$H(0.57)$	92.86	$92.87^{+0.57}_{-0.55}$
$A_{143}^{\text{dustTT}}$	8.97	$8.93^{+3.6}_{-3.6}$	$z_{\text{re}}$	10.07	$10.0^{+3.1}_{-3.2}$	$D_A(0.57)$	1392.3	$1392^{+17}_{-17}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.0^{+8.1}_{-8.1}$	$10^9 A_s$	2.204	$2.21^{+0.15}_{-0.14}$	$F_{\text{AP}}(0.57)$	0.67708	$0.6770^{+0.0046}_{-0.0044}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8824	$1.882^{+0.023}_{-0.024}$	$f\sigma_8(0.57)$	0.4842	$0.484^{+0.016}_{-0.015}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1240.0	$1242^{+26}_{-26}$	$\sigma_8(0.57)$	0.6171	$0.617^{+0.020}_{-0.020}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0488^{+0.0098}_{-0.0098}$	$D_{220}$	5726	$5729^{+76}_{-78}$	$f_{2000}^{143}$	29.2	$30^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0995	$0.099^{+0.065}_{-0.064}$	$D_{810}$	2535.8	$2536^{+26}_{-27}$	$f_{2000}^{143 \times 217}$	32.13	$32^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.013}_{-0.013}$	$D_{1420}$	814.9	$814.7^{+9.4}_{-9.3}$	$f_{2000}^{217}$	105.74	$105.8^{+3.7}_{-3.7}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.225^{+0.093}_{-0.092}$	$D_{2000}$	230.48	$230.4^{+3.3}_{-3.2}$	$\chi_{\text{lowTEB}}^2$	10496.93	10497.8 ( $\nu$ : 2.5)
$A_{217}^{\text{dustEE}}$	0.645	$0.65^{+0.25}_{-0.25}$	$n_{s,0.002}$	0.9648	$0.9645^{+0.0098}_{-0.0096}$	$\chi_{\text{plik}}^2$	2431.6	2450.6 ( $\nu$ : 23.0)
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.074}_{-0.074}$	$Y_P$	0.245341	$0.24534^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	6.98	19.3 ( $\nu$ : 15.1)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	$Y_P^{\text{BBN}}$	0.246667	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12928.6	12948.4 ( $\nu$ : 22.2)

Best-fit  $\chi_{\text{eff}}^2 = 12935.56$ ;  $\bar{\chi}_{\text{eff}}^2 = 12967.69$ ;  $R - 1 = 0.00875$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.93 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.65

## 2.7 base\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022319	$0.02229^{+0.00029}_{-0.00027}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04105	$1.04103^{+0.00059}_{-0.00057}$
$\Omega_c h^2$	0.11910	$0.1192^{+0.0021}_{-0.0020}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.8998	$13.898^{+0.045}_{-0.045}$
$100\theta_{\text{MC}}$	1.04087	$1.04084^{+0.00060}_{-0.00057}$	$c_{100}$	0.99822	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.74	$1059.70^{+0.61}_{-0.57}$
$\tau$	0.0865	$0.082^{+0.033}_{-0.032}$	$c_{217}$	0.99585	$0.9959^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.389	$147.38^{+0.49}_{-0.49}$
$\ln(10^{10} A_s)$	3.106	$3.098^{+0.064}_{-0.064}$	$H_0$	67.61	$67.54^{+0.92}_{-0.93}$	$k_D$	0.14051	$0.14051^{+0.00058}_{-0.00058}$
$n_s$	0.9671	$0.9660^{+0.0083}_{-0.0081}$	$\Omega_\Lambda$	0.6892	$0.688^{+0.012}_{-0.013}$	$100\theta_D$	0.160849	$0.16088^{+0.00035}_{-0.00035}$
$y_{\text{cal}}$	1.00020	$1.0004^{+0.0049}_{-0.0049}$	$\Omega_m$	0.3108	$0.312^{+0.013}_{-0.012}$	$z_{\text{eq}}$	3379.4	$3382^{+47}_{-46}$
$A_{217}^{\text{CIB}}$	64.5	$64^{+10}_{-10}$	$\Omega_m h^2$	0.14206	$0.1422^{+0.0020}_{-0.0019}$	$k_{\text{eq}}$	0.010314	$0.01032^{+0.00014}_{-0.00014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.33	—	$\Omega_m h^3$	0.09605	$0.09601^{+0.00059}_{-0.00057}$	$100\theta_{\text{eq}}$	0.8172	$0.8167^{+0.0088}_{-0.0087}$
$A_{143}^{\text{tSZ}}$	6.99	$5.42^{+3.6}_{-3.8}$	$\sigma_8$	0.8344	$0.831^{+0.027}_{-0.026}$	$100\theta_{s,\text{eq}}$	0.45146	$0.4512^{+0.0045}_{-0.0045}$
$A_{100}^{\text{PS}}$	253	$259^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4652	$0.464^{+0.017}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.07161	$0.07156^{+0.00070}_{-0.00069}$
$A_{143}^{\text{PS}}$	42.8	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.621^{+0.020}_{-0.020}$	$H(0.57)$	93.007	$92.97^{+0.43}_{-0.42}$
$A_{143 \times 217}^{\text{PS}}$	42.1	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0148	$1.012^{+0.032}_{-0.031}$	$D_A(0.57)$	1387.6	$1389^{+13}_{-12}$
$A_{217}^{\text{PS}}$	101.4	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.509	$2.503^{+0.077}_{-0.075}$	$F_{\text{AP}}(0.57)$	0.67585	$0.6761^{+0.0032}_{-0.0031}$
$A^{\text{kSZ}}$	0.00	$< 7.75$	$z_{\text{re}}$	10.71	$10.3^{+2.9}_{-3.0}$	$f\sigma_8(0.57)$	0.4850	$0.483^{+0.015}_{-0.015}$
$A_{100}^{\text{dustTT}}$	7.35	$7.44^{+3.7}_{-3.7}$	$10^9 A_s$	2.234	$2.22^{+0.15}_{-0.14}$	$\sigma_8(0.57)$	0.6209	$0.618^{+0.020}_{-0.020}$
$A_{143}^{\text{dustTT}}$	8.94	$8.93^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8789	$1.880^{+0.022}_{-0.023}$	$f_{2000}^{143}$	28.5	$29^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$16.9^{+8.1}_{-8.3}$	$D_{40}$	1238.1	$1240^{+25}_{-25}$	$f_{2000}^{143 \times 217}$	31.69	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.0	$81^{+10}_{-10}$	$D_{220}$	5728	$5731^{+76}_{-77}$	$f_{2000}^{217}$	105.20	$105.7^{+3.6}_{-3.6}$
$A_{100}^{\text{dustEE}}$	0.0816	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2535.0	$2535^{+27}_{-27}$	$\chi_{\text{lowTEB}}^2$	10497.42	$10497.7 (\nu: 2.8)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0490^{+0.0097}_{-0.0099}$	$D_{1420}$	815.4	$815.0^{+9.3}_{-9.2}$	$\chi_{\text{plik}}^2$	2431.5	$2450.3 (\nu: 23.4)$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0998^{+0.066}_{-0.064}$	$D_{2000}$	230.88	$230.6^{+3.2}_{-3.1}$	$\chi_{6\text{DF}}^2$	0.029	$0.066 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	0.1007	$0.100^{+0.013}_{-0.013}$	$n_{s,0.002}$	0.9671	$0.9660^{+0.0083}_{-0.0081}$	$\chi_{\text{MGS}}^2$	1.22	$1.21 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.225^{+0.092}_{-0.094}$	$Y_{\text{P}}$	0.245370	$0.24536^{+0.00013}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.50	$2.86 (\nu: 0.2)$
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}^{\text{BBN}}$	0.246697	$0.24668^{+0.00013}_{-0.00013}$	$\chi_{\text{DR11LOWZ}}^2$	0.68	$0.85 (\nu: 0.2)$
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.074}_{-0.074}$	$10^5 D/H$	2.601	$2.606^{+0.051}_{-0.054}$	$\chi_{\text{prior}}^2$	6.78	$19.5 (\nu: 15.5)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.056}$	$\text{Age}/\text{Gyr}$	13.8006	$13.804^{+0.041}_{-0.043}$	$\chi_{\text{CMB}}^2$	12929.0	$12948.0 (\nu: 22.1)$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.16}$	$z_*$	1089.904	$1089.95^{+0.46}_{-0.47}$	$\chi_{\text{BAO}}^2$	4.42	$4.99 (\nu: 0.4)$
$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$r_*$	144.704	$144.69^{+0.48}_{-0.47}$			

Best-fit  $\chi_{\text{eff}}^2 = 12940.16$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.47$ ;  $R - 1 = 0.00954$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 MGS: 1.22 DR11CMass: 2.50 DR11LOWZ: 0.68 CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10497.42 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.54

## 2.8 base\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022287	$0.02227^{+0.00032}_{-0.00030}$	$A_{143}^{\text{dustTE}}$	0.160	$0.15^{+0.11}_{-0.10}$	$z_*$	1090.01	$1090.01^{+0.57}_{-0.57}$
$\Omega_c h^2$	0.11976	$0.1196^{+0.0029}_{-0.0028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$r_*$	144.56	$144.61^{+0.60}_{-0.62}$
$100\theta_{\text{MC}}$	1.04077	$1.04079^{+0.00064}_{-0.00062}$	$A_{217}^{\text{dustTE}}$	1.64	$1.67^{+0.50}_{-0.49}$	$100\theta_*$	1.04096	$1.04099^{+0.00063}_{-0.00061}$
$\tau$	0.0829	$0.080^{+0.034}_{-0.034}$	$c_{100}$	0.99829	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.887	$13.892^{+0.056}_{-0.057}$
$\ln(10^{10} A_s)$	3.101	$3.095^{+0.066}_{-0.065}$	$c_{217}$	0.99608	$0.9959^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.74	$1059.67^{+0.64}_{-0.63}$
$n_s$	0.9652	$0.9651^{+0.0096}_{-0.0094}$	$H_0$	67.32	$67.4^{+1.3}_{-1.3}$	$r_{\text{drag}}$	147.25	$147.31^{+0.60}_{-0.60}$
$y_{\text{cal}}$	1.00056	$1.0004^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6851	$0.686^{+0.017}_{-0.018}$	$k_D$	0.14064	$0.14056^{+0.00063}_{-0.00063}$
$A_{217}^{\text{CIB}}$	64.6	$64^{+10}_{-10}$	$\Omega_m$	0.3149	$0.314^{+0.018}_{-0.017}$	$100\theta_D$	0.160857	$0.16089^{+0.00036}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.23	—	$\Omega_m h^2$	0.14270	$0.1425^{+0.0027}_{-0.0026}$	$z_{\text{eq}}$	3395	$3390^{+64}_{-62}$
$A_{143}^{\text{tSZ}}$	7.52	$5.40^{+3.6}_{-3.8}$	$\Omega_m h^3$	0.09606	$0.09601^{+0.00059}_{-0.00056}$	$k_{\text{eq}}$	0.010361	$0.01035^{+0.00020}_{-0.00019}$
$A_{100}^{\text{PS}}$	252	$259^{+50}_{-50}$	$\sigma_8$	0.8341	$0.831^{+0.027}_{-0.026}$	$100\theta_{\text{eq}}$	0.8143	$0.815^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	40.6	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4680	$0.466^{+0.019}_{-0.019}$	$100\theta_{s,\text{eq}}$	0.4500	$0.4504^{+0.0061}_{-0.0062}$
$A_{143 \times 217}^{\text{PS}}$	39.5	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6248	$0.622^{+0.021}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	0.07138	$0.07143^{+0.00095}_{-0.00095}$
$A_{217}^{\text{PS}}$	101.1	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0166	$1.013^{+0.033}_{-0.032}$	$H(0.57)$	92.89	$92.91^{+0.55}_{-0.54}$
$A^{\text{kSZ}}$	0.01	$< 7.79$	$\langle d^2 \rangle^{1/2}$	2.514	$2.505^{+0.078}_{-0.076}$	$D_A(0.57)$	1391.4	$1391^{+17}_{-17}$
$A_{100}^{\text{dustTT}}$	7.54	$7.43^{+3.7}_{-3.7}$	$z_{\text{re}}$	10.41	$10.1^{+3.1}_{-3.1}$	$F_{\text{AP}}(0.57)$	0.67689	$0.6767^{+0.0045}_{-0.0043}$
$A_{143}^{\text{dustTT}}$	8.97	$8.93^{+3.6}_{-3.6}$	$10^9 A_s$	2.222	$2.21^{+0.15}_{-0.14}$	$f\sigma_8(0.57)$	0.4858	$0.484^{+0.016}_{-0.015}$
$A_{143 \times 217}^{\text{dustTT}}$	18.5	$16.9^{+8.1}_{-8.3}$	$10^9 A_s e^{-2\tau}$	1.8830	$1.881^{+0.023}_{-0.024}$	$\sigma_8(0.57)$	0.6196	$0.618^{+0.020}_{-0.020}$
$A_{217}^{\text{dustTT}}$	83.8	$82^{+10}_{-10}$	$D_{40}$	1241.6	$1241^{+26}_{-26}$	$f_{2000}^{143}$	28.8	$29^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5732	$5730^{+77}_{-78}$	$f_{2000}^{143 \times 217}$	32.03	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0488^{+0.0097}_{-0.0098}$	$D_{810}$	2537.1	$2535^{+27}_{-27}$	$f_{2000}^{217}$	105.73	$105.8^{+3.7}_{-3.6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.097	$0.099^{+0.065}_{-0.064}$	$D_{1420}$	815.5	$814.8^{+9.3}_{-9.3}$	$\chi_{\text{lowTEB}}^2$	10497.36	10497.8 ( $\nu$ : 2.6)
$A_{143}^{\text{dustEE}}$	0.1003	$0.100^{+0.013}_{-0.013}$	$D_{2000}$	230.83	$230.5^{+3.3}_{-3.2}$	$\chi_{\text{plik}}^2$	2431.6	2450.5 ( $\nu$ : 23.3)
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.225^{+0.092}_{-0.093}$	$n_{s,0.002}$	0.9652	$0.9651^{+0.0096}_{-0.0094}$	$\chi_{\text{JLA}}^2$	706.86	706.89 ( $\nu$ : 0.0)
$A_{217}^{\text{dustEE}}$	0.681	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}$	0.245356	$0.24535^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	6.57	19.4 ( $\nu$ : 15.4)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.073}_{-0.074}$	$Y_{\text{P}}^{\text{BBN}}$	0.246683	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12929.0	12948.3 ( $\nu$ : 22.4)
$A_{100 \times 143}^{\text{dustTE}}$	0.130	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.607	$2.610^{+0.057}_{-0.059}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.16}$	Age/Gyr	13.809	$13.810^{+0.049}_{-0.051}$			

Best-fit  $\chi_{\text{eff}}^2 = 13642.40$ ;  $\bar{\chi}_{\text{eff}}^2 = 13674.63$ ;  $R - 1 = 0.00946$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.36 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.61 SN - JLA December\_2013: 706.86

## 2.9 base\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022289	$0.02228^{+0.00032}_{-0.00030}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.98	$1090.00^{+0.58}_{-0.58}$
$\Omega_c h^2$	0.11945	$0.1196^{+0.0029}_{-0.0028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$r_*$	144.64	$144.62^{+0.61}_{-0.63}$
$100\theta_{\text{MC}}$	1.04082	$1.04080^{+0.00065}_{-0.00063}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.49}$	$100\theta_*$	1.04100	$1.04100^{+0.00064}_{-0.00062}$
$\tau$	0.0821	$0.081^{+0.034}_{-0.034}$	$c_{100}$	0.99821	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.894	$13.892^{+0.056}_{-0.058}$
$\ln(10^{10} A_s)$	3.098	$3.096^{+0.066}_{-0.066}$	$c_{217}$	0.99586	$0.9959^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.70	$1059.68^{+0.63}_{-0.59}$
$n_s$	0.9661	$0.9652^{+0.0097}_{-0.0095}$	$H_0$	67.44	$67.4^{+1.3}_{-1.3}$	$r_{\text{drag}}$	147.33	$147.31^{+0.60}_{-0.61}$
$y_{\text{cal}}$	1.00033	$1.0004^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6870	$0.686^{+0.017}_{-0.018}$	$k_D$	0.14056	$0.14056^{+0.00064}_{-0.00064}$
$A_{217}^{\text{CIB}}$	65.1	$64^{+10}_{-10}$	$\Omega_m$	0.3130	$0.314^{+0.018}_{-0.017}$	$100\theta_D$	0.160870	$0.16089^{+0.00036}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.25	—	$\Omega_m h^2$	0.14238	$0.1425^{+0.0027}_{-0.0026}$	$z_{\text{eq}}$	3387	$3390^{+65}_{-63}$
$A_{143}^{\text{tSZ}}$	7.12	$5.40^{+3.6}_{-3.8}$	$\Omega_m h^3$	0.09603	$0.09602^{+0.00059}_{-0.00057}$	$k_{\text{eq}}$	0.010338	$0.01035^{+0.00020}_{-0.00019}$
$A_{100}^{\text{PS}}$	253	$259^{+50}_{-50}$	$\sigma_8$	0.8321	$0.831^{+0.027}_{-0.026}$	$100\theta_{\text{eq}}$	0.8157	$0.815^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	41.6	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4655	$0.466^{+0.019}_{-0.019}$	$100\theta_{s,\text{eq}}$	0.4507	$0.4505^{+0.0062}_{-0.0063}$
$A_{143 \times 217}^{\text{PS}}$	39.9	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6224	$0.622^{+0.021}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	0.07148	$0.07145^{+0.00097}_{-0.00097}$
$A_{217}^{\text{PS}}$	100.7	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0132	$1.013^{+0.032}_{-0.032}$	$H(0.57)$	92.94	$92.92^{+0.57}_{-0.54}$
$A^{\text{kSZ}}$	0.00	$< 7.77$	$\langle d^2 \rangle^{1/2}$	2.505	$2.505^{+0.078}_{-0.076}$	$D_A(0.57)$	1389.8	$1391^{+17}_{-17}$
$A_{100}^{\text{dustTT}}$	7.39	$7.43^{+3.7}_{-3.7}$	$z_{\text{re}}$	10.33	$10.2^{+3.1}_{-3.1}$	$F_{\text{AP}}(0.57)$	0.67642	$0.6766^{+0.0046}_{-0.0044}$
$A_{143}^{\text{dustTT}}$	8.99	$8.93^{+3.6}_{-3.6}$	$10^9 A_s$	2.216	$2.21^{+0.15}_{-0.14}$	$f\sigma_8(0.57)$	0.4842	$0.484^{+0.016}_{-0.015}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$16.9^{+8.1}_{-8.3}$	$10^9 A_s e^{-2\tau}$	1.8806	$1.881^{+0.023}_{-0.024}$	$\sigma_8(0.57)$	0.6186	$0.618^{+0.020}_{-0.020}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$D_{40}$	1238.4	$1241^{+26}_{-26}$	$f_{2000}^{143}$	28.8	$29^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5728	$5730^{+77}_{-78}$	$f_{2000}^{143 \times 217}$	31.90	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0489^{+0.0097}_{-0.0098}$	$D_{810}$	2535.7	$2535^{+27}_{-27}$	$f_{2000}^{217}$	105.51	$105.7^{+3.7}_{-3.6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.099^{+0.065}_{-0.064}$	$D_{1420}$	815.3	$814.9^{+9.4}_{-9.3}$	$\chi_{\text{lowTEB}}^2$	10497.00	$10497.8 (\nu: 2.7)$
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.013}_{-0.013}$	$D_{2000}$	230.73	$230.5^{+3.3}_{-3.2}$	$\chi_{\text{plik}}^2$	2431.8	$2450.6 (\nu: 23.4)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.225^{+0.092}_{-0.093}$	$n_{s,0.002}$	0.9661	$0.9652^{+0.0097}_{-0.0095}$	$\chi_{\text{H070p6}}^2$	0.90	$0.96 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.655	$0.65^{+0.25}_{-0.26}$	$Y_P$	0.245357	$0.24535^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	6.81	$19.4 (\nu: 15.4)$
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.073}_{-0.074}$	$Y_P^{\text{BBN}}$	0.246684	$0.24668^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12928.8	$12948.4 (\nu: 22.5)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.607	$2.609^{+0.058}_{-0.060}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.16}$	$\text{Age}/\text{Gyr}$	13.807	$13.809^{+0.050}_{-0.051}$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.48$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.75$ ;  $R - 1 = 0.00925$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.00 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.77 Hubble - H070p6: 0.90

## 2.10 base\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02225^{+0.00032}_{-0.00030}$	$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.17}_{-0.16}$	$10^5 D/H$	$2.613^{+0.057}_{-0.060}$
$\Omega_c h^2$	$0.1198^{+0.0029}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	$0.15^{+0.11}_{-0.10}$	Age/Gyr	$13.813^{+0.050}_{-0.052}$
$1000\theta_{\text{MC}}$	$1.04077^{+0.00065}_{-0.00063}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$z_*$	$1090.05^{+0.58}_{-0.58}$
$\tau$	$0.080^{+0.033}_{-0.033}$	$A_{217}^{\text{dustTE}}$	$1.67^{+0.50}_{-0.49}$	$r_*$	$144.57^{+0.62}_{-0.63}$
$\ln(10^{10} A_s)$	$3.095^{+0.063}_{-0.064}$	$c_{100}$	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	$1.04097^{+0.00063}_{-0.00062}$
$n_s$	$0.9646^{+0.0097}_{-0.0095}$	$c_{217}$	$0.9959^{+0.0028}_{-0.0028}$	$D_A/\text{Gpc}$	$13.888^{+0.057}_{-0.058}$
$y_{\text{cal}}$	$1.0004^{+0.0049}_{-0.0049}$	$H_0$	$67.3^{+1.3}_{-1.3}$	$z_{\text{drag}}$	$1059.65^{+0.63}_{-0.59}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$\Omega_\Lambda$	$0.685^{+0.017}_{-0.018}$	$r_{\text{drag}}$	$147.27^{+0.61}_{-0.61}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m$	$0.315^{+0.018}_{-0.017}$	$k_D$	$0.14059^{+0.00064}_{-0.00064}$
$A_{143}^{\text{tSZ}}$	$5.39^{+3.6}_{-3.8}$	$\Omega_m h^2$	$0.1427^{+0.0027}_{-0.0027}$	$100\theta_D$	$0.16090^{+0.00036}_{-0.00036}$
$A_{100}^{\text{PS}}$	$259^{+50}_{-50}$	$\Omega_m h^3$	$0.09601^{+0.00059}_{-0.00056}$	$z_{\text{eq}}$	$3395^{+65}_{-63}$
$A_{143}^{\text{PS}}$	$43^{+10}_{-20}$	$\sigma_8$	$0.832^{+0.026}_{-0.025}$	$k_{\text{eq}}$	$0.01036^{+0.00020}_{-0.00019}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	$0.467^{+0.019}_{-0.018}$	$100\theta_{\text{eq}}$	$0.814^{+0.012}_{-0.012}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.623^{+0.021}_{-0.020}$	$100\theta_{\text{s,eq}}$	$0.4500^{+0.0062}_{-0.0062}$
$A^{\text{kSZ}}$	$< 7.78$	$\sigma_8/h^{0.5}$	$1.014^{+0.032}_{-0.030}$	$r_{\text{drag}}/D_V(0.57)$	$0.07137^{+0.00097}_{-0.00096}$
$A_{100}^{\text{dustTT}}$	$7.43^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	$2.508^{+0.077}_{-0.073}$	$H(0.57)$	$92.87^{+0.56}_{-0.54}$
$A_{143}^{\text{dustTT}}$	$8.93^{+3.6}_{-3.6}$	$z_{\text{re}}$	$10.1^{+2.8}_{-2.9}$	$D_A(0.57)$	$1392^{+17}_{-17}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0^{+8.1}_{-8.3}$	$10^9 A_s$	$2.21^{+0.14}_{-0.14}$	$F_{\text{AP}}(0.57)$	$0.6770^{+0.0045}_{-0.0044}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.882^{+0.023}_{-0.024}$	$f\sigma_8(0.57)$	$0.484^{+0.015}_{-0.015}$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{40}$	$1242^{+26}_{-26}$	$\sigma_8(0.57)$	$0.618^{+0.020}_{-0.019}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0488^{+0.0098}_{-0.0098}$	$D_{220}$	$5729^{+76}_{-78}$	$f_{2000}^{143}$	$29^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.099^{+0.065}_{-0.064}$	$D_{810}$	$2536^{+27}_{-27}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.013}_{-0.013}$	$D_{1420}$	$814.7^{+9.3}_{-9.3}$	$f_{2000}^{217}$	$105.8^{+3.7}_{-3.6}$
$A_{143 \times 217}^{\text{dustEE}}$	$0.225^{+0.092}_{-0.093}$	$D_{2000}$	$230.4^{+3.2}_{-3.2}$	$\chi_{\text{lowTEB}}^2$	$10497.8 (\nu: 2.5)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.26}$	$n_{\text{s},0.002}$	$0.9646^{+0.0097}_{-0.0095}$	$\chi_{\text{plik}}^2$	$2450.5 (\nu: 22.9)$
$A_{100}^{\text{dustTE}}$	$0.141^{+0.074}_{-0.075}$	$Y_{\text{P}}$	$0.24534^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	$19.4 (\nu: 15.5)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.131^{+0.057}_{-0.057}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	$12948.3 (\nu: 22.2)$

$$\bar{\chi}_{\text{eff}}^2 = 12967.68; R - 1 = 0.00977$$

## 2.11 base\_plikHM\_TE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022396	$0.02239^{+0.00050}_{-0.00049}$	$\sigma_8 \Omega_m^{0.5}$	0.4456	$0.445^{+0.030}_{-0.029}$	$D_A/\text{Gpc}$	13.919	$13.926^{+0.087}_{-0.086}$
$\Omega_c h^2$	0.11803	$0.1177^{+0.0039}_{-0.0038}$	$\sigma_8 \Omega_m^{0.25}$	0.5999	$0.599^{+0.034}_{-0.032}$	$z_{\text{drag}}$	1059.86	$1059.8^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	1.04099	$1.0410^{+0.0010}_{-0.0010}$	$\sigma_8/h^{0.5}$	0.979	$0.978^{+0.052}_{-0.049}$	$r_{\text{drag}}$	147.59	$147.67^{+0.96}_{-0.96}$
$\tau$	0.0611	$0.061^{+0.041}_{-0.044}$	$\langle d^2 \rangle^{1/2}$	2.413	$2.41^{+0.11}_{-0.10}$	$k_D$	0.14037	$0.1403^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	3.047	$3.048^{+0.088}_{-0.093}$	$z_{\text{re}}$	8.32	$8.22^{+3.9}_{-4.4}$	$100\theta_D$	0.16079	$0.16082^{+0.00063}_{-0.00062}$
$n_s$	0.9727	$0.975^{+0.020}_{-0.020}$	$10^9 A_s$	2.104	$2.11^{+0.19}_{-0.19}$	$z_{\text{eq}}$	3356	$3349^{+88}_{-87}$
$y_{\text{cal}}$	0.99997	$1.0001^{+0.0049}_{-0.0049}$	$10^9 A_s e^{-2\tau}$	1.8623	$1.863^{+0.037}_{-0.037}$	$k_{\text{eq}}$	0.010242	$0.01022^{+0.00027}_{-0.00026}$
$A_{100}^{\text{dustTE}}$	0.136	$0.137^{+0.073}_{-0.075}$	$D_{40}$	1206.0	$1204^{+45}_{-42}$	$100\theta_{\text{eq}}$	0.8218	$0.823^{+0.017}_{-0.017}$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.133^{+0.057}_{-0.058}$	$D_{220}$	5679	$5679^{+110}_{-100}$	$100\theta_{s,\text{eq}}$	0.4538	$0.4545^{+0.0087}_{-0.0086}$
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.17}_{-0.17}$	$D_{810}$	2523	$2526^{+50}_{-49}$	$r_{\text{drag}}/D_V(0.57)$	0.07198	$0.0721^{+0.0013}_{-0.0013}$
$A_{143}^{\text{dustTE}}$	0.147	$0.15^{+0.11}_{-0.10}$	$D_{1420}$	814.4	$816^{+23}_{-22}$	$H(0.57)$	93.21	$93.25^{+0.81}_{-0.77}$
$A_{143 \times 217}^{\text{dustTE}}$	0.325	$0.33^{+0.16}_{-0.16}$	$D_{2000}$	230.3	$230.9^{+8.7}_{-8.3}$	$D_A(0.57)$	1381.2	$1380^{+23}_{-23}$
$A_{217}^{\text{dustTE}}$	1.62	$1.65^{+0.51}_{-0.50}$	$n_{s,0.002}$	0.9727	$0.975^{+0.020}_{-0.020}$	$F_{\text{AP}}(0.57)$	0.6742	$0.6738^{+0.0060}_{-0.0058}$
$c_{100}$	0.99931	$0.9992^{+0.0019}_{-0.0020}$	$Y_{\text{P}}$	0.245404	$0.24540^{+0.00022}_{-0.00022}$	$f\sigma_8(0.57)$	0.4678	$0.467^{+0.025}_{-0.024}$
$H_0$	68.09	$68.2^{+1.7}_{-1.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246731	$0.24673^{+0.00022}_{-0.00022}$	$\sigma_8(0.57)$	0.6027	$0.603^{+0.029}_{-0.030}$
$\Omega_\Lambda$	0.6958	$0.697^{+0.022}_{-0.024}$	$10^5 D/H$	2.587	$2.588^{+0.093}_{-0.091}$	$\chi_{\text{lowTEB}}^2$	10493.50	$10494.5 (\nu: 1.8)$
$\Omega_m$	0.3042	$0.303^{+0.024}_{-0.022}$	Age/Gyr	13.785	$13.782^{+0.075}_{-0.076}$	$\chi_{\text{plikTE}}^2$	931.7	$938.8 (\nu: 8.1)$
$\Omega_m h^2$	0.14107	$0.1408^{+0.0037}_{-0.0036}$	$z_*$	1089.72	$1089.70^{+0.82}_{-0.80}$	$\chi_{\text{prior}}^2$	1.94	$7.88 (\nu: 6.7)$
$\Omega_m h^3$	0.09606	$0.0960^{+0.0010}_{-0.0010}$	$r_*$	144.92	$145.00^{+0.92}_{-0.93}$	$\chi_{\text{CMB}}^2$	11425.2	$11433.3 (\nu: 8.4)$
$\sigma_8$	0.8078	$0.808^{+0.040}_{-0.040}$	$100\theta_*$	1.04116	$1.0412^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11427.16$ ;  $\bar{\chi}_{\text{eff}}^2 = 11441.18$ ;  $R - 1 = 0.00601$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.50 plik\_dx11dr2\_HM\_v18\_TE: 931.73

## 2.12 base\_plikHM\_EE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02417	$0.0242^{+0.0027}_{-0.0027}$	$\sigma_8 \Omega_m^{0.25}$	0.571	$0.572^{+0.063}_{-0.062}$	$z_{\text{drag}}$	1063.4	$1063.4^{+5.2}_{-5.4}$
$\Omega_c h^2$	0.1123	$0.1125^{+0.0097}_{-0.0095}$	$\sigma_8/h^{0.5}$	0.938	$0.940^{+0.093}_{-0.085}$	$r_{\text{drag}}$	147.16	$147.1^{+1.5}_{-1.5}$
$100\theta_{\text{MC}}$	1.04007	$1.0401^{+0.0018}_{-0.0019}$	$\langle d^2 \rangle^{1/2}$	2.349	$2.35^{+0.17}_{-0.17}$	$k_{\text{D}}$	0.14201	$0.1420^{+0.0027}_{-0.0029}$
$\tau$	0.0651	$0.066^{+0.043}_{-0.042}$	$z_{\text{re}}$	8.19	$8.18^{+3.7}_{-4.1}$	$100\theta_{\text{D}}$	0.15862	$0.1587^{+0.0029}_{-0.0027}$
$\ln(10^{10} A_s)$	3.072	$3.074^{+0.089}_{-0.088}$	$10^9 A_s$	2.158	$2.16^{+0.19}_{-0.20}$	$z_{\text{eq}}$	3261	$3266^{+180}_{-160}$
$n_s$	0.9867	$0.988^{+0.028}_{-0.027}$	$10^9 A_s e^{-2\tau}$	1.895	$1.895^{+0.052}_{-0.051}$	$k_{\text{eq}}$	0.00995	$0.00997^{+0.00056}_{-0.00050}$
$y_{\text{cal}}$	0.99998	$1.0000^{+0.0048}_{-0.0050}$	$D_{40}$	1223	$1221^{+59}_{-57}$	$100\theta_{\text{eq}}$	0.8440	$0.844^{+0.039}_{-0.041}$
$A_{100}^{\text{dustEE}}$	0.0824	$0.083^{+0.011}_{-0.012}$	$D_{220}$	6000	$5990^{+420}_{-430}$	$100\theta_{s,\text{eq}}$	0.4639	$0.464^{+0.019}_{-0.019}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0499	$0.050^{+0.010}_{-0.011}$	$D_{810}$	2593	$2592^{+81}_{-85}$	$r_{\text{drag}}/D_V(0.57)$	0.07385	$0.0739^{+0.0037}_{-0.0037}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.064}_{-0.063}$	$D_{1420}$	846.8	$846^{+38}_{-41}$	$H(0.57)$	95.03	$95.1^{+3.6}_{-3.3}$
$A_{143}^{\text{dustEE}}$	0.1015	$0.101^{+0.014}_{-0.014}$	$D_{2000}$	242.4	$242^{+15}_{-16}$	$D_A(0.57)$	1336	$1337^{+82}_{-76}$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.091}_{-0.091}$	$n_{s,0.002}$	0.9867	$0.988^{+0.028}_{-0.027}$	$F_{\text{AP}}(0.57)$	0.6649	$0.665^{+0.016}_{-0.016}$
$A_{217}^{\text{dustEE}}$	0.650	$0.64^{+0.25}_{-0.25}$	$Y_{\text{P}}$	0.24615	$0.2461^{+0.0010}_{-0.0011}$	$f\sigma_8(0.57)$	0.4487	$0.449^{+0.043}_{-0.042}$
$H_0$	71.4	$71.4^{+5.8}_{-5.9}$	$Y_{\text{P}}^{\text{BBN}}$	0.24748	$0.2475^{+0.0010}_{-0.0011}$	$\sigma_8(0.57)$	0.6000	$0.600^{+0.031}_{-0.029}$
$\Omega_\Lambda$	0.731	$0.729^{+0.057}_{-0.061}$	$10^5 \text{D}/\text{H}$	2.287	$2.30^{+0.44}_{-0.41}$	$\chi_{\text{lowTEB}}^2$	10493.61	10494.8 ( $\nu: 2.4$ )
$\Omega_m$	0.269	$0.271^{+0.061}_{-0.057}$	Age/Gyr	13.606	$13.60^{+0.33}_{-0.33}$	$\chi_{\text{plikEE}}^2$	751.2	758.7 ( $\nu: 10.1$ )
$\Omega_m h^2$	0.1371	$0.1373^{+0.0076}_{-0.0069}$	$z_*$	1087.18	$1087.3^{+3.7}_{-3.6}$	$\chi_{\text{prior}}^2$	3.97	8.31 ( $\nu: 6.4$ )
$\Omega_m h^3$	0.09786	$0.0979^{+0.0039}_{-0.0038}$	$r_*$	145.06	$145.0^{+1.3}_{-1.3}$	$\chi_{\text{CMB}}^2$	11244.8	11253.5 ( $\nu: 10.8$ )
$\sigma_8$	0.792	$0.793^{+0.051}_{-0.049}$	$100\theta_*$	1.04007	$1.0401^{+0.0017}_{-0.0018}$			
$\sigma_8 \Omega_m^{0.5}$	0.411	$0.413^{+0.067}_{-0.065}$	$D_A/\text{Gpc}$	13.947	$13.94^{+0.12}_{-0.12}$			

Best-fit  $\chi_{\text{eff}}^2 = 11248.79$ ;  $\bar{\chi}_{\text{eff}}^2 = 11261.82$ ;  $R - 1 = 0.00601$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.61 plik\_dx11dr2\_HM\_v18\_EE: 751.20

## 2.13 base\_plikHM\_TE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02232	$0.02228^{+0.00051}_{-0.00050}$	$\sigma_8 \Omega_m^{0.5}$	0.4457	$0.446^{+0.029}_{-0.029}$	$D_A/\text{Gpc}$	13.907	$13.911^{+0.091}_{-0.089}$
$\Omega_c h^2$	0.11874	$0.1187^{+0.0041}_{-0.0041}$	$\sigma_8 \Omega_m^{0.25}$	0.5980	$0.598^{+0.031}_{-0.031}$	$z_{\text{drag}}$	1059.74	$1059.6^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	1.04096	$1.0409^{+0.0010}_{-0.0010}$	$\sigma_8/h^{0.5}$	0.9747	$0.975^{+0.048}_{-0.046}$	$r_{\text{drag}}$	147.48	$147.53^{+0.99}_{-0.98}$
$\tau$	0.0527	$< 0.0845$	$\langle d^2 \rangle^{1/2}$	2.418	$2.42^{+0.11}_{-0.11}$	$k_D$	0.14041	$0.1403^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	3.032	$3.031^{+0.080}_{-0.085}$	$z_{\text{re}}$	7.51	$7.38^{+3.7}_{-4.4}$	$100\theta_D$	0.16088	$0.16093^{+0.00064}_{-0.00063}$
$n_s$	0.9652	$0.965^{+0.023}_{-0.023}$	$10^9 A_s$	2.074	$2.07^{+0.17}_{-0.17}$	$z_{\text{eq}}$	3371	$3370^{+93}_{-94}$
$y_{\text{cal}}$	1.00013	$1.0001^{+0.0048}_{-0.0050}$	$10^9 A_s e^{-2\tau}$	1.8666	$1.865^{+0.038}_{-0.037}$	$k_{\text{eq}}$	0.010288	$0.01029^{+0.00028}_{-0.00029}$
$A_{100}^{\text{dustTE}}$	0.133	$0.137^{+0.074}_{-0.073}$	$D_{40}$	1223	$1225^{+53}_{-53}$	$100\theta_{\text{eq}}$	0.8188	$0.819^{+0.018}_{-0.017}$
$A_{100 \times 143}^{\text{dustTE}}$	0.134	$0.133^{+0.057}_{-0.057}$	$D_{220}$	5709	$5704^{+110}_{-110}$	$100\theta_{s,\text{eq}}$	0.4523	$0.4524^{+0.0094}_{-0.0089}$
$A_{100 \times 217}^{\text{dustTE}}$	0.316	$0.30^{+0.16}_{-0.16}$	$D_{810}$	2521	$2519^{+51}_{-50}$	$r_{\text{drag}}/D_V(0.57)$	0.07174	$0.0717^{+0.0014}_{-0.0013}$
$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$D_{1420}$	810.7	$809^{+24}_{-24}$	$H(0.57)$	93.07	$93.04^{+0.84}_{-0.77}$
$A_{143 \times 217}^{\text{dustTE}}$	0.351	$0.33^{+0.16}_{-0.16}$	$D_{2000}$	228.6	$228.2^{+9.0}_{-8.7}$	$D_A(0.57)$	1385.5	$1386^{+24}_{-25}$
$A_{217}^{\text{dustTE}}$	1.66	$1.65^{+0.50}_{-0.50}$	$n_{s,0.002}$	0.9652	$0.965^{+0.023}_{-0.023}$	$F_{\text{AP}}(0.57)$	0.6753	$0.6754^{+0.0063}_{-0.0063}$
$c_{100}$	0.99919	$0.9993^{+0.0020}_{-0.0020}$	$Y_{\text{P}}$	0.245370	$0.24535^{+0.00023}_{-0.00023}$	$f\sigma_8(0.57)$	0.4658	$0.466^{+0.023}_{-0.022}$
$H_0$	67.77	$67.7^{+1.9}_{-1.8}$	$Y_{\text{P}}^{\text{BBN}}$	0.246697	$0.24668^{+0.00023}_{-0.00023}$	$\sigma_8(0.57)$	0.5976	$0.597^{+0.026}_{-0.027}$
$\Omega_\Lambda$	0.6915	$0.691^{+0.024}_{-0.025}$	$10^5 \text{D}/\text{H}$	2.601	$2.609^{+0.097}_{-0.094}$	$\chi_{\text{lowEB}}^2$	5430.77	$5431.7 (\nu: 0.7)$
$\Omega_m$	0.3085	$0.309^{+0.025}_{-0.024}$	Age/Gyr	13.796	$13.801^{+0.075}_{-0.078}$	$\chi_{\text{plikTE}}^2$	931.2	$938.4 (\nu: 8.2)$
$\Omega_m h^2$	0.14170	$0.1417^{+0.0039}_{-0.0039}$	$z_*$	1089.87	$1089.93^{+0.85}_{-0.85}$	$\chi_{\text{prior}}^2$	1.89	$7.77 (\nu: 6.5)$
$\Omega_m h^3$	0.09603	$0.0959^{+0.0010}_{-0.0011}$	$r_*$	144.80	$144.83^{+0.97}_{-0.94}$	$\chi_{\text{CMB}}^2$	6362.0	$6370.1 (\nu: 8.9)$
$\sigma_8$	0.8024	$0.802^{+0.036}_{-0.037}$	$100\theta_*$	1.04115	$1.04113^{+0.00098}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 6363.89$ ;  $\bar{\chi}_{\text{eff}}^2 = 6377.85$ ;  $R - 1 = 0.00716$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.77 plik\_dx11dr2\_HM.v18\_TE: 931.24



## 2.14 base\_plikHM\_EE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02388	$0.0240^{+0.0026}_{-0.0025}$	$\sigma_8 \Omega_m^{0.25}$	0.579	$0.582^{+0.063}_{-0.060}$	$z_{\text{drag}}$	1063.0	$1063.1^{+5.0}_{-5.1}$
$\Omega_c h^2$	0.1148	$0.115^{+0.010}_{-0.010}$	$\sigma_8/h^{0.5}$	0.948	$0.951^{+0.089}_{-0.087}$	$r_{\text{drag}}$	146.82	$146.7^{+1.6}_{-1.5}$
$100\theta_{\text{MC}}$	1.03993	$1.0399^{+0.0018}_{-0.0019}$	$\langle d^2 \rangle^{1/2}$	2.387	$2.40^{+0.18}_{-0.18}$	$k_{\text{D}}$	0.14220	$0.1423^{+0.0027}_{-0.0028}$
$\tau$	0.0566	$0.059^{+0.038}_{-0.040}$	$z_{\text{re}}$	7.50	$7.62^{+3.7}_{-4.1}$	$100\theta_{\text{D}}$	0.15885	$0.1588^{+0.0028}_{-0.0026}$
$\ln(10^{10} A_s)$	3.059	$3.066^{+0.082}_{-0.085}$	$10^9 A_s$	2.131	$2.15^{+0.18}_{-0.18}$	$z_{\text{eq}}$	3313	$3321^{+200}_{-190}$
$n_s$	0.9732	$0.973^{+0.033}_{-0.032}$	$10^9 A_s e^{-2\tau}$	1.903	$1.907^{+0.053}_{-0.053}$	$k_{\text{eq}}$	0.01011	$0.01014^{+0.00060}_{-0.00058}$
$y_{\text{cal}}$	0.99986	$1.0002^{+0.0050}_{-0.0049}$	$D_{40}$	1251	$1257^{+72}_{-72}$	$100\theta_{\text{eq}}$	0.8330	$0.832^{+0.040}_{-0.042}$
$A_{100}^{\text{dustEE}}$	0.0802	$0.080^{+0.012}_{-0.012}$	$D_{220}$	6011	$6031^{+410}_{-420}$	$100\theta_{\text{s,eq}}$	0.4585	$0.458^{+0.019}_{-0.020}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0475	$0.047^{+0.011}_{-0.011}$	$D_{810}$	2587	$2590^{+80}_{-84}$	$r_{\text{drag}}/D_V(0.57)$	0.07296	$0.0730^{+0.0037}_{-0.0036}$
$A_{100 \times 217}^{\text{dustEE}}$	0.095	$0.099^{+0.065}_{-0.063}$	$D_{1420}$	839.2	$840^{+39}_{-41}$	$H(0.57)$	94.45	$94.6^{+3.3}_{-3.3}$
$A_{143}^{\text{dustEE}}$	0.0988	$0.099^{+0.014}_{-0.014}$	$D_{2000}$	239.2	$239^{+15}_{-16}$	$D_A(0.57)$	1352	$1352^{+81}_{-76}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.091}_{-0.092}$	$n_{\text{s},0.002}$	0.9732	$0.973^{+0.033}_{-0.032}$	$F_{\text{AP}}(0.57)$	0.6687	$0.669^{+0.017}_{-0.016}$
$A_{217}^{\text{dustEE}}$	0.636	$0.65^{+0.25}_{-0.25}$	$Y_{\text{P}}$	0.24603	$0.24605^{+0.00099}_{-0.0011}$	$f\sigma_8(0.57)$	0.4539	$0.455^{+0.041}_{-0.042}$
$H_0$	70.2	$70.2^{+5.7}_{-5.8}$	$Y_{\text{P}}^{\text{BBN}}$	0.24736	$0.2474^{+0.0010}_{-0.0011}$	$\sigma_8(0.57)$	0.5975	$0.599^{+0.026}_{-0.028}$
$\Omega_\Lambda$	0.717	$0.714^{+0.062}_{-0.067}$	$10^5 \text{D}/\text{H}$	2.333	$2.33^{+0.42}_{-0.40}$	$\chi_{\text{lowEB}}^2$	5430.73	5431.8 ( $\nu: 0.9$ )
$\Omega_m$	0.283	$0.286^{+0.067}_{-0.062}$	Age/Gyr	13.652	$13.64^{+0.31}_{-0.32}$	$\chi_{\text{plikEE}}^2$	750.8	758.5 ( $\nu: 9.6$ )
$\Omega_m h^2$	0.1393	$0.1396^{+0.0082}_{-0.0079}$	$z_*$	1087.70	$1087.7^{+3.7}_{-3.5}$	$\chi_{\text{prior}}^2$	3.42	7.71 ( $\nu: 5.9$ )
$\Omega_m h^3$	0.09772	$0.0979^{+0.0038}_{-0.0036}$	$r_*$	144.63	$144.5^{+1.4}_{-1.4}$	$\chi_{\text{CMB}}^2$	6181.5	6190.3 ( $\nu: 10.3$ )
$\sigma_8$	0.7938	$0.796^{+0.046}_{-0.048}$	$100\theta_*$	1.03996	$1.0399^{+0.0018}_{-0.0018}$			
$\sigma_8 \Omega_m^{0.5}$	0.422	$0.425^{+0.069}_{-0.067}$	$D_A/\text{Gpc}$	13.907	$13.90^{+0.13}_{-0.13}$			

Best-fit  $\chi_{\text{eff}}^2 = 6184.90$ ;  $\bar{\chi}_{\text{eff}}^2 = 6197.97$ ;  $R - 1 = 0.00671$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.73 plik\_dx11dr2\_HM\_v18\_EE: 750.75

## 2.15 base\_plikHM\_TT\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022143	$0.02213^{+0.00046}_{-0.00044}$	$\Omega_m$	0.3241	$0.324^{+0.029}_{-0.027}$	$100\theta_*$	1.04090	$1.04090^{+0.00093}_{-0.00094}$
$\Omega_c h^2$	0.12124	$0.1212^{+0.0045}_{-0.0043}$	$\Omega_m h^2$	0.14402	$0.1440^{+0.0042}_{-0.0041}$	$D_A/\text{Gpc}$	13.862	$13.863^{+0.088}_{-0.089}$
$100\theta_{\text{MC}}$	1.04069	$1.04069^{+0.00095}_{-0.00096}$	$\Omega_m h^3$	0.09601	$0.09598^{+0.00089}_{-0.00087}$	$z_{\text{drag}}$	1059.51	$1059.46^{+0.93}_{-0.89}$
$\tau$	0.0693	$0.069^{+0.037}_{-0.036}$	$\sigma_8$	0.8280	$0.828^{+0.027}_{-0.028}$	$r_{\text{drag}}$	147.02	$147.04^{+0.94}_{-0.96}$
$\ln(10^{10} A_s)$	3.077	$3.076^{+0.069}_{-0.069}$	$\sigma_8 \Omega_m^{0.5}$	0.4714	$0.471^{+0.027}_{-0.026}$	$k_D$	0.14077	$0.1407^{+0.0010}_{-0.0010}$
$n_s$	0.9608	$0.960^{+0.012}_{-0.013}$	$\sigma_8 \Omega_m^{0.25}$	0.6247	$0.624^{+0.025}_{-0.026}$	$100\theta_D$	0.16100	$0.16103^{+0.00053}_{-0.00052}$
$y_{\text{cal}}$	1.00030	$1.0003^{+0.0049}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.0141	$1.014^{+0.037}_{-0.038}$	$z_{\text{eq}}$	3426	$3426^{+100}_{-97}$
$A_{217}^{\text{CIB}}$	67.7	$65^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.508	$2.509^{+0.089}_{-0.091}$	$k_{\text{eq}}$	0.010458	$0.01046^{+0.00031}_{-0.00030}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	9.24	$9.14^{+3.5}_{-3.6}$	$100\theta_{\text{eq}}$	0.8082	$0.808^{+0.018}_{-0.018}$
$A_{143}^{\text{tSZ}}$	7.15	$4.91^{+3.8}_{-3.8}$	$10^9 A_s$	2.169	$2.17^{+0.15}_{-0.15}$	$100\theta_{s,\text{eq}}$	0.4469	$0.4470^{+0.0094}_{-0.0095}$
$A_{100}^{\text{PS}}$	256	$263^{+50}_{-50}$	$10^9 A_s e^{-2\tau}$	1.8880	$1.888^{+0.029}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07090	$0.0709^{+0.0015}_{-0.0015}$
$A_{143}^{\text{PS}}$	40.6	$45^{+31}_{-20}$	$D_{40}$	1245.0	$1247^{+31}_{-30}$	$H(0.57)$	92.63	$92.63^{+0.84}_{-0.79}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{220}$	5722	$5723^{+82}_{-81}$	$D_A(0.57)$	1400.2	$1400^{+27}_{-26}$
$A_{217}^{\text{PS}}$	97.7	$97^{+20}_{-20}$	$D_{810}$	2536.2	$2535^{+28}_{-27}$	$F_{\text{AP}}(0.57)$	0.6792	$0.6792^{+0.0072}_{-0.0067}$
$A^{\text{kSZ}}$	0.0	—	$D_{1420}$	813.7	$813^{+10}_{-10}$	$f\sigma_8(0.57)$	0.4845	$0.484^{+0.018}_{-0.018}$
$A_{100}^{\text{dustTT}}$	7.37	$7.38^{+3.7}_{-3.7}$	$D_{2000}$	229.79	$229.6^{+3.7}_{-3.6}$	$\sigma_8(0.57)$	0.6129	$0.613^{+0.021}_{-0.021}$
$A_{143}^{\text{dustTT}}$	9.05	$9.01^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9608	$0.960^{+0.012}_{-0.013}$	$f_{2000}^{143}$	30.6	$31^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.1^{+8.2}_{-8.2}$	$Y_{\text{P}}$	0.245289	$0.24528^{+0.00021}_{-0.00020}$	$f_{2000}^{143 \times 217}$	33.06	$33^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246616	$0.24661^{+0.00021}_{-0.00020}$	$f_{2000}^{217}$	106.60	$106.7^{+4.0}_{-4.0}$
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.634	$2.637^{+0.087}_{-0.087}$	$\chi_{\text{lowEB}}^2$	5431.55	$5432.4 (\nu: 2.1)$
$c_{217}$	0.99601	$0.9960^{+0.0028}_{-0.0028}$	Age/Gyr	13.832	$13.833^{+0.075}_{-0.077}$	$\chi_{\text{plik}}^2$	763.7	$777.5 (\nu: 15.4)$
$H_0$	66.66	$66.7^{+1.9}_{-1.9}$	$z_*$	1090.32	$1090.34^{+0.88}_{-0.85}$	$\chi_{\text{prior}}^2$	2.00	$7.26 (\nu: 6.3)$
$\Omega_\Lambda$	0.6759	$0.676^{+0.027}_{-0.029}$	$r_*$	144.29	$144.30^{+0.95}_{-0.97}$	$\chi_{\text{CMB}}^2$	6195.2	$6209.9 (\nu: 15.1)$

Best-fit  $\chi_{\text{eff}}^2 = 6197.23$ ;  $\bar{\chi}_{\text{eff}}^2 = 6217.15$ ;  $R - 1 = 0.00628$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 5431.55 plik\_dx11dr2\_HM\_v18\_TT: 763.67

## 2.16 base\_plikHM\_TTTEE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022214	$0.02221^{+0.00031}_{-0.00031}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.16}$	$10^5 \text{D/H}$	2.621	$2.622^{+0.060}_{-0.059}$
$\Omega_c h^2$	0.12059	$0.1205^{+0.0029}_{-0.0029}$	$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.11}_{-0.10}$	Age/Gyr	13.822	$13.823^{+0.051}_{-0.051}$
$100\theta_{\text{MC}}$	1.04070	$1.04069^{+0.00062}_{-0.00061}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$z_*$	1090.17	$1090.17^{+0.59}_{-0.59}$
$\tau$	0.0728	$0.073^{+0.032}_{-0.032}$	$A_{217}^{\text{dustTE}}$	1.678	$1.67^{+0.50}_{-0.49}$	$r_*$	144.40	$144.43^{+0.64}_{-0.64}$
$\ln(10^{10} A_s)$	3.083	$3.084^{+0.063}_{-0.062}$	$c_{100}$	0.99823	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04090	$1.04089^{+0.00062}_{-0.00060}$
$n_s$	0.9616	$0.9614^{+0.0096}_{-0.0097}$	$c_{217}$	0.99606	$0.9961^{+0.0029}_{-0.0029}$	$D_A/\text{Gpc}$	13.872	$13.876^{+0.059}_{-0.060}$
$y_{\text{cal}}$	1.00025	$1.0005^{+0.0049}_{-0.0049}$	$H_0$	66.95	$67.0^{+1.3}_{-1.3}$	$z_{\text{drag}}$	1059.63	$1059.59^{+0.62}_{-0.61}$
$A_{217}^{\text{CIB}}$	67.3	$65^{+10}_{-10}$	$\Omega_\Lambda$	0.6799	$0.680^{+0.018}_{-0.019}$	$r_{\text{drag}}$	147.11	$147.14^{+0.62}_{-0.63}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$\Omega_m$	0.3201	$0.320^{+0.019}_{-0.018}$	$k_D$	0.14073	$0.14068^{+0.00066}_{-0.00064}$
$A_{143}^{\text{tSZ}}$	7.13	$5.20^{+3.6}_{-3.8}$	$\Omega_m h^2$	0.14345	$0.1433^{+0.0028}_{-0.0027}$	$100\theta_D$	0.160924	$0.16094^{+0.00038}_{-0.00036}$
$A_{100}^{\text{PS}}$	259	$264^{+50}_{-50}$	$\Omega_m h^3$	0.09603	$0.09600^{+0.00058}_{-0.00058}$	$z_{\text{eq}}$	3413	$3410^{+66}_{-66}$
$A_{143}^{\text{PS}}$	40.4	$44^{+10}_{-20}$	$\sigma_8$	0.8283	$0.828^{+0.025}_{-0.025}$	$k_{\text{eq}}$	0.010416	$0.01041^{+0.00020}_{-0.00020}$
$A_{143 \times 217}^{\text{PS}}$	34.6	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4686	$0.468^{+0.020}_{-0.020}$	$100\theta_{\text{eq}}$	0.8108	$0.811^{+0.013}_{-0.012}$
$A_{217}^{\text{PS}}$	97.9	$97^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.623^{+0.020}_{-0.021}$	$100\theta_{s,\text{eq}}$	0.4482	$0.4485^{+0.0064}_{-0.0062}$
$A^{\text{kSZ}}$	0.00	$< 8.26$	$\sigma_8/h^{0.5}$	1.0123	$1.012^{+0.032}_{-0.032}$	$r_{\text{drag}}/D_V(0.57)$	0.07110	$0.07113^{+0.00099}_{-0.00096}$
$A_{100}^{\text{dustTT}}$	7.39	$7.34^{+3.7}_{-3.6}$	$\langle d^2 \rangle^{1/2}$	2.507	$2.508^{+0.078}_{-0.077}$	$H(0.57)$	92.74	$92.75^{+0.56}_{-0.53}$
$A_{143}^{\text{dustTT}}$	8.94	$8.95^{+3.6}_{-3.5}$	$z_{\text{re}}$	9.53	$9.50^{+2.8}_{-3.2}$	$D_A(0.57)$	1396.4	$1396^{+17}_{-18}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.1^{+8.2}_{-8.1}$	$10^9 A_s$	2.182	$2.18^{+0.14}_{-0.13}$	$F_{\text{AP}}(0.57)$	0.67819	$0.6781^{+0.0046}_{-0.0046}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8862	$1.886^{+0.023}_{-0.024}$	$f\sigma_8(0.57)$	0.4837	$0.484^{+0.015}_{-0.015}$
$A_{100}^{\text{dustEE}}$	0.0807	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1245.7	$1248^{+27}_{-26}$	$\sigma_8(0.57)$	0.6141	$0.614^{+0.019}_{-0.019}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0483	$0.0484^{+0.0098}_{-0.0098}$	$D_{220}$	5734	$5738^{+76}_{-77}$	$f_{2000}^{143}$	30.0	$30^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0996^{+0.065}_{-0.065}$	$D_{810}$	2536.6	$2537^{+27}_{-27}$	$f_{2000}^{143 \times 217}$	32.71	$33^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.0995	$0.0996^{+0.014}_{-0.013}$	$D_{1420}$	814.1	$814.0^{+9.5}_{-9.5}$	$f_{2000}^{217}$	106.26	$106.4^{+3.6}_{-3.7}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.091}_{-0.093}$	$D_{2000}$	230.01	$229.9^{+3.2}_{-3.2}$	$\chi_{\text{lowEB}}^2$	5431.90	$5432.6 (\nu: 2.1)$
$A_{217}^{\text{dustEE}}$	0.649	$0.65^{+0.26}_{-0.25}$	$n_{s,0.002}$	0.9616	$0.9614^{+0.0096}_{-0.0097}$	$\chi_{\text{plik}}^2$	2432.3	$2451.1 (\nu: 23.1)$
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.075}_{-0.074}$	$Y_P$	0.245324	$0.24532^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	6.65	$19.2 (\nu: 15.2)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.058}_{-0.057}$	$Y_P^{\text{BBN}}$	0.246650	$0.24664^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	7864.2	$7883.7 (\nu: 22.2)$

Best-fit  $\chi_{\text{eff}}^2 = 7870.83$ ;  $\bar{\chi}_{\text{eff}}^2 = 7902.90$ ;  $R - 1 = 0.00941$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5431.90 plik\_dx11dr2\_HM.v18.TTTEE: 2432.28

## 2.17 base\_plikHM\_TT\_tau07

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022215	$0.02220^{+0.00045}_{-0.00046}$	$\Omega_m$	0.3202	$0.321^{+0.028}_{-0.026}$	$100\theta_*$	1.04098	$1.04098^{+0.00091}_{-0.00092}$
$\Omega_c h^2$	0.12066	$0.1208^{+0.0044}_{-0.0043}$	$\Omega_m h^2$	0.14352	$0.1436^{+0.0042}_{-0.0041}$	$D_A/\text{Gpc}$	13.870	$13.869^{+0.089}_{-0.092}$
$100\theta_{\text{MC}}$	1.04079	$1.04078^{+0.00093}_{-0.00093}$	$\Omega_m h^3$	0.09609	$0.09606^{+0.00088}_{-0.00090}$	$z_{\text{drag}}$	1059.63	$1059.59^{+0.88}_{-0.91}$
$\tau$	0.0851	$0.083^{+0.035}_{-0.036}$	$\sigma_8$	0.8389	$0.838^{+0.028}_{-0.028}$	$r_{\text{drag}}$	147.09	$147.09^{+0.96}_{-0.98}$
$\ln(10^{10} A_s)$	3.107	$3.104^{+0.067}_{-0.068}$	$\sigma_8 \Omega_m^{0.5}$	0.4747	$0.475^{+0.029}_{-0.027}$	$k_D$	0.14075	$0.1407^{+0.0010}_{-0.0010}$
$n_s$	0.9626	$0.962^{+0.012}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	0.6310	$0.630^{+0.027}_{-0.026}$	$100\theta_D$	0.16093	$0.16096^{+0.00056}_{-0.00051}$
$A_{217}^{\text{CIB}}$	67.0	$64^{+10}_{-10}$	$\sigma_8/h^{0.5}$	1.0252	$1.024^{+0.039}_{-0.038}$	$z_{\text{eq}}$	3414	$3416^{+100}_{-97}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\langle d^2 \rangle^{1/2}$	2.536	$2.534^{+0.094}_{-0.093}$	$k_{\text{eq}}$	0.010421	$0.01043^{+0.00031}_{-0.00030}$
$A_{143}^{\text{tSZ}}$	7.16	$5.02^{+3.8}_{-3.8}$	$z_{\text{re}}$	10.65	$10.4^{+3.1}_{-3.3}$	$100\theta_{\text{eq}}$	0.8106	$0.810^{+0.018}_{-0.018}$
$A_{100}^{\text{PS}}$	255	$260^{+50}_{-50}$	$10^9 A_s$	2.235	$2.23^{+0.15}_{-0.15}$	$100\theta_{s,\text{eq}}$	0.4481	$0.4480^{+0.0095}_{-0.0094}$
$A_{143}^{\text{PS}}$	39.1	$44^{+20}_{-20}$	$10^9 A_s e^{-2\tau}$	1.8850	$1.885^{+0.028}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07110	$0.0711^{+0.0015}_{-0.0014}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{40}$	1247.6	$1249^{+31}_{-31}$	$H(0.57)$	92.75	$92.74^{+0.81}_{-0.77}$
$A_{217}^{\text{PS}}$	97.7	$97^{+20}_{-20}$	$D_{220}$	5724	$5725^{+80}_{-80}$	$D_A(0.57)$	1396.2	$1397^{+26}_{-25}$
$A^{\text{kSZ}}$	0.0	—	$D_{810}$	2534.4	$2534^{+27}_{-27}$	$F_{\text{AP}}(0.57)$	0.6782	$0.6784^{+0.0070}_{-0.0066}$
$A_{100}^{\text{dustTT}}$	7.25	$7.36^{+3.7}_{-3.7}$	$D_{1420}$	813.6	$813^{+10}_{-10}$	$f\sigma_8(0.57)$	0.4899	$0.489^{+0.019}_{-0.019}$
$A_{143}^{\text{dustTT}}$	8.91	$8.95^{+3.6}_{-3.6}$	$D_{2000}$	230.20	$230.0^{+3.6}_{-3.6}$	$\sigma_8(0.57)$	0.6219	$0.621^{+0.021}_{-0.021}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.1^{+8.2}_{-8.0}$	$n_{s,0.002}$	0.9626	$0.962^{+0.012}_{-0.012}$	$f_{2000}^{143}$	29.8	$30^{+6}_{-6}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$Y_{\text{P}}$	0.245324	$0.24531^{+0.00020}_{-0.00021}$	$f_{2000}^{143 \times 217}$	32.38	$33^{+4}_{-4}$
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	$Y_{\text{P}}^{\text{BBN}}$	0.246650	$0.24664^{+0.00020}_{-0.00021}$	$f_{2000}^{217}$	106.06	$106.3^{+3.9}_{-3.9}$
$c_{217}$	0.99596	$0.9959^{+0.0028}_{-0.0028}$	$10^5 D/H$	2.621	$2.625^{+0.089}_{-0.084}$	$\chi_{\text{plik}}^2$	762.4	776.4 ( $\nu$ : 14.9)
$y_{\text{cal}}$	1.0002	$1.0002^{+0.0051}_{-0.0050}$	Age/Gyr	13.820	$13.822^{+0.073}_{-0.075}$	$\chi_{\text{prior}}^2$	2.54	8.55 ( $\nu$ : 7.6)
$H_0$	66.95	$66.9^{+1.9}_{-1.9}$	$z_*$	1090.17	$1090.21^{+0.86}_{-0.83}$			
$\Omega_\Lambda$	0.6798	$0.679^{+0.026}_{-0.028}$	$r_*$	144.38	$144.37^{+0.98}_{-0.98}$			

Best-fit  $\chi_{\text{eff}}^2 = 764.91$ ;  $\bar{\chi}_{\text{eff}}^2 = 784.98$ ;  $R - 1 = 0.00877$

$\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM\_v18\_TT: 762.36

## 2.18 base\_plikHM\_TTTEEE\_tau07

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022256	$0.02224^{+0.00031}_{-0.00030}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$10^5 \text{D/H}$	2.613	$2.616^{+0.059}_{-0.058}$
$\Omega_c h^2$	0.12009	$0.1202^{+0.0029}_{-0.0029}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	Age/Gyr	13.815	$13.817^{+0.050}_{-0.050}$
$100\theta_{\text{MC}}$	1.04073	$1.04073^{+0.00062}_{-0.00062}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.51}$	$z_*$	1090.07	$1090.11^{+0.58}_{-0.58}$
$\tau$	0.0883	$0.086^{+0.031}_{-0.032}$	$c_{100}$	0.99822	$0.9982^{+0.0015}_{-0.0015}$	$r_*$	144.50	$144.48^{+0.64}_{-0.64}$
$\ln(10^{10} A_s)$	3.112	$3.108^{+0.060}_{-0.062}$	$c_{217}$	0.99593	$0.9960^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04093	$1.04093^{+0.00061}_{-0.00062}$
$n_s$	0.9633	$0.9625^{+0.0094}_{-0.0097}$	$y_{\text{cal}}$	1.00013	$1.0003^{+0.0050}_{-0.0049}$	$D_A/\text{Gpc}$	13.881	$13.880^{+0.060}_{-0.060}$
$A_{217}^{\text{CIB}}$	65.7	$64^{+10}_{-10}$	$H_0$	67.17	$67.1^{+1.3}_{-1.3}$	$z_{\text{drag}}$	1059.67	$1059.65^{+0.63}_{-0.63}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.18	—	$\Omega_\Lambda$	0.6830	$0.682^{+0.018}_{-0.018}$	$r_{\text{drag}}$	147.20	$147.18^{+0.63}_{-0.63}$
$A_{143}^{\text{tSZ}}$	7.06	$5.30^{+3.6}_{-3.7}$	$\Omega_m$	0.3170	$0.318^{+0.018}_{-0.018}$	$k_D$	0.14067	$0.14067^{+0.00065}_{-0.00065}$
$A_{100}^{\text{PS}}$	256	$262^{+50}_{-50}$	$\Omega_m h^2$	0.14299	$0.1431^{+0.0028}_{-0.0027}$	$100\theta_D$	0.160886	$0.16091^{+0.00036}_{-0.00036}$
$A_{143}^{\text{PS}}$	41.4	$44^{+10}_{-20}$	$\Omega_m h^3$	0.09604	$0.09603^{+0.00060}_{-0.00058}$	$z_{\text{eq}}$	3402	$3404^{+66}_{-65}$
$A_{143 \times 217}^{\text{PS}}$	38.0	$40^{+20}_{-20}$	$\sigma_8$	0.8393	$0.838^{+0.025}_{-0.025}$	$k_{\text{eq}}$	0.010382	$0.01039^{+0.00020}_{-0.00020}$
$A_{217}^{\text{PS}}$	99.8	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4725	$0.472^{+0.019}_{-0.019}$	$100\theta_{\text{eq}}$	0.8129	$0.813^{+0.012}_{-0.012}$
$A^{\text{kSZ}}$	0.00	$< 7.94$	$\sigma_8 \Omega_m^{0.25}$	0.6298	$0.629^{+0.020}_{-0.021}$	$100\theta_{\text{s,eq}}$	0.4493	$0.4491^{+0.0064}_{-0.0063}$
$A_{100}^{\text{dustTT}}$	7.31	$7.35^{+3.7}_{-3.7}$	$\sigma_8/h^{0.5}$	1.0241	$1.023^{+0.031}_{-0.032}$	$r_{\text{drag}}/D_V(0.57)$	0.07127	$0.07124^{+0.00097}_{-0.00095}$
$A_{143}^{\text{dustTT}}$	8.95	$8.89^{+3.6}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.535	$2.533^{+0.076}_{-0.077}$	$H(0.57)$	92.83	$92.81^{+0.56}_{-0.53}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.0^{+8.0}_{-8.1}$	$z_{\text{re}}$	10.91	$10.6^{+2.8}_{-2.9}$	$D_A(0.57)$	1393.5	$1394^{+17}_{-17}$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$10^9 A_s$	2.247	$2.24^{+0.14}_{-0.14}$	$F_{\text{AP}}(0.57)$	0.67741	$0.6776^{+0.0046}_{-0.0045}$
$A_{100}^{\text{dustEE}}$	0.0812	$0.081^{+0.011}_{-0.011}$	$10^9 A_s e^{-2\tau}$	1.8836	$1.884^{+0.024}_{-0.024}$	$f\sigma_8(0.57)$	0.4894	$0.489^{+0.015}_{-0.015}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0484	$0.0483^{+0.0095}_{-0.0096}$	$D_{40}$	1248.5	$1250^{+27}_{-27}$	$\sigma_8(0.57)$	0.6230	$0.622^{+0.019}_{-0.019}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0998^{+0.064}_{-0.063}$	$D_{220}$	5734	$5736^{+80}_{-78}$	$f_{2000}^{143}$	29.3	$30^{+5}_{-5}$
$A_{143}^{\text{dustEE}}$	0.0997	$0.0995^{+0.013}_{-0.014}$	$D_{810}$	2534.7	$2535^{+27}_{-26}$	$f_{2000}^{143 \times 217}$	32.16	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.091}_{-0.093}$	$D_{1420}$	813.8	$813.6^{+9.5}_{-9.4}$	$f_{2000}^{217}$	105.70	$106.0^{+3.7}_{-3.6}$
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.26}_{-0.25}$	$D_{2000}$	230.33	$230.2^{+3.3}_{-3.2}$	$\chi_{\text{plik}}^2$	2430.6	$2449.8 (\nu: 22.1)$
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.075}_{-0.075}$	$n_{\text{s},0.002}$	0.9633	$0.9625^{+0.0094}_{-0.0097}$	$\chi_{\text{prior}}^2$	7.57	$20 (\nu: 16.2)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.057}$	$Y_{\text{P}}$	0.245342	$0.24533^{+0.00014}_{-0.00014}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.17}_{-0.16}$	$Y_{\text{P}}^{\text{BBN}}$	0.246669	$0.24666^{+0.00014}_{-0.00014}$			

Best-fit  $\chi_{\text{eff}}^2 = 2438.15$ ;  $\bar{\chi}_{\text{eff}}^2 = 2470.25$ ;  $R - 1 = 0.01136$

$\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM\_v18\_TTTEEE: 2430.59

## 2.19 base\_plikHM\_TT\_lowl

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02249	$0.02240^{+0.00054}_{-0.00053}$	$\Omega_m$	0.3002	$0.305^{+0.032}_{-0.030}$	$100\theta_*$	1.04136	$1.0413^{+0.0010}_{-0.0010}$
$\Omega_c h^2$	0.1175	$0.1181^{+0.0051}_{-0.0050}$	$\Omega_m h^2$	0.14060	$0.1411^{+0.0048}_{-0.0046}$	$D_A/\text{Gpc}$	13.924	$13.917^{+0.097}_{-0.099}$
$100\theta_{\text{MC}}$	1.04119	$1.0411^{+0.0010}_{-0.0010}$	$\Omega_m h^3$	0.09623	$0.09612^{+0.00091}_{-0.00090}$	$z_{\text{drag}}$	1060.05	$1059.9^{+1.0}_{-0.99}$
$\tau$	0.125	$0.112^{+0.062}_{-0.068}$	$\sigma_8$	0.8610	$0.852^{+0.043}_{-0.047}$	$r_{\text{drag}}$	147.63	$147.6^{+1.0}_{-1.0}$
$\ln(10^{10} A_s)$	3.179	$3.15^{+0.12}_{-0.13}$	$\sigma_8 \Omega_m^{0.5}$	0.4718	$0.470^{+0.027}_{-0.026}$	$k_D$	0.14039	$0.1404^{+0.0010}_{-0.0010}$
$n_s$	0.9742	$0.971^{+0.016}_{-0.015}$	$\sigma_8 \Omega_m^{0.25}$	0.6373	$0.633^{+0.030}_{-0.031}$	$100\theta_D$	0.16071	$0.16081^{+0.00057}_{-0.00056}$
$y_{\text{cal}}$	1.00027	$1.0002^{+0.0049}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.0408	$1.032^{+0.048}_{-0.051}$	$z_{\text{eq}}$	3345	$3357^{+110}_{-110}$
$A_{217}^{\text{CIB}}$	61.1	$62^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.567	$2.55^{+0.11}_{-0.12}$	$k_{\text{eq}}$	0.010208	$0.01025^{+0.00035}_{-0.00034}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.56	—	$z_{\text{re}}$	13.8	$12.6^{+5.1}_{-5.5}$	$100\theta_{\text{eq}}$	0.8243	$0.822^{+0.022}_{-0.022}$
$A_{143}^{\text{tSZ}}$	6.84	$5.43^{+3.6}_{-3.8}$	$10^9 A_s$	2.402	$2.35^{+0.28}_{-0.29}$	$100\theta_{s,\text{eq}}$	0.4550	$0.454^{+0.011}_{-0.011}$
$A_{100}^{\text{PS}}$	243	$252^{+60}_{-60}$	$10^9 A_s e^{-2\tau}$	1.8705	$1.872^{+0.030}_{-0.030}$	$r_{\text{drag}}/D_V(0.57)$	0.07221	$0.0720^{+0.0018}_{-0.0017}$
$A_{143}^{\text{PS}}$	43.0	$41^{+20}_{-20}$	$D_{40}$	1242.3	$1244^{+32}_{-31}$	$H(0.57)$	93.39	$93.2^{+1.1}_{-1.0}$
$A_{143 \times 217}^{\text{PS}}$	46.1	$39^{+20}_{-20}$	$D_{220}$	5722	$5721^{+82}_{-81}$	$D_A(0.57)$	1376.4	$1381^{+31}_{-32}$
$A_{217}^{\text{PS}}$	104.1	$98^{+20}_{-20}$	$D_{810}$	2531.6	$2530^{+27}_{-27}$	$F_{\text{AP}}(0.57)$	0.6731	$0.6742^{+0.0081}_{-0.0077}$
$A^{\text{kSZ}}$	0.00	$< 7.57$	$D_{1420}$	816.5	$814.9^{+9.9}_{-9.8}$	$f\sigma_8(0.57)$	0.4975	$0.493^{+0.023}_{-0.025}$
$A_{100}^{\text{dustTT}}$	7.31	$7.40^{+3.7}_{-3.7}$	$D_{2000}$	232.38	$231.4^{+4.0}_{-4.1}$	$\sigma_8(0.57)$	0.6435	$0.636^{+0.036}_{-0.039}$
$A_{143}^{\text{dustTT}}$	9.07	$8.95^{+3.6}_{-3.7}$	$n_{s,0.002}$	0.9742	$0.971^{+0.016}_{-0.015}$	$f_{2000}^{143}$	26.6	$28^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$16.9^{+8.1}_{-8.3}$	$Y_{\text{P}}$	0.245446	$0.24540^{+0.00024}_{-0.00024}$	$f_{2000}^{143 \times 217}$	30.07	$31^{+5}_{-5}$
$A_{217}^{\text{dustTT}}$	82.9	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246773	$0.24673^{+0.00024}_{-0.00024}$	$f_{2000}^{217}$	103.68	$104.7^{+4.4}_{-4.4}$
$c_{100}$	0.99796	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.569	$2.59^{+0.10}_{-0.099}$	$\chi_{\text{lowl}}^2$	15.39	15.6 ( $\nu: 1.5$ )
$c_{217}$	0.99555	$0.9958^{+0.0029}_{-0.0029}$	Age/Gyr	13.766	$13.781^{+0.092}_{-0.095}$	$\chi_{\text{plik}}^2$	761.1	775.6 ( $\nu: 16.1$ )
$H_0$	68.44	$68.1^{+2.4}_{-2.4}$	$z_*$	1089.55	$1089.7^{+1.0}_{-1.0}$	$\chi_{\text{prior}}^2$	1.58	7.24 ( $\nu: 6.2$ )
$\Omega_\Lambda$	0.6998	$0.695^{+0.030}_{-0.032}$	$r_*$	145.00	$144.9^{+1.1}_{-1.1}$	$\chi_{\text{CMB}}^2$	776.5	791.1 ( $\nu: 15.3$ )

Best-fit  $\chi_{\text{eff}}^2 = 778.06$ ;  $\bar{\chi}_{\text{eff}}^2 = 798.39$ ;  $R - 1 = 0.00655$

$\chi_{\text{eff}}^2$ : CMB - commander\_rc2.v1.1.l2\_29\_B: 15.39 plik\_dx11dr2\_HM\_v18\_TT: 761.09

## 2.20 base\_plikHM\_TT\_lowl\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022416	$0.02237^{+0.00042}_{-0.00040}$	$\Omega_m h^3$	0.09617	$0.09611^{+0.00091}_{-0.00087}$	$k_D$	0.14048	$0.14044^{+0.00088}_{-0.00085}$
$\Omega_c h^2$	0.11831	$0.1185^{+0.0026}_{-0.0026}$	$\sigma_8$	0.8571	$0.851^{+0.043}_{-0.045}$	$100\theta_D$	0.16077	$0.16083^{+0.00052}_{-0.00052}$
$100\theta_{MC}$	1.04103	$1.04103^{+0.00084}_{-0.00085}$	$\sigma_8 \Omega_m^{0.5}$	0.4738	$0.471^{+0.024}_{-0.024}$	$z_{eq}$	3363	$3367^{+60}_{-60}$
$\tau$	0.116	$0.108^{+0.055}_{-0.056}$	$\sigma_8 \Omega_m^{0.25}$	0.6372	$0.633^{+0.031}_{-0.032}$	$k_{eq}$	0.010264	$0.01028^{+0.00018}_{-0.00018}$
$\ln(10^{10} A_s)$	3.164	$3.15^{+0.11}_{-0.11}$	$\sigma_8/h^{0.5}$	1.039	$1.032^{+0.049}_{-0.053}$	$100\theta_{eq}$	0.8206	$0.820^{+0.012}_{-0.011}$
$n_s$	0.9720	$0.9698^{+0.0099}_{-0.0098}$	$\langle d^2 \rangle^{1/2}$	2.562	$2.55^{+0.12}_{-0.13}$	$100\theta_{s,eq}$	0.4532	$0.4528^{+0.0059}_{-0.0058}$
$y_{cal}$	1.00039	$1.0003^{+0.0047}_{-0.0049}$	$z_{re}$	13.14	$12.4^{+4.4}_{-4.7}$	$r_{drag}/D_V(0.57)$	0.07190	$0.07184^{+0.00091}_{-0.00087}$
$A_{217}^{CIB}$	61.7	$62^{+10}_{-10}$	$10^9 A_s$	2.366	$2.33^{+0.24}_{-0.25}$	$H(0.57)$	93.20	$93.15^{+0.59}_{-0.58}$
$\xi^{tSZ \times CIB}$	0.55	—	$10^9 A_s e^{-2\tau}$	1.8744	$1.874^{+0.023}_{-0.023}$	$D_A(0.57)$	1381.9	$1383^{+16}_{-17}$
$A_{143}^{tSZ}$	6.78	$5.37^{+3.6}_{-3.7}$	$D_{40}$	1241.9	$1244^{+32}_{-30}$	$F_{AP}(0.57)$	0.67451	$0.6749^{+0.0040}_{-0.0040}$
$A_{100}^{PS}$	245	$253^{+50}_{-50}$	$D_{220}$	5718	$5720^{+80}_{-79}$	$f\sigma_8(0.57)$	0.4967	$0.493^{+0.024}_{-0.025}$
$A_{143}^{PS}$	44.0	$41^{+20}_{-20}$	$D_{810}$	2532.9	$2531^{+27}_{-27}$	$\sigma_8(0.57)$	0.6392	$0.634^{+0.033}_{-0.035}$
$A_{143 \times 217}^{PS}$	46.5	$39^{+20}_{-20}$	$D_{1420}$	816.3	$814.7^{+9.4}_{-9.6}$	$f_{2000}^{143}$	27.2	$28^{+6}_{-6}$
$A_{217}^{PS}$	104.1	$98^{+20}_{-20}$	$D_{2000}$	232.06	$231.3^{+3.6}_{-3.7}$	$f_{2000}^{143 \times 217}$	30.51	$31^{+4}_{-4}$
$A^{kSZ}$	0.00	$< 7.73$	$n_{s,0.002}$	0.9720	$0.9698^{+0.0099}_{-0.0098}$	$f_{2000}^{217}$	104.11	$104.9^{+4.1}_{-4.2}$
$A_{100}^{dustTT}$	7.32	$7.43^{+3.7}_{-3.7}$	$Y_P$	0.245413	$0.24539^{+0.00018}_{-0.00019}$	$\chi_{lowl}^2$	15.25	15.5 ( $\nu$ : 1.5)
$A_{143}^{dustTT}$	9.03	$8.93^{+3.6}_{-3.5}$	$Y_P^{BBN}$	0.246739	$0.24672^{+0.00019}_{-0.00019}$	$\chi_{plik}^2$	761.4	774.9 ( $\nu$ : 15.5)
$A_{143 \times 217}^{dustTT}$	17.9	$16.9^{+8.0}_{-8.1}$	$10^5 D/H$	2.583	$2.592^{+0.077}_{-0.077}$	$\chi_{6DF}^2$	0.001	0.050 ( $\nu$ : 0.0)
$A_{217}^{dustTT}$	82.7	$82^{+10}_{-10}$	Age/Gyr	13.782	$13.788^{+0.060}_{-0.060}$	$\chi_{MGS}^2$	1.61	1.58 ( $\nu$ : 0.2)
$c_{100}$	0.99798	$0.9979^{+0.0015}_{-0.0016}$	$z_*$	1089.72	$1089.80^{+0.64}_{-0.63}$	$\chi_{DR11CMass}^2$	2.44	2.91 ( $\nu$ : 0.3)
$c_{217}$	0.99560	$0.9958^{+0.0029}_{-0.0029}$	$r_*$	144.83	$144.82^{+0.64}_{-0.64}$	$\chi_{DR11LOWZ}^2$	0.33	0.55 ( $\nu$ : 0.1)
$H_0$	68.02	$67.9^{+1.2}_{-1.2}$	$100\theta_*$	1.04121	$1.04122^{+0.00083}_{-0.00083}$	$\chi_{prior}^2$	1.52	7.19 ( $\nu$ : 6.2)
$\Omega_\Lambda$	0.6945	$0.693^{+0.016}_{-0.016}$	$D_A/Gpc$	13.910	$13.909^{+0.061}_{-0.062}$	$\chi_{BAO}^2$	4.38	5.10 ( $\nu$ : 0.6)
$\Omega_m$	0.3055	$0.307^{+0.016}_{-0.016}$	$z_{drag}$	1059.93	$1059.82^{+0.92}_{-0.88}$	$\chi_{CMB}^2$	776.7	790.4 ( $\nu$ : 14.6)
$\Omega_m h^2$	0.14137	$0.1415^{+0.0025}_{-0.0025}$	$r_{drag}$	147.49	$147.49^{+0.68}_{-0.67}$			

Best-fit  $\chi_{eff}^2 = 782.58$ ;  $\bar{\chi}_{eff}^2 = 802.73$ ;  $R - 1 = 0.00934$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.44 DR11LOWZ: 0.33 CMB - commander\_rc2\_v1.1\_l2\_29\_B: 15.25 plik\_dx11dr2\_HM\_v18\_TT: 761.44

## 2.21 base\_plikHM\_TT\_lowl\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022444	$0.02239^{+0.00041}_{-0.00039}$	$\sigma_8$	0.8573	$0.852^{+0.042}_{-0.045}$	$z_{\text{eq}}$	3362	$3361^{+58}_{-58}$
$\Omega_c h^2$	0.11823	$0.1182^{+0.0026}_{-0.0025}$	$\sigma_8 \Omega_m^{0.5}$	0.4732	$0.471^{+0.024}_{-0.024}$	$k_{\text{eq}}$	0.010260	$0.01026^{+0.00018}_{-0.00018}$
$100\theta_{\text{MC}}$	1.04113	$1.04107^{+0.00084}_{-0.00084}$	$\sigma_8 \Omega_m^{0.25}$	0.6369	$0.633^{+0.030}_{-0.032}$	$100\theta_{\text{eq}}$	0.8210	$0.821^{+0.011}_{-0.011}$
$\tau$	0.117	$0.111^{+0.050}_{-0.056}$	$\sigma_8/h^{0.5}$	1.039	$1.033^{+0.049}_{-0.052}$	$100\theta_{\text{s,eq}}$	0.4533	$0.4534^{+0.0057}_{-0.0055}$
$\ln(10^{10} A_s)$	3.165	$3.152^{+0.099}_{-0.11}$	$\langle d^2 \rangle^{1/2}$	2.564	$2.55^{+0.12}_{-0.12}$	$r_{\text{drag}}/D_V(0.57)$	0.07196	$0.07193^{+0.00087}_{-0.00084}$
$n_s$	0.9716	$0.9706^{+0.0097}_{-0.0098}$	$z_{\text{re}}$	13.19	$12.6^{+4.3}_{-4.5}$	$H(0.57)$	93.26	$93.20^{+0.58}_{-0.55}$
$y_{\text{cal}}$	1.00026	$1.0003^{+0.0047}_{-0.0049}$	$10^9 A_s$	2.369	$2.34^{+0.24}_{-0.25}$	$D_A(0.57)$	1380.7	$1382^{+16}_{-16}$
$A_{217}^{\text{CIB}}$	62.9	$62^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8740	$1.873^{+0.023}_{-0.023}$	$F_{\text{AP}}(0.57)$	0.67428	$0.6744^{+0.0039}_{-0.0038}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.37	—	$D_{40}$	1243.7	$1243^{+32}_{-30}$	$f\sigma_8(0.57)$	0.4966	$0.493^{+0.024}_{-0.025}$
$A_{143}^{\text{tSZ}}$	6.89	$5.40^{+3.6}_{-3.7}$	$D_{220}$	5723	$5721^{+80}_{-79}$	$\sigma_8(0.57)$	0.6395	$0.635^{+0.032}_{-0.034}$
$A_{100}^{\text{PS}}$	246	$252^{+50}_{-50}$	$D_{810}$	2532.4	$2531^{+27}_{-27}$	$f_{2000}^{143}$	27.2	$28^{+6}_{-6}$
$A_{143}^{\text{PS}}$	40.7	$41^{+20}_{-20}$	$D_{1420}$	816.0	$814.9^{+9.3}_{-9.6}$	$f_{2000}^{143 \times 217}$	30.39	$31^{+4}_{-4}$
$A_{143 \times 217}^{\text{PS}}$	41.0	$38^{+20}_{-20}$	$D_{2000}$	232.00	$231.4^{+3.6}_{-3.6}$	$f_{2000}^{217}$	104.08	$104.7^{+4.1}_{-4.1}$
$A_{217}^{\text{PS}}$	101.7	$98^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9716	$0.9706^{+0.0097}_{-0.0098}$	$\chi_{\text{lowl}}^2$	15.46	15.5 ( $\nu$ : 1.5)
$A^{\text{kSZ}}$	0.02	< 7.68	$Y_{\text{P}}$	0.245425	$0.24540^{+0.00018}_{-0.00018}$	$\chi_{\text{plik}}^2$	761.0	774.8 ( $\nu$ : 15.5)
$A_{100}^{\text{dustTT}}$	7.32	$7.43^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246752	$0.24673^{+0.00018}_{-0.00018}$	$\chi_{\text{H070p6}}^2$	0.56	0.62 ( $\nu$ : 0.0)
$A_{143}^{\text{dustTT}}$	8.96	$8.92^{+3.6}_{-3.5}$	$10^5 D/H$	2.578	$2.587^{+0.075}_{-0.077}$	$\chi_{\text{JLA}}^2$	706.587	706.65 ( $\nu$ : 0.0)
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$16.9^{+7.9}_{-8.2}$	Age/Gyr	13.776	$13.783^{+0.057}_{-0.058}$	$\chi_{6\text{DF}}^2$	0.000	0.043 ( $\nu$ : 0.0)
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$z_*$	1089.67	$1089.74^{+0.63}_{-0.62}$	$\chi_{\text{MGS}}^2$	1.68	1.71 ( $\nu$ : 0.2)
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0016}$	$r_*$	144.83	$144.87^{+0.63}_{-0.62}$	$\chi_{\text{DR11CMASS}}^2$	2.47	2.92 ( $\nu$ : 0.3)
$c_{217}$	0.99560	$0.9958^{+0.0028}_{-0.0029}$	$100\theta_*$	1.04130	$1.04125^{+0.00082}_{-0.00082}$	$\chi_{\text{DR11LOWZ}}^2$	0.28	0.44 ( $\nu$ : 0.1)
$H_0$	68.11	$68.0^{+1.2}_{-1.1}$	$D_A/\text{Gpc}$	13.909	$13.913^{+0.061}_{-0.060}$	$\chi_{\text{prior}}^2$	1.75	7.18 ( $\nu$ : 6.2)
$\Omega_\Lambda$	0.6954	$0.695^{+0.015}_{-0.015}$	$z_{\text{drag}}$	1059.97	$1059.86^{+0.91}_{-0.87}$	$\chi_{\text{BAO}}^2$	4.43	5.12 ( $\nu$ : 0.6)
$\Omega_m$	0.3046	$0.305^{+0.015}_{-0.015}$	$r_{\text{drag}}$	147.48	$147.53^{+0.68}_{-0.67}$	$\chi_{\text{CMB}}^2$	776.5	790.4 ( $\nu$ : 14.6)
$\Omega_m h^2$	0.14132	$0.1413^{+0.0024}_{-0.0024}$	$k_{\text{D}}$	0.14051	$0.14042^{+0.00088}_{-0.00086}$			
$\Omega_m h^3$	0.09625	$0.09613^{+0.00091}_{-0.00087}$	$100\theta_{\text{D}}$	0.16074	$0.16081^{+0.00051}_{-0.00051}$			

Best-fit  $\chi_{\text{eff}}^2 = 1489.81$ ;  $\bar{\chi}_{\text{eff}}^2 = 1509.93$ ;  $R - 1 = 0.00850$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.68 DR11CMASS: 2.48 DR11LOWZ: 0.28 CMB - commander\_rc2.v1.1\_l2\_29\_B: 15.46 plik\_dx11dr2\_HM.v18\_TT: 761.02 Hubble - H070p6: 0.56 SN - JLA December\_2013: 706.59



## 2.22 base\_plikHM\_TT\_lowl\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02241^{+0.00053}_{-0.00052}$	$\Omega_m$	$0.304^{+0.031}_{-0.029}$	$100\theta_*$	$1.04129^{+0.00099}_{-0.00098}$
$\Omega_c h^2$	$0.1180^{+0.0050}_{-0.0049}$	$\Omega_m h^2$	$0.1410^{+0.0046}_{-0.0046}$	$D_A/\text{Gpc}$	$13.918^{+0.096}_{-0.097}$
$100\theta_{\text{MC}}$	$1.0411^{+0.0010}_{-0.0010}$	$\Omega_m h^3$	$0.09613^{+0.00090}_{-0.00088}$	$z_{\text{drag}}$	$1059.9^{+1.0}_{-0.97}$
$\tau$	$0.114^{+0.060}_{-0.059}$	$\sigma_8$	$0.853^{+0.042}_{-0.042}$	$r_{\text{drag}}$	$147.6^{+1.0}_{-1.0}$
$\ln(10^{10} A_s)$	$3.16^{+0.11}_{-0.11}$	$\sigma_8 \Omega_m^{0.5}$	$0.470^{+0.027}_{-0.025}$	$k_D$	$0.1404^{+0.0010}_{-0.0010}$
$n_s$	$0.971^{+0.015}_{-0.015}$	$\sigma_8 \Omega_m^{0.25}$	$0.633^{+0.030}_{-0.029}$	$100\theta_D$	$0.16080^{+0.00057}_{-0.00055}$
$y_{\text{cal}}$	$1.0002^{+0.0048}_{-0.0048}$	$\sigma_8/h^{0.5}$	$1.034^{+0.047}_{-0.047}$	$z_{\text{eq}}$	$3355^{+110}_{-110}$
$A_{217}^{\text{CIB}}$	$62^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	$2.55^{+0.11}_{-0.11}$	$k_{\text{eq}}$	$0.01024^{+0.00034}_{-0.00034}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$z_{\text{re}}$	$12.8^{+4.6}_{-5.0}$	$100\theta_{\text{eq}}$	$0.822^{+0.022}_{-0.021}$
$A_{143}^{\text{tSZ}}$	$5.46^{+3.5}_{-3.7}$	$10^9 A_s$	$2.36^{+0.27}_{-0.27}$	$100\theta_{\text{s,eq}}$	$0.454^{+0.011}_{-0.011}$
$A_{100}^{\text{PS}}$	$251^{+60}_{-50}$	$10^9 A_s e^{-2\tau}$	$1.872^{+0.029}_{-0.029}$	$r_{\text{drag}}/D_V(0.57)$	$0.0720^{+0.0018}_{-0.0017}$
$A_{143}^{\text{PS}}$	$41^{+20}_{-20}$	$D_{40}$	$1244^{+32}_{-31}$	$H(0.57)$	$93.3^{+1.1}_{-0.98}$
$A_{143 \times 217}^{\text{PS}}$	$38^{+20}_{-20}$	$D_{220}$	$5721^{+81}_{-80}$	$D_A(0.57)$	$1380^{+30}_{-31}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$D_{810}$	$2530^{+27}_{-27}$	$F_{\text{AP}}(0.57)$	$0.6741^{+0.0078}_{-0.0077}$
$A^{\text{kSZ}}$	$< 7.56$	$D_{1420}$	$815.0^{+9.9}_{-9.8}$	$f\sigma_8(0.57)$	$0.494^{+0.023}_{-0.023}$
$A_{100}^{\text{dustTT}}$	$7.40^{+3.8}_{-3.7}$	$D_{2000}$	$231.5^{+4.0}_{-4.0}$	$\sigma_8(0.57)$	$0.637^{+0.035}_{-0.034}$
$A_{143}^{\text{dustTT}}$	$8.93^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	$0.971^{+0.015}_{-0.015}$	$f_{2000}^{143}$	$28^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	$16.9^{+8.1}_{-8.1}$	$Y_{\text{P}}$	$0.24541^{+0.00023}_{-0.00024}$	$f_{2000}^{143 \times 217}$	$31^{+5}_{-5}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24674^{+0.00023}_{-0.00024}$	$f_{2000}^{217}$	$104.6^{+4.3}_{-4.3}$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$10^5 \text{D}/\text{H}$	$2.584^{+0.099}_{-0.097}$	$\chi_{\text{lowl}}^2$	$15.6 (\nu: 1.5)$
$c_{217}$	$0.9958^{+0.0029}_{-0.0029}$	$\text{Age}/\text{Gyr}$	$13.779^{+0.089}_{-0.092}$	$\chi_{\text{plik}}^2$	$775.3 (\nu: 15.3)$
$H_0$	$68.2^{+2.4}_{-2.3}$	$z_*$	$1089.70^{+0.99}_{-0.99}$	$\chi_{\text{prior}}^2$	$7.20 (\nu: 6.1)$
$\Omega_\Lambda$	$0.696^{+0.029}_{-0.031}$	$r_*$	$144.9^{+1.1}_{-1.1}$	$\chi_{\text{CMB}}^2$	$790.9 (\nu: 14.7)$

$$\bar{\chi}_{\text{eff}}^2 = 798.12; R - 1 = 0.00960$$

## 2.23 base\_plikHM\_TT\_lowl\_post\_BAO\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02237^{+0.00042}_{-0.00040}$	$\Omega_m h^3$	$0.09612^{+0.00091}_{-0.00086}$	$k_D$	$0.14044^{+0.00088}_{-0.00085}$
$\Omega_c h^2$	$0.1185^{+0.0026}_{-0.0026}$	$\sigma_8$	$0.851^{+0.042}_{-0.042}$	$100\theta_D$	$0.16083^{+0.00051}_{-0.00052}$
$100\theta_{MC}$	$1.04103^{+0.00084}_{-0.00084}$	$\sigma_8 \Omega_m^{0.5}$	$0.471^{+0.024}_{-0.023}$	$z_{eq}$	$3366^{+60}_{-59}$
$\tau$	$0.109^{+0.050}_{-0.053}$	$\sigma_8 \Omega_m^{0.25}$	$0.634^{+0.030}_{-0.030}$	$k_{eq}$	$0.01027^{+0.00018}_{-0.00018}$
$\ln(10^{10} A_s)$	$3.15^{+0.10}_{-0.10}$	$\sigma_8/h^{0.5}$	$1.033^{+0.049}_{-0.049}$	$100\theta_{eq}$	$0.820^{+0.011}_{-0.011}$
$n_s$	$0.9699^{+0.0098}_{-0.0096}$	$\langle d^2 \rangle^{1/2}$	$2.55^{+0.11}_{-0.12}$	$100\theta_{s,eq}$	$0.4528^{+0.0059}_{-0.0057}$
$y_{cal}$	$1.0002^{+0.0047}_{-0.0049}$	$z_{re}$	$12.5^{+4.1}_{-4.5}$	$r_{drag}/D_V(0.57)$	$0.07184^{+0.00091}_{-0.00087}$
$A_{217}^{CIB}$	$62^{+10}_{-10}$	$10^9 A_s$	$2.33^{+0.24}_{-0.23}$	$H(0.57)$	$93.15^{+0.59}_{-0.57}$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.874^{+0.023}_{-0.023}$	$D_A(0.57)$	$1383^{+16}_{-16}$
$A_{143}^{tSZ}$	$5.38^{+3.6}_{-3.7}$	$D_{40}$	$1244^{+32}_{-30}$	$F_{AP}(0.57)$	$0.6748^{+0.0040}_{-0.0040}$
$A_{100}^{PS}$	$253^{+50}_{-50}$	$D_{220}$	$5720^{+80}_{-79}$	$f\sigma_8(0.57)$	$0.494^{+0.023}_{-0.023}$
$A_{143}^{PS}$	$41^{+10}_{-20}$	$D_{810}$	$2531^{+27}_{-27}$	$\sigma_8(0.57)$	$0.634^{+0.033}_{-0.032}$
$A_{143 \times 217}^{PS}$	$39^{+20}_{-20}$	$D_{1420}$	$814.7^{+9.3}_{-9.6}$	$f_{2000}^{143}$	$28^{+6}_{-6}$
$A_{217}^{PS}$	$98^{+20}_{-20}$	$D_{2000}$	$231.3^{+3.6}_{-3.6}$	$f_{2000}^{143 \times 217}$	$31^{+4}_{-4}$
$A^{kSZ}$	$< 7.73$	$n_{s,0.002}$	$0.9699^{+0.0098}_{-0.0096}$	$f_{2000}^{217}$	$104.8^{+4.1}_{-4.2}$
$A_{100}^{dustTT}$	$7.42^{+3.7}_{-3.7}$	$Y_P$	$0.24539^{+0.00018}_{-0.00019}$	$\chi_{lowl}^2$	$15.6 (\nu: 1.5)$
$A_{143}^{dustTT}$	$8.93^{+3.6}_{-3.5}$	$Y_P^{BBN}$	$0.24672^{+0.00018}_{-0.00019}$	$\chi_{plik}^2$	$774.8 (\nu: 15.0)$
$A_{143 \times 217}^{dustTT}$	$16.9^{+8.0}_{-8.2}$	$10^5 D/H$	$2.592^{+0.076}_{-0.077}$	$\chi_{6DF}^2$	$0.049 (\nu: 0.0)$
$A_{217}^{dustTT}$	$82^{+10}_{-10}$	Age/Gyr	$13.788^{+0.059}_{-0.059}$	$\chi_{MGS}^2$	$1.59 (\nu: 0.2)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0016}$	$z_*$	$1089.79^{+0.63}_{-0.63}$	$\chi_{DR11CMass}^2$	$2.91 (\nu: 0.3)$
$c_{217}$	$0.9958^{+0.0029}_{-0.0030}$	$r_*$	$144.82^{+0.64}_{-0.64}$	$\chi_{DR11LOWZ}^2$	$0.54 (\nu: 0.1)$
$H_0$	$67.9^{+1.2}_{-1.2}$	$100\theta_*$	$1.04122^{+0.00083}_{-0.00082}$	$\chi_{prior}^2$	$7.19 (\nu: 6.2)$
$\Omega_\Lambda$	$0.693^{+0.016}_{-0.016}$	$D_A/Gpc$	$13.909^{+0.061}_{-0.061}$	$\chi_{BAO}^2$	$5.09 (\nu: 0.6)$
$\Omega_m$	$0.307^{+0.016}_{-0.016}$	$z_{drag}$	$1059.83^{+0.92}_{-0.88}$	$\chi_{CMB}^2$	$790.4 (\nu: 14.4)$
$\Omega_m h^2$	$0.1415^{+0.0025}_{-0.0025}$	$r_{drag}$	$147.49^{+0.68}_{-0.68}$		

$$\bar{\chi}_{eff}^2 = 802.64; R - 1 = 0.00939$$

## 2.24 base\_plikHM\_TTTEE\_lowl

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022371	$0.02232^{+0.00033}_{-0.00033}$	$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.17}$	$10^5 \text{D/H}$	2.591	$2.602^{+0.063}_{-0.062}$
$\Omega_c h^2$	0.11884	$0.1192^{+0.0031}_{-0.0031}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	Age/Gyr	13.794	$13.801^{+0.055}_{-0.056}$
$100\theta_{\text{MC}}$	1.04087	$1.04085^{+0.00066}_{-0.00065}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$z_*$	1089.82	$1089.91^{+0.63}_{-0.63}$
$\tau$	0.1078	$0.099^{+0.047}_{-0.050}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.51}_{-0.50}$	$r_*$	144.73	$144.69^{+0.68}_{-0.67}$
$\ln(10^{10} A_s)$	3.148	$3.132^{+0.090}_{-0.095}$	$c_{100}$	0.99826	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04106	$1.04104^{+0.00065}_{-0.00064}$
$n_s$	0.9690	$0.967^{+0.011}_{-0.010}$	$c_{217}$	0.99572	$0.9959^{+0.0029}_{-0.0028}$	$D_A/\text{Gpc}$	13.902	$13.899^{+0.063}_{-0.062}$
$y_{\text{cal}}$	1.00018	$1.0003^{+0.0050}_{-0.0049}$	$H_0$	67.75	$67.6^{+1.4}_{-1.4}$	$z_{\text{drag}}$	1059.86	$1059.75^{+0.64}_{-0.65}$
$A_{217}^{\text{CIB}}$	61.5	$63^{+10}_{-10}$	$\Omega_\Lambda$	0.6909	$0.689^{+0.019}_{-0.020}$	$r_{\text{drag}}$	147.40	$147.38^{+0.66}_{-0.66}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.63	—	$\Omega_m$	0.3091	$0.311^{+0.020}_{-0.019}$	$k_D$	0.14054	$0.14053^{+0.00068}_{-0.00067}$
$A_{143}^{\text{tSZ}}$	6.83	$5.49^{+3.5}_{-3.7}$	$\Omega_m h^2$	0.14186	$0.1421^{+0.0029}_{-0.0029}$	$100\theta_D$	0.160786	$0.16085^{+0.00037}_{-0.00036}$
$A_{100}^{\text{PS}}$	248	$257^{+50}_{-50}$	$\Omega_m h^3$	0.09610	$0.09604^{+0.00059}_{-0.00059}$	$z_{\text{eq}}$	3374	$3381^{+70}_{-70}$
$A_{143}^{\text{PS}}$	45.9	$42^{+10}_{-20}$	$\sigma_8$	0.8516	$0.846^{+0.035}_{-0.037}$	$k_{\text{eq}}$	0.010299	$0.01032^{+0.00021}_{-0.00021}$
$A_{143 \times 217}^{\text{PS}}$	49.8	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4735	$0.472^{+0.021}_{-0.021}$	$100\theta_{\text{eq}}$	0.8182	$0.817^{+0.014}_{-0.013}$
$A_{217}^{\text{PS}}$	105.4	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6350	$0.632^{+0.025}_{-0.026}$	$100\theta_{s,\text{eq}}$	0.4520	$0.4513^{+0.0070}_{-0.0067}$
$A^{\text{kSZ}}$	0.00	$< 7.37$	$\sigma_8/h^{0.5}$	1.0347	$1.029^{+0.041}_{-0.043}$	$r_{\text{drag}}/D_V(0.57)$	0.07170	$0.0716^{+0.0011}_{-0.0010}$
$A_{100}^{\text{dustTT}}$	7.34	$7.36^{+3.7}_{-3.6}$	$\langle d^2 \rangle^{1/2}$	2.555	$2.543^{+0.096}_{-0.10}$	$H(0.57)$	93.07	$93.00^{+0.63}_{-0.61}$
$A_{143}^{\text{dustTT}}$	8.85	$8.86^{+3.6}_{-3.6}$	$z_{\text{re}}$	12.48	$11.7^{+4.0}_{-4.3}$	$D_A(0.57)$	1385.7	$1388^{+19}_{-19}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$16.8^{+8.1}_{-8.1}$	$10^9 A_s$	2.330	$2.30^{+0.21}_{-0.21}$	$F_{\text{AP}}(0.57)$	0.67542	$0.6760^{+0.0049}_{-0.0049}$
$A_{217}^{\text{dustTT}}$	82.6	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8781	$1.879^{+0.025}_{-0.025}$	$f\sigma_8(0.57)$	0.4945	$0.491^{+0.020}_{-0.021}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1245.0	$1246^{+28}_{-27}$	$\sigma_8(0.57)$	0.6342	$0.629^{+0.028}_{-0.029}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0489^{+0.0097}_{-0.0098}$	$D_{220}$	5728	$5729^{+77}_{-77}$	$f_{2000}^{143}$	27.4	$29^{+6}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.0995^{+0.064}_{-0.063}$	$D_{810}$	2534.4	$2534^{+27}_{-28}$	$f_{2000}^{143 \times 217}$	30.90	$31^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1008	$0.100^{+0.013}_{-0.013}$	$D_{1420}$	815.7	$814.6^{+9.7}_{-9.5}$	$f_{2000}^{217}$	104.37	$105.1^{+3.9}_{-3.8}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.090}_{-0.092}$	$D_{2000}$	231.58	$230.9^{+3.4}_{-3.3}$	$\chi_{\text{lowl}}^2$	15.48	$15.7 (\nu: 1.1)$
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.26}_{-0.26}$	$n_{s,0.002}$	0.9690	$0.967^{+0.011}_{-0.010}$	$\chi_{\text{plik}}^2$	2429.9	$2449.4 (\nu: 22.8)$
$A_{100}^{\text{dustTE}}$	0.139	$0.140^{+0.076}_{-0.074}$	$Y_P$	0.245393	$0.24537^{+0.00015}_{-0.00015}$	$\chi_{\text{prior}}^2$	6.53	$19.2 (\nu: 15.2)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.057}$	$Y_P^{\text{BBN}}$	0.246720	$0.24669^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	2445.4	$2465.1 (\nu: 22.4)$

Best-fit  $\chi_{\text{eff}}^2 = 2451.89$ ;  $\bar{\chi}_{\text{eff}}^2 = 2484.29$ ;  $R - 1 = 0.00632$

$\chi_{\text{eff}}^2$ : CMB - commander\_rc2.v1.1\_l2\_29\_B: 15.48 plik\_dx11dr2\_HM\_v18\_TTTEE: 2429.87

## 2.25 base\_plikHM\_TTTEEE\_lowl\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022343	$0.02234^{+0.00029}_{-0.00029}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.15}$	$100\theta_*$	1.04106	$1.04107^{+0.00059}_{-0.00057}$
$\Omega_c h^2$	0.11879	$0.1189^{+0.0022}_{-0.0022}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.51}_{-0.51}$	$D_A/\text{Gpc}$	13.9054	$13.904^{+0.047}_{-0.047}$
$100\theta_{\text{MC}}$	1.04088	$1.04089^{+0.00060}_{-0.00058}$	$c_{100}$	0.99823	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.78	$1059.78^{+0.61}_{-0.61}$
$\tau$	0.1040	$0.102^{+0.043}_{-0.046}$	$c_{217}$	0.99582	$0.9958^{+0.0029}_{-0.0028}$	$r_{\text{drag}}$	147.44	$147.43^{+0.51}_{-0.51}$
$\ln(10^{10} A_s)$	3.140	$3.137^{+0.084}_{-0.090}$	$H_0$	67.74	$67.7^{+1.0}_{-0.98}$	$k_D$	0.14048	$0.14048^{+0.00058}_{-0.00059}$
$n_s$	0.9683	$0.9677^{+0.0086}_{-0.0084}$	$\Omega_\Lambda$	0.6910	$0.691^{+0.013}_{-0.014}$	$100\theta_D$	0.160828	$0.16083^{+0.00035}_{-0.00034}$
$y_{\text{cal}}$	1.0001	$1.0003^{+0.0050}_{-0.0050}$	$\Omega_m$	0.3090	$0.309^{+0.014}_{-0.013}$	$z_{\text{eq}}$	3373	$3374^{+50}_{-49}$
$A_{217}^{\text{CIB}}$	64.2	$63^{+10}_{-10}$	$\Omega_m h^2$	0.14178	$0.1418^{+0.0021}_{-0.0021}$	$k_{\text{eq}}$	0.010294	$0.01030^{+0.00015}_{-0.00015}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.26	—	$\Omega_m h^3$	0.09604	$0.09605^{+0.00059}_{-0.00059}$	$100\theta_{\text{eq}}$	0.8185	$0.8183^{+0.0096}_{-0.0094}$
$A_{143}^{\text{tSZ}}$	7.17	$5.50^{+3.8}_{-3.7}$	$\sigma_8$	0.8478	$0.847^{+0.035}_{-0.037}$	$100\theta_{s,\text{eq}}$	0.45211	$0.4520^{+0.0049}_{-0.0048}$
$A_{100}^{\text{PS}}$	250	$257^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4713	$0.471^{+0.020}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.07169^{+0.00076}_{-0.00074}$
$A_{143}^{\text{PS}}$	39.8	$42^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6321	$0.631^{+0.025}_{-0.027}$	$H(0.57)$	93.060	$93.05^{+0.46}_{-0.45}$
$A_{143 \times 217}^{\text{PS}}$	38.7	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0301	$1.029^{+0.041}_{-0.043}$	$D_A(0.57)$	1385.8	$1386^{+13}_{-14}$
$A_{217}^{\text{PS}}$	100.5	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.546	$2.544^{+0.096}_{-0.10}$	$F_{\text{AP}}(0.57)$	0.67539	$0.6755^{+0.0034}_{-0.0034}$
$A^{\text{kSZ}}$	0.01	$< 7.33$	$z_{\text{re}}$	12.18	$12.0^{+3.7}_{-3.9}$	$f\sigma_8(0.57)$	0.4923	$0.492^{+0.020}_{-0.021}$
$A_{100}^{\text{dustTT}}$	7.36	$7.36^{+3.7}_{-3.7}$	$10^9 A_s$	2.311	$2.31^{+0.20}_{-0.20}$	$\sigma_8(0.57)$	0.6314	$0.630^{+0.027}_{-0.028}$
$A_{143}^{\text{dustTT}}$	8.97	$8.83^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8765	$1.877^{+0.023}_{-0.023}$	$f_{2000}^{143}$	27.9	$28^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$16.8^{+8.2}_{-8.0}$	$D_{40}$	1243.5	$1246^{+27}_{-26}$	$f_{2000}^{143 \times 217}$	31.10	$31^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	$D_{220}$	5725	$5729^{+77}_{-77}$	$f_{2000}^{217}$	104.82	$105.0^{+3.8}_{-3.7}$
$A_{100}^{\text{dustEE}}$	0.0816	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2532.3	$2533^{+27}_{-28}$	$\chi_{\text{lowl}}^2$	15.35	15.6 ( $\nu$ : 1.1)
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0490^{+0.0098}_{-0.0096}$	$D_{1420}$	814.7	$814.6^{+9.6}_{-9.5}$	$\chi_{\text{plik}}^2$	2429.9	2449.0 ( $\nu$ : 22.3)
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.0995^{+0.065}_{-0.065}$	$D_{2000}$	231.09	$231.0^{+3.2}_{-3.3}$	$\chi_{6\text{DF}}^2$	0.015	0.050 ( $\nu$ : 0.0)
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.013}_{-0.013}$	$n_{s,0.002}$	0.9683	$0.9677^{+0.0086}_{-0.0084}$	$\chi_{\text{MGS}}^2$	1.34	1.39 ( $\nu$ : 0.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.224^{+0.090}_{-0.091}$	$Y_{\text{P}}$	0.245381	$0.24538^{+0.00013}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.43	2.80 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.655	$0.65^{+0.25}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.246707	$0.24670^{+0.00013}_{-0.00013}$	$\chi_{\text{DR11LOWZ}}^2$	0.55	0.68 ( $\nu$ : 0.1)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.076}_{-0.073}$	$10^5 D/H$	2.596	$2.597^{+0.055}_{-0.053}$	$\chi_{\text{prior}}^2$	6.87	19.2 ( $\nu$ : 15.2)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.058}$	$\text{Age}/\text{Gyr}$	13.7964	$13.797^{+0.044}_{-0.044}$	$\chi_{\text{BAO}}^2$	4.33	4.91 ( $\nu$ : 0.3)
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.17}$	$z_*$	1089.847	$1089.86^{+0.49}_{-0.49}$	$\chi_{\text{CMB}}^2$	2445.2	2464.6 ( $\nu$ : 21.9)
$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.10}$	$r_*$	144.76	$144.75^{+0.50}_{-0.50}$			

Best-fit  $\chi_{\text{eff}}^2 = 2456.44$ ;  $\bar{\chi}_{\text{eff}}^2 = 2488.74$ ;  $R - 1 = 0.01004$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.34 DR11CMass: 2.43 DR11LOWZ: 0.55 CMB - commander\_rc2\_v1.1.l2\_29.B: 15.35 plik\_dx11dr2\_HM\_v18.TTTEEE: 2429.89

## 2.26 base\_plikHM\_TTTEEE\_lowl\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022384	$0.02236^{+0.00029}_{-0.00028}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.51}_{-0.51}$	$z_{\text{drag}}$	1059.86	$1059.81^{+0.64}_{-0.60}$
$\Omega_c h^2$	0.11854	$0.1186^{+0.0021}_{-0.0022}$	$c_{100}$	0.99825	$0.9982^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.46	$147.47^{+0.51}_{-0.50}$
$100\theta_{\text{MC}}$	1.04093	$1.04091^{+0.00059}_{-0.00057}$	$c_{217}$	0.99574	$0.9958^{+0.0029}_{-0.0028}$	$k_{\text{D}}$	0.14049	$0.14046^{+0.00059}_{-0.00058}$
$\tau$	0.1080	$0.104^{+0.043}_{-0.045}$	$H_0$	67.88	$67.82^{+0.97}_{-0.97}$	$100\theta_{\text{D}}$	0.160787	$0.16082^{+0.00035}_{-0.00035}$
$\ln(10^{10} A_s)$	3.148	$3.140^{+0.083}_{-0.090}$	$\Omega_{\Lambda}$	0.6928	$0.692^{+0.013}_{-0.013}$	$z_{\text{eq}}$	3367.7	$3369^{+49}_{-49}$
$n_s$	0.9692	$0.9683^{+0.0087}_{-0.0084}$	$\Omega_m$	0.3072	$0.308^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010279	$0.01028^{+0.00015}_{-0.00015}$
$y_{\text{cal}}$	1.0001	$1.0003^{+0.0050}_{-0.0050}$	$\Omega_m h^2$	0.14157	$0.1416^{+0.0020}_{-0.0020}$	$100\theta_{\text{eq}}$	0.8196	$0.8192^{+0.0094}_{-0.0092}$
$A_{217}^{\text{CIB}}$	63.3	$63^{+10}_{-10}$	$\Omega_m h^3$	0.09610	$0.09606^{+0.00059}_{-0.00059}$	$100\theta_{s,\text{eq}}$	0.45264	$0.4525^{+0.0048}_{-0.0047}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.40	—	$\sigma_8$	0.8503	$0.847^{+0.035}_{-0.036}$	$r_{\text{drag}}/D_V(0.57)$	0.07180	$0.07177^{+0.00073}_{-0.00073}$
$A_{143}^{\text{tSZ}}$	6.97	$5.52^{+3.8}_{-3.7}$	$\sigma_8 \Omega_m^{0.5}$	0.4713	$0.470^{+0.020}_{-0.021}$	$H(0.57)$	93.131	$93.10^{+0.45}_{-0.44}$
$A_{100}^{\text{PS}}$	250	$256^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6331	$0.631^{+0.025}_{-0.027}$	$D_A(0.57)$	1383.9	$1385^{+13}_{-13}$
$A_{143}^{\text{PS}}$	42.1	$42^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0321	$1.029^{+0.041}_{-0.043}$	$F_{\text{AP}}(0.57)$	0.67494	$0.6751^{+0.0033}_{-0.0033}$
$A_{143 \times 217}^{\text{PS}}$	42.9	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.551	$2.545^{+0.096}_{-0.10}$	$f\sigma_8(0.57)$	0.4933	$0.492^{+0.020}_{-0.021}$
$A_{217}^{\text{PS}}$	102.0	$98^{+20}_{-20}$	$z_{\text{re}}$	12.48	$12.1^{+3.6}_{-3.9}$	$\sigma_8(0.57)$	0.6337	$0.631^{+0.027}_{-0.028}$
$A^{\text{kSZ}}$	0.00	$< 7.27$	$10^9 A_s$	2.328	$2.31^{+0.20}_{-0.20}$	$f_{2000}^{143}$	27.6	$28^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	7.34	$7.36^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8761	$1.876^{+0.023}_{-0.023}$	$f_{2000}^{143 \times 217}$	30.92	$31^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	8.85	$8.82^{+3.7}_{-3.6}$	$D_{40}$	1244.3	$1245^{+28}_{-26}$	$f_{2000}^{217}$	104.52	$104.9^{+3.8}_{-3.8}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$16.8^{+8.2}_{-8.0}$	$D_{220}$	5729	$5730^{+77}_{-77}$	$\chi_{\text{lowl}}^2$	15.45	$15.6 (\nu: 1.1)$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{810}$	2532.9	$2533^{+27}_{-28}$	$\chi_{\text{plik}}^2$	2430.0	$2449.0 (\nu: 22.4)$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	815.2	$814.8^{+9.6}_{-9.5}$	$\chi_{\text{H070p6}}^2$	0.669	$0.72 (\nu: 0.0)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0491^{+0.0098}_{-0.0096}$	$D_{2000}$	231.39	$231.1^{+3.3}_{-3.2}$	$\chi_{\text{JLA}}^2$	706.639	$706.69 (\nu: 0.0)$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.099^{+0.065}_{-0.065}$	$n_{s,0.002}$	0.9692	$0.9683^{+0.0087}_{-0.0084}$	$\chi_{6\text{DF}}^2$	0.006	$0.040 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	0.1005	$0.100^{+0.013}_{-0.013}$	$Y_{\text{P}}$	0.245399	$0.24539^{+0.00013}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.47	$1.49 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.090}_{-0.091}$	$Y_{\text{P}}^{\text{BBN}}$	0.246725	$0.24671^{+0.00013}_{-0.00013}$	$\chi_{\text{DR11CMASS}}^2$	2.41	$2.75 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.25}_{-0.25}$	$10^5 D/H$	2.589	$2.594^{+0.054}_{-0.054}$	$\chi_{\text{DR11LOWZ}}^2$	0.43	$0.57 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.076}_{-0.073}$	Age/Gyr	13.7895	$13.793^{+0.043}_{-0.043}$	$\chi_{\text{prior}}^2$	6.65	$19.2 (\nu: 15.2)$
$A_{100 \times 143}^{\text{dustTE}}$	0.130	$0.131^{+0.057}_{-0.058}$	$z_*$	1089.774	$1089.82^{+0.47}_{-0.47}$	$\chi_{\text{BAO}}^2$	4.32	$4.85 (\nu: 0.3)$
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.30^{+0.17}_{-0.17}$	$r_*$	144.798	$144.79^{+0.50}_{-0.49}$	$\chi_{\text{CMB}}^2$	2445.4	$2464.6 (\nu: 22.0)$
$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.10}$	$100\theta_*$	1.04112	$1.04110^{+0.00059}_{-0.00057}$			
$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.33^{+0.15}_{-0.16}$	$D_A/\text{Gpc}$	13.9079	$13.908^{+0.047}_{-0.047}$			

Best-fit  $\chi_{\text{eff}}^2 = 3163.67$ ;  $\bar{\chi}_{\text{eff}}^2 = 3196.11$ ;  $R - 1 = 0.01055$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMASS: 2.41 DR11LOWZ: 0.43 CMB - commander\_rc2.v1.1\_l2\_29\_B: 15.45 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.95 Hubble -

## 2.27 base\_plikHM\_TTTEEE\_lowl\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02232^{+0.00033}_{-0.00034}$	$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.16}_{-0.17}$	$10^5 D/H$	$2.601^{+0.064}_{-0.062}$
$\Omega_c h^2$	$0.1191^{+0.0031}_{-0.0031}$	$A_{143}^{\text{dustTE}}$	$0.15^{+0.11}_{-0.11}$	Age/Gyr	$13.801^{+0.056}_{-0.056}$
$100\theta_{\text{MC}}$	$1.04085^{+0.00065}_{-0.00065}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$z_*$	$1089.91^{+0.63}_{-0.62}$
$\tau$	$0.100^{+0.047}_{-0.047}$	$A_{217}^{\text{dustTE}}$	$1.66^{+0.50}_{-0.51}$	$r_*$	$144.70^{+0.68}_{-0.66}$
$\ln(10^{10} A_s)$	$3.134^{+0.089}_{-0.090}$	$c_{100}$	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	$1.04104^{+0.00064}_{-0.00063}$
$n_s$	$0.967^{+0.011}_{-0.010}$	$c_{217}$	$0.9959^{+0.0028}_{-0.0028}$	$D_A/\text{Gpc}$	$13.899^{+0.063}_{-0.061}$
$y_{\text{cal}}$	$1.0003^{+0.0050}_{-0.0050}$	$H_0$	$67.6^{+1.4}_{-1.4}$	$z_{\text{drag}}$	$1059.76^{+0.63}_{-0.66}$
$A_{217}^{\text{CIB}}$	$63^{+10}_{-10}$	$\Omega_\Lambda$	$0.689^{+0.019}_{-0.020}$	$r_{\text{drag}}$	$147.38^{+0.66}_{-0.65}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m$	$0.311^{+0.020}_{-0.019}$	$k_D$	$0.14052^{+0.00068}_{-0.00066}$
$A_{143}^{\text{tSZ}}$	$5.47^{+3.6}_{-3.8}$	$\Omega_m h^2$	$0.1421^{+0.0029}_{-0.0029}$	$100\theta_D$	$0.16085^{+0.00037}_{-0.00036}$
$A_{100}^{\text{PS}}$	$257^{+50}_{-50}$	$\Omega_m h^3$	$0.09604^{+0.00059}_{-0.00059}$	$z_{\text{eq}}$	$3380^{+69}_{-70}$
$A_{143}^{\text{PS}}$	$42^{+20}_{-20}$	$\sigma_8$	$0.846^{+0.035}_{-0.034}$	$k_{\text{eq}}$	$0.01032^{+0.00021}_{-0.00021}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	$0.472^{+0.021}_{-0.021}$	$100\theta_{\text{eq}}$	$0.817^{+0.014}_{-0.013}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.632^{+0.025}_{-0.025}$	$100\theta_{\text{s,eq}}$	$0.4514^{+0.0070}_{-0.0067}$
$A^{\text{kSZ}}$	$< 7.36$	$\sigma_8/h^{0.5}$	$1.029^{+0.040}_{-0.040}$	$r_{\text{drag}}/D_V(0.57)$	$0.0716^{+0.0011}_{-0.0010}$
$A_{100}^{\text{dustTT}}$	$7.37^{+3.7}_{-3.6}$	$\langle d^2 \rangle^{1/2}$	$2.545^{+0.094}_{-0.095}$	$H(0.57)$	$93.01^{+0.62}_{-0.60}$
$A_{143}^{\text{dustTT}}$	$8.84^{+3.7}_{-3.7}$	$z_{\text{re}}$	$11.8^{+3.6}_{-4.1}$	$D_A(0.57)$	$1388^{+19}_{-19}$
$A_{143 \times 217}^{\text{dustTT}}$	$16.8^{+8.3}_{-8.0}$	$10^9 A_s$	$2.30^{+0.20}_{-0.21}$	$F_{\text{AP}}(0.57)$	$0.6759^{+0.0049}_{-0.0048}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.879^{+0.025}_{-0.025}$	$f\sigma_8(0.57)$	$0.492^{+0.019}_{-0.019}$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{40}$	$1246^{+27}_{-27}$	$\sigma_8(0.57)$	$0.630^{+0.028}_{-0.027}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0489^{+0.0099}_{-0.0098}$	$D_{220}$	$5729^{+78}_{-77}$	$f_{2000}^{143}$	$29^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0995^{+0.064}_{-0.064}$	$D_{810}$	$2533^{+27}_{-28}$	$f_{2000}^{143 \times 217}$	$31^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.013}_{-0.013}$	$D_{1420}$	$814.6^{+9.6}_{-9.4}$	$f_{2000}^{217}$	$105.1^{+3.9}_{-3.8}$
$A_{143 \times 217}^{\text{dustEE}}$	$0.224^{+0.090}_{-0.093}$	$D_{2000}$	$230.9^{+3.4}_{-3.3}$	$\chi_{\text{lowl}}^2$	$15.7 (\nu: 1.1)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.25}$	$n_{\text{s},0.002}$	$0.967^{+0.011}_{-0.010}$	$\chi_{\text{plik}}^2$	$2449.4 (\nu: 22.4)$
$A_{100}^{\text{dustTE}}$	$0.141^{+0.076}_{-0.073}$	$Y_{\text{P}}$	$0.24537^{+0.00015}_{-0.00016}$	$\chi_{\text{prior}}^2$	$19.2 (\nu: 15.3)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.131^{+0.057}_{-0.058}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24670^{+0.00015}_{-0.00016}$	$\chi_{\text{CMB}}^2$	$2465.1 (\nu: 22.2)$

$$\bar{\chi}_{\text{eff}}^2 = 2484.26; R - 1 = 0.00864$$

## 2.28 base\_plikHM\_TTTEEE\_lowl\_post\_BAO\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02234^{+0.00029}_{-0.00028}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.33^{+0.16}_{-0.15}$	$100\theta_*$	$1.04107^{+0.00059}_{-0.00057}$
$\Omega_c h^2$	$0.1188^{+0.0022}_{-0.0022}$	$A_{217}^{\text{dustTE}}$	$1.66^{+0.51}_{-0.51}$	$D_A/\text{Gpc}$	$13.904^{+0.047}_{-0.047}$
$100\theta_{\text{MC}}$	$1.04089^{+0.00060}_{-0.00058}$	$c_{100}$	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	$1059.78^{+0.61}_{-0.61}$
$\tau$	$0.103^{+0.043}_{-0.044}$	$c_{217}$	$0.9958^{+0.0029}_{-0.0028}$	$r_{\text{drag}}$	$147.43^{+0.51}_{-0.51}$
$\ln(10^{10} A_s)$	$3.138^{+0.083}_{-0.086}$	$H_0$	$67.7^{+1.0}_{-0.99}$	$k_D$	$0.14048^{+0.00059}_{-0.00059}$
$n_s$	$0.9678^{+0.0086}_{-0.0084}$	$\Omega_\Lambda$	$0.691^{+0.013}_{-0.014}$	$100\theta_D$	$0.16083^{+0.00035}_{-0.00034}$
$y_{\text{cal}}$	$1.0003^{+0.0050}_{-0.0050}$	$\Omega_m$	$0.309^{+0.014}_{-0.013}$	$z_{\text{eq}}$	$3374^{+50}_{-49}$
$A_{217}^{\text{CIB}}$	$63^{+10}_{-10}$	$\Omega_m h^2$	$0.1418^{+0.0021}_{-0.0021}$	$k_{\text{eq}}$	$0.01030^{+0.00015}_{-0.00015}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^3$	$0.09605^{+0.00059}_{-0.00059}$	$100\theta_{\text{eq}}$	$0.8183^{+0.0096}_{-0.0094}$
$A_{143}^{\text{tSZ}}$	$5.50^{+3.8}_{-3.7}$	$\sigma_8$	$0.847^{+0.035}_{-0.035}$	$100\theta_{\text{s,eq}}$	$0.4520^{+0.0049}_{-0.0048}$
$A_{100}^{\text{PS}}$	$257^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	$0.471^{+0.019}_{-0.020}$	$r_{\text{drag}}/D_V(0.57)$	$0.07170^{+0.00076}_{-0.00074}$
$A_{143}^{\text{PS}}$	$42^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.632^{+0.025}_{-0.026}$	$H(0.57)$	$93.06^{+0.45}_{-0.45}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$1.029^{+0.041}_{-0.042}$	$D_A(0.57)$	$1386^{+13}_{-13}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	$2.545^{+0.095}_{-0.098}$	$F_{\text{AP}}(0.57)$	$0.6755^{+0.0034}_{-0.0034}$
$A^{\text{kSZ}}$	$< 7.32$	$z_{\text{re}}$	$12.0^{+3.3}_{-3.9}$	$f\sigma_8(0.57)$	$0.492^{+0.019}_{-0.020}$
$A_{100}^{\text{dustTT}}$	$7.36^{+3.7}_{-3.7}$	$10^9 A_s$	$2.31^{+0.20}_{-0.19}$	$\sigma_8(0.57)$	$0.631^{+0.027}_{-0.027}$
$A_{143}^{\text{dustTT}}$	$8.82^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	$1.877^{+0.023}_{-0.023}$	$f_{2000}^{143}$	$28^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	$16.8^{+8.2}_{-8.0}$	$D_{40}$	$1246^{+27}_{-26}$	$f_{2000}^{143 \times 217}$	$31^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{220}$	$5729^{+77}_{-77}$	$f_{2000}^{217}$	$105.0^{+3.8}_{-3.7}$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{810}$	$2533^{+27}_{-28}$	$\chi_{\text{lowl}}^2$	$15.6 (\nu: 1.1)$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0490^{+0.0098}_{-0.0096}$	$D_{1420}$	$814.6^{+9.6}_{-9.5}$	$\chi_{\text{plik}}^2$	$2448.9 (\nu: 21.9)$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0996^{+0.065}_{-0.065}$	$D_{2000}$	$231.0^{+3.2}_{-3.3}$	$\chi_{6\text{DF}}^2$	$0.049 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.013}_{-0.013}$	$n_{\text{s},0.002}$	$0.9678^{+0.0086}_{-0.0084}$	$\chi_{\text{MGS}}^2$	$1.39 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.224^{+0.090}_{-0.091}$	$Y_{\text{P}}$	$0.24538^{+0.00013}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	$2.79 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24670^{+0.00013}_{-0.00013}$	$\chi_{\text{DR11LOWZ}}^2$	$0.67 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	$0.141^{+0.076}_{-0.073}$	$10^5 \text{D}/\text{H}$	$2.597^{+0.054}_{-0.053}$	$\chi_{\text{prior}}^2$	$19.2 (\nu: 15.2)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.131^{+0.057}_{-0.058}$	$\text{Age}/\text{Gyr}$	$13.797^{+0.043}_{-0.044}$	$\chi_{\text{BAO}}^2$	$4.91 (\nu: 0.3)$
$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.17}_{-0.17}$	$z_*$	$1089.86^{+0.49}_{-0.48}$	$\chi_{\text{CMB}}^2$	$2464.6 (\nu: 21.7)$
$A_{143}^{\text{dustTE}}$	$0.15^{+0.11}_{-0.10}$	$r_*$	$144.75^{+0.50}_{-0.50}$		

$$\bar{\chi}_{\text{eff}}^2 = 2488.68; R - 1 = 0.00998$$

## 2.29 base\_plikHM\_TT\_lowl\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02230	$0.02228^{+0.00051}_{-0.00050}$	$\Omega_m h^2$	0.14114	$0.1412^{+0.0045}_{-0.0046}$	$z_{\text{drag}}$	1059.63	$1059.6^{+1.0}_{-0.96}$
$\Omega_c h^2$	0.11819	$0.1182^{+0.0049}_{-0.0050}$	$\Omega_m h^3$	0.09594	$0.09592^{+0.00090}_{-0.00088}$	$r_{\text{drag}}$	147.65	$147.7^{+1.0}_{-1.0}$
$100\theta_{\text{MC}}$	1.04106	$1.0411^{+0.0010}_{-0.0010}$	$\sigma_8$	0.8175	$0.817^{+0.025}_{-0.024}$	$k_{\text{D}}$	0.14022	$0.1402^{+0.0010}_{-0.0010}$
$\tau$	0.0706	$0.070^{+0.049}_{-0.046}$	$\sigma_8 \Omega_m^{0.5}$	0.4518	$0.452^{+0.018}_{-0.018}$	$100\theta_{\text{D}}$	0.16094	$0.16097^{+0.00054}_{-0.00054}$
$\ln(10^{10} A_s)$	3.071	$3.069^{+0.086}_{-0.081}$	$\sigma_8 \Omega_m^{0.25}$	0.6077	$0.607^{+0.015}_{-0.015}$	$z_{\text{eq}}$	3357	$3358^{+110}_{-110}$
$n_s$	0.9689	$0.969^{+0.015}_{-0.014}$	$\sigma_8/h^{0.5}$	0.9915	$0.991^{+0.024}_{-0.024}$	$k_{\text{eq}}$	0.010247	$0.01025^{+0.00033}_{-0.00034}$
$y_{\text{cal}}$	1.00005	$1.0001^{+0.0048}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.452	$2.451^{+0.056}_{-0.057}$	$100\theta_{\text{eq}}$	0.8213	$0.821^{+0.022}_{-0.021}$
$A_{217}^{\text{CIB}}$	67.3	$64^{+10}_{-10}$	$z_{\text{re}}$	9.26	$9.03^{+4.4}_{-4.6}$	$100\theta_{s,\text{eq}}$	0.4536	$0.454^{+0.011}_{-0.011}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.156	$2.15^{+0.19}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	0.07193	$0.0719^{+0.0018}_{-0.0017}$
$A_{143}^{\text{tSZ}}$	7.16	$5.10^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8720	$1.872^{+0.029}_{-0.030}$	$H(0.57)$	93.13	$93.1^{+1.0}_{-1.0}$
$A_{100}^{\text{PS}}$	254	$259^{+50}_{-50}$	$D_{40}$	1224.4	$1227^{+26}_{-25}$	$D_A(0.57)$	1382.9	$1383^{+30}_{-31}$
$A_{143}^{\text{PS}}$	39.2	$44^{+20}_{-20}$	$D_{220}$	5717	$5718^{+79}_{-82}$	$F_{\text{AP}}(0.57)$	0.6745	$0.6746^{+0.0077}_{-0.0077}$
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$D_{810}$	2531.5	$2531^{+27}_{-28}$	$f\sigma_8(0.57)$	0.4737	$0.473^{+0.011}_{-0.012}$
$A_{217}^{\text{PS}}$	97.1	$96^{+20}_{-20}$	$D_{1420}$	814.8	$814.5^{+9.8}_{-10}$	$\sigma_8(0.57)$	0.6097	$0.609^{+0.024}_{-0.023}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.27	$230.1^{+3.7}_{-3.8}$	$f_{2000}^{143}$	29.9	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.47	$7.45^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9689	$0.969^{+0.015}_{-0.014}$	$f_{2000}^{143 \times 217}$	32.47	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.06	$9.09^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245360	$0.24535^{+0.00023}_{-0.00023}$	$f_{2000}^{217}$	106.03	$106.2^{+4.1}_{-4.2}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.1}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246687	$0.24668^{+0.00023}_{-0.00023}$	$\chi_{\text{lensing}}^2$	9.37	10.1 ( $\nu$ : 1.7)
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 \text{D}/\text{H}$	2.605	$2.609^{+0.097}_{-0.096}$	$\chi_{\text{lowl}}^2$	13.29	13.52 ( $\nu$ : 0.5)
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.793	$13.794^{+0.087}_{-0.091}$	$\chi_{\text{plik}}^2$	766.1	779.7 ( $\nu$ : 15.9)
$c_{217}$	0.99596	$0.9960^{+0.0029}_{-0.0028}$	$z_*$	1089.85	$1089.88^{+0.98}_{-0.99}$	$\chi_{\text{prior}}^2$	2.08	7.46 ( $\nu$ : 6.4)
$H_0$	67.98	$68.0^{+2.3}_{-2.2}$	$r_*$	144.96	$145.0^{+1.1}_{-1.0}$	$\chi_{\text{CMB}}^2$	788.7	803.4 ( $\nu$ : 15.2)
$\Omega_\Lambda$	0.6946	$0.694^{+0.029}_{-0.031}$	$100\theta_*$	1.04126	$1.04127^{+0.00099}_{-0.00099}$			
$\Omega_m$	0.3054	$0.306^{+0.031}_{-0.029}$	$D_A/\text{Gpc}$	13.921	$13.922^{+0.097}_{-0.095}$			

Best-fit  $\chi_{\text{eff}}^2 = 790.81$ ;  $\bar{\chi}_{\text{eff}}^2 = 810.82$ ;  $R - 1 = 0.00684$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.37 commander\_rc2\_v1.1\_l2\_29\_B: 13.29 plik\_dx11dr2\_HM\_v18.TT: 766.07



## 2.30 base\_plikHM\_TT\_lowl\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022263	$0.02226^{+0.00040}_{-0.00039}$	$\Omega_m h^3$	0.09592	$0.09591^{+0.00089}_{-0.00087}$	$k_D$	0.14025	$0.14023^{+0.00083}_{-0.00083}$
$\Omega_c h^2$	0.11853	$0.1185^{+0.0026}_{-0.0026}$	$\sigma_8$	0.8164	$0.816^{+0.021}_{-0.021}$	$100\theta_D$	0.160969	$0.16098^{+0.00050}_{-0.00050}$
$100\theta_{MC}$	1.04102	$1.04103^{+0.00084}_{-0.00082}$	$\sigma_8 \Omega_m^{0.5}$	0.4527	$0.452^{+0.013}_{-0.013}$	$z_{eq}$	3364	$3364^{+59}_{-59}$
$\tau$	0.0677	$0.067^{+0.032}_{-0.032}$	$\sigma_8 \Omega_m^{0.25}$	0.6079	$0.607^{+0.015}_{-0.015}$	$k_{eq}$	0.010269	$0.01027^{+0.00018}_{-0.00018}$
$\ln(10^{10} A_s)$	3.066	$3.064^{+0.058}_{-0.059}$	$\sigma_8/h^{0.5}$	0.9913	$0.990^{+0.024}_{-0.024}$	$100\theta_{eq}$	0.8199	$0.820^{+0.011}_{-0.011}$
$n_s$	0.9681	$0.9677^{+0.0094}_{-0.0092}$	$\langle d^2 \rangle^{1/2}$	2.451	$2.450^{+0.056}_{-0.057}$	$100\theta_{s,eq}$	0.4529	$0.4529^{+0.0058}_{-0.0057}$
$y_{cal}$	0.99997	$1.0001^{+0.0049}_{-0.0050}$	$z_{re}$	9.00	$8.85^{+3.0}_{-3.2}$	$r_{drag}/D_V(0.57)$	0.07181	$0.07182^{+0.00090}_{-0.00088}$
$A_{217}^{CIB}$	67.5	$65^{+10}_{-10}$	$10^9 A_s$	2.145	$2.14^{+0.13}_{-0.12}$	$H(0.57)$	93.06	$93.06^{+0.58}_{-0.56}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8732	$1.873^{+0.023}_{-0.023}$	$D_A(0.57)$	1385.0	$1385^{+16}_{-16}$
$A_{143}^{tSZ}$	7.19	$5.07^{+3.8}_{-3.8}$	$D_{40}$	1224.9	$1227^{+23}_{-23}$	$F_{AP}(0.57)$	0.67501	$0.6750^{+0.0041}_{-0.0040}$
$A_{100}^{PS}$	254	$260^{+50}_{-50}$	$D_{220}$	5714	$5717^{+78}_{-81}$	$f\sigma_8(0.57)$	0.4736	$0.473^{+0.011}_{-0.012}$
$A_{143}^{PS}$	39.4	$44^{+20}_{-20}$	$D_{810}$	2531.6	$2532^{+27}_{-28}$	$\sigma_8(0.57)$	0.6083	$0.608^{+0.018}_{-0.017}$
$A_{143 \times 217}^{PS}$	33	$38^{+20}_{-20}$	$D_{1420}$	814.6	$814.4^{+9.7}_{-10}$	$f_{2000}^{143}$	30.0	$30^{+6}_{-6}$
$A_{217}^{PS}$	97.1	$96^{+20}_{-20}$	$D_{2000}$	230.10	$230.0^{+3.4}_{-3.5}$	$f_{2000}^{143 \times 217}$	32.60	$33^{+4}_{-4}$
$A^{kSZ}$	0.0	—	$n_{s,0.002}$	0.9681	$0.9677^{+0.0094}_{-0.0092}$	$f_{2000}^{217}$	106.15	$106.3^{+3.9}_{-3.9}$
$A_{100}^{dustTT}$	7.45	$7.46^{+3.7}_{-3.7}$	$Y_P$	0.245346	$0.24534^{+0.00018}_{-0.00018}$	$\chi_{lensing}^2$	9.36	10.1 ( $\nu: 1.6$ )
$A_{143}^{dustTT}$	9.09	$9.06^{+3.5}_{-3.6}$	$Y_P^{BBN}$	0.246672	$0.24667^{+0.00018}_{-0.00018}$	$\chi_{lowl}^2$	13.34	13.50 ( $\nu: 0.4$ )
$A_{143 \times 217}^{dustTT}$	17.8	$17.2^{+8.1}_{-8.0}$	$10^5 D/H$	2.611	$2.613^{+0.075}_{-0.075}$	$\chi_{plik}^2$	766.0	779.1 ( $\nu: 15.0$ )
$A_{217}^{dustTT}$	82.0	$82^{+10}_{-10}$	Age/Gyr	13.799	$13.799^{+0.058}_{-0.059}$	$\chi_{6DF}^2$	0.006	0.051 ( $\nu: 0.0$ )
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.92	$1089.94^{+0.62}_{-0.62}$	$\chi_{MGS}^2$	1.47	1.55 ( $\nu: 0.2$ )
$c_{217}$	0.99599	$0.9960^{+0.0028}_{-0.0028}$	$r_*$	144.90	$144.90^{+0.63}_{-0.62}$	$\chi_{DR11CMass}^2$	2.40	2.90 ( $\nu: 0.3$ )
$H_0$	67.82	$67.8^{+1.2}_{-1.2}$	$100\theta_*$	1.04122	$1.04123^{+0.00083}_{-0.00082}$	$\chi_{DR11LOWZ}^2$	0.42	0.58 ( $\nu: 0.2$ )
$\Omega_\Lambda$	0.6925	$0.692^{+0.015}_{-0.016}$	$D_A/Gpc$	13.916	$13.916^{+0.061}_{-0.060}$	$\chi_{prior}^2$	2.08	7.42 ( $\nu: 6.2$ )
$\Omega_m$	0.3075	$0.308^{+0.016}_{-0.015}$	$z_{drag}$	1059.59	$1059.57^{+0.88}_{-0.85}$	$\chi_{CMB}^2$	788.7	802.8 ( $\nu: 14.5$ )
$\Omega_m h^2$	0.14143	$0.1414^{+0.0025}_{-0.0024}$	$r_{drag}$	147.60	$147.61^{+0.67}_{-0.66}$	$\chi_{BAO}^2$	4.30	5.08 ( $\nu: 0.6$ )

Best-fit  $\chi_{eff}^2 = 795.13$ ;  $\bar{\chi}_{eff}^2 = 815.27$ ;  $R - 1 = 0.01077$

$\chi_{eff}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.40 DR11LOWZ: 0.42 CMB - smica\_g30\_ftl\_full\_pp: 9.36 commander\_rc2\_v1.1\_l2\_29\_B: 13.34 plik\_dx11dr2\_HM\_v18\_TT: 766.05

### 2.31 base\_plikHM\_TT\_lowl\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022305	$0.02228^{+0.00039}_{-0.00039}$	$\sigma_8$	0.8177	$0.817^{+0.021}_{-0.021}$	$z_{\text{eq}}$	3359	$3358^{+57}_{-57}$
$\Omega_c h^2$	0.11827	$0.1183^{+0.0025}_{-0.0025}$	$\sigma_8 \Omega_m^{0.5}$	0.4521	$0.452^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010253	$0.01025^{+0.00017}_{-0.00017}$
$100\theta_{\text{MC}}$	1.04108	$1.04107^{+0.00083}_{-0.00082}$	$\sigma_8 \Omega_m^{0.25}$	0.6080	$0.607^{+0.015}_{-0.015}$	$100\theta_{\text{eq}}$	0.8210	$0.821^{+0.011}_{-0.011}$
$\tau$	0.0704	$0.069^{+0.031}_{-0.032}$	$\sigma_8/h^{0.5}$	0.9919	$0.991^{+0.024}_{-0.024}$	$100\theta_{\text{s,eq}}$	0.4534	$0.4535^{+0.0056}_{-0.0055}$
$\ln(10^{10} A_s)$	3.071	$3.068^{+0.057}_{-0.058}$	$\langle d^2 \rangle^{1/2}$	2.453	$2.450^{+0.055}_{-0.057}$	$r_{\text{drag}}/D_V(0.57)$	0.07191	$0.07192^{+0.00086}_{-0.00084}$
$n_s$	0.9688	$0.9684^{+0.0091}_{-0.0090}$	$z_{\text{re}}$	9.24	$9.07^{+2.9}_{-3.1}$	$H(0.57)$	93.14	$93.12^{+0.57}_{-0.55}$
$y_{\text{cal}}$	1.00006	$1.0001^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.156	$2.15^{+0.13}_{-0.12}$	$D_A(0.57)$	1383.0	$1383^{+15}_{-15}$
$A_{217}^{\text{CIB}}$	67.3	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8726	$1.872^{+0.023}_{-0.023}$	$F_{\text{AP}}(0.57)$	0.67456	$0.6746^{+0.0039}_{-0.0038}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1224.9	$1226^{+23}_{-23}$	$f\sigma_8(0.57)$	0.4739	$0.473^{+0.011}_{-0.011}$
$A_{143}^{\text{tSZ}}$	7.21	$5.11^{+3.8}_{-3.8}$	$D_{220}$	5718	$5718^{+78}_{-82}$	$\sigma_8(0.57)$	0.6097	$0.609^{+0.018}_{-0.017}$
$A_{100}^{\text{PS}}$	253	$259^{+50}_{-50}$	$D_{810}$	2532.1	$2531^{+27}_{-28}$	$f_{2000}^{143}$	29.8	$30^{+6}_{-6}$
$A_{143}^{\text{PS}}$	38.9	$44^{+20}_{-20}$	$D_{1420}$	815.1	$814.6^{+9.7}_{-9.8}$	$f_{2000}^{143 \times 217}$	32.41	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{PS}}$	32	$38^{+20}_{-20}$	$D_{2000}$	230.36	$230.1^{+3.4}_{-3.4}$	$f_{2000}^{217}$	105.94	$106.2^{+3.9}_{-3.9}$
$A_{217}^{\text{PS}}$	96.9	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9688	$0.9684^{+0.0091}_{-0.0090}$	$\chi_{\text{lensing}}^2$	9.43	10.1 ( $\nu$ : 1.6)
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245364	$0.24535^{+0.00018}_{-0.00018}$	$\chi_{\text{lowl}}^2$	13.33	13.44 ( $\nu$ : 0.3)
$A_{100}^{\text{dustTT}}$	7.44	$7.46^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246691	$0.24668^{+0.00018}_{-0.00018}$	$\chi_{\text{plik}}^2$	765.9	779.2 ( $\nu$ : 15.0)
$A_{143}^{\text{dustTT}}$	9.11	$9.07^{+3.5}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.604	$2.608^{+0.074}_{-0.074}$	$\chi_{\text{H070p6}}^2$	0.63	0.67 ( $\nu$ : 0.0)
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.1}_{-8.0}$	Age/Gyr	13.792	$13.794^{+0.058}_{-0.058}$	$\chi_{\text{JLA}}^2$	706.607	706.66 ( $\nu$ : 0.0)
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$z_*$	1089.85	$1089.88^{+0.60}_{-0.60}$	$\chi_{6\text{DF}}^2$	0.001	0.043 ( $\nu$ : 0.0)
$c_{100}$	0.99788	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.93	$144.95^{+0.61}_{-0.61}$	$\chi_{\text{MGS}}^2$	1.61	1.69 ( $\nu$ : 0.2)
$c_{217}$	0.99599	$0.9960^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04128	$1.04127^{+0.00082}_{-0.00081}$	$\chi_{\text{DR11CMass}}^2$	2.44	2.90 ( $\nu$ : 0.2)
$H_0$	67.97	$68.0^{+1.1}_{-1.1}$	$D_A/\text{Gpc}$	13.918	$13.921^{+0.060}_{-0.059}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	0.46 ( $\nu$ : 0.1)
$\Omega_\Lambda$	0.6943	$0.694^{+0.015}_{-0.015}$	$z_{\text{drag}}$	1059.67	$1059.61^{+0.86}_{-0.86}$	$\chi_{\text{prior}}^2$	2.16	7.42 ( $\nu$ : 6.2)
$\Omega_m$	0.3057	$0.306^{+0.015}_{-0.015}$	$r_{\text{drag}}$	147.62	$147.65^{+0.66}_{-0.66}$	$\chi_{\text{CMB}}^2$	788.7	802.7 ( $\nu$ : 14.4)
$\Omega_m h^2$	0.14122	$0.1412^{+0.0024}_{-0.0024}$	$k_{\text{D}}$	0.14026	$0.14021^{+0.00084}_{-0.00084}$	$\chi_{\text{BAO}}^2$	4.36	5.09 ( $\nu$ : 0.6)
$\Omega_m h^3$	0.09598	$0.09593^{+0.00089}_{-0.00088}$	$100\theta_{\text{D}}$	0.16093	$0.16096^{+0.00050}_{-0.00049}$			

Best-fit  $\chi_{\text{eff}}^2 = 1502.43$ ;  $\bar{\chi}_{\text{eff}}^2 = 1522.55$ ;  $R - 1 = 0.01084$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.44 DR11LOWZ: 0.32 CMB - smica\_g30\_ftl\_full\_pp: 9.43 commander\_rc2\_v1.1\_l2\_29\_B: 13.33 plik\_dx11dr2\_HM\_v18\_TT: 765.90 Hubble - H070p6: 0.63 SN - JLA December\_2013: 706.61

## 2.32 base\_plikHM\_TT\_lowl\_lensing\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02232^{+0.00050}_{-0.00045}$	$\Omega_m h^2$	$0.1407^{+0.0041}_{-0.0042}$	$z_{\text{drag}}$	$1059.65^{+0.97}_{-0.89}$
$\Omega_c h^2$	$0.1177^{+0.0044}_{-0.0045}$	$\Omega_m h^3$	$0.09594^{+0.00090}_{-0.00089}$	$r_{\text{drag}}$	$147.76^{+0.97}_{-0.94}$
$100\theta_{\text{MC}}$	$1.04115^{+0.00098}_{-0.00094}$	$\sigma_8$	$0.820^{+0.022}_{-0.021}$	$k_D$	$0.14012^{+0.00095}_{-0.0010}$
$\tau$	$0.076^{+0.040}_{-0.036}$	$\sigma_8 \Omega_m^{0.5}$	$0.451^{+0.018}_{-0.018}$	$100\theta_D$	$0.16094^{+0.00052}_{-0.00053}$
$\ln(10^{10} A_s)$	$3.079^{+0.072}_{-0.064}$	$\sigma_8 \Omega_m^{0.25}$	$0.608^{+0.015}_{-0.015}$	$z_{\text{eq}}$	$3346^{+97}_{-100}$
$n_s$	$0.970^{+0.014}_{-0.013}$	$\sigma_8/h^{0.5}$	$0.992^{+0.023}_{-0.022}$	$k_{\text{eq}}$	$0.01021^{+0.00030}_{-0.00031}$
$y_{\text{cal}}$	$1.0000^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	$2.455^{+0.053}_{-0.052}$	$100\theta_{\text{eq}}$	$0.824^{+0.020}_{-0.019}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$z_{\text{re}}$	$< 12.7$	$100\theta_{\text{s,eq}}$	$0.455^{+0.010}_{-0.0097}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.18^{+0.16}_{-0.14}$	$r_{\text{drag}}/D_V(0.57)$	$0.0721^{+0.0016}_{-0.0015}$
$A_{143}^{\text{tSZ}}$	$5.16^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	$1.869^{+0.026}_{-0.028}$	$H(0.57)$	$93.24^{+0.96}_{-0.90}$
$A_{100}^{\text{PS}}$	$258^{+50}_{-50}$	$D_{40}$	$1225^{+24}_{-24}$	$D_A(0.57)$	$1380^{+27}_{-28}$
$A_{143}^{\text{PS}}$	$43^{+20}_{-20}$	$D_{220}$	$5718^{+80}_{-82}$	$F_{\text{AP}}(0.57)$	$0.6737^{+0.0068}_{-0.0070}$
$A_{143 \times 217}^{\text{PS}}$	$38^{+20}_{-20}$	$D_{810}$	$2530^{+27}_{-27}$	$f\sigma_8(0.57)$	$0.474^{+0.011}_{-0.011}$
$A_{217}^{\text{PS}}$	$96^{+20}_{-20}$	$D_{1420}$	$814.6^{+9.8}_{-10}$	$\sigma_8(0.57)$	$0.612^{+0.020}_{-0.018}$
$A^{\text{kSZ}}$	—	$D_{2000}$	$230.3^{+3.6}_{-3.7}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	$7.45^{+3.7}_{-3.8}$	$n_{\text{s},0.002}$	$0.970^{+0.014}_{-0.013}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	$9.08^{+3.6}_{-3.6}$	$Y_{\text{P}}$	$0.24537^{+0.00022}_{-0.00021}$	$f_{2000}^{217}$	$106.0^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.1}_{-8.0}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24670^{+0.00022}_{-0.00021}$	$\chi_{\text{lensing}}^2$	$10.2 (\nu: 1.9)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^5 D/H$	$2.601^{+0.087}_{-0.092}$	$\chi_{\text{lowl}}^2$	$13.43 (\nu: 0.4)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	$13.785^{+0.082}_{-0.085}$	$\chi_{\text{plik}}^2$	$779.5 (\nu: 16.0)$
$c_{217}$	$0.9960^{+0.0029}_{-0.0028}$	$z_*$	$1089.78^{+0.86}_{-0.93}$	$\chi_{\text{prior}}^2$	$7.44 (\nu: 6.4)$
$H_0$	$68.2^{+2.1}_{-2.0}$	$r_*$	$145.1^{+1.0}_{-0.95}$	$\chi_{\text{CMB}}^2$	$803.2 (\nu: 15.0)$
$\Omega_\Lambda$	$0.697^{+0.027}_{-0.026}$	$100\theta_*$	$1.04134^{+0.00096}_{-0.00091}$		
$\Omega_m$	$0.303^{+0.026}_{-0.027}$	$D_A/\text{Gpc}$	$13.931^{+0.091}_{-0.088}$		

$$\bar{\chi}_{\text{eff}}^2 = 810.60; R - 1 = 0.00977$$

### 2.33 base\_plikHM\_TT\_lowl\_lensing\_post\_BAO\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02227^{+0.00039}_{-0.00038}$	$\Omega_m h^3$	$0.09592^{+0.00089}_{-0.00088}$	$k_D$	$0.14022^{+0.00084}_{-0.00084}$
$\Omega_c h^2$	$0.1184^{+0.0025}_{-0.0025}$	$\sigma_8$	$0.817^{+0.019}_{-0.019}$	$100\theta_D$	$0.16098^{+0.00050}_{-0.00049}$
$100\theta_{MC}$	$1.04105^{+0.00083}_{-0.00081}$	$\sigma_8 \Omega_m^{0.5}$	$0.453^{+0.013}_{-0.013}$	$z_{eq}$	$3362^{+56}_{-57}$
$\tau$	$0.069^{+0.027}_{-0.027}$	$\sigma_8 \Omega_m^{0.25}$	$0.608^{+0.014}_{-0.014}$	$k_{eq}$	$0.01026^{+0.00017}_{-0.00017}$
$\ln(10^{10} A_s)$	$3.068^{+0.052}_{-0.050}$	$\sigma_8/h^{0.5}$	$0.992^{+0.023}_{-0.021}$	$100\theta_{eq}$	$0.820^{+0.011}_{-0.011}$
$n_s$	$0.9681^{+0.0091}_{-0.0088}$	$\langle d^2 \rangle^{1/2}$	$2.453^{+0.053}_{-0.050}$	$100\theta_{s,eq}$	$0.4532^{+0.0056}_{-0.0054}$
$y_{cal}$	$1.0001^{+0.0049}_{-0.0050}$	$z_{re}$	$< 11.3$	$r_{drag}/D_V(0.57)$	$0.07186^{+0.00087}_{-0.00083}$
$A_{217}^{CIB}$	$65^{+10}_{-10}$	$10^9 A_s$	$2.15^{+0.11}_{-0.11}$	$H(0.57)$	$93.09^{+0.57}_{-0.54}$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.873^{+0.022}_{-0.023}$	$D_A(0.57)$	$1384^{+15}_{-16}$
$A_{143}^{tSZ}$	$5.10^{+3.8}_{-3.8}$	$D_{40}$	$1226^{+23}_{-23}$	$F_{AP}(0.57)$	$0.6748^{+0.0038}_{-0.0038}$
$A_{100}^{PS}$	$259^{+50}_{-50}$	$D_{220}$	$5716^{+77}_{-81}$	$f\sigma_8(0.57)$	$0.474^{+0.011}_{-0.010}$
$A_{143}^{PS}$	$44^{+20}_{-20}$	$D_{810}$	$2531^{+27}_{-27}$	$\sigma_8(0.57)$	$0.609^{+0.016}_{-0.015}$
$A_{143 \times 217}^{PS}$	$38^{+20}_{-20}$	$D_{1420}$	$814.3^{+9.7}_{-10}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{217}^{PS}$	$96^{+20}_{-20}$	$D_{2000}$	$230.0^{+3.4}_{-3.5}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A^{kSZ}$	—	$n_{s,0.002}$	$0.9681^{+0.0091}_{-0.0088}$	$f_{2000}^{217}$	$106.2^{+3.8}_{-3.9}$
$A_{100}^{dustTT}$	$7.45^{+3.7}_{-3.8}$	$Y_P$	$0.24535^{+0.00018}_{-0.00018}$	$\chi_{lensing}^2$	$10.1 (\nu: 1.7)$
$A_{143}^{dustTT}$	$9.07^{+3.5}_{-3.6}$	$Y_P^{BBN}$	$0.24667^{+0.00018}_{-0.00018}$	$\chi_{lowl}^2$	$13.50 (\nu: 0.4)$
$A_{143 \times 217}^{dustTT}$	$17.2^{+8.1}_{-8.0}$	$10^5 D/H$	$2.611^{+0.073}_{-0.074}$	$\chi_{plik}^2$	$778.9 (\nu: 14.8)$
$A_{217}^{dustTT}$	$82^{+10}_{-10}$	Age/Gyr	$13.797^{+0.057}_{-0.058}$	$\chi_{6DF}^2$	$0.045 (\nu: 0.0)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	$1089.91^{+0.60}_{-0.61}$	$\chi_{MGS}^2$	$1.60 (\nu: 0.2)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0028}$	$r_*$	$144.92^{+0.61}_{-0.60}$	$\chi_{DR11CMass}^2$	$2.87 (\nu: 0.2)$
$H_0$	$67.9^{+1.2}_{-1.1}$	$100\theta_*$	$1.04125^{+0.00082}_{-0.00080}$	$\chi_{DR11LOWZ}^2$	$0.52 (\nu: 0.1)$
$\Omega_\Lambda$	$0.693^{+0.015}_{-0.015}$	$D_A/Gpc$	$13.918^{+0.060}_{-0.059}$	$\chi_{prior}^2$	$7.44 (\nu: 6.2)$
$\Omega_m$	$0.307^{+0.015}_{-0.015}$	$z_{drag}$	$1059.58^{+0.91}_{-0.86}$	$\chi_{CMB}^2$	$802.6 (\nu: 14.2)$
$\Omega_m h^2$	$0.1413^{+0.0024}_{-0.0024}$	$r_{drag}$	$147.63^{+0.66}_{-0.65}$	$\chi_{BAO}^2$	$5.03 (\nu: 0.5)$

$$\bar{\chi}_{eff}^2 = 815.05; R - 1 = 0.01185$$

### 2.34 base\_plikHM\_TT\_lowl\_lensing\_post\_reion

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022162	$0.02217^{+0.00041}_{-0.00040}$	$\Omega_m h^2$	0.14280	$0.1425^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.44	$1059.45^{+0.87}_{-0.85}$
$\Omega_c h^2$	0.11999	$0.1196^{+0.0030}_{-0.0030}$	$\Omega_m h^3$	0.09590	$0.09588^{+0.00085}_{-0.00087}$	$r_{\text{drag}}$	147.33	$147.41^{+0.74}_{-0.69}$
$100\theta_{\text{MC}}$	1.04082	$1.04087^{+0.00081}_{-0.00082}$	$\sigma_8$	0.8078	$0.809^{+0.013}_{-0.012}$	$k_{\text{D}}$	0.14046	$0.14038^{+0.00085}_{-0.00088}$
$\tau$	0.0502	$0.054^{+0.015}_{-0.013}$	$\sigma_8 \Omega_m^{0.5}$	0.4546	$0.454^{+0.017}_{-0.017}$	$100\theta_{\text{D}}$	0.16103	$0.16104^{+0.00050}_{-0.00049}$
$\ln(10^{10} A_s)$	3.0347	$3.041^{+0.029}_{-0.026}$	$\sigma_8 \Omega_m^{0.25}$	0.6060	$0.606^{+0.015}_{-0.015}$	$z_{\text{eq}}$	3397	$3389^{+67}_{-67}$
$n_s$	0.9641	$0.9645^{+0.0090}_{-0.0087}$	$\sigma_8/h^{0.5}$	0.9858	$0.986^{+0.020}_{-0.021}$	$k_{\text{eq}}$	0.010368	$0.01034^{+0.00020}_{-0.00020}$
$y_{\text{cal}}$	1.00024	$1.0003^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.4367	$2.440^{+0.047}_{-0.047}$	$100\theta_{\text{eq}}$	0.8136	$0.815^{+0.013}_{-0.012}$
$A_{217}^{\text{CIB}}$	68.2	$65^{+10}_{-10}$	$z_{\text{re}}$	7.30	$< 8.97$	$100\theta_{s,\text{eq}}$	0.4497	$0.4505^{+0.0067}_{-0.0065}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.080	$2.093^{+0.061}_{-0.055}$	$r_{\text{drag}}/D_V(0.57)$	0.07131	$0.0714^{+0.0010}_{-0.00097}$
$A_{143}^{\text{tSZ}}$	7.10	$4.98^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8809	$1.879^{+0.022}_{-0.022}$	$H(0.57)$	92.79	$92.85^{+0.63}_{-0.63}$
$A_{100}^{\text{PS}}$	257	$262^{+50}_{-50}$	$D_{40}$	1229.2	$1230^{+24}_{-23}$	$D_A(0.57)$	1393.9	$1392^{+18}_{-19}$
$A_{143}^{\text{PS}}$	41.1	$45^{+20}_{-20}$	$D_{220}$	5714	$5717^{+79}_{-84}$	$F_{\text{AP}}(0.57)$	0.67734	$0.6768^{+0.0045}_{-0.0047}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{810}$	2535.4	$2534^{+26}_{-26}$	$f\sigma_8(0.57)$	0.4710	$0.4712^{+0.0097}_{-0.0099}$
$A_{217}^{\text{PS}}$	97.3	$96^{+20}_{-20}$	$D_{1420}$	814.7	$814.2^{+9.9}_{-10}$	$\sigma_8(0.57)$	0.5997	$0.6013^{+0.0089}_{-0.0082}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	229.69	$229.6^{+3.5}_{-3.5}$	$f_{2000}^{143}$	30.8	$31^{+6}_{-5}$
$A_{100}^{\text{dustTT}}$	7.36	$7.42^{+3.7}_{-3.9}$	$n_{s,0.002}$	0.9641	$0.9645^{+0.0090}_{-0.0087}$	$f_{2000}^{143 \times 217}$	33.29	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.07	$9.03^{+3.6}_{-3.7}$	$Y_{\text{P}}$	0.245299	$0.24530^{+0.00019}_{-0.00018}$	$f_{2000}^{217}$	106.76	$106.8^{+3.9}_{-3.8}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.2^{+8.3}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246625	$0.24663^{+0.00019}_{-0.00018}$	$\chi_{\text{lensing}}^2$	8.99	$9.65 (\nu: 0.7)$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$10^5 D/H$	2.631	$2.629^{+0.079}_{-0.078}$	$\chi_{\text{lowl}}^2$	13.53	$13.66 (\nu: 0.4)$
$c_{100}$	0.99789	$0.9979^{+0.0016}_{-0.0016}$	Age/Gyr	13.821	$13.817^{+0.059}_{-0.064}$	$\chi_{\text{plik}}^2$	766.9	$779.7 (\nu: 14.9)$
$c_{217}$	0.99609	$0.9961^{+0.0028}_{-0.0028}$	$z_*$	1090.18	$1090.14^{+0.66}_{-0.68}$	$\chi_{\text{prior}}^2$	2.19	$8.43 (\nu: 7.4)$
$H_0$	67.15	$67.3^{+1.4}_{-1.3}$	$r_*$	144.59	$144.68^{+0.71}_{-0.68}$	$\chi_{\text{CMB}}^2$	789.4	$803.0 (\nu: 14.8)$
$\Omega_\Lambda$	0.6833	$0.685^{+0.018}_{-0.018}$	$100\theta_*$	1.04103	$1.04107^{+0.00079}_{-0.00082}$			
$\Omega_m$	0.3167	$0.315^{+0.018}_{-0.018}$	$D_A/\text{Gpc}$	13.889	$13.897^{+0.067}_{-0.065}$			

Best-fit  $\chi_{\text{eff}}^2 = 791.64$ ;  $\bar{\chi}_{\text{eff}}^2 = 811.42$ ;  $R - 1 = 0.01094$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.99 commander\_rc2\_v1.1\_l2\_29\_B: 13.53 plik\_dx11dr2\_HM\_v18\_TT: 766.93

## 2.35 base\_plikHM\_TTTEEE\_lowl\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022267	$0.02226^{+0.00033}_{-0.00032}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	$z_*$	1089.98	$1090.01^{+0.62}_{-0.62}$
$\Omega_c h^2$	0.11921	$0.1193^{+0.0031}_{-0.0031}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$r_*$	144.72	$144.69^{+0.66}_{-0.67}$
$100\theta_{\text{MC}}$	1.04086	$1.04084^{+0.00063}_{-0.00064}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.51}$	$100\theta_*$	1.04106	$1.04103^{+0.00062}_{-0.00063}$
$\tau$	0.0634	$0.062^{+0.033}_{-0.033}$	$c_{100}$	0.99815	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.901	$13.899^{+0.061}_{-0.062}$
$\ln(10^{10} A_s)$	3.059	$3.057^{+0.061}_{-0.061}$	$c_{217}$	0.99604	$0.9961^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.63	$1059.62^{+0.63}_{-0.59}$
$n_s$	0.9658	$0.965^{+0.010}_{-0.0099}$	$H_0$	67.53	$67.5^{+1.4}_{-1.4}$	$r_{\text{drag}}$	147.42	$147.39^{+0.63}_{-0.65}$
$y_{\text{cal}}$	0.99980	$1.0002^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6884	$0.687^{+0.019}_{-0.019}$	$k_D$	0.14045	$0.14046^{+0.00065}_{-0.00064}$
$A_{217}^{\text{CIB}}$	67.7	$65^{+10}_{-10}$	$\Omega_m$	0.3116	$0.313^{+0.019}_{-0.019}$	$100\theta_D$	0.160917	$0.16093^{+0.00035}_{-0.00035}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14212	$0.1422^{+0.0029}_{-0.0029}$	$z_{\text{eq}}$	3381	$3384^{+69}_{-69}$
$A_{143}^{\text{tSZ}}$	7.31	$5.24^{+3.6}_{-3.9}$	$\Omega_m h^3$	0.09597	$0.09596^{+0.00058}_{-0.00057}$	$k_{\text{eq}}$	0.010318	$0.01033^{+0.00021}_{-0.00021}$
$A_{100}^{\text{PS}}$	257	$263^{+50}_{-50}$	$\sigma_8$	0.8151	$0.815^{+0.020}_{-0.020}$	$100\theta_{\text{eq}}$	0.8168	$0.816^{+0.013}_{-0.013}$
$A_{143}^{\text{PS}}$	38.7	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4550	$0.455^{+0.013}_{-0.013}$	$100\theta_{s,\text{eq}}$	0.4513	$0.4510^{+0.0069}_{-0.0066}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6090	$0.609^{+0.014}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.07157	$0.0715^{+0.0011}_{-0.0010}$
$A_{217}^{\text{PS}}$	96.9	$96^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9918	$0.992^{+0.022}_{-0.022}$	$H(0.57)$	92.96	$92.93^{+0.61}_{-0.58}$
$A^{\text{kSZ}}$	0.0	—	$\langle d^2 \rangle^{1/2}$	2.454	$2.455^{+0.053}_{-0.054}$	$D_A(0.57)$	1388.8	$1390^{+18}_{-19}$
$A_{100}^{\text{dustTT}}$	7.45	$7.49^{+3.7}_{-3.7}$	$z_{\text{re}}$	8.59	$8.37^{+3.2}_{-3.5}$	$F_{\text{AP}}(0.57)$	0.67607	$0.6763^{+0.0049}_{-0.0048}$
$A_{143}^{\text{dustTT}}$	9.07	$9.04^{+3.6}_{-3.6}$	$10^9 A_s$	2.130	$2.13^{+0.13}_{-0.13}$	$f\sigma_8(0.57)$	0.4739	$0.474^{+0.011}_{-0.011}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.0}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8767	$1.879^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	0.6063	$0.606^{+0.018}_{-0.017}$
$A_{217}^{\text{dustTT}}$	81.6	$82^{+10}_{-10}$	$D_{40}$	1229.5	$1233^{+24}_{-23}$	$f_{2000}^{143}$	29.8	$30^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5721	$5726^{+76}_{-75}$	$f_{2000}^{143 \times 217}$	32.58	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0489^{+0.0097}_{-0.0097}$	$D_{810}$	2532.6	$2534^{+27}_{-27}$	$f_{2000}^{217}$	106.11	$106.3^{+3.8}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.0995^{+0.064}_{-0.063}$	$D_{1420}$	814.4	$814.6^{+9.4}_{-9.4}$	$\chi_{\text{lensing}}^2$	9.76	$10.6 (\nu: 2.2)$
$A_{143}^{\text{dustEE}}$	0.1001	$0.100^{+0.014}_{-0.014}$	$D_{2000}$	229.96	$230.0^{+3.2}_{-3.2}$	$\chi_{\text{lowl}}^2$	13.71	$13.94 (\nu: 0.4)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.093}_{-0.091}$	$n_{s,0.002}$	0.9658	$0.965^{+0.010}_{-0.0099}$	$\chi_{\text{plik}}^2$	2435.0	$2453.5 (\nu: 23.2)$
$A_{217}^{\text{dustEE}}$	0.656	$0.65^{+0.25}_{-0.26}$	$Y_P$	0.245347	$0.24534^{+0.00015}_{-0.00015}$	$\chi_{\text{prior}}^2$	7.08	$19.5 (\nu: 15.3)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.075}$	$Y_P^{\text{BBN}}$	0.246674	$0.24667^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	2458.5	$2478.0 (\nu: 21.9)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.056}_{-0.057}$	$10^5 D/H$	2.611	$2.613^{+0.061}_{-0.061}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.17}$	Age/Gyr	13.806	$13.809^{+0.054}_{-0.055}$			

Best-fit  $\chi_{\text{eff}}^2 = 2465.57$ ;  $\bar{\chi}_{\text{eff}}^2 = 2497.50$ ;  $R - 1 = 0.01483$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.76 commander\_rc2\_v1.1.l2\_29\_B: 13.71 plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.01

## 2.36 base\_plikHM\_TTTEEE\_lowl\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022290	$0.02228^{+0.00028}_{-0.00028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04109	$1.04108^{+0.00056}_{-0.00057}$
$\Omega_c h^2$	0.11893	$0.1189^{+0.0022}_{-0.0021}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.51}_{-0.51}$	$D_A/\text{Gpc}$	13.9055	$13.906^{+0.046}_{-0.047}$
$100\theta_{\text{MC}}$	1.04089	$1.04089^{+0.00057}_{-0.00058}$	$c_{100}$	0.99815	$0.9981^{+0.0016}_{-0.0015}$	$z_{\text{drag}}$	1059.67	$1059.66^{+0.58}_{-0.56}$
$\tau$	0.0660	$0.065^{+0.028}_{-0.029}$	$c_{217}$	0.99606	$0.9961^{+0.0029}_{-0.0028}$	$r_{\text{drag}}$	147.464	$147.47^{+0.49}_{-0.50}$
$\ln(10^{10} A_s)$	3.064	$3.062^{+0.052}_{-0.054}$	$H_0$	67.65	$67.65^{+0.99}_{-0.98}$	$k_D$	0.14041	$0.14040^{+0.00058}_{-0.00056}$
$n_s$	0.9666	$0.9661^{+0.0080}_{-0.0082}$	$\Omega_\Lambda$	0.6901	$0.690^{+0.013}_{-0.014}$	$100\theta_D$	0.160900	$0.16091^{+0.00034}_{-0.00034}$
$y_{\text{cal}}$	1.00003	$1.0002^{+0.0050}_{-0.0048}$	$\Omega_m$	0.3099	$0.310^{+0.014}_{-0.013}$	$z_{\text{eq}}$	3374.8	$3375^{+49}_{-48}$
$A_{217}^{\text{CIB}}$	67.6	$65^{+10}_{-10}$	$\Omega_m h^2$	0.14187	$0.1419^{+0.0020}_{-0.0020}$	$k_{\text{eq}}$	0.010300	$0.01030^{+0.00015}_{-0.00015}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\Omega_m h^3$	0.09598	$0.09597^{+0.00057}_{-0.00057}$	$100\theta_{\text{eq}}$	0.8180	$0.8180^{+0.0092}_{-0.0092}$
$A_{143}^{\text{tSZ}}$	7.24	$5.30^{+3.7}_{-4.0}$	$\sigma_8$	0.8164	$0.816^{+0.019}_{-0.020}$	$100\theta_{s,\text{eq}}$	0.45189	$0.4519^{+0.0047}_{-0.0047}$
$A_{100}^{\text{PS}}$	258	$262^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4545	$0.454^{+0.012}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	0.07166	$0.07166^{+0.00074}_{-0.00073}$
$A_{143}^{\text{PS}}$	39.1	$44^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	0.6092	$0.609^{+0.014}_{-0.014}$	$H(0.57)$	93.009	$93.01^{+0.46}_{-0.44}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9926	$0.992^{+0.022}_{-0.023}$	$D_A(0.57)$	1387.1	$1387^{+13}_{-13}$
$A_{217}^{\text{PS}}$	96.7	$96^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.456	$2.455^{+0.053}_{-0.054}$	$F_{\text{AP}}(0.57)$	0.67564	$0.6757^{+0.0034}_{-0.0033}$
$A^{\text{kSZ}}$	0.0	—	$z_{\text{re}}$	8.84	$8.70^{+2.7}_{-2.9}$	$f\sigma_8(0.57)$	0.4743	$0.474^{+0.011}_{-0.011}$
$A_{100}^{\text{dustTT}}$	7.43	$7.49^{+3.7}_{-3.7}$	$10^9 A_s$	2.141	$2.14^{+0.11}_{-0.11}$	$\sigma_8(0.57)$	0.6077	$0.607^{+0.016}_{-0.016}$
$A_{143}^{\text{dustTT}}$	9.09	$9.05^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8764	$1.877^{+0.022}_{-0.022}$	$f_{2000}^{143}$	29.7	$30^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.3}_{-8.1}$	$D_{40}$	1229.2	$1231^{+22}_{-22}$	$f_{2000}^{143 \times 217}$	32.46	$32.6^{+3.5}_{-3.6}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{220}$	5724	$5728^{+76}_{-75}$	$f_{2000}^{217}$	105.97	$106.2^{+3.7}_{-3.6}$
$A_{100}^{\text{dustEE}}$	0.0817	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2533.6	$2534^{+27}_{-26}$	$\chi_{\text{lensing}}^2$	9.87	$10.6 (\nu: 2.1)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0491^{+0.0096}_{-0.0097}$	$D_{1420}$	814.9	$814.7^{+9.4}_{-9.2}$	$\chi_{\text{lowl}}^2$	13.64	$13.82 (\nu: 0.3)$
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.0999^{+0.064}_{-0.063}$	$D_{2000}$	230.21	$230.1^{+3.1}_{-3.1}$	$\chi_{\text{plik}}^2$	2435.0	$2453.1 (\nu: 22.2)$
$A_{143}^{\text{dustEE}}$	0.1006	$0.100^{+0.014}_{-0.014}$	$n_{s,0.002}$	0.9666	$0.9661^{+0.0080}_{-0.0082}$	$\chi_{6\text{DF}}^2$	0.022	$0.054 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.223^{+0.094}_{-0.091}$	$Y_{\text{P}}$	0.245358	$0.24535^{+0.00013}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.28	$1.34 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.656	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}^{\text{BBN}}$	0.246684	$0.24668^{+0.00013}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.45	$2.81 (\nu: 0.2)$
$A_{100}^{\text{dustTE}}$	0.140	$0.140^{+0.073}_{-0.075}$	$10^5 D/H$	2.606	$2.608^{+0.053}_{-0.053}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	$0.72 (\nu: 0.1)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.056}_{-0.057}$	$\text{Age}/\text{Gyr}$	13.8018	$13.803^{+0.043}_{-0.043}$	$\chi_{\text{prior}}^2$	7.10	$19.5 (\nu: 15.6)$
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.16}_{-0.17}$	$z_*$	1089.927	$1089.94^{+0.48}_{-0.48}$	$\chi_{\text{CMB}}^2$	2458.5	$2477.4 (\nu: 20.7)$
$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$r_*$	144.769	$144.77^{+0.48}_{-0.49}$	$\chi_{\text{BAO}}^2$	4.36	$4.92 (\nu: 0.3)$

Best-fit  $\chi_{\text{eff}}^2 = 2469.97$ ;  $\bar{\chi}_{\text{eff}}^2 = 2501.88$ ;  $R - 1 = 0.01338$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 MGS: 1.28 DR11CMass: 2.45 DR11LOWZ: 0.61 CMB - smica\_g30\_ftl\_full\_pp: 9.87 commander\_rc2\_v1.1\_l2\_29\_B: 13.64 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.99

## 2.37 base\_plikHM\_TTTEEE\_lowl\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022306	$0.02230^{+0.00028}_{-0.00028}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.51}_{-0.51}$	$z_{\text{drag}}$	1059.70	$1059.69^{+0.59}_{-0.59}$
$\Omega_c h^2$	0.11866	$0.1187^{+0.0021}_{-0.0021}$	$c_{100}$	0.99814	$0.9981^{+0.0016}_{-0.0015}$	$r_{\text{drag}}$	147.518	$147.51^{+0.48}_{-0.49}$
$100\theta_{\text{MC}}$	1.04095	$1.04092^{+0.00056}_{-0.00057}$	$c_{217}$	0.99606	$0.9960^{+0.0029}_{-0.0028}$	$k_{\text{D}}$	0.14037	$0.14038^{+0.00058}_{-0.00056}$
$\tau$	0.0683	$0.067^{+0.027}_{-0.029}$	$H_0$	67.78	$67.75^{+0.97}_{-0.96}$	$100\theta_{\text{D}}$	0.160895	$0.16089^{+0.00034}_{-0.00034}$
$\ln(10^{10} A_s)$	3.068	$3.066^{+0.052}_{-0.054}$	$\Omega_{\Lambda}$	0.6918	$0.691^{+0.013}_{-0.013}$	$z_{\text{eq}}$	3368.6	$3370^{+48}_{-46}$
$n_s$	0.9672	$0.9667^{+0.0081}_{-0.0080}$	$\Omega_m$	0.3082	$0.309^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010281	$0.01029^{+0.00015}_{-0.00014}$
$y_{\text{cal}}$	1.00006	$1.0002^{+0.0049}_{-0.0048}$	$\Omega_m h^2$	0.14161	$0.1417^{+0.0020}_{-0.0019}$	$100\theta_{\text{eq}}$	0.8192	$0.8189^{+0.0090}_{-0.0090}$
$A_{217}^{\text{CIB}}$	68.0	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09599	$0.09598^{+0.00057}_{-0.00057}$	$100\theta_{s,\text{eq}}$	0.45251	$0.4524^{+0.0046}_{-0.0046}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8172	$0.816^{+0.019}_{-0.020}$	$r_{\text{drag}}/D_V(0.57)$	0.07176	$0.07174^{+0.00072}_{-0.00071}$
$A_{143}^{\text{tSZ}}$	7.39	$5.33^{+3.7}_{-4.0}$	$\sigma_8 \Omega_m^{0.5}$	0.4537	$0.454^{+0.012}_{-0.012}$	$H(0.57)$	93.063	$93.05^{+0.44}_{-0.43}$
$A_{100}^{\text{PS}}$	256	$262^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6089	$0.608^{+0.014}_{-0.014}$	$D_A(0.57)$	1385.4	$1386^{+13}_{-13}$
$A_{143}^{\text{PS}}$	38.1	$43^{+10}_{-10}$	$\sigma_8/h^{0.5}$	0.9926	$0.992^{+0.022}_{-0.023}$	$F_{\text{AP}}(0.57)$	0.67520	$0.6753^{+0.0033}_{-0.0032}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.456	$2.456^{+0.053}_{-0.054}$	$f\sigma_8(0.57)$	0.4743	$0.474^{+0.011}_{-0.011}$
$A_{217}^{\text{PS}}$	96.0	$96^{+20}_{-20}$	$z_{\text{re}}$	9.04	$8.87^{+2.7}_{-2.8}$	$\sigma_8(0.57)$	0.6087	$0.608^{+0.015}_{-0.016}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.149	$2.15^{+0.11}_{-0.11}$	$f_{2000}^{143}$	29.7	$30^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	7.45	$7.48^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8749	$1.876^{+0.022}_{-0.021}$	$f_{2000}^{143 \times 217}$	32.41	$32.5^{+3.5}_{-3.6}$
$A_{143}^{\text{dustTT}}$	9.03	$9.05^{+3.6}_{-3.6}$	$D_{40}$	1228.6	$1230^{+22}_{-22}$	$f_{2000}^{217}$	105.96	$106.1^{+3.6}_{-3.6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.3}_{-8.1}$	$D_{220}$	5725	$5729^{+76}_{-74}$	$\chi_{\text{lensing}}^2$	9.80	$10.5 (\nu: 2.1)$
$A_{217}^{\text{dustTT}}$	81.6	$82^{+10}_{-10}$	$D_{810}$	2532.9	$2533^{+27}_{-26}$	$\chi_{\text{lowl}}^2$	13.60	$13.76 (\nu: 0.3)$
$A_{100}^{\text{dustEE}}$	0.0814	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	814.9	$814.8^{+9.4}_{-9.2}$	$\chi_{\text{plik}}^2$	2435.0	$2453.2 (\nu: 22.4)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0492^{+0.0097}_{-0.0096}$	$D_{2000}$	230.24	$230.2^{+3.1}_{-3.0}$	$\chi_{\text{H070p6}}^2$	0.719	$0.75 (\nu: 0.0)$
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.100^{+0.064}_{-0.063}$	$n_{s,0.002}$	0.9672	$0.9667^{+0.0081}_{-0.0080}$	$\chi_{\text{JLA}}^2$	706.662	$706.71 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	0.1005	$0.100^{+0.014}_{-0.014}$	$Y_{\text{P}}$	0.245365	$0.24536^{+0.00013}_{-0.00013}$	$\chi_{6\text{DF}}^2$	0.010	$0.042 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.094}_{-0.091}$	$Y_{\text{P}}^{\text{BBN}}$	0.246691	$0.24669^{+0.00013}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.41	$1.44 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.647	$0.65^{+0.25}_{-0.26}$	$10^5 D/H$	2.603	$2.604^{+0.052}_{-0.053}$	$\chi_{\text{DR11CMass}}^2$	2.41	$2.75 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	0.141	$0.140^{+0.073}_{-0.075}$	Age/Gyr	13.7975	$13.799^{+0.042}_{-0.043}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	$0.61 (\nu: 0.1)$
$A_{100 \times 143}^{\text{dustTE}}$	0.130	$0.131^{+0.056}_{-0.057}$	$z_*$	1089.882	$1089.89^{+0.47}_{-0.46}$	$\chi_{\text{prior}}^2$	7.31	$19.5 (\nu: 15.6)$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.17}$	$r_*$	144.829	$144.81^{+0.47}_{-0.48}$	$\chi_{\text{CMB}}^2$	2458.4	$2477.5 (\nu: 20.7)$
$A_{143}^{\text{dustTE}}$	0.152	$0.15^{+0.10}_{-0.11}$	$100\theta_*$	1.04114	$1.04111^{+0.00055}_{-0.00057}$	$\chi_{\text{BAO}}^2$	4.31	$4.84 (\nu: 0.3)$
$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.9106	$13.910^{+0.045}_{-0.046}$			

Best-fit  $\chi_{\text{eff}}^2 = 3177.41$ ;  $\bar{\chi}_{\text{eff}}^2 = 3209.31$ ;  $R - 1 = 0.01457$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.41 DR11CMass: 2.41 DR11LOWZ: 0.48 CMB - smica\_g30\_ftl\_full\_pp: 9.80 commander\_rc2.v1.1.l2\_29\_B: 13.60 plik\_dx11dr2\_HM.v18\_TTTEEE:



## 2.38 base\_plikHM\_TTTEEE\_lowl\_lensing\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02228^{+0.00032}_{-0.00030}$	$A_{143}^{\text{dustTE}}$	$0.15^{+0.11}_{-0.10}$	$z_*$	$1089.96^{+0.57}_{-0.60}$
$\Omega_c h^2$	$0.1191^{+0.0028}_{-0.0029}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$r_*$	$144.75^{+0.62}_{-0.60}$
$100\theta_{\text{MC}}$	$1.04088^{+0.00060}_{-0.00061}$	$A_{217}^{\text{dustTE}}$	$1.67^{+0.51}_{-0.51}$	$100\theta_*$	$1.04107^{+0.00059}_{-0.00060}$
$\tau$	$0.066^{+0.027}_{-0.025}$	$c_{100}$	$0.9981^{+0.0016}_{-0.0015}$	$D_A/\text{Gpc}$	$13.903^{+0.058}_{-0.057}$
$\ln(10^{10} A_s)$	$3.065^{+0.051}_{-0.047}$	$c_{217}$	$0.9961^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	$1059.65^{+0.63}_{-0.59}$
$n_s$	$0.9658^{+0.0097}_{-0.0092}$	$H_0$	$67.6^{+1.3}_{-1.2}$	$r_{\text{drag}}$	$147.44^{+0.60}_{-0.59}$
$y_{\text{cal}}$	$1.0001^{+0.0050}_{-0.0048}$	$\Omega_\Lambda$	$0.689^{+0.018}_{-0.017}$	$k_D$	$0.14042^{+0.00063}_{-0.00061}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$\Omega_m$	$0.311^{+0.017}_{-0.018}$	$100\theta_D$	$0.16091^{+0.00035}_{-0.00035}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1420^{+0.0026}_{-0.0027}$	$z_{\text{eq}}$	$3378^{+63}_{-65}$
$A_{143}^{\text{tSZ}}$	$5.29^{+3.7}_{-4.0}$	$\Omega_m h^3$	$0.09597^{+0.00058}_{-0.00057}$	$k_{\text{eq}}$	$0.01031^{+0.00019}_{-0.00020}$
$A_{100}^{\text{PS}}$	$262^{+50}_{-50}$	$\sigma_8$	$0.817^{+0.018}_{-0.017}$	$100\theta_{\text{eq}}$	$0.817^{+0.013}_{-0.012}$
$A_{143}^{\text{PS}}$	$44^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.5}$	$0.455^{+0.014}_{-0.013}$	$100\theta_{\text{s,eq}}$	$0.4516^{+0.0064}_{-0.0060}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.610^{+0.013}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	$0.0716^{+0.0010}_{-0.00099}$
$A_{217}^{\text{PS}}$	$96^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$0.994^{+0.021}_{-0.019}$	$H(0.57)$	$92.99^{+0.58}_{-0.57}$
$A^{\text{kSZ}}$	—	$\langle d^2 \rangle^{1/2}$	$2.460^{+0.050}_{-0.047}$	$D_A(0.57)$	$1388^{+17}_{-18}$
$A_{100}^{\text{dustTT}}$	$7.50^{+3.7}_{-3.7}$	$z_{\text{re}}$	$< 11.0$	$F_{\text{AP}}(0.57)$	$0.6759^{+0.0043}_{-0.0045}$
$A_{143}^{\text{dustTT}}$	$9.04^{+3.6}_{-3.5}$	$10^9 A_s$	$2.14^{+0.11}_{-0.10}$	$f\sigma_8(0.57)$	$0.475^{+0.010}_{-0.0094}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.2}_{-8.1}$	$10^9 A_s e^{-2\tau}$	$1.877^{+0.023}_{-0.023}$	$\sigma_8(0.57)$	$0.608^{+0.015}_{-0.014}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{40}$	$1232^{+23}_{-22}$	$f_{2000}^{143}$	$30^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	$0.082^{+0.011}_{-0.011}$	$D_{220}$	$5726^{+76}_{-74}$	$f_{2000}^{143 \times 217}$	$32.6^{+3.6}_{-3.7}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0491^{+0.0097}_{-0.0095}$	$D_{810}$	$2533^{+27}_{-26}$	$f_{2000}^{217}$	$106.1^{+3.8}_{-3.6}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.100^{+0.065}_{-0.063}$	$D_{1420}$	$814.5^{+9.5}_{-9.3}$	$\chi_{\text{lensing}}^2$	$10.8 (\nu: 2.3)$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.014}_{-0.014}$	$D_{2000}$	$230.0^{+3.2}_{-3.2}$	$\chi_{\text{lowl}}^2$	$13.91 (\nu: 0.4)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.223^{+0.094}_{-0.090}$	$n_{\text{s},0.002}$	$0.9658^{+0.0097}_{-0.0092}$	$\chi_{\text{plik}}^2$	$2453.0 (\nu: 22.1)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}$	$0.24535^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	$19.5 (\nu: 15.5)$
$A_{100}^{\text{dustTE}}$	$0.140^{+0.073}_{-0.075}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	$2477.7 (\nu: 21.0)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.131^{+0.056}_{-0.057}$	$10^5 D/H$	$2.609^{+0.058}_{-0.061}$		
$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.17}_{-0.17}$	$\text{Age}/\text{Gyr}$	$13.804^{+0.050}_{-0.053}$		

$$\bar{\chi}_{\text{eff}}^2 = 2497.20; R - 1 = 0.01795$$

## 2.39 base\_plikHM\_TTTEEE\_lowl\_lensing\_post\_BAO\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02229^{+0.00028}_{-0.00027}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	$1.04110^{+0.00055}_{-0.00057}$
$\Omega_c h^2$	$0.1189^{+0.0021}_{-0.0021}$	$A_{217}^{\text{dustTE}}$	$1.67^{+0.51}_{-0.51}$	$D_A/\text{Gpc}$	$13.907^{+0.045}_{-0.046}$
$100\theta_{\text{MC}}$	$1.04090^{+0.00056}_{-0.00057}$	$c_{100}$	$0.9981^{+0.0016}_{-0.0015}$	$z_{\text{drag}}$	$1059.67^{+0.59}_{-0.60}$
$\tau$	$0.067^{+0.025}_{-0.024}$	$c_{217}$	$0.9960^{+0.0029}_{-0.0028}$	$r_{\text{drag}}$	$147.48^{+0.48}_{-0.49}$
$\ln(10^{10} A_s)$	$3.066^{+0.047}_{-0.045}$	$H_0$	$67.69^{+0.96}_{-0.94}$	$k_D$	$0.14039^{+0.00058}_{-0.00056}$
$n_s$	$0.9663^{+0.0079}_{-0.0078}$	$\Omega_\Lambda$	$0.690^{+0.013}_{-0.013}$	$100\theta_D$	$0.16090^{+0.00034}_{-0.00033}$
$y_{\text{cal}}$	$1.0001^{+0.0049}_{-0.0048}$	$\Omega_m$	$0.310^{+0.013}_{-0.013}$	$z_{\text{eq}}$	$3373^{+47}_{-46}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$\Omega_m h^2$	$0.1418^{+0.0020}_{-0.0019}$	$k_{\text{eq}}$	$0.01029^{+0.00014}_{-0.00014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^3$	$0.09597^{+0.00057}_{-0.00057}$	$100\theta_{\text{eq}}$	$0.8184^{+0.0091}_{-0.0087}$
$A_{143}^{\text{tSZ}}$	$5.31^{+3.7}_{-4.0}$	$\sigma_8$	$0.817^{+0.018}_{-0.017}$	$100\theta_{\text{s,eq}}$	$0.4521^{+0.0046}_{-0.0045}$
$A_{100}^{\text{PS}}$	$262^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	$0.455^{+0.012}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	$0.07169^{+0.00072}_{-0.00069}$
$A_{143}^{\text{PS}}$	$43^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	$0.609^{+0.013}_{-0.013}$	$H(0.57)$	$93.02^{+0.44}_{-0.42}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$0.993^{+0.021}_{-0.020}$	$D_A(0.57)$	$1387^{+13}_{-13}$
$A_{217}^{\text{PS}}$	$96^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	$2.459^{+0.051}_{-0.048}$	$F_{\text{AP}}(0.57)$	$0.6755^{+0.0032}_{-0.0032}$
$A^{\text{kSZ}}$	—	$z_{\text{re}}$	$< 10.9$	$f\sigma_8(0.57)$	$0.474^{+0.010}_{-0.0094}$
$A_{100}^{\text{dustTT}}$	$7.48^{+3.7}_{-3.7}$	$10^9 A_s$	$2.15^{+0.10}_{-0.097}$	$\sigma_8(0.57)$	$0.608^{+0.014}_{-0.014}$
$A_{143}^{\text{dustTT}}$	$9.04^{+3.6}_{-3.5}$	$10^9 A_s e^{-2\tau}$	$1.876^{+0.021}_{-0.021}$	$f_{2000}^{143}$	$30^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.3}_{-8.1}$	$D_{40}$	$1231^{+22}_{-22}$	$f_{2000}^{143 \times 217}$	$32.6^{+3.5}_{-3.6}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{220}$	$5727^{+76}_{-75}$	$f_{2000}^{217}$	$106.1^{+3.6}_{-3.5}$
$A_{100}^{\text{dustEE}}$	$0.082^{+0.011}_{-0.011}$	$D_{810}$	$2533^{+27}_{-26}$	$\chi_{\text{lensing}}^2$	$10.6 (\nu: 2.2)$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0491^{+0.0096}_{-0.0096}$	$D_{1420}$	$814.6^{+9.4}_{-9.3}$	$\chi_{\text{lowl}}^2$	$13.83 (\nu: 0.3)$
$A_{100 \times 217}^{\text{dustEE}}$	$0.100^{+0.064}_{-0.063}$	$D_{2000}$	$230.1^{+3.1}_{-3.1}$	$\chi_{\text{plik}}^2$	$2452.8 (\nu: 21.9)$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.014}_{-0.014}$	$n_{\text{s},0.002}$	$0.9663^{+0.0079}_{-0.0078}$	$\chi_{\text{6DF}}^2$	$0.047 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.223^{+0.093}_{-0.091}$	$Y_{\text{P}}$	$0.24536^{+0.00012}_{-0.00013}$	$\chi_{\text{MGS}}^2$	$1.38 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMASS}}^2$	$2.76 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	$0.140^{+0.073}_{-0.075}$	$10^5 \text{D}/\text{H}$	$2.606^{+0.052}_{-0.052}$	$\chi_{\text{DR11LOWZ}}^2$	$0.67 (\nu: 0.1)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.131^{+0.056}_{-0.057}$	$\text{Age}/\text{Gyr}$	$13.801^{+0.042}_{-0.043}$	$\chi_{\text{prior}}^2$	$19.5 (\nu: 15.6)$
$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.16}_{-0.17}$	$z_*$	$1089.92^{+0.47}_{-0.46}$	$\chi_{\text{CMB}}^2$	$2477.3 (\nu: 20.5)$
$A_{143}^{\text{dustTE}}$	$0.15^{+0.10}_{-0.11}$	$r_*$	$144.79^{+0.47}_{-0.48}$	$\chi_{\text{BAO}}^2$	$4.85 (\nu: 0.3)$

$$\bar{\chi}_{\text{eff}}^2 = 2501.68; R - 1 = 0.01627$$

## 2.40 base\_plikHM\_TTTEEE\_lowl\_lensing\_post\_reion

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022210	$0.02221^{+0.00029}_{-0.00029}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.11}$	$z_*$	1090.12	$1090.11^{+0.50}_{-0.51}$
$\Omega_c h^2$	0.12002	$0.1199^{+0.0024}_{-0.0024}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$r_*$	144.55	$144.58^{+0.53}_{-0.53}$
$100\theta_{\text{MC}}$	1.04075	$1.04077^{+0.00058}_{-0.00059}$	$A_{217}^{\text{dustTE}}$	1.67	$1.68^{+0.52}_{-0.50}$	$100\theta_*$	1.04096	$1.04097^{+0.00057}_{-0.00058}$
$\tau$	0.0512	$0.054^{+0.014}_{-0.012}$	$c_{100}$	0.99817	$0.9981^{+0.0016}_{-0.0015}$	$D_A/\text{Gpc}$	13.886	$13.889^{+0.050}_{-0.051}$
$\ln(10^{10} A_s)$	3.0376	$3.043^{+0.028}_{-0.026}$	$c_{217}$	0.99612	$0.9961^{+0.0027}_{-0.0028}$	$z_{\text{drag}}$	1059.55	$1059.56^{+0.61}_{-0.58}$
$n_s$	0.9633	$0.9633^{+0.0082}_{-0.0080}$	$H_0$	67.16	$67.2^{+1.1}_{-1.0}$	$r_{\text{drag}}$	147.27	$147.29^{+0.54}_{-0.54}$
$y_{\text{cal}}$	1.00025	$1.0003^{+0.0051}_{-0.0048}$	$\Omega_\Lambda$	0.6832	$0.684^{+0.015}_{-0.014}$	$k_D$	0.14056	$0.14053^{+0.00060}_{-0.00058}$
$A_{217}^{\text{CIB}}$	68.2	$65^{+10}_{-10}$	$\Omega_m$	0.3168	$0.316^{+0.014}_{-0.015}$	$100\theta_D$	0.160957	$0.16096^{+0.00035}_{-0.00035}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14288	$0.1428^{+0.0022}_{-0.0022}$	$z_{\text{eq}}$	3399	$3396^{+53}_{-53}$
$A_{143}^{\text{tSZ}}$	7.27	$5.18^{+3.7}_{-4.0}$	$\Omega_m h^3$	0.09596	$0.09594^{+0.00057}_{-0.00057}$	$k_{\text{eq}}$	0.010374	$0.01037^{+0.00016}_{-0.00016}$
$A_{100}^{\text{PS}}$	259	$263^{+50}_{-50}$	$\sigma_8$	0.8086	$0.810^{+0.012}_{-0.011}$	$100\theta_{\text{eq}}$	0.8133	$0.814^{+0.010}_{-0.0098}$
$A_{143}^{\text{PS}}$	39.8	$44^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4551	$0.456^{+0.014}_{-0.014}$	$100\theta_{s,\text{eq}}$	0.4495	$0.4498^{+0.0052}_{-0.0050}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6066	$0.607^{+0.012}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	0.07129	$0.07133^{+0.00081}_{-0.00075}$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9866	$0.988^{+0.017}_{-0.017}$	$H(0.57)$	92.807	$92.83^{+0.48}_{-0.47}$
$A^{\text{kSZ}}$	0.0	—	$\langle d^2 \rangle^{1/2}$	2.4419	$2.447^{+0.042}_{-0.042}$	$D_A(0.57)$	1393.7	$1393^{+14}_{-15}$
$A_{100}^{\text{dustTT}}$	7.43	$7.55^{+3.7}_{-3.7}$	$z_{\text{re}}$	7.40	$< 8.91$	$F_{\text{AP}}(0.57)$	0.67736	$0.6772^{+0.0036}_{-0.0037}$
$A_{143}^{\text{dustTT}}$	9.06	$9.01^{+3.6}_{-3.5}$	$10^9 A_s$	2.085	$2.096^{+0.059}_{-0.055}$	$f\sigma_8(0.57)$	0.4714	$0.4722^{+0.0083}_{-0.0084}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.3^{+8.2}_{-8.0}$	$10^9 A_s e^{-2\tau}$	1.8824	$1.882^{+0.022}_{-0.021}$	$\sigma_8(0.57)$	0.6002	$0.6016^{+0.0085}_{-0.0080}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$D_{40}$	1232.8	$1234^{+23}_{-23}$	$f_{2000}^{143}$	30.4	$31^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0810	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5726	$5728^{+75}_{-74}$	$f_{2000}^{143 \times 217}$	33.00	$33.1^{+3.6}_{-3.6}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0487	$0.0488^{+0.0097}_{-0.0096}$	$D_{810}$	2536.6	$2536^{+26}_{-26}$	$f_{2000}^{217}$	106.49	$106.6^{+3.7}_{-3.5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0999	$0.100^{+0.065}_{-0.063}$	$D_{1420}$	815.0	$814.7^{+9.4}_{-9.5}$	$\chi_{\text{lensing}}^2$	9.20	$9.87 (\nu: 0.9)$
$A_{143}^{\text{dustEE}}$	0.1001	$0.100^{+0.014}_{-0.013}$	$D_{2000}$	229.81	$229.8^{+3.1}_{-3.2}$	$\chi_{\text{lowl}}^2$	13.81	$13.96 (\nu: 0.4)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.094}_{-0.091}$	$n_{s,0.002}$	0.9633	$0.9633^{+0.0082}_{-0.0080}$	$\chi_{\text{plik}}^2$	2436.1	$2453.7 (\nu: 21.3)$
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.25}_{-0.26}$	$Y_P$	0.245322	$0.24532^{+0.00013}_{-0.00014}$	$\chi_{\text{prior}}^2$	7.14	$20 (\nu: 16.4)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.072}_{-0.075}$	$Y_P^{\text{BBN}}$	0.246648	$0.24665^{+0.00013}_{-0.00014}$	$\chi_{\text{CMB}}^2$	2459.1	$2477.6 (\nu: 20.9)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.056}_{-0.056}$	$10^5 D/H$	2.622	$2.621^{+0.056}_{-0.055}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.17}$	Age/Gyr	13.8186	$13.817^{+0.044}_{-0.045}$			

Best-fit  $\chi_{\text{eff}}^2 = 2466.21$ ;  $\bar{\chi}_{\text{eff}}^2 = 2497.92$ ;  $R - 1 = 0.02919$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.20 commander\_rc2\_v1.1\_l2\_29\_B: 13.80 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2436.06

## 2.41 base\_plikHM\_TT\_lowl\_reion

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022112	$0.02212^{+0.00042}_{-0.00043}$	$\Omega_m$	0.3228	$0.322^{+0.026}_{-0.025}$	$100\theta_*$	1.04089	$1.04094^{+0.00090}_{-0.00088}$
$\Omega_c h^2$	0.12097	$0.1208^{+0.0040}_{-0.0041}$	$\Omega_m h^2$	0.14373	$0.1436^{+0.0039}_{-0.0039}$	$D_A/\text{Gpc}$	13.871	$13.874^{+0.086}_{-0.086}$
$100\theta_{\text{MC}}$	1.04069	$1.04073^{+0.00091}_{-0.00090}$	$\Omega_m h^3$	0.09590	$0.09591^{+0.00089}_{-0.00089}$	$z_{\text{drag}}$	1059.40	$1059.41^{+0.88}_{-0.88}$
$\tau$	0.0516	$0.055^{+0.016}_{-0.014}$	$\sigma_8$	0.8126	$0.815^{+0.019}_{-0.017}$	$r_{\text{drag}}$	147.12	$147.16^{+0.94}_{-0.92}$
$\ln(10^{10} A_s)$	3.0403	$3.046^{+0.034}_{-0.031}$	$\sigma_8 \Omega_m^{0.5}$	0.4617	$0.462^{+0.026}_{-0.026}$	$k_D$	0.14063	$0.1406^{+0.0010}_{-0.0010}$
$n_s$	0.9618	$0.962^{+0.011}_{-0.011}$	$\sigma_8 \Omega_m^{0.25}$	0.6125	$0.613^{+0.023}_{-0.023}$	$100\theta_D$	0.16105	$0.16106^{+0.00053}_{-0.00051}$
$y_{\text{cal}}$	1.00037	$1.0005^{+0.0049}_{-0.0049}$	$\sigma_8/h^{0.5}$	0.9948	$0.997^{+0.032}_{-0.032}$	$z_{\text{eq}}$	3419	$3416^{+92}_{-93}$
$A_{217}^{\text{CIB}}$	67.9	$65^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.458	$2.464^{+0.076}_{-0.074}$	$k_{\text{eq}}$	0.010436	$0.01042^{+0.00028}_{-0.00028}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	7.47	$< 9.22$	$100\theta_{\text{eq}}$	0.8094	$0.810^{+0.018}_{-0.017}$
$A_{143}^{\text{tSZ}}$	7.12	$4.90^{+3.8}_{-3.8}$	$10^9 A_s$	2.091	$2.104^{+0.072}_{-0.065}$	$100\theta_{s,\text{eq}}$	0.4475	$0.4479^{+0.0091}_{-0.0086}$
$A_{100}^{\text{PS}}$	256	$263^{+50}_{-50}$	$10^9 A_s e^{-2\tau}$	1.8862	$1.886^{+0.027}_{-0.027}$	$r_{\text{drag}}/D_V(0.57)$	0.07097	$0.0710^{+0.0014}_{-0.0013}$
$A_{143}^{\text{PS}}$	41.1	$46^{+20}_{-20}$	$D_{40}$	1235.5	$1237^{+30}_{-30}$	$H(0.57)$	92.62	$92.67^{+0.77}_{-0.72}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{220}$	5714	$5716^{+81}_{-82}$	$D_A(0.57)$	1399.5	$1398^{+24}_{-24}$
$A_{217}^{\text{PS}}$	97.9	$97^{+20}_{-20}$	$D_{810}$	2537.1	$2536^{+27}_{-27}$	$F_{\text{AP}}(0.57)$	0.6789	$0.6786^{+0.0064}_{-0.0063}$
$A^{\text{kSZ}}$	0.0	—	$D_{1420}$	814.5	$814.2^{+9.8}_{-9.9}$	$f\sigma_8(0.57)$	0.4752	$0.476^{+0.015}_{-0.015}$
$A_{100}^{\text{dustTT}}$	7.47	$7.45^{+3.6}_{-3.7}$	$D_{2000}$	229.62	$229.6^{+3.4}_{-3.5}$	$\sigma_8(0.57)$	0.6018	$0.603^{+0.011}_{-0.010}$
$A_{143}^{\text{dustTT}}$	9.07	$9.07^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9618	$0.962^{+0.011}_{-0.011}$	$f_{2000}^{143}$	30.8	$31^{+6}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.3^{+8.2}_{-8.2}$	$Y_{\text{P}}$	0.245274	$0.24528^{+0.00019}_{-0.00019}$	$f_{2000}^{143 \times 217}$	33.29	$33^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246600	$0.24660^{+0.00019}_{-0.00020}$	$f_{2000}^{217}$	106.83	$106.9^{+3.8}_{-3.8}$
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.640	$2.639^{+0.084}_{-0.081}$	$\chi_{\text{lowl}}^2$	14.10	$14.3 (\nu: 0.8)$
$c_{217}$	0.99602	$0.9961^{+0.0029}_{-0.0029}$	Age/Gyr	13.834	$13.831^{+0.071}_{-0.070}$	$\chi_{\text{plik}}^2$	766.0	$779.2 (\nu: 15.2)$
$H_0$	66.73	$66.8^{+1.8}_{-1.8}$	$z_*$	1090.33	$1090.31^{+0.80}_{-0.78}$	$\chi_{\text{prior}}^2$	2.25	$8.64 (\nu: 8.1)$
$\Omega_\Lambda$	0.6772	$0.678^{+0.025}_{-0.026}$	$r_*$	144.38	$144.42^{+0.93}_{-0.92}$	$\chi_{\text{CMB}}^2$	780.1	$793.5 (\nu: 14.6)$

Best-fit  $\chi_{\text{eff}}^2 = 782.30$ ;  $\bar{\chi}_{\text{eff}}^2 = 802.10$ ;  $R - 1 = 0.00778$

$\chi_{\text{eff}}^2$ : CMB - commander\_rc2\_v1.1\_l2\_29\_B: 14.10 plik\_dx11dr2\_HM\_v18\_TT: 765.95

## 2.42 base\_plikHM\_TT\_lowl\_reion\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022214	$0.02220^{+0.00039}_{-0.00038}$	$\Omega_m h^3$	0.09593	$0.09590^{+0.00088}_{-0.00090}$	$k_D$	0.14039	$0.14036^{+0.00089}_{-0.00089}$
$\Omega_c h^2$	0.11939	$0.1194^{+0.0025}_{-0.0024}$	$\sigma_8$	0.8091	$0.810^{+0.016}_{-0.016}$	$100\theta_D$	0.16099	$0.16102^{+0.00051}_{-0.00050}$
$100\theta_{MC}$	1.04092	$1.04091^{+0.00082}_{-0.00080}$	$\sigma_8 \Omega_m^{0.5}$	0.4525	$0.453^{+0.017}_{-0.016}$	$z_{eq}$	3384	$3383^{+57}_{-57}$
$\tau$	0.0544	$0.056^{+0.016}_{-0.015}$	$\sigma_8 \Omega_m^{0.25}$	0.6051	$0.606^{+0.016}_{-0.016}$	$k_{eq}$	0.010328	$0.01033^{+0.00018}_{-0.00017}$
$\ln(10^{10} A_s)$	3.0423	$3.046^{+0.035}_{-0.032}$	$\sigma_8/h^{0.5}$	0.9853	$0.987^{+0.024}_{-0.023}$	$100\theta_{eq}$	0.8162	$0.816^{+0.010}_{-0.010}$
$n_s$	0.9654	$0.9651^{+0.0083}_{-0.0082}$	$\langle d^2 \rangle^{1/2}$	2.437	$2.442^{+0.058}_{-0.055}$	$100\theta_{s,eq}$	0.4510	$0.4510^{+0.0054}_{-0.0054}$
$y_{cal}$	1.00040	$1.0006^{+0.0050}_{-0.0048}$	$z_{re}$	7.71	< 9.32	$r_{drag}/D_V(0.57)$	0.07152	$0.07152^{+0.00082}_{-0.00080}$
$A_{217}^{CIB}$	67.8	$65^{+10}_{-10}$	$10^9 A_s$	2.095	$2.103^{+0.073}_{-0.067}$	$H(0.57)$	92.91	$92.90^{+0.53}_{-0.51}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8794	$1.880^{+0.023}_{-0.022}$	$D_A(0.57)$	1390.0	$1390^{+15}_{-15}$
$A_{143}^{tSZ}$	7.13	$4.92^{+3.8}_{-3.8}$	$D_{40}$	1228.2	$1230^{+25}_{-26}$	$F_{AP}(0.57)$	0.67635	$0.6764^{+0.0038}_{-0.0037}$
$A_{100}^{PS}$	256	$262^{+50}_{-50}$	$D_{220}$	5721	$5723^{+79}_{-79}$	$f\sigma_8(0.57)$	0.4708	$0.472^{+0.012}_{-0.011}$
$A_{143}^{PS}$	40.5	$45^{+20}_{-10}$	$D_{810}$	2536.0	$2536^{+27}_{-26}$	$\sigma_8(0.57)$	0.6016	$0.603^{+0.011}_{-0.010}$
$A_{143 \times 217}^{PS}$	33	$39^{+20}_{-20}$	$D_{1420}$	815.3	$815.0^{+9.9}_{-9.7}$	$f_{2000}^{143}$	30.5	$31^{+6}_{-5}$
$A_{217}^{PS}$	97.5	$96^{+20}_{-20}$	$D_{2000}$	229.99	$229.9^{+3.4}_{-3.4}$	$f_{2000}^{143 \times 217}$	33.01	$33^{+4}_{-4}$
$A^{kSZ}$	0.0	—	$n_{s,0.002}$	0.9654	$0.9651^{+0.0083}_{-0.0082}$	$f_{2000}^{217}$	106.56	$106.7^{+3.8}_{-3.9}$
$A_{100}^{dustTT}$	7.40	$7.46^{+3.7}_{-3.7}$	$Y_P$	0.245324	$0.24531^{+0.00017}_{-0.00017}$	$\chi_{lowl}^2$	13.42	13.63 ( $\nu$ : 0.5)
$A_{143}^{dustTT}$	9.03	$9.08^{+3.5}_{-3.6}$	$Y_P^{BBN}$	0.246650	$0.24664^{+0.00017}_{-0.00017}$	$\chi_{plik}^2$	767.0	779.7 ( $\nu$ : 15.4)
$A_{143 \times 217}^{dustTT}$	17.8	$17.2^{+8.1}_{-8.5}$	$10^5 D/H$	2.621	$2.624^{+0.074}_{-0.073}$	$\chi_{6DF}^2$	0.047	0.09 ( $\nu$ : 0.0)
$A_{217}^{dustTT}$	82.0	$82^{+10}_{-10}$	Age/Gyr	13.811	$13.812^{+0.055}_{-0.055}$	$\chi_{MGS}^2$	1.10	1.17 ( $\nu$ : 0.1)
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1090.06	$1090.08^{+0.59}_{-0.57}$	$\chi_{DR11CMass}^2$	2.59	3.03 ( $\nu$ : 0.4)
$c_{217}$	0.99600	$0.9960^{+0.0029}_{-0.0028}$	$r_*$	144.71	$144.72^{+0.63}_{-0.63}$	$\chi_{DR11LOWZ}^2$	0.82	0.96 ( $\nu$ : 0.2)
$H_0$	67.44	$67.4^{+1.1}_{-1.1}$	$100\theta_*$	1.04112	$1.04111^{+0.00081}_{-0.00079}$	$\chi_{prior}^2$	2.50	8.81 ( $\nu$ : 8.3)
$\Omega_\Lambda$	0.6872	$0.687^{+0.015}_{-0.015}$	$D_A/Gpc$	13.899	$13.901^{+0.061}_{-0.062}$	$\chi_{BAO}^2$	4.55	5.24 ( $\nu$ : 0.8)
$\Omega_m$	0.3128	$0.313^{+0.015}_{-0.014}$	$z_{drag}$	1059.51	$1059.49^{+0.86}_{-0.83}$	$\chi_{CMB}^2$	780.4	793.3 ( $\nu$ : 14.6)
$\Omega_m h^2$	0.14225	$0.1422^{+0.0024}_{-0.0024}$	$r_{drag}$	147.43	$147.45^{+0.69}_{-0.69}$			

Best-fit  $\chi_{eff}^2 = 787.47$ ;  $\bar{\chi}_{eff}^2 = 807.37$ ;  $R - 1 = 0.01084$

$\chi_{eff}^2$ : BAO - 6DF: 0.05 MGS: 1.10 DR11CMass: 2.59 DR11LOWZ: 0.82 CMB - commander\_rc2\_v1.1\_l2\_29\_B: 13.42 plik\_dx11dr2\_HM\_v18\_TT: 767.00

## 2.43 base\_plikHM\_TT\_lowl\_reion\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022235	$0.02222^{+0.00038}_{-0.00038}$	$\sigma_8$	0.8086	$0.810^{+0.016}_{-0.016}$	$z_{\text{eq}}$	3378	$3377^{+56}_{-55}$
$\Omega_c h^2$	0.11912	$0.1191^{+0.0024}_{-0.0023}$	$\sigma_8 \Omega_m^{0.5}$	0.4510	$0.452^{+0.016}_{-0.016}$	$k_{\text{eq}}$	0.010310	$0.01031^{+0.00017}_{-0.00017}$
$100\theta_{\text{MC}}$	1.04098	$1.04095^{+0.00082}_{-0.00080}$	$\sigma_8 \Omega_m^{0.25}$	0.6039	$0.605^{+0.016}_{-0.016}$	$100\theta_{\text{eq}}$	0.8173	$0.818^{+0.010}_{-0.010}$
$\tau$	0.0548	$0.056^{+0.016}_{-0.015}$	$\sigma_8/h^{0.5}$	0.9837	$0.985^{+0.024}_{-0.022}$	$100\theta_{\text{s,eq}}$	0.4516	$0.4517^{+0.0053}_{-0.0053}$
$\ln(10^{10} A_s)$	3.0430	$3.046^{+0.035}_{-0.032}$	$\langle d^2 \rangle^{1/2}$	2.433	$2.437^{+0.058}_{-0.054}$	$r_{\text{drag}}/D_V(0.57)$	0.07162	$0.07162^{+0.00081}_{-0.00078}$
$n_s$	0.9660	$0.9658^{+0.0081}_{-0.0082}$	$z_{\text{re}}$	7.75	< 9.38	$H(0.57)$	92.97	$92.96^{+0.52}_{-0.50}$
$y_{\text{cal}}$	1.00059	$1.0006^{+0.0051}_{-0.0048}$	$10^9 A_s$	2.097	$2.103^{+0.074}_{-0.068}$	$D_A(0.57)$	1388.3	$1388^{+14}_{-15}$
$A_{217}^{\text{CIB}}$	67.9	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8790	$1.878^{+0.023}_{-0.022}$	$F_{\text{AP}}(0.57)$	0.67590	$0.6759^{+0.0036}_{-0.0036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1227.6	$1229^{+25}_{-25}$	$f\sigma_8(0.57)$	0.4700	$0.471^{+0.011}_{-0.011}$
$A_{143}^{\text{tSZ}}$	7.14	$4.94^{+3.8}_{-3.8}$	$D_{220}$	5726	$5725^{+79}_{-79}$	$\sigma_8(0.57)$	0.6017	$0.602^{+0.011}_{-0.010}$
$A_{100}^{\text{PS}}$	256	$262^{+50}_{-50}$	$D_{810}$	2536.9	$2536^{+27}_{-26}$	$f_{2000}^{143}$	30.5	$31^{+5}_{-5}$
$A_{143}^{\text{PS}}$	40.5	$45^{+20}_{-10}$	$D_{1420}$	815.8	$815.2^{+9.9}_{-9.7}$	$f_{2000}^{143 \times 217}$	33.01	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.15	$230.0^{+3.4}_{-3.4}$	$f_{2000}^{217}$	106.56	$106.6^{+3.8}_{-3.9}$
$A_{217}^{\text{PS}}$	97.3	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9660	$0.9658^{+0.0081}_{-0.0082}$	$\chi_{\text{lowl}}^2$	13.33	$13.50 (\nu: 0.4)$
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245333	$0.24533^{+0.00017}_{-0.00017}$	$\chi_{\text{plik}}^2$	767.2	$780.0 (\nu: 15.6)$
$A_{100}^{\text{dustTT}}$	7.40	$7.46^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246660	$0.24665^{+0.00017}_{-0.00018}$	$\chi_{\text{H070p6}}^2$	0.83	$0.86 (\nu: 0.0)$
$A_{143}^{\text{dustTT}}$	9.04	$9.08^{+3.6}_{-3.6}$	$10^5 D/H$	2.617	$2.619^{+0.074}_{-0.072}$	$\chi_{\text{JLA}}^2$	706.734	$706.78 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.1}_{-8.6}$	Age/Gyr	13.806	$13.807^{+0.054}_{-0.053}$	$\chi_{6\text{DF}}^2$	0.029	$0.064 (\nu: 0.0)$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$z_*$	1090.01	$1090.03^{+0.57}_{-0.56}$	$\chi_{\text{MGS}}^2$	1.22	$1.29 (\nu: 0.1)$
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.76	$144.78^{+0.62}_{-0.62}$	$\chi_{\text{DR11CMASS}}^2$	2.48	$2.88 (\nu: 0.2)$
$c_{217}$	0.99604	$0.9960^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04117	$1.04115^{+0.00080}_{-0.00080}$	$\chi_{\text{DR11LOWZ}}^2$	0.67	$0.79 (\nu: 0.2)$
$H_0$	67.57	$67.6^{+1.1}_{-1.0}$	$D_A/\text{Gpc}$	13.904	$13.906^{+0.061}_{-0.060}$	$\chi_{\text{prior}}^2$	2.63	$8.88 (\nu: 8.5)$
$\Omega_\Lambda$	0.6890	$0.689^{+0.014}_{-0.014}$	$z_{\text{drag}}$	1059.55	$1059.53^{+0.88}_{-0.87}$	$\chi_{\text{BAO}}^2$	4.40	$5.03 (\nu: 0.5)$
$\Omega_m$	0.3110	$0.311^{+0.014}_{-0.014}$	$r_{\text{drag}}$	147.48	$147.50^{+0.68}_{-0.68}$	$\chi_{\text{CMB}}^2$	780.5	$793.5 (\nu: 14.8)$
$\Omega_m h^2$	0.14200	$0.1420^{+0.0023}_{-0.0023}$	$k_{\text{D}}$	0.14036	$0.14033^{+0.00089}_{-0.00089}$			
$\Omega_m h^3$	0.09595	$0.09591^{+0.00089}_{-0.00089}$	$100\theta_{\text{D}}$	0.16098	$0.16100^{+0.00052}_{-0.00050}$			

Best-fit  $\chi_{\text{eff}}^2 = 1495.13$ ;  $\bar{\chi}_{\text{eff}}^2 = 1515.03$ ;  $R - 1 = 0.01183$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 MGS: 1.22 DR11CMASS: 2.48 DR11LOWZ: 0.67 CMB - commander\_rc2.v1.1\_l2\_29\_B: 13.33 plik\_dx11dr2\_HM.v18\_TT: 767.21 Hubble - H070p6: 0.83 SN - JLA December\_2013: 706.73

## 2.44 base\_plikHM\_TTTEEE\_lowl\_reion

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022179	$0.02218^{+0.00029}_{-0.00029}$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.16}$	$10^5 \text{D/H}$	2.627	$2.628^{+0.057}_{-0.056}$
$\Omega_c h^2$	0.12068	$0.1206^{+0.0027}_{-0.0027}$	$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.11}_{-0.11}$	Age/Gyr	13.8268	$13.826^{+0.047}_{-0.049}$
$100\theta_{\text{MC}}$	1.04068	$1.04068^{+0.00062}_{-0.00062}$	$A_{143 \times 217}^{\text{dustTE}}$	0.341	$0.34^{+0.16}_{-0.16}$	$z_*$	1090.22	$1090.21^{+0.55}_{-0.54}$
$\tau$	0.0544	$0.056^{+0.016}_{-0.014}$	$A_{217}^{\text{dustTE}}$	1.688	$1.68^{+0.49}_{-0.49}$	$r_*$	144.40	$144.42^{+0.60}_{-0.59}$
$\ln(10^{10} A_s)$	3.0460	$3.050^{+0.033}_{-0.030}$	$c_{100}$	0.99816	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04088	$1.04089^{+0.00062}_{-0.00061}$
$n_s$	0.9618	$0.9617^{+0.0088}_{-0.0088}$	$c_{217}$	0.99613	$0.9961^{+0.0029}_{-0.0028}$	$D_A/\text{Gpc}$	13.873	$13.875^{+0.055}_{-0.056}$
$y_{\text{cal}}$	1.00040	$1.0007^{+0.0048}_{-0.0048}$	$H_0$	66.88	$66.9^{+1.2}_{-1.2}$	$z_{\text{drag}}$	1059.55	$1059.54^{+0.59}_{-0.59}$
$A_{217}^{\text{CIB}}$	68.1	$65^{+10}_{-10}$	$\Omega_\Lambda$	0.6791	$0.680^{+0.017}_{-0.017}$	$r_{\text{drag}}$	147.12	$147.15^{+0.59}_{-0.59}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m$	0.3209	$0.320^{+0.017}_{-0.017}$	$k_D$	0.14069	$0.14066^{+0.00063}_{-0.00062}$
$A_{143}^{\text{tSZ}}$	7.20	$5.22^{+3.7}_{-3.8}$	$\Omega_m h^2$	0.14351	$0.1434^{+0.0026}_{-0.0025}$	$100\theta_D$	0.160965	$0.16097^{+0.00036}_{-0.00035}$
$A_{100}^{\text{PS}}$	259	$264^{+50}_{-50}$	$\Omega_m h^3$	0.09597	$0.09596^{+0.00057}_{-0.00058}$	$z_{\text{eq}}$	3414	$3412^{+61}_{-60}$
$A_{143}^{\text{PS}}$	40.1	$45^{+10}_{-20}$	$\sigma_8$	0.8137	$0.815^{+0.015}_{-0.014}$	$k_{\text{eq}}$	0.010420	$0.01041^{+0.00019}_{-0.00018}$
$A_{143 \times 217}^{\text{PS}}$	34	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4609	$0.461^{+0.018}_{-0.017}$	$100\theta_{\text{eq}}$	0.8105	$0.811^{+0.012}_{-0.011}$
$A_{217}^{\text{PS}}$	97.1	$97^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6124	$0.613^{+0.016}_{-0.016}$	$100\theta_{s,\text{eq}}$	0.4481	$0.4483^{+0.0059}_{-0.0058}$
$A^{\text{kSZ}}$	0.00	$< 8.27$	$\sigma_8/h^{0.5}$	0.9950	$0.996^{+0.023}_{-0.023}$	$r_{\text{drag}}/D_V(0.57)$	0.07107	$0.07110^{+0.00091}_{-0.00088}$
$A_{100}^{\text{dustTT}}$	7.46	$7.48^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.462	$2.466^{+0.057}_{-0.057}$	$H(0.57)$	92.70	$92.71^{+0.52}_{-0.49}$
$A_{143}^{\text{dustTT}}$	9.04	$8.99^{+3.6}_{-3.6}$	$z_{\text{re}}$	7.74	$< 9.31$	$D_A(0.57)$	1397.4	$1397^{+16}_{-16}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.2}_{-8.1}$	$10^9 A_s$	2.103	$2.112^{+0.069}_{-0.064}$	$F_{\text{AP}}(0.57)$	0.67839	$0.6783^{+0.0043}_{-0.0042}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8862	$1.887^{+0.023}_{-0.023}$	$f\sigma_8(0.57)$	0.4754	$0.476^{+0.011}_{-0.011}$
$A_{100}^{\text{dustEE}}$	0.0809	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1237.9	$1240^{+26}_{-26}$	$\sigma_8(0.57)$	0.6031	$0.604^{+0.010}_{-0.0095}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0484	$0.0484^{+0.0099}_{-0.0099}$	$D_{220}$	5727	$5732^{+75}_{-78}$	$f_{2000}^{143}$	30.4	$31^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0996^{+0.064}_{-0.064}$	$D_{810}$	2537.9	$2539^{+26}_{-26}$	$f_{2000}^{143 \times 217}$	33.07	$33.1^{+3.6}_{-3.6}$
$A_{143}^{\text{dustEE}}$	0.09998	$0.0998^{+0.013}_{-0.014}$	$D_{1420}$	814.9	$815.0^{+9.3}_{-9.4}$	$f_{2000}^{217}$	106.61	$106.6^{+3.6}_{-3.5}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.092}_{-0.093}$	$D_{2000}$	229.84	$229.9^{+3.1}_{-3.1}$	$\chi_{\text{lowl}}^2$	14.28	$14.5 (\nu: 0.6)$
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.26}_{-0.25}$	$n_{s,0.002}$	0.9618	$0.9617^{+0.0088}_{-0.0088}$	$\chi_{\text{plik}}^2$	2434.8	$2453.2 (\nu: 21.9)$
$A_{100}^{\text{dustTE}}$	0.140	$0.142^{+0.074}_{-0.074}$	$Y_P$	0.245307	$0.24531^{+0.00013}_{-0.00014}$	$\chi_{\text{prior}}^2$	7.50	$21 (\nu: 16.7)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.057}$	$Y_P^{\text{BBN}}$	0.246633	$0.24663^{+0.00013}_{-0.00014}$	$\chi_{\text{CMB}}^2$	2449.1	$2467.6 (\nu: 21.6)$

Best-fit  $\chi_{\text{eff}}^2 = 2456.59$ ;  $\bar{\chi}_{\text{eff}}^2 = 2488.39$ ;  $R - 1 = 0.00812$

$\chi_{\text{eff}}^2$ : CMB - commander\_rc2.v1.1\_l2\_29\_B: 14.28 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.81

## 2.45 base\_plikHM\_TTTEEE\_lowl\_reion\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022253	$0.02224^{+0.00027}_{-0.00027}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04100	$1.04099^{+0.00058}_{-0.00058}$
$\Omega_c h^2$	0.11965	$0.1197^{+0.0020}_{-0.0020}$	$A_{217}^{\text{dustTE}}$	1.672	$1.67^{+0.49}_{-0.50}$	$D_A/\text{Gpc}$	13.8916	$13.892^{+0.045}_{-0.045}$
$100\theta_{\text{MC}}$	1.04081	$1.04079^{+0.00059}_{-0.00059}$	$c_{100}$	0.99818	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.63	$1059.61^{+0.60}_{-0.56}$
$\tau$	0.0563	$0.057^{+0.016}_{-0.015}$	$c_{217}$	0.99612	$0.9961^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.316	$147.32^{+0.48}_{-0.49}$
$\ln(10^{10} A_s)$	3.0477	$3.050^{+0.034}_{-0.032}$	$H_0$	67.34	$67.32^{+0.91}_{-0.90}$	$k_D$	0.14054	$0.14053^{+0.00058}_{-0.00057}$
$n_s$	0.9642	$0.9639^{+0.0076}_{-0.0077}$	$\Omega_\Lambda$	0.6857	$0.685^{+0.012}_{-0.013}$	$100\theta_D$	0.160914	$0.16093^{+0.00034}_{-0.00033}$
$y_{\text{cal}}$	1.00049	$1.0007^{+0.0048}_{-0.0048}$	$\Omega_m$	0.3143	$0.315^{+0.013}_{-0.012}$	$z_{\text{eq}}$	3391.0	$3392^{+46}_{-46}$
$A_{217}^{\text{CIB}}$	67.7	$65^{+10}_{-10}$	$\Omega_m h^2$	0.14255	$0.1426^{+0.0019}_{-0.0019}$	$k_{\text{eq}}$	0.010350	$0.01035^{+0.00014}_{-0.00014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\Omega_m h^3$	0.09599	$0.09597^{+0.00056}_{-0.00058}$	$100\theta_{\text{eq}}$	0.8149	$0.8148^{+0.0087}_{-0.0086}$
$A_{143}^{\text{tSZ}}$	7.21	$5.27^{+3.7}_{-3.9}$	$\sigma_8$	0.8116	$0.813^{+0.015}_{-0.015}$	$100\theta_{s,\text{eq}}$	0.45030	$0.4502^{+0.0044}_{-0.0044}$
$A_{100}^{\text{PS}}$	258	$262^{+60}_{-60}$	$\sigma_8 \Omega_m^{0.5}$	0.4550	$0.456^{+0.014}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.07142	$0.07140^{+0.00069}_{-0.00068}$
$A_{143}^{\text{PS}}$	39.8	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6077	$0.609^{+0.014}_{-0.014}$	$H(0.57)$	92.887	$92.87^{+0.43}_{-0.41}$
$A_{143 \times 217}^{\text{PS}}$	34	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9890	$0.990^{+0.021}_{-0.020}$	$D_A(0.57)$	1391.2	$1392^{+12}_{-12}$
$A_{217}^{\text{PS}}$	97.2	$97^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.448	$2.453^{+0.052}_{-0.050}$	$F_{\text{AP}}(0.57)$	0.67675	$0.6768^{+0.0032}_{-0.0031}$
$A^{\text{kSZ}}$	0.00	$< 8.28$	$z_{\text{re}}$	7.91	$< 9.42$	$f\sigma_8(0.57)$	0.4726	$0.473^{+0.010}_{-0.0095}$
$A_{100}^{\text{dustTT}}$	7.51	$7.55^{+3.7}_{-3.6}$	$10^9 A_s$	2.107	$2.112^{+0.072}_{-0.067}$	$\sigma_8(0.57)$	0.6030	$0.604^{+0.010}_{-0.0099}$
$A_{143}^{\text{dustTT}}$	9.07	$9.00^{+3.6}_{-3.5}$	$10^9 A_s e^{-2\tau}$	1.8822	$1.883^{+0.021}_{-0.021}$	$f_{2000}^{143}$	30.0	$30^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.2}_{-7.9}$	$D_{40}$	1233.3	$1235^{+24}_{-24}$	$f_{2000}^{143 \times 217}$	32.74	$32.9^{+3.5}_{-3.6}$
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	$D_{220}$	5733	$5736^{+74}_{-75}$	$f_{2000}^{217}$	106.34	$106.5^{+3.5}_{-3.6}$
$A_{100}^{\text{dustEE}}$	0.0812	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2537.8	$2538^{+26}_{-26}$	$\chi_{\text{lowl}}^2$	13.82	$14.00 (\nu: 0.4)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0488^{+0.010}_{-0.0099}$	$D_{1420}$	815.6	$815.6^{+9.1}_{-9.3}$	$\chi_{\text{plik}}^2$	2435.4	$2453.4 (\nu: 22.6)$
$A_{100 \times 217}^{\text{dustEE}}$	0.0996	$0.100^{+0.064}_{-0.064}$	$D_{2000}$	230.16	$230.1^{+3.0}_{-3.0}$	$\chi_{6\text{DF}}^2$	0.069	$0.099 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	0.1003	$0.100^{+0.013}_{-0.014}$	$n_{s,0.002}$	0.9642	$0.9639^{+0.0076}_{-0.0077}$	$\chi_{\text{MGS}}^2$	0.98	$1.03 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.225^{+0.0091}_{-0.0094}$	$Y_{\text{P}}$	0.245341	$0.24533^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.76	$3.09 (\nu: 0.3)$
$A_{217}^{\text{dustEE}}$	0.649	$0.65^{+0.26}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.246668	$0.24666^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11LOWZ}}^2$	0.98	$1.10 (\nu: 0.2)$
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.075}_{-0.074}$	$10^5 D/H$	2.613	$2.616^{+0.051}_{-0.050}$	$\chi_{\text{prior}}^2$	7.90	$21 (\nu: 16.5)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.059}_{-0.058}$	$\text{Age}/\text{Gyr}$	13.8113	$13.813^{+0.041}_{-0.042}$	$\chi_{\text{BAO}}^2$	4.80	$5.32 (\nu: 0.7)$
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.16}$	$z_*$	1090.038	$1090.06^{+0.45}_{-0.45}$	$\chi_{\text{CMB}}^2$	2449.2	$2467.4 (\nu: 21.7)$
$A_{143}^{\text{dustTE}}$	0.152	$0.15^{+0.11}_{-0.11}$	$r_*$	144.612	$144.61^{+0.47}_{-0.48}$			

Best-fit  $\chi_{\text{eff}}^2 = 2461.93$ ;  $\bar{\chi}_{\text{eff}}^2 = 2493.79$ ;  $R - 1 = 0.01676$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.07 MGS: 0.98 DR11CMass: 2.76 DR11LOWZ: 0.98 CMB - commander\_rc2\_v1.1.l2\_29.B: 13.82 plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.42



## 2.46 base\_plikHM\_TTTEEE\_lowl\_reion\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022260	$0.02226^{+0.00027}_{-0.00026}$	$A_{217}^{dustTE}$	1.680	$1.67^{+0.49}_{-0.50}$	$z_{drag}$	1059.63	$1059.64^{+0.57}_{-0.59}$
$\Omega_c h^2$	0.11951	$0.1195^{+0.0020}_{-0.0020}$	$c_{100}$	0.99821	$0.9982^{+0.0015}_{-0.0015}$	$r_{drag}$	147.346	$147.36^{+0.48}_{-0.48}$
$100\theta_{MC}$	1.04082	$1.04082^{+0.00059}_{-0.00058}$	$c_{217}$	0.99604	$0.9961^{+0.0028}_{-0.0028}$	$k_D$	0.14052	$0.14050^{+0.00058}_{-0.00057}$
$\tau$	0.0566	$0.058^{+0.016}_{-0.015}$	$H_0$	67.40	$67.42^{+0.92}_{-0.89}$	$100\theta_D$	0.160910	$0.16091^{+0.00033}_{-0.00033}$
$\ln(10^{10} A_s)$	3.0480	$3.051^{+0.034}_{-0.032}$	$\Omega_\Lambda$	0.6865	$0.687^{+0.012}_{-0.012}$	$z_{eq}$	3387.8	$3387^{+45}_{-45}$
$n_s$	0.9649	$0.9645^{+0.0075}_{-0.0076}$	$\Omega_m$	0.3135	$0.313^{+0.012}_{-0.012}$	$k_{eq}$	0.010340	$0.01034^{+0.00014}_{-0.00014}$
$y_{cal}$	1.00052	$1.0007^{+0.0048}_{-0.0048}$	$\Omega_m h^2$	0.14241	$0.1424^{+0.0019}_{-0.0019}$	$100\theta_{eq}$	0.8155	$0.8157^{+0.0086}_{-0.0084}$
$A_{217}^{CIB}$	67.3	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09599	$0.09598^{+0.00056}_{-0.00058}$	$100\theta_{s,eq}$	0.45060	$0.4507^{+0.0044}_{-0.0043}$
$\xi^{tSZ \times CIB}$	0.09	—	$\sigma_8$	0.8114	$0.812^{+0.015}_{-0.015}$	$r_{drag}/D_V(0.57)$	0.07146	$0.07148^{+0.00067}_{-0.00066}$
$A_{143}^{tSZ}$	7.15	$5.28^{+3.7}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4543	$0.454^{+0.014}_{-0.014}$	$H(0.57)$	92.909	$92.92^{+0.41}_{-0.40}$
$A_{100}^{PS}$	258	$262^{+60}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6071	$0.608^{+0.014}_{-0.013}$	$D_A(0.57)$	1390.4	$1390^{+12}_{-12}$
$A_{143}^{PS}$	40.8	$44^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9883	$0.989^{+0.021}_{-0.020}$	$F_{AP}(0.57)$	0.67654	$0.6765^{+0.0031}_{-0.0030}$
$A_{143 \times 217}^{PS}$	35.7	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.446	$2.449^{+0.052}_{-0.049}$	$f\sigma_8(0.57)$	0.4723	$0.473^{+0.010}_{-0.0096}$
$A_{217}^{PS}$	98.1	$97^{+20}_{-20}$	$z_{re}$	7.94	$< 9.45$	$\sigma_8(0.57)$	0.6031	$0.604^{+0.010}_{-0.010}$
$A^{kSZ}$	0.01	$< 8.27$	$10^9 A_s$	2.107	$2.113^{+0.072}_{-0.068}$	$f_{2000}^{143}$	29.9	$30^{+5}_{-5}$
$A_{100}^{dustTT}$	7.46	$7.55^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8816	$1.882^{+0.021}_{-0.021}$	$f_{2000}^{143 \times 217}$	32.69	$32.8^{+3.5}_{-3.6}$
$A_{143}^{dustTT}$	9.02	$9.00^{+3.6}_{-3.5}$	$D_{40}$	1231.8	$1234^{+23}_{-24}$	$f_{2000}^{217}$	106.22	$106.4^{+3.5}_{-3.6}$
$A_{143 \times 217}^{dustTT}$	17.7	$17.2^{+8.1}_{-7.9}$	$D_{220}$	5732	$5737^{+74}_{-74}$	$\chi_{lowl}^2$	13.68	$13.89 (\nu: 0.4)$
$A_{217}^{dustTT}$	81.9	$82^{+10}_{-10}$	$D_{810}$	2537.9	$2538^{+26}_{-25}$	$\chi_{plik}^2$	2435.8	$2453.6 (\nu: 22.8)$
$A_{100}^{dustEE}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	815.9	$815.8^{+9.1}_{-9.3}$	$\chi_{H070p6}^2$	0.92	$0.93 (\nu: 0.0)$
$A_{100 \times 143}^{dustEE}$	0.0488	$0.049^{+0.010}_{-0.010}$	$D_{2000}$	230.28	$230.2^{+3.0}_{-3.0}$	$\chi_{JLA}^2$	706.810	$706.83 (\nu: 0.0)$
$A_{100 \times 217}^{dustEE}$	0.099	$0.100^{+0.063}_{-0.064}$	$n_{s,0.002}$	0.9649	$0.9645^{+0.0075}_{-0.0076}$	$\chi_{6DF}^2$	0.058	$0.079 (\nu: 0.0)$
$A_{143}^{dustEE}$	0.1002	$0.100^{+0.013}_{-0.014}$	$Y_P$	0.245344	$0.24534^{+0.00012}_{-0.00012}$	$\chi_{MGS}^2$	1.04	$1.12 (\nu: 0.1)$
$A_{143 \times 217}^{dustEE}$	0.225	$0.225^{+0.091}_{-0.095}$	$Y_P^{BBN}$	0.246670	$0.24667^{+0.00012}_{-0.00012}$	$\chi_{DR11CMass}^2$	2.68	$2.94 (\nu: 0.2)$
$A_{217}^{dustEE}$	0.652	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	2.612	$2.612^{+0.050}_{-0.051}$	$\chi_{DR11LOWZ}^2$	0.91	$0.96 (\nu: 0.2)$
$A_{100}^{dustTE}$	0.141	$0.141^{+0.075}_{-0.074}$	Age/Gyr	13.8097	$13.809^{+0.040}_{-0.040}$	$\chi_{prior}^2$	7.83	$21 (\nu: 16.5)$
$A_{100 \times 143}^{dustTE}$	0.131	$0.131^{+0.059}_{-0.058}$	$z_*$	1090.018	$1090.01^{+0.44}_{-0.44}$	$\chi_{BAO}^2$	4.68	$5.10 (\nu: 0.5)$
$A_{100 \times 217}^{dustTE}$	0.301	$0.30^{+0.16}_{-0.16}$	$r_*$	144.642	$144.66^{+0.46}_{-0.47}$	$\chi_{CMB}^2$	2449.5	$2467.5 (\nu: 21.8)$
$A_{143}^{dustTE}$	0.154	$0.15^{+0.11}_{-0.11}$	$100\theta_*$	1.04101	$1.04102^{+0.00059}_{-0.00057}$			
$A_{143 \times 217}^{dustTE}$	0.340	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.8944	$13.896^{+0.045}_{-0.044}$			

Best-fit  $\chi_{eff}^2 = 3169.73$ ;  $\bar{\chi}_{eff}^2 = 3201.55$ ;  $R - 1 = 0.02083$

$\chi_{eff}^2$ : BAO - 6DF: 0.06 MGS: 1.04 DR11CMass: 2.68 DR11LOWZ: 0.91 CMB - commander\_rc2.v1.1\_l2\_29\_B: 13.68 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.80 Hubble -

## 2.47 base\_plikHM\_TE

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02220	$0.02237^{+0.00059}_{-0.00055}$	$\sigma_8$	0.780	$0.834^{+0.10}_{-0.084}$	$r_*$	144.80	$144.91^{+0.98}_{-0.98}$
$\Omega_c h^2$	0.11905	$0.1182^{+0.0044}_{-0.0042}$	$\sigma_8 \Omega_m^{0.5}$	0.435	$0.461^{+0.056}_{-0.049}$	$100\theta_*$	1.04112	$1.04118^{+0.00098}_{-0.0010}$
$100\theta_{MC}$	1.04092	$1.0410^{+0.0010}_{-0.0010}$	$\sigma_8 \Omega_m^{0.25}$	0.582	$0.620^{+0.076}_{-0.063}$	$D_A/\text{Gpc}$	13.909	$13.917^{+0.091}_{-0.091}$
$\tau$	0.026	$< 0.196$	$\sigma_8/h^{0.5}$	0.949	$1.01^{+0.12}_{-0.10}$	$z_{\text{drag}}$	1059.47	$1059.8^{+1.2}_{-1.2}$
$\ln(10^{10} A_s)$	2.975	$3.11^{+0.24}_{-0.20}$	$\langle d^2 \rangle^{1/2}$	2.364	$2.50^{+0.27}_{-0.22}$	$r_{\text{drag}}$	147.53	$147.6^{+1.0}_{-0.99}$
$n_s$	0.9600	$0.971^{+0.029}_{-0.026}$	$z_{\text{re}}$	4.45	$10.4^{+9.2}_{-8.7}$	$k_D$	0.14028	$0.1403^{+0.0011}_{-0.0012}$
$A_{100}^{\text{dustTE}}$	0.139	$0.136^{+0.074}_{-0.073}$	$10^9 A_s$	1.96	$2.25^{+0.58}_{-0.44}$	$100\theta_D$	0.16102	$0.16084^{+0.00070}_{-0.00069}$
$A_{100 \times 143}^{\text{dustTE}}$	0.134	$0.133^{+0.057}_{-0.058}$	$10^9 A_s e^{-2\tau}$	1.8609	$1.870^{+0.043}_{-0.040}$	$z_{\text{eq}}$	3375	$3359^{+99}_{-95}$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.17}$	$D_{40}$	1225	$1236^{+67}_{-65}$	$k_{\text{eq}}$	0.010302	$0.01025^{+0.00030}_{-0.00029}$
$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.11}$	$D_{220}$	5701	$5713^{+120}_{-110}$	$100\theta_{\text{eq}}$	0.8176	$0.821^{+0.019}_{-0.019}$
$A_{143 \times 217}^{\text{dustTE}}$	0.334	$0.34^{+0.16}_{-0.16}$	$D_{810}$	2511	$2529^{+61}_{-58}$	$100\theta_{s,\text{eq}}$	0.4518	$0.4536^{+0.0095}_{-0.0095}$
$A_{217}^{\text{dustTE}}$	1.65	$1.66^{+0.50}_{-0.51}$	$D_{1420}$	805.2	$815^{+29}_{-28}$	$r_{\text{drag}}/D_V(0.57)$	0.07162	$0.0719^{+0.0015}_{-0.0015}$
$c_{100}$	0.99924	$0.9992^{+0.0020}_{-0.0019}$	$D_{2000}$	226.1	$231^{+12}_{-12}$	$H(0.57)$	92.94	$93.18^{+0.94}_{-0.86}$
$y_{\text{cal}}$	1.00000	$1.0000^{+0.0050}_{-0.0049}$	$n_{s,0.002}$	0.9600	$0.971^{+0.029}_{-0.026}$	$D_A(0.57)$	1388.7	$1382^{+26}_{-27}$
$H_0$	67.55	$68.0^{+2.0}_{-1.9}$	$Y_P$	0.245319	$0.24539^{+0.00026}_{-0.00025}$	$F_{\text{AP}}(0.57)$	0.6759	$0.6745^{+0.0068}_{-0.0065}$
$\Omega_\Lambda$	0.6890	$0.695^{+0.025}_{-0.027}$	$Y_P^{\text{BBN}}$	0.246645	$0.24672^{+0.00026}_{-0.00025}$	$f\sigma_8(0.57)$	0.453	$0.483^{+0.060}_{-0.049}$
$\Omega_m$	0.3110	$0.305^{+0.027}_{-0.025}$	$10^5 \text{D}/\text{H}$	2.623	$2.59^{+0.11}_{-0.11}$	$\sigma_8(0.57)$	0.580	$0.622^{+0.080}_{-0.063}$
$\Omega_m h^2$	0.14190	$0.1412^{+0.0041}_{-0.0040}$	Age/Gyr	13.810	$13.787^{+0.084}_{-0.087}$	$\chi_{\text{plikTE}}^2$	931.2	938.9 ( $\nu$ : 8.6)
$\Omega_m h^3$	0.09585	$0.0960^{+0.0011}_{-0.0011}$	$z_*$	1090.05	$1089.77^{+0.95}_{-0.96}$	$\chi_{\text{prior}}^2$	1.89	7.85 ( $\nu$ : 6.7)

Best-fit  $\chi_{\text{eff}}^2 = 933.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 946.77$ ;  $R - 1 = 0.00574$

$\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM\_v18\_TE: 931.21

## 2.48 base\_plikHM\_TE\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022249	$0.02234^{+0.00050}_{-0.00049}$	$\sigma_8 \Omega_m^{0.25}$	0.589	$0.618^{+0.074}_{-0.060}$	$r_{\text{drag}}$	147.55	$147.53^{+0.76}_{-0.75}$
$\Omega_c h^2$	0.11880	$0.1185^{+0.0025}_{-0.0025}$	$\sigma_8/h^{0.5}$	0.961	$1.01^{+0.12}_{-0.096}$	$k_D$	0.14030	$0.1404^{+0.0011}_{-0.0010}$
$100\theta_{\text{MC}}$	1.04097	$1.04097^{+0.00091}_{-0.00092}$	$\langle d^2 \rangle^{1/2}$	2.389	$2.49^{+0.26}_{-0.21}$	$100\theta_D$	0.16097	$0.16086^{+0.00067}_{-0.00066}$
$\tau$	0.039	< 0.182	$z_{\text{re}}$	6.06	$10.0^{+8.8}_{-8.3}$	$z_{\text{eq}}$	3371	$3365^{+60}_{-58}$
$\ln(10^{10} A_s)$	3.003	$3.10^{+0.23}_{-0.18}$	$10^9 A_s$	2.014	$2.23^{+0.54}_{-0.41}$	$k_{\text{eq}}$	0.010288	$0.01027^{+0.00018}_{-0.00018}$
$n_s$	0.9622	$0.969^{+0.025}_{-0.023}$	$10^9 A_s e^{-2\tau}$	1.8622	$1.871^{+0.041}_{-0.039}$	$100\theta_{\text{eq}}$	0.8187	$0.820^{+0.011}_{-0.011}$
$A_{100}^{\text{dustTE}}$	0.137	$0.138^{+0.073}_{-0.073}$	$D_{40}$	1224	$1235^{+64}_{-61}$	$100\theta_{s,\text{eq}}$	0.4523	$0.4529^{+0.0056}_{-0.0056}$
$A_{100 \times 143}^{\text{dustTE}}$	0.135	$0.133^{+0.057}_{-0.057}$	$D_{220}$	5704	$5710^{+120}_{-120}$	$r_{\text{drag}}/D_V(0.57)$	0.07172	$0.07184^{+0.00085}_{-0.00082}$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.16}$	$D_{810}$	2514	$2528^{+59}_{-57}$	$H(0.57)$	93.01	$93.12^{+0.60}_{-0.58}$
$A_{143}^{\text{dustTE}}$	0.156	$0.15^{+0.10}_{-0.11}$	$D_{1420}$	807.1	$814^{+27}_{-26}$	$D_A(0.57)$	1386.7	$1384^{+16}_{-16}$
$A_{143 \times 217}^{\text{dustTE}}$	0.333	$0.34^{+0.16}_{-0.16}$	$D_{2000}$	227.0	$230^{+12}_{-11}$	$F_{\text{AP}}(0.57)$	0.67545	$0.6749^{+0.0038}_{-0.0038}$
$A_{217}^{\text{dustTE}}$	1.65	$1.66^{+0.51}_{-0.51}$	$n_{s,0.002}$	0.9622	$0.969^{+0.025}_{-0.023}$	$f\sigma_8(0.57)$	0.459	$0.482^{+0.058}_{-0.046}$
$c_{100}$	0.99924	$0.9992^{+0.0020}_{-0.0019}$	$Y_{\text{P}}$	0.245340	$0.24538^{+0.00022}_{-0.00022}$	$\sigma_8(0.57)$	0.588	$0.619^{+0.075}_{-0.059}$
$y_{\text{cal}}$	1.00002	$0.99999^{+0.0050}_{-0.0049}$	$Y_{\text{P}}^{\text{BBN}}$	0.246666	$0.24670^{+0.00022}_{-0.00022}$	$\chi_{\text{plikTE}}^2$	931.3	$938.3 (\nu: 7.7)$
$H_0$	67.69	$67.9^{+1.2}_{-1.1}$	$10^5 D/H$	2.614	$2.598^{+0.093}_{-0.092}$	$\chi_{6\text{DF}}^2$	0.015	$0.045 (\nu: 0.0)$
$\Omega_\Lambda$	0.6908	$0.693^{+0.015}_{-0.015}$	Age/Gyr	13.803	$13.792^{+0.064}_{-0.065}$	$\chi_{\text{MGS}}^2$	1.34	$1.58 (\nu: 0.2)$
$\Omega_m$	0.3092	$0.307^{+0.015}_{-0.015}$	$z_*$	1089.97	$1089.83^{+0.71}_{-0.70}$	$\chi_{\text{DR11CMASS}}^2$	2.42	$2.86 (\nu: 0.2)$
$\Omega_m h^2$	0.14170	$0.1415^{+0.0025}_{-0.0024}$	$r_*$	144.83	$144.85^{+0.67}_{-0.66}$	$\chi_{\text{DR11LOWZ}}^2$	0.54	$0.54 (\nu: 0.1)$
$\Omega_m h^3$	0.09592	$0.0960^{+0.0011}_{-0.0011}$	$100\theta_*$	1.04117	$1.04116^{+0.00090}_{-0.00092}$	$\chi_{\text{prior}}^2$	1.81	$7.86 (\nu: 6.7)$
$\sigma_8$	0.790	$0.830^{+0.10}_{-0.079}$	$D_A/\text{Gpc}$	13.911	$13.913^{+0.066}_{-0.064}$	$\chi_{\text{BAO}}^2$	4.32	$5.02 (\nu: 0.5)$
$\sigma_8 \Omega_m^{0.5}$	0.439	$0.460^{+0.055}_{-0.046}$	$z_{\text{drag}}$	1059.55	$1059.8^{+1.1}_{-1.1}$			

Best-fit  $\chi_{\text{eff}}^2 = 937.43$ ;  $\bar{\chi}_{\text{eff}}^2 = 951.18$ ;  $R - 1 = 0.00975$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.34 DR11CMASS: 2.42 DR11LOWZ: 0.54 CMB - plik\_dx11dr2\_HM\_v18\_TE: 931.30

## 2.49 base\_plikHM\_TE\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022280	$0.02237^{+0.00050}_{-0.00048}$	$\sigma_8/h^{0.5}$	0.965	$1.01^{+0.12}_{-0.099}$	$100\theta_D$	0.16094	$0.16084^{+0.00067}_{-0.00065}$
$\Omega_c h^2$	0.11834	$0.1182^{+0.0024}_{-0.0024}$	$\langle d^2 \rangle^{1/2}$	2.399	$2.49^{+0.26}_{-0.22}$	$z_{\text{eq}}$	3360	$3360^{+57}_{-57}$
$100\theta_{\text{MC}}$	1.04098	$1.04101^{+0.00090}_{-0.00092}$	$z_{\text{re}}$	6.92	$10.3^{+8.8}_{-8.4}$	$k_{\text{eq}}$	0.010256	$0.01025^{+0.00017}_{-0.00017}$
$\tau$	0.047	< 0.188	$10^9 A_s$	2.044	$2.24^{+0.55}_{-0.42}$	$100\theta_{\text{eq}}$	0.8206	$0.821^{+0.011}_{-0.010}$
$\ln(10^{10} A_s)$	3.018	$3.10^{+0.23}_{-0.19}$	$10^9 A_s e^{-2\tau}$	1.8606	$1.870^{+0.041}_{-0.040}$	$100\theta_{s,\text{eq}}$	0.4533	$0.4534^{+0.0055}_{-0.0054}$
$n_s$	0.9638	$0.970^{+0.025}_{-0.023}$	$D_{40}$	1222	$1235^{+66}_{-62}$	$r_{\text{drag}}/D_V(0.57)$	0.07186	$0.07192^{+0.00082}_{-0.00080}$
$A_{100}^{\text{dustTE}}$	0.137	$0.138^{+0.073}_{-0.073}$	$D_{220}$	5704	$5712^{+120}_{-120}$	$H(0.57)$	93.08	$93.17^{+0.59}_{-0.57}$
$A_{100 \times 143}^{\text{dustTE}}$	0.134	$0.133^{+0.057}_{-0.057}$	$D_{810}$	2514	$2529^{+59}_{-58}$	$D_A(0.57)$	1384.2	$1382^{+15}_{-15}$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.16}$	$D_{1420}$	807.5	$815^{+28}_{-27}$	$F_{\text{AP}}(0.57)$	0.67477	$0.6745^{+0.0037}_{-0.0036}$
$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.10}_{-0.11}$	$D_{2000}$	227.3	$231^{+12}_{-11}$	$f\sigma_8(0.57)$	0.461	$0.482^{+0.059}_{-0.048}$
$A_{143 \times 217}^{\text{dustTE}}$	0.332	$0.34^{+0.16}_{-0.16}$	$n_{s,0.002}$	0.9638	$0.970^{+0.025}_{-0.023}$	$\sigma_8(0.57)$	0.593	$0.621^{+0.077}_{-0.061}$
$A_{217}^{\text{dustTE}}$	1.65	$1.66^{+0.51}_{-0.51}$	$Y_{\text{P}}$	0.245353	$0.24539^{+0.00022}_{-0.00022}$	$\chi_{\text{plikTE}}^2$	931.3	$938.3 (\nu: 7.7)$
$c_{100}$	0.99927	$0.9992^{+0.0020}_{-0.0019}$	$Y_{\text{P}}^{\text{BBN}}$	0.246680	$0.24672^{+0.00022}_{-0.00022}$	$\chi_{\text{H070p6}}^2$	0.67	$0.64 (\nu: 0.0)$
$y_{\text{cal}}$	0.99987	$1.0000^{+0.0050}_{-0.0049}$	$10^5 \text{D}/\text{H}$	2.608	$2.592^{+0.093}_{-0.092}$	$\chi_{\text{JLA}}^2$	706.625	$706.65 (\nu: 0.0)$
$H_0$	67.88	$68.0^{+1.1}_{-1.1}$	Age/Gyr	13.798	$13.787^{+0.063}_{-0.066}$	$\chi_{6\text{DF}}^2$	0.003	$0.039 (\nu: 0.0)$
$\Omega_\Lambda$	0.6934	$0.695^{+0.014}_{-0.014}$	$z_*$	1089.89	$1089.77^{+0.70}_{-0.69}$	$\chi_{\text{MGS}}^2$	1.54	$1.69 (\nu: 0.2)$
$\Omega_m$	0.3066	$0.305^{+0.014}_{-0.014}$	$r_*$	144.93	$144.89^{+0.67}_{-0.65}$	$\chi_{\text{DR11CMASS}}^2$	2.41	$2.87 (\nu: 0.2)$
$\Omega_m h^2$	0.14127	$0.1412^{+0.0024}_{-0.0024}$	$100\theta_*$	1.04117	$1.04119^{+0.00089}_{-0.00092}$	$\chi_{\text{DR11LOWZ}}^2$	0.37	$0.44 (\nu: 0.1)$
$\Omega_m h^3$	0.09590	$0.0961^{+0.0011}_{-0.0011}$	$D_A/\text{Gpc}$	13.920	$13.916^{+0.065}_{-0.065}$	$\chi_{\text{prior}}^2$	1.84	$7.89 (\nu: 6.7)$
$\sigma_8$	0.795	$0.832^{+0.10}_{-0.082}$	$z_{\text{drag}}$	1059.59	$1059.8^{+1.1}_{-1.1}$	$\chi_{\text{BAO}}^2$	4.33	$5.04 (\nu: 0.5)$
$\sigma_8 \Omega_m^{0.5}$	0.440	$0.460^{+0.056}_{-0.047}$	$r_{\text{drag}}$	147.63	$147.57^{+0.76}_{-0.73}$			
$\sigma_8 \Omega_m^{0.25}$	0.592	$0.619^{+0.076}_{-0.061}$	$k_D$	0.14023	$0.1404^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 1644.79$ ;  $\bar{\chi}_{\text{eff}}^2 = 1658.51$ ;  $R - 1 = 0.01010$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMASS: 2.42 DR11LOWZ: 0.37 CMB - plik\_dx11dr2\_HM\_v18\_TE: 931.33 Hubble - H070p6: 0.67 SN - JLA December\_2013: 706.62

## 2.50 base\_plikHM\_EE

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02443	$0.0244^{+0.0026}_{-0.0025}$	$\sigma_8 \Omega_m^{0.5}$	0.487	$0.472^{+0.079}_{-0.080}$	$100\theta_*$	1.03987	$1.0398^{+0.0018}_{-0.0018}$
$\Omega_c h^2$	0.1126	$0.1132^{+0.0098}_{-0.0091}$	$\sigma_8 \Omega_m^{0.25}$	0.676	$0.652^{+0.088}_{-0.095}$	$D_A/\text{Gpc}$	13.923	$13.91^{+0.13}_{-0.13}$
$100\theta_{\text{MC}}$	1.03989	$1.0399^{+0.0018}_{-0.0019}$	$\sigma_8/h^{0.5}$	1.110	$1.07^{+0.14}_{-0.15}$	$z_{\text{drag}}$	1064.0	$1064.1^{+5.1}_{-5.0}$
$\tau$	0.232	$0.19^{+0.11}_{-0.14}$	$\langle d^2 \rangle^{1/2}$	2.802	$2.70^{+0.31}_{-0.36}$	$r_{\text{drag}}$	146.81	$146.6^{+1.5}_{-1.5}$
$\ln(10^{10} A_s)$	3.414	$3.33^{+0.23}_{-0.28}$	$z_{\text{re}}$	19.9	$17.0^{+6.9}_{-9.4}$	$k_D$	0.14254	$0.1427^{+0.0026}_{-0.0027}$
$n_s$	0.9812	$0.980^{+0.033}_{-0.032}$	$10^9 A_s$	3.04	$2.82^{+0.63}_{-0.74}$	$100\theta_D$	0.15829	$0.1583^{+0.0026}_{-0.0025}$
$A_{100}^{\text{dustEE}}$	0.0775	$0.078^{+0.013}_{-0.013}$	$10^9 A_s e^{-2\tau}$	1.909	$1.912^{+0.052}_{-0.051}$	$z_{\text{eq}}$	3274	$3289^{+190}_{-170}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0442	$0.045^{+0.013}_{-0.013}$	$D_{40}$	1385	$1351^{+140}_{-140}$	$k_{\text{eq}}$	0.00999	$0.01004^{+0.00057}_{-0.00051}$
$A_{100 \times 217}^{\text{dustEE}}$	0.097	$0.099^{+0.064}_{-0.065}$	$D_{220}$	6112	$6112^{+420}_{-410}$	$100\theta_{\text{eq}}$	0.8420	$0.840^{+0.040}_{-0.040}$
$A_{143}^{\text{dustEE}}$	0.0958	$0.096^{+0.015}_{-0.016}$	$D_{810}$	2591	$2595^{+78}_{-80}$	$100\theta_{s,\text{eq}}$	0.4627	$0.461^{+0.019}_{-0.019}$
$A_{143 \times 217}^{\text{dustEE}}$	0.218	$0.223^{+0.092}_{-0.093}$	$D_{1420}$	840.8	$842^{+37}_{-38}$	$r_{\text{drag}}/D_V(0.57)$	0.07375	$0.0736^{+0.0037}_{-0.0036}$
$A_{217}^{\text{dustEE}}$	0.634	$0.64^{+0.26}_{-0.26}$	$D_{2000}$	244.5	$244^{+15}_{-15}$	$H(0.57)$	95.15	$95.2^{+3.5}_{-3.3}$
$y_{\text{cal}}$	0.99983	$1.0001^{+0.0049}_{-0.0048}$	$n_{s,0.002}$	0.9812	$0.980^{+0.033}_{-0.032}$	$D_A(0.57)$	1335	$1337^{+78}_{-76}$
$H_0$	71.4	$71.3^{+5.8}_{-5.7}$	$Y_{\text{P}}$	0.24625	$0.24624^{+0.00099}_{-0.0010}$	$F_{\text{AP}}(0.57)$	0.6651	$0.666^{+0.016}_{-0.016}$
$\Omega_\Lambda$	0.730	$0.726^{+0.058}_{-0.061}$	$Y_{\text{P}}^{\text{BBN}}$	0.24758	$0.2476^{+0.0010}_{-0.0010}$	$f\sigma_8(0.57)$	0.531	$0.512^{+0.065}_{-0.072}$
$\Omega_m$	0.270	$0.274^{+0.061}_{-0.058}$	$10^5 D/H$	2.250	$2.26^{+0.40}_{-0.38}$	$\sigma_8(0.57)$	0.710	$0.682^{+0.074}_{-0.090}$
$\Omega_m h^2$	0.1377	$0.1383^{+0.0078}_{-0.0070}$	Age/Gyr	13.587	$13.59^{+0.31}_{-0.32}$	$\chi_{\text{plikEE}}^2$	747.6	756.3 ( $\nu$ : 9.9)
$\Omega_m h^3$	0.09832	$0.0984^{+0.0039}_{-0.0038}$	$z_*$	1086.93	$1087.0^{+3.5}_{-3.4}$	$\chi_{\text{prior}}^2$	3.00	7.37 ( $\nu$ : 5.9)
$\sigma_8$	0.938	$0.90^{+0.10}_{-0.12}$	$r_*$	144.78	$144.6^{+1.4}_{-1.4}$			

Best-fit  $\chi_{\text{eff}}^2 = 750.57$ ;  $\bar{\chi}_{\text{eff}}^2 = 763.68$ ;  $R - 1 = 0.00703$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM.v18\_EE: 747.57

## 2.51 base\_plikHM\_EE\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02333	$0.0234_{-0.0013}^{+0.0013}$	$\sigma_8/h^{0.5}$	1.138	$1.09_{-0.14}^{+0.12}$	$k_D$	0.14201	$0.1420_{-0.0024}^{+0.0023}$
$\Omega_c h^2$	0.11757	$0.1176_{-0.0030}^{+0.0030}$	$\langle d^2 \rangle^{1/2}$	2.846	$2.74_{-0.34}^{+0.30}$	$100\theta_D$	0.15934	$0.1593_{-0.0016}^{+0.0018}$
$100\theta_{MC}$	1.03944	$1.0395_{-0.0017}^{+0.0017}$	$z_{re}$	19.4	$16.5_{-9.5}^{+7.5}$	$z_{eq}$	3367	$3368_{-71}^{+71}$
$\tau$	0.212	$0.17_{-0.13}^{+0.11}$	$10^9 A_s$	2.92	$2.72_{-0.66}^{+0.57}$	$k_{eq}$	0.010277	$0.01028_{-0.00022}^{+0.00022}$
$\ln(10^{10} A_s)$	3.375	$3.29_{-0.26}^{+0.22}$	$10^9 A_s e^{-2\tau}$	1.912	$1.911_{-0.051}^{+0.055}$	$100\theta_{eq}$	0.8212	$0.821_{-0.012}^{+0.013}$
$n_s$	0.9685	$0.968_{-0.021}^{+0.022}$	$D_{40}$	1373	$1343_{-130}^{+130}$	$100\theta_{s,eq}$	0.4527	$0.4527_{-0.0064}^{+0.0066}$
$A_{100}^{dustEE}$	0.0768	$0.078_{-0.013}^{+0.013}$	$D_{220}$	5966	$5965_{-290}^{+280}$	$r_{drag}/D_V(0.57)$	0.07188	$0.0719_{-0.00096}^{+0.0010}$
$A_{100 \times 143}^{dustEE}$	0.0437	$0.045_{-0.012}^{+0.011}$	$D_{810}$	2572	$2574_{-68}^{+68}$	$H(0.57)$	93.59	$93.6_{-1.1}^{+1.2}$
$A_{100 \times 217}^{dustEE}$	0.097	$0.097_{-0.063}^{+0.065}$	$D_{1420}$	828.4	$830_{-30}^{+30}$	$D_A(0.57)$	1374.1	$1374_{-25}^{+24}$
$A_{143}^{dustEE}$	0.0950	$0.095_{-0.015}^{+0.015}$	$D_{2000}$	239.2	$239_{-11}^{+12}$	$F_{AP}(0.57)$	0.67347	$0.6735_{-0.0048}^{+0.0046}$
$A_{143 \times 217}^{dustEE}$	0.220	$0.220_{-0.090}^{+0.088}$	$n_{s,0.002}$	0.9685	$0.968_{-0.021}^{+0.022}$	$f\sigma_8(0.57)$	0.545	$0.524_{-0.066}^{+0.058}$
$A_{217}^{dustEE}$	0.638	$0.64_{-0.27}^{+0.25}$	$Y_P$	0.24581	$0.24581_{-0.00057}^{+0.00054}$	$\sigma_8(0.57)$	0.704	$0.677_{-0.085}^{+0.075}$
$y_{cal}$	1.00005	$1.0000_{-0.0048}^{+0.0050}$	$Y_P^{BBN}$	0.24713	$0.24714_{-0.00058}^{+0.00054}$	$\chi_{plikEE}^2$	748.8	756.3 ( $\nu: 9.0$ )
$H_0$	68.52	$68.5_{-1.7}^{+1.8}$	$10^5 D/H$	2.421	$2.42_{-0.21}^{+0.23}$	$\chi_{6DF}^2$	0.000	0.058 ( $\nu: 0.0$ )
$\Omega_\Lambda$	0.6985	$0.698_{-0.018}^{+0.018}$	Age/Gyr	13.734	$13.73_{-0.14}^{+0.13}$	$\chi_{MGS}^2$	1.68	1.78 ( $\nu: 0.3$ )
$\Omega_m$	0.3015	$0.302_{-0.018}^{+0.018}$	$z_*$	1088.55	$1088.5_{-1.5}^{+1.7}$	$\chi_{DR11CMass}^2$	2.56	3.17 ( $\nu: 0.4$ )
$\Omega_m h^2$	0.14154	$0.1416_{-0.0029}^{+0.0030}$	$r_*$	144.32	$144.3_{-1.1}^{+1.1}$	$\chi_{DR11LOWZ}^2$	0.30	0.48 ( $\nu: 0.1$ )
$\Omega_m h^3$	0.09698	$0.0971_{-0.0023}^{+0.0026}$	$100\theta_*$	1.03953	$1.0395_{-0.0017}^{+0.0017}$	$\chi_{prior}^2$	2.86	7.28 ( $\nu: 5.8$ )
$\sigma_8$	0.942	$0.91_{-0.11}^{+0.10}$	$D_A/Gpc$	13.884	$13.88_{-0.11}^{+0.11}$	$\chi_{BAO}^2$	4.54	5.49 ( $\nu: 1.0$ )
$\sigma_8 \Omega_m^{0.5}$	0.517	$0.497_{-0.063}^{+0.055}$	$z_{drag}$	1061.95	$1062.0_{-3.0}^{+2.8}$			
$\sigma_8 \Omega_m^{0.25}$	0.698	$0.671_{-0.085}^{+0.075}$	$r_{drag}$	146.67	$146.6_{-1.5}^{+1.4}$			

Best-fit  $\chi_{eff}^2 = 756.21$ ;  $\bar{\chi}_{eff}^2 = 769.06$ ;  $R - 1 = 0.01745$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.68 DR11CMass: 2.56 DR11LOWZ: 0.30 CMB - plik\_dx11dr2\_HM\_v18\_EE: 748.81

## 2.52 base\_plikHM\_EE\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02349	$0.0235^{+0.0013}_{-0.0013}$	$\sigma_8/h^{0.5}$	1.134	$1.09^{+0.12}_{-0.14}$	$k_D$	0.14222	$0.1422^{+0.0023}_{-0.0024}$
$\Omega_c h^2$	0.11730	$0.1174^{+0.0029}_{-0.0029}$	$\langle d^2 \rangle^{1/2}$	2.841	$2.74^{+0.30}_{-0.34}$	$100\theta_D$	0.15915	$0.1592^{+0.0017}_{-0.0017}$
$100\theta_{MC}$	1.03938	$1.0395^{+0.0017}_{-0.0017}$	$z_{re}$	19.3	$16.5^{+7.5}_{-9.4}$	$z_{eq}$	3364	$3365^{+69}_{-69}$
$\tau$	0.212	$0.17^{+0.11}_{-0.13}$	$10^9 A_s$	2.92	$2.72^{+0.60}_{-0.67}$	$k_{eq}$	0.010268	$0.01027^{+0.00021}_{-0.00021}$
$\ln(10^{10} A_s)$	3.375	$3.30^{+0.22}_{-0.26}$	$10^9 A_s e^{-2\tau}$	1.914	$1.913^{+0.055}_{-0.052}$	$100\theta_{eq}$	0.8220	$0.822^{+0.012}_{-0.012}$
$n_s$	0.9686	$0.968^{+0.022}_{-0.021}$	$D_{40}$	1376	$1345^{+130}_{-130}$	$100\theta_{s,eq}$	0.4531	$0.4530^{+0.0064}_{-0.0061}$
$A_{100}^{dustEE}$	0.0771	$0.077^{+0.013}_{-0.013}$	$D_{220}$	5992	$5981^{+270}_{-290}$	$r_{drag}/D_V(0.57)$	0.07197	$0.07197^{+0.00096}_{-0.00090}$
$A_{100 \times 143}^{dustEE}$	0.0438	$0.044^{+0.011}_{-0.012}$	$D_{810}$	2576	$2577^{+66}_{-68}$	$H(0.57)$	93.72	$93.7^{+1.1}_{-1.1}$
$A_{100 \times 217}^{dustEE}$	0.098	$0.097^{+0.065}_{-0.064}$	$D_{1420}$	830.0	$831^{+29}_{-29}$	$D_A(0.57)$	1371.1	$1371^{+24}_{-24}$
$A_{143}^{dustEE}$	0.0948	$0.095^{+0.015}_{-0.015}$	$D_{2000}$	239.9	$239^{+11}_{-11}$	$F_{AP}(0.57)$	0.67295	$0.6730^{+0.0045}_{-0.0045}$
$A_{143 \times 217}^{dustEE}$	0.221	$0.220^{+0.088}_{-0.090}$	$n_{s,0.002}$	0.9686	$0.968^{+0.022}_{-0.021}$	$f\sigma_8(0.57)$	0.543	$0.523^{+0.058}_{-0.066}$
$A_{217}^{dustEE}$	0.640	$0.64^{+0.24}_{-0.26}$	$Y_P$	0.24587	$0.24585^{+0.00051}_{-0.00055}$	$\sigma_8(0.57)$	0.703	$0.677^{+0.075}_{-0.086}$
$y_{cal}$	0.99990	$1.0000^{+0.0050}_{-0.0048}$	$Y_P^{BBN}$	0.24720	$0.24718^{+0.00051}_{-0.00056}$	$\chi_{plikEE}^2$	748.7	756.2 ( $\nu: 8.9$ )
$H_0$	68.72	$68.7^{+1.7}_{-1.6}$	$10^5 D/H$	2.395	$2.40^{+0.23}_{-0.21}$	$\chi_{H070p6}^2$	0.323	0.39 ( $\nu: 0.0$ )
$\Omega_\Lambda$	0.7005	$0.700^{+0.017}_{-0.017}$	Age/Gyr	13.719	$13.72^{+0.13}_{-0.13}$	$\chi_{JLA}^2$	706.517	706.59 ( $\nu: 0.0$ )
$\Omega_m$	0.2995	$0.300^{+0.017}_{-0.017}$	$z_*$	1088.35	$1088.4^{+1.7}_{-1.5}$	$\chi_{6DF}^2$	0.002	0.054 ( $\nu: 0.0$ )
$\Omega_m h^2$	0.14143	$0.1415^{+0.0029}_{-0.0029}$	$r_*$	144.28	$144.3^{+1.1}_{-1.1}$	$\chi_{MGS}^2$	1.82	1.90 ( $\nu: 0.2$ )
$\Omega_m h^3$	0.09720	$0.0972^{+0.0025}_{-0.0023}$	$100\theta_*$	1.03946	$1.0395^{+0.0017}_{-0.0017}$	$\chi_{DR11CMAS}^2$	2.63	3.18 ( $\nu: 0.4$ )
$\sigma_8$	0.940	$0.91^{+0.10}_{-0.11}$	$D_A/Gpc$	13.880	$13.88^{+0.11}_{-0.11}$	$\chi_{DR11LOWZ}^2$	0.22	0.39 ( $\nu: 0.1$ )
$\sigma_8 \Omega_m^{0.5}$	0.514	$0.496^{+0.054}_{-0.063}$	$z_{drag}$	1062.30	$1062.2^{+2.8}_{-2.9}$	$\chi_{prior}^2$	2.88	7.26 ( $\nu: 5.7$ )
$\sigma_8 \Omega_m^{0.25}$	0.695	$0.671^{+0.075}_{-0.085}$	$r_{drag}$	146.57	$146.6^{+1.4}_{-1.4}$	$\chi_{BAO}^2$	4.67	5.52 ( $\nu: 1.0$ )

Best-fit  $\chi_{eff}^2 = 1463.07$ ;  $\bar{\chi}_{eff}^2 = 1475.93$ ;  $R - 1 = 0.01752$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.82 DR11CMAS: 2.63 DR11LOWZ: 0.22 CMB - plik\_dx11dr2\_HM.v18\_EE: 748.67 Hubble - H070p6: 0.32 SN - JLA December.2013: 706.52

## 2.53 base\_plikHM\_TE\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02230	$0.02231^{+0.00054}_{-0.00051}$	$\sigma_8 \Omega_m^{0.5}$	0.4478	$0.449^{+0.018}_{-0.018}$	$D_A/\text{Gpc}$	13.914	$13.916^{+0.090}_{-0.089}$
$\Omega_c h^2$	0.11855	$0.1185^{+0.0043}_{-0.0043}$	$\sigma_8 \Omega_m^{0.25}$	0.6012	$0.603^{+0.017}_{-0.017}$	$z_{\text{drag}}$	1059.67	$1059.7^{+1.1}_{-1.0}$
$100\theta_{\text{MC}}$	1.04090	$1.0409^{+0.0010}_{-0.0010}$	$\sigma_8/h^{0.5}$	0.9802	$0.983^{+0.026}_{-0.026}$	$r_{\text{drag}}$	147.55	$147.57^{+0.98}_{-0.95}$
$\tau$	0.0595	$0.063^{+0.042}_{-0.041}$	$\langle d^2 \rangle^{1/2}$	2.431	$2.437^{+0.074}_{-0.073}$	$k_D$	0.14033	$0.1403^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	3.045	$3.051^{+0.075}_{-0.074}$	$z_{\text{re}}$	8.19	$8.35^{+4.0}_{-4.3}$	$100\theta_D$	0.16089	$0.16090^{+0.00062}_{-0.00063}$
$n_s$	0.9656	$0.966^{+0.024}_{-0.024}$	$10^9 A_s$	2.101	$2.12^{+0.16}_{-0.15}$	$z_{\text{eq}}$	3366	$3364^{+97}_{-97}$
$y_{\text{cal}}$	0.99984	$1.0000^{+0.0050}_{-0.0048}$	$10^9 A_s e^{-2\tau}$	1.8657	$1.866^{+0.032}_{-0.032}$	$k_{\text{eq}}$	0.010274	$0.01027^{+0.00029}_{-0.00030}$
$A_{100}^{\text{dustTE}}$	0.135	$0.137^{+0.076}_{-0.074}$	$D_{40}$	1224	$1225^{+52}_{-49}$	$100\theta_{\text{eq}}$	0.8196	$0.820^{+0.019}_{-0.018}$
$A_{100 \times 143}^{\text{dustTE}}$	0.129	$0.133^{+0.057}_{-0.058}$	$D_{220}$	5707	$5707^{+120}_{-110}$	$100\theta_{s,\text{eq}}$	0.4527	$0.4530^{+0.0098}_{-0.0094}$
$A_{100 \times 217}^{\text{dustTE}}$	0.297	$0.30^{+0.16}_{-0.17}$	$D_{810}$	2520.2	$2520^{+45}_{-46}$	$r_{\text{drag}}/D_V(0.57)$	0.07178	$0.0718^{+0.0015}_{-0.0015}$
$A_{143}^{\text{dustTE}}$	0.146	$0.15^{+0.11}_{-0.10}$	$D_{1420}$	810.2	$810^{+22}_{-22}$	$H(0.57)$	93.06	$93.09^{+0.94}_{-0.85}$
$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.33^{+0.16}_{-0.16}$	$D_{2000}$	228.6	$228.7^{+8.2}_{-8.0}$	$D_A(0.57)$	1385.2	$1385^{+27}_{-27}$
$A_{217}^{\text{dustTE}}$	1.68	$1.65^{+0.50}_{-0.50}$	$n_{s,0.002}$	0.9656	$0.966^{+0.024}_{-0.024}$	$F_{\text{AP}}(0.57)$	0.6751	$0.6750^{+0.0068}_{-0.0066}$
$c_{100}$	0.99943	$0.9993^{+0.0020}_{-0.0019}$	$Y_{\text{P}}$	0.245364	$0.24536^{+0.00024}_{-0.00023}$	$f\sigma_8(0.57)$	0.4683	$0.469^{+0.013}_{-0.013}$
$H_0$	67.80	$67.9^{+2.0}_{-2.0}$	$Y_{\text{P}}^{\text{BBN}}$	0.246690	$0.24669^{+0.00024}_{-0.00023}$	$\sigma_8(0.57)$	0.6013	$0.603^{+0.023}_{-0.021}$
$\Omega_\Lambda$	0.6922	$0.693^{+0.025}_{-0.027}$	$10^5 D/H$	2.604	$2.604^{+0.098}_{-0.10}$	$\chi_{\text{lensing}}^2$	8.72	$9.75 (\nu: 1.0)$
$\Omega_m$	0.3078	$0.307^{+0.027}_{-0.025}$	Age/Gyr	13.799	$13.796^{+0.082}_{-0.085}$	$\chi_{\text{plikTE}}^2$	931.1	$938.3 (\nu: 7.9)$
$\Omega_m h^2$	0.14150	$0.1414^{+0.0040}_{-0.0041}$	$z_*$	1089.87	$1089.87^{+0.93}_{-0.92}$	$\chi_{\text{prior}}^2$	2.09	$7.82 (\nu: 6.5)$
$\Omega_m h^3$	0.09594	$0.0959^{+0.0010}_{-0.00099}$	$r_*$	144.86	$144.88^{+0.98}_{-0.95}$	$\chi_{\text{CMB}}^2$	939.8	$948.1 (\nu: 8.9)$
$\sigma_8$	0.8071	$0.809^{+0.025}_{-0.024}$	$100\theta_*$	1.04109	$1.0411^{+0.0010}_{-0.00099}$			

Best-fit  $\chi_{\text{eff}}^2 = 941.87$ ;  $\bar{\chi}_{\text{eff}}^2 = 955.88$ ;  $R - 1 = 0.00937$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.71 plik\_dx11dr2\_HM\_v18\_TE: 931.06



## 2.54 base\_plikHM\_TE\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022296	$0.02230^{+0.00045}_{-0.00043}$	$\sigma_8/h^{0.5}$	0.9821	$0.982^{+0.027}_{-0.026}$	$100\theta_D$	0.16092	$0.16090^{+0.00059}_{-0.00061}$
$\Omega_c h^2$	0.11851	$0.1185^{+0.0026}_{-0.0025}$	$\langle d^2 \rangle^{1/2}$	2.437	$2.436^{+0.074}_{-0.073}$	$z_{\text{eq}}$	3365	$3366^{+58}_{-58}$
$100\theta_{\text{MC}}$	1.04097	$1.04093^{+0.00093}_{-0.00090}$	$z_{\text{re}}$	8.43	$8.32^{+3.3}_{-3.4}$	$k_{\text{eq}}$	0.010270	$0.01027^{+0.00018}_{-0.00018}$
$\tau$	0.0619	$0.062^{+0.033}_{-0.033}$	$10^9 A_s$	2.111	$2.11^{+0.13}_{-0.12}$	$100\theta_{\text{eq}}$	0.8199	$0.820^{+0.011}_{-0.011}$
$\ln(10^{10} A_s)$	3.050	$3.049^{+0.060}_{-0.059}$	$10^9 A_s e^{-2\tau}$	1.8655	$1.866^{+0.030}_{-0.029}$	$100\theta_{s,\text{eq}}$	0.4529	$0.4528^{+0.0057}_{-0.0056}$
$n_s$	0.9653	$0.966^{+0.020}_{-0.020}$	$D_{40}$	1225.3	$1225^{+49}_{-46}$	$r_{\text{drag}}/D_V(0.57)$	0.07181	$0.07179^{+0.00086}_{-0.00083}$
$y_{\text{cal}}$	0.99999	$1.0000^{+0.0050}_{-0.0048}$	$D_{220}$	5708	$5707^{+120}_{-110}$	$H(0.57)$	93.08	$93.07^{+0.57}_{-0.56}$
$A_{100}^{\text{dustTE}}$	0.138	$0.138^{+0.075}_{-0.073}$	$D_{810}$	2519.8	$2520^{+44}_{-45}$	$D_A(0.57)$	1384.8	$1385^{+16}_{-15}$
$A_{100 \times 143}^{\text{dustTE}}$	0.135	$0.133^{+0.057}_{-0.058}$	$D_{1420}$	809.9	$810^{+21}_{-21}$	$F_{\text{AP}}(0.57)$	0.67499	$0.6751^{+0.0038}_{-0.0038}$
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.30^{+0.16}_{-0.17}$	$D_{2000}$	228.5	$228.7^{+7.5}_{-7.6}$	$f\sigma_8(0.57)$	0.4693	$0.469^{+0.013}_{-0.013}$
$A_{143}^{\text{dustTE}}$	0.156	$0.15^{+0.10}_{-0.10}$	$n_{s,0.002}$	0.9653	$0.966^{+0.020}_{-0.020}$	$\sigma_8(0.57)$	0.6027	$0.603^{+0.019}_{-0.018}$
$A_{143 \times 217}^{\text{dustTE}}$	0.332	$0.34^{+0.15}_{-0.16}$	$Y_{\text{P}}$	0.245360	$0.24536^{+0.00020}_{-0.00020}$	$\chi_{\text{lensing}}^2$	8.70	$9.75 (\nu: 1.0)$
$A_{217}^{\text{dustTE}}$	1.64	$1.65^{+0.49}_{-0.50}$	$Y_{\text{P}}^{\text{BBN}}$	0.246687	$0.24669^{+0.00020}_{-0.00020}$	$\chi_{\text{plikTE}}^2$	931.4	$937.6 (\nu: 7.1)$
$c_{100}$	0.99923	$0.9993^{+0.0020}_{-0.0020}$	$10^5 D/H$	2.605	$2.605^{+0.084}_{-0.084}$	$\chi_{6\text{DF}}^2$	0.006	$0.049 (\nu: 0.0)$
$H_0$	67.83	$67.8^{+1.1}_{-1.1}$	Age/Gyr	13.797	$13.798^{+0.059}_{-0.061}$	$\chi_{\text{MGS}}^2$	1.47	$1.52 (\nu: 0.2)$
$\Omega_\Lambda$	0.6926	$0.692^{+0.015}_{-0.015}$	$z_*$	1089.88	$1089.88^{+0.67}_{-0.66}$	$\chi_{\text{DR11CMASS}}^2$	2.41	$2.87 (\nu: 0.2)$
$\Omega_m$	0.3074	$0.308^{+0.015}_{-0.015}$	$r_*$	144.87	$144.86^{+0.65}_{-0.65}$	$\chi_{\text{DR11LOWZ}}^2$	0.43	$0.59 (\nu: 0.1)$
$\Omega_m h^2$	0.14145	$0.1415^{+0.0024}_{-0.0024}$	$100\theta_*$	1.04116	$1.04112^{+0.00092}_{-0.00091}$	$\chi_{\text{prior}}^2$	1.80	$7.81 (\nu: 6.6)$
$\Omega_m h^3$	0.09595	$0.0959^{+0.0010}_{-0.00098}$	$D_A/\text{Gpc}$	13.915	$13.914^{+0.063}_{-0.064}$	$\chi_{\text{CMB}}^2$	940.1	$947.4 (\nu: 8.0)$
$\sigma_8$	0.8089	$0.809^{+0.023}_{-0.022}$	$z_{\text{drag}}$	1059.67	$1059.7^{+1.1}_{-1.0}$	$\chi_{\text{BAO}}^2$	4.31	$5.02 (\nu: 0.5)$
$\sigma_8 \Omega_m^{0.5}$	0.4485	$0.449^{+0.014}_{-0.014}$	$r_{\text{drag}}$	147.57	$147.56^{+0.71}_{-0.73}$			
$\sigma_8 \Omega_m^{0.25}$	0.6023	$0.602^{+0.017}_{-0.016}$	$k_D$	0.14031	$0.14032^{+0.00097}_{-0.00095}$			

Best-fit  $\chi_{\text{eff}}^2 = 946.19$ ;  $\bar{\chi}_{\text{eff}}^2 = 960.24$ ;  $R - 1 = 0.01208$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMASS: 2.41 DR11LOWZ: 0.43 CMB - smica\_g30\_ftl\_full\_pp: 8.70 plik\_dx11dr2\_HM\_v18\_TE: 931.38

## 2.55 base\_plikHM\_TE\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022314	$0.02233^{+0.00045}_{-0.00043}$	$\sigma_8/h^{0.5}$	0.9820	$0.982^{+0.027}_{-0.026}$	$100\theta_D$	0.16090	$0.16088^{+0.00059}_{-0.00060}$
$\Omega_c h^2$	0.11835	$0.1183^{+0.0024}_{-0.0024}$	$\langle d^2 \rangle^{1/2}$	2.434	$2.435^{+0.074}_{-0.073}$	$z_{\text{eq}}$	3361	$3360^{+57}_{-57}$
$100\theta_{\text{MC}}$	1.04096	$1.04096^{+0.00093}_{-0.00089}$	$z_{\text{re}}$	8.48	$8.49^{+3.2}_{-3.4}$	$k_{\text{eq}}$	0.010260	$0.01026^{+0.00017}_{-0.00017}$
$\tau$	0.0625	$0.063^{+0.032}_{-0.033}$	$10^9 A_s$	2.114	$2.12^{+0.13}_{-0.12}$	$100\theta_{\text{eq}}$	0.8205	$0.821^{+0.011}_{-0.010}$
$\ln(10^{10} A_s)$	3.051	$3.053^{+0.059}_{-0.059}$	$10^9 A_s e^{-2\tau}$	1.8657	$1.865^{+0.030}_{-0.030}$	$100\theta_{s,\text{eq}}$	0.4532	$0.4533^{+0.0055}_{-0.0054}$
$n_s$	0.9666	$0.967^{+0.020}_{-0.020}$	$D_{40}$	1223.0	$1224^{+48}_{-45}$	$r_{\text{drag}}/D_V(0.57)$	0.07186	$0.07189^{+0.00083}_{-0.00082}$
$y_{\text{cal}}$	1.00001	$1.0000^{+0.0050}_{-0.0049}$	$D_{220}$	5708	$5708^{+120}_{-110}$	$H(0.57)$	93.11	$93.13^{+0.56}_{-0.55}$
$A_{100}^{\text{dustTE}}$	0.138	$0.137^{+0.075}_{-0.072}$	$D_{810}$	2521.4	$2521^{+45}_{-45}$	$D_A(0.57)$	1383.9	$1383^{+15}_{-15}$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.133^{+0.057}_{-0.058}$	$D_{1420}$	810.9	$811^{+21}_{-21}$	$F_{\text{AP}}(0.57)$	0.67475	$0.6747^{+0.0038}_{-0.0037}$
$A_{100 \times 217}^{\text{dustTE}}$	0.306	$0.30^{+0.17}_{-0.17}$	$D_{2000}$	228.9	$228.9^{+7.5}_{-7.6}$	$f\sigma_8(0.57)$	0.4692	$0.469^{+0.013}_{-0.013}$
$A_{143}^{\text{dustTE}}$	0.152	$0.15^{+0.10}_{-0.10}$	$n_{s,0.002}$	0.9666	$0.967^{+0.020}_{-0.020}$	$\sigma_8(0.57)$	0.6032	$0.604^{+0.019}_{-0.018}$
$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.33^{+0.15}_{-0.16}$	$Y_{\text{P}}$	0.245368	$0.24537^{+0.00020}_{-0.00020}$	$\chi^2_{\text{lensing}}$	8.69	$9.74 (\nu: 1.0)$
$A_{217}^{\text{dustTE}}$	1.66	$1.65^{+0.49}_{-0.50}$	$Y_{\text{P}}^{\text{BBN}}$	0.246695	$0.24670^{+0.00020}_{-0.00020}$	$\chi^2_{\text{plikTE}}$	931.3	$937.6 (\nu: 7.0)$
$c_{100}$	0.99927	$0.9993^{+0.0020}_{-0.0020}$	$10^5 D/H$	2.602	$2.599^{+0.083}_{-0.083}$	$\chi^2_{\text{H070p6}}$	0.66	$0.67 (\nu: 0.0)$
$H_0$	67.90	$67.9^{+1.1}_{-1.1}$	Age/Gyr	13.795	$13.793^{+0.059}_{-0.060}$	$\chi^2_{\text{JLA}}$	706.623	$706.66 (\nu: 0.0)$
$\Omega_\Lambda$	0.6935	$0.694^{+0.014}_{-0.015}$	$z_*$	1089.85	$1089.82^{+0.65}_{-0.64}$	$\chi^2_{6\text{DF}}$	0.003	$0.040 (\nu: 0.0)$
$\Omega_m$	0.3065	$0.306^{+0.015}_{-0.014}$	$r_*$	144.90	$144.91^{+0.64}_{-0.64}$	$\chi^2_{\text{MGS}}$	1.54	$1.64 (\nu: 0.2)$
$\Omega_m h^2$	0.14131	$0.1413^{+0.0024}_{-0.0024}$	$100\theta_*$	1.04116	$1.04115^{+0.00091}_{-0.00090}$	$\chi^2_{\text{DR11CMass}}$	2.42	$2.85 (\nu: 0.2)$
$\Omega_m h^3$	0.09596	$0.0960^{+0.0010}_{-0.00098}$	$D_A/\text{Gpc}$	13.917	$13.918^{+0.063}_{-0.064}$	$\chi^2_{\text{DR11LOWZ}}$	0.37	$0.48 (\nu: 0.1)$
$\sigma_8$	0.8092	$0.810^{+0.023}_{-0.022}$	$z_{\text{drag}}$	1059.70	$1059.7^{+1.0}_{-0.99}$	$\chi^2_{\text{prior}}$	1.91	$7.83 (\nu: 6.6)$
$\sigma_8 \Omega_m^{0.5}$	0.4480	$0.448^{+0.014}_{-0.014}$	$r_{\text{drag}}$	147.59	$147.59^{+0.70}_{-0.73}$	$\chi^2_{\text{CMB}}$	940.0	$947.4 (\nu: 8.0)$
$\sigma_8 \Omega_m^{0.25}$	0.6021	$0.602^{+0.017}_{-0.016}$	$k_D$	0.14030	$0.14031^{+0.00097}_{-0.00094}$	$\chi^2_{\text{BAO}}$	4.33	$5.01 (\nu: 0.5)$

Best-fit  $\chi^2_{\text{eff}} = 1653.50$ ;  $\bar{\chi}^2_{\text{eff}} = 1667.55$ ;  $R - 1 = 0.01133$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.42 DR11LOWZ: 0.37 CMB - smica\_g30\_ftl\_full\_pp: 8.69 plik\_dx11dr2\_HM\_v18\_TE: 931.28 Hubble - H070p6: 0.66 SN - JLA December\_2013: 706.62

## 2.56 base\_plikHM\_EE\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02329	$0.0235^{+0.0021}_{-0.0020}$	$\sigma_8 \Omega_m^{0.25}$	0.5776	$0.576^{+0.038}_{-0.039}$	$z_{\text{drag}}$	1061.76	$1062.1^{+4.2}_{-4.2}$
$\Omega_c h^2$	0.1163	$0.1149^{+0.0077}_{-0.0079}$	$\sigma_8/h^{0.5}$	0.944	$0.943^{+0.055}_{-0.058}$	$r_{\text{drag}}$	147.05	$147.2^{+1.4}_{-1.4}$
$100\theta_{\text{MC}}$	1.04015	$1.0403^{+0.0018}_{-0.0017}$	$\langle d^2 \rangle^{1/2}$	2.365	$2.36^{+0.11}_{-0.11}$	$k_{\text{D}}$	0.14158	$0.1415^{+0.0023}_{-0.0024}$
$\tau$	0.0384	< 0.0973	$z_{\text{re}}$	5.77	$6.75^{+4.7}_{-4.8}$	$100\theta_{\text{D}}$	0.15955	$0.1594^{+0.0023}_{-0.0023}$
$\ln(10^{10} A_s)$	3.018	$3.039^{+0.091}_{-0.080}$	$10^9 A_s$	2.045	$2.09^{+0.19}_{-0.17}$	$z_{\text{eq}}$	3337	$3307^{+150}_{-150}$
$n_s$	0.9693	$0.974^{+0.030}_{-0.029}$	$10^9 A_s e^{-2\tau}$	1.8939	$1.888^{+0.044}_{-0.046}$	$k_{\text{eq}}$	0.010184	$0.01009^{+0.00045}_{-0.00047}$
$y_{\text{cal}}$	0.99999	$0.9999^{+0.0049}_{-0.0049}$	$D_{40}$	1241	$1236^{+62}_{-60}$	$100\theta_{\text{eq}}$	0.8272	$0.834^{+0.035}_{-0.032}$
$A_{100}^{\text{dustEE}}$	0.0809	$0.081^{+0.012}_{-0.012}$	$D_{220}$	5914	$5925^{+340}_{-330}$	$100\theta_{\text{s,eq}}$	0.4559	$0.459^{+0.017}_{-0.015}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0472	$0.049^{+0.011}_{-0.011}$	$D_{810}$	2569	$2568^{+72}_{-73}$	$r_{\text{drag}}/D_V(0.57)$	0.07243	$0.0730^{+0.0032}_{-0.0028}$
$A_{100 \times 217}^{\text{dustEE}}$	0.105	$0.099^{+0.064}_{-0.064}$	$D_{1420}$	830.9	$832^{+35}_{-36}$	$H(0.57)$	93.87	$94.3^{+2.8}_{-2.6}$
$A_{143}^{\text{dustEE}}$	0.0988	$0.0998^{+0.014}_{-0.014}$	$D_{2000}$	235.6	$236^{+13}_{-14}$	$D_A(0.57)$	1366	$1356^{+63}_{-65}$
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.224^{+0.092}_{-0.092}$	$n_{\text{s},0.002}$	0.9693	$0.974^{+0.030}_{-0.029}$	$F_{\text{AP}}(0.57)$	0.6713	$0.669^{+0.014}_{-0.013}$
$A_{217}^{\text{dustEE}}$	0.655	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	0.24579	$0.24586^{+0.00085}_{-0.00087}$	$f\sigma_8(0.57)$	0.4516	$0.451^{+0.025}_{-0.027}$
$H_0$	69.16	$69.9^{+4.9}_{-4.5}$	$Y_{\text{P}}^{\text{BBN}}$	0.24711	$0.24719^{+0.00085}_{-0.00088}$	$\sigma_8(0.57)$	0.5882	$0.593^{+0.026}_{-0.023}$
$\Omega_\Lambda$	0.707	$0.714^{+0.051}_{-0.051}$	$10^5 \text{D}/\text{H}$	2.429	$2.40^{+0.35}_{-0.34}$	$\chi_{\text{lensing}}^2$	9.12	10.6 ( $\nu: 1.4$ )
$\Omega_m$	0.293	$0.286^{+0.051}_{-0.051}$	Age/Gyr	13.712	$13.68^{+0.26}_{-0.27}$	$\chi_{\text{plikEE}}^2$	751.8	758.4 ( $\nu: 8.6$ )
$\Omega_m h^2$	0.1403	$0.1390^{+0.0061}_{-0.0064}$	$z_*$	1088.50	$1088.2^{+3.0}_{-2.8}$	$\chi_{\text{prior}}^2$	3.36	8.00 ( $\nu: 6.1$ )
$\Omega_m h^3$	0.09701	$0.0972^{+0.0033}_{-0.0031}$	$r_*$	144.68	$144.9^{+1.3}_{-1.2}$	$\chi_{\text{CMB}}^2$	761.0	768.9 ( $\nu: 9.7$ )
$\sigma_8$	0.7848	$0.788^{+0.034}_{-0.031}$	$100\theta_*$	1.04024	$1.0403^{+0.0017}_{-0.0016}$			
$\sigma_8 \Omega_m^{0.5}$	0.4250	$0.421^{+0.045}_{-0.044}$	$D_A/\text{Gpc}$	13.908	$13.93^{+0.12}_{-0.12}$			

Best-fit  $\chi_{\text{eff}}^2 = 764.31$ ;  $\bar{\chi}_{\text{eff}}^2 = 776.92$ ;  $R - 1 = 0.00961$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.12 plik\_dx11dr2\_HM\_v18\_EE: 751.83

## 2.57 base\_plikHM\_EE\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02289	$0.0228^{+0.0012}_{-0.0012}$	$\sigma_8/h^{0.5}$	0.9522	$0.957^{+0.041}_{-0.039}$	$k_D$	0.14127	$0.1411^{+0.0021}_{-0.0022}$
$\Omega_c h^2$	0.11792	$0.1177^{+0.0029}_{-0.0029}$	$\langle d^2 \rangle^{1/2}$	2.377	$2.387^{+0.091}_{-0.088}$	$100\theta_D$	0.15997	$0.1601^{+0.0016}_{-0.0015}$
$100\theta_{MC}$	1.03985	$1.0399^{+0.0015}_{-0.0015}$	$z_{re}$	5.24	$5.89^{+4.2}_{-4.0}$	$z_{eq}$	3365	$3358^{+65}_{-67}$
$\tau$	0.0330	$< 0.0757$	$10^9 A_s$	2.021	$2.05^{+0.14}_{-0.12}$	$k_{eq}$	0.010270	$0.01025^{+0.00020}_{-0.00020}$
$\ln(10^{10} A_s)$	3.006	$3.018^{+0.065}_{-0.058}$	$10^9 A_s e^{-2\tau}$	1.8923	$1.888^{+0.041}_{-0.045}$	$100\theta_{eq}$	0.8206	$0.822^{+0.012}_{-0.012}$
$n_s$	0.9656	$0.966^{+0.021}_{-0.022}$	$D_{40}$	1240	$1238^{+63}_{-61}$	$100\theta_{s,eq}$	0.4528	$0.4535^{+0.0063}_{-0.0060}$
$y_{cal}$	0.99980	$0.9998^{+0.0049}_{-0.0048}$	$D_{220}$	5854	$5839^{+240}_{-250}$	$r_{drag}/D_V(0.57)$	0.07180	$0.07190^{+0.00097}_{-0.00093}$
$A_{100}^{dustEE}$	0.0808	$0.081^{+0.012}_{-0.012}$	$D_{810}$	2560	$2555^{+60}_{-64}$	$H(0.57)$	93.31	$93.3^{+1.1}_{-1.1}$
$A_{100 \times 143}^{dustEE}$	0.0479	$0.048^{+0.011}_{-0.011}$	$D_{1420}$	825.5	$824^{+27}_{-28}$	$D_A(0.57)$	1379.7	$1379^{+24}_{-24}$
$A_{100 \times 217}^{dustEE}$	0.098	$0.0996^{+0.063}_{-0.065}$	$D_{2000}$	233.4	$232.9^{+9.7}_{-9.8}$	$F_{AP}(0.57)$	0.67424	$0.6739^{+0.0047}_{-0.0046}$
$A_{143}^{dustEE}$	0.0991	$0.099^{+0.015}_{-0.014}$	$n_{s,0.002}$	0.9656	$0.966^{+0.021}_{-0.022}$	$f\sigma_8(0.57)$	0.4553	$0.457^{+0.019}_{-0.018}$
$A_{143 \times 217}^{dustEE}$	0.223	$0.224^{+0.091}_{-0.092}$	$Y_P$	0.24562	$0.24559^{+0.00048}_{-0.00052}$	$\sigma_8(0.57)$	0.5865	$0.590^{+0.022}_{-0.019}$
$A_{217}^{dustEE}$	0.656	$0.65^{+0.25}_{-0.25}$	$Y_P^{BBN}$	0.24695	$0.24692^{+0.00048}_{-0.00052}$	$\chi^2_{lensing}$	9.00	10.0 ( $\nu: 1.0$ )
$H_0$	68.16	$68.2^{+1.7}_{-1.6}$	$10^5 D/H$	2.497	$2.51^{+0.21}_{-0.21}$	$\chi^2_{plikEE}$	752.0	758.2 ( $\nu: 7.9$ )
$\Omega_\Lambda$	0.6955	$0.697^{+0.018}_{-0.018}$	Age/Gyr	13.768	$13.77^{+0.13}_{-0.13}$	$\chi^2_{6DF}$	0.003	0.056 ( $\nu: 0.0$ )
$\Omega_m$	0.3045	$0.303^{+0.018}_{-0.018}$	$z_*$	1089.11	$1089.2^{+1.5}_{-1.5}$	$\chi^2_{MGS}$	1.54	1.74 ( $\nu: 0.2$ )
$\Omega_m h^2$	0.14145	$0.1412^{+0.0027}_{-0.0028}$	$r_*$	144.57	$144.7^{+1.0}_{-0.92}$	$\chi^2_{DR11CMAS}$	2.49	3.10 ( $\nu: 0.4$ )
$\Omega_m h^3$	0.09641	$0.0963^{+0.0022}_{-0.0023}$	$100\theta_*$	1.03999	$1.0401^{+0.0015}_{-0.0015}$	$\chi^2_{DR11LOWZ}$	0.39	0.49 ( $\nu: 0.1$ )
$\sigma_8$	0.7862	$0.790^{+0.030}_{-0.027}$	$D_A/Gpc$	13.901	$13.91^{+0.10}_{-0.093}$	$\chi^2_{prior}$	3.51	7.88 ( $\nu: 6.0$ )
$\sigma_8 \Omega_m^{0.5}$	0.4338	$0.435^{+0.023}_{-0.022}$	$z_{drag}$	1060.96	$1060.8^{+2.5}_{-2.7}$	$\chi^2_{CMB}$	761.0	768.2 ( $\nu: 8.6$ )
$\sigma_8 \Omega_m^{0.25}$	0.5840	$0.587^{+0.026}_{-0.024}$	$r_{drag}$	147.07	$147.2^{+1.4}_{-1.2}$	$\chi^2_{BAO}$	4.43	5.39 ( $\nu: 0.9$ )

Best-fit  $\chi^2_{eff} = 768.95$ ;  $\bar{\chi}^2_{eff} = 781.51$ ;  $R - 1 = 0.01617$

$\chi^2_{eff}$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMAS: 2.49 DR11LOWZ: 0.40 CMB - smica\_g30\_ftl\_full\_pp: 9.00 plik\_dx11dr2\_HM\_v18\_EE: 752.02

## 2.58 base\_plikHM\_EE\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02302	$0.0229^{+0.0011}_{-0.0011}$	$\langle d^2 \rangle^{1/2}$	2.374	$2.383^{+0.090}_{-0.086}$	$z_{\text{eq}}$	3363	$3354^{+63}_{-65}$
$\Omega_c h^2$	0.11773	$0.1174^{+0.0028}_{-0.0028}$	$z_{\text{re}}$	5.14	$5.85^{+4.2}_{-4.0}$	$k_{\text{eq}}$	0.010266	$0.01024^{+0.00019}_{-0.00020}$
$100\theta_{\text{MC}}$	1.03993	$1.0400^{+0.0015}_{-0.0015}$	$10^9 A_s$	2.021	$2.05^{+0.14}_{-0.12}$	$100\theta_{\text{eq}}$	0.8213	$0.823^{+0.012}_{-0.011}$
$\tau$	0.0324	$< 0.0757$	$10^9 A_s e^{-2\tau}$	1.8943	$1.889^{+0.040}_{-0.044}$	$100\theta_{s,\text{eq}}$	0.4531	$0.4539^{+0.0061}_{-0.0058}$
$\ln(10^{10} A_s)$	3.006	$3.018^{+0.065}_{-0.058}$	$D_{40}$	1243	$1239^{+63}_{-62}$	$r_{\text{drag}}/D_V(0.57)$	0.07190	$0.07200^{+0.00092}_{-0.00090}$
$n_s$	0.9657	$0.967^{+0.021}_{-0.022}$	$D_{220}$	5877	$5855^{+240}_{-240}$	$H(0.57)$	93.46	$93.4^{+1.1}_{-1.0}$
$y_{\text{cal}}$	0.99976	$0.9998^{+0.0049}_{-0.0048}$	$D_{810}$	2563	$2558^{+60}_{-63}$	$D_A(0.57)$	1376.6	$1376^{+23}_{-23}$
$A_{100}^{\text{dustEE}}$	0.0810	$0.081^{+0.012}_{-0.012}$	$D_{1420}$	827.2	$825^{+27}_{-28}$	$F_{\text{AP}}(0.57)$	0.67373	$0.6734^{+0.0044}_{-0.0043}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0478	$0.048^{+0.011}_{-0.011}$	$D_{2000}$	234.1	$233.5^{+9.5}_{-9.8}$	$f\sigma_8(0.57)$	0.4541	$0.456^{+0.019}_{-0.017}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0996^{+0.063}_{-0.065}$	$n_{s,0.002}$	0.9657	$0.967^{+0.021}_{-0.022}$	$\sigma_8(0.57)$	0.5861	$0.590^{+0.022}_{-0.019}$
$A_{143}^{\text{dustEE}}$	0.0989	$0.099^{+0.015}_{-0.014}$	$Y_{\text{P}}$	0.245680	$0.24564^{+0.00047}_{-0.00051}$	$\chi_{\text{lensing}}^2$	9.04	10.0 ( $\nu: 1.0$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.224^{+0.091}_{-0.091}$	$Y_{\text{P}}^{\text{BBN}}$	0.247007	$0.24696^{+0.00047}_{-0.00051}$	$\chi_{\text{plikEE}}^2$	751.8	758.1 ( $\nu: 7.8$ )
$A_{217}^{\text{dustEE}}$	0.649	$0.65^{+0.25}_{-0.25}$	$10^5 \text{D}/\text{H}$	2.473	$2.49^{+0.21}_{-0.20}$	$\chi_{\text{H070p6}}^2$	0.45	0.49 ( $\nu: 0.1$ )
$H_0$	68.37	$68.4^{+1.6}_{-1.5}$	Age/Gyr	13.751	$13.76^{+0.13}_{-0.12}$	$\chi_{\text{JLA}}^2$	706.553	706.60 ( $\nu: 0.0$ )
$\Omega_\Lambda$	0.6975	$0.699^{+0.017}_{-0.017}$	$z_*$	1088.93	$1089.0^{+1.5}_{-1.4}$	$\chi_{6\text{DF}}^2$	0.000	0.051 ( $\nu: 0.0$ )
$\Omega_m$	0.3025	$0.301^{+0.017}_{-0.017}$	$r_*$	144.52	$144.7^{+1.0}_{-0.91}$	$\chi_{\text{MGS}}^2$	1.68	1.89 ( $\nu: 0.2$ )
$\Omega_m h^2$	0.14139	$0.1410^{+0.0026}_{-0.0027}$	$100\theta_*$	1.04005	$1.0401^{+0.0015}_{-0.0015}$	$\chi_{\text{DR11CMASS}}^2$	2.53	3.12 ( $\nu: 0.4$ )
$\Omega_m h^3$	0.09667	$0.0965^{+0.0021}_{-0.0023}$	$D_A/\text{Gpc}$	13.895	$13.91^{+0.10}_{-0.092}$	$\chi_{\text{DR11LOWZ}}^2$	0.29	0.38 ( $\nu: 0.1$ )
$\sigma_8$	0.7850	$0.790^{+0.030}_{-0.027}$	$z_{\text{drag}}$	1061.27	$1061.1^{+2.5}_{-2.6}$	$\chi_{\text{prior}}^2$	3.60	7.85 ( $\nu: 5.9$ )
$\sigma_8 \Omega_m^{0.5}$	0.4317	$0.433^{+0.023}_{-0.021}$	$r_{\text{drag}}$	146.97	$147.1^{+1.3}_{-1.3}$	$\chi_{\text{CMB}}^2$	760.9	768.1 ( $\nu: 8.5$ )
$\sigma_8 \Omega_m^{0.25}$	0.5822	$0.585^{+0.025}_{-0.024}$	$k_{\text{D}}$	0.14147	$0.1412^{+0.0021}_{-0.0021}$	$\chi_{\text{BAO}}^2$	4.50	5.43 ( $\nu: 0.9$ )
$\sigma_8/h^{0.5}$	0.9494	$0.955^{+0.041}_{-0.038}$	$100\theta_{\text{D}}$	0.15981	$0.1600^{+0.0015}_{-0.0014}$			

Best-fit  $\chi_{\text{eff}}^2 = 1475.97$ ;  $\bar{\chi}_{\text{eff}}^2 = 1488.50$ ;  $R - 1 = 0.01677$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.68 DR11CMASS: 2.53 DR11LOWZ: 0.29 CMB - smica\_g30\_ftl\_full\_pp: 9.04 plik\_dx11dr2\_HM.v18\_EE: 751.82 Hubble - H070p6: 0.45 SN - JLA December\_2013: 706.55

## 2.59 base\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022277	$0.02226^{+0.00046}_{-0.00044}$	$\Omega_m h^2$	0.14135	$0.1415^{+0.0037}_{-0.0036}$	$z_{\text{drag}}$	1059.59	$1059.57^{+0.94}_{-0.89}$
$\Omega_c h^2$	0.11843	$0.1186^{+0.0039}_{-0.0039}$	$\Omega_m h^3$	0.09593	$0.09591^{+0.00089}_{-0.00085}$	$r_{\text{drag}}$	147.61	$147.60^{+0.85}_{-0.86}$
$100\theta_{\text{MC}}$	1.04103	$1.04103^{+0.00091}_{-0.00090}$	$\sigma_8$	0.8152	$0.815^{+0.018}_{-0.018}$	$k_{\text{D}}$	0.14025	$0.14024^{+0.00094}_{-0.00092}$
$\tau$	0.0666	$0.066^{+0.033}_{-0.032}$	$\sigma_8 \Omega_m^{0.5}$	0.4516	$0.452^{+0.017}_{-0.017}$	$100\theta_{\text{D}}$	0.16095	$0.16098^{+0.00052}_{-0.00052}$
$\ln(10^{10} A_s)$	3.064	$3.062^{+0.059}_{-0.058}$	$\sigma_8 \Omega_m^{0.25}$	0.6068	$0.607^{+0.015}_{-0.015}$	$z_{\text{eq}}$	3362	$3365^{+88}_{-87}$
$n_s$	0.9683	$0.968^{+0.012}_{-0.011}$	$\sigma_8/h^{0.5}$	0.9896	$0.990^{+0.021}_{-0.022}$	$k_{\text{eq}}$	0.010263	$0.01027^{+0.00027}_{-0.00026}$
$y_{\text{cal}}$	1.00012	$1.0001^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.447	$2.448^{+0.049}_{-0.051}$	$100\theta_{\text{eq}}$	0.8203	$0.820^{+0.017}_{-0.017}$
$A_{217}^{\text{CIB}}$	67.4	$65^{+10}_{-10}$	$z_{\text{re}}$	8.89	$8.75^{+3.1}_{-3.1}$	$100\theta_{\text{s,eq}}$	0.4531	$0.4529^{+0.0087}_{-0.0085}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.141	$2.14^{+0.13}_{-0.12}$	$r_{\text{drag}}/D_V(0.57)$	0.07185	$0.0718^{+0.0014}_{-0.0013}$
$A_{143}^{\text{tSZ}}$	7.21	$5.04^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8734	$1.874^{+0.025}_{-0.025}$	$H(0.57)$	93.08	$93.07^{+0.84}_{-0.77}$
$A_{100}^{\text{PS}}$	254	$260^{+50}_{-50}$	$D_{40}$	1224.6	$1226^{+25}_{-25}$	$D_A(0.57)$	1384.4	$1385^{+24}_{-24}$
$A_{143}^{\text{PS}}$	39.2	$44^{+20}_{-20}$	$D_{220}$	5717	$5717^{+82}_{-80}$	$F_{\text{AP}}(0.57)$	0.6749	$0.6751^{+0.0062}_{-0.0060}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2532.5	$2532^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4728	$0.473^{+0.010}_{-0.011}$
$A_{217}^{\text{PS}}$	97.3	$96^{+20}_{-20}$	$D_{1420}$	815.0	$815^{+10}_{-10}$	$\sigma_8(0.57)$	0.6076	$0.607^{+0.017}_{-0.016}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.22	$230.0^{+3.6}_{-3.7}$	$f_{2000}^{143}$	30.0	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.42	$7.45^{+3.6}_{-3.7}$	$n_{\text{s},0.002}$	0.9683	$0.968^{+0.012}_{-0.011}$	$f_{2000}^{143 \times 217}$	32.58	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.04	$9.08^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245352	$0.24534^{+0.00021}_{-0.00020}$	$f_{2000}^{217}$	106.15	$106.3^{+3.9}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.2^{+8.1}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246678	$0.24667^{+0.00021}_{-0.00020}$	$\chi_{\text{lensing}}^2$	9.18	$9.89 (\nu: 1.1)$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$10^5 D/H$	2.609	$2.613^{+0.085}_{-0.087}$	$\chi_{\text{lowTEB}}^2$	10494.86	$10495.6 (\nu: 0.8)$
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.797	$13.799^{+0.074}_{-0.077}$	$\chi_{\text{plik}}^2$	766.3	$779.4 (\nu: 14.9)$
$c_{217}$	0.99597	$0.9960^{+0.0029}_{-0.0028}$	$z_*$	1089.90	$1089.94^{+0.81}_{-0.83}$	$\chi_{\text{prior}}^2$	2.08	$7.40 (\nu: 6.4)$
$H_0$	67.87	$67.8^{+1.8}_{-1.8}$	$r_*$	144.91	$144.89^{+0.86}_{-0.87}$	$\chi_{\text{CMB}}^2$	11270.4	$11284.9 (\nu: 15.0)$
$\Omega_\Lambda$	0.6931	$0.692^{+0.023}_{-0.024}$	$100\theta_*$	1.04122	$1.04122^{+0.00089}_{-0.00088}$			
$\Omega_m$	0.3069	$0.308^{+0.024}_{-0.023}$	$D_A/\text{Gpc}$	13.917	$13.916^{+0.080}_{-0.081}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.43$ ;  $\bar{\chi}_{\text{eff}}^2 = 11292.30$ ;  $R - 1 = 0.00803$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.18 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.86 plik\_dx11dr2\_HM\_v18.TT: 766.32

## 2.60 base\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022249	$0.02225^{+0.00040}_{-0.00039}$	$\Omega_m h^3$	0.09591	$0.09591^{+0.00087}_{-0.00085}$	$k_D$	0.14026	$0.14024^{+0.00083}_{-0.00082}$
$\Omega_c h^2$	0.11867	$0.1186^{+0.0024}_{-0.0024}$	$\sigma_8$	0.8153	$0.815^{+0.018}_{-0.017}$	$100\theta_D$	0.16098	$0.16099^{+0.00050}_{-0.00050}$
$100\theta_{MC}$	1.04101	$1.04103^{+0.00081}_{-0.00080}$	$\sigma_8 \Omega_m^{0.5}$	0.4527	$0.452^{+0.013}_{-0.013}$	$z_{eq}$	3367	$3366^{+55}_{-54}$
$\tau$	0.0654	$0.066^{+0.026}_{-0.025}$	$\sigma_8 \Omega_m^{0.25}$	0.6075	$0.607^{+0.014}_{-0.014}$	$k_{eq}$	0.010278	$0.01027^{+0.00017}_{-0.00016}$
$\ln(10^{10} A_s)$	3.0618	$3.062^{+0.048}_{-0.047}$	$\sigma_8/h^{0.5}$	0.9905	$0.990^{+0.021}_{-0.021}$	$100\theta_{eq}$	0.8193	$0.820^{+0.010}_{-0.010}$
$n_s$	0.9679	$0.9675^{+0.0087}_{-0.0089}$	$\langle d^2 \rangle^{1/2}$	2.4480	$2.448^{+0.048}_{-0.050}$	$100\theta_{s,eq}$	0.4526	$0.4528^{+0.0053}_{-0.0053}$
$y_{cal}$	1.00023	$1.0002^{+0.0049}_{-0.0048}$	$z_{re}$	8.78	$8.76^{+2.3}_{-2.5}$	$r_{drag}/D_V(0.57)$	0.07177	$0.07179^{+0.00083}_{-0.00081}$
$A_{217}^{CIB}$	67.6	$65^{+10}_{-10}$	$10^9 A_s$	2.136	$2.14^{+0.10}_{-0.099}$	$H(0.57)$	93.03	$93.05^{+0.55}_{-0.53}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8746	$1.874^{+0.023}_{-0.022}$	$D_A(0.57)$	1385.9	$1386^{+15}_{-15}$
$A_{143}^{tSZ}$	7.25	$5.05^{+3.8}_{-3.9}$	$D_{40}$	1225.0	$1227^{+23}_{-22}$	$F_{AP}(0.57)$	0.67524	$0.6751^{+0.0037}_{-0.0037}$
$A_{100}^{PS}$	253	$260^{+50}_{-50}$	$D_{220}$	5715	$5717^{+79}_{-77}$	$f\sigma_8(0.57)$	0.4732	$0.473^{+0.010}_{-0.010}$
$A_{143}^{PS}$	39.2	$44^{+20}_{-20}$	$D_{810}$	2533.1	$2532^{+27}_{-27}$	$\sigma_8(0.57)$	0.6073	$0.607^{+0.015}_{-0.014}$
$A_{143 \times 217}^{PS}$	33	$39^{+20}_{-20}$	$D_{1420}$	815.0	$814.5^{+9.9}_{-10}$	$f_{2000}^{143}$	30.0	$30^{+6}_{-5}$
$A_{217}^{PS}$	97.0	$96^{+20}_{-20}$	$D_{2000}$	230.18	$230.0^{+3.5}_{-3.5}$	$f_{2000}^{143 \times 217}$	32.68	$33^{+4}_{-4}$
$A^{kSZ}$	0.0	—	$n_{s,0.002}$	0.9679	$0.9675^{+0.0087}_{-0.0089}$	$f_{2000}^{217}$	106.22	$106.4^{+3.9}_{-3.9}$
$A_{100}^{dustTT}$	7.51	$7.46^{+3.7}_{-3.7}$	$Y_P$	0.245339	$0.24534^{+0.00018}_{-0.00018}$	$\chi_{lensing}^2$	9.24	$9.88 (\nu: 1.0)$
$A_{143}^{dustTT}$	9.06	$9.05^{+3.7}_{-3.6}$	$Y_P^{BBN}$	0.246666	$0.24666^{+0.00018}_{-0.00018}$	$\chi_{lowTEB}^2$	10494.86	$10495.4 (\nu: 0.6)$
$A_{143 \times 217}^{dustTT}$	17.7	$17.2^{+8.3}_{-8.3}$	$10^5 D/H$	2.614	$2.614^{+0.075}_{-0.075}$	$\chi_{plik}^2$	766.2	$779.0 (\nu: 14.8)$
$A_{217}^{dustTT}$	82.0	$82^{+10}_{-10}$	Age/Gyr	13.801	$13.800^{+0.056}_{-0.057}$	$\chi_{6DF}^2$	0.010	$0.047 (\nu: 0.0)$
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.95	$1089.95^{+0.60}_{-0.60}$	$\chi_{MGS}^2$	1.41	$1.51 (\nu: 0.2)$
$c_{217}$	0.99598	$0.9960^{+0.0028}_{-0.0029}$	$r_*$	144.87	$144.89^{+0.59}_{-0.59}$	$\chi_{DR11CMass}^2$	2.40	$2.83 (\nu: 0.2)$
$H_0$	67.75	$67.8^{+1.1}_{-1.1}$	$100\theta_*$	1.04121	$1.04122^{+0.00079}_{-0.00079}$	$\chi_{DR11LOWZ}^2$	0.48	$0.58 (\nu: 0.1)$
$\Omega_\Lambda$	0.6916	$0.692^{+0.014}_{-0.015}$	$D_A/Gpc$	13.914	$13.915^{+0.058}_{-0.058}$	$\chi_{prior}^2$	2.15	$7.42 (\nu: 6.4)$
$\Omega_m$	0.3084	$0.308^{+0.015}_{-0.014}$	$z_{drag}$	1059.55	$1059.55^{+0.88}_{-0.84}$	$\chi_{CMB}^2$	11270.3	$11284.3 (\nu: 14.6)$
$\Omega_m h^2$	0.14156	$0.1415^{+0.0023}_{-0.0023}$	$r_{drag}$	147.58	$147.60^{+0.64}_{-0.64}$	$\chi_{BAO}^2$	4.30	$4.97 (\nu: 0.4)$

Best-fit  $\chi_{eff}^2 = 11276.74$ ;  $\bar{\chi}_{eff}^2 = 11296.69$ ;  $R - 1 = 0.00978$

$\chi_{eff}^2$ : BAO - 6DF: 0.01 MGS: 1.41 DR11CMass: 2.40 DR11LOWZ: 0.48 CMB - smica\_g30\_ftl\_full\_pp: 9.24 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.86 plik\_dx11dr2\_HM\_v18\_TT: 766.20

## 2.61 base\_plikHM\_TT\_lowTEB\_lensing\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022286	$0.02228^{+0.00045}_{-0.00043}$	$\Omega_m h^2$	0.14104	$0.1412^{+0.0034}_{-0.0034}$	$z_{\text{drag}}$	1059.59	$1059.60^{+0.92}_{-0.92}$
$\Omega_c h^2$	0.11811	$0.1183^{+0.0036}_{-0.0037}$	$\Omega_m h^3$	0.09592	$0.09592^{+0.00089}_{-0.00086}$	$r_{\text{drag}}$	147.69	$147.64^{+0.84}_{-0.82}$
$100\theta_{\text{MC}}$	1.04109	$1.04106^{+0.00089}_{-0.00088}$	$\sigma_8$	0.8170	$0.815^{+0.018}_{-0.018}$	$k_{\text{D}}$	0.14018	$0.14021^{+0.00091}_{-0.00089}$
$\tau$	0.0704	$0.067^{+0.032}_{-0.031}$	$\sigma_8 \Omega_m^{0.5}$	0.4511	$0.451^{+0.016}_{-0.017}$	$100\theta_{\text{D}}$	0.16096	$0.16097^{+0.00052}_{-0.00052}$
$\ln(10^{10} A_s)$	3.070	$3.065^{+0.057}_{-0.055}$	$\sigma_8 \Omega_m^{0.25}$	0.6071	$0.606^{+0.015}_{-0.015}$	$z_{\text{eq}}$	3355	$3360^{+80}_{-82}$
$n_s$	0.9689	$0.968^{+0.012}_{-0.011}$	$\sigma_8/h^{0.5}$	0.9907	$0.989^{+0.022}_{-0.022}$	$k_{\text{eq}}$	0.010240	$0.01025^{+0.00025}_{-0.00025}$
$y_{\text{cal}}$	0.99991	$1.0002^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.450	$2.447^{+0.049}_{-0.051}$	$100\theta_{\text{eq}}$	0.8217	$0.821^{+0.016}_{-0.015}$
$A_{217}^{\text{CIB}}$	67.9	$64^{+10}_{-10}$	$z_{\text{re}}$	9.24	$8.90^{+2.8}_{-3.0}$	$100\theta_{s,\text{eq}}$	0.4538	$0.4534^{+0.0082}_{-0.0079}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$10^9 A_s$	2.154	$2.14^{+0.13}_{-0.12}$	$r_{\text{drag}}/D_V(0.57)$	0.07196	$0.0719^{+0.0013}_{-0.0012}$
$A_{143}^{\text{tSZ}}$	6.82	$5.06^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8713	$1.873^{+0.025}_{-0.024}$	$H(0.57)$	93.14	$93.11^{+0.80}_{-0.74}$
$A_{100}^{\text{PS}}$	258	$260^{+60}_{-50}$	$D_{40}$	1224.3	$1226^{+24}_{-24}$	$D_A(0.57)$	1382.5	$1384^{+22}_{-23}$
$A_{143}^{\text{PS}}$	40.0	$44^{+20}_{-20}$	$D_{220}$	5716	$5719^{+82}_{-78}$	$F_{\text{AP}}(0.57)$	0.6744	$0.6747^{+0.0057}_{-0.0056}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$D_{810}$	2530.9	$2532^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4733	$0.473^{+0.010}_{-0.011}$
$A_{217}^{\text{PS}}$	95.8	$96^{+20}_{-20}$	$D_{1420}$	814.5	$814.7^{+9.9}_{-10}$	$\sigma_8(0.57)$	0.6094	$0.608^{+0.016}_{-0.016}$
$A^{\text{kSZ}}$	0.2	—	$D_{2000}$	230.14	$230.1^{+3.6}_{-3.6}$	$f_{2000}^{143}$	30.1	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.31	$7.45^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9689	$0.968^{+0.012}_{-0.011}$	$f_{2000}^{143 \times 217}$	32.42	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.27	$9.05^{+3.7}_{-3.6}$	$Y_{\text{P}}$	0.245356	$0.24535^{+0.00020}_{-0.00020}$	$f_{2000}^{217}$	105.86	$106.2^{+3.9}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.1}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.246682	$0.24668^{+0.00020}_{-0.00020}$	$\chi_{\text{lensing}}^2$	9.25	9.85 ( $\nu: 1.0$ )
$A_{217}^{\text{dustTT}}$	81.5	$82^{+10}_{-10}$	$10^5 D/H$	2.607	$2.609^{+0.084}_{-0.085}$	$\chi_{\text{lowTEB}}^2$	10494.98	10495.5 ( $\nu: 0.8$ )
$c_{100}$	0.99774	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.793	$13.795^{+0.071}_{-0.074}$	$\chi_{\text{plik}}^2$	766.2	779.4 ( $\nu: 15.3$ )
$c_{217}$	0.99586	$0.9960^{+0.0028}_{-0.0028}$	$z_*$	1089.86	$1089.89^{+0.78}_{-0.79}$	$\chi_{\text{JLA}}^2$	706.593	706.73 ( $\nu: 0.0$ )
$H_0$	68.01	$67.9^{+1.7}_{-1.6}$	$r_*$	144.99	$144.94^{+0.83}_{-0.81}$	$\chi_{\text{prior}}^2$	1.99	7.39 ( $\nu: 6.3$ )
$\Omega_\Lambda$	0.6951	$0.694^{+0.022}_{-0.022}$	$100\theta_*$	1.04129	$1.04126^{+0.00087}_{-0.00086}$	$\chi_{\text{CMB}}^2$	11270.5	11284.8 ( $\nu: 14.9$ )
$\Omega_m$	0.3049	$0.306^{+0.022}_{-0.021}$	$D_A/\text{Gpc}$	13.924	$13.920^{+0.078}_{-0.076}$			

Best-fit  $\chi_{\text{eff}}^2 = 11979.06$ ;  $\bar{\chi}_{\text{eff}}^2 = 11998.93$ ;  $R - 1 = 0.00900$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.25 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.98 plik\_dx11dr2\_HM\_v18.TT: 766.24 SN - JLA December\_2013: 706.59



## 2.62 base\_plikHM\_TT\_lowTEB\_lensing\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022298	$0.02229^{+0.00046}_{-0.00044}$	$\Omega_m h^2$	0.14103	$0.1411^{+0.0035}_{-0.0035}$	$z_{\text{drag}}$	1059.63	$1059.62^{+0.93}_{-0.91}$
$\Omega_c h^2$	0.11809	$0.1182^{+0.0037}_{-0.0038}$	$\Omega_m h^3$	0.09593	$0.09594^{+0.00089}_{-0.00086}$	$r_{\text{drag}}$	147.68	$147.67^{+0.84}_{-0.84}$
$100\theta_{\text{MC}}$	1.04107	$1.04109^{+0.00089}_{-0.00088}$	$\sigma_8$	0.8156	$0.816^{+0.019}_{-0.018}$	$k_{\text{D}}$	0.14019	$0.14020^{+0.00092}_{-0.00091}$
$\tau$	0.0687	$0.068^{+0.032}_{-0.031}$	$\sigma_8 \Omega_m^{0.5}$	0.4503	$0.451^{+0.017}_{-0.017}$	$100\theta_{\text{D}}$	0.16094	$0.16095^{+0.00052}_{-0.00052}$
$\ln(10^{10} A_s)$	3.067	$3.067^{+0.058}_{-0.056}$	$\sigma_8 \Omega_m^{0.25}$	0.6060	$0.606^{+0.015}_{-0.015}$	$z_{\text{eq}}$	3355	$3357^{+83}_{-84}$
$n_s$	0.9692	$0.969^{+0.012}_{-0.011}$	$\sigma_8/h^{0.5}$	0.9889	$0.989^{+0.022}_{-0.022}$	$k_{\text{eq}}$	0.010239	$0.01024^{+0.00025}_{-0.00025}$
$y_{\text{cal}}$	0.99999	$1.0002^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.445	$2.447^{+0.049}_{-0.051}$	$100\theta_{\text{eq}}$	0.8218	$0.822^{+0.017}_{-0.016}$
$A_{217}^{\text{CIB}}$	67.4	$64^{+10}_{-10}$	$z_{\text{re}}$	9.08	$8.99^{+3.0}_{-3.0}$	$100\theta_{\text{s,eq}}$	0.4539	$0.4538^{+0.0084}_{-0.0081}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$10^9 A_s$	2.147	$2.15^{+0.13}_{-0.12}$	$r_{\text{drag}}/D_V(0.57)$	0.07197	$0.0720^{+0.0013}_{-0.0013}$
$A_{143}^{\text{tSZ}}$	7.14	$5.08^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8714	$1.872^{+0.025}_{-0.024}$	$H(0.57)$	93.15	$93.15^{+0.80}_{-0.75}$
$A_{100}^{\text{PS}}$	255	$259^{+50}_{-50}$	$D_{40}$	1223.0	$1225^{+24}_{-25}$	$D_A(0.57)$	1382.4	$1383^{+23}_{-23}$
$A_{143}^{\text{PS}}$	39.2	$44^{+20}_{-20}$	$D_{220}$	5716	$5720^{+82}_{-79}$	$F_{\text{AP}}(0.57)$	0.6743	$0.6744^{+0.0058}_{-0.0057}$
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$D_{810}$	2531.5	$2532^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4725	$0.473^{+0.011}_{-0.011}$
$A_{217}^{\text{PS}}$	97.0	$96^{+20}_{-20}$	$D_{1420}$	814.9	$815^{+10}_{-10}$	$\sigma_8(0.57)$	0.6083	$0.608^{+0.017}_{-0.016}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.26	$230.2^{+3.6}_{-3.6}$	$f_{2000}^{143}$	29.9	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.40	$7.46^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	0.9692	$0.969^{+0.012}_{-0.011}$	$f_{2000}^{143 \times 217}$	32.45	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.06	$9.05^{+3.7}_{-3.6}$	$Y_{\text{P}}$	0.245361	$0.24536^{+0.00020}_{-0.00020}$	$f_{2000}^{217}$	106.03	$106.1^{+4.0}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.1}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.246688	$0.24668^{+0.00020}_{-0.00020}$	$\chi_{\text{lensing}}^2$	9.07	$9.82 (\nu: 1.0)$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 D/H$	2.605	$2.606^{+0.085}_{-0.085}$	$\chi_{\text{lowTEB}}^2$	10494.80	$10495.5 (\nu: 0.8)$
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.792	$13.792^{+0.072}_{-0.074}$	$\chi_{\text{plik}}^2$	766.5	$779.5 (\nu: 15.4)$
$c_{217}$	0.99604	$0.9960^{+0.0028}_{-0.0029}$	$z_*$	1089.84	$1089.86^{+0.79}_{-0.81}$	$\chi_{\text{H070p6}}^2$	0.61	$0.68 (\nu: 0.1)$
$H_0$	68.02	$68.0^{+1.7}_{-1.7}$	$r_*$	144.98	$144.97^{+0.85}_{-0.83}$	$\chi_{\text{prior}}^2$	2.13	$7.38 (\nu: 6.3)$
$\Omega_\Lambda$	0.6952	$0.695^{+0.022}_{-0.023}$	$100\theta_*$	1.04127	$1.04128^{+0.00087}_{-0.00087}$	$\chi_{\text{CMB}}^2$	11270.4	$11284.9 (\nu: 15.1)$
$\Omega_m$	0.3048	$0.305^{+0.023}_{-0.022}$	$D_A/\text{Gpc}$	13.924	$13.922^{+0.079}_{-0.078}$			

Best-fit  $\chi_{\text{eff}}^2 = 11273.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 11292.96$ ;  $R - 1 = 0.00870$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.07 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.80 plik\_dx11dr2\_HM\_v18.TT: 766.50 Hubble - H070p6: 0.60

## 2.63 base\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022274	$0.02227^{+0.00039}_{-0.00038}$	$\sigma_8$	0.8162	$0.815^{+0.018}_{-0.017}$	$z_{\text{eq}}$	3362	$3361^{+54}_{-53}$
$\Omega_c h^2$	0.11840	$0.1184^{+0.0023}_{-0.0023}$	$\sigma_8 \Omega_m^{0.5}$	0.4520	$0.451^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010260	$0.01026^{+0.00016}_{-0.00016}$
$100\theta_{\text{MC}}$	1.04106	$1.04106^{+0.00080}_{-0.00081}$	$\sigma_8 \Omega_m^{0.25}$	0.6074	$0.607^{+0.014}_{-0.014}$	$100\theta_{\text{eq}}$	0.8205	$0.821^{+0.010}_{-0.010}$
$\tau$	0.0677	$0.067^{+0.026}_{-0.025}$	$\sigma_8/h^{0.5}$	0.9906	$0.989^{+0.021}_{-0.021}$	$100\theta_{\text{s,eq}}$	0.4532	$0.4533^{+0.0051}_{-0.0052}$
$\ln(10^{10} A_s)$	3.0661	$3.064^{+0.048}_{-0.047}$	$\langle d^2 \rangle^{1/2}$	2.4496	$2.448^{+0.048}_{-0.050}$	$r_{\text{drag}}/D_V(0.57)$	0.07186	$0.07188^{+0.00080}_{-0.00078}$
$n_s$	0.9683	$0.9681^{+0.0087}_{-0.0087}$	$z_{\text{re}}$	8.99	$8.90^{+2.3}_{-2.5}$	$H(0.57)$	93.09	$93.10^{+0.54}_{-0.52}$
$y_{\text{cal}}$	1.00033	$1.0002^{+0.0049}_{-0.0048}$	$10^9 A_s$	2.146	$2.14^{+0.10}_{-0.099}$	$D_A(0.57)$	1384.1	$1384^{+14}_{-15}$
$A_{217}^{\text{CIB}}$	67.7	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8741	$1.873^{+0.022}_{-0.022}$	$F_{\text{AP}}(0.57)$	0.67480	$0.6747^{+0.0036}_{-0.0036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1225.5	$1226^{+23}_{-23}$	$f\sigma_8(0.57)$	0.4733	$0.473^{+0.010}_{-0.010}$
$A_{143}^{\text{tSZ}}$	7.22	$5.08^{+3.7}_{-3.8}$	$D_{220}$	5720	$5719^{+79}_{-77}$	$\sigma_8(0.57)$	0.6084	$0.608^{+0.015}_{-0.014}$
$A_{100}^{\text{PS}}$	254	$259^{+50}_{-50}$	$D_{810}$	2533.4	$2532^{+27}_{-27}$	$f_{2000}^{143}$	30.0	$30^{+6}_{-5}$
$A_{143}^{\text{PS}}$	39.0	$44^{+20}_{-20}$	$D_{1420}$	815.2	$814.7^{+9.8}_{-10}$	$f_{2000}^{143 \times 217}$	32.57	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.30	$230.1^{+3.5}_{-3.5}$	$f_{2000}^{217}$	106.15	$106.2^{+3.9}_{-3.9}$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9683	$0.9681^{+0.0087}_{-0.0087}$	$\chi_{\text{lensing}}^2$	9.26	9.83 ( $\nu: 1.0$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245350	$0.24535^{+0.00018}_{-0.00018}$	$\chi_{\text{lowTEB}}^2$	10494.92	10495.4 ( $\nu: 0.6$ )
$A_{100}^{\text{dustTT}}$	7.46	$7.47^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246677	$0.24668^{+0.00018}_{-0.00018}$	$\chi_{\text{plik}}^2$	766.1	779.1 ( $\nu: 14.9$ )
$A_{143}^{\text{dustTT}}$	9.18	$9.05^{+3.7}_{-3.6}$	$10^5 D/H$	2.609	$2.610^{+0.074}_{-0.074}$	$\chi_{\text{H070p6}}^2$	0.67	0.69 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.3}_{-8.3}$	Age/Gyr	13.796	$13.796^{+0.055}_{-0.057}$	$\chi_{\text{JLA}}^2$	706.627	706.67 ( $\nu: 0.0$ )
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$z_*$	1089.90	$1089.90^{+0.59}_{-0.60}$	$\chi_{6\text{DF}}^2$	0.003	0.039 ( $\nu: 0.0$ )
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.92	$144.93^{+0.58}_{-0.59}$	$\chi_{\text{MGS}}^2$	1.54	1.63 ( $\nu: 0.2$ )
$c_{217}$	0.99598	$0.9960^{+0.0028}_{-0.0029}$	$100\theta_*$	1.04125	$1.04126^{+0.00079}_{-0.00079}$	$\chi_{\text{DR11CMASS}}^2$	2.41	2.82 ( $\nu: 0.2$ )
$H_0$	67.89	$67.9^{+1.1}_{-1.1}$	$D_A/\text{Gpc}$	13.918	$13.919^{+0.058}_{-0.057}$	$\chi_{\text{DR11LOWZ}}^2$	0.37	0.48 ( $\nu: 0.1$ )
$\Omega_\Lambda$	0.6933	$0.693^{+0.014}_{-0.014}$	$z_{\text{drag}}$	1059.59	$1059.60^{+0.87}_{-0.84}$	$\chi_{\text{prior}}^2$	2.13	7.42 ( $\nu: 6.4$ )
$\Omega_m$	0.3067	$0.307^{+0.014}_{-0.014}$	$r_{\text{drag}}$	147.62	$147.63^{+0.64}_{-0.64}$	$\chi_{\text{CMB}}^2$	11270.3	11284.3 ( $\nu: 14.6$ )
$\Omega_m h^2$	0.14132	$0.1413^{+0.0023}_{-0.0022}$	$k_{\text{D}}$	0.14023	$0.14022^{+0.00083}_{-0.00081}$	$\chi_{\text{BAO}}^2$	4.33	4.96 ( $\nu: 0.4$ )
$\Omega_m h^3$	0.09593	$0.09593^{+0.00088}_{-0.00085}$	$100\theta_{\text{D}}$	0.16096	$0.16097^{+0.00049}_{-0.00050}$			

Best-fit  $\chi_{\text{eff}}^2 = 11984.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 12004.02$ ;  $R - 1 = 0.00967$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMASS: 2.41 DR11LOWZ: 0.37 CMB - smica\_g30\_ftl\_full\_pp: 9.26 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.92 plik\_dx11dr2\_HM\_v18\_TT: 766.13 Hubble - H070p6: 0.67 SN - JLA December\_2013: 706.63

## 2.64 base\_plikHM\_TT\_lowTEB\_lensing\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02227^{+0.00045}_{-0.00043}$	$\Omega_m h^2$	$0.1413^{+0.0032}_{-0.0035}$	$z_{\text{drag}}$	$1059.59^{+0.92}_{-0.91}$
$\Omega_c h^2$	$0.1183^{+0.0036}_{-0.0037}$	$\Omega_m h^3$	$0.09592^{+0.00089}_{-0.00086}$	$r_{\text{drag}}$	$147.64^{+0.84}_{-0.80}$
$100\theta_{\text{MC}}$	$1.04106^{+0.00088}_{-0.00085}$	$\sigma_8$	$0.816^{+0.018}_{-0.016}$	$k_D$	$0.14021^{+0.00091}_{-0.00089}$
$\tau$	$0.068^{+0.028}_{-0.027}$	$\sigma_8 \Omega_m^{0.5}$	$0.452^{+0.017}_{-0.017}$	$100\theta_D$	$0.16097^{+0.00053}_{-0.00052}$
$\ln(10^{10} A_s)$	$3.067^{+0.052}_{-0.049}$	$\sigma_8 \Omega_m^{0.25}$	$0.607^{+0.015}_{-0.015}$	$z_{\text{eq}}$	$3360^{+77}_{-83}$
$n_s$	$0.968^{+0.011}_{-0.011}$	$\sigma_8/h^{0.5}$	$0.990^{+0.021}_{-0.022}$	$k_{\text{eq}}$	$0.01026^{+0.00023}_{-0.00025}$
$y_{\text{cal}}$	$1.0001^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	$2.450^{+0.048}_{-0.050}$	$100\theta_{\text{eq}}$	$0.821^{+0.016}_{-0.016}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$z_{\text{re}}$	$< 11.2$	$100\theta_{\text{s,eq}}$	$0.4534^{+0.0082}_{-0.0080}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.15^{+0.11}_{-0.10}$	$r_{\text{drag}}/D_V(0.57)$	$0.0719^{+0.0013}_{-0.0012}$
$A_{143}^{\text{tSZ}}$	$5.06^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	$1.873^{+0.024}_{-0.024}$	$H(0.57)$	$93.11^{+0.79}_{-0.75}$
$A_{100}^{\text{PS}}$	$260^{+50}_{-50}$	$D_{40}$	$1226^{+24}_{-24}$	$D_A(0.57)$	$1384^{+22}_{-23}$
$A_{143}^{\text{PS}}$	$44^{+20}_{-20}$	$D_{220}$	$5717^{+81}_{-79}$	$F_{\text{AP}}(0.57)$	$0.6747^{+0.0056}_{-0.0057}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{810}$	$2532^{+27}_{-27}$	$f\sigma_8(0.57)$	$0.473^{+0.010}_{-0.010}$
$A_{217}^{\text{PS}}$	$96^{+20}_{-20}$	$D_{1420}$	$815^{+10}_{-10}$	$\sigma_8(0.57)$	$0.608^{+0.015}_{-0.014}$
$A^{\text{kSZ}}$	—	$D_{2000}$	$230.1^{+3.6}_{-3.6}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	$7.46^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	$0.968^{+0.011}_{-0.011}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	$9.04^{+3.7}_{-3.6}$	$Y_{\text{P}}$	$0.24535^{+0.00020}_{-0.00020}$	$f_{2000}^{217}$	$106.2^{+3.9}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.1}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24667^{+0.00020}_{-0.00020}$	$\chi_{\text{lensing}}^2$	$9.93 (\nu: 1.2)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^5 D/H$	$2.610^{+0.083}_{-0.085}$	$\chi_{\text{lowTEB}}^2$	$10495.5 (\nu: 0.7)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	$13.796^{+0.068}_{-0.074}$	$\chi_{\text{plik}}^2$	$779.3 (\nu: 15.2)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0028}$	$z_*$	$1089.90^{+0.74}_{-0.80}$	$\chi_{\text{prior}}^2$	$7.38 (\nu: 6.3)$
$H_0$	$67.9^{+1.7}_{-1.7}$	$r_*$	$144.94^{+0.84}_{-0.78}$	$\chi_{\text{CMB}}^2$	$11284.7 (\nu: 14.7)$
$\Omega_\Lambda$	$0.694^{+0.022}_{-0.021}$	$100\theta_*$	$1.04126^{+0.00086}_{-0.00084}$		
$\Omega_m$	$0.306^{+0.021}_{-0.022}$	$D_A/\text{Gpc}$	$13.919^{+0.078}_{-0.074}$		

$$\bar{\chi}_{\text{eff}}^2 = 11292.06; R - 1 = 0.01013$$

## 2.65 base\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02225^{+0.00040}_{-0.00038}$	$\Omega_m h^3$	$0.09591^{+0.00087}_{-0.00085}$	$k_D$	$0.14023^{+0.00083}_{-0.00081}$
$\Omega_c h^2$	$0.1186^{+0.0023}_{-0.0024}$	$\sigma_8$	$0.816^{+0.017}_{-0.017}$	$100\theta_D$	$0.16099^{+0.00050}_{-0.00050}$
$100\theta_{MC}$	$1.04104^{+0.00080}_{-0.00079}$	$\sigma_8 \Omega_m^{0.5}$	$0.452^{+0.013}_{-0.013}$	$z_{eq}$	$3365^{+54}_{-53}$
$\tau$	$0.067^{+0.023}_{-0.023}$	$\sigma_8 \Omega_m^{0.25}$	$0.607^{+0.013}_{-0.013}$	$k_{eq}$	$0.01027^{+0.00016}_{-0.00016}$
$\ln(10^{10} A_s)$	$3.064^{+0.043}_{-0.044}$	$\sigma_8/h^{0.5}$	$0.991^{+0.021}_{-0.020}$	$100\theta_{eq}$	$0.820^{+0.010}_{-0.010}$
$n_s$	$0.9676^{+0.0086}_{-0.0086}$	$\langle d^2 \rangle^{1/2}$	$2.450^{+0.047}_{-0.047}$	$100\theta_{s,eq}$	$0.4529^{+0.0053}_{-0.0051}$
$y_{cal}$	$1.0001^{+0.0049}_{-0.0048}$	$z_{re}$	$8.87^{+2.0}_{-2.3}$	$r_{drag}/D_V(0.57)$	$0.07181^{+0.00082}_{-0.00078}$
$A_{217}^{CIB}$	$65^{+10}_{-10}$	$10^9 A_s$	$2.142^{+0.094}_{-0.093}$	$H(0.57)$	$93.06^{+0.54}_{-0.51}$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.874^{+0.022}_{-0.022}$	$D_A(0.57)$	$1385^{+14}_{-15}$
$A_{143}^{tSZ}$	$5.05^{+3.7}_{-3.8}$	$D_{40}$	$1226^{+23}_{-22}$	$F_{AP}(0.57)$	$0.6751^{+0.0036}_{-0.0036}$
$A_{100}^{PS}$	$260^{+50}_{-50}$	$D_{220}$	$5717^{+79}_{-77}$	$f\sigma_8(0.57)$	$0.473^{+0.010}_{-0.0097}$
$A_{143}^{PS}$	$44^{+20}_{-20}$	$D_{810}$	$2532^{+26}_{-27}$	$\sigma_8(0.57)$	$0.608^{+0.013}_{-0.013}$
$A_{143 \times 217}^{PS}$	$39^{+20}_{-20}$	$D_{1420}$	$814.5^{+9.9}_{-10}$	$f_{2000}^{143}$	$30^{+6}_{-5}$
$A_{217}^{PS}$	$96^{+20}_{-20}$	$D_{2000}$	$230.0^{+3.5}_{-3.5}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A^{kSZ}$	—	$n_{s,0.002}$	$0.9676^{+0.0086}_{-0.0086}$	$f_{2000}^{217}$	$106.3^{+3.9}_{-3.9}$
$A_{100}^{dustTT}$	$7.46^{+3.7}_{-3.7}$	$Y_P$	$0.24534^{+0.00018}_{-0.00018}$	$\chi_{lensing}^2$	$9.90 (\nu: 1.1)$
$A_{143}^{dustTT}$	$9.04^{+3.7}_{-3.6}$	$Y_P^{BBN}$	$0.24667^{+0.00018}_{-0.00018}$	$\chi_{lowTEB}^2$	$10495.4 (\nu: 0.5)$
$A_{143 \times 217}^{dustTT}$	$17.2^{+8.2}_{-8.3}$	$10^5 D/H$	$2.614^{+0.074}_{-0.075}$	$\chi_{plik}^2$	$778.9 (\nu: 14.7)$
$A_{217}^{dustTT}$	$82^{+10}_{-10}$	Age/Gyr	$13.800^{+0.055}_{-0.057}$	$\chi_{6DF}^2$	$0.043 (\nu: 0.0)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	$1089.94^{+0.58}_{-0.60}$	$\chi_{MGS}^2$	$1.54 (\nu: 0.2)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0029}$	$r_*$	$144.90^{+0.59}_{-0.59}$	$\chi_{DR11CMass}^2$	$2.81 (\nu: 0.2)$
$H_0$	$67.8^{+1.1}_{-1.1}$	$100\theta_*$	$1.04123^{+0.00079}_{-0.00079}$	$\chi_{DR11LOWZ}^2$	$0.55 (\nu: 0.1)$
$\Omega_\Lambda$	$0.692^{+0.014}_{-0.014}$	$D_A/Gpc$	$13.916^{+0.057}_{-0.058}$	$\chi_{prior}^2$	$7.41 (\nu: 6.4)$
$\Omega_m$	$0.308^{+0.014}_{-0.014}$	$z_{drag}$	$1059.56^{+0.88}_{-0.84}$	$\chi_{CMB}^2$	$11284.2 (\nu: 14.3)$
$\Omega_m h^2$	$0.1415^{+0.0022}_{-0.0022}$	$r_{drag}$	$147.61^{+0.64}_{-0.64}$	$\chi_{BAO}^2$	$4.94 (\nu: 0.4)$

$$\bar{\chi}_{eff}^2 = 11296.53; R - 1 = 0.01108$$

## 2.66 base\_plikHM\_TT\_lowTEB\_lensing\_post\_reion

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022176	$0.02218^{+0.00042}_{-0.00039}$	$\Omega_m h^2$	0.14257	$0.1423^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.47	$1059.46^{+0.89}_{-0.87}$
$\Omega_c h^2$	0.11975	$0.1195^{+0.0029}_{-0.0030}$	$\Omega_m h^3$	0.09589	$0.09588^{+0.00088}_{-0.00084}$	$r_{\text{drag}}$	147.37	$147.43^{+0.72}_{-0.74}$
$100\theta_{\text{MC}}$	1.04084	$1.04089^{+0.00079}_{-0.00080}$	$\sigma_8$	0.8089	$0.810^{+0.012}_{-0.012}$	$k_{\text{D}}$	0.14042	$0.14036^{+0.00094}_{-0.00087}$
$\tau$	0.0526	$0.055^{+0.014}_{-0.013}$	$\sigma_8 \Omega_m^{0.5}$	0.4541	$0.453^{+0.016}_{-0.017}$	$100\theta_{\text{D}}$	0.16103	$0.16103^{+0.00050}_{-0.00051}$
$\ln(10^{10} A_s)$	3.0390	$3.043^{+0.028}_{-0.026}$	$\sigma_8 \Omega_m^{0.25}$	0.6061	$0.606^{+0.014}_{-0.015}$	$z_{\text{eq}}$	3392	$3386^{+68}_{-67}$
$n_s$	0.9648	$0.9648^{+0.0091}_{-0.0087}$	$\sigma_8/h^{0.5}$	0.9864	$0.986^{+0.019}_{-0.020}$	$k_{\text{eq}}$	0.010352	$0.01033^{+0.00021}_{-0.00020}$
$y_{\text{cal}}$	1.00029	$1.0003^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.4381	$2.440^{+0.046}_{-0.047}$	$100\theta_{\text{eq}}$	0.8146	$0.816^{+0.013}_{-0.012}$
$A_{217}^{\text{CIB}}$	67.7	$65^{+10}_{-10}$	$z_{\text{re}}$	7.54	$< 9.00$	$100\theta_{\text{s,eq}}$	0.4502	$0.4508^{+0.0066}_{-0.0062}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.089	$2.096^{+0.060}_{-0.055}$	$r_{\text{drag}}/D_V(0.57)$	0.07139	$0.0715^{+0.0010}_{-0.00092}$
$A_{143}^{\text{tSZ}}$	7.11	$4.90^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8800	$1.879^{+0.021}_{-0.022}$	$H(0.57)$	92.83	$92.87^{+0.63}_{-0.58}$
$A_{100}^{\text{PS}}$	256	$262^{+50}_{-50}$	$D_{40}$	1228.4	$1229^{+24}_{-23}$	$D_A(0.57)$	1392.5	$1391^{+17}_{-18}$
$A_{143}^{\text{PS}}$	40.9	$45^{+20}_{-20}$	$D_{220}$	5715	$5718^{+80}_{-84}$	$F_{\text{AP}}(0.57)$	0.67697	$0.6766^{+0.0043}_{-0.0046}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{810}$	2535.3	$2534^{+26}_{-27}$	$f\sigma_8(0.57)$	0.4712	$0.4712^{+0.0093}_{-0.0096}$
$A_{217}^{\text{PS}}$	97.9	$96^{+20}_{-20}$	$D_{1420}$	814.8	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.6009	$0.6017^{+0.0087}_{-0.0084}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	229.79	$229.6^{+3.5}_{-3.6}$	$f_{2000}^{143}$	30.6	$31^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	7.45	$7.43^{+3.6}_{-3.8}$	$n_{\text{s},0.002}$	0.9648	$0.9648^{+0.0091}_{-0.0087}$	$f_{2000}^{143 \times 217}$	33.17	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.08	$9.02^{+3.7}_{-3.6}$	$Y_{\text{P}}$	0.245306	$0.24531^{+0.00019}_{-0.00018}$	$f_{2000}^{217}$	106.67	$106.8^{+3.6}_{-3.7}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.2}_{-8.5}$	$Y_{\text{P}}^{\text{BBN}}$	0.246632	$0.24663^{+0.00019}_{-0.00018}$	$\chi_{\text{lensing}}^2$	9.00	$9.62 (\nu: 0.7)$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 \text{D}/\text{H}$	2.628	$2.627^{+0.077}_{-0.079}$	$\chi_{\text{lowTEB}}^2$	10495.29	$10495.5 (\nu: 0.5)$
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.818	$13.815^{+0.060}_{-0.063}$	$\chi_{\text{plik}}^2$	766.9	$779.5 (\nu: 14.5)$
$c_{217}$	0.99602	$0.9961^{+0.0028}_{-0.0028}$	$z_*$	1090.14	$1090.12^{+0.65}_{-0.69}$	$\chi_{\text{prior}}^2$	2.34	$8.50 (\nu: 7.4)$
$H_0$	67.26	$67.4^{+1.4}_{-1.3}$	$r_*$	144.64	$144.70^{+0.69}_{-0.70}$	$\chi_{\text{CMB}}^2$	11271.2	$11284.6 (\nu: 14.2)$
$\Omega_\Lambda$	0.6848	$0.686^{+0.018}_{-0.017}$	$100\theta_*$	1.04105	$1.04109^{+0.00077}_{-0.00078}$			
$\Omega_m$	0.3152	$0.314^{+0.017}_{-0.018}$	$D_A/\text{Gpc}$	13.894	$13.899^{+0.065}_{-0.068}$			

Best-fit  $\chi_{\text{eff}}^2 = 11273.51$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.12$ ;  $R - 1 = 0.01693$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.00 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10495.29 plik\_dx11dr2\_HM\_v18.TT: 766.87

## 2.67 base\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022274	$0.02226^{+0.00031}_{-0.00030}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.11}$	$z_*$	1089.97	$1090.00^{+0.56}_{-0.58}$
$\Omega_c h^2$	0.11913	$0.1193^{+0.0027}_{-0.0028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34^{+0.16}_{-0.16}$	$r_*$	144.73	$144.71^{+0.59}_{-0.59}$
$100\theta_{\text{MC}}$	1.04087	$1.04087^{+0.00063}_{-0.00062}$	$A_{217}^{\text{dustTE}}$	1.662	$1.66^{+0.50}_{-0.50}$	$100\theta_*$	1.04106	$1.04106^{+0.00062}_{-0.00061}$
$\tau$	0.0639	$0.063^{+0.027}_{-0.027}$	$c_{100}$	0.99816	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.902	$13.900^{+0.056}_{-0.055}$
$\ln(10^{10} A_s)$	3.0600	$3.059^{+0.050}_{-0.049}$	$c_{217}$	0.99606	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.67	$1059.62^{+0.63}_{-0.60}$
$n_s$	0.9660	$0.9653^{+0.0093}_{-0.0094}$	$H_0$	67.56	$67.5^{+1.3}_{-1.2}$	$r_{\text{drag}}$	147.43	$147.41^{+0.58}_{-0.58}$
$y_{\text{cal}}$	0.99995	$1.0001^{+0.0047}_{-0.0048}$	$\Omega_\Lambda$	0.6888	$0.688^{+0.017}_{-0.017}$	$k_D$	0.14044	$0.14044^{+0.00062}_{-0.00061}$
$A_{217}^{\text{CIB}}$	67.7	$65^{+10}_{-10}$	$\Omega_m$	0.3112	$0.312^{+0.017}_{-0.017}$	$100\theta_D$	0.160911	$0.16093^{+0.00035}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\Omega_m h^2$	0.14205	$0.1422^{+0.0026}_{-0.0026}$	$z_{\text{eq}}$	3379	$3382^{+61}_{-62}$
$A_{143}^{\text{tSZ}}$	7.31	$5.27^{+3.7}_{-3.8}$	$\Omega_m h^3$	0.09597	$0.09596^{+0.00058}_{-0.00057}$	$k_{\text{eq}}$	0.010313	$0.01032^{+0.00019}_{-0.00019}$
$A_{100}^{\text{PS}}$	257	$262^{+50}_{-50}$	$\sigma_8$	0.8153	$0.815^{+0.017}_{-0.017}$	$100\theta_{\text{eq}}$	0.8171	$0.817^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	38.7	$44^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4548	$0.455^{+0.013}_{-0.014}$	$100\theta_{s,\text{eq}}$	0.4515	$0.4512^{+0.0062}_{-0.0059}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6089	$0.609^{+0.013}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.07159	$0.07156^{+0.00096}_{-0.00092}$
$A_{217}^{\text{PS}}$	96.7	$96^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9919	$0.992^{+0.020}_{-0.020}$	$H(0.57)$	92.97	$92.95^{+0.57}_{-0.52}$
$A^{\text{kSZ}}$	0.01	$< 8.22$	$\langle d^2 \rangle^{1/2}$	2.4545	$2.455^{+0.048}_{-0.048}$	$D_A(0.57)$	1388.3	$1389^{+17}_{-17}$
$A_{100}^{\text{dustTT}}$	7.58	$7.50^{+3.7}_{-3.7}$	$z_{\text{re}}$	8.64	$8.49^{+2.5}_{-2.7}$	$F_{\text{AP}}(0.57)$	0.67595	$0.6762^{+0.0043}_{-0.0044}$
$A_{143}^{\text{dustTT}}$	9.06	$9.04^{+3.6}_{-3.6}$	$10^9 A_s$	2.133	$2.13^{+0.11}_{-0.10}$	$f\sigma_8(0.57)$	0.4739	$0.4740^{+0.0096}_{-0.0097}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.1}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8769	$1.878^{+0.022}_{-0.023}$	$\sigma_8(0.57)$	0.6066	$0.606^{+0.014}_{-0.014}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{40}$	1229.6	$1232^{+24}_{-23}$	$f_{2000}^{143}$	29.8	$30^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5723	$5725^{+74}_{-76}$	$f_{2000}^{143 \times 217}$	32.54	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0490^{+0.0098}_{-0.0099}$	$D_{810}$	2533.3	$2534^{+26}_{-26}$	$f_{2000}^{217}$	106.05	$106.2^{+3.6}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0997^{+0.064}_{-0.062}$	$D_{1420}$	814.6	$814.6^{+9.2}_{-9.3}$	$\chi_{\text{lensing}}^2$	9.78	$10.4 (\nu: 1.7)$
$A_{143}^{\text{dustEE}}$	0.1006	$0.100^{+0.013}_{-0.014}$	$D_{2000}$	230.06	$230.0^{+3.1}_{-3.1}$	$\chi_{\text{lowTEB}}^2$	10495.29	$10495.9 (\nu: 0.6)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.091}_{-0.091}$	$n_{s,0.002}$	0.9660	$0.9653^{+0.0093}_{-0.0094}$	$\chi_{\text{plik}}^2$	2434.9	$2453.4 (\nu: 22.7)$
$A_{217}^{\text{dustEE}}$	0.649	$0.65^{+0.26}_{-0.25}$	$Y_P$	0.245350	$0.24534^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	7.20	$19.4 (\nu: 15.0)$
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.075}_{-0.074}$	$Y_P^{\text{BBN}}$	0.246677	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12940.0	$12959.7 (\nu: 22.3)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.058}$	$10^5 D/H$	2.610	$2.613^{+0.058}_{-0.058}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.17}$	Age/Gyr	13.805	$13.807^{+0.049}_{-0.051}$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 12979.12$ ;  $R - 1 = 0.01038$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.78 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10495.29 plik\_dx11dr2\_HM\_v18.TTTEEE: 2434.91

## 2.68 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022283	$0.02228^{+0.00027}_{-0.00027}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04109	$1.04110^{+0.00059}_{-0.00057}$
$\Omega_c h^2$	0.11893	$0.1190^{+0.0021}_{-0.0021}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.9062	$13.906^{+0.044}_{-0.046}$
$100\theta_{\text{MC}}$	1.04089	$1.04090^{+0.00060}_{-0.00058}$	$c_{100}$	0.99821	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.67	$1059.65^{+0.60}_{-0.59}$
$\tau$	0.0649	$0.065^{+0.024}_{-0.024}$	$c_{217}$	0.99606	$0.9961^{+0.0029}_{-0.0028}$	$r_{\text{drag}}$	147.472	$147.47^{+0.48}_{-0.49}$
$\ln(10^{10} A_s)$	3.0616	$3.062^{+0.045}_{-0.045}$	$H_0$	67.65	$67.64^{+0.95}_{-0.92}$	$k_D$	0.14040	$0.14040^{+0.00057}_{-0.00056}$
$n_s$	0.9665	$0.9661^{+0.0078}_{-0.0080}$	$\Omega_\Lambda$	0.6900	$0.690^{+0.012}_{-0.013}$	$100\theta_D$	0.160909	$0.16092^{+0.00033}_{-0.00034}$
$y_{\text{cal}}$	0.99996	$1.0002^{+0.0047}_{-0.0047}$	$\Omega_m$	0.3100	$0.310^{+0.013}_{-0.012}$	$z_{\text{eq}}$	3374.4	$3375^{+47}_{-46}$
$A_{217}^{\text{CIB}}$	67.5	$65^{+10}_{-10}$	$\Omega_m h^2$	0.14185	$0.1419^{+0.0020}_{-0.0019}$	$k_{\text{eq}}$	0.010299	$0.01030^{+0.00014}_{-0.00014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\Omega_m h^3$	0.09596	$0.09597^{+0.00058}_{-0.00057}$	$100\theta_{\text{eq}}$	0.8180	$0.8179^{+0.0089}_{-0.0088}$
$A_{143}^{\text{tSZ}}$	7.36	$5.32^{+3.6}_{-3.7}$	$\sigma_8$	0.8154	$0.816^{+0.017}_{-0.017}$	$100\theta_{s,\text{eq}}$	0.45191	$0.4519^{+0.0045}_{-0.0045}$
$A_{100}^{\text{PS}}$	257	$262^{+60}_{-60}$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.454^{+0.012}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	0.07166	$0.07166^{+0.00070}_{-0.00069}$
$A_{143}^{\text{PS}}$	38.4	$44^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6084	$0.609^{+0.013}_{-0.013}$	$H(0.57)$	93.005	$93.00^{+0.43}_{-0.42}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9914	$0.992^{+0.020}_{-0.020}$	$D_A(0.57)$	1387.2	$1387^{+12}_{-13}$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4532	$2.455^{+0.048}_{-0.048}$	$F_{\text{AP}}(0.57)$	0.67564	$0.6757^{+0.0032}_{-0.0032}$
$A^{\text{kSZ}}$	0.00	$< 8.07$	$z_{\text{re}}$	8.73	$8.70^{+2.2}_{-2.4}$	$f\sigma_8(0.57)$	0.4737	$0.4738^{+0.0096}_{-0.0098}$
$A_{100}^{\text{dustTT}}$	7.50	$7.50^{+3.7}_{-3.6}$	$10^9 A_s$	2.136	$2.138^{+0.097}_{-0.094}$	$\sigma_8(0.57)$	0.6070	$0.607^{+0.014}_{-0.013}$
$A_{143}^{\text{dustTT}}$	9.03	$9.05^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8761	$1.877^{+0.021}_{-0.021}$	$f_{2000}^{143}$	29.7	$30^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.0}_{-8.0}$	$D_{40}$	1228.7	$1231^{+23}_{-22}$	$f_{2000}^{143 \times 217}$	32.49	$33^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$D_{220}$	5723	$5726^{+74}_{-75}$	$f_{2000}^{217}$	106.05	$106.2^{+3.6}_{-3.6}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2533.2	$2534^{+26}_{-26}$	$\chi_{\text{lensing}}^2$	9.67	$10.4 (\nu: 1.6)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0490^{+0.0096}_{-0.0098}$	$D_{1420}$	814.8	$814.8^{+9.1}_{-9.2}$	$\chi_{\text{lowTEB}}^2$	10495.21	$10495.7 (\nu: 0.5)$
$A_{100 \times 217}^{\text{dustEE}}$	0.0995	$0.0999^{+0.064}_{-0.062}$	$D_{2000}$	230.12	$230.1^{+3.0}_{-3.0}$	$\chi_{\text{plik}}^2$	2435.3	$2453.3 (\nu: 22.7)$
$A_{143}^{\text{dustEE}}$	0.1004	$0.101^{+0.013}_{-0.014}$	$n_{s,0.002}$	0.9665	$0.9661^{+0.0078}_{-0.0080}$	$\chi_{6\text{DF}}^2$	0.022	$0.050 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.225^{+0.091}_{-0.091}$	$Y_{\text{P}}$	0.245355	$0.24535^{+0.00012}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.28	$1.33 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.26}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.246681	$0.24668^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.45	$2.76 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.075}_{-0.074}$	$10^5 D/H$	2.608	$2.609^{+0.051}_{-0.051}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	$0.71 (\nu: 0.1)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.056}_{-0.057}$	$\text{Age}/\text{Gyr}$	13.8026	$13.803^{+0.041}_{-0.042}$	$\chi_{\text{prior}}^2$	7.04	$19.4 (\nu: 14.8)$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	$z_*$	1089.935	$1089.94^{+0.45}_{-0.46}$	$\chi_{\text{CMB}}^2$	12940.2	$12959.4 (\nu: 22.0)$
$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.10}_{-0.11}$	$r_*$	144.776	$144.77^{+0.46}_{-0.48}$	$\chi_{\text{BAO}}^2$	4.36	$4.86 (\nu: 0.3)$

Best-fit  $\chi_{\text{eff}}^2 = 12951.58$ ;  $\bar{\chi}_{\text{eff}}^2 = 12983.64$ ;  $R - 1 = 0.01558$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 MGS: 1.28 DR11CMass: 2.45 DR11LOWZ: 0.61 CMB - smica\_g30\_ftl\_full\_pp: 9.67 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.21 plik\_dx11dr2\_HM\_v18\_TTT 2435.30

## 2.69 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022276	$0.02227^{+0.00031}_{-0.00030}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.10}_{-0.11}$	$z_*$	1089.95	$1089.96^{+0.55}_{-0.58}$
$\Omega_c h^2$	0.11902	$0.1191^{+0.0027}_{-0.0027}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$r_*$	144.76	$144.74^{+0.58}_{-0.59}$
$100\theta_{\text{MC}}$	1.04087	$1.04089^{+0.00062}_{-0.00062}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$100\theta_*$	1.04106	$1.04108^{+0.00061}_{-0.00061}$
$\tau$	0.0639	$0.064^{+0.027}_{-0.026}$	$c_{100}$	0.99815	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.905	$13.903^{+0.054}_{-0.054}$
$\ln(10^{10} A_s)$	3.0599	$3.061^{+0.050}_{-0.049}$	$c_{217}$	0.99608	$0.9960^{+0.0029}_{-0.0028}$	$z_{\text{drag}}$	1059.67	$1059.64^{+0.63}_{-0.59}$
$n_s$	0.9662	$0.9658^{+0.0093}_{-0.0092}$	$H_0$	67.60	$67.6^{+1.2}_{-1.2}$	$r_{\text{drag}}$	147.45	$147.44^{+0.57}_{-0.58}$
$y_{\text{cal}}$	0.99999	$1.0002^{+0.0047}_{-0.0047}$	$\Omega_\Lambda$	0.6894	$0.689^{+0.016}_{-0.017}$	$k_D$	0.14041	$0.14042^{+0.00063}_{-0.00060}$
$A_{217}^{\text{CIB}}$	67.8	$65^{+10}_{-10}$	$\Omega_m$	0.3106	$0.311^{+0.017}_{-0.016}$	$100\theta_D$	0.160912	$0.16092^{+0.00034}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14194	$0.1420^{+0.0025}_{-0.0025}$	$z_{\text{eq}}$	3377	$3378^{+60}_{-61}$
$A_{143}^{\text{tSZ}}$	7.31	$5.32^{+3.6}_{-3.8}$	$\Omega_m h^3$	0.09596	$0.09597^{+0.00058}_{-0.00057}$	$k_{\text{eq}}$	0.010306	$0.01031^{+0.00018}_{-0.00018}$
$A_{100}^{\text{PS}}$	258	$262^{+60}_{-60}$	$\sigma_8$	0.8150	$0.815^{+0.017}_{-0.017}$	$100\theta_{\text{eq}}$	0.8176	$0.817^{+0.012}_{-0.011}$
$A_{143}^{\text{PS}}$	38.5	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4542	$0.455^{+0.013}_{-0.014}$	$100\theta_{s,\text{eq}}$	0.4517	$0.4516^{+0.0060}_{-0.0058}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6084	$0.609^{+0.013}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.07163	$0.07162^{+0.00094}_{-0.00090}$
$A_{217}^{\text{PS}}$	96.5	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9912	$0.992^{+0.020}_{-0.020}$	$H(0.57)$	92.98	$92.98^{+0.55}_{-0.52}$
$A^{\text{kSZ}}$	0.00	$< 8.08$	$\langle d^2 \rangle^{1/2}$	2.4528	$2.455^{+0.048}_{-0.049}$	$D_A(0.57)$	1387.8	$1388^{+16}_{-17}$
$A_{100}^{\text{dustTT}}$	7.42	$7.50^{+3.7}_{-3.6}$	$z_{\text{re}}$	8.64	$8.60^{+2.5}_{-2.6}$	$F_{\text{AP}}(0.57)$	0.67580	$0.6759^{+0.0042}_{-0.0042}$
$A_{143}^{\text{dustTT}}$	9.10	$9.04^{+3.6}_{-3.6}$	$10^9 A_s$	2.132	$2.13^{+0.11}_{-0.10}$	$f\sigma_8(0.57)$	0.4736	$0.4739^{+0.0096}_{-0.0098}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.0}_{-8.0}$	$10^9 A_s e^{-2\tau}$	1.8765	$1.877^{+0.022}_{-0.022}$	$\sigma_8(0.57)$	0.6065	$0.607^{+0.015}_{-0.014}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{40}$	1229.2	$1231^{+23}_{-23}$	$f_{2000}^{143}$	29.8	$30^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5723	$5726^{+75}_{-76}$	$f_{2000}^{143 \times 217}$	32.52	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0489^{+0.0098}_{-0.0099}$	$D_{810}$	2533.3	$2534^{+26}_{-26}$	$f_{2000}^{217}$	106.09	$106.2^{+3.6}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0999	$0.0999^{+0.063}_{-0.062}$	$D_{1420}$	814.7	$814.7^{+9.1}_{-9.3}$	$\chi_{\text{lensing}}^2$	9.66	$10.4 (\nu: 1.7)$
$A_{143}^{\text{dustEE}}$	0.1004	$0.101^{+0.013}_{-0.014}$	$D_{2000}$	230.07	$230.1^{+3.1}_{-3.1}$	$\chi_{\text{lowTEB}}^2$	10495.23	$10495.8 (\nu: 0.6)$
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.091}_{-0.091}$	$n_{s,0.002}$	0.9662	$0.9658^{+0.0093}_{-0.0092}$	$\chi_{\text{plik}}^2$	2435.1	$2453.5 (\nu: 23.2)$
$A_{217}^{\text{dustEE}}$	0.653	$0.65^{+0.26}_{-0.25}$	$Y_P$	0.245351	$0.24535^{+0.00014}_{-0.00014}$	$\chi_{\text{JLA}}^2$	706.723	$706.79 (\nu: 0.0)$
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.074}_{-0.074}$	$Y_P^{\text{BBN}}$	0.246678	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	7.16	$19.4 (\nu: 15.0)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.056}_{-0.057}$	$10^5 D/H$	2.609	$2.610^{+0.057}_{-0.058}$	$\chi_{\text{CMB}}^2$	12940.0	$12959.7 (\nu: 22.5)$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.17}$	Age/Gyr	13.8044	$13.804^{+0.049}_{-0.050}$			

Best-fit  $\chi_{\text{eff}}^2 = 13653.91$ ;  $\bar{\chi}_{\text{eff}}^2 = 13685.92$ ;  $R - 1 = 0.01520$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.66 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10495.24 plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.13 SN - JLA December\_2013: 706.72



## 2.70 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022294	$0.02228_{-0.00030}^{+0.00031}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15_{-0.11}^{+0.10}$	$z_*$	1089.92	$1089.95_{-0.58}^{+0.56}$
$\Omega_c h^2$	0.11896	$0.1190_{-0.0027}^{+0.0027}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34_{-0.16}^{+0.16}$	$r_*$	144.76	$144.75_{-0.60}^{+0.59}$
$100\theta_{\text{MC}}$	1.04089	$1.04090_{-0.00062}^{+0.00062}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66_{-0.50}^{+0.50}$	$100\theta_*$	1.04108	$1.04109_{-0.00061}^{+0.00062}$
$\tau$	0.0649	$0.064_{-0.026}^{+0.027}$	$c_{100}$	0.99816	$0.9981_{-0.0015}^{+0.0015}$	$D_A/\text{Gpc}$	13.905	$13.904_{-0.055}^{+0.054}$
$\ln(10^{10} A_s)$	3.0617	$3.061_{-0.049}^{+0.050}$	$c_{217}$	0.99602	$0.9960_{-0.0028}^{+0.0029}$	$z_{\text{drag}}$	1059.67	$1059.65_{-0.60}^{+0.62}$
$n_s$	0.9665	$0.9660_{-0.0093}^{+0.0094}$	$H_0$	67.65	$67.6_{-1.2}^{+1.3}$	$r_{\text{drag}}$	147.45	$147.45_{-0.59}^{+0.58}$
$y_{\text{cal}}$	0.99997	$1.0002_{-0.0047}^{+0.0047}$	$\Omega_\Lambda$	0.6899	$0.689_{-0.017}^{+0.017}$	$k_D$	0.14043	$0.14042_{-0.00061}^{+0.00063}$
$A_{217}^{\text{CIB}}$	67.7	$65_{-10}^{+10}$	$\Omega_m$	0.3101	$0.311_{-0.017}^{+0.017}$	$100\theta_D$	0.160893	$0.16091_{-0.00036}^{+0.00034}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14190	$0.1420_{-0.0026}^{+0.0025}$	$z_{\text{eq}}$	3375	$3377_{-61}^{+61}$
$A_{143}^{\text{tSZ}}$	7.38	$5.33_{-3.8}^{+3.6}$	$\Omega_m h^3$	0.09599	$0.09597_{-0.00057}^{+0.00058}$	$k_{\text{eq}}$	0.010302	$0.01031_{-0.00019}^{+0.00019}$
$A_{100}^{\text{PS}}$	256	$262_{-60}^{+60}$	$\sigma_8$	0.8155	$0.815_{-0.017}^{+0.017}$	$100\theta_{\text{eq}}$	0.8179	$0.818_{-0.011}^{+0.012}$
$A_{143}^{\text{PS}}$	38.1	$44_{-20}^{+20}$	$\sigma_8 \Omega_m^{0.5}$	0.4541	$0.454_{-0.014}^{+0.013}$	$100\theta_{s,\text{eq}}$	0.4518	$0.4517_{-0.0059}^{+0.0061}$
$A_{143 \times 217}^{\text{PS}}$	32	$39_{-20}^{+20}$	$\sigma_8 \Omega_m^{0.25}$	0.6085	$0.609_{-0.013}^{+0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.07165	$0.07164_{-0.00091}^{+0.00095}$
$A_{217}^{\text{PS}}$	96.4	$97_{-20}^{+20}$	$\sigma_8/h^{0.5}$	0.9915	$0.992_{-0.020}^{+0.020}$	$H(0.57)$	93.01	$93.00_{-0.52}^{+0.56}$
$A^{\text{kSZ}}$	0.00	$< 8.07$	$\langle d^2 \rangle^{1/2}$	2.4537	$2.455_{-0.049}^{+0.048}$	$D_A(0.57)$	1387.2	$1388_{-17}^{+16}$
$A_{100}^{\text{dustTT}}$	7.45	$7.49_{-3.6}^{+3.7}$	$z_{\text{re}}$	8.73	$8.64_{-2.6}^{+2.5}$	$F_{\text{AP}}(0.57)$	0.67567	$0.6758_{-0.0042}^{+0.0043}$
$A_{143}^{\text{dustTT}}$	9.07	$9.04_{-3.6}^{+3.6}$	$10^9 A_s$	2.136	$2.14_{-0.10}^{+0.11}$	$f\sigma_8(0.57)$	0.4738	$0.4738_{-0.0098}^{+0.0096}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2_{-8.0}^{+8.0}$	$10^9 A_s e^{-2\tau}$	1.8763	$1.877_{-0.022}^{+0.023}$	$\sigma_8(0.57)$	0.6070	$0.607_{-0.014}^{+0.015}$
$A_{217}^{\text{dustTT}}$	81.7	$82_{-10}^{+10}$	$D_{40}$	1229.0	$1231_{-23}^{+24}$	$f_{2000}^{143}$	29.6	$30_{-5}^{+5}$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081_{-0.011}^{+0.011}$	$D_{220}$	5724	$5726_{-76}^{+74}$	$f_{2000}^{143 \times 217}$	32.37	$33_{-4}^{+4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0490_{-0.0099}^{+0.0098}$	$D_{810}$	2533.4	$2534_{-26}^{+26}$	$f_{2000}^{217}$	105.94	$106.2_{-3.7}^{+3.6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0999	$0.0999_{-0.062}^{+0.063}$	$D_{1420}$	814.9	$814.8_{-9.3}^{+9.1}$	$\chi_{\text{lensing}}^2$	9.73	$10.4 (\nu: 1.7)$
$A_{143}^{\text{dustEE}}$	0.1002	$0.101_{-0.014}^{+0.013}$	$D_{2000}$	230.17	$230.1_{-3.1}^{+3.1}$	$\chi_{\text{lowTEB}}^2$	10495.23	$10495.8 (\nu: 0.6)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224_{-0.091}^{+0.091}$	$n_{s,0.002}$	0.9665	$0.9660_{-0.0093}^{+0.0094}$	$\chi_{\text{plik}}^2$	2435.1	$2453.6 (\nu: 23.3)$
$A_{217}^{\text{dustEE}}$	0.649	$0.65_{-0.25}^{+0.26}$	$Y_P$	0.245359	$0.24535_{-0.00014}^{+0.00014}$	$\chi_{\text{H070p6}}^2$	0.79	$0.84 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141_{-0.073}^{+0.074}$	$Y_P^{\text{BBN}}$	0.246686	$0.24668_{-0.00014}^{+0.00014}$	$\chi_{\text{prior}}^2$	7.19	$19.4 (\nu: 15.0)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132_{-0.057}^{+0.056}$	$10^5 D/H$	2.606	$2.609_{-0.059}^{+0.057}$	$\chi_{\text{CMB}}^2$	12940.0	$12959.8 (\nu: 22.6)$
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30_{-0.17}^{+0.17}$	Age/Gyr	13.8017	$13.803_{-0.050}^{+0.049}$			

Best-fit  $\chi_{\text{eff}}^2 = 12948.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.00$ ;  $R - 1 = 0.01547$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.72 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10495.23 plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.07 Hubble - H070p6: 0.79

## 2.71 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022307	$0.02230^{+0.00027}_{-0.00026}$	$A_{217}^{dustTE}$	1.646	$1.66^{+0.50}_{-0.50}$	$z_{drag}$	1059.70	$1059.68^{+0.60}_{-0.57}$
$\Omega_c h^2$	0.11865	$0.1188^{+0.0020}_{-0.0021}$	$c_{100}$	0.99816	$0.9981^{+0.0015}_{-0.0015}$	$r_{drag}$	147.518	$147.50^{+0.47}_{-0.48}$
$100\theta_{MC}$	1.04094	$1.04093^{+0.00059}_{-0.00058}$	$c_{217}$	0.99606	$0.9960^{+0.0029}_{-0.0028}$	$k_D$	0.14037	$0.14038^{+0.00057}_{-0.00055}$
$\tau$	0.0677	$0.066^{+0.024}_{-0.024}$	$H_0$	67.78	$67.74^{+0.93}_{-0.90}$	$100\theta_D$	0.160891	$0.16090^{+0.00033}_{-0.00034}$
$\ln(10^{10} A_s)$	3.0665	$3.064^{+0.045}_{-0.045}$	$\Omega_\Lambda$	0.6918	$0.691^{+0.012}_{-0.012}$	$z_{eq}$	3368.4	$3371^{+45}_{-46}$
$n_s$	0.9672	$0.9667^{+0.0079}_{-0.0078}$	$\Omega_m$	0.3082	$0.309^{+0.012}_{-0.012}$	$k_{eq}$	0.010281	$0.01029^{+0.00014}_{-0.00014}$
$y_{cal}$	0.99993	$1.0002^{+0.0047}_{-0.0047}$	$\Omega_m h^2$	0.14160	$0.1417^{+0.0019}_{-0.0019}$	$100\theta_{eq}$	0.8192	$0.8188^{+0.0089}_{-0.0086}$
$A_{217}^{CIB}$	67.6	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09598	$0.09598^{+0.00058}_{-0.00057}$	$100\theta_{s,eq}$	0.45252	$0.4523^{+0.0045}_{-0.0044}$
$\xi^{tSZ \times CIB}$	0.01	—	$\sigma_8$	0.8166	$0.816^{+0.017}_{-0.017}$	$r_{drag}/D_V(0.57)$	0.07176	$0.07173^{+0.00070}_{-0.00067}$
$A_{143}^{tSZ}$	7.33	$5.34^{+3.6}_{-3.7}$	$\sigma_8 \Omega_m^{0.5}$	0.4534	$0.453^{+0.012}_{-0.012}$	$H(0.57)$	93.062	$93.04^{+0.43}_{-0.41}$
$A_{100}^{PS}$	257	$261^{+60}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6085	$0.608^{+0.013}_{-0.013}$	$D_A(0.57)$	1385.4	$1386^{+12}_{-12}$
$A_{143}^{PS}$	38.3	$43^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9919	$0.991^{+0.020}_{-0.020}$	$F_{AP}(0.57)$	0.67519	$0.6754^{+0.0031}_{-0.0031}$
$A_{143 \times 217}^{PS}$	32	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4549	$2.454^{+0.048}_{-0.048}$	$f\sigma_8(0.57)$	0.4740	$0.4737^{+0.0097}_{-0.0098}$
$A_{217}^{PS}$	96.4	$96^{+20}_{-20}$	$z_{re}$	8.99	$8.82^{+2.2}_{-2.4}$	$\sigma_8(0.57)$	0.6083	$0.608^{+0.014}_{-0.013}$
$A^{kSZ}$	0.00	< 8.02	$10^9 A_s$	2.147	$2.142^{+0.098}_{-0.095}$	$f_{2000}^{143}$	29.6	$30^{+5}_{-5}$
$A_{100}^{dustTT}$	7.43	$7.49^{+3.8}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8749	$1.876^{+0.021}_{-0.021}$	$f_{2000}^{143 \times 217}$	32.36	$32.6^{+3.6}_{-3.7}$
$A_{143}^{dustTT}$	9.01	$9.04^{+3.6}_{-3.6}$	$D_{40}$	1228.2	$1230^{+22}_{-22}$	$f_{2000}^{217}$	105.88	$106.1^{+3.5}_{-3.6}$
$A_{143 \times 217}^{dustTT}$	17.6	$17.2^{+8.0}_{-8.0}$	$D_{220}$	5724	$5728^{+75}_{-74}$	$\chi_{lensing}^2$	9.75	10.3 ( $\nu: 1.6$ )
$A_{217}^{dustTT}$	81.9	$82^{+10}_{-10}$	$D_{810}$	2532.8	$2534^{+26}_{-26}$	$\chi_{lowTEB}^2$	10495.22	10495.6 ( $\nu: 0.5$ )
$A_{100}^{dustEE}$	0.0814	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	814.8	$814.9^{+9.1}_{-9.2}$	$\chi_{plik}^2$	2435.2	2435.5 ( $\nu: 22.8$ )
$A_{100 \times 143}^{dustEE}$	0.0493	$0.0491^{+0.0097}_{-0.0098}$	$D_{2000}$	230.23	$230.2^{+3.0}_{-3.0}$	$\chi_{H070p6}^2$	0.719	0.76 ( $\nu: 0.0$ )
$A_{100 \times 217}^{dustEE}$	0.099	$0.0999^{+0.064}_{-0.062}$	$n_{s,0.002}$	0.9672	$0.9667^{+0.0079}_{-0.0078}$	$\chi_{JLA}^2$	706.661	706.71 ( $\nu: 0.0$ )
$A_{143}^{dustEE}$	0.1006	$0.101^{+0.013}_{-0.014}$	$Y_P$	0.245365	$0.24536^{+0.00012}_{-0.00012}$	$\chi_{6DF}^2$	0.010	0.040 ( $\nu: 0.0$ )
$A_{143 \times 217}^{dustEE}$	0.223	$0.224^{+0.091}_{-0.091}$	$Y_P^{BBN}$	0.246692	$0.24669^{+0.00012}_{-0.00012}$	$\chi_{MGS}^2$	1.41	1.42 ( $\nu: 0.1$ )
$A_{217}^{dustEE}$	0.654	$0.65^{+0.26}_{-0.26}$	$10^5 D/H$	2.603	$2.605^{+0.050}_{-0.052}$	$\chi_{DR11CMass}^2$	2.41	2.71 ( $\nu: 0.1$ )
$A_{100}^{dustTE}$	0.141	$0.141^{+0.075}_{-0.074}$	Age/Gyr	13.7976	$13.799^{+0.041}_{-0.041}$	$\chi_{DR11LOWZ}^2$	0.48	0.61 ( $\nu: 0.1$ )
$A_{100 \times 143}^{dustTE}$	0.131	$0.132^{+0.056}_{-0.057}$	$z_*$	1089.880	$1089.90^{+0.45}_{-0.46}$	$\chi_{prior}^2$	7.19	19.4 ( $\nu: 14.8$ )
$A_{100 \times 217}^{dustTE}$	0.302	$0.30^{+0.17}_{-0.17}$	$r_*$	144.829	$144.81^{+0.46}_{-0.47}$	$\chi_{CMB}^2$	12940.2	12959.4 ( $\nu: 22.1$ )
$A_{143}^{dustTE}$	0.153	$0.15^{+0.10}_{-0.11}$	$100\theta_*$	1.04113	$1.04112^{+0.00058}_{-0.00057}$	$\chi_{BAO}^2$	4.31	4.79 ( $\nu: 0.2$ )
$A_{143 \times 217}^{dustTE}$	0.335	$0.34^{+0.16}_{-0.16}$	$D_A/Gpc$	13.9108	$13.909^{+0.043}_{-0.045}$			

Best-fit  $\chi_{eff}^2 = 13659.04$ ;  $\bar{\chi}_{eff}^2 = 13691.10$ ;  $R - 1 = 0.01658$

$\chi_{eff}^2$ : BAO - 6DF: 0.01 MGS: 1.41 DR11CMass: 2.41 DR11LOWZ: 0.48 CMB - smica.g30.ftl.full\_pp: 9.75 lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10495.22 plik\_dx11dr2\_HM\_v18.TTT

## 2.72 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02227^{+0.00031}_{-0.00029}$	$A_{143}^{\text{dustTE}}$	$0.15^{+0.10}_{-0.11}$	$z_*$	$1089.97^{+0.54}_{-0.57}$
$\Omega_c h^2$	$0.1191^{+0.0026}_{-0.0027}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$r_*$	$144.74^{+0.58}_{-0.57}$
$100\theta_{\text{MC}}$	$1.04088^{+0.00062}_{-0.00062}$	$A_{217}^{\text{dustTE}}$	$1.66^{+0.50}_{-0.50}$	$100\theta_*$	$1.04108^{+0.00061}_{-0.00061}$
$\tau$	$0.065^{+0.023}_{-0.023}$	$c_{100}$	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	$13.903^{+0.054}_{-0.053}$
$\ln(10^{10} A_s)$	$3.062^{+0.044}_{-0.042}$	$c_{217}$	$0.9960^{+0.0029}_{-0.0028}$	$z_{\text{drag}}$	$1059.63^{+0.62}_{-0.58}$
$n_s$	$0.9657^{+0.0092}_{-0.0090}$	$H_0$	$67.6^{+1.2}_{-1.2}$	$r_{\text{drag}}$	$147.44^{+0.57}_{-0.56}$
$y_{\text{cal}}$	$1.0001^{+0.0046}_{-0.0048}$	$\Omega_\Lambda$	$0.689^{+0.016}_{-0.016}$	$k_D$	$0.14042^{+0.00062}_{-0.00060}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$\Omega_m$	$0.311^{+0.016}_{-0.016}$	$100\theta_D$	$0.16092^{+0.00035}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1420^{+0.0024}_{-0.0025}$	$z_{\text{eq}}$	$3379^{+58}_{-60}$
$A_{143}^{\text{tSZ}}$	$5.33^{+3.9}_{-3.7}$	$\Omega_m h^3$	$0.09596^{+0.00058}_{-0.00057}$	$k_{\text{eq}}$	$0.01031^{+0.00018}_{-0.00018}$
$A_{100}^{\text{PS}}$	$262^{+60}_{-60}$	$\sigma_8$	$0.816^{+0.016}_{-0.015}$	$100\theta_{\text{eq}}$	$0.817^{+0.012}_{-0.011}$
$A_{143}^{\text{PS}}$	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	$0.455^{+0.013}_{-0.014}$	$100\theta_{\text{s,eq}}$	$0.4515^{+0.0060}_{-0.0056}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.610^{+0.013}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	$0.07160^{+0.00094}_{-0.00087}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$0.993^{+0.019}_{-0.019}$	$H(0.57)$	$92.97^{+0.55}_{-0.50}$
$A^{\text{kSZ}}$	$< 8.08$	$\langle d^2 \rangle^{1/2}$	$2.458^{+0.046}_{-0.046}$	$D_A(0.57)$	$1388^{+16}_{-17}$
$A_{100}^{\text{dustTT}}$	$7.50^{+3.7}_{-3.6}$	$z_{\text{re}}$	$< 10.6$	$F_{\text{AP}}(0.57)$	$0.6760^{+0.0041}_{-0.0042}$
$A_{143}^{\text{dustTT}}$	$9.05^{+3.6}_{-3.6}$	$10^9 A_s$	$2.138^{+0.094}_{-0.090}$	$f\sigma_8(0.57)$	$0.4744^{+0.0092}_{-0.0092}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.1}_{-8.0}$	$10^9 A_s e^{-2\tau}$	$1.877^{+0.022}_{-0.022}$	$\sigma_8(0.57)$	$0.607^{+0.013}_{-0.012}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{40}$	$1231^{+23}_{-23}$	$f_{2000}^{143}$	$30^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{220}$	$5725^{+75}_{-76}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0489^{+0.0098}_{-0.0099}$	$D_{810}$	$2534^{+26}_{-26}$	$f_{2000}^{217}$	$106.2^{+3.6}_{-3.6}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0998^{+0.064}_{-0.062}$	$D_{1420}$	$814.6^{+9.0}_{-9.2}$	$\chi^2_{\text{lensing}}$	$10.5 (\nu: 1.8)$
$A_{143}^{\text{dustEE}}$	$0.101^{+0.013}_{-0.014}$	$D_{2000}$	$230.0^{+3.1}_{-3.1}$	$\chi^2_{\text{lowTEB}}$	$10495.8 (\nu: 0.6)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.225^{+0.091}_{-0.091}$	$n_{\text{s},0.002}$	$0.9657^{+0.0092}_{-0.0090}$	$\chi^2_{\text{plik}}$	$2453.3 (\nu: 22.8)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.26}_{-0.25}$	$Y_{\text{P}}$	$0.24535^{+0.00014}_{-0.00014}$	$\chi^2_{\text{prior}}$	$19.4 (\nu: 15.0)$
$A_{100}^{\text{dustTE}}$	$0.141^{+0.073}_{-0.073}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24667^{+0.00014}_{-0.00014}$	$\chi^2_{\text{CMB}}$	$12959.6 (\nu: 22.1)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.132^{+0.056}_{-0.057}$	$10^5 D/H$	$2.611^{+0.056}_{-0.057}$		
$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.16}_{-0.17}$	$\text{Age}/\text{Gyr}$	$13.805^{+0.048}_{-0.049}$		

$$\bar{\chi}_{\text{eff}}^2 = 12978.93; R - 1 = 0.01449$$

## 2.73 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02228^{+0.00027}_{-0.00027}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	$1.04110^{+0.00058}_{-0.00057}$
$\Omega_c h^2$	$0.1189^{+0.0020}_{-0.0020}$	$A_{217}^{\text{dustTE}}$	$1.66^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	$13.907^{+0.044}_{-0.045}$
$100\theta_{\text{MC}}$	$1.04091^{+0.00059}_{-0.00058}$	$c_{100}$	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	$1059.65^{+0.60}_{-0.55}$
$\tau$	$0.066^{+0.022}_{-0.022}$	$c_{217}$	$0.9960^{+0.0029}_{-0.0028}$	$r_{\text{drag}}$	$147.48^{+0.47}_{-0.49}$
$\ln(10^{10} A_s)$	$3.064^{+0.042}_{-0.041}$	$H_0$	$67.66^{+0.93}_{-0.89}$	$k_D$	$0.14039^{+0.00057}_{-0.00055}$
$n_s$	$0.9663^{+0.0078}_{-0.0078}$	$\Omega_\Lambda$	$0.690^{+0.012}_{-0.012}$	$100\theta_D$	$0.16091^{+0.00033}_{-0.00034}$
$y_{\text{cal}}$	$1.0001^{+0.0047}_{-0.0047}$	$\Omega_m$	$0.310^{+0.012}_{-0.012}$	$z_{\text{eq}}$	$3374^{+46}_{-46}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$\Omega_m h^2$	$0.1418^{+0.0019}_{-0.0019}$	$k_{\text{eq}}$	$0.01030^{+0.00014}_{-0.00014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^3$	$0.09597^{+0.00058}_{-0.00058}$	$100\theta_{\text{eq}}$	$0.8181^{+0.0088}_{-0.0085}$
$A_{143}^{\text{tSZ}}$	$5.33^{+3.6}_{-3.7}$	$\sigma_8$	$0.816^{+0.016}_{-0.016}$	$100\theta_{s,\text{eq}}$	$0.4520^{+0.0045}_{-0.0044}$
$A_{100}^{\text{PS}}$	$262^{+60}_{-60}$	$\sigma_8 \Omega_m^{0.5}$	$0.454^{+0.012}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	$0.07167^{+0.00069}_{-0.00067}$
$A_{143}^{\text{PS}}$	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.609^{+0.013}_{-0.012}$	$H(0.57)$	$93.01^{+0.43}_{-0.41}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$0.992^{+0.020}_{-0.019}$	$D_A(0.57)$	$1387^{+12}_{-12}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	$2.456^{+0.047}_{-0.045}$	$F_{\text{AP}}(0.57)$	$0.6756^{+0.0031}_{-0.0031}$
$A^{\text{kSZ}}$	$< 8.07$	$z_{\text{re}}$	$8.80^{+1.9}_{-2.2}$	$f\sigma_8(0.57)$	$0.4741^{+0.0094}_{-0.0090}$
$A_{100}^{\text{dustTT}}$	$7.51^{+3.8}_{-3.6}$	$10^9 A_s$	$2.142^{+0.090}_{-0.088}$	$\sigma_8(0.57)$	$0.608^{+0.013}_{-0.012}$
$A_{143}^{\text{dustTT}}$	$9.05^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	$1.877^{+0.021}_{-0.021}$	$f_{2000}^{143}$	$30^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.0}_{-8.0}$	$D_{40}$	$1230^{+22}_{-22}$	$f_{2000}^{143 \times 217}$	$32.6^{+3.6}_{-3.7}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{220}$	$5726^{+75}_{-75}$	$f_{2000}^{217}$	$106.1^{+3.6}_{-3.6}$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{810}$	$2534^{+26}_{-26}$	$\chi_{\text{lensing}}^2$	$10.4 (\nu: 1.7)$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0490^{+0.0096}_{-0.0097}$	$D_{1420}$	$814.7^{+9.1}_{-9.2}$	$\chi_{\text{lowTEB}}^2$	$10495.7 (\nu: 0.5)$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0999^{+0.064}_{-0.062}$	$D_{2000}$	$230.1^{+3.0}_{-3.0}$	$\chi_{\text{plik}}^2$	$2453.2 (\nu: 22.6)$
$A_{143}^{\text{dustEE}}$	$0.101^{+0.013}_{-0.014}$	$n_{s,0.002}$	$0.9663^{+0.0078}_{-0.0078}$	$\chi_{6\text{DF}}^2$	$0.047 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.225^{+0.090}_{-0.091}$	$Y_{\text{P}}$	$0.24535^{+0.00012}_{-0.00013}$	$\chi_{\text{MGS}}^2$	$1.35 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	$2.74 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	$0.141^{+0.074}_{-0.074}$	$10^5 \text{D}/\text{H}$	$2.608^{+0.051}_{-0.051}$	$\chi_{\text{DR11LOWZ}}^2$	$0.68 (\nu: 0.1)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.132^{+0.056}_{-0.057}$	$\text{Age}/\text{Gyr}$	$13.802^{+0.041}_{-0.042}$	$\chi_{\text{prior}}^2$	$19.4 (\nu: 14.8)$
$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.17}_{-0.17}$	$z_*$	$1089.94^{+0.45}_{-0.46}$	$\chi_{\text{CMB}}^2$	$12959.3 (\nu: 21.9)$
$A_{143}^{\text{dustTE}}$	$0.15^{+0.10}_{-0.11}$	$r_*$	$144.78^{+0.46}_{-0.47}$	$\chi_{\text{BAO}}^2$	$4.82 (\nu: 0.2)$

$$\bar{\chi}_{\text{eff}}^2 = 12983.50; R - 1 = 0.01640$$

## 2.74 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_reion

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022219	$0.02222^{+0.00029}_{-0.00029}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.11}$	$z_*$	1090.10	$1090.09^{+0.50}_{-0.50}$
$\Omega_c h^2$	0.11991	$0.1198^{+0.0023}_{-0.0024}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$r_*$	144.57	$144.59^{+0.52}_{-0.51}$
$100\theta_{\text{MC}}$	1.04078	$1.04079^{+0.00061}_{-0.00059}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.50}$	$100\theta_*$	1.04097	$1.04099^{+0.00060}_{-0.00058}$
$\tau$	0.0529	$0.055^{+0.014}_{-0.013}$	$c_{100}$	0.99813	$0.9981^{+0.0015}_{-0.0016}$	$D_A/\text{Gpc}$	13.8880	$13.890^{+0.050}_{-0.048}$
$\ln(10^{10} A_s)$	3.0405	$3.044^{+0.027}_{-0.025}$	$c_{217}$	0.99611	$0.9961^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.59	$1059.58^{+0.59}_{-0.58}$
$n_s$	0.9638	$0.9636^{+0.0079}_{-0.0081}$	$H_0$	67.21	$67.3^{+1.1}_{-1.0}$	$r_{\text{drag}}$	147.28	$147.31^{+0.52}_{-0.52}$
$y_{\text{cal}}$	1.00021	$1.0003^{+0.0047}_{-0.0048}$	$\Omega_\Lambda$	0.6839	$0.684^{+0.014}_{-0.014}$	$k_D$	0.14055	$0.14052^{+0.00059}_{-0.00059}$
$A_{217}^{\text{CIB}}$	68.1	$65^{+10}_{-10}$	$\Omega_m$	0.3161	$0.316^{+0.014}_{-0.014}$	$100\theta_D$	0.160949	$0.16095^{+0.00035}_{-0.00034}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14277	$0.1427^{+0.0022}_{-0.0022}$	$z_{\text{eq}}$	3396	$3394^{+52}_{-53}$
$A_{143}^{\text{tSZ}}$	7.26	$5.25^{+3.6}_{-3.7}$	$\Omega_m h^3$	0.09596	$0.09596^{+0.00058}_{-0.00057}$	$k_{\text{eq}}$	0.010366	$0.01036^{+0.00016}_{-0.00016}$
$A_{100}^{\text{PS}}$	258	$264^{+50}_{-50}$	$\sigma_8$	0.8095	$0.810^{+0.012}_{-0.010}$	$100\theta_{\text{eq}}$	0.8138	$0.814^{+0.010}_{-0.0096}$
$A_{143}^{\text{PS}}$	39.7	$45^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4551	$0.455^{+0.013}_{-0.014}$	$100\theta_{s,\text{eq}}$	0.4498	$0.4500^{+0.0052}_{-0.0050}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6070	$0.607^{+0.012}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.07133	$0.07136^{+0.00080}_{-0.00076}$
$A_{217}^{\text{PS}}$	96.7	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9874	$0.988^{+0.017}_{-0.017}$	$H(0.57)$	92.828	$92.85^{+0.47}_{-0.45}$
$A^{\text{kSZ}}$	0.0	—	$\langle d^2 \rangle^{1/2}$	2.4434	$2.447^{+0.040}_{-0.042}$	$D_A(0.57)$	1393.0	$1392^{+14}_{-14}$
$A_{100}^{\text{dustTT}}$	7.46	$7.52^{+3.7}_{-3.6}$	$z_{\text{re}}$	7.57	$< 8.94$	$F_{\text{AP}}(0.57)$	0.67718	$0.6770^{+0.0036}_{-0.0037}$
$A_{143}^{\text{dustTT}}$	9.11	$9.09^{+3.6}_{-3.4}$	$10^9 A_s$	2.092	$2.099^{+0.057}_{-0.053}$	$f\sigma_8(0.57)$	0.4718	$0.4722^{+0.0080}_{-0.0083}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.3^{+8.1}_{-7.9}$	$10^9 A_s e^{-2\tau}$	1.8817	$1.882^{+0.020}_{-0.021}$	$\sigma_8(0.57)$	0.6011	$0.6019^{+0.0083}_{-0.0077}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$D_{40}$	1232.0	$1233^{+23}_{-23}$	$f_{2000}^{143}$	30.3	$31^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0810	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5725	$5728^{+76}_{-77}$	$f_{2000}^{143 \times 217}$	32.94	$33.1^{+3.6}_{-3.6}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0487^{+0.0098}_{-0.010}$	$D_{810}$	2536.2	$2536^{+26}_{-25}$	$f_{2000}^{217}$	106.43	$106.6^{+3.6}_{-3.6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0997^{+0.063}_{-0.062}$	$D_{1420}$	815.0	$814.7^{+9.2}_{-9.3}$	$\chi_{\text{lensing}}^2$	9.26	$9.83 (\nu: 0.8)$
$A_{143}^{\text{dustEE}}$	0.0999	$0.100^{+0.013}_{-0.014}$	$D_{2000}$	229.88	$229.8^{+3.1}_{-3.1}$	$\chi_{\text{lowTEB}}^2$	10495.58	$10495.80 (\nu: 0.5)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.226^{+0.089}_{-0.091}$	$n_{s,0.002}$	0.9638	$0.9636^{+0.0079}_{-0.0081}$	$\chi_{\text{plik}}^2$	2435.9	$2453.8 (\nu: 21.9)$
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.25}$	$Y_P$	0.245326	$0.24532^{+0.00013}_{-0.00013}$	$\chi_{\text{prior}}^2$	7.38	$20 (\nu: 16.0)$
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.073}_{-0.076}$	$Y_P^{\text{BBN}}$	0.246652	$0.24665^{+0.00013}_{-0.00013}$	$\chi_{\text{CMB}}^2$	12940.7	$12959.4 (\nu: 21.3)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.056}_{-0.057}$	$10^5 D/H$	2.620	$2.620^{+0.055}_{-0.054}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.16}_{-0.17}$	Age/Gyr	13.8168	$13.815^{+0.044}_{-0.045}$			

Best-fit  $\chi_{\text{eff}}^2 = 12948.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 12979.66$ ;  $R - 1 = 0.01869$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.26 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10495.58 plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.85

## 2.75 base\_lensonly

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02215	$0.0223^{+0.0017}_{-0.0017}$	$10^9 A_s$	2.28	$2.16^{+0.65}_{-0.60}$	$z_{\text{drag}}$	1059.09	$1059.4^{+4.5}_{-4.9}$
$\Omega_c h^2$	0.1155	$0.116^{+0.027}_{-0.026}$	$10^9 A_s e^{-2\tau}$	1.98	$1.88^{+0.57}_{-0.52}$	$r_{\text{drag}}$	148.5	$148.4^{+7.4}_{-7.7}$
$100\theta_{\text{MC}}$	1.062	$1.035^{+0.099}_{-0.098}$	$D_{40}$	1352	$1263^{+400}_{-400}$	$k_{\text{D}}$	0.1392	$0.1395^{+0.0087}_{-0.0087}$
$\ln(10^{10} A_s)$	3.128	$3.06^{+0.28}_{-0.28}$	$D_{220}$	6163	$5844^{+2000}_{-2000}$	$100\theta_{\text{D}}$	0.1645	$0.160^{+0.015}_{-0.015}$
$n_s$	0.9595	$0.959^{+0.039}_{-0.038}$	$D_{810}$	2667	$2374^{+900}_{-800}$	$z_{\text{eq}}$	3289	$3311^{+700}_{-600}$
$H_0$	76.2	—	$D_{1420}$	840	$737^{+300}_{-300}$	$k_{\text{eq}}$	0.01004	$0.0101^{+0.0020}_{-0.0019}$
$\Omega_\Lambda$	0.762	$0.64^{+0.28}_{-0.40}$	$D_{2000}$	238	$235^{+100}_{-100}$	$100\theta_{\text{eq}}$	0.851	$0.83^{+0.11}_{-0.10}$
$\Omega_m$	0.238	$0.36^{+0.40}_{-0.28}$	$n_{s,0.002}$	0.9595	$0.959^{+0.039}_{-0.038}$	$100\theta_{s,\text{eq}}$	0.470	$0.457^{+0.057}_{-0.053}$
$\Omega_m h^2$	0.1383	$0.139^{+0.028}_{-0.026}$	$Y_{\text{P}}$	0.24529	$0.24534^{+0.00075}_{-0.00081}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.0782	$0.072^{+0.023}_{-0.021}$
$\Omega_m h^3$	0.105	$0.095^{+0.055}_{-0.049}$	$Y_{\text{P}}^{\text{BBN}}$	0.24662	$0.24667^{+0.00075}_{-0.00081}$	$H(0.57)$	98.9	$93^{+30}_{-20}$
$\sigma_8$	0.845	$0.79^{+0.16}_{-0.17}$	$10^5 \text{D}/\text{H}$	2.632	$2.62^{+0.35}_{-0.33}$	$D_{\text{A}}(0.57)$	1268	$1437^{+500}_{-500}$
$\sigma_8 \Omega_m^{0.5}$	0.413	$0.45^{+0.12}_{-0.11}$	Age/Gyr	13.18	$14.1^{+3.3}_{-3.0}$	$F_{\text{AP}}(0.57)$	0.656	$0.684^{+0.082}_{-0.065}$
$\sigma_8 \Omega_m^{0.25}$	0.5904	$0.591^{+0.043}_{-0.041}$	$z_*$	1089.79	$1089.7^{+3.0}_{-3.0}$	$f\sigma_8(0.57)$	0.467	$0.451^{+0.047}_{-0.059}$
$\sigma_8/h^{0.5}$	0.9682	$0.969^{+0.044}_{-0.044}$	$r_*$	145.8	$145.6^{+7.0}_{-7.4}$	$\sigma_8(0.57)$	0.649	$0.59^{+0.17}_{-0.18}$
$\langle d^2 \rangle^{1/2}$	2.460	$2.46^{+0.12}_{-0.11}$	$100\theta_*$	1.063	$1.035^{+0.099}_{-0.098}$	$\chi_{\text{lensing}}^2$	8.44	10.6 ( $\nu$ : 2.1)
$z_{\text{re}}$	9.22	$9.16^{+0.78}_{-0.78}$	$D_{\text{A}}/\text{Gpc}$	13.72	$14.1^{+2.0}_{-1.9}$	$\chi_{\text{prior}}^2$	0.00	1.96 ( $\nu$ : 1.9)

Best-fit  $\chi_{\text{eff}}^2 = 8.44$ ;  $\bar{\chi}_{\text{eff}}^2 = 12.52$ ;  $R - 1 = 0.00540$   
 $\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.44

## 2.76 base\_lensonly\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02233	$0.0223^{+0.0017}_{-0.0017}$	$D_{40}$	1237	$1219^{+300}_{-300}$	$z_{\text{eq}}$	3342	$3409^{+600}_{-600}$
$\Omega_c h^2$	0.1175	$0.120^{+0.026}_{-0.025}$	$D_{220}$	5716	$5615^{+2000}_{-2000}$	$k_{\text{eq}}$	0.01020	$0.0104^{+0.0019}_{-0.0018}$
$100\theta_{\text{MC}}$	1.0396	$1.043^{+0.033}_{-0.031}$	$D_{810}$	2490	$2437^{+600}_{-600}$	$100\theta_{\text{eq}}$	0.823	$0.817^{+0.081}_{-0.081}$
$\ln(10^{10} A_s)$	3.056	$3.04^{+0.21}_{-0.22}$	$D_{1420}$	797	$775^{+200}_{-200}$	$100\theta_{\text{s,eq}}$	0.4544	$0.451^{+0.042}_{-0.042}$
$n_s$	0.9581	$0.957^{+0.039}_{-0.040}$	$D_{2000}$	224	$221^{+60}_{-50}$	$r_{\text{drag}}/D_V(0.57)$	0.07178	$0.0718^{+0.0011}_{-0.0011}$
$H_0$	67.75	$68.0^{+2.9}_{-2.7}$	$n_{\text{s},0.002}$	0.9581	$0.957^{+0.039}_{-0.040}$	$H(0.57)$	92.9	$93.4^{+5.8}_{-5.6}$
$\Omega_\Lambda$	0.6938	$0.690^{+0.038}_{-0.039}$	$Y_{\text{P}}$	0.24537	$0.24534^{+0.00074}_{-0.00079}$	$D_A(0.57)$	1387	$1381^{+67}_{-69}$
$\Omega_{\text{m}}$	0.3062	$0.310^{+0.039}_{-0.038}$	$Y_{\text{P}}^{\text{BBN}}$	0.24670	$0.24667^{+0.00074}_{-0.00079}$	$F_{\text{AP}}(0.57)$	0.6747	$0.6755^{+0.0098}_{-0.0097}$
$\Omega_{\text{m}} h^2$	0.1405	$0.143^{+0.026}_{-0.025}$	$10^5 D/H$	2.599	$2.62^{+0.34}_{-0.33}$	$f\sigma_8(0.57)$	0.4663	$0.468^{+0.027}_{-0.027}$
$\Omega_{\text{m}} h^3$	0.0952	$0.098^{+0.022}_{-0.020}$	Age/Gyr	13.83	$13.76^{+0.87}_{-0.89}$	$\sigma_8(0.57)$	0.5997	$0.600^{+0.024}_{-0.024}$
$\sigma_8$	0.8044	$0.806^{+0.037}_{-0.037}$	$z_*$	1089.76	$1090.1^{+3.1}_{-2.8}$	$\chi^2_{\text{lensing}}$	8.55	10.6 ( $\nu: 2.2$ )
$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4451	$0.448^{+0.042}_{-0.040}$	$r_*$	145.1	$144.5^{+6.3}_{-6.8}$	$\chi^2_{6\text{DF}}$	0.006	0.07 ( $\nu: 0.0$ )
$\sigma_8 \Omega_{\text{m}}^{0.25}$	0.5983	$0.601^{+0.040}_{-0.039}$	$100\theta_*$	1.0398	$1.043^{+0.033}_{-0.031}$	$\chi^2_{\text{MGS}}$	1.47	1.56 ( $\nu: 0.3$ )
$\sigma_8/h^{0.5}$	0.9773	$0.978^{+0.038}_{-0.038}$	$D_A/\text{Gpc}$	13.96	$13.9^{+1.0}_{-1.1}$	$\chi^2_{\text{DR11CMASS}}$	2.45	3.11 ( $\nu: 0.7$ )
$\langle d^2 \rangle^{1/2}$	2.453	$2.44^{+0.11}_{-0.10}$	$z_{\text{drag}}$	1059.67	$1059.7^{+4.4}_{-4.6}$	$\chi^2_{\text{DR11LOWZ}}$	0.44	0.63 ( $\nu: 0.2$ )
$z_{\text{re}}$	9.18	$9.25^{+0.71}_{-0.66}$	$r_{\text{drag}}$	147.8	$147.2^{+6.7}_{-7.1}$	$\chi^2_{\text{prior}}$	0.01	1.98 ( $\nu: 1.9$ )
$10^9 A_s$	2.124	$2.10^{+0.48}_{-0.42}$	$k_{\text{D}}$	0.1401	$0.1407^{+0.0082}_{-0.0075}$	$\chi^2_{\text{BAO}}$	4.37	5.37 ( $\nu: 1.3$ )
$10^9 A_s e^{-2\tau}$	1.846	$1.82^{+0.42}_{-0.37}$	$100\theta_{\text{D}}$	0.16069	$0.1612^{+0.0049}_{-0.0045}$			

Best-fit  $\chi^2_{\text{eff}} = 12.93$ ;  $\bar{\chi}^2_{\text{eff}} = 17.98$ ;  $R - 1 = 0.00533$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMASS: 2.45 DR11LOWZ: 0.44 CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.55

## 2.77 base\_lensonly\_theta

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02228	$0.0223^{+0.0017}_{-0.0017}$	$10^9 A_s e^{-2\tau}$	1.97	$1.92^{+0.52}_{-0.48}$	$r_{\text{drag}}$	149.2	$148.5^{+6.1}_{-6.5}$
$\Omega_c h^2$	0.1125	$0.115^{+0.022}_{-0.021}$	$D_{40}$	1321	$1296^{+400}_{-400}$	$k_D$	0.1386	$0.1394^{+0.0076}_{-0.0070}$
$\ln(10^{10} A_s)$	3.119	$3.09^{+0.26}_{-0.25}$	$D_{220}$	6190	$6040^{+2000}_{-2000}$	$100\theta_D$	0.16112	$0.1610^{+0.0027}_{-0.0027}$
$n_s$	0.9634	$0.960^{+0.040}_{-0.041}$	$D_{810}$	2673	$2605^{+800}_{-700}$	$z_{\text{eq}}$	3221	$3291^{+500}_{-500}$
$H_0$	70.0	$69^{+8}_{-8}$	$D_{1420}$	854	$832^{+200}_{-200}$	$k_{\text{eq}}$	0.00983	$0.0100^{+0.0016}_{-0.0016}$
$\Omega_\Lambda$	0.723	$0.71^{+0.11}_{-0.12}$	$D_{2000}$	240	$234^{+70}_{-60}$	$100\theta_{\text{eq}}$	0.847	$0.837^{+0.10}_{-0.094}$
$\Omega_m$	0.277	$0.29^{+0.12}_{-0.11}$	$n_{s,0.002}$	0.9634	$0.960^{+0.040}_{-0.041}$	$100\theta_{s,\text{eq}}$	0.467	$0.462^{+0.051}_{-0.049}$
$\Omega_m h^2$	0.1354	$0.138^{+0.022}_{-0.021}$	$Y_P$	0.24535	$0.24536^{+0.00075}_{-0.00080}$	$r_{\text{drag}}/D_V(0.57)$	0.0737	$0.0731^{+0.0072}_{-0.0065}$
$\Omega_m h^3$	0.0948	$0.0953^{+0.0055}_{-0.0052}$	$Y_P^{\text{BBN}}$	0.24668	$0.24668^{+0.00075}_{-0.00081}$	$H(0.57)$	93.72	$93.7^{+2.9}_{-2.6}$
$\sigma_8$	0.8145	$0.807^{+0.040}_{-0.043}$	$10^5 D/H$	2.609	$2.61^{+0.35}_{-0.34}$	$D_A(0.57)$	1359	$1369^{+96}_{-95}$
$\sigma_8 \Omega_m^{0.5}$	0.428	$0.435^{+0.070}_{-0.066}$	Age/Gyr	13.775	$13.78^{+0.19}_{-0.19}$	$F_{\text{AP}}(0.57)$	0.6670	$0.671^{+0.030}_{-0.028}$
$\sigma_8 \Omega_m^{0.25}$	0.5908	$0.592^{+0.041}_{-0.043}$	$z_*$	1089.37	$1089.6^{+2.8}_{-2.7}$	$f\sigma_8(0.57)$	0.4638	$0.462^{+0.023}_{-0.025}$
$\sigma_8/h^{0.5}$	0.9738	$0.971^{+0.039}_{-0.043}$	$r_*$	146.5	$145.8^{+5.7}_{-6.0}$	$\sigma_8(0.57)$	0.615	$0.606^{+0.055}_{-0.055}$
$\langle d^2 \rangle^{1/2}$	2.467	$2.46^{+0.11}_{-0.10}$	$100\theta_*$	1.041009	$1.04100^{+0.00020}_{-0.00019}$	$\chi^2_{\text{lensing}}$	8.44	10.4 ( $\nu$ : 1.8)
$z_{\text{re}}$	9.09	$9.14^{+0.60}_{-0.58}$	$D_A/\text{Gpc}$	14.07	$14.00^{+0.55}_{-0.58}$	$\chi^2_{\text{prior}}$	0.00	1.99 ( $\nu$ : 2.0)
$10^9 A_s$	2.26	$2.21^{+0.60}_{-0.55}$	$z_{\text{drag}}$	1059.17	$1059.4^{+4.4}_{-4.8}$			

Best-fit  $\chi^2_{\text{eff}} = 8.45$ ;  $\bar{\chi}^2_{\text{eff}} = 12.43$ ;  $R - 1 = 0.00399$   
 $\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.44



## 2.78 base\_lensonly\_BAO\_theta

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02234	$0.0223^{+0.0018}_{-0.0018}$	$D_{220}$	5661	$5635^{+440}_{-420}$	$k_{\text{eq}}$	0.010270	$0.01027^{+0.00031}_{-0.00031}$
$\Omega_c h^2$	0.11847	$0.1185^{+0.0035}_{-0.0034}$	$D_{810}$	2476	$2467^{+180}_{-180}$	$100\theta_{\text{eq}}$	0.8198	$0.820^{+0.016}_{-0.016}$
$\ln(10^{10} A_s)$	3.051	$3.046^{+0.069}_{-0.064}$	$D_{1420}$	793	$790^{+71}_{-65}$	$100\theta_{s,\text{eq}}$	0.4528	$0.4530^{+0.0090}_{-0.0087}$
$n_s$	0.9588	$0.959^{+0.037}_{-0.038}$	$D_{2000}$	223.4	$222^{+23}_{-21}$	$r_{\text{drag}}/D_V(0.57)$	0.07179	$0.0718^{+0.0010}_{-0.0010}$
$H_0$	67.83	$67.8^{+1.6}_{-1.6}$	$n_{s,0.002}$	0.9588	$0.959^{+0.037}_{-0.038}$	$H(0.57)$	93.07	$93.0^{+1.3}_{-1.3}$
$\Omega_\Lambda$	0.6925	$0.692^{+0.017}_{-0.018}$	$Y_P$	0.24538	$0.24534^{+0.00077}_{-0.00083}$	$D_A(0.57)$	1384.9	$1386^{+25}_{-25}$
$\Omega_m$	0.3075	$0.308^{+0.018}_{-0.017}$	$Y_P^{\text{BBN}}$	0.24671	$0.24667^{+0.00077}_{-0.00083}$	$F_{\text{AP}}(0.57)$	0.67501	$0.6751^{+0.0046}_{-0.0045}$
$\Omega_m h^2$	0.14146	$0.1414^{+0.0043}_{-0.0043}$	$10^5 D/H$	2.597	$2.62^{+0.36}_{-0.34}$	$f\sigma_8(0.57)$	0.4680	$0.467^{+0.018}_{-0.017}$
$\Omega_m h^3$	0.09595	$0.0959^{+0.0036}_{-0.0035}$	Age/Gyr	13.798	$13.80^{+0.18}_{-0.18}$	$\sigma_8(0.57)$	0.6011	$0.600^{+0.023}_{-0.024}$
$\sigma_8$	0.8067	$0.806^{+0.030}_{-0.029}$	$z_*$	1089.82	$1089.9^{+2.3}_{-2.2}$	$\chi^2_{\text{lensing}}$	8.62	9.73 ( $\nu: 1.1$ )
$\sigma_8 \Omega_m^{0.5}$	0.4473	$0.447^{+0.020}_{-0.020}$	$r_*$	144.85	$144.9^{+1.8}_{-1.8}$	$\chi^2_{6\text{DF}}$	0.007	0.065 ( $\nu: 0.0$ )
$\sigma_8 \Omega_m^{0.25}$	0.6007	$0.600^{+0.023}_{-0.023}$	$100\theta_*$	1.040989	$1.04099^{+0.00019}_{-0.00019}$	$\chi^2_{\text{MGS}}$	1.47	1.54 ( $\nu: 0.2$ )
$\sigma_8/h^{0.5}$	0.9796	$0.978^{+0.038}_{-0.036}$	$D_A/\text{Gpc}$	13.915	$13.92^{+0.17}_{-0.18}$	$\chi^2_{\text{DR11CMASS}}$	2.41	3.05 ( $\nu: 0.4$ )
$\langle d^2 \rangle^{1/2}$	2.451	$2.446^{+0.075}_{-0.069}$	$z_{\text{drag}}$	1059.74	$1059.6^{+4.1}_{-4.3}$	$\chi^2_{\text{DR11LOWZ}}$	0.45	0.64 ( $\nu: 0.2$ )
$z_{\text{re}}$	9.193	$9.22^{+0.49}_{-0.44}$	$r_{\text{drag}}$	147.53	$147.6^{+2.5}_{-2.4}$	$\chi^2_{\text{prior}}$	-0.02	1.93 ( $\nu: 1.8$ )
$10^9 A_s$	2.113	$2.11^{+0.14}_{-0.14}$	$k_D$	0.14038	$0.1402^{+0.0038}_{-0.0039}$	$\chi^2_{\text{BAO}}$	4.34	5.30 ( $\nu: 0.9$ )
$10^9 A_s e^{-2\tau}$	1.837	$1.83^{+0.12}_{-0.12}$	$100\theta_D$	0.16083	$0.1610^{+0.0026}_{-0.0026}$			
$D_{40}$	1227	$1222^{+110}_{-100}$	$z_{\text{eq}}$	3365	$3364^{+100}_{-100}$			

Best-fit  $\chi^2_{\text{eff}} = 12.94$ ;  $\bar{\chi}^2_{\text{eff}} = 16.95$ ;  $R - 1 = 0.00592$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMASS: 2.41 DR11LOWZ: 0.45 CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.62

## 2.79 base\_WMAP

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02257	$0.02267^{+0.00098}_{-0.00096}$	$z_{\text{re}}$	10.55	$10.6^{+2.3}_{-2.2}$	$z_{\text{drag}}$	1060.01	$1060.2^{+2.1}_{-2.2}$
$\Omega_c h^2$	0.1145	$0.1137^{+0.0088}_{-0.0087}$	$10^9 A_s$	2.204	$2.20^{+0.14}_{-0.13}$	$r_{\text{drag}}$	148.34	$148.5^{+2.4}_{-2.3}$
$100\theta_{\text{MC}}$	1.04006	$1.0403^{+0.0044}_{-0.0045}$	$10^9 A_s e^{-2\tau}$	1.852	$1.844^{+0.059}_{-0.060}$	$k_{\text{D}}$	0.13971	$0.1396^{+0.0026}_{-0.0027}$
$\tau$	0.0868	$0.089^{+0.029}_{-0.028}$	$D_{40}$	1221.5	$1219^{+48}_{-47}$	$100\theta_{\text{D}}$	0.16053	$0.1605^{+0.0010}_{-0.00093}$
$\ln(10^{10} A_s)$	3.093	$3.092^{+0.063}_{-0.058}$	$D_{220}$	5751	$5751^{+68}_{-68}$	$z_{\text{eq}}$	3276	$3258^{+210}_{-200}$
$n_s$	0.9727	$0.974^{+0.025}_{-0.025}$	$D_{810}$	2518	$2509^{+62}_{-63}$	$k_{\text{eq}}$	0.009998	$0.00994^{+0.00063}_{-0.00061}$
$A_{\text{tsz}}$	0.00	—	$D_{1420}$	811.0	$808^{+30}_{-31}$	$100\theta_{\text{eq}}$	0.8365	$0.841^{+0.042}_{-0.039}$
$H_0$	69.21	$69.7^{+4.3}_{-4.1}$	$D_{2000}$	229.4	$229^{+12}_{-12}$	$100\theta_{\text{s,eq}}$	0.4613	$0.464^{+0.021}_{-0.020}$
$\Omega_\Lambda$	0.712	$0.717^{+0.050}_{-0.051}$	$n_{\text{s},0.002}$	0.9727	$0.974^{+0.025}_{-0.025}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07290	$0.0733^{+0.0034}_{-0.0031}$
$\Omega_{\text{m}}$	0.288	$0.283^{+0.051}_{-0.050}$	$Y_{\text{P}}$	0.245483	$0.24552^{+0.00042}_{-0.00043}$	$H(0.57)$	93.52	$93.8^{+2.3}_{-2.1}$
$\Omega_{\text{m}} h^2$	0.1377	$0.1370^{+0.0086}_{-0.0084}$	$Y_{\text{P}}^{\text{BBN}}$	0.246809	$0.24685^{+0.00042}_{-0.00043}$	$D_{\text{A}}(0.57)$	1368	$1361^{+56}_{-56}$
$\Omega_{\text{m}} h^3$	0.09532	$0.0954^{+0.0035}_{-0.0035}$	$10^5 \text{D}/\text{H}$	2.553	$2.54^{+0.18}_{-0.17}$	$F_{\text{AP}}(0.57)$	0.6698	$0.669^{+0.013}_{-0.013}$
$\sigma_8$	0.8121	$0.808^{+0.046}_{-0.046}$	Age/Gyr	13.777	$13.76^{+0.22}_{-0.23}$	$f\sigma_8(0.57)$	0.4657	$0.462^{+0.037}_{-0.038}$
$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.435	$0.430^{+0.058}_{-0.055}$	$z_*$	1089.19	$1089.0^{+1.6}_{-1.6}$	$\sigma_8(0.57)$	0.6102	$0.608^{+0.028}_{-0.027}$
$\sigma_8 \Omega_{\text{m}}^{0.25}$	0.595	$0.589^{+0.054}_{-0.054}$	$r_*$	145.71	$145.9^{+2.3}_{-2.2}$	$\chi^2_{\text{WMAP}}$	7557.9	7564.0 ( $\nu$ : 6.0)
$\sigma_8/h^{0.5}$	0.976	$0.968^{+0.075}_{-0.075}$	$100\theta_*$	1.04023	$1.0404^{+0.0043}_{-0.0044}$			
$\langle d^2 \rangle^{1/2}$	2.435	$2.42^{+0.15}_{-0.15}$	$D_{\text{A}}/\text{Gpc}$	14.008	$14.02^{+0.23}_{-0.23}$			

Best-fit  $\chi_{\text{eff}}^2 = 7557.94$ ;  $\bar{\chi}_{\text{eff}}^2 = 7564.00$ ;  $R - 1 = 0.00785$   
 $\chi_{\text{eff}}^2$ : CMB - WMAP: 7557.94

## 2.80 base\_WMAP\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02245	$0.02247^{+0.00085}_{-0.00083}$	$10^9 A_s$	2.208	$2.21^{+0.14}_{-0.12}$	$k_D$	0.14026	$0.1403^{+0.0023}_{-0.0023}$
$\Omega_c h^2$	0.11725	$0.1172^{+0.0040}_{-0.0040}$	$10^9 A_s e^{-2\tau}$	1.8663	$1.863^{+0.042}_{-0.043}$	$100\theta_D$	0.16052	$0.1605^{+0.0010}_{-0.00098}$
$100\theta_{MC}$	1.03953	$1.0395^{+0.0037}_{-0.0040}$	$D_{40}$	1231.8	$1234^{+36}_{-34}$	$z_{eq}$	3338	$3337^{+100}_{-110}$
$\tau$	0.0842	$0.085^{+0.028}_{-0.025}$	$D_{220}$	5742	$5740^{+66}_{-62}$	$k_{eq}$	0.010189	$0.01019^{+0.00032}_{-0.00032}$
$\ln(10^{10} A_s)$	3.095	$3.095^{+0.062}_{-0.056}$	$D_{810}$	2524	$2519^{+58}_{-58}$	$100\theta_{eq}$	0.8240	$0.824^{+0.017}_{-0.017}$
$n_s$	0.9680	$0.967^{+0.020}_{-0.020}$	$D_{1420}$	812.1	$810^{+30}_{-29}$	$100\theta_{s,eq}$	0.4549	$0.4551^{+0.0090}_{-0.0087}$
$A_{tSZ}$	0.02	—	$D_{2000}$	229.8	$229^{+12}_{-11}$	$r_{drag}/D_V(0.57)$	0.07187	$0.0719^{+0.0010}_{-0.00097}$
$H_0$	67.93	$68.0^{+1.4}_{-1.4}$	$n_{s,0.002}$	0.9680	$0.967^{+0.020}_{-0.020}$	$H(0.57)$	92.98	$93.0^{+1.2}_{-1.2}$
$\Omega_\Lambda$	0.6959	$0.696^{+0.017}_{-0.017}$	$Y_P$	0.245430	$0.24543^{+0.00037}_{-0.00038}$	$D_A(0.57)$	1384.5	$1384^{+22}_{-22}$
$\Omega_m$	0.3041	$0.304^{+0.017}_{-0.017}$	$Y_P^{BBN}$	0.246757	$0.24676^{+0.00037}_{-0.00038}$	$F_{AP}(0.57)$	0.67415	$0.6740^{+0.0044}_{-0.0043}$
$\Omega_m h^2$	0.14034	$0.1403^{+0.0044}_{-0.0044}$	$10^5 D/H$	2.576	$2.57^{+0.16}_{-0.15}$	$f\sigma_8(0.57)$	0.4758	$0.475^{+0.022}_{-0.021}$
$\Omega_m h^3$	0.09534	$0.0954^{+0.0035}_{-0.0034}$	Age/Gyr	13.819	$13.82^{+0.16}_{-0.16}$	$\sigma_8(0.57)$	0.6130	$0.613^{+0.025}_{-0.024}$
$\sigma_8$	0.8216	$0.821^{+0.035}_{-0.034}$	$z_*$	1089.57	$1089.56^{+0.99}_{-0.97}$	$\chi^2_{WMAP}$	7558.4	$7563.8 (\nu: 5.3)$
$\sigma_8 \Omega_m^{0.5}$	0.4531	$0.453^{+0.026}_{-0.025}$	$r_*$	145.08	$145.1^{+1.4}_{-1.4}$	$\chi^2_{6DF}$	0.001	$0.054 (\nu: 0.0)$
$\sigma_8 \Omega_m^{0.25}$	0.6102	$0.610^{+0.030}_{-0.028}$	$100\theta_*$	1.03970	$1.0397^{+0.0036}_{-0.0040}$	$\chi^2_{MGS}$	1.61	$1.74 (\nu: 0.2)$
$\sigma_8/h^{0.5}$	0.9969	$0.996^{+0.043}_{-0.043}$	$D_A/\text{Gpc}$	13.954	$13.95^{+0.18}_{-0.18}$	$\chi^2_{DR11CMAS}$	2.48	$3.10 (\nu: 0.4)$
$\langle d^2 \rangle^{1/2}$	2.477	$2.479^{+0.080}_{-0.077}$	$z_{drag}$	1059.93	$1060.0^{+2.0}_{-2.1}$	$\chi^2_{DR11LOWZ}$	0.33	$0.48 (\nu: 0.1)$
$z_{re}$	10.41	$10.5^{+2.3}_{-2.2}$	$r_{drag}$	147.73	$147.7^{+1.7}_{-1.7}$	$\chi^2_{BAO}$	4.42	$5.37 (\nu: 0.9)$

Best-fit  $\chi^2_{eff} = 7562.82$ ;  $\bar{\chi}^2_{eff} = 7569.13$ ;  $R - 1 = 0.01084$

$\chi^2_{eff}$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMAS: 2.48 DR11LOWZ: 0.33 CMB - WMAP: 7558.39

## 2.81 base\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022226	$0.02222^{+0.00044}_{-0.00041}$	$\Omega_m$	0.3162	$0.316^{+0.026}_{-0.024}$	$100\theta_*$	1.04105	$1.04105^{+0.00089}_{-0.00090}$
$\Omega_c h^2$	0.11999	$0.1199^{+0.0041}_{-0.0040}$	$\Omega_m h^2$	0.14286	$0.1428^{+0.0039}_{-0.0038}$	$D_A/\text{Gpc}$	13.885	$13.887^{+0.086}_{-0.087}$
$100\theta_{\text{MC}}$	1.04084	$1.04085^{+0.00091}_{-0.00092}$	$\Omega_m h^3$	0.09602	$0.09599^{+0.00090}_{-0.00085}$	$z_{\text{drag}}$	1059.59	$1059.57^{+0.90}_{-0.84}$
$\tau$	0.0731	$0.074^{+0.024}_{-0.023}$	$\sigma_8$	0.8268	$0.827^{+0.021}_{-0.020}$	$r_{\text{drag}}$	147.26	$147.29^{+0.95}_{-0.94}$
$\ln(10^{10} A_s)$	3.0810	$3.082^{+0.047}_{-0.045}$	$\sigma_8 \Omega_m^{0.5}$	0.4650	$0.465^{+0.026}_{-0.025}$	$k_D$	0.14058	$0.1405^{+0.0010}_{-0.0010}$
$n_s$	0.9655	$0.965^{+0.012}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	0.6200	$0.620^{+0.023}_{-0.023}$	$100\theta_D$	0.16095	$0.16097^{+0.00051}_{-0.00050}$
$y_{\text{cal}}$	1.00031	$1.0004^{+0.0050}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.0085	$1.009^{+0.033}_{-0.032}$	$z_{\text{eq}}$	3398	$3396^{+94}_{-92}$
$A_{217}^{\text{CIB}}$	66.2	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.490	$2.493^{+0.078}_{-0.076}$	$k_{\text{eq}}$	0.010372	$0.01037^{+0.00029}_{-0.00028}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$z_{\text{re}}$	9.55	$9.59^{+2.1}_{-2.0}$	$100\theta_{\text{eq}}$	0.8135	$0.814^{+0.018}_{-0.017}$
$A_{143}^{\text{tSZ}}$	7.02	$5.13^{+3.7}_{-3.8}$	$10^9 A_s$	2.178	$2.18^{+0.10}_{-0.099}$	$100\theta_{s,\text{eq}}$	0.4496	$0.4498^{+0.0090}_{-0.0089}$
$A_{100}^{\text{PS}}$	253	$259^{+60}_{-50}$	$10^9 A_s e^{-2\tau}$	1.8816	$1.881^{+0.027}_{-0.026}$	$r_{\text{drag}}/D_V(0.57)$	0.07132	$0.0714^{+0.0014}_{-0.0013}$
$A_{143}^{\text{PS}}$	41.1	$44^{+20}_{-20}$	$D_{40}$	1234.6	$1237^{+31}_{-29}$	$H(0.57)$	92.84	$92.85^{+0.79}_{-0.77}$
$A_{143 \times 217}^{\text{PS}}$	36.4	$39^{+20}_{-20}$	$D_{220}$	5715	$5718^{+83}_{-79}$	$D_A(0.57)$	1392.8	$1393^{+24}_{-24}$
$A_{217}^{\text{PS}}$	98.9	$98^{+20}_{-20}$	$D_{810}$	2535.4	$2535^{+27}_{-27}$	$F_{\text{AP}}(0.57)$	0.6772	$0.6772^{+0.0064}_{-0.0062}$
$A^{\text{kSZ}}$	0.0	—	$D_{1420}$	815.1	$815^{+10}_{-9.8}$	$f\sigma_8(0.57)$	0.4819	$0.482^{+0.016}_{-0.015}$
$A_{100}^{\text{dustTT}}$	7.46	$7.41^{+3.6}_{-3.7}$	$D_{2000}$	230.46	$230.2^{+3.5}_{-3.5}$	$\sigma_8(0.57)$	0.6140	$0.614^{+0.015}_{-0.013}$
$A_{143}^{\text{dustTT}}$	9.06	$9.00^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9655	$0.965^{+0.012}_{-0.012}$	$f_{2000}^{143}$	29.6	$30^{+6}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.2}_{-8.1}$	$Y_{\text{P}}$	0.245329	$0.24532^{+0.00019}_{-0.00019}$	$f_{2000}^{143 \times 217}$	32.29	$33^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246655	$0.24665^{+0.00020}_{-0.00019}$	$f_{2000}^{217}$	105.84	$106.2^{+3.9}_{-3.8}$
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.619	$2.621^{+0.080}_{-0.082}$	$\chi_{\text{WMAPTEB}}^2$	19734.15	$19735.4 (\nu: 2.4)$
$c_{217}$	0.99597	$0.9959^{+0.0029}_{-0.0029}$	Age/Gyr	13.814	$13.814^{+0.069}_{-0.073}$	$\chi_{\text{plik}}^2$	764.1	$777.4 (\nu: 15.2)$
$H_0$	67.21	$67.2^{+1.8}_{-1.8}$	$z_*$	1090.10	$1090.11^{+0.77}_{-0.79}$	$\chi_{\text{prior}}^2$	1.93	$7.34 (\nu: 6.3)$
$\Omega_\Lambda$	0.6838	$0.684^{+0.024}_{-0.026}$	$r_*$	144.54	$144.57^{+0.94}_{-0.93}$	$\chi_{\text{CMB}}^2$	20498.2	$20512.8 (\nu: 15.1)$

Best-fit  $\chi_{\text{eff}}^2 = 20500.15$ ;  $\bar{\chi}_{\text{eff}}^2 = 20520.13$ ;  $R - 1 = 0.01203$

$\chi_{\text{eff}}^2$ : CMB - bflike\_WMAP353ggf\_LFI312\_nw8: 19734.15 plik\_dx11dr2\_HM\_v18\_TT: 764.08

## 2.82 base\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02228^{+0.00043}_{-0.00042}$	$\Omega_m h^2$	$0.1412^{+0.0031}_{-0.0031}$	$z_{\text{drag}}$	$1059.60^{+0.90}_{-0.87}$
$\Omega_c h^2$	$0.1183^{+0.0032}_{-0.0032}$	$\Omega_m h^3$	$0.09593^{+0.00091}_{-0.00084}$	$r_{\text{drag}}$	$147.65^{+0.78}_{-0.76}$
$100\theta_{\text{MC}}$	$1.04108^{+0.00081}_{-0.00082}$	$\sigma_8$	$0.817^{+0.015}_{-0.014}$	$k_D$	$0.14021^{+0.00088}_{-0.00091}$
$\tau$	$0.070^{+0.022}_{-0.022}$	$\sigma_8 \Omega_m^{0.5}$	$0.452^{+0.017}_{-0.016}$	$100\theta_D$	$0.16096^{+0.00052}_{-0.00052}$
$\ln(10^{10} A_s)$	$3.070^{+0.040}_{-0.039}$	$\sigma_8 \Omega_m^{0.25}$	$0.608^{+0.015}_{-0.014}$	$z_{\text{eq}}$	$3359^{+74}_{-74}$
$n_s$	$0.969^{+0.011}_{-0.0097}$	$\sigma_8/h^{0.5}$	$0.991^{+0.020}_{-0.020}$	$k_{\text{eq}}$	$0.01025^{+0.00023}_{-0.00023}$
$y_{\text{cal}}$	$1.0001^{+0.0051}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	$2.452^{+0.047}_{-0.044}$	$100\theta_{\text{eq}}$	$0.821^{+0.014}_{-0.014}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$z_{\text{re}}$	$9.18^{+2.0}_{-1.9}$	$100\theta_{\text{s,eq}}$	$0.4535^{+0.0072}_{-0.0071}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.154^{+0.087}_{-0.085}$	$r_{\text{drag}}/D_V(0.57)$	$0.0719^{+0.0011}_{-0.0011}$
$A_{143}^{\text{tSZ}}$	$5.10^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	$1.872^{+0.024}_{-0.024}$	$H(0.57)$	$93.13^{+0.70}_{-0.64}$
$A_{100}^{\text{PS}}$	$259^{+60}_{-60}$	$D_{40}$	$1225^{+25}_{-25}$	$D_A(0.57)$	$1383^{+19}_{-20}$
$A_{143}^{\text{PS}}$	$44^{+20}_{-20}$	$D_{220}$	$5717^{+86}_{-86}$	$F_{\text{AP}}(0.57)$	$0.6746^{+0.0050}_{-0.0049}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{810}$	$2532^{+27}_{-27}$	$f\sigma_8(0.57)$	$0.4737^{+0.0098}_{-0.0096}$
$A_{217}^{\text{PS}}$	$96^{+20}_{-20}$	$D_{1420}$	$815^{+10}_{-9.7}$	$\sigma_8(0.57)$	$0.609^{+0.012}_{-0.012}$
$A^{\text{kSZ}}$	—	$D_{2000}$	$230.2^{+3.7}_{-3.4}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	$7.37^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	$0.969^{+0.011}_{-0.0097}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	$9.09^{+3.5}_{-3.6}$	$Y_{\text{P}}$	$0.24535^{+0.00019}_{-0.00019}$	$f_{2000}^{217}$	$106.1^{+3.9}_{-3.8}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.3^{+8.1}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668^{+0.00019}_{-0.00019}$	$\chi_{\text{lensing}}^2$	$9.98 (\nu: 1.2)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-20}$	$10^5 D/H$	$2.608^{+0.080}_{-0.080}$	$\chi_{\text{WMAPTEB}}^2$	$19734.0 (\nu: 1.1)$
$c_{100}$	$0.9979^{+0.0016}_{-0.0016}$	$\text{Age/Gyr}$	$13.794^{+0.062}_{-0.065}$	$\chi_{\text{plik}}^2$	$779.4 (\nu: 46.0)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0029}$	$z_*$	$1089.88^{+0.69}_{-0.72}$	$\chi_{\text{prior}}^2$	$7.43 (\nu: 6.4)$
$H_0$	$68.0^{+1.5}_{-1.4}$	$r_*$	$144.95^{+0.75}_{-0.75}$	$\chi_{\text{CMB}}^2$	$20523.3 (\nu: 46.5)$
$\Omega_\Lambda$	$0.694^{+0.019}_{-0.020}$	$100\theta_*$	$1.04127^{+0.00080}_{-0.00081}$		
$\Omega_m$	$0.306^{+0.020}_{-0.019}$	$D_A/\text{Gpc}$	$13.921^{+0.070}_{-0.071}$		

$$\bar{\chi}_{\text{eff}}^2 = 20530.75; R - 1 = 0.02755$$

## 2.83 base\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02226^{+0.00039}_{-0.00038}$	$\Omega_m h^3$	$0.09599^{+0.00091}_{-0.00085}$	$k_D$	$0.14040^{+0.00088}_{-0.00085}$
$\Omega_c h^2$	$0.1191^{+0.0025}_{-0.0024}$	$\sigma_8$	$0.825^{+0.020}_{-0.019}$	$100\theta_D$	$0.16095^{+0.00051}_{-0.00049}$
$100\theta_{MC}$	$1.04097^{+0.00079}_{-0.00081}$	$\sigma_8 \Omega_m^{0.5}$	$0.460^{+0.017}_{-0.017}$	$z_{eq}$	$3378^{+57}_{-56}$
$\tau$	$0.076^{+0.023}_{-0.021}$	$\sigma_8 \Omega_m^{0.25}$	$0.616^{+0.018}_{-0.017}$	$k_{eq}$	$0.01031^{+0.00018}_{-0.00017}$
$\ln(10^{10} A_s)$	$3.084^{+0.045}_{-0.043}$	$\sigma_8/h^{0.5}$	$1.004^{+0.027}_{-0.026}$	$100\theta_{eq}$	$0.817^{+0.010}_{-0.011}$
$n_s$	$0.9669^{+0.0086}_{-0.0087}$	$\langle d^2 \rangle^{1/2}$	$2.482^{+0.062}_{-0.061}$	$100\theta_{s,eq}$	$0.4516^{+0.0054}_{-0.0054}$
$y_{cal}$	$1.0004^{+0.0050}_{-0.0050}$	$z_{re}$	$9.72^{+2.0}_{-2.0}$	$r_{drag}/D_V(0.57)$	$0.07163^{+0.00082}_{-0.00082}$
$A_{217}^{CIB}$	$64^{+10}_{-10}$	$10^9 A_s$	$2.18^{+0.10}_{-0.091}$	$H(0.57)$	$92.99^{+0.54}_{-0.51}$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.878^{+0.024}_{-0.023}$	$D_A(0.57)$	$1388^{+15}_{-15}$
$A_{143}^{tSZ}$	$5.18^{+3.8}_{-3.8}$	$D_{40}$	$1233^{+27}_{-26}$	$F_{AP}(0.57)$	$0.6758^{+0.0038}_{-0.0037}$
$A_{100}^{PS}$	$258^{+50}_{-60}$	$D_{220}$	$5721^{+81}_{-78}$	$f\sigma_8(0.57)$	$0.480^{+0.013}_{-0.012}$
$A_{143}^{PS}$	$44^{+20}_{-20}$	$D_{810}$	$2534^{+27}_{-26}$	$\sigma_8(0.57)$	$0.614^{+0.015}_{-0.013}$
$A_{143 \times 217}^{PS}$	$39^{+20}_{-20}$	$D_{1420}$	$815^{+10}_{-9.6}$	$f_{2000}^{143}$	$30^{+6}_{-5}$
$A_{217}^{PS}$	$97^{+20}_{-20}$	$D_{2000}$	$230.4^{+3.5}_{-3.4}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A^{kSZ}$	$< 8.21$	$n_{s,0.002}$	$0.9669^{+0.0086}_{-0.0087}$	$f_{2000}^{217}$	$106.0^{+4.0}_{-3.6}$
$A_{100}^{dustTT}$	$7.40^{+3.6}_{-3.6}$	$Y_P$	$0.24534^{+0.00017}_{-0.00017}$	$\chi_{WMAPTEB}^2$	$19735.1 (\nu: 2.4)$
$A_{143}^{dustTT}$	$9.00^{+3.6}_{-3.5}$	$Y_P^{BBN}$	$0.24667^{+0.00017}_{-0.00017}$	$\chi_{plik}^2$	$777 (\nu: 67.1)$
$A_{143 \times 217}^{dustTT}$	$17.2^{+8.3}_{-8.1}$	$10^5 D/H$	$2.612^{+0.073}_{-0.073}$	$\chi_{6DF}^2$	$0.064 (\nu: 0.0)$
$A_{217}^{dustTT}$	$82^{+10}_{-20}$	Age/Gyr	$13.803^{+0.053}_{-0.055}$	$\chi_{MGS}^2$	$1.31 (\nu: 0.1)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0016}$	$z_*$	$1089.98^{+0.57}_{-0.58}$	$\chi_{DR11CMass}^2$	$2.90 (\nu: 0.2)$
$c_{217}$	$0.9959^{+0.0029}_{-0.0029}$	$r_*$	$144.75^{+0.61}_{-0.62}$	$\chi_{DR11LOWZ}^2$	$0.78 (\nu: 0.2)$
$H_0$	$67.6^{+1.1}_{-1.1}$	$100\theta_*$	$1.04116^{+0.00078}_{-0.00080}$	$\chi_{prior}^2$	$7.31 (\nu: 6.4)$
$\Omega_\Lambda$	$0.689^{+0.014}_{-0.015}$	$D_A/Gpc$	$13.903^{+0.060}_{-0.061}$	$\chi_{CMB}^2$	$20510 (\nu: 67.6)$
$\Omega_m$	$0.311^{+0.015}_{-0.014}$	$z_{drag}$	$1059.62^{+0.89}_{-0.86}$	$\chi_{BAO}^2$	$5.05 (\nu: 0.5)$
$\Omega_m h^2$	$0.1420^{+0.0024}_{-0.0023}$	$r_{drag}$	$147.46^{+0.66}_{-0.68}$		

$$\bar{\chi}_{eff}^2 = 20524.89; R - 1 = 0.01550$$

## 2.84 base\_plikHM\_TT\_WMAPTEB\_post\_BAO\_lensing

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02227^{+0.00040}_{-0.00039}$	$\Omega_m h^3$	$0.09593^{+0.00090}_{-0.00085}$	$k_D$	$0.14023^{+0.00084}_{-0.00084}$
$\Omega_c h^2$	$0.1185^{+0.0022}_{-0.0022}$	$\sigma_8$	$0.817^{+0.014}_{-0.013}$	$100\theta_D$	$0.16098^{+0.00052}_{-0.00050}$
$100\theta_{MC}$	$1.04106^{+0.00073}_{-0.00078}$	$\sigma_8 \Omega_m^{0.5}$	$0.453^{+0.013}_{-0.012}$	$z_{eq}$	$3363^{+51}_{-51}$
$\tau$	$0.069^{+0.019}_{-0.018}$	$\sigma_8 \Omega_m^{0.25}$	$0.608^{+0.013}_{-0.012}$	$k_{eq}$	$0.01026^{+0.00016}_{-0.00016}$
$\ln(10^{10} A_s)$	$3.068^{+0.036}_{-0.033}$	$\sigma_8/h^{0.5}$	$0.992^{+0.019}_{-0.019}$	$100\theta_{eq}$	$0.8202^{+0.0096}_{-0.0095}$
$n_s$	$0.9681^{+0.0083}_{-0.0081}$	$\langle d^2 \rangle^{1/2}$	$2.453^{+0.044}_{-0.042}$	$100\theta_{s,eq}$	$0.4531^{+0.0050}_{-0.0049}$
$y_{cal}$	$1.0001^{+0.0050}_{-0.0048}$	$z_{re}$	$9.09^{+1.7}_{-1.7}$	$r_{drag}/D_V(0.57)$	$0.07185^{+0.00076}_{-0.00075}$
$A_{217}^{CIB}$	$64^{+10}_{-10}$	$10^9 A_s$	$2.150^{+0.078}_{-0.071}$	$H(0.57)$	$93.08^{+0.51}_{-0.51}$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.873^{+0.022}_{-0.021}$	$D_A(0.57)$	$1385^{+14}_{-14}$
$A_{143}^{tSZ}$	$5.09^{+3.8}_{-3.8}$	$D_{40}$	$1226^{+24}_{-24}$	$F_{AP}(0.57)$	$0.6749^{+0.0034}_{-0.0034}$
$A_{100}^{PS}$	$260^{+60}_{-50}$	$D_{220}$	$5715^{+83}_{-79}$	$f\sigma_8(0.57)$	$0.4739^{+0.0091}_{-0.0089}$
$A_{143}^{PS}$	$44^{+20}_{-20}$	$D_{810}$	$2531^{+27}_{-27}$	$\sigma_8(0.57)$	$0.609^{+0.011}_{-0.010}$
$A_{143 \times 217}^{PS}$	$39^{+20}_{-20}$	$D_{1420}$	$814^{+10}_{-9.6}$	$f_{2000}^{143}$	$30^{+5}_{-5}$
$A_{217}^{PS}$	$96^{+20}_{-20}$	$D_{2000}$	$230.1^{+3.6}_{-3.3}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A^{kSZ}$	—	$n_{s,0.002}$	$0.9681^{+0.0083}_{-0.0081}$	$f_{2000}^{217}$	$106.2^{+3.9}_{-3.8}$
$A_{100}^{dustTT}$	$7.36^{+3.6}_{-3.7}$	$Y_P$	$0.24534^{+0.00018}_{-0.00018}$	$\chi^2_{lensing}$	$9.95 (\nu: 1.0)$
$A_{143}^{dustTT}$	$9.09^{+3.5}_{-3.6}$	$Y_P^{BBN}$	$0.24667^{+0.00018}_{-0.00018}$	$\chi^2_{WMAPTEB}$	$19733.9 (\nu: 0.8)$
$A_{143 \times 217}^{dustTT}$	$17.3^{+8.3}_{-8.2}$	$10^5 D/H$	$2.611^{+0.076}_{-0.074}$	$\chi^2_{plik}$	$779 (\nu: 58.6)$
$A_{217}^{dustTT}$	$82^{+10}_{-20}$	Age/Gyr	$13.797^{+0.052}_{-0.054}$	$\chi^2_{6DF}$	$0.036 (\nu: 0.0)$
$c_{100}$	$0.9979^{+0.0016}_{-0.0016}$	$z_*$	$1089.92^{+0.56}_{-0.58}$	$\chi^2_{MGS}$	$1.58 (\nu: 0.1)$
$c_{217}$	$0.9960^{+0.0029}_{-0.0029}$	$r_*$	$144.91^{+0.60}_{-0.58}$	$\chi^2_{DR11CMass}$	$2.76 (\nu: 0.1)$
$H_0$	$67.9^{+1.0}_{-1.0}$	$100\theta_*$	$1.04125^{+0.00072}_{-0.00076}$	$\chi^2_{DR11LOWZ}$	$0.50 (\nu: 0.1)$
$\Omega_\Lambda$	$0.693^{+0.013}_{-0.014}$	$D_A/Gpc$	$13.917^{+0.057}_{-0.057}$	$\chi^2_{prior}$	$7.45 (\nu: 6.4)$
$\Omega_m$	$0.307^{+0.014}_{-0.013}$	$z_{drag}$	$1059.58^{+0.89}_{-0.85}$	$\chi^2_{CMB}$	$20520 (\nu: 59.4)$
$\Omega_m h^2$	$0.1414^{+0.0021}_{-0.0021}$	$r_{drag}$	$147.62^{+0.66}_{-0.64}$	$\chi^2_{BAO}$	$4.87 (\nu: 0.3)$

$$\bar{\chi}^2_{eff} = 20535.09; R - 1 = 0.02637$$

### 3 Alens

#### 3.1 base\_Alens\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02271	$0.02262^{+0.00057}_{-0.00056}$	$\Omega_m$	0.2920	$0.295^{+0.031}_{-0.028}$	$D_A/\text{Gpc}$	13.936	$13.933^{+0.093}_{-0.094}$
$\Omega_c h^2$	0.11625	$0.1166^{+0.0050}_{-0.0048}$	$\Omega_m h^2$	0.13960	$0.1399^{+0.0046}_{-0.0044}$	$z_{\text{drag}}$	1060.47	$1060.3^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	1.04141	$1.0414^{+0.0010}_{-0.0010}$	$\Omega_m h^3$	0.09652	$0.09641^{+0.00098}_{-0.00097}$	$r_{\text{drag}}$	147.71	$147.71^{+0.99}_{-1.0}$
$\tau$	0.0636	$0.059^{+0.041}_{-0.040}$	$\sigma_8$	0.8047	$0.802^{+0.036}_{-0.035}$	$k_D$	0.14046	$0.1404^{+0.0010}_{-0.0010}$
$A_L$	1.239	$1.22^{+0.21}_{-0.20}$	$\sigma_8 \Omega_m^{0.5}$	0.4349	$0.436^{+0.036}_{-0.034}$	$100\theta_D$	0.16050	$0.16060^{+0.00059}_{-0.00058}$
$\ln(10^{10} A_s)$	3.054	$3.046^{+0.081}_{-0.081}$	$\sigma_8 \Omega_m^{0.25}$	0.5916	$0.591^{+0.036}_{-0.035}$	$z_{\text{eq}}$	3321	$3328^{+110}_{-110}$
$n_s$	0.9767	$0.974^{+0.014}_{-0.014}$	$\sigma_8/h^{0.5}$	0.968	$0.967^{+0.053}_{-0.052}$	$k_{\text{eq}}$	0.010135	$0.01016^{+0.00034}_{-0.00032}$
$y_{\text{cal}}$	0.99997	$1.0001^{+0.0049}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	2.664	$2.64^{+0.15}_{-0.15}$	$100\theta_{\text{eq}}$	0.8295	$0.828^{+0.022}_{-0.022}$
$A_{217}^{\text{CIB}}$	58.1	$61^{+10}_{-10}$	$z_{\text{re}}$	8.45	$7.95^{+4.0}_{-4.4}$	$100\theta_{s,\text{eq}}$	0.4576	$0.457^{+0.011}_{-0.011}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.88	—	$10^9 A_s$	2.120	$2.10^{+0.17}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	0.07268	$0.0726^{+0.0018}_{-0.0018}$
$A_{143}^{\text{tSZ}}$	6.72	$5.64^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8671	$1.868^{+0.029}_{-0.029}$	$H(0.57)$	93.75	$93.6^{+1.1}_{-1.1}$
$A_{100}^{\text{PS}}$	236	$247^{+60}_{-60}$	$D_{40}$	1208.1	$1213^{+36}_{-34}$	$D_A(0.57)$	1366.8	$1370^{+32}_{-31}$
$A_{143}^{\text{PS}}$	45.0	$38^{+20}_{-20}$	$D_{220}$	5741	$5740^{+83}_{-82}$	$F_{\text{AP}}(0.57)$	0.6710	$0.6717^{+0.0080}_{-0.0075}$
$A_{143 \times 217}^{\text{PS}}$	52.9	$38^{+20}_{-20}$	$D_{810}$	2528.6	$2527^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4627	$0.462^{+0.026}_{-0.025}$
$A_{217}^{\text{PS}}$	107.2	$98^{+20}_{-20}$	$D_{1420}$	816.0	$814.3^{+9.8}_{-9.8}$	$\sigma_8(0.57)$	0.6034	$0.601^{+0.025}_{-0.024}$
$A^{\text{kSZ}}$	0.00	$< 7.14$	$D_{2000}$	233.36	$232.4^{+4.0}_{-4.0}$	$f_{2000}^{143}$	25.0	$27^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.38	$7.42^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9767	$0.974^{+0.014}_{-0.014}$	$f_{2000}^{143 \times 217}$	28.79	$30^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	8.98	$8.92^{+3.6}_{-3.6}$	$Y_P$	0.245542	$0.24550^{+0.00025}_{-0.00025}$	$f_{2000}^{217}$	102.38	$103.5^{+4.5}_{-4.4}$
$A_{143 \times 217}^{\text{dustTT}}$	18.1	$16.6^{+8.2}_{-8.2}$	$Y_P^{\text{BBN}}$	0.246869	$0.24683^{+0.00025}_{-0.00025}$	$\chi_{\text{lowTEB}}^2$	10493.41	10494.9 ( $\nu: 1.5$ )
$A_{217}^{\text{dustTT}}$	83.0	$82^{+10}_{-10}$	$10^5 D/H$	2.528	$2.55^{+0.10}_{-0.10}$	$\chi_{\text{plik}}^2$	760.7	775.1 ( $\nu: 15.6$ )
$c_{100}$	0.99801	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.732	$13.743^{+0.097}_{-0.099}$	$\chi_{\text{prior}}^2$	1.36	7.17 ( $\nu: 6.1$ )
$c_{217}$	0.99534	$0.9956^{+0.0029}_{-0.0029}$	$z_*$	1089.18	$1089.3^{+1.1}_{-1.0}$	$\chi_{\text{CMB}}^2$	11254.1	11270.0 ( $\nu: 16.3$ )
$H_0$	69.14	$68.9^{+2.4}_{-2.4}$	$r_*$	145.15	$145.1^{+1.0}_{-1.0}$			
$\Omega_\Lambda$	0.7080	$0.705^{+0.028}_{-0.031}$	$100\theta_*$	1.04156	$1.0415^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11255.51$ ;  $\Delta\chi_{\text{eff}}^2 = -6.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 11277.18$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.64$ ;  $R - 1 = 0.00926$   
 $\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.41 ( $\Delta -3.06$ ) plik\_dx11dr2\_HM\_v18\_TT: 760.74 ( $\Delta -2.64$ )



### 3.2 base\_Alens\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022545	$0.02249^{+0.00044}_{-0.00043}$	$\Omega_m h^2$	0.14116	$0.1413^{+0.0024}_{-0.0025}$	$r_{\text{drag}}$	147.44	$147.44^{+0.69}_{-0.68}$
$\Omega_c h^2$	0.11797	$0.1182^{+0.0026}_{-0.0026}$	$\Omega_m h^3$	0.09639	$0.09634^{+0.00094}_{-0.00095}$	$k_D$	0.14063	$0.14059^{+0.00088}_{-0.00088}$
$100\theta_{\text{MC}}$	1.04114	$1.04115^{+0.00083}_{-0.00086}$	$\sigma_8$	0.8089	$0.807^{+0.034}_{-0.034}$	$100\theta_D$	0.16062	$0.16069^{+0.00053}_{-0.00054}$
$\tau$	0.0605	$0.058^{+0.039}_{-0.042}$	$\sigma_8 \Omega_m^{0.5}$	0.4450	$0.445^{+0.024}_{-0.023}$	$z_{\text{eq}}$	3358	$3362^{+58}_{-59}$
$A_L$	1.202	$1.19^{+0.18}_{-0.16}$	$\sigma_8 \Omega_m^{0.25}$	0.6000	$0.599^{+0.028}_{-0.028}$	$k_{\text{eq}}$	0.010248	$0.01026^{+0.00018}_{-0.00018}$
$\ln(10^{10} A_s)$	3.052	$3.046^{+0.080}_{-0.078}$	$\sigma_8/h^{0.5}$	0.9788	$0.978^{+0.044}_{-0.044}$	$100\theta_{\text{eq}}$	0.8220	$0.821^{+0.011}_{-0.011}$
$n_s$	0.9720	$0.9699^{+0.0091}_{-0.0087}$	$\langle d^2 \rangle^{1/2}$	2.651	$2.63^{+0.14}_{-0.14}$	$100\theta_{s,\text{eq}}$	0.4538	$0.4533^{+0.0058}_{-0.0055}$
$y_{\text{cal}}$	0.99999	$1.0001^{+0.0050}_{-0.0049}$	$z_{\text{re}}$	8.23	$7.83^{+4.0}_{-4.4}$	$r_{\text{drag}}/D_V(0.57)$	0.07205	$0.07198^{+0.00090}_{-0.00088}$
$A_{217}^{\text{CIB}}$	59.7	$62^{+10}_{-10}$	$10^9 A_s$	2.115	$2.10^{+0.17}_{-0.17}$	$H(0.57)$	93.36	$93.30^{+0.61}_{-0.58}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.74	—	$10^9 A_s e^{-2\tau}$	1.8739	$1.874^{+0.023}_{-0.023}$	$D_A(0.57)$	1378.1	$1380^{+16}_{-16}$
$A_{143}^{\text{tSZ}}$	6.80	$5.55^{+3.8}_{-3.7}$	$D_{40}$	1216.8	$1222^{+29}_{-27}$	$F_{\text{AP}}(0.57)$	0.67378	$0.6742^{+0.0040}_{-0.0040}$
$A_{100}^{\text{PS}}$	240	$249^{+50}_{-50}$	$D_{220}$	5731	$5732^{+84}_{-78}$	$f\sigma_8(0.57)$	0.4680	$0.467^{+0.021}_{-0.021}$
$A_{143}^{\text{PS}}$	44.7	$40^{+20}_{-20}$	$D_{810}$	2530.1	$2529^{+28}_{-27}$	$\sigma_8(0.57)$	0.6039	$0.602^{+0.025}_{-0.025}$
$A_{143 \times 217}^{\text{PS}}$	50.6	$38^{+20}_{-20}$	$D_{1420}$	815.0	$813.7^{+9.9}_{-9.8}$	$f_{2000}^{143}$	26.0	$27^{+6}_{-6}$
$A_{217}^{\text{PS}}$	106.0	$98^{+20}_{-20}$	$D_{2000}$	232.54	$231.8^{+3.7}_{-3.6}$	$f_{2000}^{143 \times 217}$	29.67	$30^{+4}_{-4}$
$A^{\text{kSZ}}$	0.01	$< 7.37$	$n_{s,0.002}$	0.9720	$0.9699^{+0.0091}_{-0.0087}$	$f_{2000}^{217}$	103.16	$104.2^{+4.2}_{-4.1}$
$A_{100}^{\text{dustTT}}$	7.61	$7.40^{+3.8}_{-3.6}$	$Y_{\text{P}}$	0.245470	$0.24544^{+0.00020}_{-0.00020}$	$\chi_{\text{lowTEB}}^2$	10494.08	$10495.5 (\nu: 1.2)$
$A_{143}^{\text{dustTT}}$	9.07	$8.93^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246797	$0.24677^{+0.00020}_{-0.00020}$	$\chi_{\text{plik}}^2$	760.6	$774.2 (\nu: 14.4)$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$16.8^{+8.4}_{-8.2}$	$10^5 \text{D}/\text{H}$	2.559	$2.570^{+0.080}_{-0.081}$	$\chi_{6\text{DF}}^2$	0.002	$0.046 (\nu: 0.0)$
$A_{217}^{\text{dustTT}}$	82.6	$82^{+10}_{-10}$	Age/Gyr	13.765	$13.771^{+0.062}_{-0.063}$	$\chi_{\text{MGS}}^2$	1.82	$1.78 (\nu: 0.2)$
$c_{100}$	0.99804	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.52	$1089.62^{+0.65}_{-0.66}$	$\chi_{\text{DR11CMass}}^2$	2.58	$2.99 (\nu: 0.3)$
$c_{217}$	0.99539	$0.9956^{+0.0029}_{-0.0029}$	$r_*$	144.82	$144.81^{+0.64}_{-0.62}$	$\chi_{\text{DR11LOWZ}}^2$	0.19	$0.41 (\nu: 0.1)$
$H_0$	68.29	$68.2^{+1.2}_{-1.2}$	$100\theta_*$	1.04130	$1.04132^{+0.00081}_{-0.00085}$	$\chi_{\text{prior}}^2$	1.41	$7.23 (\nu: 6.1)$
$\Omega_\Lambda$	0.6973	$0.696^{+0.015}_{-0.016}$	$D_A/\text{Gpc}$	13.908	$13.906^{+0.062}_{-0.060}$	$\chi_{\text{CMB}}^2$	11254.7	$11269.7 (\nu: 15.4)$
$\Omega_m$	0.3027	$0.304^{+0.016}_{-0.015}$	$z_{\text{drag}}$	1060.20	$1060.08^{+0.97}_{-0.94}$	$\chi_{\text{BAO}}^2$	4.60	$5.23 (\nu: 0.8)$

Best-fit  $\chi_{\text{eff}}^2 = 11260.70$ ;  $\Delta\chi_{\text{eff}}^2 = -5.73$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.16$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.21$ ;  $R - 1 = 0.01751$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta -0.02$ ) MGS: 1.82 ( $\Delta 0.54$ ) DR11CMass: 2.58 ( $\Delta 0.13$ ) DR11LOWZ: 0.19 ( $\Delta -0.42$ ) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10494.08 ( $\Delta -2.34$ ) plik\_dx11dr2\_HM\_v18\_TT: 760.62 ( $\Delta -2.98$ )

### 3.3 base\_Alens\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02271	$0.02263^{+0.00054}_{-0.00053}$	$\Omega_m$	0.2918	$0.295^{+0.028}_{-0.026}$	$D_A/\text{Gpc}$	13.936	$13.933^{+0.088}_{-0.087}$
$\Omega_c h^2$	0.11621	$0.1166^{+0.0045}_{-0.0044}$	$\Omega_m h^2$	0.13957	$0.1399^{+0.0042}_{-0.0041}$	$z_{\text{drag}}$	1060.43	$1060.3^{+1.1}_{-1.0}$
$100\theta_{\text{MC}}$	1.04144	$1.04137^{+0.00099}_{-0.0010}$	$\Omega_m h^3$	0.09652	$0.09641^{+0.00097}_{-0.00096}$	$r_{\text{drag}}$	147.73	$147.71^{+0.93}_{-0.93}$
$\tau$	0.0618	$0.059^{+0.041}_{-0.040}$	$\sigma_8$	0.8032	$0.802^{+0.036}_{-0.035}$	$k_D$	0.14045	$0.14040^{+0.00099}_{-0.00099}$
$A_L$	1.246	$1.22^{+0.21}_{-0.18}$	$\sigma_8 \Omega_m^{0.5}$	0.4339	$0.436^{+0.034}_{-0.032}$	$100\theta_D$	0.16050	$0.16060^{+0.00058}_{-0.00058}$
$\ln(10^{10} A_s)$	3.050	$3.046^{+0.080}_{-0.080}$	$\sigma_8 \Omega_m^{0.25}$	0.5903	$0.591^{+0.034}_{-0.033}$	$z_{\text{eq}}$	3320	$3327^{+100}_{-98}$
$n_s$	0.9769	$0.974^{+0.013}_{-0.013}$	$\sigma_8/h^{0.5}$	0.966	$0.966^{+0.051}_{-0.050}$	$k_{\text{eq}}$	0.010132	$0.01016^{+0.00031}_{-0.00030}$
$y_{\text{cal}}$	0.99990	$1.0001^{+0.0049}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	2.666	$2.64^{+0.15}_{-0.15}$	$100\theta_{\text{eq}}$	0.8297	$0.828^{+0.020}_{-0.020}$
$A_{217}^{\text{CIB}}$	57.8	$61^{+10}_{-10}$	$z_{\text{re}}$	8.28	$7.96^{+4.0}_{-4.4}$	$100\theta_{s,\text{eq}}$	0.4577	$0.457^{+0.010}_{-0.010}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.97	—	$10^9 A_s$	2.112	$2.10^{+0.17}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	0.07270	$0.0726^{+0.0017}_{-0.0016}$
$A_{143}^{\text{tSZ}}$	6.59	$5.65^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8667	$1.867^{+0.028}_{-0.027}$	$H(0.57)$	93.76	$93.6^{+1.0}_{-0.98}$
$A_{100}^{\text{PS}}$	236	$247^{+60}_{-50}$	$D_{40}$	1206.9	$1213^{+34}_{-33}$	$D_A(0.57)$	1366.5	$1370^{+29}_{-29}$
$A_{143}^{\text{PS}}$	46.3	$38^{+20}_{-20}$	$D_{220}$	5739	$5740^{+83}_{-82}$	$F_{\text{AP}}(0.57)$	0.6710	$0.6717^{+0.0072}_{-0.0069}$
$A_{143 \times 217}^{\text{PS}}$	55.3	$38^{+20}_{-20}$	$D_{810}$	2528.5	$2527^{+27}_{-28}$	$f\sigma_8(0.57)$	0.4618	$0.462^{+0.024}_{-0.024}$
$A_{217}^{\text{PS}}$	108.0	$98^{+20}_{-20}$	$D_{1420}$	816.0	$814.3^{+9.9}_{-9.7}$	$\sigma_8(0.57)$	0.6023	$0.601^{+0.025}_{-0.024}$
$A^{\text{kSZ}}$	0.00	$< 7.13$	$D_{2000}$	233.38	$232.4^{+3.9}_{-3.9}$	$f_{2000}^{143}$	24.9	$27^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.33	$7.40^{+3.8}_{-3.7}$	$n_{s,0.002}$	0.9769	$0.974^{+0.013}_{-0.013}$	$f_{2000}^{143 \times 217}$	28.80	$30^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	8.96	$8.93^{+3.7}_{-3.6}$	$Y_P$	0.245541	$0.24550^{+0.00023}_{-0.00024}$	$f_{2000}^{217}$	102.33	$103.5^{+4.4}_{-4.3}$
$A_{143 \times 217}^{\text{dustTT}}$	18.1	$16.6^{+8.4}_{-8.3}$	$Y_P^{\text{BBN}}$	0.246868	$0.24683^{+0.00023}_{-0.00024}$	$\chi_{\text{lowTEB}}^2$	10493.34	10494.8 ( $\nu: 1.4$ )
$A_{217}^{\text{dustTT}}$	82.8	$82^{+10}_{-10}$	$10^5 D/H$	2.529	$2.545^{+0.098}_{-0.096}$	$\chi_{\text{plik}}^2$	760.9	775.0 ( $\nu: 15.1$ )
$c_{100}$	0.99804	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.731	$13.743^{+0.090}_{-0.092}$	$\chi_{\text{JLA}}^2$	706.498	706.66 ( $\nu: 0.0$ )
$c_{217}$	0.99537	$0.9956^{+0.0029}_{-0.0029}$	$z_*$	1089.18	$1089.31^{+0.97}_{-0.95}$	$\chi_{\text{prior}}^2$	1.25	7.21 ( $\nu: 6.1$ )
$H_0$	69.16	$68.9^{+2.2}_{-2.2}$	$r_*$	145.16	$145.12^{+0.96}_{-0.96}$	$\chi_{\text{CMB}}^2$	11254.2	11269.8 ( $\nu: 15.7$ )
$\Omega_\Lambda$	0.7082	$0.705^{+0.026}_{-0.028}$	$100\theta_*$	1.04159	$1.04154^{+0.00097}_{-0.00097}$			

Best-fit  $\chi_{\text{eff}}^2 = 11961.99$ ;  $\Delta\chi_{\text{eff}}^2 = -6.75$ ;  $\bar{\chi}_{\text{eff}}^2 = 11983.68$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.92$ ;  $R - 1 = 0.01216$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.34 ( $\Delta -3.10$ ) plik\_dx11dr2\_HM\_v18\_TT: 760.90 ( $\Delta -2.52$ ) SN - JLA December\_2013: 706.50 ( $\Delta -0.27$ )

### 3.4 base\_Alens\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02275	$0.02266^{+0.00055}_{-0.00054}$	$\Omega_m$	0.2896	$0.293^{+0.029}_{-0.026}$	$D_A/\text{Gpc}$	13.943	$13.939^{+0.088}_{-0.090}$
$\Omega_c h^2$	0.11583	$0.1162^{+0.0047}_{-0.0045}$	$\Omega_m h^2$	0.13922	$0.1396^{+0.0043}_{-0.0042}$	$z_{\text{drag}}$	1060.51	$1060.3^{+1.1}_{-1.0}$
$100\theta_{\text{MC}}$	1.04146	$1.0414^{+0.0010}_{-0.0010}$	$\Omega_m h^3$	0.09653	$0.09643^{+0.00097}_{-0.00096}$	$r_{\text{drag}}$	147.79	$147.77^{+0.94}_{-0.96}$
$\tau$	0.0619	$0.060^{+0.041}_{-0.040}$	$\sigma_8$	0.8017	$0.801^{+0.036}_{-0.035}$	$k_D$	0.14041	$0.1404^{+0.0010}_{-0.00099}$
$A_L$	1.252	$1.23^{+0.21}_{-0.20}$	$\sigma_8 \Omega_m^{0.5}$	0.4314	$0.433^{+0.034}_{-0.032}$	$100\theta_D$	0.16047	$0.16057^{+0.00058}_{-0.00057}$
$\ln(10^{10} A_s)$	3.050	$3.046^{+0.081}_{-0.081}$	$\sigma_8 \Omega_m^{0.25}$	0.5881	$0.589^{+0.035}_{-0.034}$	$z_{\text{eq}}$	3311	$3319^{+100}_{-99}$
$n_s$	0.9778	$0.975^{+0.014}_{-0.013}$	$\sigma_8/h^{0.5}$	0.963	$0.964^{+0.052}_{-0.050}$	$k_{\text{eq}}$	0.010107	$0.01013^{+0.00032}_{-0.00030}$
$y_{\text{cal}}$	1.00001	$1.0001^{+0.0049}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	2.664	$2.65^{+0.15}_{-0.15}$	$100\theta_{\text{eq}}$	0.8314	$0.830^{+0.021}_{-0.021}$
$A_{217}^{\text{CIB}}$	57.8	$61^{+10}_{-10}$	$z_{\text{re}}$	8.27	$7.98^{+4.0}_{-4.4}$	$100\theta_{s,\text{eq}}$	0.4585	$0.458^{+0.010}_{-0.010}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.95	—	$10^9 A_s$	2.111	$2.10^{+0.17}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	0.07284	$0.0727^{+0.0017}_{-0.0017}$
$A_{143}^{\text{tSZ}}$	6.72	$5.68^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8653	$1.866^{+0.028}_{-0.027}$	$H(0.57)$	93.84	$93.7^{+1.1}_{-1.0}$
$A_{100}^{\text{PS}}$	235	$246^{+60}_{-50}$	$D_{40}$	1205.3	$1211^{+34}_{-33}$	$D_A(0.57)$	1364.2	$1367^{+30}_{-29}$
$A_{143}^{\text{PS}}$	45.4	$38^{+20}_{-20}$	$D_{220}$	5743	$5742^{+82}_{-82}$	$F_{\text{AP}}(0.57)$	0.6704	$0.6711^{+0.0074}_{-0.0070}$
$A_{143 \times 217}^{\text{PS}}$	54.6	$38^{+20}_{-20}$	$D_{810}$	2528.3	$2526^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4603	$0.461^{+0.025}_{-0.024}$
$A_{217}^{\text{PS}}$	107.7	$98^{+20}_{-20}$	$D_{1420}$	816.2	$814.5^{+9.9}_{-9.8}$	$\sigma_8(0.57)$	0.6018	$0.601^{+0.025}_{-0.025}$
$A^{\text{kSZ}}$	0.00	$< 7.07$	$D_{2000}$	233.53	$232.6^{+3.9}_{-3.9}$	$f_{2000}^{143}$	24.7	$26^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.34	$7.40^{+3.8}_{-3.7}$	$n_{s,0.002}$	0.9778	$0.975^{+0.014}_{-0.013}$	$f_{2000}^{143 \times 217}$	28.64	$29^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.01	$8.93^{+3.7}_{-3.6}$	$Y_P$	0.245558	$0.24552^{+0.00023}_{-0.00024}$	$f_{2000}^{217}$	102.23	$103.4^{+4.5}_{-4.4}$
$A_{143 \times 217}^{\text{dustTT}}$	18.1	$16.6^{+8.4}_{-8.3}$	$Y_P^{\text{BBN}}$	0.246885	$0.24685^{+0.00024}_{-0.00024}$	$\chi_{\text{lowTEB}}^2$	10493.22	10494.7 ( $\nu: 1.4$ )
$A_{217}^{\text{dustTT}}$	82.9	$82^{+10}_{-10}$	$10^5 D/H$	2.522	$2.54^{+0.10}_{-0.097}$	$\chi_{\text{plik}}^2$	761.0	775.2 ( $\nu: 15.5$ )
$c_{100}$	0.99802	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.725	$13.736^{+0.092}_{-0.093}$	$\chi_{\text{H070p6}}^2$	0.15	0.32 ( $\nu: 0.1$ )
$c_{217}$	0.99532	$0.9955^{+0.0029}_{-0.0029}$	$z_*$	1089.09	$1089.24^{+0.99}_{-0.97}$	$\chi_{\text{prior}}^2$	1.33	7.20 ( $\nu: 6.0$ )
$H_0$	69.34	$69.1^{+2.2}_{-2.2}$	$r_*$	145.23	$145.19^{+0.98}_{-0.99}$	$\chi_{\text{CMB}}^2$	11254.2	11269.9 ( $\nu: 15.9$ )
$\Omega_\Lambda$	0.7104	$0.707^{+0.026}_{-0.029}$	$100\theta_*$	1.04161	$1.04159^{+0.00098}_{-0.00098}$			

Best-fit  $\chi_{\text{eff}}^2 = 11255.65$ ;  $\Delta\chi_{\text{eff}}^2 = -7.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 11277.40$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -5.30$ ;  $R - 1 = 0.01240$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10493.22 ( $\Delta -3.11$ ) plik\_dx11dr2\_HM\_v18\_TT: 760.95 ( $\Delta -2.71$ ) Hubble - H070p6: 0.15 ( $\Delta -0.68$ )

### 3.5 base\_Alens\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02263^{+0.00058}_{-0.00057}$	$\Omega_m$	$0.294^{+0.031}_{-0.030}$	$D_A/\text{Gpc}$	$13.935^{+0.091}_{-0.095}$
$\Omega_c h^2$	$0.1166^{+0.0050}_{-0.0048}$	$\Omega_m h^2$	$0.1398^{+0.0047}_{-0.0044}$	$z_{\text{drag}}$	$1060.3^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	$1.0414^{+0.0010}_{-0.0011}$	$\Omega_m h^3$	$0.09640^{+0.00098}_{-0.00097}$	$r_{\text{drag}}$	$147.73^{+0.97}_{-1.0}$
$\tau$	$0.068^{+0.031}_{-0.027}$	$\sigma_8$	$0.809^{+0.031}_{-0.029}$	$k_D$	$0.1404^{+0.0010}_{-0.0010}$
$A_L$	$1.20^{+0.19}_{-0.18}$	$\sigma_8 \Omega_m^{0.5}$	$0.439^{+0.035}_{-0.032}$	$100\theta_D$	$0.16060^{+0.00060}_{-0.00059}$
$\ln(10^{10} A_s)$	$3.063^{+0.063}_{-0.055}$	$\sigma_8 \Omega_m^{0.25}$	$0.596^{+0.034}_{-0.031}$	$z_{\text{eq}}$	$3326^{+110}_{-100}$
$n_s$	$0.974^{+0.014}_{-0.014}$	$\sigma_8/h^{0.5}$	$0.974^{+0.050}_{-0.044}$	$k_{\text{eq}}$	$0.01015^{+0.00034}_{-0.00032}$
$y_{\text{cal}}$	$1.0001^{+0.0049}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	$2.64^{+0.15}_{-0.15}$	$100\theta_{\text{eq}}$	$0.828^{+0.022}_{-0.022}$
$A_{217}^{\text{CIB}}$	$61^{+10}_{-10}$	$z_{\text{re}}$	$< 11.4$	$100\theta_{\text{s,eq}}$	$0.457^{+0.011}_{-0.011}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.14^{+0.14}_{-0.12}$	$r_{\text{drag}}/D_V(0.57)$	$0.0726^{+0.0018}_{-0.0018}$
$A_{143}^{\text{tSZ}}$	$5.66^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	$1.867^{+0.029}_{-0.028}$	$H(0.57)$	$93.7^{+1.1}_{-1.1}$
$A_{100}^{\text{PS}}$	$247^{+60}_{-50}$	$D_{40}$	$1215^{+35}_{-34}$	$D_A(0.57)$	$1369^{+32}_{-31}$
$A_{143}^{\text{PS}}$	$38^{+20}_{-20}$	$D_{220}$	$5739^{+83}_{-82}$	$F_{\text{AP}}(0.57)$	$0.6716^{+0.0081}_{-0.0074}$
$A_{143 \times 217}^{\text{PS}}$	$38^{+20}_{-20}$	$D_{810}$	$2527^{+27}_{-28}$	$f\sigma_8(0.57)$	$0.466^{+0.024}_{-0.022}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$D_{1420}$	$814^{+10}_{-10}$	$\sigma_8(0.57)$	$0.606^{+0.020}_{-0.018}$
$A^{\text{kSZ}}$	$< 7.13$	$D_{2000}$	$232.4^{+4.0}_{-4.1}$	$f_{2000}^{143}$	$27^{+6}_{-7}$
$A_{100}^{\text{dustTT}}$	$7.41^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	$0.974^{+0.014}_{-0.014}$	$f_{2000}^{143 \times 217}$	$30^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	$8.92^{+3.7}_{-3.6}$	$Y_{\text{P}}$	$0.24550^{+0.00025}_{-0.00026}$	$f_{2000}^{217}$	$103.5^{+4.5}_{-4.4}$
$A_{143 \times 217}^{\text{dustTT}}$	$16.7^{+8.3}_{-8.3}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24683^{+0.00025}_{-0.00026}$	$\chi_{\text{lowTEB}}^2$	$10494.6 (\nu: 1.5)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^5 D/H$	$2.54^{+0.11}_{-0.10}$	$\chi_{\text{plik}}^2$	$775.1 (\nu: 15.5)$
$c_{100}$	$0.9979^{+0.0016}_{-0.0015}$	$\text{Age}/\text{Gyr}$	$13.742^{+0.098}_{-0.099}$	$\chi_{\text{prior}}^2$	$7.21 (\nu: 6.1)$
$c_{217}$	$0.9955^{+0.0029}_{-0.0029}$	$z_*$	$1089.3^{+1.1}_{-1.0}$	$\chi_{\text{CMB}}^2$	$11269.7 (\nu: 16.1)$
$H_0$	$69.0^{+2.4}_{-2.4}$	$r_*$	$145.1^{+1.0}_{-1.0}$		
$\Omega_\Lambda$	$0.706^{+0.030}_{-0.031}$	$100\theta_*$	$1.0415^{+0.0010}_{-0.0010}$		

$$\bar{\chi}_{\text{eff}}^2 = 11276.95; \Delta\bar{\chi}_{\text{eff}}^2 = -4.69; R - 1 = 0.01160$$

### 3.6 base\_Alens\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022432	$0.02240^{+0.00034}_{-0.00033}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.17}$	Age/Gyr	13.784	$13.787^{+0.057}_{-0.057}$
$\Omega_c h^2$	0.11835	$0.1185^{+0.0031}_{-0.0031}$	$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.70	$1089.75^{+0.64}_{-0.63}$
$100\theta_{\text{MC}}$	1.04092	$1.04093^{+0.00064}_{-0.00065}$	$A_{143 \times 217}^{\text{dustTE}}$	0.334	$0.33^{+0.16}_{-0.16}$	$r_*$	144.81	$144.80^{+0.65}_{-0.66}$
$\tau$	0.0581	$0.057^{+0.038}_{-0.042}$	$A_{217}^{\text{dustTE}}$	1.65	$1.65^{+0.50}_{-0.50}$	$100\theta_*$	1.04110	$1.04111^{+0.00063}_{-0.00064}$
$A_L$	1.157	$1.15^{+0.16}_{-0.15}$	$c_{100}$	0.99825	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.909	$13.908^{+0.060}_{-0.061}$
$\ln(10^{10} A_s)$	3.048	$3.046^{+0.080}_{-0.078}$	$c_{217}$	0.99562	$0.9957^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.97	$1059.90^{+0.66}_{-0.63}$
$n_s$	0.9692	$0.968^{+0.010}_{-0.010}$	$H_0$	67.99	$67.9^{+1.4}_{-1.4}$	$r_{\text{drag}}$	147.46	$147.46^{+0.63}_{-0.64}$
$y_{\text{cal}}$	0.99988	$1.0001^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6941	$0.693^{+0.019}_{-0.019}$	$k_D$	0.14052	$0.14050^{+0.00065}_{-0.00064}$
$A_{217}^{\text{CIB}}$	61.5	$62^{+10}_{-10}$	$\Omega_m$	0.3059	$0.307^{+0.019}_{-0.019}$	$100\theta_D$	0.160726	$0.16077^{+0.00038}_{-0.00037}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.63	—	$\Omega_m h^2$	0.14142	$0.1415^{+0.0029}_{-0.0029}$	$z_{\text{eq}}$	3364	$3367^{+69}_{-69}$
$A_{143}^{\text{tSZ}}$	6.87	$5.59^{+3.7}_{-3.7}$	$\Omega_m h^3$	0.09615	$0.09612^{+0.00059}_{-0.00059}$	$k_{\text{eq}}$	0.010268	$0.01028^{+0.00021}_{-0.00021}$
$A_{100}^{\text{PS}}$	247	$254^{+50}_{-50}$	$\sigma_8$	0.8081	$0.808^{+0.034}_{-0.032}$	$100\theta_{\text{eq}}$	0.8203	$0.820^{+0.014}_{-0.013}$
$A_{143}^{\text{PS}}$	45.1	$41^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4470	$0.447^{+0.027}_{-0.025}$	$100\theta_{s,\text{eq}}$	0.4530	$0.4528^{+0.0069}_{-0.0068}$
$A_{143 \times 217}^{\text{PS}}$	49.1	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6010	$0.601^{+0.030}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07187	$0.0718^{+0.0011}_{-0.0011}$
$A_{217}^{\text{PS}}$	104.8	$99^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9800	$0.980^{+0.046}_{-0.043}$	$H(0.57)$	93.19	$93.15^{+0.65}_{-0.61}$
$A^{\text{kSZ}}$	0.00	$< 7.14$	$\langle d^2 \rangle^{1/2}$	2.608	$2.60^{+0.11}_{-0.12}$	$D_A(0.57)$	1382.4	$1383^{+19}_{-19}$
$A_{100}^{\text{dustTT}}$	7.29	$7.42^{+3.6}_{-3.6}$	$z_{\text{re}}$	8.02	$7.78^{+4.0}_{-4.4}$	$F_{\text{AP}}(0.57)$	0.67461	$0.6749^{+0.0049}_{-0.0048}$
$A_{143}^{\text{dustTT}}$	8.88	$8.82^{+3.6}_{-3.6}$	$10^9 A_s$	2.107	$2.10^{+0.17}_{-0.17}$	$f\sigma_8(0.57)$	0.4684	$0.468^{+0.022}_{-0.020}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$16.6^{+8.0}_{-8.0}$	$10^9 A_s e^{-2\tau}$	1.8757	$1.877^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	0.6025	$0.602^{+0.024}_{-0.025}$
$A_{217}^{\text{dustTT}}$	82.1	$81^{+10}_{-10}$	$D_{40}$	1222.3	$1226^{+30}_{-29}$	$f_{2000}^{143}$	27.1	$28^{+6}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0818	$0.082^{+0.011}_{-0.011}$	$D_{220}$	5733	$5736^{+77}_{-75}$	$f_{2000}^{143 \times 217}$	30.57	$31^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0495	$0.0492^{+0.0098}_{-0.0099}$	$D_{810}$	2530.9	$2531^{+27}_{-26}$	$f_{2000}^{217}$	104.05	$104.6^{+3.8}_{-3.9}$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.099^{+0.064}_{-0.063}$	$D_{1420}$	814.2	$813.6^{+9.2}_{-9.2}$	$\chi_{\text{lowTEB}}^2$	10494.58	10495.8 ( $\nu$ : 1.3)
$A_{143}^{\text{dustEE}}$	0.1006	$0.100^{+0.013}_{-0.014}$	$D_{2000}$	231.56	$231.2^{+3.2}_{-3.2}$	$\chi_{\text{plik}}^2$	2429.3	2448.8 ( $\nu$ : 21.6)
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.223^{+0.093}_{-0.092}$	$n_{s,0.002}$	0.9692	$0.968^{+0.010}_{-0.010}$	$\chi_{\text{prior}}^2$	6.63	19.1 ( $\nu$ : 14.6)
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.26}_{-0.26}$	$Y_P$	0.245420	$0.24541^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12923.9	12944.7 ( $\nu$ : 22.7)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.073}$	$Y_P^{\text{BBN}}$	0.246747	$0.24673^{+0.00015}_{-0.00015}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.580	$2.586^{+0.063}_{-0.064}$			

Best-fit  $\chi_{\text{eff}}^2 = 12930.56$ ;  $\Delta\chi_{\text{eff}}^2 = -5.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12963.80$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -3.90$ ;  $R - 1 = 0.00817$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.58 ( $\Delta$  -2.36) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.35 ( $\Delta$  -2.30)

### 3.7 base\_Alens\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022436	$0.02239^{+0.00030}_{-0.00030}$	$A_{143}^{\text{dustTE}}$	0.152	$0.15^{+0.11}_{-0.11}$	$r_*$	144.794	$144.79^{+0.49}_{-0.49}$
$\Omega_c h^2$	0.11840	$0.1185^{+0.0022}_{-0.0022}$	$A_{143 \times 217}^{\text{dustTE}}$	0.331	$0.33^{+0.16}_{-0.16}$	$100\theta_*$	1.04111	$1.04111^{+0.00059}_{-0.00059}$
$100\theta_{\text{MC}}$	1.04093	$1.04093^{+0.00060}_{-0.00060}$	$A_{217}^{\text{dustTE}}$	1.64	$1.65^{+0.50}_{-0.51}$	$D_A/\text{Gpc}$	13.9076	$13.907^{+0.047}_{-0.047}$
$\tau$	0.0581	$0.057^{+0.038}_{-0.042}$	$c_{100}$	0.99829	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.97	$1059.89^{+0.62}_{-0.64}$
$A_L$	1.160	$1.15^{+0.15}_{-0.14}$	$c_{217}$	0.99553	$0.9958^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.44	$147.45^{+0.50}_{-0.50}$
$\ln(10^{10} A_s)$	3.048	$3.046^{+0.080}_{-0.078}$	$H_0$	67.98	$67.9^{+1.0}_{-0.99}$	$k_D$	0.14055	$0.14051^{+0.00059}_{-0.00058}$
$n_s$	0.9697	$0.9678^{+0.0082}_{-0.0082}$	$\Omega_\Lambda$	0.6938	$0.693^{+0.013}_{-0.013}$	$100\theta_D$	0.160720	$0.16077^{+0.00036}_{-0.00036}$
$y_{\text{cal}}$	0.99992	$1.0001^{+0.0049}_{-0.0049}$	$\Omega_m$	0.3062	$0.307^{+0.013}_{-0.013}$	$z_{\text{eq}}$	3365.6	$3368^{+49}_{-49}$
$A_{217}^{\text{CIB}}$	59.7	$62^{+10}_{-10}$	$\Omega_m h^2$	0.14149	$0.1416^{+0.0020}_{-0.0020}$	$k_{\text{eq}}$	0.010272	$0.01028^{+0.00015}_{-0.00015}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.85	—	$\Omega_m h^3$	0.09618	$0.09612^{+0.00060}_{-0.00060}$	$100\theta_{\text{eq}}$	0.8201	$0.8196^{+0.0094}_{-0.0092}$
$A_{143}^{\text{tSZ}}$	6.62	$5.57^{+3.5}_{-3.7}$	$\sigma_8$	0.8086	$0.808^{+0.034}_{-0.032}$	$100\theta_{s,\text{eq}}$	0.45287	$0.4526^{+0.0048}_{-0.0047}$
$A_{100}^{\text{PS}}$	245	$255^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4475	$0.448^{+0.023}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	0.07185	$0.07181^{+0.00075}_{-0.00074}$
$A_{143}^{\text{PS}}$	48.4	$41^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6015	$0.601^{+0.027}_{-0.026}$	$H(0.57)$	93.185	$93.14^{+0.46}_{-0.45}$
$A_{143 \times 217}^{\text{PS}}$	55.2	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9808	$0.980^{+0.043}_{-0.041}$	$D_A(0.57)$	1382.5	$1384^{+13}_{-13}$
$A_{217}^{\text{PS}}$	107.9	$99^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.612	$2.60^{+0.11}_{-0.12}$	$F_{\text{AP}}(0.57)$	0.67468	$0.6749^{+0.0034}_{-0.0033}$
$A^{\text{kSZ}}$	0.00	$< 7.05$	$z_{\text{re}}$	8.02	$7.78^{+4.0}_{-4.4}$	$f\sigma_8(0.57)$	0.4688	$0.469^{+0.021}_{-0.019}$
$A_{100}^{\text{dustTT}}$	7.29	$7.43^{+3.6}_{-3.7}$	$10^9 A_s$	2.108	$2.10^{+0.17}_{-0.17}$	$\sigma_8(0.57)$	0.6028	$0.602^{+0.024}_{-0.025}$
$A_{143}^{\text{dustTT}}$	8.86	$8.82^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8767	$1.877^{+0.022}_{-0.022}$	$f_{2000}^{143}$	26.6	$28^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$16.6^{+8.0}_{-8.0}$	$D_{40}$	1221.5	$1227^{+27}_{-26}$	$f_{2000}^{143 \times 217}$	30.35	$31^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.4	$81^{+10}_{-10}$	$D_{220}$	5732	$5736^{+78}_{-75}$	$f_{2000}^{217}$	103.76	$104.7^{+3.8}_{-3.7}$
$A_{100}^{\text{dustEE}}$	0.0818	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2532.3	$2531^{+27}_{-27}$	$\chi_{\text{lowTEB}}^2$	10494.50	$10495.9 (\nu: 1.2)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0492^{+0.0097}_{-0.010}$	$D_{1420}$	814.9	$813.6^{+9.2}_{-9.3}$	$\chi_{\text{plik}}^2$	2429.5	$2448.4 (\nu: 21.4)$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0996^{+0.065}_{-0.062}$	$D_{2000}$	231.85	$231.2^{+3.1}_{-3.2}$	$\chi_{6\text{DF}}^2$	0.003	$0.038 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	0.1007	$0.100^{+0.013}_{-0.014}$	$n_{s,0.002}$	0.9697	$0.9678^{+0.0082}_{-0.0082}$	$\chi_{\text{MGS}}^2$	1.54	$1.53 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.093}_{-0.093}$	$Y_P$	0.245422	$0.24540^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.43	$2.76 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.646	$0.65^{+0.26}_{-0.26}$	$Y_P^{\text{BBN}}$	0.246748	$0.24673^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.37	$0.54 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.073}_{-0.074}$	$10^5 D/H$	2.579	$2.587^{+0.056}_{-0.055}$	$\chi_{\text{prior}}^2$	6.47	$19.1 (\nu: 14.9)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	Age/Gyr	13.7836	$13.789^{+0.044}_{-0.045}$	$\chi_{\text{CMB}}^2$	12924.0	$12944.2 (\nu: 22.4)$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	$z_*$	1089.700	$1089.76^{+0.49}_{-0.49}$	$\chi_{\text{BAO}}^2$	4.34	$4.87 (\nu: 0.3)$

Best-fit  $\chi_{\text{eff}}^2 = 12934.81$ ;  $\Delta\chi_{\text{eff}}^2 = -5.35$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.23$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.25$ ;  $R - 1 = 0.00741$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.03) MGS: 1.54 ( $\Delta$  0.32) DR11CMass: 2.43 ( $\Delta$  -0.07) DR11LOWZ: 0.37 ( $\Delta$  -0.31) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10494.50 ( $\Delta$  -2.92) plik.dx11dr2.HM.v18.TTTEEE: 2429.50 ( $\Delta$  -2.03)

### 3.8 base\_Alens\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022465	$0.02241^{+0.00034}_{-0.00033}$	$A_{100 \times 217}^{\text{dustTE}}$	0.306	$0.30^{+0.16}_{-0.17}$	Age/Gyr	13.778	$13.785^{+0.055}_{-0.056}$
$\Omega_c h^2$	0.11809	$0.1183^{+0.0030}_{-0.0030}$	$A_{143}^{\text{dustTE}}$	0.152	$0.15^{+0.11}_{-0.11}$	$z_*$	1089.63	$1089.72^{+0.62}_{-0.62}$
$100\theta_{\text{MC}}$	1.04098	$1.04095^{+0.00064}_{-0.00065}$	$A_{143 \times 217}^{\text{dustTE}}$	0.333	$0.33^{+0.16}_{-0.16}$	$r_*$	144.85	$144.83^{+0.63}_{-0.64}$
$\tau$	0.0586	$0.057^{+0.040}_{-0.039}$	$A_{217}^{\text{dustTE}}$	1.66	$1.65^{+0.50}_{-0.51}$	$100\theta_*$	1.04114	$1.04113^{+0.00063}_{-0.00064}$
$A_L$	1.168	$1.16^{+0.15}_{-0.14}$	$c_{100}$	0.99829	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.913	$13.911^{+0.058}_{-0.059}$
$\ln(10^{10} A_s)$	3.048	$3.046^{+0.079}_{-0.078}$	$c_{217}$	0.99551	$0.9957^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1060.01	$1059.91^{+0.67}_{-0.67}$
$n_s$	0.9706	$0.968^{+0.010}_{-0.010}$	$H_0$	68.12	$68.0^{+1.4}_{-1.4}$	$r_{\text{drag}}$	147.49	$147.49^{+0.61}_{-0.61}$
$y_{\text{cal}}$	0.99966	$1.0001^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6957	$0.694^{+0.018}_{-0.019}$	$k_D$	0.14052	$0.14048^{+0.00065}_{-0.00063}$
$A_{217}^{\text{CIB}}$	59.3	$62^{+10}_{-10}$	$\Omega_m$	0.3043	$0.306^{+0.019}_{-0.018}$	$100\theta_D$	0.160697	$0.16076^{+0.00038}_{-0.00037}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.89	—	$\Omega_m h^2$	0.14120	$0.1414^{+0.0028}_{-0.0028}$	$z_{\text{eq}}$	3359	$3363^{+67}_{-66}$
$A_{143}^{\text{tSZ}}$	6.62	$5.59^{+3.7}_{-3.7}$	$\Omega_m h^3$	0.09619	$0.09612^{+0.00060}_{-0.00060}$	$k_{\text{eq}}$	0.010252	$0.01026^{+0.00020}_{-0.00020}$
$A_{100}^{\text{PS}}$	244	$254^{+50}_{-50}$	$\sigma_8$	0.8077	$0.807^{+0.034}_{-0.032}$	$100\theta_{\text{eq}}$	0.8214	$0.821^{+0.013}_{-0.013}$
$A_{143}^{\text{PS}}$	48.2	$41^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4455	$0.446^{+0.026}_{-0.024}$	$100\theta_{s,\text{eq}}$	0.4536	$0.4531^{+0.0067}_{-0.0065}$
$A_{143 \times 217}^{\text{PS}}$	55.7	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.5999	$0.600^{+0.029}_{-0.027}$	$r_{\text{drag}}/D_V(0.57)$	0.07196	$0.0719^{+0.0011}_{-0.0010}$
$A_{217}^{\text{PS}}$	108.1	$99^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9785	$0.979^{+0.046}_{-0.042}$	$H(0.57)$	93.25	$93.19^{+0.63}_{-0.59}$
$A^{\text{kSZ}}$	0.00	$< 7.04$	$\langle d^2 \rangle^{1/2}$	2.614	$2.60^{+0.11}_{-0.12}$	$D_A(0.57)$	1380.6	$1382^{+18}_{-19}$
$A_{100}^{\text{dustTT}}$	7.37	$7.44^{+3.6}_{-3.7}$	$z_{\text{re}}$	8.06	$7.80^{+4.0}_{-4.3}$	$F_{\text{AP}}(0.57)$	0.67419	$0.6746^{+0.0047}_{-0.0047}$
$A_{143}^{\text{dustTT}}$	8.90	$8.81^{+3.6}_{-3.6}$	$10^9 A_s$	2.108	$2.10^{+0.17}_{-0.17}$	$f\sigma_8(0.57)$	0.4677	$0.468^{+0.022}_{-0.020}$
$A_{143 \times 217}^{\text{dustTT}}$	18.1	$16.6^{+8.0}_{-8.0}$	$10^9 A_s e^{-2\tau}$	1.8745	$1.876^{+0.024}_{-0.023}$	$\sigma_8(0.57)$	0.6026	$0.602^{+0.025}_{-0.023}$
$A_{217}^{\text{dustTT}}$	82.6	$81^{+10}_{-10}$	$D_{40}$	1219.1	$1225^{+29}_{-28}$	$f_{2000}^{143}$	26.4	$28^{+6}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0818	$0.082^{+0.011}_{-0.011}$	$D_{220}$	5731	$5737^{+78}_{-75}$	$f_{2000}^{143 \times 217}$	30.14	$31^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0496	$0.0492^{+0.0097}_{-0.010}$	$D_{810}$	2530.7	$2531^{+27}_{-26}$	$f_{2000}^{217}$	103.54	$104.6^{+3.8}_{-3.8}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.064}_{-0.062}$	$D_{1420}$	814.7	$813.7^{+9.2}_{-9.3}$	$\chi_{\text{lowTEB}}^2$	10494.33	10495.8 ( $\nu: 1.3$ )
$A_{143}^{\text{dustEE}}$	0.1010	$0.101^{+0.013}_{-0.014}$	$D_{2000}$	231.90	$231.3^{+3.2}_{-3.2}$	$\chi_{\text{plik}}^2$	2429.7	2448.9 ( $\nu: 21.8$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.223^{+0.093}_{-0.093}$	$n_{s,0.002}$	0.9706	$0.968^{+0.010}_{-0.010}$	$\chi_{\text{JLA}}^2$	706.581	706.68 ( $\nu: 0.0$ )
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.26}$	$Y_P$	0.245434	$0.24541^{+0.00015}_{-0.00015}$	$\chi_{\text{prior}}^2$	6.44	19.1 ( $\nu: 14.9$ )
$A_{100}^{\text{dustTE}}$	0.140	$0.140^{+0.073}_{-0.074}$	$Y_P^{\text{BBN}}$	0.246761	$0.24674^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12924.0	12944.6 ( $\nu: 22.7$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.574	$2.583^{+0.063}_{-0.062}$			

Best-fit  $\chi_{\text{eff}}^2 = 13637.05$ ;  $\Delta\chi_{\text{eff}}^2 = -5.34$ ;  $\bar{\chi}_{\text{eff}}^2 = 13670.44$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.19$ ;  $R - 1 = 0.00864$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.33 ( $\Delta -3.03$ ) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.70 ( $\Delta -1.92$ ) SN - JLA December\_2013: 706.58 ( $\Delta -0.28$ )

### 3.9 base\_Alens\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022484	$0.02242^{+0.00034}_{-0.00034}$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.17}$	Age/Gyr	13.775	$13.783^{+0.056}_{-0.056}$
$\Omega_c h^2$	0.11791	$0.1182^{+0.0031}_{-0.0030}$	$A_{143}^{\text{dustTE}}$	0.150	$0.15^{+0.11}_{-0.11}$	$z_*$	1089.59	$1089.70^{+0.63}_{-0.62}$
$100\theta_{\text{MC}}$	1.04099	$1.04096^{+0.00064}_{-0.00065}$	$A_{143 \times 217}^{\text{dustTE}}$	0.331	$0.33^{+0.16}_{-0.16}$	$r_*$	144.89	$144.85^{+0.64}_{-0.65}$
$\tau$	0.0582	$0.057^{+0.039}_{-0.039}$	$A_{217}^{\text{dustTE}}$	1.65	$1.65^{+0.50}_{-0.51}$	$100\theta_*$	1.04116	$1.04114^{+0.00063}_{-0.00064}$
$A_L$	1.177	$1.16^{+0.15}_{-0.15}$	$c_{100}$	0.99829	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.916	$13.913^{+0.059}_{-0.060}$
$\ln(10^{10} A_s)$	3.047	$3.046^{+0.079}_{-0.078}$	$c_{217}$	0.99551	$0.9957^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1060.05	$1059.93^{+0.65}_{-0.68}$
$n_s$	0.9712	$0.969^{+0.010}_{-0.010}$	$H_0$	68.21	$68.0^{+1.4}_{-1.4}$	$r_{\text{drag}}$	147.52	$147.50^{+0.62}_{-0.62}$
$y_{\text{cal}}$	0.99986	$1.0001^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6969	$0.695^{+0.018}_{-0.019}$	$k_D$	0.14050	$0.14047^{+0.00065}_{-0.00063}$
$A_{217}^{\text{CIB}}$	58.5	$62^{+10}_{-10}$	$\Omega_m$	0.3031	$0.305^{+0.019}_{-0.018}$	$100\theta_D$	0.160680	$0.16075^{+0.00038}_{-0.00037}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.998	—	$\Omega_m h^2$	0.14104	$0.1413^{+0.0029}_{-0.0028}$	$z_{\text{eq}}$	3355	$3361^{+68}_{-67}$
$A_{143}^{\text{tSZ}}$	6.61	$5.61^{+3.7}_{-3.7}$	$\Omega_m h^3$	0.09620	$0.09613^{+0.00060}_{-0.00060}$	$k_{\text{eq}}$	0.010240	$0.01026^{+0.00021}_{-0.00020}$
$A_{100}^{\text{PS}}$	242	$254^{+50}_{-60}$	$\sigma_8$	0.8069	$0.807^{+0.034}_{-0.032}$	$100\theta_{\text{eq}}$	0.8222	$0.821^{+0.013}_{-0.013}$
$A_{143}^{\text{PS}}$	49.5	$41^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4443	$0.446^{+0.026}_{-0.024}$	$100\theta_{s,\text{eq}}$	0.4539	$0.4533^{+0.0067}_{-0.0067}$
$A_{143 \times 217}^{\text{PS}}$	58.6	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.5987	$0.600^{+0.029}_{-0.027}$	$r_{\text{drag}}/D_V(0.57)$	0.07203	$0.0719^{+0.0011}_{-0.0010}$
$A_{217}^{\text{PS}}$	109.3	$99^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9770	$0.978^{+0.045}_{-0.042}$	$H(0.57)$	93.29	$93.21^{+0.64}_{-0.61}$
$A^{\text{kSZ}}$	0.00	$< 7.01$	$\langle d^2 \rangle^{1/2}$	2.620	$2.60^{+0.11}_{-0.12}$	$D_A(0.57)$	1379.4	$1382^{+19}_{-19}$
$A_{100}^{\text{dustTT}}$	7.31	$7.44^{+3.6}_{-3.7}$	$z_{\text{re}}$	8.02	$7.80^{+4.0}_{-4.3}$	$F_{\text{AP}}(0.57)$	0.67390	$0.6744^{+0.0048}_{-0.0047}$
$A_{143}^{\text{dustTT}}$	8.88	$8.81^{+3.6}_{-3.6}$	$10^9 A_s$	2.106	$2.10^{+0.17}_{-0.17}$	$f\sigma_8(0.57)$	0.4670	$0.467^{+0.022}_{-0.020}$
$A_{143 \times 217}^{\text{dustTT}}$	18.3	$16.6^{+8.0}_{-8.0}$	$10^9 A_s e^{-2\tau}$	1.8747	$1.875^{+0.024}_{-0.023}$	$\sigma_8(0.57)$	0.6023	$0.602^{+0.025}_{-0.023}$
$A_{217}^{\text{dustTT}}$	82.8	$81^{+10}_{-10}$	$D_{40}$	1218.1	$1225^{+29}_{-29}$	$f_{2000}^{143}$	26.1	$28^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0818	$0.082^{+0.011}_{-0.011}$	$D_{220}$	5734	$5738^{+78}_{-75}$	$f_{2000}^{143 \times 217}$	29.99	$31^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0496	$0.0493^{+0.0097}_{-0.010}$	$D_{810}$	2531.8	$2530^{+27}_{-27}$	$f_{2000}^{217}$	103.35	$104.5^{+3.8}_{-3.8}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.099^{+0.064}_{-0.062}$	$D_{1420}$	815.2	$813.7^{+9.2}_{-9.2}$	$\chi_{\text{lowTEB}}^2$	10494.22	10495.7 ( $\nu$ : 1.3)
$A_{143}^{\text{dustEE}}$	0.1009	$0.101^{+0.013}_{-0.014}$	$D_{2000}$	232.16	$231.3^{+3.1}_{-3.2}$	$\chi_{\text{plik}}^2$	2429.8	2448.9 ( $\nu$ : 21.9)
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.093}_{-0.094}$	$n_{s,0.002}$	0.9712	$0.969^{+0.010}_{-0.010}$	$\chi_{\text{H070p6}}^2$	0.52	0.64 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.25}_{-0.26}$	$Y_P$	0.245443	$0.24542^{+0.00015}_{-0.00015}$	$\chi_{\text{prior}}^2$	6.46	19.2 ( $\nu$ : 14.9)
$A_{100}^{\text{dustTE}}$	0.141	$0.140^{+0.074}_{-0.074}$	$Y_P^{\text{BBN}}$	0.246770	$0.24674^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12924.0	12944.6 ( $\nu$ : 22.7)
$A_{100 \times 143}^{\text{dustTE}}$	0.130	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.570	$2.581^{+0.063}_{-0.062}$			

Best-fit  $\chi_{\text{eff}}^2 = 12931.01$ ;  $\Delta\chi_{\text{eff}}^2 = -5.46$ ;  $\bar{\chi}_{\text{eff}}^2 = 12964.42$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.33$ ;  $R - 1 = 0.00877$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.22 ( $\Delta$  -2.78) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.81 ( $\Delta$  -1.95) Hubble - H070p6: 0.52 ( $\Delta$  -0.38)



### 3.10 base\_Alens\_plikHM\_TTTEE\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02240^{+0.00035}_{-0.00033}$	$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.17}_{-0.17}$	Age/Gyr	$13.787^{+0.057}_{-0.058}$
$\Omega_c h^2$	$0.1184^{+0.0032}_{-0.0031}$	$A_{143}^{\text{dustTE}}$	$0.15^{+0.11}_{-0.10}$	$z_*$	$1089.74^{+0.64}_{-0.64}$
$100\theta_{\text{MC}}$	$1.04093^{+0.00065}_{-0.00065}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.33^{+0.16}_{-0.16}$	$r_*$	$144.82^{+0.66}_{-0.67}$
$\tau$	$0.066^{+0.030}_{-0.025}$	$A_{217}^{\text{dustTE}}$	$1.65^{+0.50}_{-0.50}$	$100\theta_*$	$1.04111^{+0.00063}_{-0.00064}$
$A_L$	$1.13^{+0.14}_{-0.13}$	$c_{100}$	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	$13.910^{+0.060}_{-0.061}$
$\ln(10^{10} A_s)$	$3.063^{+0.061}_{-0.052}$	$c_{217}$	$0.9957^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	$1059.90^{+0.68}_{-0.68}$
$n_s$	$0.968^{+0.010}_{-0.010}$	$H_0$	$67.9^{+1.5}_{-1.4}$	$r_{\text{drag}}$	$147.47^{+0.63}_{-0.64}$
$y_{\text{cal}}$	$1.0001^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	$0.693^{+0.019}_{-0.020}$	$k_D$	$0.14049^{+0.00065}_{-0.00064}$
$A_{217}^{\text{CIB}}$	$62^{+10}_{-10}$	$\Omega_m$	$0.307^{+0.020}_{-0.019}$	$100\theta_D$	$0.16077^{+0.00038}_{-0.00037}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1415^{+0.0030}_{-0.0029}$	$z_{\text{eq}}$	$3365^{+71}_{-69}$
$A_{143}^{\text{tSZ}}$	$5.59^{+3.7}_{-3.7}$	$\Omega_m h^3$	$0.09611^{+0.00059}_{-0.00060}$	$k_{\text{eq}}$	$0.01027^{+0.00022}_{-0.00021}$
$A_{100}^{\text{PS}}$	$254^{+50}_{-60}$	$\sigma_8$	$0.814^{+0.028}_{-0.025}$	$100\theta_{\text{eq}}$	$0.820^{+0.014}_{-0.013}$
$A_{143}^{\text{PS}}$	$41^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	$0.451^{+0.024}_{-0.023}$	$100\theta_{\text{s,eq}}$	$0.4529^{+0.0069}_{-0.0068}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.606^{+0.026}_{-0.023}$	$r_{\text{drag}}/D_V(0.57)$	$0.0718^{+0.0011}_{-0.0011}$
$A_{217}^{\text{PS}}$	$99^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$0.988^{+0.040}_{-0.036}$	$H(0.57)$	$93.16^{+0.65}_{-0.62}$
$A^{\text{kSZ}}$	$< 7.09$	$\langle d^2 \rangle^{1/2}$	$2.60^{+0.11}_{-0.12}$	$D_A(0.57)$	$1383^{+19}_{-19}$
$A_{100}^{\text{dustTT}}$	$7.43^{+3.6}_{-3.6}$	$z_{\text{re}}$	$< 11.2$	$F_{\text{AP}}(0.57)$	$0.6748^{+0.0050}_{-0.0049}$
$A_{143}^{\text{dustTT}}$	$8.79^{+3.6}_{-3.5}$	$10^9 A_s$	$2.14^{+0.13}_{-0.11}$	$f\sigma_8(0.57)$	$0.472^{+0.019}_{-0.017}$
$A_{143 \times 217}^{\text{dustTT}}$	$16.6^{+8.0}_{-8.1}$	$10^9 A_s e^{-2\tau}$	$1.876^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	$0.607^{+0.019}_{-0.017}$
$A_{217}^{\text{dustTT}}$	$81^{+10}_{-10}$	$D_{40}$	$1228^{+29}_{-29}$	$f_{2000}^{143}$	$28^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	$0.082^{+0.011}_{-0.011}$	$D_{220}$	$5735^{+78}_{-75}$	$f_{2000}^{143 \times 217}$	$31^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0492^{+0.0098}_{-0.010}$	$D_{810}$	$2531^{+27}_{-27}$	$f_{2000}^{217}$	$104.6^{+3.9}_{-3.8}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.099^{+0.064}_{-0.061}$	$D_{1420}$	$813.7^{+9.2}_{-9.2}$	$\chi_{\text{lowTEB}}^2$	$10495.6 (\nu: 1.4)$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.013}_{-0.013}$	$D_{2000}$	$231.3^{+3.1}_{-3.2}$	$\chi_{\text{plik}}^2$	$2448.8 (\nu: 21.7)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.223^{+0.093}_{-0.093}$	$n_{\text{s},0.002}$	$0.968^{+0.010}_{-0.010}$	$\chi_{\text{prior}}^2$	$19.1 (\nu: 14.9)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}$	$0.24541^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	$12944.4 (\nu: 22.6)$
$A_{100}^{\text{dustTE}}$	$0.141^{+0.073}_{-0.075}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24673^{+0.00015}_{-0.00015}$		
$A_{100 \times 143}^{\text{dustTE}}$	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	$2.585^{+0.063}_{-0.064}$		

$$\bar{\chi}_{\text{eff}}^2 = 12963.55; \Delta\bar{\chi}_{\text{eff}}^2 = -4.13; R - 1 = 0.01233$$

### 3.11 base\_Alens\_plikHM\_TE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02255	$0.02253^{+0.00063}_{-0.00063}$	$\sigma_8$	0.8074	$0.808^{+0.040}_{-0.040}$	$100\theta_*$	1.04127	$1.0413^{+0.0010}_{-0.0010}$
$\Omega_c h^2$	0.11699	$0.1172^{+0.0045}_{-0.0043}$	$\sigma_8 \Omega_m^{0.5}$	0.4404	$0.442^{+0.031}_{-0.030}$	$D_A/\text{Gpc}$	13.933	$13.930^{+0.091}_{-0.092}$
$100\theta_{\text{MC}}$	1.04110	$1.0411^{+0.0011}_{-0.0010}$	$\sigma_8 \Omega_m^{0.25}$	0.5963	$0.597^{+0.034}_{-0.033}$	$z_{\text{drag}}$	1060.12	$1060.1^{+1.3}_{-1.3}$
$\tau$	0.0597	$0.059^{+0.040}_{-0.044}$	$\sigma_8/h^{0.5}$	0.975	$0.976^{+0.052}_{-0.049}$	$r_{\text{drag}}$	147.69	$147.7^{+1.0}_{-0.99}$
$A_L$	1.122	$1.13^{+0.38}_{-0.38}$	$\langle d^2 \rangle^{1/2}$	2.527	$2.53^{+0.40}_{-0.41}$	$k_D$	0.14037	$0.1404^{+0.0012}_{-0.0012}$
$\ln(10^{10} A_s)$	3.049	$3.049^{+0.088}_{-0.091}$	$z_{\text{re}}$	8.13	$7.97^{+3.8}_{-4.5}$	$100\theta_D$	0.16063	$0.16067^{+0.00077}_{-0.00073}$
$n_s$	0.9819	$0.981^{+0.030}_{-0.030}$	$10^9 A_s$	2.109	$2.11^{+0.19}_{-0.19}$	$z_{\text{eq}}$	3335	$3338^{+100}_{-96}$
$y_{\text{cal}}$	0.99975	$1.0001^{+0.0049}_{-0.0050}$	$10^9 A_s e^{-2\tau}$	1.8717	$1.873^{+0.047}_{-0.045}$	$k_{\text{eq}}$	0.010177	$0.01019^{+0.00031}_{-0.00029}$
$A_{100}^{\text{dustTE}}$	0.128	$0.136^{+0.075}_{-0.074}$	$D_{40}$	1193	$1195^{+52}_{-52}$	$100\theta_{\text{eq}}$	0.8262	$0.826^{+0.019}_{-0.019}$
$A_{100 \times 143}^{\text{dustTE}}$	0.133	$0.133^{+0.056}_{-0.057}$	$D_{220}$	5696	$5696^{+120}_{-110}$	$100\theta_{s,\text{eq}}$	0.4560	$0.4557^{+0.0097}_{-0.0097}$
$A_{100 \times 217}^{\text{dustTE}}$	0.310	$0.30^{+0.17}_{-0.16}$	$D_{810}$	2541	$2542^{+68}_{-65}$	$r_{\text{drag}}/D_V(0.57)$	0.07235	$0.0723^{+0.0015}_{-0.0015}$
$A_{143}^{\text{dustTE}}$	0.152	$0.15^{+0.11}_{-0.10}$	$D_{1420}$	823.3	$823^{+31}_{-31}$	$H(0.57)$	93.47	$93.44^{+0.99}_{-0.94}$
$A_{143 \times 217}^{\text{dustTE}}$	0.355	$0.33^{+0.16}_{-0.16}$	$D_{2000}$	234.7	$235^{+14}_{-14}$	$D_A(0.57)$	1373.8	$1375^{+28}_{-27}$
$A_{217}^{\text{dustTE}}$	1.69	$1.65^{+0.51}_{-0.50}$	$n_{s,0.002}$	0.9819	$0.981^{+0.030}_{-0.030}$	$F_{\text{AP}}(0.57)$	0.6725	$0.6728^{+0.0070}_{-0.0065}$
$c_{100}$	0.99952	$0.9993^{+0.0019}_{-0.0020}$	$Y_P$	0.245473	$0.24546^{+0.00027}_{-0.00029}$	$f\sigma_8(0.57)$	0.4658	$0.466^{+0.025}_{-0.024}$
$H_0$	68.64	$68.6^{+2.1}_{-2.1}$	$Y_P^{\text{BBN}}$	0.246800	$0.24679^{+0.00027}_{-0.00029}$	$\sigma_8(0.57)$	0.6040	$0.604^{+0.029}_{-0.030}$
$\Omega_\Lambda$	0.7024	$0.701^{+0.027}_{-0.027}$	$10^5 \text{D}/\text{H}$	2.557	$2.56^{+0.12}_{-0.11}$	$\chi_{\text{lowTEB}}^2$	10492.62	10494.1 ( $\nu: 2.0$ )
$\Omega_m$	0.2976	$0.299^{+0.027}_{-0.027}$	Age/Gyr	13.761	$13.763^{+0.091}_{-0.092}$	$\chi_{\text{plikTE}}^2$	932.0	939.8 ( $\nu: 9.5$ )
$\Omega_m h^2$	0.14019	$0.1403^{+0.0042}_{-0.0040}$	$z_*$	1089.43	$1089.5^{+1.0}_{-1.0}$	$\chi_{\text{prior}}^2$	2.17	7.85 ( $\nu: 6.7$ )
$\Omega_m h^3$	0.09622	$0.0962^{+0.0011}_{-0.0011}$	$r_*$	145.07	$145.05^{+0.97}_{-0.99}$	$\chi_{\text{CMB}}^2$	11424.6	11433.9 ( $\nu: 10.1$ )

Best-fit  $\chi_{\text{eff}}^2 = 11426.78$ ;  $\Delta\chi_{\text{eff}}^2 = -0.37$ ;  $\bar{\chi}_{\text{eff}}^2 = 11441.75$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.57$ ;  $R - 1 = 0.00876$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10492.62 ( $\Delta -0.87$ ) plik\_dx11dr2\_HM\_v18\_TE: 931.99 ( $\Delta 0.26$ )

### 3.12 base\_Alens\_plikHM\_EE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02494	$0.0251^{+0.0028}_{-0.0027}$	$\sigma_8 \Omega_m^{0.5}$	0.393	$0.391^{+0.063}_{-0.061}$	$D_\Lambda/\text{Gpc}$	13.957	$13.96^{+0.12}_{-0.12}$
$\Omega_c h^2$	0.1097	$0.1093^{+0.0093}_{-0.0087}$	$\sigma_8 \Omega_m^{0.25}$	0.553	$0.551^{+0.060}_{-0.057}$	$z_{\text{drag}}$	1064.9	$1065.1^{+5.4}_{-5.3}$
$100\theta_{\text{MC}}$	1.04009	$1.0401^{+0.0019}_{-0.0018}$	$\sigma_8/h^{0.5}$	0.912	$0.909^{+0.088}_{-0.085}$	$r_{\text{drag}}$	147.04	$147.0^{+1.6}_{-1.6}$
$\tau$	0.0612	$0.061^{+0.042}_{-0.046}$	$\langle d^2 \rangle^{1/2}$	2.870	$2.87^{+0.46}_{-0.50}$	$k_D$	0.14257	$0.1426^{+0.0028}_{-0.0028}$
$A_L$	1.56	$1.59^{+0.61}_{-0.59}$	$z_{\text{re}}$	7.64	$7.48^{+3.7}_{-4.3}$	$100\theta_D$	0.15787	$0.1579^{+0.0026}_{-0.0025}$
$\ln(10^{10} A_s)$	3.069	$3.069^{+0.090}_{-0.087}$	$10^9 A_s$	2.152	$2.15^{+0.20}_{-0.20}$	$z_{\text{eq}}$	3216	$3212^{+170}_{-160}$
$n_s$	0.9963	$0.999^{+0.030}_{-0.029}$	$10^9 A_s e^{-2\tau}$	1.904	$1.904^{+0.053}_{-0.053}$	$k_{\text{eq}}$	0.00982	$0.00980^{+0.00052}_{-0.00048}$
$y_{\text{cal}}$	0.99996	$1.0000^{+0.0047}_{-0.0050}$	$D_{40}$	1218	$1214^{+56}_{-56}$	$100\theta_{\text{eq}}$	0.8551	$0.857^{+0.039}_{-0.039}$
$A_{100}^{\text{dustEE}}$	0.0823	$0.083^{+0.011}_{-0.012}$	$D_{220}$	6106	$6112^{+430}_{-420}$	$100\theta_{s,\text{eq}}$	0.4690	$0.470^{+0.018}_{-0.019}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.050^{+0.010}_{-0.010}$	$D_{810}$	2598	$2600^{+77}_{-80}$	$r_{\text{drag}}/D_V(0.57)$	0.07488	$0.0751^{+0.0038}_{-0.0036}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.099^{+0.064}_{-0.064}$	$D_{1420}$	848.7	$850^{+36}_{-38}$	$H(0.57)$	96.02	$96.3^{+3.7}_{-3.6}$
$A_{143}^{\text{dustEE}}$	0.1007	$0.101^{+0.014}_{-0.014}$	$D_{2000}$	248.8	$250^{+15}_{-16}$	$D_\Lambda(0.57)$	1314	$1310^{+78}_{-76}$
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.221^{+0.092}_{-0.092}$	$n_{s,0.002}$	0.9963	$0.999^{+0.030}_{-0.029}$	$F_{\text{AP}}(0.57)$	0.6606	$0.660^{+0.015}_{-0.015}$
$A_{217}^{\text{dustEE}}$	0.636	$0.64^{+0.26}_{-0.25}$	$Y_P$	0.24646	$0.2465^{+0.0010}_{-0.0011}$	$f\sigma_8(0.57)$	0.4365	$0.435^{+0.042}_{-0.042}$
$H_0$	73.0	$73.4^{+6.0}_{-5.7}$	$Y_P^{\text{BBN}}$	0.24779	$0.2478^{+0.0010}_{-0.0011}$	$\sigma_8(0.57)$	0.5949	$0.594^{+0.030}_{-0.030}$
$\Omega_\Lambda$	0.747	$0.747^{+0.052}_{-0.055}$	$10^5 D/H$	2.177	$2.17^{+0.40}_{-0.39}$	$\chi_{\text{lowTEB}}^2$	10493.00	10494.1 ( $\nu$ : 1.5)
$\Omega_m$	0.253	$0.253^{+0.055}_{-0.052}$	Age/Gyr	13.514	$13.50^{+0.33}_{-0.34}$	$\chi_{\text{plikEE}}^2$	747.4	755.8 ( $\nu$ : 10.6)
$\Omega_m h^2$	0.1352	$0.1351^{+0.0071}_{-0.0065}$	$z_*$	1086.17	$1086.1^{+3.5}_{-3.4}$	$\chi_{\text{prior}}^2$	4.11	8.48 ( $\nu$ : 6.4)
$\Omega_m h^3$	0.09879	$0.0990^{+0.0043}_{-0.0039}$	$r_*$	145.16	$145.1^{+1.3}_{-1.3}$	$\chi_{\text{CMB}}^2$	11240.4	11250.0 ( $\nu$ : 11.6)
$\sigma_8$	0.780	$0.778^{+0.050}_{-0.050}$	$100\theta_*$	1.04001	$1.0401^{+0.0018}_{-0.0018}$			

Best-fit  $\chi_{\text{eff}}^2 = 11244.51$ ;  $\Delta\chi_{\text{eff}}^2 = -4.28$ ;  $\bar{\chi}_{\text{eff}}^2 = 11258.43$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -3.39$ ;  $R - 1 = 0.00674$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.00 ( $\Delta$  -0.62) plik\_dx11dr2\_HM\_v18\_EE: 747.40 ( $\Delta$  -3.80)

### 3.13 base\_Alens\_plikHM\_TE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02224	$0.02224^{+0.00075}_{-0.00073}$	$\sigma_8$	0.8016	$0.801^{+0.036}_{-0.035}$	$100\theta_*$	1.04116	$1.0411^{+0.0010}_{-0.0010}$
$\Omega_c h^2$	0.1191	$0.1188^{+0.0051}_{-0.0050}$	$\sigma_8 \Omega_m^{0.5}$	0.4469	$0.446^{+0.033}_{-0.032}$	$D_A/\text{Gpc}$	13.904	$13.912^{+0.095}_{-0.094}$
$100\theta_{\text{MC}}$	1.04096	$1.0409^{+0.0011}_{-0.0011}$	$\sigma_8 \Omega_m^{0.25}$	0.5986	$0.597^{+0.034}_{-0.033}$	$z_{\text{drag}}$	1059.55	$1059.6^{+1.5}_{-1.5}$
$\tau$	0.0523	$0.053^{+0.033}_{-0.043}$	$\sigma_8/h^{0.5}$	0.9751	$0.974^{+0.050}_{-0.049}$	$r_{\text{drag}}$	147.48	$147.56^{+0.99}_{-0.99}$
$A_L$	0.957	$0.98^{+0.46}_{-0.42}$	$\langle d^2 \rangle^{1/2}$	2.372	$2.38^{+0.48}_{-0.49}$	$k_D$	0.14036	$0.1403^{+0.0011}_{-0.0012}$
$\ln(10^{10} A_s)$	3.029	$3.030^{+0.081}_{-0.084}$	$z_{\text{re}}$	7.49	$7.40^{+3.7}_{-4.4}$	$100\theta_D$	0.16097	$0.16098^{+0.00090}_{-0.00087}$
$n_s$	0.9619	$0.963^{+0.040}_{-0.039}$	$10^9 A_s$	2.068	$2.07^{+0.17}_{-0.17}$	$z_{\text{eq}}$	3377	$3370^{+110}_{-110}$
$y_{\text{cal}}$	0.9998	$0.99997^{+0.0050}_{-0.0050}$	$10^9 A_s e^{-2\tau}$	1.8620	$1.862^{+0.048}_{-0.048}$	$k_{\text{eq}}$	0.010308	$0.01029^{+0.00034}_{-0.00033}$
$A_{100}^{\text{dustTE}}$	0.144	$0.137^{+0.074}_{-0.075}$	$D_{40}$	1227	$1228^{+74}_{-73}$	$100\theta_{\text{eq}}$	0.8174	$0.819^{+0.022}_{-0.021}$
$A_{100 \times 143}^{\text{dustTE}}$	0.134	$0.134^{+0.058}_{-0.057}$	$D_{220}$	5697	$5703^{+120}_{-120}$	$100\theta_{s,\text{eq}}$	0.4516	$0.452^{+0.011}_{-0.011}$
$A_{100 \times 217}^{\text{dustTE}}$	0.307	$0.30^{+0.17}_{-0.17}$	$D_{810}$	2513	$2514^{+75}_{-75}$	$r_{\text{drag}}/D_V(0.57)$	0.07162	$0.0717^{+0.0018}_{-0.0017}$
$A_{143}^{\text{dustTE}}$	0.158	$0.15^{+0.11}_{-0.11}$	$D_{1420}$	807.0	$807^{+37}_{-37}$	$H(0.57)$	92.97	$93.0^{+1.2}_{-1.1}$
$A_{143 \times 217}^{\text{dustTE}}$	0.332	$0.33^{+0.16}_{-0.16}$	$D_{2000}$	226.9	$227^{+17}_{-17}$	$D_A(0.57)$	1388.1	$1387^{+33}_{-33}$
$A_{217}^{\text{dustTE}}$	1.64	$1.65^{+0.51}_{-0.50}$	$n_{s,0.002}$	0.9619	$0.963^{+0.040}_{-0.039}$	$F_{\text{AP}}(0.57)$	0.6759	$0.6755^{+0.0083}_{-0.0079}$
$c_{100}$	0.99923	$0.9993^{+0.0020}_{-0.0019}$	$Y_P$	0.245336	$0.24533^{+0.00034}_{-0.00033}$	$f\sigma_8(0.57)$	0.4659	$0.465^{+0.024}_{-0.023}$
$H_0$	67.58	$67.7^{+2.5}_{-2.4}$	$Y_P^{\text{BBN}}$	0.246662	$0.24666^{+0.00034}_{-0.00034}$	$\sigma_8(0.57)$	0.5965	$0.596^{+0.027}_{-0.025}$
$\Omega_\Lambda$	0.6891	$0.690^{+0.030}_{-0.033}$	$10^5 D/H$	2.616	$2.62^{+0.14}_{-0.14}$	$\chi_{\text{lowEB}}^2$	5430.77	$5431.7 (\nu: 0.7)$
$\Omega_m$	0.3109	$0.310^{+0.033}_{-0.030}$	Age/Gyr	13.806	$13.80^{+0.11}_{-0.11}$	$\chi_{\text{plikTE}}^2$	931.4	$939.3 (\nu: 9.2)$
$\Omega_m h^2$	0.14197	$0.1417^{+0.0046}_{-0.0046}$	$z_*$	1090.01	$1090.0^{+1.3}_{-1.3}$	$\chi_{\text{prior}}^2$	1.64	$7.85 (\nu: 6.6)$
$\Omega_m h^3$	0.09595	$0.0959^{+0.0012}_{-0.0012}$	$r_*$	144.77	$144.8^{+1.0}_{-1.0}$	$\chi_{\text{CMB}}^2$	6362.2	$6371.1 (\nu: 9.9)$

Best-fit  $\chi_{\text{eff}}^2 = 6363.86$ ;  $\Delta\chi_{\text{eff}}^2 = -0.04$ ;  $\bar{\chi}_{\text{eff}}^2 = 6378.92$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.07$ ;  $R - 1 = 0.00925$

$\chi_{\text{eff}}^2$ : CMB - lowL\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.77 ( $\Delta$  0.00) plik\_dx11dr2\_HM\_v18\_TE: 931.45 ( $\Delta$  0.21)

### 3.14 base\_Alens\_plikHM\_EE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02485	$0.0248^{+0.0028}_{-0.0027}$	$\sigma_8 \Omega_m^{0.5}$	0.401	$0.401^{+0.070}_{-0.064}$	$D_\Lambda/\text{Gpc}$	13.921	$13.92^{+0.13}_{-0.13}$
$\Omega_c h^2$	0.1115	$0.111^{+0.010}_{-0.0098}$	$\sigma_8 \Omega_m^{0.25}$	0.560	$0.559^{+0.064}_{-0.062}$	$z_{\text{drag}}$	1064.9	$1064.8^{+5.4}_{-5.3}$
$100\theta_{\text{MC}}$	1.03984	$1.0399^{+0.0019}_{-0.0019}$	$\sigma_8/h^{0.5}$	0.920	$0.919^{+0.093}_{-0.091}$	$r_{\text{drag}}$	146.66	$146.7^{+1.6}_{-1.6}$
$\tau$	0.0564	< 0.0895	$\langle d^2 \rangle^{1/2}$	2.872	$2.86^{+0.46}_{-0.50}$	$k_D$	0.14294	$0.1428^{+0.0028}_{-0.0027}$
$A_L$	1.51	$1.54^{+0.62}_{-0.60}$	$z_{\text{re}}$	7.24	$7.01^{+3.6}_{-4.2}$	$100\theta_D$	0.15787	$0.1580^{+0.0027}_{-0.0026}$
$\ln(10^{10} A_s)$	3.064	$3.061^{+0.086}_{-0.089}$	$10^9 A_s$	2.141	$2.14^{+0.19}_{-0.19}$	$z_{\text{eq}}$	3257	$3256^{+190}_{-180}$
$n_s$	0.9833	$0.987^{+0.038}_{-0.035}$	$10^9 A_s e^{-2\tau}$	1.913	$1.911^{+0.054}_{-0.052}$	$k_{\text{eq}}$	0.00994	$0.00994^{+0.00059}_{-0.00055}$
$y_{\text{cal}}$	1.00013	$0.9999^{+0.0050}_{-0.0049}$	$D_{40}$	1249	$1239^{+73}_{-72}$	$100\theta_{\text{eq}}$	0.8465	$0.847^{+0.044}_{-0.043}$
$A_{100}^{\text{dustEE}}$	0.0804	$0.081^{+0.012}_{-0.012}$	$D_{220}$	6154	$6128^{+420}_{-420}$	$100\theta_{s,\text{eq}}$	0.4647	$0.465^{+0.021}_{-0.021}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0486	$0.048^{+0.011}_{-0.011}$	$D_{810}$	2597	$2596^{+78}_{-77}$	$r_{\text{drag}}/D_V(0.57)$	0.07418	$0.0743^{+0.0041}_{-0.0038}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.098^{+0.064}_{-0.063}$	$D_{1420}$	843.6	$844^{+38}_{-38}$	$H(0.57)$	95.62	$95.7^{+3.8}_{-3.7}$
$A_{143}^{\text{dustEE}}$	0.0999	$0.099^{+0.015}_{-0.014}$	$D_{2000}$	246.3	$247^{+16}_{-17}$	$D_\Lambda(0.57)$	1324	$1324^{+82}_{-82}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.221^{+0.091}_{-0.092}$	$n_{s,0.002}$	0.9833	$0.987^{+0.038}_{-0.035}$	$F_{\text{AP}}(0.57)$	0.6632	$0.663^{+0.017}_{-0.015}$
$A_{217}^{\text{dustEE}}$	0.615	$0.64^{+0.26}_{-0.25}$	$Y_P$	0.24642	$0.2464^{+0.0010}_{-0.0011}$	$f\sigma_8(0.57)$	0.4407	$0.440^{+0.044}_{-0.045}$
$H_0$	72.2	$72.3^{+6.4}_{-6.1}$	$Y_P^{\text{BBN}}$	0.24775	$0.2477^{+0.0010}_{-0.0011}$	$\sigma_8(0.57)$	0.5936	$0.593^{+0.029}_{-0.029}$
$\Omega_\Lambda$	0.737	$0.736^{+0.059}_{-0.063}$	$10^5 D/H$	2.190	$2.21^{+0.42}_{-0.39}$	$\chi_{\text{lowEB}}^2$	5430.70	$5431.7 (\nu: 0.8)$
$\Omega_m$	0.263	$0.264^{+0.063}_{-0.059}$	Age/Gyr	13.541	$13.54^{+0.33}_{-0.35}$	$\chi_{\text{plikEE}}^2$	747.4	$756.0 (\nu: 10.9)$
$\Omega_m h^2$	0.1370	$0.1369^{+0.0081}_{-0.0075}$	$z_*$	1086.42	$1086.5^{+3.7}_{-3.3}$	$\chi_{\text{prior}}^2$	3.52	$8.02 (\nu: 6.3)$
$\Omega_m h^3$	0.09886	$0.0988^{+0.0041}_{-0.0041}$	$r_*$	144.75	$144.8^{+1.4}_{-1.4}$	$\chi_{\text{CMB}}^2$	6178.1	$6187.6 (\nu: 11.6)$
$\sigma_8$	0.782	$0.780^{+0.050}_{-0.052}$	$100\theta_*$	1.03978	$1.0399^{+0.0018}_{-0.0019}$			

Best-fit  $\chi_{\text{eff}}^2 = 6181.60$ ;  $\Delta\chi_{\text{eff}}^2 = -3.29$ ;  $\bar{\chi}_{\text{eff}}^2 = 6195.67$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -2.30$ ;  $R - 1 = 0.00929$

$\chi_{\text{eff}}^2$ : CMB - lowL\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.70 ( $\Delta$  -0.03) plik\_dx11dr2\_HM\_v18\_EE: 747.38 ( $\Delta$  -3.37)

### 3.15 base\_Alens\_plikHM\_TT\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02261	$0.02250^{+0.00060}_{-0.00058}$	$\Omega_m$	0.2994	$0.304^{+0.035}_{-0.031}$	$D_A/\text{Gpc}$	13.914	$13.907^{+0.099}_{-0.10}$
$\Omega_c h^2$	0.1175	$0.1181^{+0.0055}_{-0.0053}$	$\Omega_m h^2$	0.14072	$0.1413^{+0.0050}_{-0.0049}$	$z_{\text{drag}}$	1060.31	$1060.1^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	1.04124	$1.0412^{+0.0011}_{-0.0011}$	$\Omega_m h^3$	0.09648	$0.09635^{+0.00098}_{-0.00096}$	$r_{\text{drag}}$	147.49	$147.4^{+1.0}_{-1.1}$
$\tau$	0.0578	$0.054^{+0.035}_{-0.043}$	$\sigma_8$	0.8047	$0.804^{+0.035}_{-0.035}$	$k_D$	0.14063	$0.1406^{+0.0010}_{-0.0010}$
$A_L$	1.224	$1.20^{+0.22}_{-0.19}$	$\sigma_8 \Omega_m^{0.5}$	0.4403	$0.443^{+0.038}_{-0.037}$	$100\theta_D$	0.16056	$0.16068^{+0.00062}_{-0.00061}$
$\ln(10^{10} A_s)$	3.046	$3.039^{+0.076}_{-0.077}$	$\sigma_8 \Omega_m^{0.25}$	0.5953	$0.597^{+0.037}_{-0.037}$	$z_{\text{eq}}$	3347	$3361^{+120}_{-120}$
$n_s$	0.9727	$0.969^{+0.016}_{-0.015}$	$\sigma_8/h^{0.5}$	0.972	$0.973^{+0.053}_{-0.054}$	$k_{\text{eq}}$	0.010217	$0.01026^{+0.00037}_{-0.00035}$
$y_{\text{cal}}$	1.00001	$1.0001^{+0.0050}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.660	$2.63^{+0.15}_{-0.15}$	$100\theta_{\text{eq}}$	0.8242	$0.822^{+0.023}_{-0.023}$
$A_{217}^{\text{CIB}}$	58.9	$62^{+10}_{-10}$	$z_{\text{re}}$	7.94	$7.49^{+3.7}_{-4.4}$	$100\theta_{s,\text{eq}}$	0.4549	$0.454^{+0.012}_{-0.012}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.83	—	$10^9 A_s$	2.103	$2.09^{+0.16}_{-0.17}$	$r_{\text{drag}}/D_V(0.57)$	0.07225	$0.0720^{+0.0019}_{-0.0019}$
$A_{143}^{\text{tSZ}}$	6.67	$5.45^{+3.9}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8729	$1.875^{+0.031}_{-0.030}$	$H(0.57)$	93.50	$93.3^{+1.2}_{-1.1}$
$A_{100}^{\text{PS}}$	240	$252^{+60}_{-60}$	$D_{40}$	1215.8	$1223^{+39}_{-38}$	$D_A(0.57)$	1374.3	$1379^{+34}_{-34}$
$A_{143}^{\text{PS}}$	45.9	$40^{+20}_{-20}$	$D_{220}$	5742	$5742^{+82}_{-83}$	$F_{\text{AP}}(0.57)$	0.6729	$0.6741^{+0.0087}_{-0.0082}$
$A_{143 \times 217}^{\text{PS}}$	52.9	$38^{+20}_{-20}$	$D_{810}$	2530.4	$2529^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4647	$0.465^{+0.025}_{-0.026}$
$A_{217}^{\text{PS}}$	107.1	$98^{+20}_{-20}$	$D_{1420}$	815.3	$813^{+10}_{-10}$	$\sigma_8(0.57)$	0.6016	$0.600^{+0.024}_{-0.023}$
$A^{\text{kSZ}}$	0.00	$< 7.68$	$D_{2000}$	232.78	$231.6^{+4.1}_{-4.2}$	$f_{2000}^{143}$	25.8	$28^{+7}_{-7}$
$A_{100}^{\text{dustTT}}$	7.34	$7.39^{+3.7}_{-3.6}$	$n_{s,0.002}$	0.9727	$0.969^{+0.016}_{-0.015}$	$f_{2000}^{143 \times 217}$	29.49	$31^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.00	$8.94^{+3.6}_{-3.6}$	$Y_P$	0.245500	$0.24545^{+0.00026}_{-0.00026}$	$f_{2000}^{217}$	102.98	$104.3^{+4.6}_{-4.6}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$16.7^{+8.1}_{-8.2}$	$Y_P^{\text{BBN}}$	0.246827	$0.24678^{+0.00026}_{-0.00026}$	$\chi_{\text{lowEB}}^2$	5430.77	$5431.7 (\nu: 0.7)$
$A_{217}^{\text{dustTT}}$	82.6	$81^{+10}_{-10}$	$10^5 D/H$	2.546	$2.57^{+0.11}_{-0.11}$	$\chi_{\text{plik}}^2$	760.6	$775.1 (\nu: 15.3)$
$c_{100}$	0.99802	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.752	$13.77^{+0.10}_{-0.10}$	$\chi_{\text{prior}}^2$	1.32	$7.15 (\nu: 6.1)$
$c_{217}$	0.99538	$0.9957^{+0.0029}_{-0.0029}$	$z_*$	1089.40	$1089.6^{+1.1}_{-1.1}$	$\chi_{\text{CMB}}^2$	6191.4	$6206.9 (\nu: 16.0)$
$H_0$	68.56	$68.2^{+2.6}_{-2.5}$	$r_*$	144.90	$144.8^{+1.1}_{-1.1}$			
$\Omega_\Lambda$	0.7006	$0.696^{+0.031}_{-0.035}$	$100\theta_*$	1.04140	$1.0413^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 6192.67$ ;  $\Delta\chi_{\text{eff}}^2 = -4.55$ ;  $\bar{\chi}_{\text{eff}}^2 = 6214.01$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -3.14$ ;  $R - 1 = 0.00725$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.77 ( $\Delta$  -0.78) plik\_dx11dr2\_HM\_v18\_TT: 760.58 ( $\Delta$  -3.09)

### 3.16 base\_Alens\_plikHM\_TTTEEE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022396	$0.02236^{+0.00035}_{-0.00034}$	$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.16}$	Age/Gyr	13.792	$13.796^{+0.055}_{-0.058}$
$\Omega_c h^2$	0.11893	$0.1192^{+0.0032}_{-0.0031}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	$z_*$	1089.79	$1089.86^{+0.65}_{-0.65}$
$100\theta_{\text{MC}}$	1.04087	$1.04086^{+0.00066}_{-0.00066}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.33^{+0.16}_{-0.16}$	$r_*$	144.69	$144.65^{+0.66}_{-0.67}$
$\tau$	0.0551	$0.054^{+0.034}_{-0.042}$	$A_{217}^{\text{dustTE}}$	1.647	$1.65^{+0.50}_{-0.50}$	$100\theta_*$	1.04106	$1.04105^{+0.00064}_{-0.00064}$
$A_L$	1.153	$1.14^{+0.15}_{-0.14}$	$c_{100}$	0.99829	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.898	$13.895^{+0.062}_{-0.062}$
$\ln(10^{10} A_s)$	3.043	$3.041^{+0.075}_{-0.080}$	$c_{217}$	0.99565	$0.9958^{+0.0028}_{-0.0029}$	$z_{\text{drag}}$	1059.93	$1059.86^{+0.66}_{-0.64}$
$n_s$	0.9668	$0.965^{+0.010}_{-0.0099}$	$H_0$	67.74	$67.6^{+1.5}_{-1.4}$	$r_{\text{drag}}$	147.34	$147.32^{+0.64}_{-0.65}$
$y_{\text{cal}}$	0.99985	$0.99997^{+0.0049}_{-0.0050}$	$\Omega_\Lambda$	0.6906	$0.689^{+0.019}_{-0.020}$	$k_D$	0.14062	$0.14061^{+0.00066}_{-0.00066}$
$A_{217}^{\text{CIB}}$	62.0	$63^{+10}_{-10}$	$\Omega_m$	0.3094	$0.311^{+0.020}_{-0.019}$	$100\theta_D$	0.160750	$0.16079^{+0.00038}_{-0.00038}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.56	—	$\Omega_m h^2$	0.14197	$0.1422^{+0.0030}_{-0.0029}$	$z_{\text{eq}}$	3377	$3382^{+71}_{-70}$
$A_{143}^{\text{tSZ}}$	6.84	$5.46^{+3.5}_{-3.7}$	$\Omega_m h^3$	0.09617	$0.09614^{+0.00060}_{-0.00059}$	$k_{\text{eq}}$	0.010308	$0.01032^{+0.00022}_{-0.00021}$
$A_{100}^{\text{PS}}$	249	$257^{+50}_{-50}$	$\sigma_8$	0.8077	$0.807^{+0.033}_{-0.032}$	$100\theta_{\text{eq}}$	0.8178	$0.817^{+0.014}_{-0.014}$
$A_{143}^{\text{PS}}$	45.1	$42^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4493	$0.450^{+0.027}_{-0.026}$	$100\theta_{s,\text{eq}}$	0.4517	$0.4513^{+0.0069}_{-0.0069}$
$A_{143 \times 217}^{\text{PS}}$	47.8	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6024	$0.603^{+0.029}_{-0.029}$	$r_{\text{drag}}/D_V(0.57)$	0.07167	$0.0716^{+0.0011}_{-0.0011}$
$A_{217}^{\text{PS}}$	104.7	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9814	$0.982^{+0.044}_{-0.044}$	$H(0.57)$	93.09	$93.04^{+0.65}_{-0.61}$
$A^{\text{kSZ}}$	0.00	$< 7.46$	$\langle d^2 \rangle^{1/2}$	2.609	$2.60^{+0.11}_{-0.11}$	$D_A(0.57)$	1385.7	$1387^{+19}_{-19}$
$A_{100}^{\text{dustTT}}$	7.32	$7.38^{+3.7}_{-3.7}$	$z_{\text{re}}$	7.73	$7.47^{+3.7}_{-4.4}$	$F_{\text{AP}}(0.57)$	0.67550	$0.6759^{+0.0050}_{-0.0049}$
$A_{143}^{\text{dustTT}}$	8.83	$8.86^{+3.6}_{-3.7}$	$10^9 A_s$	2.098	$2.09^{+0.16}_{-0.17}$	$f\sigma_8(0.57)$	0.4691	$0.469^{+0.021}_{-0.021}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$16.7^{+8.1}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8791	$1.879^{+0.025}_{-0.024}$	$\sigma_8(0.57)$	0.6013	$0.601^{+0.023}_{-0.024}$
$A_{217}^{\text{dustTT}}$	82.1	$81^{+10}_{-10}$	$D_{40}$	1227.7	$1232^{+30}_{-30}$	$f_{2000}^{143}$	27.6	$29^{+6}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5739	$5741^{+77}_{-77}$	$f_{2000}^{143 \times 217}$	30.93	$31^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0487^{+0.0098}_{-0.0097}$	$D_{810}$	2532.0	$2531^{+27}_{-27}$	$f_{2000}^{217}$	104.44	$105.1^{+3.9}_{-3.9}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.063}_{-0.064}$	$D_{1420}$	813.7	$812.8^{+9.4}_{-9.4}$	$\chi_{\text{lowEB}}^2$	5430.76	5431.7 ( $\nu: 0.7$ )
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.013}_{-0.014}$	$D_{2000}$	231.24	$230.7^{+3.3}_{-3.2}$	$\chi_{\text{plik}}^2$	2429.4	2448.8 ( $\nu: 22.0$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.223^{+0.091}_{-0.090}$	$n_{s,0.002}$	0.9668	$0.965^{+0.010}_{-0.0099}$	$\chi_{\text{prior}}^2$	6.43	19.2 ( $\nu: 15.0$ )
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.26}_{-0.25}$	$Y_P$	0.245404	$0.24539^{+0.00015}_{-0.00016}$	$\chi_{\text{CMB}}^2$	7860.1	7880.5 ( $\nu: 22.9$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.075}$	$Y_P^{\text{BBN}}$	0.246731	$0.24671^{+0.00016}_{-0.00016}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.586	$2.593^{+0.064}_{-0.065}$			

Best-fit  $\chi_{\text{eff}}^2 = 7866.54$ ;  $\Delta\chi_{\text{eff}}^2 = -4.29$ ;  $\bar{\chi}_{\text{eff}}^2 = 7899.69$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -3.22$ ;  $R - 1 = 0.00830$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70.dx11d.2014.10.03\_v5c.Ap: 5430.76 ( $\Delta -1.15$ ) plik\_dx11dr2\_HM.v18\_TTTEEE: 2429.35 ( $\Delta -2.93$ )

### 3.17 base\_Alens\_plikHM\_TT\_tau07

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02258	$0.02252^{+0.00058}_{-0.00058}$	$\Omega_\Lambda$	0.6990	$0.697^{+0.031}_{-0.033}$	$r_*$	144.86	$144.8^{+1.1}_{-1.1}$
$\Omega_c h^2$	0.1177	$0.1180^{+0.0052}_{-0.0051}$	$\Omega_m$	0.3010	$0.303^{+0.033}_{-0.031}$	$100\theta_*$	1.04139	$1.0413^{+0.0010}_{-0.0010}$
$100\theta_{MC}$	1.04123	$1.0412^{+0.0011}_{-0.0011}$	$\Omega_m h^2$	0.14096	$0.1412^{+0.0048}_{-0.0047}$	$D_A/\text{Gpc}$	13.910	$13.909^{+0.098}_{-0.098}$
$\tau$	0.0722	$0.071^{+0.038}_{-0.040}$	$\Omega_m h^3$	0.09646	$0.09636^{+0.00098}_{-0.00096}$	$z_{\text{drag}}$	1060.28	$1060.1^{+1.1}_{-1.1}$
$A_L$	1.175	$1.16^{+0.21}_{-0.20}$	$\sigma_8$	0.8174	$0.817^{+0.036}_{-0.036}$	$r_{\text{drag}}$	147.46	$147.5^{+1.0}_{-1.0}$
$\ln(10^{10} A_s)$	3.075	$3.073^{+0.076}_{-0.080}$	$\sigma_8 \Omega_m^{0.5}$	0.4484	$0.450^{+0.038}_{-0.037}$	$k_D$	0.14064	$0.1406^{+0.0010}_{-0.0010}$
$n_s$	0.9717	$0.970^{+0.015}_{-0.015}$	$\sigma_8 \Omega_m^{0.25}$	0.6054	$0.606^{+0.038}_{-0.037}$	$100\theta_D$	0.16059	$0.16067^{+0.00062}_{-0.00059}$
$A_{217}^{\text{CIB}}$	60.8	$62^{+10}_{-10}$	$\sigma_8/h^{0.5}$	0.988	$0.989^{+0.055}_{-0.055}$	$z_{\text{eq}}$	3353	$3358^{+120}_{-110}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.57	—	$\langle d^2 \rangle^{1/2}$	2.650	$2.63^{+0.15}_{-0.15}$	$k_{\text{eq}}$	0.010234	$0.01025^{+0.00035}_{-0.00035}$
$A_{143}^{\text{tSZ}}$	6.93	$5.50^{+3.5}_{-3.8}$	$z_{\text{re}}$	9.32	$9.14^{+3.7}_{-3.8}$	$100\theta_{\text{eq}}$	0.8230	$0.822^{+0.023}_{-0.022}$
$A_{100}^{\text{PS}}$	241	$251^{+50}_{-50}$	$10^9 A_s$	2.165	$2.16^{+0.17}_{-0.17}$	$100\theta_{s,\text{eq}}$	0.4543	$0.454^{+0.012}_{-0.011}$
$A_{143}^{\text{PS}}$	42.1	$40^{+20}_{-20}$	$10^9 A_s e^{-2\tau}$	1.8737	$1.874^{+0.030}_{-0.030}$	$r_{\text{drag}}/D_V(0.57)$	0.07215	$0.0721^{+0.0019}_{-0.0018}$
$A_{143 \times 217}^{\text{PS}}$	45.7	$38^{+20}_{-20}$	$D_{40}$	1222.9	$1228^{+40}_{-38}$	$H(0.57)$	93.44	$93.4^{+1.2}_{-1.1}$
$A_{217}^{\text{PS}}$	103.9	$98^{+20}_{-20}$	$D_{220}$	5741	$5741^{+83}_{-81}$	$D_A(0.57)$	1376.0	$1378^{+33}_{-33}$
$A^{\text{kSZ}}$	0.02	$< 7.44$	$D_{810}$	2530.3	$2528^{+28}_{-27}$	$F_{\text{AP}}(0.57)$	0.6733	$0.6739^{+0.0084}_{-0.0080}$
$A_{100}^{\text{dustTT}}$	7.19	$7.38^{+3.7}_{-3.7}$	$D_{1420}$	815.0	$813.5^{+9.9}_{-9.8}$	$f\sigma_8(0.57)$	0.4725	$0.473^{+0.026}_{-0.026}$
$A_{143}^{\text{dustTT}}$	8.93	$8.92^{+3.7}_{-3.6}$	$D_{2000}$	232.52	$231.7^{+4.1}_{-4.1}$	$\sigma_8(0.57)$	0.6106	$0.610^{+0.024}_{-0.024}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$16.8^{+8.2}_{-8.1}$	$n_{s,0.002}$	0.9717	$0.970^{+0.015}_{-0.015}$	$f_{2000}^{143}$	26.2	$28^{+7}_{-6}$
$A_{217}^{\text{dustTT}}$	82.8	$82^{+10}_{-10}$	$Y_P$	0.245486	$0.24546^{+0.00025}_{-0.00026}$	$f_{2000}^{143 \times 217}$	29.66	$30^{+5}_{-5}$
$c_{100}$	0.99802	$0.9979^{+0.0015}_{-0.0015}$	$Y_P^{\text{BBN}}$	0.246812	$0.24678^{+0.00026}_{-0.00026}$	$f_{2000}^{217}$	103.41	$104.2^{+4.6}_{-4.5}$
$c_{217}$	0.99553	$0.9956^{+0.0029}_{-0.0028}$	$10^5 D/H$	2.552	$2.56^{+0.11}_{-0.10}$	$\chi_{\text{plik}}^2$	760.3	$774.8 (\nu: 14.9)$
$y_{\text{cal}}$	1.00005	$1.0000^{+0.0049}_{-0.0048}$	Age/Gyr	13.757	$13.766^{+0.098}_{-0.10}$	$\chi_{\text{prior}}^2$	1.47	$8.09 (\nu: 6.9)$
$H_0$	68.44	$68.3^{+2.5}_{-2.4}$	$z_*$	1089.46	$1089.6^{+1.1}_{-1.1}$			

Best-fit  $\chi_{\text{eff}}^2 = 761.79$ ;  $\Delta\chi_{\text{eff}}^2 = -3.11$ ;  $\bar{\chi}_{\text{eff}}^2 = 782.92$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -2.06$ ;  $R - 1 = 0.00510$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM\_v18\_TT: 760.32 ( $\Delta$  -2.04)



### 3.18 base\_Alens\_plikHM\_TTTEE\_tau07

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022394	$0.02235^{+0.00035}_{-0.00034}$	$A_{100 \times 217}^{dustTE}$	0.303	$0.30^{+0.17}_{-0.17}$	$Y_P^{BBN}$	0.246730	$0.24671^{+0.00016}_{-0.00016}$
$\Omega_c h^2$	0.11889	$0.1192^{+0.0032}_{-0.0032}$	$A_{143}^{dustTE}$	0.154	$0.15^{+0.11}_{-0.10}$	$10^5 D/H$	2.587	$2.595^{+0.065}_{-0.066}$
$100\theta_{MC}$	1.04089	$1.04086^{+0.00067}_{-0.00065}$	$A_{143 \times 217}^{dustTE}$	0.334	$0.33^{+0.16}_{-0.16}$	Age/Gyr	13.792	$13.797^{+0.057}_{-0.058}$
$\tau$	0.0708	$0.070^{+0.039}_{-0.039}$	$A_{217}^{dustTE}$	1.65	$1.66^{+0.50}_{-0.50}$	$z_*$	1089.79	$1089.87^{+0.67}_{-0.66}$
$A_L$	1.117	$1.11^{+0.15}_{-0.14}$	$c_{100}$	0.99828	$0.9982^{+0.0015}_{-0.0015}$	$r_*$	144.70	$144.66^{+0.68}_{-0.68}$
$\ln(10^{10} A_s)$	3.075	$3.074^{+0.079}_{-0.079}$	$c_{217}$	0.99568	$0.9958^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04106	$1.04105^{+0.00065}_{-0.00063}$
$n_s$	0.9672	$0.965^{+0.010}_{-0.010}$	$y_{cal}$	0.99987	$1.0001^{+0.0049}_{-0.0048}$	$D_A/Gpc$	13.899	$13.895^{+0.062}_{-0.062}$
$A_{217}^{CIB}$	62.0	$63^{+10}_{-10}$	$H_0$	67.75	$67.6^{+1.5}_{-1.4}$	$z_{drag}$	1059.89	$1059.84^{+0.68}_{-0.66}$
$\xi^{tSZ \times CIB}$	0.58	—	$\Omega_\Lambda$	0.6908	$0.689^{+0.019}_{-0.020}$	$r_{drag}$	147.36	$147.33^{+0.65}_{-0.65}$
$A_{143}^{tSZ}$	6.83	$5.46^{+3.6}_{-3.8}$	$\Omega_m$	0.3092	$0.311^{+0.020}_{-0.019}$	$k_D$	0.14060	$0.14060^{+0.00067}_{-0.00067}$
$A_{100}^{PS}$	249	$257^{+50}_{-50}$	$\Omega_m h^2$	0.14193	$0.1422^{+0.0030}_{-0.0030}$	$100\theta_D$	0.160755	$0.16080^{+0.00039}_{-0.00039}$
$A_{143}^{PS}$	45.3	$42^{+20}_{-20}$	$\Omega_m h^3$	0.09616	$0.09612^{+0.00060}_{-0.00060}$	$z_{eq}$	3376	$3382^{+71}_{-71}$
$A_{143 \times 217}^{PS}$	48.2	$40^{+20}_{-20}$	$\sigma_8$	0.8204	$0.821^{+0.034}_{-0.034}$	$k_{eq}$	0.010305	$0.01032^{+0.00022}_{-0.00022}$
$A_{217}^{PS}$	104.4	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4562	$0.458^{+0.028}_{-0.027}$	$100\theta_{eq}$	0.8180	$0.817^{+0.014}_{-0.013}$
$A^{kSZ}$	0.00	< 7.43	$\sigma_8 \Omega_m^{0.25}$	0.6118	$0.613^{+0.030}_{-0.030}$	$100\theta_{s,eq}$	0.4518	$0.4512^{+0.0071}_{-0.0069}$
$A_{100}^{dustTT}$	7.27	$7.36^{+3.7}_{-3.7}$	$\sigma_8/h^{0.5}$	0.9968	$0.998^{+0.046}_{-0.046}$	$r_{drag}/D_V(0.57)$	0.07169	$0.0716^{+0.0011}_{-0.0011}$
$A_{143}^{dustTT}$	8.85	$8.85^{+3.6}_{-3.5}$	$\langle d^2 \rangle^{1/2}$	2.607	$2.60^{+0.11}_{-0.12}$	$H(0.57)$	93.09	$93.03^{+0.65}_{-0.62}$
$A_{143 \times 217}^{dustTT}$	17.8	$16.7^{+8.2}_{-8.3}$	$z_{re}$	9.27	$9.14^{+3.7}_{-3.9}$	$D_A(0.57)$	1385.5	$1387^{+19}_{-20}$
$A_{217}^{dustTT}$	82.2	$81^{+10}_{-10}$	$10^9 A_s$	2.165	$2.17^{+0.18}_{-0.17}$	$F_{AP}(0.57)$	0.6754	$0.6759^{+0.0051}_{-0.0050}$
$A_{100}^{dustEE}$	0.0814	$0.081^{+0.011}_{-0.011}$	$10^9 A_s e^{-2\tau}$	1.8787	$1.880^{+0.025}_{-0.024}$	$f\sigma_8(0.57)$	0.4764	$0.477^{+0.022}_{-0.022}$
$A_{100 \times 143}^{dustEE}$	0.0490	$0.0487^{+0.0097}_{-0.010}$	$D_{40}$	1232.0	$1238^{+33}_{-31}$	$\sigma_8(0.57)$	0.6109	$0.611^{+0.025}_{-0.024}$
$A_{100 \times 217}^{dustEE}$	0.099	$0.099^{+0.064}_{-0.064}$	$D_{220}$	5737	$5741^{+76}_{-76}$	$f_{2000}^{143}$	27.5	$29^{+6}_{-6}$
$A_{143}^{dustEE}$	0.1002	$0.100^{+0.014}_{-0.014}$	$D_{810}$	2531.9	$2531^{+27}_{-27}$	$f_{2000}^{143 \times 217}$	30.90	$31^{+4}_{-4}$
$A_{143 \times 217}^{dustEE}$	0.224	$0.223^{+0.091}_{-0.091}$	$D_{1420}$	813.9	$813.0^{+9.6}_{-9.4}$	$f_{2000}^{217}$	104.34	$105.1^{+3.8}_{-3.8}$
$A_{217}^{dustEE}$	0.649	$0.65^{+0.25}_{-0.26}$	$D_{2000}$	231.32	$230.8^{+3.3}_{-3.2}$	$\chi_{plik}^2$	2429.2	$2448.9 (\nu: 22.0)$
$A_{100}^{dustTE}$	0.141	$0.141^{+0.074}_{-0.073}$	$n_{s,0.002}$	0.9672	$0.965^{+0.010}_{-0.010}$	$\chi_{prior}^2$	6.46	$20 (\nu: 15.3)$
$A_{100 \times 143}^{dustTE}$	0.131	$0.131^{+0.057}_{-0.057}$	$Y_P$	0.245403	$0.24538^{+0.00016}_{-0.00016}$			

Best-fit  $\chi_{eff}^2 = 2435.69$ ;  $\Delta\chi_{eff}^2 = -2.47$ ;  $\bar{\chi}_{eff}^2 = 2468.93$ ;  $\Delta\bar{\chi}_{eff}^2 = -1.32$ ;  $R - 1 = 0.00687$   
 $\chi_{eff}^2$ : CMB - plik\_dx11dr2\_HM.v18\_TTTEE: 2429.23 ( $\Delta$  -1.36)

### 3.19 base\_Alens\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02233	$0.02233^{+0.00051}_{-0.00050}$	$\Omega_m$	0.3027	$0.302^{+0.030}_{-0.028}$	$D_A/\text{Gpc}$	13.928	$13.931^{+0.091}_{-0.092}$
$\Omega_c h^2$	0.11777	$0.1177^{+0.0047}_{-0.0047}$	$\Omega_m h^2$	0.14074	$0.1406^{+0.0044}_{-0.0044}$	$z_{\text{drag}}$	1059.67	$1059.7^{+1.0}_{-0.99}$
$100\theta_{\text{MC}}$	1.04115	$1.0412^{+0.0010}_{-0.0010}$	$\Omega_m h^3$	0.09597	$0.09594^{+0.00091}_{-0.00088}$	$r_{\text{drag}}$	147.73	$147.76^{+0.97}_{-0.97}$
$\tau$	0.0596	$0.058^{+0.039}_{-0.043}$	$\sigma_8$	0.8069	$0.805^{+0.036}_{-0.034}$	$k_D$	0.14016	$0.14012^{+0.00098}_{-0.00098}$
$A_L$	1.033	$1.04^{+0.12}_{-0.11}$	$\sigma_8 \Omega_m^{0.5}$	0.4439	$0.443^{+0.034}_{-0.033}$	$100\theta_D$	0.16092	$0.16094^{+0.00055}_{-0.00053}$
$\ln(10^{10} A_s)$	3.048	$3.045^{+0.080}_{-0.079}$	$\sigma_8 \Omega_m^{0.25}$	0.5985	$0.597^{+0.034}_{-0.034}$	$z_{\text{eq}}$	3348	$3345^{+110}_{-100}$
$n_s$	0.9699	$0.970^{+0.014}_{-0.013}$	$\sigma_8/h^{0.5}$	0.977	$0.975^{+0.050}_{-0.050}$	$k_{\text{eq}}$	0.010218	$0.01021^{+0.00032}_{-0.00032}$
$y_{\text{cal}}$	0.99994	$1.0000^{+0.0050}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.457	$2.457^{+0.058}_{-0.058}$	$100\theta_{\text{eq}}$	0.8232	$0.824^{+0.021}_{-0.020}$
$A_{217}^{\text{CIB}}$	67.3	$64^{+10}_{-10}$	$z_{\text{re}}$	8.18	$7.94^{+3.8}_{-4.4}$	$100\theta_{s,\text{eq}}$	0.4546	$0.455^{+0.011}_{-0.010}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.107	$2.10^{+0.17}_{-0.17}$	$r_{\text{drag}}/D_V(0.57)$	0.07209	$0.0721^{+0.0017}_{-0.0016}$
$A_{143}^{\text{tSZ}}$	7.23	$5.13^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8699	$1.870^{+0.029}_{-0.028}$	$H(0.57)$	93.23	$93.3^{+1.0}_{-0.95}$
$A_{100}^{\text{PS}}$	253	$259^{+50}_{-50}$	$D_{40}$	1218.1	$1219^{+35}_{-34}$	$D_A(0.57)$	1380.1	$1380^{+29}_{-30}$
$A_{143}^{\text{PS}}$	38.4	$43^{+20}_{-20}$	$D_{220}$	5718	$5720^{+82}_{-81}$	$F_{\text{AP}}(0.57)$	0.6738	$0.6737^{+0.0075}_{-0.0072}$
$A_{143 \times 217}^{\text{PS}}$	32	$38^{+20}_{-20}$	$D_{810}$	2530.5	$2530^{+28}_{-27}$	$f\sigma_8(0.57)$	0.4669	$0.466^{+0.024}_{-0.024}$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$D_{1420}$	814.8	$815^{+10}_{-10}$	$\sigma_8(0.57)$	0.6024	$0.601^{+0.024}_{-0.025}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.37	$230.3^{+3.8}_{-3.7}$	$f_{2000}^{143}$	29.6	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.44	$7.48^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9699	$0.970^{+0.014}_{-0.013}$	$f_{2000}^{143 \times 217}$	32.29	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.15	$9.07^{+3.6}_{-3.6}$	$Y_P$	0.245375	$0.24537^{+0.00023}_{-0.00023}$	$f_{2000}^{217}$	105.86	$106.0^{+4.1}_{-4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.2}_{-8.2}$	$Y_P^{\text{BBN}}$	0.246701	$0.24670^{+0.00023}_{-0.00023}$	$\chi_{\text{lensing}}^2$	9.58	10.4 ( $\nu: 2.2$ )
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 D/H$	2.599	$2.600^{+0.096}_{-0.094}$	$\chi_{\text{lowTEB}}^2$	10494.28	10495.4 ( $\nu: 1.6$ )
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.785	$13.784^{+0.087}_{-0.090}$	$\chi_{\text{plik}}^2$	766.1	779.7 ( $\nu: 16.0$ )
$c_{217}$	0.99597	$0.9959^{+0.0028}_{-0.0029}$	$z_*$	1089.78	$1089.77^{+0.98}_{-0.95}$	$\chi_{\text{prior}}^2$	2.14	7.40 ( $\nu: 6.5$ )
$H_0$	68.19	$68.2^{+2.2}_{-2.2}$	$r_*$	145.04	$145.1^{+1.0}_{-1.0}$	$\chi_{\text{CMB}}^2$	11269.9	11285.5 ( $\nu: 16.0$ )
$\Omega_\Lambda$	0.6973	$0.698^{+0.028}_{-0.030}$	$100\theta_*$	1.04134	$1.04135^{+0.00099}_{-0.00099}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.06$ ;  $\Delta\chi_{\text{eff}}^2 = -0.38$ ;  $\bar{\chi}_{\text{eff}}^2 = 11292.95$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.64$ ;  $R - 1 = 0.00683$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.58 ( $\Delta$  0.40) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.28 ( $\Delta$  -0.57) plik\_dx11dr2\_HM\_v18\_TT: 766.06 ( $\Delta$  -0.26)

### 3.20 base\_Alens\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022267	$0.02227^{+0.00040}_{-0.00040}$	$\Omega_m h^3$	0.09591	$0.09592^{+0.00089}_{-0.00087}$	$100\theta_D$	0.16097	$0.16098^{+0.00051}_{-0.00049}$
$\Omega_c h^2$	0.11838	$0.1184^{+0.0025}_{-0.0025}$	$\sigma_8$	0.8075	$0.808^{+0.033}_{-0.034}$	$z_{\text{eq}}$	3361	$3361^{+58}_{-58}$
$100\theta_{\text{MC}}$	1.04104	$1.04106^{+0.00082}_{-0.00083}$	$\sigma_8 \Omega_m^{0.5}$	0.4472	$0.447^{+0.024}_{-0.023}$	$k_{\text{eq}}$	0.010258	$0.01026^{+0.00018}_{-0.00018}$
$\tau$	0.0577	$0.058^{+0.039}_{-0.042}$	$\sigma_8 \Omega_m^{0.25}$	0.6009	$0.601^{+0.027}_{-0.027}$	$100\theta_{\text{eq}}$	0.8205	$0.821^{+0.011}_{-0.011}$
$A_L$	1.027	$1.03^{+0.10}_{-0.097}$	$\sigma_8/h^{0.5}$	0.9801	$0.980^{+0.043}_{-0.042}$	$100\theta_{s,\text{eq}}$	0.4532	$0.4533^{+0.0057}_{-0.0056}$
$\ln(10^{10} A_s)$	3.045	$3.045^{+0.079}_{-0.083}$	$\langle d^2 \rangle^{1/2}$	2.455	$2.456^{+0.056}_{-0.058}$	$r_{\text{drag}}/D_V(0.57)$	0.07187	$0.07188^{+0.00089}_{-0.00087}$
$n_s$	0.9685	$0.9681^{+0.0089}_{-0.0088}$	$z_{\text{re}}$	8.02	$7.88^{+3.8}_{-4.4}$	$H(0.57)$	93.09	$93.10^{+0.59}_{-0.56}$
$y_{\text{cal}}$	0.99977	$1.0001^{+0.0050}_{-0.0049}$	$10^9 A_s$	2.100	$2.10^{+0.17}_{-0.17}$	$D_A(0.57)$	1384.2	$1384^{+16}_{-16}$
$A_{217}^{\text{CIB}}$	67.6	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8715	$1.873^{+0.024}_{-0.022}$	$F_{\text{AP}}(0.57)$	0.67479	$0.6748^{+0.0040}_{-0.0039}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1219.9	$1223^{+28}_{-27}$	$f\sigma_8(0.57)$	0.4683	$0.468^{+0.021}_{-0.020}$
$A_{143}^{\text{tSZ}}$	7.19	$5.08^{+3.7}_{-3.7}$	$D_{220}$	5710	$5717^{+81}_{-78}$	$\sigma_8(0.57)$	0.6019	$0.602^{+0.024}_{-0.025}$
$A_{100}^{\text{PS}}$	255	$259^{+50}_{-50}$	$D_{810}$	2529.9	$2531^{+28}_{-27}$	$f_{2000}^{143}$	30.1	$30^{+6}_{-5}$
$A_{143}^{\text{PS}}$	39.4	$44^{+20}_{-20}$	$D_{1420}$	814.1	$814^{+10}_{-9.7}$	$f_{2000}^{143 \times 217}$	32.62	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.01	$230.0^{+3.5}_{-3.4}$	$f_{2000}^{217}$	106.08	$106.2^{+3.8}_{-3.9}$
$A_{217}^{\text{PS}}$	96.7	$96^{+20}_{-20}$	$n_{s,0.002}$	0.9685	$0.9681^{+0.0089}_{-0.0088}$	$\chi_{\text{lensing}}^2$	9.57	10.4 ( $\nu: 2.1$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245347	$0.24535^{+0.00018}_{-0.00018}$	$\chi_{\text{lowTEB}}^2$	10494.51	10495.6 ( $\nu: 1.2$ )
$A_{100}^{\text{dustTT}}$	7.48	$7.44^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246674	$0.24667^{+0.00018}_{-0.00018}$	$\chi_{\text{plik}}^2$	766.0	778.9 ( $\nu: 14.4$ )
$A_{143}^{\text{dustTT}}$	9.16	$9.08^{+3.5}_{-3.6}$	$10^5 D/H$	2.611	$2.611^{+0.076}_{-0.075}$	$\chi_{6\text{DF}}^2$	0.003	0.046 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.2}_{-8.1}$	Age/Gyr	13.797	$13.796^{+0.058}_{-0.059}$	$\chi_{\text{MGS}}^2$	1.54	1.64 ( $\nu: 0.2$ )
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$z_*$	1089.91	$1089.90^{+0.63}_{-0.62}$	$\chi_{\text{DR11CMass}}^2$	2.41	2.90 ( $\nu: 0.3$ )
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.93	$144.94^{+0.62}_{-0.63}$	$\chi_{\text{DR11LOWZ}}^2$	0.37	0.50 ( $\nu: 0.1$ )
$c_{217}$	0.99602	$0.9960^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04124	$1.04126^{+0.00081}_{-0.00082}$	$\chi_{\text{prior}}^2$	2.13	7.40 ( $\nu: 6.5$ )
$H_0$	67.88	$67.9^{+1.2}_{-1.2}$	$D_A/\text{Gpc}$	13.919	$13.919^{+0.061}_{-0.060}$	$\chi_{\text{CMB}}^2$	11270.0	11284.9 ( $\nu: 15.1$ )
$\Omega_\Lambda$	0.6934	$0.693^{+0.015}_{-0.016}$	$z_{\text{drag}}$	1059.59	$1059.58^{+0.89}_{-0.86}$	$\chi_{\text{BAO}}^2$	4.32	5.09 ( $\nu: 0.6$ )
$\Omega_m$	0.3066	$0.307^{+0.016}_{-0.015}$	$r_{\text{drag}}$	147.64	$147.64^{+0.66}_{-0.67}$			
$\Omega_m h^2$	0.14129	$0.1413^{+0.0024}_{-0.0024}$	$k_D$	0.14021	$0.14021^{+0.00084}_{-0.00083}$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.49$ ;  $\Delta\chi_{\text{eff}}^2 = -0.25$ ;  $\bar{\chi}_{\text{eff}}^2 = 11297.40$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.70$ ;  $R - 1 = 0.00707$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta -0.01$ ) MGS: 1.54 ( $\Delta 0.13$ ) DR11CMass: 2.41 ( $\Delta 0.01$ ) DR11LOWZ: 0.37 ( $\Delta -0.11$ ) CMB - smica\_g30\_ftl\_full\_pp: 9.57 ( $\Delta 0.33$ ) lowl\_SMW\_70\_dx11d\_2014\_10\_03 10494.51 ( $\Delta -0.34$ ) plik\_dx11dr2\_HM\_v18\_TT: 765.96 ( $\Delta -0.24$ )

### 3.21 base\_Alens\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022293	$0.02229^{+0.00033}_{-0.00031}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.16}$	Age/Gyr	13.801	$13.802^{+0.053}_{-0.055}$
$\Omega_c h^2$	0.11891	$0.1189^{+0.0030}_{-0.0030}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.92	$1089.93^{+0.61}_{-0.61}$
$100\theta_{\text{MC}}$	1.04090	$1.04090^{+0.00066}_{-0.00064}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$r_*$	144.77	$144.78^{+0.65}_{-0.65}$
$\tau$	0.0576	$0.056^{+0.037}_{-0.043}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$100\theta_*$	1.04110	$1.04109^{+0.00064}_{-0.00063}$
$A_L$	1.022	$1.02^{+0.11}_{-0.11}$	$c_{100}$	0.99816	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.906	$13.906^{+0.060}_{-0.060}$
$\ln(10^{10} A_s)$	3.047	$3.044^{+0.080}_{-0.079}$	$c_{217}$	0.99605	$0.9961^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.67	$1059.67^{+0.64}_{-0.65}$
$n_s$	0.9665	$0.9660^{+0.0096}_{-0.0098}$	$H_0$	67.67	$67.7^{+1.4}_{-1.4}$	$r_{\text{drag}}$	147.47	$147.47^{+0.63}_{-0.63}$
$y_{\text{cal}}$	0.99992	$0.9999^{+0.0049}_{-0.0050}$	$\Omega_\Lambda$	0.6902	$0.690^{+0.018}_{-0.019}$	$k_D$	0.14041	$0.14040^{+0.00065}_{-0.00065}$
$A_{217}^{\text{CIB}}$	67.6	$65^{+10}_{-10}$	$\Omega_m$	0.3098	$0.310^{+0.019}_{-0.018}$	$100\theta_D$	0.160897	$0.16091^{+0.00036}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\Omega_m h^2$	0.14185	$0.1419^{+0.0028}_{-0.0028}$	$z_{\text{eq}}$	3374	$3374^{+68}_{-66}$
$A_{143}^{\text{tSZ}}$	7.32	$5.27^{+3.7}_{-3.8}$	$\Omega_m h^3$	0.09599	$0.09597^{+0.00060}_{-0.00058}$	$k_{\text{eq}}$	0.010299	$0.01030^{+0.00021}_{-0.00020}$
$A_{100}^{\text{PS}}$	257	$262^{+50}_{-50}$	$\sigma_8$	0.8093	$0.808^{+0.034}_{-0.033}$	$100\theta_{\text{eq}}$	0.8181	$0.818^{+0.013}_{-0.013}$
$A_{143}^{\text{PS}}$	38.8	$43^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4505	$0.450^{+0.026}_{-0.025}$	$100\theta_{s,\text{eq}}$	0.4519	$0.4520^{+0.0066}_{-0.0066}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6038	$0.603^{+0.029}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07167	$0.0717^{+0.0010}_{-0.0010}$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9839	$0.982^{+0.045}_{-0.043}$	$H(0.57)$	93.02	$93.02^{+0.61}_{-0.58}$
$A^{\text{kSZ}}$	0.0	—	$\langle d^2 \rangle^{1/2}$	2.461	$2.461^{+0.056}_{-0.055}$	$D_A(0.57)$	1386.9	$1387^{+18}_{-18}$
$A_{100}^{\text{dustTT}}$	7.45	$7.49^{+3.7}_{-3.6}$	$z_{\text{re}}$	8.01	$7.72^{+3.8}_{-4.5}$	$F_{\text{AP}}(0.57)$	0.67559	$0.6756^{+0.0048}_{-0.0047}$
$A_{143}^{\text{dustTT}}$	9.06	$9.05^{+3.6}_{-3.6}$	$10^9 A_s$	2.105	$2.10^{+0.17}_{-0.17}$	$f\sigma_8(0.57)$	0.4701	$0.469^{+0.021}_{-0.021}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.0}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8760	$1.876^{+0.024}_{-0.025}$	$\sigma_8(0.57)$	0.6025	$0.601^{+0.024}_{-0.025}$
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{40}$	1226.5	$1228^{+29}_{-29}$	$f_{2000}^{143}$	29.7	$30^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5724	$5725^{+76}_{-74}$	$f_{2000}^{143 \times 217}$	32.46	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0491^{+0.0099}_{-0.0097}$	$D_{810}$	2532.8	$2532^{+27}_{-28}$	$f_{2000}^{217}$	105.98	$106.1^{+3.7}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.0999^{+0.064}_{-0.063}$	$D_{1420}$	814.6	$814.2^{+9.4}_{-9.5}$	$\chi_{\text{lensing}}^2$	10.22	10.9 ( $\nu$ : 2.9)
$A_{143}^{\text{dustEE}}$	0.1008	$0.100^{+0.013}_{-0.014}$	$D_{2000}$	230.13	$230.0^{+3.1}_{-3.1}$	$\chi_{\text{lowTEB}}^2$	10495.01	10496.1 ( $\nu$ : 1.3)
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.092}_{-0.092}$	$n_{s,0.002}$	0.9665	$0.9660^{+0.0096}_{-0.0098}$	$\chi_{\text{plik}}^2$	2434.6	2453.4 ( $\nu$ : 23.3)
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.25}_{-0.26}$	$Y_P$	0.245359	$0.24535^{+0.00015}_{-0.00015}$	$\chi_{\text{prior}}^2$	7.18	19.6 ( $\nu$ : 14.9)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.074}$	$Y_P^{\text{BBN}}$	0.246685	$0.24668^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12939.8	12960.5 ( $\nu$ : 22.9)
$A_{100 \times 143}^{\text{dustTE}}$	0.130	$0.132^{+0.056}_{-0.058}$	$10^5 \text{D}/\text{H}$	2.606	$2.607^{+0.060}_{-0.061}$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.00$ ;  $\Delta\chi_{\text{eff}}^2 = -0.18$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.03$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.91$ ;  $R - 1 = 0.01280$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.22 ( $\Delta$  0.44) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.01 ( $\Delta$  -0.28) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.59 ( $\Delta$  -0.32)

### 3.22 base\_Alens\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022295	$0.02230^{+0.00028}_{-0.00028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.9083	$13.909^{+0.047}_{-0.046}$
$\Omega_c h^2$	0.11879	$0.1188^{+0.0021}_{-0.0022}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.51}_{-0.50}$	$z_{\text{drag}}$	1059.67	$1059.68^{+0.60}_{-0.59}$
$100\theta_{\text{MC}}$	1.04092	$1.04092^{+0.00060}_{-0.00059}$	$c_{100}$	0.99815	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.496	$147.50^{+0.50}_{-0.49}$
$\tau$	0.0577	$0.056^{+0.037}_{-0.044}$	$c_{217}$	0.99606	$0.9960^{+0.0028}_{-0.0029}$	$k_D$	0.14038	$0.14038^{+0.00057}_{-0.00058}$
$A_L$	1.023	$1.03^{+0.10}_{-0.096}$	$H_0$	67.72	$67.73^{+0.99}_{-0.96}$	$100\theta_D$	0.160901	$0.16090^{+0.00034}_{-0.00034}$
$\ln(10^{10} A_s)$	3.047	$3.044^{+0.081}_{-0.085}$	$\Omega_\Lambda$	0.6909	$0.691^{+0.013}_{-0.013}$	$z_{\text{eq}}$	3371.5	$3371^{+48}_{-48}$
$n_s$	0.9666	$0.9664^{+0.0080}_{-0.0081}$	$\Omega_m$	0.3091	$0.309^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010290	$0.01029^{+0.00015}_{-0.00015}$
$y_{\text{cal}}$	0.99996	$0.99997^{+0.0050}_{-0.0051}$	$\Omega_m h^2$	0.14173	$0.1417^{+0.0020}_{-0.0020}$	$100\theta_{\text{eq}}$	0.8186	$0.8188^{+0.0093}_{-0.0091}$
$A_{217}^{\text{CIB}}$	67.9	$64^{+10}_{-10}$	$\Omega_m h^3$	0.09598	$0.09598^{+0.00059}_{-0.00059}$	$100\theta_{s,\text{eq}}$	0.45221	$0.4523^{+0.0048}_{-0.0047}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8090	$0.808^{+0.034}_{-0.034}$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.07173^{+0.00073}_{-0.00072}$
$A_{143}^{\text{tSZ}}$	7.36	$5.26^{+3.7}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4498	$0.449^{+0.023}_{-0.022}$	$H(0.57)$	93.034	$93.04^{+0.45}_{-0.44}$
$A_{100}^{\text{PS}}$	256	$262^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6032	$0.602^{+0.028}_{-0.026}$	$D_A(0.57)$	1386.3	$1386^{+13}_{-13}$
$A_{143}^{\text{PS}}$	38.3	$43^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9831	$0.981^{+0.044}_{-0.041}$	$F_{\text{AP}}(0.57)$	0.67542	$0.6754^{+0.0033}_{-0.0033}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.461	$2.461^{+0.056}_{-0.055}$	$f\sigma_8(0.57)$	0.4698	$0.469^{+0.021}_{-0.020}$
$A_{217}^{\text{PS}}$	96.3	$96^{+20}_{-20}$	$z_{\text{re}}$	8.02	$7.74^{+3.9}_{-4.6}$	$\sigma_8(0.57)$	0.6024	$0.601^{+0.025}_{-0.025}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.105	$2.10^{+0.17}_{-0.18}$	$f_{2000}^{143}$	29.7	$30^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	7.49	$7.48^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8755	$1.875^{+0.022}_{-0.022}$	$f_{2000}^{143 \times 217}$	32.51	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.03	$9.07^{+3.6}_{-3.5}$	$D_{40}$	1226.3	$1227^{+27}_{-26}$	$f_{2000}^{217}$	106.02	$106.1^{+3.7}_{-3.6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+7.9}_{-8.4}$	$D_{220}$	5725	$5726^{+76}_{-75}$	$\chi_{\text{lensing}}^2$	10.16	$10.9 (\nu: 2.9)$
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{810}$	2532.6	$2532^{+27}_{-28}$	$\chi_{\text{lowTEB}}^2$	10494.98	$10496.0 (\nu: 1.2)$
$A_{100}^{\text{dustEE}}$	0.0814	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	814.5	$814.3^{+9.3}_{-9.6}$	$\chi_{\text{plik}}^2$	2434.7	$2453.1 (\nu: 23.2)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0491^{+0.0099}_{-0.0097}$	$D_{2000}$	230.11	$230.0^{+3.1}_{-3.1}$	$\chi_{6\text{DF}}^2$	0.015	$0.045 (\nu: 0.0)$
$A_{100 \times 217}^{\text{dustEE}}$	0.0996	$0.0996^{+0.064}_{-0.064}$	$n_{s,0.002}$	0.9666	$0.9664^{+0.0080}_{-0.0081}$	$\chi_{\text{MGS}}^2$	1.34	$1.42 (\nu: 0.1)$
$A_{143}^{\text{dustEE}}$	0.1005	$0.100^{+0.013}_{-0.013}$	$Y_P$	0.245360	$0.24536^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.42	$2.76 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.094}_{-0.091}$	$Y_P^{\text{BBN}}$	0.246686	$0.24669^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11LOWZ}}^2$	0.54	$0.63 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.656	$0.65^{+0.25}_{-0.26}$	$10^5 D/H$	2.605	$2.605^{+0.053}_{-0.053}$	$\chi_{\text{prior}}^2$	7.19	$19.6 (\nu: 14.8)$
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.074}_{-0.073}$	$\text{Age}/\text{Gyr}$	13.8000	$13.799^{+0.044}_{-0.043}$	$\chi_{\text{CMB}}^2$	12939.8	$12960.0 (\nu: 22.7)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.056}_{-0.058}$	$z_*$	1089.907	$1089.90^{+0.47}_{-0.47}$	$\chi_{\text{BAO}}^2$	4.32	$4.86 (\nu: 0.3)$
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.16}_{-0.16}$	$r_*$	144.801	$144.81^{+0.49}_{-0.48}$			
$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	$100\theta_*$	1.04111	$1.04111^{+0.00059}_{-0.00058}$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.33$ ;  $\Delta\chi_{\text{eff}}^2 = -0.25$ ;  $\bar{\chi}_{\text{eff}}^2 = 12984.50$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.86$ ;  $R - 1 = 0.01770$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMass: 2.42 ( $\Delta$  -0.03) DR11LOWZ: 0.54 ( $\Delta$  -0.06) CMB - smica\_g30\_ftl\_full\_pp: 10.16 ( $\Delta$  0.49)

## 3.23 base\_Alens\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02269	$0.02264^{+0.00059}_{-0.00058}$	$\Omega_m$	0.2928	$0.294^{+0.031}_{-0.028}$	$D_A/\text{Gpc}$	13.934	$13.935^{+0.096}_{-0.095}$
$\Omega_c h^2$	0.11636	$0.1165^{+0.0050}_{-0.0049}$	$\Omega_m h^2$	0.13970	$0.1398^{+0.0046}_{-0.0045}$	$z_{\text{drag}}$	1060.43	$1060.3^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	1.04138	$1.0414^{+0.0010}_{-0.0010}$	$\Omega_m h^3$	0.09650	$0.09641^{+0.00099}_{-0.00099}$	$r_{\text{drag}}$	147.70	$147.7^{+1.0}_{-1.0}$
$\tau$	0.0686	$0.069^{+0.023}_{-0.022}$	$\sigma_8$	0.8089	$0.810^{+0.025}_{-0.025}$	$k_D$	0.14047	$0.1404^{+0.0010}_{-0.0010}$
$A_L$	1.224	$1.20^{+0.19}_{-0.18}$	$\sigma_8 \Omega_m^{0.5}$	0.4377	$0.439^{+0.033}_{-0.032}$	$100\theta_D$	0.16051	$0.16059^{+0.00062}_{-0.00059}$
$\ln(10^{10} A_s)$	3.0638	$3.065^{+0.047}_{-0.045}$	$\sigma_8 \Omega_m^{0.25}$	0.5950	$0.596^{+0.031}_{-0.030}$	$z_{\text{eq}}$	3323	$3325^{+110}_{-110}$
$n_s$	0.9761	$0.975^{+0.014}_{-0.014}$	$\sigma_8/h^{0.5}$	0.9733	$0.975^{+0.044}_{-0.043}$	$k_{\text{eq}}$	0.010142	$0.01015^{+0.00033}_{-0.00033}$
$y_{\text{cal}}$	0.99993	$1.0000^{+0.0050}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	2.663	$2.65^{+0.15}_{-0.15}$	$100\theta_{\text{eq}}$	0.8290	$0.829^{+0.022}_{-0.022}$
$A_{217}^{\text{CIB}}$	59.7	$61^{+10}_{-10}$	$z_{\text{re}}$	8.92	$8.97^{+2.1}_{-2.1}$	$100\theta_{s,\text{eq}}$	0.4573	$0.457^{+0.011}_{-0.011}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.64	—	$10^9 A_s$	2.141	$2.14^{+0.10}_{-0.096}$	$r_{\text{drag}}/D_V(0.57)$	0.07264	$0.0726^{+0.0018}_{-0.0018}$
$A_{143}^{\text{tSZ}}$	6.87	$5.71^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8665	$1.867^{+0.029}_{-0.029}$	$H(0.57)$	93.72	$93.7^{+1.1}_{-1.0}$
$A_{100}^{\text{PS}}$	238	$247^{+50}_{-50}$	$D_{40}$	1210.6	$1215^{+35}_{-34}$	$D_A(0.57)$	1367.6	$1369^{+31}_{-31}$
$A_{143}^{\text{PS}}$	41.4	$38^{+20}_{-20}$	$D_{220}$	5738	$5739^{+83}_{-84}$	$F_{\text{AP}}(0.57)$	0.6712	$0.6716^{+0.0078}_{-0.0075}$
$A_{143 \times 217}^{\text{PS}}$	46.4	$38^{+20}_{-20}$	$D_{810}$	2527.2	$2526^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4653	$0.466^{+0.021}_{-0.021}$
$A_{217}^{\text{PS}}$	104.3	$98^{+20}_{-20}$	$D_{1420}$	815.3	$814.3^{+9.9}_{-9.8}$	$\sigma_8(0.57)$	0.6064	$0.607^{+0.015}_{-0.015}$
$A^{\text{kSZ}}$	0.00	$< 6.97$	$D_{2000}$	233.12	$232.4^{+4.0}_{-4.0}$	$f_{2000}^{143}$	25.2	$26^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.33	$7.44^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9761	$0.975^{+0.014}_{-0.014}$	$f_{2000}^{143 \times 217}$	28.88	$29^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	8.91	$8.94^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245535	$0.24551^{+0.00025}_{-0.00026}$	$f_{2000}^{217}$	102.60	$103.4^{+4.5}_{-4.5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$16.6^{+8.2}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246863	$0.24684^{+0.00025}_{-0.00026}$	$\chi_{\text{WMAPTEB}}^2$	19731.87	19733.3 ( $\nu$ : 1.8)
$A_{217}^{\text{dustTT}}$	82.6	$82^{+10}_{-10}$	$10^5 \text{D}/\text{H}$	2.531	$2.54^{+0.11}_{-0.10}$	$\chi_{\text{plik}}^2$	760.5	775.1 ( $\nu$ : 15.4)
$c_{100}$	0.99797	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.735	$13.741^{+0.095}_{-0.099}$	$\chi_{\text{prior}}^2$	1.55	7.16 ( $\nu$ : 6.2)
$c_{217}$	0.99541	$0.9955^{+0.0029}_{-0.0028}$	$z_*$	1089.20	$1089.3^{+1.1}_{-1.0}$	$\chi_{\text{CMB}}^2$	20492.4	20508.3 ( $\nu$ : 16.4)
$H_0$	69.07	$69.0^{+2.4}_{-2.3}$	$r_*$	145.13	$145.1^{+1.0}_{-1.0}$			
$\Omega_\Lambda$	0.7072	$0.706^{+0.028}_{-0.031}$	$100\theta_*$	1.04154	$1.04153^{+0.00099}_{-0.00099}$			

Best-fit  $\chi_{\text{eff}}^2 = 20493.97$ ;  $\Delta\chi_{\text{eff}}^2 = -6.19$ ;  $\bar{\chi}_{\text{eff}}^2 = 20515.50$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.63$ ;  $R - 1 = 0.01119$  $\chi_{\text{eff}}^2$ : CMB - bflike\_WMAP353ggf\_LFI312\_nw8: 19731.87 ( $\Delta$  -2.28) plik\_dx11dr2\_HM\_v18\_TT: 760.54 ( $\Delta$  -3.53)

### 3.24 base\_Alens\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02249^{+0.00045}_{-0.00045}$	$\Omega_m h^2$	$0.1413^{+0.0025}_{-0.0025}$	$r_{\text{drag}}$	$147.43^{+0.69}_{-0.67}$
$\Omega_c h^2$	$0.1182^{+0.0026}_{-0.0026}$	$\Omega_m h^3$	$0.09635^{+0.00096}_{-0.00095}$	$k_D$	$0.14060^{+0.00089}_{-0.00091}$
$100\theta_{\text{MC}}$	$1.04116^{+0.00084}_{-0.00087}$	$\sigma_8$	$0.815^{+0.022}_{-0.020}$	$100\theta_D$	$0.16069^{+0.00057}_{-0.00055}$
$\tau$	$0.068^{+0.023}_{-0.023}$	$\sigma_8 \Omega_m^{0.5}$	$0.450^{+0.020}_{-0.019}$	$z_{\text{eq}}$	$3362^{+59}_{-59}$
$A_L$	$1.16^{+0.15}_{-0.15}$	$\sigma_8 \Omega_m^{0.25}$	$0.605^{+0.020}_{-0.019}$	$k_{\text{eq}}$	$0.01026^{+0.00018}_{-0.00018}$
$\ln(10^{10} A_s)$	$3.066^{+0.048}_{-0.045}$	$\sigma_8/h^{0.5}$	$0.987^{+0.031}_{-0.028}$	$100\theta_{\text{eq}}$	$0.821^{+0.011}_{-0.011}$
$n_s$	$0.9702^{+0.0089}_{-0.0089}$	$\langle d^2 \rangle^{1/2}$	$2.63^{+0.14}_{-0.15}$	$100\theta_{\text{s,eq}}$	$0.4533^{+0.0058}_{-0.0057}$
$y_{\text{cal}}$	$1.0001^{+0.0050}_{-0.0050}$	$z_{\text{re}}$	$8.91^{+2.1}_{-2.0}$	$r_{\text{drag}}/D_V(0.57)$	$0.07198^{+0.00090}_{-0.00087}$
$A_{217}^{\text{CIB}}$	$62^{+10}_{-10}$	$10^9 A_s$	$2.15^{+0.10}_{-0.097}$	$H(0.57)$	$93.31^{+0.61}_{-0.60}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s e^{-2\tau}$	$1.874^{+0.023}_{-0.023}$	$D_A(0.57)$	$1380^{+16}_{-16}$
$A_{143}^{\text{tSZ}}$	$5.60^{+3.5}_{-3.7}$	$D_{40}$	$1223^{+27}_{-26}$	$F_{\text{AP}}(0.57)$	$0.6742^{+0.0040}_{-0.0040}$
$A_{100}^{\text{PS}}$	$249^{+50}_{-50}$	$D_{220}$	$5730^{+77}_{-81}$	$f\sigma_8(0.57)$	$0.472^{+0.015}_{-0.014}$
$A_{143}^{\text{PS}}$	$40^{+20}_{-20}$	$D_{810}$	$2529^{+27}_{-27}$	$\sigma_8(0.57)$	$0.608^{+0.015}_{-0.014}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{1420}$	$813.8^{+9.9}_{-10}$	$f_{2000}^{143}$	$27^{+6}_{-6}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$D_{2000}$	$231.8^{+3.7}_{-3.7}$	$f_{2000}^{143 \times 217}$	$30^{+4}_{-4}$
$A^{\text{kSZ}}$	$< 7.19$	$n_{\text{s},0.002}$	$0.9702^{+0.0089}_{-0.0089}$	$f_{2000}^{217}$	$104.1^{+4.2}_{-4.1}$
$A_{100}^{\text{dustTT}}$	$7.40^{+3.6}_{-3.6}$	$Y_{\text{P}}$	$0.24545^{+0.00020}_{-0.00021}$	$\chi_{\text{WMAPTEB}}^2$	$19733.9 (\nu: 1.6)$
$A_{143}^{\text{dustTT}}$	$8.94^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24677^{+0.00020}_{-0.00021}$	$\chi_{\text{plik}}^2$	$774.2 (\nu: 17.0)$
$A_{143 \times 217}^{\text{dustTT}}$	$16.8^{+8.3}_{-8.0}$	$10^5 D/H$	$2.569^{+0.085}_{-0.082}$	$\chi_{6\text{DF}}^2$	$0.045 (\nu: 0.0)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	Age/Gyr	$13.770^{+0.063}_{-0.063}$	$\chi_{\text{MGS}}^2$	$1.79 (\nu: 0.2)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	$1089.61^{+0.67}_{-0.67}$	$\chi_{\text{DR11CMASS}}^2$	$2.99 (\nu: 0.3)$
$c_{217}$	$0.9956^{+0.0030}_{-0.0028}$	$r_*$	$144.80^{+0.63}_{-0.62}$	$\chi_{\text{DR11LOWZ}}^2$	$0.40 (\nu: 0.1)$
$H_0$	$68.2^{+1.2}_{-1.2}$	$100\theta_*$	$1.04133^{+0.00083}_{-0.00085}$	$\chi_{\text{prior}}^2$	$7.14 (\nu: 6.3)$
$\Omega_\Lambda$	$0.696^{+0.015}_{-0.016}$	$D_A/\text{Gpc}$	$13.906^{+0.063}_{-0.060}$	$\chi_{\text{CMB}}^2$	$20508.1 (\nu: 18.7)$
$\Omega_m$	$0.304^{+0.016}_{-0.015}$	$z_{\text{drag}}$	$1060.09^{+0.99}_{-0.98}$	$\chi_{\text{BAO}}^2$	$5.22 (\nu: 0.8)$

$$\bar{\chi}_{\text{eff}}^2 = 20520.50; \Delta\chi_{\text{eff}}^2 = -4.40; R - 1 = 0.02623$$

## 4 Alensf

### 4.1 base\_Alensf\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02270	$0.02262^{+0.00058}_{-0.00055}$	$\Omega_m$	0.2925	$0.296^{+0.031}_{-0.029}$	$D_A/\text{Gpc}$	13.934	$13.929^{+0.093}_{-0.096}$
$\Omega_c h^2$	0.11633	$0.1168^{+0.0050}_{-0.0049}$	$\Omega_m h^2$	0.13967	$0.1401^{+0.0046}_{-0.0045}$	$z_{\text{drag}}$	1060.43	$1060.3^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	1.04141	$1.0413^{+0.0010}_{-0.0010}$	$\Omega_m h^3$	0.09651	$0.09641^{+0.00098}_{-0.00095}$	$r_{\text{drag}}$	147.70	$147.66^{+0.98}_{-1.0}$
$\tau$	0.0617	$0.060^{+0.041}_{-0.041}$	$\sigma_8$	0.8035	$0.804^{+0.035}_{-0.036}$	$k_D$	0.14047	$0.1404^{+0.0010}_{-0.0010}$
$A_L^{\text{fid}}$	1.182	$1.17^{+0.13}_{-0.13}$	$\sigma_8 \Omega_m^{0.5}$	0.4346	$0.437^{+0.035}_{-0.034}$	$100\theta_D$	0.16050	$0.16059^{+0.00059}_{-0.00059}$
$\ln(10^{10} A_s)$	3.051	$3.048^{+0.080}_{-0.081}$	$\sigma_8 \Omega_m^{0.25}$	0.5909	$0.593^{+0.035}_{-0.035}$	$z_{\text{eq}}$	3322	$3332^{+110}_{-110}$
$n_s$	0.9763	$0.974^{+0.014}_{-0.014}$	$\sigma_8/h^{0.5}$	0.967	$0.969^{+0.052}_{-0.052}$	$k_{\text{eq}}$	0.010140	$0.01017^{+0.00034}_{-0.00033}$
$y_{\text{cal}}$	1.00006	$1.0000^{+0.0048}_{-0.0047}$	$\langle d^2 \rangle^{1/2}$	2.390	$2.40^{+0.12}_{-0.12}$	$100\theta_{\text{eq}}$	0.8292	$0.827^{+0.022}_{-0.022}$
$A_{217}^{\text{CIB}}$	59.2	$61^{+10}_{-10}$	$z_{\text{re}}$	8.27	$8.05^{+4.0}_{-4.4}$	$100\theta_{s,\text{eq}}$	0.4574	$0.456^{+0.011}_{-0.011}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.73	—	$10^9 A_s$	2.113	$2.11^{+0.17}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	0.07266	$0.0725^{+0.0018}_{-0.0018}$
$A_{143}^{\text{tSZ}}$	6.81	$5.67^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8675	$1.868^{+0.029}_{-0.029}$	$H(0.57)$	93.73	$93.6^{+1.2}_{-1.1}$
$A_{100}^{\text{PS}}$	237	$246^{+50}_{-50}$	$D_{40}$	1208.3	$1214^{+35}_{-35}$	$D_A(0.57)$	1367.3	$1371^{+31}_{-32}$
$A_{143}^{\text{PS}}$	42.4	$38^{+20}_{-20}$	$D_{220}$	5741	$5739^{+83}_{-81}$	$F_{\text{AP}}(0.57)$	0.6711	$0.6720^{+0.0079}_{-0.0076}$
$A_{143 \times 217}^{\text{PS}}$	48.5	$38^{+20}_{-20}$	$D_{810}$	2528.7	$2527^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4622	$0.463^{+0.025}_{-0.025}$
$A_{217}^{\text{PS}}$	105.0	$98^{+20}_{-20}$	$D_{1420}$	815.9	$814.4^{+9.9}_{-9.8}$	$\sigma_8(0.57)$	0.6024	$0.602^{+0.025}_{-0.025}$
$A^{\text{kSZ}}$	0.00	$< 7.02$	$D_{2000}$	233.43	$232.6^{+4.1}_{-4.1}$	$f_{2000}^{143}$	25.0	$26^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.35	$7.45^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9763	$0.974^{+0.014}_{-0.014}$	$f_{2000}^{143 \times 217}$	28.70	$29^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.01	$8.89^{+3.6}_{-3.6}$	$Y_P$	0.245538	$0.24550^{+0.00025}_{-0.00025}$	$f_{2000}^{217}$	102.40	$103.3^{+4.4}_{-4.4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$16.6^{+8.1}_{-8.2}$	$Y_P^{\text{BBN}}$	0.246865	$0.24683^{+0.00025}_{-0.00025}$	$\chi_{\text{lowTEB}}^2$	10493.41	10494.9 ( $\nu: 1.5$ )
$A_{217}^{\text{dustTT}}$	82.7	$82^{+10}_{-10}$	$10^5 D/H$	2.530	$2.55^{+0.10}_{-0.10}$	$\chi_{\text{plik}}^2$	760.7	775.0 ( $\nu: 15.4$ )
$c_{100}$	0.99798	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.734	$13.746^{+0.095}_{-0.10}$	$\chi_{\text{prior}}^2$	1.47	7.08 ( $\nu: 5.9$ )
$c_{217}$	0.99538	$0.9956^{+0.0028}_{-0.0028}$	$z_*$	1089.19	$1089.3^{+1.0}_{-1.0}$	$\chi_{\text{CMB}}^2$	11254.1	11269.9 ( $\nu: 16.2$ )
$H_0$	69.10	$68.8^{+2.4}_{-2.4}$	$r_*$	145.13	$145.1^{+1.0}_{-1.1}$			
$\Omega_\Lambda$	0.7075	$0.704^{+0.029}_{-0.031}$	$100\theta_*$	1.04156	$1.0415^{+0.0010}_{-0.00099}$			

Best-fit  $\chi_{\text{eff}}^2 = 11255.58$ ;  $\Delta\chi_{\text{eff}}^2 = -6.35$ ;  $\bar{\chi}_{\text{eff}}^2 = 11277.01$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.81$ ;  $R - 1 = 0.00509$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.41 ( $\Delta -3.06$ ) plik\_dx11dr2\_HM\_v18\_TT: 760.69 ( $\Delta -2.68$ )



## 4.2 base\_Alensf\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022450	$0.02240^{+0.00035}_{-0.00034}$	$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.16}_{-0.16}$	Age/Gyr	13.781	$13.788^{+0.057}_{-0.057}$
$\Omega_c h^2$	0.11824	$0.1185^{+0.0031}_{-0.0030}$	$A_{143}^{\text{dustTE}}$	0.152	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.67	$1089.75^{+0.65}_{-0.64}$
$100\theta_{\text{MC}}$	1.04094	$1.04092^{+0.00065}_{-0.00065}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.33^{+0.16}_{-0.16}$	$r_*$	144.83	$144.79^{+0.66}_{-0.65}$
$\tau$	0.0582	$0.057^{+0.038}_{-0.042}$	$A_{217}^{\text{dustTE}}$	1.649	$1.65^{+0.49}_{-0.50}$	$100\theta_*$	1.04112	$1.04110^{+0.00064}_{-0.00063}$
$A_L^{\text{fid}}$	1.145	$1.13^{+0.10}_{-0.098}$	$c_{100}$	0.99832	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.911	$13.908^{+0.060}_{-0.060}$
$\ln(10^{10} A_s)$	3.048	$3.047^{+0.077}_{-0.078}$	$c_{217}$	0.99554	$0.9958^{+0.0029}_{-0.0029}$	$z_{\text{drag}}$	1060.01	$1059.91^{+0.68}_{-0.65}$
$n_s$	0.9704	$0.9680^{+0.0097}_{-0.010}$	$H_0$	68.05	$67.9^{+1.4}_{-1.4}$	$r_{\text{drag}}$	147.47	$147.45^{+0.64}_{-0.62}$
$y_{\text{cal}}$	0.99994	$1.0001^{+0.0049}_{-0.0050}$	$\Omega_\Lambda$	0.6948	$0.693^{+0.018}_{-0.019}$	$k_D$	0.14053	$0.14051^{+0.00064}_{-0.00065}$
$A_{217}^{\text{CIB}}$	59.0	$62^{+10}_{-10}$	$\Omega_m$	0.3052	$0.307^{+0.019}_{-0.018}$	$100\theta_D$	0.160707	$0.16076^{+0.00037}_{-0.00038}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.90	—	$\Omega_m h^2$	0.14133	$0.1416^{+0.0029}_{-0.0028}$	$z_{\text{eq}}$	3362	$3367^{+69}_{-68}$
$A_{143}^{\text{tSZ}}$	6.66	$5.59^{+3.7}_{-3.7}$	$\Omega_m h^3$	0.09618	$0.09613^{+0.00061}_{-0.00059}$	$k_{\text{eq}}$	0.010261	$0.01028^{+0.00021}_{-0.00021}$
$A_{100}^{\text{PS}}$	243	$254^{+60}_{-50}$	$\sigma_8$	0.8082	$0.808^{+0.034}_{-0.033}$	$100\theta_{\text{eq}}$	0.8208	$0.820^{+0.013}_{-0.013}$
$A_{143}^{\text{PS}}$	48.3	$41^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4465	$0.448^{+0.027}_{-0.026}$	$100\theta_{s,\text{eq}}$	0.4532	$0.4527^{+0.0068}_{-0.0067}$
$A_{143 \times 217}^{\text{PS}}$	56.1	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6007	$0.601^{+0.030}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07191	$0.0718^{+0.0011}_{-0.0011}$
$A_{217}^{\text{PS}}$	108.5	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9797	$0.981^{+0.046}_{-0.044}$	$H(0.57)$	93.21	$93.15^{+0.64}_{-0.62}$
$A^{\text{kSZ}}$	0.00	$< 6.97$	$\langle d^2 \rangle^{1/2}$	2.421	$2.43^{+0.11}_{-0.11}$	$D_A(0.57)$	1381.6	$1383^{+19}_{-19}$
$A_{100}^{\text{dustTT}}$	7.30	$7.43^{+3.6}_{-3.7}$	$z_{\text{re}}$	8.02	$7.84^{+3.7}_{-4.4}$	$F_{\text{AP}}(0.57)$	0.67443	$0.6749^{+0.0049}_{-0.0047}$
$A_{143}^{\text{dustTT}}$	8.78	$8.83^{+3.6}_{-3.5}$	$10^9 A_s$	2.108	$2.11^{+0.16}_{-0.17}$	$f\sigma_8(0.57)$	0.4683	$0.469^{+0.022}_{-0.021}$
$A_{143 \times 217}^{\text{dustTT}}$	18.1	$16.6^{+8.1}_{-8.0}$	$10^9 A_s e^{-2\tau}$	1.8764	$1.877^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	0.6027	$0.602^{+0.024}_{-0.025}$
$A_{217}^{\text{dustTT}}$	82.8	$81^{+10}_{-10}$	$D_{40}$	1220.1	$1226^{+30}_{-29}$	$f_{2000}^{143}$	26.2	$28^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0819	$0.082^{+0.011}_{-0.011}$	$D_{220}$	5732	$5736^{+78}_{-78}$	$f_{2000}^{143 \times 217}$	30.07	$31^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0495	$0.0492^{+0.0098}_{-0.0097}$	$D_{810}$	2532.4	$2531^{+27}_{-27}$	$f_{2000}^{217}$	103.49	$104.5^{+3.8}_{-3.8}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.064}_{-0.063}$	$D_{1420}$	815.1	$813.6^{+9.4}_{-9.5}$	$\chi_{\text{lowTEB}}^2$	10494.37	10495.8 ( $\nu$ : 1.3)
$A_{143}^{\text{dustEE}}$	0.1009	$0.101^{+0.014}_{-0.013}$	$D_{2000}$	232.11	$231.3^{+3.3}_{-3.3}$	$\chi_{\text{plik}}^2$	2429.6	2448.8 ( $\nu$ : 22.2)
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.223^{+0.091}_{-0.091}$	$n_{s,0.002}$	0.9704	$0.9680^{+0.0097}_{-0.010}$	$\chi_{\text{prior}}^2$	6.48	19.1 ( $\nu$ : 14.4)
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.25}$	$Y_P$	0.245428	$0.24541^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12924.0	12944.6 ( $\nu$ : 23.2)
$A_{100}^{\text{dustTE}}$	0.142	$0.140^{+0.075}_{-0.073}$	$Y_P^{\text{BBN}}$	0.246755	$0.24673^{+0.00016}_{-0.00016}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.576	$2.585^{+0.063}_{-0.065}$			

Best-fit  $\chi_{\text{eff}}^2 = 12930.49$ ;  $\Delta\chi_{\text{eff}}^2 = -5.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 12963.78$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -3.91$ ;  $R - 1 = 0.01020$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.37 ( $\Delta$  -2.56) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.63 ( $\Delta$  -2.02)

### 4.3 base\_Alensf\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02266	$0.02256^{+0.00053}_{-0.00051}$	$\Omega_m$	0.2963	$0.300^{+0.025}_{-0.023}$	$D_A/\text{Gpc}$	13.923	$13.920^{+0.079}_{-0.080}$
$\Omega_c h^2$	0.11695	$0.1174^{+0.0040}_{-0.0040}$	$\Omega_m h^2$	0.14026	$0.1406^{+0.0037}_{-0.0037}$	$z_{\text{drag}}$	1060.39	$1060.2^{+1.1}_{-1.0}$
$100\theta_{\text{MC}}$	1.04128	$1.04119^{+0.00092}_{-0.00091}$	$\Omega_m h^3$	0.09650	$0.09635^{+0.00097}_{-0.00096}$	$r_{\text{drag}}$	147.58	$147.57^{+0.84}_{-0.85}$
$\tau$	0.0719	$0.069^{+0.033}_{-0.033}$	$\sigma_8$	0.8144	$0.813^{+0.019}_{-0.019}$	$k_D$	0.14058	$0.14051^{+0.00094}_{-0.00094}$
$A_L^{\text{fid}}$	1.103	$1.09^{+0.12}_{-0.12}$	$\sigma_8 \Omega_m^{0.5}$	0.4433	$0.445^{+0.018}_{-0.018}$	$100\theta_D$	0.16051	$0.16063^{+0.00058}_{-0.00057}$
$\ln(10^{10} A_s)$	3.073	$3.068^{+0.060}_{-0.059}$	$\sigma_8 \Omega_m^{0.25}$	0.6009	$0.602^{+0.016}_{-0.016}$	$z_{\text{eq}}$	3336	$3345^{+89}_{-87}$
$n_s$	0.9752	$0.972^{+0.013}_{-0.012}$	$\sigma_8/h^{0.5}$	0.9819	$0.982^{+0.023}_{-0.023}$	$k_{\text{eq}}$	0.010183	$0.01021^{+0.00027}_{-0.00027}$
$y_{\text{cal}}$	1.00020	$1.0002^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.426	$2.431^{+0.053}_{-0.054}$	$100\theta_{\text{eq}}$	0.8264	$0.825^{+0.018}_{-0.017}$
$A_{217}^{\text{CIB}}$	58.1	$61^{+10}_{-10}$	$z_{\text{re}}$	9.25	$8.96^{+3.1}_{-3.2}$	$100\theta_{s,\text{eq}}$	0.4560	$0.4551^{+0.0089}_{-0.0088}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.90	—	$10^9 A_s$	2.160	$2.15^{+0.13}_{-0.12}$	$r_{\text{drag}}/D_V(0.57)$	0.07242	$0.0723^{+0.0014}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	6.70	$5.61^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8709	$1.871^{+0.025}_{-0.025}$	$H(0.57)$	93.60	$93.46^{+0.91}_{-0.86}$
$A_{100}^{\text{PS}}$	236	$248^{+50}_{-60}$	$D_{40}$	1215.0	$1220^{+25}_{-25}$	$D_A(0.57)$	1371.2	$1375^{+25}_{-25}$
$A_{143}^{\text{PS}}$	45.2	$39^{+20}_{-20}$	$D_{220}$	5740	$5738^{+81}_{-82}$	$F_{\text{AP}}(0.57)$	0.6721	$0.6730^{+0.0063}_{-0.0061}$
$A_{143 \times 217}^{\text{PS}}$	53.7	$38^{+20}_{-20}$	$D_{810}$	2531.1	$2528^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4695	$0.470^{+0.011}_{-0.011}$
$A_{217}^{\text{PS}}$	107.6	$98^{+20}_{-20}$	$D_{1420}$	816.5	$814^{+10}_{-9.9}$	$\sigma_8(0.57)$	0.6096	$0.608^{+0.017}_{-0.017}$
$A^{\text{kSZ}}$	0.00	$< 7.18$	$D_{2000}$	233.42	$232.3^{+4.0}_{-3.9}$	$f_{2000}^{143}$	24.9	$27^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.37	$7.45^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9752	$0.972^{+0.013}_{-0.012}$	$f_{2000}^{143 \times 217}$	28.81	$30^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	8.97	$8.91^{+3.6}_{-3.6}$	$Y_P$	0.245522	$0.24548^{+0.00023}_{-0.00023}$	$f_{2000}^{217}$	102.46	$103.7^{+4.4}_{-4.4}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$16.7^{+8.1}_{-8.1}$	$Y_P^{\text{BBN}}$	0.246849	$0.24680^{+0.00023}_{-0.00023}$	$\chi_{\text{lensing}}^2$	8.83	9.69 ( $\nu: 0.9$ )
$A_{217}^{\text{dustTT}}$	82.7	$82^{+10}_{-10}$	$10^5 D/H$	2.537	$2.556^{+0.096}_{-0.094}$	$\chi_{\text{lowTEB}}^2$	10494.05	10495.1 ( $\nu: 0.8$ )
$c_{100}$	0.99805	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.744	$13.758^{+0.082}_{-0.083}$	$\chi_{\text{plik}}^2$	760.6	774.4 ( $\nu: 14.4$ )
$c_{217}$	0.99535	$0.9956^{+0.0029}_{-0.0029}$	$z_*$	1089.29	$1089.46^{+0.90}_{-0.88}$	$\chi_{\text{prior}}^2$	1.28	7.10 ( $\nu: 5.9$ )
$H_0$	68.80	$68.5^{+1.9}_{-1.9}$	$r_*$	145.00	$144.96^{+0.85}_{-0.86}$	$\chi_{\text{CMB}}^2$	11263.5	11279.1 ( $\nu: 16.5$ )
$\Omega_\Lambda$	0.7037	$0.700^{+0.023}_{-0.025}$	$100\theta_*$	1.04143	$1.04136^{+0.00090}_{-0.00089}$			

Best-fit  $\chi_{\text{eff}}^2 = 11264.76$ ;  $\Delta\chi_{\text{eff}}^2 = -7.67$ ;  $\bar{\chi}_{\text{eff}}^2 = 11286.25$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -6.05$ ;  $R - 1 = 0.00753$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.83 ( $\Delta -0.34$ ) lowl.SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.05 ( $\Delta -0.81$ ) plik\_dx11dr2\_HM\_v18\_TT: 760.60 ( $\Delta -5.72$ )

#### 4.4 base\_Alensf\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022432	$0.02240^{+0.00033}_{-0.00032}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	Age/Gyr	13.784	$13.789^{+0.052}_{-0.054}$
$\Omega_c h^2$	0.11834	$0.1185^{+0.0028}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	0.152	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.70	$1089.76^{+0.60}_{-0.60}$
$100\theta_{\text{MC}}$	1.04094	$1.04090^{+0.00063}_{-0.00063}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.34^{+0.16}_{-0.16}$	$r_*$	144.81	$144.79^{+0.60}_{-0.60}$
$\tau$	0.0616	$0.059^{+0.028}_{-0.028}$	$A_{217}^{\text{dustTE}}$	1.65	$1.65^{+0.51}_{-0.50}$	$100\theta_*$	1.04111	$1.04109^{+0.00062}_{-0.00062}$
$A_L^{\text{fid}}$	1.067	$1.059^{+0.095}_{-0.091}$	$c_{100}$	0.99825	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.909	$13.908^{+0.056}_{-0.055}$
$\ln(10^{10} A_s)$	3.055	$3.051^{+0.052}_{-0.051}$	$c_{217}$	0.99561	$0.9957^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.97	$1059.90^{+0.65}_{-0.65}$
$n_s$	0.9694	$0.9680^{+0.0093}_{-0.0094}$	$H_0$	68.00	$67.9^{+1.3}_{-1.3}$	$r_{\text{drag}}$	147.46	$147.45^{+0.58}_{-0.58}$
$y_{\text{cal}}$	0.99993	$1.0001^{+0.0050}_{-0.0049}$	$\Omega_\Lambda$	0.6941	$0.693^{+0.017}_{-0.017}$	$k_D$	0.14052	$0.14051^{+0.00061}_{-0.00062}$
$A_{217}^{\text{CIB}}$	61.4	$62^{+10}_{-10}$	$\Omega_m$	0.3059	$0.307^{+0.017}_{-0.017}$	$100\theta_D$	0.160726	$0.16077^{+0.00037}_{-0.00037}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.62	—	$\Omega_m h^2$	0.14142	$0.1416^{+0.0026}_{-0.0026}$	$z_{\text{eq}}$	3364	$3368^{+62}_{-62}$
$A_{143}^{\text{tSZ}}$	6.85	$5.58^{+3.4}_{-3.7}$	$\Omega_m h^3$	0.09616	$0.09611^{+0.00060}_{-0.00057}$	$k_{\text{eq}}$	0.010267	$0.01028^{+0.00019}_{-0.00019}$
$A_{100}^{\text{PS}}$	245	$254^{+50}_{-50}$	$\sigma_8$	0.8110	$0.810^{+0.018}_{-0.018}$	$100\theta_{\text{eq}}$	0.8204	$0.820^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	44.3	$41^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4485	$0.449^{+0.014}_{-0.014}$	$100\theta_{s,\text{eq}}$	0.4530	$0.4527^{+0.0062}_{-0.0061}$
$A_{143 \times 217}^{\text{PS}}$	48.5	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6031	$0.603^{+0.014}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.07187	$0.07181^{+0.00097}_{-0.00095}$
$A_{217}^{\text{PS}}$	104.6	$99^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9835	$0.983^{+0.022}_{-0.022}$	$H(0.57)$	93.19	$93.14^{+0.59}_{-0.56}$
$A^{\text{kSZ}}$	0.00	$< 7.11$	$\langle d^2 \rangle^{1/2}$	2.432	$2.433^{+0.052}_{-0.052}$	$D_A(0.57)$	1382.3	$1384^{+17}_{-17}$
$A_{100}^{\text{dustTT}}$	7.29	$7.41^{+3.7}_{-3.7}$	$z_{\text{re}}$	8.36	$8.11^{+2.8}_{-2.8}$	$F_{\text{AP}}(0.57)$	0.67460	$0.6749^{+0.0044}_{-0.0043}$
$A_{143}^{\text{dustTT}}$	8.90	$8.82^{+3.6}_{-3.6}$	$10^9 A_s$	2.122	$2.11^{+0.11}_{-0.11}$	$f\sigma_8(0.57)$	0.4701	$0.470^{+0.011}_{-0.010}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$16.6^{+8.1}_{-8.1}$	$10^9 A_s e^{-2\tau}$	1.8761	$1.877^{+0.023}_{-0.022}$	$\sigma_8(0.57)$	0.6047	$0.603^{+0.015}_{-0.015}$
$A_{217}^{\text{dustTT}}$	82.0	$81^{+10}_{-10}$	$D_{40}$	1223.2	$1226^{+23}_{-23}$	$f_{2000}^{143}$	26.8	$28^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0817	$0.082^{+0.011}_{-0.011}$	$D_{220}$	5733	$5736^{+77}_{-75}$	$f_{2000}^{143 \times 217}$	30.35	$31^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0494	$0.0492^{+0.0098}_{-0.0098}$	$D_{810}$	2531.5	$2531^{+27}_{-27}$	$f_{2000}^{217}$	103.89	$104.5^{+3.8}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0998^{+0.064}_{-0.063}$	$D_{1420}$	814.5	$813.8^{+9.7}_{-9.5}$	$\chi_{\text{lensing}}^2$	8.77	$9.62 (\nu: 0.7)$
$A_{143}^{\text{dustEE}}$	0.1008	$0.101^{+0.014}_{-0.013}$	$D_{2000}$	231.75	$231.3^{+3.3}_{-3.3}$	$\chi_{\text{lowTEB}}^2$	10494.61	$10495.4 (\nu: 0.6)$
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.223^{+0.093}_{-0.092}$	$n_{s,0.002}$	0.9694	$0.9680^{+0.0093}_{-0.0094}$	$\chi_{\text{plik}}^2$	2429.3	$2448.6 (\nu: 21.5)$
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.25}_{-0.25}$	$Y_P$	0.245420	$0.24541^{+0.00014}_{-0.00015}$	$\chi_{\text{prior}}^2$	6.63	$19.2 (\nu: 14.9)$
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.075}_{-0.075}$	$Y_P^{\text{BBN}}$	0.246747	$0.24673^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12932.7	$12953.5 (\nu: 23.3)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.058}_{-0.058}$	$10^5 \text{D}/\text{H}$	2.580	$2.586^{+0.061}_{-0.061}$			

Best-fit  $\chi_{\text{eff}}^2 = 12939.35$ ;  $\Delta\chi_{\text{eff}}^2 = -7.82$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.78$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -6.34$ ;  $R - 1 = 0.01140$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.78 ( $\Delta -1.00$ ) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.61 ( $\Delta -0.68$ ) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.34 ( $\Delta -5.57$ )

## 5 Aphihi

### 5.1 base\_Aphihi\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022264	$0.02224^{+0.00045}_{-0.00045}$	$\Omega_m$	0.3127	$0.313^{+0.027}_{-0.025}$	$D_A/\text{Gpc}$	13.895	$13.896^{+0.088}_{-0.088}$
$\Omega_c h^2$	0.11942	$0.1195^{+0.0042}_{-0.0042}$	$\Omega_m h^2$	0.14233	$0.1424^{+0.0040}_{-0.0040}$	$z_{\text{drag}}$	1059.67	$1059.60^{+0.95}_{-0.92}$
$100\theta_{\text{MC}}$	1.04090	$1.04087^{+0.00092}_{-0.00095}$	$\Omega_m h^3$	0.09602	$0.09598^{+0.00092}_{-0.00091}$	$r_{\text{drag}}$	147.36	$147.37^{+0.96}_{-0.95}$
$\tau$	0.0796	$0.078^{+0.039}_{-0.037}$	$\sigma_8$	0.8298	$0.829^{+0.029}_{-0.028}$	$k_D$	0.14050	$0.1405^{+0.0010}_{-0.0010}$
$\ln(10^{10} A_s)$	3.092	$3.089^{+0.072}_{-0.070}$	$\sigma_8 \Omega_m^{0.5}$	0.4640	$0.464^{+0.026}_{-0.025}$	$100\theta_D$	0.16092	$0.16095^{+0.00053}_{-0.00053}$
$n_s$	0.9665	$0.966^{+0.012}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	0.6205	$0.620^{+0.025}_{-0.025}$	$z_{\text{eq}}$	3386	$3387^{+96}_{-95}$
$A_L^{\phi\phi}$	0.947	$0.950^{+0.082}_{-0.075}$	$\sigma_8/h^{0.5}$	1.0103	$1.009^{+0.038}_{-0.038}$	$k_{\text{eq}}$	0.010334	$0.01034^{+0.00029}_{-0.00029}$
$y_{\text{cal}}$	1.00024	$1.0004^{+0.0048}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.496	$2.495^{+0.090}_{-0.089}$	$100\theta_{\text{eq}}$	0.8159	$0.816^{+0.018}_{-0.018}$
$A_{217}^{\text{CIB}}$	66.8	$64^{+10}_{-10}$	$z_{\text{re}}$	10.12	$9.90^{+3.2}_{-3.6}$	$100\theta_{s,\text{eq}}$	0.4508	$0.4508^{+0.0094}_{-0.0092}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$10^9 A_s$	2.203	$2.20^{+0.16}_{-0.15}$	$r_{\text{drag}}/D_V(0.57)$	0.07151	$0.0715^{+0.0015}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	7.18	$5.15^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8786	$1.879^{+0.027}_{-0.027}$	$H(0.57)$	92.94	$92.92^{+0.83}_{-0.78}$
$A_{100}^{\text{PS}}$	252	$258^{+50}_{-60}$	$D_{40}$	1234.7	$1236^{+30}_{-29}$	$D_A(0.57)$	1389.5	$1390^{+25}_{-25}$
$A_{143}^{\text{PS}}$	38.9	$44^{+20}_{-20}$	$D_{220}$	5717	$5719^{+80}_{-79}$	$F_{\text{AP}}(0.57)$	0.6763	$0.6765^{+0.0067}_{-0.0064}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2533.6	$2534^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4828	$0.482^{+0.018}_{-0.018}$
$A_{217}^{\text{PS}}$	97.6	$97^{+20}_{-20}$	$D_{1420}$	814.8	$814.6^{+9.8}_{-9.8}$	$\sigma_8(0.57)$	0.6170	$0.616^{+0.022}_{-0.021}$
$A^{\text{kSZ}}$	0.00	< 8.22	$D_{2000}$	230.49	$230.4^{+3.6}_{-3.5}$	$f_{2000}^{143}$	29.5	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.44	$7.42^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9665	$0.966^{+0.012}_{-0.012}$	$f_{2000}^{143 \times 217}$	32.14	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.07	$9.01^{+3.6}_{-3.7}$	$Y_{\text{P}}$	0.245346	$0.24533^{+0.00020}_{-0.00020}$	$f_{2000}^{217}$	105.77	$105.9^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.1^{+8.1}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.246672	$0.24666^{+0.00020}_{-0.00020}$	$\chi_{\text{lensing}}^2$	8.83	9.87 ( $\nu: 1.0$ )
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^5 D/H$	2.611	$2.616^{+0.087}_{-0.085}$	$\chi_{\text{lowTEB}}^2$	10496.47	10497.3 ( $\nu: 2.7$ )
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.806	$13.809^{+0.074}_{-0.076}$	$\chi_{\text{plik}}^2$	763.4	777.3 ( $\nu: 16.1$ )
$c_{217}$	0.99591	$0.9959^{+0.0028}_{-0.0028}$	$z_*$	1090.01	$1090.04^{+0.84}_{-0.82}$	$\chi_{\text{prior}}^2$	2.06	7.25 ( $\nu: 6.2$ )
$H_0$	67.46	$67.4^{+1.9}_{-1.9}$	$r_*$	144.66	$144.66^{+0.96}_{-0.96}$	$\chi_{\text{CMB}}^2$	11268.7	11284.5 ( $\nu: 16.3$ )
$\Omega_\Lambda$	0.6873	$0.687^{+0.025}_{-0.027}$	$100\theta_*$	1.04110	$1.04107^{+0.00090}_{-0.00093}$			

Best-fit  $\chi_{\text{eff}}^2 = 11270.78$ ;  $\Delta\chi_{\text{eff}}^2 = -1.65$ ;  $\bar{\chi}_{\text{eff}}^2 = 11291.72$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.59$ ;  $R - 1 = 0.00620$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.83 ( $\Delta -0.35$ ) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.47 ( $\Delta 1.61$ ) plik\_dx11dr2\_HM\_v18\_TT: 763.43 ( $\Delta -2.90$ )

## 5.2 base\_Aphipli\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022262	$0.02226^{+0.00031}_{-0.00030}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	Age/Gyr	13.811	$13.812^{+0.051}_{-0.051}$
$\Omega_c h^2$	0.11970	$0.1198^{+0.0029}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	0.156	$0.15^{+0.11}_{-0.11}$	$z_*$	1090.03	$1090.04^{+0.58}_{-0.57}$
$100\theta_{\text{MC}}$	1.04078	$1.04078^{+0.00062}_{-0.00065}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$r_*$	144.59	$144.58^{+0.62}_{-0.63}$
$\tau$	0.0805	$0.079^{+0.034}_{-0.033}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.50}$	$100\theta_*$	1.04097	$1.04097^{+0.00061}_{-0.00064}$
$\ln(10^{10} A_s)$	3.096	$3.093^{+0.064}_{-0.064}$	$c_{100}$	0.99822	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.890	$13.889^{+0.058}_{-0.058}$
$n_s$	0.9655	$0.9647^{+0.0094}_{-0.0095}$	$c_{217}$	0.99595	$0.9960^{+0.0029}_{-0.0028}$	$z_{\text{drag}}$	1059.67	$1059.66^{+0.62}_{-0.60}$
$A_L^{\phi\phi}$	0.938	$0.940^{+0.070}_{-0.067}$	$H_0$	67.32	$67.3^{+1.3}_{-1.3}$	$r_{\text{drag}}$	147.29	$147.28^{+0.62}_{-0.62}$
$y_{\text{cal}}$	1.00037	$1.0004^{+0.0050}_{-0.0048}$	$\Omega_\Lambda$	0.6853	$0.685^{+0.017}_{-0.018}$	$k_D$	0.14057	$0.14058^{+0.00065}_{-0.00064}$
$A_{217}^{\text{CIB}}$	65.4	$64^{+10}_{-10}$	$\Omega_m$	0.3147	$0.315^{+0.018}_{-0.017}$	$100\theta_D$	0.160896	$0.16090^{+0.00035}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.24	—	$\Omega_m h^2$	0.14261	$0.1427^{+0.0027}_{-0.0027}$	$z_{\text{eq}}$	3393	$3394^{+65}_{-64}$
$A_{143}^{\text{tSZ}}$	7.06	$5.37^{+3.6}_{-3.8}$	$\Omega_m h^3$	0.09601	$0.09601^{+0.00059}_{-0.00058}$	$k_{\text{eq}}$	0.010354	$0.01036^{+0.00020}_{-0.00019}$
$A_{100}^{\text{PS}}$	254	$259^{+50}_{-50}$	$\sigma_8$	0.8319	$0.831^{+0.026}_{-0.025}$	$100\theta_{\text{eq}}$	0.8146	$0.814^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	41.8	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4666	$0.466^{+0.019}_{-0.019}$	$100\theta_{s,\text{eq}}$	0.4502	$0.4500^{+0.0062}_{-0.0063}$
$A_{143 \times 217}^{\text{PS}}$	39.5	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.622^{+0.020}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	0.07140	$0.07138^{+0.00096}_{-0.00097}$
$A_{217}^{\text{PS}}$	100.2	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0138	$1.013^{+0.031}_{-0.032}$	$H(0.57)$	92.88	$92.88^{+0.56}_{-0.54}$
$A^{\text{kSZ}}$	0.00	$< 7.73$	$\langle d^2 \rangle^{1/2}$	2.506	$2.505^{+0.075}_{-0.075}$	$D_A(0.57)$	1391.5	$1392^{+17}_{-17}$
$A_{100}^{\text{dustTT}}$	7.37	$7.43^{+3.6}_{-3.7}$	$z_{\text{re}}$	10.20	$10.0^{+3.1}_{-3.1}$	$F_{\text{AP}}(0.57)$	0.67683	$0.6769^{+0.0046}_{-0.0044}$
$A_{143}^{\text{dustTT}}$	8.92	$8.90^{+3.6}_{-3.6}$	$10^9 A_s$	2.211	$2.21^{+0.15}_{-0.14}$	$f\sigma_8(0.57)$	0.4845	$0.484^{+0.015}_{-0.015}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.0^{+8.1}_{-8.1}$	$10^9 A_s e^{-2\tau}$	1.8821	$1.882^{+0.024}_{-0.023}$	$\sigma_8(0.57)$	0.6181	$0.617^{+0.020}_{-0.020}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$D_{40}$	1239.2	$1241^{+26}_{-25}$	$f_{2000}^{143}$	28.9	$29^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5727	$5729^{+79}_{-76}$	$f_{2000}^{143 \times 217}$	31.97	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0487	$0.0488^{+0.0098}_{-0.0097}$	$D_{810}$	2536.4	$2536^{+27}_{-26}$	$f_{2000}^{217}$	105.53	$105.8^{+3.6}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0996^{+0.065}_{-0.063}$	$D_{1420}$	815.3	$814.8^{+9.5}_{-9.2}$	$\chi_{\text{lensing}}^2$	8.84	9.85 ( $\nu: 1.0$ )
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.013}_{-0.014}$	$D_{2000}$	230.67	$230.5^{+3.2}_{-3.1}$	$\chi_{\text{lowTEB}}^2$	10496.95	10497.7 ( $\nu: 2.3$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.092}_{-0.092}$	$n_{s,0.002}$	0.9655	$0.9647^{+0.0094}_{-0.0095}$	$\chi_{\text{plik}}^2$	2431.9	2450.5 ( $\nu: 22.8$ )
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.25}_{-0.26}$	$Y_P$	0.245345	$0.24534^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	6.70	19.4 ( $\nu: 15.3$ )
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.074}_{-0.074}$	$Y_P^{\text{BBN}}$	0.246671	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12937.7	12958.1 ( $\nu: 23.0$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.058}$	$10^5 \text{D}/\text{H}$	2.612	$2.612^{+0.057}_{-0.058}$			

Best-fit  $\chi_{\text{eff}}^2 = 12944.37$ ;  $\Delta\chi_{\text{eff}}^2 = -2.80$ ;  $\bar{\chi}_{\text{eff}}^2 = 12977.44$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.68$ ;  $R - 1 = 0.01215$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.84 ( $\Delta -0.93$ ) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.95 ( $\Delta 1.67$ ) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.88 ( $\Delta -3.03$ )

## 6 alpha1

### 6.1 base\_alpha1\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022343	$0.02239_{-0.00048}^{+0.00050}$	$\Omega_m$	0.3177	$0.319_{-0.027}^{+0.029}$	$D_A/\text{Gpc}$	13.873	$13.868_{-0.093}^{+0.094}$
$\Omega_c h^2$	0.12025	$0.1204_{-0.0045}^{+0.0045}$	$\Omega_m h^2$	0.14324	$0.1434_{-0.0043}^{+0.0043}$	$z_{\text{drag}}$	1059.89	$1060.0_{-1.0}^{+1.0}$
$100\theta_{\text{MC}}$	1.04061	$1.0405_{-0.0010}^{+0.0010}$	$\Omega_m h^3$	0.09617	$0.09622_{-0.00093}^{+0.00095}$	$r_{\text{drag}}$	147.06	$147.0_{-1.0}^{+1.1}$
$\tau$	0.0854	$0.088_{-0.041}^{+0.042}$	$\sigma_8$	0.8346	$0.835_{-0.030}^{+0.030}$	$k_D$	0.14088	$0.1410_{-0.0012}^{+0.0011}$
$\alpha_{-1}$	-0.00081	$-0.0025_{-0.0047}^{+0.0035}$	$\sigma_8 \Omega_m^{0.5}$	0.4705	$0.472_{-0.027}^{+0.027}$	$100\theta_D$	0.16074	$0.16066_{-0.00060}^{+0.00063}$
$\ln(10^{10} A_s)$	3.108	$3.115_{-0.080}^{+0.082}$	$\sigma_8 \Omega_m^{0.25}$	0.6266	$0.628_{-0.027}^{+0.027}$	$z_{\text{eq}}$	3408	$3411_{-100}^{+100}$
$n_s$	0.9619	$0.960_{-0.014}^{+0.015}$	$\sigma_8/h^{0.5}$	1.0186	$1.020_{-0.040}^{+0.039}$	$k_{\text{eq}}$	0.010400	$0.01041_{-0.00031}^{+0.00031}$
$y_{\text{cal}}$	1.00029	$1.0004_{-0.0048}^{+0.0049}$	$\langle d^2 \rangle^{1/2}$	2.519	$2.526_{-0.097}^{+0.095}$	$100\theta_{\text{eq}}$	0.8120	$0.812_{-0.019}^{+0.020}$
$A_{217}^{\text{CIB}}$	66.1	$64_{-10}^{+10}$	$z_{\text{re}}$	10.63	$10.8_{-3.7}^{+3.6}$	$100\theta_{\text{s,eq}}$	0.4487	$0.448_{-0.0097}^{+0.010}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$10^9 A_s$	2.237	$2.25_{-0.18}^{+0.19}$	$r_{\text{drag}}/D_V(0.57)$	0.07120	$0.0712_{-0.0015}^{+0.0016}$
$A_{143}^{\text{tSZ}}$	7.11	$5.11_{-3.8}^{+3.7}$	$10^9 A_s e^{-2\tau}$	1.8860	$1.888_{-0.029}^{+0.030}$	$H(0.57)$	92.85	$92.86_{-0.79}^{+0.88}$
$A_{100}^{\text{PS}}$	252	$258_{-60}^{+60}$	$D_{40}$	1222.0	$1216_{-37}^{+38}$	$D_A(0.57)$	1393.6	$1394_{-27}^{+26}$
$A_{143}^{\text{PS}}$	39.0	$43_{-20}^{+20}$	$D_{220}$	5722	$5727_{-80}^{+80}$	$F_{\text{AP}}(0.57)$	0.6776	$0.6778_{-0.0070}^{+0.0071}$
$A_{143 \times 217}^{\text{PS}}$	34	$38_{-20}^{+20}$	$D_{810}$	2536.5	$2537_{-27}^{+27}$	$f\sigma_8(0.57)$	0.4868	$0.487_{-0.019}^{+0.019}$
$A_{217}^{\text{PS}}$	98.4	$97_{-20}^{+20}$	$D_{1420}$	814.6	$814_{-9.9}^{+10}$	$\sigma_8(0.57)$	0.6193	$0.620_{-0.023}^{+0.024}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.53	$230.4_{-3.7}^{+3.7}$	$f_{2000}^{143}$	29.3	$30_{-6}^{+6}$
$A_{100}^{\text{dustTT}}$	7.48	$7.49_{-3.7}^{+3.7}$	$n_{\text{s},0.002}$	0.9619	$0.960_{-0.014}^{+0.015}$	$f_{2000}^{143 \times 217}$	31.98	$32_{-4}^{+4}$
$A_{143}^{\text{dustTT}}$	9.00	$9.02_{-3.6}^{+3.6}$	$Y_{\text{P}}$	0.245381	$0.24540_{-0.00022}^{+0.00022}$	$f_{2000}^{217}$	105.62	$105.8_{-4.0}^{+4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.1_{-8.2}^{+8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.246707	$0.24673_{-0.00022}^{+0.00022}$	$\chi_{\text{lowTEB}}^2$	10494.52	10495.0 ( $\nu$ : 3.3)
$A_{217}^{\text{dustTT}}$	82.0	$82_{-10}^{+10}$	$10^5 \text{D}/\text{H}$	2.596	$2.588_{-0.092}^{+0.091}$	$\chi_{\text{plik}}^2$	764.3	779.7 ( $\nu$ : 17.8)
$c_{100}$	0.99796	$0.9979_{-0.0015}^{+0.0015}$	Age/Gyr	13.810	$13.809_{-0.080}^{+0.076}$	$\chi_{\text{prior}}^2$	1.91	7.28 ( $\nu$ : 6.3)
$c_{217}$	0.99583	$0.9959_{-0.0028}^{+0.0029}$	$z_*$	1089.98	$1089.93_{-0.87}^{+0.85}$	$\chi_{\text{CMB}}^2$	11258.8	11274.7 ( $\nu$ : 16.5)
$H_0$	67.14	$67.1_{-1.9}^{+2.0}$	$r_*$	144.39	$144.3_{-1.0}^{+1.0}$			
$\Omega_\Lambda$	0.6823	$0.681_{-0.029}^{+0.027}$	$100\theta_*$	1.04080	$1.0407_{-0.0010}^{+0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11260.72$ ;  $\Delta\chi_{\text{eff}}^2 = -1.20$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.01$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.19$ ;  $R - 1 = 0.00523$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.52 ( $\Delta$  -1.95) plik\_dx11dr2\_HM\_v18\_TT: 764.30 ( $\Delta$  0.93)

## 6.2 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022397	$0.02246_{-0.00046}^{+0.00045}$	$\Omega_m h^2$	0.14199	$0.1422_{-0.0024}^{+0.0024}$	$r_{\text{drag}}$	147.34	$147.23_{-0.72}^{+0.76}$
$\Omega_c h^2$	0.11895	$0.1191_{-0.0025}^{+0.0025}$	$\Omega_m h^3$	0.09615	$0.09623_{-0.00095}^{+0.00096}$	$k_D$	0.14063	$0.14079_{-0.0010}^{+0.00097}$
$100\theta_{\text{MC}}$	1.04082	$1.04069_{-0.00089}^{+0.00090}$	$\sigma_8$	0.8326	$0.835_{-0.031}^{+0.030}$	$100\theta_D$	0.16074	$0.16064_{-0.00060}^{+0.00064}$
$\tau$	0.0884	$0.093_{-0.040}^{+0.039}$	$\sigma_8 \Omega_m^{0.5}$	0.4634	$0.465_{-0.021}^{+0.021}$	$z_{\text{eq}}$	3378	$3383_{-58}^{+58}$
$\alpha_{-1}$	-0.00060	$-0.0023_{-0.0047}^{+0.0034}$	$\sigma_8 \Omega_m^{0.25}$	0.6211	$0.623_{-0.024}^{+0.024}$	$k_{\text{eq}}$	0.010309	$0.01033_{-0.00018}^{+0.00018}$
$\ln(10^{10} A_s)$	3.110	$3.121_{-0.081}^{+0.079}$	$\sigma_8/h^{0.5}$	1.0119	$1.015_{-0.038}^{+0.037}$	$100\theta_{\text{eq}}$	0.8177	$0.817_{-0.011}^{+0.011}$
$n_s$	0.9654	$0.963_{-0.010}^{+0.011}$	$\langle d^2 \rangle^{1/2}$	2.503	$2.515_{-0.093}^{+0.091}$	$100\theta_{s,\text{eq}}$	0.4516	$0.4511_{-0.0055}^{+0.0056}$
$y_{\text{cal}}$	1.00032	$1.0004_{-0.0047}^{+0.0049}$	$z_{\text{re}}$	10.85	$11.1_{-3.5}^{+3.4}$	$r_{\text{drag}}/D_V(0.57)$	0.07165	$0.07158_{-0.00083}^{+0.00085}$
$A_{217}^{\text{CIB}}$	66.3	$63_{-10}^{+10}$	$10^9 A_s$	2.243	$2.27_{-0.18}^{+0.18}$	$H(0.57)$	93.07	$93.07_{-0.53}^{+0.57}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$10^9 A_s e^{-2\tau}$	1.8795	$1.882_{-0.024}^{+0.024}$	$D_A(0.57)$	1386.0	$1387_{-16}^{+15}$
$A_{143}^{\text{tSZ}}$	7.09	$5.17_{-3.8}^{+3.7}$	$D_{40}$	1219.1	$1213_{-37}^{+38}$	$F_{\text{AP}}(0.57)$	0.67557	$0.6758_{-0.0038}^{+0.0038}$
$A_{100}^{\text{PS}}$	252	$257_{-50}^{+60}$	$D_{220}$	5725	$5731_{-80}^{+79}$	$f\sigma_8(0.57)$	0.4836	$0.485_{-0.018}^{+0.018}$
$A_{143}^{\text{PS}}$	38.4	$42_{-20}^{+20}$	$D_{810}$	2534.9	$2536_{-26}^{+27}$	$\sigma_8(0.57)$	0.6199	$0.621_{-0.023}^{+0.023}$
$A_{143 \times 217}^{\text{PS}}$	33	$38_{-20}^{+20}$	$D_{1420}$	815.1	$814.8_{-9.6}^{+9.8}$	$f_{2000}^{143}$	29.2	$29_{-6}^{+6}$
$A_{217}^{\text{PS}}$	97.5	$97_{-20}^{+20}$	$D_{2000}$	230.77	$230.7_{-3.5}^{+3.6}$	$f_{2000}^{143 \times 217}$	31.81	$32_{-4}^{+4}$
$A^{\text{kSZ}}$	0.0	—	$n_{s,0.002}$	0.9654	$0.963_{-0.010}^{+0.011}$	$f_{2000}^{217}$	105.46	$105.5_{-3.9}^{+4.0}$
$A_{100}^{\text{dustTT}}$	7.40	$7.47_{-3.7}^{+3.7}$	$Y_{\text{P}}$	0.245405	$0.24543_{-0.00021}^{+0.00020}$	$\chi_{\text{lowTEB}}^2$	10494.69	10495.3 ( $\nu$ : 3.7)
$A_{143}^{\text{dustTT}}$	8.94	$9.02_{-3.6}^{+3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246731	$0.24676_{-0.00021}^{+0.00020}$	$\chi_{\text{plik}}^2$	764.4	779.2 ( $\nu$ : 47.2)
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.0_{-8.3}^{+8.2}$	$10^5 \text{D}/\text{H}$	2.586	$2.575_{-0.083}^{+0.087}$	$\chi_{6\text{DF}}^2$	0.022	0.073 ( $\nu$ : 0.0)
$A_{217}^{\text{dustTT}}$	82.0	$82_{-10}^{+10}$	Age/Gyr	13.793	$13.792_{-0.059}^{+0.058}$	$\chi_{\text{MGS}}^2$	1.28	1.27 ( $\nu$ : 0.1)
$c_{100}$	0.99793	$0.9979_{-0.0015}^{+0.0015}$	$z_*$	1089.79	$1089.74_{-0.65}^{+0.65}$	$\chi_{\text{DR11CMass}}^2$	2.47	3.00 ( $\nu$ : 0.3)
$c_{217}$	0.99588	$0.9958_{-0.0028}^{+0.0028}$	$r_*$	144.68	$144.59_{-0.65}^{+0.68}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	0.85 ( $\nu$ : 0.2)
$H_0$	67.71	$67.7_{-1.1}^{+1.2}$	$100\theta_*$	1.04101	$1.04087_{-0.00089}^{+0.00091}$	$\chi_{\text{prior}}^2$	1.96	7.31 ( $\nu$ : 6.4)
$\Omega_\Lambda$	0.6903	$0.689_{-0.015}^{+0.015}$	$D_A/\text{Gpc}$	13.898	$13.892_{-0.063}^{+0.064}$	$\chi_{\text{CMB}}^2$	11259.1	11274.5 ( $\nu$ : 46.2)
$\Omega_m$	0.3097	$0.311_{-0.015}^{+0.015}$	$z_{\text{drag}}$	1059.93	$1060.1_{-1.1}^{+1.0}$	$\chi_{\text{BAO}}^2$	4.38	5.20 ( $\nu$ : 0.7)

Best-fit  $\chi_{\text{eff}}^2 = 11265.42$ ;  $\Delta\chi_{\text{eff}}^2 = -1.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11286.95$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.58$ ;  $R - 1 = 0.00775$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMass: 2.47 ( $\Delta$  0.02) DR11LOWZ: 0.61 ( $\Delta$  -0.00) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10494.69 ( $\Delta$  -1.73) plik\_dx11dr2\_HM\_v18\_TT: 764.38 ( $\Delta$  0.78)

### 6.3 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022369	$0.02243_{-0.00048}^{+0.00048}$	$\Omega_m$	0.3142	$0.315_{-0.025}^{+0.026}$	$D_A/\text{Gpc}$	13.883	$13.879_{-0.088}^{+0.089}$
$\Omega_c h^2$	0.11969	$0.1198_{-0.0041}^{+0.0042}$	$\Omega_m h^2$	0.14271	$0.1429_{-0.0040}^{+0.0040}$	$z_{\text{drag}}$	1059.89	$1060.0_{-1.0}^{+1.0}$
$100\theta_{\text{MC}}$	1.04072	$1.0406_{-0.0010}^{+0.0010}$	$\Omega_m h^3$	0.09617	$0.09623_{-0.00094}^{+0.00095}$	$r_{\text{drag}}$	147.17	$147.1_{-0.99}^{+1.0}$
$\tau$	0.0874	$0.091_{-0.041}^{+0.041}$	$\sigma_8$	0.8342	$0.835_{-0.031}^{+0.030}$	$k_D$	0.14078	$0.1409_{-0.0012}^{+0.0011}$
$\alpha_{-1}$	-0.00077	$-0.0024_{-0.0048}^{+0.0036}$	$\sigma_8 \Omega_m^{0.5}$	0.4676	$0.469_{-0.026}^{+0.026}$	$100\theta_D$	0.16074	$0.16064_{-0.00060}^{+0.00063}$
$\ln(10^{10} A_s)$	3.110	$3.118_{-0.081}^{+0.081}$	$\sigma_8 \Omega_m^{0.25}$	0.6246	$0.626_{-0.027}^{+0.026}$	$z_{\text{eq}}$	3395	$3399_{-95}^{+95}$
$n_s$	0.9633	$0.961_{-0.014}^{+0.014}$	$\sigma_8/h^{0.5}$	1.0162	$1.018_{-0.040}^{+0.039}$	$k_{\text{eq}}$	0.010362	$0.01037_{-0.00029}^{+0.00029}$
$y_{\text{cal}}$	1.00032	$1.0004_{-0.0048}^{+0.0049}$	$\langle d^2 \rangle^{1/2}$	2.514	$2.521_{-0.096}^{+0.094}$	$100\theta_{\text{eq}}$	0.8144	$0.814_{-0.017}^{+0.018}$
$A_{217}^{\text{CIB}}$	66.5	$64_{-10}^{+10}$	$z_{\text{re}}$	10.78	$11.0_{-3.6}^{+3.5}$	$100\theta_{s,\text{eq}}$	0.4500	$0.4497_{-0.0090}^{+0.0093}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$10^9 A_s$	2.243	$2.26_{-0.18}^{+0.19}$	$r_{\text{drag}}/D_V(0.57)$	0.07140	$0.0714_{-0.0014}^{+0.0015}$
$A_{143}^{\text{tSZ}}$	7.15	$5.13_{-3.8}^{+3.7}$	$10^9 A_s e^{-2\tau}$	1.8833	$1.886_{-0.028}^{+0.029}$	$H(0.57)$	92.95	$92.96_{-0.76}^{+0.83}$
$A_{100}^{\text{PS}}$	252	$257_{-60}^{+38}$	$D_{40}$	1220.2	$1215_{-37}^{+38}$	$D_A(0.57)$	1390.3	$1390_{-25}^{+25}$
$A_{143}^{\text{PS}}$	39.0	$43_{-20}^{+20}$	$D_{220}$	5723	$5729_{-81}^{+80}$	$F_{\text{AP}}(0.57)$	0.6767	$0.6769_{-0.0064}^{+0.0065}$
$A_{143 \times 217}^{\text{PS}}$	34	$38_{-20}^{+20}$	$D_{810}$	2535.8	$2536_{-27}^{+27}$	$f\sigma_8(0.57)$	0.4857	$0.486_{-0.019}^{+0.019}$
$A_{217}^{\text{PS}}$	97.8	$97_{-20}^{+20}$	$D_{1420}$	814.8	$814.5_{-9.9}^{+9.8}$	$\sigma_8(0.57)$	0.6199	$0.621_{-0.023}^{+0.024}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.63	$230.6_{-3.7}^{+3.7}$	$f_{2000}^{143}$	29.3	$30_{-6}^{+6}$
$A_{100}^{\text{dustTT}}$	7.42	$7.48_{-3.7}^{+3.7}$	$n_{s,0.002}$	0.9633	$0.961_{-0.014}^{+0.014}$	$f_{2000}^{143 \times 217}$	32.00	$32_{-4}^{+4}$
$A_{143}^{\text{dustTT}}$	9.05	$9.03_{-3.6}^{+3.6}$	$Y_P$	0.245392	$0.24542_{-0.00022}^{+0.00021}$	$f_{2000}^{217}$	105.62	$105.7_{-4.0}^{+4.1}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.0_{-8.2}^{+8.2}$	$Y_P^{\text{BBN}}$	0.246719	$0.24674_{-0.00022}^{+0.00021}$	$\chi_{\text{lowTEB}}^2$	10494.57	10495.1 ( $\nu$ : 3.5)
$A_{217}^{\text{dustTT}}$	82.0	$82_{-10}^{+10}$	$10^5 \text{D}/\text{H}$	2.592	$2.581_{-0.089}^{+0.091}$	$\chi_{\text{plik}}^2$	764.2	780 ( $\nu$ : 78.6)
$c_{100}$	0.99793	$0.9979_{-0.0015}^{+0.0015}$	Age/Gyr	13.803	$13.801_{-0.076}^{+0.073}$	$\chi_{\text{JLA}}^2$	706.83	707.00 ( $\nu$ : 0.1)
$c_{217}$	0.99591	$0.9959_{-0.0028}^{+0.0028}$	$z_*$	1089.89	$1089.84_{-0.82}^{+0.82}$	$\chi_{\text{prior}}^2$	2.02	7.30 ( $\nu$ : 7.2)
$H_0$	67.39	$67.4_{-1.8}^{+1.9}$	$r_*$	144.51	$144.44_{-0.97}^{+0.98}$	$\chi_{\text{CMB}}^2$	11258.8	11270 ( $\nu$ : 78.5)
$\Omega_\Lambda$	0.6858	$0.685_{-0.026}^{+0.025}$	$100\theta_*$	1.04089	$1.0408_{-0.00099}^{+0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11967.60$ ;  $\Delta\chi_{\text{eff}}^2 = -1.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 11989.25$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.64$ ;  $R - 1 = 0.00412$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.57 ( $\Delta$  -1.88) plik\_dx11dr2\_HM\_v18\_TT: 764.18 ( $\Delta$  0.76) SN - JLA December\_2013: 706.83 ( $\Delta$  0.07)



## 6.4 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022335	$0.02238^{+0.00050}_{-0.00049}$	$\Omega_m$	0.3090	$0.310^{+0.026}_{-0.027}$	$D_A/\text{Gpc}$	13.906	$13.901^{+0.085}_{-0.085}$
$\Omega_c h^2$	0.11880	$0.1189^{+0.0041}_{-0.0042}$	$\Omega_m h^2$	0.14178	$0.1419^{+0.0039}_{-0.0040}$	$z_{\text{drag}}$	1059.78	$1059.9^{+1.0}_{-1.0}$
$100\theta_{\text{MC}}$	1.04087	$1.0408^{+0.0010}_{-0.0010}$	$\Omega_m h^3$	0.09603	$0.09609^{+0.00093}_{-0.00092}$	$r_{\text{drag}}$	147.45	$147.37^{+0.92}_{-0.92}$
$\tau$	0.0694	$0.071^{+0.038}_{-0.033}$	$\sigma_8$	0.8166	$0.817^{+0.019}_{-0.019}$	$k_D$	0.14046	$0.1406^{+0.0010}_{-0.0011}$
$\alpha_{-1}$	-0.00039	$-0.0018^{+0.0030}_{-0.0043}$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.454^{+0.017}_{-0.018}$	$100\theta_D$	0.16084	$0.16076^{+0.00063}_{-0.00058}$
$\ln(10^{10} A_s)$	3.071	$3.076^{+0.066}_{-0.061}$	$\sigma_8 \Omega_m^{0.25}$	0.6089	$0.609^{+0.015}_{-0.016}$	$z_{\text{eq}}$	3373	$3376^{+93}_{-96}$
$n_s$	0.9656	$0.963^{+0.014}_{-0.014}$	$\sigma_8/h^{0.5}$	0.9923	$0.992^{+0.022}_{-0.022}$	$k_{\text{eq}}$	0.010293	$0.01030^{+0.00028}_{-0.00029}$
$y_{\text{cal}}$	1.00009	$1.0001^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.455	$2.460^{+0.053}_{-0.054}$	$100\theta_{\text{eq}}$	0.8185	$0.818^{+0.019}_{-0.017}$
$A_{217}^{\text{CIB}}$	67.4	$64^{+10}_{-10}$	$z_{\text{re}}$	9.14	$9.24^{+3.1}_{-3.2}$	$100\theta_{\text{s,eq}}$	0.4521	$0.4518^{+0.0097}_{-0.0090}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.156	$2.17^{+0.15}_{-0.13}$	$r_{\text{drag}}/D_V(0.57)$	0.07170	$0.0717^{+0.0014}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	7.19	$4.97^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8769	$1.879^{+0.027}_{-0.027}$	$H(0.57)$	93.05	$93.07^{+0.88}_{-0.80}$
$A_{100}^{\text{PS}}$	254	$261^{+50}_{-50}$	$D_{40}$	1213.5	$1207^{+41}_{-37}$	$D_A(0.57)$	1386.0	$1386^{+25}_{-26}$
$A_{143}^{\text{PS}}$	39.2	$44^{+20}_{-20}$	$D_{220}$	5719	$5724^{+81}_{-79}$	$F_{\text{AP}}(0.57)$	0.6754	$0.6756^{+0.0065}_{-0.0064}$
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$D_{810}$	2533.7	$2534^{+26}_{-26}$	$f\sigma_8(0.57)$	0.4742	$0.474^{+0.011}_{-0.011}$
$A_{217}^{\text{PS}}$	97.0	$96^{+20}_{-20}$	$D_{1420}$	814.8	$814.2^{+9.8}_{-10}$	$\sigma_8(0.57)$	0.6081	$0.608^{+0.018}_{-0.017}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.16	$229.9^{+3.6}_{-3.7}$	$f_{2000}^{143}$	30.0	$31^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.40	$7.51^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	0.9656	$0.963^{+0.014}_{-0.014}$	$f_{2000}^{143 \times 217}$	32.55	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.10	$9.13^{+3.8}_{-3.7}$	$Y_{\text{P}}$	0.245377	$0.24540^{+0.00022}_{-0.00023}$	$f_{2000}^{217}$	106.08	$106.2^{+4.0}_{-4.1}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.3}_{-8.8}$	$Y_{\text{P}}^{\text{BBN}}$	0.246704	$0.24672^{+0.00022}_{-0.00023}$	$\chi_{\text{lensing}}^2$	9.43	10.2 ( $\nu: 1.6$ )
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^5 \text{D}/\text{H}$	2.598	$2.589^{+0.095}_{-0.092}$	$\chi_{\text{lowTEB}}^2$	10493.35	10493.7 ( $\nu: 2.0$ )
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.797	$13.795^{+0.075}_{-0.079}$	$\chi_{\text{plik}}^2$	766.9	782.1 ( $\nu: 18.3$ )
$c_{217}$	0.99596	$0.9959^{+0.0028}_{-0.0027}$	$z_*$	1089.86	$1089.81^{+0.83}_{-0.88}$	$\chi_{\text{prior}}^2$	2.07	7.44 ( $\nu: 6.8$ )
$H_0$	67.73	$67.7^{+1.9}_{-1.8}$	$r_*$	144.77	$144.71^{+0.94}_{-0.94}$	$\chi_{\text{CMB}}^2$	11269.7	11286.0 ( $\nu: 17.9$ )
$\Omega_\Lambda$	0.6910	$0.690^{+0.027}_{-0.026}$	$100\theta_*$	1.04106	$1.0410^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11271.77$ ;  $\Delta\chi_{\text{eff}}^2 = -0.66$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.45$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.15$ ;  $R - 1 = 0.01968$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.43 ( $\Delta$  0.25) lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.35 ( $\Delta$  -1.50) plik\_dx11dr2\_HM\_v18\_TT: 766.92 ( $\Delta$  0.60)

## 6.5 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022385	$0.02243^{+0.00049}_{-0.00048}$	$\Omega_m$	0.3131	$0.315^{+0.027}_{-0.026}$	$D_A/\text{Gpc}$	13.886	$13.879^{+0.091}_{-0.091}$
$\Omega_c h^2$	0.11952	$0.1197^{+0.0043}_{-0.0043}$	$\Omega_m h^2$	0.14255	$0.1428^{+0.0041}_{-0.0041}$	$z_{\text{drag}}$	1059.93	$1060.1^{+1.0}_{-1.0}$
$100\theta_{\text{MC}}$	1.04074	$1.0406^{+0.0010}_{-0.0010}$	$\Omega_m h^3$	0.09618	$0.09624^{+0.00096}_{-0.00094}$	$r_{\text{drag}}$	147.20	$147.1^{+1.0}_{-1.0}$
$\tau$	0.0879	$0.091^{+0.042}_{-0.041}$	$\sigma_8$	0.8340	$0.835^{+0.030}_{-0.030}$	$k_D$	0.14076	$0.1409^{+0.0011}_{-0.0012}$
$\alpha_{-1}$	-0.00076	$-0.0024^{+0.0035}_{-0.0048}$	$\sigma_8 \Omega_m^{0.5}$	0.4667	$0.469^{+0.026}_{-0.027}$	$100\theta_D$	0.16073	$0.16063^{+0.00063}_{-0.00060}$
$\ln(10^{10} A_s)$	3.111	$3.119^{+0.081}_{-0.081}$	$\sigma_8 \Omega_m^{0.25}$	0.6239	$0.626^{+0.026}_{-0.027}$	$z_{\text{eq}}$	3391	$3398^{+99}_{-98}$
$n_s$	0.9637	$0.961^{+0.014}_{-0.014}$	$\sigma_8/h^{0.5}$	1.0153	$1.018^{+0.039}_{-0.040}$	$k_{\text{eq}}$	0.010350	$0.01037^{+0.00030}_{-0.00030}$
$y_{\text{cal}}$	1.00027	$1.0004^{+0.0049}_{-0.0047}$	$\langle d^2 \rangle^{1/2}$	2.512	$2.521^{+0.094}_{-0.095}$	$100\theta_{\text{eq}}$	0.8152	$0.814^{+0.019}_{-0.018}$
$A_{217}^{\text{CIB}}$	66.9	$64^{+10}_{-10}$	$z_{\text{re}}$	10.82	$11.0^{+3.5}_{-3.7}$	$100\theta_{s,\text{eq}}$	0.4504	$0.4498^{+0.0097}_{-0.0093}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.09	—	$10^9 A_s$	2.244	$2.26^{+0.19}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	0.07146	$0.0714^{+0.0015}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	7.16	$5.15^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8825	$1.885^{+0.029}_{-0.028}$	$H(0.57)$	92.98	$92.98^{+0.86}_{-0.78}$
$A_{100}^{\text{PS}}$	251	$257^{+38}_{-50}$	$D_{40}$	1220.0	$1215^{+38}_{-37}$	$D_A(0.57)$	1389.1	$1390^{+25}_{-26}$
$A_{143}^{\text{PS}}$	39.1	$43^{+20}_{-20}$	$D_{220}$	5725	$5729^{+80}_{-80}$	$F_{\text{AP}}(0.57)$	0.6764	$0.6768^{+0.0067}_{-0.0067}$
$A_{143 \times 217}^{\text{PS}}$	34	$38^{+20}_{-20}$	$D_{810}$	2535.7	$2536^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4853	$0.486^{+0.019}_{-0.019}$
$A_{217}^{\text{PS}}$	97.0	$97^{+20}_{-20}$	$D_{1420}$	814.9	$814.6^{+9.9}_{-9.8}$	$\sigma_8(0.57)$	0.6200	$0.621^{+0.024}_{-0.023}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.68	$230.6^{+3.7}_{-3.7}$	$f_{2000}^{143}$	29.2	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.47	$7.48^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9637	$0.961^{+0.014}_{-0.014}$	$f_{2000}^{143 \times 217}$	31.90	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.07	$9.02^{+3.7}_{-3.6}$	$Y_P$	0.245399	$0.24542^{+0.00022}_{-0.00022}$	$f_{2000}^{217}$	105.45	$105.6^{+4.1}_{-4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.0^{+8.2}_{-8.2}$	$Y_P^{\text{BBN}}$	0.246726	$0.24675^{+0.00022}_{-0.00022}$	$\chi_{\text{lowTEB}}^2$	10494.61	10495.2 ( $\nu$ : 3.6)
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^5 \text{D}/\text{H}$	2.589	$2.580^{+0.091}_{-0.090}$	$\chi_{\text{plik}}^2$	764.2	779.6 ( $\nu$ : 35.6)
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.799	$13.799^{+0.074}_{-0.077}$	$\chi_{\text{H070p6}}^2$	0.88	1.00 ( $\nu$ : 0.2)
$c_{217}$	0.99590	$0.9959^{+0.0028}_{-0.0028}$	$z_*$	1089.86	$1089.82^{+0.83}_{-0.85}$	$\chi_{\text{prior}}^2$	2.04	7.26 ( $\nu$ : 6.3)
$H_0$	67.47	$67.4^{+1.9}_{-1.9}$	$r_*$	144.54	$144.5^{+1.0}_{-1.0}$	$\chi_{\text{CMB}}^2$	11258.8	11274.8 ( $\nu$ : 34.5)
$\Omega_\Lambda$	0.6869	$0.685^{+0.026}_{-0.027}$	$100\theta_*$	1.04092	$1.0408^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.72$ ;  $\Delta\chi_{\text{eff}}^2 = -1.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.07$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.37$ ;  $R - 1 = 0.00545$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.61 ( $\Delta$  -1.71) plik\_dx11dr2\_HM\_v18\_TT: 764.18 ( $\Delta$  0.52) Hubble - H070p6: 0.88 ( $\Delta$  0.05)

## 6.6 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022360	$0.02242_{-0.00046}^{+0.00043}$	$\Omega_m h^3$	0.09603	$0.09610_{-0.00092}^{+0.00090}$	$100\theta_D$	0.16083	$0.16073_{-0.00056}^{+0.00064}$
$\Omega_c h^2$	0.11837	$0.1184_{-0.0024}^{+0.0024}$	$\sigma_8$	0.8171	$0.817_{-0.018}^{+0.019}$	$z_{\text{eq}}$	3363	$3366_{-55}^{+55}$
$100\theta_{\text{MC}}$	1.04095	$1.04083_{-0.00087}^{+0.00092}$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.453_{-0.013}^{+0.013}$	$k_{\text{eq}}$	0.010264	$0.01027_{-0.00017}^{+0.00017}$
$\tau$	0.0718	$0.074_{-0.028}^{+0.029}$	$\sigma_8 \Omega_m^{0.25}$	0.6079	$0.608_{-0.014}^{+0.014}$	$100\theta_{\text{eq}}$	0.8204	$0.820_{-0.010}^{+0.011}$
$\alpha_{-1}$	-0.00043	$-0.0017_{-0.0044}^{+0.0031}$	$\sigma_8/h^{0.5}$	0.9914	$0.992_{-0.022}^{+0.022}$	$100\theta_{\text{s,eq}}$	0.4531	$0.4528_{-0.0052}^{+0.0054}$
$\ln(10^{10} A_s)$	3.075	$3.081_{-0.055}^{+0.054}$	$\langle d^2 \rangle^{1/2}$	2.454	$2.458_{-0.053}^{+0.053}$	$r_{\text{drag}}/D_V(0.57)$	0.07186	$0.07182_{-0.00079}^{+0.00083}$
$n_s$	0.9664	$0.964_{-0.010}^{+0.011}$	$z_{\text{re}}$	9.36	$9.53_{-2.7}^{+2.4}$	$H(0.57)$	93.13	$93.15_{-0.52}^{+0.55}$
$y_{\text{cal}}$	1.0002	$1.0001_{-0.0049}^{+0.0051}$	$10^9 A_s$	2.166	$2.18_{-0.12}^{+0.12}$	$D_A(0.57)$	1383.4	$1383_{-15}^{+15}$
$A_{217}^{\text{CIB}}$	67.6	$64_{-10}^{+10}$	$10^9 A_s e^{-2\tau}$	1.8760	$1.877_{-0.023}^{+0.024}$	$F_{\text{AP}}(0.57)$	0.67473	$0.6748_{-0.0037}^{+0.0036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1212.5	$1206_{-37}^{+40}$	$f\sigma_8(0.57)$	0.4737	$0.474_{-0.010}^{+0.011}$
$A_{143}^{\text{tSZ}}$	7.22	$4.98_{-3.8}^{+3.8}$	$D_{220}$	5723	$5726_{-80}^{+79}$	$\sigma_8(0.57)$	0.6091	$0.609_{-0.014}^{+0.015}$
$A_{100}^{\text{PS}}$	254	$261_{-50}^{+50}$	$D_{810}$	2534.1	$2533_{-27}^{+27}$	$f_{2000}^{143}$	29.9	$30_{-6}^{+6}$
$A_{143}^{\text{PS}}$	39.0	$43_{-20}^{+20}$	$D_{1420}$	815.1	$814.4_{-9.9}^{+9.7}$	$f_{2000}^{143 \times 217}$	32.44	$33_{-4}^{+4}$
$A_{143 \times 217}^{\text{PS}}$	32	$38_{-20}^{+20}$	$D_{2000}$	230.31	$230.1_{-3.4}^{+3.4}$	$f_{2000}^{217}$	106.03	$106.1_{-4.0}^{+4.0}$
$A_{217}^{\text{PS}}$	96.7	$96_{-20}^{+20}$	$n_{\text{s},0.002}$	0.9664	$0.964_{-0.010}^{+0.011}$	$\chi_{\text{lensing}}^2$	9.27	10.0 ( $\nu: 1.4$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245388	$0.24541_{-0.00021}^{+0.00019}$	$\chi_{\text{lowTEB}}^2$	10493.30	10493.6 ( $\nu: 1.8$ )
$A_{100}^{\text{dustTT}}$	7.49	$7.54_{-3.8}^{+3.8}$	$Y_{\text{P}}^{\text{BBN}}$	0.246715	$0.24674_{-0.00021}^{+0.00019}$	$\chi_{\text{plik}}^2$	767.2	783 ( $\nu: 242.8$ )
$A_{143}^{\text{dustTT}}$	9.07	$9.14_{-3.7}^{+3.7}$	$10^5 \text{D/H}$	2.593	$2.582_{-0.080}^{+0.087}$	$\chi_{\text{H070p6}}^2$	0.65	0.68 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2_{-8.3}^{+8.7}$	Age/Gyr	13.791	$13.788_{-0.058}^{+0.057}$	$\chi_{\text{JLA}}^2$	706.621	706.67 ( $\nu: 0.0$ )
$A_{217}^{\text{dustTT}}$	82.0	$82_{-10}^{+10}$	$z_*$	1089.79	$1089.72_{-0.63}^{+0.66}$	$\chi_{\text{6DF}}^2$	0.003	0.042 ( $\nu: 0.0$ )
$c_{100}$	0.99793	$0.9979_{-0.0015}^{+0.0015}$	$r_*$	144.86	$144.80_{-0.62}^{+0.63}$	$\chi_{\text{MGS}}^2$	1.54	1.57 ( $\nu: 0.2$ )
$c_{217}$	0.99602	$0.9960_{-0.0027}^{+0.0029}$	$100\theta_*$	1.04113	$1.04101_{-0.00086}^{+0.00092}$	$\chi_{\text{DR11CMass}}^2$	2.42	2.84 ( $\nu: 0.2$ )
$H_0$	67.93	$67.9_{-1.1}^{+1.1}$	$D_A/\text{Gpc}$	13.914	$13.910_{-0.060}^{+0.060}$	$\chi_{\text{DR11LOWZ}}^2$	0.37	0.53 ( $\nu: 0.1$ )
$\Omega_\Lambda$	0.6936	$0.693_{-0.014}^{+0.014}$	$z_{\text{drag}}$	1059.78	$1059.93_{-1.0}^{+0.96}$	$\chi_{\text{prior}}^2$	2.09	7.53 ( $\nu: 7.6$ )
$\Omega_m$	0.3064	$0.307_{-0.014}^{+0.014}$	$r_{\text{drag}}$	147.54	$147.46_{-0.68}^{+0.71}$	$\chi_{\text{CMB}}^2$	11269.7	11290 ( $\nu: 246.9$ )
$\Omega_m h^2$	0.14137	$0.1415_{-0.0023}^{+0.0023}$	$k_D$	0.14039	$0.14052_{-0.00097}^{+0.00092}$	$\chi_{\text{BAO}}^2$	4.34	4.98 ( $\nu: 0.4$ )

Best-fit  $\chi_{\text{eff}}^2 = 11983.43$ ;  $\Delta\chi_{\text{eff}}^2 = -0.64$ ;  $\bar{\chi}_{\text{eff}}^2 = 12006.07$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.05$ ;  $R - 1 = 0.02161$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta 0.00$ ) MGS: 1.54 ( $\Delta 0.00$ ) DR11CMass: 2.42 ( $\Delta 0.01$ ) DR11LOWZ: 0.37 ( $\Delta 0.00$ ) CMB - smica\_g30\_ftl\_full\_pp: 9.27 ( $\Delta 0.01$ ) lowL\_SMW\_70\_dx11d\_2014\_10\_03.v  
10493.30 ( $\Delta -1.61$ ) plik\_dx11dr2\_HM\_v18\_TT: 767.16 ( $\Delta 1.03$ ) Hubble - H070p6: 0.65 ( $\Delta -0.02$ ) SN - JLA December\_2013: 706.62 ( $\Delta -0.01$ )

## 6.7 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02239^{+0.00049}_{-0.00047}$	$\Omega_m$	$0.319^{+0.029}_{-0.027}$	$D_A/\text{Gpc}$	$13.868^{+0.094}_{-0.093}$
$\Omega_c h^2$	$0.1203^{+0.0045}_{-0.0045}$	$\Omega_m h^2$	$0.1434^{+0.0043}_{-0.0042}$	$z_{\text{drag}}$	$1060.0^{+1.1}_{-0.99}$
$100\theta_{\text{MC}}$	$1.0405^{+0.0010}_{-0.0010}$	$\Omega_m h^3$	$0.09623^{+0.00095}_{-0.00093}$	$r_{\text{drag}}$	$147.0^{+1.1}_{-1.0}$
$\tau$	$0.089^{+0.040}_{-0.041}$	$\sigma_8$	$0.836^{+0.030}_{-0.028}$	$k_D$	$0.1410^{+0.0011}_{-0.0012}$
$\alpha_{-1}$	$-0.0025^{+0.0035}_{-0.0047}$	$\sigma_8 \Omega_m^{0.5}$	$0.472^{+0.028}_{-0.027}$	$100\theta_D$	$0.16066^{+0.00061}_{-0.00060}$
$\ln(10^{10} A_s)$	$3.116^{+0.078}_{-0.079}$	$\sigma_8 \Omega_m^{0.25}$	$0.628^{+0.027}_{-0.026}$	$z_{\text{eq}}$	$3411^{+100}_{-100}$
$n_s$	$0.960^{+0.015}_{-0.014}$	$\sigma_8/h^{0.5}$	$1.020^{+0.039}_{-0.039}$	$k_{\text{eq}}$	$0.01041^{+0.00031}_{-0.00031}$
$y_{\text{cal}}$	$1.0004^{+0.0049}_{-0.0047}$	$\langle d^2 \rangle^{1/2}$	$2.527^{+0.094}_{-0.093}$	$100\theta_{\text{eq}}$	$0.812^{+0.019}_{-0.019}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$z_{\text{re}}$	$10.9^{+3.2}_{-3.4}$	$100\theta_{\text{s,eq}}$	$0.448^{+0.010}_{-0.0097}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.26^{+0.18}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	$0.0712^{+0.0015}_{-0.0015}$
$A_{143}^{\text{tSZ}}$	$5.12^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	$1.888^{+0.030}_{-0.029}$	$H(0.57)$	$92.86^{+0.87}_{-0.79}$
$A_{100}^{\text{PS}}$	$258^{+60}_{-50}$	$D_{40}$	$1216^{+38}_{-37}$	$D_A(0.57)$	$1394^{+26}_{-27}$
$A_{143}^{\text{PS}}$	$43^{+20}_{-20}$	$D_{220}$	$5727^{+80}_{-81}$	$F_{\text{AP}}(0.57)$	$0.6778^{+0.0071}_{-0.0069}$
$A_{143 \times 217}^{\text{PS}}$	$38^{+20}_{-20}$	$D_{810}$	$2537^{+27}_{-27}$	$f\sigma_8(0.57)$	$0.488^{+0.019}_{-0.019}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$D_{1420}$	$814.1^{+9.9}_{-9.9}$	$\sigma_8(0.57)$	$0.620^{+0.023}_{-0.023}$
$A^{\text{kSZ}}$	—	$D_{2000}$	$230.4^{+3.7}_{-3.6}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	$7.48^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	$0.960^{+0.015}_{-0.014}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	$9.02^{+3.7}_{-3.6}$	$Y_{\text{P}}$	$0.24540^{+0.00022}_{-0.00022}$	$f_{2000}^{217}$	$105.8^{+4.1}_{-4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0^{+8.2}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24673^{+0.00022}_{-0.00022}$	$\chi_{\text{lowTEB}}^2$	$10495.0 (\nu: 3.3)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^5 D/H$	$2.587^{+0.091}_{-0.091}$	$\chi_{\text{plik}}^2$	$779.7 (\nu: 32.4)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$\text{Age}/\text{Gyr}$	$13.808^{+0.076}_{-0.079}$	$\chi_{\text{prior}}^2$	$7.24 (\nu: 6.3)$
$c_{217}$	$0.9959^{+0.0028}_{-0.0028}$	$z_*$	$1089.92^{+0.85}_{-0.86}$	$\chi_{\text{CMB}}^2$	$11274.7 (\nu: 31.1)$
$H_0$	$67.1^{+2.0}_{-1.9}$	$r_*$	$144.3^{+1.0}_{-1.0}$		
$\Omega_\Lambda$	$0.681^{+0.027}_{-0.029}$	$100\theta_*$	$1.0407^{+0.0010}_{-0.0010}$		

$$\bar{\chi}_{\text{eff}}^2 = 11281.96; \Delta \bar{\chi}_{\text{eff}}^2 = 0.32; R - 1 = 0.00567$$

## 6.8 base\_alpha1\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022269	$0.02225^{+0.00031}_{-0.00030}$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.16}$	Age/Gyr	13.806	$13.805^{+0.056}_{-0.057}$
$\Omega_c h^2$	0.11941	$0.1192^{+0.0037}_{-0.0035}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	$z_*$	1090.00	$1090.01^{+0.59}_{-0.59}$
$100\theta_{\text{MC}}$	1.04090	$1.04096^{+0.00086}_{-0.00095}$	$A_{143 \times 217}^{\text{dustTE}}$	0.334	$0.34^{+0.16}_{-0.16}$	$r_*$	144.66	$144.74^{+0.83}_{-0.90}$
$\tau$	0.0819	$0.080^{+0.034}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.665	$1.67^{+0.50}_{-0.49}$	$100\theta_*$	1.04109	$1.04115^{+0.00086}_{-0.00095}$
$\alpha_{-1}$	0.00004	$0.0003^{+0.0016}_{-0.0012}$	$c_{100}$	0.99818	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.895	$13.901^{+0.074}_{-0.079}$
$\ln(10^{10} A_s)$	3.098	$3.092^{+0.065}_{-0.066}$	$c_{217}$	0.99595	$0.9960^{+0.0029}_{-0.0029}$	$z_{\text{drag}}$	1059.67	$1059.59^{+0.69}_{-0.64}$
$n_s$	0.9667	$0.967^{+0.013}_{-0.014}$	$H_0$	67.47	$67.6^{+1.6}_{-1.6}$	$r_{\text{drag}}$	147.36	$147.44^{+0.83}_{-0.91}$
$y_{\text{cal}}$	1.00029	$1.0005^{+0.0050}_{-0.0049}$	$\Omega_\Lambda$	0.6873	$0.688^{+0.021}_{-0.023}$	$k_D$	0.14051	$0.14040^{+0.00097}_{-0.00088}$
$A_{217}^{\text{CIB}}$	65.3	$64^{+10}_{-10}$	$\Omega_m$	0.3127	$0.312^{+0.023}_{-0.021}$	$100\theta_D$	0.160912	$0.16096^{+0.00041}_{-0.00043}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.23	—	$\Omega_m h^2$	0.14233	$0.1421^{+0.0036}_{-0.0034}$	$z_{\text{eq}}$	3386	$3380^{+86}_{-81}$
$A_{143}^{\text{tSZ}}$	7.04	$5.42^{+3.5}_{-3.8}$	$\Omega_m h^3$	0.09603	$0.09597^{+0.00061}_{-0.00059}$	$k_{\text{eq}}$	0.010334	$0.01032^{+0.00026}_{-0.00025}$
$A_{100}^{\text{PS}}$	254	$259^{+50}_{-50}$	$\sigma_8$	0.8325	$0.830^{+0.026}_{-0.026}$	$100\theta_{\text{eq}}$	0.8159	$0.817^{+0.016}_{-0.016}$
$A_{143}^{\text{PS}}$	41.6	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4655	$0.463^{+0.023}_{-0.022}$	$100\theta_{s,\text{eq}}$	0.4508	$0.4514^{+0.0080}_{-0.0084}$
$A_{143 \times 217}^{\text{PS}}$	39.3	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6226	$0.620^{+0.023}_{-0.022}$	$r_{\text{drag}}/D_V(0.57)$	0.07151	$0.0716^{+0.0012}_{-0.0013}$
$A_{217}^{\text{PS}}$	100.1	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0136	$1.010^{+0.034}_{-0.034}$	$H(0.57)$	92.95	$92.97^{+0.67}_{-0.64}$
$A^{\text{kSZ}}$	0.00	$< 7.69$	$\langle d^2 \rangle^{1/2}$	2.505	$2.498^{+0.084}_{-0.083}$	$D_A(0.57)$	1389.5	$1389^{+22}_{-21}$
$A_{100}^{\text{dustTT}}$	7.35	$7.42^{+3.7}_{-3.7}$	$z_{\text{re}}$	10.32	$10.1^{+3.1}_{-3.1}$	$F_{\text{AP}}(0.57)$	0.6763	$0.6760^{+0.0059}_{-0.0054}$
$A_{143}^{\text{dustTT}}$	8.94	$8.92^{+3.6}_{-3.6}$	$10^9 A_s$	2.214	$2.20^{+0.15}_{-0.14}$	$f\sigma_8(0.57)$	0.4844	$0.483^{+0.016}_{-0.016}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.0^{+8.1}_{-8.1}$	$10^9 A_s e^{-2\tau}$	1.8800	$1.878^{+0.028}_{-0.027}$	$\sigma_8(0.57)$	0.6191	$0.618^{+0.020}_{-0.020}$
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	$D_{40}$	1242.7	$1245^{+29}_{-29}$	$f_{2000}^{143}$	28.9	$29^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0812	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5727	$5726^{+79}_{-75}$	$f_{2000}^{143 \times 217}$	31.93	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0486	$0.0485^{+0.0099}_{-0.0098}$	$D_{810}$	2535.5	$2535^{+27}_{-27}$	$f_{2000}^{217}$	105.52	$105.7^{+3.7}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0999^{+0.064}_{-0.064}$	$D_{1420}$	815.4	$815.2^{+9.5}_{-9.3}$	$\chi_{\text{lowTEB}}^2$	10497.8	10498.9 ( $\nu$ : 4.6)
$A_{143}^{\text{dustEE}}$	0.0998	$0.0998^{+0.014}_{-0.014}$	$D_{2000}$	230.75	$230.6^{+3.2}_{-3.2}$	$\chi_{\text{plik}}^2$	2430.9	2451.1 ( $\nu$ : 26.8)
$A_{143 \times 217}^{\text{dustEE}}$	0.226	$0.224^{+0.091}_{-0.091}$	$n_{s,0.002}$	0.9667	$0.967^{+0.013}_{-0.014}$	$\chi_{\text{prior}}^2$	6.74	19.2 ( $\nu$ : 14.9)
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.25}_{-0.25}$	$Y_P$	0.245348	$0.24534^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12928.6	12950.0 ( $\nu$ : 24.2)
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.074}_{-0.074}$	$Y_P^{\text{BBN}}$	0.246675	$0.24666^{+0.00014}_{-0.00014}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.610	$2.615^{+0.057}_{-0.059}$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.39$ ;  $\Delta\chi_{\text{eff}}^2 = -0.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.25$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.55$ ;  $R - 1 = 0.00701$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10497.79 ( $\Delta$  0.86) plik\_dx11dr2\_HM.v18.TTTEEE: 2430.86 ( $\Delta$  -0.79)

## 6.9 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022273	$0.02225^{+0.00030}_{-0.00028}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$r_*$	144.77	$144.82^{+0.57}_{-0.58}$
$\Omega_c h^2$	0.11897	$0.1188^{+0.0023}_{-0.0022}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04115	$1.04124^{+0.00072}_{-0.00078}$
$100\theta_{\text{MC}}$	1.04096	$1.04104^{+0.00072}_{-0.00077}$	$A_{217}^{\text{dustTE}}$	1.673	$1.67^{+0.49}_{-0.49}$	$D_A/\text{Gpc}$	13.905	$13.909^{+0.052}_{-0.052}$
$\tau$	0.0805	$0.081^{+0.033}_{-0.033}$	$c_{100}$	0.99816	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.63	$1059.58^{+0.68}_{-0.67}$
$\alpha_{-1}$	0.00007	$0.00039^{+0.0014}_{-0.00094}$	$c_{217}$	0.99596	$0.9960^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.47	$147.53^{+0.60}_{-0.63}$
$\ln(10^{10} A_s)$	3.093	$3.093^{+0.065}_{-0.066}$	$H_0$	67.65	$67.7^{+1.0}_{-1.0}$	$k_D$	0.14039	$0.14031^{+0.00077}_{-0.00071}$
$n_s$	0.9680	$0.9688^{+0.0097}_{-0.010}$	$\Omega_\Lambda$	0.6900	$0.691^{+0.013}_{-0.014}$	$100\theta_D$	0.160932	$0.16098^{+0.00040}_{-0.00044}$
$y_{\text{cal}}$	1.00033	$1.0005^{+0.0048}_{-0.0049}$	$\Omega_m$	0.3100	$0.309^{+0.014}_{-0.013}$	$z_{\text{eq}}$	3375	$3372^{+53}_{-52}$
$A_{217}^{\text{CIB}}$	66.2	$64^{+10}_{-10}$	$\Omega_m h^2$	0.14189	$0.1417^{+0.0022}_{-0.0022}$	$k_{\text{eq}}$	0.010301	$0.01029^{+0.00016}_{-0.00016}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\Omega_m h^3$	0.09598	$0.09596^{+0.00061}_{-0.00059}$	$100\theta_{\text{eq}}$	0.8179	$0.8186^{+0.0099}_{-0.0099}$
$A_{143}^{\text{tSZ}}$	7.20	$5.42^{+3.5}_{-3.7}$	$\sigma_8$	0.8299	$0.830^{+0.026}_{-0.026}$	$100\theta_{s,\text{eq}}$	0.4519	$0.4522^{+0.0052}_{-0.0052}$
$A_{100}^{\text{PS}}$	255	$259^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4621	$0.462^{+0.018}_{-0.018}$	$r_{\text{drag}}/D_V(0.57)$	0.07166	$0.07172^{+0.00079}_{-0.00079}$
$A_{143}^{\text{PS}}$	39.8	$43^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	0.6193	$0.619^{+0.021}_{-0.021}$	$H(0.57)$	93.008	$93.03^{+0.45}_{-0.43}$
$A_{143 \times 217}^{\text{PS}}$	36.2	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0090	$1.009^{+0.032}_{-0.032}$	$D_A(0.57)$	1387.2	$1386^{+13}_{-13}$
$A_{217}^{\text{PS}}$	98.7	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.494	$2.494^{+0.079}_{-0.079}$	$F_{\text{AP}}(0.57)$	0.67566	$0.6755^{+0.0035}_{-0.0035}$
$A^{\text{kSZ}}$	0.00	$< 7.61$	$z_{\text{re}}$	10.19	$10.1^{+3.0}_{-3.0}$	$f\sigma_8(0.57)$	0.4821	$0.482^{+0.015}_{-0.016}$
$A_{100}^{\text{dustTT}}$	7.45	$7.43^{+3.6}_{-3.7}$	$10^9 A_s$	2.205	$2.21^{+0.15}_{-0.14}$	$\sigma_8(0.57)$	0.6177	$0.618^{+0.020}_{-0.020}$
$A_{143}^{\text{dustTT}}$	9.00	$8.92^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8770	$1.876^{+0.023}_{-0.023}$	$f_{2000}^{143}$	29.1	$29^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.0^{+8.2}_{-8.1}$	$D_{40}$	1240.9	$1246^{+28}_{-30}$	$f_{2000}^{143 \times 217}$	32.03	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$D_{220}$	5725	$5726^{+77}_{-76}$	$f_{2000}^{217}$	105.67	$105.7^{+3.6}_{-3.7}$
$A_{100}^{\text{dustEE}}$	0.0811	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2534.2	$2534^{+27}_{-26}$	$\chi_{\text{lowTEB}}^2$	10497.6	$10499.2 (\nu: 4.3)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0484^{+0.0099}_{-0.0097}$	$D_{1420}$	815.3	$815.4^{+9.1}_{-9.1}$	$\chi_{\text{plik}}^2$	2431.0	$2450.3 (\nu: 25.2)$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.062}$	$D_{2000}$	230.69	$230.7^{+3.1}_{-3.1}$	$\chi_{6\text{DF}}^2$	0.022	$0.050 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	0.1002	$0.0997^{+0.013}_{-0.014}$	$n_{s,0.002}$	0.9680	$0.9688^{+0.0097}_{-0.010}$	$\chi_{\text{MGS}}^2$	1.28	$1.42 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.091}_{-0.091}$	$Y_P$	0.245350	$0.24534^{+0.00013}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.45	$2.82 (\nu: 0.2)$
$A_{217}^{\text{dustEE}}$	0.653	$0.65^{+0.25}_{-0.25}$	$Y_P^{\text{BBN}}$	0.246676	$0.24666^{+0.00013}_{-0.00013}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	$0.66 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	0.142	$0.140^{+0.073}_{-0.073}$	$10^5 D/H$	2.610	$2.614^{+0.054}_{-0.056}$	$\chi_{\text{prior}}^2$	6.92	$19.1 (\nu: 14.7)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.057}$	Age/Gyr	13.8018	$13.801^{+0.042}_{-0.043}$	$\chi_{\text{CMB}}^2$	12928.6	$12949.5 (\nu: 23.7)$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.16}$	$z_*$	1089.952	$1089.97^{+0.46}_{-0.47}$	$\chi_{\text{BAO}}^2$	4.35	$4.94 (\nu: 0.4)$

Best-fit  $\chi_{\text{eff}}^2 = 12939.87$ ;  $\Delta\chi_{\text{eff}}^2 = -0.29$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.56$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.09$ ;  $R - 1 = 0.00883$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.01) MGS: 1.28 ( $\Delta$  0.06) DR11CMass: 2.45 ( $\Delta$  -0.05) DR11LOWZ: 0.61 ( $\Delta$  -0.07) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10497.61 ( $\Delta$  0.19) plik.dx11dr2\_HM.v18.TTTEEE: 2430.98 ( $\Delta$  -0.55)

## 6.10 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022274	$0.02226^{+0.00031}_{-0.00030}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.17}$	Age/Gyr	13.805	$13.802^{+0.054}_{-0.055}$
$\Omega_c h^2$	0.11924	$0.1189^{+0.0035}_{-0.0033}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.97	$1089.97^{+0.57}_{-0.57}$
$100\theta_{\text{MC}}$	1.04089	$1.04101^{+0.00084}_{-0.00093}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$r_*$	144.70	$144.80^{+0.79}_{-0.86}$
$\tau$	0.0820	$0.081^{+0.034}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.668	$1.67^{+0.49}_{-0.49}$	$100\theta_*$	1.04108	$1.04121^{+0.00084}_{-0.00093}$
$\alpha_{-1}$	0.00004	$0.0004^{+0.0016}_{-0.0011}$	$c_{100}$	0.99819	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.899	$13.907^{+0.070}_{-0.075}$
$\ln(10^{10} A_s)$	3.097	$3.093^{+0.065}_{-0.066}$	$c_{217}$	0.99594	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.67	$1059.59^{+0.69}_{-0.65}$
$n_s$	0.9676	$0.968^{+0.012}_{-0.014}$	$H_0$	67.53	$67.7^{+1.5}_{-1.6}$	$r_{\text{drag}}$	147.40	$147.51^{+0.79}_{-0.87}$
$y_{\text{cal}}$	1.00039	$1.0005^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6883	$0.690^{+0.020}_{-0.022}$	$k_D$	0.14047	$0.14034^{+0.00095}_{-0.00085}$
$A_{217}^{\text{CIB}}$	65.2	$64^{+10}_{-10}$	$\Omega_m$	0.3117	$0.310^{+0.022}_{-0.020}$	$100\theta_D$	0.160910	$0.16097^{+0.00041}_{-0.00043}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.25	—	$\Omega_m h^2$	0.14216	$0.1418^{+0.0034}_{-0.0032}$	$z_{\text{eq}}$	3382	$3374^{+82}_{-77}$
$A_{143}^{\text{tSZ}}$	7.11	$5.43^{+3.6}_{-3.8}$	$\Omega_m h^3$	0.09600	$0.09597^{+0.00061}_{-0.00059}$	$k_{\text{eq}}$	0.010321	$0.01030^{+0.00025}_{-0.00023}$
$A_{100}^{\text{PS}}$	252	$259^{+50}_{-50}$	$\sigma_8$	0.8322	$0.830^{+0.026}_{-0.026}$	$100\theta_{\text{eq}}$	0.8167	$0.818^{+0.015}_{-0.015}$
$A_{143}^{\text{PS}}$	41.2	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4646	$0.462^{+0.022}_{-0.021}$	$100\theta_{s,\text{eq}}$	0.4512	$0.4521^{+0.0076}_{-0.0079}$
$A_{143 \times 217}^{\text{PS}}$	39.5	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6218	$0.619^{+0.022}_{-0.022}$	$r_{\text{drag}}/D_V(0.57)$	0.07157	$0.0717^{+0.0012}_{-0.0012}$
$A_{217}^{\text{PS}}$	100.0	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0127	$1.009^{+0.033}_{-0.033}$	$H(0.57)$	92.96	$93.02^{+0.64}_{-0.62}$
$A^{\text{kSZ}}$	0.00	$< 7.63$	$\langle d^2 \rangle^{1/2}$	2.502	$2.495^{+0.082}_{-0.082}$	$D_A(0.57)$	1388.7	$1387^{+21}_{-20}$
$A_{100}^{\text{dustTT}}$	7.46	$7.43^{+3.6}_{-3.7}$	$z_{\text{re}}$	10.33	$10.1^{+3.1}_{-3.1}$	$F_{\text{AP}}(0.57)$	0.6761	$0.6756^{+0.0056}_{-0.0051}$
$A_{143}^{\text{dustTT}}$	8.94	$8.92^{+3.6}_{-3.6}$	$10^9 A_s$	2.214	$2.21^{+0.15}_{-0.14}$	$f\sigma_8(0.57)$	0.4839	$0.482^{+0.016}_{-0.016}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.0^{+8.2}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8791	$1.877^{+0.027}_{-0.026}$	$\sigma_8(0.57)$	0.6190	$0.618^{+0.020}_{-0.020}$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$D_{40}$	1240.8	$1245^{+29}_{-29}$	$f_{2000}^{143}$	28.6	$29^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0812	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5725	$5727^{+78}_{-75}$	$f_{2000}^{143 \times 217}$	31.75	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0486	$0.0485^{+0.0099}_{-0.0098}$	$D_{810}$	2535.6	$2534^{+27}_{-26}$	$f_{2000}^{217}$	105.33	$105.7^{+3.7}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.063}$	$D_{1420}$	815.7	$815.4^{+9.4}_{-9.2}$	$\chi_{\text{lowTEB}}^2$	10497.6	10499.1 ( $\nu$ : 4.6)
$A_{143}^{\text{dustEE}}$	0.09999	$0.0998^{+0.014}_{-0.014}$	$D_{2000}$	230.89	$230.7^{+3.2}_{-3.1}$	$\chi_{\text{plik}}^2$	2430.9	2450.9 ( $\nu$ : 26.3)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.091}_{-0.092}$	$n_{s,0.002}$	0.9676	$0.968^{+0.012}_{-0.014}$	$\chi_{\text{JLA}}^2$	706.75	706.79 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.25}_{-0.25}$	$Y_{\text{P}}$	0.245350	$0.24534^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	6.86	19.2 ( $\nu$ : 14.7)
$A_{100}^{\text{dustTE}}$	0.143	$0.140^{+0.074}_{-0.073}$	$Y_{\text{P}}^{\text{BBN}}$	0.246677	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12928.5	12950.0 ( $\nu$ : 24.3)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.609	$2.613^{+0.057}_{-0.059}$			

Best-fit  $\chi_{\text{eff}}^2 = 13642.15$ ;  $\Delta\chi_{\text{eff}}^2 = -0.24$ ;  $\bar{\chi}_{\text{eff}}^2 = 13675.99$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.35$ ;  $R - 1 = 0.00918$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.60 ( $\Delta$  0.24) plik\_dx11dr2\_HM.v18\_TTTEEE: 2430.94 ( $\Delta$  -0.68) SN - JLA December\_2013: 706.75 ( $\Delta$  -0.10)

## 6.11 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022256	$0.02224^{+0.00031}_{-0.00030}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	Age/Gyr	13.800	$13.795^{+0.055}_{-0.056}$
$\Omega_c h^2$	0.11875	$0.1183^{+0.0034}_{-0.0031}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.95	$1089.93^{+0.59}_{-0.58}$
$100\theta_{\text{MC}}$	1.04103	$1.04117^{+0.00082}_{-0.00087}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$r_*$	144.84	$144.98^{+0.74}_{-0.80}$
$\tau$	0.0644	$0.066^{+0.027}_{-0.028}$	$A_{217}^{\text{dustTE}}$	1.666	$1.66^{+0.48}_{-0.48}$	$100\theta_*$	1.04123	$1.04137^{+0.00081}_{-0.00086}$
$\alpha_{-1}$	0.00011	$0.0006^{+0.0016}_{-0.0012}$	$c_{100}$	0.99817	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.911	$13.922^{+0.067}_{-0.070}$
$\ln(10^{10} A_s)$	3.0598	$3.062^{+0.049}_{-0.050}$	$c_{217}$	0.99612	$0.9961^{+0.0029}_{-0.0029}$	$z_{\text{drag}}$	1059.59	$1059.51^{+0.65}_{-0.67}$
$n_s$	0.9681	$0.970^{+0.012}_{-0.013}$	$H_0$	67.74	$68.0^{+1.4}_{-1.5}$	$r_{\text{drag}}$	147.55	$147.70^{+0.74}_{-0.80}$
$y_{\text{cal}}$	1.00010	$1.0002^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6913	$0.694^{+0.020}_{-0.021}$	$k_D$	0.14030	$0.14013^{+0.00086}_{-0.00083}$
$A_{217}^{\text{CIB}}$	67.8	$64^{+10}_{-10}$	$\Omega_m$	0.3087	$0.306^{+0.021}_{-0.020}$	$100\theta_D$	0.160973	$0.16103^{+0.00039}_{-0.00039}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\Omega_m h^2$	0.14165	$0.1411^{+0.0032}_{-0.0031}$	$z_{\text{eq}}$	3370	$3358^{+77}_{-75}$
$A_{143}^{\text{tSZ}}$	7.30	$5.36^{+3.7}_{-3.8}$	$\Omega_m h^3$	0.09595	$0.09590^{+0.00059}_{-0.00058}$	$k_{\text{eq}}$	0.010284	$0.01025^{+0.00024}_{-0.00023}$
$A_{100}^{\text{PS}}$	257	$260^{+50}_{-50}$	$\sigma_8$	0.8157	$0.816^{+0.017}_{-0.017}$	$100\theta_{\text{eq}}$	0.8189	$0.821^{+0.014}_{-0.015}$
$A_{143}^{\text{PS}}$	39.0	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4532	$0.451^{+0.015}_{-0.015}$	$100\theta_{s,\text{eq}}$	0.4524	$0.4536^{+0.0071}_{-0.0076}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6080	$0.607^{+0.014}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.07175	$0.0719^{+0.0011}_{-0.0012}$
$A_{217}^{\text{PS}}$	96.7	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9911	$0.990^{+0.020}_{-0.021}$	$H(0.57)$	93.04	$93.12^{+0.63}_{-0.61}$
$A^{\text{kSZ}}$	0.00	$< 8.09$	$\langle d^2 \rangle^{1/2}$	2.4511	$2.448^{+0.049}_{-0.049}$	$D_A(0.57)$	1386.0	$1383^{+20}_{-19}$
$A_{100}^{\text{dustTT}}$	7.40	$7.50^{+3.6}_{-3.7}$	$z_{\text{re}}$	8.69	$8.79^{+2.6}_{-2.7}$	$F_{\text{AP}}(0.57)$	0.6753	$0.6746^{+0.0054}_{-0.0049}$
$A_{143}^{\text{dustTT}}$	9.02	$9.03^{+3.6}_{-3.6}$	$10^9 A_s$	2.132	$2.14^{+0.11}_{-0.11}$	$f\sigma_8(0.57)$	0.4735	$0.4730^{+0.0098}_{-0.0099}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.1}_{-8.1}$	$10^9 A_s e^{-2\tau}$	1.8746	$1.872^{+0.025}_{-0.025}$	$\sigma_8(0.57)$	0.6075	$0.609^{+0.015}_{-0.016}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{40}$	1235.3	$1239^{+27}_{-27}$	$f_{2000}^{143}$	29.7	$30^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0812	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5723	$5721^{+79}_{-73}$	$f_{2000}^{143 \times 217}$	32.54	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0485	$0.0485^{+0.0098}_{-0.0098}$	$D_{810}$	2533.1	$2532^{+27}_{-25}$	$f_{2000}^{217}$	106.06	$106.0^{+3.6}_{-3.6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.063}_{-0.062}$	$D_{1420}$	815.1	$815.4^{+9.5}_{-9.2}$	$\chi_{\text{lensing}}^2$	9.60	10.1 ( $\nu: 1.4$ )
$A_{143}^{\text{dustEE}}$	0.0998	$0.0998^{+0.014}_{-0.013}$	$D_{2000}$	230.26	$230.4^{+3.3}_{-3.1}$	$\chi_{\text{lowTEB}}^2$	10496.31	10497.8 ( $\nu: 2.3$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.225^{+0.091}_{-0.091}$	$n_{s,0.002}$	0.9681	$0.970^{+0.012}_{-0.013}$	$\chi_{\text{plik}}^2$	2433.6	2453.2 ( $\nu: 24.4$ )
$A_{217}^{\text{dustEE}}$	0.650	$0.66^{+0.25}_{-0.25}$	$Y_{\text{P}}$	0.245343	$0.24533^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	7.06	19.2 ( $\nu: 14.8$ )
$A_{100}^{\text{dustTE}}$	0.139	$0.140^{+0.073}_{-0.072}$	$Y_{\text{P}}^{\text{BBN}}$	0.246669	$0.24666^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12939.6	12961.0 ( $\nu: 24.1$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.058}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.613	$2.616^{+0.058}_{-0.058}$			

Best-fit  $\chi_{\text{eff}}^2 = 12946.63$ ;  $\Delta\chi_{\text{eff}}^2 = -0.55$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.16$ ;  $R - 1 = 0.02079$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.60 ( $\Delta -0.17$ ) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.31 ( $\Delta 1.03$ ) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2433.65 ( $\Delta -1.26$ )



## 6.12 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022297	$0.02226^{+0.00032}_{-0.00030}$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.17}$	Age/Gyr	13.801	$13.800^{+0.055}_{-0.055}$
$\Omega_c h^2$	0.11906	$0.1188^{+0.0036}_{-0.0034}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.93	$1089.95^{+0.58}_{-0.58}$
$100\theta_{\text{MC}}$	1.04093	$1.04103^{+0.00085}_{-0.00094}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$r_*$	144.73	$144.82^{+0.80}_{-0.88}$
$\tau$	0.0838	$0.081^{+0.034}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.675	$1.67^{+0.49}_{-0.49}$	$100\theta_*$	1.04112	$1.04123^{+0.00085}_{-0.00094}$
$\alpha_{-1}$	0.00004	$0.0004^{+0.0016}_{-0.0011}$	$c_{100}$	0.99821	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.901	$13.909^{+0.071}_{-0.076}$
$\ln(10^{10} A_s)$	3.101	$3.094^{+0.065}_{-0.065}$	$c_{217}$	0.99582	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.70	$1059.60^{+0.68}_{-0.66}$
$n_s$	0.9684	$0.969^{+0.013}_{-0.014}$	$H_0$	67.62	$67.7^{+1.5}_{-1.6}$	$r_{\text{drag}}$	147.42	$147.53^{+0.81}_{-0.89}$
$y_{\text{cal}}$	1.00036	$1.0005^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6895	$0.691^{+0.022}_{-0.022}$	$k_D$	0.14046	$0.14033^{+0.00097}_{-0.00086}$
$A_{217}^{\text{CIB}}$	63.1	$64^{+10}_{-10}$	$\Omega_m$	0.3105	$0.309^{+0.022}_{-0.022}$	$100\theta_D$	0.160891	$0.16096^{+0.00041}_{-0.00043}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.52	—	$\Omega_m h^2$	0.14200	$0.1417^{+0.0035}_{-0.0032}$	$z_{\text{eq}}$	3378	$3371^{+84}_{-78}$
$A_{143}^{\text{tSZ}}$	6.80	$5.44^{+3.6}_{-3.7}$	$\Omega_m h^3$	0.09603	$0.09597^{+0.00061}_{-0.00058}$	$k_{\text{eq}}$	0.010310	$0.01029^{+0.00026}_{-0.00024}$
$A_{100}^{\text{PS}}$	251	$258^{+50}_{-50}$	$\sigma_8$	0.8332	$0.830^{+0.026}_{-0.026}$	$100\theta_{\text{eq}}$	0.8174	$0.819^{+0.015}_{-0.016}$
$A_{143}^{\text{PS}}$	45.9	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4643	$0.462^{+0.022}_{-0.021}$	$100\theta_{s,\text{eq}}$	0.4516	$0.4523^{+0.0078}_{-0.0082}$
$A_{143 \times 217}^{\text{PS}}$	47.5	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6220	$0.619^{+0.022}_{-0.022}$	$r_{\text{drag}}/D_V(0.57)$	0.07163	$0.0717^{+0.0012}_{-0.0013}$
$A_{217}^{\text{PS}}$	103.9	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0132	$1.009^{+0.033}_{-0.033}$	$H(0.57)$	93.01	$93.04^{+0.65}_{-0.64}$
$A^{\text{kSZ}}$	0.00	$< 7.61$	$\langle d^2 \rangle^{1/2}$	2.503	$2.494^{+0.082}_{-0.082}$	$D_A(0.57)$	1387.4	$1386^{+21}_{-20}$
$A_{100}^{\text{dustTT}}$	7.34	$7.43^{+3.6}_{-3.7}$	$z_{\text{re}}$	10.48	$10.2^{+3.1}_{-3.1}$	$F_{\text{AP}}(0.57)$	0.6758	$0.6754^{+0.0057}_{-0.0052}$
$A_{143}^{\text{dustTT}}$	8.93	$8.92^{+3.6}_{-3.6}$	$10^9 A_s$	2.222	$2.21^{+0.15}_{-0.14}$	$f\sigma_8(0.57)$	0.4842	$0.482^{+0.016}_{-0.016}$
$A_{143 \times 217}^{\text{dustTT}}$	18.1	$17.0^{+8.2}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8790	$1.876^{+0.028}_{-0.026}$	$\sigma_8(0.57)$	0.6201	$0.618^{+0.020}_{-0.020}$
$A_{217}^{\text{dustTT}}$	82.6	$82^{+10}_{-10}$	$D_{40}$	1240.7	$1245^{+29}_{-29}$	$f_{2000}^{143}$	28.3	$29^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5727	$5727^{+78}_{-75}$	$f_{2000}^{143 \times 217}$	31.60	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0485^{+0.0099}_{-0.0098}$	$D_{810}$	2536.5	$2534^{+27}_{-26}$	$f_{2000}^{217}$	105.07	$105.6^{+3.7}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.063}$	$D_{1420}$	816.3	$815.4^{+9.4}_{-9.2}$	$\chi_{\text{lowTEB}}^2$	10497.8	10499.2 ( $\nu$ : 4.7)
$A_{143}^{\text{dustEE}}$	0.1003	$0.0998^{+0.014}_{-0.014}$	$D_{2000}$	231.15	$230.8^{+3.2}_{-3.2}$	$\chi_{\text{plik}}^2$	2431.2	2450.9 ( $\nu$ : 26.3)
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.091}_{-0.092}$	$n_{s,0.002}$	0.9684	$0.969^{+0.013}_{-0.014}$	$\chi_{\text{H070p6}}^2$	0.80	0.80 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.25}$	$Y_P$	0.245361	$0.24534^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	6.56	19.2 ( $\nu$ : 14.7)
$A_{100}^{\text{dustTE}}$	0.140	$0.140^{+0.074}_{-0.073}$	$Y_P^{\text{BBN}}$	0.246687	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12928.9	12950.1 ( $\nu$ : 24.5)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.605	$2.612^{+0.057}_{-0.059}$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.26$ ;  $\Delta\chi_{\text{eff}}^2 = -0.21$ ;  $\bar{\chi}_{\text{eff}}^2 = 12970.07$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.33$ ;  $R - 1 = 0.00953$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.75 ( $\Delta$  0.75) plik\_dx11dr2\_HM.v18\_TTTEEE: 2431.15 ( $\Delta$  -0.61) Hubble - H070p6: 0.80 ( $\Delta$  -0.10)

### 6.13 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022267	$0.02224^{+0.00029}_{-0.00028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.9175	$13.922^{+0.048}_{-0.049}$
$\Omega_c h^2$	0.11841	$0.1183^{+0.0022}_{-0.0021}$	$A_{217}^{\text{dustTE}}$	1.663	$1.66^{+0.48}_{-0.48}$	$z_{\text{drag}}$	1059.59	$1059.51^{+0.64}_{-0.66}$
$100\theta_{\text{MC}}$	1.04109	$1.04118^{+0.00070}_{-0.00070}$	$c_{100}$	0.99814	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.63	$147.70^{+0.54}_{-0.57}$
$\tau$	0.0660	$0.066^{+0.023}_{-0.024}$	$c_{217}$	0.99609	$0.9961^{+0.0029}_{-0.0029}$	$k_D$	0.14022	$0.14013^{+0.00069}_{-0.00067}$
$\alpha_{-1}$	0.00014	$0.0006^{+0.0015}_{-0.0011}$	$H_0$	67.89	$67.95^{+0.97}_{-0.98}$	$100\theta_D$	0.160978	$0.16103^{+0.00038}_{-0.00040}$
$\ln(10^{10} A_s)$	3.0620	$3.061^{+0.044}_{-0.046}$	$\Omega_\Lambda$	0.6933	$0.694^{+0.013}_{-0.013}$	$z_{\text{eq}}$	3361.8	$3357^{+50}_{-49}$
$n_s$	0.9690	$0.9704^{+0.0091}_{-0.0097}$	$\Omega_m$	0.3067	$0.306^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010261	$0.01025^{+0.00015}_{-0.00015}$
$y_{\text{cal}}$	1.00006	$1.0002^{+0.0048}_{-0.0049}$	$\Omega_m h^2$	0.14133	$0.1411^{+0.0021}_{-0.0020}$	$100\theta_{\text{eq}}$	0.8204	$0.8213^{+0.0094}_{-0.0094}$
$A_{217}^{\text{CIB}}$	67.7	$64^{+10}_{-10}$	$\Omega_m h^3$	0.09594	$0.09590^{+0.00060}_{-0.00059}$	$100\theta_{s,\text{eq}}$	0.45318	$0.4536^{+0.0049}_{-0.0048}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\sigma_8$	0.8159	$0.816^{+0.017}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.07187	$0.07194^{+0.00075}_{-0.00076}$
$A_{143}^{\text{tSZ}}$	7.30	$5.35^{+3.7}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4518	$0.451^{+0.012}_{-0.012}$	$H(0.57)$	93.094	$93.11^{+0.44}_{-0.44}$
$A_{100}^{\text{PS}}$	257	$260^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6072	$0.607^{+0.013}_{-0.013}$	$D_A(0.57)$	1384.1	$1383^{+13}_{-13}$
$A_{143}^{\text{PS}}$	38.8	$44^{+10}_{-20}$	$\sigma_8/h^{0.5}$	0.9902	$0.990^{+0.020}_{-0.020}$	$F_{\text{AP}}(0.57)$	0.67480	$0.6746^{+0.0034}_{-0.0032}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4491	$2.448^{+0.048}_{-0.048}$	$f\sigma_8(0.57)$	0.4731	$0.4731^{+0.0097}_{-0.0097}$
$A_{217}^{\text{PS}}$	96.7	$97^{+20}_{-20}$	$z_{\text{re}}$	8.84	$8.80^{+2.3}_{-2.4}$	$\sigma_8(0.57)$	0.6081	$0.609^{+0.013}_{-0.013}$
$A^{\text{kSZ}}$	0.00	$< 8.04$	$10^9 A_s$	2.137	$2.136^{+0.095}_{-0.097}$	$f_{2000}^{143}$	29.69	$30^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	7.41	$7.52^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8727	$1.872^{+0.022}_{-0.021}$	$f_{2000}^{143 \times 217}$	32.51	$32.5^{+3.5}_{-3.6}$
$A_{143}^{\text{dustTT}}$	9.05	$9.04^{+3.5}_{-3.6}$	$D_{40}$	1234.8	$1240^{+27}_{-27}$	$f_{2000}^{217}$	106.02	$106.0^{+3.6}_{-3.5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.2}_{-8.0}$	$D_{220}$	5722	$5721^{+79}_{-73}$	$\chi_{\text{lensing}}^2$	9.45	10.1 ( $\nu: 1.3$ )
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{810}$	2532.2	$2532^{+27}_{-26}$	$\chi_{\text{lowTEB}}^2$	10496.37	10497.7 ( $\nu: 2.1$ )
$A_{100}^{\text{dustEE}}$	0.0811	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	815.1	$815.4^{+9.1}_{-9.1}$	$\chi_{\text{plik}}^2$	2433.7	2452.6 ( $\nu: 23.6$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0486	$0.0484^{+0.0097}_{-0.0096}$	$D_{2000}$	230.29	$230.4^{+3.1}_{-3.0}$	$\chi_{\text{H070p6}}^2$	0.669	0.66 ( $\nu: 0.0$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.0999^{+0.062}_{-0.062}$	$n_{s,0.002}$	0.9690	$0.9704^{+0.0091}_{-0.0097}$	$\chi_{\text{JLA}}^2$	706.627	706.64 ( $\nu: 0.0$ )
$A_{143}^{\text{dustEE}}$	0.0999	$0.0998^{+0.013}_{-0.013}$	$Y_{\text{P}}$	0.245348	$0.24533^{+0.00013}_{-0.00013}$	$\chi_{6\text{DF}}^2$	0.003	0.032 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.092}_{-0.091}$	$Y_{\text{P}}^{\text{BBN}}$	0.246674	$0.24666^{+0.00013}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.54	1.69 ( $\nu: 0.1$ )
$A_{217}^{\text{dustEE}}$	0.657	$0.66^{+0.25}_{-0.25}$	$10^5 D/H$	2.611	$2.616^{+0.053}_{-0.054}$	$\chi_{\text{DR11CMAS}}^2$	2.41	2.79 ( $\nu: 0.2$ )
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.074}_{-0.073}$	Age/Gyr	13.7960	$13.795^{+0.043}_{-0.041}$	$\chi_{\text{DR11LOWZ}}^2$	0.37	0.41 ( $\nu: 0.1$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.058}_{-0.058}$	$z_*$	1089.909	$1089.93^{+0.46}_{-0.45}$	$\chi_{\text{prior}}^2$	7.11	19.2 ( $\nu: 14.7$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.16}$	$r_*$	144.92	$144.98^{+0.52}_{-0.54}$	$\chi_{\text{CMB}}^2$	12939.5	12960.4 ( $\nu: 23.3$ )
$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.10}$	$100\theta_*$	1.04129	$1.04138^{+0.00070}_{-0.00070}$	$\chi_{\text{BAO}}^2$	4.32	4.93 ( $\nu: 0.3$ )

Best-fit  $\chi_{\text{eff}}^2 = 13658.28$ ;  $\Delta\chi_{\text{eff}}^2 = -0.77$ ;  $\bar{\chi}_{\text{eff}}^2 = 13691.81$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.70$ ;  $R - 1 = 0.02241$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta -0.01$ ) MGS: 1.54 ( $\Delta 0.13$ ) DR11CMAS: 2.41 ( $\Delta 0.00$ ) DR11LOWZ: 0.37 ( $\Delta -0.11$ ) CMB - smica\_g30\_ftl\_full\_pp: 9.45 ( $\Delta -0.30$ ) low1\_SMW\_70\_dx11d\_2014\_10\_03

### 6.14 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02225^{+0.00031}_{-0.00029}$	$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.16}_{-0.17}$	Age/Gyr	$13.805^{+0.055}_{-0.057}$
$\Omega_c h^2$	$0.1192^{+0.0037}_{-0.0035}$	$A_{143}^{\text{dustTE}}$	$0.15^{+0.11}_{-0.10}$	$z_*$	$1090.00^{+0.58}_{-0.59}$
$100\theta_{\text{MC}}$	$1.04096^{+0.00087}_{-0.00096}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$r_*$	$144.74^{+0.82}_{-0.89}$
$\tau$	$0.080^{+0.033}_{-0.033}$	$A_{217}^{\text{dustTE}}$	$1.67^{+0.49}_{-0.49}$	$100\theta_*$	$1.04116^{+0.00087}_{-0.00096}$
$\alpha_{-1}$	$0.0003^{+0.0016}_{-0.0012}$	$c_{100}$	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	$13.902^{+0.074}_{-0.079}$
$\ln(10^{10} A_s)$	$3.094^{+0.064}_{-0.060}$	$c_{217}$	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	$1059.59^{+0.69}_{-0.65}$
$n_s$	$0.968^{+0.013}_{-0.014}$	$H_0$	$67.6^{+1.6}_{-1.6}$	$r_{\text{drag}}$	$147.45^{+0.83}_{-0.91}$
$y_{\text{cal}}$	$1.0005^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	$0.689^{+0.021}_{-0.023}$	$k_D$	$0.14040^{+0.00097}_{-0.00089}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$\Omega_m$	$0.311^{+0.023}_{-0.021}$	$100\theta_D$	$0.16096^{+0.00041}_{-0.00043}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1421^{+0.0036}_{-0.0033}$	$z_{\text{eq}}$	$3380^{+86}_{-80}$
$A_{143}^{\text{tSZ}}$	$5.41^{+3.6}_{-3.8}$	$\Omega_m h^3$	$0.09597^{+0.00061}_{-0.00058}$	$k_{\text{eq}}$	$0.01031^{+0.00026}_{-0.00024}$
$A_{100}^{\text{PS}}$	$259^{+50}_{-50}$	$\sigma_8$	$0.831^{+0.025}_{-0.024}$	$100\theta_{\text{eq}}$	$0.817^{+0.015}_{-0.016}$
$A_{143}^{\text{PS}}$	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	$0.464^{+0.023}_{-0.021}$	$100\theta_{\text{s,eq}}$	$0.4515^{+0.0080}_{-0.0084}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.621^{+0.022}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	$0.0716^{+0.0012}_{-0.0013}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$1.011^{+0.033}_{-0.032}$	$H(0.57)$	$92.98^{+0.67}_{-0.64}$
$A^{\text{kSZ}}$	$< 7.64$	$\langle d^2 \rangle^{1/2}$	$2.499^{+0.082}_{-0.079}$	$D_A(0.57)$	$1388^{+21}_{-21}$
$A_{100}^{\text{dustTT}}$	$7.43^{+3.6}_{-3.7}$	$z_{\text{re}}$	$10.1^{+2.8}_{-2.9}$	$F_{\text{AP}}(0.57)$	$0.6760^{+0.0058}_{-0.0054}$
$A_{143}^{\text{dustTT}}$	$8.92^{+3.7}_{-3.6}$	$10^9 A_s$	$2.21^{+0.14}_{-0.14}$	$f\sigma_8(0.57)$	$0.483^{+0.016}_{-0.015}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0^{+8.2}_{-8.1}$	$10^9 A_s e^{-2\tau}$	$1.878^{+0.028}_{-0.027}$	$\sigma_8(0.57)$	$0.618^{+0.020}_{-0.019}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{40}$	$1245^{+29}_{-29}$	$f_{2000}^{143}$	$29^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{220}$	$5727^{+78}_{-75}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0485^{+0.0099}_{-0.0098}$	$D_{810}$	$2535^{+27}_{-26}$	$f_{2000}^{217}$	$105.7^{+3.7}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.100^{+0.064}_{-0.063}$	$D_{1420}$	$815.2^{+9.4}_{-9.2}$	$\chi_{\text{lowTEB}}^2$	$10499.0 (\nu: 4.6)$
$A_{143}^{\text{dustEE}}$	$0.0998^{+0.014}_{-0.014}$	$D_{2000}$	$230.6^{+3.2}_{-3.2}$	$\chi_{\text{plik}}^2$	$2451.1 (\nu: 26.5)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.224^{+0.091}_{-0.092}$	$n_{\text{s},0.002}$	$0.968^{+0.013}_{-0.014}$	$\chi_{\text{prior}}^2$	$19.2 (\nu: 14.7)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.25}$	$Y_{\text{P}}$	$0.24534^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	$12950.0 (\nu: 24.1)$
$A_{100}^{\text{dustTE}}$	$0.140^{+0.074}_{-0.073}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24666^{+0.00014}_{-0.00014}$		
$A_{100 \times 143}^{\text{dustTE}}$	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	$2.615^{+0.057}_{-0.059}$		

$$\bar{\chi}_{\text{eff}}^2 = 12969.17; \Delta\bar{\chi}_{\text{eff}}^2 = 1.49; R - 1 = 0.00901$$

## 7 mnu

### 7.1 base\_mnu\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02226	$0.02213^{+0.00051}_{-0.00054}$	$\Omega_m$	0.307	$0.339^{+0.083}_{-0.061}$	$100\theta_*$	1.04107	$1.04096^{+0.00095}_{-0.00095}$
$\Omega_c h^2$	0.11950	$0.1202^{+0.0047}_{-0.0046}$	$\Omega_m h^2$	0.1418	$0.1449^{+0.0082}_{-0.0069}$	$D_A/\text{Gpc}$	13.894	$13.881^{+0.094}_{-0.10}$
$100\theta_{\text{MC}}$	1.04090	$1.0407^{+0.0010}_{-0.0011}$	$\Omega_\nu h^2$	0.00000	$< 0.00769$	$z_{\text{drag}}$	1059.67	$1059.4^{+1.0}_{-1.0}$
$\tau$	0.0789	$0.080^{+0.039}_{-0.039}$	$\Omega_m h^3$	0.09632	$0.0949^{+0.0024}_{-0.0035}$	$r_{\text{drag}}$	147.35	$147.2^{+1.0}_{-1.1}$
$\Sigma m_\nu$ [eV]	0.000	$< 0.715$	$\sigma_8$	0.843	$0.796^{+0.076}_{-0.11}$	$k_D$	0.14051	$0.1406^{+0.0011}_{-0.0010}$
$\ln(10^{10} A_s)$	3.091	$3.095^{+0.075}_{-0.076}$	$\sigma_8 \Omega_m^{0.5}$	0.4672	$0.462^{+0.028}_{-0.029}$	$100\theta_D$	0.16092	$0.16102^{+0.00057}_{-0.00054}$
$n_s$	0.9666	$0.964^{+0.014}_{-0.014}$	$\sigma_8 \Omega_m^{0.25}$	0.6276	$0.606^{+0.044}_{-0.054}$	$z_{\text{eq}}$	3388	$3402^{+110}_{-100}$
$y_{\text{cal}}$	1.0004	$1.0004^{+0.0050}_{-0.0050}$	$\sigma_8/h^{0.5}$	1.023	$0.983^{+0.075}_{-0.096}$	$k_{\text{eq}}$	0.010339	$0.01039^{+0.00033}_{-0.00031}$
$A_{217}^{\text{CIB}}$	66.4	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.505	$2.498^{+0.094}_{-0.092}$	$100\theta_{\text{eq}}$	0.8155	$0.813^{+0.020}_{-0.019}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.08	—	$z_{\text{re}}$	10.04	$10.2^{+3.6}_{-3.7}$	$100\theta_{\text{s,eq}}$	0.4506	$0.449^{+0.010}_{-0.0098}$
$A_{143}^{\text{tSZ}}$	7.13	$5.05^{+3.7}_{-3.8}$	$10^9 A_s$	2.201	$2.21^{+0.17}_{-0.16}$	$r_{\text{drag}}/D_V(0.57)$	0.07181	$0.0703^{+0.0029}_{-0.0037}$
$A_{100}^{\text{PS}}$	251	$260^{+60}_{-50}$	$10^9 A_s e^{-2\tau}$	1.8794	$1.881^{+0.028}_{-0.028}$	$H(0.57)$	93.21	$92.0^{+2.0}_{-2.7}$
$A_{143}^{\text{PS}}$	39.4	$45^{+20}_{-20}$	$D_{40}$	1234.9	$1238^{+30}_{-29}$	$D_A(0.57)$	1383	$1417^{+84}_{-62}$
$A_{143 \times 217}^{\text{PS}}$	34.4	$40^{+20}_{-20}$	$D_{220}$	5716	$5715^{+82}_{-82}$	$F_{\text{AP}}(0.57)$	0.6749	$0.683^{+0.020}_{-0.015}$
$A_{217}^{\text{PS}}$	98.0	$97^{+20}_{-20}$	$D_{810}$	2533.8	$2534^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4879	$0.471^{+0.035}_{-0.045}$
$A^{\text{kSZ}}$	0.0	—	$D_{1420}$	814.8	$814.1^{+9.9}_{-9.9}$	$\sigma_8(0.57)$	0.628	$0.588^{+0.064}_{-0.090}$
$A_{100}^{\text{dustTT}}$	7.46	$7.43^{+3.7}_{-3.7}$	$D_{2000}$	230.63	$229.8^{+3.8}_{-4.0}$	$f_{2000}^{143}$	29.3	$31^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	9.07	$9.03^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	0.9666	$0.964^{+0.014}_{-0.014}$	$f_{2000}^{143 \times 217}$	32.00	$33^{+5}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.0}_{-8.1}$	$Y_{\text{P}}$	0.245346	$0.24528^{+0.00023}_{-0.00025}$	$f_{2000}^{217}$	105.63	$106.6^{+4.4}_{-4.2}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246672	$0.24661^{+0.00023}_{-0.00025}$	$\chi_{\text{lowTEB}}^2$	10496.5	10497.7 ( $\nu: 3.3$ )
$c_{100}$	0.99788	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.611	$2.64^{+0.11}_{-0.097}$	$\chi_{\text{plik}}^2$	762.9	778.5 ( $\nu: 17.8$ )
$c_{217}$	0.99588	$0.9960^{+0.0028}_{-0.0028}$	Age/Gyr	13.778	$13.91^{+0.31}_{-0.22}$	$\chi_{\text{prior}}^2$	2.09	7.40 ( $\nu: 6.5$ )
$H_0$	67.9	$65.6^{+4.3}_{-5.7}$	$z_*$	1090.01	$1090.3^{+1.1}_{-1.1}$	$\chi_{\text{CMB}}^2$	11259.5	11276.2 ( $\nu: 17.3$ )
$\Omega_\Lambda$	0.693	$0.661^{+0.061}_{-0.083}$	$r_*$	144.65	$144.5^{+1.0}_{-1.1}$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.54$ ;  $\Delta\chi_{\text{eff}}^2 = -0.39$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.63$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.82$ ;  $R - 1 = 0.00693$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.52 ( $\Delta 0.05$ ) plik\_dx11dr2\_HM.v18\_TT: 762.93 ( $\Delta -0.44$ )

## 7.2 base\_mnu\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022299	$0.02224^{+0.00045}_{-0.00045}$	$\Omega_m$	0.3045	$0.318^{+0.037}_{-0.034}$	$100\theta_*$	1.04115	$1.04110^{+0.00089}_{-0.00091}$
$\Omega_c h^2$	0.11909	$0.1192^{+0.0040}_{-0.0041}$	$\Omega_m h^2$	0.14140	$0.1427^{+0.0046}_{-0.0043}$	$D_A/\text{Gpc}$	13.901	$13.900^{+0.085}_{-0.082}$
$100\theta_{\text{MC}}$	1.04099	$1.04088^{+0.00091}_{-0.00093}$	$\Omega_\nu h^2$	0.00002	< 0.00353	$z_{\text{drag}}$	1059.70	$1059.59^{+0.94}_{-0.91}$
$\tau$	0.0797	$0.081^{+0.039}_{-0.039}$	$\Omega_m h^3$	0.09636	$0.0957^{+0.0015}_{-0.0018}$	$r_{\text{drag}}$	147.42	$147.43^{+0.93}_{-0.88}$
$\Sigma m_\nu$ [eV]	0.001	< 0.328	$\sigma_8$	0.842	$0.819^{+0.049}_{-0.055}$	$k_D$	0.14046	$0.14042^{+0.00099}_{-0.0010}$
$\ln(10^{10} A_s)$	3.092	$3.095^{+0.074}_{-0.076}$	$\sigma_8 \Omega_m^{0.5}$	0.4646	$0.461^{+0.026}_{-0.026}$	$100\theta_D$	0.16090	$0.16095^{+0.00053}_{-0.00051}$
$n_s$	0.9673	$0.967^{+0.011}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	0.6255	$0.615^{+0.033}_{-0.035}$	$z_{\text{eq}}$	3379	$3381^{+90}_{-92}$
$y_{\text{cal}}$	1.00028	$1.0003^{+0.0050}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.020	$1.000^{+0.053}_{-0.056}$	$k_{\text{eq}}$	0.010312	$0.01032^{+0.00028}_{-0.00028}$
$A_{217}^{\text{CIB}}$	66.8	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.500	$2.491^{+0.091}_{-0.091}$	$100\theta_{\text{eq}}$	0.8173	$0.817^{+0.018}_{-0.017}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$z_{\text{re}}$	10.10	$10.2^{+3.6}_{-3.7}$	$100\theta_{s,\text{eq}}$	0.4515	$0.4513^{+0.0091}_{-0.0087}$
$A_{143}^{\text{tSZ}}$	7.25	$5.20^{+3.7}_{-3.8}$	$10^9 A_s$	2.202	$2.21^{+0.17}_{-0.16}$	$r_{\text{drag}}/D_V(0.57)$	0.07196	$0.0713^{+0.0018}_{-0.0019}$
$A_{100}^{\text{PS}}$	250	$258^{+50}_{-50}$	$10^9 A_s e^{-2\tau}$	1.8777	$1.877^{+0.027}_{-0.026}$	$H(0.57)$	93.30	$92.7^{+1.3}_{-1.4}$
$A_{143}^{\text{PS}}$	38.0	$44^{+20}_{-20}$	$D_{40}$	1233.7	$1235^{+30}_{-28}$	$D_A(0.57)$	1380.0	$1396^{+40}_{-36}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{220}$	5720	$5718^{+81}_{-81}$	$F_{\text{AP}}(0.57)$	0.6742	$0.6776^{+0.0092}_{-0.0086}$
$A_{217}^{\text{PS}}$	97.3	$98^{+20}_{-20}$	$D_{810}$	2533.3	$2533^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4866	$0.479^{+0.024}_{-0.026}$
$A^{\text{kSZ}}$	0.02	< 8.24	$D_{1420}$	814.9	$814.6^{+9.8}_{-9.8}$	$\sigma_8(0.57)$	0.6277	$0.608^{+0.040}_{-0.045}$
$A_{100}^{\text{dustTT}}$	7.47	$7.45^{+3.6}_{-3.7}$	$D_{2000}$	230.69	$230.3^{+3.7}_{-3.7}$	$f_{2000}^{143}$	29.2	$30^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	9.01	$9.02^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9673	$0.967^{+0.011}_{-0.012}$	$f_{2000}^{143 \times 217}$	31.96	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.1^{+7.9}_{-8.0}$	$Y_{\text{P}}$	0.245362	$0.24533^{+0.00020}_{-0.00020}$	$f_{2000}^{217}$	105.66	$106.0^{+4.1}_{-4.0}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246688	$0.24666^{+0.00020}_{-0.00020}$	$\chi_{\text{lowTEB}}^2$	10496.47	$10497.5$ ( $\nu$ : 3.3)
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.605	$2.616^{+0.087}_{-0.085}$	$\chi_{\text{plik}}^2$	763.0	$777.7$ ( $\nu$ : 17.0)
$c_{217}$	0.99592	$0.9959^{+0.0028}_{-0.0029}$	Age/Gyr	13.770	$13.83^{+0.15}_{-0.13}$	$\chi_{\text{JLA}}^2$	706.58	$707.22$ ( $\nu$ : 0.4)
$H_0$	68.15	$67.1^{+2.6}_{-2.8}$	$z_*$	1089.92	$1090.02^{+0.83}_{-0.81}$	$\chi_{\text{prior}}^2$	2.10	$7.31$ ( $\nu$ : 6.2)
$\Omega_\Lambda$	0.6955	$0.682^{+0.034}_{-0.037}$	$r_*$	144.73	$144.72^{+0.93}_{-0.89}$	$\chi_{\text{CMB}}^2$	11259.5	$11275.2$ ( $\nu$ : 16.0)

Best-fit  $\chi_{\text{eff}}^2 = 11968.16$ ;  $\Delta\chi_{\text{eff}}^2 = -0.58$ ;  $\bar{\chi}_{\text{eff}}^2 = 11989.73$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.13$ ;  $R - 1 = 0.01054$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.47 ( $\Delta$  0.02) plik\_dx11dr2\_HM.v18\_TT: 763.00 ( $\Delta$  -0.42) SN - JLA December\_2013: 706.59 ( $\Delta$  -0.18)

### 7.3 base\_mnu\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022294	$0.02225^{+0.00046}_{-0.00046}$	$\Omega_m$	0.3042	$0.317^{+0.039}_{-0.036}$	$100\theta_*$	1.04116	$1.04112^{+0.00090}_{-0.00092}$
$\Omega_c h^2$	0.11905	$0.1192^{+0.0042}_{-0.0041}$	$\Omega_m h^2$	0.14135	$0.1427^{+0.0049}_{-0.0048}$	$D_A/\text{Gpc}$	13.902	$13.901^{+0.089}_{-0.085}$
$100\theta_{\text{MC}}$	1.04099	$1.04090^{+0.00093}_{-0.00094}$	$\Omega_\nu h^2$	0.00001	< 0.00353	$z_{\text{drag}}$	1059.70	$1059.61^{+0.93}_{-0.93}$
$\tau$	0.0800	$0.082^{+0.039}_{-0.040}$	$\Omega_m h^3$	0.09635	$0.0957^{+0.0015}_{-0.0018}$	$r_{\text{drag}}$	147.43	$147.43^{+0.96}_{-0.91}$
$\Sigma m_\nu$ [eV]	0.001	< 0.328	$\sigma_8$	0.842	$0.820^{+0.049}_{-0.056}$	$k_D$	0.14044	$0.1404^{+0.0010}_{-0.0010}$
$\ln(10^{10} A_s)$	3.092	$3.096^{+0.075}_{-0.077}$	$\sigma_8 \Omega_m^{0.5}$	0.4646	$0.461^{+0.027}_{-0.026}$	$100\theta_D$	0.16091	$0.16094^{+0.00053}_{-0.00052}$
$n_s$	0.9676	$0.967^{+0.012}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	0.6255	$0.615^{+0.033}_{-0.034}$	$z_{\text{eq}}$	3378	$3380^{+94}_{-95}$
$y_{\text{cal}}$	1.00029	$1.0003^{+0.0050}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.020	$1.001^{+0.053}_{-0.056}$	$k_{\text{eq}}$	0.010309	$0.01032^{+0.00029}_{-0.00029}$
$A_{217}^{\text{CIB}}$	66.4	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.499	$2.491^{+0.091}_{-0.091}$	$100\theta_{\text{eq}}$	0.8175	$0.817^{+0.018}_{-0.018}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.10	—	$z_{\text{re}}$	10.13	$10.2^{+3.6}_{-3.7}$	$100\theta_{s,\text{eq}}$	0.4516	$0.4515^{+0.0095}_{-0.0091}$
$A_{143}^{\text{tSZ}}$	7.11	$5.21^{+3.7}_{-3.8}$	$10^9 A_s$	2.203	$2.21^{+0.17}_{-0.16}$	$r_{\text{drag}}/D_V(0.57)$	0.07198	$0.0713^{+0.0020}_{-0.0020}$
$A_{100}^{\text{PS}}$	252	$257^{+50}_{-50}$	$10^9 A_s e^{-2\tau}$	1.8772	$1.877^{+0.027}_{-0.027}$	$H(0.57)$	93.30	$92.8^{+1.3}_{-1.5}$
$A_{143}^{\text{PS}}$	39.8	$43^{+20}_{-20}$	$D_{40}$	1233.0	$1235^{+30}_{-28}$	$D_A(0.57)$	1379.8	$1395^{+42}_{-38}$
$A_{143 \times 217}^{\text{PS}}$	35.1	$39^{+20}_{-20}$	$D_{220}$	5718	$5718^{+81}_{-82}$	$F_{\text{AP}}(0.57)$	0.6742	$0.6774^{+0.0098}_{-0.0091}$
$A_{217}^{\text{PS}}$	98.0	$98^{+20}_{-20}$	$D_{810}$	2533.1	$2533^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4866	$0.479^{+0.024}_{-0.025}$
$A^{\text{kSZ}}$	0.01	< 8.23	$D_{1420}$	814.9	$814.7^{+9.8}_{-9.9}$	$\sigma_8(0.57)$	0.6279	$0.609^{+0.040}_{-0.046}$
$A_{100}^{\text{dustTT}}$	7.43	$7.44^{+3.6}_{-3.7}$	$D_{2000}$	230.70	$230.4^{+3.7}_{-3.7}$	$f_{2000}^{143}$	29.3	$30^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	9.09	$9.02^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9676	$0.967^{+0.012}_{-0.012}$	$f_{2000}^{143 \times 217}$	32.02	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.1^{+7.9}_{-8.0}$	$Y_{\text{P}}$	0.245359	$0.24534^{+0.00021}_{-0.00021}$	$f_{2000}^{217}$	105.57	$106.0^{+4.1}_{-4.0}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246686	$0.24667^{+0.00021}_{-0.00021}$	$\chi_{\text{lowTEB}}^2$	10496.42	$10497.5$ ( $\nu$ : 3.3)
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.606	$2.614^{+0.089}_{-0.086}$	$\chi_{\text{plik}}^2$	763.1	$777.7$ ( $\nu$ : 17.1)
$c_{217}$	0.99588	$0.9959^{+0.0028}_{-0.0029}$	Age/Gyr	13.770	$13.83^{+0.16}_{-0.13}$	$\chi_{\text{H070p6}}^2$	0.54	$1.26$ ( $\nu$ : 0.5)
$H_0$	68.16	$67.1^{+2.8}_{-3.0}$	$z_*$	1089.93	$1090.00^{+0.86}_{-0.83}$	$\chi_{\text{prior}}^2$	2.01	$7.31$ ( $\nu$ : 6.2)
$\Omega_\Lambda$	0.6958	$0.683^{+0.036}_{-0.039}$	$r_*$	144.74	$144.72^{+0.97}_{-0.92}$	$\chi_{\text{CMB}}^2$	11259.6	$11275.2$ ( $\nu$ : 16.1)

Best-fit  $\chi_{\text{eff}}^2 = 11262.11$ ;  $\Delta\chi_{\text{eff}}^2 = -0.71$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.80$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.11$ ;  $R - 1 = 0.01188$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.42 ( $\Delta$  0.10) plik\_dx11dr2\_HM.v18\_TT: 763.15 ( $\Delta$  -0.51) Hubble - H070p6: 0.54 ( $\Delta$  -0.29)

## 7.4 base\_mnu\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02214^{+0.00051}_{-0.00054}$	$\Omega_m$	$0.339^{+0.085}_{-0.061}$	$100\theta_*$	$1.04097^{+0.00095}_{-0.00095}$
$\Omega_c h^2$	$0.1202^{+0.0047}_{-0.0045}$	$\Omega_m h^2$	$0.1449^{+0.0083}_{-0.0069}$	$D_A/\text{Gpc}$	$13.881^{+0.094}_{-0.099}$
$100\theta_{\text{MC}}$	$1.0407^{+0.0010}_{-0.0011}$	$\Omega_\nu h^2$	$< 0.00775$	$z_{\text{drag}}$	$1059.44^{+0.99}_{-1.0}$
$\tau$	$0.082^{+0.036}_{-0.037}$	$\Omega_m h^3$	$0.0949^{+0.0024}_{-0.0036}$	$r_{\text{drag}}$	$147.2^{+1.0}_{-1.0}$
$\Sigma m_\nu$ [eV]	$< 0.721$	$\sigma_8$	$0.796^{+0.076}_{-0.11}$	$k_D$	$0.1406^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	$3.098^{+0.070}_{-0.071}$	$\sigma_8 \Omega_m^{0.5}$	$0.462^{+0.028}_{-0.028}$	$100\theta_D$	$0.16101^{+0.00057}_{-0.00054}$
$n_s$	$0.964^{+0.014}_{-0.014}$	$\sigma_8 \Omega_m^{0.25}$	$0.606^{+0.044}_{-0.055}$	$z_{\text{eq}}$	$3402^{+100}_{-100}$
$y_{\text{cal}}$	$1.0004^{+0.0050}_{-0.0050}$	$\sigma_8/h^{0.5}$	$0.983^{+0.075}_{-0.097}$	$k_{\text{eq}}$	$0.01039^{+0.00032}_{-0.00031}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	$2.501^{+0.092}_{-0.087}$	$100\theta_{\text{eq}}$	$0.813^{+0.019}_{-0.019}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$z_{\text{re}}$	$10.3^{+3.1}_{-3.5}$	$100\theta_{\text{s,eq}}$	$0.449^{+0.010}_{-0.0097}$
$A_{143}^{\text{tSZ}}$	$5.06^{+3.7}_{-3.8}$	$10^9 A_s$	$2.22^{+0.16}_{-0.16}$	$r_{\text{drag}}/D_V(0.57)$	$0.0703^{+0.0029}_{-0.0038}$
$A_{100}^{\text{PS}}$	$260^{+60}_{-50}$	$10^9 A_s e^{-2\tau}$	$1.881^{+0.028}_{-0.027}$	$H(0.57)$	$92.0^{+2.1}_{-2.8}$
$A_{143}^{\text{PS}}$	$45^{+20}_{-20}$	$D_{40}$	$1238^{+30}_{-29}$	$D_A(0.57)$	$1417^{+85}_{-62}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$D_{220}$	$5715^{+81}_{-82}$	$F_{\text{AP}}(0.57)$	$0.683^{+0.020}_{-0.015}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$D_{810}$	$2534^{+27}_{-27}$	$f\sigma_8(0.57)$	$0.471^{+0.035}_{-0.046}$
$A^{\text{kSZ}}$	—	$D_{1420}$	$814.2^{+9.9}_{-10}$	$\sigma_8(0.57)$	$0.588^{+0.064}_{-0.091}$
$A_{100}^{\text{dustTT}}$	$7.44^{+3.7}_{-3.7}$	$D_{2000}$	$229.8^{+3.8}_{-4.0}$	$f_{2000}^{143}$	$31^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	$9.03^{+3.6}_{-3.7}$	$n_{\text{s},0.002}$	$0.964^{+0.014}_{-0.014}$	$f_{2000}^{143 \times 217}$	$33^{+5}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.0}_{-8.1}$	$Y_{\text{P}}$	$0.24529^{+0.00023}_{-0.00025}$	$f_{2000}^{217}$	$106.5^{+4.3}_{-4.2}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24661^{+0.00023}_{-0.00025}$	$\chi_{\text{lowTEB}}^2$	$10497.8 (\nu: 3.4)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	$2.64^{+0.11}_{-0.097}$	$\chi_{\text{plik}}^2$	$778.4 (\nu: 17.7)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0029}$	Age/Gyr	$13.91^{+0.32}_{-0.22}$	$\chi_{\text{prior}}^2$	$7.38 (\nu: 6.4)$
$H_0$	$65.6^{+4.3}_{-5.8}$	$z_*$	$1090.3^{+1.1}_{-1.1}$	$\chi_{\text{CMB}}^2$	$11276.1 (\nu: 17.1)$
$\Omega_\Lambda$	$0.661^{+0.061}_{-0.085}$	$r_*$	$144.5^{+1.0}_{-1.1}$		

$$\bar{\chi}_{\text{eff}}^2 = 11283.53; \Delta \bar{\chi}_{\text{eff}}^2 = 1.89; R - 1 = 0.00979$$

## 7.5 base\_mnu\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022256	$0.02222^{+0.00032}_{-0.00033}$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.16}$	$10^5 \text{D/H}$	2.613	$2.620^{+0.065}_{-0.060}$
$\Omega_c h^2$	0.11979	$0.1200^{+0.0029}_{-0.0029}$	$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.11}_{-0.10}$	Age/Gyr	13.784	$13.87^{+0.20}_{-0.15}$
$100\theta_{\text{MC}}$	1.04077	$1.04068^{+0.00066}_{-0.00067}$	$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34^{+0.16}_{-0.16}$	$z_*$	1090.04	$1090.13^{+0.67}_{-0.62}$
$\tau$	0.0769	$0.083^{+0.034}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.50}$	$r_*$	144.58	$144.53^{+0.64}_{-0.66}$
$\Sigma m_\nu$ [eV]	0.002	< 0.492	$c_{100}$	0.99821	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04094	$1.04093^{+0.00062}_{-0.00062}$
$\ln(10^{10} A_s)$	3.089	$3.100^{+0.066}_{-0.067}$	$c_{217}$	0.99590	$0.9960^{+0.0029}_{-0.0028}$	$D_A/\text{Gpc}$	13.889	$13.885^{+0.059}_{-0.061}$
$n_s$	0.9651	$0.9639^{+0.0097}_{-0.0098}$	$H_0$	67.79	$66.3^{+2.9}_{-3.7}$	$z_{\text{drag}}$	1059.67	$1059.60^{+0.62}_{-0.60}$
$y_{\text{cal}}$	1.00033	$1.0005^{+0.0049}_{-0.0048}$	$\Omega_\Lambda$	0.6909	$0.672^{+0.038}_{-0.050}$	$r_{\text{drag}}$	147.28	$147.24^{+0.63}_{-0.63}$
$A_{217}^{\text{CIB}}$	65.1	$64^{+10}_{-10}$	$\Omega_m$	0.3091	$0.328^{+0.050}_{-0.038}$	$k_D$	0.14057	$0.14060^{+0.00066}_{-0.00065}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.27	—	$\Omega_m h^2$	0.14207	$0.1440^{+0.0051}_{-0.0044}$	$100\theta_D$	0.160903	$0.16092^{+0.00036}_{-0.00035}$
$A_{143}^{\text{tSZ}}$	7.03	$5.34^{+3.6}_{-3.7}$	$\Omega_\nu h^2$	0.00002	< 0.00528	$z_{\text{eq}}$	3394	$3398^{+66}_{-65}$
$A_{100}^{\text{PS}}$	254	$261^{+50}_{-50}$	$\Omega_m h^3$	0.09631	$0.0954^{+0.0016}_{-0.0023}$	$k_{\text{eq}}$	0.010360	$0.01037^{+0.00020}_{-0.00020}$
$A_{143}^{\text{PS}}$	42.7	$44^{+10}_{-20}$	$\sigma_8$	0.842	$0.812^{+0.057}_{-0.074}$	$100\theta_{\text{eq}}$	0.8142	$0.814^{+0.012}_{-0.012}$
$A_{143 \times 217}^{\text{PS}}$	40.7	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4684	$0.464^{+0.021}_{-0.022}$	$100\theta_{\text{s,eq}}$	0.4499	$0.4497^{+0.0064}_{-0.0062}$
$A_{217}^{\text{PS}}$	100.9	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6282	$0.614^{+0.034}_{-0.039}$	$r_{\text{drag}}/D_V(0.57)$	0.07169	$0.0708^{+0.0019}_{-0.0024}$
$A^{\text{kSZ}}$	0.00	< 7.95	$\sigma_8/h^{0.5}$	1.023	$0.997^{+0.057}_{-0.068}$	$H(0.57)$	93.14	$92.4^{+1.4}_{-1.8}$
$A_{100}^{\text{dustTT}}$	7.39	$7.45^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.509	$2.506^{+0.077}_{-0.079}$	$D_A(0.57)$	1384.8	$1406^{+54}_{-41}$
$A_{143}^{\text{dustTT}}$	8.96	$8.93^{+3.6}_{-3.6}$	$z_{\text{re}}$	9.87	$10.4^{+3.1}_{-3.2}$	$F_{\text{AP}}(0.57)$	0.6754	$0.680^{+0.012}_{-0.0095}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.1^{+8.2}_{-8.1}$	$10^9 A_s$	2.196	$2.22^{+0.15}_{-0.15}$	$f\sigma_8(0.57)$	0.4881	$0.477^{+0.026}_{-0.031}$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8826	$1.883^{+0.023}_{-0.023}$	$\sigma_8(0.57)$	0.627	$0.601^{+0.047}_{-0.063}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1239.0	$1242^{+26}_{-26}$	$f_{2000}^{143}$	29.0	$30^{+6}_{-5}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0487	$0.0487^{+0.0098}_{-0.0098}$	$D_{220}$	5726	$5730^{+76}_{-76}$	$f_{2000}^{143 \times 217}$	32.02	$32^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0997^{+0.064}_{-0.064}$	$D_{810}$	2535.9	$2536^{+27}_{-26}$	$f_{2000}^{217}$	105.55	$106.1^{+3.8}_{-3.7}$
$A_{143}^{\text{dustEE}}$	0.1001	$0.100^{+0.013}_{-0.013}$	$D_{1420}$	814.9	$814.8^{+9.3}_{-9.3}$	$\chi_{\text{lowTEB}}^2$	10496.79	10498.1 ( $\nu$ : 3.0)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.091}_{-0.091}$	$D_{2000}$	230.59	$230.3^{+3.2}_{-3.3}$	$\chi_{\text{plik}}^2$	2431.5	2451.5 ( $\nu$ : 24.3)
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.25}$	$n_{\text{s},0.002}$	0.9651	$0.9639^{+0.0097}_{-0.0098}$	$\chi_{\text{prior}}^2$	6.71	19.3 ( $\nu$ : 15.3)
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.074}_{-0.074}$	$Y_{\text{P}}$	0.245342	$0.24532^{+0.00014}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12928.3	12949.6 ( $\nu$ : 23.8)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.058}_{-0.057}$	$Y_{\text{P}}^{\text{BBN}}$	0.246669	$0.24665^{+0.00014}_{-0.00015}$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.02$ ;  $\Delta\chi_{\text{eff}}^2 = -0.54$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.87$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.17$ ;  $R - 1 = 0.00787$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.79 ( $\Delta$  -0.15) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.52 ( $\Delta$  -0.12)



## 7.6 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022275	$0.02226^{+0.00031}_{-0.00031}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.17}$	$10^5 \text{D/H}$	2.609	$2.612^{+0.059}_{-0.058}$
$\Omega_c h^2$	0.11960	$0.1196^{+0.0028}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.10}_{-0.11}$	Age/Gyr	13.780	$13.83^{+0.12}_{-0.099}$
$100\theta_{\text{MC}}$	1.04083	$1.04075^{+0.00063}_{-0.00063}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$z_*$	1090.00	$1090.03^{+0.59}_{-0.57}$
$\tau$	0.0789	$0.082^{+0.033}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.51}_{-0.49}$	$r_*$	144.61	$144.62^{+0.61}_{-0.60}$
$\Sigma m_\nu$ [eV]	0.001	< 0.288	$c_{100}$	0.99820	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04099	$1.04097^{+0.00062}_{-0.00061}$
$\ln(10^{10} A_s)$	3.092	$3.099^{+0.065}_{-0.066}$	$c_{217}$	0.99592	$0.9960^{+0.0029}_{-0.0028}$	$D_A/\text{Gpc}$	13.892	$13.893^{+0.057}_{-0.057}$
$n_s$	0.9653	$0.9651^{+0.0093}_{-0.0092}$	$H_0$	67.89	$67.0^{+2.0}_{-2.3}$	$z_{\text{drag}}$	1059.67	$1059.65^{+0.59}_{-0.60}$
$y_{\text{cal}}$	1.00013	$1.0005^{+0.0048}_{-0.0049}$	$\Omega_\Lambda$	0.6922	$0.681^{+0.026}_{-0.030}$	$r_{\text{drag}}$	147.31	$147.32^{+0.59}_{-0.59}$
$A_{217}^{\text{CIB}}$	66.0	$64^{+10}_{-10}$	$\Omega_m$	0.3078	$0.319^{+0.030}_{-0.026}$	$k_D$	0.14056	$0.14054^{+0.00064}_{-0.00064}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.15	—	$\Omega_m h^2$	0.14188	$0.1430^{+0.0035}_{-0.0034}$	$100\theta_D$	0.160889	$0.16090^{+0.00036}_{-0.00035}$
$A_{143}^{\text{tSZ}}$	7.18	$5.39^{+3.6}_{-3.8}$	$\Omega_\nu h^2$	0.00001	< 0.00310	$z_{\text{eq}}$	3390	$3390^{+62}_{-62}$
$A_{100}^{\text{PS}}$	254	$260^{+60}_{-50}$	$\Omega_m h^3$	0.09633	$0.0958^{+0.0011}_{-0.0014}$	$k_{\text{eq}}$	0.010348	$0.01035^{+0.00019}_{-0.00019}$
$A_{143}^{\text{PS}}$	40.1	$43^{+10}_{-20}$	$\sigma_8$	0.8432	$0.824^{+0.041}_{-0.047}$	$100\theta_{\text{eq}}$	0.8150	$0.815^{+0.012}_{-0.012}$
$A_{143 \times 217}^{\text{PS}}$	36.6	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4678	$0.465^{+0.020}_{-0.020}$	$100\theta_{\text{s,eq}}$	0.4504	$0.4505^{+0.0061}_{-0.0060}$
$A_{217}^{\text{PS}}$	99.0	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6281	$0.619^{+0.027}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07176	$0.0712^{+0.0014}_{-0.0015}$
$A^{\text{kSZ}}$	0.00	< 7.81	$\sigma_8/h^{0.5}$	1.0233	$1.006^{+0.044}_{-0.047}$	$H(0.57)$	93.19	$92.72^{+0.98}_{-1.1}$
$A_{100}^{\text{dustTT}}$	7.38	$7.43^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.510	$2.504^{+0.077}_{-0.079}$	$D_A(0.57)$	1383.4	$1396^{+32}_{-28}$
$A_{143}^{\text{dustTT}}$	8.93	$8.90^{+3.6}_{-3.5}$	$z_{\text{re}}$	10.04	$10.3^{+3.0}_{-3.1}$	$F_{\text{AP}}(0.57)$	0.6751	$0.6778^{+0.0074}_{-0.0066}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.0^{+8.1}_{-8.0}$	$10^9 A_s$	2.202	$2.22^{+0.15}_{-0.14}$	$f\sigma_8(0.57)$	0.4881	$0.481^{+0.020}_{-0.021}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8808	$1.881^{+0.023}_{-0.023}$	$\sigma_8(0.57)$	0.6277	$0.611^{+0.033}_{-0.039}$
$A_{100}^{\text{dustEE}}$	0.0811	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1238.9	$1241^{+26}_{-26}$	$f_{2000}^{143}$	29.0	$29^{+5}_{-5}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0488^{+0.0098}_{-0.0096}$	$D_{220}$	5726	$5731^{+76}_{-76}$	$f_{2000}^{143 \times 217}$	31.96	$32^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.065}$	$D_{810}$	2534.3	$2536^{+27}_{-27}$	$f_{2000}^{217}$	105.56	$105.8^{+3.7}_{-3.7}$
$A_{143}^{\text{dustEE}}$	0.0999	$0.100^{+0.013}_{-0.013}$	$D_{1420}$	814.5	$815.0^{+9.3}_{-9.4}$	$\chi_{\text{lowTEB}}^2$	10496.97	10497.9 ( $\nu$ : 2.8)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.091}_{-0.092}$	$D_{2000}$	230.51	$230.5^{+3.1}_{-3.2}$	$\chi_{\text{plik}}^2$	2431.2	2450.9 ( $\nu$ : 23.5)
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.25}_{-0.26}$	$n_{\text{s},0.002}$	0.9653	$0.9651^{+0.0093}_{-0.0092}$	$\chi_{\text{JLA}}^2$	706.65	707.16 ( $\nu$ : 0.3)
$A_{100}^{\text{dustTE}}$	0.142	$0.142^{+0.074}_{-0.074}$	$Y_{\text{P}}$	0.245351	$0.24534^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	6.85	19.3 ( $\nu$ : 15.3)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.057}$	$Y_{\text{P}}^{\text{BBN}}$	0.246677	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12928.2	12948.8 ( $\nu$ : 22.6)

Best-fit  $\chi_{\text{eff}}^2 = 13641.67$ ;  $\Delta\chi_{\text{eff}}^2 = -0.73$ ;  $\bar{\chi}_{\text{eff}}^2 = 13675.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.65$ ;  $R - 1 = 0.00899$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.97 ( $\Delta$  -0.39) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.20 ( $\Delta$  -0.41) SN - JLA December\_2013: 706.65 ( $\Delta$  -0.20)

## 7.7 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022299	$0.02226^{+0.00031}_{-0.00031}$	$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.17}_{-0.17}$	$10^5 D/H$	2.605	$2.611^{+0.060}_{-0.058}$
$\Omega_c h^2$	0.11940	$0.1196^{+0.0028}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.10}_{-0.11}$	Age/Gyr	13.776	$13.83^{+0.12}_{-0.10}$
$100\theta_{\text{MC}}$	1.04085	$1.04076^{+0.00064}_{-0.00064}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$z_*$	1089.95	$1090.02^{+0.60}_{-0.58}$
$\tau$	0.0807	$0.082^{+0.033}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.51}_{-0.49}$	$r_*$	144.65	$144.62^{+0.62}_{-0.62}$
$\Sigma m_\nu$ [eV]	0.000	< 0.287	$c_{100}$	0.99819	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04100	$1.04098^{+0.00062}_{-0.00062}$
$\ln(10^{10} A_s)$	3.095	$3.099^{+0.065}_{-0.066}$	$c_{217}$	0.99587	$0.9960^{+0.0029}_{-0.0028}$	$D_A/\text{Gpc}$	13.895	$13.893^{+0.057}_{-0.058}$
$n_s$	0.9664	$0.9651^{+0.0094}_{-0.0093}$	$H_0$	67.99	$67.0^{+2.1}_{-2.3}$	$z_{\text{drag}}$	1059.74	$1059.66^{+0.62}_{-0.61}$
$y_{\text{cal}}$	1.00022	$1.0005^{+0.0048}_{-0.0049}$	$\Omega_\Lambda$	0.6935	$0.682^{+0.027}_{-0.030}$	$r_{\text{drag}}$	147.34	$147.32^{+0.60}_{-0.60}$
$A_{217}^{\text{CIB}}$	65.3	$64^{+10}_{-10}$	$\Omega_m$	0.3065	$0.318^{+0.030}_{-0.027}$	$k_D$	0.14055	$0.14055^{+0.00064}_{-0.00064}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.20	—	$\Omega_m h^2$	0.14170	$0.1429^{+0.0036}_{-0.0035}$	$100\theta_D$	0.160865	$0.16090^{+0.00036}_{-0.00034}$
$A_{143}^{\text{tSZ}}$	7.16	$5.40^{+3.6}_{-3.8}$	$\Omega_\nu h^2$	0.00000	< 0.00309	$z_{\text{eq}}$	3386	$3389^{+64}_{-63}$
$A_{100}^{\text{PS}}$	252	$260^{+60}_{-50}$	$\Omega_m h^3$	0.09634	$0.0958^{+0.0011}_{-0.0014}$	$k_{\text{eq}}$	0.010334	$0.01034^{+0.00019}_{-0.00019}$
$A_{143}^{\text{PS}}$	40.2	$43^{+10}_{-20}$	$\sigma_8$	0.8441	$0.824^{+0.041}_{-0.047}$	$100\theta_{\text{eq}}$	0.8159	$0.815^{+0.012}_{-0.012}$
$A_{143 \times 217}^{\text{PS}}$	37.6	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4673	$0.465^{+0.020}_{-0.020}$	$100\theta_{\text{s,eq}}$	0.4508	$0.4505^{+0.0062}_{-0.0061}$
$A_{217}^{\text{PS}}$	99.7	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6281	$0.619^{+0.027}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07183	$0.0712^{+0.0014}_{-0.0016}$
$A^{\text{kSZ}}$	0.00	< 7.80	$\sigma_8/h^{0.5}$	1.0237	$1.006^{+0.044}_{-0.047}$	$H(0.57)$	93.23	$92.7^{+1.0}_{-1.2}$
$A_{100}^{\text{dustTT}}$	7.43	$7.43^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.509	$2.504^{+0.077}_{-0.079}$	$D_A(0.57)$	1382.0	$1396^{+33}_{-29}$
$A_{143}^{\text{dustTT}}$	8.90	$8.90^{+3.6}_{-3.5}$	$z_{\text{re}}$	10.19	$10.3^{+3.0}_{-3.1}$	$F_{\text{AP}}(0.57)$	0.6748	$0.6777^{+0.0076}_{-0.0068}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.0^{+8.1}_{-8.0}$	$10^9 A_s$	2.210	$2.22^{+0.15}_{-0.14}$	$f\sigma_8(0.57)$	0.4883	$0.482^{+0.020}_{-0.021}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8802	$1.881^{+0.023}_{-0.023}$	$\sigma_8(0.57)$	0.6287	$0.612^{+0.033}_{-0.039}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1237.3	$1241^{+26}_{-26}$	$f_{2000}^{143}$	28.6	$29^{+5}_{-5}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0488^{+0.0098}_{-0.0096}$	$D_{220}$	5725	$5731^{+76}_{-76}$	$f_{2000}^{143 \times 217}$	31.60	$32^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.065}$	$D_{810}$	2534.8	$2536^{+27}_{-27}$	$f_{2000}^{217}$	105.27	$105.8^{+3.8}_{-3.7}$
$A_{143}^{\text{dustEE}}$	0.1005	$0.100^{+0.013}_{-0.013}$	$D_{1420}$	815.0	$815.0^{+9.3}_{-9.4}$	$\chi_{\text{lowTEB}}^2$	10496.91	10497.9 ( $\nu$ : 2.8)
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.223^{+0.091}_{-0.092}$	$D_{2000}$	230.77	$230.5^{+3.2}_{-3.2}$	$\chi_{\text{plik}}^2$	2431.2	2450.9 ( $\nu$ : 23.5)
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.25}_{-0.26}$	$n_{\text{s},0.002}$	0.9664	$0.9651^{+0.0094}_{-0.0093}$	$\chi_{\text{H070p6}}^2$	0.62	1.24 ( $\nu$ : 0.3)
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.074}_{-0.074}$	$Y_{\text{P}}$	0.245362	$0.24534^{+0.00014}_{-0.00015}$	$\chi_{\text{prior}}^2$	6.94	19.3 ( $\nu$ : 15.3)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.058}_{-0.057}$	$Y_{\text{P}}^{\text{BBN}}$	0.246688	$0.24667^{+0.00014}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12928.1	12948.8 ( $\nu$ : 22.6)

Best-fit  $\chi_{\text{eff}}^2 = 12935.66$ ;  $\Delta\chi_{\text{eff}}^2 = -0.81$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.37$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.63$ ;  $R - 1 = 0.00898$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.91 ( $\Delta$  -0.09) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.20 ( $\Delta$  -0.57) Hubble - H070p6: 0.62 ( $\Delta$  -0.28)

## 7.8 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02222^{+0.00032}_{-0.00033}$	$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.17}_{-0.17}$	$10^5 D/H$	$2.620^{+0.064}_{-0.060}$
$\Omega_c h^2$	$0.1200^{+0.0029}_{-0.0029}$	$A_{143}^{\text{dustTE}}$	$0.16^{+0.10}_{-0.10}$	Age/Gyr	$13.87^{+0.20}_{-0.15}$
$100\theta_{\text{MC}}$	$1.04068^{+0.00066}_{-0.00067}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$z_*$	$1090.13^{+0.67}_{-0.62}$
$\tau$	$0.083^{+0.033}_{-0.032}$	$A_{217}^{\text{dustTE}}$	$1.68^{+0.51}_{-0.50}$	$r_*$	$144.53^{+0.64}_{-0.66}$
$\Sigma m_\nu$ [eV]	$< 0.494$	$c_{100}$	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	$1.04093^{+0.00062}_{-0.00062}$
$\ln(10^{10} A_s)$	$3.102^{+0.065}_{-0.063}$	$c_{217}$	$0.9960^{+0.0029}_{-0.0028}$	$D_A/\text{Gpc}$	$13.885^{+0.060}_{-0.061}$
$n_s$	$0.9640^{+0.0096}_{-0.0097}$	$H_0$	$66.3^{+2.9}_{-3.7}$	$z_{\text{drag}}$	$1059.60^{+0.61}_{-0.60}$
$y_{\text{cal}}$	$1.0005^{+0.0048}_{-0.0049}$	$\Omega_\Lambda$	$0.672^{+0.039}_{-0.050}$	$r_{\text{drag}}$	$147.24^{+0.63}_{-0.63}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$\Omega_m$	$0.328^{+0.050}_{-0.039}$	$k_D$	$0.14060^{+0.00066}_{-0.00066}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1440^{+0.0051}_{-0.0044}$	$100\theta_D$	$0.16092^{+0.00036}_{-0.00035}$
$A_{143}^{\text{tSZ}}$	$5.34^{+3.6}_{-3.8}$	$\Omega_\nu h^2$	$< 0.00531$	$z_{\text{eq}}$	$3398^{+65}_{-65}$
$A_{100}^{\text{PS}}$	$261^{+60}_{-50}$	$\Omega_m h^3$	$0.0954^{+0.0016}_{-0.0023}$	$k_{\text{eq}}$	$0.01037^{+0.00020}_{-0.00020}$
$A_{143}^{\text{PS}}$	$44^{+20}_{-20}$	$\sigma_8$	$0.812^{+0.057}_{-0.075}$	$100\theta_{\text{eq}}$	$0.814^{+0.013}_{-0.012}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	$0.465^{+0.021}_{-0.022}$	$100\theta_{\text{s,eq}}$	$0.4497^{+0.0064}_{-0.0062}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.614^{+0.034}_{-0.039}$	$r_{\text{drag}}/D_V(0.57)$	$0.0708^{+0.0019}_{-0.0024}$
$A^{\text{kSZ}}$	$< 7.90$	$\sigma_8/h^{0.5}$	$0.997^{+0.057}_{-0.069}$	$H(0.57)$	$92.4^{+1.4}_{-1.8}$
$A_{100}^{\text{dustTT}}$	$7.44^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	$2.507^{+0.076}_{-0.077}$	$D_A(0.57)$	$1406^{+54}_{-41}$
$A_{143}^{\text{dustTT}}$	$8.92^{+3.6}_{-3.6}$	$z_{\text{re}}$	$10.4^{+2.8}_{-3.0}$	$F_{\text{AP}}(0.57)$	$0.680^{+0.012}_{-0.0095}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0^{+8.1}_{-8.0}$	$10^9 A_s$	$2.22^{+0.14}_{-0.15}$	$f\sigma_8(0.57)$	$0.477^{+0.026}_{-0.031}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.883^{+0.023}_{-0.024}$	$\sigma_8(0.57)$	$0.601^{+0.047}_{-0.063}$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{40}$	$1242^{+26}_{-26}$	$f_{2000}^{143}$	$30^{+6}_{-5}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0487^{+0.0097}_{-0.0097}$	$D_{220}$	$5730^{+76}_{-76}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0998^{+0.064}_{-0.065}$	$D_{810}$	$2536^{+27}_{-26}$	$f_{2000}^{217}$	$106.1^{+3.8}_{-3.7}$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.013}_{-0.013}$	$D_{1420}$	$814.8^{+9.3}_{-9.3}$	$\chi_{\text{lowTEB}}^2$	$10498.1 (\nu: 3.0)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.223^{+0.091}_{-0.092}$	$D_{2000}$	$230.3^{+3.2}_{-3.3}$	$\chi_{\text{plik}}^2$	$2451.4 (\nu: 24.2)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.26}_{-0.26}$	$n_{\text{s},0.002}$	$0.9640^{+0.0096}_{-0.0097}$	$\chi_{\text{prior}}^2$	$19.3 (\nu: 15.3)$
$A_{100}^{\text{dustTE}}$	$0.141^{+0.075}_{-0.073}$	$Y_{\text{P}}$	$0.24532^{+0.00014}_{-0.00015}$	$\chi_{\text{CMB}}^2$	$12949.5 (\nu: 23.7)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.132^{+0.058}_{-0.057}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24665^{+0.00014}_{-0.00015}$		

$\bar{\chi}_{\text{eff}}^2 = 12968.81$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.13$ ;  $R - 1 = 0.00798$

## 7.9 base\_mnu\_plikHM\_TE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02238	$0.02223^{+0.00054}_{-0.00054}$	$\sigma_8$	0.798	$0.70^{+0.14}_{-0.15}$	$D_A/\text{Gpc}$	13.927	$13.90^{+0.10}_{-0.10}$
$\Omega_c h^2$	0.11775	$0.1181^{+0.0039}_{-0.0039}$	$\sigma_8 \Omega_m^{0.5}$	0.4425	$0.421^{+0.043}_{-0.045}$	$z_{\text{drag}}$	1059.78	$1059.6^{+1.1}_{-1.0}$
$100\theta_{\text{MC}}$	1.04096	$1.0408^{+0.0010}_{-0.0011}$	$\sigma_8 \Omega_m^{0.25}$	0.594	$0.543^{+0.080}_{-0.087}$	$r_{\text{drag}}$	147.68	$147.5^{+1.0}_{-1.1}$
$\tau$	0.0614	$0.061^{+0.041}_{-0.043}$	$\sigma_8/h^{0.5}$	0.969	$0.88^{+0.14}_{-0.15}$	$k_D$	0.14026	$0.1405^{+0.0013}_{-0.0012}$
$\Sigma m_\nu [\text{eV}]$	0.11	< 1.36	$\langle d^2 \rangle^{1/2}$	2.401	$2.39^{+0.11}_{-0.11}$	$100\theta_D$	0.16082	$0.16081^{+0.00064}_{-0.00066}$
$\ln(10^{10} A_s)$	3.047	$3.041^{+0.088}_{-0.085}$	$z_{\text{re}}$	8.36	$8.30^{+3.9}_{-4.5}$	$z_{\text{eq}}$	3349	$3353^{+91}_{-89}$
$n_s$	0.9737	$0.966^{+0.024}_{-0.024}$	$10^9 A_s$	2.106	$2.09^{+0.18}_{-0.19}$	$k_{\text{eq}}$	0.010221	$0.01025^{+0.00028}_{-0.00027}$
$y_{\text{cal}}$	0.99984	$0.99996^{+0.0050}_{-0.0049}$	$10^9 A_s e^{-2\tau}$	1.8625	$1.852^{+0.040}_{-0.040}$	$100\theta_{\text{eq}}$	0.8231	$0.823^{+0.018}_{-0.017}$
$A_{100}^{\text{dustTE}}$	0.141	$0.135^{+0.074}_{-0.073}$	$D_{40}$	1204.6	$1200^{+45}_{-45}$	$100\theta_{s,\text{eq}}$	0.4545	$0.4546^{+0.0091}_{-0.0089}$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.058}$	$D_{220}$	5680	$5689^{+110}_{-110}$	$r_{\text{drag}}/D_V(0.57)$	0.07180	$0.0691^{+0.0040}_{-0.0044}$
$A_{100 \times 217}^{\text{dustTE}}$	0.298	$0.30^{+0.16}_{-0.16}$	$D_{810}$	2525	$2514^{+53}_{-51}$	$H(0.57)$	93.01	$90.9^{+3.1}_{-3.2}$
$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$D_{1420}$	815.4	$810^{+24}_{-24}$	$D_A(0.57)$	1386	$1450^{+110}_{-93}$
$A_{143 \times 217}^{\text{dustTE}}$	0.328	$0.33^{+0.16}_{-0.16}$	$D_{2000}$	230.5	$227.6^{+9.5}_{-9.1}$	$F_{\text{AP}}(0.57)$	0.6751	$0.689^{+0.025}_{-0.021}$
$A_{217}^{\text{dustTE}}$	1.65	$1.65^{+0.50}_{-0.50}$	$n_{s,0.002}$	0.9737	$0.966^{+0.024}_{-0.024}$	$f\sigma_8(0.57)$	0.464	$0.421^{+0.065}_{-0.074}$
$c_{100}$	0.99907	$0.9992^{+0.0019}_{-0.0019}$	$Y_P$	0.245397	$0.24533^{+0.00024}_{-0.00025}$	$\sigma_8(0.57)$	0.595	$0.51^{+0.11}_{-0.12}$
$H_0$	67.8	$63.5^{+6.2}_{-6.9}$	$Y_P^{\text{BBN}}$	0.246724	$0.24666^{+0.00024}_{-0.00025}$	$\chi_{\text{lowTEB}}^2$	10493.34	10494.5 ( $\nu: 1.8$ )
$\Omega_\Lambda$	0.692	$0.632^{+0.091}_{-0.11}$	$10^5 D/H$	2.589	$2.62^{+0.11}_{-0.10}$	$\chi_{\text{plikTE}}^2$	932.2	939.5 ( $\nu: 9.3$ )
$\Omega_m$	0.308	$0.368^{+0.11}_{-0.091}$	Age/Gyr	13.807	$14.06^{+0.40}_{-0.36}$	$\chi_{\text{prior}}^2$	1.60	7.86 ( $\nu: 6.5$ )
$\Omega_m h^2$	0.1413	$0.1466^{+0.0098}_{-0.0087}$	$z_*$	1089.71	$1090.1^{+1.1}_{-0.99}$	$\chi_{\text{CMB}}^2$	11425.6	11434.0 ( $\nu: 9.5$ )
$\Omega_\nu h^2$	0.0012	< 0.0146	$r_*$	145.01	$144.8^{+1.0}_{-1.1}$			
$\Omega_m h^3$	0.09578	$0.0930^{+0.0041}_{-0.0046}$	$100\theta_*$	1.04117	$1.04117^{+0.00099}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11427.17$ ;  $\Delta\chi_{\text{eff}}^2 = 0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11441.88$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.71$ ;  $R - 1 = 0.00840$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.34 ( $\Delta -0.15$ ) plik\_dx11dr2\_HM\_v18\_TE: 932.23 ( $\Delta 0.50$ )

## 7.10 base\_mnu\_plikHM\_EE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02211	$0.0226^{+0.0030}_{-0.0029}$	$\sigma_8$	0.455	$0.50^{+0.27}_{-0.19}$	$100\theta_*$	1.04058	$1.0408^{+0.0024}_{-0.0022}$
$\Omega_c h^2$	0.1163	$0.113^{+0.011}_{-0.011}$	$\sigma_8 \Omega_m^{0.5}$	0.375	$0.373^{+0.077}_{-0.069}$	$D_A/\text{Gpc}$	13.691	$13.74^{+0.25}_{-0.22}$
$100\theta_{\text{MC}}$	1.03986	$1.0403^{+0.0022}_{-0.0021}$	$\sigma_8 \Omega_m^{0.25}$	0.413	$0.43^{+0.14}_{-0.11}$	$z_{\text{drag}}$	1060.5	$1061.2^{+5.6}_{-5.5}$
$\tau$	0.0655	$0.065^{+0.040}_{-0.040}$	$\sigma_8/h^{0.5}$	0.644	$0.68^{+0.26}_{-0.19}$	$r_{\text{drag}}$	145.13	$145.6^{+2.2}_{-2.0}$
$\Sigma m_\nu [\text{eV}]$	2.84	—	$\langle d^2 \rangle^{1/2}$	2.511	$2.47^{+0.22}_{-0.23}$	$k_D$	0.14403	$0.1436^{+0.0033}_{-0.0035}$
$\ln(10^{10} A_s)$	3.066	$3.064^{+0.088}_{-0.086}$	$z_{\text{re}}$	9.28	$8.90^{+4.2}_{-4.4}$	$100\theta_D$	0.15932	$0.1592^{+0.0032}_{-0.0028}$
$n_s$	0.9529	$0.960^{+0.040}_{-0.035}$	$10^9 A_s$	2.146	$2.14^{+0.19}_{-0.18}$	$z_{\text{eq}}$	3309	$3248^{+240}_{-250}$
$y_{\text{cal}}$	1.00010	$1.0001^{+0.0048}_{-0.0049}$	$10^9 A_s e^{-2\tau}$	1.883	$1.880^{+0.058}_{-0.063}$	$k_{\text{eq}}$	0.01027	$0.01008^{+0.00064}_{-0.00057}$
$A_{100}^{\text{dustEE}}$	0.0821	$0.082^{+0.012}_{-0.012}$	$D_{40}$	1173	$1180^{+76}_{-71}$	$100\theta_{\text{eq}}$	0.842	$0.855^{+0.065}_{-0.061}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0495	$0.050^{+0.010}_{-0.011}$	$D_{220}$	5749	$5782^{+520}_{-570}$	$100\theta_{s,\text{eq}}$	0.4650	$0.472^{+0.035}_{-0.031}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.063}_{-0.063}$	$D_{810}$	2587	$2587^{+85}_{-88}$	$r_{\text{drag}}/D_V(0.57)$	0.0606	$0.0631^{+0.010}_{-0.0075}$
$A_{143}^{\text{dustEE}}$	0.1007	$0.101^{+0.014}_{-0.014}$	$D_{1420}$	842.0	$842^{+41}_{-43}$	$H(0.57)$	85.7	$87.4^{+7.2}_{-4.6}$
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.093}_{-0.092}$	$D_{2000}$	236.2	$237^{+16}_{-17}$	$D_A(0.57)$	1671	$1610^{+200}_{-300}$
$A_{217}^{\text{dustEE}}$	0.646	$0.65^{+0.26}_{-0.26}$	$n_{s,0.002}$	0.9529	$0.960^{+0.040}_{-0.035}$	$F_{\text{AP}}(0.57)$	0.750	$0.734^{+0.063}_{-0.070}$
$H_0$	49.9	$54^{+20}_{-10}$	$Y_{\text{P}}$	0.24527	$0.2455^{+0.0013}_{-0.0012}$	$f\sigma_8(0.57)$	0.293	$0.32^{+0.14}_{-0.11}$
$\Omega_\Lambda$	0.321	$0.39^{+0.39}_{-0.41}$	$Y_{\text{P}}^{\text{BBN}}$	0.24660	$0.2468^{+0.0013}_{-0.0012}$	$\sigma_8(0.57)$	0.307	$0.35^{+0.23}_{-0.16}$
$\Omega_m$	0.679	$0.61^{+0.41}_{-0.39}$	$10^5 \text{D}/\text{H}$	2.64	$2.57^{+0.55}_{-0.53}$	$\chi_{\text{lowTEB}}^2$	10493.39	10494.5 ( $\nu: 2.4$ )
$\Omega_m h^2$	0.1690	$0.163^{+0.022}_{-0.027}$	Age/Gyr	14.81	$14.60^{+0.80}_{-0.99}$	$\chi_{\text{plikEE}}^2$	751.4	759.0 ( $\nu: 10.1$ )
$\Omega_\nu h^2$	0.0305	$< 0.0520$	$z_*$	1091.6	$1090.7^{+5.2}_{-5.1}$	$\chi_{\text{prior}}^2$	3.89	8.25 ( $\nu: 6.2$ )
$\Omega_m h^3$	0.0843	$0.087^{+0.012}_{-0.010}$	$r_*$	142.46	$143.1^{+2.5}_{-2.1}$	$\chi_{\text{CMB}}^2$	11244.8	11253.6 ( $\nu: 10.6$ )

Best-fit  $\chi_{\text{eff}}^2 = 11248.67$ ;  $\Delta\chi_{\text{eff}}^2 = -0.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 11261.82$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.00$ ;  $R - 1 = 0.00732$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.39 ( $\Delta -0.23$ ) plik\_dx11dr2\_HM\_v18\_EE: 751.39 ( $\Delta 0.19$ )

## 7.11 base\_mnu\_plikHM\_TE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02226	$0.02210^{+0.00056}_{-0.00057}$	$\sigma_8$	0.797	$0.69^{+0.14}_{-0.16}$	$D_A/\text{Gpc}$	13.914	$13.89^{+0.10}_{-0.11}$
$\Omega_c h^2$	0.11860	$0.1192^{+0.0042}_{-0.0041}$	$\sigma_8 \Omega_m^{0.5}$	0.4433	$0.422^{+0.043}_{-0.046}$	$z_{\text{drag}}$	1059.59	$1059.4^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	1.04103	$1.0407^{+0.0011}_{-0.0011}$	$\sigma_8 \Omega_m^{0.25}$	0.594	$0.540^{+0.081}_{-0.090}$	$r_{\text{drag}}$	147.59	$147.3^{+1.1}_{-1.2}$
$\tau$	0.0505	$< 0.0831$	$\sigma_8/h^{0.5}$	0.969	$0.87^{+0.14}_{-0.16}$	$k_D$	0.14026	$0.1406^{+0.0014}_{-0.0014}$
$\Sigma m_\nu [\text{eV}]$	0.08	$< 1.49$	$\langle d^2 \rangle^{1/2}$	2.407	$2.40^{+0.12}_{-0.11}$	$100\theta_D$	0.16098	$0.16094^{+0.00066}_{-0.00066}$
$\ln(10^{10} A_s)$	3.026	$3.024^{+0.079}_{-0.084}$	$z_{\text{re}}$	7.29	$7.42^{+3.8}_{-4.4}$	$z_{\text{eq}}$	3366	$3375^{+94}_{-92}$
$n_s$	0.9646	$0.954^{+0.027}_{-0.029}$	$10^9 A_s$	2.061	$2.06^{+0.16}_{-0.17}$	$k_{\text{eq}}$	0.010273	$0.01032^{+0.00029}_{-0.00029}$
$y_{\text{cal}}$	0.99990	$1.0000^{+0.0049}_{-0.0049}$	$10^9 A_s e^{-2\tau}$	1.8630	$1.854^{+0.040}_{-0.039}$	$100\theta_{\text{eq}}$	0.8196	$0.819^{+0.018}_{-0.018}$
$A_{100}^{\text{dustTE}}$	0.137	$0.137^{+0.075}_{-0.074}$	$D_{40}$	1222	$1223^{+54}_{-52}$	$100\theta_{s,\text{eq}}$	0.4528	$0.4524^{+0.0093}_{-0.0091}$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.058}_{-0.057}$	$D_{220}$	5699	$5717^{+120}_{-120}$	$r_{\text{drag}}/D_V(0.57)$	0.07174	$0.0687^{+0.0043}_{-0.0048}$
$A_{100 \times 217}^{\text{dustTE}}$	0.314	$0.30^{+0.17}_{-0.16}$	$D_{810}$	2517	$2505^{+52}_{-51}$	$H(0.57)$	93.01	$90.6^{+3.2}_{-3.4}$
$A_{143}^{\text{dustTE}}$	0.156	$0.15^{+0.11}_{-0.10}$	$D_{1420}$	808.7	$802^{+25}_{-24}$	$D_A(0.57)$	1387	$1459^{+120}_{-100}$
$A_{143 \times 217}^{\text{dustTE}}$	0.327	$0.33^{+0.16}_{-0.16}$	$D_{2000}$	227.8	$224.5^{+9.7}_{-9.5}$	$F_{\text{AP}}(0.57)$	0.6755	$0.692^{+0.029}_{-0.024}$
$A_{217}^{\text{dustTE}}$	1.71	$1.66^{+0.50}_{-0.51}$	$n_{s,0.002}$	0.9646	$0.954^{+0.027}_{-0.029}$	$f\sigma_8(0.57)$	0.463	$0.417^{+0.068}_{-0.079}$
$c_{100}$	0.99919	$0.9993^{+0.0020}_{-0.0019}$	$Y_P$	0.245345	$0.24527^{+0.00025}_{-0.00026}$	$\sigma_8(0.57)$	0.594	$0.51^{+0.12}_{-0.13}$
$H_0$	67.7	$62.9^{+6.6}_{-7.6}$	$Y_P^{\text{BBN}}$	0.246672	$0.24659^{+0.00025}_{-0.00027}$	$\chi_{\text{lowEB}}^2$	5430.81	$5431.7 (\nu: 0.7)$
$\Omega_\Lambda$	0.691	$0.62^{+0.10}_{-0.13}$	$10^5 \text{D}/\text{H}$	2.612	$2.64^{+0.11}_{-0.11}$	$\chi_{\text{plikTE}}^2$	931.7	$939.1 (\nu: 8.6)$
$\Omega_m$	0.309	$0.38^{+0.13}_{-0.10}$	Age/Gyr	13.804	$14.09^{+0.44}_{-0.38}$	$\chi_{\text{prior}}^2$	1.44	$7.84 (\nu: 6.6)$
$\Omega_m h^2$	0.1417	$0.148^{+0.011}_{-0.0095}$	$z_*$	1089.93	$1090.4^{+1.2}_{-1.2}$	$\chi_{\text{CMB}}^2$	6362.5	$6370.8 (\nu: 9.3)$
$\Omega_\nu h^2$	0.0009	$< 0.0160$	$r_*$	144.88	$144.6^{+1.1}_{-1.2}$			
$\Omega_m h^3$	0.09593	$0.0928^{+0.0043}_{-0.0050}$	$100\theta_*$	1.04124	$1.04108^{+0.00098}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 6363.89$ ;  $\Delta\chi_{\text{eff}}^2 = -0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 6378.66$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.80$ ;  $R - 1 = 0.01125$

$\chi_{\text{eff}}^2$ : CMB - lowl-QU-70-dx11d.2014-10-03-v5c-AP: 5430.81 ( $\Delta$  0.04) plik-dx11dr2-HM-v18-TE: 931.65 ( $\Delta$  0.41)

## 7.12 base\_mnu\_plikHM\_EE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02413	$0.0225^{+0.0028}_{-0.0027}$	$\sigma_8$	0.810	$0.52^{+0.28}_{-0.20}$	$100\theta_*$	1.03976	$1.0407^{+0.0026}_{-0.0024}$
$\Omega_c h^2$	0.1140	$0.115^{+0.012}_{-0.010}$	$\sigma_8 \Omega_m^{0.5}$	0.423	$0.383^{+0.078}_{-0.070}$	$D_A/\text{Gpc}$	13.911	$13.71^{+0.26}_{-0.23}$
$100\theta_{\text{MC}}$	1.03978	$1.0401^{+0.0023}_{-0.0021}$	$\sigma_8 \Omega_m^{0.25}$	0.586	$0.44^{+0.15}_{-0.12}$	$z_{\text{drag}}$	1063.5	$1061.2^{+5.2}_{-4.8}$
$\tau$	0.0643	$0.055^{+0.036}_{-0.040}$	$\sigma_8/h^{0.5}$	0.961	$0.70^{+0.27}_{-0.20}$	$r_{\text{drag}}$	146.75	$145.2^{+2.4}_{-2.2}$
$\Sigma m_\nu [\text{eV}]$	0.00	—	$\langle d^2 \rangle^{1/2}$	2.401	$2.50^{+0.23}_{-0.23}$	$k_D$	0.14243	$0.1440^{+0.0034}_{-0.0035}$
$\ln(10^{10} A_s)$	3.076	$3.049^{+0.084}_{-0.084}$	$z_{\text{re}}$	8.15	$7.83^{+3.9}_{-4.4}$	$100\theta_D$	0.15856	$0.1592^{+0.0030}_{-0.0026}$
$n_s$	0.9764	$0.947^{+0.044}_{-0.042}$	$10^9 A_s$	2.167	$2.11^{+0.18}_{-0.17}$	$z_{\text{eq}}$	3301	$3294^{+250}_{-250}$
$y_{\text{cal}}$	0.99984	$1.0000^{+0.0049}_{-0.0048}$	$10^9 A_s e^{-2\tau}$	1.905	$1.891^{+0.060}_{-0.061}$	$k_{\text{eq}}$	0.01008	$0.01022^{+0.00066}_{-0.00057}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.080^{+0.012}_{-0.012}$	$D_{40}$	1251	$1214^{+85}_{-83}$	$100\theta_{\text{eq}}$	0.836	$0.846^{+0.063}_{-0.059}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0484	$0.047^{+0.011}_{-0.011}$	$D_{220}$	6041	$5829^{+500}_{-540}$	$100\theta_{s,\text{eq}}$	0.4597	$0.467^{+0.034}_{-0.031}$
$A_{100 \times 217}^{\text{dustEE}}$	0.096	$0.099^{+0.063}_{-0.063}$	$D_{810}$	2593	$2585^{+84}_{-84}$	$r_{\text{drag}}/D_V(0.57)$	0.0735	$0.0629^{+0.010}_{-0.0077}$
$A_{143}^{\text{dustEE}}$	0.1001	$0.098^{+0.014}_{-0.014}$	$D_{1420}$	842.7	$836^{+41}_{-41}$	$H(0.57)$	95.0	$87.5^{+7.1}_{-4.6}$
$A_{143 \times 217}^{\text{dustEE}}$	0.220	$0.225^{+0.091}_{-0.091}$	$D_{2000}$	240.9	$235^{+16}_{-16}$	$D_A(0.57)$	1339	$1612^{+200}_{-300}$
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.25}_{-0.26}$	$n_{s,0.002}$	0.9764	$0.947^{+0.044}_{-0.042}$	$F_{\text{AP}}(0.57)$	0.666	$0.737^{+0.066}_{-0.071}$
$H_0$	71.1	$54^{+20}_{-10}$	$Y_{\text{P}}$	0.24613	$0.2454^{+0.0012}_{-0.0011}$	$f\sigma_8(0.57)$	0.459	$0.32^{+0.14}_{-0.11}$
$\Omega_\Lambda$	0.727	$0.37^{+0.40}_{-0.44}$	$Y_{\text{P}}^{\text{BBN}}$	0.24746	$0.2468^{+0.0012}_{-0.0011}$	$\sigma_8(0.57)$	0.612	$0.36^{+0.24}_{-0.17}$
$\Omega_m$	0.273	$0.63^{+0.44}_{-0.40}$	$10^5 \text{D}/\text{H}$	2.294	$2.58^{+0.51}_{-0.47}$	$\chi_{\text{lowEB}}^2$	5430.91	5431.9 ( $\nu: 1.0$ )
$\Omega_m h^2$	0.1382	$0.164^{+0.024}_{-0.027}$	Age/Gyr	13.60	$14.58^{+0.80}_{-0.99}$	$\chi_{\text{plikEE}}^2$	750.3	758.7 ( $\nu: 9.9$ )
$\Omega_\nu h^2$	0.0000	$< 0.0524$	$z_*$	1087.4	$1090.9^{+5.1}_{-5.0}$	$\chi_{\text{prior}}^2$	3.71	7.62 ( $\nu: 5.7$ )
$\Omega_m h^3$	0.0983	$0.087^{+0.012}_{-0.010}$	$r_*$	144.64	$142.6^{+2.7}_{-2.4}$	$\chi_{\text{CMB}}^2$	6181.2	6190.7 ( $\nu: 10.3$ )

Best-fit  $\chi_{\text{eff}}^2 = 6184.87$ ;  $\Delta\chi_{\text{eff}}^2 = -0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 6198.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.31$ ;  $R - 1 = 0.00866$

$\chi_{\text{eff}}^2$ : CMB - lowL\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.91 ( $\Delta$  0.18) plik\_dx11dr2\_HM\_v18\_EE: 750.25 ( $\Delta$  -0.50)

### 7.13 base\_mnu\_plikHM\_TT\_lowl\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02219	$0.02216^{+0.00056}_{-0.00054}$	$\Omega_m$	0.347	$0.354^{+0.079}_{-0.072}$	$100\theta_*$	1.04118	$1.04118^{+0.00098}_{-0.0010}$
$\Omega_c h^2$	0.1188	$0.1189^{+0.0051}_{-0.0051}$	$\Omega_m h^2$	0.1452	$0.1457^{+0.0080}_{-0.0077}$	$D_A/\text{Gpc}$	13.907	$13.90^{+0.10}_{-0.11}$
$100\theta_{\text{MC}}$	1.04082	$1.0408^{+0.0011}_{-0.0011}$	$\Omega_\nu h^2$	0.00426	< 0.00928	$z_{\text{drag}}$	1059.47	$1059.4^{+1.0}_{-0.96}$
$\tau$	0.101	$0.0999^{+0.058}_{-0.060}$	$\Omega_m h^3$	0.09393	$0.0937^{+0.0030}_{-0.0031}$	$r_{\text{drag}}$	147.52	$147.5^{+1.1}_{-1.1}$
$\Sigma m_\nu$ [eV]	0.396	< 0.863	$\sigma_8$	0.767	$0.762^{+0.075}_{-0.079}$	$k_D$	0.14034	$0.1404^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	3.132	$3.13^{+0.11}_{-0.11}$	$\sigma_8 \Omega_m^{0.5}$	0.4522	$0.451^{+0.019}_{-0.018}$	$100\theta_D$	0.16097	$0.16099^{+0.00056}_{-0.00055}$
$n_s$	0.9680	$0.967^{+0.016}_{-0.015}$	$\sigma_8 \Omega_m^{0.25}$	0.5891	$0.586^{+0.033}_{-0.035}$	$z_{\text{eq}}$	3369	$3372^{+110}_{-110}$
$y_{\text{cal}}$	1.00010	$1.0002^{+0.0048}_{-0.0049}$	$\sigma_8/h^{0.5}$	0.954	$0.949^{+0.061}_{-0.064}$	$k_{\text{eq}}$	0.010286	$0.01030^{+0.00035}_{-0.00035}$
$A_{217}^{\text{CIB}}$	67.5	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.499	$2.504^{+0.098}_{-0.091}$	$100\theta_{\text{eq}}$	0.8192	$0.819^{+0.022}_{-0.021}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$z_{\text{re}}$	12.1	$11.9^{+5.1}_{-5.5}$	$100\theta_{\text{s,eq}}$	0.4526	$0.453^{+0.011}_{-0.011}$
$A_{143}^{\text{tSZ}}$	7.20	$5.09^{+3.8}_{-3.9}$	$10^9 A_s$	2.293	$2.29^{+0.25}_{-0.25}$	$r_{\text{drag}}/D_V(0.57)$	0.06981	$0.0697^{+0.0034}_{-0.0034}$
$A_{100}^{\text{PS}}$	253	$260^{+50}_{-60}$	$10^9 A_s e^{-2\tau}$	1.8717	$1.872^{+0.030}_{-0.030}$	$H(0.57)$	91.39	$91.3^{+2.3}_{-2.4}$
$A_{143}^{\text{PS}}$	39.4	$45^{+20}_{-20}$	$D_{40}$	1230.8	$1233^{+25}_{-25}$	$D_A(0.57)$	1431	$1435^{+77}_{-74}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{220}$	5711	$5715^{+79}_{-81}$	$F_{\text{AP}}(0.57)$	0.6848	$0.686^{+0.018}_{-0.017}$
$A_{217}^{\text{PS}}$	97.3	$97^{+20}_{-20}$	$D_{810}$	2531.6	$2532^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4591	$0.456^{+0.028}_{-0.031}$
$A^{\text{kSZ}}$	0.0	—	$D_{1420}$	814.9	$814.5^{+9.9}_{-9.9}$	$\sigma_8(0.57)$	0.565	$0.560^{+0.067}_{-0.070}$
$A_{100}^{\text{dustTT}}$	7.43	$7.43^{+3.7}_{-3.6}$	$D_{2000}$	230.08	$229.8^{+3.9}_{-3.9}$	$f_{2000}^{143}$	30.0	$31^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	9.15	$9.06^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	0.9680	$0.967^{+0.016}_{-0.015}$	$f_{2000}^{143 \times 217}$	32.73	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$17.2^{+8.1}_{-8.1}$	$Y_{\text{P}}$	0.245313	$0.24529^{+0.00025}_{-0.00025}$	$f_{2000}^{217}$	106.32	$106.5^{+4.3}_{-4.3}$
$A_{217}^{\text{dustTT}}$	82.4	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246639	$0.24662^{+0.00025}_{-0.00025}$	$\chi_{\text{lensing}}^2$	8.63	9.94 ( $\nu$ : 1.5)
$c_{100}$	0.99784	$0.9979^{+0.0015}_{-0.0015}$	$10^5 \text{D}/\text{H}$	2.625	$2.63^{+0.11}_{-0.11}$	$\chi_{\text{lowl}}^2$	13.99	14.4 ( $\nu$ : 0.8)
$c_{217}$	0.99607	$0.9960^{+0.0028}_{-0.0028}$	Age/Gyr	13.982	$14.00^{+0.28}_{-0.27}$	$\chi_{\text{plik}}^2$	765.5	779.3 ( $\nu$ : 15.7)
$H_0$	64.7	$64.4^{+5.1}_{-5.2}$	$z_*$	1090.10	$1090.2^{+1.2}_{-1.1}$	$\chi_{\text{prior}}^2$	2.27	7.38 ( $\nu$ : 6.2)
$\Omega_\Lambda$	0.653	$0.646^{+0.072}_{-0.079}$	$r_*$	144.79	$144.7^{+1.1}_{-1.1}$	$\chi_{\text{CMB}}^2$	788.1	803.7 ( $\nu$ : 15.8)

Best-fit  $\chi_{\text{eff}}^2 = 790.42$ ;  $\Delta\chi_{\text{eff}}^2 = -0.39$ ;  $\bar{\chi}_{\text{eff}}^2 = 811.08$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.25$ ;  $R - 1 = 0.00848$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.63 ( $\Delta$  -0.74) commander\_rc2\_v1.1.12.29.B: 13.99 ( $\Delta$  0.70) plik\_dx11dr2\_HM\_v18.TT: 765.52 ( $\Delta$  -0.54)



## 7.14 base\_mnu\_plikHM\_TT\_lowl\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022317	$0.02233^{+0.00045}_{-0.00042}$	$\Omega_\nu h^2$	0.00136	< 0.00404	$k_D$	0.14016	$0.14006^{+0.00090}_{-0.00092}$
$\Omega_c h^2$	0.11781	$0.1173^{+0.0038}_{-0.0040}$	$\Omega_m h^3$	0.09566	$0.0954^{+0.0015}_{-0.0016}$	$100\theta_D$	0.16093	$0.16093^{+0.00051}_{-0.00052}$
$100\theta_{MC}$	1.04109	$1.04115^{+0.00085}_{-0.00086}$	$\sigma_8$	0.8099	$0.805^{+0.031}_{-0.033}$	$z_{eq}$	3349	$3336^{+81}_{-92}$
$\tau$	0.079	$0.089^{+0.061}_{-0.057}$	$\sigma_8 \Omega_m^{0.5}$	0.4506	$0.449^{+0.015}_{-0.015}$	$k_{eq}$	0.010221	$0.01018^{+0.00025}_{-0.00028}$
$\Sigma m_\nu$ [eV]	0.127	< 0.376	$\sigma_8 \Omega_m^{0.25}$	0.6041	$0.601^{+0.021}_{-0.021}$	$100\theta_{eq}$	0.8230	$0.826^{+0.018}_{-0.017}$
$\ln(10^{10} A_s)$	3.087	$3.11^{+0.11}_{-0.10}$	$\sigma_8/h^{0.5}$	0.9849	$0.980^{+0.033}_{-0.034}$	$100\theta_{s,eq}$	0.4545	$0.4559^{+0.0092}_{-0.0087}$
$n_s$	0.9699	$0.971^{+0.013}_{-0.012}$	$\langle d^2 \rangle^{1/2}$	2.456	$2.465^{+0.070}_{-0.066}$	$r_{drag}/D_V(0.57)$	0.07172	$0.07165^{+0.00096}_{-0.00097}$
$y_{cal}$	1.00006	$1.0001^{+0.0049}_{-0.0050}$	$z_{re}$	10.1	$10.8^{+5.1}_{-4.9}$	$H(0.57)$	92.91	$92.78^{+0.79}_{-0.88}$
$A_{217}^{CIB}$	67.4	$64^{+10}_{-10}$	$10^9 A_s$	2.192	$2.24^{+0.25}_{-0.23}$	$D_A(0.57)$	1388.3	$1391^{+21}_{-20}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8702	$1.867^{+0.027}_{-0.028}$	$F_{AP}(0.57)$	0.67553	$0.6759^{+0.0045}_{-0.0043}$
$A_{143}^{tSZ}$	7.16	$5.13^{+3.8}_{-3.9}$	$D_{40}$	1225.8	$1227^{+22}_{-22}$	$f\sigma_8(0.57)$	0.4717	$0.470^{+0.014}_{-0.015}$
$A_{100}^{PS}$	254	$258^{+50}_{-50}$	$D_{220}$	5718	$5719^{+77}_{-78}$	$\sigma_8(0.57)$	0.6035	$0.599^{+0.025}_{-0.026}$
$A_{143}^{PS}$	39.0	$43^{+20}_{-20}$	$D_{810}$	2531.1	$2530^{+27}_{-27}$	$f_{2000}^{143}$	29.8	$30^{+6}_{-6}$
$A_{143 \times 217}^{PS}$	32	$38^{+20}_{-20}$	$D_{1420}$	815.0	$815^{+10}_{-9.7}$	$f_{2000}^{143 \times 217}$	32.38	$32^{+4}_{-4}$
$A_{217}^{PS}$	96.9	$97^{+20}_{-20}$	$D_{2000}$	230.40	$230.5^{+3.7}_{-3.6}$	$f_{2000}^{217}$	105.93	$105.8^{+3.9}_{-4.1}$
$A^{kSZ}$	0.0	—	$n_{s,0.002}$	0.9699	$0.971^{+0.013}_{-0.012}$	$\chi_{lensing}^2$	9.22	9.97 ( $\nu$ : 1.6)
$A_{100}^{dustTT}$	7.41	$7.41^{+3.7}_{-3.7}$	$Y_P$	0.245369	$0.24538^{+0.00020}_{-0.00019}$	$\chi_{lowl}^2$	13.34	13.57 ( $\nu$ : 0.4)
$A_{143}^{dustTT}$	9.12	$9.03^{+3.6}_{-3.6}$	$Y_P^{BBN}$	0.246696	$0.24670^{+0.00020}_{-0.00019}$	$\chi_{plik}^2$	766.3	779.7 ( $\nu$ : 15.6)
$A_{143 \times 217}^{dustTT}$	17.6	$17.2^{+8.1}_{-7.7}$	$10^5 D/H$	2.601	$2.598^{+0.080}_{-0.084}$	$\chi_{6DF}^2$	0.015	0.08 ( $\nu$ : 0.0)
$A_{217}^{dustTT}$	81.9	$82^{+10}_{-10}$	Age/Gyr	13.818	$13.83^{+0.10}_{-0.095}$	$\chi_{MGS}^2$	1.34	1.34 ( $\nu$ : 0.2)
$c_{100}$	0.99790	$0.9979^{+0.0016}_{-0.0015}$	$z_*$	1089.80	$1089.74^{+0.71}_{-0.78}$	$\chi_{DR11CMass}^2$	2.40	3.04 ( $\nu$ : 0.4)
$c_{217}$	0.99596	$0.9959^{+0.0028}_{-0.0028}$	$r_*$	145.04	$145.15^{+0.85}_{-0.81}$	$\chi_{DR11LOWZ}^2$	0.54	0.82 ( $\nu$ : 0.3)
$H_0$	67.61	$67.4^{+1.4}_{-1.5}$	$100\theta_*$	1.04132	$1.04140^{+0.00087}_{-0.00089}$	$\chi_{prior}^2$	2.08	7.31 ( $\nu$ : 6.0)
$\Omega_\Lambda$	0.6904	$0.689^{+0.017}_{-0.018}$	$D_A/\text{Gpc}$	13.928	$13.938^{+0.078}_{-0.077}$	$\chi_{CMB}^2$	788.8	803.2 ( $\nu$ : 14.9)
$\Omega_m$	0.3096	$0.311^{+0.018}_{-0.017}$	$z_{drag}$	1059.67	$1059.66^{+0.92}_{-0.87}$	$\chi_{BAO}^2$	4.30	5.28 ( $\nu$ : 0.9)
$\Omega_m h^2$	0.14149	$0.1414^{+0.0025}_{-0.0025}$	$r_{drag}$	147.73	$147.84^{+0.86}_{-0.81}$			

Best-fit  $\chi_{eff}^2 = 795.19$ ;  $\Delta\chi_{eff}^2 = 0.06$ ;  $\bar{\chi}_{eff}^2 = 815.84$ ;  $\Delta\bar{\chi}_{eff}^2 = 0.57$ ;  $R - 1 = 0.02005$

$\chi_{eff}^2$ : BAO - 6DF: 0.01 ( $\Delta$  0.01) MGS: 1.34 ( $\Delta$  -0.13) DR11CMass: 2.40 ( $\Delta$  0.00) DR11LOWZ: 0.54 ( $\Delta$  0.11) CMB - smica\_g30\_ftl\_full\_pp: 9.22 ( $\Delta$  -0.14) commander\_rc2.v1.1.12\_29\_B: 13.34 ( $\Delta$  0.00) plik\_dx11dr2\_HM.v18\_TT: 766.25 ( $\Delta$  0.20)

## 7.15 base\_mnu\_plikHM\_TT\_lowl\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022327	$0.02235^{+0.00046}_{-0.00042}$	$\Omega_m h^3$	0.09592	$0.0955^{+0.0015}_{-0.0015}$	$z_{\text{eq}}$	3351	$3334^{+79}_{-89}$
$\Omega_c h^2$	0.11792	$0.1171^{+0.0037}_{-0.0039}$	$\sigma_8$	0.8161	$0.808^{+0.029}_{-0.032}$	$k_{\text{eq}}$	0.010229	$0.01018^{+0.00024}_{-0.00027}$
$100\theta_{\text{MC}}$	1.04113	$1.04118^{+0.00083}_{-0.00086}$	$\sigma_8 \Omega_m^{0.5}$	0.4515	$0.448^{+0.015}_{-0.015}$	$100\theta_{\text{eq}}$	0.8225	$0.826^{+0.017}_{-0.016}$
$\tau$	0.076	$0.088^{+0.059}_{-0.055}$	$\sigma_8 \Omega_m^{0.25}$	0.6070	$0.602^{+0.020}_{-0.021}$	$100\theta_{\text{s,eq}}$	0.4542	$0.4561^{+0.0089}_{-0.0083}$
$\Sigma m_\nu$ [eV]	0.090	< 0.352	$\sigma_8/h^{0.5}$	0.9902	$0.982^{+0.031}_{-0.033}$	$r_{\text{drag}}/D_V(0.57)$	0.07192	$0.07180^{+0.00090}_{-0.00091}$
$\ln(10^{10} A_s)$	3.081	$3.10^{+0.11}_{-0.10}$	$\langle d^2 \rangle^{1/2}$	2.454	$2.463^{+0.068}_{-0.066}$	$H(0.57)$	93.10	$92.90^{+0.74}_{-0.85}$
$n_s$	0.9697	$0.972^{+0.013}_{-0.012}$	$z_{\text{re}}$	9.73	$10.7^{+4.8}_{-4.7}$	$D_A(0.57)$	1383.6	$1388^{+20}_{-18}$
$y_{\text{cal}}$	0.999997	$1.0001^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.177	$2.23^{+0.25}_{-0.22}$	$F_{\text{AP}}(0.57)$	0.67463	$0.6752^{+0.0042}_{-0.0041}$
$A_{217}^{\text{CIB}}$	67.4	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8708	$1.867^{+0.026}_{-0.028}$	$f\sigma_8(0.57)$	0.4738	$0.470^{+0.013}_{-0.014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1225.2	$1226^{+22}_{-22}$	$\sigma_8(0.57)$	0.6087	$0.602^{+0.023}_{-0.025}$
$A_{143}^{\text{tSZ}}$	7.17	$5.14^{+3.8}_{-4.0}$	$D_{220}$	5718	$5720^{+76}_{-78}$	$f_{2000}^{143}$	29.7	$30^{+6}_{-6}$
$A_{100}^{\text{PS}}$	254	$257^{+50}_{-50}$	$D_{810}$	2531.2	$2530^{+27}_{-27}$	$f_{2000}^{143 \times 217}$	32.29	$32^{+4}_{-4}$
$A_{143}^{\text{PS}}$	38.6	$43^{+20}_{-20}$	$D_{1420}$	815.0	$815^{+10}_{-9.6}$	$f_{2000}^{217}$	105.88	$105.7^{+3.9}_{-4.0}$
$A_{143 \times 217}^{\text{PS}}$	32	$38^{+20}_{-20}$	$D_{2000}$	230.44	$230.6^{+3.7}_{-3.5}$	$\chi_{\text{lensing}}^2$	9.50	10.0 ( $\nu$ : 1.7)
$A_{217}^{\text{PS}}$	96.6	$97^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9697	$0.972^{+0.013}_{-0.012}$	$\chi_{\text{lowl}}^2$	13.34	13.51 ( $\nu$ : 0.4)
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245374	$0.24538^{+0.00020}_{-0.00019}$	$\chi_{\text{plik}}^2$	766.0	779.7 ( $\nu$ : 15.7)
$A_{100}^{\text{dustTT}}$	7.38	$7.40^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246700	$0.24671^{+0.00020}_{-0.00019}$	$\chi_{\text{H070p6}}^2$	0.65	0.83 ( $\nu$ : 0.1)
$A_{143}^{\text{dustTT}}$	9.17	$9.03^{+3.6}_{-3.6}$	$10^5 D/H$	2.600	$2.595^{+0.080}_{-0.085}$	$\chi_{\text{JLA}}^2$	706.613	706.72 ( $\nu$ : 0.0)
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.1^{+8.0}_{-8.3}$	Age/Gyr	13.797	$13.823^{+0.098}_{-0.090}$	$\chi_{6\text{DF}}^2$	0.001	0.056 ( $\nu$ : 0.0)
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$z_*$	1089.79	$1089.71^{+0.74}_{-0.78}$	$\chi_{\text{MGS}}^2$	1.61	1.52 ( $\nu$ : 0.2)
$c_{100}$	0.99789	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	145.01	$145.18^{+0.83}_{-0.78}$	$\chi_{\text{DR11CMass}}^2$	2.43	2.92 ( $\nu$ : 0.3)
$c_{217}$	0.99604	$0.9959^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04134	$1.04142^{+0.00086}_{-0.00088}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	0.61 ( $\nu$ : 0.2)
$H_0$	67.93	$67.7^{+1.3}_{-1.4}$	$D_A/\text{Gpc}$	13.925	$13.940^{+0.077}_{-0.075}$	$\chi_{\text{prior}}^2$	2.12	7.31 ( $\nu$ : 6.0)
$\Omega_\Lambda$	0.6940	$0.692^{+0.016}_{-0.017}$	$z_{\text{drag}}$	1059.67	$1059.69^{+0.95}_{-0.90}$	$\chi_{\text{CMB}}^2$	788.9	803.3 ( $\nu$ : 15.0)
$\Omega_m$	0.3060	$0.308^{+0.017}_{-0.016}$	$r_{\text{drag}}$	147.70	$147.86^{+0.83}_{-0.80}$	$\chi_{\text{BAO}}^2$	4.36	5.11 ( $\nu$ : 0.6)
$\Omega_m h^2$	0.14121	$0.1411^{+0.0024}_{-0.0024}$	$k_{\text{D}}$	0.14020	$0.14005^{+0.00089}_{-0.00089}$			
$\Omega_\nu h^2$	0.00096	< 0.00379	$100\theta_{\text{D}}$	0.16092	$0.16091^{+0.00050}_{-0.00053}$			

Best-fit  $\chi_{\text{eff}}^2 = 1502.59$ ;  $\Delta\chi_{\text{eff}}^2 = 0.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 1523.23$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.68$ ;  $R - 1 = 0.02283$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  0.00) MGS: 1.61 ( $\Delta$  0.00) DR11CMass: 2.43 ( $\Delta$  -0.01) DR11LOWZ: 0.32 ( $\Delta$  -0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.50 ( $\Delta$  0.07) commander\_rc2.v1.1\_l2\_29\_B: 13.34 ( $\Delta$  0.01) plik\_dx11dr2\_HM.v18\_TT: 766.01 ( $\Delta$  0.11) Hubble - H070p6: 0.65 ( $\Delta$  0.02) SN - JLA December\_2013: 706.61 ( $\Delta$  0.01)

## 7.16 base\_mnu\_plikHM\_TTTEEE\_lowl\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022207	$0.02219^{+0.00033}_{-0.00033}$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.17}$	$10^5 \text{D/H}$	2.622	$2.625^{+0.065}_{-0.063}$
$\Omega_c h^2$	0.11945	$0.1195^{+0.0031}_{-0.0030}$	$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.10}$	Age/Gyr	13.958	$13.97^{+0.24}_{-0.22}$
$100\theta_{\text{MC}}$	1.04069	$1.04068^{+0.00065}_{-0.00066}$	$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34^{+0.16}_{-0.16}$	$z_*$	1090.12	$1090.17^{+0.71}_{-0.67}$
$\tau$	0.0911	$0.090^{+0.049}_{-0.049}$	$A_{217}^{\text{dustTE}}$	1.68	$1.67^{+0.51}_{-0.50}$	$r_*$	144.63	$144.60^{+0.68}_{-0.71}$
$\Sigma m_\nu$ [eV]	0.340	< 0.763	$c_{100}$	0.99816	$0.9981^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04103	$1.04102^{+0.00061}_{-0.00061}$
$\ln(10^{10} A_s)$	3.114	$3.112^{+0.093}_{-0.093}$	$c_{217}$	0.99608	$0.9961^{+0.0028}_{-0.0028}$	$D_A/\text{Gpc}$	13.893	$13.890^{+0.062}_{-0.066}$
$n_s$	0.9652	$0.965^{+0.010}_{-0.010}$	$H_0$	64.90	$64.7^{+4.0}_{-4.2}$	$z_{\text{drag}}$	1059.55	$1059.54^{+0.63}_{-0.64}$
$y_{\text{cal}}$	1.00006	$1.0002^{+0.0047}_{-0.0049}$	$\Omega_\Lambda$	0.655	$0.651^{+0.055}_{-0.062}$	$r_{\text{drag}}$	147.35	$147.32^{+0.65}_{-0.68}$
$A_{217}^{\text{CIB}}$	67.9	$65^{+10}_{-10}$	$\Omega_m$	0.345	$0.349^{+0.062}_{-0.055}$	$k_D$	0.14051	$0.14055^{+0.00071}_{-0.00066}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\Omega_m h^2$	0.1453	$0.1456^{+0.0059}_{-0.0056}$	$100\theta_D$	0.160929	$0.16092^{+0.00037}_{-0.00035}$
$A_{143}^{\text{tSZ}}$	7.30	$5.28^{+3.7}_{-3.8}$	$\Omega_\nu h^2$	0.00366	< 0.00821	$z_{\text{eq}}$	3385	$3386^{+69}_{-67}$
$A_{100}^{\text{PS}}$	258	$262^{+50}_{-50}$	$\Omega_m h^3$	0.09432	$0.0942^{+0.0025}_{-0.0027}$	$k_{\text{eq}}$	0.010335	$0.01034^{+0.00021}_{-0.00021}$
$A_{143}^{\text{PS}}$	39.1	$44^{+20}_{-20}$	$\sigma_8$	0.775	$0.770^{+0.064}_{-0.070}$	$100\theta_{\text{eq}}$	0.8161	$0.816^{+0.013}_{-0.013}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4549	$0.454^{+0.014}_{-0.014}$	$100\theta_{\text{s,eq}}$	0.4510	$0.4510^{+0.0067}_{-0.0066}$
$A_{217}^{\text{PS}}$	97.0	$97^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.5936	$0.591^{+0.029}_{-0.033}$	$r_{\text{drag}}/D_V(0.57)$	0.06990	$0.0698^{+0.0026}_{-0.0027}$
$A^{\text{kSZ}}$	0.00	< 8.20	$\sigma_8/h^{0.5}$	0.961	$0.956^{+0.053}_{-0.060}$	$H(0.57)$	91.57	$91.5^{+2.0}_{-2.1}$
$A_{100}^{\text{dustTT}}$	7.44	$7.45^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.494	$2.496^{+0.090}_{-0.085}$	$D_A(0.57)$	1427	$1430^{+63}_{-58}$
$A_{143}^{\text{dustTT}}$	9.02	$9.02^{+3.6}_{-3.6}$	$z_{\text{re}}$	11.22	$11.0^{+4.5}_{-4.7}$	$F_{\text{AP}}(0.57)$	0.6843	$0.685^{+0.015}_{-0.013}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.2^{+8.1}_{-8.1}$	$10^9 A_s$	2.252	$2.25^{+0.22}_{-0.20}$	$f\sigma_8(0.57)$	0.4622	$0.459^{+0.024}_{-0.028}$
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8768	$1.877^{+0.024}_{-0.025}$	$\sigma_8(0.57)$	0.571	$0.567^{+0.056}_{-0.061}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1236.4	$1237^{+23}_{-23}$	$f_{2000}^{143}$	30.0	$30^{+5}_{-5}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0489^{+0.0098}_{-0.0097}$	$D_{220}$	5724	$5728^{+75}_{-75}$	$f_{2000}^{143 \times 217}$	32.73	$33^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.0997^{+0.064}_{-0.063}$	$D_{810}$	2533.7	$2534^{+26}_{-26}$	$f_{2000}^{217}$	106.29	$106.4^{+3.7}_{-3.8}$
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.013}_{-0.013}$	$D_{1420}$	814.7	$814.8^{+9.1}_{-9.1}$	$\chi_{\text{lensing}}^2$	9.10	10.0 ( $\nu$ : 1.5)
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.225^{+0.092}_{-0.091}$	$D_{2000}$	229.93	$229.9^{+3.1}_{-3.1}$	$\chi_{\text{lowl}}^2$	14.34	14.6 ( $\nu$ : 0.6)
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.26}_{-0.25}$	$n_{\text{s},0.002}$	0.9652	$0.965^{+0.010}_{-0.010}$	$\chi_{\text{plik}}^2$	2434.8	2453.8 ( $\nu$ : 23.0)
$A_{100}^{\text{dustTE}}$	0.142	$0.140^{+0.075}_{-0.074}$	$Y_{\text{P}}$	0.245321	$0.24531^{+0.00015}_{-0.00015}$	$\chi_{\text{prior}}^2$	7.14	19.5 ( $\nu$ : 15.4)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.058}$	$Y_{\text{P}}^{\text{BBN}}$	0.246647	$0.24664^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	2458.2	2478.4 ( $\nu$ : 22.7)

Best-fit  $\chi_{\text{eff}}^2 = 2465.39$ ;  $\Delta\chi_{\text{eff}}^2 = -0.18$ ;  $\bar{\chi}_{\text{eff}}^2 = 2497.84$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.34$ ;  $R - 1 = 0.01148$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.10 ( $\Delta$  -0.66) commander\_rc2\_v1.1.12\_29\_B: 14.34 ( $\Delta$  0.63) plik\_dx11dr2\_HM\_v18.TTTEEE: 2434.80 ( $\Delta$  -0.21)

## 7.17 base\_mnu\_plikHM\_TTTEEE\_lowl\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022289	$0.02230^{+0.00029}_{-0.00029}$	$A_{143 \times 217}^{\text{dustTE}}$	0.334	$0.33^{+0.16}_{-0.16}$	$100\theta_*$	1.04107	$1.04112^{+0.00058}_{-0.00058}$
$\Omega_c h^2$	0.11924	$0.1185^{+0.0025}_{-0.0025}$	$A_{217}^{\text{dustTE}}$	1.65	$1.66^{+0.51}_{-0.51}$	$D_A/\text{Gpc}$	13.899	$13.914^{+0.050}_{-0.050}$
$100\theta_{\text{MC}}$	1.04089	$1.04090^{+0.00056}_{-0.00058}$	$c_{100}$	0.99818	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.70	$1059.68^{+0.58}_{-0.57}$
$\tau$	0.0597	$0.073^{+0.043}_{-0.036}$	$c_{217}$	0.99608	$0.9960^{+0.0027}_{-0.0029}$	$r_{\text{drag}}$	147.39	$147.55^{+0.54}_{-0.55}$
$\Sigma m_\nu$ [eV]	0.033	< 0.263	$H_0$	67.84	$67.4^{+1.2}_{-1.4}$	$k_D$	0.14049	$0.14034^{+0.00059}_{-0.00059}$
$\ln(10^{10} A_s)$	3.052	$3.076^{+0.081}_{-0.068}$	$\Omega_\Lambda$	0.6917	$0.687^{+0.015}_{-0.017}$	$100\theta_D$	0.160893	$0.16090^{+0.00034}_{-0.00033}$
$n_s$	0.9660	$0.9674^{+0.0092}_{-0.0092}$	$\Omega_m$	0.3083	$0.313^{+0.017}_{-0.015}$	$z_{\text{eq}}$	3382	$3366^{+55}_{-57}$
$y_{\text{cal}}$	0.99987	$1.0001^{+0.0048}_{-0.0047}$	$\Omega_m h^2$	0.14188	$0.1420^{+0.0021}_{-0.0020}$	$k_{\text{eq}}$	0.010322	$0.01027^{+0.00017}_{-0.00017}$
$A_{217}^{\text{CIB}}$	67.2	$64^{+10}_{-10}$	$\Omega_\nu h^2$	0.00036	< 0.00283	$100\theta_{\text{eq}}$	0.8166	$0.820^{+0.011}_{-0.010}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$\Omega_m h^3$	0.09626	$0.0957^{+0.0010}_{-0.0011}$	$100\theta_{\text{s,eq}}$	0.4512	$0.4528^{+0.0058}_{-0.0054}$
$A_{143}^{\text{tSZ}}$	7.25	$5.34^{+3.6}_{-3.7}$	$\sigma_8$	0.8201	$0.810^{+0.026}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07176	$0.07154^{+0.00081}_{-0.00088}$
$A_{100}^{\text{PS}}$	256	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4553	$0.453^{+0.012}_{-0.013}$	$H(0.57)$	93.14	$92.86^{+0.68}_{-0.74}$
$A_{143}^{\text{PS}}$	39.4	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6111	$0.606^{+0.017}_{-0.017}$	$D_A(0.57)$	1384.2	$1391^{+19}_{-18}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9957	$0.987^{+0.027}_{-0.029}$	$F_{\text{AP}}(0.57)$	0.67520	$0.6763^{+0.0042}_{-0.0037}$
$A_{217}^{\text{PS}}$	97.3	$97^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.450	$2.458^{+0.058}_{-0.058}$	$f\sigma_8(0.57)$	0.4756	$0.472^{+0.011}_{-0.013}$
$A^{\text{kSZ}}$	0.01	< 8.03	$z_{\text{re}}$	8.23	$9.36^{+3.7}_{-3.6}$	$\sigma_8(0.57)$	0.6107	$0.603^{+0.021}_{-0.023}$
$A_{100}^{\text{dustTT}}$	7.50	$7.43^{+3.9}_{-3.8}$	$10^9 A_s$	2.116	$2.17^{+0.18}_{-0.14}$	$f_{2000}^{143}$	29.6	$30^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.07	$9.05^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8776	$1.874^{+0.023}_{-0.023}$	$f_{2000}^{143 \times 217}$	32.41	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.3^{+7.9}_{-8.1}$	$D_{40}$	1228.9	$1231^{+22}_{-22}$	$f_{2000}^{217}$	105.93	$105.9^{+3.8}_{-3.7}$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$D_{220}$	5722	$5725^{+73}_{-77}$	$\chi_{\text{lensing}}^2$	10.06	10.4 ( $\nu$ : 1.9)
$A_{100}^{\text{dustEE}}$	0.0813	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2533.6	$2533^{+26}_{-25}$	$\chi_{\text{lowl}}^2$	13.65	13.78 ( $\nu$ : 0.4)
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0491^{+0.0098}_{-0.0097}$	$D_{1420}$	814.8	$814.8^{+9.2}_{-9.0}$	$\chi_{\text{plik}}^2$	2435.1	2453.6 ( $\nu$ : 23.5)
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0996^{+0.064}_{-0.063}$	$D_{2000}$	230.16	$230.2^{+3.0}_{-3.1}$	$\chi_{6\text{DF}}^2$	0.010	0.09 ( $\nu$ : 0.0)
$A_{143}^{\text{dustEE}}$	0.1004	$0.101^{+0.013}_{-0.013}$	$n_{\text{s},0.002}$	0.9660	$0.9674^{+0.0092}_{-0.0092}$	$\chi_{\text{MGS}}^2$	1.41	1.20 ( $\nu$ : 0.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.226	$0.224^{+0.093}_{-0.088}$	$Y_{\text{P}}$	0.245357	$0.24536^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.41	3.05 ( $\nu$ : 0.4)
$A_{217}^{\text{dustEE}}$	0.653	$0.65^{+0.26}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.246684	$0.24669^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	0.95 ( $\nu$ : 0.3)
$A_{100}^{\text{dustTE}}$	0.142	$0.142^{+0.074}_{-0.076}$	$10^5 D/H$	2.607	$2.604^{+0.055}_{-0.054}$	$\chi_{\text{prior}}^2$	6.98	19.7 ( $\nu$ : 15.6)
$A_{100 \times 143}^{\text{dustTE}}$	0.133	$0.132^{+0.057}_{-0.058}$	Age/Gyr	13.786	$13.821^{+0.082}_{-0.073}$	$\chi_{\text{CMB}}^2$	2458.8	2477.8 ( $\nu$ : 21.9)
$A_{100 \times 217}^{\text{dustTE}}$	0.300	$0.30^{+0.16}_{-0.17}$	$z_*$	1089.95	$1089.88^{+0.51}_{-0.50}$	$\chi_{\text{BAO}}^2$	4.31	5.28 ( $\nu$ : 0.9)
$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$r_*$	144.70	$144.86^{+0.54}_{-0.54}$			

Best-fit  $\chi_{\text{eff}}^2 = 2470.12$ ;  $\Delta\chi_{\text{eff}}^2 = 0.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 2502.70$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.83$ ;  $R - 1 = 0.03617$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.41 ( $\Delta$  0.13) DR11CMass: 2.41 ( $\Delta$  -0.04) DR11LOWZ: 0.48 ( $\Delta$  -0.12) CMB - smica\_g30.ftl.full.pp: 10.06 ( $\Delta$  0.19) comman-

der\_rc2.v1.1\_l2\_29\_B: 13.65 ( $\Delta$  0.01) plik\_dx11dr2\_HM.v18\_TTTEEE: 2435.11 ( $\Delta$  0.12)

## 7.18 base\_mnu\_plikHM\_TTTEEE\_lowl\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022280	$0.02232^{+0.00028}_{-0.00027}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.51}_{-0.51}$	$z_{\text{drag}}$	1059.67	$1059.70^{+0.58}_{-0.57}$
$\Omega_c h^2$	0.11919	$0.1184^{+0.0024}_{-0.0025}$	$c_{100}$	0.99813	$0.9981^{+0.0016}_{-0.0015}$	$r_{\text{drag}}$	147.41	$147.57^{+0.52}_{-0.53}$
$100\theta_{\text{MC}}$	1.04090	$1.04092^{+0.00055}_{-0.00058}$	$c_{217}$	0.99608	$0.9960^{+0.0028}_{-0.0029}$	$k_{\text{D}}$	0.14045	$0.14033^{+0.00058}_{-0.00058}$
$\tau$	0.0573	$0.072^{+0.043}_{-0.035}$	$H_0$	68.06	$67.6^{+1.1}_{-1.3}$	$100\theta_{\text{D}}$	0.160907	$0.16088^{+0.00033}_{-0.00033}$
$\Sigma m_\nu$ [eV]	0.002	< 0.234	$\Omega_\Lambda$	0.6946	$0.690^{+0.014}_{-0.016}$	$z_{\text{eq}}$	3381	$3363^{+53}_{-56}$
$\ln(10^{10} A_s)$	3.047	$3.074^{+0.079}_{-0.066}$	$\Omega_m$	0.3054	$0.310^{+0.016}_{-0.014}$	$k_{\text{eq}}$	0.010318	$0.01027^{+0.00016}_{-0.00017}$
$n_s$	0.9658	$0.9677^{+0.0091}_{-0.0089}$	$\Omega_m h^2$	0.14149	$0.1418^{+0.0020}_{-0.0019}$	$100\theta_{\text{eq}}$	0.8168	$0.820^{+0.011}_{-0.010}$
$y_{\text{cal}}$	0.99986	$1.0001^{+0.0047}_{-0.0047}$	$\Omega_\nu h^2$	0.00003	< 0.00251	$100\theta_{\text{s,eq}}$	0.4513	$0.4530^{+0.0057}_{-0.0052}$
$A_{217}^{\text{CIB}}$	67.9	$64^{+10}_{-10}$	$\Omega_m h^3$	0.09631	$0.09583^{+0.00093}_{-0.0010}$	$r_{\text{drag}}/D_V(0.57)$	0.07191	$0.07166^{+0.00077}_{-0.00083}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8231	$0.812^{+0.025}_{-0.026}$	$H(0.57)$	93.25	$92.95^{+0.63}_{-0.67}$
$A_{143}^{\text{tSZ}}$	7.32	$5.36^{+3.6}_{-3.7}$	$\sigma_8 \Omega_m^{0.5}$	0.4549	$0.452^{+0.012}_{-0.013}$	$D_A(0.57)$	1381.2	$1388^{+18}_{-17}$
$A_{100}^{\text{PS}}$	257	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6119	$0.606^{+0.016}_{-0.017}$	$F_{\text{AP}}(0.57)$	0.67448	$0.6757^{+0.0039}_{-0.0035}$
$A_{143}^{\text{PS}}$	38.4	$43^{+10}_{-20}$	$\sigma_8/h^{0.5}$	0.9976	$0.988^{+0.026}_{-0.027}$	$f\sigma_8(0.57)$	0.4759	$0.473^{+0.011}_{-0.012}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.448	$2.456^{+0.058}_{-0.057}$	$\sigma_8(0.57)$	0.6133	$0.605^{+0.019}_{-0.022}$
$A_{217}^{\text{PS}}$	96.3	$97^{+20}_{-20}$	$z_{\text{re}}$	7.98	$9.30^{+3.7}_{-3.5}$	$f_{2000}^{143}$	29.7	$30^{+5}_{-5}$
$A^{\text{kSZ}}$	0.00	< 7.94	$10^9 A_s$	2.105	$2.17^{+0.18}_{-0.14}$	$f_{2000}^{143 \times 217}$	32.51	$32^{+4}_{-4}$
$A_{100}^{\text{dustTT}}$	7.42	$7.42^{+4.0}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8773	$1.874^{+0.023}_{-0.023}$	$f_{2000}^{217}$	106.05	$105.8^{+3.8}_{-3.8}$
$A_{143}^{\text{dustTT}}$	9.13	$9.04^{+3.6}_{-3.6}$	$D_{40}$	1228.2	$1230^{+22}_{-21}$	$\chi_{\text{lensing}}^2$	9.95	10.4 ( $\nu$ : 2.0)
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.3^{+8.0}_{-8.1}$	$D_{220}$	5722	$5726^{+73}_{-77}$	$\chi_{\text{lowl}}^2$	13.62	13.73 ( $\nu$ : 0.4)
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{810}$	2533.1	$2532^{+26}_{-25}$	$\chi_{\text{plik}}^2$	2435.1	2453.6 ( $\nu$ : 23.3)
$A_{100}^{\text{dustEE}}$	0.0814	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	814.5	$814.9^{+9.2}_{-9.0}$	$\chi_{\text{H070p6}}^2$	0.58	0.85 ( $\nu$ : 0.1)
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0492^{+0.0098}_{-0.0097}$	$D_{2000}$	230.04	$230.3^{+3.0}_{-3.1}$	$\chi_{\text{JLA}}^2$	706.602	706.76 ( $\nu$ : 0.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0997^{+0.064}_{-0.063}$	$n_{\text{s},0.002}$	0.9658	$0.9677^{+0.0091}_{-0.0089}$	$\chi_{\text{6DF}}^2$	0.001	0.060 ( $\nu$ : 0.0)
$A_{143}^{\text{dustEE}}$	0.1004	$0.101^{+0.013}_{-0.013}$	$Y_{\text{P}}$	0.245353	$0.24537^{+0.00012}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.61	1.34 ( $\nu$ : 0.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.226	$0.225^{+0.094}_{-0.092}$	$Y_{\text{P}}^{\text{BBN}}$	0.246679	$0.24670^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMASS}}^2$	2.44	2.87 ( $\nu$ : 0.2)
$A_{217}^{\text{dustEE}}$	0.653	$0.66^{+0.26}_{-0.25}$	$10^5 D/H$	2.608	$2.601^{+0.052}_{-0.052}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	0.74 ( $\nu$ : 0.2)
$A_{100}^{\text{dustTE}}$	0.140	$0.142^{+0.074}_{-0.075}$	Age/Gyr	13.775	$13.811^{+0.075}_{-0.068}$	$\chi_{\text{prior}}^2$	7.11	19.7 ( $\nu$ : 15.9)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.058}_{-0.059}$	$z_*$	1089.958	$1089.85^{+0.49}_{-0.49}$	$\chi_{\text{CMB}}^2$	2458.6	2477.8 ( $\nu$ : 21.7)
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.17}$	$r_*$	144.72	$144.88^{+0.53}_{-0.53}$	$\chi_{\text{BAO}}^2$	4.38	5.02 ( $\nu$ : 0.5)
$A_{143}^{\text{dustTE}}$	0.156	$0.15^{+0.11}_{-0.11}$	$100\theta_*$	1.04106	$1.04113^{+0.00057}_{-0.00058}$			
$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.33^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.9009	$13.916^{+0.049}_{-0.050}$			

Best-fit  $\chi_{\text{eff}}^2 = 3177.29$ ;  $\Delta\chi_{\text{eff}}^2 = -0.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 3210.11$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.81$ ;  $R - 1 = 0.04365$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.61 ( $\Delta$  0.20) DR11CMASS: 2.44 ( $\Delta$  0.03) DR11LOWZ: 0.32 ( $\Delta$  -0.16) CMB - smica\_g30\_ftl\_full\_pp: 9.95 ( $\Delta$  0.14) commander\_rc2\_v1.1\_l2\_29\_B: 13.62 ( $\Delta$  0.02) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.06 ( $\Delta$  0.05) Hubble - H070p6: 0.58 ( $\Delta$  -0.14) SN - JLA December\_2013: 706.60 ( $\Delta$  -0.06)

## 7.19 base\_mnu\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02230	$0.02211^{+0.00050}_{-0.00052}$	$\Omega_m$	0.299	$0.344^{+0.075}_{-0.063}$	$100\theta_*$	1.04128	$1.04102^{+0.00093}_{-0.00094}$
$\Omega_c h^2$	0.11815	$0.1199^{+0.0047}_{-0.0046}$	$\Omega_m h^2$	0.1405	$0.1451^{+0.0078}_{-0.0070}$	$D_A/\text{Gpc}$	13.922	$13.890^{+0.092}_{-0.099}$
$100\theta_{\text{MC}}$	1.04112	$1.0407^{+0.0010}_{-0.0010}$	$\Omega_\nu h^2$	0.00004	$< 0.00725$	$z_{\text{drag}}$	1059.67	$1059.36^{+0.95}_{-1.0}$
$\tau$	0.0637	$0.075^{+0.036}_{-0.036}$	$\Omega_m h^3$	0.09628	$0.0945^{+0.0024}_{-0.0028}$	$r_{\text{drag}}$	147.66	$147.35^{+0.96}_{-1.0}$
$\Sigma m_\nu$ [eV]	0.003	$< 0.675$	$\sigma_8$	0.825	$0.776^{+0.062}_{-0.073}$	$k_D$	0.14021	$0.1404^{+0.0011}_{-0.0010}$
$\ln(10^{10} A_s)$	3.057	$3.083^{+0.068}_{-0.067}$	$\sigma_8 \Omega_m^{0.5}$	0.4511	$0.454^{+0.018}_{-0.017}$	$100\theta_D$	0.16094	$0.16105^{+0.00055}_{-0.00053}$
$n_s$	0.9692	$0.964^{+0.013}_{-0.014}$	$\sigma_8 \Omega_m^{0.25}$	0.6100	$0.593^{+0.027}_{-0.031}$	$z_{\text{eq}}$	3357	$3393^{+110}_{-97}$
$y_{\text{cal}}$	1.0000	$1.0003^{+0.0050}_{-0.0050}$	$\sigma_8/h^{0.5}$	0.996	$0.961^{+0.050}_{-0.059}$	$k_{\text{eq}}$	0.010244	$0.01036^{+0.00033}_{-0.00030}$
$A_{217}^{\text{CIB}}$	67.4	$65^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.443	$2.471^{+0.076}_{-0.071}$	$100\theta_{\text{eq}}$	0.8215	$0.815^{+0.019}_{-0.019}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	8.59	$9.72^{+3.5}_{-3.5}$	$100\theta_{s,\text{eq}}$	0.4537	$0.4503^{+0.0095}_{-0.0099}$
$A_{143}^{\text{tSZ}}$	7.35	$4.92^{+3.8}_{-3.8}$	$10^9 A_s$	2.127	$2.18^{+0.15}_{-0.14}$	$r_{\text{drag}}/D_V(0.57)$	0.07228	$0.0701^{+0.0030}_{-0.0034}$
$A_{100}^{\text{PS}}$	251	$262^{+50}_{-60}$	$10^9 A_s e^{-2\tau}$	1.8721	$1.879^{+0.027}_{-0.027}$	$H(0.57)$	93.43	$91.8^{+2.1}_{-2.4}$
$A_{143}^{\text{PS}}$	38.1	$46^{+20}_{-20}$	$D_{40}$	1221.7	$1232^{+27}_{-26}$	$D_A(0.57)$	1375	$1423^{+74}_{-65}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$D_{220}$	5716	$5715^{+81}_{-83}$	$F_{\text{AP}}(0.57)$	0.6729	$0.684^{+0.018}_{-0.015}$
$A_{217}^{\text{PS}}$	96.8	$97^{+20}_{-20}$	$D_{810}$	2531.8	$2534^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4752	$0.461^{+0.023}_{-0.028}$
$A^{\text{kSZ}}$	0.0	—	$D_{1420}$	815.1	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.616	$0.572^{+0.056}_{-0.066}$
$A_{100}^{\text{dustTT}}$	7.47	$7.47^{+3.7}_{-3.7}$	$D_{2000}$	230.35	$229.5^{+3.8}_{-3.8}$	$f_{2000}^{143}$	29.6	$31^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	9.08	$9.04^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9692	$0.964^{+0.013}_{-0.014}$	$f_{2000}^{143 \times 217}$	32.30	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.2}_{-8.2}$	$Y_{\text{P}}$	0.245364	$0.24527^{+0.00024}_{-0.00024}$	$f_{2000}^{217}$	105.91	$106.9^{+4.2}_{-4.1}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246691	$0.24660^{+0.00024}_{-0.00024}$	$\chi_{\text{lensing}}^2$	9.38	$9.49$ ( $\nu$ : 0.9)
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	$10^5 \text{D}/\text{H}$	2.604	$2.64^{+0.10}_{-0.10}$	$\chi_{\text{lowTEB}}^2$	10494.67	$10496.6$ ( $\nu$ : 1.7)
$c_{217}$	0.99593	$0.9961^{+0.0029}_{-0.0029}$	Age/Gyr	13.762	$13.94^{+0.27}_{-0.23}$	$\chi_{\text{plik}}^2$	766.3	$779.8$ ( $\nu$ : 15.0)
$H_0$	68.53	$65.2^{+4.5}_{-5.0}$	$z_*$	1089.84	$1090.3^{+1.1}_{-1.1}$	$\chi_{\text{prior}}^2$	2.23	$7.48$ ( $\nu$ : 6.6)
$\Omega_\Lambda$	0.701	$0.656^{+0.063}_{-0.075}$	$r_*$	144.97	$144.6^{+1.0}_{-1.1}$	$\chi_{\text{CMB}}^2$	11270.3	$11285.9$ ( $\nu$ : 15.9)

Best-fit  $\chi_{\text{eff}}^2 = 11272.57$ ;  $\Delta\chi_{\text{eff}}^2 = 0.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.42$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.12$ ;  $R - 1 = 0.00753$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.38 ( $\Delta$  0.20) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.67 ( $\Delta$  -0.18) plik\_dx11dr2\_HM\_v18\_TT: 766.29 ( $\Delta$  -0.04)

## 7.20 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022254	$0.02219^{+0.00033}_{-0.00034}$	$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.17}$	$10^5 D/H$	2.613	$2.625^{+0.067}_{-0.062}$
$\Omega_c h^2$	0.11935	$0.1198^{+0.0031}_{-0.0030}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	Age/Gyr	13.834	$13.91^{+0.22}_{-0.18}$
$100\theta_{\text{MC}}$	1.04080	$1.04069^{+0.00066}_{-0.00069}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$z_*$	1090.01	$1090.17^{+0.73}_{-0.65}$
$\tau$	0.0667	$0.074^{+0.034}_{-0.033}$	$A_{217}^{\text{dustTE}}$	1.67	$1.68^{+0.50}_{-0.50}$	$r_*$	144.69	$144.56^{+0.68}_{-0.71}$
$\Sigma m_\nu$ [eV]	0.117	< 0.589	$c_{100}$	0.99815	$0.9981^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04103	$1.04098^{+0.00061}_{-0.00063}$
$\ln(10^{10} A_s)$	3.066	$3.081^{+0.066}_{-0.062}$	$c_{217}$	0.99607	$0.9961^{+0.0029}_{-0.0028}$	$D_A/\text{Gpc}$	13.898	$13.887^{+0.063}_{-0.065}$
$n_s$	0.9654	$0.9637^{+0.0098}_{-0.0099}$	$H_0$	67.01	$65.6^{+3.5}_{-4.0}$	$z_{\text{drag}}$	1059.63	$1059.54^{+0.63}_{-0.63}$
$y_{\text{cal}}$	1.00002	$1.0003^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.682	$0.662^{+0.047}_{-0.057}$	$r_{\text{drag}}$	147.39	$147.29^{+0.66}_{-0.68}$
$A_{217}^{\text{CIB}}$	68.1	$65^{+10}_{-10}$	$\Omega_m$	0.318	$0.338^{+0.057}_{-0.047}$	$k_D$	0.14046	$0.14055^{+0.00069}_{-0.00068}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.1429	$0.1447^{+0.0058}_{-0.0051}$	$100\theta_D$	0.160924	$0.16095^{+0.00036}_{-0.00036}$
$A_{143}^{\text{tSZ}}$	7.25	$5.21^{+3.7}_{-3.9}$	$\Omega_\nu h^2$	0.00126	< 0.00633	$z_{\text{eq}}$	3384	$3394^{+68}_{-66}$
$A_{100}^{\text{PS}}$	258	$263^{+50}_{-50}$	$\Omega_m h^3$	0.09573	$0.0949^{+0.0020}_{-0.0024}$	$k_{\text{eq}}$	0.010328	$0.01036^{+0.00021}_{-0.00020}$
$A_{143}^{\text{PS}}$	39.1	$44^{+10}_{-20}$	$\sigma_8$	0.807	$0.783^{+0.054}_{-0.065}$	$100\theta_{\text{eq}}$	0.8162	$0.815^{+0.013}_{-0.013}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4554	$0.454^{+0.014}_{-0.014}$	$100\theta_{\text{s,eq}}$	0.4510	$0.4501^{+0.0065}_{-0.0064}$
$A_{217}^{\text{PS}}$	96.5	$97^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6064	$0.597^{+0.025}_{-0.029}$	$r_{\text{drag}}/D_V(0.57)$	0.07123	$0.0703^{+0.0023}_{-0.0026}$
$A^{\text{kSZ}}$	0.0	—	$\sigma_8/h^{0.5}$	0.986	$0.967^{+0.046}_{-0.054}$	$H(0.57)$	92.69	$92.0^{+1.7}_{-2.0}$
$A_{100}^{\text{dustTT}}$	7.50	$7.47^{+3.7}_{-3.6}$	$\langle d^2 \rangle^{1/2}$	2.457	$2.472^{+0.067}_{-0.063}$	$D_A(0.57)$	1396	$1417^{+59}_{-50}$
$A_{143}^{\text{dustTT}}$	9.05	$9.01^{+3.6}_{-3.6}$	$z_{\text{re}}$	8.92	$9.58^{+3.1}_{-3.3}$	$F_{\text{AP}}(0.57)$	0.6777	$0.682^{+0.014}_{-0.012}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.2^{+8.1}_{-8.2}$	$10^9 A_s$	2.146	$2.18^{+0.15}_{-0.13}$	$f\sigma_8(0.57)$	0.4723	$0.464^{+0.021}_{-0.025}$
$A_{217}^{\text{dustTT}}$	81.5	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8781	$1.880^{+0.024}_{-0.023}$	$\sigma_8(0.57)$	0.599	$0.578^{+0.047}_{-0.057}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1232.4	$1236^{+23}_{-24}$	$f_{2000}^{143}$	30.0	$31^{+5}_{-5}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0488^{+0.0099}_{-0.0098}$	$D_{220}$	5723	$5728^{+77}_{-75}$	$f_{2000}^{143 \times 217}$	32.70	$33^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.063}$	$D_{810}$	2533.9	$2536^{+27}_{-26}$	$f_{2000}^{217}$	106.19	$106.6^{+3.7}_{-3.6}$
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.013}_{-0.013}$	$D_{1420}$	814.6	$814.8^{+9.4}_{-9.2}$	$\chi_{\text{lensing}}^2$	9.69	$9.77 (\nu: 1.2)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.092}_{-0.091}$	$D_{2000}$	230.00	$229.8^{+3.1}_{-3.1}$	$\chi_{\text{lowTEB}}^2$	10495.48	$10496.7 (\nu: 1.5)$
$A_{217}^{\text{dustEE}}$	0.653	$0.65^{+0.25}_{-0.25}$	$n_{\text{s},0.002}$	0.9654	$0.9637^{+0.0098}_{-0.0099}$	$\chi_{\text{plik}}^2$	2435.1	$2454.3 (\nu: 22.7)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.075}_{-0.075}$	$Y_{\text{P}}$	0.245342	$0.24531^{+0.00015}_{-0.00016}$	$\chi_{\text{prior}}^2$	7.12	$19.4 (\nu: 15.2)$
$A_{100 \times 143}^{\text{dustTE}}$	0.133	$0.131^{+0.057}_{-0.056}$	$Y_{\text{P}}^{\text{BBN}}$	0.246668	$0.24664^{+0.00015}_{-0.00016}$	$\chi_{\text{CMB}}^2$	12940.2	$12960.8 (\nu: 22.8)$

Best-fit  $\chi_{\text{eff}}^2 = 12947.35$ ;  $\Delta\chi_{\text{eff}}^2 = 0.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.23$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.12$ ;  $R - 1 = 0.00848$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.69 ( $\Delta$  -0.09) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.48 ( $\Delta$  0.19) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.05 ( $\Delta$  0.14)



## 7.21 base\_mnu\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022278	$0.02228^{+0.00040}_{-0.00040}$	$\Omega_\nu h^2$	0.00001	$< 0.00230$	$k_D$	0.14055	$0.14035^{+0.00093}_{-0.00095}$
$\Omega_c h^2$	0.11953	$0.1188^{+0.0028}_{-0.0029}$	$\Omega_m h^3$	0.09637	$0.0959^{+0.0012}_{-0.0013}$	$100\theta_D$	0.16090	$0.16093^{+0.00053}_{-0.00051}$
$100\theta_{MC}$	1.04093	$1.04099^{+0.00084}_{-0.00083}$	$\sigma_8$	0.8427	$0.825^{+0.040}_{-0.042}$	$z_{eq}$	3389	$3371^{+65}_{-68}$
$\tau$	0.0784	$0.082^{+0.037}_{-0.037}$	$\sigma_8 \Omega_m^{0.5}$	0.4670	$0.460^{+0.022}_{-0.023}$	$k_{eq}$	0.010343	$0.01029^{+0.00020}_{-0.00021}$
$\Sigma m_\nu$ [eV]	0.001	$< 0.214$	$\sigma_8 \Omega_m^{0.25}$	0.6274	$0.616^{+0.027}_{-0.031}$	$100\theta_{eq}$	0.8154	$0.819^{+0.013}_{-0.012}$
$\ln(10^{10} A_s)$	3.090	$3.096^{+0.072}_{-0.072}$	$\sigma_8/h^{0.5}$	1.0223	$1.004^{+0.043}_{-0.049}$	$100\theta_{s,eq}$	0.4505	$0.4523^{+0.0067}_{-0.0062}$
$n_s$	0.9666	$0.9678^{+0.0095}_{-0.0093}$	$\langle d^2 \rangle^{1/2}$	2.504	$2.488^{+0.088}_{-0.088}$	$r_{drag}/D_V(0.57)$	0.07181	$0.07163^{+0.00090}_{-0.00087}$
$y_{cal}$	1.00031	$1.0004^{+0.0048}_{-0.0049}$	$z_{re}$	9.99	$10.3^{+3.4}_{-3.4}$	$H(0.57)$	93.22	$92.96^{+0.65}_{-0.73}$
$A_{217}^{CIB}$	65.9	$64^{+10}_{-10}$	$10^9 A_s$	2.199	$2.21^{+0.16}_{-0.15}$	$D_A(0.57)$	1382.5	$1388^{+19}_{-17}$
$\xi^{tSZ \times CIB}$	0.16	—	$10^9 A_s e^{-2\tau}$	1.8799	$1.876^{+0.024}_{-0.024}$	$F_{AP}(0.57)$	0.67492	$0.6759^{+0.0041}_{-0.0040}$
$A_{143}^{tSZ}$	7.04	$5.17^{+3.7}_{-3.8}$	$D_{40}$	1235.0	$1234^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4877	$0.480^{+0.020}_{-0.022}$
$A_{100}^{PS}$	251	$258^{+60}_{-50}$	$D_{220}$	5718	$5721^{+78}_{-78}$	$\sigma_8(0.57)$	0.6275	$0.614^{+0.030}_{-0.032}$
$A_{143}^{PS}$	40.8	$43^{+20}_{-20}$	$D_{810}$	2534.4	$2533^{+26}_{-27}$	$f_{2000}^{143}$	29.1	$30^{+6}_{-6}$
$A_{143 \times 217}^{PS}$	37.0	$39^{+20}_{-20}$	$D_{1420}$	815.0	$815.0^{+9.6}_{-10}$	$f_{2000}^{143 \times 217}$	31.96	$32^{+4}_{-4}$
$A_{217}^{PS}$	99.0	$97^{+20}_{-20}$	$D_{2000}$	230.73	$230.6^{+3.5}_{-3.6}$	$f_{2000}^{217}$	105.53	$105.8^{+3.9}_{-3.9}$
$A^{kSZ}$	0.00	$< 8.25$	$n_{s,0.002}$	0.9666	$0.9678^{+0.0095}_{-0.0093}$	$\chi_{lowTEB}^2$	10496.49	$10497.3 (\nu: 3.2)$
$A_{100}^{dustTT}$	7.42	$7.43^{+3.7}_{-3.7}$	$Y_P$	0.245353	$0.24535^{+0.00018}_{-0.00019}$	$\chi_{plik}^2$	763.1	$777.5 (\nu: 16.9)$
$A_{143}^{dustTT}$	9.03	$9.04^{+3.6}_{-3.6}$	$Y_P^{BBN}$	0.246679	$0.24668^{+0.00018}_{-0.00019}$	$\chi_{6DF}^2$	0.006	$0.073 (\nu: 0.0)$
$A_{143 \times 217}^{dustTT}$	17.8	$17.1^{+8.3}_{-8.2}$	$10^5 D/H$	2.609	$2.608^{+0.078}_{-0.075}$	$\chi_{MGS}^2$	1.47	$1.31 (\nu: 0.2)$
$A_{217}^{dustTT}$	82.1	$82^{+10}_{-10}$	Age/Gyr	13.776	$13.808^{+0.083}_{-0.077}$	$\chi_{DR11CMass}^2$	2.41	$2.97 (\nu: 0.3)$
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.99	$1089.92^{+0.63}_{-0.62}$	$\chi_{DR11LOWZ}^2$	0.43	$0.81 (\nu: 0.2)$
$c_{217}$	0.99591	$0.9959^{+0.0028}_{-0.0028}$	$r_*$	144.63	$144.82^{+0.73}_{-0.70}$	$\chi_{prior}^2$	1.92	$7.31 (\nu: 6.3)$
$H_0$	67.95	$67.6^{+1.3}_{-1.3}$	$100\theta_*$	1.04108	$1.04119^{+0.00084}_{-0.00083}$	$\chi_{CMB}^2$	11259.6	$11274.8 (\nu: 15.6)$
$\Omega_\Lambda$	0.6929	$0.689^{+0.016}_{-0.016}$	$D_A/\text{Gpc}$	13.892	$13.909^{+0.070}_{-0.067}$	$\chi_{BAO}^2$	4.32	$5.17 (\nu: 0.7)$
$\Omega_m$	0.3071	$0.311^{+0.016}_{-0.016}$	$z_{drag}$	1059.70	$1059.64^{+0.90}_{-0.89}$			
$\Omega_m h^2$	0.14182	$0.1420^{+0.0025}_{-0.0024}$	$r_{drag}$	147.32	$147.52^{+0.77}_{-0.74}$			

Best-fit  $\chi_{eff}^2 = 11265.84$ ;  $\Delta\chi_{eff}^2 = -0.59$ ;  $\bar{\chi}_{eff}^2 = 11287.27$ ;  $\Delta\bar{\chi}_{eff}^2 = 0.91$ ;  $R - 1 = 0.00894$

$\chi_{eff}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.02) MGS: 1.47 ( $\Delta$  0.19) DR11CMass: 2.42 ( $\Delta$  -0.04) DR11LOWZ: 0.43 ( $\Delta$  -0.19) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10496.49 ( $\Delta$  0.07) plik.dx11dr2\_HM.v18.TT: 763.12 ( $\Delta$  -0.48)

## 7.22 base\_mnu\_plikHM\_TT\_lowTEB\_BAO\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022300	$0.02230^{+0.00040}_{-0.00040}$	$\Omega_\nu h^2$	0.00003	$< 0.00218$	$k_D$	0.14055	$0.14035^{+0.00091}_{-0.00094}$
$\Omega_c h^2$	0.11940	$0.1186^{+0.0027}_{-0.0029}$	$\Omega_m h^3$	0.09641	$0.0960^{+0.0012}_{-0.0013}$	$100\theta_D$	0.16088	$0.16092^{+0.00053}_{-0.00051}$
$100\theta_{MC}$	1.04097	$1.04101^{+0.00083}_{-0.00083}$	$\sigma_8$	0.8428	$0.826^{+0.039}_{-0.041}$	$z_{eq}$	3386	$3368^{+64}_{-67}$
$\tau$	0.0792	$0.083^{+0.037}_{-0.037}$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.460^{+0.022}_{-0.023}$	$k_{eq}$	0.010335	$0.01028^{+0.00019}_{-0.00020}$
$\Sigma m_\nu$ [eV]	0.003	$< 0.203$	$\sigma_8 \Omega_m^{0.25}$	0.6270	$0.616^{+0.027}_{-0.030}$	$100\theta_{eq}$	0.8159	$0.819^{+0.013}_{-0.012}$
$\ln(10^{10} A_s)$	3.092	$3.097^{+0.071}_{-0.072}$	$\sigma_8/h^{0.5}$	1.0219	$1.005^{+0.043}_{-0.048}$	$100\theta_{s,eq}$	0.4508	$0.4526^{+0.0066}_{-0.0061}$
$n_s$	0.9670	$0.9681^{+0.0093}_{-0.0093}$	$\langle d^2 \rangle^{1/2}$	2.503	$2.488^{+0.089}_{-0.088}$	$r_{drag}/D_V(0.57)$	0.07186	$0.07171^{+0.00088}_{-0.00086}$
$y_{cal}$	1.00029	$1.0004^{+0.0047}_{-0.0048}$	$z_{re}$	10.06	$10.3^{+3.3}_{-3.4}$	$H(0.57)$	93.26	$93.02^{+0.63}_{-0.70}$
$A_{217}^{CIB}$	65.7	$64^{+10}_{-10}$	$10^9 A_s$	2.202	$2.21^{+0.16}_{-0.15}$	$D_A(0.57)$	1381.5	$1387^{+18}_{-17}$
$\xi^{tSZ \times CIB}$	0.12	—	$10^9 A_s e^{-2\tau}$	1.8794	$1.876^{+0.024}_{-0.024}$	$F_{AP}(0.57)$	0.67470	$0.6755^{+0.0040}_{-0.0039}$
$A_{143}^{tSZ}$	7.11	$5.20^{+3.7}_{-3.9}$	$D_{40}$	1234.6	$1234^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4876	$0.480^{+0.020}_{-0.022}$
$A_{100}^{PS}$	251	$257^{+60}_{-60}$	$D_{220}$	5719	$5722^{+79}_{-79}$	$\sigma_8(0.57)$	0.6278	$0.615^{+0.029}_{-0.031}$
$A_{143}^{PS}$	39.6	$43^{+20}_{-20}$	$D_{810}$	2534.4	$2533^{+27}_{-27}$	$f_{2000}^{143}$	29.0	$30^{+6}_{-6}$
$A_{143 \times 217}^{PS}$	35.5	$39^{+20}_{-20}$	$D_{1420}$	815.2	$815.1^{+9.8}_{-9.8}$	$f_{2000}^{143 \times 217}$	31.78	$32^{+4}_{-4}$
$A_{217}^{PS}$	99.0	$97^{+20}_{-20}$	$D_{2000}$	230.84	$230.6^{+3.5}_{-3.5}$	$f_{2000}^{217}$	105.47	$105.8^{+4.0}_{-3.9}$
$A^{kSZ}$	0.00	$< 8.19$	$n_{s,0.002}$	0.9670	$0.9681^{+0.0093}_{-0.0093}$	$\chi_{lowTEB}^2$	10496.51	10497.3 ( $\nu: 3.2$ )
$A_{100}^{dustTT}$	7.37	$7.42^{+3.7}_{-3.6}$	$Y_P$	0.245362	$0.24536^{+0.00018}_{-0.00019}$	$\chi_{plik}^2$	763.1	777.4 ( $\nu: 16.8$ )
$A_{143}^{dustTT}$	9.02	$9.05^{+3.6}_{-3.6}$	$Y_P^{BBN}$	0.246689	$0.24669^{+0.00018}_{-0.00019}$	$\chi_{H070p6}^2$	0.60	0.81 ( $\nu: 0.1$ )
$A_{143 \times 217}^{dustTT}$	17.7	$17.1^{+8.2}_{-8.3}$	$10^5 D/H$	2.604	$2.605^{+0.077}_{-0.074}$	$\chi_{6DF}^2$	0.003	0.061 ( $\nu: 0.0$ )
$A_{217}^{dustTT}$	82.1	$82^{+10}_{-10}$	Age/Gyr	13.772	$13.802^{+0.080}_{-0.075}$	$\chi_{MGS}^2$	1.54	1.41 ( $\nu: 0.2$ )
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.95	$1089.89^{+0.63}_{-0.62}$	$\chi_{DR11CMass}^2$	2.42	2.92 ( $\nu: 0.3$ )
$c_{217}$	0.99584	$0.9959^{+0.0028}_{-0.0029}$	$r_*$	144.65	$144.84^{+0.72}_{-0.69}$	$\chi_{DR11LOWZ}^2$	0.37	0.71 ( $\nu: 0.2$ )
$H_0$	68.02	$67.7^{+1.2}_{-1.2}$	$100\theta_*$	1.04112	$1.04121^{+0.00084}_{-0.00082}$	$\chi_{prior}^2$	1.94	7.29 ( $\nu: 6.3$ )
$\Omega_\Lambda$	0.6937	$0.690^{+0.015}_{-0.016}$	$D_A/\text{Gpc}$	13.893	$13.910^{+0.069}_{-0.067}$	$\chi_{CMB}^2$	11259.6	11274.8 ( $\nu: 15.4$ )
$\Omega_m$	0.3063	$0.310^{+0.016}_{-0.015}$	$z_{drag}$	1059.74	$1059.67^{+0.91}_{-0.91}$	$\chi_{BAO}^2$	4.34	5.09 ( $\nu: 0.6$ )
$\Omega_m h^2$	0.14173	$0.1418^{+0.0024}_{-0.0024}$	$r_{drag}$	147.33	$147.53^{+0.77}_{-0.74}$			

Best-fit  $\chi_{eff}^2 = 11266.47$ ;  $\bar{\chi}_{eff}^2 = 11287.94$ ;  $R - 1 = 0.00873$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.42 DR11LOWZ: 0.37 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.51 plik\_dx11dr2\_HM\_v18\_TT: 763.08  
Hubble - H070p6: 0.60

### 7.23 base\_mnu\_plikHM\_TT\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022278	$0.02231^{+0.00040}_{-0.00040}$	$\Omega_\nu h^2$	0.00001	$< 0.00212$	$k_D$	0.14046	$0.14034^{+0.00091}_{-0.00094}$
$\Omega_c h^2$	0.11924	$0.1186^{+0.0027}_{-0.0028}$	$\Omega_m h^3$	0.09633	$0.0960^{+0.0012}_{-0.0012}$	$100\theta_D$	0.16092	$0.16091^{+0.00053}_{-0.00051}$
$100\theta_{MC}$	1.04097	$1.04102^{+0.00083}_{-0.00083}$	$\sigma_8$	0.8415	$0.827^{+0.039}_{-0.041}$	$z_{eq}$	3382	$3366^{+63}_{-66}$
$\tau$	0.0783	$0.083^{+0.037}_{-0.036}$	$\sigma_8 \Omega_m^{0.5}$	0.4651	$0.460^{+0.021}_{-0.023}$	$k_{eq}$	0.010321	$0.01027^{+0.00019}_{-0.00020}$
$\Sigma m_\nu$ [eV]	0.001	$< 0.197$	$\sigma_8 \Omega_m^{0.25}$	0.6256	$0.616^{+0.027}_{-0.030}$	$100\theta_{eq}$	0.8167	$0.820^{+0.013}_{-0.012}$
$\ln(10^{10} A_s)$	3.089	$3.097^{+0.071}_{-0.071}$	$\sigma_8/h^{0.5}$	1.0199	$1.005^{+0.043}_{-0.047}$	$100\theta_{s,eq}$	0.4512	$0.4528^{+0.0065}_{-0.0060}$
$n_s$	0.9670	$0.9684^{+0.0093}_{-0.0092}$	$\langle d^2 \rangle^{1/2}$	2.499	$2.487^{+0.088}_{-0.088}$	$r_{drag}/D_V(0.57)$	0.07191	$0.07175^{+0.00086}_{-0.00084}$
$y_{cal}$	1.00032	$1.0004^{+0.0047}_{-0.0048}$	$z_{re}$	9.98	$10.3^{+3.3}_{-3.3}$	$H(0.57)$	93.26	$93.05^{+0.63}_{-0.69}$
$A_{217}^{CIB}$	66.8	$64^{+10}_{-10}$	$10^9 A_s$	2.197	$2.22^{+0.16}_{-0.15}$	$D_A(0.57)$	1381.0	$1386^{+17}_{-16}$
$\xi^{tSZ \times CIB}$	0.03	—	$10^9 A_s e^{-2\tau}$	1.8782	$1.875^{+0.024}_{-0.024}$	$F_{AP}(0.57)$	0.67449	$0.6753^{+0.0039}_{-0.0038}$
$A_{143}^{tSZ}$	7.17	$5.20^{+3.7}_{-3.9}$	$D_{40}$	1233.8	$1233^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4865	$0.480^{+0.020}_{-0.021}$
$A_{100}^{PS}$	252	$257^{+60}_{-60}$	$D_{220}$	5718	$5723^{+78}_{-79}$	$\sigma_8(0.57)$	0.6270	$0.616^{+0.029}_{-0.031}$
$A_{143}^{PS}$	38.6	$43^{+20}_{-20}$	$D_{810}$	2533.5	$2533^{+27}_{-27}$	$f_{2000}^{143}$	29.4	$30^{+6}_{-6}$
$A_{143 \times 217}^{PS}$	33	$39^{+20}_{-20}$	$D_{1420}$	814.7	$815.1^{+9.8}_{-9.8}$	$f_{2000}^{143 \times 217}$	32.06	$32^{+4}_{-4}$
$A_{217}^{PS}$	97.4	$97^{+20}_{-20}$	$D_{2000}$	230.60	$230.7^{+3.5}_{-3.5}$	$f_{2000}^{217}$	105.75	$105.7^{+3.9}_{-3.9}$
$A^{kSZ}$	0.00	$< 8.19$	$n_{s,0.002}$	0.9670	$0.9684^{+0.0093}_{-0.0092}$	$\chi_{lowTEB}^2$	10496.36	$10497.3 (\nu: 3.3)$
$A_{100}^{dustTT}$	7.44	$7.42^{+3.7}_{-3.7}$	$Y_P$	0.245352	$0.24536^{+0.00018}_{-0.00019}$	$\chi_{plik}^2$	763.1	$777.4 (\nu: 16.8)$
$A_{143}^{dustTT}$	9.01	$9.05^{+3.6}_{-3.6}$	$Y_P^{BBN}$	0.246678	$0.24669^{+0.00018}_{-0.00019}$	$\chi_{H070p6}^2$	0.58	$0.77 (\nu: 0.1)$
$A_{143 \times 217}^{dustTT}$	17.6	$17.1^{+8.2}_{-8.3}$	$10^5 D/H$	2.609	$2.604^{+0.077}_{-0.074}$	$\chi_{JLA}^2$	706.602	$706.73 (\nu: 0.0)$
$A_{217}^{dustTT}$	82.1	$82^{+10}_{-10}$	Age/Gyr	13.774	$13.800^{+0.078}_{-0.073}$	$\chi_{6DF}^2$	0.001	$0.054 (\nu: 0.0)$
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.96	$1089.87^{+0.63}_{-0.61}$	$\chi_{MGS}^2$	1.61	$1.46 (\nu: 0.2)$
$c_{217}$	0.99596	$0.9959^{+0.0028}_{-0.0029}$	$r_*$	144.71	$144.86^{+0.71}_{-0.68}$	$\chi_{DR11CMass}^2$	2.44	$2.88 (\nu: 0.2)$
$H_0$	68.07	$67.7^{+1.2}_{-1.2}$	$100\theta_*$	1.04113	$1.04122^{+0.00083}_{-0.00083}$	$\chi_{DR11LOWZ}^2$	0.32	$0.64 (\nu: 0.2)$
$\Omega_\Lambda$	0.6946	$0.691^{+0.015}_{-0.016}$	$D_A/Gpc$	13.899	$13.912^{+0.068}_{-0.066}$	$\chi_{prior}^2$	2.06	$7.30 (\nu: 6.3)$
$\Omega_m$	0.3054	$0.309^{+0.016}_{-0.015}$	$z_{drag}$	1059.67	$1059.68^{+0.90}_{-0.89}$	$\chi_{CMB}^2$	11259.5	$11274.7 (\nu: 15.4)$
$\Omega_m h^2$	0.14152	$0.1417^{+0.0024}_{-0.0024}$	$r_{drag}$	147.40	$147.55^{+0.76}_{-0.73}$	$\chi_{BAO}^2$	4.37	$5.04 (\nu: 0.5)$

Best-fit  $\chi_{eff}^2 = 11973.10$ ;  $\bar{\chi}_{eff}^2 = 11994.57$ ;  $R - 1 = 0.00922$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.44 DR11LOWZ: 0.32 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.36 plik\_dx11dr2\_HM\_v18\_TT: 763.11  
Hubble - H070p6: 0.58 SN - JLA December\_2013: 706.60

## 7.24 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022295	$0.02229^{+0.00027}_{-0.00027}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04101	$1.04103^{+0.00057}_{-0.00058}$
$\Omega_c h^2$	0.11950	$0.1193^{+0.0021}_{-0.0022}$	$A_{217}^{\text{dustTE}}$	1.68	$1.66^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.8927	$13.898^{+0.048}_{-0.047}$
$100\theta_{\text{MC}}$	1.04085	$1.04083^{+0.00057}_{-0.00059}$	$c_{100}$	0.99821	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.70	$1059.70^{+0.58}_{-0.57}$
$\tau$	0.0806	$0.082^{+0.033}_{-0.033}$	$c_{217}$	0.99590	$0.9959^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.32	$147.38^{+0.51}_{-0.51}$
$\Sigma m_\nu [\text{eV}]$	0.000	< 0.168	$H_0$	67.95	$67.5^{+1.0}_{-1.1}$	$k_D$	0.14057	$0.14050^{+0.00059}_{-0.00059}$
$\ln(10^{10} A_s)$	3.096	$3.098^{+0.064}_{-0.064}$	$\Omega_\Lambda$	0.6929	$0.688^{+0.013}_{-0.015}$	$100\theta_D$	0.160868	$0.16088^{+0.00035}_{-0.00034}$
$n_s$	0.9663	$0.9660^{+0.0085}_{-0.0082}$	$\Omega_m$	0.3071	$0.312^{+0.015}_{-0.013}$	$z_{\text{eq}}$	3388.5	$3383^{+48}_{-49}$
$y_{\text{cal}}$	1.00024	$1.0005^{+0.0050}_{-0.0049}$	$\Omega_m h^2$	0.14180	$0.1423^{+0.0020}_{-0.0020}$	$k_{\text{eq}}$	0.010342	$0.01032^{+0.00015}_{-0.00015}$
$A_{217}^{\text{CIB}}$	64.0	$64^{+10}_{-10}$	$\Omega_\nu h^2$	0.00000	< 0.00181	$100\theta_{\text{eq}}$	0.8154	$0.8165^{+0.0094}_{-0.0090}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.41	—	$\Omega_m h^3$	0.09636	$0.09606^{+0.00082}_{-0.00086}$	$100\theta_{s,\text{eq}}$	0.45055	$0.4511^{+0.0049}_{-0.0046}$
$A_{143}^{\text{tSZ}}$	6.94	$5.41^{+3.6}_{-3.8}$	$\sigma_8$	0.8446	$0.832^{+0.032}_{-0.034}$	$r_{\text{drag}}/D_V(0.57)$	0.07180	$0.07156^{+0.00075}_{-0.00078}$
$A_{100}^{\text{PS}}$	251	$259^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4681	$0.464^{+0.018}_{-0.018}$	$H(0.57)$	93.22	$92.97^{+0.56}_{-0.59}$
$A_{143}^{\text{PS}}$	44.0	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6288	$0.621^{+0.022}_{-0.024}$	$D_A(0.57)$	1382.5	$1389^{+16}_{-15}$
$A_{143 \times 217}^{\text{PS}}$	44.3	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0246	$1.012^{+0.036}_{-0.039}$	$F_{\text{AP}}(0.57)$	0.67492	$0.6762^{+0.0037}_{-0.0034}$
$A_{217}^{\text{PS}}$	102.3	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.511	$2.502^{+0.076}_{-0.076}$	$f\sigma_8(0.57)$	0.4888	$0.484^{+0.017}_{-0.018}$
$A^{\text{kSZ}}$	0.00	< 7.79	$z_{\text{re}}$	10.19	$10.3^{+3.0}_{-3.0}$	$\sigma_8(0.57)$	0.6290	$0.619^{+0.025}_{-0.026}$
$A_{100}^{\text{dustTT}}$	7.43	$7.44^{+3.7}_{-3.7}$	$10^9 A_s$	2.210	$2.22^{+0.14}_{-0.14}$	$f_{2000}^{143}$	28.4	$29^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.02	$8.94^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8814	$1.880^{+0.022}_{-0.022}$	$f_{2000}^{143 \times 217}$	31.69	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$17.0^{+8.2}_{-8.3}$	$D_{40}$	1237.8	$1240^{+25}_{-25}$	$f_{2000}^{217}$	105.19	$105.7^{+3.7}_{-3.7}$
$A_{217}^{\text{dustTT}}$	82.5	$82^{+10}_{-10}$	$D_{220}$	5726	$5732^{+76}_{-76}$	$\chi_{\text{lowTEB}}^2$	10496.94	$10497.7 (\nu: 2.6)$
$A_{100}^{\text{dustEE}}$	0.0812	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2536.1	$2536^{+26}_{-26}$	$\chi_{\text{plik}}^2$	2431.4	$2450.2 (\nu: 23.0)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0490^{+0.0097}_{-0.0097}$	$D_{1420}$	815.5	$815.1^{+9.1}_{-9.3}$	$\chi_{6\text{DF}}^2$	0.006	$0.073 (\nu: 0.0)$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0997^{+0.064}_{-0.064}$	$D_{2000}$	230.91	$230.6^{+3.1}_{-3.2}$	$\chi_{\text{MGS}}^2$	1.47	$1.21 (\nu: 0.1)$
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.013}_{-0.013}$	$n_{s,0.002}$	0.9663	$0.9660^{+0.0085}_{-0.0082}$	$\chi_{\text{DR11CMass}}^2$	2.42	$2.93 (\nu: 0.3)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.090}_{-0.092}$	$Y_P$	0.245360	$0.24536^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11LOWZ}}^2$	0.43	$0.88 (\nu: 0.2)$
$A_{217}^{\text{dustEE}}$	0.647	$0.65^{+0.26}_{-0.25}$	$Y_P^{\text{BBN}}$	0.246686	$0.24668^{+0.00012}_{-0.00013}$	$\chi_{\text{prior}}^2$	6.65	$19.3 (\nu: 15.1)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.073}$	$10^5 D/H$	2.606	$2.606^{+0.052}_{-0.051}$	$\chi_{\text{CMB}}^2$	12928.4	$12948.0 (\nu: 22.2)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.057}$	Age/Gyr	13.777	$13.804^{+0.064}_{-0.059}$	$\chi_{\text{BAO}}^2$	4.33	$5.09 (\nu: 0.6)$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	$z_*$	1089.968	$1089.95^{+0.47}_{-0.46}$			
$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.10}$	$r_*$	144.62	$144.68^{+0.50}_{-0.49}$			

Best-fit  $\chi_{\text{eff}}^2 = 12939.33$ ;  $\Delta\chi_{\text{eff}}^2 = -0.83$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.41$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.06$ ;  $R - 1 = 0.01159$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.02) MGS: 1.47 ( $\Delta$  0.26) DR11CMass: 2.42 ( $\Delta$  -0.08) DR11LOWZ: 0.43 ( $\Delta$  -0.25) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10496.94

( $\Delta$  -0.48) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.41 ( $\Delta$  -0.12)

## 7.25 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022295	$0.02230^{+0.00027}_{-0.00027}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04099	$1.04104^{+0.00056}_{-0.00058}$
$\Omega_c h^2$	0.11947	$0.1192^{+0.0021}_{-0.0021}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.8937	$13.900^{+0.047}_{-0.046}$
$100\theta_{\text{MC}}$	1.04083	$1.04084^{+0.00057}_{-0.00059}$	$c_{100}$	0.99819	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.70	$1059.72^{+0.58}_{-0.57}$
$\tau$	0.0806	$0.082^{+0.033}_{-0.033}$	$c_{217}$	0.99590	$0.9959^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.32	$147.39^{+0.50}_{-0.50}$
$\Sigma m_\nu$ [eV]	0.003	$< 0.159$	$H_0$	67.95	$67.6^{+1.0}_{-1.1}$	$k_D$	0.14056	$0.14050^{+0.00059}_{-0.00058}$
$\ln(10^{10} A_s)$	3.095	$3.098^{+0.063}_{-0.065}$	$\Omega_\Lambda$	0.6929	$0.689^{+0.013}_{-0.013}$	$100\theta_D$	0.160866	$0.16087^{+0.00035}_{-0.00034}$
$n_s$	0.9662	$0.9662^{+0.0084}_{-0.0082}$	$\Omega_m$	0.3071	$0.311^{+0.014}_{-0.013}$	$z_{\text{eq}}$	3387.8	$3381^{+48}_{-49}$
$y_{\text{cal}}$	1.00014	$1.0005^{+0.0049}_{-0.0049}$	$\Omega_m h^2$	0.14180	$0.1421^{+0.0020}_{-0.0020}$	$k_{\text{eq}}$	0.010340	$0.01032^{+0.00015}_{-0.00015}$
$A_{217}^{\text{CIB}}$	64.9	$64^{+10}_{-10}$	$\Omega_\nu h^2$	0.00003	$< 0.00171$	$100\theta_{\text{eq}}$	0.8156	$0.8169^{+0.0093}_{-0.0090}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.24	—	$\Omega_m h^3$	0.09635	$0.09609^{+0.00080}_{-0.00083}$	$100\theta_{\text{s,eq}}$	0.45061	$0.4513^{+0.0047}_{-0.0046}$
$A_{143}^{\text{tSZ}}$	7.16	$5.42^{+3.6}_{-3.8}$	$\sigma_8$	0.8440	$0.832^{+0.030}_{-0.034}$	$r_{\text{drag}}/D_V(0.57)$	0.07180	$0.07161^{+0.00074}_{-0.00076}$
$A_{100}^{\text{PS}}$	252	$259^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4677	$0.464^{+0.018}_{-0.018}$	$H(0.57)$	93.21	$93.02^{+0.54}_{-0.57}$
$A_{143}^{\text{PS}}$	41.0	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6283	$0.622^{+0.022}_{-0.023}$	$D_A(0.57)$	1382.6	$1388^{+16}_{-14}$
$A_{143 \times 217}^{\text{PS}}$	39.1	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0239	$1.012^{+0.035}_{-0.038}$	$F_{\text{AP}}(0.57)$	0.67491	$0.6759^{+0.0036}_{-0.0034}$
$A_{217}^{\text{PS}}$	100.3	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.510	$2.502^{+0.076}_{-0.075}$	$f\sigma_8(0.57)$	0.4885	$0.484^{+0.017}_{-0.017}$
$A^{\text{kSZ}}$	0.00	$< 7.72$	$z_{\text{re}}$	10.19	$10.3^{+3.0}_{-3.1}$	$\sigma_8(0.57)$	0.6285	$0.619^{+0.025}_{-0.026}$
$A_{100}^{\text{dustTT}}$	7.30	$7.44^{+3.8}_{-3.7}$	$10^9 A_s$	2.209	$2.22^{+0.14}_{-0.14}$	$f_{2000}^{143}$	28.6	$29^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	8.98	$8.94^{+3.6}_{-3.5}$	$10^9 A_s e^{-2\tau}$	1.8802	$1.880^{+0.022}_{-0.022}$	$f_{2000}^{143 \times 217}$	31.71	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.0^{+8.1}_{-8.3}$	$D_{40}$	1237.5	$1240^{+25}_{-25}$	$f_{2000}^{217}$	105.31	$105.6^{+3.7}_{-3.7}$
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	$D_{220}$	5724	$5732^{+75}_{-76}$	$\chi_{\text{lowTEB}}^2$	10496.94	$10497.7$ ( $\nu$ : 2.7)
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2534.5	$2535^{+26}_{-26}$	$\chi_{\text{plik}}^2$	2431.3	$2450.2$ ( $\nu$ : 22.9)
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0490^{+0.010}_{-0.0097}$	$D_{1420}$	814.9	$815.2^{+9.1}_{-9.5}$	$\chi_{\text{H070p6}}^2$	0.64	$0.83$ ( $\nu$ : 0.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0995^{+0.063}_{-0.064}$	$D_{2000}$	230.73	$230.7^{+3.1}_{-3.1}$	$\chi_{6\text{DF}}^2$	0.006	$0.062$ ( $\nu$ : 0.0)
$A_{143}^{\text{dustEE}}$	0.1003	$0.100^{+0.013}_{-0.013}$	$n_{\text{s},0.002}$	0.9662	$0.9662^{+0.0084}_{-0.0082}$	$\chi_{\text{MGS}}^2$	1.47	$1.28$ ( $\nu$ : 0.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.090}_{-0.092}$	$Y_{\text{P}}$	0.245360	$0.24536^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.42	$2.85$ ( $\nu$ : 0.2)
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.26}_{-0.24}$	$Y_{\text{P}}^{\text{BBN}}$	0.246686	$0.24669^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11LOWZ}}^2$	0.43	$0.79$ ( $\nu$ : 0.2)
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.075}_{-0.073}$	$10^5 \text{D}/\text{H}$	2.606	$2.604^{+0.052}_{-0.051}$	$\chi_{\text{prior}}^2$	6.79	$19.3$ ( $\nu$ : 14.6)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.057}$	$\text{Age}/\text{Gyr}$	13.777	$13.800^{+0.061}_{-0.057}$	$\chi_{\text{CMB}}^2$	12928.2	$12947.9$ ( $\nu$ : 22.1)
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.17}$	$z_*$	1089.965	$1089.93^{+0.46}_{-0.45}$	$\chi_{\text{BAO}}^2$	4.32	$4.99$ ( $\nu$ : 0.4)
$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.11}_{-0.10}$	$r_*$	144.632	$144.70^{+0.50}_{-0.49}$			

Best-fit  $\chi_{\text{eff}}^2 = 12939.99$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.05$ ;  $R - 1 = 0.01333$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.42 DR11LOWZ: 0.43 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.94 plik\_dx11dr2\_HM\_v18\_TTTEEE:  
2431.29 Hubble - H070p6: 0.64

## 7.26 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022293	$0.02231^{+0.00027}_{-0.00027}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04100	$1.04104^{+0.00057}_{-0.00058}$
$\Omega_c h^2$	0.11949	$0.1191^{+0.0021}_{-0.0021}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.8933	$13.901^{+0.046}_{-0.046}$
$100\theta_{\text{MC}}$	1.04085	$1.04085^{+0.00057}_{-0.00058}$	$c_{100}$	0.99821	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.70	$1059.73^{+0.59}_{-0.55}$
$\tau$	0.0801	$0.082^{+0.033}_{-0.033}$	$c_{217}$	0.99589	$0.9959^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.321	$147.40^{+0.49}_{-0.49}$
$\Sigma m_\nu$ [eV]	0.001	< 0.153	$H_0$	67.95	$67.7^{+1.0}_{-1.1}$	$k_D$	0.14056	$0.14049^{+0.00059}_{-0.00058}$
$\ln(10^{10} A_s)$	3.094	$3.098^{+0.063}_{-0.064}$	$\Omega_\Lambda$	0.6929	$0.690^{+0.013}_{-0.014}$	$100\theta_D$	0.160869	$0.16087^{+0.00035}_{-0.00034}$
$n_s$	0.9660	$0.9664^{+0.0084}_{-0.0082}$	$\Omega_m$	0.3071	$0.310^{+0.014}_{-0.013}$	$z_{\text{eq}}$	3388.1	$3379^{+47}_{-48}$
$y_{\text{cal}}$	1.00016	$1.0005^{+0.0049}_{-0.0049}$	$\Omega_m h^2$	0.14179	$0.1420^{+0.0019}_{-0.0020}$	$k_{\text{eq}}$	0.010341	$0.01031^{+0.00014}_{-0.00015}$
$A_{217}^{\text{CIB}}$	65.0	$64^{+10}_{-10}$	$\Omega_\nu h^2$	0.00001	< 0.00165	$100\theta_{\text{eq}}$	0.8155	$0.8172^{+0.0092}_{-0.0089}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.29	—	$\Omega_m h^3$	0.09635	$0.09610^{+0.00078}_{-0.00081}$	$100\theta_{s,\text{eq}}$	0.45058	$0.4515^{+0.0047}_{-0.0046}$
$A_{143}^{\text{tSZ}}$	7.06	$5.42^{+3.6}_{-3.8}$	$\sigma_8$	0.8438	$0.833^{+0.030}_{-0.033}$	$r_{\text{drag}}/D_V(0.57)$	0.07180	$0.07165^{+0.00072}_{-0.00074}$
$A_{100}^{\text{PS}}$	252	$259^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4676	$0.464^{+0.018}_{-0.018}$	$H(0.57)$	93.21	$93.04^{+0.49}_{-0.57}$
$A_{143}^{\text{PS}}$	42.3	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6282	$0.622^{+0.022}_{-0.023}$	$D_A(0.57)$	1382.6	$1387^{+15}_{-14}$
$A_{143 \times 217}^{\text{PS}}$	41.0	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0237	$1.012^{+0.035}_{-0.038}$	$F_{\text{AP}}(0.57)$	0.67491	$0.6757^{+0.0035}_{-0.0033}$
$A_{217}^{\text{PS}}$	100.8	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.509	$2.501^{+0.076}_{-0.075}$	$f\sigma_8(0.57)$	0.4883	$0.484^{+0.016}_{-0.017}$
$A^{\text{kSZ}}$	0.01	< 7.70	$z_{\text{re}}$	10.14	$10.3^{+3.0}_{-3.0}$	$\sigma_8(0.57)$	0.6284	$0.620^{+0.023}_{-0.025}$
$A_{100}^{\text{dustTT}}$	7.43	$7.44^{+3.8}_{-3.7}$	$10^9 A_s$	2.207	$2.22^{+0.14}_{-0.14}$	$f_{2000}^{143}$	28.7	$29^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	8.98	$8.94^{+3.6}_{-3.5}$	$10^9 A_s e^{-2\tau}$	1.8804	$1.880^{+0.022}_{-0.022}$	$f_{2000}^{143 \times 217}$	31.85	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.0^{+8.0}_{-8.3}$	$D_{40}$	1237.7	$1239^{+25}_{-24}$	$f_{2000}^{217}$	105.37	$105.6^{+3.7}_{-3.7}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$D_{220}$	5725	$5733^{+75}_{-76}$	$\chi_{\text{lowTEB}}^2$	10496.92	$10497.7$ ( $\nu: 2.7$ )
$A_{100}^{\text{dustEE}}$	0.0812	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2534.6	$2535^{+26}_{-26}$	$\chi_{\text{plik}}^2$	2431.3	$2450.2$ ( $\nu: 23.0$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0491^{+0.010}_{-0.0097}$	$D_{1420}$	814.9	$815.2^{+9.1}_{-9.4}$	$\chi_{\text{H070p6}}^2$	0.64	$0.81$ ( $\nu: 0.0$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0996^{+0.063}_{-0.064}$	$D_{2000}$	230.70	$230.7^{+3.1}_{-3.1}$	$\chi_{\text{JLA}}^2$	706.636	$706.75$ ( $\nu: 0.0$ )
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.013}_{-0.013}$	$n_{s,0.002}$	0.9660	$0.9664^{+0.0084}_{-0.0082}$	$\chi_{6\text{DF}}^2$	0.006	$0.055$ ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.224^{+0.090}_{-0.092}$	$Y_{\text{P}}$	0.245359	$0.24536^{+0.00012}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.47	$1.33$ ( $\nu: 0.1$ )
$A_{217}^{\text{dustEE}}$	0.649	$0.65^{+0.26}_{-0.24}$	$Y_{\text{P}}^{\text{BBN}}$	0.246685	$0.24669^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.42	$2.81$ ( $\nu: 0.2$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.075}_{-0.073}$	$10^5 D/H$	2.606	$2.603^{+0.052}_{-0.051}$	$\chi_{\text{DR11LOWZ}}^2$	0.43	$0.73$ ( $\nu: 0.1$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.057}$	Age/Gyr	13.777	$13.798^{+0.059}_{-0.055}$	$\chi_{\text{prior}}^2$	6.78	$19.3$ ( $\nu: 14.6$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.17}$	$z_*$	1089.969	$1089.92^{+0.46}_{-0.44}$	$\chi_{\text{CMB}}^2$	12928.2	$12947.9$ ( $\nu: 22.1$ )
$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.10}$	$r_*$	144.630	$144.72^{+0.49}_{-0.49}$	$\chi_{\text{BAO}}^2$	4.33	$4.92$ ( $\nu: 0.4$ )

Best-fit  $\chi_{\text{eff}}^2 = 13646.61$ ;  $\bar{\chi}_{\text{eff}}^2 = 13679.70$ ;  $R - 1 = 0.01404$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.42 DR11LOWZ: 0.43 CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10496.92 plik\_dx11dr2\_HM\_v18\_TTTEEE:

## 7.27 base\_mnu\_plikHM\_TT\_lowTEB\_lensing\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022256	$0.02227^{+0.00040}_{-0.00040}$	$\Omega_\nu h^2$	0.00069	$< 0.00273$	$k_D$	0.14024	$0.14017^{+0.00082}_{-0.00085}$
$\Omega_c h^2$	0.11859	$0.1181^{+0.0027}_{-0.0027}$	$\Omega_m h^3$	0.09599	$0.0957^{+0.0012}_{-0.0013}$	$100\theta_D$	0.16098	$0.16097^{+0.00050}_{-0.00050}$
$100\theta_{MC}$	1.04101	$1.04105^{+0.00079}_{-0.00081}$	$\sigma_8$	0.8162	$0.808^{+0.028}_{-0.029}$	$z_{eq}$	3366	$3356^{+61}_{-63}$
$\tau$	0.0654	$0.073^{+0.035}_{-0.034}$	$\sigma_8 \Omega_m^{0.5}$	0.4528	$0.450^{+0.014}_{-0.015}$	$k_{eq}$	0.010273	$0.01024^{+0.00019}_{-0.00019}$
$\Sigma m_\nu$ [eV]	0.064	$< 0.254$	$\sigma_8 \Omega_m^{0.25}$	0.6079	$0.603^{+0.019}_{-0.019}$	$100\theta_{eq}$	0.8196	$0.822^{+0.012}_{-0.012}$
$\ln(10^{10} A_s)$	3.062	$3.075^{+0.066}_{-0.063}$	$\sigma_8/h^{0.5}$	0.9911	$0.983^{+0.030}_{-0.031}$	$100\theta_{s,eq}$	0.4528	$0.4538^{+0.0062}_{-0.0059}$
$n_s$	0.9680	$0.9687^{+0.0095}_{-0.0090}$	$\langle d^2 \rangle^{1/2}$	2.446	$2.450^{+0.051}_{-0.051}$	$r_{drag}/D_V(0.57)$	0.07182	$0.07167^{+0.00090}_{-0.00094}$
$y_{cal}$	1.00014	$1.0003^{+0.0048}_{-0.0047}$	$z_{re}$	8.78	$9.40^{+3.1}_{-3.1}$	$H(0.57)$	93.07	$92.89^{+0.75}_{-0.78}$
$A_{217}^{CIB}$	67.5	$64^{+10}_{-10}$	$10^9 A_s$	2.136	$2.17^{+0.14}_{-0.14}$	$D_A(0.57)$	1384.9	$1389^{+21}_{-18}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8742	$1.872^{+0.023}_{-0.022}$	$F_{AP}(0.57)$	0.67506	$0.6758^{+0.0044}_{-0.0041}$
$A_{143}^{tSZ}$	7.17	$5.07^{+3.7}_{-3.8}$	$D_{40}$	1225.3	$1227^{+23}_{-22}$	$f\sigma_8(0.57)$	0.4738	$0.471^{+0.012}_{-0.014}$
$A_{100}^{PS}$	254	$259^{+50}_{-50}$	$D_{220}$	5715	$5719^{+77}_{-77}$	$\sigma_8(0.57)$	0.6082	$0.602^{+0.022}_{-0.023}$
$A_{143}^{PS}$	39.4	$44^{+20}_{-20}$	$D_{810}$	2532.7	$2532^{+26}_{-26}$	$f_{2000}^{143}$	30.0	$30^{+6}_{-6}$
$A_{143 \times 217}^{PS}$	33	$39^{+20}_{-20}$	$D_{1420}$	814.9	$814.9^{+9.7}_{-9.7}$	$f_{2000}^{143 \times 217}$	32.60	$33^{+4}_{-4}$
$A_{217}^{PS}$	97.1	$96^{+20}_{-20}$	$D_{2000}$	230.17	$230.2^{+3.4}_{-3.4}$	$f_{2000}^{217}$	106.15	$106.2^{+3.8}_{-3.8}$
$A^{kSZ}$	0.0	—	$n_{s,0.002}$	0.9680	$0.9687^{+0.0095}_{-0.0090}$	$\chi_{lensing}^2$	9.39	9.75 ( $\nu: 1.0$ )
$A_{100}^{dustTT}$	7.47	$7.46^{+3.7}_{-3.7}$	$Y_P$	0.245343	$0.24535^{+0.00018}_{-0.00018}$	$\chi_{lowTEB}^2$	10494.90	10495.8 ( $\nu: 1.1$ )
$A_{143}^{dustTT}$	9.07	$9.05^{+3.6}_{-3.6}$	$Y_P^{BBN}$	0.246669	$0.24667^{+0.00018}_{-0.00018}$	$\chi_{plik}^2$	766.2	779.5 ( $\nu: 15.1$ )
$A_{143 \times 217}^{dustTT}$	17.7	$17.1^{+8.1}_{-8.2}$	$10^5 D/H$	2.613	$2.610^{+0.076}_{-0.075}$	$\chi_{6DF}^2$	0.006	0.072 ( $\nu: 0.0$ )
$A_{217}^{dustTT}$	81.9	$82^{+10}_{-10}$	Age/Gyr	13.797	$13.819^{+0.088}_{-0.083}$	$\chi_{MGS}^2$	1.47	1.36 ( $\nu: 0.2$ )
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.94	$1089.88^{+0.63}_{-0.62}$	$\chi_{DR11CMass}^2$	2.40	2.98 ( $\nu: 0.4$ )
$c_{217}$	0.99599	$0.9960^{+0.0028}_{-0.0028}$	$r_*$	144.89	$144.98^{+0.66}_{-0.64}$	$\chi_{DR11LOWZ}^2$	0.42	0.78 ( $\nu: 0.2$ )
$H_0$	67.82	$67.5^{+1.3}_{-1.4}$	$100\theta_*$	1.04121	$1.04127^{+0.00079}_{-0.00080}$	$\chi_{prior}^2$	2.13	7.33 ( $\nu: 6.4$ )
$\Omega_\Lambda$	0.6923	$0.689^{+0.017}_{-0.018}$	$D_A/Gpc$	13.915	$13.924^{+0.063}_{-0.061}$	$\chi_{CMB}^2$	11270.5	11285.0 ( $\nu: 15.2$ )
$\Omega_m$	0.3077	$0.311^{+0.018}_{-0.017}$	$z_{drag}$	1059.55	$1059.58^{+0.89}_{-0.86}$	$\chi_{BAO}^2$	4.30	5.19 ( $\nu: 0.8$ )
$\Omega_m h^2$	0.14154	$0.1417^{+0.0023}_{-0.0023}$	$r_{drag}$	147.60	$147.69^{+0.69}_{-0.67}$			

Best-fit  $\chi_{eff}^2 = 11276.91$ ;  $\Delta\chi_{eff}^2 = 0.17$ ;  $\bar{\chi}_{eff}^2 = 11297.54$ ;  $\Delta\bar{\chi}_{eff}^2 = 0.84$ ;  $R - 1 = 0.00541$

$\chi_{eff}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.00) MGS: 1.47 ( $\Delta$  0.07) DR11CMass: 2.40 ( $\Delta$  -0.01) DR11LOWZ: 0.42 ( $\Delta$  -0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.39 ( $\Delta$  0.15) lowL\_SMW\_70\_dx11d\_2014\_10\_01  
10494.90 ( $\Delta$  0.04) plik\_dx11dr2\_HM\_v18\_TT: 766.20 ( $\Delta$  0.00)



## 7.28 base\_mnu\_plikHM\_TT\_lowTEB\_lensing\_BAO\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022290	$0.02229^{+0.00040}_{-0.00039}$	$\Omega_\nu h^2$	0.00055	$< 0.00257$	$k_D$	0.14030	$0.14017^{+0.00082}_{-0.00085}$
$\Omega_c h^2$	0.11855	$0.1181^{+0.0027}_{-0.0027}$	$\Omega_m h^3$	0.09613	$0.0957^{+0.0012}_{-0.0012}$	$100\theta_D$	0.160939	$0.16096^{+0.00050}_{-0.00049}$
$100\theta_{MC}$	1.04104	$1.04107^{+0.00078}_{-0.00081}$	$\sigma_8$	0.8183	$0.810^{+0.027}_{-0.028}$	$z_{eq}$	3366	$3354^{+60}_{-62}$
$\tau$	0.0646	$0.073^{+0.035}_{-0.033}$	$\sigma_8 \Omega_m^{0.5}$	0.4525	$0.450^{+0.014}_{-0.015}$	$k_{eq}$	0.010272	$0.01024^{+0.00018}_{-0.00019}$
$\Sigma m_\nu$ [eV]	0.051	$< 0.239$	$\sigma_8 \Omega_m^{0.25}$	0.6085	$0.604^{+0.017}_{-0.019}$	$100\theta_{eq}$	0.8197	$0.822^{+0.012}_{-0.011}$
$\ln(10^{10} A_s)$	3.060	$3.075^{+0.065}_{-0.062}$	$\sigma_8/h^{0.5}$	0.9924	$0.984^{+0.029}_{-0.030}$	$100\theta_{s,eq}$	0.4528	$0.4540^{+0.0062}_{-0.0058}$
$n_s$	0.9684	$0.9690^{+0.0096}_{-0.0089}$	$\langle d^2 \rangle^{1/2}$	2.445	$2.449^{+0.051}_{-0.051}$	$r_{drag}/D_V(0.57)$	0.07192	$0.07175^{+0.00088}_{-0.00091}$
$y_{cal}$	1.00020	$1.0002^{+0.0049}_{-0.0047}$	$z_{re}$	8.69	$9.39^{+3.0}_{-3.0}$	$H(0.57)$	93.18	$92.96^{+0.73}_{-0.75}$
$A_{217}^{CIB}$	67.7	$64^{+10}_{-10}$	$10^9 A_s$	2.133	$2.17^{+0.14}_{-0.13}$	$D_A(0.57)$	1382.5	$1387^{+19}_{-19}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8742	$1.872^{+0.022}_{-0.022}$	$F_{AP}(0.57)$	0.67459	$0.6754^{+0.0043}_{-0.0039}$
$A_{143}^{tSZ}$	7.20	$5.08^{+3.7}_{-3.9}$	$D_{40}$	1224.2	$1226^{+23}_{-22}$	$f\sigma_8(0.57)$	0.4742	$0.471^{+0.012}_{-0.013}$
$A_{100}^{PS}$	254	$259^{+60}_{-50}$	$D_{220}$	5716	$5720^{+78}_{-76}$	$\sigma_8(0.57)$	0.6100	$0.603^{+0.021}_{-0.023}$
$A_{143}^{PS}$	38.7	$44^{+20}_{-20}$	$D_{810}$	2533.1	$2532^{+26}_{-26}$	$f_{2000}^{143}$	29.8	$30^{+5}_{-5}$
$A_{143 \times 217}^{PS}$	32	$38^{+20}_{-20}$	$D_{1420}$	815.3	$815.0^{+9.6}_{-9.7}$	$f_{2000}^{143 \times 217}$	32.41	$33^{+4}_{-4}$
$A_{217}^{PS}$	96.2	$96^{+20}_{-20}$	$D_{2000}$	230.39	$230.2^{+3.4}_{-3.4}$	$f_{2000}^{217}$	105.94	$106.1^{+3.8}_{-3.8}$
$A^{kSZ}$	0.1	—	$n_{s,0.002}$	0.9684	$0.9690^{+0.0096}_{-0.0089}$	$\chi_{lensing}^2$	9.42	$9.77 (\nu: 1.1)$
$A_{100}^{dustTT}$	7.52	$7.47^{+3.6}_{-3.7}$	$Y_P$	0.245358	$0.24535^{+0.00018}_{-0.00018}$	$\chi_{lowTEB}^2$	10494.80	$10495.7 (\nu: 1.0)$
$A_{143}^{dustTT}$	9.15	$9.08^{+3.6}_{-3.7}$	$Y_P^{BBN}$	0.246684	$0.24668^{+0.00018}_{-0.00018}$	$\chi_{plik}^2$	766.2	$779.5 (\nu: 15.1)$
$A_{143 \times 217}^{dustTT}$	17.7	$17.2^{+8.0}_{-8.1}$	$10^5 D/H$	2.606	$2.607^{+0.075}_{-0.074}$	$\chi_{H070p6}^2$	0.62	$0.82 (\nu: 0.1)$
$A_{217}^{dustTT}$	81.9	$82^{+10}_{-10}$	Age/Gyr	13.786	$13.813^{+0.084}_{-0.080}$	$\chi_{6DF}^2$	0.001	$0.059 (\nu: 0.0)$
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.89	$1089.86^{+0.62}_{-0.61}$	$\chi_{MGS}^2$	1.61	$1.46 (\nu: 0.2)$
$c_{217}$	0.99600	$0.9960^{+0.0029}_{-0.0028}$	$r_*$	144.87	$145.00^{+0.65}_{-0.63}$	$\chi_{DR11CMAS}^2$	2.43	$2.91 (\nu: 0.3)$
$H_0$	67.99	$67.7^{+1.3}_{-1.4}$	$100\theta_*$	1.04123	$1.04129^{+0.00078}_{-0.00081}$	$\chi_{DR11LOWZ}^2$	0.32	$0.66 (\nu: 0.2)$
$\Omega_\Lambda$	0.6941	$0.691^{+0.015}_{-0.017}$	$D_A/\text{Gpc}$	13.914	$13.925^{+0.063}_{-0.061}$	$\chi_{prior}^2$	2.18	$7.32 (\nu: 6.4)$
$\Omega_m$	0.3059	$0.309^{+0.017}_{-0.015}$	$z_{drag}$	1059.63	$1059.60^{+0.86}_{-0.83}$	$\chi_{CMB}^2$	11270.5	$11285.0 (\nu: 15.2)$
$\Omega_m h^2$	0.14139	$0.1415^{+0.0023}_{-0.0023}$	$r_{drag}$	147.57	$147.70^{+0.69}_{-0.67}$	$\chi_{BAO}^2$	4.36	$5.09 (\nu: 0.6)$

Best-fit  $\chi_{eff}^2 = 11277.62$ ;  $\bar{\chi}_{eff}^2 = 11298.19$ ;  $R - 1 = 0.00655$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMAS: 2.43 DR11LOWZ: 0.32 CMB - smica\_g30\_ftl\_full\_pp: 9.42 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.80 plik\_dx11dr2\_HM\_v18\_TT: 766.24 Hubble - H070p6: 0.62

## 7.29 base\_mnu\_plikHM\_TT\_lowTEB\_lensing\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022266	$0.02229^{+0.00039}_{-0.00039}$	$\Omega_m h^3$	0.09607	$0.0958^{+0.0012}_{-0.0012}$	$z_{\text{eq}}$	3364	$3352^{+59}_{-61}$
$\Omega_c h^2$	0.11852	$0.1180^{+0.0026}_{-0.0027}$	$\sigma_8$	0.8181	$0.810^{+0.026}_{-0.028}$	$k_{\text{eq}}$	0.010268	$0.01023^{+0.00018}_{-0.00019}$
$100\theta_{\text{MC}}$	1.04103	$1.04108^{+0.00079}_{-0.00081}$	$\sigma_8 \Omega_m^{0.5}$	0.4525	$0.450^{+0.014}_{-0.014}$	$100\theta_{\text{eq}}$	0.8199	$0.822^{+0.012}_{-0.011}$
$\tau$	0.0649	$0.073^{+0.034}_{-0.033}$	$\sigma_8 \Omega_m^{0.25}$	0.6084	$0.604^{+0.017}_{-0.019}$	$100\theta_{\text{s,eq}}$	0.4529	$0.4542^{+0.0061}_{-0.0057}$
$\Sigma m_\nu$ [eV]	0.051	< 0.234	$\sigma_8/h^{0.5}$	0.9923	$0.985^{+0.027}_{-0.030}$	$r_{\text{drag}}/D_V(0.57)$	0.07192	$0.07180^{+0.00086}_{-0.00088}$
$\ln(10^{10} A_s)$	3.060	$3.075^{+0.064}_{-0.061}$	$\langle d^2 \rangle^{1/2}$	2.445	$2.448^{+0.051}_{-0.051}$	$H(0.57)$	93.16	$92.99^{+0.71}_{-0.72}$
$n_s$	0.9683	$0.9691^{+0.0096}_{-0.0089}$	$z_{\text{re}}$	8.72	$9.40^{+3.0}_{-3.0}$	$D_A(0.57)$	1382.8	$1387^{+19}_{-17}$
$y_{\text{cal}}$	0.99996	$1.0002^{+0.0048}_{-0.0047}$	$10^9 A_s$	2.133	$2.17^{+0.14}_{-0.13}$	$F_{\text{AP}}(0.57)$	0.67459	$0.6752^{+0.0041}_{-0.0039}$
$A_{217}^{\text{CIB}}$	67.4	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8732	$1.872^{+0.022}_{-0.022}$	$f\sigma_8(0.57)$	0.4741	$0.471^{+0.012}_{-0.013}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1223.9	$1226^{+23}_{-22}$	$\sigma_8(0.57)$	0.6099	$0.604^{+0.021}_{-0.022}$
$A_{143}^{\text{tSZ}}$	7.25	$5.08^{+3.7}_{-3.9}$	$D_{220}$	5712	$5720^{+78}_{-76}$	$f_{2000}^{143}$	29.9	$30^{+5}_{-5}$
$A_{100}^{\text{PS}}$	254	$259^{+60}_{-50}$	$D_{810}$	2531.5	$2532^{+26}_{-26}$	$f_{2000}^{143 \times 217}$	32.54	$33^{+4}_{-4}$
$A_{143}^{\text{PS}}$	39.0	$44^{+20}_{-20}$	$D_{1420}$	814.6	$815.0^{+9.6}_{-9.7}$	$f_{2000}^{217}$	106.05	$106.1^{+3.8}_{-3.7}$
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$D_{2000}$	230.13	$230.3^{+3.4}_{-3.4}$	$\chi_{\text{lensing}}^2$	9.39	$9.77 (\nu: 1.1)$
$A_{217}^{\text{PS}}$	97.0	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9683	$0.9691^{+0.0096}_{-0.0089}$	$\chi_{\text{lowTEB}}^2$	10494.83	$10495.7 (\nu: 1.0)$
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245347	$0.24536^{+0.00018}_{-0.00018}$	$\chi_{\text{plik}}^2$	766.3	$779.5 (\nu: 15.1)$
$A_{100}^{\text{dustTT}}$	7.42	$7.47^{+3.6}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246673	$0.24668^{+0.00018}_{-0.00018}$	$\chi_{\text{H070p6}}^2$	0.63	$0.78 (\nu: 0.1)$
$A_{143}^{\text{dustTT}}$	9.15	$9.08^{+3.6}_{-3.7}$	$10^5 \text{D}/\text{H}$	2.611	$2.606^{+0.074}_{-0.074}$	$\chi_{\text{JLA}}^2$	706.610	$706.72 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.0}_{-8.1}$	$\text{Age}/\text{Gyr}$	13.789	$13.810^{+0.081}_{-0.078}$	$\chi_{6\text{DF}}^2$	0.001	$0.052 (\nu: 0.0)$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$z_*$	1089.92	$1089.84^{+0.61}_{-0.61}$	$\chi_{\text{MGS}}^2$	1.61	$1.52 (\nu: 0.2)$
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.90	$145.01^{+0.65}_{-0.62}$	$\chi_{\text{DR11CMass}}^2$	2.43	$2.88 (\nu: 0.2)$
$c_{217}$	0.99594	$0.9960^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04122	$1.04130^{+0.00078}_{-0.00081}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	$0.60 (\nu: 0.2)$
$H_0$	67.97	$67.7^{+1.2}_{-1.3}$	$D_A/\text{Gpc}$	13.916	$13.926^{+0.063}_{-0.060}$	$\chi_{\text{prior}}^2$	2.08	$7.31 (\nu: 6.4)$
$\Omega_\Lambda$	0.6941	$0.692^{+0.015}_{-0.016}$	$z_{\text{drag}}$	1059.59	$1059.61^{+0.85}_{-0.84}$	$\chi_{\text{CMB}}^2$	11270.5	$11285.0 (\nu: 15.2)$
$\Omega_m$	0.3059	$0.308^{+0.016}_{-0.015}$	$r_{\text{drag}}$	147.61	$147.71^{+0.69}_{-0.66}$	$\chi_{\text{BAO}}^2$	4.36	$5.04 (\nu: 0.5)$
$\Omega_m h^2$	0.14134	$0.1414^{+0.0023}_{-0.0022}$	$k_{\text{D}}$	0.14024	$0.14016^{+0.00081}_{-0.00085}$			
$\Omega_\nu h^2$	0.00055	< 0.00251	$100\theta_{\text{D}}$	0.160971	$0.16096^{+0.00050}_{-0.00049}$			

Best-fit  $\chi_{\text{eff}}^2 = 11984.21$ ;  $\Delta\chi_{\text{eff}}^2 = 0.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 12004.81$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.79$ ;  $R - 1 = 0.00684$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.43 ( $\Delta$  0.02) DR11LOWZ: 0.32 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.39 ( $\Delta$  0.13) lowl\_SMW\_70\_dx11d\_2014\_10\_03 10494.83 ( $\Delta$  -0.08) plik\_dx11dr2\_HM\_v18\_TT: 766.31 ( $\Delta$  0.18) Hubble - H070p6: 0.63 ( $\Delta$  -0.04) SN - JLA December\_2013: 706.61 ( $\Delta$  -0.02)

### 7.30 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022284	$0.02229^{+0.00028}_{-0.00028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04108	$1.04110^{+0.00059}_{-0.00058}$
$\Omega_c h^2$	0.11900	$0.1188^{+0.0022}_{-0.0022}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.9048	$13.908^{+0.048}_{-0.047}$
$100\theta_{\text{MC}}$	1.04089	$1.04089^{+0.00060}_{-0.00058}$	$c_{100}$	0.99817	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.67	$1059.67^{+0.61}_{-0.58}$
$\tau$	0.0625	$0.067^{+0.031}_{-0.028}$	$c_{217}$	0.99598	$0.9960^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.46	$147.49^{+0.51}_{-0.50}$
$\Sigma m_\nu$ [eV]	0.047	< 0.215	$H_0$	67.81	$67.5^{+1.2}_{-1.3}$	$k_D$	0.14041	$0.14038^{+0.00059}_{-0.00057}$
$\ln(10^{10} A_s)$	3.057	$3.066^{+0.058}_{-0.052}$	$\Omega_\Lambda$	0.6916	$0.688^{+0.014}_{-0.017}$	$100\theta_D$	0.160910	$0.16090^{+0.00034}_{-0.00035}$
$n_s$	0.9664	$0.9665^{+0.0084}_{-0.0080}$	$\Omega_m$	0.3084	$0.312^{+0.017}_{-0.014}$	$z_{\text{eq}}$	3376	$3372^{+50}_{-50}$
$y_{\text{cal}}$	0.99987	$1.0003^{+0.0048}_{-0.0047}$	$\Omega_m h^2$	0.14179	$0.1421^{+0.0021}_{-0.0020}$	$k_{\text{eq}}$	0.010305	$0.01029^{+0.00015}_{-0.00015}$
$A_{217}^{\text{CIB}}$	67.4	$65^{+10}_{-10}$	$\Omega_\nu h^2$	0.00050	< 0.00231	$100\theta_{\text{eq}}$	0.8177	$0.8186^{+0.0097}_{-0.0094}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.08	—	$\Omega_m h^3$	0.09614	$0.09586^{+0.00091}_{-0.0010}$	$100\theta_{s,\text{eq}}$	0.45172	$0.4522^{+0.0050}_{-0.0048}$
$A_{143}^{\text{tSZ}}$	7.28	$5.32^{+3.7}_{-3.8}$	$\sigma_8$	0.8188	$0.811^{+0.024}_{-0.026}$	$r_{\text{drag}}/D_V(0.57)$	0.07176	$0.07156^{+0.00080}_{-0.00087}$
$A_{100}^{\text{PS}}$	256	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4547	$0.453^{+0.012}_{-0.012}$	$H(0.57)$	93.11	$92.91^{+0.64}_{-0.68}$
$A_{143}^{\text{PS}}$	39.7	$43^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6102	$0.606^{+0.016}_{-0.016}$	$D_A(0.57)$	1384.8	$1390^{+18}_{-17}$
$A_{143 \times 217}^{\text{PS}}$	34.9	$39^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9943	$0.987^{+0.026}_{-0.027}$	$F_{\text{AP}}(0.57)$	0.67523	$0.6762^{+0.0041}_{-0.0037}$
$A_{217}^{\text{PS}}$	97.3	$97^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4511	$2.453^{+0.047}_{-0.048}$	$f\sigma_8(0.57)$	0.4751	$0.472^{+0.011}_{-0.012}$
$A^{\text{kSZ}}$	0.01	< 8.30	$z_{\text{re}}$	8.50	$8.89^{+2.8}_{-2.8}$	$\sigma_8(0.57)$	0.6098	$0.603^{+0.019}_{-0.021}$
$A_{100}^{\text{dustTT}}$	7.44	$7.50^{+3.7}_{-3.7}$	$10^9 A_s$	2.126	$2.15^{+0.12}_{-0.12}$	$f_{2000}^{143}$	29.6	$30^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.07	$9.06^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8765	$1.877^{+0.021}_{-0.021}$	$f_{2000}^{143 \times 217}$	32.43	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.2}_{-8.2}$	$D_{40}$	1228.6	$1231^{+22}_{-21}$	$f_{2000}^{217}$	105.90	$106.1^{+3.5}_{-3.6}$
$A_{217}^{\text{dustTT}}$	81.3	$82^{+10}_{-10}$	$D_{220}$	5722	$5728^{+75}_{-75}$	$\chi_{\text{lensing}}^2$	9.99	10.2 ( $\nu$ : 1.4)
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2533.1	$2534^{+26}_{-26}$	$\chi_{\text{lowTEB}}^2$	10495.22	10495.8 ( $\nu$ : 0.7)
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0492^{+0.0097}_{-0.0099}$	$D_{1420}$	814.7	$815.1^{+9.3}_{-9.0}$	$\chi_{\text{plik}}^2$	2435.2	2453.7 ( $\nu$ : 22.8)
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.0997^{+0.064}_{-0.065}$	$D_{2000}$	230.14	$230.2^{+3.0}_{-2.9}$	$\chi_{6\text{DF}}^2$	0.010	0.08 ( $\nu$ : 0.0)
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.013}_{-0.014}$	$n_{s,0.002}$	0.9664	$0.9665^{+0.0084}_{-0.0080}$	$\chi_{\text{MGS}}^2$	1.41	1.22 ( $\nu$ : 0.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.090}_{-0.092}$	$Y_{\text{P}}$	0.245355	$0.24536^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.41	3.00 ( $\nu$ : 0.4)
$A_{217}^{\text{dustEE}}$	0.656	$0.65^{+0.26}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.246681	$0.24668^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	0.90 ( $\nu$ : 0.2)
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.074}_{-0.075}$	$10^5 D/H$	2.608	$2.606^{+0.053}_{-0.053}$	$\chi_{\text{prior}}^2$	6.99	19.5 ( $\nu$ : 15.2)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.058}_{-0.057}$	Age/Gyr	13.791	$13.814^{+0.074}_{-0.068}$	$\chi_{\text{CMB}}^2$	12940.4	12959.8 ( $\nu$ : 21.7)
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.17}$	$z_*$	1089.937	$1089.92^{+0.48}_{-0.47}$	$\chi_{\text{BAO}}^2$	4.31	5.20 ( $\nu$ : 0.8)
$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.11}$	$r_*$	144.76	$144.80^{+0.50}_{-0.50}$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.71$ ;  $\Delta\chi_{\text{eff}}^2 = 0.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 12984.47$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.83$ ;  $R - 1 = 0.01052$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.41 ( $\Delta$  0.13) DR11CMass: 2.41 ( $\Delta$  -0.04) DR11LOWZ: 0.48 ( $\Delta$  -0.12) CMB - smica\_g30.ftl.full\_pp: 9.99 ( $\Delta$  0.32) low1\_SMW\_70\_dx11d\_2014\_10\_03

## 7.31 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022290	$0.02230^{+0.00028}_{-0.00028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04110	$1.04112^{+0.00060}_{-0.00059}$
$\Omega_c h^2$	0.11897	$0.1187^{+0.0022}_{-0.0022}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.9052	$13.909^{+0.048}_{-0.047}$
$100\theta_{\text{MC}}$	1.04092	$1.04091^{+0.00060}_{-0.00059}$	$c_{100}$	0.99813	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.67	$1059.69^{+0.59}_{-0.58}$
$\tau$	0.0611	$0.067^{+0.030}_{-0.027}$	$c_{217}$	0.99605	$0.9960^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.46	$147.51^{+0.50}_{-0.51}$
$\Sigma m_\nu$ [eV]	0.022	< 0.201	$H_0$	68.04	$67.6^{+1.2}_{-1.2}$	$k_D$	0.14041	$0.14038^{+0.00059}_{-0.00057}$
$\ln(10^{10} A_s)$	3.054	$3.066^{+0.056}_{-0.051}$	$\Omega_\Lambda$	0.6944	$0.689^{+0.015}_{-0.016}$	$100\theta_D$	0.160905	$0.16090^{+0.00034}_{-0.00035}$
$n_s$	0.9663	$0.9668^{+0.0084}_{-0.0081}$	$\Omega_m$	0.3056	$0.311^{+0.016}_{-0.015}$	$z_{\text{eq}}$	3375.6	$3370^{+49}_{-50}$
$y_{\text{cal}}$	1.00000	$1.0002^{+0.0048}_{-0.0047}$	$\Omega_m h^2$	0.14149	$0.1419^{+0.0021}_{-0.0020}$	$k_{\text{eq}}$	0.010302	$0.01029^{+0.00015}_{-0.00015}$
$A_{217}^{\text{CIB}}$	67.8	$64^{+10}_{-10}$	$\Omega_\nu h^2$	0.00023	< 0.00216	$100\theta_{\text{eq}}$	0.8178	$0.8189^{+0.0096}_{-0.0093}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^3$	0.09627	$0.09591^{+0.00089}_{-0.00096}$	$100\theta_{\text{s,eq}}$	0.45180	$0.4524^{+0.0049}_{-0.0047}$
$A_{143}^{\text{tSZ}}$	7.35	$5.34^{+3.7}_{-3.8}$	$\sigma_8$	0.8224	$0.812^{+0.023}_{-0.025}$	$r_{\text{drag}}/D_V(0.57)$	0.07191	$0.07163^{+0.00078}_{-0.00084}$
$A_{100}^{\text{PS}}$	257	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4547	$0.453^{+0.012}_{-0.012}$	$H(0.57)$	93.23	$92.96^{+0.61}_{-0.65}$
$A_{143}^{\text{PS}}$	38.5	$43^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6115	$0.607^{+0.016}_{-0.016}$	$D_A(0.57)$	1381.6	$1388^{+17}_{-17}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9970	$0.988^{+0.025}_{-0.026}$	$F_{\text{AP}}(0.57)$	0.67453	$0.6759^{+0.0039}_{-0.0038}$
$A_{217}^{\text{PS}}$	96.4	$97^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4516	$2.453^{+0.047}_{-0.048}$	$f\sigma_8(0.57)$	0.4760	$0.473^{+0.011}_{-0.011}$
$A^{\text{kSZ}}$	0.00	< 8.30	$z_{\text{re}}$	8.35	$8.89^{+2.7}_{-2.7}$	$\sigma_8(0.57)$	0.6130	$0.605^{+0.019}_{-0.020}$
$A_{100}^{\text{dustTT}}$	7.43	$7.52^{+3.6}_{-3.7}$	$10^9 A_s$	2.120	$2.15^{+0.12}_{-0.12}$	$f_{2000}^{143}$	29.8	$30^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.08	$9.06^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8765	$1.876^{+0.021}_{-0.021}$	$f_{2000}^{143 \times 217}$	32.55	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.2}_{-8.1}$	$D_{40}$	1228.7	$1231^{+22}_{-21}$	$f_{2000}^{217}$	106.06	$106.1^{+3.6}_{-3.6}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{220}$	5724	$5729^{+74}_{-74}$	$\chi_{\text{lensing}}^2$	10.07	10.2 ( $\nu$ : 1.4)
$A_{100}^{\text{dustEE}}$	0.0813	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2533.1	$2534^{+26}_{-25}$	$\chi_{\text{lowTEB}}^2$	10495.25	10495.8 ( $\nu$ : 0.7)
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0493^{+0.0097}_{-0.0099}$	$D_{1420}$	814.6	$815.1^{+9.3}_{-8.9}$	$\chi_{\text{plik}}^2$	2435.0	2453.8 ( $\nu$ : 23.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.0997	$0.100^{+0.065}_{-0.065}$	$D_{2000}$	230.11	$230.2^{+3.0}_{-3.0}$	$\chi_{\text{H070p6}}^2$	0.60	0.86 ( $\nu$ : 0.1)
$A_{143}^{\text{dustEE}}$	0.1005	$0.101^{+0.014}_{-0.014}$	$n_{\text{s},0.002}$	0.9663	$0.9668^{+0.0084}_{-0.0081}$	$\chi_{6\text{DF}}^2$	0.001	0.066 ( $\nu$ : 0.0)
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.091}_{-0.093}$	$Y_{\text{P}}$	0.245358	$0.24536^{+0.00012}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.61	1.30 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.26}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.246684	$0.24669^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.44	2.90 ( $\nu$ : 0.3)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.073}_{-0.073}$	$10^5 \text{D}/\text{H}$	2.606	$2.604^{+0.052}_{-0.052}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	0.79 ( $\nu$ : 0.2)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.058}_{-0.056}$	$\text{Age}/\text{Gyr}$	13.779	$13.808^{+0.071}_{-0.065}$	$\chi_{\text{prior}}^2$	7.11	19.5 ( $\nu$ : 15.0)
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.16}_{-0.16}$	$z_*$	1089.925	$1089.89^{+0.47}_{-0.46}$	$\chi_{\text{CMB}}^2$	12940.3	12959.8 ( $\nu$ : 21.8)
$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.11}$	$r_*$	144.77	$144.81^{+0.50}_{-0.50}$	$\chi_{\text{BAO}}^2$	4.37	5.06 ( $\nu$ : 0.6)

Best-fit  $\chi_{\text{eff}}^2 = 12952.35$ ;  $\bar{\chi}_{\text{eff}}^2 = 12985.21$ ;  $R - 1 = 0.01385$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.44 DR11LOWZ: 0.32 CMB - smica\_g30\_ftl\_full\_pp: 10.07 lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.25  
plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.95 Hubble - H070p6: 0.60

### 7.32 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022280	$0.02231^{+0.00027}_{-0.00027}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1059.67	$1059.69^{+0.58}_{-0.56}$
$\Omega_c h^2$	0.11908	$0.1187^{+0.0021}_{-0.0022}$	$c_{100}$	0.99815	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.44	$147.52^{+0.50}_{-0.50}$
$100\theta_{\text{MC}}$	1.04089	$1.04092^{+0.00060}_{-0.00058}$	$c_{217}$	0.99611	$0.9960^{+0.0028}_{-0.0028}$	$k_{\text{D}}$	0.14042	$0.14037^{+0.00059}_{-0.00057}$
$\tau$	0.0603	$0.067^{+0.030}_{-0.027}$	$H_0$	67.97	$67.6^{+1.2}_{-1.2}$	$100\theta_{\text{D}}$	0.160911	$0.16089^{+0.00034}_{-0.00034}$
$\Sigma m_\nu$ [eV]	0.023	< 0.194	$\Omega_\Lambda$	0.6935	$0.690^{+0.015}_{-0.015}$	$z_{\text{eq}}$	3378.1	$3369^{+49}_{-49}$
$\ln(10^{10} A_s)$	3.053	$3.066^{+0.056}_{-0.051}$	$\Omega_m$	0.3065	$0.310^{+0.015}_{-0.015}$	$k_{\text{eq}}$	0.010310	$0.01028^{+0.00015}_{-0.00015}$
$n_s$	0.9658	$0.9669^{+0.0084}_{-0.0081}$	$\Omega_m h^2$	0.14160	$0.1418^{+0.0020}_{-0.0019}$	$100\theta_{\text{eq}}$	0.8173	$0.8192^{+0.0096}_{-0.0091}$
$y_{\text{cal}}$	1.00002	$1.0002^{+0.0048}_{-0.0047}$	$\Omega_\nu h^2$	0.00024	< 0.00208	$100\theta_{s,\text{eq}}$	0.45154	$0.4525^{+0.0049}_{-0.0047}$
$A_{217}^{\text{CIB}}$	68.3	$64^{+10}_{-10}$	$\Omega_m h^3$	0.09625	$0.09594^{+0.00087}_{-0.00093}$	$r_{\text{drag}}/D_V(0.57)$	0.07186	$0.07167^{+0.00077}_{-0.00082}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8220	$0.813^{+0.023}_{-0.024}$	$H(0.57)$	93.20	$92.99^{+0.59}_{-0.63}$
$A_{143}^{\text{tSZ}}$	7.35	$5.35^{+3.7}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4551	$0.453^{+0.012}_{-0.012}$	$D_A(0.57)$	1382.5	$1387^{+17}_{-16}$
$A_{100}^{\text{PS}}$	258	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6116	$0.607^{+0.015}_{-0.016}$	$F_{\text{AP}}(0.57)$	0.67474	$0.6757^{+0.0038}_{-0.0035}$
$A_{143}^{\text{PS}}$	38.8	$43^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9970	$0.989^{+0.025}_{-0.026}$	$f\sigma_8(0.57)$	0.4760	$0.473^{+0.011}_{-0.011}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4521	$2.452^{+0.047}_{-0.048}$	$\sigma_8(0.57)$	0.6125	$0.605^{+0.018}_{-0.020}$
$A_{217}^{\text{PS}}$	96.0	$97^{+20}_{-20}$	$z_{\text{re}}$	8.28	$8.89^{+2.7}_{-2.7}$	$f_{2000}^{143}$	30.0	$30^{+5}_{-5}$
$A^{\text{kSZ}}$	0.00	< 8.30	$10^9 A_s$	2.118	$2.15^{+0.12}_{-0.11}$	$f_{2000}^{143 \times 217}$	32.70	$32^{+4}_{-4}$
$A_{100}^{\text{dustTT}}$	7.51	$7.52^{+3.6}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8771	$1.876^{+0.021}_{-0.021}$	$f_{2000}^{217}$	106.15	$106.0^{+3.6}_{-3.6}$
$A_{143}^{\text{dustTT}}$	9.12	$9.06^{+3.6}_{-3.6}$	$D_{40}$	1229.5	$1230^{+22}_{-21}$	$\chi_{\text{lensing}}^2$	10.12	10.2 ( $\nu: 1.5$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.1^{+8.2}_{-8.2}$	$D_{220}$	5725	$5729^{+74}_{-74}$	$\chi_{\text{lowTEB}}^2$	10495.33	10495.8 ( $\nu: 0.7$ )
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{810}$	2533.2	$2534^{+26}_{-25}$	$\chi_{\text{plik}}^2$	2434.7	2453.8 ( $\nu: 23.0$ )
$A_{100}^{\text{dustEE}}$	0.0813	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	814.5	$815.1^{+9.3}_{-8.9}$	$\chi_{\text{H070p6}}^2$	0.63	0.82 ( $\nu: 0.1$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0493^{+0.0097}_{-0.0099}$	$D_{2000}$	230.03	$230.3^{+3.0}_{-2.9}$	$\chi_{\text{JLA}}^2$	706.622	706.75 ( $\nu: 0.0$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.100^{+0.065}_{-0.065}$	$n_{s,0.002}$	0.9658	$0.9669^{+0.0084}_{-0.0081}$	$\chi_{6\text{DF}}^2$	0.003	0.057 ( $\nu: 0.0$ )
$A_{143}^{\text{dustEE}}$	0.1004	$0.101^{+0.014}_{-0.014}$	$Y_{\text{P}}$	0.245353	$0.24536^{+0.00012}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.54	1.36 ( $\nu: 0.1$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.091}_{-0.093}$	$Y_{\text{P}}^{\text{BBN}}$	0.246679	$0.24669^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMASS}}^2$	2.42	2.84 ( $\nu: 0.2$ )
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	2.608	$2.603^{+0.052}_{-0.051}$	$\chi_{\text{DR11LOWZ}}^2$	0.37	0.72 ( $\nu: 0.2$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.073}_{-0.073}$	Age/Gyr	13.781	$13.805^{+0.068}_{-0.063}$	$\chi_{\text{prior}}^2$	7.21	19.5 ( $\nu: 15.0$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.058}_{-0.056}$	$z_*$	1089.949	$1089.88^{+0.47}_{-0.45}$	$\chi_{\text{CMB}}^2$	12940.2	12959.8 ( $\nu: 21.8$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.17}$	$r_*$	144.745	$144.83^{+0.49}_{-0.49}$	$\chi_{\text{BAO}}^2$	4.33	4.98 ( $\nu: 0.5$ )
$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	$100\theta_*$	1.04106	$1.04112^{+0.00060}_{-0.00058}$			
$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.9035	$13.911^{+0.048}_{-0.046}$			

Best-fit  $\chi_{\text{eff}}^2 = 13658.96$ ;  $\Delta\chi_{\text{eff}}^2 = -0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 13691.86$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.76$ ;  $R - 1 = 0.01490$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.54 ( $\Delta$  0.13) DR11CMAS: 2.42 ( $\Delta$  0.01) DR11LOWZ: 0.37 ( $\Delta$  -0.11) CMB - smica\_g30\_ftl\_full\_pp: 10.12 ( $\Delta$  0.37) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.33 ( $\Delta$  0.10) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.72 ( $\Delta$  -0.47) Hubble - H070p6: 0.63 ( $\Delta$  -0.09) SN - JLA December\_2013: 706.62 ( $\Delta$  -0.04)

### 7.33 base\_mnu\_lensonly

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02236	$0.0223_{-0.0018}^{+0.0017}$	$z_{\text{re}}$	9.45	$10.5_{-1.7}^{+1.7}$	$z_{\text{drag}}$	1060.4	$1063.7_{-6.7}^{+6.4}$
$\Omega_c h^2$	0.126	$0.169_{-0.067}^{+0.069}$	$10^9 A_s$	2.22	$1.89_{-0.68}^{+0.76}$	$r_{\text{drag}}$	145.4	$135_{-20}^{+20}$
$100\theta_{\text{MC}}$	1.055	$1.11_{-0.13}^{+0.13}$	$10^9 A_s e^{-2\tau}$	1.93	$1.64_{-0.59}^{+0.66}$	$k_{\text{D}}$	0.1428	$0.155_{-0.020}^{+0.020}$
$\Sigma m_\nu$ [eV]	0.56	—	$D_{40}$	1257	$1014_{-400}^{+500}$	$100\theta_{\text{D}}$	0.1626	$0.170_{-0.019}^{+0.018}$
$\ln(10^{10} A_s)$	3.098	$2.92_{-0.36}^{+0.37}$	$D_{220}$	5764	$4276_{-2000}^{+3000}$	$z_{\text{eq}}$	3542	$4564_{-2000}^{+2000}$
$n_s$	0.9606	$0.960_{-0.039}^{+0.040}$	$D_{810}$	2578	$1778_{-1000}^{+1000}$	$k_{\text{eq}}$	0.0108	$0.0140_{-0.0050}^{+0.0051}$
$H_0$	65.7	—	$D_{1420}$	827	$524_{-300}^{+400}$	$100\theta_{\text{eq}}$	0.801	$0.72_{-0.14}^{+0.15}$
$\Omega_\Lambda$	0.64	$0.46_{-0.68}^{+0.47}$	$D_{2000}$	235	$156_{-100}^{+100}$	$100\theta_{\text{s,eq}}$	0.443	$0.402_{-0.072}^{+0.081}$
$\Omega_m$	0.36	$0.54_{-0.48}^{+0.68}$	$n_{\text{s},0.002}$	0.9606	$0.960_{-0.039}^{+0.040}$	$r_{\text{drag}}/D_V(0.57)$	0.0703	$0.072_{-0.019}^{+0.020}$
$\Omega_m h^2$	0.154	$0.213_{-0.088}^{+0.094}$	$Y_{\text{P}}$	0.24539	$0.24536_{-0.00081}^{+0.00073}$	$H(0.57)$	93.5	$105_{-30}^{+30}$
$\Omega_\nu h^2$	0.0061	$< 0.0482$	$Y_{\text{P}}^{\text{BBN}}$	0.24671	$0.24668_{-0.00081}^{+0.00074}$	$D_A(0.57)$	1403	$1333_{-400}^{+500}$
$\Omega_m h^3$	0.101	$0.148_{-0.094}^{+0.11}$	$10^5 D/H$	2.593	$2.61_{-0.33}^{+0.35}$	$F_{\text{AP}}(0.57)$	0.687	$0.716_{-0.090}^{+0.11}$
$\sigma_8$	0.754	$0.69_{-0.20}^{+0.20}$	Age/Gyr	13.65	$12.4_{-3.0}^{+3.4}$	$f\sigma_8(0.57)$	0.454	$0.420_{-0.094}^{+0.075}$
$\sigma_8 \Omega_m^{0.5}$	0.451	$0.47_{-0.10}^{+0.12}$	$z_*$	1090.6	$1094.8_{-6.8}^{+7.0}$	$\sigma_8(0.57)$	0.554	$0.50_{-0.21}^{+0.21}$
$\sigma_8 \Omega_m^{0.25}$	0.5829	$0.566_{-0.049}^{+0.049}$	$r_*$	142.8	$133_{-10}^{+20}$	$\chi_{\text{lensing}}^2$	8.25	11.1 ( $\nu$ : 2.3)
$\sigma_8/h^{0.5}$	0.930	$0.84_{-0.13}^{+0.13}$	$100\theta_*$	1.055	$1.11_{-0.13}^{+0.13}$	$\chi_{\text{prior}}^2$	0.01	1.96 ( $\nu$ : 1.9)
$\langle d^2 \rangle^{1/2}$	2.494	$2.45_{-0.12}^{+0.13}$	$D_A/\text{Gpc}$	13.53	$12.0_{-2.5}^{+2.7}$			

Best-fit  $\chi_{\text{eff}}^2 = 8.25$ ;  $\Delta\chi_{\text{eff}}^2 = -0.19$ ;  $\bar{\chi}_{\text{eff}}^2 = 13.05$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.53$ ;  $R - 1 = 0.00493$   
 $\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.24 ( $\Delta$  -0.20)

### 7.34 base\_mnu\_lensonly\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02228	$0.0223^{+0.0018}_{-0.0018}$	$10^9 A_s e^{-2\tau}$	1.959	$1.66^{+0.47}_{-0.46}$	$z_{\text{eq}}$	3438	$4551^{+1000}_{-1000}$
$\Omega_c h^2$	0.122	$0.168^{+0.061}_{-0.059}$	$D_{40}$	1296	$1028^{+400}_{-300}$	$k_{\text{eq}}$	0.01050	$0.0140^{+0.0046}_{-0.0044}$
$100\theta_{\text{MC}}$	1.053	$1.121^{+0.073}_{-0.079}$	$D_{220}$	5952	$4333^{+2000}_{-2000}$	$100\theta_{\text{eq}}$	0.817	$0.72^{+0.12}_{-0.11}$
$\Sigma m_\nu$ [eV]	0.41	< 4.16	$D_{810}$	2633	$1842^{+1000}_{-1000}$	$100\theta_{\text{s,eq}}$	0.452	$0.403^{+0.061}_{-0.057}$
$\ln(10^{10} A_s)$	3.115	$2.94^{+0.27}_{-0.27}$	$D_{1420}$	842	$527^{+400}_{-300}$	$r_{\text{drag}}/D_V(0.57)$	0.07184	$0.0725^{+0.0012}_{-0.0012}$
$n_s$	0.9604	$0.959^{+0.038}_{-0.038}$	$D_{2000}$	239	$153^{+100}_{-90}$	$H(0.57)$	94.1	$105^{+10}_{-10}$
$H_0$	67.7	$71.3^{+5.2}_{-4.9}$	$n_{\text{s},0.002}$	0.9604	$0.959^{+0.038}_{-0.038}$	$D_A(0.57)$	1378	$1272^{+130}_{-130}$
$\Omega_\Lambda$	0.677	$0.59^{+0.11}_{-0.11}$	$Y_{\text{P}}$	0.24535	$0.24537^{+0.00078}_{-0.00081}$	$F_{\text{AP}}(0.57)$	0.6790	$0.699^{+0.024}_{-0.025}$
$\Omega_{\text{m}}$	0.323	$0.41^{+0.11}_{-0.10}$	$Y_{\text{P}}^{\text{BBN}}$	0.24668	$0.24670^{+0.00079}_{-0.00081}$	$f\sigma_8(0.57)$	0.4592	$0.438^{+0.041}_{-0.044}$
$\Omega_{\text{m}} h^2$	0.148	$0.211^{+0.084}_{-0.079}$	$10^5 \text{D}/\text{H}$	2.608	$2.61^{+0.36}_{-0.32}$	$\sigma_8(0.57)$	0.577	$0.517^{+0.083}_{-0.077}$
$\Omega_\nu h^2$	0.0044	< 0.0447	Age/Gyr	13.62	$12.1^{+1.8}_{-1.7}$	$\chi^2_{\text{lensing}}$	8.27	11.0 ( $\nu$ : 2.2)
$\Omega_{\text{m}} h^3$	0.100	$0.152^{+0.071}_{-0.065}$	$z_*$	1090.2	$1094.6^{+6.1}_{-6.0}$	$\chi^2_{6\text{DF}}$	0.04	0.64 ( $\nu$ : 0.2)
$\sigma_8$	0.776	$0.715^{+0.091}_{-0.085}$	$r_*$	144.0	$133^{+13}_{-13}$	$\chi^2_{\text{MGS}}$	1.16	0.49 ( $\nu$ : 0.2)
$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4412	$0.456^{+0.042}_{-0.040}$	$100\theta_*$	1.053	$1.121^{+0.074}_{-0.079}$	$\chi^2_{\text{DR11CMAS}}$	2.00	1.76 ( $\nu$ : 1.1)
$\sigma_8 \Omega_{\text{m}}^{0.25}$	0.5852	$0.571^{+0.049}_{-0.049}$	$D_A/\text{Gpc}$	13.67	$11.9^{+2.1}_{-1.9}$	$\chi^2_{\text{DR11LOWZ}}$	0.62	1.42 ( $\nu$ : 0.6)
$\sigma_8/h^{0.5}$	0.943	$0.85^{+0.13}_{-0.12}$	$z_{\text{drag}}$	1059.9	$1063.7^{+6.5}_{-6.2}$	$\chi^2_{\text{prior}}$	0.00	2.01 ( $\nu$ : 2.0)
$\langle d^2 \rangle^{1/2}$	2.486	$2.45^{+0.12}_{-0.11}$	$r_{\text{drag}}$	146.7	$135^{+14}_{-13}$	$\chi^2_{\text{BAO}}$	3.81	4.32 ( $\nu$ : 1.1)
$z_{\text{re}}$	9.36	$10.5^{+1.5}_{-1.4}$	$k_{\text{D}}$	0.1413	$0.155^{+0.018}_{-0.018}$			
$10^9 A_s$	2.25	$1.91^{+0.55}_{-0.52}$	$100\theta_{\text{D}}$	0.1626	$0.171^{+0.010}_{-0.011}$			

Best-fit  $\chi^2_{\text{eff}} = 12.08$ ;  $\Delta\chi^2_{\text{eff}} = -0.85$ ;  $\bar{\chi}^2_{\text{eff}} = 17.34$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = -0.64$ ;  $R - 1 = 0.01298$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.04 ( $\Delta$  0.04) MGS: 1.16 ( $\Delta$  -0.32) DR11CMAS: 2.00 ( $\Delta$  -0.46) DR11LOWZ: 0.61 ( $\Delta$  0.18) CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.27 ( $\Delta$  -0.28)



### 7.35 base\_mnu\_lenonly\_theta

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02222	$0.0223^{+0.0018}_{-0.0018}$	$10^9 A_s$	2.17	$1.88^{+0.66}_{-0.58}$	$r_{\text{drag}}$	146.0	$140^{+11}_{-9.9}$
$\Omega_c h^2$	0.1243	$0.146^{+0.037}_{-0.039}$	$10^9 A_s e^{-2\tau}$	1.89	$1.64^{+0.57}_{-0.50}$	$k_D$	0.1420	$0.149^{+0.012}_{-0.013}$
$\Sigma m_\nu$ [eV]	0.53	< 2.48	$D_{40}$	1220	$1017^{+500}_{-400}$	$100\theta_D$	0.16071	$0.1598^{+0.0031}_{-0.0029}$
$\ln(10^{10} A_s)$	3.079	$2.92^{+0.33}_{-0.31}$	$D_{220}$	5667	$4637^{+2000}_{-2000}$	$z_{\text{eq}}$	3502	$4013^{+900}_{-900}$
$n_s$	0.9632	$0.960^{+0.040}_{-0.039}$	$D_{810}$	2540	$2169^{+900}_{-700}$	$k_{\text{eq}}$	0.01069	$0.0123^{+0.0028}_{-0.0029}$
$H_0$	61.8	< 68.7	$D_{1420}$	820	$710^{+300}_{-200}$	$100\theta_{\text{eq}}$	0.796	$0.73^{+0.14}_{-0.12}$
$\Omega_\Lambda$	0.60	$0.27^{+0.53}_{-0.65}$	$D_{2000}$	232	$202^{+70}_{-60}$	$100\theta_{\text{s,eq}}$	0.441	$0.406^{+0.073}_{-0.063}$
$\Omega_m$	0.40	$0.73^{+0.65}_{-0.53}$	$n_{\text{s},0.002}$	0.9632	$0.960^{+0.040}_{-0.039}$	$r_{\text{drag}}/D_V(0.57)$	0.0676	$0.0618^{+0.012}_{-0.0095}$
$\Omega_m h^2$	0.152	$0.181^{+0.050}_{-0.051}$	$Y_P$	0.24533	$0.24536^{+0.00077}_{-0.00084}$	$H(0.57)$	90.52	$89.9^{+3.6}_{-2.8}$
$\Omega_\nu h^2$	0.0057	< 0.0266	$Y_P^{\text{BBN}}$	0.24665	$0.24669^{+0.00077}_{-0.00084}$	$D_A(0.57)$	1470	$1595^{+200}_{-200}$
$\Omega_m h^3$	0.0941	$0.0935^{+0.0057}_{-0.0054}$	$10^5 D/H$	2.620	$2.61^{+0.36}_{-0.34}$	$F_{\text{AP}}(0.57)$	0.697	$0.750^{+0.091}_{-0.090}$
$\sigma_8$	0.736	$0.64^{+0.18}_{-0.16}$	Age/Gyr	14.058	$14.23^{+0.42}_{-0.49}$	$f\sigma_8(0.57)$	0.450	$0.400^{+0.076}_{-0.085}$
$\sigma_8 \Omega_m^{0.5}$	0.465	$0.514^{+0.097}_{-0.11}$	$z_*$	1090.60	$1092.6^{+4.2}_{-4.3}$	$\sigma_8(0.57)$	0.533	$0.44^{+0.18}_{-0.15}$
$\sigma_8 \Omega_m^{0.25}$	0.5849	$0.569^{+0.047}_{-0.047}$	$r_*$	143.3	$138^{+10}_{-9.5}$	$\chi^2_{\text{lensing}}$	8.25	10.7 ( $\nu$ : 2.2)
$\sigma_8/h^{0.5}$	0.936	$0.88^{+0.11}_{-0.11}$	$100\theta_*$	1.041191	$1.04125^{+0.00026}_{-0.00031}$	$\chi^2_{\text{prior}}$	0.00	2.04 ( $\nu$ : 2.1)
$\langle d^2 \rangle^{1/2}$	2.490	$2.48^{+0.11}_{-0.11}$	$D_A/\text{Gpc}$	13.76	$13.24^{+0.99}_{-0.91}$			
$z_{\text{re}}$	9.43	$9.91^{+0.98}_{-1.0}$	$z_{\text{drag}}$	1060.0	$1061.9^{+5.2}_{-5.5}$			

Best-fit  $\chi^2_{\text{eff}} = 8.25$ ;  $\Delta\chi^2_{\text{eff}} = -0.19$ ;  $\bar{\chi}^2_{\text{eff}} = 12.70$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.28$ ;  $R - 1 = 0.00639$   
 $\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp\_lenonly: 8.25 ( $\Delta$  -0.19)

### 7.36 base\_mnu\_lensonly\_BAO\_theta

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02227	$0.0223^{+0.0017}_{-0.0017}$	$10^9 A_s e^{-2\tau}$	1.988	$2.02^{+0.36}_{-0.32}$	$100\theta_D$	0.16102	$0.1611^{+0.0025}_{-0.0025}$
$\Omega_c h^2$	0.1152	$0.1146^{+0.0072}_{-0.0074}$	$D_{40}$	1328	$1345^{+200}_{-200}$	$z_{\text{eq}}$	3284	$3269^{+180}_{-200}$
$\Sigma m_\nu$ [eV]	0.243	< 0.601	$D_{220}$	6196	$6310^{+1000}_{-1000}$	$k_{\text{eq}}$	0.01003	$0.00998^{+0.00056}_{-0.00059}$
$\ln(10^{10} A_s)$	3.130	$3.14^{+0.17}_{-0.16}$	$D_{810}$	2693	$2738^{+500}_{-500}$	$100\theta_{\text{eq}}$	0.8349	$0.838^{+0.036}_{-0.034}$
$n_s$	0.9618	$0.963^{+0.040}_{-0.038}$	$D_{1420}$	862	$876^{+200}_{-200}$	$100\theta_{s,\text{eq}}$	0.4607	$0.463^{+0.020}_{-0.018}$
$H_0$	67.34	$67.2^{+1.8}_{-2.0}$	$D_{2000}$	242.5	$246^{+50}_{-40}$	$r_{\text{drag}}/D_V(0.57)$	0.07177	$0.0718^{+0.0011}_{-0.0011}$
$\Omega_\Lambda$	0.6912	$0.691^{+0.019}_{-0.020}$	$n_{s,0.002}$	0.9618	$0.963^{+0.040}_{-0.038}$	$H(0.57)$	92.50	$92.4^{+1.7}_{-1.8}$
$\Omega_m$	0.3088	$0.309^{+0.020}_{-0.019}$	$Y_P$	0.24535	$0.24533^{+0.00079}_{-0.00077}$	$D_A(0.57)$	1394.2	$1396^{+33}_{-32}$
$\Omega_m h^2$	0.1400	$0.1398^{+0.0051}_{-0.0053}$	$Y_P^{\text{BBN}}$	0.24668	$0.24666^{+0.00080}_{-0.00078}$	$F_{\text{AP}}(0.57)$	0.67535	$0.6754^{+0.0049}_{-0.0049}$
$\Omega_\nu h^2$	0.00262	< 0.00646	$10^5 D/H$	2.610	$2.62^{+0.33}_{-0.33}$	$f\sigma_8(0.57)$	0.4601	$0.457^{+0.025}_{-0.028}$
$\Omega_m h^3$	0.09431	$0.0940^{+0.0047}_{-0.0048}$	Age/Gyr	13.882	$13.90^{+0.25}_{-0.24}$	$\sigma_8(0.57)$	0.5872	$0.582^{+0.038}_{-0.041}$
$\sigma_8$	0.787	$0.780^{+0.051}_{-0.056}$	$z_*$	1089.64	$1089.7^{+2.2}_{-2.2}$	$\chi^2_{\text{lensing}}$	8.35	9.98 ( $\nu: 1.7$ )
$\sigma_8 \Omega_m^{0.5}$	0.4373	$0.434^{+0.029}_{-0.030}$	$r_*$	145.74	$145.9^{+2.6}_{-2.3}$	$\chi^2_{6\text{DF}}$	0.011	0.08 ( $\nu: 0.0$ )
$\sigma_8 \Omega_m^{0.25}$	0.5866	$0.582^{+0.034}_{-0.040}$	$100\theta_*$	1.041102	$1.04111^{+0.00027}_{-0.00026}$	$\chi^2_{\text{MGS}}$	1.41	1.49 ( $\nu: 0.3$ )
$\sigma_8/h^{0.5}$	0.959	$0.952^{+0.053}_{-0.063}$	$D_A/\text{Gpc}$	13.999	$14.01^{+0.25}_{-0.22}$	$\chi^2_{\text{DR11CMass}}$	2.39	3.12 ( $\nu: 0.6$ )
$\langle d^2 \rangle^{1/2}$	2.485	$2.49^{+0.11}_{-0.10}$	$z_{\text{drag}}$	1059.36	$1059.3^{+4.1}_{-4.3}$	$\chi^2_{\text{DR11LOWZ}}$	0.48	0.72 ( $\nu: 0.3$ )
$z_{\text{re}}$	9.178	$9.18^{+0.45}_{-0.46}$	$r_{\text{drag}}$	148.47	$148.6^{+3.1}_{-2.8}$	$\chi^2_{\text{prior}}$	0.01	1.95 ( $\nu: 1.9$ )
$10^9 A_s$	2.287	$2.32^{+0.41}_{-0.37}$	$k_D$	0.13937	$0.1392^{+0.0040}_{-0.0042}$	$\chi^2_{\text{BAO}}$	4.28	5.41 ( $\nu: 1.3$ )

Best-fit  $\chi^2_{\text{eff}} = 12.65$ ;  $\Delta\chi^2_{\text{eff}} = -0.29$ ;  $\bar{\chi}^2_{\text{eff}} = 17.34$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.39$ ;  $R - 1 = 0.00450$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  -0.07) DR11CMass: 2.39 ( $\Delta$  -0.03) DR11LOWZ: 0.48 ( $\Delta$  0.03) CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.35 ( $\Delta$  -0.27)

### 7.37 base\_mnu\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02224	$0.02211^{+0.00049}_{-0.00052}$	$\Omega_m$	0.309	$0.340^{+0.082}_{-0.060}$	$100\theta_*$	1.04104	$1.04093^{+0.00093}_{-0.00095}$
$\Omega_c h^2$	0.11983	$0.1205^{+0.0045}_{-0.0044}$	$\Omega_m h^2$	0.1421	$0.1451^{+0.0081}_{-0.0068}$	$D_A/\text{Gpc}$	13.888	$13.877^{+0.094}_{-0.096}$
$100\theta_{\text{MC}}$	1.04087	$1.0406^{+0.0010}_{-0.0010}$	$\Omega_\nu h^2$	0.00002	$< 0.00753$	$z_{\text{drag}}$	1059.63	$1059.40^{+0.95}_{-0.99}$
$\tau$	0.0728	$0.075^{+0.024}_{-0.023}$	$\Omega_m h^3$	0.09634	$0.0949^{+0.0024}_{-0.0035}$	$r_{\text{drag}}$	147.29	$147.2^{+1.0}_{-1.0}$
$\Sigma m_\nu$ [eV]	0.002	$< 0.701$	$\sigma_8$	0.839	$0.794^{+0.071}_{-0.10}$	$k_D$	0.14056	$0.1406^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	3.0797	$3.084^{+0.047}_{-0.044}$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.461^{+0.028}_{-0.029}$	$100\theta_D$	0.16094	$0.16103^{+0.00054}_{-0.00053}$
$n_s$	0.9657	$0.963^{+0.013}_{-0.013}$	$\sigma_8 \Omega_m^{0.25}$	0.6255	$0.605^{+0.043}_{-0.053}$	$z_{\text{eq}}$	3395	$3408^{+100}_{-100}$
$y_{\text{cal}}$	1.00020	$1.0005^{+0.0049}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.019	$0.980^{+0.071}_{-0.094}$	$k_{\text{eq}}$	0.010362	$0.01041^{+0.00031}_{-0.00031}$
$A_{217}^{\text{CIB}}$	66.5	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.496	$2.490^{+0.080}_{-0.080}$	$100\theta_{\text{eq}}$	0.8141	$0.812^{+0.019}_{-0.018}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$z_{\text{re}}$	9.50	$9.72^{+2.1}_{-2.1}$	$100\theta_{\text{s,eq}}$	0.4499	$0.4487^{+0.0097}_{-0.0094}$
$A_{143}^{\text{tSZ}}$	7.19	$4.94^{+3.7}_{-3.8}$	$10^9 A_s$	2.175	$2.19^{+0.10}_{-0.10}$	$r_{\text{drag}}/D_V(0.57)$	0.07170	$0.0702^{+0.0029}_{-0.0036}$
$A_{100}^{\text{PS}}$	252	$261^{+50}_{-50}$	$10^9 A_s e^{-2\tau}$	1.8804	$1.883^{+0.026}_{-0.027}$	$H(0.57)$	93.15	$92.0^{+2.0}_{-2.7}$
$A_{143}^{\text{PS}}$	39.1	$45^{+20}_{-20}$	$D_{40}$	1234.1	$1237^{+29}_{-31}$	$D_A(0.57)$	1385	$1418^{+83}_{-61}$
$A_{143 \times 217}^{\text{PS}}$	34	$40^{+20}_{-20}$	$D_{220}$	5714	$5716^{+81}_{-82}$	$F_{\text{AP}}(0.57)$	0.6754	$0.683^{+0.019}_{-0.015}$
$A_{217}^{\text{PS}}$	98.1	$97^{+20}_{-20}$	$D_{810}$	2533.9	$2536^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4860	$0.469^{+0.033}_{-0.045}$
$A^{\text{kSZ}}$	0.0	—	$D_{1420}$	814.6	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.624	$0.585^{+0.059}_{-0.088}$
$A_{100}^{\text{dustTT}}$	7.43	$7.46^{+3.7}_{-3.7}$	$D_{2000}$	230.43	$229.7^{+3.8}_{-4.0}$	$f_{2000}^{143}$	29.4	$31^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	9.00	$9.02^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	0.9657	$0.963^{+0.013}_{-0.013}$	$f_{2000}^{143 \times 217}$	32.16	$33^{+5}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.2}_{-8.3}$	$Y_{\text{P}}$	0.245337	$0.24527^{+0.00022}_{-0.00024}$	$f_{2000}^{217}$	105.78	$106.8^{+4.3}_{-4.0}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.246663	$0.24660^{+0.00022}_{-0.00024}$	$\chi^2_{\text{WMAPTEB}}$	19734.25	19735.4 ( $\nu: 2.6$ )
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.615	$2.64^{+0.10}_{-0.093}$	$\chi^2_{\text{plik}}$	763.4	779.0 ( $\nu: 17.8$ )
$c_{217}$	0.99588	$0.9960^{+0.0028}_{-0.0028}$	Age/Gyr	13.782	$13.91^{+0.31}_{-0.22}$	$\chi^2_{\text{prior}}$	2.06	7.40 ( $\nu: 6.4$ )
$H_0$	67.80	$65.5^{+4.2}_{-5.6}$	$z_*$	1090.06	$1090.3^{+1.1}_{-1.0}$	$\chi^2_{\text{CMB}}$	20497.7	20514.4 ( $\nu: 17.5$ )
$\Omega_\Lambda$	0.691	$0.660^{+0.060}_{-0.082}$	$r_*$	144.58	$144.4^{+1.0}_{-1.1}$			

Best-fit  $\chi^2_{\text{eff}} = 20499.74$ ;  $\Delta\chi^2_{\text{eff}} = -0.42$ ;  $\bar{\chi}^2_{\text{eff}} = 20521.79$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.66$ ;  $R - 1 = 0.00732$   
 $\chi^2_{\text{eff}}$ : CMB - bflike\_WMAP353ggf\_LFI312\_nw8: 19734.25 ( $\Delta$  0.10) plik\_dx11dr2\_HM\_v18\_TT: 763.42 ( $\Delta$  -0.65)

### 7.38 base\_mnu\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02210^{+0.00051}_{-0.00053}$	$\Omega_m$	$0.344^{+0.076}_{-0.064}$	$100\theta_*$	$1.04100^{+0.00092}_{-0.00095}$
$\Omega_c h^2$	$0.1200^{+0.0047}_{-0.0045}$	$\Omega_m h^2$	$0.1452^{+0.0079}_{-0.0072}$	$D_A/\text{Gpc}$	$13.888^{+0.094}_{-0.10}$
$100\theta_{\text{MC}}$	$1.0407^{+0.0010}_{-0.0011}$	$\Omega_\nu h^2$	$< 0.00707$	$z_{\text{drag}}$	$1059.35^{+0.98}_{-0.98}$
$\tau$	$0.073^{+0.023}_{-0.023}$	$\Omega_m h^3$	$0.0945^{+0.0024}_{-0.0028}$	$r_{\text{drag}}$	$147.33^{+0.99}_{-1.1}$
$\Sigma m_\nu [\text{eV}]$	$< 0.657$	$\sigma_8$	$0.777^{+0.063}_{-0.073}$	$k_D$	$0.1404^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	$3.079^{+0.044}_{-0.042}$	$\sigma_8 \Omega_m^{0.5}$	$0.454^{+0.018}_{-0.017}$	$100\theta_D$	$0.16107^{+0.00056}_{-0.00053}$
$n_s$	$0.964^{+0.013}_{-0.014}$	$\sigma_8 \Omega_m^{0.25}$	$0.593^{+0.027}_{-0.031}$	$z_{\text{eq}}$	$3396^{+100}_{-100}$
$y_{\text{cal}}$	$1.0003^{+0.0051}_{-0.0049}$	$\sigma_8/h^{0.5}$	$0.962^{+0.051}_{-0.058}$	$k_{\text{eq}}$	$0.01037^{+0.00032}_{-0.00031}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	$2.469^{+0.066}_{-0.059}$	$100\theta_{\text{eq}}$	$0.814^{+0.019}_{-0.019}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$z_{\text{re}}$	$9.58^{+2.1}_{-2.1}$	$100\theta_{\text{s,eq}}$	$0.4500^{+0.0098}_{-0.0095}$
$A_{143}^{\text{tSZ}}$	$4.87^{+3.8}_{-3.9}$	$10^9 A_s$	$2.175^{+0.098}_{-0.090}$	$r_{\text{drag}}/D_V(0.57)$	$0.0701^{+0.0031}_{-0.0034}$
$A_{100}^{\text{PS}}$	$263^{+50}_{-50}$	$10^9 A_s e^{-2\tau}$	$1.879^{+0.026}_{-0.026}$	$H(0.57)$	$91.8^{+2.2}_{-2.4}$
$A_{143}^{\text{PS}}$	$46^{+20}_{-20}$	$D_{40}$	$1232^{+26}_{-27}$	$D_A(0.57)$	$1423^{+75}_{-66}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{220}$	$5714^{+81}_{-83}$	$F_{\text{AP}}(0.57)$	$0.684^{+0.018}_{-0.016}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$D_{810}$	$2534^{+28}_{-27}$	$f\sigma_8(0.57)$	$0.461^{+0.023}_{-0.028}$
$A^{\text{kSZ}}$	—	$D_{1420}$	$814^{+11}_{-10}$	$\sigma_8(0.57)$	$0.572^{+0.057}_{-0.066}$
$A_{100}^{\text{dustTT}}$	$7.48^{+3.7}_{-3.7}$	$D_{2000}$	$229.4^{+3.9}_{-3.9}$	$f_{2000}^{143}$	$31^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	$9.04^{+3.7}_{-3.6}$	$n_{\text{s},0.002}$	$0.964^{+0.013}_{-0.014}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.1}_{-8.2}$	$Y_{\text{P}}$	$0.24527^{+0.00023}_{-0.00024}$	$f_{2000}^{217}$	$107.0^{+4.2}_{-4.1}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24660^{+0.00023}_{-0.00025}$	$\chi_{\text{lensing}}^2$	$9.46 (\nu: 0.9)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	$2.64^{+0.10}_{-0.097}$	$\chi_{\text{WMAPTEB}}^2$	$19734.7 (\nu: 1.8)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0029}$	$\text{Age}/\text{Gyr}$	$13.94^{+0.27}_{-0.23}$	$\chi_{\text{plik}}^2$	$780.1 (\nu: 15.6)$
$H_0$	$65.2^{+4.6}_{-5.1}$	$z_*$	$1090.3^{+1.1}_{-1.1}$	$\chi_{\text{prior}}^2$	$7.46 (\nu: 6.4)$
$\Omega_\Lambda$	$0.656^{+0.064}_{-0.076}$	$r_*$	$144.6^{+1.0}_{-1.1}$	$\chi_{\text{CMB}}^2$	$20524.2 (\nu: 16.3)$

$$\bar{\chi}_{\text{eff}}^2 = 20531.70; \Delta \bar{\chi}_{\text{eff}}^2 = 0.95; R - 1 = 0.01261$$

### 7.39 base\_mnu\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02226^{+0.00040}_{-0.00038}$	$\Omega_\nu h^2$	$< 0.00209$	$k_D$	$0.14036^{+0.00091}_{-0.00095}$
$\Omega_c h^2$	$0.1189^{+0.0027}_{-0.0028}$	$\Omega_m h^3$	$0.0959^{+0.0012}_{-0.0012}$	$100\theta_D$	$0.16095^{+0.00052}_{-0.00050}$
$100\theta_{MC}$	$1.04095^{+0.00082}_{-0.00084}$	$\sigma_8$	$0.823^{+0.034}_{-0.038}$	$z_{eq}$	$3374^{+63}_{-65}$
$\tau$	$0.076^{+0.023}_{-0.023}$	$\sigma_8 \Omega_m^{0.5}$	$0.459^{+0.020}_{-0.022}$	$k_{eq}$	$0.01030^{+0.00019}_{-0.00020}$
$\Sigma m_\nu$ [eV]	$< 0.195$	$\sigma_8 \Omega_m^{0.25}$	$0.615^{+0.025}_{-0.027}$	$100\theta_{eq}$	$0.818^{+0.012}_{-0.011}$
$\ln(10^{10} A_s)$	$3.085^{+0.046}_{-0.045}$	$\sigma_8/h^{0.5}$	$1.001^{+0.040}_{-0.043}$	$100\theta_{s,eq}$	$0.4520^{+0.0063}_{-0.0059}$
$n_s$	$0.9671^{+0.0089}_{-0.0088}$	$\langle d^2 \rangle^{1/2}$	$2.479^{+0.068}_{-0.071}$	$r_{drag}/D_V(0.57)$	$0.07161^{+0.00085}_{-0.00087}$
$y_{cal}$	$1.0005^{+0.0047}_{-0.0049}$	$z_{re}$	$9.77^{+2.0}_{-2.1}$	$H(0.57)$	$92.96^{+0.67}_{-0.70}$
$A_{217}^{CIB}$	$64^{+10}_{-10}$	$10^9 A_s$	$2.19^{+0.10}_{-0.096}$	$D_A(0.57)$	$1389^{+18}_{-16}$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.878^{+0.023}_{-0.023}$	$F_{AP}(0.57)$	$0.6760^{+0.0041}_{-0.0039}$
$A_{143}^{tSZ}$	$5.09^{+3.7}_{-3.8}$	$D_{40}$	$1233^{+26}_{-27}$	$f\sigma_8(0.57)$	$0.479^{+0.018}_{-0.019}$
$A_{100}^{PS}$	$258^{+50}_{-60}$	$D_{220}$	$5723^{+79}_{-83}$	$\sigma_8(0.57)$	$0.612^{+0.025}_{-0.028}$
$A_{143}^{PS}$	$43^{+20}_{-20}$	$D_{810}$	$2535^{+26}_{-28}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{143 \times 217}^{PS}$	$39^{+20}_{-20}$	$D_{1420}$	$815^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{217}^{PS}$	$97^{+20}_{-20}$	$D_{2000}$	$230.4^{+3.5}_{-3.5}$	$f_{2000}^{217}$	$106.0^{+3.8}_{-3.7}$
$A^{kSZ}$	—	$n_{s,0.002}$	$0.9671^{+0.0089}_{-0.0088}$	$\chi_{WMAPTEB}^2$	$19735.1 (\nu: 2.3)$
$A_{100}^{dustTT}$	$7.49^{+3.7}_{-3.6}$	$Y_P$	$0.24534^{+0.00018}_{-0.00018}$	$\chi_{plik}^2$	$778 (\nu: 50.1)$
$A_{143}^{dustTT}$	$9.01^{+3.6}_{-3.5}$	$Y_P^{BBN}$	$0.24667^{+0.00018}_{-0.00018}$	$\chi_{6DF}^2$	$0.074 (\nu: 0.0)$
$A_{143 \times 217}^{dustTT}$	$17.1^{+8.2}_{-8.2}$	$10^5 D/H$	$2.612^{+0.074}_{-0.074}$	$\chi_{MGS}^2$	$1.29 (\nu: 0.2)$
$A_{217}^{dustTT}$	$82^{+10}_{-10}$	Age/Gyr	$13.808^{+0.079}_{-0.076}$	$\chi_{DR11CMass}^2$	$2.97 (\nu: 0.3)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	$1089.97^{+0.59}_{-0.59}$	$\chi_{DR11LOWZ}^2$	$0.84 (\nu: 0.2)$
$c_{217}$	$0.9959^{+0.0028}_{-0.0028}$	$r_*$	$144.79^{+0.69}_{-0.69}$	$\chi_{prior}^2$	$7.28 (\nu: 6.2)$
$H_0$	$67.5^{+1.2}_{-1.3}$	$100\theta_*$	$1.04115^{+0.00082}_{-0.00084}$	$\chi_{CMB}^2$	$20510 (\nu: 50.6)$
$\Omega_\Lambda$	$0.689^{+0.015}_{-0.016}$	$D_A/\text{Gpc}$	$13.907^{+0.068}_{-0.066}$	$\chi_{BAO}^2$	$5.17 (\nu: 0.7)$
$\Omega_m$	$0.311^{+0.016}_{-0.015}$	$z_{drag}$	$1059.61^{+0.90}_{-0.92}$		
$\Omega_m h^2$	$0.1420^{+0.0024}_{-0.0024}$	$r_{drag}$	$147.50^{+0.76}_{-0.73}$		

$$\bar{\chi}_{eff}^2 = 20525.59; \Delta\bar{\chi}_{eff}^2 = 0.69; R - 1 = 0.01723$$

## 8 mnu+Alens

### 8.1 base\_mnu\_Alens\_plikHM\_TT\_lowTEB\_lensing\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022407	$0.02238^{+0.00045}_{-0.00042}$	$\Omega_m$	0.3115	$0.312^{+0.018}_{-0.017}$	$D_A/\text{Gpc}$	13.947	$13.947^{+0.076}_{-0.075}$
$\Omega_c h^2$	0.11664	$0.1167^{+0.0036}_{-0.0038}$	$\Omega_m h^2$	0.14133	$0.1413^{+0.0025}_{-0.0024}$	$z_{\text{drag}}$	1059.78	$1059.73^{+0.94}_{-0.89}$
$100\theta_{\text{MC}}$	1.04124	$1.04124^{+0.00088}_{-0.00090}$	$\Omega_\nu h^2$	0.00229	< 0.00444	$r_{\text{drag}}$	147.93	$147.94^{+0.83}_{-0.80}$
$\tau$	0.0602	$0.060^{+0.041}_{-0.041}$	$\Omega_m h^3$	0.09519	$0.0952^{+0.0015}_{-0.0016}$	$k_D$	0.14003	$0.14000^{+0.00091}_{-0.00091}$
$\Sigma m_\nu$ [eV]	0.213	< 0.413	$\sigma_8$	0.770	$0.772^{+0.067}_{-0.069}$	$100\theta_D$	0.16086	$0.16089^{+0.00051}_{-0.00053}$
$A_L$	1.091	$1.09^{+0.15}_{-0.15}$	$\sigma_8 \Omega_m^{0.5}$	0.4295	$0.430^{+0.035}_{-0.037}$	$z_{\text{eq}}$	3323	$3324^{+82}_{-85}$
$\ln(10^{10} A_s)$	3.046	$3.046^{+0.083}_{-0.081}$	$\sigma_8 \Omega_m^{0.25}$	0.5750	$0.576^{+0.049}_{-0.050}$	$k_{\text{eq}}$	0.010142	$0.01014^{+0.00025}_{-0.00026}$
$n_s$	0.9727	$0.972^{+0.011}_{-0.011}$	$\sigma_8/h^{0.5}$	0.938	$0.940^{+0.079}_{-0.080}$	$100\theta_{\text{eq}}$	0.8283	$0.828^{+0.017}_{-0.016}$
$y_{\text{cal}}$	0.9999	$1.0000^{+0.0050}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	2.482	$2.480^{+0.075}_{-0.071}$	$100\theta_{s,\text{eq}}$	0.4572	$0.4572^{+0.0089}_{-0.0082}$
$A_{217}^{\text{CIB}}$	66.8	$64^{+10}_{-10}$	$z_{\text{re}}$	8.22	$8.11^{+4.1}_{-4.4}$	$r_{\text{drag}}/D_V(0.57)$	0.07162	$0.07164^{+0.00098}_{-0.00096}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.103	$2.11^{+0.17}_{-0.18}$	$H(0.57)$	92.70	$92.71^{+0.83}_{-0.88}$
$A_{143}^{\text{tSZ}}$	7.26	$5.17^{+3.7}_{-3.9}$	$10^9 A_s e^{-2\tau}$	1.8643	$1.865^{+0.026}_{-0.027}$	$D_A(0.57)$	1392.5	$1392^{+22}_{-21}$
$A_{100}^{\text{PS}}$	252	$258^{+50}_{-50}$	$D_{40}$	1210.4	$1212^{+33}_{-35}$	$F_{\text{AP}}(0.57)$	0.67603	$0.6760^{+0.0045}_{-0.0044}$
$A_{143}^{\text{PS}}$	36.9	$43^{+20}_{-20}$	$D_{220}$	5723	$5725^{+80}_{-79}$	$f\sigma_8(0.57)$	0.4502	$0.451^{+0.036}_{-0.036}$
$A_{143 \times 217}^{\text{PS}}$	31	$38^{+20}_{-20}$	$D_{810}$	2528.8	$2529^{+28}_{-28}$	$\sigma_8(0.57)$	0.574	$0.575^{+0.050}_{-0.051}$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$D_{1420}$	815.1	$815^{+10}_{-10}$	$\chi^2_{\text{lensing}}$	9.53	10.3 ( $\nu: 2.2$ )
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.74	$230.5^{+3.5}_{-3.6}$	$\chi^2_{\text{lowTEB}}$	10493.50	10494.7 ( $\nu: 1.5$ )
$A_{100}^{\text{dustTT}}$	7.44	$7.48^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9727	$0.972^{+0.011}_{-0.011}$	$\chi^2_{\text{plik}}$	766.7	780.1 ( $\nu: 16.5$ )
$A_{143}^{\text{dustTT}}$	9.18	$9.07^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245409	$0.24540^{+0.00020}_{-0.00020}$	$\chi^2_{6\text{DF}}$	0.030	0.08 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.1^{+8.0}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.246735	$0.24672^{+0.00020}_{-0.00020}$	$\chi^2_{\text{MGS}}$	1.22	1.31 ( $\nu: 0.2$ )
$A_{217}^{\text{dustTT}}$	81.5	$82^{+10}_{-10}$	$10^5 D/H$	2.584	$2.590^{+0.081}_{-0.083}$	$\chi^2_{\text{DR11CMass}}$	2.46	3.05 ( $\nu: 0.4$ )
$c_{100}$	0.99796	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.845	$13.84^{+0.10}_{-0.10}$	$\chi^2_{\text{DR11LOWZ}}$	0.68	0.85 ( $\nu: 0.3$ )
$c_{217}$	0.99584	$0.9959^{+0.0028}_{-0.0028}$	$z_*$	1089.60	$1089.64^{+0.74}_{-0.74}$	$\chi^2_{\text{prior}}$	2.01	7.39 ( $\nu: 6.3$ )
$H_0$	67.35	$67.4^{+1.5}_{-1.5}$	$r_*$	145.26	$145.26^{+0.82}_{-0.80}$	$\chi^2_{\text{CMB}}$	11269.7	11285.2 ( $\nu: 16.2$ )
$\Omega_\Lambda$	0.6885	$0.688^{+0.017}_{-0.018}$	$100\theta_*$	1.04150	$1.04150^{+0.00090}_{-0.00092}$	$\chi^2_{\text{BAO}}$	4.38	5.30 ( $\nu: 1.0$ )

Best-fit  $\chi^2_{\text{eff}} = 11276.09$ ;  $\Delta\chi^2_{\text{eff}} = -0.65$ ;  $\bar{\chi}^2_{\text{eff}} = 11297.84$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.15$ ;  $R - 1 = 0.00467$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.03 ( $\Delta$  0.02) MGS: 1.22 ( $\Delta$  -0.19) DR11CMass: 2.46 ( $\Delta$  0.06) DR11LOWZ: 0.68 ( $\Delta$  0.20) CMB - smica\_g30\_ft1\_full\_pp: 9.53 ( $\Delta$  0.29) low1\_SMW\_70\_dx11d\_2014.10.03: 10493.50 ( $\Delta$  -1.35) plik\_dx11dr2\_HM\_v18\_TT: 766.67 ( $\Delta$  0.47)

## 9 mnu+omegak

### 9.1 base\_mnu\_omegak\_plikHM\_TT\_lowTEB\_lensing\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022282	$0.02223^{+0.00048}_{-0.00049}$	$\Omega_m$	0.3090	$0.312^{+0.020}_{-0.018}$	$D_A/\text{Gpc}$	13.915	$13.911^{+0.090}_{-0.093}$
$\Omega_c h^2$	0.11851	$0.1188^{+0.0047}_{-0.0044}$	$\Omega_m h^2$	0.1418	$0.1426^{+0.0055}_{-0.0052}$	$z_{\text{drag}}$	1059.63	$1059.52^{+0.96}_{-0.95}$
$100\theta_{\text{MC}}$	1.04100	$1.04095^{+0.00099}_{-0.00099}$	$\Omega_\nu h^2$	0.00102	< 0.00396	$r_{\text{drag}}$	147.58	$147.56^{+0.95}_{-0.99}$
$\tau$	0.0690	$0.074^{+0.037}_{-0.036}$	$\Omega_m h^3$	0.09607	$0.0964^{+0.0040}_{-0.0039}$	$k_D$	0.14028	$0.1403^{+0.0010}_{-0.0010}$
$\Omega_K$	0.0003	$0.0014^{+0.0069}_{-0.0065}$	$\sigma_8$	0.8117	$0.804^{+0.031}_{-0.035}$	$100\theta_D$	0.16094	$0.16100^{+0.00054}_{-0.00054}$
$\Sigma m_\nu [\text{eV}]$	0.095	< 0.368	$\sigma_8 \Omega_m^{0.5}$	0.4512	$0.449^{+0.014}_{-0.015}$	$z_{\text{eq}}$	3365	$3370^{+100}_{-98}$
$\ln(10^{10} A_s)$	3.068	$3.080^{+0.072}_{-0.068}$	$\sigma_8 \Omega_m^{0.25}$	0.6052	$0.601^{+0.020}_{-0.021}$	$k_{\text{eq}}$	0.010269	$0.01028^{+0.00032}_{-0.00030}$
$n_s$	0.9684	$0.967^{+0.013}_{-0.012}$	$\sigma_8/h^{0.5}$	0.9862	$0.978^{+0.034}_{-0.038}$	$100\theta_{\text{eq}}$	0.8199	$0.819^{+0.019}_{-0.020}$
$y_{\text{cal}}$	1.00017	$1.0004^{+0.0050}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.446	$2.451^{+0.054}_{-0.052}$	$100\theta_{s,\text{eq}}$	0.4529	$0.4525^{+0.0099}_{-0.010}$
$A_{217}^{\text{CIB}}$	67.5	$65^{+10}_{-10}$	$z_{\text{re}}$	9.12	$9.59^{+3.4}_{-3.3}$	$r_{\text{drag}}/D_V(0.57)$	0.07178	$0.0718^{+0.0011}_{-0.0010}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.151	$2.18^{+0.16}_{-0.15}$	$H(0.57)$	93.07	$93.1^{+1.5}_{-1.4}$
$A_{143}^{\text{tSZ}}$	7.27	$4.98^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8735	$1.875^{+0.029}_{-0.026}$	$D_A(0.57)$	1385.7	$1387^{+24}_{-24}$
$A_{100}^{\text{PS}}$	254	$261^{+50}_{-50}$	$D_{40}$	1225.0	$1230^{+31}_{-30}$	$F_{\text{AP}}(0.57)$	0.6754	$0.6764^{+0.0056}_{-0.0048}$
$A_{143}^{\text{PS}}$	38.8	$44^{+20}_{-20}$	$D_{220}$	5714	$5718^{+85}_{-81}$	$f\sigma_8(0.57)$	0.4720	$0.469^{+0.014}_{-0.015}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$D_{810}$	2533.0	$2533^{+29}_{-26}$	$\sigma_8(0.57)$	0.6047	$0.599^{+0.025}_{-0.028}$
$A_{217}^{\text{PS}}$	96.8	$97^{+20}_{-20}$	$D_{1420}$	815.1	$815^{+10}_{-9.9}$	$\chi^2_{\text{lensing}}$	9.13	$9.58 (\nu: 0.9)$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.35	$230.0^{+3.7}_{-3.7}$	$\chi^2_{\text{lowTEB}}$	10494.95	$10496.4 (\nu: 2.5)$
$A_{100}^{\text{dustTT}}$	7.34	$7.46^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9684	$0.967^{+0.013}_{-0.012}$	$\chi^2_{\text{plik}}$	766.2	$780.1 (\nu: 15.1)$
$A_{143}^{\text{dustTT}}$	9.09	$9.04^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245354	$0.24533^{+0.00021}_{-0.00022}$	$\chi^2_{6\text{DF}}$	0.010	$0.073 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.1^{+8.3}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.246680	$0.24665^{+0.00022}_{-0.00022}$	$\chi^2_{\text{MGS}}$	1.41	$1.38 (\nu: 0.2)$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$10^5 D/H$	2.608	$2.619^{+0.095}_{-0.090}$	$\chi^2_{\text{DR11CMass}}$	2.37	$2.95 (\nu: 0.4)$
$c_{100}$	0.99791	$0.9979^{+0.0016}_{-0.0015}$	Age/Gyr	13.795	$13.78^{+0.20}_{-0.21}$	$\chi^2_{\text{DR11LOWZ}}$	0.47	$0.74 (\nu: 0.2)$
$c_{217}$	0.99599	$0.9960^{+0.0028}_{-0.0028}$	$z_*$	1089.90	$1090.01^{+0.97}_{-0.90}$	$\chi^2_{\text{prior}}$	2.12	$7.44 (\nu: 6.4)$
$H_0$	67.74	$67.6^{+1.5}_{-1.5}$	$r_*$	144.88	$144.85^{+0.98}_{-1.0}$	$\chi^2_{\text{CMB}}$	11270.3	$11286.1 (\nu: 16.3)$
$\Omega_\Lambda$	0.6906	$0.686^{+0.022}_{-0.024}$	$100\theta_*$	1.04122	$1.04119^{+0.00094}_{-0.00093}$	$\chi^2_{\text{BAO}}$	4.26	$5.15 (\nu: 0.9)$

Best-fit  $\chi^2_{\text{eff}} = 11276.69$ ;  $\Delta\chi^2_{\text{eff}} = -0.05$ ;  $\bar{\chi}^2_{\text{eff}} = 11298.64$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.95$ ;  $R - 1 = 0.03072$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMass: 2.37 ( $\Delta$  -0.03) DR11LOWZ: 0.47 ( $\Delta$  -0.01) CMB - smica\_g30\_ftl\_full\_pp: 9.13 ( $\Delta$  -0.11) low1\_SMW\_70\_dx11d\_2014\_10\_03: 10494.95 ( $\Delta$  0.10) plik\_dx11dr2\_HM.v18.TT: 766.23 ( $\Delta$  0.03)

# 10 mnu+w

## 10.1 base\_mnu\_w\_plikHM\_TT\_lowTEB\_lensing\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022346	$0.02225^{+0.00043}_{-0.00042}$	$\Omega_m$	0.3148	$0.307^{+0.028}_{-0.029}$	$D_A/\text{Gpc}$	13.931	$13.918^{+0.076}_{-0.074}$
$\Omega_c h^2$	0.11763	$0.1184^{+0.0035}_{-0.0035}$	$\Omega_m h^2$	0.14001	$0.1423^{+0.0043}_{-0.0040}$	$z_{\text{drag}}$	1059.70	$1059.55^{+0.88}_{-0.87}$
$100\theta_{\text{MC}}$	1.04118	$1.04099^{+0.00087}_{-0.00087}$	$\Omega_\nu h^2$	0.00003	< 0.00400	$r_{\text{drag}}$	147.75	$147.63^{+0.81}_{-0.80}$
$\tau$	0.0710	$0.074^{+0.037}_{-0.035}$	$\Omega_m h^3$	0.0934	$0.0971^{+0.0077}_{-0.0070}$	$k_D$	0.14015	$0.14021^{+0.00091}_{-0.00089}$
$\Sigma m_\nu [\text{eV}]$	0.003	< 0.372	$\sigma_8$	0.8089	$0.810^{+0.037}_{-0.035}$	$100\theta_D$	0.16091	$0.16099^{+0.00050}_{-0.00050}$
$w$	-0.934	$-1.04^{+0.19}_{-0.21}$	$\sigma_8 \Omega_m^{0.5}$	0.4538	$0.448^{+0.017}_{-0.017}$	$z_{\text{eq}}$	3345	$3361^{+79}_{-79}$
$\ln(10^{10} A_s)$	3.071	$3.077^{+0.067}_{-0.064}$	$\sigma_8 \Omega_m^{0.25}$	0.6059	$0.603^{+0.020}_{-0.020}$	$k_{\text{eq}}$	0.010209	$0.01026^{+0.00024}_{-0.00024}$
$n_s$	0.9706	$0.968^{+0.011}_{-0.011}$	$\sigma_8/h^{0.5}$	0.9905	$0.981^{+0.030}_{-0.033}$	$100\theta_{\text{eq}}$	0.8237	$0.821^{+0.015}_{-0.015}$
$y_{\text{cal}}$	1.00029	$1.0002^{+0.0048}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.439	$2.457^{+0.064}_{-0.059}$	$100\theta_{s,\text{eq}}$	0.4548	$0.4533^{+0.0079}_{-0.0076}$
$A_{217}^{\text{CIB}}$	66.6	$64^{+10}_{-10}$	$z_{\text{re}}$	9.27	$9.49^{+3.1}_{-3.4}$	$r_{\text{drag}}/D_V(0.57)$	0.07186	$0.07157^{+0.00097}_{-0.00099}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$10^9 A_s$	2.156	$2.17^{+0.15}_{-0.14}$	$H(0.57)$	93.56	$92.5^{+1.6}_{-1.8}$
$A_{143}^{\text{tSZ}}$	7.24	$5.06^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8709	$1.873^{+0.024}_{-0.024}$	$D_A(0.57)$	1389.4	$1389^{+23}_{-23}$
$A_{100}^{\text{PS}}$	252	$260^{+50}_{-50}$	$D_{40}$	1223.0	$1227^{+24}_{-23}$	$F_{\text{AP}}(0.57)$	0.6807	$0.673^{+0.016}_{-0.018}$
$A_{143}^{\text{PS}}$	39.0	$44^{+20}_{-20}$	$D_{220}$	5721	$5718^{+79}_{-80}$	$f\sigma_8(0.57)$	0.4631	$0.476^{+0.034}_{-0.031}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{810}$	2532.7	$2532^{+26}_{-26}$	$\sigma_8(0.57)$	0.6030	$0.603^{+0.028}_{-0.027}$
$A_{217}^{\text{PS}}$	97.7	$97^{+20}_{-20}$	$D_{1420}$	815.8	$814.7^{+9.7}_{-10}$	$\chi_{\text{lensing}}^2$	9.37	9.61 ( $\nu: 1.0$ )
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.69	$230.1^{+3.5}_{-3.6}$	$\chi_{\text{lowTEB}}^2$	10494.95	10495.9 ( $\nu: 1.2$ )
$A_{100}^{\text{dustTT}}$	7.47	$7.47^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9706	$0.968^{+0.011}_{-0.011}$	$\chi_{\text{plik}}^2$	766.5	779.6 ( $\nu: 15.1$ )
$A_{143}^{\text{dustTT}}$	9.08	$9.08^{+3.5}_{-3.5}$	$Y_{\text{P}}$	0.245382	$0.24534^{+0.00019}_{-0.00019}$	$\chi_{6\text{DF}}^2$	0.0999	0.18 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.1}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246709	$0.24666^{+0.00019}_{-0.00019}$	$\chi_{\text{MGS}}^2$	0.93	1.73 ( $\nu: 0.6$ )
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$10^5 D/H$	2.596	$2.615^{+0.081}_{-0.081}$	$\chi_{\text{DR11CMass}}^2$	1.83	3.57 ( $\nu: 1.1$ )
$c_{100}$	0.99787	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.799	$13.827^{+0.092}_{-0.086}$	$\chi_{\text{DR11LOWZ}}^2$	0.70	0.77 ( $\nu: 0.3$ )
$c_{217}$	0.99589	$0.9960^{+0.0028}_{-0.0028}$	$z_*$	1089.74	$1089.95^{+0.75}_{-0.75}$	$\chi_{\text{prior}}^2$	2.18	7.38 ( $\nu: 6.4$ )
$H_0$	66.69	$68.2^{+3.9}_{-3.5}$	$r_*$	145.07	$144.92^{+0.80}_{-0.79}$	$\chi_{\text{CMB}}^2$	11270.9	11285.0 ( $\nu: 15.4$ )
$\Omega_\Lambda$	0.6852	$0.693^{+0.029}_{-0.028}$	$100\theta_*$	1.04133	$1.04124^{+0.00084}_{-0.00084}$	$\chi_{\text{BAO}}^2$	3.55	6.25 ( $\nu: 2.7$ )

Best-fit  $\chi_{\text{eff}}^2 = 11276.58$ ;  $\Delta\chi_{\text{eff}}^2 = -0.16$ ;  $\bar{\chi}_{\text{eff}}^2 = 11298.68$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.99$ ;  $R - 1 = 0.00919$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.10 ( $\Delta$  0.09) MGS: 0.93 ( $\Delta$  -0.48) DR11CMass: 1.83 ( $\Delta$  -0.58) DR11LOWZ: 0.70 ( $\Delta$  0.22) CMB - smica\_g30\_ftl\_full\_pp: 9.37 ( $\Delta$  0.13) lowl\_SMW\_70\_dx11d\_2014\_10\_03 10494.95 ( $\Delta$  0.10) plik\_dx11dr2\_HM.v18.TT: 766.52 ( $\Delta$  0.32)



# 11 nnu

## 11.1 base\_nnu\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02224	$0.02230^{+0.00075}_{-0.00071}$	$\Omega_m$	0.3142	$0.312^{+0.042}_{-0.040}$	$D_A/\text{Gpc}$	13.894	$13.83^{+0.49}_{-0.49}$
$\Omega_c h^2$	0.1196	$0.1205^{+0.0081}_{-0.0077}$	$\Omega_m h^2$	0.1425	$0.1435^{+0.0085}_{-0.0080}$	$z_{\text{drag}}$	1059.59	$1059.9^{+2.5}_{-2.4}$
$100\theta_{\text{MC}}$	1.04088	$1.0408^{+0.0011}_{-0.0011}$	$\Omega_m h^3$	0.0960	$0.098^{+0.013}_{-0.012}$	$r_{\text{drag}}$	147.4	$146.7^{+5.5}_{-5.5}$
$\tau$	0.0775	$0.080^{+0.044}_{-0.042}$	$\sigma_8$	0.8290	$0.834^{+0.046}_{-0.045}$	$k_D$	0.14050	$0.1410^{+0.0041}_{-0.0039}$
$N_{\text{eff}}$	3.04	$3.13^{+0.64}_{-0.63}$	$\sigma_8 \Omega_m^{0.5}$	0.4647	$0.465^{+0.027}_{-0.026}$	$100\theta_D$	0.16094	$0.1611^{+0.0014}_{-0.0013}$
$\ln(10^{10} A_s)$	3.089	$3.096^{+0.095}_{-0.089}$	$\sigma_8 \Omega_m^{0.25}$	0.6207	$0.622^{+0.027}_{-0.026}$	$z_{\text{eq}}$	3391	$3380^{+140}_{-150}$
$n_s$	0.9662	$0.969^{+0.032}_{-0.030}$	$\sigma_8/h^{0.5}$	1.0102	$1.011^{+0.038}_{-0.037}$	$k_{\text{eq}}$	0.010347	$0.01036^{+0.00032}_{-0.00031}$
$y_{\text{cal}}$	1.00028	$1.0003^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.495	$2.495^{+0.095}_{-0.095}$	$100\theta_{\text{eq}}$	0.8150	$0.817^{+0.029}_{-0.027}$
$A_{217}^{\text{CIB}}$	66.5	$64^{+10}_{-10}$	$z_{\text{re}}$	9.94	$10.1^{+3.7}_{-4.1}$	$100\theta_{s,\text{eq}}$	0.4503	$0.452^{+0.015}_{-0.014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.08	—	$10^9 A_s$	2.195	$2.21^{+0.22}_{-0.20}$	$r_{\text{drag}}/D_V(0.57)$	0.07143	$0.0716^{+0.0023}_{-0.0021}$
$A_{143}^{\text{tSZ}}$	7.09	$5.08^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8796	$1.883^{+0.042}_{-0.044}$	$H(0.57)$	92.9	$93.5^{+5.1}_{-5.0}$
$A_{100}^{\text{PS}}$	252	$259^{+60}_{-60}$	$D_{40}$	1234.5	$1234^{+44}_{-43}$	$D_A(0.57)$	1391	$1382^{+91}_{-92}$
$A_{143}^{\text{PS}}$	39.8	$44^{+20}_{-20}$	$D_{220}$	5715	$5717^{+82}_{-82}$	$F_{\text{AP}}(0.57)$	0.6767	$0.676^{+0.010}_{-0.010}$
$A_{143 \times 217}^{\text{PS}}$	35	$39^{+20}_{-20}$	$D_{810}$	2534.4	$2535^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4827	$0.484^{+0.022}_{-0.021}$
$A_{217}^{\text{PS}}$	98.2	$97^{+20}_{-20}$	$D_{1420}$	815.0	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.6161	$0.620^{+0.041}_{-0.040}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.51	$230.0^{+4.5}_{-4.6}$	$f_{2000}^{143}$	29.4	$30^{+7}_{-7}$
$A_{100}^{\text{dustTT}}$	7.46	$7.44^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9662	$0.969^{+0.032}_{-0.030}$	$f_{2000}^{143 \times 217}$	32.1	$33^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	8.99	$8.99^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.2453	$0.2463^{+0.0086}_{-0.0084}$	$f_{2000}^{217}$	105.73	$106.3^{+4.7}_{-4.7}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.1^{+8.1}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.2466	$0.2477^{+0.0086}_{-0.0084}$	$\chi_{\text{lowTEB}}^2$	10496.3	$10497.5 (\nu: 4.0)$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 D/H$	2.615	$2.63^{+0.14}_{-0.13}$	$\chi_{\text{plik}}^2$	763.6	$778.2 (\nu: 18.1)$
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.81	$13.74^{+0.65}_{-0.65}$	$\chi_{\text{prior}}^2$	2.00	$7.35 (\nu: 6.3)$
$c_{217}$	0.99592	$0.9960^{+0.0029}_{-0.0028}$	$z_*$	1090.05	$1090.13^{+0.98}_{-0.97}$	$\chi_{\text{CMB}}^2$	11259.9	$11275.7 (\nu: 16.3)$
$H_0$	67.3	$68.0^{+5.7}_{-5.6}$	$r_*$	144.6	$144.0^{+5.3}_{-5.3}$			
$\Omega_\Lambda$	0.6858	$0.688^{+0.040}_{-0.042}$	$100\theta_*$	1.04108	$1.0410^{+0.0014}_{-0.0014}$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.94$ ;  $\Delta\chi_{\text{eff}}^2 = 0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.02$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.20$ ;  $R - 1 = 0.00593$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.30 ( $\Delta -0.17$ ) plik\_dx11dr2\_HM\_v18\_TT: 763.64 ( $\Delta 0.26$ )

## 11.2 base\_nnu\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02232	$0.02237^{+0.00069}_{-0.00065}$	$\Omega_m$	0.3091	$0.306^{+0.035}_{-0.035}$	$D_A/\text{Gpc}$	13.856	$13.80^{+0.47}_{-0.47}$
$\Omega_c h^2$	0.1198	$0.1208^{+0.0081}_{-0.0077}$	$\Omega_m h^2$	0.1428	$0.1439^{+0.0085}_{-0.0080}$	$z_{\text{drag}}$	1059.86	$1060.1^{+2.4}_{-2.2}$
$100\theta_{\text{MC}}$	1.04087	$1.0408^{+0.0011}_{-0.0011}$	$\Omega_m h^3$	0.0971	$0.099^{+0.012}_{-0.012}$	$r_{\text{drag}}$	146.9	$146.3^{+5.3}_{-5.2}$
$\tau$	0.0827	$0.084^{+0.043}_{-0.040}$	$\sigma_8$	0.8335	$0.837^{+0.045}_{-0.044}$	$k_D$	0.14081	$0.1413^{+0.0039}_{-0.0037}$
$N_{\text{eff}}$	3.10	$3.18^{+0.61}_{-0.56}$	$\sigma_8 \Omega_m^{0.5}$	0.4634	$0.463^{+0.025}_{-0.024}$	$100\theta_D$	0.16102	$0.1612^{+0.0013}_{-0.0013}$
$\ln(10^{10} A_s)$	3.100	$3.104^{+0.093}_{-0.087}$	$\sigma_8 \Omega_m^{0.25}$	0.6215	$0.622^{+0.028}_{-0.027}$	$z_{\text{eq}}$	3373	$3363^{+120}_{-130}$
$n_s$	0.9695	$0.972^{+0.029}_{-0.027}$	$\sigma_8/h^{0.5}$	1.0110	$1.010^{+0.038}_{-0.038}$	$k_{\text{eq}}$	0.010332	$0.01035^{+0.00031}_{-0.00030}$
$y_{\text{cal}}$	1.00042	$1.0004^{+0.0048}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.494	$2.489^{+0.092}_{-0.092}$	$100\theta_{\text{eq}}$	0.8184	$0.821^{+0.026}_{-0.023}$
$A_{217}^{\text{CIB}}$	67.1	$64^{+10}_{-10}$	$z_{\text{re}}$	10.40	$10.4^{+3.6}_{-3.8}$	$100\theta_{s,\text{eq}}$	0.4521	$0.453^{+0.013}_{-0.012}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$10^9 A_s$	2.220	$2.23^{+0.21}_{-0.20}$	$r_{\text{drag}}/D_V(0.57)$	0.07170	$0.0719^{+0.0020}_{-0.0019}$
$A_{143}^{\text{tSZ}}$	7.23	$5.04^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8814	$1.885^{+0.042}_{-0.043}$	$H(0.57)$	93.39	$94.0^{+4.7}_{-4.3}$
$A_{100}^{\text{PS}}$	253	$260^{+60}_{-60}$	$D_{40}$	1231.7	$1229^{+40}_{-40}$	$D_A(0.57)$	1381	$1371^{+81}_{-83}$
$A_{143}^{\text{PS}}$	38.6	$45^{+20}_{-20}$	$D_{220}$	5719	$5719^{+81}_{-80}$	$F_{\text{AP}}(0.57)$	0.6754	$0.6747^{+0.0089}_{-0.0091}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$D_{810}$	2534.9	$2535^{+28}_{-27}$	$f\sigma_8(0.57)$	0.4840	$0.485^{+0.022}_{-0.021}$
$A_{217}^{\text{PS}}$	97.2	$97^{+20}_{-20}$	$D_{1420}$	815.0	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.6207	$0.624^{+0.039}_{-0.038}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.44	$229.9^{+4.5}_{-4.6}$	$f_{2000}^{143}$	29.6	$31^{+7}_{-7}$
$A_{100}^{\text{dustTT}}$	7.40	$7.45^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9695	$0.972^{+0.029}_{-0.027}$	$f_{2000}^{143 \times 217}$	32.3	$33^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.06	$9.01^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.2461	$0.2471^{+0.0081}_{-0.0079}$	$f_{2000}^{217}$	105.94	$106.4^{+4.7}_{-4.7}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.2}_{-8.3}$	$Y_{\text{P}}^{\text{BBN}}$	0.2474	$0.2485^{+0.0081}_{-0.0080}$	$\chi_{\text{lowTEB}}^2$	10496.3	10497.1 ( $\nu: 3.8$ )
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$10^5 D/H$	2.619	$2.64^{+0.14}_{-0.13}$	$\chi_{\text{plik}}^2$	763.6	778.5 ( $\nu: 30.5$ )
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.75	$13.67^{+0.60}_{-0.60}$	$\chi_{\text{JLA}}^2$	706.68	706.89 ( $\nu: 0.1$ )
$c_{217}$	0.99598	$0.9960^{+0.0029}_{-0.0028}$	$z_*$	1090.02	$1090.12^{+0.99}_{-0.97}$	$\chi_{\text{prior}}^2$	2.12	7.37 ( $\nu: 6.4$ )
$H_0$	68.0	$68.6^{+5.1}_{-5.0}$	$r_*$	144.2	$143.6^{+5.1}_{-5.0}$	$\chi_{\text{CMB}}^2$	11259.9	11275.6 ( $\nu: 29.1$ )
$\Omega_\Lambda$	0.6909	$0.694^{+0.035}_{-0.035}$	$100\theta_*$	1.04103	$1.0409^{+0.0014}_{-0.0013}$			

Best-fit  $\chi_{\text{eff}}^2 = 11968.68$ ;  $\Delta\chi_{\text{eff}}^2 = -0.06$ ;  $\bar{\chi}_{\text{eff}}^2 = 11989.87$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.27$ ;  $R - 1 = 0.00852$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.30 ( $\Delta -0.14$ ) plik\_dx11dr2\_HM\_v18\_TT: 763.57 ( $\Delta 0.15$ ) SN - JLA December\_2013: 706.68 ( $\Delta -0.08$ )

### 11.3 base\_nnu\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02227	$0.02232^{+0.00074}_{-0.00069}$	$\Omega_m$	0.3074	$0.305^{+0.038}_{-0.037}$	$D_A/\text{Gpc}$	13.915	$13.86^{+0.47}_{-0.49}$
$\Omega_c h^2$	0.1185	$0.1195^{+0.0079}_{-0.0073}$	$\Omega_m h^2$	0.1415	$0.1424^{+0.0083}_{-0.0076}$	$z_{\text{drag}}$	1059.59	$1059.8^{+2.5}_{-2.3}$
$100\theta_{\text{MC}}$	1.04104	$1.0410^{+0.0011}_{-0.0011}$	$\Omega_m h^3$	0.0960	$0.098^{+0.012}_{-0.012}$	$r_{\text{drag}}$	147.6	$146.9^{+5.3}_{-5.4}$
$\tau$	0.0666	$0.069^{+0.040}_{-0.038}$	$\sigma_8$	0.8158	$0.820^{+0.039}_{-0.037}$	$k_D$	0.14027	$0.1407^{+0.0040}_{-0.0037}$
$N_{\text{eff}}$	3.05	$3.13^{+0.62}_{-0.61}$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.452^{+0.018}_{-0.017}$	$100\theta_D$	0.16096	$0.1612^{+0.0014}_{-0.0013}$
$\ln(10^{10} A_s)$	3.064	$3.070^{+0.085}_{-0.079}$	$\sigma_8 \Omega_m^{0.25}$	0.6074	$0.609^{+0.018}_{-0.017}$	$z_{\text{eq}}$	3365	$3353^{+130}_{-140}$
$n_s$	0.9684	$0.971^{+0.030}_{-0.028}$	$\sigma_8/h^{0.5}$	0.9905	$0.991^{+0.022}_{-0.022}$	$k_{\text{eq}}$	0.010270	$0.01029^{+0.00030}_{-0.00029}$
$y_{\text{cal}}$	1.00014	$1.0002^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.448	$2.446^{+0.057}_{-0.058}$	$100\theta_{\text{eq}}$	0.8199	$0.822^{+0.027}_{-0.027}$
$A_{217}^{\text{CIB}}$	67.2	$65^{+10}_{-10}$	$z_{\text{re}}$	8.89	$9.02^{+3.5}_{-3.9}$	$100\theta_{s,\text{eq}}$	0.4529	$0.454^{+0.014}_{-0.014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.141	$2.16^{+0.19}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	0.07182	$0.0720^{+0.0022}_{-0.0021}$
$A_{143}^{\text{tSZ}}$	7.18	$4.96^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8739	$1.877^{+0.041}_{-0.041}$	$H(0.57)$	93.08	$93.7^{+5.0}_{-4.8}$
$A_{100}^{\text{PS}}$	254	$262^{+60}_{-60}$	$D_{40}$	1224.3	$1223^{+40}_{-39}$	$D_A(0.57)$	1385	$1375^{+85}_{-89}$
$A_{143}^{\text{PS}}$	39.1	$45^{+20}_{-20}$	$D_{220}$	5715	$5716^{+83}_{-80}$	$F_{\text{AP}}(0.57)$	0.6750	$0.6742^{+0.0094}_{-0.0097}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2532.7	$2533^{+28}_{-27}$	$f\sigma_8(0.57)$	0.4732	$0.474^{+0.015}_{-0.015}$
$A_{217}^{\text{PS}}$	97.4	$96^{+20}_{-20}$	$D_{1420}$	815.1	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.6078	$0.612^{+0.037}_{-0.036}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.26	$229.7^{+4.3}_{-4.6}$	$f_{2000}^{143}$	29.9	$31^{+7}_{-7}$
$A_{100}^{\text{dustTT}}$	7.40	$7.46^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9684	$0.971^{+0.030}_{-0.028}$	$f_{2000}^{143 \times 217}$	32.51	$33^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.12	$9.10^{+3.6}_{-3.7}$	$Y_{\text{P}}$	0.2454	$0.2464^{+0.0084}_{-0.0079}$	$f_{2000}^{217}$	106.14	$106.7^{+4.7}_{-4.4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.3^{+8.0}_{-7.9}$	$Y_{\text{P}}^{\text{BBN}}$	0.2467	$0.2477^{+0.0084}_{-0.0080}$	$\chi_{\text{lensing}}^2$	9.24	10.0 ( $\nu$ : 1.2)
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	$10^5 D/H$	2.610	$2.63^{+0.14}_{-0.13}$	$\chi_{\text{lowTEB}}^2$	10494.83	10495.6 ( $\nu$ : 2.1)
$c_{100}$	0.99788	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.80	$13.72^{+0.61}_{-0.64}$	$\chi_{\text{plik}}^2$	766.2	780.5 ( $\nu$ : 19.7)
$c_{217}$	0.99600	$0.9960^{+0.0029}_{-0.0029}$	$z_*$	1089.92	$1090.01^{+0.94}_{-0.93}$	$\chi_{\text{prior}}^2$	2.14	7.41 ( $\nu$ : 6.6)
$H_0$	67.8	$68.5^{+5.6}_{-5.3}$	$r_*$	144.9	$144.3^{+5.0}_{-5.2}$	$\chi_{\text{CMB}}^2$	11270.3	11286.2 ( $\nu$ : 19.2)
$\Omega_\Lambda$	0.6926	$0.695^{+0.037}_{-0.038}$	$100\theta_*$	1.04123	$1.0411^{+0.0014}_{-0.0013}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.43$ ;  $\Delta\chi_{\text{eff}}^2 = -0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.59$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.28$ ;  $R - 1 = 0.01075$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.24 ( $\Delta$  0.06) lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.83 ( $\Delta$  -0.02) plik\_dx11dr2\_HM\_v18\_TT: 766.22 ( $\Delta$  -0.10)

### 11.4 base\_nnu\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02240	$0.02242^{+0.00061}_{-0.00060}$	$\Omega_m$	0.3056	$0.304^{+0.033}_{-0.031}$	$D_A/\text{Gpc}$	13.784	$13.75^{+0.41}_{-0.40}$
$\Omega_c h^2$	0.1209	$0.1214^{+0.0074}_{-0.0072}$	$\Omega_m h^2$	0.1440	$0.1445^{+0.0076}_{-0.0074}$	$z_{\text{drag}}$	1060.20	$1060.3^{+2.0}_{-2.0}$
$100\theta_{\text{MC}}$	1.04080	$1.0407^{+0.0011}_{-0.0011}$	$\Omega_m h^3$	0.0988	$0.0998^{+0.010}_{-0.0097}$	$r_{\text{drag}}$	146.12	$145.8^{+4.6}_{-4.5}$
$\tau$	0.0843	$0.085^{+0.041}_{-0.039}$	$\sigma_8$	0.8379	$0.839^{+0.041}_{-0.039}$	$k_D$	0.14139	$0.1416^{+0.0034}_{-0.0033}$
$N_{\text{eff}}$	3.19	$3.23^{+0.51}_{-0.49}$	$\sigma_8 \Omega_m^{0.5}$	0.4632	$0.463^{+0.025}_{-0.024}$	$100\theta_D$	0.16119	$0.1613^{+0.0012}_{-0.0012}$
$\ln(10^{10} A_s)$	3.106	$3.108^{+0.086}_{-0.083}$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.623^{+0.027}_{-0.027}$	$z_{\text{eq}}$	3362	$3355^{+120}_{-120}$
$n_s$	0.9731	$0.975^{+0.025}_{-0.024}$	$\sigma_8/h^{0.5}$	1.0114	$1.011^{+0.038}_{-0.038}$	$k_{\text{eq}}$	0.010357	$0.01036^{+0.00031}_{-0.00030}$
$y_{\text{cal}}$	1.00041	$1.0004^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.490	$2.487^{+0.093}_{-0.090}$	$100\theta_{\text{eq}}$	0.8206	$0.822^{+0.023}_{-0.022}$
$A_{217}^{\text{CIB}}$	67.3	$65^{+10}_{-10}$	$z_{\text{re}}$	10.55	$10.5^{+3.4}_{-3.7}$	$100\theta_{s,\text{eq}}$	0.4532	$0.454^{+0.012}_{-0.011}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.233	$2.24^{+0.20}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	0.07188	$0.0720^{+0.0018}_{-0.0017}$
$A_{143}^{\text{tSZ}}$	7.18	$4.98^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8869	$1.888^{+0.039}_{-0.040}$	$H(0.57)$	94.05	$94.4^{+4.0}_{-3.8}$
$A_{100}^{\text{PS}}$	254	$261^{+60}_{-60}$	$D_{40}$	1227.6	$1227^{+38}_{-36}$	$D_A(0.57)$	1370	$1364^{+70}_{-69}$
$A_{143}^{\text{PS}}$	39.5	$45^{+20}_{-20}$	$D_{220}$	5720	$5720^{+82}_{-82}$	$F_{\text{AP}}(0.57)$	0.6745	$0.6741^{+0.0083}_{-0.0081}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2536.3	$2536^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4856	$0.486^{+0.021}_{-0.021}$
$A_{217}^{\text{PS}}$	97.5	$97^{+20}_{-20}$	$D_{1420}$	814.8	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.6248	$0.626^{+0.035}_{-0.033}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.09	$229.7^{+4.3}_{-4.4}$	$f_{2000}^{143}$	30.1	$31^{+7}_{-6}$
$A_{100}^{\text{dustTT}}$	7.42	$7.47^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9731	$0.975^{+0.025}_{-0.024}$	$f_{2000}^{143 \times 217}$	32.65	$33^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.02	$9.00^{+3.6}_{-3.7}$	$Y_{\text{P}}$	0.2473	$0.2479^{+0.0067}_{-0.0069}$	$f_{2000}^{217}$	106.27	$106.7^{+4.6}_{-4.6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.1^{+8.2}_{-8.3}$	$Y_{\text{P}}^{\text{BBN}}$	0.2486	$0.2492^{+0.0067}_{-0.0069}$	$\chi_{\text{lowTEB}}^2$	10495.9	10496.8 ( $\nu$ : 3.6)
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$10^5 D/H$	2.634	$2.65^{+0.13}_{-0.13}$	$\chi_{\text{plik}}^2$	764.2	778.7 ( $\nu$ : 18.9)
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.66	$13.62^{+0.52}_{-0.50}$	$\chi_{\text{H070p6}}^2$	0.35	0.66 ( $\nu$ : 0.4)
$c_{217}$	0.99598	$0.9960^{+0.0029}_{-0.0028}$	$z_*$	1090.10	$1090.16^{+0.97}_{-0.96}$	$\chi_{\text{prior}}^2$	2.05	7.41 ( $\nu$ : 6.5)
$H_0$	68.64	$69.0^{+4.4}_{-4.2}$	$r_*$	143.48	$143.2^{+4.4}_{-4.3}$	$\chi_{\text{CMB}}^2$	11260.1	11275.5 ( $\nu$ : 16.7)
$\Omega_\Lambda$	0.6944	$0.696^{+0.031}_{-0.033}$	$100\theta_*$	1.04089	$1.0408^{+0.0013}_{-0.0013}$			

Best-fit  $\chi_{\text{eff}}^2 = 11262.49$ ;  $\Delta\chi_{\text{eff}}^2 = -0.33$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.57$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.87$ ;  $R - 1 = 0.00564$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.93 ( $\Delta$  -0.39) plik\_dx11dr2\_HM\_v18\_TT: 764.16 ( $\Delta$  0.50) Hubble - H070p6: 0.35 ( $\Delta$  -0.48)

### 11.5 base\_nnu\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02232^{+0.00075}_{-0.00069}$	$\Omega_m$	$0.310^{+0.040}_{-0.039}$	$D_A/\text{Gpc}$	$13.83^{+0.48}_{-0.48}$
$\Omega_c h^2$	$0.1206^{+0.0080}_{-0.0077}$	$\Omega_m h^2$	$0.1436^{+0.0084}_{-0.0080}$	$z_{\text{drag}}$	$1059.9^{+2.5}_{-2.3}$
$100\theta_{\text{MC}}$	$1.0408^{+0.0011}_{-0.0011}$	$\Omega_m h^3$	$0.098^{+0.013}_{-0.012}$	$r_{\text{drag}}$	$146.6^{+5.4}_{-5.5}$
$\tau$	$0.082^{+0.040}_{-0.039}$	$\sigma_8$	$0.835^{+0.043}_{-0.042}$	$k_D$	$0.1410^{+0.0040}_{-0.0038}$
$N_{\text{eff}}$	$3.14^{+0.63}_{-0.62}$	$\sigma_8 \Omega_m^{0.5}$	$0.465^{+0.027}_{-0.026}$	$100\theta_D$	$0.1611^{+0.0014}_{-0.0013}$
$\ln(10^{10} A_s)$	$3.100^{+0.087}_{-0.084}$	$\sigma_8 \Omega_m^{0.25}$	$0.623^{+0.027}_{-0.026}$	$z_{\text{eq}}$	$3376^{+140}_{-140}$
$n_s$	$0.970^{+0.031}_{-0.029}$	$\sigma_8/h^{0.5}$	$1.012^{+0.037}_{-0.036}$	$k_{\text{eq}}$	$0.01036^{+0.00031}_{-0.00030}$
$y_{\text{cal}}$	$1.0003^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	$2.496^{+0.093}_{-0.093}$	$100\theta_{\text{eq}}$	$0.818^{+0.029}_{-0.026}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$z_{\text{re}}$	$10.3^{+3.2}_{-3.7}$	$100\theta_{s,\text{eq}}$	$0.452^{+0.015}_{-0.013}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.22^{+0.20}_{-0.19}$	$r_{\text{drag}}/D_V(0.57)$	$0.0717^{+0.0023}_{-0.0020}$
$A_{143}^{\text{tSZ}}$	$5.08^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	$1.884^{+0.042}_{-0.044}$	$H(0.57)$	$93.6^{+5.0}_{-4.9}$
$A_{100}^{\text{PS}}$	$259^{+60}_{-60}$	$D_{40}$	$1233^{+44}_{-42}$	$D_A(0.57)$	$1379^{+88}_{-91}$
$A_{143}^{\text{PS}}$	$44^{+20}_{-20}$	$D_{220}$	$5717^{+82}_{-83}$	$F_{\text{AP}}(0.57)$	$0.676^{+0.010}_{-0.010}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{810}$	$2535^{+28}_{-28}$	$f\sigma_8(0.57)$	$0.485^{+0.021}_{-0.020}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$D_{1420}$	$814^{+10}_{-10}$	$\sigma_8(0.57)$	$0.622^{+0.039}_{-0.037}$
$A^{\text{kSZ}}$	—	$D_{2000}$	$230.0^{+4.5}_{-4.6}$	$f_{2000}^{143}$	$30^{+7}_{-7}$
$A_{100}^{\text{dustTT}}$	$7.44^{+3.6}_{-3.7}$	$n_{s,0.002}$	$0.970^{+0.031}_{-0.029}$	$f_{2000}^{143 \times 217}$	$33^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	$9.00^{+3.6}_{-3.7}$	$Y_{\text{P}}$	$0.2465^{+0.0084}_{-0.0083}$	$f_{2000}^{217}$	$106.3^{+4.7}_{-4.7}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.1^{+8.2}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	$0.2478^{+0.0085}_{-0.0083}$	$\chi_{\text{lowTEB}}^2$	$10497.4 (\nu: 3.9)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^5 \text{D}/\text{H}$	$2.63^{+0.14}_{-0.13}$	$\chi_{\text{plik}}^2$	$778.2 (\nu: 31.7)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$\text{Age}/\text{Gyr}$	$13.72^{+0.63}_{-0.64}$	$\chi_{\text{prior}}^2$	$7.38 (\nu: 6.5)$
$c_{217}$	$0.9960^{+0.0029}_{-0.0029}$	$z_*$	$1090.13^{+0.98}_{-0.97}$	$\chi_{\text{CMB}}^2$	$11275.6 (\nu: 30.4)$
$H_0$	$68.1^{+5.6}_{-5.4}$	$r_*$	$143.9^{+5.2}_{-5.2}$		
$\Omega_\Lambda$	$0.690^{+0.039}_{-0.040}$	$100\theta_*$	$1.0409^{+0.0014}_{-0.0014}$		

$$\bar{\chi}_{\text{eff}}^2 = 11282.96; \Delta\bar{\chi}_{\text{eff}}^2 = 1.32; R - 1 = 0.00790$$

## 11.6 base\_nnu\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022167	$0.02220^{+0.00048}_{-0.00048}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.16}$	Age/Gyr	13.925	$13.88^{+0.43}_{-0.42}$
$\Omega_c h^2$	0.1183	$0.1191^{+0.0062}_{-0.0061}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.10}$	$z_*$	1089.92	$1090.00^{+0.71}_{-0.70}$
$100\theta_{\text{MC}}$	1.04093	$1.04087^{+0.00092}_{-0.00086}$	$A_{143 \times 217}^{\text{dustTE}}$	0.341	$0.34^{+0.16}_{-0.16}$	$r_*$	145.58	$145.1^{+3.8}_{-3.7}$
$\tau$	0.0778	$0.077^{+0.035}_{-0.035}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.50}$	$100\theta_*$	1.04120	$1.0411^{+0.0011}_{-0.0011}$
$N_{\text{eff}}$	2.938	$2.99^{+0.41}_{-0.39}$	$c_{100}$	0.99823	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.982	$13.94^{+0.35}_{-0.34}$
$\ln(10^{10} A_s)$	3.087	$3.088^{+0.074}_{-0.074}$	$c_{217}$	0.99587	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.25	$1059.4^{+1.7}_{-1.7}$
$n_s$	0.9607	$0.962^{+0.019}_{-0.019}$	$H_0$	66.52	$66.8^{+3.2}_{-3.1}$	$r_{\text{drag}}$	148.32	$147.9^{+4.0}_{-3.9}$
$y_{\text{cal}}$	1.0003	$1.0005^{+0.0051}_{-0.0050}$	$\Omega_\Lambda$	0.6811	$0.682^{+0.023}_{-0.024}$	$k_D$	0.13984	$0.1402^{+0.0029}_{-0.0029}$
$A_{217}^{\text{CIB}}$	64.2	$64^{+10}_{-10}$	$\Omega_m$	0.3189	$0.318^{+0.024}_{-0.023}$	$100\theta_D$	0.16068	$0.16079^{+0.00084}_{-0.00085}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.35	—	$\Omega_m h^2$	0.1411	$0.1419^{+0.0064}_{-0.0063}$	$z_{\text{eq}}$	3406	$3403^{+80}_{-79}$
$A_{143}^{\text{tSZ}}$	6.98	$5.42^{+3.5}_{-3.7}$	$\Omega_m h^3$	0.0939	$0.0949^{+0.0082}_{-0.0077}$	$k_{\text{eq}}$	0.010321	$0.01034^{+0.00024}_{-0.00024}$
$A_{100}^{\text{PS}}$	252	$259^{+60}_{-50}$	$\sigma_8$	0.8256	$0.828^{+0.036}_{-0.034}$	$100\theta_{\text{eq}}$	0.8119	$0.813^{+0.015}_{-0.015}$
$A_{143}^{\text{PS}}$	42.8	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4662	$0.466^{+0.019}_{-0.019}$	$100\theta_{\text{s,eq}}$	0.4488	$0.4492^{+0.0077}_{-0.0076}$
$A_{143 \times 217}^{\text{PS}}$	42.4	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.621^{+0.023}_{-0.024}$	$r_{\text{drag}}/D_V(0.57)$	0.07119	$0.0713^{+0.0012}_{-0.0012}$
$A_{217}^{\text{PS}}$	101.6	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0123	$1.012^{+0.032}_{-0.033}$	$H(0.57)$	92.07	$92.4^{+3.1}_{-3.0}$
$A^{\text{kSZ}}$	0.00	$< 7.69$	$\langle d^2 \rangle^{1/2}$	2.510	$2.508^{+0.076}_{-0.078}$	$D_A(0.57)$	1406	$1400^{+56}_{-55}$
$A_{100}^{\text{dustTT}}$	7.37	$7.41^{+3.7}_{-3.7}$	$z_{\text{re}}$	9.94	$9.86^{+3.1}_{-3.4}$	$F_{\text{AP}}(0.57)$	0.6779	$0.6776^{+0.0059}_{-0.0057}$
$A_{143}^{\text{dustTT}}$	8.90	$8.91^{+3.6}_{-3.6}$	$10^9 A_s$	2.191	$2.19^{+0.17}_{-0.16}$	$f\sigma_8(0.57)$	0.4819	$0.483^{+0.018}_{-0.018}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.0^{+8.1}_{-8.1}$	$10^9 A_s e^{-2\tau}$	1.8752	$1.878^{+0.036}_{-0.037}$	$\sigma_8(0.57)$	0.6124	$0.614^{+0.030}_{-0.028}$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$D_{40}$	1245.0	$1245^{+32}_{-31}$	$f_{2000}^{143}$	28.4	$29^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0810	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5728	$5730^{+76}_{-76}$	$f_{2000}^{143 \times 217}$	31.57	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0485	$0.0486^{+0.0099}_{-0.0098}$	$D_{810}$	2535.1	$2535^{+28}_{-27}$	$f_{2000}^{217}$	105.13	$105.6^{+4.0}_{-4.0}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0996	$0.0996^{+0.064}_{-0.063}$	$D_{1420}$	815.7	$815.0^{+9.8}_{-9.5}$	$\chi_{\text{lowTEB}}^2$	10497.53	10498.2 ( $\nu$ : 2.7)
$A_{143}^{\text{dustEE}}$	0.1001	$0.0999^{+0.014}_{-0.013}$	$D_{2000}$	231.12	$230.7^{+3.7}_{-3.6}$	$\chi_{\text{plik}}^2$	2431.2	2451.0 ( $\nu$ : 23.5)
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.091}_{-0.093}$	$n_{\text{s},0.002}$	0.9607	$0.962^{+0.019}_{-0.019}$	$\chi_{\text{prior}}^2$	6.53	19.2 ( $\nu$ : 15.0)
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	0.2438	$0.2445^{+0.0056}_{-0.0057}$	$\chi_{\text{CMB}}^2$	12928.7	12949.2 ( $\nu$ : 22.8)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.074}$	$Y_{\text{P}}^{\text{BBN}}$	0.2451	$0.2458^{+0.0057}_{-0.0057}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.592	$2.603^{+0.091}_{-0.091}$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.24$ ;  $\Delta\chi_{\text{eff}}^2 = -0.32$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.38$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.69$ ;  $R - 1 = 0.00667$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.53 ( $\Delta$  0.60) plik\_dx11dr2\_HM.v18\_TTTEEE: 2431.18 ( $\Delta$  -0.47)

## 11.7 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022223	$0.02224^{+0.00047}_{-0.00046}$	$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.16}_{-0.16}$	Age/Gyr	13.866	$13.85^{+0.41}_{-0.41}$
$\Omega_c h^2$	0.1188	$0.1192^{+0.0062}_{-0.0060}$	$A_{143}^{\text{dustTE}}$	0.156	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.95	$1089.98^{+0.70}_{-0.70}$
$100\theta_{\text{MC}}$	1.04088	$1.04086^{+0.00090}_{-0.00085}$	$A_{143 \times 217}^{\text{dustTE}}$	0.342	$0.34^{+0.16}_{-0.16}$	$r_*$	145.12	$144.9^{+3.7}_{-3.7}$
$\tau$	0.0790	$0.079^{+0.035}_{-0.035}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.51}_{-0.50}$	$100\theta_*$	1.04112	$1.0411^{+0.0011}_{-0.0011}$
$N_{\text{eff}}$	2.992	$3.02^{+0.40}_{-0.38}$	$c_{100}$	0.99820	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.939	$13.92^{+0.35}_{-0.34}$
$\ln(10^{10} A_s)$	3.090	$3.092^{+0.073}_{-0.073}$	$c_{217}$	0.99585	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.47	$1059.5^{+1.6}_{-1.6}$
$n_s$	0.9633	$0.964^{+0.019}_{-0.018}$	$H_0$	66.99	$67.1^{+3.1}_{-3.0}$	$r_{\text{drag}}$	147.84	$147.6^{+3.9}_{-3.8}$
$y_{\text{cal}}$	1.0003	$1.0005^{+0.0051}_{-0.0050}$	$\Omega_\Lambda$	0.6843	$0.685^{+0.022}_{-0.022}$	$k_D$	0.14018	$0.1403^{+0.0028}_{-0.0028}$
$A_{217}^{\text{CIB}}$	65.3	$64^{+10}_{-10}$	$\Omega_m$	0.3157	$0.315^{+0.022}_{-0.022}$	$100\theta_D$	0.16079	$0.16083^{+0.00083}_{-0.00083}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.20	—	$\Omega_m h^2$	0.1417	$0.1421^{+0.0064}_{-0.0062}$	$z_{\text{eq}}$	3396	$3394^{+75}_{-74}$
$A_{143}^{\text{tSZ}}$	7.16	$5.41^{+3.8}_{-3.7}$	$\Omega_m h^3$	0.0949	$0.0954^{+0.0081}_{-0.0076}$	$k_{\text{eq}}$	0.010326	$0.01034^{+0.00024}_{-0.00024}$
$A_{100}^{\text{PS}}$	253	$259^{+60}_{-50}$	$\sigma_8$	0.8279	$0.829^{+0.036}_{-0.034}$	$100\theta_{\text{eq}}$	0.8140	$0.814^{+0.015}_{-0.014}$
$A_{143}^{\text{PS}}$	40.6	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4652	$0.466^{+0.019}_{-0.019}$	$100\theta_{\text{s,eq}}$	0.4498	$0.4500^{+0.0073}_{-0.0072}$
$A_{143 \times 217}^{\text{PS}}$	38.3	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6206	$0.621^{+0.023}_{-0.023}$	$r_{\text{drag}}/D_V(0.57)$	0.07135	$0.0714^{+0.0011}_{-0.0011}$
$A_{217}^{\text{PS}}$	100.0	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0114	$1.012^{+0.033}_{-0.033}$	$H(0.57)$	92.51	$92.7^{+3.0}_{-2.9}$
$A^{\text{kSZ}}$	0.00	$< 7.77$	$\langle d^2 \rangle^{1/2}$	2.505	$2.506^{+0.075}_{-0.078}$	$D_A(0.57)$	1398	$1395^{+53}_{-53}$
$A_{100}^{\text{dustTT}}$	7.31	$7.43^{+3.6}_{-3.7}$	$z_{\text{re}}$	10.05	$10.0^{+3.2}_{-3.3}$	$F_{\text{AP}}(0.57)$	0.6771	$0.6770^{+0.0055}_{-0.0055}$
$A_{143}^{\text{dustTT}}$	8.90	$8.92^{+3.5}_{-3.6}$	$10^9 A_s$	2.199	$2.20^{+0.17}_{-0.16}$	$f\sigma_8(0.57)$	0.4824	$0.483^{+0.019}_{-0.018}$
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.0^{+8.2}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8773	$1.879^{+0.036}_{-0.037}$	$\sigma_8(0.57)$	0.6148	$0.616^{+0.030}_{-0.028}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{40}$	1241.3	$1243^{+30}_{-30}$	$f_{2000}^{143}$	28.8	$29^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.012}$	$D_{220}$	5727	$5731^{+76}_{-77}$	$f_{2000}^{143 \times 217}$	31.84	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0487^{+0.0098}_{-0.0099}$	$D_{810}$	2534.7	$2535^{+28}_{-27}$	$f_{2000}^{217}$	105.45	$105.7^{+4.0}_{-4.0}$
$A_{100 \times 217}^{\text{dustEE}}$	0.101	$0.0996^{+0.062}_{-0.063}$	$D_{1420}$	815.2	$815.0^{+9.8}_{-9.5}$	$\chi_{\text{lowTEB}}^2$	10497.16	10498.0 ( $\nu$ : 2.7)
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.014}_{-0.014}$	$D_{2000}$	230.79	$230.6^{+3.7}_{-3.6}$	$\chi_{\text{plik}}^2$	2431.4	2451.1 ( $\nu$ : 23.6)
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.224^{+0.090}_{-0.092}$	$n_{\text{s},0.002}$	0.9633	$0.964^{+0.019}_{-0.018}$	$\chi_{\text{JLA}}^2$	706.89	706.97 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	0.2446	$0.2449^{+0.0056}_{-0.0055}$	$\chi_{\text{prior}}^2$	6.82	19.3 ( $\nu$ : 15.1)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.075}$	$Y_{\text{P}}^{\text{BBN}}$	0.2459	$0.2462^{+0.0056}_{-0.0055}$	$\chi_{\text{CMB}}^2$	12928.5	12949.1 ( $\nu$ : 22.5)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.058}$	$10^5 \text{D}/\text{H}$	2.600	$2.605^{+0.091}_{-0.091}$			

Best-fit  $\chi_{\text{eff}}^2 = 13642.26$ ;  $\Delta\chi_{\text{eff}}^2 = -0.13$ ;  $\bar{\chi}_{\text{eff}}^2 = 13675.33$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.70$ ;  $R - 1 = 0.00924$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.16 ( $\Delta$  -0.20) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.40 ( $\Delta$  -0.22) SN - JLA December\_2013: 706.89 ( $\Delta$  0.03)

## 11.8 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022137	$0.02216^{+0.00045}_{-0.00046}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.17}$	Age/Gyr	13.959	$13.93^{+0.41}_{-0.40}$
$\Omega_c h^2$	0.1173	$0.1178^{+0.0058}_{-0.0057}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.10}_{-0.11}$	$z_*$	1089.83	$1089.89^{+0.70}_{-0.67}$
$100\theta_{\text{MC}}$	1.04107	$1.04103^{+0.00087}_{-0.00083}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$r_*$	146.05	$145.7^{+3.6}_{-3.5}$
$\tau$	0.0599	$0.060^{+0.028}_{-0.028}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.51}_{-0.49}$	$100\theta_*$	1.04138	$1.0413^{+0.0011}_{-0.0010}$
$N_{\text{eff}}$	2.900	$2.94^{+0.38}_{-0.38}$	$c_{100}$	0.99820	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	14.025	$14.00^{+0.33}_{-0.32}$
$\ln(10^{10} A_s)$	3.048	$3.049^{+0.058}_{-0.056}$	$c_{217}$	0.99590	$0.9961^{+0.0029}_{-0.0029}$	$z_{\text{drag}}$	1059.09	$1059.2^{+1.6}_{-1.6}$
$n_s$	0.9598	$0.961^{+0.019}_{-0.018}$	$H_0$	66.46	$66.7^{+3.0}_{-3.0}$	$r_{\text{drag}}$	148.81	$148.5^{+3.7}_{-3.6}$
$y_{\text{cal}}$	1.0000	$1.0002^{+0.0050}_{-0.0050}$	$\Omega_\Lambda$	0.6828	$0.684^{+0.021}_{-0.023}$	$k_D$	0.13945	$0.1397^{+0.0027}_{-0.0027}$
$A_{217}^{\text{CIB}}$	65.8	$64^{+10}_{-10}$	$\Omega_m$	0.3172	$0.316^{+0.023}_{-0.021}$	$100\theta_D$	0.16063	$0.16072^{+0.00083}_{-0.00084}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.20	—	$\Omega_m h^2$	0.1401	$0.1406^{+0.0060}_{-0.0059}$	$z_{\text{eq}}$	3399	$3395^{+78}_{-74}$
$A_{143}^{\text{tSZ}}$	7.15	$5.37^{+3.7}_{-3.8}$	$\Omega_m h^3$	0.0931	$0.0938^{+0.0077}_{-0.0074}$	$k_{\text{eq}}$	0.010272	$0.01029^{+0.00023}_{-0.00023}$
$A_{100}^{\text{PS}}$	255	$262^{+60}_{-60}$	$\sigma_8$	0.8075	$0.809^{+0.027}_{-0.025}$	$100\theta_{\text{eq}}$	0.8132	$0.814^{+0.015}_{-0.015}$
$A_{143}^{\text{PS}}$	40.6	$43^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4548	$0.455^{+0.013}_{-0.014}$	$100\theta_{\text{s,eq}}$	0.4495	$0.4499^{+0.0074}_{-0.0075}$
$A_{143 \times 217}^{\text{PS}}$	38.1	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6060	$0.607^{+0.016}_{-0.015}$	$r_{\text{drag}}/D_V(0.57)$	0.07130	$0.0714^{+0.0011}_{-0.0011}$
$A_{217}^{\text{PS}}$	99.2	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9905	$0.990^{+0.021}_{-0.021}$	$H(0.57)$	91.87	$92.1^{+2.9}_{-2.9}$
$A^{\text{kSZ}}$	0.00	$< 8.12$	$\langle d^2 \rangle^{1/2}$	2.460	$2.459^{+0.050}_{-0.050}$	$D_A(0.57)$	1408	$1404^{+54}_{-52}$
$A_{100}^{\text{dustTT}}$	7.37	$7.41^{+3.8}_{-3.8}$	$z_{\text{re}}$	8.23	$8.21^{+2.8}_{-2.8}$	$F_{\text{AP}}(0.57)$	0.6775	$0.6772^{+0.0058}_{-0.0054}$
$A_{143}^{\text{dustTT}}$	9.03	$9.03^{+3.5}_{-3.6}$	$10^9 A_s$	2.106	$2.11^{+0.12}_{-0.12}$	$f\sigma_8(0.57)$	0.4709	$0.471^{+0.013}_{-0.012}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.2}_{-8.3}$	$10^9 A_s e^{-2\tau}$	1.8686	$1.871^{+0.035}_{-0.036}$	$\sigma_8(0.57)$	0.5993	$0.601^{+0.024}_{-0.022}$
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-20}$	$D_{40}$	1237.3	$1238^{+30}_{-29}$	$f_{2000}^{143}$	28.8	$30^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0810	$0.081^{+0.011}_{-0.012}$	$D_{220}$	5724	$5726^{+75}_{-75}$	$f_{2000}^{143 \times 217}$	31.85	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0487	$0.0487^{+0.0097}_{-0.0099}$	$D_{810}$	2532.8	$2533^{+27}_{-28}$	$f_{2000}^{217}$	105.36	$105.8^{+4.0}_{-3.9}$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.099^{+0.063}_{-0.064}$	$D_{1420}$	815.6	$815.0^{+9.6}_{-9.7}$	$\chi_{\text{lensing}}^2$	9.64	$10.3 (\nu: 1.6)$
$A_{143}^{\text{dustEE}}$	0.0999	$0.100^{+0.014}_{-0.013}$	$D_{2000}$	230.82	$230.5^{+3.6}_{-3.6}$	$\chi_{\text{lowTEB}}^2$	10496.14	$10496.7 (\nu: 1.4)$
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.226^{+0.088}_{-0.092}$	$n_{\text{s},0.002}$	0.9598	$0.961^{+0.019}_{-0.018}$	$\chi_{\text{plik}}^2$	2434.3	$2453.6 (\nu: 22.8)$
$A_{217}^{\text{dustEE}}$	0.658	$0.66^{+0.26}_{-0.24}$	$Y_{\text{P}}$	0.2433	$0.2438^{+0.0054}_{-0.0055}$	$\chi_{\text{prior}}^2$	6.64	$19.3 (\nu: 15.0)$
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.075}_{-0.073}$	$Y_{\text{P}}^{\text{BBN}}$	0.2446	$0.2451^{+0.0054}_{-0.0055}$	$\chi_{\text{CMB}}^2$	12940.0	$12960.5 (\nu: 22.4)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.058}$	$10^5 \text{D}/\text{H}$	2.584	$2.593^{+0.093}_{-0.086}$			

Best-fit  $\chi_{\text{eff}}^2 = 12946.67$ ;  $\Delta\chi_{\text{eff}}^2 = -0.50$ ;  $\bar{\chi}_{\text{eff}}^2 = 12979.84$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.73$ ;  $R - 1 = 0.02934$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.64 ( $\Delta -0.13$ ) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.14 ( $\Delta 0.85$ ) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.25 ( $\Delta -0.66$ )



## 11.9 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022284	$0.02229^{+0.00045}_{-0.00044}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.16}$	Age/Gyr	13.801	$13.79^{+0.39}_{-0.38}$
$\Omega_c h^2$	0.1195	$0.1199^{+0.0059}_{-0.0059}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$z_*$	1090.00	$1090.03^{+0.70}_{-0.70}$
$100\theta_{\text{MC}}$	1.04081	$1.04078^{+0.00086}_{-0.00082}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$r_*$	144.58	$144.4^{+3.5}_{-3.5}$
$\tau$	0.0827	$0.081^{+0.035}_{-0.035}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.51}_{-0.50}$	$100\theta_*$	1.04100	$1.0410^{+0.0011}_{-0.0010}$
$N_{\text{eff}}$	3.052	$3.07^{+0.38}_{-0.37}$	$c_{100}$	0.99820	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.889	$13.87^{+0.33}_{-0.32}$
$\ln(10^{10} A_s)$	3.100	$3.098^{+0.073}_{-0.073}$	$c_{217}$	0.99596	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.70	$1059.8^{+1.5}_{-1.5}$
$n_s$	0.9662	$0.966^{+0.018}_{-0.017}$	$H_0$	67.48	$67.6^{+3.0}_{-2.8}$	$r_{\text{drag}}$	147.28	$147.1^{+3.7}_{-3.6}$
$y_{\text{cal}}$	1.0003	$1.0005^{+0.0051}_{-0.0050}$	$\Omega_\Lambda$	0.6871	$0.687^{+0.021}_{-0.021}$	$k_D$	0.14058	$0.1407^{+0.0027}_{-0.0027}$
$A_{217}^{\text{CIB}}$	66.1	$64^{+10}_{-10}$	$\Omega_m$	0.3129	$0.313^{+0.021}_{-0.021}$	$100\theta_D$	0.16090	$0.16094^{+0.00078}_{-0.00080}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.17	—	$\Omega_m h^2$	0.1425	$0.1429^{+0.0061}_{-0.0061}$	$z_{\text{eq}}$	3386	$3388^{+74}_{-73}$
$A_{143}^{\text{tSZ}}$	7.14	$5.37^{+3.6}_{-3.8}$	$\Omega_m h^3$	0.0961	$0.0966^{+0.0077}_{-0.0072}$	$k_{\text{eq}}$	0.010340	$0.01036^{+0.00024}_{-0.00024}$
$A_{100}^{\text{PS}}$	255	$260^{+60}_{-50}$	$\sigma_8$	0.8329	$0.833^{+0.035}_{-0.034}$	$100\theta_{\text{eq}}$	0.8158	$0.816^{+0.014}_{-0.014}$
$A_{143}^{\text{PS}}$	40.5	$43^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4659	$0.466^{+0.019}_{-0.019}$	$100\theta_{\text{s,eq}}$	0.4508	$0.4507^{+0.0073}_{-0.0071}$
$A_{143 \times 217}^{\text{PS}}$	37.2	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.623^{+0.023}_{-0.024}$	$r_{\text{drag}}/D_V(0.57)$	0.07149	$0.0715^{+0.0011}_{-0.0011}$
$A_{217}^{\text{PS}}$	99.0	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0140	$1.013^{+0.033}_{-0.033}$	$H(0.57)$	92.98	$93.1^{+2.8}_{-2.7}$
$A^{\text{kSZ}}$	0.00	$< 7.89$	$\langle d^2 \rangle^{1/2}$	2.507	$2.505^{+0.075}_{-0.077}$	$D_A(0.57)$	1389	$1388^{+50}_{-50}$
$A_{100}^{\text{dustTT}}$	7.42	$7.46^{+3.6}_{-3.7}$	$z_{\text{re}}$	10.40	$10.2^{+3.2}_{-3.3}$	$F_{\text{AP}}(0.57)$	0.6764	$0.6765^{+0.0053}_{-0.0053}$
$A_{143}^{\text{dustTT}}$	9.00	$8.94^{+3.6}_{-3.6}$	$10^9 A_s$	2.220	$2.22^{+0.17}_{-0.16}$	$f\sigma_8(0.57)$	0.4846	$0.485^{+0.018}_{-0.018}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.0^{+8.2}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8811	$1.883^{+0.035}_{-0.035}$	$\sigma_8(0.57)$	0.6193	$0.619^{+0.029}_{-0.027}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{40}$	1238.7	$1240^{+29}_{-30}$	$f_{2000}^{143}$	29.1	$30^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.012}$	$D_{220}$	5727	$5731^{+76}_{-77}$	$f_{2000}^{143 \times 217}$	32.01	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0489^{+0.0098}_{-0.0099}$	$D_{810}$	2535.6	$2536^{+27}_{-27}$	$f_{2000}^{217}$	105.60	$105.9^{+4.0}_{-3.9}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.063}_{-0.063}$	$D_{1420}$	815.1	$814.8^{+9.9}_{-9.4}$	$\chi_{\text{lowTEB}}^2$	10497.09	10497.8 ( $\nu$ : 2.8)
$A_{143}^{\text{dustEE}}$	0.1005	$0.100^{+0.014}_{-0.013}$	$D_{2000}$	230.63	$230.4^{+3.7}_{-3.5}$	$\chi_{\text{plik}}^2$	2431.6	2451.4 ( $\nu$ : 23.9)
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.223^{+0.089}_{-0.092}$	$n_{\text{s},0.002}$	0.9662	$0.966^{+0.018}_{-0.017}$	$\chi_{\text{H070p6}}^2$	0.88	1.03 ( $\nu$ : 0.4)
$A_{217}^{\text{dustEE}}$	0.653	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	0.2454	$0.2457^{+0.0052}_{-0.0052}$	$\chi_{\text{prior}}^2$	6.92	19.4 ( $\nu$ : 15.2)
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.074}_{-0.075}$	$Y_{\text{P}}^{\text{BBN}}$	0.2468	$0.2470^{+0.0052}_{-0.0052}$	$\chi_{\text{CMB}}^2$	12928.7	12949.2 ( $\nu$ : 22.6)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.058}$	$10^5 \text{D}/\text{H}$	2.610	$2.614^{+0.090}_{-0.089}$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.50$ ;  $\Delta\chi_{\text{eff}}^2 = 0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.57$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.82$ ;  $R - 1 = 0.00977$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.09 ( $\Delta$  0.08) plik\_dx11dr2\_HM.v18\_TTTEEE: 2431.62 ( $\Delta$  -0.15) Hubble - H070p6: 0.88 ( $\Delta$  -0.02)

### 11.10 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02220^{+0.00048}_{-0.00047}$	$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.16}_{-0.16}$	Age/Gyr	$13.87^{+0.43}_{-0.42}$
$\Omega_c h^2$	$0.1191^{+0.0061}_{-0.0061}$	$A_{143}^{\text{dustTE}}$	$0.15^{+0.11}_{-0.10}$	$z_*$	$1089.99^{+0.70}_{-0.70}$
$100\theta_{\text{MC}}$	$1.04087^{+0.00091}_{-0.00085}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$r_*$	$145.1^{+3.8}_{-3.7}$
$\tau$	$0.079^{+0.033}_{-0.033}$	$A_{217}^{\text{dustTE}}$	$1.67^{+0.51}_{-0.50}$	$100\theta_*$	$1.0411^{+0.0011}_{-0.0011}$
$N_{\text{eff}}$	$2.99^{+0.41}_{-0.40}$	$c_{100}$	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	$13.94^{+0.35}_{-0.34}$
$\ln(10^{10} A_s)$	$3.090^{+0.071}_{-0.070}$	$c_{217}$	$0.9959^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	$1059.4^{+1.7}_{-1.7}$
$n_s$	$0.962^{+0.019}_{-0.019}$	$H_0$	$66.9^{+3.2}_{-3.1}$	$r_{\text{drag}}$	$147.8^{+4.0}_{-3.8}$
$y_{\text{cal}}$	$1.0004^{+0.0051}_{-0.0050}$	$\Omega_\Lambda$	$0.682^{+0.023}_{-0.023}$	$k_D$	$0.1402^{+0.0029}_{-0.0029}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$\Omega_m$	$0.318^{+0.023}_{-0.023}$	$100\theta_D$	$0.16080^{+0.00084}_{-0.00084}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1419^{+0.0064}_{-0.0063}$	$z_{\text{eq}}$	$3402^{+78}_{-78}$
$A_{143}^{\text{tSZ}}$	$5.42^{+3.8}_{-3.7}$	$\Omega_m h^3$	$0.0950^{+0.0082}_{-0.0077}$	$k_{\text{eq}}$	$0.01034^{+0.00024}_{-0.00024}$
$A_{100}^{\text{PS}}$	$259^{+60}_{-50}$	$\sigma_8$	$0.828^{+0.035}_{-0.034}$	$100\theta_{\text{eq}}$	$0.813^{+0.015}_{-0.015}$
$A_{143}^{\text{PS}}$	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	$0.467^{+0.019}_{-0.019}$	$100\theta_{\text{s,eq}}$	$0.4493^{+0.0077}_{-0.0075}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.622^{+0.023}_{-0.022}$	$r_{\text{drag}}/D_V(0.57)$	$0.0713^{+0.0012}_{-0.0011}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$1.013^{+0.032}_{-0.031}$	$H(0.57)$	$92.5^{+3.1}_{-3.0}$
$A^{\text{kSZ}}$	$< 7.71$	$\langle d^2 \rangle^{1/2}$	$2.510^{+0.074}_{-0.073}$	$D_A(0.57)$	$1400^{+56}_{-55}$
$A_{100}^{\text{dustTT}}$	$7.42^{+3.6}_{-3.7}$	$z_{\text{re}}$	$9.97^{+2.8}_{-3.2}$	$F_{\text{AP}}(0.57)$	$0.6775^{+0.0058}_{-0.0057}$
$A_{143}^{\text{dustTT}}$	$8.91^{+3.5}_{-3.6}$	$10^9 A_s$	$2.20^{+0.16}_{-0.15}$	$f\sigma_8(0.57)$	$0.483^{+0.018}_{-0.017}$
$A_{143 \times 217}^{\text{dustTT}}$	$16.9^{+8.2}_{-8.2}$	$10^9 A_s e^{-2\tau}$	$1.878^{+0.036}_{-0.037}$	$\sigma_8(0.57)$	$0.615^{+0.029}_{-0.028}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{40}$	$1245^{+32}_{-31}$	$f_{2000}^{143}$	$29^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{220}$	$5730^{+76}_{-77}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0486^{+0.0098}_{-0.0098}$	$D_{810}$	$2535^{+28}_{-28}$	$f_{2000}^{217}$	$105.6^{+4.0}_{-3.9}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0996^{+0.062}_{-0.063}$	$D_{1420}$	$815.0^{+9.8}_{-9.4}$	$\chi_{\text{lowTEB}}^2$	$10498.1 (\nu: 2.7)$
$A_{143}^{\text{dustEE}}$	$0.0999^{+0.014}_{-0.014}$	$D_{2000}$	$230.7^{+3.7}_{-3.6}$	$\chi_{\text{plik}}^2$	$2450.9 (\nu: 23.2)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.224^{+0.090}_{-0.092}$	$n_{\text{s},0.002}$	$0.962^{+0.019}_{-0.019}$	$\chi_{\text{prior}}^2$	$19.2 (\nu: 15.0)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	$0.2445^{+0.0056}_{-0.0057}$	$\chi_{\text{CMB}}^2$	$12949.1 (\nu: 22.3)$
$A_{100}^{\text{dustTE}}$	$0.141^{+0.074}_{-0.075}$	$Y_{\text{P}}^{\text{BBN}}$	$0.2459^{+0.0057}_{-0.0057}$		
$A_{100 \times 143}^{\text{dustTE}}$	$0.131^{+0.057}_{-0.058}$	$10^5 \text{D}/\text{H}$	$2.603^{+0.091}_{-0.091}$		

$$\bar{\chi}_{\text{eff}}^2 = 12968.24; \Delta\bar{\chi}_{\text{eff}}^2 = 0.56; R - 1 = 0.00849$$

### 11.11 base\_nnu\_plikHM\_TE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02231	$0.02235^{+0.00070}_{-0.00066}$	$\sigma_8$	0.8017	$0.805^{+0.052}_{-0.047}$	$100\theta_*$	1.04160	$1.0414^{+0.0025}_{-0.0024}$
$\Omega_c h^2$	0.1156	$0.117^{+0.014}_{-0.013}$	$\sigma_8 \Omega_m^{0.5}$	0.4437	$0.444^{+0.029}_{-0.029}$	$D_A/\text{Gpc}$	14.06	$13.99^{+0.76}_{-0.79}$
$100\theta_{\text{MC}}$	1.04130	$1.0412^{+0.0019}_{-0.0018}$	$\sigma_8 \Omega_m^{0.25}$	0.5964	$0.598^{+0.035}_{-0.034}$	$z_{\text{drag}}$	1059.36	$1059.6^{+3.0}_{-2.8}$
$\tau$	0.0603	$0.060^{+0.041}_{-0.044}$	$\sigma_8/h^{0.5}$	0.978	$0.978^{+0.050}_{-0.050}$	$r_{\text{drag}}$	149.1	$148.4^{+8.6}_{-8.8}$
$N_{\text{eff}}$	2.90	$2.99^{+0.94}_{-0.89}$	$\langle d^2 \rangle^{1/2}$	2.412	$2.41^{+0.11}_{-0.12}$	$k_D$	0.1393	$0.1398^{+0.0063}_{-0.0057}$
$\ln(10^{10} A_s)$	3.041	$3.043^{+0.094}_{-0.090}$	$z_{\text{re}}$	8.20	$8.11^{+3.9}_{-4.5}$	$100\theta_D$	0.16046	$0.1607^{+0.0023}_{-0.0021}$
$n_s$	0.9705	$0.973^{+0.030}_{-0.029}$	$10^9 A_s$	2.093	$2.10^{+0.20}_{-0.20}$	$z_{\text{eq}}$	3363	$3356^{+130}_{-120}$
$y_{\text{cal}}$	0.99998	$1.0002^{+0.0050}_{-0.0048}$	$10^9 A_s e^{-2\tau}$	1.855	$1.859^{+0.056}_{-0.057}$	$k_{\text{eq}}$	0.010160	$0.01019^{+0.00046}_{-0.00042}$
$A_{100}^{\text{dustTE}}$	0.137	$0.136^{+0.075}_{-0.074}$	$D_{40}$	1207	$1205^{+51}_{-51}$	$100\theta_{\text{eq}}$	0.8204	$0.822^{+0.024}_{-0.024}$
$A_{100 \times 143}^{\text{dustTE}}$	0.133	$0.133^{+0.057}_{-0.057}$	$D_{220}$	5683	$5679^{+110}_{-110}$	$100\theta_{s,\text{eq}}$	0.4532	$0.454^{+0.012}_{-0.012}$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	$D_{810}$	2529	$2528^{+54}_{-54}$	$r_{\text{drag}}/D_V(0.57)$	0.07190	$0.0720^{+0.0018}_{-0.0017}$
$A_{143}^{\text{dustTE}}$	0.151	$0.15^{+0.11}_{-0.11}$	$D_{1420}$	819.3	$818^{+31}_{-31}$	$H(0.57)$	92.2	$92.8^{+6.7}_{-6.4}$
$A_{143 \times 217}^{\text{dustTE}}$	0.332	$0.33^{+0.16}_{-0.16}$	$D_{2000}$	232.6	$232^{+14}_{-14}$	$D_A(0.57)$	1397	$1389^{+110}_{-110}$
$A_{217}^{\text{dustTE}}$	1.649	$1.65^{+0.50}_{-0.49}$	$n_{s,0.002}$	0.9705	$0.973^{+0.030}_{-0.029}$	$F_{\text{AP}}(0.57)$	0.6747	$0.6743^{+0.0087}_{-0.0083}$
$c_{100}$	0.99927	$0.9992^{+0.0019}_{-0.0020}$	$Y_{\text{P}}$	0.2433	$0.244^{+0.013}_{-0.012}$	$f\sigma_8(0.57)$	0.4648	$0.466^{+0.027}_{-0.026}$
$H_0$	67.2	$67.8^{+6.4}_{-5.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.2446	$0.246^{+0.013}_{-0.012}$	$\sigma_8(0.57)$	0.5976	$0.600^{+0.042}_{-0.041}$
$\Omega_\Lambda$	0.6936	$0.695^{+0.034}_{-0.034}$	$10^5 \text{D}/\text{H}$	2.550	$2.57^{+0.25}_{-0.22}$	$\chi_{\text{lowTEB}}^2$	10493.65	10494.7 ( $\nu: 2.5$ )
$\Omega_m$	0.3064	$0.305^{+0.034}_{-0.034}$	Age/Gyr	13.93	$13.86^{+0.88}_{-0.90}$	$\chi_{\text{plikTE}}^2$	931.5	939.4 ( $\nu: 10.5$ )
$\Omega_m h^2$	0.1385	$0.140^{+0.014}_{-0.014}$	$z_*$	1089.45	$1089.6^{+1.7}_{-1.5}$	$\chi_{\text{prior}}^2$	1.95	7.82 ( $\nu: 6.5$ )
$\Omega_m h^3$	0.0932	$0.095^{+0.018}_{-0.017}$	$r_*$	146.4	$145.7^{+8.3}_{-8.5}$	$\chi_{\text{CMB}}^2$	11425.1	11434.2 ( $\nu: 9.8$ )

Best-fit  $\chi_{\text{eff}}^2 = 11427.06$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 11441.99$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.82$ ;  $R - 1 = 0.00488$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.65 ( $\Delta$  0.16) plik\_dx11dr2\_HM\_v18\_TE: 931.46 ( $\Delta$  -0.26)

## 11.12 base\_nnu\_plikHM\_EE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02383	$0.0244^{+0.0043}_{-0.0046}$	$\sigma_8 \Omega_m^{0.5}$	0.412	$0.414^{+0.066}_{-0.064}$	$D_\Lambda/\text{Gpc}$	14.15	$13.8^{+2.6}_{-2.4}$
$\Omega_c h^2$	0.1093	$0.117^{+0.042}_{-0.041}$	$\sigma_8 \Omega_m^{0.25}$	0.568	$0.576^{+0.071}_{-0.072}$	$z_{\text{drag}}$	1062.3	$1064^{+14}_{-15}$
$100\theta_{\text{MC}}$	1.0406	$1.0401^{+0.0069}_{-0.0059}$	$\sigma_8/h^{0.5}$	0.940	$0.941^{+0.091}_{-0.086}$	$r_{\text{drag}}$	149.5	$146^{+30}_{-30}$
$\tau$	0.0652	$0.068^{+0.045}_{-0.043}$	$\langle d^2 \rangle^{1/2}$	2.355	$2.35^{+0.18}_{-0.17}$	$k_{\text{D}}$	0.1402	$0.144^{+0.022}_{-0.023}$
$N_{\text{eff}}$	2.83	$3.35^{+2.8}_{-2.9}$	$z_{\text{re}}$	8.19	$8.37^{+3.9}_{-4.3}$	$100\theta_{\text{D}}$	0.15839	$0.1592^{+0.0045}_{-0.0043}$
$\ln(10^{10} A_s)$	3.064	$3.08^{+0.15}_{-0.16}$	$10^9 A_s$	2.141	$2.17^{+0.32}_{-0.34}$	$z_{\text{eq}}$	3276	$3261^{+270}_{-250}$
$n_s$	0.982	$0.991^{+0.067}_{-0.068}$	$10^9 A_s e^{-2\tau}$	1.879	$1.89^{+0.17}_{-0.20}$	$k_{\text{eq}}$	0.00985	$0.0101^{+0.0014}_{-0.0014}$
$y_{\text{cal}}$	1.00000	$1.0000^{+0.0049}_{-0.0050}$	$D_{40}$	1222	$1218^{+60}_{-58}$	$100\theta_{\text{eq}}$	0.840	$0.846^{+0.058}_{-0.060}$
$A_{100}^{\text{dustEE}}$	0.0827	$0.083^{+0.012}_{-0.011}$	$D_{220}$	5963	$5991^{+490}_{-520}$	$100\theta_{s,\text{eq}}$	0.4623	$0.465^{+0.026}_{-0.028}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0501	$0.050^{+0.010}_{-0.010}$	$D_{810}$	2593	$2588^{+80}_{-84}$	$r_{\text{drag}}/D_V(0.57)$	0.07356	$0.0741^{+0.0050}_{-0.0048}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.099^{+0.064}_{-0.064}$	$D_{1420}$	850	$842^{+57}_{-57}$	$H(0.57)$	93.3	$97^{+20}_{-20}$
$A_{143}^{\text{dustEE}}$	0.1010	$0.101^{+0.014}_{-0.014}$	$D_{2000}$	244.3	$240^{+30}_{-30}$	$D_\Lambda(0.57)$	1364	$1328^{+400}_{-300}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.091}_{-0.092}$	$n_{s,0.002}$	0.982	$0.991^{+0.067}_{-0.068}$	$F_{\text{AP}}(0.57)$	0.6665	$0.665^{+0.024}_{-0.023}$
$A_{217}^{\text{dustEE}}$	0.641	$0.65^{+0.25}_{-0.25}$	$Y_{\text{P}}$	0.2430	$0.248^{+0.037}_{-0.039}$	$f\sigma_8(0.57)$	0.447	$0.452^{+0.056}_{-0.057}$
$H_0$	69.8	$73^{+20}_{-20}$	$Y_{\text{P}}^{\text{BBN}}$	0.2443	$0.249^{+0.037}_{-0.039}$	$\sigma_8(0.57)$	0.593	$0.61^{+0.10}_{-0.10}$
$\Omega_\Lambda$	0.725	$0.730^{+0.083}_{-0.093}$	$10^5 D/H$	2.27	$2.34^{+0.51}_{-0.50}$	$\chi_{\text{lowTEB}}^2$	10493.70	10494.9 ( $\nu: 3.3$ )
$\Omega_m$	0.275	$0.270^{+0.093}_{-0.083}$	Age/Gyr	13.84	$13.5^{+3.0}_{-2.8}$	$\chi_{\text{plikEE}}^2$	750.9	759.4 ( $\nu: 12.0$ )
$\Omega_m h^2$	0.1337	$0.142^{+0.045}_{-0.044}$	$z_*$	1087.09	$1087.5^{+4.0}_{-3.9}$	$\chi_{\text{prior}}^2$	4.15	8.36 ( $\nu: 6.4$ )
$\Omega_m h^3$	0.093	$0.106^{+0.064}_{-0.059}$	$r_*$	147.3	$144^{+30}_{-30}$	$\chi_{\text{CMB}}^2$	11244.6	11254.3 ( $\nu: 11.4$ )
$\sigma_8$	0.785	$0.80^{+0.11}_{-0.12}$	$100\theta_*$	1.0408	$1.0400^{+0.0089}_{-0.0078}$			

Best-fit  $\chi_{\text{eff}}^2 = 11248.77$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11262.63$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.82$ ;  $R - 1 = 0.01533$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.69 ( $\Delta$  0.08) plik\_dx11dr2\_HM\_v18\_EE: 750.93 ( $\Delta$  -0.27)

### 11.13 base\_nnu\_plikHM\_TE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02194	$0.02199^{+0.00080}_{-0.00078}$	$\sigma_8$	0.7865	$0.787^{+0.049}_{-0.045}$	$100\theta_*$	1.04238	$1.0423^{+0.0027}_{-0.0026}$
$\Omega_c h^2$	0.1121	$0.113^{+0.014}_{-0.013}$	$\sigma_8 \Omega_m^{0.5}$	0.4483	$0.448^{+0.030}_{-0.029}$	$D_A/\text{Gpc}$	14.34	$14.30^{+0.82}_{-0.86}$
$100\theta_{\text{MC}}$	1.04183	$1.0418^{+0.0021}_{-0.0020}$	$\sigma_8 \Omega_m^{0.25}$	0.5938	$0.594^{+0.033}_{-0.031}$	$z_{\text{drag}}$	1057.95	$1058.2^{+3.5}_{-3.2}$
$\tau$	0.0537	$0.052^{+0.033}_{-0.040}$	$\sigma_8/h^{0.5}$	0.9803	$0.979^{+0.048}_{-0.046}$	$r_{\text{drag}}$	152.4	$151.9^{+9.2}_{-9.7}$
$N_{\text{eff}}$	2.56	$2.63^{+0.96}_{-0.93}$	$\langle d^2 \rangle^{1/2}$	2.456	$2.45^{+0.13}_{-0.12}$	$k_D$	0.1371	$0.1375^{+0.0065}_{-0.0064}$
$\ln(10^{10} A_s)$	3.018	$3.016^{+0.086}_{-0.087}$	$z_{\text{re}}$	7.53	$7.21^{+3.6}_{-4.2}$	$100\theta_D$	0.15985	$0.1600^{+0.0023}_{-0.0023}$
$n_s$	0.9483	$0.951^{+0.037}_{-0.036}$	$10^9 A_s$	2.045	$2.04^{+0.18}_{-0.18}$	$z_{\text{eq}}$	3426	$3422^{+150}_{-140}$
$y_{\text{cal}}$	0.99954	$0.99999^{+0.0048}_{-0.0049}$	$10^9 A_s e^{-2\tau}$	1.837	$1.841^{+0.063}_{-0.066}$	$k_{\text{eq}}$	0.010110	$0.01014^{+0.00045}_{-0.00041}$
$A_{100}^{\text{dustTE}}$	0.145	$0.137^{+0.073}_{-0.074}$	$D_{40}$	1246	$1244^{+67}_{-64}$	$100\theta_{\text{eq}}$	0.8081	$0.809^{+0.027}_{-0.026}$
$A_{100 \times 143}^{\text{dustTE}}$	0.136	$0.133^{+0.057}_{-0.058}$	$D_{220}$	5713	$5715^{+120}_{-120}$	$100\theta_{s,\text{eq}}$	0.4470	$0.448^{+0.014}_{-0.013}$
$A_{100 \times 217}^{\text{dustTE}}$	0.315	$0.30^{+0.17}_{-0.17}$	$D_{810}$	2523	$2526^{+54}_{-55}$	$r_{\text{drag}}/D_V(0.57)$	0.07098	$0.0711^{+0.0020}_{-0.0019}$
$A_{143}^{\text{dustTE}}$	0.156	$0.15^{+0.11}_{-0.10}$	$D_{1420}$	816.9	$817^{+30}_{-31}$	$H(0.57)$	89.5	$90.0^{+7.0}_{-6.8}$
$A_{143 \times 217}^{\text{dustTE}}$	0.344	$0.34^{+0.16}_{-0.16}$	$D_{2000}$	232.6	$233^{+13}_{-14}$	$D_A(0.57)$	1450	$1444^{+130}_{-130}$
$A_{217}^{\text{dustTE}}$	1.70	$1.65^{+0.50}_{-0.50}$	$n_{s,0.002}$	0.9483	$0.951^{+0.037}_{-0.036}$	$F_{\text{AP}}(0.57)$	0.6794	$0.679^{+0.010}_{-0.0098}$
$c_{100}$	0.99908	$0.9992^{+0.0020}_{-0.0020}$	$Y_P$	0.2383	$0.239^{+0.014}_{-0.013}$	$f\sigma_8(0.57)$	0.4605	$0.460^{+0.026}_{-0.024}$
$H_0$	64.4	$64.8^{+6.8}_{-6.7}$	$Y_P^{\text{BBN}}$	0.2396	$0.240^{+0.014}_{-0.013}$	$\sigma_8(0.57)$	0.5820	$0.583^{+0.041}_{-0.040}$
$\Omega_\Lambda$	0.6750	$0.676^{+0.038}_{-0.042}$	$10^5 D/H$	2.500	$2.51^{+0.25}_{-0.24}$	$\chi_{\text{lowEB}}^2$	5430.74	$5431.7 (\nu: 0.7)$
$\Omega_m$	0.3250	$0.324^{+0.042}_{-0.038}$	Age/Gyr	14.31	$14.26^{+0.99}_{-1.0}$	$\chi_{\text{plikTE}}^2$	930.2	$938.1 (\nu: 9.1)$
$\Omega_m h^2$	0.1346	$0.136^{+0.014}_{-0.014}$	$z_*$	1089.26	$1089.3^{+1.7}_{-1.5}$	$\chi_{\text{prior}}^2$	1.73	$7.79 (\nu: 6.6)$
$\Omega_m h^3$	0.0867	$0.088^{+0.018}_{-0.017}$	$r_*$	149.5	$149.0^{+8.9}_{-9.3}$	$\chi_{\text{CMB}}^2$	6360.9	$6369.8 (\nu: 9.7)$

Best-fit  $\chi_{\text{eff}}^2 = 6362.64$ ;  $\Delta\chi_{\text{eff}}^2 = -1.26$ ;  $\bar{\chi}_{\text{eff}}^2 = 6377.60$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.26$ ;  $R - 1 = 0.00720$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.74 ( $\Delta -0.02$ ) plik\_dx11dr2\_HM.v18\_TE: 930.16 ( $\Delta -1.08$ )

### 11.14 base\_nnu\_plikHM\_EE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.01826	$0.0212^{+0.0051}_{-0.0045}$	$\sigma_8 \Omega_m^{0.5}$	0.453	$0.438^{+0.075}_{-0.074}$	$D_\Lambda/\text{Gpc}$	17.67	$15.7^{+2.3}_{-2.8}$
$\Omega_c h^2$	0.0748	$0.095^{+0.036}_{-0.028}$	$\sigma_8 \Omega_m^{0.25}$	0.558	$0.569^{+0.065}_{-0.063}$	$z_{\text{drag}}$	1042.9	$1053^{+16}_{-15}$
$100\theta_{\text{MC}}$	1.0508	$1.0447^{+0.0071}_{-0.0076}$	$\sigma_8/h^{0.5}$	1.008	$0.98^{+0.10}_{-0.10}$	$r_{\text{drag}}$	191.3	$168^{+30}_{-30}$
$\tau$	0.0496	$0.055^{+0.036}_{-0.040}$	$\langle d^2 \rangle^{1/2}$	2.594	$2.49^{+0.22}_{-0.25}$	$k_{\text{D}}$	0.1138	$0.128^{+0.023}_{-0.018}$
$N_{\text{eff}}$	0.05	< 4.01	$z_{\text{re}}$	6.89	$7.22^{+3.5}_{-3.9}$	$100\theta_{\text{D}}$	0.15627	$0.1574^{+0.0041}_{-0.0038}$
$\ln(10^{10} A_s)$	2.856	$2.97^{+0.17}_{-0.15}$	$10^9 A_s$	1.738	$1.96^{+0.34}_{-0.30}$	$z_{\text{eq}}$	3718	$3509^{+340}_{-370}$
$n_s$	0.868	$0.923^{+0.090}_{-0.075}$	$10^9 A_s e^{-2\tau}$	1.574	$1.75^{+0.23}_{-0.21}$	$k_{\text{eq}}$	0.00878	$0.0095^{+0.0013}_{-0.0011}$
$y_{\text{cal}}$	1.00008	$1.0000^{+0.0047}_{-0.0049}$	$D_{40}$	1287	$1276^{+79}_{-84}$	$100\theta_{\text{eq}}$	0.756	$0.795^{+0.076}_{-0.066}$
$A_{100}^{\text{dustEE}}$	0.0776	$0.079^{+0.012}_{-0.012}$	$D_{220}$	5477	$5778^{+560}_{-550}$	$100\theta_{s,\text{eq}}$	0.4220	$0.440^{+0.036}_{-0.031}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0443	$0.046^{+0.011}_{-0.011}$	$D_{810}$	2564	$2578^{+81}_{-83}$	$r_{\text{drag}}/D_V(0.57)$	0.0677	$0.0703^{+0.0059}_{-0.0051}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.063}_{-0.064}$	$D_{1420}$	869.9	$855^{+47}_{-52}$	$H(0.57)$	69.6	$82^{+20}_{-20}$
$A_{143}^{\text{dustEE}}$	0.0953	$0.097^{+0.015}_{-0.015}$	$D_{2000}$	260.7	$250^{+24}_{-26}$	$D_\Lambda(0.57)$	1932	$1625^{+400}_{-400}$
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.224^{+0.090}_{-0.091}$	$n_{s,0.002}$	0.868	$0.923^{+0.090}_{-0.075}$	$F_{\text{AP}}(0.57)$	0.7045	$0.686^{+0.031}_{-0.034}$
$A_{217}^{\text{dustEE}}$	0.643	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	0.1937	$0.220^{+0.041}_{-0.032}$	$f\sigma_8(0.57)$	0.4179	$0.437^{+0.049}_{-0.048}$
$H_0$	46.5	$58^{+20}_{-20}$	$Y_{\text{P}}^{\text{BBN}}$	0.1948	$0.221^{+0.042}_{-0.032}$	$\sigma_8(0.57)$	0.490	$0.543^{+0.098}_{-0.076}$
$\Omega_\Lambda$	0.566	$0.64^{+0.13}_{-0.13}$	$10^5 D/H$	2.174	$2.25^{+0.45}_{-0.44}$	$\chi_{\text{lowEB}}^2$	5430.73	$5431.7 (\nu: 1.0)$
$\Omega_m$	0.434	$0.36^{+0.13}_{-0.13}$	Age/Gyr	18.24	$15.8^{+2.9}_{-3.4}$	$\chi_{\text{plikEE}}^2$	746.5	$756.1 (\nu: 11.1)$
$\Omega_m h^2$	0.0937	$0.117^{+0.040}_{-0.030}$	$z_*$	1087.28	$1087.4^{+3.8}_{-3.5}$	$\chi_{\text{prior}}^2$	2.90	$7.43 (\nu: 5.7)$
$\Omega_m h^3$	0.0435	$0.070^{+0.052}_{-0.036}$	$r_*$	186.2	$164^{+30}_{-30}$	$\chi_{\text{CMB}}^2$	6177.2	$6187.8 (\nu: 11.9)$
$\sigma_8$	0.687	$0.740^{+0.11}_{-0.089}$	$100\theta_*$	1.0539	$1.0462^{+0.0090}_{-0.0098}$			

Best-fit  $\chi_{\text{eff}}^2 = 6180.11$ ;  $\Delta\chi_{\text{eff}}^2 = -4.79$ ;  $\bar{\chi}_{\text{eff}}^2 = 6195.27$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -2.70$ ;  $R - 1 = 0.01852$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.73 ( $\Delta$  0.00) plik\_dx11dr2\_HM\_v18\_EE: 746.48 ( $\Delta$  -4.27)

### 11.15 base\_nnu\_plikHM\_TT\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02170	$0.02176^{+0.00076}_{-0.00073}$	$\Omega_m$	0.3532	$0.349^{+0.051}_{-0.048}$	$D_A/\text{Gpc}$	14.27	$14.18^{+0.52}_{-0.55}$
$\Omega_c h^2$	0.1159	$0.1171^{+0.0083}_{-0.0076}$	$\Omega_m h^2$	0.1382	$0.1395^{+0.0088}_{-0.0079}$	$z_{\text{drag}}$	1057.64	$1058.0^{+2.7}_{-2.6}$
$100\theta_{\text{MC}}$	1.04125	$1.0411^{+0.0012}_{-0.0012}$	$\Omega_m h^3$	0.0865	$0.089^{+0.013}_{-0.012}$	$r_{\text{drag}}$	151.6	$150.7^{+5.9}_{-6.2}$
$\tau$	0.0588	$0.060^{+0.038}_{-0.036}$	$\sigma_8$	0.8058	$0.809^{+0.042}_{-0.037}$	$k_D$	0.13768	$0.1383^{+0.0043}_{-0.0040}$
$N_{\text{eff}}$	2.55	$2.66^{+0.67}_{-0.63}$	$\sigma_8 \Omega_m^{0.5}$	0.4789	$0.477^{+0.029}_{-0.028}$	$100\theta_D$	0.15994	$0.1602^{+0.0015}_{-0.0014}$
$\ln(10^{10} A_s)$	3.040	$3.044^{+0.086}_{-0.080}$	$\sigma_8 \Omega_m^{0.25}$	0.6212	$0.621^{+0.027}_{-0.026}$	$z_{\text{eq}}$	3522	$3504^{+160}_{-160}$
$n_s$	0.9376	$0.941^{+0.035}_{-0.032}$	$\sigma_8/h^{0.5}$	1.0187	$1.017^{+0.038}_{-0.037}$	$k_{\text{eq}}$	0.010387	$0.01041^{+0.00032}_{-0.00031}$
$y_{\text{cal}}$	1.00023	$1.0003^{+0.0048}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.551	$2.54^{+0.11}_{-0.11}$	$100\theta_{\text{eq}}$	0.7906	$0.794^{+0.030}_{-0.028}$
$A_{217}^{\text{CIB}}$	62.5	$63^{+10}_{-10}$	$z_{\text{re}}$	8.16	$8.15^{+3.6}_{-4.0}$	$100\theta_{s,\text{eq}}$	0.4380	$0.440^{+0.015}_{-0.014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.42	—	$10^9 A_s$	2.091	$2.10^{+0.18}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	0.06959	$0.0699^{+0.0023}_{-0.0021}$
$A_{143}^{\text{tSZ}}$	6.98	$5.30^{+3.6}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8589	$1.864^{+0.047}_{-0.048}$	$H(0.57)$	88.8	$89.6^{+5.3}_{-5.0}$
$A_{100}^{\text{PS}}$	245	$255^{+60}_{-60}$	$D_{40}$	1276	$1273^{+53}_{-53}$	$D_A(0.57)$	1476	$1462^{+100}_{-110}$
$A_{143}^{\text{PS}}$	41.6	$42^{+20}_{-20}$	$D_{220}$	5718	$5720^{+78}_{-80}$	$F_{\text{AP}}(0.57)$	0.6863	$0.685^{+0.012}_{-0.012}$
$A_{143 \times 217}^{\text{PS}}$	42.7	$38^{+20}_{-20}$	$D_{810}$	2531.1	$2531^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4779	$0.479^{+0.020}_{-0.019}$
$A_{217}^{\text{PS}}$	102.2	$97^{+20}_{-20}$	$D_{1420}$	815.9	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.5901	$0.594^{+0.038}_{-0.036}$
$A^{\text{kSZ}}$	0.00	$< 8.05$	$D_{2000}$	232.23	$231.2^{+4.5}_{-4.5}$	$f_{2000}^{143}$	27.3	$29^{+7}_{-7}$
$A_{100}^{\text{dustTT}}$	7.24	$7.22^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9376	$0.941^{+0.035}_{-0.032}$	$f_{2000}^{143 \times 217}$	30.5	$31^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	8.96	$8.90^{+3.6}_{-3.7}$	$Y_{\text{P}}$	0.2381	$0.2396^{+0.0097}_{-0.0090}$	$f_{2000}^{217}$	104.15	$105.1^{+4.7}_{-4.7}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.0^{+8.2}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.2394	$0.2409^{+0.0097}_{-0.0090}$	$\chi_{\text{lowEB}}^2$	5430.94	5431.9 ( $\nu$ : 1.3)
$A_{217}^{\text{dustTT}}$	82.8	$82^{+10}_{-10}$	$10^5 D/H$	2.543	$2.57^{+0.14}_{-0.13}$	$\chi_{\text{plik}}^2$	762.3	777.0 ( $\nu$ : 15.2)
$c_{100}$	0.99797	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	14.38	$14.27^{+0.71}_{-0.75}$	$\chi_{\text{prior}}^2$	1.67	7.17 ( $\nu$ : 6.1)
$c_{217}$	0.99569	$0.9958^{+0.0029}_{-0.0029}$	$z_*$	1089.91	$1090.05^{+0.97}_{-0.94}$	$\chi_{\text{CMB}}^2$	6193.3	6208.9 ( $\nu$ : 16.0)
$H_0$	62.6	$63.4^{+5.9}_{-5.3}$	$r_*$	148.6	$147.8^{+5.6}_{-5.9}$			
$\Omega_\Lambda$	0.6468	$0.651^{+0.048}_{-0.051}$	$100\theta_*$	1.04182	$1.0416^{+0.0015}_{-0.0015}$			

Best-fit  $\chi_{\text{eff}}^2 = 6194.93$ ;  $\Delta\chi_{\text{eff}}^2 = -2.29$ ;  $\bar{\chi}_{\text{eff}}^2 = 6216.10$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.05$ ;  $R - 1 = 0.01012$   
 $\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.94 ( $\Delta$  -0.61) plik\_dx11dr2\_HM.v18\_TT: 762.32 ( $\Delta$  -1.35)

### 11.16 base\_nnu\_plikHM\_TTTEEE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.021959	$0.02199^{+0.00051}_{-0.00048}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	Age/Gyr	14.127	$14.07^{+0.44}_{-0.44}$
$\Omega_c h^2$	0.1167	$0.1176^{+0.0062}_{-0.0059}$	$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.11}_{-0.10}$	$z_*$	1089.86	$1089.95^{+0.71}_{-0.69}$
$100\theta_{\text{MC}}$	1.04113	$1.04104^{+0.00089}_{-0.00087}$	$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34^{+0.16}_{-0.16}$	$r_*$	147.09	$146.6^{+3.9}_{-3.8}$
$\tau$	0.0671	$0.068^{+0.034}_{-0.032}$	$A_{217}^{\text{dustTE}}$	1.67	$1.68^{+0.51}_{-0.50}$	$100\theta_*$	1.04155	$1.0414^{+0.0011}_{-0.0011}$
$N_{\text{eff}}$	2.759	$2.82^{+0.42}_{-0.40}$	$c_{100}$	0.99828	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	14.122	$14.07^{+0.36}_{-0.36}$
$\ln(10^{10} A_s)$	3.061	$3.065^{+0.072}_{-0.071}$	$c_{217}$	0.99578	$0.9959^{+0.0029}_{-0.0028}$	$z_{\text{drag}}$	1058.52	$1058.7^{+1.8}_{-1.7}$
$n_s$	0.9500	$0.952^{+0.020}_{-0.020}$	$H_0$	64.89	$65.3^{+3.3}_{-3.1}$	$r_{\text{drag}}$	149.93	$149.4^{+4.1}_{-4.0}$
$y_{\text{cal}}$	1.00025	$1.0003^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6691	$0.671^{+0.025}_{-0.025}$	$k_D$	0.13873	$0.1391^{+0.0030}_{-0.0029}$
$A_{217}^{\text{CIB}}$	63.4	$63^{+10}_{-10}$	$\Omega_m$	0.3309	$0.329^{+0.025}_{-0.025}$	$100\theta_D$	0.16035	$0.16050^{+0.00085}_{-0.00086}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.42	—	$\Omega_m h^2$	0.1393	$0.1402^{+0.0065}_{-0.0062}$	$z_{\text{eq}}$	3447	$3440^{+81}_{-84}$
$A_{143}^{\text{tSZ}}$	6.95	$5.35^{+3.6}_{-3.8}$	$\Omega_m h^3$	0.0904	$0.0916^{+0.0082}_{-0.0076}$	$k_{\text{eq}}$	0.010315	$0.01034^{+0.00024}_{-0.00023}$
$A_{100}^{\text{PS}}$	251	$260^{+50}_{-50}$	$\sigma_8$	0.8131	$0.816^{+0.034}_{-0.033}$	$100\theta_{\text{eq}}$	0.8042	$0.806^{+0.016}_{-0.015}$
$A_{143}^{\text{PS}}$	43.5	$43^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4678	$0.468^{+0.019}_{-0.019}$	$100\theta_{\text{s,eq}}$	0.4449	$0.4456^{+0.0081}_{-0.0076}$
$A_{143 \times 217}^{\text{PS}}$	44.2	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6167	$0.618^{+0.023}_{-0.022}$	$r_{\text{drag}}/D_V(0.57)$	0.07062	$0.0707^{+0.0012}_{-0.0011}$
$A_{217}^{\text{PS}}$	102.6	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0095	$1.010^{+0.032}_{-0.031}$	$H(0.57)$	90.61	$91.0^{+3.2}_{-3.0}$
$A^{\text{kSZ}}$	0.00	$< 7.81$	$\langle d^2 \rangle^{1/2}$	2.518	$2.518^{+0.078}_{-0.078}$	$D_A(0.57)$	1435	$1428^{+59}_{-59}$
$A_{100}^{\text{dustTT}}$	7.27	$7.28^{+3.6}_{-3.7}$	$z_{\text{re}}$	8.94	$8.98^{+3.1}_{-3.3}$	$F_{\text{AP}}(0.57)$	0.6809	$0.6804^{+0.0060}_{-0.0062}$
$A_{143}^{\text{dustTT}}$	8.80	$8.83^{+3.6}_{-3.6}$	$10^9 A_s$	2.135	$2.14^{+0.16}_{-0.15}$	$f\sigma_8(0.57)$	0.4775	$0.479^{+0.018}_{-0.018}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$16.9^{+8.2}_{-8.0}$	$10^9 A_s e^{-2\tau}$	1.8672	$1.870^{+0.036}_{-0.037}$	$\sigma_8(0.57)$	0.6004	$0.603^{+0.029}_{-0.027}$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$D_{40}$	1259.7	$1259^{+35}_{-34}$	$f_{2000}^{143}$	28.0	$29^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0799	$0.080^{+0.011}_{-0.011}$	$D_{220}$	5735	$5736^{+79}_{-77}$	$f_{2000}^{143 \times 217}$	31.27	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0474	$0.0476^{+0.010}_{-0.0098}$	$D_{810}$	2534.1	$2533^{+27}_{-26}$	$f_{2000}^{217}$	104.80	$105.5^{+4.0}_{-3.9}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.063}_{-0.064}$	$D_{1420}$	815.8	$814.5^{+9.5}_{-9.3}$	$\chi_{\text{lowEB}}^2$	5431.43	$5432.3 (\nu: 1.7)$
$A_{143}^{\text{dustEE}}$	0.0986	$0.099^{+0.014}_{-0.014}$	$D_{2000}$	231.48	$230.8^{+3.6}_{-3.5}$	$\chi_{\text{plik}}^2$	2431.5	$2451.2 (\nu: 23.0)$
$A_{143 \times 217}^{\text{dustEE}}$	0.226	$0.225^{+0.092}_{-0.093}$	$n_{\text{s},0.002}$	0.9500	$0.952^{+0.020}_{-0.020}$	$\chi_{\text{prior}}^2$	6.12	$18.8 (\nu: 14.7)$
$A_{217}^{\text{dustEE}}$	0.652	$0.66^{+0.26}_{-0.25}$	$Y_{\text{P}}$	0.2412	$0.2420^{+0.0059}_{-0.0059}$	$\chi_{\text{CMB}}^2$	7862.9	$7883.5 (\nu: 22.9)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.073}$	$Y_{\text{P}}^{\text{BBN}}$	0.2425	$0.2434^{+0.0059}_{-0.0059}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.568	$2.582^{+0.092}_{-0.091}$			

Best-fit  $\chi_{\text{eff}}^2 = 7869.05$ ;  $\Delta\chi_{\text{eff}}^2 = -1.78$ ;  $\bar{\chi}_{\text{eff}}^2 = 7902.25$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.66$ ;  $R - 1 = 0.01108$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5431.43 ( $\Delta$  -0.47) plik\_dx11dr2\_HM.v18\_TTTEEE: 2431.50 ( $\Delta$  -0.78)



### 11.17 base\_nnu\_plikHM\_TT\_tau07

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02184	$0.02191^{+0.00076}_{-0.00072}$	$\Omega_\Lambda$	0.6575	$0.661^{+0.046}_{-0.049}$	$r_*$	147.9	$147.1^{+5.8}_{-5.8}$
$\Omega_c h^2$	0.1163	$0.1173^{+0.0083}_{-0.0078}$	$\Omega_m$	0.3425	$0.339^{+0.049}_{-0.046}$	$100\theta_*$	1.04172	$1.0416^{+0.0015}_{-0.0015}$
$100\theta_{MC}$	1.04122	$1.0411^{+0.0012}_{-0.0012}$	$\Omega_m h^2$	0.1388	$0.1399^{+0.0088}_{-0.0082}$	$D_A/\text{Gpc}$	14.20	$14.13^{+0.53}_{-0.54}$
$\tau$	0.0774	$0.077^{+0.037}_{-0.037}$	$\Omega_m h^3$	0.0884	$0.090^{+0.013}_{-0.012}$	$z_{\text{drag}}$	1058.10	$1058.4^{+2.7}_{-2.5}$
$N_{\text{eff}}$	2.65	$2.74^{+0.66}_{-0.65}$	$\sigma_8$	0.8213	$0.823^{+0.041}_{-0.039}$	$r_{\text{drag}}$	150.8	$150.0^{+6.0}_{-6.0}$
$\ln(10^{10} A_s)$	3.079	$3.080^{+0.082}_{-0.082}$	$\sigma_8 \Omega_m^{0.5}$	0.4806	$0.479^{+0.028}_{-0.028}$	$k_D$	0.13822	$0.1388^{+0.0043}_{-0.0040}$
$n_s$	0.9442	$0.947^{+0.034}_{-0.033}$	$\sigma_8 \Omega_m^{0.25}$	0.6283	$0.628^{+0.027}_{-0.026}$	$100\theta_D$	0.16011	$0.1603^{+0.0015}_{-0.0014}$
$A_{217}^{\text{CIB}}$	62.8	$63^{+10}_{-10}$	$\sigma_8/h^{0.5}$	1.0293	$1.026^{+0.039}_{-0.037}$	$z_{\text{eq}}$	3488	$3473^{+160}_{-160}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.39	—	$\langle d^2 \rangle^{1/2}$	2.571	$2.56^{+0.11}_{-0.11}$	$k_{\text{eq}}$	0.010357	$0.01037^{+0.00031}_{-0.00031}$
$A_{143}^{\text{tSZ}}$	7.04	$5.31^{+3.6}_{-3.8}$	$z_{\text{re}}$	9.92	$9.80^{+3.5}_{-3.5}$	$100\theta_{\text{eq}}$	0.7968	$0.800^{+0.030}_{-0.028}$
$A_{100}^{\text{PS}}$	246	$254^{+60}_{-60}$	$10^9 A_s$	2.173	$2.18^{+0.18}_{-0.17}$	$100\theta_{s,\text{eq}}$	0.4412	$0.443^{+0.015}_{-0.014}$
$A_{143}^{\text{PS}}$	41.0	$42^{+20}_{-20}$	$10^9 A_s e^{-2\tau}$	1.8617	$1.866^{+0.047}_{-0.049}$	$r_{\text{drag}}/D_V(0.57)$	0.07007	$0.0703^{+0.0023}_{-0.0021}$
$A_{143 \times 217}^{\text{PS}}$	41.7	$39^{+20}_{-20}$	$D_{40}$	1272	$1269^{+52}_{-52}$	$H(0.57)$	89.7	$90.4^{+5.2}_{-5.1}$
$A_{217}^{\text{PS}}$	101.7	$98^{+20}_{-20}$	$D_{220}$	5720	$5723^{+82}_{-79}$	$D_A(0.57)$	1456	$1444^{+100}_{-100}$
$A^{\text{kSZ}}$	0.00	$< 8.02$	$D_{810}$	2530.1	$2530^{+29}_{-28}$	$F_{\text{AP}}(0.57)$	0.6837	$0.683^{+0.012}_{-0.011}$
$A_{100}^{\text{dustTT}}$	7.23	$7.25^{+3.7}_{-3.7}$	$D_{1420}$	815.2	$814^{+10}_{-10}$	$f\sigma_8(0.57)$	0.4848	$0.485^{+0.020}_{-0.020}$
$A_{143}^{\text{dustTT}}$	8.88	$8.87^{+3.6}_{-3.6}$	$D_{2000}$	232.12	$231.4^{+4.5}_{-4.6}$	$\sigma_8(0.57)$	0.6038	$0.606^{+0.038}_{-0.035}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$16.9^{+8.0}_{-8.2}$	$n_{s,0.002}$	0.9442	$0.947^{+0.034}_{-0.033}$	$f_{2000}^{143}$	27.2	$29^{+7}_{-7}$
$A_{217}^{\text{dustTT}}$	82.6	$82^{+10}_{-10}$	$Y_P$	0.2396	$0.2408^{+0.0095}_{-0.0092}$	$f_{2000}^{143 \times 217}$	30.5	$31^{+5}_{-5}$
$c_{100}$	0.99802	$0.9979^{+0.0015}_{-0.0016}$	$Y_P^{\text{BBN}}$	0.2409	$0.2421^{+0.0095}_{-0.0092}$	$f_{2000}^{217}$	104.12	$105.0^{+4.9}_{-4.8}$
$c_{217}$	0.99570	$0.9958^{+0.0028}_{-0.0029}$	$10^5 D/H$	2.550	$2.57^{+0.14}_{-0.14}$	$\chi_{\text{plik}}^2$	761.6	776.3 ( $\nu: 15.2$ )
$y_{\text{cal}}$	1.00014	$1.0003^{+0.0049}_{-0.0048}$	Age/Gyr	14.26	$14.17^{+0.72}_{-0.73}$	$\chi_{\text{prior}}^2$	1.75	8.20 ( $\nu: 7.3$ )
$H_0$	63.7	$64.4^{+6.0}_{-5.4}$	$z_*$	1089.86	$1089.96^{+0.99}_{-0.96}$			

Best-fit  $\chi_{\text{eff}}^2 = 763.38$ ;  $\Delta\chi_{\text{eff}}^2 = -1.53$ ;  $\bar{\chi}_{\text{eff}}^2 = 784.49$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.49$ ;  $R - 1 = 0.00828$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM\_v18\_TT: 761.63 ( $\Delta -0.73$ )

### 11.18 base\_nnu\_plikHM\_TTTEEE\_tau07

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022040	$0.02206^{+0.00048}_{-0.00047}$	$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.17}$	$Y_P^{\text{BBN}}$	0.2431	$0.2438^{+0.0056}_{-0.0057}$
$\Omega_c h^2$	0.1168	$0.1175^{+0.0061}_{-0.0059}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.10}_{-0.11}$	$10^5 \text{D/H}$	2.565	$2.580^{+0.093}_{-0.091}$
$100\theta_{\text{MC}}$	1.04113	$1.04104^{+0.00089}_{-0.00089}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	Age/Gyr	14.079	$14.03^{+0.43}_{-0.42}$
$\tau$	0.0834	$0.082^{+0.033}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.50}$	$z_*$	1089.80	$1089.89^{+0.71}_{-0.70}$
$N_{\text{eff}}$	2.796	$2.85^{+0.39}_{-0.39}$	$c_{100}$	0.99830	$0.9982^{+0.0015}_{-0.0015}$	$r_*$	146.81	$146.4^{+3.8}_{-3.7}$
$\ln(10^{10} A_s)$	3.094	$3.093^{+0.068}_{-0.070}$	$c_{217}$	0.99577	$0.9959^{+0.0028}_{-0.0029}$	$100\theta_*$	1.04151	$1.0414^{+0.0011}_{-0.0011}$
$n_s$	0.9532	$0.954^{+0.019}_{-0.019}$	$y_{\text{cal}}$	1.00014	$1.0002^{+0.0049}_{-0.0048}$	$D_A/\text{Gpc}$	14.096	$14.05^{+0.35}_{-0.34}$
$A_{217}^{\text{CIB}}$	62.3	$63^{+10}_{-10}$	$H_0$	65.36	$65.7^{+3.2}_{-3.1}$	$z_{\text{drag}}$	1058.71	$1058.9^{+1.7}_{-1.7}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.50	—	$\Omega_\Lambda$	0.6735	$0.675^{+0.023}_{-0.025}$	$r_{\text{drag}}$	149.62	$149.2^{+4.0}_{-3.9}$
$A_{143}^{\text{tSZ}}$	6.84	$5.41^{+3.5}_{-3.7}$	$\Omega_m$	0.3265	$0.325^{+0.025}_{-0.023}$	$k_D$	0.13896	$0.1393^{+0.0028}_{-0.0028}$
$A_{100}^{\text{PS}}$	251	$258^{+50}_{-50}$	$\Omega_m h^2$	0.1395	$0.1402^{+0.0063}_{-0.0062}$	$100\theta_D$	0.16038	$0.16052^{+0.00086}_{-0.00085}$
$A_{143}^{\text{PS}}$	44.0	$42^{+20}_{-20}$	$\Omega_m h^3$	0.0912	$0.0922^{+0.0078}_{-0.0075}$	$z_{\text{eq}}$	3433	$3428^{+82}_{-81}$
$A_{143 \times 217}^{\text{PS}}$	45.9	$40^{+20}_{-20}$	$\sigma_8$	0.8264	$0.827^{+0.033}_{-0.032}$	$k_{\text{eq}}$	0.010300	$0.01032^{+0.00024}_{-0.00024}$
$A_{217}^{\text{PS}}$	103.8	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4722	$0.472^{+0.020}_{-0.019}$	$100\theta_{\text{eq}}$	0.8069	$0.808^{+0.015}_{-0.015}$
$A^{\text{kSZ}}$	0.00	$< 7.54$	$\sigma_8 \Omega_m^{0.25}$	0.6247	$0.624^{+0.023}_{-0.023}$	$100\theta_{\text{s,eq}}$	0.4463	$0.4468^{+0.0078}_{-0.0077}$
$A_{100}^{\text{dustTT}}$	7.13	$7.28^{+3.7}_{-3.7}$	$\sigma_8/h^{0.5}$	1.0222	$1.020^{+0.032}_{-0.033}$	$r_{\text{drag}}/D_V(0.57)$	0.07083	$0.0709^{+0.0012}_{-0.0012}$
$A_{143}^{\text{dustTT}}$	8.80	$8.79^{+3.7}_{-3.6}$	$\langle d^2 \rangle^{1/2}$	2.547	$2.542^{+0.080}_{-0.082}$	$H(0.57)$	90.98	$91.3^{+3.0}_{-2.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$16.7^{+8.2}_{-8.1}$	$z_{\text{re}}$	10.43	$10.3^{+3.0}_{-3.1}$	$D_A(0.57)$	1427	$1421^{+58}_{-56}$
$A_{217}^{\text{dustTT}}$	82.6	$82^{+10}_{-10}$	$10^9 A_s$	2.207	$2.21^{+0.15}_{-0.15}$	$F_{\text{AP}}(0.57)$	0.6798	$0.6795^{+0.0060}_{-0.0059}$
$A_{100}^{\text{dustEE}}$	0.0804	$0.080^{+0.011}_{-0.011}$	$10^9 A_s e^{-2\tau}$	1.8678	$1.871^{+0.036}_{-0.036}$	$f\sigma_8(0.57)$	0.4842	$0.484^{+0.018}_{-0.017}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0478	$0.0478^{+0.0098}_{-0.0096}$	$D_{40}$	1260.8	$1260^{+35}_{-33}$	$\sigma_8(0.57)$	0.6112	$0.612^{+0.027}_{-0.027}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0997	$0.100^{+0.063}_{-0.063}$	$D_{220}$	5735	$5737^{+75}_{-73}$	$f_{2000}^{143}$	27.5	$29^{+6}_{-6}$
$A_{143}^{\text{dustEE}}$	0.0992	$0.099^{+0.014}_{-0.014}$	$D_{810}$	2533.1	$2532^{+27}_{-26}$	$f_{2000}^{143 \times 217}$	30.87	$31^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustEE}}$	0.227	$0.225^{+0.093}_{-0.091}$	$D_{1420}$	815.5	$814.3^{+9.3}_{-9.1}$	$f_{2000}^{217}$	104.47	$105.2^{+4.0}_{-4.0}$
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.25}_{-0.25}$	$D_{2000}$	231.69	$231.0^{+3.5}_{-3.5}$	$\chi_{\text{plik}}^2$	2430.2	$2450.0 (\nu: 22.3)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.075}_{-0.075}$	$n_{\text{s},0.002}$	0.9532	$0.954^{+0.019}_{-0.019}$	$\chi_{\text{prior}}^2$	6.52	$19.9 (\nu: 15.9)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.058}$	$Y_P$	0.2418	$0.2425^{+0.0055}_{-0.0057}$			

Best-fit  $\chi_{\text{eff}}^2 = 2436.74$ ;  $\Delta\chi_{\text{eff}}^2 = -1.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 2469.87$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.38$ ;  $R - 1 = 0.00709$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM.v18\_TTTEEE: 2430.21 ( $\Delta$  -0.38)

### 11.19 base\_nnu\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022318	$0.02233^{+0.00047}_{-0.00047}$	$\Omega_m h^2$	0.1430	$0.1437^{+0.0080}_{-0.0077}$	$r_{\text{drag}}$	146.80	$146.5^{+4.5}_{-4.4}$
$\Omega_c h^2$	0.1201	$0.1207^{+0.0077}_{-0.0074}$	$\Omega_m h^3$	0.0973	$0.0981^{+0.0094}_{-0.0087}$	$k_D$	0.14088	$0.1411^{+0.0033}_{-0.0032}$
$100\theta_{\text{MC}}$	1.04087	$1.0408^{+0.0011}_{-0.0011}$	$\sigma_8$	0.8342	$0.835^{+0.039}_{-0.038}$	$100\theta_D$	0.16107	$0.1612^{+0.0011}_{-0.0011}$
$\tau$	0.0827	$0.082^{+0.035}_{-0.036}$	$\sigma_8 \Omega_m^{0.5}$	0.4637	$0.464^{+0.021}_{-0.021}$	$z_{\text{eq}}$	3373	$3370^{+65}_{-62}$
$N_{\text{eff}}$	3.112	$3.15^{+0.47}_{-0.44}$	$\sigma_8 \Omega_m^{0.25}$	0.6220	$0.622^{+0.027}_{-0.027}$	$k_{\text{eq}}$	0.010339	$0.01036^{+0.00029}_{-0.00029}$
$\ln(10^{10} A_s)$	3.101	$3.100^{+0.074}_{-0.075}$	$\sigma_8/h^{0.5}$	1.0114	$1.011^{+0.037}_{-0.037}$	$100\theta_{\text{eq}}$	0.8185	$0.819^{+0.012}_{-0.012}$
$n_s$	0.9697	$0.971^{+0.018}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	2.495	$2.491^{+0.084}_{-0.085}$	$100\theta_{s,\text{eq}}$	0.4521	$0.4524^{+0.0061}_{-0.0062}$
$y_{\text{cal}}$	1.00045	$1.0003^{+0.0048}_{-0.0050}$	$z_{\text{re}}$	10.40	$10.3^{+3.2}_{-3.3}$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.07174^{+0.00092}_{-0.00091}$
$A_{217}^{\text{CIB}}$	67.1	$64^{+10}_{-10}$	$10^9 A_s$	2.221	$2.22^{+0.17}_{-0.16}$	$H(0.57)$	93.47	$93.7^{+3.2}_{-3.1}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8828	$1.884^{+0.040}_{-0.042}$	$D_A(0.57)$	1380	$1376^{+53}_{-52}$
$A_{143}^{\text{tSZ}}$	7.17	$5.05^{+3.7}_{-3.8}$	$D_{40}$	1231.9	$1231^{+31}_{-30}$	$F_{\text{AP}}(0.57)$	0.67540	$0.6752^{+0.0045}_{-0.0043}$
$A_{100}^{\text{PS}}$	254	$260^{+60}_{-60}$	$D_{220}$	5720	$5718^{+79}_{-79}$	$f\sigma_8(0.57)$	0.4844	$0.485^{+0.021}_{-0.021}$
$A_{143}^{\text{PS}}$	38.9	$45^{+20}_{-20}$	$D_{810}$	2535.4	$2535^{+28}_{-28}$	$\sigma_8(0.57)$	0.6212	$0.622^{+0.031}_{-0.030}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{1420}$	814.8	$814^{+10}_{-10}$	$f_{2000}^{143}$	29.8	$31^{+7}_{-6}$
$A_{217}^{\text{PS}}$	97.7	$97^{+20}_{-20}$	$D_{2000}$	230.31	$229.9^{+4.3}_{-4.4}$	$f_{2000}^{143 \times 217}$	32.42	$33^{+5}_{-5}$
$A^{\text{kSZ}}$	0.0	—	$n_{s,0.002}$	0.9697	$0.971^{+0.018}_{-0.017}$	$f_{2000}^{217}$	106.15	$106.4^{+4.5}_{-4.5}$
$A_{100}^{\text{dustTT}}$	7.36	$7.49^{+3.7}_{-3.6}$	$Y_{\text{P}}$	0.2463	$0.2468^{+0.0062}_{-0.0062}$	$\chi_{\text{lowTEB}}^2$	10496.29	10496.9 ( $\nu$ : 3.1)
$A_{143}^{\text{dustTT}}$	9.07	$9.03^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.2476	$0.2481^{+0.0062}_{-0.0062}$	$\chi_{\text{plik}}^2$	763.6	777.8 ( $\nu$ : 16.9)
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.2}_{-8.2}$	$10^5 \text{D}/\text{H}$	2.624	$2.64^{+0.13}_{-0.13}$	$\chi_{6\text{DF}}^2$	0.016	0.062 ( $\nu$ : 0.0)
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	Age/Gyr	13.736	$13.70^{+0.45}_{-0.44}$	$\chi_{\text{MGS}}^2$	1.34	1.47 ( $\nu$ : 0.2)
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1090.06	$1090.14^{+0.97}_{-0.94}$	$\chi_{\text{DR11CMass}}^2$	2.43	2.97 ( $\nu$ : 0.3)
$c_{217}$	0.99594	$0.9960^{+0.0029}_{-0.0029}$	$r_*$	144.12	$143.8^{+4.3}_{-4.3}$	$\chi_{\text{DR11LOWZ}}^2$	0.55	0.68 ( $\nu$ : 0.2)
$H_0$	68.03	$68.3^{+3.0}_{-2.9}$	$100\theta_*$	1.04101	$1.0409^{+0.0013}_{-0.0013}$	$\chi_{\text{prior}}^2$	2.07	7.35 ( $\nu$ : 6.4)
$\Omega_\Lambda$	0.6910	$0.692^{+0.017}_{-0.018}$	$D_A/\text{Gpc}$	13.845	$13.82^{+0.40}_{-0.40}$	$\chi_{\text{CMB}}^2$	11259.9	11274.7 ( $\nu$ : 15.1)
$\Omega_m$	0.3090	$0.308^{+0.018}_{-0.017}$	$z_{\text{drag}}$	1059.86	$1060.0^{+1.7}_{-1.7}$	$\chi_{\text{BAO}}^2$	4.33	5.18 ( $\nu$ : 0.7)

Best-fit  $\chi_{\text{eff}}^2 = 11266.34$ ;  $\Delta\chi_{\text{eff}}^2 = -0.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 11287.24$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.87$ ;  $R - 1 = 0.01093$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMass: 2.43 ( $\Delta$  -0.02) DR11LOWZ: 0.55 ( $\Delta$  -0.07) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10496.30  
( $\Delta$  -0.13) plik\_dx11dr2\_HM\_v18\_TT: 763.64 ( $\Delta$  0.04)

## 11.20 base\_nnu\_plikHM\_TT\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022365	$0.02238^{+0.00044}_{-0.00045}$	$\Omega_m h^3$	0.0984	$0.0994^{+0.0086}_{-0.0081}$	$100\theta_D$	0.16118	$0.1613^{+0.0011}_{-0.0010}$
$\Omega_c h^2$	0.1206	$0.1215^{+0.0073}_{-0.0070}$	$\sigma_8$	0.8369	$0.839^{+0.038}_{-0.037}$	$z_{\text{eq}}$	3362	$3362^{+61}_{-59}$
$100\theta_{\text{MC}}$	1.04079	$1.0407^{+0.0011}_{-0.0010}$	$\sigma_8 \Omega_m^{0.5}$	0.4631	$0.464^{+0.022}_{-0.021}$	$k_{\text{eq}}$	0.010345	$0.01038^{+0.00028}_{-0.00028}$
$\tau$	0.0843	$0.083^{+0.035}_{-0.036}$	$\sigma_8 \Omega_m^{0.25}$	0.6225	$0.624^{+0.027}_{-0.027}$	$100\theta_{\text{eq}}$	0.8204	$0.821^{+0.011}_{-0.011}$
$N_{\text{eff}}$	3.166	$3.22^{+0.43}_{-0.41}$	$\sigma_8/h^{0.5}$	1.0112	$1.012^{+0.038}_{-0.037}$	$100\theta_{\text{s,eq}}$	0.4531	$0.4532^{+0.0058}_{-0.0058}$
$\ln(10^{10} A_s)$	3.105	$3.105^{+0.073}_{-0.075}$	$\langle d^2 \rangle^{1/2}$	2.491	$2.490^{+0.084}_{-0.086}$	$r_{\text{drag}}/D_V(0.57)$	0.07185	$0.07186^{+0.00087}_{-0.00087}$
$n_s$	0.9723	$0.973^{+0.016}_{-0.016}$	$z_{\text{re}}$	10.55	$10.4^{+3.0}_{-3.4}$	$H(0.57)$	93.89	$94.2^{+2.9}_{-2.8}$
$y_{\text{cal}}$	1.00030	$1.0003^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.231	$2.23^{+0.17}_{-0.16}$	$D_A(0.57)$	1372.2	$1368^{+48}_{-46}$
$A_{217}^{\text{CIB}}$	67.2	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8850	$1.888^{+0.038}_{-0.039}$	$F_{\text{AP}}(0.57)$	0.67468	$0.6746^{+0.0041}_{-0.0040}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$D_{40}$	1228.0	$1228^{+30}_{-29}$	$f\sigma_8(0.57)$	0.4852	$0.486^{+0.021}_{-0.021}$
$A_{143}^{\text{tSZ}}$	7.11	$4.96^{+3.7}_{-3.8}$	$D_{220}$	5717	$5718^{+80}_{-80}$	$\sigma_8(0.57)$	0.6239	$0.625^{+0.030}_{-0.029}$
$A_{100}^{\text{PS}}$	255	$261^{+50}_{-60}$	$D_{810}$	2535.2	$2535^{+28}_{-28}$	$f_{2000}^{143}$	30.1	$31^{+7}_{-6}$
$A_{143}^{\text{PS}}$	40.1	$45^{+20}_{-20}$	$D_{1420}$	814.5	$814^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	32.69	$33^{+5}_{-5}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{2000}$	230.02	$229.6^{+4.3}_{-4.5}$	$f_{2000}^{217}$	106.30	$106.7^{+4.5}_{-4.4}$
$A_{217}^{\text{PS}}$	98.1	$97^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9723	$0.973^{+0.016}_{-0.016}$	$\chi_{\text{lowTEB}}^2$	10496.03	10496.7 ( $\nu: 3.1$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.2470	$0.2476^{+0.0056}_{-0.0057}$	$\chi_{\text{plik}}^2$	764.1	778.2 ( $\nu: 16.8$ )
$A_{100}^{\text{dustTT}}$	7.42	$7.54^{+3.7}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.2483	$0.2490^{+0.0056}_{-0.0057}$	$\chi_{\text{H070p6}}^2$	0.40	0.48 ( $\nu: 0.1$ )
$A_{143}^{\text{dustTT}}$	9.05	$9.04^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.634	$2.65^{+0.13}_{-0.12}$	$\chi_{\text{JLA}}^2$	706.617	706.67 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.3}_{-8.2}$	$\text{Age}/\text{Gyr}$	13.680	$13.64^{+0.40}_{-0.40}$	$\chi_{6\text{DF}}^2$	0.003	0.046 ( $\nu: 0.0$ )
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$z_*$	1090.10	$1090.20^{+0.95}_{-0.91}$	$\chi_{\text{MGS}}^2$	1.54	1.63 ( $\nu: 0.2$ )
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	143.68	$143.2^{+4.0}_{-3.9}$	$\chi_{\text{DR11CMASS}}^2$	2.43	2.91 ( $\nu: 0.2$ )
$c_{217}$	0.99592	$0.9960^{+0.0029}_{-0.0029}$	$100\theta_*$	1.04090	$1.0408^{+0.0013}_{-0.0012}$	$\chi_{\text{DR11LOWZ}}^2$	0.37	0.51 ( $\nu: 0.1$ )
$H_0$	68.49	$68.7^{+2.7}_{-2.6}$	$D_A/\text{Gpc}$	13.803	$13.76^{+0.37}_{-0.36}$	$\chi_{\text{prior}}^2$	1.99	7.36 ( $\nu: 6.5$ )
$\Omega_\Lambda$	0.6938	$0.694^{+0.015}_{-0.016}$	$z_{\text{drag}}$	1060.05	$1060.2^{+1.6}_{-1.6}$	$\chi_{\text{CMB}}^2$	11260.1	11274.8 ( $\nu: 15.0$ )
$\Omega_m$	0.3062	$0.306^{+0.016}_{-0.015}$	$r_{\text{drag}}$	146.34	$145.9^{+4.1}_{-4.0}$	$\chi_{\text{BAO}}^2$	4.34	5.10 ( $\nu: 0.6$ )
$\Omega_m h^2$	0.1436	$0.1445^{+0.0074}_{-0.0071}$	$k_D$	0.14120	$0.1415^{+0.0031}_{-0.0030}$			

Best-fit  $\chi_{\text{eff}}^2 = 11973.47$ ;  $\bar{\chi}_{\text{eff}}^2 = 11994.45$ ;  $R - 1 = 0.01034$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMASS: 2.43 DR11LOWZ: 0.37 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.03 plik\_dx11dr2\_HM\_v18\_TT: 764.08  
Hubble - H070p6: 0.40 SN - JLA December\_2013: 706.62

## 11.21 base\_nnu\_plikHM\_TT\_lowTEB\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022321	$0.02232^{+0.00043}_{-0.00043}$	$\Omega_m h^3$	0.0973	$0.0980^{+0.0085}_{-0.0077}$	$100\theta_D$	0.16110	$0.1612^{+0.0011}_{-0.0010}$
$\Omega_c h^2$	0.1195	$0.1200^{+0.0072}_{-0.0065}$	$\sigma_8$	0.8191	$0.820^{+0.025}_{-0.025}$	$z_{\text{eq}}$	3358	$3355^{+57}_{-56}$
$100\theta_{\text{MC}}$	1.04094	$1.0409^{+0.0010}_{-0.0010}$	$\sigma_8 \Omega_m^{0.5}$	0.4528	$0.453^{+0.014}_{-0.014}$	$k_{\text{eq}}$	0.010298	$0.01031^{+0.00028}_{-0.00025}$
$\tau$	0.0674	$0.067^{+0.025}_{-0.026}$	$\sigma_8 \Omega_m^{0.25}$	0.6090	$0.609^{+0.017}_{-0.017}$	$100\theta_{\text{eq}}$	0.8211	$0.822^{+0.011}_{-0.011}$
$N_{\text{eff}}$	3.115	$3.15^{+0.41}_{-0.40}$	$\sigma_8/h^{0.5}$	0.9912	$0.991^{+0.022}_{-0.022}$	$100\theta_{\text{s,eq}}$	0.4535	$0.4538^{+0.0054}_{-0.0055}$
$\ln(10^{10} A_s)$	3.0678	$3.068^{+0.049}_{-0.049}$	$\langle d^2 \rangle^{1/2}$	2.445	$2.445^{+0.052}_{-0.051}$	$r_{\text{drag}}/D_V(0.57)$	0.07191	$0.07194^{+0.00084}_{-0.00083}$
$n_s$	0.9710	$0.971^{+0.015}_{-0.016}$	$z_{\text{re}}$	8.98	$8.91^{+2.3}_{-2.6}$	$H(0.57)$	93.57	$93.8^{+2.9}_{-2.7}$
$y_{\text{cal}}$	1.00008	$1.0001^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.149	$2.15^{+0.11}_{-0.10}$	$D_A(0.57)$	1376.6	$1373^{+47}_{-47}$
$A_{217}^{\text{CIB}}$	67.6	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8783	$1.881^{+0.037}_{-0.037}$	$F_{\text{AP}}(0.57)$	0.67451	$0.6744^{+0.0039}_{-0.0039}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1220.9	$1222^{+28}_{-27}$	$f\sigma_8(0.57)$	0.4747	$0.475^{+0.013}_{-0.013}$
$A_{143}^{\text{tSZ}}$	7.22	$4.95^{+3.8}_{-3.8}$	$D_{220}$	5713	$5716^{+79}_{-81}$	$\sigma_8(0.57)$	0.6108	$0.612^{+0.021}_{-0.021}$
$A_{100}^{\text{PS}}$	254	$262^{+50}_{-60}$	$D_{810}$	2533.4	$2533^{+28}_{-27}$	$f_{2000}^{143}$	30.3	$31^{+6}_{-6}$
$A_{143}^{\text{PS}}$	39.9	$45^{+20}_{-20}$	$D_{1420}$	814.7	$814^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	32.88	$33^{+5}_{-5}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	229.91	$229.4^{+4.1}_{-4.5}$	$f_{2000}^{217}$	106.38	$106.9^{+4.6}_{-4.4}$
$A_{217}^{\text{PS}}$	97.5	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9710	$0.971^{+0.015}_{-0.016}$	$\chi_{\text{lensing}}^2$	9.31	10.1 ( $\nu: 1.2$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.2463	$0.2467^{+0.0056}_{-0.0055}$	$\chi_{\text{lowTEB}}^2$	10494.51	10495.0 ( $\nu: 0.9$ )
$A_{100}^{\text{dustTT}}$	7.47	$7.47^{+3.7}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.2476	$0.2481^{+0.0056}_{-0.0055}$	$\chi_{\text{plik}}^2$	766.5	780.0 ( $\nu: 15.3$ )
$A_{143}^{\text{dustTT}}$	9.13	$9.07^{+3.5}_{-3.5}$	$10^5 D/H$	2.624	$2.64^{+0.13}_{-0.12}$	$\chi_{\text{H070p6}}^2$	0.48	0.57 ( $\nu: 0.2$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.4^{+8.5}_{-8.4}$	Age/Gyr	13.729	$13.70^{+0.39}_{-0.39}$	$\chi_{\text{JLA}}^2$	706.604	706.65 ( $\nu: 0.0$ )
$A_{217}^{\text{dustTT}}$	82.1	$82^{+20}_{-10}$	$z_*$	1090.01	$1090.09^{+0.94}_{-0.89}$	$\chi_{6\text{DF}}^2$	0.001	0.043 ( $\nu: 0.0$ )
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.25	$144.0^{+3.7}_{-3.9}$	$\chi_{\text{MGS}}^2$	1.61	1.73 ( $\nu: 0.2$ )
$c_{217}$	0.99599	$0.9961^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04108	$1.0410^{+0.0012}_{-0.0012}$	$\chi_{\text{DR11CMass}}^2$	2.44	2.93 ( $\nu: 0.3$ )
$H_0$	68.29	$68.5^{+2.8}_{-2.6}$	$D_A/\text{Gpc}$	13.856	$13.83^{+0.35}_{-0.36}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	0.43 ( $\nu: 0.1$ )
$\Omega_\Lambda$	0.6945	$0.695^{+0.015}_{-0.015}$	$z_{\text{drag}}$	1059.86	$1059.9^{+1.6}_{-1.5}$	$\chi_{\text{prior}}^2$	2.15	7.39 ( $\nu: 6.5$ )
$\Omega_m$	0.3055	$0.305^{+0.015}_{-0.015}$	$r_{\text{drag}}$	146.93	$146.7^{+3.9}_{-4.0}$	$\chi_{\text{CMB}}^2$	11270.4	11285.1 ( $\nu: 15.1$ )
$\Omega_m h^2$	0.1425	$0.1430^{+0.0073}_{-0.0067}$	$k_D$	0.14074	$0.1409^{+0.0030}_{-0.0028}$	$\chi_{\text{BAO}}^2$	4.37	5.14 ( $\nu: 0.6$ )

Best-fit  $\chi_{\text{eff}}^2 = 11983.97$ ;  $\Delta\chi_{\text{eff}}^2 = -0.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 12004.83$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.81$ ;  $R - 1 = 0.02766$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta -0.00$ ) MGS: 1.61 ( $\Delta 0.07$ ) DR11CMass: 2.44 ( $\Delta 0.03$ ) DR11LOWZ: 0.32 ( $\Delta -0.05$ ) CMB - smica\_g30\_ftl\_full\_pp: 9.31 ( $\Delta 0.05$ ) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10494.51 ( $\Delta -0.41$ ) plik\_dx11dr2\_HM\_v18\_TT: 766.54 ( $\Delta 0.41$ ) Hubble - H070p6: 0.48 ( $\Delta -0.18$ ) SN - JLA December\_2013: 706.60 ( $\Delta -0.02$ )

## 11.22 base\_nnu\_plikHM\_TT\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022267	$0.02226^{+0.00047}_{-0.00047}$	$\Omega_m h^3$	0.0958	$0.0967^{+0.0090}_{-0.0084}$	$100\theta_D$	0.16095	$0.1611^{+0.0012}_{-0.0011}$
$\Omega_c h^2$	0.1184	$0.1192^{+0.0075}_{-0.0072}$	$\sigma_8$	0.8157	$0.817^{+0.027}_{-0.027}$	$z_{\text{eq}}$	3365	$3364^{+60}_{-60}$
$100\theta_{\text{MC}}$	1.04106	$1.0409^{+0.0011}_{-0.0010}$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.453^{+0.014}_{-0.013}$	$k_{\text{eq}}$	0.010265	$0.01029^{+0.00029}_{-0.00027}$
$\tau$	0.0671	$0.066^{+0.026}_{-0.026}$	$\sigma_8 \Omega_m^{0.25}$	0.6074	$0.608^{+0.018}_{-0.017}$	$100\theta_{\text{eq}}$	0.8198	$0.820^{+0.012}_{-0.012}$
$N_{\text{eff}}$	3.038	$3.08^{+0.45}_{-0.44}$	$\sigma_8/h^{0.5}$	0.9907	$0.990^{+0.022}_{-0.022}$	$100\theta_{\text{s,eq}}$	0.4529	$0.4530^{+0.0059}_{-0.0058}$
$\ln(10^{10} A_s)$	3.064	$3.063^{+0.051}_{-0.051}$	$\langle d^2 \rangle^{1/2}$	2.449	$2.447^{+0.053}_{-0.053}$	$r_{\text{drag}}/D_V(0.57)$	0.07182	$0.07181^{+0.00092}_{-0.00090}$
$n_s$	0.9680	$0.968^{+0.017}_{-0.017}$	$z_{\text{re}}$	8.93	$8.76^{+2.3}_{-2.6}$	$H(0.57)$	93.02	$93.3^{+3.2}_{-3.1}$
$y_{\text{cal}}$	1.00016	$1.0001^{+0.0048}_{-0.0048}$	$10^9 A_s$	2.142	$2.14^{+0.11}_{-0.11}$	$D_A(0.57)$	1386	$1382^{+53}_{-52}$
$A_{217}^{\text{CIB}}$	67.6	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8732	$1.876^{+0.042}_{-0.040}$	$F_{\text{AP}}(0.57)$	0.67502	$0.6750^{+0.0043}_{-0.0042}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1225.0	$1225^{+30}_{-28}$	$f\sigma_8(0.57)$	0.4732	$0.474^{+0.014}_{-0.014}$
$A_{143}^{\text{tSZ}}$	7.26	$5.01^{+3.8}_{-3.8}$	$D_{220}$	5716	$5716^{+79}_{-81}$	$\sigma_8(0.57)$	0.6078	$0.608^{+0.023}_{-0.022}$
$A_{100}^{\text{PS}}$	253	$261^{+50}_{-50}$	$D_{810}$	2532.5	$2532^{+28}_{-27}$	$f_{2000}^{143}$	29.9	$31^{+6}_{-6}$
$A_{143}^{\text{PS}}$	38.8	$45^{+20}_{-20}$	$D_{1420}$	815.1	$814^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	32.55	$33^{+5}_{-5}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.29	$229.7^{+4.3}_{-4.6}$	$f_{2000}^{217}$	106.09	$106.6^{+4.7}_{-4.5}$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9680	$0.968^{+0.017}_{-0.017}$	$\chi_{\text{lensing}}^2$	9.25	10.0 ( $\nu: 1.2$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.2452	$0.2458^{+0.0060}_{-0.0061}$	$\chi_{\text{lowTEB}}^2$	10494.91	10495.4 ( $\nu: 1.0$ )
$A_{100}^{\text{dustTT}}$	7.51	$7.45^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.2466	$0.2471^{+0.0060}_{-0.0062}$	$\chi_{\text{plik}}^2$	766.1	779.8 ( $\nu: 15.3$ )
$A_{143}^{\text{dustTT}}$	9.13	$9.07^{+3.5}_{-3.5}$	$10^5 D/H$	2.608	$2.63^{+0.13}_{-0.13}$	$\chi_{6\text{DF}}^2$	0.006	0.055 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.5}_{-8.3}$	Age/Gyr	13.805	$13.77^{+0.44}_{-0.43}$	$\chi_{\text{MGS}}^2$	1.47	1.55 ( $\nu: 0.2$ )
$A_{217}^{\text{dustTT}}$	81.9	$82^{+20}_{-10}$	$z_*$	1089.90	$1090.03^{+0.96}_{-0.90}$	$\chi_{\text{DR11CMass}}^2$	2.40	2.93 ( $\nu: 0.3$ )
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.96	$144.6^{+4.3}_{-4.1}$	$\chi_{\text{DR11LOWZ}}^2$	0.42	0.59 ( $\nu: 0.2$ )
$c_{217}$	0.99599	$0.9960^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04126	$1.0411^{+0.0013}_{-0.0013}$	$\chi_{\text{prior}}^2$	2.18	7.34 ( $\nu: 6.3$ )
$H_0$	67.79	$68.0^{+2.9}_{-3.0}$	$D_A/\text{Gpc}$	13.922	$13.89^{+0.40}_{-0.41}$	$\chi_{\text{CMB}}^2$	11270.3	11285.2 ( $\nu: 15.3$ )
$\Omega_\Lambda$	0.6925	$0.692^{+0.017}_{-0.017}$	$z_{\text{drag}}$	1059.59	$1059.6^{+1.7}_{-1.7}$	$\chi_{\text{BAO}}^2$	4.30	5.13 ( $\nu: 0.6$ )
$\Omega_m$	0.3075	$0.308^{+0.017}_{-0.017}$	$r_{\text{drag}}$	147.67	$147.3^{+4.5}_{-4.3}$			
$\Omega_m h^2$	0.1413	$0.1421^{+0.0076}_{-0.0074}$	$k_D$	0.14021	$0.1405^{+0.0032}_{-0.0032}$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.73$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11297.63$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.94$ ;  $R - 1 = 0.02506$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta -0.00$ ) MGS: 1.47 ( $\Delta 0.07$ ) DR11CMass: 2.40 ( $\Delta -0.00$ ) DR11LOWZ: 0.42 ( $\Delta -0.06$ ) CMB - smica\_g30\_ftl\_full\_pp: 9.25 ( $\Delta 0.01$ ) low1\_SMW\_70\_dx11d\_2014\_10\_03: 10494.91 ( $\Delta 0.05$ ) plik\_dx11dr2\_HM.v18.TT: 766.09 ( $\Delta -0.11$ )

### 11.23 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022261	$0.02229^{+0.00038}_{-0.00038}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$r_*$	145.17	$144.8^{+3.6}_{-3.4}$
$\Omega_c h^2$	0.1184	$0.1192^{+0.0060}_{-0.0059}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04116	$1.0411^{+0.0011}_{-0.0010}$
$100\theta_{\text{MC}}$	1.04093	$1.04087^{+0.00087}_{-0.00083}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.51}_{-0.50}$	$D_A/\text{Gpc}$	13.943	$13.91^{+0.33}_{-0.31}$
$\tau$	0.0832	$0.082^{+0.032}_{-0.032}$	$c_{100}$	0.99822	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.51	$1059.7^{+1.4}_{-1.5}$
$N_{\text{eff}}$	2.996	$3.04^{+0.35}_{-0.35}$	$c_{217}$	0.99584	$0.9959^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.88	$147.5^{+3.7}_{-3.5}$
$\ln(10^{10} A_s)$	3.098	$3.098^{+0.067}_{-0.069}$	$H_0$	67.23	$67.5^{+2.4}_{-2.4}$	$k_D$	0.14015	$0.1405^{+0.0026}_{-0.0027}$
$n_s$	0.9651	$0.966^{+0.015}_{-0.015}$	$\Omega_\Lambda$	0.6873	$0.688^{+0.014}_{-0.015}$	$100\theta_D$	0.16077	$0.16086^{+0.00080}_{-0.00081}$
$y_{\text{cal}}$	1.00011	$1.0005^{+0.0050}_{-0.0050}$	$\Omega_m$	0.3127	$0.312^{+0.015}_{-0.014}$	$z_{\text{eq}}$	3385	$3383^{+53}_{-51}$
$A_{217}^{\text{CIB}}$	64.1	$64^{+10}_{-10}$	$\Omega_m h^2$	0.1413	$0.1421^{+0.0062}_{-0.0062}$	$k_{\text{eq}}$	0.010297	$0.01032^{+0.00023}_{-0.00023}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.37	—	$\Omega_m h^3$	0.0950	$0.0959^{+0.0072}_{-0.0070}$	$100\theta_{\text{eq}}$	0.8160	$0.8165^{+0.0099}_{-0.010}$
$A_{143}^{\text{tSZ}}$	7.04	$5.41^{+3.6}_{-3.8}$	$\sigma_8$	0.8298	$0.831^{+0.034}_{-0.034}$	$100\theta_{\text{s,eq}}$	0.4509	$0.4511^{+0.0050}_{-0.0051}$
$A_{100}^{\text{PS}}$	250	$259^{+60}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4640	$0.464^{+0.018}_{-0.018}$	$r_{\text{drag}}/D_V(0.57)$	0.07152	$0.07155^{+0.00077}_{-0.00076}$
$A_{143}^{\text{PS}}$	42.7	$43^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6205	$0.621^{+0.023}_{-0.024}$	$H(0.57)$	92.62	$92.9^{+2.6}_{-2.5}$
$A_{143 \times 217}^{\text{PS}}$	42.9	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0120	$1.012^{+0.033}_{-0.033}$	$D_A(0.57)$	1394.3	$1390^{+44}_{-43}$
$A_{217}^{\text{PS}}$	101.8	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.505	$2.504^{+0.073}_{-0.076}$	$F_{\text{AP}}(0.57)$	0.67633	$0.6761^{+0.0038}_{-0.0036}$
$A^{\text{kSZ}}$	0.00	$< 7.77$	$z_{\text{re}}$	10.41	$10.3^{+2.9}_{-3.0}$	$f\sigma_8(0.57)$	0.4828	$0.483^{+0.018}_{-0.019}$
$A_{100}^{\text{dustTT}}$	7.43	$7.46^{+3.7}_{-3.7}$	$10^9 A_s$	2.215	$2.22^{+0.15}_{-0.15}$	$\sigma_8(0.57)$	0.6170	$0.618^{+0.027}_{-0.026}$
$A_{143}^{\text{dustTT}}$	8.96	$8.92^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8753	$1.879^{+0.034}_{-0.035}$	$f_{2000}^{143}$	28.2	$29^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.0^{+8.1}_{-8.1}$	$D_{40}$	1238.8	$1240^{+28}_{-27}$	$f_{2000}^{143 \times 217}$	31.51	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$D_{220}$	5725	$5731^{+78}_{-77}$	$f_{2000}^{217}$	105.03	$105.6^{+3.9}_{-3.9}$
$A_{100}^{\text{dustEE}}$	0.0816	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2534.1	$2535^{+28}_{-27}$	$\chi_{\text{lowTEB}}^2$	10497.26	10497.8 ( $\nu: 2.8$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0490^{+0.0097}_{-0.0097}$	$D_{1420}$	815.5	$815.1^{+9.5}_{-9.5}$	$\chi_{\text{plik}}^2$	2431.5	2450.9 ( $\nu: 23.7$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.063}$	$D_{2000}$	231.02	$230.7^{+3.6}_{-3.6}$	$\chi_{6\text{DF}}^2$	0.047	0.075 ( $\nu: 0.0$ )
$A_{143}^{\text{dustEE}}$	0.1003	$0.100^{+0.013}_{-0.013}$	$n_{\text{s},0.002}$	0.9651	$0.966^{+0.015}_{-0.015}$	$\chi_{\text{MGS}}^2$	1.10	1.21 ( $\nu: 0.1$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.091}_{-0.092}$	$Y_{\text{P}}$	0.24466	$0.2452^{+0.0049}_{-0.0050}$	$\chi_{\text{DR11CMass}}^2$	2.59	2.94 ( $\nu: 0.3$ )
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.24599	$0.2466^{+0.0049}_{-0.0050}$	$\chi_{\text{DR11LOWZ}}^2$	0.82	0.89 ( $\nu: 0.2$ )
$A_{100}^{\text{dustTE}}$	0.140	$0.140^{+0.074}_{-0.074}$	$10^5 \text{D}/\text{H}$	2.594	$2.604^{+0.092}_{-0.091}$	$\chi_{\text{prior}}^2$	6.81	19.3 ( $\nu: 14.9$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.058}_{-0.057}$	Age/Gyr	13.854	$13.81^{+0.37}_{-0.35}$	$\chi_{\text{CMB}}^2$	12928.7	12948.7 ( $\nu: 22.1$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.307	$0.30^{+0.16}_{-0.17}$	$z_*$	1089.87	$1089.94^{+0.70}_{-0.69}$	$\chi_{\text{BAO}}^2$	4.56	5.11 ( $\nu: 0.6$ )

Best-fit  $\chi_{\text{eff}}^2 = 12940.09$ ;  $\Delta\chi_{\text{eff}}^2 = -0.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.12$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.64$ ;  $R - 1 = 0.00881$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.05 ( $\Delta$  0.02) MGS: 1.10 ( $\Delta$  -0.12) DR11CMass: 2.60 ( $\Delta$  0.10) DR11LOWZ: 0.82 ( $\Delta$  0.14) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10497.26 ( $\Delta$  -0.16) plik.dx11dr2.HM.v18.TTTEEE: 2431.46 ( $\Delta$  -0.07)

## 11.24 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022366	$0.02235^{+0.00037}_{-0.00036}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.852	$13.86^{+0.31}_{-0.29}$
$\Omega_c h^2$	0.1199	$0.1198^{+0.0058}_{-0.0057}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.52}_{-0.50}$	$z_{\text{drag}}$	1059.97	$1059.9^{+1.3}_{-1.3}$
$100\theta_{\text{MC}}$	1.04078	$1.04080^{+0.00084}_{-0.00080}$	$c_{100}$	0.99820	$0.9982^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	146.84	$146.9^{+3.5}_{-3.3}$
$\tau$	0.0863	$0.084^{+0.031}_{-0.032}$	$c_{217}$	0.99596	$0.9959^{+0.0029}_{-0.0028}$	$k_D$	0.14090	$0.1408^{+0.0025}_{-0.0025}$
$N_{\text{eff}}$	3.103	$3.10^{+0.34}_{-0.33}$	$H_0$	68.02	$67.9^{+2.2}_{-2.2}$	$100\theta_D$	0.16096	$0.16097^{+0.00077}_{-0.00077}$
$\ln(10^{10} A_s)$	3.108	$3.104^{+0.067}_{-0.068}$	$\Omega_\Lambda$	0.6912	$0.691^{+0.013}_{-0.014}$	$z_{\text{eq}}$	3372.7	$3375^{+50}_{-47}$
$n_s$	0.9693	$0.968^{+0.014}_{-0.014}$	$\Omega_m$	0.3088	$0.309^{+0.014}_{-0.013}$	$k_{\text{eq}}$	0.010334	$0.01033^{+0.00023}_{-0.00023}$
$y_{\text{cal}}$	1.00038	$1.0005^{+0.0050}_{-0.0049}$	$\Omega_m h^2$	0.1429	$0.1428^{+0.0060}_{-0.0059}$	$100\theta_{\text{eq}}$	0.8185	$0.8181^{+0.0092}_{-0.0095}$
$A_{217}^{\text{CIB}}$	66.1	$64^{+10}_{-10}$	$\Omega_m h^3$	0.0972	$0.0971^{+0.0068}_{-0.0066}$	$100\theta_{s,\text{eq}}$	0.45211	$0.4519^{+0.0047}_{-0.0048}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.16	—	$\sigma_8$	0.8364	$0.835^{+0.033}_{-0.033}$	$r_{\text{drag}}/D_V(0.57)$	0.07170	$0.07168^{+0.00072}_{-0.00073}$
$A_{143}^{\text{tSZ}}$	7.18	$5.37^{+3.6}_{-3.7}$	$\sigma_8 \Omega_m^{0.5}$	0.4648	$0.464^{+0.018}_{-0.018}$	$H(0.57)$	93.43	$93.4^{+2.4}_{-2.4}$
$A_{100}^{\text{PS}}$	255	$260^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6235	$0.623^{+0.024}_{-0.023}$	$D_A(0.57)$	1380.3	$1382^{+40}_{-39}$
$A_{143}^{\text{PS}}$	40.4	$43^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0141	$1.013^{+0.033}_{-0.033}$	$F_{\text{AP}}(0.57)$	0.67534	$0.6755^{+0.0035}_{-0.0034}$
$A_{143 \times 217}^{\text{PS}}$	37.1	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.504	$2.502^{+0.073}_{-0.078}$	$f\sigma_8(0.57)$	0.4856	$0.485^{+0.018}_{-0.018}$
$A_{217}^{\text{PS}}$	98.9	$98^{+20}_{-20}$	$z_{\text{re}}$	10.70	$10.5^{+2.8}_{-3.0}$	$\sigma_8(0.57)$	0.6228	$0.622^{+0.026}_{-0.026}$
$A^{\text{kSZ}}$	0.00	$< 7.85$	$10^9 A_s$	2.237	$2.23^{+0.15}_{-0.15}$	$f_{2000}^{143}$	29.1	$29^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.43	$7.48^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8827	$1.883^{+0.033}_{-0.034}$	$f_{2000}^{143 \times 217}$	32.05	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	8.99	$8.96^{+3.6}_{-3.6}$	$D_{40}$	1235.2	$1237^{+27}_{-27}$	$f_{2000}^{217}$	105.64	$105.8^{+3.8}_{-4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.0^{+8.1}_{-8.2}$	$D_{220}$	5729	$5731^{+78}_{-76}$	$\chi_{\text{lowTEB}}^2$	10496.97	10497.6 ( $\nu$ : 2.9)
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$D_{810}$	2535.9	$2536^{+28}_{-27}$	$\chi_{\text{plik}}^2$	2432.2	2451.4 ( $\nu$ : 23.9)
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	815.2	$815.0^{+9.5}_{-9.4}$	$\chi_{\text{H070p6}}^2$	0.60	0.75 ( $\nu$ : 0.2)
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0491^{+0.0097}_{-0.0097}$	$D_{2000}$	230.59	$230.5^{+3.5}_{-3.6}$	$\chi_{\text{JLA}}^2$	706.676	706.73 ( $\nu$ : 0.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.065}$	$n_{s,0.002}$	0.9693	$0.968^{+0.014}_{-0.014}$	$\chi_{6\text{DF}}^2$	0.015	0.051 ( $\nu$ : 0.0)
$A_{143}^{\text{dustEE}}$	0.1007	$0.101^{+0.013}_{-0.014}$	$Y_{\text{P}}$	0.24617	$0.2460^{+0.0045}_{-0.0047}$	$\chi_{\text{MGS}}^2$	1.34	1.37 ( $\nu$ : 0.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.091}_{-0.093}$	$Y_{\text{P}}^{\text{BBN}}$	0.24750	$0.2474^{+0.0045}_{-0.0047}$	$\chi_{\text{DR11CMass}}^2$	2.44	2.79 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.656	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	2.612	$2.613^{+0.088}_{-0.088}$	$\chi_{\text{DR11LOWZ}}^2$	0.55	0.69 ( $\nu$ : 0.1)
$A_{100}^{\text{dustTE}}$	0.141	$0.140^{+0.074}_{-0.074}$	Age/Gyr	13.742	$13.75^{+0.34}_{-0.33}$	$\chi_{\text{prior}}^2$	6.93	19.4 ( $\nu$ : 15.0)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	$z_*$	1089.97	$1089.98^{+0.69}_{-0.67}$	$\chi_{\text{CMB}}^2$	12929.2	12949.0 ( $\nu$ : 22.1)
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.17}$	$r_*$	144.18	$144.3^{+3.3}_{-3.2}$	$\chi_{\text{BAO}}^2$	4.34	4.91 ( $\nu$ : 0.3)
$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$100\theta_*$	1.04093	$1.0410^{+0.0010}_{-0.00098}$			

Best-fit  $\chi_{\text{eff}}^2 = 13647.70$ ;  $\bar{\chi}_{\text{eff}}^2 = 13680.72$ ;  $R - 1 = 0.01333$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.34 DR11CMass: 2.44 DR11LOWZ: 0.55 CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10496.97 plik\_dx11dr2\_HM\_v18\_TTTEEE:



## 11.25 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022286	$0.02229^{+0.00037}_{-0.00036}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.33^{+0.16}_{-0.15}$	$D_A/\text{Gpc}$	13.937	$13.92^{+0.31}_{-0.30}$
$\Omega_c h^2$	0.1182	$0.1187^{+0.0055}_{-0.0053}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.50}_{-0.53}$	$z_{\text{drag}}$	1059.59	$1059.6^{+1.3}_{-1.3}$
$100\theta_{\text{MC}}$	1.04094	$1.04095^{+0.00080}_{-0.00081}$	$c_{100}$	0.99817	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.81	$147.6^{+3.4}_{-3.4}$
$\tau$	0.0667	$0.066^{+0.024}_{-0.023}$	$c_{217}$	0.99606	$0.9960^{+0.0028}_{-0.0029}$	$k_D$	0.14016	$0.1403^{+0.0025}_{-0.0025}$
$N_{\text{eff}}$	3.016	$3.04^{+0.33}_{-0.33}$	$H_0$	67.57	$67.7^{+2.4}_{-2.2}$	$100\theta_D$	0.16082	$0.16089^{+0.00075}_{-0.00076}$
$\ln(10^{10} A_s)$	3.0632	$3.063^{+0.047}_{-0.046}$	$\Omega_\Lambda$	0.6909	$0.691^{+0.013}_{-0.014}$	$z_{\text{eq}}$	3371	$3372^{+49}_{-51}$
$n_s$	0.9661	$0.966^{+0.014}_{-0.014}$	$\Omega_m$	0.3091	$0.309^{+0.014}_{-0.013}$	$k_{\text{eq}}$	0.010268	$0.01029^{+0.00021}_{-0.00022}$
$y_{\text{cal}}$	0.9999	$1.0001^{+0.0052}_{-0.0050}$	$\Omega_m h^2$	0.1411	$0.1416^{+0.0058}_{-0.0056}$	$100\theta_{\text{eq}}$	0.8186	$0.8186^{+0.0092}_{-0.0095}$
$A_{217}^{\text{CIB}}$	67.2	$64^{+10}_{-10}$	$\Omega_m h^3$	0.0954	$0.0959^{+0.0068}_{-0.0064}$	$100\theta_{s,\text{eq}}$	0.45223	$0.4522^{+0.0047}_{-0.0048}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$\sigma_8$	0.8145	$0.815^{+0.024}_{-0.023}$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.07171^{+0.00071}_{-0.00072}$
$A_{143}^{\text{tSZ}}$	7.26	$5.32^{+3.6}_{-3.7}$	$\sigma_8 \Omega_m^{0.5}$	0.4528	$0.453^{+0.012}_{-0.013}$	$H(0.57)$	92.84	$93.0^{+2.5}_{-2.4}$
$A_{100}^{\text{PS}}$	256	$260^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6073	$0.608^{+0.015}_{-0.015}$	$D_A(0.57)$	1389.3	$1387^{+41}_{-42}$
$A_{143}^{\text{PS}}$	38.9	$43^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9908	$0.991^{+0.020}_{-0.021}$	$F_{\text{AP}}(0.57)$	0.67543	$0.6754^{+0.0036}_{-0.0034}$
$A_{143 \times 217}^{\text{PS}}$	33.8	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4542	$2.454^{+0.050}_{-0.048}$	$f\sigma_8(0.57)$	0.4729	$0.473^{+0.012}_{-0.012}$
$A_{217}^{\text{PS}}$	96.9	$97^{+20}_{-20}$	$z_{\text{re}}$	8.89	$8.79^{+2.2}_{-2.3}$	$\sigma_8(0.57)$	0.6065	$0.607^{+0.019}_{-0.019}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.140	$2.14^{+0.10}_{-0.097}$	$f_{2000}^{143}$	29.4	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.49	$7.47^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8724	$1.875^{+0.033}_{-0.033}$	$f_{2000}^{143 \times 217}$	32.24	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.11	$9.10^{+3.5}_{-3.6}$	$D_{40}$	1229.1	$1230^{+26}_{-25}$	$f_{2000}^{217}$	105.74	$106.0^{+3.9}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.0}_{-8.3}$	$D_{220}$	5724	$5726^{+80}_{-76}$	$\chi_{\text{lensing}}^2$	9.62	10.3 ( $\nu: 1.6$ )
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$D_{810}$	2532.0	$2533^{+28}_{-28}$	$\chi_{\text{lowTEB}}^2$	10495.32	10495.7 ( $\nu: 0.9$ )
$A_{100}^{\text{dustEE}}$	0.0816	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	814.9	$814.9^{+9.6}_{-9.5}$	$\chi_{\text{plik}}^2$	2435.1	2454.1 ( $\nu: 22.4$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0493^{+0.0095}_{-0.0096}$	$D_{2000}$	230.34	$230.2^{+3.5}_{-3.6}$	$\chi_{\text{H070p6}}^2$	0.83	0.89 ( $\nu: 0.2$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0999^{+0.062}_{-0.066}$	$n_{s,0.002}$	0.9661	$0.966^{+0.014}_{-0.014}$	$\chi_{\text{JLA}}^2$	706.684	706.73 ( $\nu: 0.0$ )
$A_{143}^{\text{dustEE}}$	0.1002	$0.101^{+0.014}_{-0.014}$	$Y_{\text{P}}$	0.24494	$0.2452^{+0.0046}_{-0.0046}$	$\chi_{6\text{DF}}^2$	0.015	0.046 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.091}_{-0.092}$	$Y_{\text{P}}^{\text{BBN}}$	0.24627	$0.2466^{+0.0046}_{-0.0046}$	$\chi_{\text{MGS}}^2$	1.34	1.41 ( $\nu: 0.1$ )
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.26}_{-0.26}$	$10^5 D/H$	2.597	$2.604^{+0.083}_{-0.087}$	$\chi_{\text{DR11CMass}}^2$	2.42	2.76 ( $\nu: 0.1$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.140^{+0.073}_{-0.076}$	Age/Gyr	13.829	$13.81^{+0.34}_{-0.33}$	$\chi_{\text{DR11LOWZ}}^2$	0.54	0.65 ( $\nu: 0.1$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.056}_{-0.055}$	$z_*$	1089.84	$1089.90^{+0.63}_{-0.65}$	$\chi_{\text{prior}}^2$	7.13	19.6 ( $\nu: 16.3$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.17}$	$r_*$	145.11	$144.9^{+3.3}_{-3.2}$	$\chi_{\text{CMB}}^2$	12940.0	12960.1 ( $\nu: 21.1$ )
$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$100\theta_*$	1.04116	$1.04115^{+0.00099}_{-0.0010}$	$\chi_{\text{BAO}}^2$	4.32	4.86 ( $\nu: 0.3$ )

Best-fit  $\chi_{\text{eff}}^2 = 13659.02$ ;  $\Delta\chi_{\text{eff}}^2 = -0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 13692.20$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.09$ ;  $R - 1 = 0.03612$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.34 ( $\Delta$  -0.06) DR11CMASS: 2.42 ( $\Delta$  0.01) DR11LOWZ: 0.54 ( $\Delta$  0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.62 ( $\Delta$  -0.12) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.32 ( $\Delta$  0.10) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.11 ( $\Delta$  -0.09) Hubble - H070p6: 0.83 ( $\Delta$  0.11) SN - JLA December\_2013: 706.68 ( $\Delta$  0.02)

## 11.26 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022240	$0.02222^{+0.00037}_{-0.00040}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.33^{+0.16}_{-0.15}$	$D_A/\text{Gpc}$	13.973	$13.97^{+0.31}_{-0.31}$
$\Omega_c h^2$	0.1177	$0.1179^{+0.0057}_{-0.0056}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.49}_{-0.52}$	$z_{\text{drag}}$	1059.40	$1059.4^{+1.4}_{-1.4}$
$100\theta_{\text{MC}}$	1.04104	$1.04103^{+0.00080}_{-0.00082}$	$c_{100}$	0.99814	$0.9981^{+0.0016}_{-0.0015}$	$r_{\text{drag}}$	148.22	$148.2^{+3.5}_{-3.5}$
$\tau$	0.0652	$0.064^{+0.024}_{-0.023}$	$c_{217}$	0.99599	$0.9960^{+0.0029}_{-0.0028}$	$k_D$	0.13987	$0.1399^{+0.0026}_{-0.0025}$
$N_{\text{eff}}$	2.972	$2.98^{+0.35}_{-0.34}$	$H_0$	67.23	$67.2^{+2.4}_{-2.4}$	$100\theta_D$	0.16075	$0.16077^{+0.00076}_{-0.00078}$
$\ln(10^{10} A_s)$	3.0592	$3.057^{+0.049}_{-0.049}$	$\Omega_\Lambda$	0.6889	$0.688^{+0.014}_{-0.015}$	$z_{\text{eq}}$	3378	$3381^{+54}_{-51}$
$n_s$	0.9644	$0.964^{+0.015}_{-0.015}$	$\Omega_m$	0.3111	$0.312^{+0.015}_{-0.014}$	$k_{\text{eq}}$	0.010258	$0.01027^{+0.00022}_{-0.00021}$
$y_{\text{cal}}$	1.0001	$1.0001^{+0.0052}_{-0.0051}$	$\Omega_m h^2$	0.1406	$0.1408^{+0.0059}_{-0.0058}$	$100\theta_{\text{eq}}$	0.8173	$0.8168^{+0.0098}_{-0.010}$
$A_{217}^{\text{CIB}}$	66.8	$64^{+10}_{-10}$	$\Omega_m h^3$	0.0945	$0.0946^{+0.0072}_{-0.0066}$	$100\theta_{s,\text{eq}}$	0.4516	$0.4513^{+0.0050}_{-0.0051}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.07	—	$\sigma_8$	0.8121	$0.812^{+0.025}_{-0.023}$	$r_{\text{drag}}/D_V(0.57)$	0.07162	$0.07158^{+0.00076}_{-0.00076}$
$A_{143}^{\text{tSZ}}$	7.30	$5.35^{+3.6}_{-3.6}$	$\sigma_8 \Omega_m^{0.5}$	0.4530	$0.453^{+0.012}_{-0.012}$	$H(0.57)$	92.50	$92.5^{+2.6}_{-2.5}$
$A_{100}^{\text{PS}}$	255	$259^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6065	$0.607^{+0.016}_{-0.015}$	$D_A(0.57)$	1395.3	$1396^{+44}_{-43}$
$A_{143}^{\text{PS}}$	38.3	$43^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9905	$0.991^{+0.020}_{-0.020}$	$F_{\text{AP}}(0.57)$	0.67592	$0.6761^{+0.0038}_{-0.0036}$
$A_{143 \times 217}^{\text{PS}}$	33.7	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4555	$2.456^{+0.050}_{-0.048}$	$f\sigma_8(0.57)$	0.4721	$0.472^{+0.013}_{-0.012}$
$A_{217}^{\text{PS}}$	97.4	$96^{+20}_{-20}$	$z_{\text{re}}$	8.74	$8.62^{+2.2}_{-2.3}$	$\sigma_8(0.57)$	0.6043	$0.604^{+0.020}_{-0.019}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.131	$2.13^{+0.11}_{-0.10}$	$f_{2000}^{143}$	29.1	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.48	$7.47^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8705	$1.871^{+0.034}_{-0.034}$	$f_{2000}^{143 \times 217}$	31.97	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.10	$9.06^{+3.5}_{-3.6}$	$D_{40}$	1231.0	$1233^{+27}_{-26}$	$f_{2000}^{217}$	105.59	$105.8^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.1}_{-8.3}$	$D_{220}$	5724	$5725^{+78}_{-78}$	$\chi_{\text{lensing}}^2$	9.55	10.2 ( $\nu$ : 1.5)
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{810}$	2532.6	$2532^{+28}_{-28}$	$\chi_{\text{lowTEB}}^2$	10495.48	10496.0 ( $\nu$ : 1.0)
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	815.5	$815.0^{+9.5}_{-9.6}$	$\chi_{\text{plik}}^2$	2434.8	2453.7 ( $\nu$ : 21.9)
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0491^{+0.0096}_{-0.0095}$	$D_{2000}$	230.66	$230.5^{+3.6}_{-3.6}$	$\chi_{6\text{DF}}^2$	0.029	0.071 ( $\nu$ : 0.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.0997	$0.100^{+0.063}_{-0.066}$	$n_{s,0.002}$	0.9644	$0.964^{+0.015}_{-0.015}$	$\chi_{\text{MGS}}^2$	1.22	1.24 ( $\nu$ : 0.1)
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.013}_{-0.014}$	$Y_{\text{P}}$	0.24433	$0.2443^{+0.0049}_{-0.0048}$	$\chi_{\text{DR11CMass}}^2$	2.48	2.89 ( $\nu$ : 0.2)
$A_{143 \times 217}^{\text{dustEE}}$	0.226	$0.225^{+0.091}_{-0.091}$	$Y_{\text{P}}^{\text{BBN}}$	0.24565	$0.2456^{+0.0049}_{-0.0049}$	$\chi_{\text{DR11LOWZ}}^2$	0.67	0.85 ( $\nu$ : 0.2)
$A_{217}^{\text{dustEE}}$	0.656	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	2.590	$2.594^{+0.086}_{-0.085}$	$\chi_{\text{prior}}^2$	7.11	19.5 ( $\nu$ : 15.8)
$A_{100}^{\text{dustTE}}$	0.142	$0.140^{+0.073}_{-0.075}$	Age/Gyr	13.875	$13.88^{+0.36}_{-0.36}$	$\chi_{\text{CMB}}^2$	12939.8	12960.0 ( $\nu$ : 20.8)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.056}_{-0.054}$	$z_*$	1089.81	$1089.85^{+0.64}_{-0.63}$	$\chi_{\text{BAO}}^2$	4.39	5.05 ( $\nu$ : 0.5)
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.30^{+0.16}_{-0.16}$	$r_*$	145.50	$145.5^{+3.4}_{-3.3}$			
$A_{143}^{\text{dustTE}}$	0.154	$0.153^{+0.10}_{-0.099}$	$100\theta_*$	1.04128	$1.04128^{+0.00099}_{-0.00098}$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.35$ ;  $\Delta\chi_{\text{eff}}^2 = -0.24$ ;  $\bar{\chi}_{\text{eff}}^2 = 12984.50$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.86$ ;  $R - 1 = 0.02938$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 ( $\Delta$  0.01) MGS: 1.22 ( $\Delta$  -0.06) DR11CMass: 2.48 ( $\Delta$  0.02) DR11LOWZ: 0.67 ( $\Delta$  0.06) CMB - smica\_g30.ftl.full\_pp: 9.55 ( $\Delta$  -0.12) lowl\_SMW\_70\_dx11d.2014.10.03

10495.48 ( $\Delta$  0.27) plik\_dx11dr2\_HM.v18.TTTEEE: 2434.81 ( $\Delta$  -0.49)

### 11.27 base\_nnu\_plikHM\_TT\_lowTEB\_nnup39

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022604	$0.02259^{+0.00047}_{-0.00046}$	$\Omega_m$	0.2953	$0.295^{+0.026}_{-0.024}$	$100\theta_*$	1.04043	$1.04045^{+0.00092}_{-0.00091}$
$\Omega_c h^2$	0.12385	$0.1238^{+0.0046}_{-0.0045}$	$\Omega_m h^2$	0.14710	$0.1470^{+0.0043}_{-0.0042}$	$D_A/\text{Gpc}$	13.591	$13.593^{+0.086}_{-0.088}$
$100\theta_{\text{MC}}$	1.04051	$1.04053^{+0.00094}_{-0.00093}$	$\Omega_m h^3$	0.10381	$0.10378^{+0.00096}_{-0.00098}$	$z_{\text{drag}}$	1061.04	$1061.03^{+0.95}_{-0.90}$
$\tau$	0.0917	$0.090^{+0.039}_{-0.039}$	$\sigma_8$	0.8518	$0.850^{+0.031}_{-0.030}$	$r_{\text{drag}}$	143.95	$143.98^{+0.93}_{-0.94}$
$\ln(10^{10} A_s)$	3.128	$3.123^{+0.075}_{-0.073}$	$\sigma_8 \Omega_m^{0.5}$	0.4629	$0.462^{+0.026}_{-0.026}$	$k_D$	0.14295	$0.1429^{+0.0010}_{-0.0010}$
$n_s$	0.9836	$0.983^{+0.013}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	0.6279	$0.626^{+0.026}_{-0.027}$	$100\theta_D$	0.16171	$0.16173^{+0.00053}_{-0.00052}$
$y_{\text{cal}}$	1.00018	$1.0003^{+0.0049}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.0139	$1.011^{+0.039}_{-0.039}$	$z_{\text{eq}}$	3326	$3324^{+98}_{-96}$
$A_{217}^{\text{CIB}}$	68.4	$66^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.480	$2.476^{+0.090}_{-0.092}$	$k_{\text{eq}}$	0.010413	$0.01041^{+0.00031}_{-0.00030}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	11.24	$11.0^{+3.4}_{-3.4}$	$100\theta_{\text{eq}}$	0.8279	$0.828^{+0.019}_{-0.019}$
$A_{143}^{\text{tSZ}}$	6.98	$4.76^{+3.9}_{-3.8}$	$10^9 A_s$	2.282	$2.27^{+0.18}_{-0.16}$	$100\theta_{s,\text{eq}}$	0.4568	$0.4570^{+0.0098}_{-0.0097}$
$A_{100}^{\text{PS}}$	259	$265^{+50}_{-50}$	$10^9 A_s e^{-2\tau}$	1.8997	$1.900^{+0.028}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07243	$0.0725^{+0.0015}_{-0.0015}$
$A_{143}^{\text{PS}}$	42.6	$47^{+20}_{-20}$	$D_{40}$	1215.6	$1217^{+30}_{-29}$	$H(0.57)$	95.94	$95.95^{+0.93}_{-0.89}$
$A_{143 \times 217}^{\text{PS}}$	34.8	$39^{+20}_{-20}$	$D_{220}$	5718	$5721^{+80}_{-82}$	$D_A(0.57)$	1337.2	$1337^{+25}_{-25}$
$A_{217}^{\text{PS}}$	97.9	$96^{+20}_{-20}$	$D_{810}$	2538.0	$2538^{+27}_{-27}$	$F_{\text{AP}}(0.57)$	0.6719	$0.6718^{+0.0067}_{-0.0064}$
$A^{\text{kSZ}}$	0.2	—	$D_{1420}$	813.3	$813^{+10}_{-9.9}$	$f\sigma_8(0.57)$	0.4907	$0.489^{+0.019}_{-0.019}$
$A_{100}^{\text{dustTT}}$	7.57	$7.55^{+3.6}_{-3.7}$	$D_{2000}$	228.87	$228.7^{+3.7}_{-3.7}$	$\sigma_8(0.57)$	0.6378	$0.636^{+0.024}_{-0.023}$
$A_{143}^{\text{dustTT}}$	9.13	$9.09^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9836	$0.983^{+0.013}_{-0.012}$	$f_{2000}^{143}$	31.5	$32^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.3^{+8.2}_{-8.1}$	$Y_{\text{P}}$	0.250648	$0.25064^{+0.00021}_{-0.00020}$	$f_{2000}^{143 \times 217}$	33.90	$34^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.251993	$0.25199^{+0.00021}_{-0.00021}$	$f_{2000}^{217}$	107.30	$107.5^{+3.9}_{-4.0}$
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$10^5 \text{D}/\text{H}$	2.680	$2.683^{+0.090}_{-0.088}$	$\chi_{\text{lowTEB}}^2$	10495.36	$10496.0 (\nu: 3.6)$
$c_{217}$	0.99606	$0.9961^{+0.0028}_{-0.0028}$	$\text{Age}/\text{Gyr}$	13.411	$13.411^{+0.076}_{-0.076}$	$\chi_{\text{plik}}^2$	766.0	$779.8 (\nu: 17.1)$
$H_0$	70.57	$70.6^{+2.0}_{-2.0}$	$z_*$	1090.34	$1090.35^{+0.88}_{-0.85}$	$\chi_{\text{prior}}^2$	2.04	$7.43 (\nu: 6.4)$
$\Omega_\Lambda$	0.7047	$0.705^{+0.024}_{-0.026}$	$r_*$	141.40	$141.43^{+0.94}_{-0.95}$	$\chi_{\text{CMB}}^2$	11261.4	$11275.8 (\nu: 15.4)$

Best-fit  $\chi_{\text{eff}}^2 = 11263.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.25$ ;  $R - 1 = 0.00929$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.36 plik\_dx11dr2\_HM.v18.TT: 766.01

## 11.28 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnp39

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022615	$0.02261^{+0.00032}_{-0.00031}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.16}$	$10^5 \text{D/H}$	2.678	$2.680^{+0.061}_{-0.060}$
$\Omega_c h^2$	0.12490	$0.1249^{+0.0030}_{-0.0031}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	Age/Gyr	13.422	$13.422^{+0.050}_{-0.052}$
$100\theta_{\text{MC}}$	1.04026	$1.04025^{+0.00064}_{-0.00063}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.15}_{-0.16}$	$z_*$	1090.41	$1090.42^{+0.59}_{-0.59}$
$\tau$	0.0937	$0.091^{+0.035}_{-0.035}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$r_*$	141.14	$141.15^{+0.62}_{-0.61}$
$\ln(10^{10} A_s)$	3.134	$3.130^{+0.066}_{-0.067}$	$c_{100}$	0.99813	$0.9981^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04017	$1.04017^{+0.00063}_{-0.00062}$
$n_s$	0.9810	$0.9804^{+0.0098}_{-0.0095}$	$c_{217}$	0.99609	$0.9961^{+0.0028}_{-0.0028}$	$D_A/\text{Gpc}$	13.569	$13.570^{+0.058}_{-0.057}$
$y_{\text{cal}}$	1.00023	$1.0005^{+0.0050}_{-0.0049}$	$H_0$	70.12	$70.1^{+1.4}_{-1.4}$	$z_{\text{drag}}$	1061.15	$1061.14^{+0.63}_{-0.60}$
$A_{217}^{\text{CIB}}$	68.7	$66^{+10}_{-10}$	$\Omega_\Lambda$	0.6987	$0.699^{+0.017}_{-0.018}$	$r_{\text{drag}}$	143.68	$143.68^{+0.61}_{-0.60}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m$	0.3013	$0.301^{+0.018}_{-0.017}$	$k_D$	0.14325	$0.14324^{+0.00066}_{-0.00066}$
$A_{143}^{\text{tSZ}}$	7.31	$5.08^{+3.8}_{-3.8}$	$\Omega_m h^2$	0.14816	$0.1482^{+0.0028}_{-0.0029}$	$100\theta_D$	0.161624	$0.16163^{+0.00036}_{-0.00036}$
$A_{100}^{\text{PS}}$	259	$266^{+50}_{-50}$	$\Omega_m h^3$	0.10390	$0.10388^{+0.00064}_{-0.00063}$	$z_{\text{eq}}$	3350	$3350^{+65}_{-65}$
$A_{143}^{\text{PS}}$	40.9	$46^{+20}_{-20}$	$\sigma_8$	0.8571	$0.855^{+0.027}_{-0.027}$	$k_{\text{eq}}$	0.010488	$0.01049^{+0.00020}_{-0.00020}$
$A_{143 \times 217}^{\text{PS}}$	34	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4705	$0.469^{+0.019}_{-0.019}$	$100\theta_{\text{eq}}$	0.8232	$0.823^{+0.013}_{-0.012}$
$A_{217}^{\text{PS}}$	97.2	$97^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6350	$0.633^{+0.021}_{-0.021}$	$100\theta_{s,\text{eq}}$	0.4544	$0.4544^{+0.0066}_{-0.0064}$
$A^{\text{kSZ}}$	0.0	—	$\sigma_8/h^{0.5}$	1.0235	$1.021^{+0.032}_{-0.033}$	$r_{\text{drag}}/D_V(0.57)$	0.07205	$0.0721^{+0.0010}_{-0.00099}$
$A_{100}^{\text{dustTT}}$	7.49	$7.57^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.505	$2.500^{+0.077}_{-0.077}$	$H(0.57)$	95.77	$95.77^{+0.62}_{-0.59}$
$A_{143}^{\text{dustTT}}$	9.08	$9.09^{+3.6}_{-3.6}$	$z_{\text{re}}$	11.44	$11.2^{+2.9}_{-3.1}$	$D_A(0.57)$	1342.7	$1343^{+17}_{-17}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.2}_{-8.2}$	$10^9 A_s$	2.298	$2.29^{+0.16}_{-0.15}$	$F_{\text{AP}}(0.57)$	0.67342	$0.6735^{+0.0045}_{-0.0044}$
$A_{217}^{\text{dustTT}}$	81.6	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.9050	$1.906^{+0.024}_{-0.024}$	$f\sigma_8(0.57)$	0.4955	$0.494^{+0.016}_{-0.016}$
$A_{100}^{\text{dustEE}}$	0.0821	$0.082^{+0.011}_{-0.011}$	$D_{40}$	1223.3	$1225^{+26}_{-25}$	$\sigma_8(0.57)$	0.6402	$0.639^{+0.021}_{-0.021}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0498	$0.0497^{+0.0097}_{-0.0098}$	$D_{220}$	5724	$5729^{+77}_{-75}$	$f_{2000}^{143}$	30.9	$32^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.099^{+0.063}_{-0.063}$	$D_{810}$	2539.4	$2540^{+27}_{-27}$	$f_{2000}^{143 \times 217}$	33.59	$33.9^{+3.8}_{-3.8}$
$A_{143}^{\text{dustEE}}$	0.1013	$0.101^{+0.013}_{-0.013}$	$D_{1420}$	813.2	$813.2^{+9.5}_{-9.3}$	$f_{2000}^{217}$	106.97	$107.3^{+3.7}_{-3.7}$
$A_{143 \times 217}^{\text{dustEE}}$	0.220	$0.221^{+0.091}_{-0.091}$	$D_{2000}$	228.97	$228.9^{+3.2}_{-3.2}$	$\chi_{\text{lowTEB}}^2$	10496.26	$10496.7 (\nu: 3.5)$
$A_{217}^{\text{dustEE}}$	0.647	$0.64^{+0.25}_{-0.25}$	$n_{s,0.002}$	0.9810	$0.9804^{+0.0098}_{-0.0095}$	$\chi_{\text{plik}}^2$	2436.8	$2456.1 (\nu: 24.4)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.076}_{-0.074}$	$Y_P$	0.250653	$0.25065^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	7.56	$19.9 (\nu: 15.5)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	$Y_P^{\text{BBN}}$	0.251998	$0.25200^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12933.0	$12952.9 (\nu: 22.8)$

Best-fit  $\chi_{\text{eff}}^2 = 12940.62$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.81$ ;  $R - 1 = 0.00717$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.26 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2436.79

## 11.29 base\_nnu\_plikHM\_TT\_lowTEB\_nnup57

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022748	$0.02277^{+0.00047}_{-0.00047}$	$\Omega_m$	0.2872	$0.287^{+0.026}_{-0.025}$	$100\theta_*$	1.04016	$1.04019^{+0.00091}_{-0.00091}$
$\Omega_c h^2$	0.12571	$0.1256^{+0.0048}_{-0.0047}$	$\Omega_m h^2$	0.14910	$0.1490^{+0.0046}_{-0.0043}$	$D_A/\text{Gpc}$	13.461	$13.463^{+0.087}_{-0.089}$
$100\theta_{\text{MC}}$	1.04037	$1.04040^{+0.00092}_{-0.00093}$	$\Omega_m h^3$	0.10744	$0.1075^{+0.0010}_{-0.00098}$	$z_{\text{drag}}$	1061.65	$1061.69^{+0.92}_{-0.91}$
$\tau$	0.0954	$0.098^{+0.039}_{-0.040}$	$\sigma_8$	0.8595	$0.861^{+0.029}_{-0.031}$	$r_{\text{drag}}$	142.50	$142.51^{+0.93}_{-0.95}$
$\ln(10^{10} A_s)$	3.140	$3.145^{+0.072}_{-0.075}$	$\sigma_8 \Omega_m^{0.5}$	0.4606	$0.461^{+0.026}_{-0.026}$	$k_D$	0.14399	$0.1440^{+0.0011}_{-0.0010}$
$n_s$	0.9910	$0.991^{+0.013}_{-0.013}$	$\sigma_8 \Omega_m^{0.25}$	0.6292	$0.630^{+0.026}_{-0.027}$	$100\theta_D$	0.16208	$0.16207^{+0.00053}_{-0.00052}$
$y_{\text{cal}}$	1.00033	$1.0005^{+0.0049}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.0126	$1.014^{+0.038}_{-0.039}$	$z_{\text{eq}}$	3295	$3293^{+100}_{-97}$
$A_{217}^{\text{CIB}}$	69.2	$66^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.468	$2.472^{+0.088}_{-0.091}$	$k_{\text{eq}}$	0.010436	$0.01043^{+0.00032}_{-0.00031}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	11.59	$11.7^{+3.3}_{-3.4}$	$100\theta_{\text{eq}}$	0.8340	$0.835^{+0.020}_{-0.020}$
$A_{143}^{\text{tSZ}}$	6.09	$4.61^{+3.8}_{-4.0}$	$10^9 A_s$	2.309	$2.32^{+0.17}_{-0.17}$	$100\theta_{s,\text{eq}}$	0.4599	$0.460^{+0.010}_{-0.010}$
$A_{100}^{\text{PS}}$	265	$268^{+50}_{-50}$	$10^9 A_s e^{-2\tau}$	1.9083	$1.908^{+0.029}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07290	$0.0730^{+0.0016}_{-0.0016}$
$A_{143}^{\text{PS}}$	44.0	$48^{+20}_{-20}$	$D_{40}$	1207.2	$1209^{+29}_{-28}$	$H(0.57)$	97.33	$97.4^{+1.0}_{-0.96}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$D_{220}$	5721	$5725^{+81}_{-80}$	$D_A(0.57)$	1313.9	$1313^{+26}_{-26}$
$A_{217}^{\text{PS}}$	95.6	$96^{+20}_{-20}$	$D_{810}$	2540.0	$2541^{+27}_{-27}$	$F_{\text{AP}}(0.57)$	0.6697	$0.6696^{+0.0069}_{-0.0066}$
$A^{\text{kSZ}}$	1.81	—	$D_{1420}$	812.5	$812.8^{+9.7}_{-9.9}$	$f\sigma_8(0.57)$	0.4927	$0.493^{+0.019}_{-0.019}$
$A_{100}^{\text{dustTT}}$	7.49	$7.57^{+3.7}_{-3.6}$	$D_{2000}$	228.00	$228.2^{+3.6}_{-3.6}$	$\sigma_8(0.57)$	0.6458	$0.648^{+0.023}_{-0.024}$
$A_{143}^{\text{dustTT}}$	9.15	$9.13^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9910	$0.991^{+0.013}_{-0.013}$	$f_{2000}^{143}$	33.0	$33^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.3^{+8.1}_{-8.2}$	$Y_{\text{P}}$	0.252987	$0.25300^{+0.00021}_{-0.00021}$	$f_{2000}^{143 \times 217}$	34.93	$35^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.254340	$0.25435^{+0.00021}_{-0.00021}$	$f_{2000}^{217}$	108.29	$108.1^{+4.0}_{-4.1}$
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.714	$2.711^{+0.091}_{-0.089}$	$\chi_{\text{lowTEB}}^2$	10494.9	$10496.1 (\nu: 4.3)$
$c_{217}$	0.99626	$0.9962^{+0.0028}_{-0.0028}$	Age/Gyr	13.238	$13.234^{+0.077}_{-0.078}$	$\chi_{\text{plik}}^2$	767.8	$781.1 (\nu: 17.5)$
$H_0$	72.06	$72.1^{+2.2}_{-2.1}$	$z_*$	1090.48	$1090.45^{+0.89}_{-0.88}$	$\chi_{\text{prior}}^2$	2.33	$7.47 (\nu: 6.5)$
$\Omega_\Lambda$	0.7128	$0.713^{+0.025}_{-0.026}$	$r_*$	140.02	$140.04^{+0.95}_{-0.96}$	$\chi_{\text{CMB}}^2$	11262.7	$11277.3 (\nu: 15.5)$

Best-fit  $\chi_{\text{eff}}^2 = 11265.05$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.75$ ;  $R - 1 = 0.00538$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.90 plik\_dx11dr2\_HM\_v18\_TT: 767.82

### 11.30 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnp57

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022771	$0.02276^{+0.00032}_{-0.00031}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.16}$	$10^5 \text{D/H}$	2.709	$2.712^{+0.061}_{-0.060}$
$\Omega_c h^2$	0.12727	$0.1273^{+0.0031}_{-0.0031}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.11}$	Age/Gyr	13.252	$13.253^{+0.051}_{-0.051}$
$100\theta_{\text{MC}}$	1.04002	$1.04002^{+0.00063}_{-0.00063}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.34^{+0.16}_{-0.16}$	$z_*$	1090.59	$1090.61^{+0.60}_{-0.60}$
$\tau$	0.0985	$0.096^{+0.033}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.51}_{-0.49}$	$r_*$	139.63	$139.64^{+0.61}_{-0.60}$
$\ln(10^{10} A_s)$	3.149	$3.145^{+0.064}_{-0.067}$	$c_{100}$	0.99812	$0.9981^{+0.0015}_{-0.0015}$	$100\theta_*$	1.03981	$1.03981^{+0.00062}_{-0.00062}$
$n_s$	0.9880	$0.9875^{+0.0097}_{-0.0095}$	$c_{217}$	0.99615	$0.9962^{+0.0028}_{-0.0028}$	$D_A/\text{Gpc}$	13.429	$13.429^{+0.057}_{-0.056}$
$y_{\text{cal}}$	1.00029	$1.0005^{+0.0049}_{-0.0049}$	$H_0$	71.41	$71.4^{+1.4}_{-1.4}$	$z_{\text{drag}}$	1061.80	$1061.79^{+0.61}_{-0.59}$
$A_{217}^{\text{CIB}}$	68.9	$66^{+10}_{-10}$	$\Omega_\Lambda$	0.7045	$0.704^{+0.017}_{-0.017}$	$r_{\text{drag}}$	142.10	$142.11^{+0.60}_{-0.59}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m$	0.2955	$0.296^{+0.017}_{-0.017}$	$k_D$	0.14445	$0.14443^{+0.00066}_{-0.00066}$
$A_{143}^{\text{tSZ}}$	7.13	$4.92^{+3.9}_{-3.8}$	$\Omega_m h^2$	0.15069	$0.1507^{+0.0029}_{-0.0029}$	$100\theta_D$	0.161951	$0.16197^{+0.00036}_{-0.00035}$
$A_{100}^{\text{PS}}$	263	$269^{+50}_{-50}$	$\Omega_m h^3$	0.10761	$0.10758^{+0.00064}_{-0.00065}$	$z_{\text{eq}}$	3331	$3331^{+64}_{-65}$
$A_{143}^{\text{PS}}$	42.9	$47^{+20}_{-20}$	$\sigma_8$	0.8677	$0.866^{+0.027}_{-0.028}$	$k_{\text{eq}}$	0.010548	$0.01055^{+0.00020}_{-0.00021}$
$A_{143 \times 217}^{\text{PS}}$	35	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4717	$0.471^{+0.019}_{-0.019}$	$100\theta_{\text{eq}}$	0.8272	$0.827^{+0.013}_{-0.012}$
$A_{217}^{\text{PS}}$	97.7	$96^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6398	$0.638^{+0.021}_{-0.022}$	$100\theta_{s,\text{eq}}$	0.4563	$0.4563^{+0.0066}_{-0.0063}$
$A^{\text{kSZ}}$	0.3	—	$\sigma_8/h^{0.5}$	1.0268	$1.024^{+0.032}_{-0.033}$	$r_{\text{drag}}/D_V(0.57)$	0.07235	$0.0723^{+0.0010}_{-0.0010}$
$A_{100}^{\text{dustTT}}$	7.59	$7.66^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.502	$2.497^{+0.075}_{-0.077}$	$H(0.57)$	97.09	$97.08^{+0.64}_{-0.61}$
$A_{143}^{\text{dustTT}}$	9.20	$9.15^{+3.6}_{-3.6}$	$z_{\text{re}}$	11.88	$11.6^{+2.9}_{-3.0}$	$D_A(0.57)$	1321.5	$1322^{+17}_{-17}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$17.3^{+8.3}_{-8.2}$	$10^9 A_s$	2.332	$2.32^{+0.15}_{-0.15}$	$F_{\text{AP}}(0.57)$	0.67193	$0.6720^{+0.0044}_{-0.0044}$
$A_{217}^{\text{dustTT}}$	82.0	$81^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.9152	$1.916^{+0.025}_{-0.024}$	$f\sigma_8(0.57)$	0.4999	$0.499^{+0.016}_{-0.016}$
$A_{100}^{\text{dustEE}}$	0.0822	$0.082^{+0.011}_{-0.011}$	$D_{40}$	1216.2	$1217^{+25}_{-24}$	$\sigma_8(0.57)$	0.6497	$0.648^{+0.021}_{-0.021}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0499	$0.0501^{+0.0097}_{-0.0098}$	$D_{220}$	5724	$5727^{+77}_{-75}$	$f_{2000}^{143}$	31.9	$32^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.064}_{-0.065}$	$D_{810}$	2541.8	$2542^{+27}_{-27}$	$f_{2000}^{143 \times 217}$	34.37	$34.6^{+3.7}_{-3.8}$
$A_{143}^{\text{dustEE}}$	0.1016	$0.102^{+0.014}_{-0.013}$	$D_{1420}$	812.6	$812.4^{+9.4}_{-9.3}$	$f_{2000}^{217}$	107.67	$107.9^{+3.7}_{-3.7}$
$A_{143 \times 217}^{\text{dustEE}}$	0.220	$0.219^{+0.092}_{-0.091}$	$D_{2000}$	228.28	$228.1^{+3.2}_{-3.2}$	$\chi_{\text{lowTEB}}^2$	10496.02	$10496.4 (\nu: 3.5)$
$A_{217}^{\text{dustEE}}$	0.638	$0.64^{+0.25}_{-0.26}$	$n_{s,0.002}$	0.9880	$0.9875^{+0.0097}_{-0.0095}$	$\chi_{\text{plik}}^2$	2441.4	$2460.4 (\nu: 24.8)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.075}_{-0.074}$	$Y_P$	0.252997	$0.25299^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	7.66	$20 (\nu: 16.4)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.058}_{-0.057}$	$Y_P^{\text{BBN}}$	0.254350	$0.25434^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12937.5	$12956.8 (\nu: 22.9)$

Best-fit  $\chi_{\text{eff}}^2 = 12945.11$ ;  $\bar{\chi}_{\text{eff}}^2 = 12977.07$ ;  $R - 1 = 0.01276$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.02 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2441.43

### 11.31 base\_nnu\_plikHM\_TT\_lowTEB\_nnu1

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.023135	$0.02316^{+0.00048}_{-0.00049}$	$\Omega_m$	0.2667	$0.268^{+0.025}_{-0.023}$	$100\theta_*$	1.03965	$1.03964^{+0.00093}_{-0.00093}$
$\Omega_c h^2$	0.12964	$0.1298^{+0.0050}_{-0.0048}$	$\Omega_m h^2$	0.15342	$0.1536^{+0.0047}_{-0.0045}$	$D_A/\text{Gpc}$	13.172	$13.168^{+0.084}_{-0.087}$
$100\theta_{\text{MC}}$	1.04016	$1.04014^{+0.00095}_{-0.00095}$	$\Omega_m h^3$	0.11636	$0.1164^{+0.0011}_{-0.0011}$	$z_{\text{drag}}$	1063.14	$1063.18^{+0.91}_{-0.92}$
$\tau$	0.1112	$0.113^{+0.041}_{-0.043}$	$\sigma_8$	0.8822	$0.885^{+0.032}_{-0.033}$	$r_{\text{drag}}$	139.27	$139.21^{+0.90}_{-0.92}$
$\ln(10^{10} A_s)$	3.179	$3.184^{+0.078}_{-0.080}$	$\sigma_8 \Omega_m^{0.5}$	0.4556	$0.458^{+0.026}_{-0.025}$	$k_D$	0.14640	$0.1465^{+0.0010}_{-0.0010}$
$n_s$	1.0098	$1.010^{+0.014}_{-0.013}$	$\sigma_8 \Omega_m^{0.25}$	0.6340	$0.636^{+0.027}_{-0.027}$	$100\theta_D$	0.16292	$0.16288^{+0.00054}_{-0.00051}$
$y_{\text{cal}}$	1.00040	$1.0005^{+0.0049}_{-0.0047}$	$\sigma_8/h^{0.5}$	1.0130	$1.016^{+0.039}_{-0.039}$	$z_{\text{eq}}$	3219	$3223^{+99}_{-96}$
$A_{217}^{\text{CIB}}$	70.3	$68^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.446	$2.453^{+0.088}_{-0.089}$	$k_{\text{eq}}$	0.010462	$0.01048^{+0.00032}_{-0.00031}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	12.93	$13.0^{+3.3}_{-3.5}$	$100\theta_{\text{eq}}$	0.8501	$0.850^{+0.021}_{-0.020}$
$A_{143}^{\text{tSZ}}$	4.75	$4.19^{+3.7}_{-4.1}$	$10^9 A_s$	2.402	$2.42^{+0.19}_{-0.19}$	$100\theta_{s,\text{eq}}$	0.4679	$0.468^{+0.010}_{-0.010}$
$A_{100}^{\text{PS}}$	277	$275^{+50}_{-60}$	$10^9 A_s e^{-2\tau}$	1.9234	$1.925^{+0.029}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07417	$0.0741^{+0.0017}_{-0.0016}$
$A_{143}^{\text{PS}}$	46.4	$51^{+20}_{-20}$	$D_{40}$	1187.7	$1190^{+29}_{-28}$	$H(0.57)$	100.78	$100.8^{+1.1}_{-1.1}$
$A_{143 \times 217}^{\text{PS}}$	32	$40^{+20}_{-20}$	$D_{220}$	5726	$5727^{+81}_{-78}$	$D_A(0.57)$	1258.6	$1259^{+26}_{-25}$
$A_{217}^{\text{PS}}$	92.4	$96^{+20}_{-20}$	$D_{810}$	2542.9	$2544^{+28}_{-27}$	$F_{\text{AP}}(0.57)$	0.6643	$0.6645^{+0.0066}_{-0.0062}$
$A^{\text{kSZ}}$	4.52	—	$D_{1420}$	810.8	$811^{+10}_{-9.9}$	$f\sigma_8(0.57)$	0.4987	$0.500^{+0.020}_{-0.020}$
$A_{100}^{\text{dustTT}}$	7.65	$7.68^{+3.7}_{-3.6}$	$D_{2000}$	226.27	$226.6^{+3.7}_{-3.7}$	$\sigma_8(0.57)$	0.6688	$0.671^{+0.026}_{-0.026}$
$A_{143}^{\text{dustTT}}$	9.16	$9.18^{+3.6}_{-3.6}$	$n_{s,0.002}$	1.0098	$1.010^{+0.014}_{-0.013}$	$f_{2000}^{143}$	35.4	$35^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.0	$17.5^{+8.1}_{-8.1}$	$Y_{\text{P}}$	0.258339	$0.25835^{+0.00020}_{-0.00021}$	$f_{2000}^{143 \times 217}$	36.72	$37^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	80.8	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.259712	$0.25972^{+0.00020}_{-0.00021}$	$f_{2000}^{217}$	109.97	$109.6^{+4.1}_{-4.1}$
$c_{100}$	0.99787	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.782	$2.778^{+0.095}_{-0.089}$	$\chi_{\text{lowTEB}}^2$	10495.4	$10496.6 (\nu: 7.1)$
$c_{217}$	0.99637	$0.9963^{+0.0028}_{-0.0028}$	$\text{Age}/\text{Gyr}$	12.836	$12.834^{+0.079}_{-0.078}$	$\chi_{\text{plik}}^2$	772.2	$785.8 (\nu: 20.4)$
$H_0$	75.84	$75.8^{+2.2}_{-2.2}$	$z_*$	1090.73	$1090.71^{+0.93}_{-0.88}$	$\chi_{\text{prior}}^2$	2.87	$7.61 (\nu: 6.6)$
$\Omega_\Lambda$	0.7333	$0.732^{+0.023}_{-0.025}$	$r_*$	136.95	$136.90^{+0.92}_{-0.94}$	$\chi_{\text{CMB}}^2$	11267.5	$11282.5 (\nu: 15.6)$

Best-fit  $\chi_{\text{eff}}^2 = 11270.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 11290.08$ ;  $R - 1 = 0.00663$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.37 plik\_dx11dr2\_HM\_v18\_TT: 772.19



### 11.32 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnu1

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.023117	$0.02313^{+0.00032}_{-0.00031}$	$A_{100 \times 217}^{\text{dustTE}}$	0.300	$0.30^{+0.17}_{-0.17}$	$10^5 \text{D/H}$	2.785	$2.783^{+0.061}_{-0.059}$
$\Omega_c h^2$	0.13287	$0.1328^{+0.0033}_{-0.0033}$	$A_{143}^{\text{dustTE}}$	0.152	$0.15^{+0.11}_{-0.11}$	Age/Gyr	12.8680	$12.866^{+0.049}_{-0.051}$
$100\theta_{\text{MC}}$	1.03957	$1.03957^{+0.00062}_{-0.00062}$	$A_{143 \times 217}^{\text{dustTE}}$	0.334	$0.33^{+0.16}_{-0.16}$	$z_*$	1091.01	$1090.99^{+0.60}_{-0.59}$
$\tau$	0.1083	$0.110^{+0.034}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$r_*$	136.24	$136.25^{+0.60}_{-0.59}$
$\ln(10^{10} A_s)$	3.180	$3.184^{+0.066}_{-0.067}$	$c_{100}$	0.99803	$0.9980^{+0.0015}_{-0.0015}$	$100\theta_*$	1.03906	$1.03907^{+0.00061}_{-0.00062}$
$n_s$	1.0036	$1.0041^{+0.0098}_{-0.0098}$	$c_{217}$	0.99642	$0.9964^{+0.0028}_{-0.0029}$	$D_A/\text{Gpc}$	13.112	$13.113^{+0.055}_{-0.056}$
$y_{\text{cal}}$	1.00025	$1.0005^{+0.0048}_{-0.0049}$	$H_0$	74.47	$74.5^{+1.5}_{-1.4}$	$z_{\text{drag}}$	1063.29	$1063.33^{+0.59}_{-0.55}$
$A_{217}^{\text{CIB}}$	70.8	$68^{+10}_{-10}$	$\Omega_\Lambda$	0.7176	$0.718^{+0.016}_{-0.016}$	$r_{\text{drag}}$	138.56	$138.56^{+0.59}_{-0.58}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m$	0.2824	$0.282^{+0.016}_{-0.016}$	$k_D$	0.14721	$0.14722^{+0.00067}_{-0.00067}$
$A_{143}^{\text{tSZ}}$	5.62	$4.61^{+3.9}_{-4.1}$	$\Omega_m h^2$	0.15663	$0.1566^{+0.0031}_{-0.0030}$	$100\theta_D$	0.162753	$0.16274^{+0.00035}_{-0.00035}$
$A_{100}^{\text{PS}}$	276	$275^{+50}_{-50}$	$\Omega_m h^3$	0.11664	$0.11666^{+0.00068}_{-0.00069}$	$z_{\text{eq}}$	3286	$3285^{+64}_{-64}$
$A_{143}^{\text{PS}}$	45.4	$50^{+20}_{-20}$	$\sigma_8$	0.8908	$0.892^{+0.028}_{-0.028}$	$k_{\text{eq}}$	0.010682	$0.01068^{+0.00021}_{-0.00021}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4734	$0.474^{+0.019}_{-0.019}$	$100\theta_{\text{eq}}$	0.8364	$0.837^{+0.013}_{-0.013}$
$A_{217}^{\text{PS}}$	92.8	$95^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6494	$0.650^{+0.021}_{-0.022}$	$100\theta_{s,\text{eq}}$	0.4608	$0.4610^{+0.0067}_{-0.0065}$
$A^{\text{kSZ}}$	3.39	—	$\sigma_8/h^{0.5}$	1.0322	$1.034^{+0.033}_{-0.033}$	$r_{\text{drag}}/D_V(0.57)$	0.07307	$0.0731^{+0.0011}_{-0.0010}$
$A_{100}^{\text{dustTT}}$	7.78	$7.78^{+3.6}_{-3.6}$	$\langle d^2 \rangle^{1/2}$	2.490	$2.494^{+0.075}_{-0.077}$	$H(0.57)$	100.22	$100.25^{+0.69}_{-0.65}$
$A_{143}^{\text{dustTT}}$	9.33	$9.32^{+3.6}_{-3.6}$	$z_{\text{re}}$	12.79	$12.9^{+2.6}_{-2.9}$	$D_A(0.57)$	1273.7	$1273^{+16}_{-17}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.6^{+8.1}_{-8.2}$	$10^9 A_s$	2.404	$2.41^{+0.16}_{-0.16}$	$F_{\text{AP}}(0.57)$	0.66849	$0.6684^{+0.0043}_{-0.0043}$
$A_{217}^{\text{dustTT}}$	81.2	$81^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.9353	$1.937^{+0.024}_{-0.024}$	$f\sigma_8(0.57)$	0.5090	$0.510^{+0.016}_{-0.017}$
$A_{100}^{\text{dustEE}}$	0.0833	$0.083^{+0.011}_{-0.011}$	$D_{40}$	1199.5	$1201^{+25}_{-25}$	$\sigma_8(0.57)$	0.6706	$0.672^{+0.022}_{-0.022}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0510	$0.0510^{+0.0097}_{-0.0098}$	$D_{220}$	5721	$5725^{+76}_{-75}$	$f_{2000}^{143}$	34.7	$35^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.098^{+0.064}_{-0.064}$	$D_{810}$	2544.4	$2546^{+26}_{-26}$	$f_{2000}^{143 \times 217}$	36.44	$36.3^{+3.8}_{-3.8}$
$A_{143}^{\text{dustEE}}$	0.1025	$0.103^{+0.014}_{-0.013}$	$D_{1420}$	810.0	$810.9^{+9.1}_{-9.1}$	$f_{2000}^{217}$	109.57	$109.4^{+3.7}_{-3.8}$
$A_{143 \times 217}^{\text{dustEE}}$	0.216	$0.216^{+0.091}_{-0.091}$	$D_{2000}$	226.27	$226.6^{+3.1}_{-3.1}$	$\chi_{\text{lowTEB}}^2$	10495.7	$10496.6 (\nu: 5.0)$
$A_{217}^{\text{dustEE}}$	0.634	$0.63^{+0.26}_{-0.25}$	$n_{s,0.002}$	1.0036	$1.0041^{+0.0098}_{-0.0098}$	$\chi_{\text{plik}}^2$	2455.7	$2474.5 (\nu: 26.9)$
$A_{100}^{\text{dustTE}}$	0.140	$0.140^{+0.074}_{-0.075}$	$Y_P$	0.258332	$0.25834^{+0.00013}_{-0.00014}$	$\chi_{\text{prior}}^2$	9.04	$21 (\nu: 16.8)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.056}_{-0.057}$	$Y_P^{\text{BBN}}$	0.259704	$0.25971^{+0.00013}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12951.4	$12971.2 (\nu: 23.6)$

Best-fit  $\chi_{\text{eff}}^2 = 12960.48$ ;  $\bar{\chi}_{\text{eff}}^2 = 12992.28$ ;  $R - 1 = 0.00975$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.71 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2455.73

### 11.33 base\_nnu\_plikHM\_TT\_lowTEB\_nnup39\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022503	$0.02249^{+0.00039}_{-0.00039}$	$\Omega_m h^3$	0.10380	$0.10376^{+0.00094}_{-0.00097}$	$k_D$	0.14315	$0.14309^{+0.00087}_{-0.00090}$
$\Omega_c h^2$	0.12532	$0.1252^{+0.0027}_{-0.0026}$	$\sigma_8$	0.8522	$0.851^{+0.030}_{-0.029}$	$100\theta_D$	0.16178	$0.16180^{+0.00052}_{-0.00050}$
$100\theta_{MC}$	1.04035	$1.04036^{+0.00082}_{-0.00081}$	$\sigma_8 \Omega_m^{0.5}$	0.4697	$0.468^{+0.020}_{-0.020}$	$z_{eq}$	3357	$3354^{+59}_{-57}$
$\tau$	0.0855	$0.085^{+0.036}_{-0.036}$	$\sigma_8 \Omega_m^{0.25}$	0.6327	$0.631^{+0.024}_{-0.023}$	$k_{eq}$	0.010510	$0.01050^{+0.00019}_{-0.00018}$
$\ln(10^{10} A_s)$	3.119	$3.117^{+0.071}_{-0.070}$	$\sigma_8/h^{0.5}$	1.0192	$1.017^{+0.036}_{-0.036}$	$100\theta_{eq}$	0.8217	$0.822^{+0.011}_{-0.011}$
$n_s$	0.9799	$0.9799^{+0.0089}_{-0.0089}$	$\langle d^2 \rangle^{1/2}$	2.493	$2.489^{+0.085}_{-0.086}$	$100\theta_{s,eq}$	0.4537	$0.4540^{+0.0056}_{-0.0057}$
$y_{cal}$	1.00048	$1.0004^{+0.0050}_{-0.0048}$	$z_{re}$	10.77	$10.6^{+3.0}_{-3.4}$	$r_{drag}/D_V(0.57)$	0.07194	$0.07198^{+0.00086}_{-0.00086}$
$A_{217}^{CIB}$	68.8	$66^{+10}_{-10}$	$10^9 A_s$	2.263	$2.26^{+0.16}_{-0.15}$	$H(0.57)$	95.66	$95.67^{+0.57}_{-0.55}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.9074	$1.906^{+0.024}_{-0.023}$	$D_A(0.57)$	1345.5	$1345^{+15}_{-15}$
$A_{143}^{tSZ}$	6.76	$4.70^{+3.8}_{-3.7}$	$D_{40}$	1221.8	$1222^{+26}_{-26}$	$F_{AP}(0.57)$	0.67405	$0.6739^{+0.0039}_{-0.0038}$
$A_{100}^{PS}$	261	$266^{+50}_{-50}$	$D_{220}$	5717	$5716^{+79}_{-79}$	$f\sigma_8(0.57)$	0.4933	$0.492^{+0.018}_{-0.018}$
$A_{143}^{PS}$	43.5	$48^{+20}_{-20}$	$D_{810}$	2540.8	$2540^{+28}_{-27}$	$\sigma_8(0.57)$	0.6359	$0.635^{+0.023}_{-0.022}$
$A_{143 \times 217}^{PS}$	34.8	$40^{+20}_{-20}$	$D_{1420}$	813.0	$813^{+10}_{-9.8}$	$f_{2000}^{143}$	32.1	$33^{+6}_{-6}$
$A_{217}^{PS}$	97.5	$97^{+20}_{-20}$	$D_{2000}$	228.56	$228.4^{+3.6}_{-3.5}$	$f_{2000}^{143 \times 217}$	34.39	$35^{+4}_{-4}$
$A^{kSZ}$	0.6	—	$n_{s,0.002}$	0.9799	$0.9799^{+0.0089}_{-0.0089}$	$f_{2000}^{217}$	107.79	$107.9^{+3.8}_{-3.9}$
$A_{100}^{dustTT}$	7.45	$7.52^{+3.7}_{-3.7}$	$Y_P$	0.250603	$0.25060^{+0.00017}_{-0.00017}$	$\chi_{lowTEB}^2$	10495.24	$10495.9 (\nu: 2.8)$
$A_{143}^{dustTT}$	9.04	$9.06^{+3.6}_{-3.6}$	$Y_P^{BBN}$	0.251949	$0.25194^{+0.00017}_{-0.00018}$	$\chi_{plik}^2$	766.5	$779.6 (\nu: 16.0)$
$A_{143 \times 217}^{dustTT}$	17.8	$17.3^{+8.2}_{-8.1}$	$10^5 D/H$	2.700	$2.702^{+0.077}_{-0.075}$	$\chi_{6DF}^2$	0.000	$0.043 (\nu: 0.0)$
$A_{217}^{dustTT}$	82.0	$82^{+10}_{-10}$	Age/Gyr	13.432	$13.432^{+0.055}_{-0.055}$	$\chi_{MGS}^2$	1.68	$1.81 (\nu: 0.2)$
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1090.59	$1090.60^{+0.62}_{-0.61}$	$\chi_{DR11CMass}^2$	2.50	$3.00 (\nu: 0.3)$
$c_{217}$	0.99617	$0.9961^{+0.0029}_{-0.0028}$	$r_*$	141.12	$141.16^{+0.62}_{-0.61}$	$\chi_{DR11LOWZ}^2$	0.28	$0.39 (\nu: 0.1)$
$H_0$	69.91	$70.0^{+1.2}_{-1.2}$	$100\theta_*$	1.04028	$1.04029^{+0.00082}_{-0.00080}$	$\chi_{prior}^2$	2.13	$7.49 (\nu: 6.5)$
$\Omega_\Lambda$	0.6963	$0.697^{+0.015}_{-0.015}$	$D_A/Gpc$	13.566	$13.569^{+0.060}_{-0.060}$	$\chi_{CMB}^2$	11261.8	$11275.5 (\nu: 14.5)$
$\Omega_m$	0.3037	$0.303^{+0.015}_{-0.015}$	$z_{drag}$	1060.92	$1060.89^{+0.87}_{-0.89}$	$\chi_{BAO}^2$	4.46	$5.24 (\nu: 0.7)$
$\Omega_m h^2$	0.14847	$0.1483^{+0.0026}_{-0.0025}$	$r_{drag}$	143.69	$143.74^{+0.67}_{-0.66}$			

Best-fit  $\chi_{eff}^2 = 11268.34$ ;  $\bar{\chi}_{eff}^2 = 11288.24$ ;  $R - 1 = 0.00687$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.68 DR11CMass: 2.50 DR11LOWZ: 0.28 CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.25 plik\_dx11dr2\_HM\_v18\_TT: 766.51

### 11.34 base\_nnu\_plikHM\_TT\_lowTEB\_nnup39\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022477	$0.02247^{+0.00038}_{-0.00039}$	$\sigma_8$	0.8335	$0.833^{+0.018}_{-0.018}$	$z_{\text{eq}}$	3341	$3339^{+54}_{-54}$
$\Omega_c h^2$	0.12467	$0.1246^{+0.0025}_{-0.0025}$	$\sigma_8 \Omega_m^{0.5}$	0.4569	$0.456^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010462	$0.01045^{+0.00017}_{-0.00017}$
$100\theta_{\text{MC}}$	1.04041	$1.04042^{+0.00083}_{-0.00082}$	$\sigma_8 \Omega_m^{0.25}$	0.6171	$0.617^{+0.014}_{-0.014}$	$100\theta_{\text{eq}}$	0.8245	$0.825^{+0.010}_{-0.010}$
$\tau$	0.0669	$0.067^{+0.026}_{-0.025}$	$\sigma_8/h^{0.5}$	0.9953	$0.995^{+0.021}_{-0.022}$	$100\theta_{\text{s,eq}}$	0.4551	$0.4554^{+0.0053}_{-0.0052}$
$\ln(10^{10} A_s)$	3.0797	$3.079^{+0.048}_{-0.048}$	$\langle d^2 \rangle^{1/2}$	2.438	$2.435^{+0.050}_{-0.050}$	$r_{\text{drag}}/D_V(0.57)$	0.07214	$0.07217^{+0.00082}_{-0.00079}$
$n_s$	0.9800	$0.9805^{+0.0087}_{-0.0085}$	$z_{\text{re}}$	9.04	$8.98^{+2.5}_{-2.5}$	$H(0.57)$	95.72	$95.73^{+0.56}_{-0.55}$
$y_{\text{cal}}$	1.00019	$1.0002^{+0.0051}_{-0.0048}$	$10^9 A_s$	2.175	$2.17^{+0.11}_{-0.10}$	$D_A(0.57)$	1342.9	$1343^{+14}_{-14}$
$A_{217}^{\text{CIB}}$	69.2	$67^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.9026	$1.902^{+0.023}_{-0.023}$	$F_{\text{AP}}(0.57)$	0.67320	$0.6731^{+0.0035}_{-0.0036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1212.4	$1212^{+23}_{-22}$	$f\sigma_8(0.57)$	0.4816	$0.481^{+0.010}_{-0.011}$
$A_{143}^{\text{tSZ}}$	6.07	$4.54^{+3.9}_{-3.7}$	$D_{220}$	5715	$5712^{+76}_{-77}$	$\sigma_8(0.57)$	0.6228	$0.623^{+0.015}_{-0.014}$
$A_{100}^{\text{PS}}$	266	$269^{+50}_{-60}$	$D_{810}$	2538.2	$2538^{+27}_{-27}$	$f_{2000}^{143}$	33.4	$33^{+5}_{-5}$
$A_{143}^{\text{PS}}$	44.1	$49^{+20}_{-20}$	$D_{1420}$	812.2	$812.3^{+9.5}_{-9.9}$	$f_{2000}^{143 \times 217}$	35.24	$35.2^{+3.8}_{-3.7}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$D_{2000}$	227.75	$227.8^{+3.3}_{-3.4}$	$f_{2000}^{217}$	108.53	$108.5^{+3.7}_{-3.8}$
$A_{217}^{\text{PS}}$	95.3	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9800	$0.9805^{+0.0087}_{-0.0085}$	$\chi_{\text{lensing}}^2$	9.94	$10.5 (\nu: 1.4)$
$A^{\text{kSZ}}$	2.26	—	$Y_{\text{P}}$	0.250592	$0.25059^{+0.00017}_{-0.00018}$	$\chi_{\text{lowTEB}}^2$	10493.58	$10493.92 (\nu: 0.4)$
$A_{100}^{\text{dustTT}}$	7.58	$7.55^{+3.6}_{-3.8}$	$Y_{\text{P}}^{\text{BBN}}$	0.251938	$0.25193^{+0.00017}_{-0.00018}$	$\chi_{\text{plik}}^2$	769.0	$782.1 (\nu: 15.0)$
$A_{143}^{\text{dustTT}}$	9.19	$9.11^{+3.7}_{-3.8}$	$10^5 D/H$	2.705	$2.707^{+0.078}_{-0.073}$	$\chi_{\text{H070p6}}^2$	0.019	$0.044 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.4^{+8.6}_{-8.3}$	Age/Gyr	13.430	$13.430^{+0.056}_{-0.054}$	$\chi_{\text{JLA}}^2$	706.527	$706.564 (\nu: 0.0)$
$A_{217}^{\text{dustTT}}$	81.5	$82^{+10}_{-10}$	$z_*$	1090.57	$1090.58^{+0.60}_{-0.58}$	$\chi_{6\text{DF}}^2$	0.008	$0.047 (\nu: 0.0)$
$c_{100}$	0.99791	$0.9979^{+0.0016}_{-0.0016}$	$r_*$	141.30	$141.33^{+0.60}_{-0.58}$	$\chi_{\text{MGS}}^2$	1.97	$2.08 (\nu: 0.2)$
$c_{217}$	0.99621	$0.9962^{+0.0028}_{-0.0029}$	$100\theta_*$	1.04033	$1.04035^{+0.00083}_{-0.00080}$	$\chi_{\text{DR11CMass}}^2$	2.73	$3.18 (\nu: 0.4)$
$H_0$	70.14	$70.2^{+1.1}_{-1.1}$	$D_A/\text{Gpc}$	13.582	$13.585^{+0.058}_{-0.056}$	$\chi_{\text{DR11LOWZ}}^2$	0.130	$0.23 (\nu: 0.0)$
$\Omega_\Lambda$	0.6996	$0.700^{+0.014}_{-0.014}$	$z_{\text{drag}}$	1060.81	$1060.79^{+0.82}_{-0.90}$	$\chi_{\text{prior}}^2$	2.50	$7.65 (\nu: 6.6)$
$\Omega_m$	0.3004	$0.300^{+0.014}_{-0.014}$	$r_{\text{drag}}$	143.88	$143.92^{+0.63}_{-0.62}$	$\chi_{\text{CMB}}^2$	11272.5	$11286.5 (\nu: 14.9)$
$\Omega_m h^2$	0.14780	$0.1477^{+0.0024}_{-0.0024}$	$k_{\text{D}}$	0.14292	$0.14287^{+0.00085}_{-0.00086}$	$\chi_{\text{BAO}}^2$	4.83	$5.53 (\nu: 1.0)$
$\Omega_m h^3$	0.10366	$0.10363^{+0.00093}_{-0.0010}$	$100\theta_{\text{D}}$	0.16184	$0.16187^{+0.00052}_{-0.00049}$			

Best-fit  $\chi_{\text{eff}}^2 = 11986.36$ ;  $\bar{\chi}_{\text{eff}}^2 = 12006.31$ ;  $R - 1 = 0.02151$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.97 DR11CMass: 2.73 DR11LOWZ: 0.13 CMB - smica\_g30\_ftl\_full\_pp: 9.94 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.58 plik\_dx11dr2\_HM\_v18\_TT: 768.96 Hubble - H070p6: 0.02 SN - JLA December\_2013: 706.53

### 11.35 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnp39\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022587	$0.02258^{+0.00027}_{-0.00027}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.15}_{-0.16}$	$100\theta_*$	1.04011	$1.04013^{+0.00058}_{-0.00057}$
$\Omega_c h^2$	0.12543	$0.1253^{+0.0022}_{-0.0022}$	$A_{217}^{\text{dustTE}}$	1.669	$1.67^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.5594	$13.562^{+0.045}_{-0.046}$
$100\theta_{\text{MC}}$	1.04021	$1.04022^{+0.00058}_{-0.00058}$	$c_{100}$	0.99816	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1061.12	$1061.11^{+0.55}_{-0.55}$
$\tau$	0.0905	$0.090^{+0.031}_{-0.032}$	$c_{217}$	0.99612	$0.9961^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	143.578	$143.61^{+0.48}_{-0.49}$
$\ln(10^{10} A_s)$	3.129	$3.128^{+0.062}_{-0.064}$	$H_0$	69.90	$69.94^{+0.98}_{-0.98}$	$k_D$	0.14334	$0.14330^{+0.00058}_{-0.00059}$
$n_s$	0.9795	$0.9795^{+0.0080}_{-0.0080}$	$\Omega_\Lambda$	0.6957	$0.696^{+0.012}_{-0.013}$	$100\theta_D$	0.161635	$0.16165^{+0.00034}_{-0.00033}$
$y_{\text{cal}}$	1.00022	$1.0004^{+0.0047}_{-0.0048}$	$\Omega_m$	0.3043	$0.304^{+0.013}_{-0.012}$	$z_{\text{eq}}$	3361.2	$3358^{+48}_{-47}$
$A_{217}^{\text{CIB}}$	68.5	$66^{+10}_{-10}$	$\Omega_m h^2$	0.14866	$0.1485^{+0.0021}_{-0.0021}$	$k_{\text{eq}}$	0.010524	$0.01052^{+0.00015}_{-0.00015}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^3$	0.10391	$0.10388^{+0.00061}_{-0.00060}$	$100\theta_{\text{eq}}$	0.8210	$0.8216^{+0.0092}_{-0.0092}$
$A_{143}^{\text{tSZ}}$	7.14	$5.06^{+3.8}_{-3.8}$	$\sigma_8$	0.8563	$0.855^{+0.026}_{-0.027}$	$100\theta_{s,\text{eq}}$	0.45325	$0.4535^{+0.0047}_{-0.0047}$
$A_{100}^{\text{PS}}$	262	$267^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4723	$0.471^{+0.017}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.07188	$0.07192^{+0.00073}_{-0.00072}$
$A_{143}^{\text{PS}}$	42.1	$46^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6360	$0.635^{+0.021}_{-0.021}$	$H(0.57)$	95.677	$95.69^{+0.45}_{-0.44}$
$A_{143 \times 217}^{\text{PS}}$	35	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0242	$1.023^{+0.032}_{-0.032}$	$D_A(0.57)$	1345.5	$1345^{+13}_{-12}$
$A_{217}^{\text{PS}}$	97.9	$97^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.507	$2.504^{+0.076}_{-0.077}$	$F_{\text{AP}}(0.57)$	0.67420	$0.6741^{+0.0033}_{-0.0032}$
$A^{\text{kSZ}}$	0.0	—	$z_{\text{re}}$	11.18	$11.1^{+2.8}_{-2.9}$	$f\sigma_8(0.57)$	0.4958	$0.495^{+0.016}_{-0.016}$
$A_{100}^{\text{dustTT}}$	7.56	$7.58^{+3.6}_{-3.7}$	$10^9 A_s$	2.286	$2.28^{+0.14}_{-0.14}$	$\sigma_8(0.57)$	0.6388	$0.638^{+0.020}_{-0.020}$
$A_{143}^{\text{dustTT}}$	9.10	$9.09^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.9078	$1.907^{+0.022}_{-0.022}$	$f_{2000}^{143}$	31.3	$32^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.2}_{-8.2}$	$D_{40}$	1225.7	$1226^{+25}_{-25}$	$f_{2000}^{143 \times 217}$	33.80	$33.9^{+3.7}_{-3.7}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{220}$	5725	$5726^{+75}_{-77}$	$f_{2000}^{217}$	107.20	$107.3^{+3.6}_{-3.6}$
$A_{100}^{\text{dustEE}}$	0.0818	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2540.3	$2540^{+26}_{-26}$	$\chi_{\text{lowTEB}}^2$	10496.13	$10496.6 (\nu: 3.0)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0495	$0.0496^{+0.0098}_{-0.0097}$	$D_{1420}$	813.0	$813.0^{+9.0}_{-9.0}$	$\chi_{\text{plik}}^2$	2437.3	$2455.7 (\nu: 23.0)$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.099^{+0.064}_{-0.065}$	$D_{2000}$	228.81	$228.8^{+3.1}_{-3.0}$	$\chi_{6\text{DF}}^2$	0.001	$0.030 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	0.1010	$0.101^{+0.014}_{-0.013}$	$n_{s,0.002}$	0.9795	$0.9795^{+0.0080}_{-0.0080}$	$\chi_{\text{MGS}}^2$	1.61	$1.72 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.221	$0.221^{+0.092}_{-0.091}$	$Y_{\text{P}}$	0.250640	$0.25064^{+0.00012}_{-0.00012}$	$\chi_{\text{DR11CMAS}}^2$	2.48	$2.83 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.645	$0.64^{+0.25}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.251986	$0.25198^{+0.00012}_{-0.00012}$	$\chi_{\text{DR11LOWZ}}^2$	0.33	$0.40 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	0.141	$0.140^{+0.074}_{-0.076}$	$10^5 D/H$	2.684	$2.685^{+0.053}_{-0.051}$	$\chi_{\text{prior}}^2$	7.29	$19.9 (\nu: 15.5)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.057}$	$\text{Age}/\text{Gyr}$	13.4284	$13.428^{+0.041}_{-0.041}$	$\chi_{\text{CMB}}^2$	12933.5	$12952.3 (\nu: 21.5)$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.17}$	$z_*$	1090.494	$1090.49^{+0.47}_{-0.45}$	$\chi_{\text{BAO}}^2$	4.42	$4.98 (\nu: 0.3)$
$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	$r_*$	141.033	$141.07^{+0.47}_{-0.48}$			

Best-fit  $\chi_{\text{eff}}^2 = 12945.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 12977.16$ ;  $R - 1 = 0.00677$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMAS: 2.48 DR11LOWZ: 0.33 CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10496.12 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2437.34

### 11.36 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnup39\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022590	$0.02257^{+0.00027}_{-0.00027}$	$A_{217}^{dustTE}$	1.67	$1.67^{+0.50}_{-0.50}$	$z_{drag}$	1061.08	$1061.06^{+0.59}_{-0.54}$
$\Omega_c h^2$	0.12483	$0.1248^{+0.0022}_{-0.0021}$	$c_{100}$	0.99811	$0.9981^{+0.0016}_{-0.0014}$	$r_{drag}$	143.723	$143.74^{+0.49}_{-0.45}$
$100\theta_{MC}$	1.04030	$1.04027^{+0.00061}_{-0.00056}$	$c_{217}$	0.99634	$0.9962^{+0.0027}_{-0.0028}$	$k_D$	0.14318	$0.14316^{+0.00059}_{-0.00058}$
$\tau$	0.0684	$0.068^{+0.024}_{-0.025}$	$H_0$	70.14	$70.11^{+0.94}_{-0.95}$	$100\theta_D$	0.161664	$0.16168^{+0.00033}_{-0.00034}$
$\ln(10^{10} A_s)$	3.0826	$3.082^{+0.044}_{-0.045}$	$\Omega_\Lambda$	0.6990	$0.699^{+0.011}_{-0.012}$	$z_{eq}$	3347.6	$3348^{+45}_{-49}$
$n_s$	0.9801	$0.9798^{+0.0079}_{-0.0078}$	$\Omega_m$	0.3010	$0.301^{+0.012}_{-0.011}$	$k_{eq}$	0.010481	$0.01048^{+0.00014}_{-0.00015}$
$y_{cal}$	0.9999	$1.0001^{+0.0048}_{-0.0052}$	$\Omega_m h^2$	0.14807	$0.1481^{+0.0020}_{-0.0022}$	$100\theta_{eq}$	0.8236	$0.8236^{+0.0089}_{-0.0090}$
$A_{217}^{CIB}$	69.7	$67^{+10}_{-10}$	$\Omega_m h^3$	0.10385	$0.10381^{+0.00061}_{-0.00061}$	$100\theta_{s,eq}$	0.45459	$0.4546^{+0.0046}_{-0.0046}$
$\xi^{tSZ \times CIB}$	0.00	—	$\sigma_8$	0.8347	$0.835^{+0.017}_{-0.017}$	$r_{drag}/D_V(0.57)$	0.07208	$0.07207^{+0.00069}_{-0.00070}$
$A_{143}^{tSZ}$	6.87	$4.93^{+3.9}_{-3.7}$	$\sigma_8 \Omega_m^{0.5}$	0.4579	$0.458^{+0.011}_{-0.012}$	$H(0.57)$	95.768	$95.75^{+0.45}_{-0.43}$
$A_{100}^{PS}$	265	$270^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6183	$0.618^{+0.013}_{-0.014}$	$D_A(0.57)$	1342.6	$1343^{+12}_{-12}$
$A_{143}^{PS}$	42.6	$47^{+20}_{-10}$	$\sigma_8/h^{0.5}$	0.9967	$0.997^{+0.020}_{-0.020}$	$F_{AP}(0.57)$	0.67334	$0.6734^{+0.0031}_{-0.0030}$
$A_{143 \times 217}^{PS}$	34	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4418	$2.442^{+0.047}_{-0.050}$	$f\sigma_8(0.57)$	0.4824	$0.4825^{+0.0096}_{-0.010}$
$A_{217}^{PS}$	95.2	$95^{+20}_{-20}$	$z_{re}$	9.15	$9.10^{+2.1}_{-2.5}$	$\sigma_8(0.57)$	0.6236	$0.623^{+0.014}_{-0.015}$
$A^{kSZ}$	0.99	—	$10^9 A_s$	2.182	$2.182^{+0.098}_{-0.096}$	$f_{2000}^{143}$	32.3	$33^{+5}_{-5}$
$A_{100}^{dustTT}$	7.58	$7.62^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.9027	$1.903^{+0.022}_{-0.022}$	$f_{2000}^{143 \times 217}$	34.58	$34.7^{+3.6}_{-3.5}$
$A_{143}^{dustTT}$	9.28	$9.31^{+3.6}_{-3.6}$	$D_{40}$	1213.1	$1214^{+22}_{-23}$	$f_{2000}^{217}$	107.78	$107.9^{+3.6}_{-3.5}$
$A_{143 \times 217}^{dustTT}$	18.2	$17.5^{+8.2}_{-8.3}$	$D_{220}$	5721	$5722^{+78}_{-84}$	$\chi_{lensing}^2$	10.57	11.2 ( $\nu$ : 2.2)
$A_{217}^{dustTT}$	82.0	$81^{+10}_{-10}$	$D_{810}$	2538.1	$2538^{+28}_{-28}$	$\chi_{lowTEB}^2$	10493.68	10494.07 ( $\nu$ : 0.4)
$A_{100}^{dustEE}$	0.0821	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	812.7	$812.7^{+8.9}_{-10}$	$\chi_{plik}^2$	2441.6	2459.4 ( $\nu$ : 21.9)
$A_{100 \times 143}^{dustEE}$	0.0499	$0.0498^{+0.0095}_{-0.0098}$	$D_{2000}$	228.19	$228.1^{+2.7}_{-3.1}$	$\chi_{H070p6}^2$	0.019	0.042 ( $\nu$ : 0.0)
$A_{100 \times 217}^{dustEE}$	0.099	$0.098^{+0.063}_{-0.066}$	$n_{s,0.002}$	0.9801	$0.9798^{+0.0079}_{-0.0078}$	$\chi_{JLA}^2$	706.533	706.568 ( $\nu$ : 0.0)
$A_{143}^{dustEE}$	0.1012	$0.101^{+0.014}_{-0.013}$	$Y_P$	0.250642	$0.25063^{+0.00012}_{-0.00012}$	$\chi_{6DF}^2$	0.004	0.031 ( $\nu$ : 0.0)
$A_{143 \times 217}^{dustEE}$	0.221	$0.221^{+0.095}_{-0.099}$	$Y_P^{BBN}$	0.251987	$0.25198^{+0.00012}_{-0.00012}$	$\chi_{MGS}^2$	1.89	1.93 ( $\nu$ : 0.1)
$A_{217}^{dustEE}$	0.645	$0.64^{+0.25}_{-0.26}$	$10^5 D/H$	2.683	$2.686^{+0.051}_{-0.055}$	$\chi_{DR11CMass}^2$	2.66	2.94 ( $\nu$ : 0.2)
$A_{100}^{dustTE}$	0.142	$0.139^{+0.076}_{-0.075}$	Age/Gyr	13.4228	$13.425^{+0.040}_{-0.040}$	$\chi_{DR11LOWZ}^2$	0.164	0.27 ( $\nu$ : 0.0)
$A_{100 \times 143}^{dustTE}$	0.131	$0.134^{+0.060}_{-0.058}$	$z_*$	1090.437	$1090.46^{+0.47}_{-0.46}$	$\chi_{prior}^2$	7.83	20 ( $\nu$ : 16.2)
$A_{100 \times 217}^{dustTE}$	0.303	$0.30^{+0.16}_{-0.15}$	$r_*$	141.176	$141.18^{+0.47}_{-0.46}$	$\chi_{CMB}^2$	12945.9	12964.7 ( $\nu$ : 21.2)
$A_{143}^{dustTE}$	0.155	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	1.04021	$1.04018^{+0.00057}_{-0.00059}$	$\chi_{BAO}^2$	4.72	5.17 ( $\nu$ : 0.5)
$A_{143 \times 217}^{dustTE}$	0.339	$0.34^{+0.16}_{-0.16}$	$D_A/Gpc$	13.5719	$13.573^{+0.044}_{-0.043}$			

Best-fit  $\chi_{eff}^2 = 13664.99$ ;  $\bar{\chi}_{eff}^2 = 13696.86$ ;  $R - 1 = 0.04442$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.89 DR11CMass: 2.66 DR11LOWZ: 0.16 CMB - smica\_g30\_ftl\_full\_pp: 10.57 lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.68

**11.37 base\_nnu\_plikHM\_TT\_lowTEB\_nnup57\_BAO**

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022596	$0.02260^{+0.00040}_{-0.00039}$	$\Omega_m h^3$	0.10743	$0.1074^{+0.0010}_{-0.00097}$	$k_D$	0.14431	$0.14432^{+0.00086}_{-0.00085}$
$\Omega_c h^2$	0.12804	$0.1280^{+0.0027}_{-0.0026}$	$\sigma_8$	0.8606	$0.861^{+0.031}_{-0.031}$	$100\theta_D$	0.16218	$0.16218^{+0.00051}_{-0.00051}$
$100\theta_{MC}$	1.04010	$1.04011^{+0.00082}_{-0.00083}$	$\sigma_8 \Omega_m^{0.5}$	0.4713	$0.471^{+0.020}_{-0.020}$	$z_{eq}$	3344	$3343^{+57}_{-56}$
$\tau$	0.0869	$0.087^{+0.036}_{-0.036}$	$\sigma_8 \Omega_m^{0.25}$	0.6369	$0.637^{+0.024}_{-0.024}$	$k_{eq}$	0.010589	$0.01059^{+0.00018}_{-0.00018}$
$\ln(10^{10} A_s)$	3.127	$3.127^{+0.070}_{-0.072}$	$\sigma_8/h^{0.5}$	1.0212	$1.021^{+0.037}_{-0.037}$	$100\theta_{eq}$	0.8243	$0.824^{+0.011}_{-0.011}$
$n_s$	0.9853	$0.9856^{+0.0089}_{-0.0088}$	$\langle d^2 \rangle^{1/2}$	2.488	$2.487^{+0.086}_{-0.088}$	$100\theta_{s,eq}$	0.4550	$0.4550^{+0.0055}_{-0.0055}$
$y_{cal}$	1.00031	$1.0004^{+0.0049}_{-0.0049}$	$z_{re}$	10.94	$10.9^{+3.2}_{-3.3}$	$r_{drag}/D_V(0.57)$	0.07212	$0.07213^{+0.00086}_{-0.00083}$
$A_{217}^{CIB}$	69.4	$67^{+10}_{-10}$	$10^9 A_s$	2.282	$2.28^{+0.16}_{-0.16}$	$H(0.57)$	96.89	$96.90^{+0.59}_{-0.57}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.9178	$1.918^{+0.023}_{-0.023}$	$D_A(0.57)$	1326.5	$1326^{+15}_{-15}$
$A_{143}^{tSZ}$	5.54	$4.44^{+3.7}_{-4.1}$	$D_{40}$	1215.5	$1216^{+26}_{-26}$	$F_{AP}(0.57)$	0.67307	$0.6730^{+0.0037}_{-0.0037}$
$A_{100}^{PS}$	270	$271^{+50}_{-60}$	$D_{220}$	5713	$5715^{+79}_{-79}$	$f\sigma_8(0.57)$	0.4971	$0.497^{+0.018}_{-0.018}$
$A_{143}^{PS}$	45.2	$50^{+20}_{-20}$	$D_{810}$	2541.4	$2542^{+27}_{-27}$	$\sigma_8(0.57)$	0.6432	$0.643^{+0.023}_{-0.023}$
$A_{143 \times 217}^{PS}$	33	$40^{+20}_{-20}$	$D_{1420}$	811.1	$811.5^{+9.9}_{-9.7}$	$f_{2000}^{143}$	33.9	$34^{+6}_{-6}$
$A_{217}^{PS}$	94.6	$96^{+20}_{-20}$	$D_{2000}$	227.30	$227.4^{+3.6}_{-3.6}$	$f_{2000}^{143 \times 217}$	35.59	$36^{+4}_{-4}$
$A^{kSZ}$	2.82	—	$n_{s,0.002}$	0.9853	$0.9856^{+0.0089}_{-0.0088}$	$f_{2000}^{217}$	108.87	$108.8^{+3.9}_{-4.0}$
$A_{100}^{dustTT}$	7.49	$7.58^{+3.7}_{-3.7}$	$Y_P$	0.252920	$0.25292^{+0.00018}_{-0.00017}$	$\chi_{lowTEB}^2$	10494.71	$10495.4 (\nu: 2.8)$
$A_{143}^{dustTT}$	9.07	$9.09^{+3.6}_{-3.6}$	$Y_P^{BBN}$	0.254273	$0.25428^{+0.00018}_{-0.00017}$	$\chi_{plik}^2$	769.0	$782.1 (\nu: 16.6)$
$A_{143 \times 217}^{dustTT}$	17.2	$17.3^{+8.2}_{-8.3}$	$10^5 D/H$	2.743	$2.742^{+0.078}_{-0.078}$	$\chi_{6DF}^2$	0.007	$0.049 (\nu: 0.0)$
$A_{217}^{dustTT}$	81.3	$82^{+10}_{-10}$	Age/Gyr	13.270	$13.269^{+0.056}_{-0.056}$	$\chi_{MGS}^2$	1.97	$2.05 (\nu: 0.2)$
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1090.87	$1090.86^{+0.62}_{-0.62}$	$\chi_{DR11CMass}^2$	2.73	$3.19 (\nu: 0.5)$
$c_{217}$	0.99626	$0.9962^{+0.0029}_{-0.0028}$	$r_*$	139.58	$139.58^{+0.59}_{-0.59}$	$\chi_{DR11LOWZ}^2$	0.134	$0.26 (\nu: 0.1)$
$H_0$	71.02	$71.0^{+1.2}_{-1.2}$	$100\theta_*$	1.03991	$1.03991^{+0.00082}_{-0.00082}$	$\chi_{prior}^2$	2.43	$7.48 (\nu: 6.6)$
$\Omega_\Lambda$	0.7001	$0.700^{+0.014}_{-0.015}$	$D_A/Gpc$	13.423	$13.423^{+0.057}_{-0.058}$	$\chi_{CMB}^2$	11263.7	$11277.6 (\nu: 15.3)$
$\Omega_m$	0.2999	$0.300^{+0.015}_{-0.014}$	$z_{drag}$	1061.46	$1061.48^{+0.85}_{-0.86}$	$\chi_{BAO}^2$	4.84	$5.55 (\nu: 1.1)$
$\Omega_m h^2$	0.15128	$0.1513^{+0.0026}_{-0.0025}$	$r_{drag}$	142.11	$142.10^{+0.63}_{-0.63}$			

 Best-fit  $\chi_{eff}^2 = 11270.95$ ;  $\bar{\chi}_{eff}^2 = 11290.61$ ;  $R - 1 = 0.00564$ 
 $\chi_{eff}^2$ : BAO - 6DF: 0.01 MGS: 1.97 DR11CMass: 2.73 DR11LOWZ: 0.13 CMB - lowL\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.71 plik\_dx11dr2\_HM\_v18\_TT: 768.98

### 11.38 base\_nnu\_plikHM\_TT\_lowTEB\_nnup57\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022551	$0.02257^{+0.00040}_{-0.00040}$	$\sigma_8$	0.8401	$0.841^{+0.019}_{-0.019}$	$z_{\text{eq}}$	3330	$3330^{+52}_{-54}$
$\Omega_c h^2$	0.12747	$0.1274^{+0.0025}_{-0.0026}$	$\sigma_8 \Omega_m^{0.5}$	0.4582	$0.458^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010546	$0.01055^{+0.00017}_{-0.00017}$
$100\theta_{\text{MC}}$	1.04011	$1.04015^{+0.00079}_{-0.00075}$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.621^{+0.014}_{-0.014}$	$100\theta_{\text{eq}}$	0.8267	$0.827^{+0.010}_{-0.010}$
$\tau$	0.0663	$0.066^{+0.026}_{-0.026}$	$\sigma_8/h^{0.5}$	0.9958	$0.996^{+0.022}_{-0.022}$	$100\theta_{\text{s,eq}}$	0.4562	$0.4563^{+0.0055}_{-0.0052}$
$\ln(10^{10} A_s)$	3.0833	$3.084^{+0.047}_{-0.049}$	$\langle d^2 \rangle^{1/2}$	2.4288	$2.428^{+0.050}_{-0.048}$	$r_{\text{drag}}/D_V(0.57)$	0.07228	$0.07231^{+0.00083}_{-0.00078}$
$n_s$	0.9852	$0.9857^{+0.0088}_{-0.0088}$	$z_{\text{re}}$	9.03	$8.97^{+2.5}_{-2.5}$	$H(0.57)$	96.91	$96.95^{+0.58}_{-0.59}$
$y_{\text{cal}}$	0.99960	$1.0001^{+0.0049}_{-0.0048}$	$10^9 A_s$	2.183	$2.19^{+0.11}_{-0.11}$	$D_A(0.57)$	1324.9	$1324^{+14}_{-15}$
$A_{217}^{\text{CIB}}$	70.1	$68^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.9121	$1.914^{+0.022}_{-0.022}$	$F_{\text{AP}}(0.57)$	0.67243	$0.6723^{+0.0035}_{-0.0035}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1204.8	$1206^{+23}_{-22}$	$f\sigma_8(0.57)$	0.4845	$0.485^{+0.011}_{-0.011}$
$A_{143}^{\text{tSZ}}$	5.12	< 7.68	$D_{220}$	5705	$5711^{+79}_{-76}$	$\sigma_8(0.57)$	0.6285	$0.629^{+0.015}_{-0.015}$
$A_{100}^{\text{PS}}$	273	$275^{+50}_{-60}$	$D_{810}$	2536.9	$2540^{+27}_{-26}$	$f_{2000}^{143}$	35.0	$35^{+6}_{-5}$
$A_{143}^{\text{PS}}$	45.8	$51^{+10}_{-10}$	$D_{1420}$	809.6	$811^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	36.48	$36^{+4}_{-4}$
$A_{143 \times 217}^{\text{PS}}$	32	$40^{+20}_{-20}$	$D_{2000}$	226.22	$226.7^{+3.5}_{-3.6}$	$f_{2000}^{217}$	109.61	$109.5^{+3.9}_{-3.8}$
$A_{217}^{\text{PS}}$	92.6	$95^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9852	$0.9857^{+0.0088}_{-0.0088}$	$\chi_{\text{lensing}}^2$	10.09	10.8 ( $\nu: 1.6$ )
$A^{\text{kSZ}}$	4.05	—	$Y_{\text{P}}$	0.252900	$0.25291^{+0.00018}_{-0.00018}$	$\chi_{\text{lowTEB}}^2$	10493.06	10493.42 ( $\nu: 0.3$ )
$A_{100}^{\text{dustTT}}$	7.62	$7.65^{+3.8}_{-3.9}$	$Y_{\text{P}}^{\text{BBN}}$	0.254253	$0.25426^{+0.00018}_{-0.00018}$	$\chi_{\text{plik}}^2$	771.5	784.5 ( $\nu: 16.0$ )
$A_{143}^{\text{dustTT}}$	9.09	$9.21^{+3.4}_{-3.6}$	$10^5 D/H$	2.752	$2.748^{+0.073}_{-0.077}$	$\chi_{\text{H070p6}}^2$	0.030	0.064 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.3	$17.7^{+8.3}_{-8.4}$	Age/Gyr	13.272	$13.268^{+0.052}_{-0.055}$	$\chi_{\text{JLA}}^2$	706.502	706.542 ( $\nu: 0.0$ )
$A_{217}^{\text{dustTT}}$	81.2	$82^{+10}_{-10}$	$z_*$	1090.88	$1090.86^{+0.59}_{-0.61}$	$\chi_{6\text{DF}}^2$	0.025	0.067 ( $\nu: 0.0$ )
$c_{100}$	0.99785	$0.9979^{+0.0016}_{-0.0016}$	$r_*$	139.75	$139.74^{+0.54}_{-0.55}$	$\chi_{\text{MGS}}^2$	2.19	2.30 ( $\nu: 0.2$ )
$c_{217}$	0.99641	$0.9964^{+0.0027}_{-0.0029}$	$100\theta_*$	1.03991	$1.03996^{+0.00078}_{-0.00074}$	$\chi_{\text{DR11CMass}}^2$	3.03	3.50 ( $\nu: 0.7$ )
$H_0$	71.17	$71.2^{+1.2}_{-1.1}$	$D_A/\text{Gpc}$	13.438	$13.437^{+0.055}_{-0.053}$	$\chi_{\text{DR11LOWZ}}^2$	0.056	0.17 ( $\nu: 0.0$ )
$\Omega_\Lambda$	0.7026	$0.703^{+0.014}_{-0.014}$	$z_{\text{drag}}$	1061.34	$1061.37^{+0.85}_{-0.79}$	$\chi_{\text{prior}}^2$	2.97	7.73 ( $\nu: 6.7$ )
$\Omega_m$	0.2974	$0.297^{+0.014}_{-0.014}$	$r_{\text{drag}}$	142.28	$142.27^{+0.61}_{-0.58}$	$\chi_{\text{CMB}}^2$	11274.6	11288.8 ( $\nu: 16.5$ )
$\Omega_m h^2$	0.15067	$0.1507^{+0.0024}_{-0.0024}$	$k_{\text{D}}$	0.14408	$0.14410^{+0.00085}_{-0.00083}$	$\chi_{\text{BAO}}^2$	5.31	6.03 ( $\nu: 1.6$ )
$\Omega_m h^3$	0.10724	$0.10730^{+0.00098}_{-0.00093}$	$100\theta_{\text{D}}$	0.16226	$0.16224^{+0.00049}_{-0.00051}$			

Best-fit  $\chi_{\text{eff}}^2 = 11989.40$ ;  $\bar{\chi}_{\text{eff}}^2 = 12009.13$ ;  $R - 1 = 0.02505$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 MGS: 2.19 DR11CMass: 3.03 DR11LOWZ: 0.06 CMB - smica\_g30\_ftl\_full\_pp: 10.09 lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.06  
plik\_dx11dr2\_HM\_v18\_TT: 771.46 Hubble - H070p6: 0.03 SN - JLA December\_2013: 706.50

### 11.39 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnp57\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022708	$0.02271^{+0.00028}_{-0.00028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.03973	$1.03973^{+0.00058}_{-0.00059}$
$\Omega_c h^2$	0.12815	$0.1282^{+0.0022}_{-0.0023}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.4146	$13.415^{+0.046}_{-0.044}$
$100\theta_{\text{MC}}$	1.03994	$1.03994^{+0.00058}_{-0.00059}$	$c_{100}$	0.99813	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1061.73	$1061.73^{+0.57}_{-0.56}$
$\tau$	0.0919	$0.092^{+0.032}_{-0.033}$	$c_{217}$	0.99623	$0.9962^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	141.960	$141.96^{+0.49}_{-0.48}$
$\ln(10^{10} A_s)$	3.138	$3.139^{+0.062}_{-0.064}$	$H_0$	71.02	$71.0^{+1.0}_{-0.97}$	$k_D$	0.14456	$0.14457^{+0.00060}_{-0.00061}$
$n_s$	0.9855	$0.9853^{+0.0082}_{-0.0079}$	$\Omega_\Lambda$	0.6996	$0.700^{+0.012}_{-0.012}$	$100\theta_D$	0.162000	$0.16200^{+0.00035}_{-0.00034}$
$y_{\text{cal}}$	1.00028	$1.0004^{+0.0048}_{-0.0048}$	$\Omega_m$	0.3004	$0.300^{+0.012}_{-0.012}$	$z_{\text{eq}}$	3348.7	$3349^{+47}_{-48}$
$A_{217}^{\text{CIB}}$	69.5	$66^{+10}_{-10}$	$\Omega_m h^2$	0.15150	$0.1515^{+0.0021}_{-0.0022}$	$k_{\text{eq}}$	0.010604	$0.01060^{+0.00015}_{-0.00015}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^3$	0.10759	$0.10759^{+0.00064}_{-0.00064}$	$100\theta_{\text{eq}}$	0.8236	$0.8236^{+0.0094}_{-0.0089}$
$A_{143}^{\text{tSZ}}$	6.79	$4.84^{+3.8}_{-3.8}$	$\sigma_8$	0.8650	$0.865^{+0.027}_{-0.027}$	$100\theta_{s,\text{eq}}$	0.45449	$0.4545^{+0.0048}_{-0.0046}$
$A_{100}^{\text{PS}}$	266	$270^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4741	$0.474^{+0.017}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.07206	$0.07206^{+0.00074}_{-0.00070}$
$A_{143}^{\text{PS}}$	43.7	$48^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6404	$0.641^{+0.020}_{-0.021}$	$H(0.57)$	96.922	$96.92^{+0.48}_{-0.45}$
$A_{143 \times 217}^{\text{PS}}$	34.9	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0265	$1.027^{+0.032}_{-0.032}$	$D_A(0.57)$	1326.3	$1326^{+12}_{-12}$
$A_{217}^{\text{PS}}$	96.7	$96^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.502	$2.503^{+0.075}_{-0.076}$	$F_{\text{AP}}(0.57)$	0.67319	$0.6732^{+0.0032}_{-0.0032}$
$A^{\text{kSZ}}$	0.9	—	$z_{\text{re}}$	11.35	$11.3^{+2.6}_{-3.0}$	$f\sigma_8(0.57)$	0.4998	$0.500^{+0.016}_{-0.016}$
$A_{100}^{\text{dustTT}}$	7.62	$7.63^{+3.6}_{-3.6}$	$10^9 A_s$	2.306	$2.31^{+0.15}_{-0.14}$	$\sigma_8(0.57)$	0.6464	$0.647^{+0.020}_{-0.020}$
$A_{143}^{\text{dustTT}}$	9.19	$9.15^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.9190	$1.919^{+0.022}_{-0.022}$	$f_{2000}^{143}$	32.6	$33^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.4^{+8.1}_{-8.3}$	$D_{40}$	1218.7	$1220^{+25}_{-24}$	$f_{2000}^{143 \times 217}$	34.84	$34.8^{+3.7}_{-3.7}$
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{220}$	5723	$5726^{+77}_{-76}$	$f_{2000}^{217}$	108.11	$108.2^{+3.7}_{-3.6}$
$A_{100}^{\text{dustEE}}$	0.0822	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2542.5	$2543^{+27}_{-26}$	$\chi_{\text{lowTEB}}^2$	10495.45	10496.1 ( $\nu: 3.0$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0498	$0.0498^{+0.0098}_{-0.0097}$	$D_{1420}$	812.0	$812.0^{+9.5}_{-9.0}$	$\chi_{\text{plik}}^2$	2442.3	2460.7 ( $\nu: 24.6$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.098^{+0.064}_{-0.064}$	$D_{2000}$	227.89	$227.9^{+3.1}_{-3.0}$	$\chi_{6\text{DF}}^2$	0.004	0.035 ( $\nu: 0.0$ )
$A_{143}^{\text{dustEE}}$	0.1012	$0.101^{+0.013}_{-0.013}$	$n_{s,0.002}$	0.9855	$0.9853^{+0.0082}_{-0.0079}$	$\chi_{\text{MGS}}^2$	1.89	1.95 ( $\nu: 0.1$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.219	$0.219^{+0.092}_{-0.092}$	$Y_{\text{P}}$	0.252969	$0.25297^{+0.00012}_{-0.00012}$	$\chi_{\text{DR11CMAS}}^2$	2.66	2.99 ( $\nu: 0.2$ )
$A_{217}^{\text{dustEE}}$	0.642	$0.64^{+0.25}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.254322	$0.25432^{+0.00012}_{-0.00012}$	$\chi_{\text{DR11LOWZ}}^2$	0.168	0.27 ( $\nu: 0.0$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.075}$	$10^5 D/H$	2.722	$2.722^{+0.054}_{-0.053}$	$\chi_{\text{prior}}^2$	7.78	20 ( $\nu: 15.8$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.058}_{-0.057}$	$\text{Age}/\text{Gyr}$	13.2642	$13.264^{+0.040}_{-0.041}$	$\chi_{\text{CMB}}^2$	12937.7	12956.8 ( $\nu: 22.9$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.17}$	$z_*$	1090.739	$1090.74^{+0.49}_{-0.47}$	$\chi_{\text{BAO}}^2$	4.73	5.25 ( $\nu: 0.6$ )
$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.10}$	$r_*$	139.476	$139.47^{+0.48}_{-0.47}$			

Best-fit  $\chi_{\text{eff}}^2 = 12950.22$ ;  $\bar{\chi}_{\text{eff}}^2 = 12982.18$ ;  $R - 1 = 0.00793$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.89 DR11CMAS: 2.66 DR11LOWZ: 0.17 CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10495.45 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2442.26



11.40 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnp57\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022706	$0.02269^{+0.00026}_{-0.00027}$	$A_{217}^{dustTE}$	1.663	$1.67^{+0.47}_{-0.48}$	$z_{drag}$	1061.69	$1061.66^{+0.56}_{-0.57}$
$\Omega_c h^2$	0.12752	$0.1277^{+0.0022}_{-0.0021}$	$c_{100}$	0.99805	$0.9980^{+0.0016}_{-0.0016}$	$r_{drag}$	142.113	$142.08^{+0.44}_{-0.45}$
$100\theta_{MC}$	1.04002	$1.04001^{+0.00055}_{-0.00056}$	$c_{217}$	0.99640	$0.9964^{+0.0028}_{-0.0030}$	$k_D$	0.14439	$0.14441^{+0.00059}_{-0.00056}$
$\tau$	0.0691	$0.068^{+0.024}_{-0.023}$	$H_0$	71.27	$71.2^{+1.0}_{-0.97}$	$100\theta_D$	0.162035	$0.16205^{+0.00033}_{-0.00033}$
$\ln(10^{10} A_s)$	3.0900	$3.088^{+0.045}_{-0.044}$	$\Omega_\Lambda$	0.7029	$0.702^{+0.012}_{-0.012}$	$z_{eq}$	3334.7	$3339^{+46}_{-44}$
$n_s$	0.9857	$0.9854^{+0.0074}_{-0.0076}$	$\Omega_m$	0.2971	$0.298^{+0.012}_{-0.012}$	$k_{eq}$	0.010560	$0.01057^{+0.00015}_{-0.00014}$
$y_{cal}$	1.00008	$0.9999^{+0.0045}_{-0.0044}$	$\Omega_m h^2$	0.15087	$0.1511^{+0.0021}_{-0.0020}$	$100\theta_{eq}$	0.8262	$0.8254^{+0.0087}_{-0.0089}$
$A_{217}^{CIB}$	70.5	$68^{+10}_{-10}$	$\Omega_m h^3$	0.10752	$0.10751^{+0.00066}_{-0.00059}$	$100\theta_{s,eq}$	0.45587	$0.4555^{+0.0045}_{-0.0045}$
$\xi^{tSZ \times CIB}$	0.00	—	$\sigma_8$	0.8426	$0.843^{+0.018}_{-0.017}$	$r_{drag}/D_V(0.57)$	0.07227	$0.07220^{+0.00073}_{-0.00069}$
$A_{143}^{tSZ}$	5.77	$4.55^{+3.9}_{-3.7}$	$\sigma_8 \Omega_m^{0.5}$	0.4592	$0.460^{+0.012}_{-0.012}$	$H(0.57)$	97.010	$96.97^{+0.48}_{-0.44}$
$A_{100}^{PS}$	273	$275^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6220	$0.623^{+0.013}_{-0.013}$	$D_A(0.57)$	1323.4	$1324^{+12}_{-13}$
$A_{143}^{PS}$	43.8	$49^{+10}_{-20}$	$\sigma_8/h^{0.5}$	0.9981	$0.999^{+0.020}_{-0.020}$	$F_{AP}(0.57)$	0.67233	$0.6726^{+0.0032}_{-0.0031}$
$A_{143 \times 217}^{PS}$	32	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4355	$2.436^{+0.047}_{-0.051}$	$f\sigma_8(0.57)$	0.4858	$0.4861^{+0.0099}_{-0.0096}$
$A_{217}^{PS}$	92.2	$94^{+20}_{-20}$	$z_{re}$	9.26	$9.14^{+2.4}_{-2.2}$	$\sigma_8(0.57)$	0.6305	$0.630^{+0.015}_{-0.013}$
$A^{kSZ}$	3.16	—	$10^9 A_s$	2.198	$2.19^{+0.10}_{-0.095}$	$f_{2000}^{143}$	33.9	$34^{+5}_{-5}$
$A_{100}^{dustTT}$	7.70	$7.75^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.9142	$1.915^{+0.020}_{-0.020}$	$f_{2000}^{143 \times 217}$	35.68	$35.7^{+3.5}_{-3.4}$
$A_{143}^{dustTT}$	9.34	$9.37^{+3.5}_{-3.5}$	$D_{40}$	1207.0	$1207^{+21}_{-21}$	$f_{2000}^{217}$	108.86	$108.8^{+3.5}_{-3.7}$
$A_{143 \times 217}^{dustTT}$	17.6	$17.7^{+7.9}_{-8.1}$	$D_{220}$	5721	$5719^{+73}_{-73}$	$\chi_{lensing}^2$	10.82	$11.6 (\nu: 2.5)$
$A_{217}^{dustTT}$	81.2	$81^{+10}_{-10}$	$D_{810}$	2540.3	$2540^{+25}_{-24}$	$\chi_{lowTEB}^2$	10493.13	$10493.51 (\nu: 0.3)$
$A_{100}^{dustEE}$	0.0823	$0.082^{+0.012}_{-0.011}$	$D_{1420}$	811.5	$811.4^{+8.6}_{-8.5}$	$\chi_{plik}^2$	2446.7	$2464.7 (\nu: 22.9)$
$A_{100 \times 143}^{dustEE}$	0.0500	$0.0502^{+0.0099}_{-0.0095}$	$D_{2000}$	227.15	$227.1^{+2.9}_{-2.9}$	$\chi_{H070p6}^2$	0.040	$0.052 (\nu: 0.0)$
$A_{100 \times 217}^{dustEE}$	0.098	$0.097^{+0.064}_{-0.062}$	$n_{s,0.002}$	0.9857	$0.9854^{+0.0074}_{-0.0076}$	$\chi_{JLA}^2$	706.500	$706.539 (\nu: 0.0)$
$A_{143}^{dustEE}$	0.1014	$0.101^{+0.013}_{-0.013}$	$Y_P$	0.252968	$0.25296^{+0.00012}_{-0.00012}$	$\chi_{6DF}^2$	0.025	$0.045 (\nu: 0.0)$
$A_{143 \times 217}^{dustEE}$	0.220	$0.219^{+0.085}_{-0.091}$	$Y_P^{BBN}$	0.254321	$0.25431^{+0.00012}_{-0.00012}$	$\chi_{MGS}^2$	2.19	$2.15 (\nu: 0.1)$
$A_{217}^{dustEE}$	0.642	$0.64^{+0.24}_{-0.23}$	$10^5 D/H$	2.722	$2.725^{+0.052}_{-0.050}$	$\chi_{DR11CMass}^2$	3.03	$3.19 (\nu: 0.4)$
$A_{100}^{dustTE}$	0.141	$0.141^{+0.074}_{-0.073}$	Age/Gyr	13.2593	$13.262^{+0.038}_{-0.039}$	$\chi_{DR11LOWZ}^2$	0.057	$0.18 (\nu: 0.0)$
$A_{100 \times 143}^{dustTE}$	0.132	$0.132^{+0.057}_{-0.056}$	$z_*$	1090.689	$1090.73^{+0.46}_{-0.48}$	$\chi_{prior}^2$	8.43	$20 (\nu: 15.5)$
$A_{100 \times 217}^{dustTE}$	0.301	$0.30^{+0.16}_{-0.16}$	$r_*$	139.625	$139.59^{+0.41}_{-0.45}$	$\chi_{CMB}^2$	12950.6	$12969.9 (\nu: 22.2)$
$A_{143}^{dustTE}$	0.155	$0.16^{+0.11}_{-0.11}$	$100\theta_*$	1.03982	$1.03980^{+0.00054}_{-0.00055}$	$\chi_{BAO}^2$	5.31	$5.57 (\nu: 0.8)$
$A_{143 \times 217}^{dustTE}$	0.334	$0.34^{+0.15}_{-0.16}$	$D_A/Gpc$	13.4278	$13.425^{+0.041}_{-0.042}$			

Best-fit  $\chi_{eff}^2 = 13670.90$ ;  $\bar{\chi}_{eff}^2 = 13702.08$ ;  $R - 1 = 0.08207$

$\chi_{eff}^2$ : BAO - 6DF: 0.03 MGS: 2.19 DR11CMass: 3.03 DR11LOWZ: 0.06 CMB - smica\_g30\_ftl\_full\_pp: 10.82 lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.13

**11.41 base\_nnu\_plikHM\_TT\_lowTEB\_nnup39\_lensing**

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022610	$0.02263^{+0.00046}_{-0.00045}$	$\Omega_m h^2$	0.14599	$0.1459^{+0.0039}_{-0.0039}$	$z_{\text{drag}}$	1061.00	$1061.03^{+0.89}_{-0.90}$
$\Omega_c h^2$	0.12274	$0.1226^{+0.0041}_{-0.0042}$	$\Omega_m h^3$	0.10368	$0.10371^{+0.00094}_{-0.00092}$	$r_{\text{drag}}$	144.22	$144.24^{+0.85}_{-0.86}$
$100\theta_{\text{MC}}$	1.04064	$1.04068^{+0.00091}_{-0.00087}$	$\sigma_8$	0.8370	$0.836^{+0.020}_{-0.019}$	$k_{\text{D}}$	0.14265	$0.14264^{+0.00097}_{-0.00094}$
$\tau$	0.0802	$0.079^{+0.035}_{-0.034}$	$\sigma_8 \Omega_m^{0.5}$	0.4503	$0.449^{+0.017}_{-0.017}$	$100\theta_{\text{D}}$	0.16176	$0.16174^{+0.00051}_{-0.00052}$
$\ln(10^{10} A_s)$	3.101	$3.100^{+0.062}_{-0.060}$	$\sigma_8 \Omega_m^{0.25}$	0.6139	$0.613^{+0.015}_{-0.015}$	$z_{\text{eq}}$	3300	$3297^{+89}_{-90}$
$n_s$	0.9848	$0.985^{+0.012}_{-0.012}$	$\sigma_8/h^{0.5}$	0.9932	$0.992^{+0.022}_{-0.022}$	$k_{\text{eq}}$	0.010334	$0.01032^{+0.00028}_{-0.00028}$
$y_{\text{cal}}$	0.99967	$1.0003^{+0.0047}_{-0.0047}$	$\langle d^2 \rangle^{1/2}$	2.434	$2.430^{+0.050}_{-0.050}$	$100\theta_{\text{eq}}$	0.8327	$0.833^{+0.018}_{-0.017}$
$A_{217}^{\text{CIB}}$	69.7	$66^{+10}_{-10}$	$z_{\text{re}}$	10.20	$10.1^{+2.9}_{-3.2}$	$100\theta_{\text{s,eq}}$	0.4593	$0.4597^{+0.0093}_{-0.0088}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.221	$2.22^{+0.14}_{-0.13}$	$r_{\text{drag}}/D_V(0.57)$	0.07280	$0.0729^{+0.0015}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	6.14	$4.67^{+3.9}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8922	$1.894^{+0.026}_{-0.026}$	$H(0.57)$	96.10	$96.16^{+0.93}_{-0.85}$
$A_{100}^{\text{PS}}$	264	$267^{+50}_{-50}$	$D_{40}$	1205.9	$1207^{+24}_{-23}$	$D_A(0.57)$	1331.9	$1331^{+23}_{-24}$
$A_{143}^{\text{PS}}$	42.4	$47^{+20}_{-20}$	$D_{220}$	5715	$5724^{+78}_{-79}$	$F_{\text{AP}}(0.57)$	0.6703	$0.6701^{+0.0060}_{-0.0060}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$D_{810}$	2533.5	$2537^{+26}_{-26}$	$f\sigma_8(0.57)$	0.4804	$0.480^{+0.011}_{-0.011}$
$A_{217}^{\text{PS}}$	93.8	$96^{+20}_{-20}$	$D_{1420}$	812.1	$813.5^{+9.6}_{-9.6}$	$\sigma_8(0.57)$	0.6283	$0.628^{+0.018}_{-0.018}$
$A^{\text{kSZ}}$	2.09	—	$D_{2000}$	228.12	$228.6^{+3.5}_{-3.5}$	$f_{2000}^{143}$	32.6	$33^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.58	$7.54^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	0.9848	$0.985^{+0.012}_{-0.012}$	$f_{2000}^{143 \times 217}$	34.47	$34^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.19	$9.15^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.250650	$0.25066^{+0.00020}_{-0.00020}$	$f_{2000}^{217}$	107.84	$107.8^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	17.1	$17.3^{+8.2}_{-8.0}$	$Y_{\text{P}}^{\text{BBN}}$	0.251996	$0.25201^{+0.00020}_{-0.00020}$	$\chi_{\text{lensing}}^2$	9.48	10.1 ( $\nu$ : 1.1)
$A_{217}^{\text{dustTT}}$	80.1	$82^{+10}_{-10}$	$10^5 D/H$	2.679	$2.676^{+0.088}_{-0.085}$	$\chi_{\text{lowTEB}}^2$	10493.71	10494.2 ( $\nu$ : 1.0)
$c_{100}$	0.99786	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.402	$13.398^{+0.073}_{-0.076}$	$\chi_{\text{plik}}^2$	768.4	782.0 ( $\nu$ : 15.3)
$c_{217}$	0.99616	$0.9962^{+0.0029}_{-0.0029}$	$z_*$	1090.23	$1090.20^{+0.83}_{-0.83}$	$\chi_{\text{prior}}^2$	2.58	7.54 ( $\nu$ : 6.6)
$H_0$	71.02	$71.1^{+2.0}_{-1.9}$	$r_*$	141.67	$141.70^{+0.87}_{-0.87}$	$\chi_{\text{CMB}}^2$	11271.6	11286.3 ( $\nu$ : 15.3)
$\Omega_\Lambda$	0.7106	$0.711^{+0.023}_{-0.023}$	$100\theta_*$	1.04056	$1.04059^{+0.00090}_{-0.00086}$			
$\Omega_m$	0.2894	$0.289^{+0.023}_{-0.023}$	$D_A/\text{Gpc}$	13.615	$13.617^{+0.081}_{-0.081}$			

 Best-fit  $\chi_{\text{eff}}^2 = 11274.19$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.84$ ;  $R - 1 = 0.00691$ 
 $\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.48 lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.71 plik\_dx11dr2\_HM\_v18\_TT: 768.42

## 11.42 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnup39\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022623	$0.02261^{+0.00032}_{-0.00032}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.10}$	$z_*$	1090.35	$1090.37^{+0.60}_{-0.59}$
$\Omega_c h^2$	0.12424	$0.1243^{+0.0030}_{-0.0029}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.34^{+0.16}_{-0.16}$	$r_*$	141.29	$141.28^{+0.60}_{-0.61}$
$100\theta_{\text{MC}}$	1.04035	$1.04033^{+0.00062}_{-0.00063}$	$A_{217}^{\text{dustTE}}$	1.65	$1.66^{+0.50}_{-0.50}$	$100\theta_*$	1.04026	$1.04025^{+0.00061}_{-0.00062}$
$\tau$	0.0716	$0.071^{+0.028}_{-0.028}$	$c_{100}$	0.99812	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.583	$13.582^{+0.056}_{-0.056}$
$\ln(10^{10} A_s)$	3.088	$3.087^{+0.051}_{-0.052}$	$c_{217}$	0.99623	$0.9962^{+0.0029}_{-0.0028}$	$z_{\text{drag}}$	1061.12	$1061.11^{+0.63}_{-0.59}$
$n_s$	0.9817	$0.9810^{+0.0096}_{-0.0097}$	$H_0$	70.39	$70.4^{+1.3}_{-1.4}$	$r_{\text{drag}}$	143.83	$143.82^{+0.58}_{-0.58}$
$y_{\text{cal}}$	0.99992	$1.0001^{+0.0048}_{-0.0048}$	$\Omega_\Lambda$	0.7023	$0.702^{+0.016}_{-0.017}$	$k_D$	0.14309	$0.14309^{+0.00064}_{-0.00063}$
$A_{217}^{\text{CIB}}$	69.2	$67^{+10}_{-10}$	$\Omega_m$	0.2977	$0.298^{+0.017}_{-0.016}$	$100\theta_D$	0.161645	$0.16166^{+0.00035}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14751	$0.1476^{+0.0029}_{-0.0027}$	$z_{\text{eq}}$	3335	$3337^{+65}_{-62}$
$A_{143}^{\text{tSZ}}$	6.95	$4.95^{+3.8}_{-3.8}$	$\Omega_m h^3$	0.10384	$0.10382^{+0.00065}_{-0.00063}$	$k_{\text{eq}}$	0.010442	$0.01045^{+0.00020}_{-0.00019}$
$A_{100}^{\text{PS}}$	265	$269^{+50}_{-50}$	$\sigma_8$	0.8354	$0.835^{+0.018}_{-0.018}$	$100\theta_{\text{eq}}$	0.8261	$0.826^{+0.012}_{-0.013}$
$A_{143}^{\text{PS}}$	42.3	$47^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4558	$0.456^{+0.014}_{-0.013}$	$100\theta_{s,\text{eq}}$	0.4558	$0.4557^{+0.0063}_{-0.0064}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6170	$0.617^{+0.014}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.07227	$0.07225^{+0.00099}_{-0.00099}$
$A_{217}^{\text{PS}}$	95.8	$95^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9956	$0.996^{+0.021}_{-0.020}$	$H(0.57)$	95.87	$95.85^{+0.61}_{-0.59}$
$A^{\text{kSZ}}$	0.8	—	$\langle d^2 \rangle^{1/2}$	2.4389	$2.440^{+0.049}_{-0.047}$	$D_A(0.57)$	1339.4	$1340^{+17}_{-17}$
$A_{100}^{\text{dustTT}}$	7.61	$7.64^{+3.7}_{-3.6}$	$z_{\text{re}}$	9.43	$9.32^{+2.6}_{-2.7}$	$F_{\text{AP}}(0.57)$	0.67249	$0.6726^{+0.0045}_{-0.0042}$
$A_{143}^{\text{dustTT}}$	9.35	$9.25^{+3.6}_{-3.6}$	$10^9 A_s$	2.193	$2.19^{+0.11}_{-0.11}$	$f\sigma_8(0.57)$	0.4819	$0.482^{+0.010}_{-0.0099}$
$A_{143 \times 217}^{\text{dustTT}}$	18.3	$17.5^{+8.2}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.9002	$1.901^{+0.023}_{-0.024}$	$\sigma_8(0.57)$	0.6249	$0.625^{+0.015}_{-0.015}$
$A_{217}^{\text{dustTT}}$	82.2	$81^{+10}_{-10}$	$D_{40}$	1210.6	$1213^{+23}_{-22}$	$f_{2000}^{143}$	32.0	$32^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0823	$0.082^{+0.011}_{-0.011}$	$D_{220}$	5721	$5725^{+76}_{-76}$	$f_{2000}^{143 \times 217}$	34.33	$34.5^{+3.7}_{-3.7}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0501	$0.0500^{+0.0098}_{-0.0098}$	$D_{810}$	2537.5	$2538^{+26}_{-26}$	$f_{2000}^{217}$	107.58	$107.8^{+3.7}_{-3.6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.102	$0.099^{+0.064}_{-0.064}$	$D_{1420}$	813.1	$813.0^{+9.4}_{-9.3}$	$\chi_{\text{lensing}}^2$	10.29	11.0 ( $\nu: 2.1$ )
$A_{143}^{\text{dustEE}}$	0.1016	$0.101^{+0.013}_{-0.013}$	$D_{2000}$	228.38	$228.3^{+3.1}_{-3.1}$	$\chi_{\text{lowTEB}}^2$	10493.57	10494.15 ( $\nu: 0.5$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.227	$0.222^{+0.091}_{-0.091}$	$n_{s,0.002}$	0.9817	$0.9810^{+0.0096}_{-0.0097}$	$\chi_{\text{plik}}^2$	2442.1	2460.3 ( $\nu: 24.1$ )
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.26}_{-0.26}$	$Y_P$	0.250656	$0.25065^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	7.69	20 ( $\nu: 15.9$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.074}$	$Y_P^{\text{BBN}}$	0.252002	$0.25200^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12945.9	12965.4 ( $\nu: 22.9$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.133	$0.132^{+0.057}_{-0.057}$	$10^5 D/H$	2.677	$2.679^{+0.061}_{-0.060}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.298	$0.30^{+0.17}_{-0.16}$	Age/Gyr	13.416	$13.417^{+0.051}_{-0.052}$			

Best-fit  $\chi_{\text{eff}}^2 = 12953.61$ ;  $\bar{\chi}_{\text{eff}}^2 = 12985.61$ ;  $R - 1 = 0.00787$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.29 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.57 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2442.06

### 11.43 base\_nnu\_plikHM\_TT\_lowTEB\_nnup57\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022761	$0.02278^{+0.00047}_{-0.00048}$	$\Omega_m h^2$	0.14828	$0.1479^{+0.0042}_{-0.0041}$	$z_{\text{drag}}$	1061.61	$1061.63^{+0.89}_{-0.93}$
$\Omega_c h^2$	0.12487	$0.1245^{+0.0045}_{-0.0044}$	$\Omega_m h^3$	0.10737	$0.10735^{+0.00098}_{-0.00098}$	$r_{\text{drag}}$	142.69	$142.77^{+0.85}_{-0.87}$
$100\theta_{\text{MC}}$	1.04049	$1.04052^{+0.00094}_{-0.00091}$	$\sigma_8$	0.8447	$0.846^{+0.019}_{-0.020}$	$k_{\text{D}}$	0.14378	$0.14371^{+0.00098}_{-0.00096}$
$\tau$	0.0822	$0.085^{+0.035}_{-0.035}$	$\sigma_8 \Omega_m^{0.5}$	0.4492	$0.448^{+0.018}_{-0.018}$	$100\theta_{\text{D}}$	0.16211	$0.16211^{+0.00053}_{-0.00051}$
$\ln(10^{10} A_s)$	3.110	$3.116^{+0.063}_{-0.062}$	$\sigma_8 \Omega_m^{0.25}$	0.6160	$0.616^{+0.016}_{-0.016}$	$z_{\text{eq}}$	3277	$3270^{+93}_{-92}$
$n_s$	0.9926	$0.993^{+0.013}_{-0.012}$	$\sigma_8/h^{0.5}$	0.9927	$0.993^{+0.022}_{-0.022}$	$k_{\text{eq}}$	0.010378	$0.01035^{+0.00030}_{-0.00029}$
$y_{\text{cal}}$	0.99988	$1.0003^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.420	$2.423^{+0.051}_{-0.051}$	$100\theta_{\text{eq}}$	0.8376	$0.839^{+0.019}_{-0.019}$
$A_{217}^{\text{CIB}}$	68.9	$67^{+10}_{-10}$	$z_{\text{re}}$	10.40	$10.6^{+3.0}_{-3.1}$	$100\theta_{\text{s,eq}}$	0.4617	$0.4626^{+0.0097}_{-0.0095}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$10^9 A_s$	2.243	$2.26^{+0.14}_{-0.14}$	$r_{\text{drag}}/D_V(0.57)$	0.07318	$0.0733^{+0.0016}_{-0.0015}$
$A_{143}^{\text{tSZ}}$	6.22	$4.47^{+3.8}_{-4.1}$	$10^9 A_s e^{-2\tau}$	1.9027	$1.903^{+0.028}_{-0.027}$	$H(0.57)$	97.47	$97.5^{+1.0}_{-0.95}$
$A_{100}^{\text{PS}}$	264	$271^{+50}_{-60}$	$D_{40}$	1196.0	$1198^{+25}_{-24}$	$D_A(0.57)$	1309.8	$1308^{+25}_{-25}$
$A_{143}^{\text{PS}}$	44.6	$49^{+20}_{-20}$	$D_{220}$	5716	$5724^{+82}_{-80}$	$F_{\text{AP}}(0.57)$	0.6686	$0.6681^{+0.0064}_{-0.0062}$
$A_{143 \times 217}^{\text{PS}}$	35	$39^{+20}_{-20}$	$D_{810}$	2537.8	$2539^{+27}_{-26}$	$f\sigma_8(0.57)$	0.4828	$0.483^{+0.011}_{-0.011}$
$A_{217}^{\text{PS}}$	96.2	$95^{+20}_{-20}$	$D_{1420}$	812.5	$812.7^{+9.6}_{-9.6}$	$\sigma_8(0.57)$	0.6359	$0.637^{+0.018}_{-0.018}$
$A^{\text{kSZ}}$	1.93	—	$D_{2000}$	227.65	$227.7^{+3.6}_{-3.5}$	$f_{2000}^{143}$	33.2	$34^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.62	$7.57^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	0.9926	$0.993^{+0.013}_{-0.012}$	$f_{2000}^{143 \times 217}$	35.19	$35^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.17	$9.19^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.252992	$0.25300^{+0.00021}_{-0.00021}$	$f_{2000}^{217}$	108.46	$108.5^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.5^{+8.1}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.254346	$0.25435^{+0.00021}_{-0.00021}$	$\chi_{\text{lensing}}^2$	9.44	$10.2 (\nu: 1.2)$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^5 D/H$	2.712	$2.709^{+0.093}_{-0.088}$	$\chi_{\text{lowTEB}}^2$	10493.04	$10494.0 (\nu: 1.2)$
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.229	$13.225^{+0.077}_{-0.079}$	$\chi_{\text{plik}}^2$	770.9	$783.7 (\nu: 15.8)$
$c_{217}$	0.99621	$0.9963^{+0.0029}_{-0.0029}$	$z_*$	1090.40	$1090.35^{+0.89}_{-0.87}$	$\chi_{\text{prior}}^2$	2.43	$7.57 (\nu: 6.7)$
$H_0$	72.41	$72.6^{+2.1}_{-2.0}$	$r_*$	140.21	$140.28^{+0.88}_{-0.89}$	$\chi_{\text{CMB}}^2$	11273.3	$11287.9 (\nu: 15.8)$
$\Omega_\Lambda$	0.7172	$0.719^{+0.023}_{-0.024}$	$100\theta_*$	1.04028	$1.04031^{+0.00091}_{-0.00089}$			
$\Omega_m$	0.2828	$0.281^{+0.024}_{-0.023}$	$D_A/\text{Gpc}$	13.478	$13.485^{+0.082}_{-0.082}$			

Best-fit  $\chi_{\text{eff}}^2 = 11275.77$ ;  $\bar{\chi}_{\text{eff}}^2 = 11295.46$ ;  $R - 1 = 0.00748$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.44 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10493.04 plik\_dx11dr2\_HM\_v18.TT: 770.85

### 11.44 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnap57\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022774	$0.02277^{+0.00032}_{-0.00032}$	$A_{143}^{\text{dustTE}}$	0.157	$0.15^{+0.11}_{-0.10}$	$z_*$	1090.54	$1090.53^{+0.59}_{-0.57}$
$\Omega_c h^2$	0.12671	$0.1266^{+0.0030}_{-0.0030}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.33^{+0.16}_{-0.16}$	$r_*$	139.76	$139.79^{+0.60}_{-0.59}$
$100\theta_{\text{MC}}$	1.04011	$1.04012^{+0.00061}_{-0.00063}$	$A_{217}^{\text{dustTE}}$	1.65	$1.66^{+0.50}_{-0.50}$	$100\theta_*$	1.03989	$1.03991^{+0.00060}_{-0.00062}$
$\tau$	0.0742	$0.075^{+0.028}_{-0.027}$	$c_{100}$	0.99804	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.440	$13.443^{+0.056}_{-0.055}$
$\ln(10^{10} A_s)$	3.099	$3.100^{+0.051}_{-0.050}$	$c_{217}$	0.99633	$0.9963^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1061.80	$1061.77^{+0.61}_{-0.61}$
$n_s$	0.9880	$0.9881^{+0.0096}_{-0.0096}$	$H_0$	71.64	$71.7^{+1.4}_{-1.3}$	$r_{\text{drag}}$	142.23	$142.27^{+0.59}_{-0.57}$
$y_{\text{cal}}$	1.00019	$1.0001^{+0.0049}_{-0.0050}$	$\Omega_\Lambda$	0.7074	$0.708^{+0.016}_{-0.017}$	$k_D$	0.14431	$0.14427^{+0.00064}_{-0.00065}$
$A_{217}^{\text{CIB}}$	70.3	$67^{+10}_{-10}$	$\Omega_m$	0.2926	$0.292^{+0.017}_{-0.016}$	$100\theta_D$	0.161977	$0.16199^{+0.00036}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.15013	$0.1500^{+0.0028}_{-0.0028}$	$z_{\text{eq}}$	3318	$3316^{+62}_{-63}$
$A_{143}^{\text{tSZ}}$	5.88	$4.68^{+3.9}_{-4.0}$	$\Omega_m h^3$	0.10755	$0.10752^{+0.00065}_{-0.00066}$	$k_{\text{eq}}$	0.010508	$0.01050^{+0.00020}_{-0.00020}$
$A_{100}^{\text{PS}}$	267	$273^{+50}_{-50}$	$\sigma_8$	0.8441	$0.844^{+0.018}_{-0.018}$	$100\theta_{\text{eq}}$	0.8295	$0.830^{+0.013}_{-0.012}$
$A_{143}^{\text{PS}}$	41.7	$48^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4566	$0.456^{+0.014}_{-0.013}$	$100\theta_{s,\text{eq}}$	0.4575	$0.4578^{+0.0064}_{-0.0062}$
$A_{143 \times 217}^{\text{PS}}$	31	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6208	$0.621^{+0.014}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.07254	$0.0726^{+0.0010}_{-0.00098}$
$A_{217}^{\text{PS}}$	91.7	$94^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9973	$0.997^{+0.021}_{-0.021}$	$H(0.57)$	97.17	$97.19^{+0.62}_{-0.60}$
$A^{\text{kSZ}}$	3.31	—	$\langle d^2 \rangle^{1/2}$	2.4331	$2.433^{+0.048}_{-0.048}$	$D_A(0.57)$	1318.9	$1318^{+17}_{-16}$
$A_{100}^{\text{dustTT}}$	7.95	$7.73^{+3.7}_{-3.7}$	$z_{\text{re}}$	9.71	$9.73^{+2.4}_{-2.6}$	$F_{\text{AP}}(0.57)$	0.67116	$0.6710^{+0.0043}_{-0.0042}$
$A_{143}^{\text{dustTT}}$	9.31	$9.35^{+3.6}_{-3.7}$	$10^9 A_s$	2.217	$2.22^{+0.12}_{-0.11}$	$f\sigma_8(0.57)$	0.4854	$0.485^{+0.010}_{-0.010}$
$A_{143 \times 217}^{\text{dustTT}}$	17.3	$17.6^{+8.2}_{-8.1}$	$10^9 A_s e^{-2\tau}$	1.9108	$1.911^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	0.6328	$0.633^{+0.016}_{-0.015}$
$A_{217}^{\text{dustTT}}$	81.1	$81^{+10}_{-10}$	$D_{40}$	1203.9	$1205^{+22}_{-23}$	$f_{2000}^{143}$	33.2	$33^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0819	$0.083^{+0.011}_{-0.011}$	$D_{220}$	5723	$5724^{+78}_{-77}$	$f_{2000}^{143 \times 217}$	35.33	$35.3^{+3.7}_{-3.7}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0503	$0.0504^{+0.0099}_{-0.0098}$	$D_{810}$	2539.9	$2540^{+27}_{-27}$	$f_{2000}^{217}$	108.62	$108.5^{+3.7}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.099^{+0.064}_{-0.064}$	$D_{1420}$	812.2	$812.2^{+9.3}_{-9.4}$	$\chi_{\text{lensing}}^2$	10.56	11.2 ( $\nu: 2.2$ )
$A_{143}^{\text{dustEE}}$	0.1012	$0.102^{+0.014}_{-0.013}$	$D_{2000}$	227.55	$227.5^{+3.1}_{-3.2}$	$\chi_{\text{lowTEB}}^2$	10493.07	10493.57 ( $\nu: 0.4$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.219	$0.219^{+0.090}_{-0.092}$	$n_{s,0.002}$	0.9880	$0.9881^{+0.0096}_{-0.0096}$	$\chi_{\text{plik}}^2$	2446.8	2465.1 ( $\nu: 25.4$ )
$A_{217}^{\text{dustEE}}$	0.630	$0.64^{+0.25}_{-0.26}$	$Y_P$	0.252998	$0.25300^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	8.40	21 ( $\nu: 16.6$ )
$A_{100}^{\text{dustTE}}$	0.137	$0.141^{+0.075}_{-0.074}$	$Y_P^{\text{BBN}}$	0.254352	$0.25435^{+0.00014}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12950.4	12970.0 ( $\nu: 24.0$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.125	$0.132^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.709	$2.710^{+0.061}_{-0.060}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.16}$	$\text{Age}/\text{Gyr}$	13.2470	$13.246^{+0.050}_{-0.049}$			

Best-fit  $\chi_{\text{eff}}^2 = 12958.80$ ;  $\bar{\chi}_{\text{eff}}^2 = 12990.67$ ;  $R - 1 = 0.00731$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.56 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.07 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2446.77

### 11.45 base\_nnu\_plikHM\_TT\_lowTEB\_nnu1\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.023209	$0.02318^{+0.00049}_{-0.00047}$	$\Omega_m h^2$	0.15195	$0.1524^{+0.0043}_{-0.0042}$	$z_{\text{drag}}$	1063.17	$1063.15^{+0.94}_{-0.88}$
$\Omega_c h^2$	0.12809	$0.1285^{+0.0046}_{-0.0044}$	$\Omega_m h^3$	0.11627	$0.1163^{+0.0011}_{-0.0011}$	$r_{\text{drag}}$	139.55	$139.48^{+0.83}_{-0.82}$
$100\theta_{\text{MC}}$	1.04027	$1.04025^{+0.00092}_{-0.00094}$	$\sigma_8$	0.8713	$0.870^{+0.021}_{-0.022}$	$k_{\text{D}}$	0.14613	$0.14619^{+0.00096}_{-0.00097}$
$\tau$	0.1066	$0.102^{+0.036}_{-0.036}$	$\sigma_8 \Omega_m^{0.5}$	0.4439	$0.445^{+0.017}_{-0.017}$	$100\theta_{\text{D}}$	0.16288	$0.16291^{+0.00052}_{-0.00051}$
$\ln(10^{10} A_s)$	3.165	$3.158^{+0.065}_{-0.065}$	$\sigma_8 \Omega_m^{0.25}$	0.6219	$0.622^{+0.015}_{-0.016}$	$z_{\text{eq}}$	3188	$3197^{+90}_{-87}$
$n_s$	1.0124	$1.012^{+0.013}_{-0.013}$	$\sigma_8/h^{0.5}$	0.9961	$0.996^{+0.022}_{-0.023}$	$k_{\text{eq}}$	0.010362	$0.01039^{+0.00029}_{-0.00028}$
$y_{\text{cal}}$	0.99970	$1.0003^{+0.0048}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.409	$2.406^{+0.049}_{-0.051}$	$100\theta_{\text{eq}}$	0.8566	$0.855^{+0.019}_{-0.019}$
$A_{217}^{\text{CIB}}$	71.4	$68^{+10}_{-10}$	$z_{\text{re}}$	12.50	$12.1^{+2.7}_{-3.0}$	$100\theta_{\text{s,eq}}$	0.4713	$0.4704^{+0.0097}_{-0.0096}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.369	$2.35^{+0.16}_{-0.15}$	$r_{\text{drag}}/D_V(0.57)$	0.07469	$0.0746^{+0.0016}_{-0.0015}$
$A_{143}^{\text{tSZ}}$	4.53	< 7.51	$10^9 A_s e^{-2\tau}$	1.9139	$1.919^{+0.027}_{-0.027}$	$H(0.57)$	101.08	$101.0^{+1.1}_{-1.0}$
$A_{100}^{\text{PS}}$	278	$277^{+50}_{-50}$	$D_{40}$	1178.0	$1179^{+23}_{-22}$	$D_A(0.57)$	1251.1	$1253^{+24}_{-24}$
$A_{143}^{\text{PS}}$	46.1	$52^{+20}_{-20}$	$D_{220}$	5724	$5727^{+82}_{-80}$	$F_{\text{AP}}(0.57)$	0.6623	$0.6629^{+0.0061}_{-0.0058}$
$A_{143 \times 217}^{\text{PS}}$	30	$40^{+20}_{-20}$	$D_{810}$	2537.4	$2542^{+26}_{-27}$	$f\sigma_8(0.57)$	0.4899	$0.490^{+0.011}_{-0.012}$
$A_{217}^{\text{PS}}$	89.3	$95^{+20}_{-20}$	$D_{1420}$	809.8	$811.4^{+9.7}_{-9.9}$	$\sigma_8(0.57)$	0.6627	$0.661^{+0.020}_{-0.020}$
$A^{\text{kSZ}}$	5.07	—	$D_{2000}$	225.86	$226.2^{+3.6}_{-3.5}$	$f_{2000}^{143}$	35.7	$36^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.72	$7.69^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	1.0124	$1.012^{+0.013}_{-0.013}$	$f_{2000}^{143 \times 217}$	36.90	$37^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.32	$9.25^{+3.5}_{-3.6}$	$Y_{\text{P}}$	0.258372	$0.25836^{+0.00021}_{-0.00020}$	$f_{2000}^{217}$	110.02	$109.9^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.6^{+8.3}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.259745	$0.25973^{+0.00021}_{-0.00021}$	$\chi_{\text{lensing}}^2$	9.70	10.5 ( $\nu$ : 1.1)
$A_{217}^{\text{dustTT}}$	81.5	$82^{+10}_{-10}$	$10^5 D/H$	2.768	$2.773^{+0.091}_{-0.091}$	$\chi_{\text{lowTEB}}^2$	10494.33	10494.3 ( $\nu$ : 2.5)
$c_{100}$	0.99783	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	12.819	$12.823^{+0.076}_{-0.078}$	$\chi_{\text{plik}}^2$	773.9	788.3 ( $\nu$ : 18.0)
$c_{217}$	0.99677	$0.9964^{+0.0028}_{-0.0029}$	$z_*$	1090.51	$1090.58^{+0.88}_{-0.87}$	$\chi_{\text{prior}}^2$	3.36	7.64 ( $\nu$ : 6.7)
$H_0$	76.52	$76.3^{+2.2}_{-2.1}$	$r_*$	137.24	$137.16^{+0.85}_{-0.84}$	$\chi_{\text{CMB}}^2$	11278.0	11293.2 ( $\nu$ : 16.4)
$\Omega_\Lambda$	0.7405	$0.738^{+0.021}_{-0.022}$	$100\theta_*$	1.03977	$1.03975^{+0.00090}_{-0.00092}$			
$\Omega_m$	0.2595	$0.262^{+0.022}_{-0.021}$	$D_A/\text{Gpc}$	13.199	$13.191^{+0.079}_{-0.077}$			

Best-fit  $\chi_{\text{eff}}^2 = 11281.34$ ;  $\bar{\chi}_{\text{eff}}^2 = 11300.80$ ;  $R - 1 = 0.00923$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.70 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.33 plik\_dx11dr2\_HM\_v18.TT: 773.95

### 11.46 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnu1\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.023105	$0.02314^{+0.00032}_{-0.00032}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	$z_*$	1090.98	$1090.91^{+0.61}_{-0.58}$
$\Omega_c h^2$	0.13238	$0.1321^{+0.0032}_{-0.0031}$	$A_{143 \times 217}^{\text{dustTE}}$	0.332	$0.33^{+0.16}_{-0.16}$	$r_*$	136.36	$136.40^{+0.58}_{-0.58}$
$100\theta_{\text{MC}}$	1.03960	$1.03967^{+0.00061}_{-0.00059}$	$A_{217}^{\text{dustTE}}$	1.65	$1.65^{+0.50}_{-0.50}$	$100\theta_*$	1.03911	$1.03917^{+0.00060}_{-0.00058}$
$\tau$	0.0822	$0.085^{+0.028}_{-0.028}$	$c_{100}$	0.99802	$0.9980^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.123	$13.126^{+0.054}_{-0.054}$
$\ln(10^{10} A_s)$	3.125	$3.131^{+0.052}_{-0.051}$	$c_{217}$	0.99661	$0.9965^{+0.0028}_{-0.0029}$	$z_{\text{drag}}$	1063.25	$1063.30^{+0.62}_{-0.58}$
$n_s$	1.0028	$1.0046^{+0.0098}_{-0.0096}$	$H_0$	74.65	$74.8^{+1.4}_{-1.4}$	$r_{\text{drag}}$	138.68	$138.72^{+0.57}_{-0.55}$
$y_{\text{cal}}$	0.99973	$1.0002^{+0.0048}_{-0.0050}$	$\Omega_\Lambda$	0.7198	$0.721^{+0.015}_{-0.016}$	$k_D$	0.14706	$0.14705^{+0.00064}_{-0.00065}$
$A_{217}^{\text{CIB}}$	71.6	$69^{+10}_{-10}$	$\Omega_m$	0.2802	$0.279^{+0.016}_{-0.015}$	$100\theta_D$	0.162792	$0.16276^{+0.00036}_{-0.00034}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.15613	$0.1559^{+0.0030}_{-0.0029}$	$z_{\text{eq}}$	3276	$3270^{+63}_{-62}$
$A_{143}^{\text{tSZ}}$	4.56	$4.34^{+3.8}_{-4.0}$	$\Omega_m h^3$	0.11654	$0.11659^{+0.00069}_{-0.00068}$	$k_{\text{eq}}$	0.010648	$0.01063^{+0.00020}_{-0.00020}$
$A_{100}^{\text{PS}}$	284	$280^{+50}_{-60}$	$\sigma_8$	0.8649	$0.867^{+0.019}_{-0.018}$	$100\theta_{\text{eq}}$	0.8384	$0.840^{+0.013}_{-0.013}$
$A_{143}^{\text{PS}}$	46.1	$51^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.5}$	0.4578	$0.458^{+0.014}_{-0.013}$	$100\theta_{s,\text{eq}}$	0.4619	$0.4626^{+0.0065}_{-0.0064}$
$A_{143 \times 217}^{\text{PS}}$	30	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6293	$0.630^{+0.014}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.07322	$0.0733^{+0.0010}_{-0.0010}$
$A_{217}^{\text{PS}}$	88.9	$93^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0011	$1.003^{+0.021}_{-0.020}$	$H(0.57)$	100.28	$100.36^{+0.67}_{-0.65}$
$A^{\text{kSZ}}$	5.77	—	$\langle d^2 \rangle^{1/2}$	2.4201	$2.421^{+0.047}_{-0.047}$	$D_A(0.57)$	1271.9	$1270^{+16}_{-16}$
$A_{100}^{\text{dustTT}}$	7.95	$7.89^{+3.7}_{-3.7}$	$z_{\text{re}}$	10.52	$10.7^{+2.4}_{-2.6}$	$F_{\text{AP}}(0.57)$	0.66790	$0.6675^{+0.0042}_{-0.0041}$
$A_{143}^{\text{dustTT}}$	9.52	$9.54^{+3.6}_{-3.6}$	$10^9 A_s$	2.276	$2.29^{+0.12}_{-0.12}$	$f\sigma_8(0.57)$	0.4935	$0.494^{+0.010}_{-0.010}$
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.9^{+8.1}_{-8.0}$	$10^9 A_s e^{-2\tau}$	1.9306	$1.932^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	0.6518	$0.654^{+0.016}_{-0.016}$
$A_{217}^{\text{dustTT}}$	80.8	$81^{+10}_{-10}$	$D_{40}$	1187.1	$1186^{+21}_{-21}$	$f_{2000}^{143}$	36.4	$36^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0831	$0.083^{+0.011}_{-0.011}$	$D_{220}$	5719	$5723^{+75}_{-75}$	$f_{2000}^{143 \times 217}$	37.52	$37.1^{+3.8}_{-3.7}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0509	$0.0514^{+0.0097}_{-0.0097}$	$D_{810}$	2541.0	$2544^{+27}_{-27}$	$f_{2000}^{217}$	110.53	$110.0^{+3.7}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.098^{+0.065}_{-0.063}$	$D_{1420}$	808.8	$810.6^{+9.3}_{-9.5}$	$\chi_{\text{lensing}}^2$	11.34	$12.3 (\nu: 3.0)$
$A_{143}^{\text{dustEE}}$	0.1024	$0.103^{+0.014}_{-0.014}$	$D_{2000}$	225.18	$225.9^{+3.1}_{-3.1}$	$\chi_{\text{lowTEB}}^2$	10492.41	$10492.9 (\nu: 0.6)$
$A_{143 \times 217}^{\text{dustEE}}$	0.215	$0.217^{+0.093}_{-0.092}$	$n_{s,0.002}$	1.0028	$1.0046^{+0.0098}_{-0.0096}$	$\chi_{\text{plik}}^2$	2462.5	$2480.6 (\nu: 27.3)$
$A_{217}^{\text{dustEE}}$	0.665	$0.63^{+0.26}_{-0.25}$	$Y_P$	0.258326	$0.25834^{+0.00013}_{-0.00014}$	$\chi_{\text{prior}}^2$	9.45	$22 (\nu: 17.7)$
$A_{100}^{\text{dustTE}}$	0.139	$0.141^{+0.074}_{-0.074}$	$Y_P^{\text{BBN}}$	0.259698	$0.25971^{+0.00013}_{-0.00014}$	$\chi_{\text{CMB}}^2$	12966.2	$12985.8 (\nu: 25.0)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.058}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.788	$2.781^{+0.062}_{-0.060}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.17}$	$\text{Age}/\text{Gyr}$	12.8659	$12.859^{+0.049}_{-0.049}$			

Best-fit  $\chi_{\text{eff}}^2 = 12975.67$ ;  $\bar{\chi}_{\text{eff}}^2 = 13007.41$ ;  $R - 1 = 0.00946$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 11.35 lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10492.41 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2462.47

### 11.47 base\_nnu\_lensonly

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02230	$0.0223^{+0.0017}_{-0.0018}$	$10^9 A_s$	2.25	$2.22^{+0.69}_{-0.64}$	$r_{\text{drag}}$	153.5	$138^{+40}_{-30}$
$\Omega_c h^2$	0.109	$0.136^{+0.061}_{-0.059}$	$10^9 A_s e^{-2\tau}$	1.96	$1.93^{+0.60}_{-0.56}$	$k_D$	0.1367	$0.147^{+0.021}_{-0.022}$
$100\theta_{\text{MC}}$	1.075	$1.00^{+0.16}_{-0.15}$	$D_{40}$	1331	$1290^{+500}_{-400}$	$100\theta_D$	0.1640	$0.160^{+0.015}_{-0.015}$
$N_{\text{eff}}$	2.44	—	$D_{220}$	6072	$6047^{+2000}_{-2000}$	$z_{\text{eq}}$	3424	$3076^{+1000}_{-1000}$
$\ln(10^{10} A_s)$	3.115	$3.09^{+0.29}_{-0.29}$	$D_{810}$	2674	$2206^{+900}_{-900}$	$k_{\text{eq}}$	0.01001	$0.0103^{+0.0022}_{-0.0021}$
$n_s$	0.9621	$0.959^{+0.039}_{-0.039}$	$D_{1420}$	849	$710^{+300}_{-300}$	$100\theta_{\text{eq}}$	0.835	$0.86^{+0.15}_{-0.15}$
$H_0$	75.1	—	$D_{2000}$	249	$231^{+100}_{-100}$	$100\theta_{s,\text{eq}}$	0.462	$0.472^{+0.076}_{-0.076}$
$\Omega_\Lambda$	0.765	$0.60^{+0.34}_{-0.49}$	$n_{s,0.002}$	0.9621	$0.959^{+0.039}_{-0.039}$	$r_{\text{drag}}/D_V(0.57)$	0.0795	$0.069^{+0.027}_{-0.024}$
$\Omega_m$	0.235	$0.40^{+0.49}_{-0.34}$	$Y_P$	0.2367	$0.262^{+0.040}_{-0.058}$	$H(0.57)$	97.1	$97^{+20}_{-20}$
$\Omega_m h^2$	0.132	$0.159^{+0.061}_{-0.059}$	$Y_P^{\text{BBN}}$	0.2380	$0.263^{+0.040}_{-0.058}$	$D_A(0.57)$	1289	$1395^{+500}_{-400}$
$\Omega_m h^3$	0.099	$0.110^{+0.076}_{-0.067}$	$10^5 D/H$	2.39	$3.33^{+1.8}_{-1.8}$	$F_{\text{AP}}(0.57)$	0.655	$0.691^{+0.094}_{-0.075}$
$\sigma_8$	0.847	$0.78^{+0.17}_{-0.19}$	Age/Gyr	13.43	$13.5^{+3.6}_{-3.2}$	$f\sigma_8(0.57)$	0.467	$0.446^{+0.054}_{-0.070}$
$\sigma_8 \Omega_m^{0.5}$	0.410	$0.46^{+0.13}_{-0.12}$	$z_*$	1088.4	$1092.9^{+8.5}_{-9.1}$	$\sigma_8(0.57)$	0.652	$0.57^{+0.19}_{-0.20}$
$\sigma_8 \Omega_m^{0.25}$	0.5894	$0.591^{+0.042}_{-0.041}$	$r_*$	150.7	$135^{+40}_{-30}$	$\chi^2_{\text{lensing}}$	8.41	10.6 ( $\nu$ : 2.1)
$\sigma_8/h^{0.5}$	0.978	$0.942^{+0.087}_{-0.076}$	$100\theta_*$	1.075	$1.00^{+0.17}_{-0.15}$	$\chi^2_{\text{prior}}$	0.01	2.00 ( $\nu$ : 2.0)
$\langle d^2 \rangle^{1/2}$	2.451	$2.47^{+0.13}_{-0.12}$	$D_A/\text{Gpc}$	14.01	$13.4^{+2.8}_{-2.6}$			
$z_{\text{re}}$	8.99	$9.65^{+1.6}_{-1.6}$	$z_{\text{drag}}$	1058.5	$1062.1^{+8.3}_{-8.8}$			

Best-fit  $\chi^2_{\text{eff}} = 8.42$ ;  $\Delta\chi^2_{\text{eff}} = -0.03$ ;  $\bar{\chi}^2_{\text{eff}} = 12.65$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.13$ ;  $R - 1 = 0.00985$   
 $\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.41 ( $\Delta$  -0.03)



### 11.48 base\_nnu\_lensonly\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02246	$0.0223^{+0.0017}_{-0.0018}$	$10^9 A_s e^{-2\tau}$	1.845	$1.83^{+0.48}_{-0.46}$	$100\theta_D$	0.1599	$0.162^{+0.011}_{-0.0092}$
$\Omega_c h^2$	0.114	$0.130^{+0.073}_{-0.059}$	$D_{40}$	1227	$1228^{+300}_{-300}$	$z_{\text{eq}}$	3385	$3402^{+1000}_{-900}$
$100\theta_{\text{MC}}$	1.042	$1.040^{+0.057}_{-0.056}$	$D_{220}$	5715	$5663^{+2000}_{-2000}$	$k_{\text{eq}}$	0.01014	$0.0106^{+0.0022}_{-0.0021}$
$N_{\text{eff}}$	2.78	—	$D_{810}$	2522	$2403^{+600}_{-600}$	$100\theta_{\text{eq}}$	0.817	$0.82^{+0.14}_{-0.13}$
$\ln(10^{10} A_s)$	3.055	$3.04^{+0.25}_{-0.24}$	$D_{1420}$	817	$754^{+300}_{-200}$	$100\theta_{\text{s,eq}}$	0.451	$0.454^{+0.071}_{-0.069}$
$n_s$	0.9623	$0.957^{+0.040}_{-0.039}$	$D_{2000}$	233	$219^{+100}_{-100}$	$r_{\text{drag}}/D_V(0.57)$	0.07177	$0.0718^{+0.0012}_{-0.0011}$
$H_0$	66.6	$70^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9623	$0.957^{+0.040}_{-0.039}$	$H(0.57)$	91.5	$96^{+20}_{-20}$
$\Omega_\Lambda$	0.691	$0.692^{+0.060}_{-0.064}$	$Y_{\text{P}}$	0.242	$0.248^{+0.049}_{-0.052}$	$D_A(0.57)$	1409	$1361^{+300}_{-300}$
$\Omega_m$	0.309	$0.308^{+0.064}_{-0.060}$	$Y_{\text{P}}^{\text{BBN}}$	0.243	$0.250^{+0.049}_{-0.052}$	$F_{\text{AP}}(0.57)$	0.6753	$0.675^{+0.016}_{-0.016}$
$\Omega_m h^2$	0.137	$0.153^{+0.073}_{-0.059}$	$10^5 D/H$	2.48	$2.88^{+1.9}_{-1.5}$	$f\sigma_8(0.57)$	0.4662	$0.468^{+0.030}_{-0.031}$
$\Omega_m h^3$	0.091	$0.111^{+0.089}_{-0.066}$	Age/Gyr	14.03	$13.5^{+3.0}_{-2.9}$	$\sigma_8(0.57)$	0.598	$0.603^{+0.050}_{-0.052}$
$\sigma_8$	0.803	$0.808^{+0.058}_{-0.060}$	$z_*$	1089.0	$1091^{+10}_{-9.0}$	$\chi^2_{\text{lensing}}$	8.52	$10.7 (\nu: 2.3)$
$\sigma_8 \Omega_m^{0.5}$	0.4461	$0.448^{+0.043}_{-0.041}$	$r_*$	147.3	$142^{+40}_{-30}$	$\chi^2_{6\text{DF}}$	0.011	$0.11 (\nu: 0.0)$
$\sigma_8 \Omega_m^{0.25}$	0.5985	$0.601^{+0.041}_{-0.041}$	$100\theta_*$	1.042	$1.040^{+0.059}_{-0.058}$	$\chi^2_{\text{MGS}}$	1.41	$1.61 (\nu: 0.4)$
$\sigma_8/h^{0.5}$	0.983	$0.969^{+0.079}_{-0.085}$	$D_A/\text{Gpc}$	14.14	$13.7^{+2.8}_{-2.8}$	$\chi^2_{\text{DR11CMAS}}$	2.39	$3.26 (\nu: 1.0)$
$\langle d^2 \rangle^{1/2}$	2.449	$2.44^{+0.11}_{-0.11}$	$z_{\text{drag}}$	1059.5	$1060.7^{+9.2}_{-8.5}$	$\chi^2_{\text{DR11LOWZ}}$	0.48	$0.64 (\nu: 0.2)$
$z_{\text{re}}$	9.04	$9.44^{+1.9}_{-1.7}$	$r_{\text{drag}}$	150.0	$145^{+40}_{-40}$	$\chi^2_{\text{prior}}$	0.04	$2.06 (\nu: 2.2)$
$10^9 A_s$	2.12	$2.11^{+0.55}_{-0.52}$	$k_D$	0.1390	$0.143^{+0.025}_{-0.022}$	$\chi^2_{\text{BAO}}$	4.29	$5.62 (\nu: 1.9)$

Best-fit  $\chi^2_{\text{eff}} = 12.86$ ;  $\Delta\chi^2_{\text{eff}} = -0.07$ ;  $\bar{\chi}^2_{\text{eff}} = 18.35$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.37$ ;  $R - 1 = 0.00916$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  -0.07) DR11CMAS: 2.39 ( $\Delta$  -0.06) DR11LOWZ: 0.48 ( $\Delta$  0.05) CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.52 ( $\Delta$  -0.03)

### 11.49 base\_nnu\_lensonly\_theta

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02228	$0.0223^{+0.0018}_{-0.0018}$	$10^9 A_s$	2.23	$2.24^{+0.71}_{-0.64}$	$z_{\text{drag}}$	1058.9	$1061.6^{+7.9}_{-8.4}$
$\Omega_c h^2$	0.111	$0.135^{+0.066}_{-0.061}$	$10^9 A_s e^{-2\tau}$	1.94	$1.95^{+0.62}_{-0.56}$	$r_{\text{drag}}$	150.9	$140^{+40}_{-30}$
$N_{\text{eff}}$	2.84	< 7.89	$D_{40}$	1304	$1318^{+500}_{-400}$	$k_D$	0.1377	$0.146^{+0.022}_{-0.023}$
$\ln(10^{10} A_s)$	3.105	$3.10^{+0.31}_{-0.31}$	$D_{220}$	6109	$6050^{+2000}_{-2000}$	$100\theta_D$	0.1604	$0.165^{+0.012}_{-0.015}$
$n_s$	0.9619	$0.959^{+0.039}_{-0.038}$	$D_{810}$	2656	$2532^{+800}_{-700}$	$z_{\text{eq}}$	3264	$3227^{+900}_{-700}$
$H_0$	68.2	—	$D_{1420}$	855	$781^{+300}_{-300}$	$k_{\text{eq}}$	0.00982	$0.0105^{+0.0023}_{-0.0020}$
$\Omega_\Lambda$	0.713	$0.72^{+0.15}_{-0.22}$	$D_{2000}$	242	$213^{+90}_{-90}$	$100\theta_{\text{eq}}$	0.838	$0.86^{+0.14}_{-0.16}$
$\Omega_m$	0.287	$0.28^{+0.22}_{-0.15}$	$n_{s,0.002}$	0.9619	$0.959^{+0.039}_{-0.038}$	$100\theta_{s,\text{eq}}$	0.463	$0.471^{+0.073}_{-0.082}$
$\Omega_m h^2$	0.133	$0.158^{+0.066}_{-0.061}$	$Y_P$	0.2425	$0.257^{+0.038}_{-0.054}$	$r_{\text{drag}}/D_V(0.57)$	0.0731	$0.0746^{+0.0098}_{-0.011}$
$\Omega_m h^3$	0.091	$0.125^{+0.086}_{-0.085}$	$Y_P^{\text{BBN}}$	0.2438	$0.259^{+0.039}_{-0.054}$	$H(0.57)$	92.1	$102^{+30}_{-30}$
$\sigma_8$	0.808	$0.829^{+0.098}_{-0.13}$	$10^5 D/H$	2.54	$3.09^{+1.5}_{-1.6}$	$D_A(0.57)$	1388	$1280^{+600}_{-400}$
$\sigma_8 \Omega_m^{0.5}$	0.432	$0.432^{+0.086}_{-0.080}$	Age/Gyr	13.99	$13.0^{+4.3}_{-3.0}$	$F_{\text{AP}}(0.57)$	0.6696	$0.667^{+0.053}_{-0.039}$
$\sigma_8 \Omega_m^{0.25}$	0.5909	$0.597^{+0.042}_{-0.044}$	$z_*$	1089.0	$1092.3^{+9.0}_{-9.5}$	$f\sigma_8(0.57)$	0.4629	$0.465^{+0.036}_{-0.038}$
$\sigma_8/h^{0.5}$	0.978	$0.952^{+0.083}_{-0.073}$	$r_*$	148.1	$138^{+40}_{-30}$	$\sigma_8(0.57)$	0.607	$0.63^{+0.11}_{-0.14}$
$\langle d^2 \rangle^{1/2}$	2.468	$2.45^{+0.11}_{-0.10}$	$100\theta_*$	1.04114	$1.0402^{+0.0026}_{-0.0022}$	$\chi_{\text{lensing}}^2$	8.44	10.6 ( $\nu: 2.2$ )
$z_{\text{re}}$	9.02	$9.64^{+1.7}_{-1.8}$	$D_A/\text{Gpc}$	14.23	$13.2^{+3.4}_{-2.7}$	$\chi_{\text{prior}}^2$	0.01	2.01 ( $\nu: 1.9$ )

Best-fit  $\chi_{\text{eff}}^2 = 8.45$ ;  $\Delta\chi_{\text{eff}}^2 = 0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12.66$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.23$ ;  $R - 1 = 0.00899$   
 $\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.44 ( $\Delta -0.00$ )

### 11.50 base\_nnu\_lensonly\_BAO\_theta

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02225	$0.0223^{+0.0018}_{-0.0018}$	$D_{40}$	1259	$1213^{+200}_{-200}$	$z_{\text{eq}}$	3351	$3369^{+120}_{-110}$
$\Omega_c h^2$	0.108	$0.131^{+0.076}_{-0.060}$	$D_{220}$	5903	$5564^{+1000}_{-1000}$	$k_{\text{eq}}$	0.00985	$0.0107^{+0.0027}_{-0.0022}$
$N_{\text{eff}}$	2.50	$3.67^{+3.9}_{-3.2}$	$D_{810}$	2610	$2419^{+700}_{-700}$	$100\theta_{\text{eq}}$	0.8216	$0.820^{+0.017}_{-0.017}$
$\ln(10^{10} A_s)$	3.074	$3.04^{+0.13}_{-0.12}$	$D_{1420}$	852	$769^{+300}_{-300}$	$100\theta_{s,\text{eq}}$	0.4538	$0.4528^{+0.0094}_{-0.0094}$
$n_s$	0.9616	$0.957^{+0.039}_{-0.039}$	$D_{2000}$	244	$215^{+100}_{-100}$	$r_{\text{drag}}/D_V(0.57)$	0.07181	$0.0718^{+0.0010}_{-0.0010}$
$H_0$	65.2	$70^{+20}_{-10}$	$n_{s,0.002}$	0.9616	$0.957^{+0.039}_{-0.039}$	$H(0.57)$	89.4	$97^{+20}_{-20}$
$\Omega_\Lambda$	0.6924	$0.693^{+0.018}_{-0.020}$	$Y_P$	0.2376	$0.250^{+0.039}_{-0.035}$	$D_A(0.57)$	1441	$1352^{+300}_{-300}$
$\Omega_m$	0.3076	$0.307^{+0.020}_{-0.018}$	$Y_P^{\text{BBN}}$	0.2389	$0.252^{+0.039}_{-0.035}$	$F_{\text{AP}}(0.57)$	0.67504	$0.6748^{+0.0050}_{-0.0047}$
$\Omega_m h^2$	0.131	$0.154^{+0.077}_{-0.061}$	$10^5 D/H$	2.42	$2.82^{+1.4}_{-1.1}$	$f\sigma_8(0.57)$	0.4620	$0.470^{+0.034}_{-0.033}$
$\Omega_m h^3$	0.085	$0.111^{+0.087}_{-0.065}$	Age/Gyr	14.36	$13.5^{+2.7}_{-3.0}$	$\sigma_8(0.57)$	0.5932	$0.604^{+0.046}_{-0.045}$
$\sigma_8$	0.796	$0.810^{+0.060}_{-0.059}$	$z_*$	1088.4	$1091.3^{+9.6}_{-8.0}$	$\chi^2_{\text{lensing}}$	8.43	10.7 ( $\nu$ : 2.3)
$\sigma_8 \Omega_m^{0.5}$	0.4415	$0.449^{+0.032}_{-0.032}$	$r_*$	150.8	$141^{+30}_{-30}$	$\chi^2_{6\text{DF}}$	0.006	0.064 ( $\nu$ : 0.0)
$\sigma_8 \Omega_m^{0.25}$	0.5929	$0.603^{+0.044}_{-0.043}$	$100\theta_*$	1.04137	$1.0407^{+0.0019}_{-0.0022}$	$\chi^2_{\text{MGS}}$	1.47	1.60 ( $\nu$ : 0.2)
$\sigma_8/h^{0.5}$	0.986	$0.969^{+0.057}_{-0.061}$	$D_A/\text{Gpc}$	14.48	$13.6^{+2.7}_{-3.0}$	$\chi^2_{\text{DR11CMASS}}$	2.40	3.08 ( $\nu$ : 0.5)
$\langle d^2 \rangle^{1/2}$	2.464	$2.443^{+0.097}_{-0.096}$	$z_{\text{drag}}$	1058.3	$1060.8^{+9.2}_{-8.5}$	$\chi^2_{\text{DR11LOWZ}}$	0.43	0.60 ( $\nu$ : 0.2)
$z_{\text{re}}$	8.92	$9.47^{+1.8}_{-1.6}$	$r_{\text{drag}}$	153.6	$144^{+30}_{-30}$	$\chi^2_{\text{prior}}$	0.01	2.06 ( $\nu$ : 2.1)
$10^9 A_s$	2.164	$2.09^{+0.27}_{-0.27}$	$k_D$	0.1363	$0.144^{+0.025}_{-0.022}$	$\chi^2_{\text{BAO}}$	4.31	5.35 ( $\nu$ : 1.0)
$10^9 A_s e^{-2\tau}$	1.881	$1.82^{+0.24}_{-0.23}$	$100\theta_D$	0.1592	$0.162^{+0.011}_{-0.0094}$			

Best-fit  $\chi^2_{\text{eff}} = 12.75$ ;  $\Delta\chi^2_{\text{eff}} = -0.19$ ;  $\bar{\chi}^2_{\text{eff}} = 18.13$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.17$ ;  $R - 1 = 0.00647$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  -0.00) MGS: 1.47 ( $\Delta$  0.00) DR11CMASS: 2.40 ( $\Delta$  -0.01) DR11LOWZ: 0.43 ( $\Delta$  -0.02) CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.43 ( $\Delta$  -0.19)

### 11.51 base\_nnu\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02219	$0.02224^{+0.00066}_{-0.00063}$	$\Omega_m$	0.3180	$0.315^{+0.038}_{-0.036}$	$D_A/\text{Gpc}$	13.915	$13.86^{+0.48}_{-0.47}$
$\Omega_c h^2$	0.1196	$0.1205^{+0.0080}_{-0.0077}$	$\Omega_m h^2$	0.1424	$0.1434^{+0.0083}_{-0.0080}$	$z_{\text{drag}}$	1059.47	$1059.7^{+2.3}_{-2.2}$
$100\theta_{\text{MC}}$	1.04089	$1.0408^{+0.0011}_{-0.0011}$	$\Omega_m h^3$	0.0953	$0.097^{+0.012}_{-0.011}$	$r_{\text{drag}}$	147.6	$146.9^{+5.3}_{-5.3}$
$\tau$	0.0727	$0.074^{+0.026}_{-0.023}$	$\sigma_8$	0.8251	$0.829^{+0.033}_{-0.031}$	$k_D$	0.14034	$0.1408^{+0.0039}_{-0.0038}$
$N_{\text{eff}}$	3.01	$3.09^{+0.60}_{-0.56}$	$\sigma_8 \Omega_m^{0.5}$	0.4653	$0.465^{+0.026}_{-0.026}$	$100\theta_D$	0.16087	$0.1611^{+0.0013}_{-0.0013}$
$\ln(10^{10} A_s)$	3.079	$3.084^{+0.058}_{-0.057}$	$\sigma_8 \Omega_m^{0.25}$	0.6196	$0.620^{+0.024}_{-0.024}$	$z_{\text{eq}}$	3405	$3392^{+130}_{-130}$
$n_s$	0.9635	$0.966^{+0.028}_{-0.027}$	$\sigma_8/h^{0.5}$	1.0087	$1.008^{+0.033}_{-0.033}$	$k_{\text{eq}}$	0.010365	$0.01038^{+0.00031}_{-0.00030}$
$y_{\text{cal}}$	1.00026	$1.0004^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.494	$2.490^{+0.090}_{-0.091}$	$100\theta_{\text{eq}}$	0.8123	$0.815^{+0.026}_{-0.024}$
$A_{217}^{\text{CIB}}$	66.7	$64^{+10}_{-10}$	$z_{\text{re}}$	9.50	$9.61^{+2.3}_{-2.2}$	$100\theta_{s,\text{eq}}$	0.4490	$0.450^{+0.013}_{-0.012}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$10^9 A_s$	2.173	$2.18^{+0.13}_{-0.12}$	$r_{\text{drag}}/D_V(0.57)$	0.07123	$0.0714^{+0.0020}_{-0.0018}$
$A_{143}^{\text{tSZ}}$	7.05	$5.05^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8791	$1.883^{+0.042}_{-0.044}$	$H(0.57)$	92.56	$93.2^{+4.7}_{-4.3}$
$A_{100}^{\text{PS}}$	254	$260^{+60}_{-50}$	$D_{40}$	1237.3	$1235^{+43}_{-43}$	$D_A(0.57)$	1398	$1388^{+84}_{-83}$
$A_{143}^{\text{PS}}$	39.3	$44^{+20}_{-20}$	$D_{220}$	5715	$5718^{+78}_{-80}$	$F_{\text{AP}}(0.57)$	0.6777	$0.6768^{+0.0093}_{-0.0092}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2534.3	$2535^{+27}_{-28}$	$f\sigma_8(0.57)$	0.4814	$0.482^{+0.017}_{-0.017}$
$A_{217}^{\text{PS}}$	97.7	$97^{+20}_{-20}$	$D_{1420}$	815.0	$814^{+10}_{-9.9}$	$\sigma_8(0.57)$	0.6123	$0.616^{+0.029}_{-0.027}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.53	$230.0^{+4.5}_{-4.4}$	$f_{2000}^{143}$	29.5	$31^{+7}_{-7}$
$A_{100}^{\text{dustTT}}$	7.37	$7.45^{+3.7}_{-3.6}$	$n_{s,0.002}$	0.9635	$0.966^{+0.028}_{-0.027}$	$f_{2000}^{143 \times 217}$	32.1	$33^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	8.91	$9.02^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.2448	$0.2459^{+0.0081}_{-0.0081}$	$f_{2000}^{217}$	105.74	$106.4^{+4.8}_{-4.7}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.2^{+8.2}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.2461	$0.2472^{+0.0081}_{-0.0081}$	$\chi_{\text{WMAPTEB}}^2$	19734.5	19735.5 ( $\nu$ : 3.9)
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 D/H$	2.611	$2.63^{+0.14}_{-0.14}$	$\chi_{\text{plik}}^2$	763.8	778.4 ( $\nu$ : 18.1)
$c_{100}$	0.99795	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.85	$13.78^{+0.61}_{-0.61}$	$\chi_{\text{prior}}^2$	1.92	7.35 ( $\nu$ : 6.3)
$c_{217}$	0.99597	$0.9960^{+0.0028}_{-0.0028}$	$z_*$	1090.07	$1090.17^{+0.96}_{-0.95}$	$\chi_{\text{CMB}}^2$	20498.2	20513.8 ( $\nu$ : 16.3)
$H_0$	66.92	$67.6^{+5.1}_{-4.7}$	$r_*$	144.9	$144.2^{+5.1}_{-5.0}$			
$\Omega_\Lambda$	0.6820	$0.685^{+0.036}_{-0.038}$	$100\theta_*$	1.04112	$1.0410^{+0.0014}_{-0.0014}$			

Best-fit  $\chi_{\text{eff}}^2 = 20500.14$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 20521.16$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.02$ ;  $R - 1 = 0.00763$   
 $\chi_{\text{eff}}^2$ : CMB - bflike\_WMAP353ggf\_LFI312\_nw8: 19734.46 ( $\Delta$  0.31) plik\_dx11dr2\_HM\_v18\_TT: 763.76 ( $\Delta$  -0.32)

## 11.52 base\_nnu\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02235^{+0.00065}_{-0.00061}$	$\Omega_m$	$0.303^{+0.029}_{-0.028}$	$D_A/\text{Gpc}$	$13.84^{+0.45}_{-0.46}$
$\Omega_c h^2$	$0.1195^{+0.0078}_{-0.0072}$	$\Omega_m h^2$	$0.1425^{+0.0082}_{-0.0076}$	$z_{\text{drag}}$	$1059.9^{+2.2}_{-2.2}$
$100\theta_{\text{MC}}$	$1.0410^{+0.0011}_{-0.0011}$	$\Omega_m h^3$	$0.098^{+0.012}_{-0.011}$	$r_{\text{drag}}$	$146.8^{+5.1}_{-5.1}$
$\tau$	$0.071^{+0.024}_{-0.022}$	$\sigma_8$	$0.821^{+0.031}_{-0.028}$	$k_D$	$0.1408^{+0.0038}_{-0.0036}$
$N_{\text{eff}}$	$3.15^{+0.58}_{-0.54}$	$\sigma_8 \Omega_m^{0.5}$	$0.452^{+0.017}_{-0.017}$	$100\theta_D$	$0.1612^{+0.0013}_{-0.0012}$
$\ln(10^{10} A_s)$	$3.074^{+0.056}_{-0.053}$	$\sigma_8 \Omega_m^{0.25}$	$0.609^{+0.017}_{-0.017}$	$z_{\text{eq}}$	$3347^{+100}_{-100}$
$n_s$	$0.972^{+0.025}_{-0.024}$	$\sigma_8/h^{0.5}$	$0.991^{+0.021}_{-0.021}$	$k_{\text{eq}}$	$0.01028^{+0.00028}_{-0.00027}$
$y_{\text{cal}}$	$1.0002^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	$2.446^{+0.057}_{-0.059}$	$100\theta_{\text{eq}}$	$0.823^{+0.021}_{-0.020}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$z_{\text{re}}$	$9.24^{+2.2}_{-2.1}$	$100\theta_{s,\text{eq}}$	$0.455^{+0.011}_{-0.010}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.16^{+0.12}_{-0.12}$	$r_{\text{drag}}/D_V(0.57)$	$0.0721^{+0.0016}_{-0.0015}$
$A_{143}^{\text{tSZ}}$	$4.91^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	$1.878^{+0.040}_{-0.044}$	$H(0.57)$	$93.8^{+4.4}_{-4.2}$
$A_{100}^{\text{PS}}$	$262^{+60}_{-50}$	$D_{40}$	$1221^{+36}_{-35}$	$D_A(0.57)$	$1372^{+77}_{-76}$
$A_{143}^{\text{PS}}$	$45^{+20}_{-20}$	$D_{220}$	$5718^{+79}_{-79}$	$F_{\text{AP}}(0.57)$	$0.6738^{+0.0074}_{-0.0074}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{810}$	$2533^{+27}_{-27}$	$f\sigma_8(0.57)$	$0.475^{+0.014}_{-0.013}$
$A_{217}^{\text{PS}}$	$96^{+20}_{-20}$	$D_{1420}$	$814.1^{+9.9}_{-9.8}$	$\sigma_8(0.57)$	$0.613^{+0.029}_{-0.026}$
$A^{\text{kSZ}}$	—	$D_{2000}$	$229.6^{+4.5}_{-4.3}$	$f_{2000}^{143}$	$31^{+7}_{-7}$
$A_{100}^{\text{dustTT}}$	$7.52^{+3.7}_{-3.6}$	$n_{s,0.002}$	$0.972^{+0.025}_{-0.024}$	$f_{2000}^{143 \times 217}$	$33^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	$9.02^{+3.6}_{-3.6}$	$Y_{\text{P}}$	$0.2466^{+0.0078}_{-0.0077}$	$f_{2000}^{217}$	$106.7^{+4.6}_{-4.6}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.2}_{-8.3}$	$Y_{\text{P}}^{\text{BBN}}$	$0.2480^{+0.0078}_{-0.0077}$	$\chi_{\text{lensing}}^2$	$10.0 (\nu: 1.2)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^5 D/H$	$2.63^{+0.14}_{-0.13}$	$\chi_{\text{WMAPTEB}}^2$	$19733.8 (\nu: 2.2)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$\text{Age}/\text{Gyr}$	$13.70^{+0.58}_{-0.57}$	$\chi_{\text{plik}}^2$	$780.4 (\nu: 20.7)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0028}$	$z_*$	$1090.00^{+0.92}_{-0.92}$	$\chi_{\text{prior}}^2$	$7.42 (\nu: 6.6)$
$H_0$	$68.7^{+4.7}_{-4.4}$	$r_*$	$144.1^{+4.9}_{-4.9}$	$\chi_{\text{CMB}}^2$	$20524.3 (\nu: 20.8)$
$\Omega_\Lambda$	$0.697^{+0.028}_{-0.029}$	$100\theta_*$	$1.0411^{+0.0013}_{-0.0014}$		

$$\bar{\chi}_{\text{eff}}^2 = 20531.67; \Delta \bar{\chi}_{\text{eff}}^2 = 0.91; R - 1 = 0.02458$$

### 11.53 base\_nnu\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02231^{+0.00047}_{-0.00046}$	$\Omega_m h^2$	$0.1436^{+0.0079}_{-0.0075}$	$r_{\text{drag}}$	$146.5^{+4.4}_{-4.4}$
$\Omega_c h^2$	$0.1207^{+0.0077}_{-0.0073}$	$\Omega_m h^3$	$0.0979^{+0.0092}_{-0.0085}$	$k_D$	$0.1411^{+0.0033}_{-0.0032}$
$100\theta_{\text{MC}}$	$1.0408^{+0.0011}_{-0.0011}$	$\sigma_8$	$0.830^{+0.030}_{-0.029}$	$100\theta_D$	$0.1612^{+0.0011}_{-0.0011}$
$\tau$	$0.075^{+0.024}_{-0.022}$	$\sigma_8 \Omega_m^{0.5}$	$0.461^{+0.019}_{-0.018}$	$z_{\text{eq}}$	$3373^{+63}_{-63}$
$N_{\text{eff}}$	$3.14^{+0.46}_{-0.44}$	$\sigma_8 \Omega_m^{0.25}$	$0.619^{+0.022}_{-0.021}$	$k_{\text{eq}}$	$0.01036^{+0.00029}_{-0.00028}$
$\ln(10^{10} A_s)$	$3.087^{+0.052}_{-0.049}$	$\sigma_8/h^{0.5}$	$1.005^{+0.029}_{-0.027}$	$100\theta_{\text{eq}}$	$0.818^{+0.012}_{-0.012}$
$n_s$	$0.970^{+0.017}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	$2.479^{+0.066}_{-0.065}$	$100\theta_{s,\text{eq}}$	$0.4521^{+0.0061}_{-0.0059}$
$y_{\text{cal}}$	$1.0004^{+0.0048}_{-0.0048}$	$z_{\text{re}}$	$9.73^{+2.1}_{-2.1}$	$r_{\text{drag}}/D_V(0.57)$	$0.07169^{+0.00092}_{-0.00088}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$10^9 A_s$	$2.19^{+0.12}_{-0.11}$	$H(0.57)$	$93.6^{+3.2}_{-3.1}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s e^{-2\tau}$	$1.885^{+0.041}_{-0.041}$	$D_A(0.57)$	$1378^{+52}_{-51}$
$A_{143}^{\text{tSZ}}$	$4.99^{+3.7}_{-3.8}$	$D_{40}$	$1230^{+30}_{-30}$	$F_{\text{AP}}(0.57)$	$0.6755^{+0.0043}_{-0.0043}$
$A_{100}^{\text{PS}}$	$261^{+60}_{-50}$	$D_{220}$	$5720^{+77}_{-79}$	$f\sigma_8(0.57)$	$0.482^{+0.017}_{-0.016}$
$A_{143}^{\text{PS}}$	$45^{+20}_{-20}$	$D_{810}$	$2535^{+27}_{-27}$	$\sigma_8(0.57)$	$0.618^{+0.024}_{-0.023}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{1420}$	$814.2^{+9.7}_{-10}$	$f_{2000}^{143}$	$31^{+7}_{-6}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$D_{2000}$	$229.8^{+4.4}_{-4.2}$	$f_{2000}^{143 \times 217}$	$33^{+5}_{-5}$
$A^{\text{kSZ}}$	—	$n_{s,0.002}$	$0.970^{+0.017}_{-0.017}$	$f_{2000}^{217}$	$106.6^{+4.6}_{-4.5}$
$A_{100}^{\text{dustTT}}$	$7.45^{+3.7}_{-3.6}$	$Y_{\text{P}}$	$0.2466^{+0.0061}_{-0.0062}$	$\chi_{\text{WMAPTEB}}^2$	$19734.8 (\nu: 2.8)$
$A_{143}^{\text{dustTT}}$	$9.01^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	$0.2480^{+0.0061}_{-0.0062}$	$\chi_{\text{plik}}^2$	$778.4 (\nu: 16.3)$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.1}_{-8.3}$	$10^5 D/H$	$2.64^{+0.13}_{-0.13}$	$\chi_{6\text{DF}}^2$	$0.065 (\nu: 0.0)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	Age/Gyr	$13.71^{+0.44}_{-0.43}$	$\chi_{\text{MGS}}^2$	$1.40 (\nu: 0.2)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	$1090.15^{+0.94}_{-0.94}$	$\chi_{\text{DR11CMASS}}^2$	$2.96 (\nu: 0.3)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0028}$	$r_*$	$143.9^{+4.2}_{-4.2}$	$\chi_{\text{DR11LOWZ}}^2$	$0.73 (\nu: 0.2)$
$H_0$	$68.2^{+3.0}_{-2.8}$	$100\theta_*$	$1.0409^{+0.0013}_{-0.0013}$	$\chi_{\text{prior}}^2$	$7.35 (\nu: 6.5)$
$\Omega_\Lambda$	$0.691^{+0.017}_{-0.017}$	$D_A/\text{Gpc}$	$13.82^{+0.39}_{-0.40}$	$\chi_{\text{CMB}}^2$	$20513.2 (\nu: 15.4)$
$\Omega_m$	$0.309^{+0.017}_{-0.017}$	$z_{\text{drag}}$	$1059.9^{+1.7}_{-1.7}$	$\chi_{\text{BAO}}^2$	$5.16 (\nu: 0.7)$

$$\bar{\chi}_{\text{eff}}^2 = 20525.70; \Delta\bar{\chi}_{\text{eff}}^2 = 0.80; R - 1 = 0.01099$$

## 12 nnu+meffsterile

### 12.1 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02225	$0.02243^{+0.00059}_{-0.00056}$	$\Omega_\Lambda$	0.6860	$0.680^{+0.040}_{-0.042}$	$r_*$	144.61	$142.3^{+3.0}_{-3.6}$
$\Omega_c h^2$	0.1196	$0.1214^{+0.0088}_{-0.0097}$	$\Omega_m$	0.3140	$0.320^{+0.042}_{-0.040}$	$100\theta_*$	1.04110	$1.0406^{+0.0011}_{-0.0012}$
$100\theta_{MC}$	1.04092	$1.0406^{+0.0010}_{-0.0010}$	$\Omega_m h^2$	0.1425	$0.1476^{+0.0084}_{-0.0077}$	$D_A/Gpc$	13.890	$13.68^{+0.28}_{-0.33}$
$\tau$	0.0746	$0.086^{+0.044}_{-0.041}$	$\Omega_\nu h^2$	0.0007	< 0.0100	$z_{drag}$	1059.63	$1060.6^{+1.8}_{-1.6}$
$m_{\nu, sterile}^{eff}$	0.003	< 0.883	$\Omega_m h^3$	0.0960	$0.1004^{+0.0082}_{-0.0060}$	$r_{drag}$	147.32	$144.9^{+3.1}_{-3.7}$
$N_{eff}$	3.046	< 3.70	$\sigma_8$	0.826	$0.801^{+0.071}_{-0.078}$	$k_D$	0.14054	$0.1424^{+0.0029}_{-0.0025}$
$\ln(10^{10} A_s)$	3.083	$3.112^{+0.090}_{-0.081}$	$\sigma_8 \Omega_m^{0.5}$	0.4631	$0.452^{+0.033}_{-0.035}$	$100\theta_D$	0.16093	$0.1614^{+0.0011}_{-0.00094}$
$n_s$	0.9655	$0.973^{+0.025}_{-0.022}$	$\sigma_8 \Omega_m^{0.25}$	0.6186	$0.602^{+0.044}_{-0.049}$	$z_{eq}$	3390	$3324^{+140}_{-150}$
$y_{cal}$	1.00021	$1.0003^{+0.0050}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.007	$0.971^{+0.071}_{-0.081}$	$k_{eq}$	0.010348	$0.01035^{+0.00042}_{-0.00045}$
$A_{217}^{CIB}$	67.3	$65^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.489	$2.498^{+0.095}_{-0.095}$	$100\theta_{eq}$	0.8151	$0.830^{+0.031}_{-0.029}$
$\xi^{tSZ \times CIB}$	0.00	—	$z_{re}$	9.67	$10.7^{+3.6}_{-3.9}$	$100\theta_{s,eq}$	0.4504	$0.458^{+0.016}_{-0.015}$
$A_{143}^{tSZ}$	7.22	$4.80^{+3.9}_{-3.9}$	$10^9 A_s$	2.182	$2.25^{+0.20}_{-0.19}$	$r_{drag}/D_V(0.57)$	0.07144	$0.0711^{+0.0023}_{-0.0021}$
$A_{100}^{PS}$	253	$264^{+60}_{-60}$	$10^9 A_s e^{-2\tau}$	1.8794	$1.893^{+0.035}_{-0.034}$	$H(0.57)$	92.91	$94.1^{+3.3}_{-2.3}$
$A_{143}^{PS}$	38.5	$47^{+20}_{-20}$	$D_{40}$	1234.8	$1227^{+36}_{-40}$	$D_A(0.57)$	1391	$1376^{+50}_{-64}$
$A_{143 \times 217}^{PS}$	32	$40^{+20}_{-20}$	$D_{220}$	5718	$5718^{+83}_{-80}$	$F_{AP}(0.57)$	0.6767	$0.678^{+0.010}_{-0.010}$
$A_{217}^{PS}$	96.9	$97^{+20}_{-20}$	$D_{810}$	2534.4	$2536^{+28}_{-27}$	$f\sigma_8(0.57)$	0.4811	$0.468^{+0.036}_{-0.040}$
$A^{kSZ}$	0.0	—	$D_{1420}$	814.5	$813^{+10}_{-10}$	$\sigma_8(0.57)$	0.614	$0.594^{+0.060}_{-0.065}$
$A_{100}^{dustTT}$	7.45	$7.47^{+3.7}_{-3.7}$	$D_{2000}$	230.38	$228.7^{+4.1}_{-4.1}$	$f_{2000}^{143}$	29.7	$32^{+7}_{-6}$
$A_{143}^{dustTT}$	9.05	$9.04^{+3.6}_{-3.6}$	$n_{s,0.002}$	0.9655	$0.973^{+0.025}_{-0.022}$	$f_{2000}^{143 \times 217}$	32.31	$34^{+5}_{-5}$
$A_{143 \times 217}^{dustTT}$	17.6	$17.3^{+8.3}_{-8.2}$	$Y_P$	0.24534	$0.2488^{+0.0055}_{-0.0042}$	$f_{2000}^{217}$	105.92	$107.5^{+4.6}_{-4.4}$
$A_{217}^{dustTT}$	81.9	$82^{+10}_{-10}$	$Y_P^{BBN}$	0.24667	$0.2501^{+0.0056}_{-0.0043}$	$\chi_{lowTEB}^2$	10496.2	10497.2 ( $\nu: 3.8$ )
$c_{100}$	0.99795	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.613	$2.67^{+0.12}_{-0.12}$	$\chi_{plik}^2$	763.8	780.1 ( $\nu: 19.7$ )
$c_{217}$	0.99594	$0.9961^{+0.0028}_{-0.0029}$	Age/Gyr	13.808	$13.62^{+0.29}_{-0.41}$	$\chi_{prior}^2$	2.01	7.47 ( $\nu: 6.4$ )
$H_0$	67.38	$68.0^{+4.3}_{-3.5}$	$z_*$	1090.04	$1090.4^{+1.0}_{-0.97}$	$\chi_{CMB}^2$	11260.0	11277.3 ( $\nu: 18.1$ )

Best-fit  $\chi_{eff}^2 = 11261.98$ ;  $\Delta\chi_{eff}^2 = 0.05$ ;  $\bar{\chi}_{eff}^2 = 11284.79$ ;  $\Delta\bar{\chi}_{eff}^2 = 2.97$ ;  $R - 1 = 0.01342$

$\chi_{eff}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.19 ( $\Delta -0.28$ ) plik\_dx11dr2\_HM\_v18\_TT: 763.77 ( $\Delta 0.40$ )

## 12.2 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022236	$0.02237^{+0.00035}_{-0.00036}$	$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	$Y_P^{\text{BBN}}$	0.24666	$0.2488^{+0.0032}_{-0.0025}$
$\Omega_c h^2$	0.1200	$0.1204^{+0.0066}_{-0.0070}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.17}$	$10^5 D/H$	2.617	$2.646^{+0.078}_{-0.075}$
$100\theta_{\text{MC}}$	1.04074	$1.04055^{+0.00070}_{-0.00072}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.11}$	Age/Gyr	13.816	$13.72^{+0.15}_{-0.19}$
$\tau$	0.0791	$0.085^{+0.035}_{-0.035}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$z_*$	1090.09	$1090.34^{+0.74}_{-0.72}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.007	< 0.780	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.50}$	$r_*$	144.52	$143.1^{+2.0}_{-2.4}$
$N_{\text{eff}}$	3.046	< 3.42	$c_{100}$	0.99822	$0.9981^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04094	$1.04067^{+0.00074}_{-0.00080}$
$\ln(10^{10} A_s)$	3.094	$3.109^{+0.070}_{-0.069}$	$c_{217}$	0.99596	$0.9961^{+0.0028}_{-0.0028}$	$D_A/\text{Gpc}$	13.884	$13.75^{+0.18}_{-0.22}$
$n_s$	0.9637	$0.967^{+0.014}_{-0.013}$	$H_0$	67.17	$67.2^{+2.0}_{-1.8}$	$z_{\text{drag}}$	1059.63	$1060.3^{+1.1}_{-1.0}$
$y_{\text{cal}}$	1.00038	$1.0004^{+0.0048}_{-0.0049}$	$\Omega_\Lambda$	0.6832	$0.675^{+0.026}_{-0.028}$	$r_{\text{drag}}$	147.23	$145.7^{+2.0}_{-2.5}$
$A_{217}^{\text{CIB}}$	66.4	$65^{+10}_{-10}$	$\Omega_m$	0.3168	$0.325^{+0.028}_{-0.026}$	$k_D$	0.14062	$0.1419^{+0.0020}_{-0.0017}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\Omega_m h^2$	0.1429	$0.1465^{+0.0065}_{-0.0056}$	$100\theta_D$	0.16092	$0.16110^{+0.00057}_{-0.00052}$
$A_{143}^{\text{tSZ}}$	7.07	$5.16^{+3.7}_{-3.8}$	$\Omega_\nu h^2$	0.00072	< 0.00894	$z_{\text{eq}}$	3398	$3341^{+110}_{-120}$
$A_{100}^{\text{PS}}$	257	$264^{+60}_{-50}$	$\Omega_m h^3$	0.09600	$0.0984^{+0.0042}_{-0.0032}$	$k_{\text{eq}}$	0.010373	$0.01034^{+0.00033}_{-0.00035}$
$A_{143}^{\text{PS}}$	40.9	$46^{+20}_{-20}$	$\sigma_8$	0.832	$0.798^{+0.057}_{-0.064}$	$100\theta_{\text{eq}}$	0.8135	$0.826^{+0.026}_{-0.023}$
$A_{143 \times 217}^{\text{PS}}$	36.7	$41^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4680	$0.455^{+0.028}_{-0.030}$	$100\theta_{\text{s,eq}}$	0.4496	$0.456^{+0.014}_{-0.012}$
$A_{217}^{\text{PS}}$	98.8	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6238	$0.602^{+0.038}_{-0.043}$	$r_{\text{drag}}/D_V(0.57)$	0.07128	$0.0708^{+0.0013}_{-0.0014}$
$A^{\text{kSZ}}$	0.0	—	$\sigma_8/h^{0.5}$	1.015	$0.974^{+0.063}_{-0.072}$	$H(0.57)$	92.82	$93.4^{+1.4}_{-1.1}$
$A_{100}^{\text{dustTT}}$	7.29	$7.50^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.512	$2.516^{+0.080}_{-0.079}$	$D_A(0.57)$	1393.5	$1389^{+25}_{-29}$
$A_{143}^{\text{dustTT}}$	8.88	$8.99^{+3.6}_{-3.6}$	$z_{\text{re}}$	10.09	$10.6^{+3.0}_{-3.3}$	$F_{\text{AP}}(0.57)$	0.6774	$0.6794^{+0.0069}_{-0.0065}$
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.1^{+8.2}_{-8.2}$	$10^9 A_s$	2.206	$2.24^{+0.16}_{-0.15}$	$f\sigma_8(0.57)$	0.4848	$0.468^{+0.030}_{-0.034}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8834	$1.891^{+0.027}_{-0.026}$	$\sigma_8(0.57)$	0.6173	$0.591^{+0.046}_{-0.051}$
$A_{100}^{\text{dustEE}}$	0.0810	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1242.8	$1238^{+29}_{-29}$	$f_{2000}^{143}$	29.4	$31^{+6}_{-6}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0486	$0.0487^{+0.0098}_{-0.0099}$	$D_{220}$	5729	$5727^{+77}_{-78}$	$f_{2000}^{143 \times 217}$	32.32	$33^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0996	$0.099^{+0.064}_{-0.063}$	$D_{810}$	2536.4	$2537^{+26}_{-27}$	$f_{2000}^{217}$	105.84	$106.9^{+4.0}_{-3.8}$
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.014}_{-0.014}$	$D_{1420}$	814.4	$813.4^{+9.6}_{-9.4}$	$\chi_{\text{lowTEB}}^2$	10497.28	10497.9 ( $\nu$ : 3.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.222^{+0.093}_{-0.090}$	$D_{2000}$	230.38	$229.3^{+3.4}_{-3.5}$	$\chi_{\text{plik}}^2$	2431.7	2453.0 ( $\nu$ : 25.2)
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.25}_{-0.25}$	$n_{\text{s},0.002}$	0.9637	$0.967^{+0.014}_{-0.013}$	$\chi_{\text{prior}}^2$	6.70	19.5 ( $\nu$ : 15.3)
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.075}_{-0.075}$	$Y_P$	0.24533	$0.2475^{+0.0032}_{-0.0025}$	$\chi_{\text{CMB}}^2$	12928.9	12951.0 ( $\nu$ : 24.1)

Best-fit  $\chi_{\text{eff}}^2 = 12935.64$ ;  $\Delta\chi_{\text{eff}}^2 = 0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 12970.44$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.75$ ;  $R - 1 = 0.01538$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.28 ( $\Delta$  0.35) plik\_dx11dr2\_HM.v18\_TTTEEE: 2431.66 ( $\Delta$  0.02)



### 12.3 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02231	$0.02246^{+0.00058}_{-0.00057}$	$\Omega_m$	0.3067	$0.314^{+0.038}_{-0.037}$	$D_A/\text{Gpc}$	13.894	$13.67^{+0.29}_{-0.33}$
$\Omega_c h^2$	0.1187	$0.1216^{+0.0072}_{-0.0074}$	$\Omega_m h^2$	0.1418	$0.1472^{+0.0081}_{-0.0075}$	$z_{\text{drag}}$	1059.70	$1060.6^{+1.7}_{-1.6}$
$100\theta_{\text{MC}}$	1.04103	$1.0407^{+0.0010}_{-0.0010}$	$\Omega_\nu h^2$	0.00078	< 0.00709	$r_{\text{drag}}$	147.36	$144.9^{+3.2}_{-3.6}$
$\tau$	0.0690	$0.078^{+0.041}_{-0.037}$	$\Omega_m h^3$	0.0964	$0.1009^{+0.0079}_{-0.0063}$	$k_D$	0.14044	$0.1423^{+0.0028}_{-0.0025}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.013	< 0.607	$\sigma_8$	0.815	$0.795^{+0.055}_{-0.060}$	$100\theta_D$	0.16100	$0.1615^{+0.0010}_{-0.00093}$
$N_{\text{eff}}$	3.073	< 3.72	$\sigma_8 \Omega_m^{0.5}$	0.4513	$0.445^{+0.022}_{-0.023}$	$z_{\text{eq}}$	3358	$3315^{+100}_{-110}$
$\ln(10^{10} A_s)$	3.069	$3.095^{+0.082}_{-0.078}$	$\sigma_8 \Omega_m^{0.25}$	0.6064	$0.595^{+0.029}_{-0.033}$	$k_{\text{eq}}$	0.010268	$0.01033^{+0.00032}_{-0.00034}$
$n_s$	0.9695	$0.976^{+0.023}_{-0.021}$	$\sigma_8/h^{0.5}$	0.988	$0.960^{+0.048}_{-0.056}$	$100\theta_{\text{eq}}$	0.8212	$0.831^{+0.023}_{-0.022}$
$y_{\text{cal}}$	0.999999	$1.0003^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.449	$2.456^{+0.058}_{-0.058}$	$100\theta_{s, \text{eq}}$	0.4536	$0.458^{+0.012}_{-0.011}$
$A_{217}^{\text{CIB}}$	67.8	$66^{+10}_{-10}$	$z_{\text{re}}$	9.12	$9.96^{+3.5}_{-3.6}$	$r_{\text{drag}}/D_V(0.57)$	0.07185	$0.0715^{+0.0022}_{-0.0020}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.151	$2.21^{+0.18}_{-0.17}$	$H(0.57)$	93.25	$94.5^{+3.1}_{-2.4}$
$A_{143}^{\text{tSZ}}$	7.17	$4.67^{+3.9}_{-4.0}$	$10^9 A_s e^{-2\tau}$	1.8740	$1.890^{+0.035}_{-0.031}$	$D_A(0.57)$	1382	$1368^{+49}_{-60}$
$A_{100}^{\text{PS}}$	254	$266^{+50}_{-60}$	$D_{40}$	1222.6	$1215^{+32}_{-33}$	$F_{\text{AP}}(0.57)$	0.6748	$0.6765^{+0.0095}_{-0.0096}$
$A_{143}^{\text{PS}}$	39.5	$48^{+20}_{-20}$	$D_{220}$	5714	$5718^{+82}_{-80}$	$f\sigma_8(0.57)$	0.4727	$0.463^{+0.025}_{-0.028}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$D_{810}$	2532.5	$2536^{+28}_{-27}$	$\sigma_8(0.57)$	0.6074	$0.591^{+0.045}_{-0.052}$
$A_{217}^{\text{PS}}$	96.6	$96^{+20}_{-20}$	$D_{1420}$	814.6	$813^{+10}_{-9.9}$	$f_{2000}^{143}$	30.1	$33^{+6}_{-6}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.13	$228.4^{+3.9}_{-4.0}$	$f_{2000}^{143 \times 217}$	32.66	$35^{+5}_{-4}$
$A_{100}^{\text{dustTT}}$	7.51	$7.56^{+3.7}_{-3.7}$	$n_{s, 0.002}$	0.9695	$0.976^{+0.023}_{-0.021}$	$f_{2000}^{217}$	106.13	$107.9^{+4.5}_{-4.3}$
$A_{143}^{\text{dustTT}}$	9.13	$9.13^{+3.6}_{-3.6}$	$Y_P$	0.24573	$0.2492^{+0.0054}_{-0.0045}$	$\chi_{\text{lensing}}^2$	9.17	$9.87 (\nu: 1.1)$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.4^{+8.1}_{-8.2}$	$Y_P^{\text{BBN}}$	0.24706	$0.2506^{+0.0054}_{-0.0045}$	$\chi_{\text{lowTEB}}^2$	10494.78	$10495.3 (\nu: 1.3)$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^5 D/H$	2.613	$2.67^{+0.12}_{-0.12}$	$\chi_{\text{plik}}^2$	766.3	$781.9 (\nu: 17.3)$
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.773	$13.58^{+0.30}_{-0.39}$	$\chi_{\text{prior}}^2$	2.09	$7.52 (\nu: 6.5)$
$c_{217}$	0.99600	$0.9962^{+0.0029}_{-0.0029}$	$z_*$	1089.92	$1090.4^{+1.0}_{-0.94}$	$\chi_{\text{CMB}}^2$	11270.2	$11287.1 (\nu: 17.4)$
$H_0$	68.00	$68.6^{+4.0}_{-3.4}$	$r_*$	144.67	$142.3^{+3.1}_{-3.5}$			
$\Omega_\Lambda$	0.6933	$0.686^{+0.037}_{-0.038}$	$100\theta_*$	1.04121	$1.0407^{+0.0011}_{-0.0012}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.33$ ;  $\Delta\chi_{\text{eff}}^2 = -0.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 11294.59$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.29$ ;  $R - 1 = 0.00725$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.17 ( $\Delta -0.00$ ) low1.SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.78 ( $\Delta -0.07$ ) plik\_dx11dr2\_HM\_v18\_TT: 766.28 ( $\Delta -0.04$ )

## 12.4 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022271	$0.02236^{+0.00036}_{-0.00034}$	$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.16}_{-0.17}$	Age/Gyr	13.805	$13.71^{+0.14}_{-0.18}$
$\Omega_c h^2$	0.1192	$0.1204^{+0.0052}_{-0.0058}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.98	$1090.32^{+0.76}_{-0.68}$
$100\theta_{\text{MC}}$	1.04086	$1.04063^{+0.00070}_{-0.00075}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.34^{+0.16}_{-0.16}$	$r_*$	144.70	$143.1^{+2.0}_{-2.3}$
$\tau$	0.0632	$0.069^{+0.030}_{-0.029}$	$A_{217}^{\text{dustTE}}$	1.663	$1.67^{+0.49}_{-0.50}$	$100\theta_*$	1.04106	$1.04075^{+0.00074}_{-0.00082}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.002	< 0.641	$c_{100}$	0.99818	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.900	$13.75^{+0.19}_{-0.22}$
$N_{\text{eff}}$	3.048	< 3.42	$c_{217}$	0.99611	$0.9962^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.67	$1060.2^{+1.1}_{-1.0}$
$\ln(10^{10} A_s)$	3.059	$3.075^{+0.059}_{-0.056}$	$H_0$	67.54	$67.3^{+1.9}_{-1.8}$	$r_{\text{drag}}$	147.40	$145.8^{+2.1}_{-2.4}$
$n_s$	0.9658	$0.968^{+0.013}_{-0.013}$	$\Omega_\Lambda$	0.6884	$0.677^{+0.026}_{-0.028}$	$k_D$	0.14046	$0.1418^{+0.0020}_{-0.0017}$
$y_{\text{cal}}$	1.00003	$1.0002^{+0.0049}_{-0.0047}$	$\Omega_m$	0.3116	$0.323^{+0.028}_{-0.026}$	$100\theta_D$	0.16092	$0.16114^{+0.00056}_{-0.00051}$
$A_{217}^{\text{CIB}}$	67.9	$66^{+10}_{-10}$	$\Omega_m h^2$	0.1421	$0.1463^{+0.0065}_{-0.0057}$	$z_{\text{eq}}$	3380	$3341^{+88}_{-93}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_\nu h^2$	0.00067	< 0.00746	$k_{\text{eq}}$	0.010317	$0.01033^{+0.00027}_{-0.00029}$
$A_{143}^{\text{tSZ}}$	7.31	$5.03^{+3.8}_{-3.8}$	$\Omega_m h^3$	0.09600	$0.0985^{+0.0040}_{-0.0032}$	$100\theta_{\text{eq}}$	0.8170	$0.826^{+0.020}_{-0.018}$
$A_{100}^{\text{PS}}$	258	$266^{+50}_{-50}$	$\sigma_8$	0.815	$0.785^{+0.047}_{-0.053}$	$100\theta_{\text{s,eq}}$	0.4514	$0.456^{+0.010}_{-0.0094}$
$A_{143}^{\text{PS}}$	38.7	$46^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4546	$0.446^{+0.020}_{-0.022}$	$r_{\text{drag}}/D_V(0.57)$	0.07157	$0.0709^{+0.0013}_{-0.0015}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6085	$0.591^{+0.029}_{-0.032}$	$H(0.57)$	92.97	$93.4^{+1.3}_{-1.1}$
$A_{217}^{\text{PS}}$	96.3	$96^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.991	$0.956^{+0.049}_{-0.057}$	$D_A(0.57)$	1388.6	$1387^{+25}_{-27}$
$A^{\text{kSZ}}$	0.0	—	$\langle d^2 \rangle^{1/2}$	2.454	$2.468^{+0.055}_{-0.052}$	$F_{\text{AP}}(0.57)$	0.6761	$0.6789^{+0.0068}_{-0.0065}$
$A_{100}^{\text{dustTT}}$	7.54	$7.57^{+3.6}_{-3.7}$	$z_{\text{re}}$	8.57	$9.13^{+2.7}_{-2.9}$	$f\sigma_8(0.57)$	0.4736	$0.459^{+0.024}_{-0.027}$
$A_{143}^{\text{dustTT}}$	9.10	$9.07^{+3.6}_{-3.6}$	$10^9 A_s$	2.130	$2.17^{+0.13}_{-0.13}$	$\sigma_8(0.57)$	0.6059	$0.581^{+0.039}_{-0.043}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.1}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8771	$1.887^{+0.027}_{-0.025}$	$f_{2000}^{143}$	29.9	$32^{+6}_{-5}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$D_{40}$	1229.6	$1227^{+26}_{-26}$	$f_{2000}^{143 \times 217}$	32.59	$34^{+4}_{-4}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5722	$5721^{+78}_{-75}$	$f_{2000}^{217}$	106.07	$107.3^{+4.0}_{-3.8}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0490^{+0.0097}_{-0.0098}$	$D_{810}$	2534.0	$2535^{+27}_{-26}$	$\chi_{\text{lensing}}^2$	9.73	$10.5 (\nu: 1.6)$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.064}_{-0.064}$	$D_{1420}$	814.6	$813.3^{+9.5}_{-9.3}$	$\chi_{\text{lowTEB}}^2$	10495.29	$10495.7 (\nu: 0.8)$
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.014}_{-0.013}$	$D_{2000}$	230.09	$228.8^{+3.4}_{-3.5}$	$\chi_{\text{plik}}^2$	2434.9	$2455.8 (\nu: 24.6)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.092}_{-0.092}$	$n_{\text{s}, 0.002}$	0.9658	$0.968^{+0.013}_{-0.013}$	$\chi_{\text{prior}}^2$	7.09	$19.7 (\nu: 15.5)$
$A_{217}^{\text{dustEE}}$	0.655	$0.65^{+0.25}_{-0.25}$	$Y_{\text{P}}$	0.24537	$0.2475^{+0.0031}_{-0.0025}$	$\chi_{\text{CMB}}^2$	12940.0	$12961.9 (\nu: 24.2)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.075}$	$Y_{\text{P}}^{\text{BBN}}$	0.24670	$0.2488^{+0.0031}_{-0.0025}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.611	$2.647^{+0.079}_{-0.076}$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.05$ ;  $\Delta\chi_{\text{eff}}^2 = -0.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 12981.60$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.49$ ;  $R - 1 = 0.01727$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.73 ( $\Delta -0.04$ ) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.29 ( $\Delta 0.00$ ) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.94 ( $\Delta 0.03$ )

## 12.5 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022318	$0.02248^{+0.00049}_{-0.00046}$	$\Omega_m h^2$	0.1423	$0.1461^{+0.0074}_{-0.0062}$	$r_{\text{drag}}$	147.16	$145.2^{+3.0}_{-3.8}$
$\Omega_c h^2$	0.1193	$0.1209^{+0.0081}_{-0.0087}$	$\Omega_\nu h^2$	0.00065	$< 0.00672$	$k_D$	0.14063	$0.1421^{+0.0029}_{-0.0024}$
$100\theta_{\text{MC}}$	1.04090	$1.04070^{+0.00095}_{-0.0010}$	$\Omega_m h^3$	0.0967	$0.1004^{+0.0079}_{-0.0059}$	$100\theta_D$	0.16098	$0.1614^{+0.0011}_{-0.00094}$
$\tau$	0.0800	$0.089^{+0.040}_{-0.039}$	$\sigma_8$	0.829	$0.812^{+0.055}_{-0.058}$	$z_{\text{eq}}$	3369	$3316^{+100}_{-110}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	$< 0.571$	$\sigma_8 \Omega_m^{0.5}$	0.4603	$0.452^{+0.029}_{-0.031}$	$k_{\text{eq}}$	0.010306	$0.01031^{+0.00036}_{-0.00038}$
$N_{\text{eff}}$	3.081	$< 3.68$	$\sigma_8 \Omega_m^{0.25}$	0.6178	$0.606^{+0.039}_{-0.042}$	$100\theta_{\text{eq}}$	0.8192	$0.831^{+0.024}_{-0.021}$
$\ln(10^{10} A_s)$	3.093	$3.117^{+0.083}_{-0.079}$	$\sigma_8/h^{0.5}$	1.006	$0.980^{+0.060}_{-0.065}$	$100\theta_{s, \text{eq}}$	0.4525	$0.458^{+0.013}_{-0.011}$
$n_s$	0.9692	$0.976^{+0.019}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	2.484	$2.485^{+0.086}_{-0.088}$	$r_{\text{drag}}/D_V(0.57)$	0.07176	$0.07163^{+0.00093}_{-0.00090}$
$y_{\text{cal}}$	1.00040	$1.0004^{+0.0049}_{-0.0049}$	$z_{\text{re}}$	10.14	$11.0^{+3.3}_{-3.6}$	$H(0.57)$	93.29	$94.4^{+2.7}_{-2.0}$
$A_{217}^{\text{CIB}}$	67.3	$65^{+10}_{-10}$	$10^9 A_s$	2.204	$2.26^{+0.19}_{-0.17}$	$D_A(0.57)$	1382.0	$1367^{+35}_{-43}$
$\xi^{\text{tSZ}} \times \text{CIB}$	0.01	—	$10^9 A_s e^{-2\tau}$	1.8783	$1.889^{+0.036}_{-0.033}$	$F_{\text{AP}}(0.57)$	0.67518	$0.6756^{+0.0042}_{-0.0043}$
$A_{143}^{\text{tSZ}}$	7.11	$4.88^{+3.8}_{-3.8}$	$D_{40}$	1229.7	$1222^{+33}_{-35}$	$f\sigma_8(0.57)$	0.4812	$0.473^{+0.031}_{-0.033}$
$A_{100}^{\text{PS}}$	254	$263^{+60}_{-60}$	$D_{220}$	5718	$5722^{+81}_{-79}$	$\sigma_8(0.57)$	0.6177	$0.605^{+0.042}_{-0.045}$
$A_{143}^{\text{PS}}$	38.9	$46^{+20}_{-20}$	$D_{810}$	2534.3	$2536^{+28}_{-27}$	$f_{2000}^{143}$	29.7	$32^{+6}_{-6}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$D_{1420}$	814.9	$813.6^{+9.9}_{-9.9}$	$f_{2000}^{143 \times 217}$	32.31	$34^{+5}_{-4}$
$A_{217}^{\text{PS}}$	96.8	$97^{+20}_{-20}$	$D_{2000}$	230.48	$229.2^{+3.9}_{-4.1}$	$f_{2000}^{217}$	105.91	$107.1^{+4.4}_{-4.2}$
$A^{\text{kSZ}}$	0.0	—	$n_{s, 0.002}$	0.9692	$0.976^{+0.019}_{-0.017}$	$\chi_{\text{lowTEB}}^2$	10496.0	10496.9 ( $\nu: 4.1$ )
$A_{100}^{\text{dustTT}}$	7.41	$7.52^{+3.7}_{-3.7}$	$Y_{\text{P}}$	0.24585	$0.2487^{+0.0054}_{-0.0041}$	$\chi_{\text{plik}}^2$	764.0	779.5 ( $\nu: 19.2$ )
$A_{143}^{\text{dustTT}}$	9.09	$9.08^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.24717	$0.2500^{+0.0054}_{-0.0041}$	$\chi_{6\text{DF}}^2$	0.010	0.073 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.2}_{-8.1}$	$10^5 D/H$	2.613	$2.66^{+0.12}_{-0.11}$	$\chi_{\text{MGS}}^2$	1.41	1.34 ( $\nu: 0.2$ )
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	Age/Gyr	13.764	$13.60^{+0.28}_{-0.36}$	$\chi_{\text{DR11CMass}}^2$	2.41	3.04 ( $\nu: 0.4$ )
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.96	$1090.23^{+0.87}_{-0.82}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	0.81 ( $\nu: 0.2$ )
$c_{217}$	0.99600	$0.9960^{+0.0029}_{-0.0029}$	$r_*$	144.47	$142.6^{+2.8}_{-3.6}$	$\chi_{\text{prior}}^2$	2.06	7.45 ( $\nu: 6.5$ )
$H_0$	67.95	$68.7^{+2.5}_{-2.1}$	$100\theta_*$	1.04107	$1.0407^{+0.0011}_{-0.0012}$	$\chi_{\text{CMB}}^2$	11260.0	11276.4 ( $\nu: 16.9$ )
$\Omega_\Lambda$	0.6919	$0.690^{+0.017}_{-0.017}$	$D_A/\text{Gpc}$	13.877	$13.71^{+0.27}_{-0.34}$	$\chi_{\text{BAO}}^2$	4.31	5.26 ( $\nu: 0.8$ )
$\Omega_m$	0.3081	$0.310^{+0.017}_{-0.017}$	$z_{\text{drag}}$	1059.78	$1060.6^{+1.7}_{-1.5}$			

Best-fit  $\chi_{\text{eff}}^2 = 11266.35$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 11289.10$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.73$ ;  $R - 1 = 0.01798$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta -0.01$ ) MGS: 1.41 ( $\Delta 0.13$ ) DR11CMass: 2.41 ( $\Delta -0.04$ ) DR11LOWZ: 0.48 ( $\Delta -0.13$ ) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10495.95  
( $\Delta -0.47$ ) plik\_dx11dr2\_HM\_v18.TT: 764.03 ( $\Delta 0.43$ )

## 12.6 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_BAO\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022376	$0.02251^{+0.00049}_{-0.00046}$	$\Omega_m h^2$	0.1432	$0.1464^{+0.0075}_{-0.0065}$	$r_{\text{drag}}$	146.61	$145.0^{+3.1}_{-3.8}$
$\Omega_c h^2$	0.1202	$0.1213^{+0.0081}_{-0.0089}$	$\Omega_\nu h^2$	0.00065	< 0.00643	$k_D$	0.14106	$0.1422^{+0.0029}_{-0.0024}$
$100\theta_{\text{MC}}$	1.04092	$1.04068^{+0.00097}_{-0.0010}$	$\Omega_m h^3$	0.0978	$0.1009^{+0.0080}_{-0.0063}$	$100\theta_D$	0.16107	$0.1614^{+0.0011}_{-0.00097}$
$\tau$	0.0831	$0.091^{+0.040}_{-0.039}$	$\sigma_8$	0.835	$0.814^{+0.055}_{-0.058}$	$z_{\text{eq}}$	3368	$3315^{+98}_{-110}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	< 0.544	$\sigma_8 \Omega_m^{0.5}$	0.4626	$0.452^{+0.029}_{-0.031}$	$k_{\text{eq}}$	0.010339	$0.01032^{+0.00036}_{-0.00038}$
$N_{\text{eff}}$	3.132	< 3.71	$\sigma_8 \Omega_m^{0.25}$	0.6215	$0.607^{+0.039}_{-0.041}$	$100\theta_{\text{eq}}$	0.8195	$0.831^{+0.023}_{-0.020}$
$\ln(10^{10} A_s)$	3.102	$3.120^{+0.083}_{-0.079}$	$\sigma_8/h^{0.5}$	1.010	$0.981^{+0.060}_{-0.065}$	$100\theta_{s, \text{eq}}$	0.4526	$0.458^{+0.012}_{-0.010}$
$n_s$	0.9710	$0.977^{+0.019}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	2.491	$2.484^{+0.086}_{-0.088}$	$r_{\text{drag}}/D_V(0.57)$	0.07181	$0.07168^{+0.00091}_{-0.00089}$
$y_{\text{cal}}$	1.00052	$1.0004^{+0.0049}_{-0.0049}$	$z_{\text{re}}$	10.43	$11.1^{+3.3}_{-3.6}$	$H(0.57)$	93.68	$94.6^{+2.6}_{-2.1}$
$A_{217}^{\text{CIB}}$	66.7	$65^{+10}_{-10}$	$10^9 A_s$	2.224	$2.27^{+0.19}_{-0.17}$	$D_A(0.57)$	1375.8	$1364^{+36}_{-42}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$10^9 A_s e^{-2\tau}$	1.8838	$1.890^{+0.037}_{-0.034}$	$F_{\text{AP}}(0.57)$	0.67493	$0.6754^{+0.0041}_{-0.0041}$
$A_{143}^{\text{tSZ}}$	7.09	$4.86^{+3.9}_{-3.9}$	$D_{40}$	1230.0	$1221^{+33}_{-34}$	$f\sigma_8(0.57)$	0.4842	$0.473^{+0.031}_{-0.032}$
$A_{100}^{\text{PS}}$	253	$263^{+60}_{-60}$	$D_{220}$	5722	$5723^{+81}_{-79}$	$\sigma_8(0.57)$	0.6221	$0.606^{+0.042}_{-0.044}$
$A_{143}^{\text{PS}}$	40.0	$46^{+20}_{-20}$	$D_{810}$	2536.9	$2537^{+28}_{-27}$	$f_{2000}^{143}$	29.7	$32^{+6}_{-6}$
$A_{143 \times 217}^{\text{PS}}$	35	$39^{+20}_{-20}$	$D_{1420}$	815.3	$813.6^{+9.9}_{-9.9}$	$f_{2000}^{143 \times 217}$	32.37	$34^{+5}_{-5}$
$A_{217}^{\text{PS}}$	98.2	$97^{+20}_{-20}$	$D_{2000}$	230.54	$229.2^{+3.9}_{-4.1}$	$f_{2000}^{217}$	105.98	$107.2^{+4.4}_{-4.3}$
$A^{\text{kSZ}}$	0.0	—	$n_{s, 0.002}$	0.9710	$0.977^{+0.019}_{-0.017}$	$\chi_{\text{lowTEB}}^2$	10496.1	10496.8 ( $\nu: 4.3$ )
$A_{100}^{\text{dustTT}}$	7.44	$7.52^{+3.7}_{-3.6}$	$Y_{\text{P}}$	0.24655	$0.2490^{+0.0054}_{-0.0044}$	$\chi_{\text{plik}}^2$	763.9	779.7 ( $\nu: 19.2$ )
$A_{143}^{\text{dustTT}}$	9.03	$9.09^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.24788	$0.2504^{+0.0054}_{-0.0044}$	$\chi_{\text{H070p6}}^2$	0.49	0.40 ( $\nu: 0.1$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.3^{+8.2}_{-8.1}$	$10^5 D/H$	2.620	$2.66^{+0.13}_{-0.12}$	$\chi_{6\text{DF}}^2$	0.006	0.064 ( $\nu: 0.0$ )
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	Age/Gyr	13.709	$13.58^{+0.29}_{-0.36}$	$\chi_{\text{MGS}}^2$	1.47	1.40 ( $\nu: 0.2$ )
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1090.01	$1090.24^{+0.88}_{-0.84}$	$\chi_{\text{DR11CMass}}^2$	2.41	2.98 ( $\nu: 0.3$ )
$c_{217}$	0.99593	$0.9961^{+0.0028}_{-0.0029}$	$r_*$	143.95	$142.4^{+3.0}_{-3.6}$	$\chi_{\text{DR11LOWZ}}^2$	0.43	0.73 ( $\nu: 0.2$ )
$H_0$	68.28	$68.9^{+2.5}_{-2.1}$	$100\theta_*$	1.04105	$1.0407^{+0.0011}_{-0.0012}$	$\chi_{\text{prior}}^2$	2.02	7.45 ( $\nu: 6.5$ )
$\Omega_\Lambda$	0.6928	$0.691^{+0.016}_{-0.016}$	$D_A/\text{Gpc}$	13.828	$13.69^{+0.28}_{-0.34}$	$\chi_{\text{CMB}}^2$	11260.0	11276.5 ( $\nu: 16.9$ )
$\Omega_m$	0.3072	$0.309^{+0.016}_{-0.016}$	$z_{\text{drag}}$	1060.05	$1060.7^{+1.7}_{-1.5}$	$\chi_{\text{BAO}}^2$	4.32	5.18 ( $\nu: 0.7$ )

Best-fit  $\chi_{\text{eff}}^2 = 11266.87$ ;  $\bar{\chi}_{\text{eff}}^2 = 11289.58$ ;  $R - 1 = 0.01576$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.41 DR11LOWZ: 0.43 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.13 plik\_dx11dr2\_HM\_v18\_TT: 763.91  
Hubble - H070p6: 0.48

## 12.7 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022401	$0.02252^{+0.00048}_{-0.00045}$	$\Omega_\nu h^2$	0.00065	$< 0.00636$	$100\theta_D$	0.16107	$0.1614^{+0.0011}_{-0.00098}$
$\Omega_c h^2$	0.1201	$0.1212^{+0.0081}_{-0.0090}$	$\Omega_m h^3$	0.0980	$0.1009^{+0.0080}_{-0.0063}$	$z_{\text{eq}}$	3362	$3313^{+97}_{-110}$
$100\theta_{\text{MC}}$	1.04093	$1.04069^{+0.00097}_{-0.0010}$	$\sigma_8$	0.836	$0.815^{+0.054}_{-0.057}$	$k_{\text{eq}}$	0.010326	$0.01031^{+0.00036}_{-0.00038}$
$\tau$	0.0850	$0.091^{+0.040}_{-0.039}$	$\sigma_8 \Omega_m^{0.5}$	0.4619	$0.452^{+0.029}_{-0.031}$	$100\theta_{\text{eq}}$	0.8207	$0.831^{+0.023}_{-0.020}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	$< 0.537$	$\sigma_8 \Omega_m^{0.25}$	0.6214	$0.607^{+0.039}_{-0.041}$	$100\theta_{\text{s,eq}}$	0.4532	$0.459^{+0.012}_{-0.010}$
$N_{\text{eff}}$	3.140	$< 3.71$	$\sigma_8/h^{0.5}$	1.010	$0.981^{+0.059}_{-0.064}$	$r_{\text{drag}}/D_V(0.57)$	0.07190	$0.07173^{+0.00089}_{-0.00087}$
$\ln(10^{10} A_s)$	3.106	$3.121^{+0.083}_{-0.079}$	$\langle d^2 \rangle^{1/2}$	2.490	$2.483^{+0.086}_{-0.088}$	$H(0.57)$	93.78	$94.6^{+2.6}_{-2.1}$
$n_s$	0.9724	$0.978^{+0.018}_{-0.017}$	$z_{\text{re}}$	10.59	$11.1^{+3.3}_{-3.6}$	$D_A(0.57)$	1373.3	$1363^{+36}_{-42}$
$y_{\text{cal}}$	1.00056	$1.0004^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.232	$2.27^{+0.19}_{-0.17}$	$F_{\text{AP}}(0.57)$	0.67448	$0.6751^{+0.0040}_{-0.0040}$
$A_{217}^{\text{CIB}}$	66.3	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8833	$1.890^{+0.037}_{-0.034}$	$f\sigma_8(0.57)$	0.4844	$0.474^{+0.031}_{-0.032}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.11	—	$D_{40}$	1227.8	$1221^{+33}_{-34}$	$\sigma_8(0.57)$	0.6233	$0.607^{+0.042}_{-0.044}$
$A_{143}^{\text{tSZ}}$	7.05	$4.86^{+3.9}_{-3.9}$	$D_{220}$	5721	$5723^{+81}_{-79}$	$f_{2000}^{143}$	29.4	$32^{+6}_{-6}$
$A_{100}^{\text{PS}}$	252	$263^{+60}_{-60}$	$D_{810}$	2537.1	$2537^{+28}_{-27}$	$f_{2000}^{143 \times 217}$	32.19	$34^{+5}_{-5}$
$A_{143}^{\text{PS}}$	40.4	$46^{+20}_{-20}$	$D_{1420}$	815.7	$813.7^{+9.9}_{-10}$	$f_{2000}^{217}$	105.87	$107.2^{+4.4}_{-4.3}$
$A_{143 \times 217}^{\text{PS}}$	35.5	$39^{+20}_{-20}$	$D_{2000}$	230.70	$229.2^{+3.9}_{-4.2}$	$\chi_{\text{lowTEB}}^2$	10496.1	$10496.8 (\nu: 4.4)$
$A_{217}^{\text{PS}}$	98.8	$97^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9724	$0.978^{+0.018}_{-0.017}$	$\chi_{\text{plik}}^2$	764.1	$779.8 (\nu: 19.3)$
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.24668	$0.2491^{+0.0054}_{-0.0044}$	$\chi_{\text{H070p6}}^2$	0.417	$0.37 (\nu: 0.1)$
$A_{100}^{\text{dustTT}}$	7.45	$7.52^{+3.7}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.24801	$0.2504^{+0.0055}_{-0.0044}$	$\chi_{\text{JLA}}^2$	706.601	$706.71 (\nu: 0.0)$
$A_{143}^{\text{dustTT}}$	9.08	$9.09^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.618	$2.66^{+0.13}_{-0.12}$	$\chi_{6\text{DF}}^2$	0.001	$0.056 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.3^{+8.2}_{-8.1}$	Age/Gyr	13.697	$13.57^{+0.29}_{-0.36}$	$\chi_{\text{MGS}}^2$	1.61	$1.46 (\nu: 0.2)$
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	$z_*$	1089.98	$1090.23^{+0.89}_{-0.84}$	$\chi_{\text{DR11CMass}}^2$	2.44	$2.94 (\nu: 0.3)$
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	143.92	$142.4^{+3.0}_{-3.7}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	$0.66 (\nu: 0.2)$
$c_{217}$	0.99594	$0.9960^{+0.0028}_{-0.0029}$	$100\theta_*$	1.04105	$1.0407^{+0.0011}_{-0.0012}$	$\chi_{\text{prior}}^2$	1.99	$7.45 (\nu: 6.5)$
$H_0$	68.45	$68.9^{+2.5}_{-2.1}$	$D_A/\text{Gpc}$	13.825	$13.69^{+0.28}_{-0.34}$	$\chi_{\text{CMB}}^2$	11260.1	$11276.6 (\nu: 16.9)$
$\Omega_\Lambda$	0.6946	$0.692^{+0.016}_{-0.016}$	$z_{\text{drag}}$	1060.09	$1060.7^{+1.7}_{-1.5}$	$\chi_{\text{BAO}}^2$	4.38	$5.12 (\nu: 0.6)$
$\Omega_m$	0.3054	$0.308^{+0.016}_{-0.016}$	$r_{\text{drag}}$	146.57	$145.0^{+3.2}_{-3.8}$			
$\Omega_m h^2$	0.1431	$0.1464^{+0.0075}_{-0.0065}$	$k_D$	0.14108	$0.1422^{+0.0029}_{-0.0025}$			

Best-fit  $\chi_{\text{eff}}^2 = 11973.54$ ;  $\bar{\chi}_{\text{eff}}^2 = 11996.22$ ;  $R - 1 = 0.01599$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.44 DR11LOWZ: 0.33 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.07 plik\_dx11dr2\_HM\_v18\_TT: 764.07  
Hubble - H070p6: 0.42 SN - JLA December\_2013: 706.60

## 12.8 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022257	$0.02241^{+0.00034}_{-0.00031}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	$r_*$	144.61	$143.6^{+1.6}_{-2.2}$
$\Omega_c h^2$	0.1162	$0.1190^{+0.0069}_{-0.0082}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04097	$1.04083^{+0.00075}_{-0.00081}$
$100\theta_{\text{MC}}$	1.04077	$1.04071^{+0.00065}_{-0.00073}$	$A_{217}^{\text{dustTE}}$	1.666	$1.66^{+0.49}_{-0.50}$	$D_A/\text{Gpc}$	13.892	$13.80^{+0.15}_{-0.20}$
$\tau$	0.0785	$0.087^{+0.034}_{-0.034}$	$c_{100}$	0.99823	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.67	$1060.2^{+1.0}_{-0.92}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.321	< 0.717	$c_{217}$	0.99596	$0.9960^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.31	$146.3^{+1.6}_{-2.3}$
$N_{\text{eff}}$	3.049	< 3.39	$H_0$	67.34	$67.9^{+1.6}_{-1.4}$	$k_D$	0.14055	$0.1414^{+0.0017}_{-0.0014}$
$\ln(10^{10} A_s)$	3.092	$3.111^{+0.069}_{-0.068}$	$\Omega_\Lambda$	0.6857	$0.686^{+0.014}_{-0.014}$	$100\theta_D$	0.16091	$0.16104^{+0.00061}_{-0.00052}$
$n_s$	0.9647	$0.970^{+0.013}_{-0.012}$	$\Omega_m$	0.3143	$0.314^{+0.014}_{-0.014}$	$z_{\text{eq}}$	3308	$3325^{+100}_{-140}$
$y_{\text{cal}}$	1.00075	$1.0004^{+0.0049}_{-0.0048}$	$\Omega_m h^2$	0.14254	$0.1444^{+0.0046}_{-0.0038}$	$k_{\text{eq}}$	0.010160	$0.01026^{+0.00032}_{-0.00041}$
$A_{217}^{\text{CIB}}$	66.3	$64^{+10}_{-10}$	$\Omega_\nu h^2$	0.00406	< 0.00827	$100\theta_{\text{eq}}$	0.8322	$0.829^{+0.031}_{-0.022}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.17	—	$\Omega_m h^3$	0.09599	$0.0980^{+0.0045}_{-0.0030}$	$100\theta_{\text{s,eq}}$	0.4594	$0.458^{+0.016}_{-0.011}$
$A_{143}^{\text{tSZ}}$	7.09	$5.32^{+3.7}_{-3.8}$	$\sigma_8$	0.827	$0.812^{+0.049}_{-0.053}$	$r_{\text{drag}}/D_V(0.57)$	0.07141	$0.07144^{+0.00078}_{-0.00077}$
$A_{100}^{\text{PS}}$	256	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4639	$0.454^{+0.026}_{-0.029}$	$H(0.57)$	92.89	$93.6^{+1.6}_{-1.1}$
$A_{143}^{\text{PS}}$	41.1	$44^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6195	$0.607^{+0.035}_{-0.038}$	$D_A(0.57)$	1391.2	$1381^{+22}_{-27}$
$A_{143 \times 217}^{\text{PS}}$	37.5	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.008	$0.985^{+0.055}_{-0.060}$	$F_{\text{AP}}(0.57)$	0.67675	$0.6765^{+0.0036}_{-0.0036}$
$A_{217}^{\text{PS}}$	99.0	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.509	$2.504^{+0.077}_{-0.077}$	$f\sigma_8(0.57)$	0.4818	$0.473^{+0.028}_{-0.030}$
$A^{\text{kSZ}}$	0.01	< 8.01	$z_{\text{re}}$	10.02	$10.8^{+2.9}_{-3.1}$	$\sigma_8(0.57)$	0.6148	$0.603^{+0.038}_{-0.041}$
$A_{100}^{\text{dustTT}}$	7.46	$7.46^{+3.6}_{-3.7}$	$10^9 A_s$	2.203	$2.25^{+0.16}_{-0.15}$	$f_{2000}^{143}$	29.3	$30^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.04	$8.95^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8829	$1.885^{+0.027}_{-0.026}$	$f_{2000}^{143 \times 217}$	32.23	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.0^{+8.1}_{-8.2}$	$D_{40}$	1240.8	$1234^{+27}_{-27}$	$f_{2000}^{217}$	105.82	$106.2^{+3.7}_{-3.7}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$D_{220}$	5733	$5730^{+75}_{-75}$	$\chi_{\text{lowTEB}}^2$	10496.90	10497.7 ( $\nu: 3.3$ )
$A_{100}^{\text{dustEE}}$	0.0814	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2537.4	$2536^{+27}_{-26}$	$\chi_{\text{plik}}^2$	2431.3	2452.3 ( $\nu: 25.0$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0492^{+0.0097}_{-0.0097}$	$D_{1420}$	815.0	$814.3^{+9.4}_{-9.2}$	$\chi_{6\text{DF}}^2$	0.069	0.096 ( $\nu: 0.0$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.065}_{-0.064}$	$D_{2000}$	230.69	$229.9^{+3.2}_{-3.3}$	$\chi_{\text{MGS}}^2$	0.98	1.08 ( $\nu: 0.1$ )
$A_{143}^{\text{dustEE}}$	0.1002	$0.101^{+0.013}_{-0.013}$	$n_{\text{s}, 0.002}$	0.9647	$0.970^{+0.013}_{-0.012}$	$\chi_{\text{DR11CMASS}}^2$	2.77	3.13 ( $\nu: 0.4$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.092}_{-0.093}$	$Y_{\text{P}}$	0.24538	$0.2470^{+0.0032}_{-0.0021}$	$\chi_{\text{DR11LOWZ}}^2$	0.99	1.06 ( $\nu: 0.2$ )
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.24671	$0.2483^{+0.0032}_{-0.0021}$	$\chi_{\text{prior}}^2$	6.92	19.5 ( $\nu: 15.1$ )
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.074}_{-0.075}$	$10^5 D/H$	2.614	$2.625^{+0.072}_{-0.066}$	$\chi_{\text{CMB}}^2$	12928.2	12950.0 ( $\nu: 23.5$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.057}$	Age/Gyr	13.811	$13.72^{+0.14}_{-0.22}$	$\chi_{\text{BAO}}^2$	4.81	5.38 ( $\nu: 0.9$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.17}$	$z_*$	1090.03	$1090.08^{+0.58}_{-0.51}$			

Best-fit  $\chi_{\text{eff}}^2 = 12939.92$ ;  $\Delta\chi_{\text{eff}}^2 = -0.24$ ;  $\bar{\chi}_{\text{eff}}^2 = 12974.88$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.40$ ;  $R - 1 = 0.01245$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.07 ( $\Delta 0.04$ ) MGS: 0.98 ( $\Delta -0.24$ ) DR11CMASS: 2.77 ( $\Delta 0.27$ ) DR11LOWZ: 0.99 ( $\Delta 0.31$ ) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10496.90

( $\Delta$  -0.51) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.29 ( $\Delta$  -0.25)

## 12.9 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022353	$0.02243^{+0.00034}_{-0.00031}$	$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.11}$	$r_*$	144.47	$143.6^{+1.7}_{-2.3}$
$\Omega_c h^2$	0.1194	$0.1192^{+0.0071}_{-0.0083}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04105	$1.04082^{+0.00077}_{-0.00083}$
$100\theta_{\text{MC}}$	1.04089	$1.04070^{+0.00066}_{-0.00074}$	$A_{217}^{\text{dustTE}}$	1.667	$1.66^{+0.49}_{-0.50}$	$D_A/\text{Gpc}$	13.877	$13.79^{+0.16}_{-0.21}$
$\tau$	0.0836	$0.088^{+0.034}_{-0.034}$	$c_{100}$	0.99821	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.86	$1060.2^{+1.1}_{-0.94}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	< 0.698	$c_{217}$	0.99582	$0.9960^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.14	$146.2^{+1.8}_{-2.4}$
$N_{\text{eff}}$	3.073	< 3.41	$H_0$	67.85	$68.0^{+1.7}_{-1.4}$	$k_D$	0.14070	$0.1414^{+0.0018}_{-0.0014}$
$\ln(10^{10} A_s)$	3.102	$3.113^{+0.070}_{-0.069}$	$\Omega_\Lambda$	0.6907	$0.687^{+0.014}_{-0.014}$	$100\theta_D$	0.16090	$0.16105^{+0.00064}_{-0.00054}$
$n_s$	0.9688	$0.970^{+0.013}_{-0.012}$	$\Omega_m$	0.3093	$0.313^{+0.014}_{-0.014}$	$z_{\text{eq}}$	3375	$3325^{+100}_{-140}$
$y_{\text{cal}}$	1.00047	$1.0004^{+0.0049}_{-0.0048}$	$\Omega_m h^2$	0.14240	$0.1445^{+0.0048}_{-0.0040}$	$k_{\text{eq}}$	0.010320	$0.01027^{+0.00032}_{-0.00042}$
$A_{217}^{\text{CIB}}$	64.2	$64^{+10}_{-10}$	$\Omega_\nu h^2$	0.00065	< 0.00807	$100\theta_{\text{eq}}$	0.8181	$0.829^{+0.031}_{-0.021}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.38	—	$\Omega_m h^3$	0.09661	$0.0982^{+0.0048}_{-0.0032}$	$100\theta_{s, \text{eq}}$	0.4519	$0.458^{+0.016}_{-0.011}$
$A_{143}^{\text{tSZ}}$	7.04	$5.31^{+3.7}_{-3.8}$	$\sigma_8$	0.833	$0.813^{+0.049}_{-0.053}$	$r_{\text{drag}}/D_V(0.57)$	0.07169	$0.07149^{+0.00077}_{-0.00076}$
$A_{100}^{\text{PS}}$	251	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4633	$0.455^{+0.026}_{-0.029}$	$H(0.57)$	93.23	$93.7^{+1.7}_{-1.2}$
$A_{143}^{\text{PS}}$	43.5	$44^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6212	$0.608^{+0.035}_{-0.038}$	$D_A(0.57)$	1383.5	$1379^{+22}_{-29}$
$A_{143 \times 217}^{\text{PS}}$	43.6	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.011	$0.986^{+0.054}_{-0.060}$	$F_{\text{AP}}(0.57)$	0.67548	$0.6763^{+0.0036}_{-0.0035}$
$A_{217}^{\text{PS}}$	102.1	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.498	$2.503^{+0.077}_{-0.076}$	$f\sigma_8(0.57)$	0.4837	$0.474^{+0.028}_{-0.030}$
$A^{\text{kSZ}}$	0.01	< 8.03	$z_{\text{re}}$	10.45	$10.9^{+3.0}_{-3.1}$	$\sigma_8(0.57)$	0.6202	$0.605^{+0.038}_{-0.041}$
$A_{100}^{\text{dustTT}}$	7.41	$7.46^{+3.7}_{-3.7}$	$10^9 A_s$	2.223	$2.25^{+0.16}_{-0.15}$	$f_{2000}^{143}$	28.5	$30^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.01	$8.96^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8810	$1.885^{+0.028}_{-0.026}$	$f_{2000}^{143 \times 217}$	31.72	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.0^{+8.1}_{-8.2}$	$D_{40}$	1233.7	$1233^{+27}_{-27}$	$f_{2000}^{217}$	105.21	$106.2^{+3.7}_{-3.7}$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$D_{220}$	5727	$5730^{+75}_{-75}$	$\chi_{\text{lowTEB}}^2$	10496.6	10497.7 ( $\nu$ : 3.4)
$A_{100}^{\text{dustEE}}$	0.0817	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2537.6	$2536^{+27}_{-26}$	$\chi_{\text{plik}}^2$	2432.5	2452.5 ( $\nu$ : 25.3)
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0493^{+0.0099}_{-0.0098}$	$D_{1420}$	816.2	$814.3^{+9.5}_{-9.3}$	$\chi_{\text{H070p6}}^2$	0.68	0.66 ( $\nu$ : 0.1)
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.065}_{-0.064}$	$D_{2000}$	231.09	$229.9^{+3.2}_{-3.3}$	$\chi_{6\text{DF}}^2$	0.018	0.085 ( $\nu$ : 0.0)
$A_{143}^{\text{dustEE}}$	0.1007	$0.101^{+0.013}_{-0.013}$	$n_{s,0.002}$	0.9688	$0.970^{+0.013}_{-0.012}$	$\chi_{\text{MGS}}^2$	1.34	1.14 ( $\nu$ : 0.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.223^{+0.093}_{-0.092}$	$Y_{\text{P}}$	0.24575	$0.2472^{+0.0033}_{-0.0023}$	$\chi_{\text{DR11CMASS}}^2$	2.44	3.05 ( $\nu$ : 0.3)
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}^{\text{BBN}}$	0.24708	$0.2485^{+0.0033}_{-0.0023}$	$\chi_{\text{DR11LOWZ}}^2$	0.57	0.98 ( $\nu$ : 0.2)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.074}$	$10^5 D/H$	2.604	$2.626^{+0.075}_{-0.068}$	$\chi_{\text{prior}}^2$	6.94	19.5 ( $\nu$ : 15.0)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.057}$	Age/Gyr	13.770	$13.70^{+0.15}_{-0.23}$	$\chi_{\text{CMB}}^2$	12929.1	12950.1 ( $\nu$ : 23.7)
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.16}$	$z_*$	1089.92	$1090.07^{+0.60}_{-0.52}$	$\chi_{\text{BAO}}^2$	4.38	5.25 ( $\nu$ : 0.7)

Best-fit  $\chi_{\text{eff}}^2 = 12941.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 12975.57$ ;  $R - 1 = 0.01234$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 MGS: 1.34 DR11CMass: 2.44 DR11LOWZ: 0.57 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.60 plik\_dx11dr2\_HM\_v18\_TTTEEE:  
2432.48 Hubble - H070p6: 0.68



12.10 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022329	$0.02243^{+0.00034}_{-0.00031}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.895	$13.79^{+0.16}_{-0.22}$
$\Omega_c h^2$	0.1166	$0.1191^{+0.0071}_{-0.0084}$	$A_{217}^{\text{dustTE}}$	1.662	$1.66^{+0.49}_{-0.50}$	$z_{\text{drag}}$	1059.78	$1060.3^{+1.1}_{-0.94}$
$100\theta_{\text{MC}}$	1.04085	$1.04071^{+0.00067}_{-0.00075}$	$c_{100}$	0.99820	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.34	$146.2^{+1.8}_{-2.4}$
$\tau$	0.0776	$0.089^{+0.034}_{-0.034}$	$c_{217}$	0.99604	$0.9960^{+0.0028}_{-0.0028}$	$k_D$	0.14058	$0.1414^{+0.0018}_{-0.0015}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.246	< 0.698	$H_0$	67.56	$68.1^{+1.7}_{-1.4}$	$100\theta_D$	0.16083	$0.16105^{+0.00065}_{-0.00054}$
$N_{\text{eff}}$	3.048	< 3.41	$\Omega_\Lambda$	0.6884	$0.688^{+0.014}_{-0.014}$	$z_{\text{eq}}$	3320	$3324^{+100}_{-140}$
$\ln(10^{10} A_s)$	3.088	$3.114^{+0.069}_{-0.069}$	$\Omega_m$	0.3116	$0.312^{+0.014}_{-0.013}$	$k_{\text{eq}}$	0.010181	$0.01026^{+0.00033}_{-0.00042}$
$n_s$	0.9658	$0.971^{+0.013}_{-0.012}$	$\Omega_m h^2$	0.14223	$0.1444^{+0.0049}_{-0.0040}$	$100\theta_{\text{eq}}$	0.8298	$0.829^{+0.031}_{-0.021}$
$y_{\text{cal}}$	1.00009	$1.0004^{+0.0049}_{-0.0048}$	$\Omega_\nu h^2$	0.00326	< 0.00807	$100\theta_{s, \text{eq}}$	0.4581	$0.458^{+0.016}_{-0.011}$
$A_{217}^{\text{CIB}}$	66.5	$64^{+10}_{-10}$	$\Omega_m h^3$	0.09609	$0.0983^{+0.0049}_{-0.0033}$	$r_{\text{drag}}/D_V(0.57)$	0.07156	$0.07153^{+0.00076}_{-0.00074}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\sigma_8$	0.825	$0.814^{+0.049}_{-0.053}$	$H(0.57)$	93.00	$93.7^{+1.7}_{-1.2}$
$A_{143}^{\text{tSZ}}$	7.17	$5.32^{+3.7}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4606	$0.455^{+0.026}_{-0.029}$	$D_A(0.57)$	1388.1	$1378^{+22}_{-29}$
$A_{100}^{\text{PS}}$	255	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6165	$0.608^{+0.035}_{-0.038}$	$F_{\text{AP}}(0.57)$	0.67605	$0.6761^{+0.0035}_{-0.0035}$
$A_{143}^{\text{PS}}$	39.6	$44^{+10}_{-20}$	$\sigma_8/h^{0.5}$	1.004	$0.987^{+0.054}_{-0.060}$	$f\sigma_8(0.57)$	0.4798	$0.474^{+0.028}_{-0.030}$
$A_{143 \times 217}^{\text{PS}}$	35.6	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.496	$2.503^{+0.077}_{-0.077}$	$\sigma_8(0.57)$	0.6138	$0.606^{+0.038}_{-0.041}$
$A_{217}^{\text{PS}}$	97.9	$98^{+20}_{-20}$	$z_{\text{re}}$	9.92	$10.9^{+3.0}_{-3.1}$	$f_{2000}^{143}$	29.0	$30^{+5}_{-5}$
$A^{\text{kSZ}}$	0.00	< 8.02	$10^9 A_s$	2.194	$2.25^{+0.16}_{-0.15}$	$f_{2000}^{143 \times 217}$	31.91	$33^{+4}_{-4}$
$A_{100}^{\text{dustTT}}$	7.41	$7.47^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8788	$1.885^{+0.028}_{-0.026}$	$f_{2000}^{217}$	105.51	$106.2^{+3.7}_{-3.7}$
$A_{143}^{\text{dustTT}}$	8.99	$8.96^{+3.6}_{-3.6}$	$D_{40}$	1236.7	$1233^{+27}_{-27}$	$\chi_{\text{lowTEB}}^2$	10496.5	10497.6 ( $\nu$ : 3.4)
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.0^{+8.1}_{-8.2}$	$D_{220}$	5731	$5731^{+75}_{-75}$	$\chi_{\text{plik}}^2$	2431.9	2452.5 ( $\nu$ : 25.4)
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{810}$	2534.5	$2536^{+27}_{-26}$	$\chi_{\text{H070p6}}^2$	0.83	0.64 ( $\nu$ : 0.1)
$A_{100}^{\text{dustEE}}$	0.0814	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	814.7	$814.4^{+9.5}_{-9.3}$	$\chi_{\text{JLA}}^2$	706.751	706.80 ( $\nu$ : 0.0)
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0493^{+0.0099}_{-0.0098}$	$D_{2000}$	230.65	$230.0^{+3.2}_{-3.3}$	$\chi_{6\text{DF}}^2$	0.037	0.075 ( $\nu$ : 0.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.065}_{-0.064}$	$n_{s, 0.002}$	0.9658	$0.971^{+0.013}_{-0.012}$	$\chi_{\text{MGS}}^2$	1.16	1.19 ( $\nu$ : 0.1)
$A_{143}^{\text{dustEE}}$	0.1005	$0.101^{+0.013}_{-0.013}$	$Y_{\text{P}}$	0.24540	$0.2472^{+0.0033}_{-0.0023}$	$\chi_{\text{DR11CMass}}^2$	2.55	2.97 ( $\nu$ : 0.3)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.093}_{-0.092}$	$Y_{\text{P}}^{\text{BBN}}$	0.24673	$0.2485^{+0.0034}_{-0.0023}$	$\chi_{\text{DR11LOWZ}}^2$	0.75	0.91 ( $\nu$ : 0.2)
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.25}_{-0.26}$	$10^5 D/H$	2.600	$2.625^{+0.076}_{-0.068}$	$\chi_{\text{prior}}^2$	6.92	19.6 ( $\nu$ : 15.0)
$A_{100}^{\text{dustTE}}$	0.139	$0.141^{+0.074}_{-0.074}$	Age/Gyr	13.800	$13.70^{+0.16}_{-0.23}$	$\chi_{\text{CMB}}^2$	12928.5	12950.1 ( $\nu$ : 23.7)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.057}$	$z_*$	1089.91	$1090.05^{+0.60}_{-0.52}$	$\chi_{\text{BAO}}^2$	4.49	5.14 ( $\nu$ : 0.6)
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.16}$	$r_*$	144.66	$143.6^{+1.7}_{-2.3}$			
$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.11}$	$100\theta_*$	1.04104	$1.04082^{+0.00078}_{-0.00084}$			

Best-fit  $\chi_{\text{eff}}^2 = 13647.45$ ;  $\bar{\chi}_{\text{eff}}^2 = 13682.29$ ;  $R - 1 = 0.01225$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.04 MGS: 1.16 DR11CMass: 2.55 DR11LOWZ: 0.75 CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.55 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.91 Hubble - H070p6: 0.83 SN - JLA December\_2013: 706.75

## 12.11 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_lensing\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022285	$0.02247^{+0.00049}_{-0.00045}$	$\Omega_m h^2$	0.1421	$0.1459^{+0.0071}_{-0.0061}$	$r_{\text{drag}}$	147.26	$145.3^{+2.9}_{-3.6}$
$\Omega_c h^2$	0.1190	$0.1207^{+0.0074}_{-0.0081}$	$\Omega_\nu h^2$	0.00085	< 0.00618	$k_D$	0.14050	$0.1420^{+0.0027}_{-0.0023}$
$100\theta_{\text{MC}}$	1.04096	$1.04075^{+0.00095}_{-0.0010}$	$\Omega_m h^3$	0.0965	$0.1004^{+0.0075}_{-0.0058}$	$100\theta_D$	0.16103	$0.1614^{+0.0010}_{-0.00092}$
$\tau$	0.0679	$0.079^{+0.035}_{-0.034}$	$\sigma_8$	0.8137	$0.800^{+0.040}_{-0.044}$	$z_{\text{eq}}$	3361	$3308^{+91}_{-97}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.019	< 0.521	$\sigma_8 \Omega_m^{0.5}$	0.4518	$0.444^{+0.020}_{-0.022}$	$k_{\text{eq}}$	0.010282	$0.01029^{+0.00031}_{-0.00034}$
$N_{\text{eff}}$	3.080	< 3.67	$\sigma_8 \Omega_m^{0.25}$	0.6063	$0.596^{+0.027}_{-0.030}$	$100\theta_{\text{eq}}$	0.8207	$0.832^{+0.021}_{-0.019}$
$\ln(10^{10} A_s)$	3.067	$3.095^{+0.072}_{-0.069}$	$\sigma_8/h^{0.5}$	0.9875	$0.965^{+0.041}_{-0.047}$	$100\theta_{\text{s,eq}}$	0.4533	$0.459^{+0.011}_{-0.0098}$
$n_s$	0.9693	$0.977^{+0.019}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	2.449	$2.451^{+0.053}_{-0.054}$	$r_{\text{drag}}/D_V(0.57)$	0.07176	$0.07171^{+0.00092}_{-0.00090}$
$y_{\text{cal}}$	1.00006	$1.0003^{+0.0049}_{-0.0048}$	$z_{\text{re}}$	9.03	$10.0^{+3.1}_{-3.0}$	$H(0.57)$	93.23	$94.5^{+2.5}_{-2.0}$
$A_{217}^{\text{CIB}}$	67.7	$66^{+10}_{-10}$	$10^9 A_s$	2.148	$2.21^{+0.16}_{-0.15}$	$D_A(0.57)$	1383.0	$1365^{+34}_{-41}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8754	$1.887^{+0.034}_{-0.032}$	$F_{\text{AP}}(0.57)$	0.67521	$0.6753^{+0.0042}_{-0.0042}$
$A_{143}^{\text{tSZ}}$	7.20	$4.75^{+3.9}_{-3.8}$	$D_{40}$	1222.7	$1215^{+29}_{-31}$	$f\sigma_8(0.57)$	0.4724	$0.465^{+0.021}_{-0.024}$
$A_{100}^{\text{PS}}$	254	$265^{+50}_{-60}$	$D_{220}$	5713	$5721^{+80}_{-78}$	$\sigma_8(0.57)$	0.6061	$0.596^{+0.032}_{-0.035}$
$A_{143}^{\text{PS}}$	39.7	$47^{+20}_{-20}$	$D_{810}$	2533.0	$2535^{+28}_{-27}$	$f_{2000}^{143}$	30.2	$32^{+6}_{-6}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{1420}$	814.5	$813^{+10}_{-9.9}$	$f_{2000}^{143 \times 217}$	32.79	$34^{+4}_{-4}$
$A_{217}^{\text{PS}}$	96.9	$96^{+20}_{-20}$	$D_{2000}$	230.00	$228.8^{+3.8}_{-4.0}$	$f_{2000}^{217}$	106.27	$107.6^{+4.3}_{-4.1}$
$A^{\text{kSZ}}$	0.0	—	$n_{\text{s},0.002}$	0.9693	$0.977^{+0.019}_{-0.017}$	$\chi_{\text{lensing}}^2$	9.19	9.73 ( $\nu$ : 0.9)
$A_{100}^{\text{dustTT}}$	7.42	$7.52^{+3.7}_{-3.7}$	$Y_{\text{P}}$	0.24582	$0.2488^{+0.0052}_{-0.0042}$	$\chi_{\text{lowTEB}}^2$	10494.76	10495.1 ( $\nu$ : 1.2)
$A_{143}^{\text{dustTT}}$	9.09	$9.13^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.24715	$0.2502^{+0.0052}_{-0.0042}$	$\chi_{\text{plik}}^2$	766.3	781.5 ( $\nu$ : 16.8)
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.3^{+8.2}_{-8.2}$	$10^5 D/H$	2.619	$2.66^{+0.12}_{-0.11}$	$\chi_{6\text{DF}}^2$	0.010	0.063 ( $\nu$ : 0.0)
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	Age/Gyr	13.773	$13.60^{+0.27}_{-0.34}$	$\chi_{\text{MGS}}^2$	1.41	1.44 ( $\nu$ : 0.2)
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.98	$1090.24^{+0.84}_{-0.81}$	$\chi_{\text{DR11CMass}}^2$	2.41	2.98 ( $\nu$ : 0.3)
$c_{217}$	0.99603	$0.9961^{+0.0029}_{-0.0028}$	$r_*$	144.57	$142.7^{+2.8}_{-3.5}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	0.70 ( $\nu$ : 0.2)
$H_0$	67.90	$68.8^{+2.4}_{-2.1}$	$100\theta_*$	1.04114	$1.0408^{+0.0011}_{-0.0012}$	$\chi_{\text{prior}}^2$	2.07	7.49 ( $\nu$ : 6.4)
$\Omega_\Lambda$	0.6917	$0.691^{+0.016}_{-0.017}$	$D_A/\text{Gpc}$	13.886	$13.71^{+0.26}_{-0.32}$	$\chi_{\text{CMB}}^2$	11270.3	11286.3 ( $\nu$ : 16.5)
$\Omega_m$	0.3083	$0.309^{+0.017}_{-0.016}$	$z_{\text{drag}}$	1059.70	$1060.5^{+1.6}_{-1.5}$	$\chi_{\text{BAO}}^2$	4.31	5.18 ( $\nu$ : 0.7)

Best-fit  $\chi_{\text{eff}}^2 = 11276.65$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 11298.94$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.25$ ;  $R - 1 = 0.00736$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMass: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.48 ( $\Delta$  0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.19 ( $\Delta$  -0.05) lowL\_SMW\_70\_dx11d\_2014\_10\_03: 10494.76 ( $\Delta$  -0.10) plik\_dx11dr2\_HM\_v18\_TT: 766.32 ( $\Delta$  0.12)

## 12.12 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_lensing\_BAO\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022350	$0.02249^{+0.00048}_{-0.00044}$	$\Omega_\nu h^2$	0.00094	$0.0027^{+0.0033}_{-0.0027}$	$100\theta_D$	0.16109	$0.1615^{+0.0010}_{-0.00095}$
$\Omega_c h^2$	0.1192	$0.1210^{+0.0073}_{-0.0082}$	$\Omega_m h^3$	0.0973	$0.1008^{+0.0075}_{-0.0061}$	$z_{\text{eq}}$	3348	$3307^{+88}_{-94}$
$100\theta_{\text{MC}}$	1.04095	$1.04073^{+0.00096}_{-0.0010}$	$\sigma_8$	0.8149	$0.801^{+0.039}_{-0.043}$	$k_{\text{eq}}$	0.010270	$0.01029^{+0.00032}_{-0.00033}$
$\tau$	0.0720	$0.080^{+0.035}_{-0.034}$	$\sigma_8 \Omega_m^{0.5}$	0.4504	$0.444^{+0.020}_{-0.022}$	$100\theta_{\text{eq}}$	0.8232	$0.832^{+0.020}_{-0.018}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.028	< 0.493	$\sigma_8 \Omega_m^{0.25}$	0.6058	$0.597^{+0.027}_{-0.030}$	$100\theta_{\text{s,eq}}$	0.4546	$0.459^{+0.010}_{-0.0094}$
$N_{\text{eff}}$	3.121	< 3.69	$\sigma_8/h^{0.5}$	0.9861	$0.965^{+0.041}_{-0.046}$	$r_{\text{drag}}/D_V(0.57)$	0.07191	$0.07176^{+0.00090}_{-0.00089}$
$\ln(10^{10} A_s)$	3.076	$3.098^{+0.072}_{-0.069}$	$\langle d^2 \rangle^{1/2}$	2.448	$2.450^{+0.053}_{-0.054}$	$H(0.57)$	93.55	$94.6^{+2.5}_{-2.1}$
$n_s$	0.9718	$0.978^{+0.018}_{-0.017}$	$z_{\text{re}}$	9.40	$10.2^{+3.1}_{-3.0}$	$D_A(0.57)$	1376.7	$1363^{+35}_{-40}$
$y_{\text{cal}}$	1.00010	$1.0003^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.167	$2.22^{+0.16}_{-0.15}$	$F_{\text{AP}}(0.57)$	0.67451	$0.6750^{+0.0041}_{-0.0041}$
$A_{217}^{\text{CIB}}$	67.9	$66^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8765	$1.888^{+0.034}_{-0.032}$	$f\sigma_8(0.57)$	0.4725	$0.466^{+0.021}_{-0.024}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1219.8	$1214^{+29}_{-30}$	$\sigma_8(0.57)$	0.6077	$0.598^{+0.031}_{-0.034}$
$A_{143}^{\text{tSZ}}$	7.15	$4.73^{+3.9}_{-3.8}$	$D_{220}$	5716	$5721^{+81}_{-79}$	$f_{2000}^{143}$	30.3	$32^{+6}_{-6}$
$A_{100}^{\text{PS}}$	255	$266^{+50}_{-60}$	$D_{810}$	2533.4	$2536^{+28}_{-27}$	$f_{2000}^{143 \times 217}$	32.83	$34^{+4}_{-4}$
$A_{143}^{\text{PS}}$	39.9	$47^{+20}_{-20}$	$D_{1420}$	814.7	$813^{+10}_{-9.9}$	$f_{2000}^{217}$	106.32	$107.6^{+4.3}_{-4.1}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	229.98	$228.7^{+3.8}_{-4.0}$	$\chi_{\text{lensing}}^2$	9.11	9.71 ( $\nu: 0.9$ )
$A_{217}^{\text{PS}}$	96.7	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9718	$0.978^{+0.018}_{-0.017}$	$\chi_{\text{lowTEB}}^2$	10494.59	10495.0 ( $\nu: 1.2$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.24639	$0.2491^{+0.0052}_{-0.0044}$	$\chi_{\text{plik}}^2$	766.5	781.6 ( $\nu: 16.9$ )
$A_{100}^{\text{dustTT}}$	7.55	$7.53^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.24772	$0.2504^{+0.0052}_{-0.0044}$	$\chi_{\text{H070p6}}^2$	0.488	0.36 ( $\nu: 0.0$ )
$A_{143}^{\text{dustTT}}$	9.12	$9.13^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.621	$2.66^{+0.12}_{-0.11}$	$\chi_{6\text{DF}}^2$	0.001	0.056 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.3^{+8.3}_{-8.2}$	Age/Gyr	13.730	$13.58^{+0.28}_{-0.34}$	$\chi_{\text{MGS}}^2$	1.61	1.50 ( $\nu: 0.2$ )
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$z_*$	1089.96	$1090.24^{+0.85}_{-0.82}$	$\chi_{\text{DR11CMASS}}^2$	2.44	2.95 ( $\nu: 0.3$ )
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.28	$142.5^{+3.0}_{-3.5}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	0.64 ( $\nu: 0.2$ )
$c_{217}$	0.99603	$0.9961^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04110	$1.0408^{+0.0011}_{-0.0012}$	$\chi_{\text{prior}}^2$	2.15	7.47 ( $\nu: 6.4$ )
$H_0$	68.28	$68.9^{+2.4}_{-2.1}$	$D_A/\text{Gpc}$	13.858	$13.69^{+0.28}_{-0.32}$	$\chi_{\text{CMB}}^2$	11270.2	11286.4 ( $\nu: 16.6$ )
$\Omega_\Lambda$	0.6945	$0.692^{+0.016}_{-0.016}$	$z_{\text{drag}}$	1059.89	$1060.6^{+1.6}_{-1.5}$	$\chi_{\text{BAO}}^2$	4.37	5.14 ( $\nu: 0.6$ )
$\Omega_m$	0.3055	$0.308^{+0.016}_{-0.016}$	$r_{\text{drag}}$	146.95	$145.1^{+3.1}_{-3.6}$			
$\Omega_m h^2$	0.1424	$0.1462^{+0.0072}_{-0.0063}$	$k_D$	0.14073	$0.1421^{+0.0028}_{-0.0024}$			

Best-fit  $\chi_{\text{eff}}^2 = 11277.24$ ;  $\bar{\chi}_{\text{eff}}^2 = 11299.34$ ;  $R - 1 = 0.00640$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMASS: 2.44 DR11LOWZ: 0.32 CMB - smica\_g30\_ft1\_full\_pp: 9.11 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.59 plik\_dx11dr2\_HM\_v18\_TT: 766.54 Hubble - H070p6: 0.49

12.13 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_lensing\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022345	$0.02250^{+0.00048}_{-0.00044}$	$\Omega_\nu h^2$	0.00085	$0.0026^{+0.0032}_{-0.0026}$	$100\theta_D$	0.16108	$0.1615^{+0.0010}_{-0.00095}$
$\Omega_c h^2$	0.1192	$0.1210^{+0.0074}_{-0.0083}$	$\Omega_m h^3$	0.0972	$0.1009^{+0.0075}_{-0.0062}$	$z_{\text{eq}}$	3352	$3305^{+87}_{-93}$
$100\theta_{\text{MC}}$	1.04098	$1.04073^{+0.00096}_{-0.0010}$	$\sigma_8$	0.8160	$0.802^{+0.039}_{-0.043}$	$k_{\text{eq}}$	0.010279	$0.01029^{+0.00032}_{-0.00033}$
$\tau$	0.0705	$0.081^{+0.035}_{-0.034}$	$\sigma_8 \Omega_m^{0.5}$	0.4511	$0.444^{+0.020}_{-0.022}$	$100\theta_{\text{eq}}$	0.8225	$0.832^{+0.020}_{-0.018}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.019	< 0.484	$\sigma_8 \Omega_m^{0.25}$	0.6067	$0.597^{+0.027}_{-0.029}$	$100\theta_{\text{s,eq}}$	0.4542	$0.459^{+0.010}_{-0.0093}$
$N_{\text{eff}}$	3.116	< 3.69	$\sigma_8/h^{0.5}$	0.9876	$0.966^{+0.041}_{-0.045}$	$r_{\text{drag}}/D_V(0.57)$	0.07191	$0.07180^{+0.00088}_{-0.00087}$
$\ln(10^{10} A_s)$	3.073	$3.099^{+0.071}_{-0.069}$	$\langle d^2 \rangle^{1/2}$	2.447	$2.450^{+0.053}_{-0.054}$	$H(0.57)$	93.54	$94.6^{+2.5}_{-2.1}$
$n_s$	0.9715	$0.978^{+0.018}_{-0.017}$	$z_{\text{re}}$	9.26	$10.2^{+3.1}_{-3.0}$	$D_A(0.57)$	1376.9	$1362^{+35}_{-40}$
$y_{\text{cal}}$	1.00018	$1.0003^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.161	$2.22^{+0.16}_{-0.15}$	$F_{\text{AP}}(0.57)$	0.67453	$0.6749^{+0.0040}_{-0.0040}$
$A_{217}^{\text{CIB}}$	67.9	$66^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8772	$1.888^{+0.034}_{-0.032}$	$f\sigma_8(0.57)$	0.4732	$0.466^{+0.021}_{-0.024}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1220.3	$1213^{+29}_{-30}$	$\sigma_8(0.57)$	0.6086	$0.598^{+0.031}_{-0.034}$
$A_{143}^{\text{tSZ}}$	7.16	$4.73^{+3.9}_{-3.8}$	$D_{220}$	5716	$5722^{+80}_{-78}$	$f_{2000}^{143}$	30.2	$32^{+6}_{-6}$
$A_{100}^{\text{PS}}$	255	$266^{+50}_{-60}$	$D_{810}$	2534.1	$2536^{+28}_{-27}$	$f_{2000}^{143 \times 217}$	32.76	$34^{+5}_{-4}$
$A_{143}^{\text{PS}}$	39.7	$47^{+20}_{-20}$	$D_{1420}$	814.9	$813.5^{+9.9}_{-9.9}$	$f_{2000}^{217}$	106.25	$107.6^{+4.3}_{-4.1}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.08	$228.8^{+3.8}_{-4.1}$	$\chi_{\text{lensing}}^2$	9.15	9.70 ( $\nu: 0.9$ )
$A_{217}^{\text{PS}}$	96.7	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9715	$0.978^{+0.018}_{-0.017}$	$\chi_{\text{lowTEB}}^2$	10494.55	10495.0 ( $\nu: 1.2$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.24633	$0.2491^{+0.0052}_{-0.0044}$	$\chi_{\text{plik}}^2$	766.7	781.7 ( $\nu: 16.9$ )
$A_{100}^{\text{dustTT}}$	7.51	$7.53^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.24766	$0.2505^{+0.0052}_{-0.0044}$	$\chi_{\text{H070p6}}^2$	0.493	0.34 ( $\nu: 0.0$ )
$A_{143}^{\text{dustTT}}$	9.15	$9.13^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.620	$2.66^{+0.12}_{-0.11}$	$\chi_{\text{JLA}}^2$	706.605	706.68 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.3^{+8.3}_{-8.2}$	Age/Gyr	13.732	$13.57^{+0.29}_{-0.34}$	$\chi_{6\text{DF}}^2$	0.001	0.050 ( $\nu: 0.0$ )
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$z_*$	1089.96	$1090.23^{+0.85}_{-0.82}$	$\chi_{\text{MGS}}^2$	1.61	1.55 ( $\nu: 0.2$ )
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.29	$142.5^{+3.0}_{-3.5}$	$\chi_{\text{DR11CMass}}^2$	2.44	2.92 ( $\nu: 0.2$ )
$c_{217}$	0.99600	$0.9961^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04113	$1.0408^{+0.0011}_{-0.0012}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	0.58 ( $\nu: 0.2$ )
$H_0$	68.27	$69.0^{+2.3}_{-2.1}$	$D_A/\text{Gpc}$	13.859	$13.69^{+0.28}_{-0.33}$	$\chi_{\text{prior}}^2$	2.03	7.47 ( $\nu: 6.4$ )
$\Omega_\Lambda$	0.6944	$0.693^{+0.015}_{-0.016}$	$z_{\text{drag}}$	1059.89	$1060.6^{+1.6}_{-1.5}$	$\chi_{\text{CMB}}^2$	11270.4	11286.4 ( $\nu: 16.6$ )
$\Omega_m$	0.3056	$0.307^{+0.016}_{-0.015}$	$r_{\text{drag}}$	146.96	$145.1^{+3.1}_{-3.6}$	$\chi_{\text{BAO}}^2$	4.37	5.10 ( $\nu: 0.6$ )
$\Omega_m h^2$	0.1424	$0.1461^{+0.0072}_{-0.0063}$	$k_D$	0.14072	$0.1421^{+0.0028}_{-0.0024}$			

Best-fit  $\chi_{\text{eff}}^2 = 11983.85$ ;  $\Delta\chi_{\text{eff}}^2 = -0.22$ ;  $\bar{\chi}_{\text{eff}}^2 = 12005.95$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.93$ ;  $R - 1 = 0.00629$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.44 ( $\Delta$  0.03) DR11LOWZ: 0.32 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.15 ( $\Delta$  -0.11) lowl\_SMW\_70\_dx11d\_2014\_10\_03: 10494.55 ( $\Delta$  -0.37) plik\_dx11dr2\_HM\_v18\_TT: 766.65 ( $\Delta$  0.52) Hubble - H070p6: 0.49 ( $\Delta$  -0.18) SN - JLA December\_2013: 706.61 ( $\Delta$  -0.02)

## 12.14 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022287	$0.02241^{+0.00035}_{-0.00032}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.11}$	$r_*$	144.80	$143.6^{+1.6}_{-2.1}$
$\Omega_c h^2$	0.1188	$0.1191^{+0.0063}_{-0.0066}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04112	$1.04087^{+0.00075}_{-0.00079}$
$100\theta_{\text{MC}}$	1.04093	$1.04075^{+0.00066}_{-0.00070}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.909	$13.80^{+0.15}_{-0.20}$
$\tau$	0.0660	$0.072^{+0.028}_{-0.027}$	$c_{100}$	0.99814	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.67	$1060.2^{+1.1}_{-0.97}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.002	< 0.577	$c_{217}$	0.99606	$0.9961^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.50	$146.3^{+1.7}_{-2.2}$
$N_{\text{eff}}$	3.047	< 3.39	$H_0$	67.71	$67.9^{+1.5}_{-1.4}$	$k_D$	0.14037	$0.1413^{+0.0017}_{-0.0014}$
$\ln(10^{10} A_s)$	3.063	$3.078^{+0.057}_{-0.053}$	$\Omega_\Lambda$	0.6909	$0.687^{+0.014}_{-0.014}$	$100\theta_D$	0.16091	$0.16107^{+0.00057}_{-0.00052}$
$n_s$	0.9667	$0.970^{+0.013}_{-0.012}$	$\Omega_m$	0.3091	$0.313^{+0.014}_{-0.014}$	$z_{\text{eq}}$	3371	$3326^{+90}_{-110}$
$y_{\text{cal}}$	1.00011	$1.0003^{+0.0049}_{-0.0048}$	$\Omega_m h^2$	0.14173	$0.1443^{+0.0046}_{-0.0039}$	$k_{\text{eq}}$	0.010289	$0.01026^{+0.00029}_{-0.00032}$
$A_{217}^{\text{CIB}}$	68.0	$65^{+10}_{-10}$	$\Omega_\nu h^2$	0.00066	< 0.00677	$100\theta_{\text{eq}}$	0.8187	$0.829^{+0.023}_{-0.019}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^3$	0.09597	$0.0981^{+0.0044}_{-0.0030}$	$100\theta_{\text{s,eq}}$	0.4523	$0.457^{+0.012}_{-0.0098}$
$A_{143}^{\text{tSZ}}$	7.31	$5.18^{+3.7}_{-3.8}$	$\sigma_8$	0.8154	$0.796^{+0.038}_{-0.042}$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.07148^{+0.00076}_{-0.00078}$
$A_{100}^{\text{PS}}$	257	$264^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4534	$0.445^{+0.020}_{-0.022}$	$H(0.57)$	93.03	$93.6^{+1.5}_{-1.1}$
$A_{143}^{\text{PS}}$	38.6	$45^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6080	$0.596^{+0.026}_{-0.030}$	$D_A(0.57)$	1386.3	$1380^{+21}_{-26}$
$A_{143 \times 217}^{\text{PS}}$	32	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9909	$0.966^{+0.042}_{-0.048}$	$F_{\text{AP}}(0.57)$	0.67543	$0.6763^{+0.0036}_{-0.0035}$
$A_{217}^{\text{PS}}$	96.3	$96^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4541	$2.459^{+0.049}_{-0.049}$	$f\sigma_8(0.57)$	0.4735	$0.464^{+0.021}_{-0.024}$
$A^{\text{kSZ}}$	0.0	—	$z_{\text{re}}$	8.83	$9.35^{+2.5}_{-2.6}$	$\sigma_8(0.57)$	0.6072	$0.592^{+0.030}_{-0.033}$
$A_{100}^{\text{dustTT}}$	7.50	$7.54^{+3.7}_{-3.7}$	$10^9 A_s$	2.140	$2.17^{+0.13}_{-0.11}$	$f_{2000}^{143}$	29.8	$31^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.11	$9.11^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8755	$1.882^{+0.026}_{-0.024}$	$f_{2000}^{143 \times 217}$	32.54	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.3^{+8.2}_{-8.1}$	$D_{40}$	1228.7	$1225^{+24}_{-25}$	$f_{2000}^{217}$	106.08	$106.8^{+3.7}_{-3.6}$
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{220}$	5723	$5728^{+75}_{-75}$	$\chi_{\text{lensing}}^2$	9.64	10.2 ( $\nu: 1.4$ )
$A_{100}^{\text{dustEE}}$	0.0814	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2533.7	$2535^{+26}_{-26}$	$\chi_{\text{lowTEB}}^2$	10495.23	10495.5 ( $\nu: 0.7$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0493^{+0.0097}_{-0.0099}$	$D_{1420}$	814.7	$814.2^{+9.2}_{-9.3}$	$\chi_{\text{plik}}^2$	2435.2	2455.5 ( $\nu: 24.7$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.0999	$0.099^{+0.064}_{-0.063}$	$D_{2000}$	230.18	$229.5^{+3.1}_{-3.2}$	$\chi_{6\text{DF}}^2$	0.015	0.086 ( $\nu: 0.0$ )
$A_{143}^{\text{dustEE}}$	0.1005	$0.101^{+0.013}_{-0.013}$	$n_{\text{s}, 0.002}$	0.9667	$0.970^{+0.013}_{-0.012}$	$\chi_{\text{MGS}}^2$	1.34	1.14 ( $\nu: 0.1$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.090}_{-0.090}$	$Y_{\text{P}}$	0.24536	$0.2471^{+0.0031}_{-0.0022}$	$\chi_{\text{DR11CMASS}}^2$	2.42	3.05 ( $\nu: 0.4$ )
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.24669	$0.2484^{+0.0031}_{-0.0022}$	$\chi_{\text{DR11LOWZ}}^2$	0.54	0.99 ( $\nu: 0.2$ )
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.074}_{-0.075}$	$10^5 \text{D}/\text{H}$	2.607	$2.628^{+0.069}_{-0.067}$	$\chi_{\text{prior}}^2$	7.12	19.7 ( $\nu: 15.3$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.130	$0.131^{+0.057}_{-0.057}$	$\text{Age}/\text{Gyr}$	13.800	$13.71^{+0.15}_{-0.21}$	$\chi_{\text{CMB}}^2$	12940.0	12961.1 ( $\nu: 23.6$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.16}_{-0.17}$	$z_*$	1089.92	$1090.07^{+0.55}_{-0.51}$	$\chi_{\text{BAO}}^2$	4.33	5.26 ( $\nu: 0.8$ )

Best-fit  $\chi_{\text{eff}}^2 = 12951.48$ ;  $\Delta\chi_{\text{eff}}^2 = -0.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 12986.10$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.46$ ;  $R - 1 = 0.01261$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMASS: 2.42 ( $\Delta$  -0.03) DR11LOWZ: 0.54 ( $\Delta$  -0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.64 ( $\Delta$  -0.03)

lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.23 ( $\Delta$  0.03) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.16 ( $\Delta$  -0.14)

12.15 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022295	$0.02243^{+0.00035}_{-0.00032}$	$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.903	$13.79^{+0.16}_{-0.21}$
$\Omega_c h^2$	0.1190	$0.1193^{+0.0064}_{-0.0066}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1059.70	$1060.2^{+1.1}_{-0.99}$
$100\theta_{\text{MC}}$	1.04094	$1.04075^{+0.00067}_{-0.00072}$	$c_{100}$	0.99815	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.44	$146.2^{+1.8}_{-2.4}$
$\tau$	0.0650	$0.073^{+0.028}_{-0.026}$	$c_{217}$	0.99609	$0.9961^{+0.0028}_{-0.0028}$	$k_D$	0.14044	$0.1414^{+0.0018}_{-0.0015}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	< 0.552	$H_0$	67.67	$68.0^{+1.6}_{-1.4}$	$100\theta_D$	0.16090	$0.16108^{+0.00060}_{-0.00054}$
$N_{\text{eff}}$	3.047	< 3.41	$\Omega_\Lambda$	0.6901	$0.688^{+0.014}_{-0.014}$	$z_{\text{eq}}$	3375	$3326^{+87}_{-100}$
$\ln(10^{10} A_s)$	3.062	$3.080^{+0.057}_{-0.052}$	$\Omega_m$	0.3099	$0.312^{+0.014}_{-0.014}$	$k_{\text{eq}}$	0.010303	$0.01026^{+0.00029}_{-0.00032}$
$n_s$	0.9662	$0.971^{+0.013}_{-0.012}$	$\Omega_m h^2$	0.14191	$0.1444^{+0.0049}_{-0.0040}$	$100\theta_{\text{eq}}$	0.8179	$0.829^{+0.022}_{-0.018}$
$y_{\text{cal}}$	0.99989	$1.0003^{+0.0049}_{-0.0048}$	$\Omega_\nu h^2$	0.00065	< 0.00651	$100\theta_{s, \text{eq}}$	0.4518	$0.457^{+0.012}_{-0.0095}$
$A_{217}^{\text{CIB}}$	67.8	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09603	$0.0983^{+0.0046}_{-0.0032}$	$r_{\text{drag}}/D_V(0.57)$	0.07166	$0.07153^{+0.00076}_{-0.00077}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8154	$0.798^{+0.038}_{-0.042}$	$H(0.57)$	93.02	$93.7^{+1.6}_{-1.2}$
$A_{143}^{\text{tSZ}}$	7.31	$5.16^{+3.7}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.446^{+0.019}_{-0.022}$	$D_A(0.57)$	1386.9	$1378^{+22}_{-27}$
$A_{100}^{\text{PS}}$	257	$264^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6084	$0.596^{+0.026}_{-0.030}$	$F_{\text{AP}}(0.57)$	0.67564	$0.6761^{+0.0036}_{-0.0035}$
$A_{143}^{\text{PS}}$	38.5	$45^{+10}_{-20}$	$\sigma_8/h^{0.5}$	0.9913	$0.967^{+0.041}_{-0.047}$	$f\sigma_8(0.57)$	0.4737	$0.464^{+0.021}_{-0.023}$
$A_{143 \times 217}^{\text{PS}}$	32	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4547	$2.458^{+0.050}_{-0.049}$	$\sigma_8(0.57)$	0.6070	$0.594^{+0.030}_{-0.033}$
$A_{217}^{\text{PS}}$	96.3	$96^{+20}_{-20}$	$z_{\text{re}}$	8.74	$9.44^{+2.5}_{-2.6}$	$f_{2000}^{143}$	29.8	$31^{+5}_{-5}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.136	$2.18^{+0.13}_{-0.12}$	$f_{2000}^{143 \times 217}$	32.53	$33^{+4}_{-4}$
$A_{100}^{\text{dustTT}}$	7.43	$7.54^{+3.6}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8758	$1.883^{+0.026}_{-0.024}$	$f_{2000}^{217}$	106.04	$106.7^{+3.7}_{-3.6}$
$A_{143}^{\text{dustTT}}$	9.06	$9.12^{+3.6}_{-3.6}$	$D_{40}$	1229.4	$1224^{+25}_{-25}$	$\chi_{\text{lensing}}^2$	9.71	10.2 ( $\nu: 1.4$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.2}_{-8.0}$	$D_{220}$	5724	$5729^{+75}_{-74}$	$\chi_{\text{lowTEB}}^2$	10495.32	10495.4 ( $\nu: 0.7$ )
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{810}$	2533.2	$2535^{+27}_{-26}$	$\chi_{\text{plik}}^2$	2434.9	2455.6 ( $\nu: 25.0$ )
$A_{100}^{\text{dustEE}}$	0.0814	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	814.5	$814.2^{+9.3}_{-9.3}$	$\chi_{\text{H070p6}}^2$	0.78	0.63 ( $\nu: 0.0$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0494^{+0.0097}_{-0.0099}$	$D_{2000}$	230.12	$229.5^{+3.1}_{-3.2}$	$\chi_{6\text{DF}}^2$	0.022	0.076 ( $\nu: 0.0$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.064}_{-0.064}$	$n_{s, 0.002}$	0.9662	$0.971^{+0.013}_{-0.012}$	$\chi_{\text{MGS}}^2$	1.28	1.19 ( $\nu: 0.1$ )
$A_{143}^{\text{dustEE}}$	0.1004	$0.101^{+0.013}_{-0.013}$	$Y_P$	0.24537	$0.2472^{+0.0033}_{-0.0023}$	$\chi_{\text{DR11CMass}}^2$	2.45	2.98 ( $\nu: 0.3$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.091}_{-0.090}$	$Y_P^{\text{BBN}}$	0.24670	$0.2486^{+0.0033}_{-0.0023}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	0.91 ( $\nu: 0.2$ )
$A_{217}^{\text{dustEE}}$	0.655	$0.65^{+0.25}_{-0.25}$	$10^5 D/H$	2.606	$2.628^{+0.072}_{-0.069}$	$\chi_{\text{prior}}^2$	7.14	19.7 ( $\nu: 15.5$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.074}$	Age/Gyr	13.800	$13.70^{+0.16}_{-0.22}$	$\chi_{\text{CMB}}^2$	12940.0	12961.3 ( $\nu: 23.8$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	$z_*$	1089.92	$1090.07^{+0.57}_{-0.52}$	$\chi_{\text{BAO}}^2$	4.36	5.16 ( $\nu: 0.6$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.16}_{-0.16}$	$r_*$	144.75	$143.6^{+1.7}_{-2.3}$			
$A_{143}^{\text{dustTE}}$	0.156	$0.15^{+0.11}_{-0.11}$	$100\theta_*$	1.04112	$1.04086^{+0.00077}_{-0.00081}$			

Best-fit  $\chi_{\text{eff}}^2 = 12952.25$ ;  $\bar{\chi}_{\text{eff}}^2 = 12986.75$ ;  $R - 1 = 0.01360$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.02 MGS: 1.28 DR11CMASS: 2.45 DR11LOWZ: 0.61 CMB - smica\_g30\_ftl\_full\_pp: 9.71 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.32 plik\_dx11dr2\_HM\_v18\_TTT  
2434.95 Hubble - H070p6: 0.78



12.16 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022305	$0.02243^{+0.00035}_{-0.00032}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.899	$13.79^{+0.16}_{-0.21}$
$\Omega_c h^2$	0.1189	$0.1192^{+0.0064}_{-0.0066}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1059.70	$1060.2^{+1.1}_{-0.99}$
$100\theta_{\text{MC}}$	1.04090	$1.04076^{+0.00067}_{-0.00073}$	$c_{100}$	0.99819	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.39	$146.2^{+1.8}_{-2.4}$
$\tau$	0.0676	$0.073^{+0.028}_{-0.026}$	$c_{217}$	0.99606	$0.9961^{+0.0028}_{-0.0028}$	$k_D$	0.14045	$0.1414^{+0.0018}_{-0.0015}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	< 0.542	$H_0$	67.83	$68.1^{+1.6}_{-1.4}$	$100\theta_D$	0.16093	$0.16108^{+0.00060}_{-0.00054}$
$N_{\text{eff}}$	3.059	< 3.41	$\Omega_\Lambda$	0.6917	$0.689^{+0.013}_{-0.014}$	$z_{\text{eq}}$	3368	$3325^{+86}_{-100}$
$\ln(10^{10} A_s)$	3.067	$3.081^{+0.057}_{-0.052}$	$\Omega_m$	0.3083	$0.311^{+0.014}_{-0.013}$	$k_{\text{eq}}$	0.010289	$0.01026^{+0.00029}_{-0.00032}$
$n_s$	0.9674	$0.971^{+0.013}_{-0.012}$	$\Omega_m h^2$	0.14184	$0.1443^{+0.0048}_{-0.0040}$	$100\theta_{\text{eq}}$	0.8192	$0.829^{+0.022}_{-0.018}$
$y_{\text{cal}}$	1.00005	$1.0003^{+0.0049}_{-0.0048}$	$\Omega_\nu h^2$	0.00065	< 0.00641	$100\theta_{s, \text{eq}}$	0.4525	$0.457^{+0.012}_{-0.0093}$
$A_{217}^{\text{CIB}}$	67.9	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09622	$0.0983^{+0.0047}_{-0.0033}$	$r_{\text{drag}}/D_V(0.57)$	0.07176	$0.07157^{+0.00075}_{-0.00075}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8172	$0.799^{+0.038}_{-0.041}$	$H(0.57)$	93.14	$93.7^{+1.6}_{-1.2}$
$A_{143}^{\text{tSZ}}$	7.30	$5.17^{+3.7}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4537	$0.446^{+0.019}_{-0.022}$	$D_A(0.57)$	1384.3	$1377^{+22}_{-27}$
$A_{100}^{\text{PS}}$	257	$264^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6089	$0.597^{+0.026}_{-0.029}$	$F_{\text{AP}}(0.57)$	0.67521	$0.6759^{+0.0035}_{-0.0034}$
$A_{143}^{\text{PS}}$	38.7	$45^{+10}_{-20}$	$\sigma_8/h^{0.5}$	0.9922	$0.968^{+0.040}_{-0.046}$	$f\sigma_8(0.57)$	0.4743	$0.465^{+0.020}_{-0.023}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4556	$2.458^{+0.050}_{-0.049}$	$\sigma_8(0.57)$	0.6087	$0.594^{+0.030}_{-0.032}$
$A_{217}^{\text{PS}}$	96.3	$96^{+20}_{-20}$	$z_{\text{re}}$	8.99	$9.48^{+2.5}_{-2.5}$	$f_{2000}^{143}$	29.8	$31^{+5}_{-5}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.148	$2.18^{+0.13}_{-0.12}$	$f_{2000}^{143 \times 217}$	32.53	$33^{+4}_{-4}$
$A_{100}^{\text{dustTT}}$	7.47	$7.54^{+3.6}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8758	$1.883^{+0.027}_{-0.024}$	$f_{2000}^{217}$	106.03	$106.7^{+3.7}_{-3.6}$
$A_{143}^{\text{dustTT}}$	9.01	$9.12^{+3.6}_{-3.6}$	$D_{40}$	1227.9	$1224^{+25}_{-25}$	$\chi_{\text{lensing}}^2$	9.83	10.2 ( $\nu: 1.4$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.3^{+8.2}_{-8.0}$	$D_{220}$	5723	$5729^{+75}_{-74}$	$\chi_{\text{lowTEB}}^2$	10495.20	10495.4 ( $\nu: 0.8$ )
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{810}$	2533.4	$2535^{+27}_{-26}$	$\chi_{\text{plik}}^2$	2435.1	2455.7 ( $\nu: 25.1$ )
$A_{100}^{\text{dustEE}}$	0.0816	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	814.6	$814.3^{+9.3}_{-9.3}$	$\chi_{\text{H070p6}}^2$	0.69	0.61 ( $\nu: 0.0$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0494	$0.0495^{+0.0097}_{-0.0099}$	$D_{2000}$	230.17	$229.5^{+3.1}_{-3.2}$	$\chi_{\text{JLA}}^2$	706.663	706.78 ( $\nu: 0.0$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.101	$0.099^{+0.064}_{-0.064}$	$n_{s, 0.002}$	0.9674	$0.971^{+0.013}_{-0.012}$	$\chi_{6\text{DF}}^2$	0.011	0.067 ( $\nu: 0.0$ )
$A_{143}^{\text{dustEE}}$	0.1006	$0.101^{+0.013}_{-0.013}$	$Y_P$	0.24554	$0.2472^{+0.0033}_{-0.0023}$	$\chi_{\text{MGS}}^2$	1.41	1.24 ( $\nu: 0.1$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.091}_{-0.090}$	$Y_P^{\text{BBN}}$	0.24687	$0.2486^{+0.0033}_{-0.0024}$	$\chi_{\text{DR11CMass}}^2$	2.41	2.92 ( $\nu: 0.2$ )
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.25}$	$10^5 D/H$	2.608	$2.626^{+0.072}_{-0.069}$	$\chi_{\text{DR11LOWZ}}^2$	0.49	0.85 ( $\nu: 0.2$ )
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.074}_{-0.074}$	Age/Gyr	13.787	$13.70^{+0.16}_{-0.22}$	$\chi_{\text{prior}}^2$	7.11	19.7 ( $\nu: 15.5$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.057}$	$z_*$	1089.92	$1090.05^{+0.56}_{-0.51}$	$\chi_{\text{CMB}}^2$	12940.2	12961.3 ( $\nu: 23.9$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.16}$	$r_*$	144.70	$143.6^{+1.7}_{-2.3}$	$\chi_{\text{BAO}}^2$	4.32	5.07 ( $\nu: 0.5$ )
$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.11}$	$100\theta_*$	1.04109	$1.04087^{+0.00077}_{-0.00082}$			

Best-fit  $\chi_{\text{eff}}^2 = 13658.95$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 13693.43$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.33$ ;  $R - 1 = 0.01427$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMass: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.49 ( $\Delta$  0.01) CMB - smica\_g30\_ftl\_full\_pp: 9.83 ( $\Delta$  0.08) lowl\_SMW\_70\_dx11d\_2014\_10\_03.v  
10495.20 ( $\Delta$  -0.02) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.15 ( $\Delta$  -0.05) Hubble - H070p6: 0.69 ( $\Delta$  -0.03) SN - JLA December\_2013: 706.66 ( $\Delta$  0.00)

# 13 nnu+meffsterile+r

## 13.1 base\_nnu\_meffsterile\_r\_plikHM\_TT\_lowTEB\_lensing

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02250^{+0.00060}_{-0.00058}$	$\Omega_m h^2$	$0.1474^{+0.0084}_{-0.0079}$	$k_D$	$0.1425^{+0.0030}_{-0.0027}$
$\Omega_c h^2$	$0.1219^{+0.0076}_{-0.0080}$	$\Omega_\nu h^2$	$< 0.00692$	$100\theta_D$	$0.1616^{+0.0011}_{-0.0010}$
$100\theta_{MC}$	$1.0406^{+0.0010}_{-0.0011}$	$\Omega_m h^3$	$0.1017^{+0.0091}_{-0.0071}$	$z_{eq}$	$3306^{+110}_{-120}$
$\tau$	$0.080^{+0.040}_{-0.037}$	$\sigma_8$	$0.798^{+0.056}_{-0.061}$	$k_{eq}$	$0.01033^{+0.00032}_{-0.00036}$
$m_{\nu, sterile}^{eff}$	$< 0.590$	$\sigma_8 \Omega_m^{0.5}$	$0.444^{+0.021}_{-0.022}$	$100\theta_{eq}$	$0.833^{+0.024}_{-0.023}$
$N_{eff}$	$< 3.80$	$\sigma_8 \Omega_m^{0.25}$	$0.595^{+0.029}_{-0.033}$	$100\theta_{s,eq}$	$0.459^{+0.012}_{-0.012}$
$\ln(10^{10} A_s)$	$3.099^{+0.081}_{-0.078}$	$\sigma_8/h^{0.5}$	$0.961^{+0.047}_{-0.055}$	$r_{drag}/D_V(0.57)$	$0.0716^{+0.0022}_{-0.0021}$
$n_s$	$0.980^{+0.025}_{-0.023}$	$\langle d^2 \rangle^{1/2}$	$2.448^{+0.060}_{-0.061}$	$H(0.57)$	$94.8^{+3.6}_{-2.7}$
$r$	$< 0.138$	$z_{re}$	$10.1^{+3.4}_{-3.6}$	$D_A(0.57)$	$1361^{+54}_{-66}$
$y_{cal}$	$1.0004^{+0.0048}_{-0.0049}$	$10^9 A_s$	$2.22^{+0.18}_{-0.17}$	$F_{AP}(0.57)$	$0.6757^{+0.0099}_{-0.0099}$
$A_{217}^{CIB}$	$66^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.891^{+0.036}_{-0.033}$	$f\sigma_8(0.57)$	$0.464^{+0.025}_{-0.028}$
$\xi^{tSZ \times CIB}$	—	$D_{40}$	$1229^{+40}_{-40}$	$\sigma_8(0.57)$	$0.594^{+0.047}_{-0.053}$
$A_{143}^{tSZ}$	$4.70^{+3.9}_{-3.8}$	$D_{220}$	$5715^{+81}_{-80}$	$r_{0.002}$	$< 0.139$
$A_{100}^{PS}$	$266^{+60}_{-60}$	$D_{810}$	$2537^{+27}_{-28}$	$r_{0.01}$	$< 0.138$
$A_{143}^{PS}$	$47^{+20}_{-20}$	$D_{1420}$	$814^{+10}_{-10}$	$\ln(10^{10} A_t)$	$-0.3^{+1.9}_{-2.4}$
$A_{143 \times 217}^{PS}$	$40^{+20}_{-20}$	$D_{2000}$	$228.5^{+4.0}_{-4.1}$	$r_{10}$	$< 0.0703$
$A_{217}^{PS}$	$96^{+20}_{-20}$	$n_{s,0.002}$	$0.980^{+0.025}_{-0.023}$	$10^9 A_t$	$< 0.307$
$A^{kSZ}$	—	$Y_P$	$0.2498^{+0.0060}_{-0.0050}$	$10^9 A_t e^{-2\tau}$	$< 0.260$
$A_{100}^{dustTT}$	$7.50^{+3.6}_{-3.6}$	$Y_P^{BBN}$	$0.2511^{+0.0060}_{-0.0050}$	$f_{2000}^{143}$	$33^{+6}_{-6}$
$A_{143}^{dustTT}$	$9.09^{+3.7}_{-3.6}$	$10^5 D/H$	$2.68^{+0.12}_{-0.12}$	$f_{2000}^{143 \times 217}$	$35^{+5}_{-5}$
$A_{143 \times 217}^{dustTT}$	$17.4^{+8.1}_{-8.0}$	Age/Gyr	$13.54^{+0.34}_{-0.44}$	$f_{2000}^{217}$	$107.9^{+4.5}_{-4.4}$
$A_{217}^{dustTT}$	$82^{+10}_{-10}$	$z_*$	$1090.4^{+1.0}_{-1.0}$	$\chi_{lensing}^2$	$9.72 (\nu: 0.9)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	$142.0^{+3.4}_{-3.8}$	$\chi_{lowTEB}^2$	$10496.8 (\nu: 2.7)$
$c_{217}$	$0.9962^{+0.0028}_{-0.0028}$	$100\theta_*$	$1.0406^{+0.0011}_{-0.0012}$	$\chi_{plik}^2$	$782.0 (\nu: 17.1)$
$H_0$	$69.0^{+4.4}_{-3.7}$	$D_A/Gpc$	$13.65^{+0.32}_{-0.35}$	$\chi_{prior}^2$	$7.51 (\nu: 6.6)$
$\Omega_\Lambda$	$0.689^{+0.038}_{-0.040}$	$z_{drag}$	$1060.7^{+1.9}_{-1.7}$	$\chi_{CMB}^2$	$11288.5 (\nu: 18.6)$
$\Omega_m$	$0.311^{+0.040}_{-0.038}$	$r_{drag}$	$144.6^{+3.5}_{-3.9}$		

$$\bar{\chi}_{eff}^2 = 11295.99; \Delta\bar{\chi}_{eff}^2 = 3.68; R - 1 = 0.03538$$

### 13.2 base\_nnu\_meffsterile\_r\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022259	$0.02238^{+0.00035}_{-0.00034}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	1.04103	$1.04070^{+0.00075}_{-0.00083}$
$\Omega_c h^2$	0.1192	$0.1207^{+0.0054}_{-0.0058}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.15}_{-0.16}$	$D_A/\text{Gpc}$	13.901	$13.74^{+0.20}_{-0.23}$
$100\theta_{\text{MC}}$	1.04083	$1.04060^{+0.00070}_{-0.00074}$	$A_{217}^{\text{dustTE}}$	1.666	$1.67^{+0.49}_{-0.49}$	$z_{\text{drag}}$	1059.63	$1060.3^{+1.1}_{-1.0}$
$\tau$	0.0623	$0.069^{+0.030}_{-0.030}$	$c_{100}$	0.99814	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.42	$145.6^{+2.2}_{-2.6}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.001	< 0.646	$c_{217}$	0.99615	$0.9962^{+0.0028}_{-0.0028}$	$k_D$	0.14044	$0.1419^{+0.0021}_{-0.0018}$
$N_{\text{eff}}$	3.047	< 3.46	$H_0$	67.51	$67.4^{+2.0}_{-1.9}$	$100\theta_D$	0.16093	$0.16118^{+0.00060}_{-0.00055}$
$\ln(10^{10} A_s)$	3.057	$3.076^{+0.060}_{-0.058}$	$\Omega_\Lambda$	0.6882	$0.677^{+0.027}_{-0.028}$	$z_{\text{eq}}$	3380	$3339^{+84}_{-88}$
$n_s$	0.9656	$0.969^{+0.014}_{-0.013}$	$\Omega_m$	0.3118	$0.323^{+0.028}_{-0.027}$	$k_{\text{eq}}$	0.010318	$0.01034^{+0.00027}_{-0.00028}$
$r$	0.000	< 0.121	$\Omega_m h^2$	0.1421	$0.1466^{+0.0068}_{-0.0060}$	$100\theta_{\text{eq}}$	0.8168	$0.826^{+0.019}_{-0.017}$
$y_{\text{cal}}$	0.999996	$1.0003^{+0.0047}_{-0.0048}$	$\Omega_\nu h^2$	0.00065	< 0.00751	$100\theta_{s, \text{eq}}$	0.4513	$0.4562^{+0.0098}_{-0.0090}$
$A_{217}^{\text{CIB}}$	68.2	$66^{+10}_{-10}$	$\Omega_m h^3$	0.09595	$0.0988^{+0.0044}_{-0.0036}$	$r_{\text{drag}}/D_V(0.57)$	0.07156	$0.0710^{+0.0014}_{-0.0015}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.814	$0.784^{+0.047}_{-0.054}$	$H(0.57)$	92.95	$93.6^{+1.5}_{-1.2}$
$A_{143}^{\text{tSZ}}$	7.25	$5.06^{+3.7}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4546	$0.445^{+0.020}_{-0.022}$	$D_A(0.57)$	1389.0	$1386^{+26}_{-30}$
$A_{100}^{\text{PS}}$	257	$266^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6083	$0.591^{+0.029}_{-0.033}$	$F_{\text{AP}}(0.57)$	0.6761	$0.6788^{+0.0070}_{-0.0067}$
$A_{143}^{\text{PS}}$	39.1	$46^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.991	$0.955^{+0.049}_{-0.057}$	$f\sigma_8(0.57)$	0.4734	$0.459^{+0.024}_{-0.027}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.453	$2.463^{+0.056}_{-0.054}$	$\sigma_8(0.57)$	0.6055	$0.581^{+0.040}_{-0.044}$
$A_{217}^{\text{PS}}$	96.2	$96^{+20}_{-20}$	$z_{\text{re}}$	8.49	$9.14^{+2.9}_{-2.9}$	$r_{0.002}$	0.000	< 0.116
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.126	$2.17^{+0.13}_{-0.12}$	$r_{0.01}$	0.000	< 0.118
$A_{100}^{\text{dustTT}}$	7.50	$7.53^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8771	$1.888^{+0.027}_{-0.026}$	$\ln(10^{10} A_t)$	-5.36	$-0.4^{+1.9}_{-2.4}$
$A_{143}^{\text{dustTT}}$	9.02	$9.11^{+3.6}_{-3.6}$	$D_{40}$	1229.7	$1240^{+36}_{-31}$	$r_{10}$	0.0001	< 0.0593
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.3^{+8.1}_{-8.0}$	$D_{220}$	5721	$5719^{+73}_{-75}$	$10^9 A_t$	0.000	< 0.262
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{810}$	2533.7	$2536^{+26}_{-26}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.228
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	814.4	$813.7^{+9.4}_{-9.4}$	$f_{2000}^{143}$	30.0	$32^{+6}_{-6}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0484^{+0.010}_{-0.0098}$	$D_{2000}$	230.00	$228.9^{+3.5}_{-3.4}$	$f_{2000}^{143 \times 217}$	32.68	$34^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0998^{+0.065}_{-0.063}$	$n_{s, 0.002}$	0.9656	$0.969^{+0.014}_{-0.013}$	$f_{2000}^{217}$	106.19	$107.3^{+4.0}_{-4.0}$
$A_{143}^{\text{dustEE}}$	0.1006	$0.0997^{+0.013}_{-0.013}$	$Y_P$	0.24535	$0.2478^{+0.0034}_{-0.0028}$	$\chi_{\text{lensing}}^2$	9.67	$10.2 (\nu: 1.4)$
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.223^{+0.092}_{-0.091}$	$Y_P^{\text{BBN}}$	0.24668	$0.2491^{+0.0034}_{-0.0028}$	$\chi_{\text{lowTEB}}^2$	10495.31	$10497.2 (\nu: 2.1)$
$A_{217}^{\text{dustEE}}$	0.657	$0.65^{+0.25}_{-0.26}$	$10^5 D/H$	2.613	$2.651^{+0.082}_{-0.080}$	$\chi_{\text{plik}}^2$	2434.9	$2455.9 (\nu: 25.0)$
$A_{100}^{\text{dustTE}}$	0.140	$0.142^{+0.075}_{-0.074}$	$\text{Age}/\text{Gyr}$	13.808	$13.70^{+0.16}_{-0.20}$	$\chi_{\text{prior}}^2$	7.16	$19.5 (\nu: 15.4)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.057}$	$z_*$	1089.99	$1090.34^{+0.76}_{-0.76}$	$\chi_{\text{CMB}}^2$	12939.9	$12963.3 (\nu: 25.7)$
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.17}$	$r_*$	144.71	$143.0^{+2.2}_{-2.5}$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.08$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 12982.78$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 3.66$ ;  $R - 1 = 0.02047$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.67 ( $\Delta$  -0.10) lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.31 ( $\Delta$  0.02) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.94 ( $\Delta$  0.03)

# 14 nnu+mnu

## 14.1 base\_nnu\_mnu\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02231	$0.02215^{+0.00080}_{-0.00084}$	$\Omega_\Lambda$	0.695	$0.661^{+0.077}_{-0.10}$	$r_*$	144.4	$144.3^{+5.3}_{-5.2}$
$\Omega_c h^2$	0.1197	$0.1205^{+0.0079}_{-0.0077}$	$\Omega_m$	0.305	$0.339^{+0.10}_{-0.077}$	$100\theta_*$	1.04107	$1.0409^{+0.0014}_{-0.0013}$
$100\theta_{MC}$	1.04094	$1.0407^{+0.0011}_{-0.0011}$	$\Omega_m h^2$	0.1420	$0.145^{+0.010}_{-0.0089}$	$D_A/\text{Gpc}$	13.872	$13.86^{+0.49}_{-0.48}$
$\tau$	0.0789	$0.081^{+0.043}_{-0.041}$	$\Omega_\nu h^2$	0.00000	$< 0.00780$	$z_{\text{drag}}$	1059.78	$1059.5^{+2.6}_{-2.6}$
$\Sigma m_\nu$ [eV]	0.000	$< 0.725$	$\Omega_m h^3$	0.0969	$0.096^{+0.013}_{-0.013}$	$r_{\text{drag}}$	147.1	$147.1^{+5.6}_{-5.4}$
$N_{\text{eff}}$	3.07	$3.08^{+0.63}_{-0.60}$	$\sigma_8$	0.844	$0.796^{+0.090}_{-0.12}$	$k_D$	0.14069	$0.1407^{+0.0040}_{-0.0039}$
$\ln(10^{10} A_s)$	3.092	$3.098^{+0.093}_{-0.088}$	$\sigma_8 \Omega_m^{0.5}$	0.4659	$0.461^{+0.027}_{-0.028}$	$100\theta_D$	0.16096	$0.1611^{+0.0013}_{-0.0013}$
$n_s$	0.9681	$0.965^{+0.032}_{-0.033}$	$\sigma_8 \Omega_m^{0.25}$	0.627	$0.606^{+0.045}_{-0.056}$	$z_{\text{eq}}$	3381	$3398^{+160}_{-150}$
$y_{\text{cal}}$	1.00030	$1.0004^{+0.0050}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.021	$0.981^{+0.073}_{-0.096}$	$k_{\text{eq}}$	0.010339	$0.01039^{+0.00032}_{-0.00031}$
$A_{217}^{\text{CIB}}$	65.7	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.500	$2.497^{+0.098}_{-0.098}$	$100\theta_{\text{eq}}$	0.8168	$0.814^{+0.030}_{-0.029}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$z_{\text{re}}$	10.04	$10.3^{+3.7}_{-4.0}$	$100\theta_{\text{s,eq}}$	0.4513	$0.450^{+0.015}_{-0.015}$
$A_{143}^{\text{tSZ}}$	7.03	$5.00^{+3.8}_{-3.9}$	$10^9 A_s$	2.203	$2.22^{+0.21}_{-0.20}$	$r_{\text{drag}}/D_V(0.57)$	0.07192	$0.0704^{+0.0036}_{-0.0044}$
$A_{100}^{\text{PS}}$	252	$260^{+60}_{-60}$	$10^9 A_s e^{-2\tau}$	1.8810	$1.882^{+0.042}_{-0.044}$	$H(0.57)$	93.5	$92.2^{+5.6}_{-5.9}$
$A_{143}^{\text{PS}}$	40.7	$45^{+20}_{-20}$	$D_{40}$	1232.9	$1236^{+44}_{-42}$	$D_A(0.57)$	1378	$1415^{+140}_{-120}$
$A_{143 \times 217}^{\text{PS}}$	36.2	$40^{+20}_{-20}$	$D_{220}$	5719	$5716^{+81}_{-79}$	$F_{\text{AP}}(0.57)$	0.6744	$0.683^{+0.024}_{-0.019}$
$A_{217}^{\text{PS}}$	99.4	$97^{+20}_{-20}$	$D_{810}$	2534.6	$2535^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4876	$0.470^{+0.038}_{-0.050}$
$A^{\text{kSZ}}$	0.0	—	$D_{1420}$	815.0	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.629	$0.588^{+0.079}_{-0.10}$
$A_{100}^{\text{dustTT}}$	7.44	$7.48^{+3.7}_{-3.7}$	$D_{2000}$	230.61	$229.7^{+4.5}_{-4.5}$	$f_{2000}^{143}$	29.4	$31^{+7}_{-7}$
$A_{143}^{\text{dustTT}}$	9.08	$9.03^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	0.9681	$0.965^{+0.032}_{-0.033}$	$f_{2000}^{143 \times 217}$	32.1	$33^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.1}_{-8.2}$	$Y_{\text{P}}$	0.2457	$0.2456^{+0.0085}_{-0.0087}$	$f_{2000}^{217}$	105.68	$106.7^{+4.8}_{-4.7}$
$A_{217}^{\text{dustTT}}$	82.4	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.2471	$0.2469^{+0.0085}_{-0.0087}$	$\chi_{\text{lowTEB}}^2$	10496.3	$10497.9$ ( $\nu$ : 4.5)
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$10^5 D/H$	2.613	$2.64^{+0.14}_{-0.13}$	$\chi_{\text{plik}}^2$	763.3	$779.1$ ( $\nu$ : 19.2)
$c_{217}$	0.99585	$0.9960^{+0.0028}_{-0.0029}$	Age/Gyr	13.75	$13.89^{+0.82}_{-0.71}$	$\chi_{\text{prior}}^2$	1.95	$7.44$ ( $\nu$ : 6.5)
$H_0$	68.2	$66^{+8}_{-9}$	$z_*$	1090.00	$1090.3^{+1.2}_{-1.1}$	$\chi_{\text{CMB}}^2$	11259.6	$11277.0$ ( $\nu$ : 17.8)

Best-fit  $\chi_{\text{eff}}^2 = 11261.51$ ;  $\Delta\chi_{\text{eff}}^2 = -0.41$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.42$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.60$ ;  $R - 1 = 0.00589$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.29 ( $\Delta$  -0.18) plik\_dx11dr2\_HM\_v18\_TT: 763.27 ( $\Delta$  -0.10)

## 14.2 base\_nnu\_mnu\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022268	$0.02236^{+0.00049}_{-0.00050}$	$\Omega_m h^2$	0.1423	$0.1442^{+0.0086}_{-0.0083}$	$r_{\text{drag}}$	147.11	$146.3^{+4.9}_{-4.5}$
$\Omega_c h^2$	0.1200	$0.1207^{+0.0080}_{-0.0078}$	$\Omega_\nu h^2$	0.00004	$< 0.00286$	$k_D$	0.14068	$0.1412^{+0.0034}_{-0.0035}$
$100\theta_{\text{MC}}$	1.04089	$1.0408^{+0.0011}_{-0.0011}$	$\Omega_m h^3$	0.0968	$0.0985^{+0.0097}_{-0.0093}$	$100\theta_D$	0.16099	$0.1612^{+0.0012}_{-0.0012}$
$\tau$	0.0754	$0.085^{+0.039}_{-0.037}$	$\sigma_8$	0.8415	$0.829^{+0.042}_{-0.047}$	$z_{\text{eq}}$	3388	$3358^{+81}_{-81}$
$\Sigma m_\nu$ [eV]	0.004	$< 0.266$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.461^{+0.022}_{-0.024}$	$k_{\text{eq}}$	0.010357	$0.01034^{+0.00029}_{-0.00030}$
$N_{\text{eff}}$	3.069	$3.18^{+0.50}_{-0.49}$	$\sigma_8 \Omega_m^{0.25}$	0.6265	$0.618^{+0.030}_{-0.033}$	$100\theta_{\text{eq}}$	0.8155	$0.821^{+0.016}_{-0.016}$
$\ln(10^{10} A_s)$	3.086	$3.106^{+0.084}_{-0.080}$	$\sigma_8/h^{0.5}$	1.0200	$1.003^{+0.047}_{-0.051}$	$100\theta_{\text{s,eq}}$	0.4506	$0.4536^{+0.0081}_{-0.0079}$
$n_s$	0.9671	$0.973^{+0.021}_{-0.019}$	$\langle d^2 \rangle^{1/2}$	2.497	$2.484^{+0.084}_{-0.089}$	$r_{\text{drag}}/D_V(0.57)$	0.07180	$0.07171^{+0.00095}_{-0.00095}$
$y_{\text{cal}}$	1.00041	$1.0005^{+0.0049}_{-0.0049}$	$z_{\text{re}}$	9.74	$10.5^{+3.3}_{-3.5}$	$H(0.57)$	93.36	$93.8^{+3.2}_{-3.3}$
$A_{217}^{\text{CIB}}$	66.5	$65^{+10}_{-10}$	$10^9 A_s$	2.189	$2.23^{+0.19}_{-0.19}$	$D_A(0.57)$	1381	$1375^{+55}_{-51}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$10^9 A_s e^{-2\tau}$	1.8824	$1.885^{+0.043}_{-0.042}$	$F_{\text{AP}}(0.57)$	0.67494	$0.6754^{+0.0046}_{-0.0044}$
$A_{143}^{\text{tSZ}}$	7.06	$4.98^{+3.9}_{-3.9}$	$D_{40}$	1233.6	$1229^{+33}_{-32}$	$f\sigma_8(0.57)$	0.4870	$0.482^{+0.022}_{-0.024}$
$A_{100}^{\text{PS}}$	253	$260^{+60}_{-50}$	$D_{220}$	5718	$5720^{+81}_{-80}$	$\sigma_8(0.57)$	0.6266	$0.618^{+0.033}_{-0.036}$
$A_{143}^{\text{PS}}$	39.5	$45^{+20}_{-20}$	$D_{810}$	2535.6	$2535^{+28}_{-28}$	$f_{2000}^{143}$	29.4	$31^{+7}_{-7}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{1420}$	815.0	$814^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	32.17	$33^{+5}_{-5}$
$A_{217}^{\text{PS}}$	98.2	$97^{+20}_{-20}$	$D_{2000}$	230.52	$229.8^{+4.4}_{-4.5}$	$f_{2000}^{217}$	105.88	$106.5^{+4.6}_{-4.7}$
$A^{\text{kSZ}}$	0.0	—	$n_{\text{s},0.002}$	0.9671	$0.973^{+0.021}_{-0.019}$	$\chi_{\text{lowTEB}}^2$	10496.09	10496.9 ( $\nu: 3.4$ )
$A_{100}^{\text{dustTT}}$	7.48	$7.50^{+3.7}_{-3.6}$	$Y_{\text{P}}$	0.2457	$0.2472^{+0.0066}_{-0.0068}$	$\chi_{\text{plik}}^2$	763.5	778.6 ( $\nu: 18.5$ )
$A_{143}^{\text{dustTT}}$	9.07	$9.04^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.2470	$0.2485^{+0.0066}_{-0.0068}$	$\chi_{6\text{DF}}^2$	0.006	0.069 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.1^{+8.3}_{-8.2}$	$10^5 D/H$	2.619	$2.64^{+0.14}_{-0.13}$	$\chi_{\text{MGS}}^2$	1.47	1.43 ( $\nu: 0.2$ )
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	Age/Gyr	13.756	$13.69^{+0.47}_{-0.44}$	$\chi_{\text{DR11CMass}}^2$	2.41	3.01 ( $\nu: 0.4$ )
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1090.06	$1090.12^{+0.95}_{-0.97}$	$\chi_{\text{DR11LOWZ}}^2$	0.43	0.73 ( $\nu: 0.2$ )
$c_{217}$	0.99595	$0.9960^{+0.0029}_{-0.0029}$	$r_*$	144.41	$143.6^{+4.6}_{-4.4}$	$\chi_{\text{prior}}^2$	1.96	7.41 ( $\nu: 6.2$ )
$H_0$	68.05	$68.3^{+3.0}_{-3.0}$	$100\theta_*$	1.04105	$1.0409^{+0.0014}_{-0.0013}$	$\chi_{\text{CMB}}^2$	11259.6	11275.5 ( $\nu: 16.3$ )
$\Omega_\Lambda$	0.6928	$0.691^{+0.017}_{-0.018}$	$D_A/\text{Gpc}$	13.871	$13.80^{+0.43}_{-0.41}$	$\chi_{\text{BAO}}^2$	4.32	5.24 ( $\nu: 0.8$ )
$\Omega_m$	0.3072	$0.309^{+0.018}_{-0.017}$	$z_{\text{drag}}$	1059.70	$1060.1^{+1.8}_{-1.9}$			

Best-fit  $\chi_{\text{eff}}^2 = 11265.87$ ;  $\Delta\chi_{\text{eff}}^2 = -0.57$ ;  $\bar{\chi}_{\text{eff}}^2 = 11288.16$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.80$ ;  $R - 1 = 0.01565$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta -0.02$ ) MGS: 1.47 ( $\Delta 0.19$ ) DR11CMass: 2.41 ( $\Delta -0.04$ ) DR11LOWZ: 0.43 ( $\Delta -0.19$ ) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10496.09 ( $\Delta -0.33$ ) plik\_dx11dr2\_HM.v18.TT: 763.49 ( $\Delta -0.11$ )

### 14.3 base\_nnu\_mnu\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02240	$0.02241^{+0.00061}_{-0.00059}$	$\Omega_m$	0.2997	$0.311^{+0.044}_{-0.041}$	$D_A/\text{Gpc}$	13.788	$13.74^{+0.41}_{-0.40}$
$\Omega_c h^2$	0.1209	$0.1216^{+0.0073}_{-0.0071}$	$\Omega_m h^2$	0.1433	$0.1454^{+0.0087}_{-0.0079}$	$z_{\text{drag}}$	1060.16	$1060.3^{+2.0}_{-2.0}$
$100\theta_{\text{MC}}$	1.04085	$1.0407^{+0.0011}_{-0.0011}$	$\Omega_\nu h^2$	0.00001	< 0.00400	$r_{\text{drag}}$	146.16	$145.7^{+4.5}_{-4.5}$
$\tau$	0.0820	$0.087^{+0.042}_{-0.040}$	$\Omega_m h^3$	0.0991	$0.0997^{+0.010}_{-0.0095}$	$k_D$	0.14135	$0.1417^{+0.0034}_{-0.0033}$
$\Sigma m_\nu [\text{eV}]$	0.001	< 0.372	$\sigma_8$	0.849	$0.827^{+0.058}_{-0.064}$	$100\theta_D$	0.16119	$0.1614^{+0.0011}_{-0.0011}$
$N_{\text{eff}}$	3.18	$3.25^{+0.51}_{-0.49}$	$\sigma_8 \Omega_m^{0.5}$	0.4647	$0.460^{+0.026}_{-0.026}$	$z_{\text{eq}}$	3362	$3352^{+120}_{-120}$
$\ln(10^{10} A_s)$	3.101	$3.112^{+0.088}_{-0.085}$	$\sigma_8 \Omega_m^{0.25}$	0.6281	$0.617^{+0.034}_{-0.036}$	$k_{\text{eq}}$	0.010355	$0.01037^{+0.00031}_{-0.00030}$
$n_s$	0.9730	$0.975^{+0.024}_{-0.024}$	$\sigma_8/h^{0.5}$	1.021	$0.999^{+0.053}_{-0.059}$	$100\theta_{\text{eq}}$	0.8206	$0.823^{+0.024}_{-0.022}$
$y_{\text{cal}}$	1.00024	$1.0005^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.493	$2.482^{+0.089}_{-0.092}$	$100\theta_{s,\text{eq}}$	0.4532	$0.454^{+0.012}_{-0.011}$
$A_{217}^{\text{CIB}}$	67.4	$65^{+10}_{-10}$	$z_{\text{re}}$	10.33	$10.7^{+3.5}_{-3.8}$	$r_{\text{drag}}/D_V(0.57)$	0.07221	$0.0717^{+0.0023}_{-0.0024}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.222	$2.25^{+0.21}_{-0.19}$	$H(0.57)$	94.31	$94.2^{+4.0}_{-3.8}$
$A_{143}^{\text{tSZ}}$	7.19	$4.89^{+3.9}_{-3.9}$	$10^9 A_s e^{-2\tau}$	1.8861	$1.889^{+0.039}_{-0.040}$	$D_A(0.57)$	1363	$1371^{+76}_{-71}$
$A_{100}^{\text{PS}}$	254	$262^{+60}_{-50}$	$D_{40}$	1226.7	$1226^{+36}_{-37}$	$F_{\text{AP}}(0.57)$	0.6730	$0.676^{+0.011}_{-0.010}$
$A_{143}^{\text{PS}}$	39.1	$46^{+20}_{-20}$	$D_{220}$	5718	$5720^{+81}_{-79}$	$f\sigma_8(0.57)$	0.4892	$0.481^{+0.026}_{-0.028}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2535.2	$2537^{+28}_{-28}$	$\sigma_8(0.57)$	0.634	$0.616^{+0.050}_{-0.054}$
$A_{217}^{\text{PS}}$	97.3	$97^{+20}_{-20}$	$D_{1420}$	814.3	$814^{+10}_{-10}$	$f_{2000}^{143}$	29.9	$31^{+7}_{-7}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.07	$229.5^{+4.3}_{-4.4}$	$f_{2000}^{143 \times 217}$	32.57	$33^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	7.38	$7.53^{+3.7}_{-3.6}$	$n_{s,0.002}$	0.9730	$0.975^{+0.024}_{-0.024}$	$f_{2000}^{217}$	106.19	$106.9^{+4.7}_{-4.5}$
$A_{143}^{\text{dustTT}}$	9.07	$9.06^{+3.6}_{-3.6}$	$Y_P$	0.2472	$0.2481^{+0.0067}_{-0.0068}$	$\chi_{\text{lowTEB}}^2$	10495.8	10496.9 ( $\nu$ : 3.8)
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.2}_{-8.1}$	$Y_P^{\text{BBN}}$	0.2486	$0.2494^{+0.0067}_{-0.0068}$	$\chi_{\text{plik}}^2$	763.8	779.4 ( $\nu$ : 19.6)
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 \text{D}/\text{H}$	2.632	$2.65^{+0.13}_{-0.13}$	$\chi_{\text{H070p6}}^2$	0.19	0.9 ( $\nu$ : 0.7)
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.63	$13.64^{+0.52}_{-0.50}$	$\chi_{\text{prior}}^2$	2.07	7.44 ( $\nu$ : 6.4)
$c_{217}$	0.99598	$0.9960^{+0.0028}_{-0.0028}$	$z_*$	1090.08	$1090.2^{+1.0}_{-0.98}$	$\chi_{\text{CMB}}^2$	11259.6	11276.2 ( $\nu$ : 17.3)
$H_0$	69.14	$68.5^{+4.6}_{-4.7}$	$r_*$	143.52	$143.0^{+4.4}_{-4.3}$			
$\Omega_\Lambda$	0.7003	$0.689^{+0.041}_{-0.044}$	$100\theta_*$	1.04091	$1.0408^{+0.0013}_{-0.0013}$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.82$ ;  $\Delta\chi_{\text{eff}}^2 = -1.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.53$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.83$ ;  $R - 1 = 0.01064$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.80 ( $\Delta$  -0.52) plik\_dx11dr2\_HM\_v18\_TT: 763.76 ( $\Delta$  0.09) Hubble - H070p6: 0.19 ( $\Delta$  -0.63)



### 14.4 base\_nnu\_mnu\_plikHM\_TT\_lowTEB\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022356	$0.02242^{+0.00046}_{-0.00047}$	$\Omega_\nu h^2$	0.00001	$< 0.00286$	$100\theta_D$	0.16106	$0.1614^{+0.0011}_{-0.0011}$
$\Omega_c h^2$	0.1208	$0.1215^{+0.0074}_{-0.0072}$	$\Omega_m h^3$	0.0981	$0.0998^{+0.0089}_{-0.0085}$	$z_{\text{eq}}$	3383	$3350^{+72}_{-80}$
$100\theta_{\text{MC}}$	1.04076	$1.0407^{+0.0011}_{-0.0011}$	$\sigma_8$	0.8472	$0.832^{+0.041}_{-0.046}$	$k_{\text{eq}}$	0.010383	$0.01036^{+0.00028}_{-0.00028}$
$\tau$	0.0797	$0.086^{+0.039}_{-0.037}$	$\sigma_8 \Omega_m^{0.5}$	0.4679	$0.461^{+0.022}_{-0.024}$	$100\theta_{\text{eq}}$	0.8167	$0.823^{+0.015}_{-0.015}$
$\Sigma m_\nu$ [eV]	0.001	$< 0.266$	$\sigma_8 \Omega_m^{0.25}$	0.6296	$0.619^{+0.029}_{-0.033}$	$100\theta_{\text{s,eq}}$	0.4512	$0.4544^{+0.0078}_{-0.0076}$
$N_{\text{eff}}$	3.132	$3.24^{+0.47}_{-0.44}$	$\sigma_8/h^{0.5}$	1.0235	$1.004^{+0.047}_{-0.051}$	$r_{\text{drag}}/D_V(0.57)$	0.07190	$0.07184^{+0.00088}_{-0.00088}$
$\ln(10^{10} A_s)$	3.096	$3.111^{+0.083}_{-0.080}$	$\langle d^2 \rangle^{1/2}$	2.504	$2.482^{+0.084}_{-0.089}$	$H(0.57)$	93.84	$94.3^{+2.9}_{-2.9}$
$n_s$	0.9690	$0.975^{+0.019}_{-0.017}$	$z_{\text{re}}$	10.13	$10.7^{+3.3}_{-3.5}$	$D_A(0.57)$	1372.4	$1367^{+48}_{-46}$
$y_{\text{cal}}$	1.00039	$1.0005^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.212	$2.25^{+0.19}_{-0.17}$	$F_{\text{AP}}(0.57)$	0.67440	$0.6748^{+0.0042}_{-0.0040}$
$A_{217}^{\text{CIB}}$	67.6	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8861	$1.889^{+0.038}_{-0.040}$	$f\sigma_8(0.57)$	0.4897	$0.483^{+0.022}_{-0.024}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1233.6	$1226^{+31}_{-31}$	$\sigma_8(0.57)$	0.6314	$0.621^{+0.032}_{-0.035}$
$A_{143}^{\text{tSZ}}$	7.22	$4.91^{+3.9}_{-3.9}$	$D_{220}$	5722	$5721^{+80}_{-81}$	$f_{2000}^{143}$	30.0	$31^{+6}_{-6}$
$A_{100}^{\text{PS}}$	254	$262^{+60}_{-50}$	$D_{810}$	2535.1	$2537^{+28}_{-28}$	$f_{2000}^{143 \times 217}$	32.59	$33^{+5}_{-5}$
$A_{143}^{\text{PS}}$	39.1	$45^{+20}_{-20}$	$D_{1420}$	814.2	$814^{+10}_{-10}$	$f_{2000}^{217}$	106.17	$106.8^{+4.6}_{-4.4}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.16	$229.6^{+4.3}_{-4.4}$	$\chi_{\text{lowTEB}}^2$	10496.32	$10496.6 (\nu: 3.4)$
$A_{217}^{\text{PS}}$	97.0	$97^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9690	$0.975^{+0.019}_{-0.017}$	$\chi_{\text{plik}}^2$	763.2	$778.9 (\nu: 18.8)$
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.2466	$0.2480^{+0.0061}_{-0.0061}$	$\chi_{\text{H070p6}}^2$	0.40	$0.47 (\nu: 0.1)$
$A_{100}^{\text{dustTT}}$	7.45	$7.52^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.2479	$0.2494^{+0.0061}_{-0.0061}$	$\chi_{\text{JLA}}^2$	706.596	$706.68 (\nu: 0.0)$
$A_{143}^{\text{dustTT}}$	9.18	$9.06^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.624	$2.65^{+0.13}_{-0.13}$	$\chi_{6\text{DF}}^2$	0.001	$0.050 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.3}_{-8.1}$	Age/Gyr	13.690	$13.62^{+0.42}_{-0.40}$	$\chi_{\text{MGS}}^2$	1.61	$1.59 (\nu: 0.2)$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$z_*$	1090.09	$1090.18^{+0.92}_{-0.93}$	$\chi_{\text{DR11CMass}}^2$	2.45	$2.93 (\nu: 0.3)$
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	143.81	$143.1^{+4.2}_{-4.1}$	$\chi_{\text{DR11LOWZ}}^2$	0.33	$0.55 (\nu: 0.1)$
$c_{217}$	0.99596	$0.9960^{+0.0028}_{-0.0029}$	$100\theta_*$	1.04086	$1.0408^{+0.0013}_{-0.0013}$	$\chi_{\text{prior}}^2$	2.15	$7.42 (\nu: 6.2)$
$H_0$	68.51	$68.8^{+2.7}_{-2.6}$	$D_A/\text{Gpc}$	13.816	$13.75^{+0.39}_{-0.38}$	$\chi_{\text{CMB}}^2$	11259.5	$11275.6 (\nu: 16.6)$
$\Omega_\Lambda$	0.6949	$0.693^{+0.016}_{-0.017}$	$z_{\text{drag}}$	1060.05	$1060.3^{+1.7}_{-1.7}$	$\chi_{\text{BAO}}^2$	4.39	$5.12 (\nu: 0.6)$
$\Omega_m$	0.3051	$0.307^{+0.017}_{-0.016}$	$r_{\text{drag}}$	146.46	$145.7^{+4.4}_{-4.2}$			
$\Omega_m h^2$	0.1432	$0.1450^{+0.0083}_{-0.0078}$	$k_D$	0.14118	$0.1417^{+0.0032}_{-0.0032}$			

Best-fit  $\chi_{\text{eff}}^2 = 11973.06$ ;  $\bar{\chi}_{\text{eff}}^2 = 11995.28$ ;  $R - 1 = 0.01765$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.45 DR11LOWZ: 0.33 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.32 plik\_dx11dr2\_HM\_v18\_TT: 763.21 Hubble - H070p6: 0.40 SN - JLA December\_2013: 706.60

## 14.5 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022199	$0.02215^{+0.00049}_{-0.00050}$	$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.058}$	$Y_{\text{P}}^{\text{BBN}}$	0.2451	$0.2456^{+0.0056}_{-0.0057}$
$\Omega_c h^2$	0.1181	$0.1191^{+0.0062}_{-0.0059}$	$A_{100 \times 217}^{\text{dustTE}}$	0.300	$0.30^{+0.17}_{-0.17}$	$10^5 \text{D}/\text{H}$	2.584	$2.608^{+0.096}_{-0.091}$
$100\theta_{\text{MC}}$	1.04100	$1.04081^{+0.00089}_{-0.00088}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.11}$	Age/Gyr	13.894	$13.95^{+0.50}_{-0.44}$
$\tau$	0.0757	$0.081^{+0.036}_{-0.036}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$z_*$	1089.85	$1090.07^{+0.78}_{-0.73}$
$\Sigma m_\nu$ [eV]	0.001	< 0.494	$A_{217}^{\text{dustTE}}$	1.67	$1.68^{+0.50}_{-0.50}$	$r_*$	145.64	$145.2^{+3.8}_{-3.7}$
$N_{\text{eff}}$	2.934	$2.98^{+0.40}_{-0.39}$	$c_{100}$	0.99822	$0.9982^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04124	$1.0411^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	3.082	$3.095^{+0.074}_{-0.075}$	$c_{217}$	0.99583	$0.9960^{+0.0029}_{-0.0029}$	$D_A/\text{Gpc}$	13.987	$13.95^{+0.35}_{-0.34}$
$n_s$	0.9612	$0.961^{+0.019}_{-0.020}$	$H_0$	67.12	$65.8^{+4.4}_{-4.9}$	$z_{\text{drag}}$	1059.32	$1059.3^{+1.7}_{-1.7}$
$y_{\text{cal}}$	1.00026	$1.0004^{+0.0048}_{-0.0050}$	$\Omega_\Lambda$	0.6886	$0.668^{+0.043}_{-0.055}$	$r_{\text{drag}}$	148.38	$147.9^{+3.9}_{-3.9}$
$A_{217}^{\text{CIB}}$	63.4	$64^{+10}_{-10}$	$\Omega_m$	0.3114	$0.332^{+0.055}_{-0.043}$	$k_{\text{D}}$	0.13982	$0.1401^{+0.0028}_{-0.0028}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.42	—	$\Omega_m h^2$	0.1403	$0.1430^{+0.0075}_{-0.0073}$	$100\theta_{\text{D}}$	0.16064	$0.16079^{+0.00085}_{-0.00084}$
$A_{143}^{\text{tSZ}}$	6.97	$5.37^{+3.6}_{-3.8}$	$\Omega_\nu h^2$	0.00001	< 0.00531	$z_{\text{eq}}$	3403	$3408^{+82}_{-79}$
$A_{100}^{\text{PS}}$	251	$259^{+50}_{-50}$	$\Omega_m h^3$	0.0941	$0.0941^{+0.0083}_{-0.0081}$	$k_{\text{eq}}$	0.010308	$0.01035^{+0.00025}_{-0.00024}$
$A_{143}^{\text{PS}}$	43.2	$43^{+20}_{-20}$	$\sigma_8$	0.837	$0.807^{+0.066}_{-0.082}$	$100\theta_{\text{eq}}$	0.8126	$0.812^{+0.015}_{-0.015}$
$A_{143 \times 217}^{\text{PS}}$	44.0	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4668	$0.464^{+0.021}_{-0.022}$	$100\theta_{\text{s,eq}}$	0.4491	$0.4488^{+0.0078}_{-0.0077}$
$A_{217}^{\text{PS}}$	102.6	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6249	$0.612^{+0.037}_{-0.042}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07159	$0.0706^{+0.0021}_{-0.0026}$
$A^{\text{kSZ}}$	0.00	< 7.81	$\sigma_8/h^{0.5}$	1.021	$0.995^{+0.059}_{-0.072}$	$H(0.57)$	92.37	$91.8^{+3.3}_{-3.6}$
$A_{100}^{\text{dustTT}}$	7.31	$7.40^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.511	$2.509^{+0.079}_{-0.080}$	$D_A(0.57)$	1397	$1417^{+81}_{-72}$
$A_{143}^{\text{dustTT}}$	8.98	$8.89^{+3.6}_{-3.6}$	$z_{\text{re}}$	9.73	$10.2^{+3.3}_{-3.4}$	$F_{\text{AP}}(0.57)$	0.6760	$0.681^{+0.013}_{-0.011}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.0^{+8.1}_{-8.2}$	$10^9 A_s$	2.181	$2.21^{+0.17}_{-0.16}$	$f\sigma_8(0.57)$	0.4853	$0.475^{+0.029}_{-0.035}$
$A_{217}^{\text{dustTT}}$	82.5	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8742	$1.878^{+0.036}_{-0.036}$	$\sigma_8(0.57)$	0.622	$0.597^{+0.055}_{-0.070}$
$A_{100}^{\text{dustEE}}$	0.0810	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1243.5	$1246^{+33}_{-32}$	$f_{2000}^{143}$	28.0	$29^{+6}_{-6}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0486	$0.0485^{+0.0098}_{-0.0097}$	$D_{220}$	5729	$5728^{+75}_{-77}$	$f_{2000}^{143 \times 217}$	31.30	$32^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0997	$0.0999^{+0.064}_{-0.064}$	$D_{810}$	2534.7	$2535^{+27}_{-27}$	$f_{2000}^{217}$	104.88	$105.8^{+4.1}_{-4.0}$
$A_{143}^{\text{dustEE}}$	0.0999	$0.0999^{+0.014}_{-0.013}$	$D_{1420}$	815.8	$815.1^{+9.5}_{-9.6}$	$\chi_{\text{lowTEB}}^2$	10497.4	$10498.5 (\nu: 3.4)$
$A_{143 \times 217}^{\text{dustEE}}$	0.226	$0.225^{+0.092}_{-0.091}$	$D_{2000}$	231.32	$230.6^{+3.6}_{-3.7}$	$\chi_{\text{plik}}^2$	2430.8	$2451.9 (\nu: 25.7)$
$A_{217}^{\text{dustEE}}$	0.649	$0.65^{+0.26}_{-0.25}$	$n_{\text{s},0.002}$	0.9612	$0.961^{+0.019}_{-0.020}$	$\chi_{\text{prior}}^2$	6.50	$19.2 (\nu: 15.1)$
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.075}_{-0.074}$	$Y_{\text{P}}$	0.2438	$0.2443^{+0.0056}_{-0.0057}$	$\chi_{\text{CMB}}^2$	12928.2	$12950.5 (\nu: 25.1)$

Best-fit  $\chi_{\text{eff}}^2 = 12934.70$ ;  $\Delta\chi_{\text{eff}}^2 = -0.86$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.63$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.94$ ;  $R - 1 = 0.00644$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.35 ( $\Delta$  0.41) plik\_dx11dr2\_HM.v18\_TTTEEE: 2430.85 ( $\Delta$  -0.80)

## 14.6 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022225	$0.02229^{+0.00038}_{-0.00037}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$r_*$	145.43	$144.7^{+3.4}_{-3.5}$
$\Omega_c h^2$	0.1183	$0.1192^{+0.0062}_{-0.0057}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04120	$1.0411^{+0.0010}_{-0.0010}$
$100\theta_{\text{MC}}$	1.04097	$1.04085^{+0.00083}_{-0.00084}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.967	$13.90^{+0.32}_{-0.32}$
$\tau$	0.0794	$0.084^{+0.033}_{-0.034}$	$c_{100}$	0.99824	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.40	$1059.7^{+1.4}_{-1.4}$
$\Sigma m_\nu$ [eV]	0.003	< 0.178	$c_{217}$	0.99579	$0.9959^{+0.0029}_{-0.0028}$	$r_{\text{drag}}$	148.15	$147.4^{+3.6}_{-3.6}$
$N_{\text{eff}}$	2.959	$3.04^{+0.37}_{-0.34}$	$H_0$	67.34	$67.5^{+2.3}_{-2.3}$	$k_D$	0.13997	$0.1405^{+0.0027}_{-0.0026}$
$\ln(10^{10} A_s)$	3.090	$3.101^{+0.069}_{-0.072}$	$\Omega_\Lambda$	0.6900	$0.688^{+0.015}_{-0.016}$	$100\theta_D$	0.16069	$0.16087^{+0.00082}_{-0.00077}$
$n_s$	0.9629	$0.966^{+0.015}_{-0.015}$	$\Omega_m$	0.3100	$0.312^{+0.016}_{-0.015}$	$z_{\text{eq}}$	3398	$3382^{+55}_{-56}$
$y_{\text{cal}}$	1.00003	$1.0004^{+0.0049}_{-0.0050}$	$\Omega_m h^2$	0.1406	$0.1422^{+0.0065}_{-0.0061}$	$k_{\text{eq}}$	0.010310	$0.01032^{+0.00023}_{-0.00023}$
$A_{217}^{\text{CIB}}$	62.7	$63^{+10}_{-10}$	$\Omega_\nu h^2$	0.00003	< 0.00192	$100\theta_{\text{eq}}$	0.8136	$0.817^{+0.011}_{-0.010}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.50	—	$\Omega_m h^3$	0.0947	$0.0960^{+0.0072}_{-0.0067}$	$100\theta_{\text{s,eq}}$	0.4496	$0.4512^{+0.0055}_{-0.0053}$
$A_{143}^{\text{tSZ}}$	6.92	$5.40^{+3.5}_{-3.7}$	$\sigma_8$	0.8401	$0.832^{+0.037}_{-0.038}$	$r_{\text{drag}}/D_V(0.57)$	0.07166	$0.07155^{+0.00080}_{-0.00081}$
$A_{100}^{\text{PS}}$	249	$259^{+60}_{-60}$	$\sigma_8 \Omega_m^{0.5}$	0.4677	$0.465^{+0.019}_{-0.019}$	$H(0.57)$	92.58	$92.9^{+2.5}_{-2.4}$
$A_{143}^{\text{PS}}$	44.6	$43^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6268	$0.622^{+0.025}_{-0.026}$	$D_A(0.57)$	1393.6	$1389^{+42}_{-41}$
$A_{143 \times 217}^{\text{PS}}$	46.5	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0237	$1.013^{+0.037}_{-0.040}$	$F_{\text{AP}}(0.57)$	0.67564	$0.6762^{+0.0040}_{-0.0038}$
$A_{217}^{\text{PS}}$	103.6	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.515	$2.505^{+0.077}_{-0.078}$	$f\sigma_8(0.57)$	0.4869	$0.484^{+0.019}_{-0.020}$
$A^{\text{kSZ}}$	0.00	< 7.75	$z_{\text{re}}$	10.07	$10.4^{+3.0}_{-3.2}$	$\sigma_8(0.57)$	0.6249	$0.619^{+0.029}_{-0.030}$
$A_{100}^{\text{dustTT}}$	7.30	$7.41^{+3.6}_{-3.7}$	$10^9 A_s$	2.198	$2.22^{+0.16}_{-0.16}$	$f_{2000}^{143}$	27.9	$29^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	8.95	$8.93^{+3.5}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8749	$1.879^{+0.035}_{-0.035}$	$f_{2000}^{143 \times 217}$	31.25	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$17.0^{+8.2}_{-8.3}$	$D_{40}$	1241.6	$1240^{+28}_{-28}$	$f_{2000}^{217}$	104.70	$105.6^{+4.1}_{-3.8}$
$A_{217}^{\text{dustTT}}$	82.7	$82^{+10}_{-10}$	$D_{220}$	5725	$5730^{+75}_{-77}$	$\chi_{\text{lowTEB}}^2$	10497.43	10498.0 ( $\nu$ : 3.1)
$A_{100}^{\text{dustEE}}$	0.0810	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2534.1	$2535^{+27}_{-28}$	$\chi_{\text{plik}}^2$	2430.9	2451.1 ( $\nu$ : 29.9)
$A_{100 \times 143}^{\text{dustEE}}$	0.0486	$0.0490^{+0.0098}_{-0.0096}$	$D_{1420}$	815.6	$815.0^{+9.3}_{-9.7}$	$\chi_{6\text{DF}}^2$	0.022	0.079 ( $\nu$ : 0.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.099^{+0.065}_{-0.064}$	$D_{2000}$	231.25	$230.7^{+3.5}_{-3.6}$	$\chi_{\text{MGS}}^2$	1.28	1.21 ( $\nu$ : 0.1)
$A_{143}^{\text{dustEE}}$	0.0999	$0.100^{+0.013}_{-0.013}$	$n_{\text{s},0.002}$	0.9629	$0.966^{+0.015}_{-0.015}$	$\chi_{\text{DR11CMASS}}^2$	2.45	2.98 ( $\nu$ : 0.3)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.090}_{-0.091}$	$Y_{\text{P}}$	0.24414	$0.2453^{+0.0050}_{-0.0049}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	0.91 ( $\nu$ : 0.2)
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.26}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.24547	$0.2466^{+0.0050}_{-0.0049}$	$\chi_{\text{prior}}^2$	6.43	19.3 ( $\nu$ : 15.2)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.074}$	$10^5 \text{D}/\text{H}$	2.588	$2.605^{+0.093}_{-0.088}$	$\chi_{\text{CMB}}^2$	12928.3	12949.1 ( $\nu$ : 28.2)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.056}_{-0.057}$	Age/Gyr	13.866	$13.81^{+0.35}_{-0.35}$	$\chi_{\text{BAO}}^2$	4.36	5.17 ( $\nu$ : 0.7)
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.17}$	$z_*$	1089.86	$1089.94^{+0.70}_{-0.67}$			

Best-fit  $\chi_{\text{eff}}^2 = 12939.09$ ;  $\Delta\chi_{\text{eff}}^2 = -1.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.53$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.05$ ;  $R - 1 = 0.01571$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.01) MGS: 1.28 ( $\Delta$  0.06) DR11CMASS: 2.45 ( $\Delta$  -0.05) DR11LOWZ: 0.61 ( $\Delta$  -0.07) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10497.43

( $\Delta$  0.01) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2430.87 ( $\Delta$  -0.66)

### 14.7 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022294	$0.02228_{-0.00044}^{+0.00044}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30_{-0.17}^{+0.16}$	Age/Gyr	13.753	$13.81_{-0.38}^{+0.39}$
$\Omega_c h^2$	0.1200	$0.1200_{-0.0057}^{+0.0060}$	$A_{143}^{\text{dustTE}}$	0.154	$0.16_{-0.10}^{+0.11}$	$z_*$	1090.03	$1090.06_{-0.70}^{+0.73}$
$100\theta_{\text{MC}}$	1.04080	$1.04075_{-0.00084}^{+0.00084}$	$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34_{-0.16}^{+0.16}$	$r_*$	144.37	$144.4_{-3.4}^{+3.4}$
$\tau$	0.0769	$0.084_{-0.036}^{+0.035}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67_{-0.50}^{+0.50}$	$100\theta_*$	1.04093	$1.0409_{-0.0010}^{+0.0010}$
$\Sigma m_\nu$ [eV]	0.001	< 0.294	$c_{100}$	0.99816	$0.9982_{-0.0015}^{+0.0015}$	$D_A/\text{Gpc}$	13.869	$13.87_{-0.32}^{+0.32}$
$N_{\text{eff}}$	3.072	$3.07_{-0.36}^{+0.37}$	$c_{217}$	0.99601	$0.9960_{-0.0028}^{+0.0029}$	$z_{\text{drag}}$	1059.78	$1059.7_{-1.5}^{+1.5}$
$\ln(10^{10} A_s)$	3.089	$3.102_{-0.074}^{+0.071}$	$H_0$	68.07	$67.2_{-3.4}^{+3.1}$	$r_{\text{drag}}$	147.06	$147.1_{-3.6}^{+3.6}$
$n_s$	0.9660	$0.966_{-0.017}^{+0.018}$	$\Omega_\Lambda$	0.6929	$0.682_{-0.033}^{+0.029}$	$k_D$	0.14074	$0.1407_{-0.0026}^{+0.0026}$
$y_{\text{cal}}$	1.00041	$1.0004_{-0.0049}^{+0.0048}$	$\Omega_m$	0.3071	$0.318_{-0.029}^{+0.033}$	$100\theta_D$	0.16095	$0.16095_{-0.00078}^{+0.00082}$
$A_{217}^{\text{CIB}}$	67.1	$64_{-10}^{+10}$	$\Omega_m h^2$	0.1423	$0.1434_{-0.0062}^{+0.0069}$	$z_{\text{eq}}$	3388	$3388_{-74}^{+73}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.07	—	$\Omega_\nu h^2$	0.00001	< 0.00316	$k_{\text{eq}}$	0.010358	$0.01036_{-0.00024}^{+0.00024}$
$A_{143}^{\text{tSZ}}$	7.24	$5.35_{-3.7}^{+3.5}$	$\Omega_m h^3$	0.0968	$0.0964_{-0.0071}^{+0.0076}$	$100\theta_{\text{eq}}$	0.8155	$0.816_{-0.014}^{+0.014}$
$A_{100}^{\text{PS}}$	257	$260_{-50}^{+50}$	$\sigma_8$	0.843	$0.826_{-0.053}^{+0.049}$	$100\theta_{\text{s,eq}}$	0.4506	$0.4506_{-0.0070}^{+0.0073}$
$A_{143}^{\text{PS}}$	39.3	$43_{-20}^{+20}$	$\sigma_8 \Omega_m^{0.5}$	0.4669	$0.466_{-0.020}^{+0.020}$	$r_{\text{drag}}/D_V(0.57)$	0.07180	$0.0713_{-0.0017}^{+0.0015}$
$A_{143 \times 217}^{\text{PS}}$	34.5	$40_{-20}^{+20}$	$\sigma_8 \Omega_m^{0.25}$	0.6272	$0.620_{-0.030}^{+0.029}$	$H(0.57)$	93.37	$92.9_{-2.8}^{+2.8}$
$A_{217}^{\text{PS}}$	97.6	$98_{-20}^{+20}$	$\sigma_8/h^{0.5}$	1.0213	$1.008_{-0.049}^{+0.046}$	$D_A(0.57)$	1380	$1393_{-51}^{+57}$
$A^{\text{kSZ}}$	0.00	< 7.93	$\langle d^2 \rangle^{1/2}$	2.504	$2.506_{-0.079}^{+0.078}$	$F_{\text{AP}}(0.57)$	0.6749	$0.6776_{-0.0073}^{+0.0082}$
$A_{100}^{\text{dustTT}}$	7.37	$7.43_{-3.7}^{+3.6}$	$z_{\text{re}}$	9.86	$10.4_{-3.3}^{+3.2}$	$f\sigma_8(0.57)$	0.4876	$0.483_{-0.024}^{+0.023}$
$A_{143}^{\text{dustTT}}$	9.01	$8.93_{-3.6}^{+3.6}$	$10^9 A_s$	2.196	$2.23_{-0.16}^{+0.16}$	$\sigma_8(0.57)$	0.6274	$0.614_{-0.044}^{+0.040}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.0_{-8.3}^{+8.2}$	$10^9 A_s e^{-2\tau}$	1.8834	$1.883_{-0.035}^{+0.034}$	$f_{2000}^{143}$	29.5	$30_{-6}^{+6}$
$A_{217}^{\text{dustTT}}$	81.8	$82_{-10}^{+10}$	$D_{40}$	1238.0	$1240_{-30}^{+30}$	$f_{2000}^{143 \times 217}$	32.31	$32_{-4}^{+4}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081_{-0.011}^{+0.011}$	$D_{220}$	5730	$5729_{-76}^{+75}$	$f_{2000}^{217}$	105.91	$105.8_{-3.9}^{+4.1}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0489_{-0.0096}^{+0.0099}$	$D_{810}$	2535.7	$2536_{-27}^{+27}$	$\chi_{\text{lowTEB}}^2$	10496.61	10498.0 ( $\nu$ : 3.1)
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.099_{-0.064}^{+0.065}$	$D_{1420}$	814.6	$814.8_{-9.6}^{+9.5}$	$\chi_{\text{plik}}^2$	2431.5	2452 ( $\nu$ : 93.2)
$A_{143}^{\text{dustEE}}$	0.1003	$0.100_{-0.013}^{+0.013}$	$D_{2000}$	230.37	$230.4_{-3.6}^{+3.6}$	$\chi_{\text{H070p6}}^2$	0.58	1.28 ( $\nu$ : 0.6)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224_{-0.091}^{+0.091}$	$n_{\text{s},0.002}$	0.9660	$0.966_{-0.017}^{+0.018}$	$\chi_{\text{prior}}^2$	7.10	19.3 ( $\nu$ : 17.4)
$A_{217}^{\text{dustEE}}$	0.648	$0.65_{-0.25}^{+0.26}$	$Y_{\text{P}}$	0.2457	$0.2457_{-0.0051}^{+0.0051}$	$\chi_{\text{CMB}}^2$	12928.1	12950 ( $\nu$ : 91.6)
$A_{100}^{\text{dustTE}}$	0.141	$0.140_{-0.074}^{+0.074}$	$Y_{\text{P}}^{\text{BBN}}$	0.2470	$0.2470_{-0.0051}^{+0.0051}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131_{-0.057}^{+0.057}$	$10^5 \text{D}/\text{H}$	2.615	$2.616_{-0.089}^{+0.094}$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.77$ ;  $\Delta\chi_{\text{eff}}^2 = -0.70$ ;  $\bar{\chi}_{\text{eff}}^2 = 12970.52$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.78$ ;  $R - 1 = 0.01068$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.61 ( $\Delta$  -0.39) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.49 ( $\Delta$  -0.28) Hubble - H070p6: 0.58 ( $\Delta$  -0.32)

14.8 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022276	$0.02234^{+0.00037}_{-0.00037}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.937	$13.86^{+0.30}_{-0.31}$
$\Omega_c h^2$	0.1186	$0.1198^{+0.0060}_{-0.0056}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.50}_{-0.51}$	$z_{\text{drag}}$	1059.59	$1059.9^{+1.4}_{-1.4}$
$100\theta_{\text{MC}}$	1.04093	$1.04079^{+0.00081}_{-0.00083}$	$c_{100}$	0.99830	$0.9982^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.81	$146.9^{+3.4}_{-3.4}$
$\tau$	0.0817	$0.085^{+0.033}_{-0.034}$	$c_{217}$	0.99583	$0.9959^{+0.0029}_{-0.0028}$	$k_D$	0.14022	$0.1408^{+0.0025}_{-0.0025}$
$\Sigma m_\nu$ [eV]	0.002	< 0.170	$H_0$	67.73	$67.9^{+2.2}_{-2.1}$	$100\theta_D$	0.16076	$0.16097^{+0.00081}_{-0.00075}$
$N_{\text{eff}}$	2.999	$3.10^{+0.35}_{-0.33}$	$\Omega_\Lambda$	0.6928	$0.690^{+0.014}_{-0.015}$	$z_{\text{eq}}$	3388	$3375^{+52}_{-54}$
$\ln(10^{10} A_s)$	3.096	$3.106^{+0.068}_{-0.071}$	$\Omega_m$	0.3072	$0.310^{+0.015}_{-0.014}$	$k_{\text{eq}}$	0.010308	$0.01034^{+0.00024}_{-0.00023}$
$n_s$	0.9649	$0.968^{+0.015}_{-0.014}$	$\Omega_m h^2$	0.1409	$0.1429^{+0.0064}_{-0.0060}$	$100\theta_{\text{eq}}$	0.8155	$0.818^{+0.011}_{-0.0099}$
$y_{\text{cal}}$	1.00028	$1.0004^{+0.0049}_{-0.0050}$	$\Omega_\nu h^2$	0.00002	< 0.00182	$100\theta_{s,\text{eq}}$	0.4506	$0.4519^{+0.0054}_{-0.0050}$
$A_{217}^{\text{CIB}}$	62.6	$64^{+10}_{-10}$	$\Omega_m h^3$	0.0954	$0.0971^{+0.0069}_{-0.0064}$	$r_{\text{drag}}/D_V(0.57)$	0.07181	$0.07167^{+0.00077}_{-0.00077}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.53	—	$\sigma_8$	0.8428	$0.836^{+0.036}_{-0.037}$	$H(0.57)$	92.91	$93.4^{+2.4}_{-2.3}$
$A_{143}^{\text{tSZ}}$	6.84	$5.37^{+3.5}_{-3.7}$	$\sigma_8 \Omega_m^{0.5}$	0.4671	$0.465^{+0.019}_{-0.019}$	$D_A(0.57)$	1387.1	$1382^{+39}_{-38}$
$A_{100}^{\text{PS}}$	251	$259^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6275	$0.624^{+0.025}_{-0.026}$	$F_{\text{AP}}(0.57)$	0.67494	$0.6756^{+0.0037}_{-0.0036}$
$A_{143}^{\text{PS}}$	45.4	$43^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0241	$1.014^{+0.036}_{-0.040}$	$f\sigma_8(0.57)$	0.4878	$0.486^{+0.019}_{-0.020}$
$A_{143 \times 217}^{\text{PS}}$	47.7	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.514	$2.504^{+0.077}_{-0.079}$	$\sigma_8(0.57)$	0.6276	$0.622^{+0.028}_{-0.029}$
$A_{217}^{\text{PS}}$	104.3	$98^{+20}_{-20}$	$z_{\text{re}}$	10.26	$10.6^{+3.0}_{-3.1}$	$f_{2000}^{143}$	28.0	$29^{+6}_{-6}$
$A^{\text{kSZ}}$	0.01	< 7.82	$10^9 A_s$	2.211	$2.23^{+0.16}_{-0.15}$	$f_{2000}^{143 \times 217}$	31.39	$32^{+4}_{-4}$
$A_{100}^{\text{dustTT}}$	7.33	$7.42^{+3.5}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8779	$1.882^{+0.034}_{-0.034}$	$f_{2000}^{217}$	104.90	$105.7^{+4.2}_{-3.9}$
$A_{143}^{\text{dustTT}}$	8.89	$8.95^{+3.5}_{-3.6}$	$D_{40}$	1240.3	$1238^{+28}_{-28}$	$\chi_{\text{lowTEB}}^2$	10497.34	10497.8 ( $\nu$ : 3.1)
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$17.0^{+8.3}_{-8.3}$	$D_{220}$	5731	$5730^{+75}_{-78}$	$\chi_{\text{plik}}^2$	2431.1	2451.4 ( $\nu$ : 25.4)
$A_{217}^{\text{dustTT}}$	82.6	$82^{+10}_{-10}$	$D_{810}$	2536.0	$2536^{+27}_{-28}$	$\chi_{\text{H070p6}}^2$	0.75	0.76 ( $\nu$ : 0.2)
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	816.0	$814.9^{+9.4}_{-9.6}$	$\chi_{\text{JLA}}^2$	706.639	706.74 ( $\nu$ : 0.0)
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0491^{+0.0097}_{-0.0096}$	$D_{2000}$	231.28	$230.5^{+3.6}_{-3.6}$	$\chi_{6\text{DF}}^2$	0.006	0.054 ( $\nu$ : 0.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.065}_{-0.064}$	$n_{s,0.002}$	0.9649	$0.968^{+0.015}_{-0.014}$	$\chi_{\text{MGS}}^2$	1.47	1.36 ( $\nu$ : 0.1)
$A_{143}^{\text{dustEE}}$	0.1003	$0.101^{+0.013}_{-0.013}$	$Y_{\text{P}}$	0.24471	$0.2460^{+0.0047}_{-0.0046}$	$\chi_{\text{DR11CMass}}^2$	2.41	2.83 ( $\nu$ : 0.2)
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.223^{+0.090}_{-0.091}$	$Y_{\text{P}}^{\text{BBN}}$	0.24603	$0.2474^{+0.0047}_{-0.0046}$	$\chi_{\text{DR11LOWZ}}^2$	0.43	0.71 ( $\nu$ : 0.2)
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.26}_{-0.27}$	$10^5 D/H$	2.593	$2.613^{+0.092}_{-0.087}$	$\chi_{\text{prior}}^2$	6.45	19.3 ( $\nu$ : 15.2)
$A_{100}^{\text{dustTE}}$	0.140	$0.140^{+0.074}_{-0.073}$	Age/Gyr	13.821	$13.75^{+0.33}_{-0.33}$	$\chi_{\text{CMB}}^2$	12928.4	12949.2 ( $\nu$ : 23.4)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.056}_{-0.057}$	$z_*$	1089.86	$1089.98^{+0.70}_{-0.66}$	$\chi_{\text{BAO}}^2$	4.32	4.95 ( $\nu$ : 0.4)
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.16}$	$r_*$	145.11	$144.3^{+3.2}_{-3.3}$			
$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$100\theta_*$	1.04113	$1.04095^{+0.00099}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 13646.60$ ;  $\bar{\chi}_{\text{eff}}^2 = 13680.95$ ;  $R - 1 = 0.01983$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMAS: 2.41 DR11LOWZ: 0.43 CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.34 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.10 Hubble - H070p6: 0.75 SN - JLA December\_2013: 706.64

### 14.9 base\_nnu\_mnu\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02233	$0.02212^{+0.00082}_{-0.00079}$	$\Omega_m$	0.298	$0.344^{+0.092}_{-0.078}$	$D_A/\text{Gpc}$	13.894	$13.88^{+0.48}_{-0.48}$
$\Omega_c h^2$	0.1186	$0.1201^{+0.0077}_{-0.0074}$	$\Omega_m h^2$	0.1409	$0.145^{+0.010}_{-0.0090}$	$z_{\text{drag}}$	1059.78	$1059.4^{+2.6}_{-2.5}$
$100\theta_{\text{MC}}$	1.04110	$1.0407^{+0.0012}_{-0.0012}$	$\Omega_\nu h^2$	0.00005	$< 0.00728$	$r_{\text{drag}}$	147.3	$147.2^{+5.4}_{-5.4}$
$\tau$	0.0652	$0.076^{+0.042}_{-0.038}$	$\Omega_m h^3$	0.0970	$0.095^{+0.013}_{-0.013}$	$k_D$	0.14043	$0.1406^{+0.0039}_{-0.0038}$
$\Sigma m_\nu [\text{eV}]$	0.005	$< 0.677$	$\sigma_8$	0.827	$0.777^{+0.078}_{-0.087}$	$100\theta_D$	0.16102	$0.1611^{+0.0013}_{-0.0013}$
$N_{\text{eff}}$	3.08	$3.07^{+0.62}_{-0.62}$	$\sigma_8 \Omega_m^{0.5}$	0.4512	$0.453^{+0.018}_{-0.018}$	$z_{\text{eq}}$	3351	$3391^{+160}_{-150}$
$\ln(10^{10} A_s)$	3.061	$3.085^{+0.089}_{-0.082}$	$\sigma_8 \Omega_m^{0.25}$	0.6108	$0.593^{+0.031}_{-0.035}$	$k_{\text{eq}}$	0.010251	$0.01036^{+0.00033}_{-0.00031}$
$n_s$	0.9707	$0.965^{+0.033}_{-0.031}$	$\sigma_8/h^{0.5}$	0.997	$0.961^{+0.052}_{-0.060}$	$100\theta_{\text{eq}}$	0.8225	$0.815^{+0.031}_{-0.029}$
$y_{\text{cal}}$	0.99996	$1.0003^{+0.0050}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.442	$2.472^{+0.086}_{-0.080}$	$100\theta_{s,\text{eq}}$	0.4542	$0.451^{+0.015}_{-0.014}$
$A_{217}^{\text{CIB}}$	67.5	$65^{+10}_{-10}$	$z_{\text{re}}$	8.74	$9.82^{+3.7}_{-3.8}$	$r_{\text{drag}}/D_V(0.57)$	0.07236	$0.0701^{+0.0035}_{-0.0040}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.135	$2.19^{+0.20}_{-0.19}$	$H(0.57)$	93.7	$91.9^{+5.7}_{-5.3}$
$A_{143}^{\text{tSZ}}$	7.18	$4.88^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8739	$1.879^{+0.041}_{-0.043}$	$D_A(0.57)$	1371	$1423^{+130}_{-120}$
$A_{100}^{\text{PS}}$	254	$263^{+60}_{-60}$	$D_{40}$	1220.1	$1231^{+41}_{-41}$	$F_{\text{AP}}(0.57)$	0.6725	$0.684^{+0.022}_{-0.019}$
$A_{143}^{\text{PS}}$	39.3	$46^{+20}_{-20}$	$D_{220}$	5716	$5714^{+82}_{-80}$	$f\sigma_8(0.57)$	0.4760	$0.461^{+0.028}_{-0.033}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2531.9	$2534^{+28}_{-28}$	$\sigma_8(0.57)$	0.618	$0.573^{+0.072}_{-0.080}$
$A_{217}^{\text{PS}}$	97.0	$97^{+20}_{-20}$	$D_{1420}$	814.8	$814^{+10}_{-10}$	$f_{2000}^{143}$	30.0	$31^{+7}_{-7}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.16	$229.4^{+4.3}_{-4.3}$	$f_{2000}^{143 \times 217}$	32.56	$34^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	7.46	$7.47^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9707	$0.965^{+0.033}_{-0.031}$	$f_{2000}^{217}$	106.07	$107.0^{+4.7}_{-4.7}$
$A_{143}^{\text{dustTT}}$	9.10	$9.08^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.2458	$0.2455^{+0.0086}_{-0.0083}$	$\chi_{\text{lensing}}^2$	9.43	$9.57 (\nu: 1.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.2}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.2472	$0.2468^{+0.0086}_{-0.0084}$	$\chi_{\text{lowTEB}}^2$	10494.53	$10496.9 (\nu: 3.2)$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$10^5 \text{D}/\text{H}$	2.610	$2.64^{+0.14}_{-0.13}$	$\chi_{\text{plik}}^2$	766.5	$780.5 (\nu: 16.9)$
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.73	$13.93^{+0.75}_{-0.72}$	$\chi_{\text{prior}}^2$	2.06	$7.48 (\nu: 6.4)$
$c_{217}$	0.99598	$0.9961^{+0.0028}_{-0.0029}$	$z_*$	1089.87	$1090.3^{+1.1}_{-1.0}$	$\chi_{\text{CMB}}^2$	11270.5	$11287.0 (\nu: 17.0)$
$H_0$	68.8	$65^{+7}_{-8}$	$r_*$	144.7	$144.5^{+5.1}_{-5.1}$			
$\Omega_\Lambda$	0.702	$0.656^{+0.078}_{-0.092}$	$100\theta_*$	1.04123	$1.0410^{+0.0014}_{-0.0014}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.54$ ;  $\Delta\chi_{\text{eff}}^2 = 0.11$ ;  $\bar{\chi}_{\text{eff}}^2 = 11294.43$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.13$ ;  $R - 1 = 0.00735$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.43 ( $\Delta$  0.25) lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.53 ( $\Delta$  -0.32) plik\_dx11dr2\_HM\_v18\_TT: 766.52 ( $\Delta$  0.19)

### 14.10 base\_nnu\_mnu\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02226	$0.02236^{+0.00054}_{-0.00052}$	$\Omega_m h^2$	0.1413	$0.1438^{+0.0090}_{-0.0085}$	$r_{\text{drag}}$	147.78	$146.6^{+4.8}_{-4.8}$
$\Omega_c h^2$	0.1182	$0.1199^{+0.0075}_{-0.0074}$	$\Omega_\nu h^2$	0.00084	$< 0.00347$	$k_D$	0.14012	$0.1410^{+0.0036}_{-0.0034}$
$100\theta_{\text{MC}}$	1.04104	$1.0409^{+0.0011}_{-0.0011}$	$\Omega_m h^3$	0.0956	$0.0980^{+0.0099}_{-0.0092}$	$100\theta_D$	0.16093	$0.1612^{+0.0012}_{-0.0012}$
$\tau$	0.0678	$0.077^{+0.040}_{-0.038}$	$\sigma_8$	0.8135	$0.810^{+0.031}_{-0.032}$	$z_{\text{eq}}$	3363	$3343^{+78}_{-84}$
$\Sigma m_\nu$ [eV]	0.078	$< 0.323$	$\sigma_8 \Omega_m^{0.5}$	0.4519	$0.450^{+0.015}_{-0.015}$	$k_{\text{eq}}$	0.010255	$0.01029^{+0.00027}_{-0.00027}$
$N_{\text{eff}}$	3.03	$3.17^{+0.53}_{-0.50}$	$\sigma_8 \Omega_m^{0.25}$	0.6064	$0.604^{+0.020}_{-0.020}$	$100\theta_{\text{eq}}$	0.8200	$0.824^{+0.017}_{-0.015}$
$\ln(10^{10} A_s)$	3.065	$3.087^{+0.086}_{-0.078}$	$\sigma_8/h^{0.5}$	0.9890	$0.981^{+0.032}_{-0.034}$	$100\theta_{s,\text{eq}}$	0.4530	$0.4551^{+0.0086}_{-0.0076}$
$n_s$	0.9677	$0.973^{+0.021}_{-0.020}$	$\langle d^2 \rangle^{1/2}$	2.448	$2.447^{+0.051}_{-0.052}$	$r_{\text{drag}}/D_V(0.57)$	0.07177	$0.07171^{+0.00096}_{-0.00095}$
$y_{\text{cal}}$	1.00019	$1.0002^{+0.0049}_{-0.0048}$	$z_{\text{re}}$	9.00	$9.78^{+3.6}_{-3.4}$	$H(0.57)$	92.92	$93.7^{+3.3}_{-3.2}$
$A_{217}^{\text{CIB}}$	67.5	$65^{+10}_{-10}$	$10^9 A_s$	2.144	$2.19^{+0.19}_{-0.17}$	$D_A(0.57)$	1388	$1378^{+54}_{-52}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8724	$1.880^{+0.040}_{-0.042}$	$F_{\text{AP}}(0.57)$	0.67529	$0.6755^{+0.0046}_{-0.0044}$
$A_{143}^{\text{tSZ}}$	7.19	$4.88^{+4.0}_{-3.9}$	$D_{40}$	1226.2	$1222^{+31}_{-30}$	$f\sigma_8(0.57)$	0.4727	$0.472^{+0.015}_{-0.015}$
$A_{100}^{\text{PS}}$	254	$263^{+60}_{-60}$	$D_{220}$	5717	$5719^{+81}_{-80}$	$\sigma_8(0.57)$	0.6061	$0.603^{+0.025}_{-0.026}$
$A_{143}^{\text{PS}}$	39.0	$45^{+20}_{-20}$	$D_{810}$	2532.4	$2534^{+28}_{-27}$	$f_{2000}^{143}$	29.9	$31^{+7}_{-7}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$D_{1420}$	815.1	$814^{+10}_{-9.5}$	$f_{2000}^{143 \times 217}$	32.51	$33^{+5}_{-5}$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$D_{2000}$	230.30	$229.5^{+4.3}_{-4.1}$	$f_{2000}^{217}$	106.05	$106.9^{+4.7}_{-4.7}$
$A^{\text{kSZ}}$	0.0	—	$n_{s,0.002}$	0.9677	$0.973^{+0.021}_{-0.020}$	$\chi_{\text{lensing}}^2$	9.29	$9.75 (\nu: 1.1)$
$A_{100}^{\text{dustTT}}$	7.47	$7.51^{+3.6}_{-3.7}$	$Y_{\text{P}}$	0.2451	$0.2470^{+0.0070}_{-0.0069}$	$\chi_{\text{lowTEB}}^2$	10495.01	$10495.6 (\nu: 1.6)$
$A_{143}^{\text{dustTT}}$	9.16	$9.10^{+3.5}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.2465	$0.2484^{+0.0070}_{-0.0069}$	$\chi_{\text{plik}}^2$	766.2	$780.7 (\nu: 16.2)$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.1}_{-7.9}$	$10^5 D/H$	2.607	$2.64^{+0.13}_{-0.13}$	$\chi_{6\text{DF}}^2$	0.010	$0.070 (\nu: 0.0)$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	Age/Gyr	13.818	$13.71^{+0.47}_{-0.46}$	$\chi_{\text{MGS}}^2$	1.41	$1.42 (\nu: 0.2)$
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.88	$1090.06^{+0.91}_{-0.94}$	$\chi_{\text{DR11CMass}}^2$	2.39	$3.01 (\nu: 0.4)$
$c_{217}$	0.99597	$0.9961^{+0.0028}_{-0.0029}$	$r_*$	145.07	$143.9^{+4.7}_{-4.6}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	$0.74 (\nu: 0.2)$
$H_0$	67.66	$68.2^{+3.0}_{-2.9}$	$100\theta_*$	1.04126	$1.0410^{+0.0014}_{-0.0013}$	$\chi_{\text{prior}}^2$	2.13	$7.44 (\nu: 6.3)$
$\Omega_\Lambda$	0.6914	$0.690^{+0.017}_{-0.018}$	$D_A/\text{Gpc}$	13.932	$13.82^{+0.44}_{-0.43}$	$\chi_{\text{CMB}}^2$	11270.5	$11286.0 (\nu: 16.2)$
$\Omega_m$	0.3086	$0.310^{+0.018}_{-0.017}$	$z_{\text{drag}}$	1059.55	$1060.0^{+2.0}_{-1.8}$	$\chi_{\text{BAO}}^2$	4.29	$5.23 (\nu: 0.8)$

Best-fit  $\chi_{\text{eff}}^2 = 11276.91$ ;  $\Delta\chi_{\text{eff}}^2 = 0.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 11298.71$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.02$ ;  $R - 1 = 0.02062$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMass: 2.39 ( $\Delta$  -0.01) DR11LOWZ: 0.48 ( $\Delta$  -0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.29 ( $\Delta$  0.05) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.01 ( $\Delta$  0.15) plik\_dx11dr2\_HM.v18.TT: 766.20 ( $\Delta$  -0.00)



### 14.11 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022128	$0.02208^{+0.00048}_{-0.00048}$	$A_{100 \times 217}^{\text{dustTE}}$	0.306	$0.30^{+0.16}_{-0.16}$	Age/Gyr	13.975	$14.04^{+0.44}_{-0.43}$
$\Omega_c h^2$	0.1174	$0.1184^{+0.0060}_{-0.0057}$	$A_{143}^{\text{dustTE}}$	0.154	$0.16^{+0.11}_{-0.11}$	$z_*$	1089.85	$1090.07^{+0.82}_{-0.81}$
$100\theta_{\text{MC}}$	1.04103	$1.04087^{+0.00090}_{-0.00091}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$r_*$	146.05	$145.6^{+3.6}_{-3.6}$
$\tau$	0.0616	$0.071^{+0.036}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.66	$1.68^{+0.50}_{-0.50}$	$100\theta_*$	1.04136	$1.0412^{+0.0011}_{-0.0011}$
$\Sigma m_\nu$ [eV]	0.094	< 0.577	$c_{100}$	0.99817	$0.9981^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	14.025	$13.98^{+0.34}_{-0.34}$
$N_{\text{eff}}$	2.899	$2.93^{+0.39}_{-0.38}$	$c_{217}$	0.99597	$0.9961^{+0.0029}_{-0.0028}$	$z_{\text{drag}}$	1059.06	$1059.1^{+1.6}_{-1.6}$
$\ln(10^{10} A_s)$	3.051	$3.071^{+0.073}_{-0.069}$	$H_0$	66.17	$64.8^{+4.2}_{-4.6}$	$r_{\text{drag}}$	148.82	$148.4^{+3.8}_{-3.8}$
$n_s$	0.9591	$0.959^{+0.019}_{-0.019}$	$\Omega_\Lambda$	0.679	$0.658^{+0.049}_{-0.057}$	$k_D$	0.13945	$0.1398^{+0.0028}_{-0.0027}$
$y_{\text{cal}}$	1.00001	$1.0003^{+0.0048}_{-0.0048}$	$\Omega_m$	0.321	$0.342^{+0.057}_{-0.049}$	$100\theta_D$	0.16064	$0.16074^{+0.00081}_{-0.00079}$
$A_{217}^{\text{CIB}}$	67.1	$64^{+10}_{-10}$	$\Omega_m h^2$	0.1405	$0.1431^{+0.0082}_{-0.0079}$	$z_{\text{eq}}$	3401	$3408^{+81}_{-80}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.07	—	$\Omega_\nu h^2$	0.00101	< 0.00620	$k_{\text{eq}}$	0.010276	$0.01033^{+0.00025}_{-0.00024}$
$A_{143}^{\text{tSZ}}$	7.31	$5.28^{+3.7}_{-3.8}$	$\Omega_m h^3$	0.0930	$0.0927^{+0.0079}_{-0.0074}$	$100\theta_{\text{eq}}$	0.8129	$0.812^{+0.016}_{-0.015}$
$A_{100}^{\text{PS}}$	256	$262^{+60}_{-50}$	$\sigma_8$	0.803	$0.778^{+0.056}_{-0.065}$	$100\theta_{\text{s,eq}}$	0.4494	$0.4487^{+0.0078}_{-0.0077}$
$A_{143}^{\text{PS}}$	38.6	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4549	$0.454^{+0.014}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.07112	$0.0701^{+0.0023}_{-0.0026}$
$A_{143 \times 217}^{\text{PS}}$	34	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6045	$0.594^{+0.026}_{-0.029}$	$H(0.57)$	91.72	$91.1^{+3.2}_{-3.2}$
$A_{217}^{\text{PS}}$	96.9	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9873	$0.967^{+0.045}_{-0.053}$	$D_A(0.57)$	1412	$1433^{+76}_{-68}$
$A^{\text{kSZ}}$	0.00	< 8.17	$\langle d^2 \rangle^{1/2}$	2.461	$2.476^{+0.066}_{-0.063}$	$F_{\text{AP}}(0.57)$	0.6784	$0.684^{+0.014}_{-0.012}$
$A_{100}^{\text{dustTT}}$	7.44	$7.42^{+3.7}_{-3.6}$	$z_{\text{re}}$	8.40	$9.29^{+3.3}_{-3.5}$	$f\sigma_8(0.57)$	0.4700	$0.462^{+0.022}_{-0.025}$
$A_{143}^{\text{dustTT}}$	9.04	$8.98^{+3.6}_{-3.6}$	$10^9 A_s$	2.113	$2.16^{+0.16}_{-0.15}$	$\sigma_8(0.57)$	0.596	$0.574^{+0.050}_{-0.057}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.2^{+8.1}_{-8.1}$	$10^9 A_s e^{-2\tau}$	1.8684	$1.873^{+0.034}_{-0.034}$	$f_{2000}^{143}$	29.2	$30^{+6}_{-6}$
$A_{217}^{\text{dustTT}}$	81.6	$82^{+10}_{-10}$	$D_{40}$	1239.8	$1241^{+30}_{-30}$	$f_{2000}^{143 \times 217}$	32.10	$33^{+4}_{-4}$
$A_{100}^{\text{dustEE}}$	0.0811	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5725	$5727^{+76}_{-77}$	$f_{2000}^{217}$	105.58	$106.1^{+4.0}_{-4.0}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0487	$0.0485^{+0.0098}_{-0.0097}$	$D_{810}$	2531.9	$2534^{+27}_{-27}$	$\chi_{\text{lensing}}^2$	9.61	$9.71 (\nu: 1.1)$
$A_{100 \times 217}^{\text{dustEE}}$	0.0999	$0.0997^{+0.064}_{-0.064}$	$D_{1420}$	815.1	$815.2^{+9.5}_{-9.4}$	$\chi_{\text{lowTEB}}^2$	10496.34	$10497.4 (\nu: 1.9)$
$A_{143}^{\text{dustEE}}$	0.09997	$0.0999^{+0.013}_{-0.013}$	$D_{2000}$	230.60	$230.3^{+3.6}_{-3.6}$	$\chi_{\text{plik}}^2$	2433.9	$2454.2 (\nu: 23.9)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.225^{+0.091}_{-0.092}$	$n_{\text{s},0.002}$	0.9591	$0.959^{+0.019}_{-0.019}$	$\chi_{\text{prior}}^2$	6.96	$19.2 (\nu: 15.1)$
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.26}_{-0.25}$	$Y_{\text{P}}$	0.2433	$0.2437^{+0.0054}_{-0.0055}$	$\chi_{\text{CMB}}^2$	12939.9	$12961.3 (\nu: 23.8)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.075}_{-0.073}$	$Y_{\text{P}}^{\text{BBN}}$	0.2446	$0.2450^{+0.0055}_{-0.0055}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.586	$2.607^{+0.097}_{-0.091}$			

Best-fit  $\chi_{\text{eff}}^2 = 12946.85$ ;  $\Delta\chi_{\text{eff}}^2 = -0.33$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.54$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.42$ ;  $R - 1 = 0.01047$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.61 ( $\Delta$  -0.17) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.34 ( $\Delta$  1.05) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2433.94 ( $\Delta$  -0.97)

## 14.12 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022169	$0.02224^{+0.00040}_{-0.00040}$	$A_{143}^{\text{dustTE}}$	0.156	$0.15^{+0.11}_{-0.10}$	$r_*$	146.09	$145.4^{+3.4}_{-3.4}$
$\Omega_c h^2$	0.1170	$0.1179^{+0.0055}_{-0.0058}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04142	$1.0413^{+0.0011}_{-0.0011}$
$100\theta_{\text{MC}}$	1.04116	$1.04101^{+0.00088}_{-0.00088}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.51}_{-0.50}$	$D_A/\text{Gpc}$	14.028	$13.97^{+0.32}_{-0.32}$
$\tau$	0.0576	$0.067^{+0.031}_{-0.028}$	$c_{100}$	0.99821	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.13	$1059.4^{+1.5}_{-1.4}$
$\Sigma m_\nu$ [eV]	0.002	< 0.222	$c_{217}$	0.99596	$0.9960^{+0.0028}_{-0.0029}$	$r_{\text{drag}}$	148.84	$148.1^{+3.6}_{-3.5}$
$N_{\text{eff}}$	2.905	$2.99^{+0.37}_{-0.34}$	$H_0$	67.18	$67.1^{+2.3}_{-2.3}$	$k_D$	0.13942	$0.1399^{+0.0026}_{-0.0025}$
$\ln(10^{10} A_s)$	3.042	$3.064^{+0.063}_{-0.057}$	$\Omega_\Lambda$	0.6915	$0.687^{+0.017}_{-0.016}$	$100\theta_D$	0.16063	$0.16079^{+0.00078}_{-0.00076}$
$n_s$	0.9610	$0.964^{+0.016}_{-0.015}$	$\Omega_m$	0.3085	$0.313^{+0.016}_{-0.017}$	$z_{\text{eq}}$	3390	$3375^{+57}_{-61}$
$y_{\text{cal}}$	0.99975	$1.0002^{+0.0048}_{-0.0049}$	$\Omega_m h^2$	0.1392	$0.1411^{+0.0065}_{-0.0060}$	$k_{\text{eq}}$	0.010249	$0.01026^{+0.00022}_{-0.00022}$
$A_{217}^{\text{CIB}}$	65.3	$64^{+10}_{-10}$	$\Omega_\nu h^2$	0.00002	< 0.00239	$100\theta_{\text{eq}}$	0.8149	$0.818^{+0.012}_{-0.011}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.24	—	$\Omega_m h^3$	0.0935	$0.0947^{+0.0070}_{-0.0066}$	$100\theta_{\text{s,eq}}$	0.4503	$0.4519^{+0.0061}_{-0.0055}$
$A_{143}^{\text{tSZ}}$	7.18	$5.35^{+3.7}_{-3.9}$	$\sigma_8$	0.8174	$0.809^{+0.026}_{-0.027}$	$r_{\text{drag}}/D_V(0.57)$	0.07177	$0.07151^{+0.00083}_{-0.00087}$
$A_{100}^{\text{PS}}$	253	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.453^{+0.012}_{-0.013}$	$H(0.57)$	92.25	$92.5^{+2.5}_{-2.4}$
$A_{143}^{\text{PS}}$	41.1	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6092	$0.605^{+0.016}_{-0.017}$	$D_A(0.57)$	1397.7	$1397^{+42}_{-41}$
$A_{143 \times 217}^{\text{PS}}$	39.0	$39^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9973	$0.987^{+0.026}_{-0.026}$	$F_{\text{AP}}(0.57)$	0.67526	$0.6765^{+0.0042}_{-0.0042}$
$A_{217}^{\text{PS}}$	99.6	$97^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4556	$2.456^{+0.048}_{-0.046}$	$f\sigma_8(0.57)$	0.4734	$0.471^{+0.013}_{-0.013}$
$A^{\text{kSZ}}$	0.00	< 8.09	$z_{\text{re}}$	7.99	$8.89^{+2.8}_{-2.8}$	$\sigma_8(0.57)$	0.6083	$0.601^{+0.022}_{-0.022}$
$A_{100}^{\text{dustTT}}$	7.43	$7.45^{+3.8}_{-3.6}$	$10^9 A_s$	2.094	$2.14^{+0.14}_{-0.13}$	$f_{2000}^{143}$	28.7	$30^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	9.06	$8.99^{+3.6}_{-3.4}$	$10^9 A_s e^{-2\tau}$	1.8664	$1.872^{+0.033}_{-0.034}$	$f_{2000}^{143 \times 217}$	31.76	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$17.1^{+7.8}_{-7.8}$	$D_{40}$	1233.7	$1234^{+26}_{-26}$	$f_{2000}^{217}$	105.25	$105.8^{+3.8}_{-4.0}$
$A_{217}^{\text{dustTT}}$	82.4	$82^{+10}_{-10}$	$D_{220}$	5721	$5729^{+75}_{-74}$	$\chi_{\text{lensing}}^2$	9.89	10.1 ( $\nu$ : 1.4)
$A_{100}^{\text{dustEE}}$	0.0811	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2530.9	$2533^{+26}_{-27}$	$\chi_{\text{lowTEB}}^2$	10495.97	10496.3 ( $\nu$ : 1.1)
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0491^{+0.0099}_{-0.0098}$	$D_{1420}$	815.2	$815.3^{+9.7}_{-9.5}$	$\chi_{\text{plik}}^2$	2434.3	2453.9 ( $\nu$ : 23.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.099^{+0.067}_{-0.064}$	$D_{2000}$	230.79	$230.5^{+3.6}_{-3.6}$	$\chi_{6\text{DF}}^2$	0.010	0.09 ( $\nu$ : 0.0)
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.013}_{-0.013}$	$n_{\text{s},0.002}$	0.9610	$0.964^{+0.016}_{-0.015}$	$\chi_{\text{MGS}}^2$	1.41	1.16 ( $\nu$ : 0.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.091}_{-0.091}$	$Y_{\text{P}}$	0.2434	$0.2445^{+0.0051}_{-0.0049}$	$\chi_{\text{DR11CMASS}}^2$	2.40	3.07 ( $\nu$ : 0.4)
$A_{217}^{\text{dustEE}}$	0.656	$0.66^{+0.26}_{-0.27}$	$Y_{\text{P}}^{\text{BBN}}$	0.2447	$0.2458^{+0.0051}_{-0.0049}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	0.99 ( $\nu$ : 0.3)
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.078}_{-0.071}$	$10^5 D/H$	2.580	$2.594^{+0.089}_{-0.087}$	$\chi_{\text{prior}}^2$	6.70	19.4 ( $\nu$ : 15.0)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.059}$	Age/Gyr	13.918	$13.88^{+0.35}_{-0.35}$	$\chi_{\text{CMB}}^2$	12940.2	12960.3 ( $\nu$ : 21.3)
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.31^{+0.16}_{-0.16}$	$z_*$	1089.77	$1089.83^{+0.67}_{-0.64}$	$\chi_{\text{BAO}}^2$	4.29	5.31 ( $\nu$ : 0.9)

Best-fit  $\chi_{\text{eff}}^2 = 12951.19$ ;  $\Delta\chi_{\text{eff}}^2 = -0.39$ ;  $\bar{\chi}_{\text{eff}}^2 = 12985.02$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.37$ ;  $R - 1 = 0.04453$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.41 ( $\Delta$  0.13) DR11CMASS: 2.40 ( $\Delta$  -0.05) DR11LOWZ: 0.48 ( $\Delta$  -0.13) CMB - smica\_g30\_ftl\_full\_pp: 9.88 ( $\Delta$  0.21) lowl\_SMW\_70\_dx11d\_2014\_10\_03

10495.97 ( $\Delta$  0.76) plik\_dx11dr2\_HM.v18.TTTEEE: 2434.35 ( $\Delta$  -0.95)

# 15 nnu+r

## 15.1 base\_nnu\_r\_plikHM\_TT\_lowTEB\_nnup39

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022591	$0.02260^{+0.00046}_{-0.00046}$	$\Omega_m h^3$	0.10377	$0.10376^{+0.00097}_{-0.00097}$	$100\theta_D$	0.16172	$0.16174^{+0.00054}_{-0.00051}$
$\Omega_c h^2$	0.12382	$0.1236^{+0.0045}_{-0.0044}$	$\sigma_8$	0.8507	$0.849^{+0.031}_{-0.030}$	$z_{\text{eq}}$	3325	$3319^{+98}_{-95}$
$100\theta_{\text{MC}}$	1.04049	$1.04054^{+0.00093}_{-0.00096}$	$\sigma_8 \Omega_m^{0.5}$	0.4623	$0.460^{+0.025}_{-0.025}$	$k_{\text{eq}}$	0.010410	$0.01039^{+0.00031}_{-0.00030}$
$\tau$	0.0904	$0.089^{+0.039}_{-0.039}$	$\sigma_8 \Omega_m^{0.25}$	0.6271	$0.625^{+0.026}_{-0.026}$	$100\theta_{\text{eq}}$	0.8280	$0.829^{+0.019}_{-0.019}$
$\ln(10^{10} A_s)$	3.125	$3.122^{+0.075}_{-0.075}$	$\sigma_8/h^{0.5}$	1.0127	$1.010^{+0.039}_{-0.039}$	$100\theta_{s,\text{eq}}$	0.4569	$0.4575^{+0.0098}_{-0.0097}$
$n_s$	0.9838	$0.984^{+0.013}_{-0.013}$	$\langle d^2 \rangle^{1/2}$	2.477	$2.470^{+0.090}_{-0.091}$	$r_{\text{drag}}/D_V(0.57)$	0.07243	$0.0725^{+0.0015}_{-0.0015}$
$r$	0.000	< 0.130	$z_{\text{re}}$	11.13	$10.9^{+3.2}_{-3.6}$	$H(0.57)$	95.93	$95.98^{+0.93}_{-0.89}$
$y_{\text{cal}}$	1.0004	$1.0005^{+0.0050}_{-0.0049}$	$10^9 A_s$	2.277	$2.27^{+0.18}_{-0.16}$	$D_A(0.57)$	1337.4	$1336^{+25}_{-25}$
$A_{217}^{\text{CIB}}$	68.6	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.9001	$1.899^{+0.028}_{-0.027}$	$F_{\text{AP}}(0.57)$	0.6719	$0.6716^{+0.0067}_{-0.0063}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1214.8	$1231^{+38}_{-37}$	$f\sigma_8(0.57)$	0.4901	$0.488^{+0.019}_{-0.019}$
$A_{143}^{\text{tSZ}}$	7.04	$4.80^{+3.8}_{-3.8}$	$D_{220}$	5718	$5719^{+81}_{-80}$	$\sigma_8(0.57)$	0.6370	$0.636^{+0.024}_{-0.023}$
$A_{100}^{\text{PS}}$	259	$264^{+60}_{-50}$	$D_{810}$	2538.9	$2539^{+27}_{-27}$	$r_{0.002}$	0.000	< 0.131
$A_{143}^{\text{PS}}$	42.5	$47^{+20}_{-20}$	$D_{1420}$	813.7	$813.7^{+9.9}_{-9.9}$	$r_{0.01}$	0.000	< 0.130
$A_{143 \times 217}^{\text{PS}}$	34.8	$40^{+20}_{-20}$	$D_{2000}$	228.92	$228.9^{+3.6}_{-3.7}$	$\ln(10^{10} A_t)$	-5.14	$-0.4^{+2.0}_{-2.4}$
$A_{217}^{\text{PS}}$	97.8	$97^{+20}_{-20}$	$n_{s,0.002}$	0.9838	$0.984^{+0.013}_{-0.013}$	$r_{10}$	0.0001	< 0.0658
$A^{\text{kSZ}}$	0.1	—	$Y_{\text{P}}$	0.250642	$0.25064^{+0.00020}_{-0.00021}$	$10^9 A_t$	0.001	< 0.292
$A_{100}^{\text{dustTT}}$	7.47	$7.48^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.251987	$0.25199^{+0.00020}_{-0.00021}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.246
$A_{143}^{\text{dustTT}}$	9.16	$9.07^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.683	$2.683^{+0.091}_{-0.086}$	$f_{2000}^{143}$	31.5	$32^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$17.3^{+8.2}_{-8.1}$	$\text{Age}/\text{Gyr}$	13.413	$13.409^{+0.077}_{-0.076}$	$f_{2000}^{143 \times 217}$	33.92	$34^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$z_*$	1090.35	$1090.33^{+0.87}_{-0.84}$	$f_{2000}^{217}$	107.34	$107.5^{+4.1}_{-4.0}$
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	141.42	$141.48^{+0.95}_{-0.95}$	$\chi_{\text{lowTEB}}^2$	10495.1	$10497.5 (\nu: 4.7)$
$c_{217}$	0.99613	$0.9961^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04041	$1.04046^{+0.00092}_{-0.00094}$	$\chi_{\text{plik}}^2$	766.2	$779.7 (\nu: 17.2)$
$H_0$	70.56	$70.7^{+2.0}_{-2.0}$	$D_A/\text{Gpc}$	13.593	$13.598^{+0.087}_{-0.087}$	$\chi_{\text{prior}}^2$	2.12	$7.48 (\nu: 6.4)$
$\Omega_\Lambda$	0.7047	$0.706^{+0.024}_{-0.026}$	$z_{\text{drag}}$	1061.04	$1061.02^{+0.90}_{-0.93}$	$\chi_{\text{CMB}}^2$	11261.3	$11277.2 (\nu: 16.3)$
$\Omega_m$	0.2953	$0.294^{+0.026}_{-0.024}$	$r_{\text{drag}}$	143.97	$144.03^{+0.94}_{-0.94}$			
$\Omega_m h^2$	0.14706	$0.1468^{+0.0043}_{-0.0042}$	$k_D$	0.14291	$0.1429^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11263.45$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.71$ ;  $R - 1 = 0.00534$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.13 plik\_dx11dr2\_HM\_v18\_TT: 766.20

## 15.2 base\_nnu\_r\_plikHM\_TTTEEE\_lowTEB\_nnp39

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022618	$0.02260^{+0.00032}_{-0.00030}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.569	$13.572^{+0.057}_{-0.058}$
$\Omega_c h^2$	0.12489	$0.1248^{+0.0030}_{-0.0030}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1061.15	$1061.12^{+0.62}_{-0.61}$
$100\theta_{\text{MC}}$	1.04025	$1.04026^{+0.00062}_{-0.00064}$	$c_{100}$	0.99814	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	143.68	$143.72^{+0.61}_{-0.61}$
$\tau$	0.0935	$0.089^{+0.033}_{-0.034}$	$c_{217}$	0.99616	$0.9961^{+0.0028}_{-0.0028}$	$k_D$	0.14326	$0.14320^{+0.00066}_{-0.00066}$
$\ln(10^{10} A_s)$	3.134	$3.126^{+0.064}_{-0.065}$	$H_0$	70.13	$70.2^{+1.4}_{-1.3}$	$100\theta_D$	0.161618	$0.16164^{+0.00036}_{-0.00036}$
$n_s$	0.9810	$0.9812^{+0.0097}_{-0.0097}$	$\Omega_\Lambda$	0.6988	$0.699^{+0.017}_{-0.017}$	$z_{\text{eq}}$	3350	$3347^{+64}_{-64}$
$r$	0.000	< 0.123	$\Omega_m$	0.3012	$0.301^{+0.017}_{-0.017}$	$k_{\text{eq}}$	0.010488	$0.01048^{+0.00020}_{-0.00020}$
$y_{\text{cal}}$	1.0003	$1.0005^{+0.0049}_{-0.0051}$	$\Omega_m h^2$	0.14816	$0.1480^{+0.0028}_{-0.0028}$	$100\theta_{\text{eq}}$	0.8233	$0.824^{+0.013}_{-0.012}$
$A_{217}^{\text{CIB}}$	68.7	$65^{+10}_{-10}$	$\Omega_m h^3$	0.10390	$0.10385^{+0.00063}_{-0.00061}$	$100\theta_{s,\text{eq}}$	0.4544	$0.4546^{+0.0064}_{-0.0063}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8570	$0.853^{+0.027}_{-0.027}$	$r_{\text{drag}}/D_V(0.57)$	0.07205	$0.0721^{+0.0010}_{-0.00099}$
$A_{143}^{\text{tSZ}}$	7.19	$5.10^{+3.7}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4704	$0.468^{+0.020}_{-0.019}$	$H(0.57)$	95.77	$95.78^{+0.61}_{-0.58}$
$A_{100}^{\text{PS}}$	261	$266^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6349	$0.632^{+0.022}_{-0.021}$	$D_A(0.57)$	1342.6	$1342^{+17}_{-17}$
$A_{143}^{\text{PS}}$	41.5	$46^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0234	$1.019^{+0.033}_{-0.033}$	$F_{\text{AP}}(0.57)$	0.67341	$0.6733^{+0.0045}_{-0.0044}$
$A_{143 \times 217}^{\text{PS}}$	34	$41^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.505	$2.493^{+0.079}_{-0.078}$	$f\sigma_8(0.57)$	0.4954	$0.493^{+0.016}_{-0.016}$
$A_{217}^{\text{PS}}$	97.5	$97^{+20}_{-20}$	$z_{\text{re}}$	11.42	$11.0^{+2.7}_{-3.1}$	$\sigma_8(0.57)$	0.6402	$0.637^{+0.021}_{-0.021}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.298	$2.28^{+0.15}_{-0.15}$	$r_{0.002}$	0.000	< 0.122
$A_{100}^{\text{dustTT}}$	7.60	$7.56^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.9055	$1.905^{+0.025}_{-0.025}$	$r_{0.01}$	0.000	< 0.122
$A_{143}^{\text{dustTT}}$	9.07	$9.08^{+3.6}_{-3.6}$	$D_{40}$	1223.9	$1239^{+37}_{-35}$	$\ln(10^{10} A_t)$	-6.46	$-0.4^{+1.9}_{-2.4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.1}_{-8.1}$	$D_{220}$	5726	$5724^{+77}_{-77}$	$r_{10}$	0.0000	< 0.0613
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{810}$	2540.1	$2540^{+27}_{-28}$	$10^9 A_t$	0.000	< 0.279
$A_{100}^{\text{dustEE}}$	0.0819	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	813.4	$813.5^{+9.4}_{-9.7}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.234
$A_{100 \times 143}^{\text{dustEE}}$	0.0498	$0.0490^{+0.010}_{-0.0097}$	$D_{2000}$	229.02	$228.9^{+3.2}_{-3.2}$	$f_{2000}^{143}$	31.1	$31^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.099^{+0.064}_{-0.063}$	$n_{s,0.002}$	0.9810	$0.9812^{+0.0097}_{-0.0097}$	$f_{2000}^{143 \times 217}$	33.65	$34^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1013	$0.100^{+0.014}_{-0.014}$	$Y_P$	0.250654	$0.25065^{+0.00014}_{-0.00013}$	$f_{2000}^{217}$	107.09	$107.2^{+3.7}_{-3.7}$
$A_{143 \times 217}^{\text{dustEE}}$	0.221	$0.221^{+0.091}_{-0.092}$	$Y_P^{\text{BBN}}$	0.252000	$0.25199^{+0.00014}_{-0.00013}$	$\chi_{\text{lowTEB}}^2$	10496.3	10498.1 ( $\nu$ : 4.4)
$A_{217}^{\text{dustEE}}$	0.639	$0.64^{+0.26}_{-0.26}$	$10^5 D/H$	2.678	$2.681^{+0.059}_{-0.060}$	$\chi_{\text{plik}}^2$	2436.9	2456.1 ( $\nu$ : 24.1)
$A_{100}^{\text{dustTE}}$	0.140	$0.142^{+0.074}_{-0.074}$	Age/Gyr	13.421	$13.422^{+0.049}_{-0.050}$	$\chi_{\text{prior}}^2$	7.46	19.7 ( $\nu$ : 15.6)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.057}$	$z_*$	1090.41	$1090.42^{+0.59}_{-0.58}$	$\chi_{\text{CMB}}^2$	12933.2	12954.3 ( $\nu$ : 23.7)
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.16}$	$r_*$	141.14	$141.18^{+0.62}_{-0.62}$			
$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	1.04017	$1.04017^{+0.00061}_{-0.00063}$			

Best-fit  $\chi_{\text{eff}}^2 = 12940.62$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.98$ ;  $R - 1 = 0.01087$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.26 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2436.89

### 15.3 base\_nnu\_r\_plikHM\_TT\_lowTEB\_nnup57

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022748	$0.02275^{+0.00047}_{-0.00045}$	$\Omega_m h^3$	0.10744	$0.10740^{+0.00099}_{-0.00099}$	$100\theta_D$	0.16209	$0.16210^{+0.00052}_{-0.00052}$
$\Omega_c h^2$	0.12568	$0.1254^{+0.0046}_{-0.0046}$	$\sigma_8$	0.8603	$0.857^{+0.031}_{-0.031}$	$z_{\text{eq}}$	3295	$3288^{+97}_{-97}$
$100\theta_{\text{MC}}$	1.04039	$1.04041^{+0.00093}_{-0.00094}$	$\sigma_8 \Omega_m^{0.5}$	0.4609	$0.458^{+0.026}_{-0.026}$	$k_{\text{eq}}$	0.010434	$0.01041^{+0.00031}_{-0.00031}$
$\tau$	0.0965	$0.094^{+0.039}_{-0.039}$	$\sigma_8 \Omega_m^{0.25}$	0.6297	$0.626^{+0.027}_{-0.027}$	$100\theta_{\text{eq}}$	0.8341	$0.836^{+0.020}_{-0.019}$
$\ln(10^{10} A_s)$	3.142	$3.135^{+0.075}_{-0.074}$	$\sigma_8/h^{0.5}$	1.0134	$1.008^{+0.039}_{-0.040}$	$100\theta_{s,\text{eq}}$	0.4599	$0.461^{+0.010}_{-0.0098}$
$n_s$	0.9910	$0.992^{+0.013}_{-0.013}$	$\langle d^2 \rangle^{1/2}$	2.470	$2.456^{+0.092}_{-0.092}$	$r_{\text{drag}}/D_V(0.57)$	0.07291	$0.0730^{+0.0016}_{-0.0015}$
$r$	0.000	< 0.142	$z_{\text{re}}$	11.67	$11.3^{+3.1}_{-3.5}$	$H(0.57)$	97.34	$97.4^{+1.0}_{-0.93}$
$y_{\text{cal}}$	1.00028	$1.0005^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.314	$2.30^{+0.18}_{-0.17}$	$D_A(0.57)$	1313.7	$1312^{+25}_{-25}$
$A_{217}^{\text{CIB}}$	68.8	$66^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.9080	$1.907^{+0.028}_{-0.028}$	$F_{\text{AP}}(0.57)$	0.6697	$0.6693^{+0.0066}_{-0.0064}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1207.6	$1224^{+41}_{-39}$	$f\sigma_8(0.57)$	0.4931	$0.490^{+0.020}_{-0.020}$
$A_{143}^{\text{tSZ}}$	6.02	$4.62^{+3.9}_{-4.0}$	$D_{220}$	5721	$5720^{+83}_{-80}$	$\sigma_8(0.57)$	0.6465	$0.644^{+0.024}_{-0.023}$
$A_{100}^{\text{PS}}$	267	$268^{+50}_{-60}$	$D_{810}$	2539.8	$2540^{+27}_{-27}$	$r_{0.002}$	0.000	< 0.148
$A_{143}^{\text{PS}}$	43.9	$48^{+20}_{-20}$	$D_{1420}$	812.5	$813.0^{+9.9}_{-10}$	$r_{0.01}$	0.000	< 0.145
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$D_{2000}$	228.00	$228.1^{+3.6}_{-3.7}$	$\ln(10^{10} A_t)$	-5.74	$-0.2^{+1.9}_{-2.5}$
$A_{217}^{\text{PS}}$	95.9	$97^{+20}_{-20}$	$n_{s,0.002}$	0.9910	$0.992^{+0.013}_{-0.013}$	$r_{10}$	0.0001	< 0.0740
$A^{\text{kSZ}}$	1.91	—	$Y_{\text{P}}$	0.252986	$0.25299^{+0.00021}_{-0.00020}$	$10^9 A_t$	0.000	< 0.324
$A_{100}^{\text{dustTT}}$	7.52	$7.54^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.254340	$0.25434^{+0.00021}_{-0.00020}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.271
$A_{143}^{\text{dustTT}}$	9.15	$9.09^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.714	$2.714^{+0.089}_{-0.088}$	$f_{2000}^{143}$	32.9	$33^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.3	$17.3^{+8.2}_{-8.2}$	$\text{Age}/\text{Gyr}$	13.237	$13.234^{+0.076}_{-0.078}$	$f_{2000}^{143 \times 217}$	34.84	$35^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	81.3	$82^{+10}_{-10}$	$z_*$	1090.48	$1090.45^{+0.87}_{-0.87}$	$f_{2000}^{217}$	108.18	$108.2^{+4.0}_{-4.0}$
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	140.03	$140.10^{+0.95}_{-0.94}$	$\chi_{\text{lowTEB}}^2$	10495.1	$10497.2 (\nu: 5.2)$
$c_{217}$	0.99610	$0.9962^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04018	$1.04020^{+0.00092}_{-0.00092}$	$\chi_{\text{plik}}^2$	767.7	$781.4 (\nu: 18.2)$
$H_0$	72.07	$72.2^{+2.1}_{-2.1}$	$D_A/\text{Gpc}$	13.462	$13.469^{+0.088}_{-0.086}$	$\chi_{\text{prior}}^2$	2.25	$7.53 (\nu: 6.6)$
$\Omega_\Lambda$	0.7130	$0.714^{+0.024}_{-0.025}$	$z_{\text{drag}}$	1061.65	$1061.64^{+0.94}_{-0.90}$	$\chi_{\text{CMB}}^2$	11262.8	$11278.6 (\nu: 16.9)$
$\Omega_m$	0.2870	$0.286^{+0.025}_{-0.024}$	$r_{\text{drag}}$	142.51	$142.59^{+0.94}_{-0.93}$			
$\Omega_m h^2$	0.14908	$0.1488^{+0.0044}_{-0.0044}$	$k_D$	0.14398	$0.1439^{+0.0010}_{-0.0011}$			

Best-fit  $\chi_{\text{eff}}^2 = 11265.06$ ;  $\bar{\chi}_{\text{eff}}^2 = 11286.10$ ;  $R - 1 = 0.01002$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.06 plik\_dx11dr2\_HM\_v18\_TT: 767.74

### 15.4 base\_nnu\_r\_plikHM\_TTTEE\_lowTEB\_nnp57

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022779	$0.02276^{+0.00031}_{-0.00031}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.430	$13.432^{+0.057}_{-0.057}$
$\Omega_c h^2$	0.12718	$0.1272^{+0.0031}_{-0.0030}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.51}$	$z_{\text{drag}}$	1061.84	$1061.78^{+0.61}_{-0.57}$
$100\theta_{\text{MC}}$	1.04005	$1.04004^{+0.00062}_{-0.00063}$	$c_{100}$	0.99812	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	142.11	$142.14^{+0.60}_{-0.60}$
$\tau$	0.0983	$0.094^{+0.034}_{-0.035}$	$c_{217}$	0.99617	$0.9962^{+0.0028}_{-0.0029}$	$k_D$	0.14444	$0.14440^{+0.00068}_{-0.00065}$
$\ln(10^{10} A_s)$	3.149	$3.141^{+0.065}_{-0.067}$	$H_0$	71.45	$71.4^{+1.4}_{-1.4}$	$100\theta_D$	0.161946	$0.16198^{+0.00036}_{-0.00034}$
$n_s$	0.9881	$0.9884^{+0.0096}_{-0.0097}$	$\Omega_\Lambda$	0.7050	$0.705^{+0.016}_{-0.017}$	$z_{\text{eq}}$	3329	$3328^{+65}_{-64}$
$r$	0.000	< 0.133	$\Omega_m$	0.2950	$0.295^{+0.017}_{-0.016}$	$k_{\text{eq}}$	0.010542	$0.01054^{+0.00021}_{-0.00020}$
$y_{\text{cal}}$	1.00025	$1.0006^{+0.0050}_{-0.0049}$	$\Omega_m h^2$	0.15061	$0.1506^{+0.0029}_{-0.0029}$	$100\theta_{\text{eq}}$	0.8275	$0.828^{+0.013}_{-0.013}$
$A_{217}^{\text{CIB}}$	69.1	$66^{+10}_{-10}$	$\Omega_m h^3$	0.10761	$0.10757^{+0.00064}_{-0.00063}$	$100\theta_{s,\text{eq}}$	0.4565	$0.4565^{+0.0064}_{-0.0065}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8671	$0.864^{+0.027}_{-0.027}$	$r_{\text{drag}}/D_V(0.57)$	0.07238	$0.0724^{+0.0010}_{-0.0010}$
$A_{143}^{\text{tSZ}}$	7.05	$4.99^{+3.8}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4709	$0.469^{+0.020}_{-0.019}$	$H(0.57)$	97.11	$97.10^{+0.63}_{-0.61}$
$A_{100}^{\text{PS}}$	264	$268^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6390	$0.637^{+0.022}_{-0.022}$	$D_A(0.57)$	1321.0	$1321^{+17}_{-17}$
$A_{143}^{\text{PS}}$	42.8	$47^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0258	$1.022^{+0.033}_{-0.033}$	$F_{\text{AP}}(0.57)$	0.67179	$0.6718^{+0.0045}_{-0.0043}$
$A_{143 \times 217}^{\text{PS}}$	35	$41^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.499	$2.490^{+0.078}_{-0.078}$	$f\sigma_8(0.57)$	0.4994	$0.498^{+0.016}_{-0.016}$
$A_{217}^{\text{PS}}$	97.3	$97^{+20}_{-20}$	$z_{\text{re}}$	11.86	$11.5^{+2.7}_{-3.1}$	$\sigma_8(0.57)$	0.6494	$0.647^{+0.021}_{-0.021}$
$A^{\text{kSZ}}$	0.5	—	$10^9 A_s$	2.331	$2.31^{+0.16}_{-0.15}$	$r_{0.002}$	0.000	< 0.136
$A_{100}^{\text{dustTT}}$	7.56	$7.58^{+3.6}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.9145	$1.915^{+0.025}_{-0.024}$	$r_{0.01}$	0.000	< 0.134
$A_{143}^{\text{dustTT}}$	9.15	$9.14^{+3.6}_{-3.6}$	$D_{40}$	1215.9	$1233^{+36}_{-34}$	$\ln(10^{10} A_t)$	-5.85	$-0.3^{+1.9}_{-2.4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.4^{+8.3}_{-8.2}$	$D_{220}$	5725	$5723^{+77}_{-76}$	$r_{10}$	0.0001	< 0.0684
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{810}$	2541.2	$2543^{+27}_{-27}$	$10^9 A_t$	0.000	< 0.306
$A_{100}^{\text{dustEE}}$	0.0826	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	812.5	$813.0^{+9.6}_{-9.4}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.254
$A_{100 \times 143}^{\text{dustEE}}$	0.0502	$0.0493^{+0.0099}_{-0.0098}$	$D_{2000}$	228.23	$228.3^{+3.3}_{-3.2}$	$f_{2000}^{143}$	32.0	$32^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.099^{+0.064}_{-0.064}$	$n_{s,0.002}$	0.9881	$0.9884^{+0.0096}_{-0.0097}$	$f_{2000}^{143 \times 217}$	34.46	$34.4^{+3.8}_{-3.7}$
$A_{143}^{\text{dustEE}}$	0.1016	$0.101^{+0.014}_{-0.014}$	$Y_P$	0.253000	$0.25299^{+0.00014}_{-0.00014}$	$f_{2000}^{217}$	107.76	$107.8^{+3.7}_{-3.6}$
$A_{143 \times 217}^{\text{dustEE}}$	0.219	$0.219^{+0.092}_{-0.090}$	$Y_P^{\text{BBN}}$	0.254354	$0.25434^{+0.00014}_{-0.00014}$	$\chi_{\text{lowTEB}}^2$	10496.0	10497.9 ( $\nu$ : 4.7)
$A_{217}^{\text{dustEE}}$	0.643	$0.64^{+0.25}_{-0.26}$	$10^5 D/H$	2.708	$2.712^{+0.061}_{-0.058}$	$\chi_{\text{plik}}^2$	2441.2	2460.4 ( $\nu$ : 25.1)
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.075}_{-0.074}$	Age/Gyr	13.250	$13.252^{+0.050}_{-0.051}$	$\chi_{\text{prior}}^2$	7.93	20 ( $\nu$ : 16.0)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.057}$	$z_*$	1090.57	$1090.60^{+0.60}_{-0.58}$	$\chi_{\text{CMB}}^2$	12937.2	12958.3 ( $\nu$ : 24.1)
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.16}$	$r_*$	139.65	$139.67^{+0.61}_{-0.62}$			
$A_{143}^{\text{dustTE}}$	0.152	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	1.03983	$1.03983^{+0.00061}_{-0.00062}$			

Best-fit  $\chi_{\text{eff}}^2 = 12945.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 12978.32$ ;  $R - 1 = 0.01145$

$\chi_{\text{eff}}^2$ : CMB - lowL.SMW\_70\_dx11d\_2014\_10\_03.v5c.Ap: 10495.97 plik\_dx11dr2.HM.v18.TTTEE: 2441.22

## 15.5 base\_nnu\_r\_plikHM\_TT\_lowTEB\_nnup39\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022623	$0.02262^{+0.00045}_{-0.00045}$	$\Omega_m h^3$	0.10371	$0.10364^{+0.00093}_{-0.00093}$	$100\theta_D$	0.16174	$0.16176^{+0.00052}_{-0.00050}$
$\Omega_c h^2$	0.12273	$0.1225^{+0.0042}_{-0.0042}$	$\sigma_8$	0.8364	$0.836^{+0.020}_{-0.019}$	$z_{\text{eq}}$	3301	$3294^{+89}_{-89}$
$100\theta_{\text{MC}}$	1.04065	$1.04065^{+0.00090}_{-0.00089}$	$\sigma_8 \Omega_m^{0.5}$	0.4499	$0.449^{+0.018}_{-0.017}$	$k_{\text{eq}}$	0.010334	$0.01031^{+0.00028}_{-0.00028}$
$\tau$	0.0791	$0.079^{+0.033}_{-0.032}$	$\sigma_8 \Omega_m^{0.25}$	0.6134	$0.612^{+0.016}_{-0.016}$	$100\theta_{\text{eq}}$	0.8327	$0.834^{+0.018}_{-0.017}$
$\ln(10^{10} A_s)$	3.099	$3.099^{+0.060}_{-0.057}$	$\sigma_8/h^{0.5}$	0.9924	$0.991^{+0.022}_{-0.023}$	$100\theta_{s,\text{eq}}$	0.4593	$0.4600^{+0.0093}_{-0.0089}$
$n_s$	0.9850	$0.986^{+0.013}_{-0.012}$	$\langle d^2 \rangle^{1/2}$	2.431	$2.427^{+0.053}_{-0.052}$	$r_{\text{drag}}/D_V(0.57)$	0.07281	$0.0729^{+0.0015}_{-0.0014}$
$r$	0.000	< 0.145	$z_{\text{re}}$	10.09	$10.1^{+2.8}_{-3.0}$	$H(0.57)$	96.12	$96.15^{+0.91}_{-0.86}$
$y_{\text{cal}}$	1.00003	$1.0002^{+0.0049}_{-0.0050}$	$10^9 A_s$	2.218	$2.22^{+0.14}_{-0.12}$	$D_A(0.57)$	1331.7	$1331^{+24}_{-24}$
$A_{217}^{\text{CIB}}$	67.7	$66^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8937	$1.893^{+0.026}_{-0.027}$	$F_{\text{AP}}(0.57)$	0.6703	$0.6700^{+0.0061}_{-0.0060}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$D_{40}$	1205.9	$1225^{+40}_{-36}$	$f\sigma_8(0.57)$	0.4801	$0.479^{+0.011}_{-0.011}$
$A_{143}^{\text{tSZ}}$	6.16	$4.75^{+3.9}_{-3.8}$	$D_{220}$	5720	$5717^{+82}_{-81}$	$\sigma_8(0.57)$	0.6279	$0.628^{+0.018}_{-0.017}$
$A_{100}^{\text{PS}}$	264	$265^{+50}_{-50}$	$D_{810}$	2535.9	$2536^{+27}_{-27}$	$r_{0.002}$	0.000	< 0.148
$A_{143}^{\text{PS}}$	42.4	$47^{+20}_{-20}$	$D_{1420}$	813.1	$813^{+10}_{-9.8}$	$r_{0.01}$	0.000	< 0.147
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$D_{2000}$	228.42	$228.5^{+3.7}_{-3.5}$	$\ln(10^{10} A_t)$	-4.89	$-0.2^{+1.9}_{-2.4}$
$A_{217}^{\text{PS}}$	95.7	$96^{+20}_{-20}$	$n_{s,0.002}$	0.9850	$0.986^{+0.013}_{-0.012}$	$r_{10}$	0.0002	< 0.0749
$A^{\text{kSZ}}$	2.05	—	$Y_{\text{P}}$	0.250656	$0.25065^{+0.00020}_{-0.00020}$	$10^9 A_t$	0.001	< 0.322
$A_{100}^{\text{dustTT}}$	7.61	$7.51^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.252001	$0.25200^{+0.00020}_{-0.00020}$	$10^9 A_t e^{-2\tau}$	0.001	< 0.275
$A_{143}^{\text{dustTT}}$	9.32	$9.12^{+3.5}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.677	$2.679^{+0.088}_{-0.084}$	$f_{2000}^{143}$	32.4	$32^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$17.4^{+8.2}_{-8.1}$	$\text{Age}/\text{Gyr}$	13.400	$13.399^{+0.073}_{-0.074}$	$f_{2000}^{143 \times 217}$	34.31	$34^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.9	$82^{+10}_{-10}$	$z_*$	1090.22	$1090.21^{+0.84}_{-0.81}$	$f_{2000}^{217}$	107.69	$107.7^{+3.9}_{-3.9}$
$c_{100}$	0.99791	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	141.66	$141.74^{+0.88}_{-0.86}$	$\chi_{\text{lensing}}^2$	9.40	9.99 ( $\nu$ : 1.1)
$c_{217}$	0.99614	$0.9961^{+0.0028}_{-0.0029}$	$100\theta_*$	1.04056	$1.04057^{+0.00088}_{-0.00087}$	$\chi_{\text{lowTEB}}^2$	10493.57	10496.0 ( $\nu$ : 2.4)
$H_0$	71.03	$71.1^{+1.9}_{-1.9}$	$D_A/\text{Gpc}$	13.614	$13.621^{+0.082}_{-0.079}$	$\chi_{\text{plik}}^2$	768.8	781.5 ( $\nu$ : 15.4)
$\Omega_\Lambda$	0.7107	$0.712^{+0.022}_{-0.024}$	$z_{\text{drag}}$	1061.00	$1060.98^{+0.90}_{-0.88}$	$\chi_{\text{prior}}^2$	2.40	7.60 ( $\nu$ : 6.6)
$\Omega_m$	0.2893	$0.288^{+0.024}_{-0.022}$	$r_{\text{drag}}$	144.21	$144.29^{+0.86}_{-0.85}$	$\chi_{\text{CMB}}^2$	11271.7	11287.4 ( $\nu$ : 16.6)
$\Omega_m h^2$	0.14599	$0.1457^{+0.0039}_{-0.0039}$	$k_D$	0.14267	$0.14258^{+0.00095}_{-0.00097}$			

Best-fit  $\chi_{\text{eff}}^2 = 11274.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 11295.00$ ;  $R - 1 = 0.00927$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.40 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10493.57 plik\_dx11dr2\_HM\_v18.TT: 768.76



## 15.6 base\_nnu\_r\_plikHM\_TTTEE\_lowTEB\_nnup39\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022626	$0.02261^{+0.00031}_{-0.00031}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.15}$	$D_A/\text{Gpc}$	13.584	$13.585^{+0.055}_{-0.056}$
$\Omega_c h^2$	0.12418	$0.1242^{+0.0029}_{-0.0029}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1061.12	$1061.09^{+0.59}_{-0.59}$
$100\theta_{\text{MC}}$	1.04034	$1.04035^{+0.00062}_{-0.00061}$	$c_{100}$	0.99811	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	143.84	$143.86^{+0.58}_{-0.58}$
$\tau$	0.0735	$0.071^{+0.028}_{-0.027}$	$c_{217}$	0.99643	$0.9962^{+0.0028}_{-0.0029}$	$k_D$	0.14308	$0.14304^{+0.00063}_{-0.00063}$
$\ln(10^{10} A_s)$	3.0904	$3.086^{+0.050}_{-0.049}$	$H_0$	70.42	$70.4^{+1.3}_{-1.3}$	$100\theta_D$	0.161642	$0.16167^{+0.00036}_{-0.00035}$
$n_s$	0.9820	$0.9821^{+0.0098}_{-0.0096}$	$\Omega_\Lambda$	0.7026	$0.702^{+0.016}_{-0.017}$	$z_{\text{eq}}$	3334	$3333^{+63}_{-62}$
$r$	0.007	< 0.143	$\Omega_m$	0.2974	$0.298^{+0.017}_{-0.016}$	$k_{\text{eq}}$	0.010438	$0.01044^{+0.00020}_{-0.00019}$
$y_{\text{cal}}$	0.99945	$1.0002^{+0.0048}_{-0.0049}$	$\Omega_m h^2$	0.14746	$0.1474^{+0.0028}_{-0.0027}$	$100\theta_{\text{eq}}$	0.8263	$0.826^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	69.4	$66^{+10}_{-10}$	$\Omega_m h^3$	0.10383	$0.10380^{+0.00061}_{-0.00060}$	$100\theta_{s,\text{eq}}$	0.4560	$0.4560^{+0.0063}_{-0.0062}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8364	$0.835^{+0.017}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.07229	$0.0723^{+0.0010}_{-0.00096}$
$A_{143}^{\text{tSZ}}$	7.10	$4.96^{+3.9}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4561	$0.455^{+0.014}_{-0.013}$	$H(0.57)$	95.88	$95.87^{+0.61}_{-0.58}$
$A_{100}^{\text{PS}}$	262	$268^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6176	$0.616^{+0.013}_{-0.013}$	$D_A(0.57)$	1339.2	$1339^{+16}_{-17}$
$A_{143}^{\text{PS}}$	42.2	$46^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9967	$0.995^{+0.020}_{-0.020}$	$F_{\text{AP}}(0.57)$	0.67241	$0.6724^{+0.0043}_{-0.0043}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4410	$2.436^{+0.048}_{-0.048}$	$f\sigma_8(0.57)$	0.4824	$0.4814^{+0.0098}_{-0.010}$
$A_{217}^{\text{PS}}$	95.7	$95^{+20}_{-20}$	$z_{\text{re}}$	9.61	$9.33^{+2.4}_{-2.6}$	$\sigma_8(0.57)$	0.6258	$0.625^{+0.015}_{-0.015}$
$A^{\text{kSZ}}$	0.5	—	$10^9 A_s$	2.199	$2.19^{+0.11}_{-0.11}$	$r_{0.002}$	0.006	< 0.144
$A_{100}^{\text{dustTT}}$	7.61	$7.61^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8980	$1.900^{+0.023}_{-0.023}$	$r_{0.01}$	0.007	< 0.143
$A_{143}^{\text{dustTT}}$	9.25	$9.21^{+3.6}_{-3.6}$	$D_{40}$	1211.7	$1231^{+38}_{-34}$	$\ln(10^{10} A_t)$	-1.91	$-0.2^{+1.8}_{-2.3}$
$A_{143 \times 217}^{\text{dustTT}}$	18.6	$17.5^{+8.1}_{-8.2}$	$D_{220}$	5714	$5720^{+77}_{-77}$	$r_{10}$	0.0032	< 0.0733
$A_{217}^{\text{dustTT}}$	82.9	$82^{+10}_{-10}$	$D_{810}$	2535.0	$2538^{+26}_{-26}$	$10^9 A_t$	0.015	< 0.313
$A_{100}^{\text{dustEE}}$	0.0823	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	812.4	$813.3^{+9.2}_{-9.2}$	$10^9 A_t e^{-2\tau}$	0.013	< 0.271
$A_{100 \times 143}^{\text{dustEE}}$	0.0500	$0.0492^{+0.0099}_{-0.0096}$	$D_{2000}$	228.22	$228.4^{+3.1}_{-3.1}$	$f_{2000}^{143}$	31.8	$32^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.097	$0.099^{+0.066}_{-0.064}$	$n_{s,0.002}$	0.9820	$0.9821^{+0.0098}_{-0.0096}$	$f_{2000}^{143 \times 217}$	34.26	$34.4^{+3.7}_{-3.7}$
$A_{143}^{\text{dustEE}}$	0.1013	$0.100^{+0.013}_{-0.013}$	$Y_{\text{P}}$	0.250658	$0.25065^{+0.00014}_{-0.00014}$	$f_{2000}^{217}$	107.48	$107.6^{+3.7}_{-3.7}$
$A_{143 \times 217}^{\text{dustEE}}$	0.220	$0.221^{+0.093}_{-0.091}$	$Y_{\text{P}}^{\text{BBN}}$	0.252003	$0.25200^{+0.00014}_{-0.00014}$	$\chi_{\text{lensing}}^2$	10.46	10.7 ( $\nu: 1.8$ )
$A_{217}^{\text{dustEE}}$	0.636	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	2.676	$2.680^{+0.060}_{-0.059}$	$\chi_{\text{lowTEB}}^2$	10493.83	10495.9 ( $\nu: 1.8$ )
$A_{100}^{\text{dustTE}}$	0.142	$0.143^{+0.075}_{-0.075}$	Age/Gyr	13.415	$13.417^{+0.050}_{-0.051}$	$\chi_{\text{plik}}^2$	2441.3	2459.9 ( $\nu: 23.7$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.133^{+0.058}_{-0.058}$	$z_*$	1090.34	$1090.36^{+0.58}_{-0.58}$	$\chi_{\text{prior}}^2$	8.09	20 ( $\nu: 16.1$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.30^{+0.17}_{-0.17}$	$r_*$	141.31	$141.32^{+0.59}_{-0.60}$	$\chi_{\text{CMB}}^2$	12945.6	12966.6 ( $\nu: 23.8$ )
$A_{143}^{\text{dustTE}}$	0.154	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	1.04026	$1.04026^{+0.00061}_{-0.00060}$			

Best-fit  $\chi_{\text{eff}}^2 = 12953.69$ ;  $\bar{\chi}_{\text{eff}}^2 = 12986.64$ ;  $R - 1 = 0.01320$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.46 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.83 plik\_dx11dr2\_HM\_v18\_TTTEE: 2441.31

## 15.7 base\_nnu\_r\_plikHM\_TT\_lowTEB\_nnup57\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022795	$0.02278_{-0.00047}^{+0.00047}$	$\Omega_m h^3$	0.10737	$0.1073_{-0.00099}^{+0.0010}$	$100\theta_D$	0.16209	$0.16210_{-0.00052}^{+0.00053}$
$\Omega_c h^2$	0.12442	$0.1243_{-0.0042}^{+0.0042}$	$\sigma_8$	0.8465	$0.845_{-0.019}^{+0.020}$	$z_{\text{eq}}$	3268	$3266_{-88}^{+88}$
$100\theta_{\text{MC}}$	1.04053	$1.04050_{-0.00090}^{+0.00088}$	$\sigma_8 \Omega_m^{0.5}$	0.4483	$0.447_{-0.017}^{+0.018}$	$k_{\text{eq}}$	0.010349	$0.01034_{-0.00028}^{+0.00028}$
$\tau$	0.0879	$0.084_{-0.034}^{+0.035}$	$\sigma_8 \Omega_m^{0.25}$	0.6160	$0.615_{-0.015}^{+0.016}$	$100\theta_{\text{eq}}$	0.8395	$0.840_{-0.018}^{+0.018}$
$\ln(10^{10} A_s)$	3.118	$3.115_{-0.060}^{+0.061}$	$\sigma_8/h^{0.5}$	0.9934	$0.991_{-0.022}^{+0.022}$	$100\theta_{s,\text{eq}}$	0.4627	$0.4630_{-0.0090}^{+0.0093}$
$n_s$	0.9933	$0.994_{-0.012}^{+0.012}$	$\langle d^2 \rangle^{1/2}$	2.423	$2.417_{-0.050}^{+0.052}$	$r_{\text{drag}}/D_V(0.57)$	0.07333	$0.0734_{-0.0014}^{+0.0015}$
$r$	0.004	< 0.159	$z_{\text{re}}$	10.89	$10.5_{-3.1}^{+2.8}$	$H(0.57)$	97.57	$97.57_{-0.90}^{+0.95}$
$y_{\text{cal}}$	0.99852	$1.0005_{-0.0049}^{+0.0050}$	$10^9 A_s$	2.260	$2.25_{-0.13}^{+0.14}$	$D_A(0.57)$	1307.3	$1307_{-24}^{+24}$
$A_{217}^{\text{CIB}}$	69.1	$66_{-10}^{+10}$	$10^9 A_s e^{-2\tau}$	1.8955	$1.902_{-0.027}^{+0.027}$	$F_{\text{AP}}(0.57)$	0.6680	$0.6679_{-0.0058}^{+0.0060}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1195.4	$1219_{-38}^{+42}$	$f\sigma_8(0.57)$	0.4831	$0.482_{-0.011}^{+0.011}$
$A_{143}^{\text{tSZ}}$	6.11	$4.56_{-4.0}^{+3.8}$	$D_{220}$	5704	$5722_{-78}^{+81}$	$\sigma_8(0.57)$	0.6379	$0.637_{-0.018}^{+0.018}$
$A_{100}^{\text{PS}}$	265	$269_{-50}^{+50}$	$D_{810}$	2529.7	$2539_{-27}^{+27}$	$r_{0.002}$	0.004	< 0.167
$A_{143}^{\text{PS}}$	44.4	$48_{-20}^{+20}$	$D_{1420}$	810.0	$813_{-9.9}^{+10}$	$r_{0.01}$	0.004	< 0.163
$A_{143 \times 217}^{\text{PS}}$	34	$40_{-20}^{+20}$	$D_{2000}$	227.05	$228.0_{-3.5}^{+3.6}$	$\ln(10^{10} A_t)$	-2.39	$-0.1_{-2.4}^{+1.9}$
$A_{217}^{\text{PS}}$	95.4	$96_{-20}^{+20}$	$n_{s,0.002}$	0.9933	$0.994_{-0.012}^{+0.012}$	$r_{10}$	0.0020	< 0.0843
$A^{\text{kSZ}}$	1.91	—	$Y_{\text{P}}$	0.253007	$0.25300_{-0.00021}^{+0.00021}$	$10^9 A_t$	0.009	< 0.358
$A_{100}^{\text{dustTT}}$	7.60	$7.56_{-3.7}^{+3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.254361	$0.25436_{-0.00021}^{+0.00021}$	$10^9 A_t e^{-2\tau}$	0.008	< 0.303
$A_{143}^{\text{dustTT}}$	9.32	$9.13_{-3.6}^{+3.5}$	$10^5 \text{D}/\text{H}$	2.705	$2.708_{-0.088}^{+0.091}$	$f_{2000}^{143}$	33.2	$33_{-6}^{+6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.4_{-8.2}^{+8.2}$	$\text{Age}/\text{Gyr}$	13.223	$13.224_{-0.075}^{+0.074}$	$f_{2000}^{143 \times 217}$	35.12	$35_{-4}^{+4}$
$A_{217}^{\text{dustTT}}$	81.3	$82_{-10}^{+10}$	$z_*$	1090.32	$1090.33_{-0.85}^{+0.86}$	$f_{2000}^{217}$	108.16	$108.4_{-4.0}^{+4.0}$
$c_{100}$	0.99787	$0.9979_{-0.0015}^{+0.0015}$	$r_*$	140.29	$140.32_{-0.84}^{+0.86}$	$\chi_{\text{lensing}}^2$	9.48	10.0 ( $\nu$ : 0.9)
$c_{217}$	0.99621	$0.9962_{-0.0028}^{+0.0028}$	$100\theta_*$	1.04032	$1.04029_{-0.00088}^{+0.00086}$	$\chi_{\text{lowTEB}}^2$	10493.64	10495.7 ( $\nu$ : 2.7)
$H_0$	72.62	$72.6_{-1.9}^{+2.0}$	$D_A/\text{Gpc}$	13.486	$13.489_{-0.079}^{+0.080}$	$\chi_{\text{plik}}^2$	770.2	783.1 ( $\nu$ : 15.9)
$\Omega_\Lambda$	0.7196	$0.720_{-0.023}^{+0.022}$	$z_{\text{drag}}$	1061.69	$1061.64_{-0.90}^{+0.93}$	$\chi_{\text{prior}}^2$	2.78	7.61 ( $\nu$ : 6.7)
$\Omega_m$	0.2804	$0.280_{-0.022}^{+0.023}$	$r_{\text{drag}}$	142.77	$142.80_{-0.83}^{+0.85}$	$\chi_{\text{CMB}}^2$	11273.3	11288.8 ( $\nu$ : 16.6)
$\Omega_m h^2$	0.14786	$0.1478_{-0.0040}^{+0.0040}$	$k_D$	0.14373	$0.14368_{-0.00097}^{+0.00095}$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 11296.42$ ;  $R - 1 = 0.00818$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.48 lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10493.64 plik\_dx11dr2\_HM\_v18.TT: 770.22

## 15.8 base\_nnu\_r\_plikHM\_TTTEE\_lowTEB\_nup57\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022758	$0.02277^{+0.00031}_{-0.00032}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.440	$13.446^{+0.054}_{-0.055}$
$\Omega_c h^2$	0.12677	$0.1265^{+0.0031}_{-0.0030}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1061.76	$1061.77^{+0.61}_{-0.60}$
$100\theta_{\text{MC}}$	1.04011	$1.04013^{+0.00062}_{-0.00063}$	$c_{100}$	0.99806	$0.9980^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	142.24	$142.30^{+0.56}_{-0.58}$
$\tau$	0.0731	$0.075^{+0.027}_{-0.027}$	$c_{217}$	0.99625	$0.9963^{+0.0028}_{-0.0028}$	$k_D$	0.14429	$0.14424^{+0.00065}_{-0.00063}$
$\ln(10^{10} A_s)$	3.096	$3.099^{+0.050}_{-0.051}$	$H_0$	71.60	$71.7^{+1.4}_{-1.4}$	$100\theta_D$	0.161996	$0.16199^{+0.00037}_{-0.00034}$
$n_s$	0.9881	$0.9893^{+0.0097}_{-0.0096}$	$\Omega_\Lambda$	0.7071	$0.709^{+0.016}_{-0.017}$	$z_{\text{eq}}$	3319	$3313^{+64}_{-62}$
$r$	0.023	< 0.156	$\Omega_m$	0.2929	$0.291^{+0.017}_{-0.016}$	$k_{\text{eq}}$	0.010511	$0.01049^{+0.00020}_{-0.00020}$
$y_{\text{cal}}$	0.99979	$1.0002^{+0.0049}_{-0.0049}$	$\Omega_m h^2$	0.15017	$0.1499^{+0.0029}_{-0.0028}$	$100\theta_{\text{eq}}$	0.8293	$0.831^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	69.8	$67^{+10}_{-10}$	$\Omega_m h^3$	0.10753	$0.10751^{+0.00064}_{-0.00065}$	$100\theta_{s,\text{eq}}$	0.4574	$0.4581^{+0.0063}_{-0.0064}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8433	$0.844^{+0.018}_{-0.018}$	$r_{\text{drag}}/D_V(0.57)$	0.07252	$0.0726^{+0.0010}_{-0.0010}$
$A_{143}^{\text{tSZ}}$	6.44	$4.81^{+3.9}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4564	$0.456^{+0.014}_{-0.014}$	$H(0.57)$	97.15	$97.21^{+0.62}_{-0.61}$
$A_{100}^{\text{PS}}$	268	$271^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.620^{+0.013}_{-0.014}$	$D_A(0.57)$	1319.3	$1318^{+17}_{-16}$
$A_{143}^{\text{PS}}$	43.5	$48^{+10}_{-20}$	$\sigma_8/h^{0.5}$	0.9966	$0.997^{+0.020}_{-0.021}$	$F_{\text{AP}}(0.57)$	0.67125	$0.6708^{+0.0044}_{-0.0042}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4305	$2.429^{+0.047}_{-0.048}$	$f\sigma_8(0.57)$	0.4851	$0.485^{+0.010}_{-0.010}$
$A_{217}^{\text{PS}}$	94.5	$95^{+20}_{-20}$	$z_{\text{re}}$	9.61	$9.73^{+2.5}_{-2.6}$	$\sigma_8(0.57)$	0.6321	$0.633^{+0.015}_{-0.015}$
$A^{\text{kSZ}}$	2.01	—	$10^9 A_s$	2.211	$2.22^{+0.11}_{-0.11}$	$r_{0.002}$	0.022	< 0.161
$A_{100}^{\text{dustTT}}$	7.71	$7.69^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.9100	$1.910^{+0.023}_{-0.023}$	$r_{0.01}$	0.023	< 0.158
$A_{143}^{\text{dustTT}}$	9.35	$9.29^{+3.6}_{-3.5}$	$D_{40}$	1210.6	$1224^{+39}_{-36}$	$\ln(10^{10} A_t)$	-0.68	$-0.1^{+1.8}_{-2.3}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.6^{+8.3}_{-8.1}$	$D_{220}$	5718	$5720^{+75}_{-75}$	$r_{10}$	0.0112	< 0.0819
$A_{217}^{\text{dustTT}}$	81.5	$82^{+10}_{-10}$	$D_{810}$	2538.7	$2540^{+26}_{-26}$	$10^9 A_t$	0.051	< 0.344
$A_{100}^{\text{dustEE}}$	0.0823	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	811.9	$812.7^{+9.3}_{-9.4}$	$10^9 A_t e^{-2\tau}$	0.044	< 0.296
$A_{100 \times 143}^{\text{dustEE}}$	0.0500	$0.0496^{+0.0098}_{-0.0099}$	$D_{2000}$	227.41	$227.7^{+3.1}_{-3.1}$	$f_{2000}^{143}$	33.2	$33^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.101	$0.099^{+0.063}_{-0.064}$	$n_{s,0.002}$	0.9881	$0.9893^{+0.0097}_{-0.0096}$	$f_{2000}^{143 \times 217}$	35.27	$35.1^{+3.7}_{-3.7}$
$A_{143}^{\text{dustEE}}$	0.1013	$0.101^{+0.014}_{-0.013}$	$Y_P$	0.252991	$0.25300^{+0.00014}_{-0.00014}$	$f_{2000}^{217}$	108.40	$108.3^{+3.7}_{-3.7}$
$A_{143 \times 217}^{\text{dustEE}}$	0.220	$0.219^{+0.090}_{-0.090}$	$Y_P^{\text{BBN}}$	0.254345	$0.25435^{+0.00014}_{-0.00014}$	$\chi_{\text{lensing}}^2$	10.43	11.0 ( $\nu$ : 1.9)
$A_{217}^{\text{dustEE}}$	0.637	$0.64^{+0.26}_{-0.26}$	$10^5 D/H$	2.712	$2.709^{+0.062}_{-0.059}$	$\chi_{\text{lowTEB}}^2$	10493.60	10495.4 ( $\nu$ : 2.0)
$A_{100}^{\text{dustTE}}$	0.142	$0.142^{+0.074}_{-0.074}$	Age/Gyr	13.249	$13.245^{+0.051}_{-0.050}$	$\chi_{\text{plik}}^2$	2446.4	2464.5 ( $\nu$ : 24.4)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.133^{+0.057}_{-0.057}$	$z_*$	1090.56	$1090.52^{+0.61}_{-0.58}$	$\chi_{\text{prior}}^2$	8.28	20 ( $\nu$ : 16.3)
$A_{100 \times 217}^{\text{dustTE}}$	0.300	$0.30^{+0.17}_{-0.16}$	$r_*$	139.76	$139.82^{+0.58}_{-0.60}$	$\chi_{\text{CMB}}^2$	12950.5	12970.9 ( $\nu$ : 24.2)
$A_{143}^{\text{dustTE}}$	0.154	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	1.03989	$1.03992^{+0.00061}_{-0.00062}$			

Best-fit  $\chi_{\text{eff}}^2 = 12958.73$ ;  $\bar{\chi}_{\text{eff}}^2 = 12991.26$ ;  $R - 1 = 0.01465$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full.pp: 10.43 lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10493.60 plik\_dx11dr2\_HM.v18.TTTEE: 2446.42

# 16 nnu+yhe

## 16.1 base\_nnu\_yhe\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02226	$0.02231^{+0.00075}_{-0.00071}$	$\Omega_\Lambda$	0.6831	$0.688^{+0.041}_{-0.045}$	$D_A/\text{Gpc}$	13.99	$13.88^{+0.81}_{-0.83}$
$\Omega_c h^2$	0.1178	$0.120^{+0.015}_{-0.015}$	$\Omega_m$	0.3169	$0.312^{+0.045}_{-0.041}$	$z_{\text{drag}}$	1059.82	$1060.0^{+2.7}_{-2.6}$
$100\theta_{\text{MC}}$	1.04150	$1.0411^{+0.0037}_{-0.0038}$	$\Omega_m h^2$	0.1407	$0.143^{+0.015}_{-0.015}$	$r_{\text{drag}}$	148.5	$147.2^{+9.1}_{-9.2}$
$\tau$	0.0787	$0.081^{+0.044}_{-0.041}$	$\Omega_m h^3$	0.0938	$0.097^{+0.020}_{-0.019}$	$k_D$	0.1394	$0.1406^{+0.0086}_{-0.0085}$
$N_{\text{eff}}$	2.91	$3.09^{+1.1}_{-1.1}$	$\sigma_8$	0.8275	$0.833^{+0.050}_{-0.046}$	$100\theta_D$	0.16108	$0.1612^{+0.0016}_{-0.0015}$
$Y_P$	0.256	$0.250^{+0.058}_{-0.065}$	$\sigma_8 \Omega_m^{0.5}$	0.4658	$0.465^{+0.027}_{-0.026}$	$z_{\text{eq}}$	3409	$3387^{+180}_{-170}$
$\ln(10^{10} A_s)$	3.089	$3.097^{+0.095}_{-0.091}$	$\sigma_8 \Omega_m^{0.25}$	0.6209	$0.622^{+0.029}_{-0.027}$	$k_{\text{eq}}$	0.010310	$0.01035^{+0.00045}_{-0.00044}$
$n_s$	0.9656	$0.969^{+0.031}_{-0.031}$	$\sigma_8/h^{0.5}$	1.0137	$1.013^{+0.039}_{-0.039}$	$100\theta_{\text{eq}}$	0.8121	$0.816^{+0.032}_{-0.031}$
$y_{\text{cal}}$	1.00027	$1.0004^{+0.0048}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	2.501	$2.497^{+0.096}_{-0.095}$	$100\theta_{s,\text{eq}}$	0.4488	$0.451^{+0.016}_{-0.016}$
$A_{217}^{\text{CIB}}$	67.4	$64^{+10}_{-10}$	$z_{\text{re}}$	10.06	$10.2^{+3.7}_{-4.0}$	$r_{\text{drag}}/D_V(0.57)$	0.07131	$0.0716^{+0.0023}_{-0.0022}$
$\xi^{\text{tSZ}} \times \text{CIB}$	0.00	—	$10^9 A_s$	2.196	$2.22^{+0.22}_{-0.20}$	$H(0.57)$	92.1	$93.2^{+7.3}_{-7.2}$
$A_{143}^{\text{tSZ}}$	7.09	$5.01^{+3.8}_{-3.9}$	$10^9 A_s e^{-2\tau}$	1.876	$1.882^{+0.049}_{-0.053}$	$D_A(0.57)$	1405	$1387^{+130}_{-120}$
$A_{100}^{\text{PS}}$	255	$260^{+60}_{-60}$	$D_{40}$	1234.3	$1233^{+45}_{-44}$	$F_{\text{AP}}(0.57)$	0.6774	$0.676^{+0.011}_{-0.011}$
$A_{143}^{\text{PS}}$	39.9	$45^{+20}_{-20}$	$D_{220}$	5715	$5718^{+81}_{-83}$	$f\sigma_8(0.57)$	0.4825	$0.484^{+0.023}_{-0.022}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2534.1	$2535^{+27}_{-28}$	$\sigma_8(0.57)$	0.6143	$0.620^{+0.045}_{-0.042}$
$A_{217}^{\text{PS}}$	97.8	$97^{+20}_{-20}$	$D_{1420}$	814.3	$814^{+10}_{-10}$	$f_{2000}^{143}$	30.2	$31^{+7}_{-7}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.10	$229.9^{+4.7}_{-4.7}$	$f_{2000}^{143 \times 217}$	32.7	$33^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.41	$7.44^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9656	$0.969^{+0.031}_{-0.031}$	$f_{2000}^{217}$	106.4	$106.5^{+5.2}_{-5.2}$
$A_{143}^{\text{dustTT}}$	9.06	$9.01^{+3.6}_{-3.6}$	$Y_P$	0.256	$0.250^{+0.058}_{-0.065}$	$\chi_{\text{lowTEB}}^2$	10496.4	10497.4 ( $\nu: 4.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.1^{+8.2}_{-8.2}$	$Y_P^{\text{BBN}}$	0.257	$0.252^{+0.058}_{-0.065}$	$\chi_{\text{plik}}^2$	763.4	779.1 ( $\nu: 19.0$ )
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	Age/Gyr	13.93	$13.79^{+0.98}_{-0.97}$	$\chi_{\text{prior}}^2$	2.05	7.40 ( $\nu: 6.4$ )
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1090.24	$1090.2^{+1.4}_{-1.4}$	$\chi_{\text{CMB}}^2$	11259.8	11276.5 ( $\nu: 17.3$ )
$c_{217}$	0.99601	$0.9960^{+0.0029}_{-0.0028}$	$r_*$	145.7	$144.5^{+8.8}_{-8.9}$			
$H_0$	66.6	$67.8^{+7.3}_{-7.2}$	$100\theta_*$	1.04144	$1.0411^{+0.0027}_{-0.0026}$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.85$ ;  $\Delta\chi_{\text{eff}}^2 = -0.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.88$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.07$ ;  $R - 1 = 0.00751$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.38 ( $\Delta -0.09$ ) plik\_dx11dr2\_HM\_v18\_TT: 763.42 ( $\Delta 0.05$ )

## 16.2 base\_nnu\_yhe\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02234	$0.02234^{+0.00050}_{-0.00050}$	$\Omega_m$	0.3091	$0.309^{+0.018}_{-0.017}$	$r_{\text{drag}}$	147.4	$146.8^{+7.6}_{-7.6}$
$\Omega_c h^2$	0.1189	$0.120^{+0.014}_{-0.014}$	$\Omega_m h^2$	0.1419	$0.143^{+0.014}_{-0.014}$	$k_D$	0.1402	$0.1409^{+0.0075}_{-0.0070}$
$100\theta_{\text{MC}}$	1.04118	$1.0410^{+0.0036}_{-0.0036}$	$\Omega_m h^3$	0.0962	$0.098^{+0.016}_{-0.015}$	$100\theta_D$	0.16116	$0.1612^{+0.0014}_{-0.0014}$
$\tau$	0.0827	$0.082^{+0.036}_{-0.036}$	$\sigma_8$	0.8322	$0.834^{+0.042}_{-0.039}$	$z_{\text{eq}}$	3377	$3374^{+88}_{-86}$
$N_{\text{eff}}$	3.04	$3.13^{+0.88}_{-0.88}$	$\sigma_8 \Omega_m^{0.5}$	0.4627	$0.463^{+0.022}_{-0.021}$	$k_{\text{eq}}$	0.010306	$0.01035^{+0.00044}_{-0.00044}$
$Y_{\text{P}}$	0.252	$0.249^{+0.058}_{-0.063}$	$\sigma_8 \Omega_m^{0.25}$	0.6205	$0.622^{+0.029}_{-0.027}$	$100\theta_{\text{eq}}$	0.8179	$0.819^{+0.015}_{-0.014}$
$\ln(10^{10} A_s)$	3.099	$3.100^{+0.073}_{-0.073}$	$\sigma_8/h^{0.5}$	1.0110	$1.011^{+0.038}_{-0.037}$	$100\theta_{s,\text{eq}}$	0.4518	$0.4521^{+0.0076}_{-0.0075}$
$n_s$	0.9705	$0.971^{+0.018}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	2.491	$2.491^{+0.083}_{-0.082}$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.07174^{+0.00094}_{-0.00091}$
$y_{\text{cal}}$	1.00028	$1.0004^{+0.0049}_{-0.0050}$	$z_{\text{re}}$	10.40	$10.3^{+3.3}_{-3.4}$	$H(0.57)$	93.1	$93.6^{+5.2}_{-5.2}$
$A_{217}^{\text{CIB}}$	67.3	$64^{+10}_{-10}$	$10^9 A_s$	2.218	$2.22^{+0.17}_{-0.16}$	$D_A(0.57)$	1385	$1379^{+80}_{-80}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$10^9 A_s e^{-2\tau}$	1.8798	$1.884^{+0.046}_{-0.048}$	$F_{\text{AP}}(0.57)$	0.67541	$0.6753^{+0.0045}_{-0.0045}$
$A_{143}^{\text{tSZ}}$	7.12	$5.02^{+3.8}_{-3.9}$	$D_{40}$	1228.4	$1230^{+34}_{-33}$	$f\sigma_8(0.57)$	0.4832	$0.484^{+0.023}_{-0.021}$
$A_{100}^{\text{PS}}$	254	$260^{+60}_{-60}$	$D_{220}$	5716	$5719^{+80}_{-81}$	$\sigma_8(0.57)$	0.6197	$0.622^{+0.033}_{-0.031}$
$A_{143}^{\text{PS}}$	39.6	$45^{+20}_{-20}$	$D_{810}$	2534.6	$2535^{+28}_{-28}$	$f_{2000}^{143}$	30.0	$31^{+7}_{-7}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{1420}$	814.5	$814^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	32.6	$33^{+6}_{-6}$
$A_{217}^{\text{PS}}$	97.8	$97^{+20}_{-20}$	$D_{2000}$	230.08	$229.8^{+4.8}_{-4.7}$	$f_{2000}^{217}$	106.3	$106.6^{+5.1}_{-5.3}$
$A^{\text{kSZ}}$	0.0	—	$n_{s,0.002}$	0.9705	$0.971^{+0.018}_{-0.017}$	$\chi_{\text{lowTEB}}^2$	10495.99	10496.9 ( $\nu: 3.2$ )
$A_{100}^{\text{dustTT}}$	7.52	$7.43^{+3.7}_{-3.7}$	$Y_{\text{P}}$	0.252	$0.249^{+0.058}_{-0.063}$	$\chi_{\text{plik}}^2$	763.9	778.9 ( $\nu: 18.0$ )
$A_{143}^{\text{dustTT}}$	9.03	$9.02^{+3.6}_{-3.5}$	$Y_{\text{P}}^{\text{BBN}}$	0.254	$0.251^{+0.058}_{-0.064}$	$\chi_{6\text{DF}}^2$	0.015	0.063 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.1}_{-8.3}$	Age/Gyr	13.79	$13.73^{+0.73}_{-0.73}$	$\chi_{\text{MGS}}^2$	1.34	1.47 ( $\nu: 0.2$ )
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$z_*$	1090.14	$1090.2^{+1.3}_{-1.3}$	$\chi_{\text{DR11CMAS}}^2$	2.42	2.97 ( $\nu: 0.3$ )
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.7	$144.1^{+7.5}_{-7.5}$	$\chi_{\text{DR11LOWZ}}^2$	0.54	0.68 ( $\nu: 0.2$ )
$c_{217}$	0.99597	$0.9960^{+0.0029}_{-0.0029}$	$100\theta_*$	1.04119	$1.0411^{+0.0025}_{-0.0024}$	$\chi_{\text{prior}}^2$	2.05	7.41 ( $\nu: 6.4$ )
$H_0$	67.76	$68.1^{+4.4}_{-4.4}$	$D_A/\text{Gpc}$	13.90	$13.84^{+0.68}_{-0.69}$	$\chi_{\text{CMB}}^2$	11259.9	11275.8 ( $\nu: 16.4$ )
$\Omega_\Lambda$	0.6909	$0.691^{+0.017}_{-0.018}$	$z_{\text{drag}}$	1060.05	$1060.1^{+2.2}_{-2.2}$	$\chi_{\text{BAO}}^2$	4.33	5.18 ( $\nu: 0.7$ )

Best-fit  $\chi_{\text{eff}}^2 = 11266.29$ ;  $\Delta\chi_{\text{eff}}^2 = -0.15$ ;  $\bar{\chi}_{\text{eff}}^2 = 11288.34$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.97$ ;  $R - 1 = 0.00475$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta -0.01$ ) MGS: 1.34 ( $\Delta 0.06$ ) DR11CMAS: 2.42 ( $\Delta -0.03$ ) DR11LOWZ: 0.54 ( $\Delta -0.07$ ) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10495.99 ( $\Delta -0.43$ ) plik\_dx11dr2\_HM\_v18\_TT: 763.93 ( $\Delta 0.33$ )

### 16.3 base\_nnu\_yhe\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02240	$0.02241^{+0.00065}_{-0.00063}$	$\Omega_\Lambda$	0.6955	$0.696^{+0.031}_{-0.033}$	$D_A/\text{Gpc}$	13.75	$13.72^{+0.61}_{-0.60}$
$\Omega_c h^2$	0.1216	$0.122^{+0.013}_{-0.012}$	$\Omega_m$	0.3045	$0.304^{+0.033}_{-0.031}$	$z_{\text{drag}}$	1060.12	$1060.2^{+2.6}_{-2.4}$
$100\theta_{\text{MC}}$	1.04060	$1.0406^{+0.0032}_{-0.0032}$	$\Omega_m h^2$	0.1447	$0.145^{+0.013}_{-0.012}$	$r_{\text{drag}}$	145.7	$145.4^{+6.8}_{-6.6}$
$\tau$	0.0858	$0.085^{+0.042}_{-0.040}$	$\Omega_m h^3$	0.0997	$0.101^{+0.015}_{-0.014}$	$k_D$	0.1418	$0.1421^{+0.0066}_{-0.0063}$
$N_{\text{eff}}$	3.24	$3.29^{+0.82}_{-0.76}$	$\sigma_8$	0.8401	$0.841^{+0.041}_{-0.039}$	$100\theta_D$	0.16115	$0.1613^{+0.0015}_{-0.0015}$
$Y_P$	0.244	$0.244^{+0.055}_{-0.060}$	$\sigma_8 \Omega_m^{0.5}$	0.4636	$0.463^{+0.026}_{-0.025}$	$z_{\text{eq}}$	3355	$3351^{+130}_{-120}$
$\ln(10^{10} A_s)$	3.110	$3.109^{+0.086}_{-0.082}$	$\sigma_8 \Omega_m^{0.25}$	0.6241	$0.624^{+0.028}_{-0.027}$	$k_{\text{eq}}$	0.010372	$0.01039^{+0.00043}_{-0.00041}$
$n_s$	0.9735	$0.975^{+0.025}_{-0.024}$	$\sigma_8/h^{0.5}$	1.0119	$1.011^{+0.039}_{-0.039}$	$100\theta_{\text{eq}}$	0.8217	$0.823^{+0.023}_{-0.023}$
$y_{\text{cal}}$	1.00037	$1.0004^{+0.0049}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	2.492	$2.488^{+0.090}_{-0.089}$	$100\theta_{s,\text{eq}}$	0.4538	$0.454^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	66.7	$64^{+10}_{-10}$	$z_{\text{re}}$	10.68	$10.5^{+3.5}_{-3.8}$	$r_{\text{drag}}/D_V(0.57)$	0.07193	$0.0720^{+0.0018}_{-0.0017}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.07	—	$10^9 A_s$	2.241	$2.24^{+0.20}_{-0.19}$	$H(0.57)$	94.4	$94.7^{+5.1}_{-4.9}$
$A_{143}^{\text{tSZ}}$	7.03	$5.00^{+3.8}_{-3.9}$	$10^9 A_s e^{-2\tau}$	1.8881	$1.890^{+0.041}_{-0.043}$	$D_A(0.57)$	1364	$1360^{+86}_{-80}$
$A_{100}^{\text{PS}}$	254	$261^{+60}_{-60}$	$D_{40}$	1228.0	$1228^{+41}_{-41}$	$F_{\text{AP}}(0.57)$	0.6743	$0.6740^{+0.0083}_{-0.0080}$
$A_{143}^{\text{PS}}$	40.5	$45^{+20}_{-20}$	$D_{220}$	5720	$5721^{+81}_{-81}$	$f\sigma_8(0.57)$	0.4866	$0.486^{+0.022}_{-0.021}$
$A_{143 \times 217}^{\text{PS}}$	35	$39^{+20}_{-20}$	$D_{810}$	2536.3	$2536^{+28}_{-28}$	$\sigma_8(0.57)$	0.6267	$0.627^{+0.035}_{-0.033}$
$A_{217}^{\text{PS}}$	98.4	$97^{+20}_{-20}$	$D_{1420}$	815.0	$814^{+10}_{-10}$	$f_{2000}^{143}$	29.8	$31^{+7}_{-7}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.26	$229.8^{+4.8}_{-4.7}$	$f_{2000}^{143 \times 217}$	32.5	$33^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.43	$7.44^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9735	$0.975^{+0.025}_{-0.024}$	$f_{2000}^{217}$	106.1	$106.5^{+5.1}_{-5.3}$
$A_{143}^{\text{dustTT}}$	9.04	$9.02^{+3.6}_{-3.6}$	$Y_P$	0.244	$0.244^{+0.055}_{-0.060}$	$\chi_{\text{lowTEB}}^2$	10496.1	10497.0 ( $\nu: 3.7$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.2}_{-8.2}$	$Y_P^{\text{BBN}}$	0.245	$0.245^{+0.055}_{-0.060}$	$\chi_{\text{plik}}^2$	764.2	779.4 ( $\nu: 18.5$ )
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	Age/Gyr	13.61	$13.58^{+0.69}_{-0.66}$	$\chi_{\text{H070p6}}^2$	0.25	0.72 ( $\nu: 0.5$ )
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1090.03	$1090.1^{+1.3}_{-1.3}$	$\chi_{\text{prior}}^2$	1.95	7.40 ( $\nu: 6.4$ )
$c_{217}$	0.99596	$0.9960^{+0.0029}_{-0.0029}$	$r_*$	143.1	$142.8^{+6.7}_{-6.5}$	$\chi_{\text{CMB}}^2$	11260.3	11276.3 ( $\nu: 16.7$ )
$H_0$	68.92	$69.2^{+4.9}_{-4.8}$	$100\theta_*$	1.04077	$1.0407^{+0.0022}_{-0.0021}$			

Best-fit  $\chi_{\text{eff}}^2 = 11262.50$ ;  $\Delta\chi_{\text{eff}}^2 = -0.32$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.44$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.74$ ;  $R - 1 = 0.00516$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c.Ap: 10496.11 ( $\Delta -0.21$ ) plik\_dx11dr2\_HM\_v18\_TT: 764.18 ( $\Delta 0.52$ ) Hubble - H070p6: 0.25 ( $\Delta -0.57$ )

## 16.4 base\_nnu\_yhe\_plikHM\_TT\_lowTEB\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02236	$0.02237^{+0.00050}_{-0.00050}$	$\Omega_m h^2$	0.1446	$0.145^{+0.013}_{-0.012}$	$100\theta_D$	0.16110	$0.1612^{+0.0014}_{-0.0014}$
$\Omega_c h^2$	0.1216	$0.122^{+0.013}_{-0.012}$	$\Omega_m h^3$	0.0994	$0.100^{+0.014}_{-0.013}$	$z_{\text{eq}}$	3359	$3359^{+75}_{-75}$
$100\theta_{\text{MC}}$	1.04051	$1.0405^{+0.0032}_{-0.0032}$	$\sigma_8$	0.8385	$0.839^{+0.039}_{-0.037}$	$k_{\text{eq}}$	0.010377	$0.01040^{+0.00040}_{-0.00038}$
$\tau$	0.0842	$0.083^{+0.036}_{-0.036}$	$\sigma_8 \Omega_m^{0.5}$	0.4639	$0.464^{+0.022}_{-0.021}$	$100\theta_{\text{eq}}$	0.8209	$0.821^{+0.013}_{-0.013}$
$N_{\text{eff}}$	3.23	$3.27^{+0.78}_{-0.72}$	$\sigma_8 \Omega_m^{0.25}$	0.6236	$0.624^{+0.028}_{-0.027}$	$100\theta_{\text{s,eq}}$	0.4533	$0.4534^{+0.0066}_{-0.0065}$
$Y_{\text{P}}$	0.242	$0.243^{+0.054}_{-0.059}$	$\sigma_8/h^{0.5}$	1.0113	$1.011^{+0.038}_{-0.037}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07185	$0.07187^{+0.00088}_{-0.00085}$
$\ln(10^{10} A_{\text{s}})$	3.106	$3.104^{+0.073}_{-0.073}$	$\langle d^2 \rangle^{1/2}$	2.493	$2.489^{+0.083}_{-0.083}$	$H(0.57)$	94.23	$94.5^{+4.4}_{-4.3}$
$n_{\text{s}}$	0.9719	$0.973^{+0.017}_{-0.017}$	$z_{\text{re}}$	10.54	$10.4^{+3.3}_{-3.4}$	$D_{\text{A}}(0.57)$	1367	$1364^{+67}_{-66}$
$y_{\text{cal}}$	1.00026	$1.0004^{+0.0049}_{-0.0050}$	$10^9 A_{\text{s}}$	2.233	$2.23^{+0.17}_{-0.16}$	$F_{\text{AP}}(0.57)$	0.67464	$0.6746^{+0.0041}_{-0.0040}$
$A_{217}^{\text{CIB}}$	67.4	$64^{+10}_{-10}$	$10^9 A_{\text{s}} e^{-2\tau}$	1.8869	$1.890^{+0.041}_{-0.043}$	$f\sigma_8(0.57)$	0.4860	$0.486^{+0.022}_{-0.021}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1229.8	$1230^{+34}_{-33}$	$\sigma_8(0.57)$	0.6251	$0.626^{+0.031}_{-0.029}$
$A_{143}^{\text{tSZ}}$	7.20	$5.02^{+3.8}_{-3.9}$	$D_{220}$	5718	$5720^{+80}_{-80}$	$f_{2000}^{143}$	29.9	$31^{+7}_{-7}$
$A_{100}^{\text{PS}}$	253	$260^{+60}_{-60}$	$D_{810}$	2534.9	$2536^{+28}_{-28}$	$f_{2000}^{143 \times 217}$	32.4	$33^{+6}_{-6}$
$A_{143}^{\text{PS}}$	39.1	$45^{+20}_{-20}$	$D_{1420}$	814.5	$814^{+10}_{-10}$	$f_{2000}^{217}$	106.0	$106.5^{+5.1}_{-5.3}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.15	$229.8^{+4.8}_{-4.7}$	$\chi_{\text{lowTEB}}^2$	10496.20	$10496.8 (\nu: 3.2)$
$A_{217}^{\text{PS}}$	97.1	$97^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9719	$0.973^{+0.017}_{-0.017}$	$\chi_{\text{plik}}^2$	763.9	$779.0 (\nu: 17.7)$
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.242	$0.243^{+0.054}_{-0.059}$	$\chi_{\text{H070p6}}^2$	0.31	$0.55 (\nu: 0.2)$
$A_{100}^{\text{dustTT}}$	7.54	$7.43^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.243	$0.244^{+0.054}_{-0.059}$	$\chi_{\text{JLA}}^2$	706.614	$706.66 (\nu: 0.0)$
$A_{143}^{\text{dustTT}}$	8.99	$9.02^{+3.6}_{-3.5}$	Age/Gyr	13.63	$13.60^{+0.62}_{-0.60}$	$\chi_{6\text{DF}}^2$	0.003	$0.046 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.2^{+8.2}_{-8.3}$	$z_*$	1090.02	$1090.1^{+1.3}_{-1.3}$	$\chi_{\text{MGS}}^2$	1.54	$1.64 (\nu: 0.2)$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$r_*$	143.1	$142.9^{+6.5}_{-6.3}$	$\chi_{\text{DR11CMass}}^2$	2.43	$2.91 (\nu: 0.2)$
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04074	$1.0407^{+0.0022}_{-0.0021}$	$\chi_{\text{DR11LOWZ}}^2$	0.38	$0.50 (\nu: 0.1)$
$c_{217}$	0.99588	$0.9960^{+0.0029}_{-0.0029}$	$D_{\text{A}}/\text{Gpc}$	13.75	$13.73^{+0.60}_{-0.58}$	$\chi_{\text{prior}}^2$	2.09	$7.41 (\nu: 6.5)$
$H_0$	68.75	$69.0^{+3.7}_{-3.5}$	$z_{\text{drag}}$	1060.01	$1060.1^{+2.2}_{-2.2}$	$\chi_{\text{CMB}}^2$	11260.1	$11275.8 (\nu: 16.3)$
$\Omega_{\Lambda}$	0.6940	$0.694^{+0.016}_{-0.016}$	$r_{\text{drag}}$	145.8	$145.5^{+6.6}_{-6.4}$	$\chi_{\text{BAO}}^2$	4.35	$5.10 (\nu: 0.5)$
$\Omega_{\text{m}}$	0.3060	$0.306^{+0.016}_{-0.016}$	$k_{\text{D}}$	0.1418	$0.1420^{+0.0065}_{-0.0062}$			

Best-fit  $\chi_{\text{eff}}^2 = 11973.47$ ;  $\bar{\chi}_{\text{eff}}^2 = 11995.51$ ;  $R - 1 = 0.00542$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.43 DR11LOWZ: 0.38 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.20 plik\_dx11dr2\_HM\_v18.TT: 763.91  
Hubble - H070p6: 0.31 SN - JLA December\_2013: 706.61

## 16.5 base\_nnu\_yhe\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02226	$0.02233^{+0.00073}_{-0.00069}$	$\Omega_\Lambda$	0.6917	$0.695^{+0.038}_{-0.040}$	$D_A/\text{Gpc}$	13.95	$13.87^{+0.77}_{-0.77}$
$\Omega_c h^2$	0.1179	$0.119^{+0.014}_{-0.014}$	$\Omega_m$	0.3083	$0.305^{+0.040}_{-0.038}$	$z_{\text{drag}}$	1059.63	$1059.9^{+2.7}_{-2.5}$
$100\theta_{\text{MC}}$	1.04119	$1.0411^{+0.0037}_{-0.0037}$	$\Omega_m h^2$	0.1408	$0.142^{+0.015}_{-0.014}$	$r_{\text{drag}}$	148.0	$147.1^{+8.6}_{-8.6}$
$\tau$	0.0666	$0.069^{+0.041}_{-0.038}$	$\Omega_m h^3$	0.0952	$0.098^{+0.019}_{-0.018}$	$k_D$	0.1399	$0.1406^{+0.0082}_{-0.0075}$
$N_{\text{eff}}$	3.00	$3.12^{+1.0}_{-1.0}$	$\sigma_8$	0.8146	$0.820^{+0.043}_{-0.041}$	$100\theta_D$	0.16098	$0.1612^{+0.0015}_{-0.0015}$
$Y_P$	0.248	$0.247^{+0.057}_{-0.062}$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.452^{+0.017}_{-0.018}$	$z_{\text{eq}}$	3370	$3355^{+160}_{-160}$
$\ln(10^{10} A_s)$	3.063	$3.071^{+0.086}_{-0.082}$	$\sigma_8 \Omega_m^{0.25}$	0.6070	$0.608^{+0.019}_{-0.019}$	$k_{\text{eq}}$	0.010255	$0.01028^{+0.00042}_{-0.00041}$
$n_s$	0.9679	$0.971^{+0.031}_{-0.029}$	$\sigma_8/h^{0.5}$	0.9909	$0.991^{+0.023}_{-0.023}$	$100\theta_{\text{eq}}$	0.8190	$0.822^{+0.030}_{-0.031}$
$y_{\text{cal}}$	1.00009	$1.0002^{+0.0047}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.449	$2.446^{+0.058}_{-0.057}$	$100\theta_{s,\text{eq}}$	0.4525	$0.454^{+0.016}_{-0.015}$
$A_{217}^{\text{CIB}}$	67.6	$65^{+10}_{-10}$	$z_{\text{re}}$	8.89	$9.07^{+3.5}_{-3.9}$	$r_{\text{drag}}/D_V(0.57)$	0.07178	$0.0720^{+0.0022}_{-0.0022}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.139	$2.16^{+0.19}_{-0.19}$	$H(0.57)$	92.8	$93.7^{+6.9}_{-6.4}$
$A_{143}^{\text{tSZ}}$	7.24	$4.95^{+3.8}_{-3.9}$	$10^9 A_s e^{-2\tau}$	1.8721	$1.877^{+0.046}_{-0.050}$	$D_A(0.57)$	1389	$1377^{+120}_{-110}$
$A_{100}^{\text{PS}}$	254	$262^{+60}_{-60}$	$D_{40}$	1224.3	$1222^{+41}_{-42}$	$F_{\text{AP}}(0.57)$	0.6752	$0.674^{+0.010}_{-0.010}$
$A_{143}^{\text{PS}}$	39.0	$45^{+20}_{-20}$	$D_{220}$	5714	$5717^{+81}_{-83}$	$f\sigma_8(0.57)$	0.4728	$0.474^{+0.017}_{-0.017}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2532.4	$2533^{+27}_{-28}$	$\sigma_8(0.57)$	0.6068	$0.612^{+0.040}_{-0.040}$
$A_{217}^{\text{PS}}$	96.9	$96^{+20}_{-20}$	$D_{1420}$	815.0	$814^{+10}_{-10}$	$f_{2000}^{143}$	29.9	$31^{+7}_{-7}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.19	$229.6^{+4.7}_{-4.6}$	$f_{2000}^{143 \times 217}$	32.6	$33^{+5}_{-6}$
$A_{100}^{\text{dustTT}}$	7.52	$7.47^{+3.7}_{-3.8}$	$n_{s,0.002}$	0.9679	$0.971^{+0.031}_{-0.029}$	$f_{2000}^{217}$	106.1	$106.7^{+5.1}_{-5.2}$
$A_{143}^{\text{dustTT}}$	9.11	$9.12^{+3.6}_{-3.6}$	$Y_P$	0.248	$0.247^{+0.057}_{-0.062}$	$\chi_{\text{lensing}}^2$	9.26	10.1 ( $\nu: 1.3$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.2}_{-8.3}$	$Y_P^{\text{BBN}}$	0.249	$0.249^{+0.057}_{-0.063}$	$\chi_{\text{lowTEB}}^2$	10494.86	10495.6 ( $\nu: 2.1$ )
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	Age/Gyr	13.84	$13.74^{+0.92}_{-0.90}$	$\chi_{\text{plik}}^2$	766.2	781.2 ( $\nu: 17.6$ )
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.96	$1090.0^{+1.4}_{-1.3}$	$\chi_{\text{prior}}^2$	2.13	7.51 ( $\nu: 6.5$ )
$c_{217}$	0.99602	$0.9960^{+0.0029}_{-0.0028}$	$r_*$	145.3	$144.4^{+8.4}_{-8.4}$	$\chi_{\text{CMB}}^2$	11270.3	11286.9 ( $\nu: 17.1$ )
$H_0$	67.6	$68.5^{+6.9}_{-6.4}$	$100\theta_*$	1.04134	$1.0412^{+0.0026}_{-0.0025}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.41$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11294.42$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.11$ ;  $R - 1 = 0.01240$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.26 ( $\Delta$  0.08) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.85 ( $\Delta$  -0.00) plik\_dx11dr2\_HM\_v18\_TT: 766.16 ( $\Delta$  -0.16)



## 16.6 base\_nnu\_yhe\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022192	$0.02221^{+0.00048}_{-0.00048}$	$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.058}_{-0.057}$	Age/Gyr	14.13	$14.08^{+0.57}_{-0.59}$
$\Omega_c h^2$	0.1147	$0.1155^{+0.0096}_{-0.0087}$	$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.17}$	$z_*$	1090.24	$1090.24^{+0.88}_{-0.87}$
$100\theta_{\text{MC}}$	1.04216	$1.0420^{+0.0025}_{-0.0025}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.11}$	$r_*$	147.7	$147.3^{+5.5}_{-5.6}$
$\tau$	0.0798	$0.080^{+0.035}_{-0.036}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04200	$1.0419^{+0.0019}_{-0.0019}$
$N_{\text{eff}}$	2.69	$2.75^{+0.63}_{-0.57}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.51}_{-0.50}$	$D_A/\text{Gpc}$	14.18	$14.13^{+0.50}_{-0.52}$
$Y_{\text{P}}$	0.2629	$0.261^{+0.034}_{-0.036}$	$c_{100}$	0.99816	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.59	$1059.7^{+1.8}_{-1.8}$
$\ln(10^{10} A_s)$	3.086	$3.088^{+0.073}_{-0.075}$	$c_{217}$	0.99598	$0.9960^{+0.0029}_{-0.0028}$	$r_{\text{drag}}$	150.5	$150.0^{+5.7}_{-5.8}$
$n_s$	0.9608	$0.962^{+0.019}_{-0.019}$	$H_0$	65.36	$65.7^{+3.9}_{-3.6}$	$k_{\text{D}}$	0.13768	$0.1381^{+0.0052}_{-0.0048}$
$y_{\text{cal}}$	1.00035	$1.0004^{+0.0048}_{-0.0049}$	$\Omega_\Lambda$	0.6780	$0.680^{+0.023}_{-0.024}$	$100\theta_{\text{D}}$	0.16096	$0.16101^{+0.00094}_{-0.00094}$
$A_{217}^{\text{CIB}}$	66.8	$64^{+10}_{-10}$	$\Omega_m$	0.3220	$0.320^{+0.024}_{-0.023}$	$z_{\text{eq}}$	3433	$3426^{+91}_{-94}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.08	—	$\Omega_m h^2$	0.1375	$0.1383^{+0.0096}_{-0.0088}$	$k_{\text{eq}}$	0.010228	$0.01024^{+0.00031}_{-0.00029}$
$A_{143}^{\text{tSZ}}$	7.17	$5.33^{+3.6}_{-3.8}$	$\Omega_m h^3$	0.0899	$0.091^{+0.011}_{-0.011}$	$100\theta_{\text{eq}}$	0.8080	$0.809^{+0.017}_{-0.016}$
$A_{100}^{\text{PS}}$	256	$260^{+50}_{-50}$	$\sigma_8$	0.8215	$0.823^{+0.036}_{-0.035}$	$100\theta_{\text{s,eq}}$	0.4468	$0.4475^{+0.0086}_{-0.0082}$
$A_{143}^{\text{PS}}$	39.9	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4661	$0.466^{+0.019}_{-0.019}$	$r_{\text{drag}}/D_V(0.57)$	0.07108	$0.0712^{+0.0012}_{-0.0011}$
$A_{143 \times 217}^{\text{PS}}$	35.2	$41^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6188	$0.619^{+0.024}_{-0.023}$	$H(0.57)$	90.67	$91.1^{+4.1}_{-3.8}$
$A_{217}^{\text{PS}}$	98.5	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0162	$1.015^{+0.034}_{-0.034}$	$D_A(0.57)$	1429	$1423^{+70}_{-71}$
$A^{\text{kSZ}}$	0.00	$< 7.93$	$\langle d^2 \rangle^{1/2}$	2.513	$2.511^{+0.077}_{-0.078}$	$F_{\text{AP}}(0.57)$	0.6787	$0.6783^{+0.0059}_{-0.0059}$
$A_{100}^{\text{dustTT}}$	7.40	$7.45^{+3.7}_{-3.7}$	$z_{\text{re}}$	10.13	$10.1^{+3.3}_{-3.4}$	$f\sigma_8(0.57)$	0.4803	$0.481^{+0.019}_{-0.018}$
$A_{143}^{\text{dustTT}}$	8.95	$8.95^{+3.6}_{-3.5}$	$10^9 A_s$	2.189	$2.19^{+0.16}_{-0.16}$	$\sigma_8(0.57)$	0.6086	$0.610^{+0.030}_{-0.029}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.0^{+8.1}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8662	$1.869^{+0.040}_{-0.040}$	$f_{2000}^{143}$	29.6	$30^{+6}_{-6}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{40}$	1241.0	$1241^{+32}_{-32}$	$f_{2000}^{143 \times 217}$	32.44	$33^{+4}_{-4}$
$A_{100}^{\text{dustEE}}$	0.0808	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5723	$5725^{+75}_{-76}$	$f_{2000}^{217}$	106.08	$106.2^{+4.2}_{-4.2}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0482	$0.0483^{+0.0098}_{-0.0098}$	$D_{810}$	2534.1	$2535^{+27}_{-27}$	$\chi_{\text{lowTEB}}^2$	10497.29	10498.0 ( $\nu$ : 2.9)
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.0995^{+0.064}_{-0.064}$	$D_{1420}$	814.8	$814.7^{+9.4}_{-9.5}$	$\chi_{\text{plik}}^2$	2430.2	2450.9 ( $\nu$ : 24.7)
$A_{143}^{\text{dustEE}}$	0.0998	$0.0997^{+0.014}_{-0.014}$	$D_{2000}$	230.51	$230.4^{+3.6}_{-3.6}$	$\chi_{\text{prior}}^2$	6.81	19.3 ( $\nu$ : 15.3)
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.091}_{-0.091}$	$n_{\text{s},0.002}$	0.9608	$0.962^{+0.019}_{-0.019}$	$\chi_{\text{CMB}}^2$	12927.5	12949.0 ( $\nu$ : 23.8)
$A_{217}^{\text{dustEE}}$	0.647	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	0.2629	$0.261^{+0.034}_{-0.036}$			
$A_{100}^{\text{dustTE}}$	0.139	$0.141^{+0.075}_{-0.074}$	$Y_{\text{P}}^{\text{BBN}}$	0.2643	$0.263^{+0.034}_{-0.037}$			

Best-fit  $\chi_{\text{eff}}^2 = 12934.29$ ;  $\Delta\chi_{\text{eff}}^2 = -1.27$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.23$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.54$ ;  $R - 1 = 0.00734$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.29 ( $\Delta$  0.35) plik\_dx11dr2\_HM.v18\_TTTEEE: 2430.19 ( $\Delta$  -1.46)

## 16.7 base\_nnu\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022314	$0.02232^{+0.00039}_{-0.00039}$	$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.17}_{-0.17}$	$r_*$	147.0	$146.6^{+5.3}_{-5.4}$
$\Omega_c h^2$	0.1151	$0.1160^{+0.0094}_{-0.0093}$	$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.11}$	$100\theta_*$	1.04184	$1.0417^{+0.0018}_{-0.0018}$
$100\theta_{\text{MC}}$	1.04197	$1.0419^{+0.0025}_{-0.0025}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.33^{+0.15}_{-0.16}$	$D_A/\text{Gpc}$	14.113	$14.07^{+0.49}_{-0.50}$
$\tau$	0.0878	$0.085^{+0.033}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1059.86	$1060.0^{+1.6}_{-1.6}$
$N_{\text{eff}}$	2.79	$2.84^{+0.59}_{-0.58}$	$c_{100}$	0.99819	$0.9982^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	149.8	$149.3^{+5.5}_{-5.6}$
$Y_{\text{P}}$	0.2608	$0.261^{+0.035}_{-0.037}$	$c_{217}$	0.99593	$0.9960^{+0.0029}_{-0.0028}$	$k_{\text{D}}$	0.13828	$0.1386^{+0.0050}_{-0.0050}$
$\ln(10^{10} A_s)$	3.103	$3.099^{+0.066}_{-0.069}$	$H_0$	66.38	$66.6^{+3.2}_{-3.0}$	$100\theta_{\text{D}}$	0.16098	$0.16108^{+0.00093}_{-0.00093}$
$n_s$	0.9664	$0.966^{+0.015}_{-0.015}$	$\Omega_{\Lambda}$	0.6868	$0.687^{+0.015}_{-0.015}$	$z_{\text{eq}}$	3400	$3400^{+67}_{-67}$
$y_{\text{cal}}$	1.00035	$1.0005^{+0.0049}_{-0.0050}$	$\Omega_{\text{m}}$	0.3132	$0.313^{+0.015}_{-0.015}$	$k_{\text{eq}}$	0.010197	$0.01023^{+0.00031}_{-0.00029}$
$A_{217}^{\text{CIB}}$	64.8	$64^{+10}_{-10}$	$\Omega_{\text{m}} h^2$	0.1380	$0.1389^{+0.0095}_{-0.0094}$	$100\theta_{\text{eq}}$	0.8141	$0.814^{+0.012}_{-0.011}$
$\xi^{\text{tSZ}} \times \text{CIB}$	0.33	—	$\Omega_{\text{m}} h^3$	0.0916	$0.093^{+0.010}_{-0.010}$	$100\theta_{\text{s,eq}}$	0.4499	$0.4499^{+0.0059}_{-0.0058}$
$A_{143}^{\text{tSZ}}$	6.98	$5.34^{+3.6}_{-3.8}$	$\sigma_8$	0.8277	$0.828^{+0.034}_{-0.034}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07153	$0.07153^{+0.00080}_{-0.00077}$
$A_{100}^{\text{PS}}$	253	$261^{+60}_{-60}$	$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4632	$0.463^{+0.018}_{-0.018}$	$H(0.57)$	91.49	$91.8^{+3.7}_{-3.5}$
$A_{143}^{\text{PS}}$	43.6	$44^{+20}_{-20}$	$\sigma_8 \Omega_{\text{m}}^{0.25}$	0.6192	$0.619^{+0.024}_{-0.023}$	$D_A(0.57)$	1412	$1408^{+60}_{-59}$
$A_{143 \times 217}^{\text{PS}}$	42.7	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0159	$1.014^{+0.034}_{-0.034}$	$F_{\text{AP}}(0.57)$	0.67646	$0.6765^{+0.0039}_{-0.0038}$
$A_{217}^{\text{PS}}$	101.7	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.509	$2.505^{+0.076}_{-0.077}$	$f\sigma_8(0.57)$	0.4817	$0.482^{+0.019}_{-0.018}$
$A^{\text{kSZ}}$	0.00	$< 7.95$	$z_{\text{re}}$	10.81	$10.5^{+3.0}_{-3.1}$	$\sigma_8(0.57)$	0.6153	$0.615^{+0.026}_{-0.026}$
$A_{100}^{\text{dustTT}}$	7.47	$7.49^{+3.6}_{-3.7}$	$10^9 A_s$	2.226	$2.22^{+0.15}_{-0.15}$	$f_{2000}^{143}$	28.9	$30^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	8.99	$8.98^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8675	$1.871^{+0.039}_{-0.039}$	$f_{2000}^{143 \times 217}$	32.08	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.1^{+8.2}_{-8.2}$	$D_{40}$	1234.7	$1236^{+30}_{-29}$	$f_{2000}^{217}$	105.57	$106.2^{+4.2}_{-4.2}$
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	$D_{220}$	5724	$5728^{+74}_{-76}$	$\chi_{\text{lowTEB}}^2$	10497.26	10497.7 ( $\nu: 3.3$ )
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2534.6	$2535^{+27}_{-27}$	$\chi_{\text{plik}}^2$	2430.7	2451.2 ( $\nu: 46.9$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0488^{+0.0097}_{-0.0096}$	$D_{1420}$	815.7	$814.7^{+9.3}_{-9.6}$	$\chi_{6\text{DF}}^2$	0.047	0.084 ( $\nu: 0.0$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.0996	$0.0995^{+0.065}_{-0.063}$	$D_{2000}$	230.88	$230.3^{+3.7}_{-3.6}$	$\chi_{\text{MGS}}^2$	1.10	1.17 ( $\nu: 0.1$ )
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.014}_{-0.014}$	$n_{\text{s},0.002}$	0.9664	$0.966^{+0.015}_{-0.015}$	$\chi_{\text{DR11CMASS}}^2$	2.56	2.97 ( $\nu: 0.3$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.090}_{-0.090}$	$Y_{\text{P}}$	0.2608	$0.261^{+0.035}_{-0.037}$	$\chi_{\text{DR11LOWZ}}^2$	0.81	0.94 ( $\nu: 0.2$ )
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}^{\text{BBN}}$	0.2622	$0.262^{+0.035}_{-0.037}$	$\chi_{\text{prior}}^2$	6.78	19.5 ( $\nu: 15.5$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.075}_{-0.074}$	Age/Gyr	14.02	$13.99^{+0.52}_{-0.53}$	$\chi_{\text{CMB}}^2$	12928.0	12948.9 ( $\nu: 46.1$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.130	$0.131^{+0.059}_{-0.057}$	$z_*$	1090.07	$1090.16^{+0.85}_{-0.87}$	$\chi_{\text{BAO}}^2$	4.52	5.16 ( $\nu: 0.6$ )

Best-fit  $\chi_{\text{eff}}^2 = 12939.26$ ;  $\Delta\chi_{\text{eff}}^2 = -0.90$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.52$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.04$ ;  $R - 1 = 0.01202$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.05 ( $\Delta$  0.02) MGS: 1.10 ( $\Delta$  -0.12) DR11CMASS: 2.56 ( $\Delta$  0.06) DR11LOWZ: 0.81 ( $\Delta$  0.13) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10497.26 ( $\Delta$  -0.15) plik.dx11dr2.HM.v18.TTTEEE: 2430.70 ( $\Delta$  -0.84)

## 16.8 base\_nnu\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022313	$0.02232^{+0.00045}_{-0.00045}$	$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.059}_{-0.057}$	Age/Gyr	13.93	$13.90^{+0.52}_{-0.51}$
$\Omega_c h^2$	0.1171	$0.1178^{+0.0092}_{-0.0084}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.17}$	$z_*$	1090.13	$1090.17^{+0.86}_{-0.88}$
$100\theta_{\text{MC}}$	1.04154	$1.0415^{+0.0024}_{-0.0024}$	$A_{143}^{\text{dustTE}}$	0.151	$0.15^{+0.11}_{-0.11}$	$r_*$	145.9	$145.6^{+5.1}_{-5.0}$
$\tau$	0.0853	$0.083^{+0.035}_{-0.035}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04148	$1.0414^{+0.0018}_{-0.0017}$
$N_{\text{eff}}$	2.90	$2.94^{+0.58}_{-0.54}$	$A_{217}^{\text{dustTE}}$	1.68	$1.67^{+0.50}_{-0.51}$	$D_A/\text{Gpc}$	14.013	$13.98^{+0.46}_{-0.47}$
$Y_{\text{P}}$	0.2565	$0.256^{+0.035}_{-0.037}$	$c_{100}$	0.99819	$0.9982^{+0.0015}_{-0.0016}$	$z_{\text{drag}}$	1059.93	$1060.0^{+1.7}_{-1.7}$
$\ln(10^{10} A_s)$	3.102	$3.099^{+0.070}_{-0.073}$	$c_{217}$	0.99589	$0.9960^{+0.0029}_{-0.0029}$	$r_{\text{drag}}$	148.7	$148.3^{+5.2}_{-5.2}$
$n_s$	0.9664	$0.967^{+0.017}_{-0.017}$	$H_0$	66.76	$67.0^{+3.4}_{-3.3}$	$k_{\text{D}}$	0.13924	$0.1395^{+0.0048}_{-0.0045}$
$y_{\text{cal}}$	1.00022	$1.0005^{+0.0048}_{-0.0050}$	$\Omega_\Lambda$	0.6856	$0.686^{+0.021}_{-0.022}$	$100\theta_{\text{D}}$	0.16101	$0.16107^{+0.00094}_{-0.00094}$
$A_{217}^{\text{CIB}}$	65.3	$64^{+10}_{-10}$	$\Omega_{\text{m}}$	0.3144	$0.314^{+0.022}_{-0.021}$	$z_{\text{eq}}$	3401	$3399^{+85}_{-81}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.24	—	$\Omega_{\text{m}} h^2$	0.1401	$0.1407^{+0.0093}_{-0.0085}$	$k_{\text{eq}}$	0.010276	$0.01029^{+0.00031}_{-0.00029}$
$A_{143}^{\text{tSZ}}$	7.06	$5.33^{+3.6}_{-3.8}$	$\Omega_{\text{m}} h^3$	0.0935	$0.0943^{+0.010}_{-0.0095}$	$100\theta_{\text{eq}}$	0.8136	$0.814^{+0.015}_{-0.015}$
$A_{100}^{\text{PS}}$	254	$261^{+60}_{-50}$	$\sigma_8$	0.8309	$0.831^{+0.034}_{-0.034}$	$100\theta_{\text{s,eq}}$	0.4496	$0.4499^{+0.0077}_{-0.0077}$
$A_{143}^{\text{PS}}$	42.4	$44^{+20}_{-20}$	$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4659	$0.465^{+0.020}_{-0.019}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07144	$0.0715^{+0.0011}_{-0.0011}$
$A_{143 \times 217}^{\text{PS}}$	40.3	$40^{+20}_{-20}$	$\sigma_8 \Omega_{\text{m}}^{0.25}$	0.6222	$0.622^{+0.024}_{-0.023}$	$H(0.57)$	92.08	$92.3^{+3.6}_{-3.5}$
$A_{217}^{\text{PS}}$	100.9	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0170	$1.015^{+0.034}_{-0.034}$	$D_A(0.57)$	1403	$1400^{+63}_{-60}$
$A^{\text{kSZ}}$	0.00	$< 7.96$	$\langle d^2 \rangle^{1/2}$	2.510	$2.506^{+0.077}_{-0.078}$	$F_{\text{AP}}(0.57)$	0.6768	$0.6766^{+0.0055}_{-0.0053}$
$A_{100}^{\text{dustTT}}$	7.41	$7.46^{+3.6}_{-3.6}$	$z_{\text{re}}$	10.62	$10.4^{+3.2}_{-3.3}$	$f\sigma_8(0.57)$	0.4839	$0.483^{+0.018}_{-0.018}$
$A_{143}^{\text{dustTT}}$	8.93	$8.96^{+3.6}_{-3.6}$	$10^9 A_s$	2.224	$2.22^{+0.16}_{-0.16}$	$\sigma_8(0.57)$	0.6174	$0.617^{+0.028}_{-0.028}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.0^{+8.2}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8750	$1.877^{+0.037}_{-0.038}$	$f_{2000}^{143}$	29.2	$30^{+6}_{-6}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$D_{40}$	1236.4	$1237^{+31}_{-31}$	$f_{2000}^{143 \times 217}$	32.24	$33^{+4}_{-4}$
$A_{100}^{\text{dustEE}}$	0.0812	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5725	$5728^{+75}_{-76}$	$f_{2000}^{217}$	105.76	$106.2^{+4.2}_{-4.2}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0489^{+0.0097}_{-0.0097}$	$D_{810}$	2535.3	$2536^{+27}_{-27}$	$\chi_{\text{lowTEB}}^2$	10497.14	10497.7 ( $\nu: 3.1$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.0998^{+0.065}_{-0.063}$	$D_{1420}$	815.1	$814.6^{+9.4}_{-9.5}$	$\chi_{\text{plik}}^2$	2430.7	2451.6 ( $\nu: 45.1$ )
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.014}_{-0.013}$	$D_{2000}$	230.56	$230.2^{+3.6}_{-3.6}$	$\chi_{\text{H070p6}}^2$	1.34	1.45 ( $\nu: 0.7$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.091}_{-0.090}$	$n_{\text{s},0.002}$	0.9664	$0.967^{+0.017}_{-0.017}$	$\chi_{\text{prior}}^2$	6.87	19.5 ( $\nu: 15.7$ )
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	0.2565	$0.256^{+0.035}_{-0.037}$	$\chi_{\text{CMB}}^2$	12927.9	12949.3 ( $\nu: 44.5$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.075}_{-0.074}$	$Y_{\text{P}}^{\text{BBN}}$	0.2578	$0.257^{+0.035}_{-0.037}$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.07$ ;  $\Delta\chi_{\text{eff}}^2 = -0.40$ ;  $\bar{\chi}_{\text{eff}}^2 = 12970.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.53$ ;  $R - 1 = 0.01172$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.14 ( $\Delta$  0.14) plik\_dx11dr2\_HM.v18\_TTTEEE: 2430.72 ( $\Delta$  -1.04) Hubble - H070p6: 1.33 ( $\Delta$  0.44)

16.9 base\_nnu\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022384	$0.02238^{+0.00037}_{-0.00038}$	$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.11}$	$D_A/\text{Gpc}$	13.977	$13.96^{+0.45}_{-0.46}$
$\Omega_c h^2$	0.1174	$0.1179^{+0.0093}_{-0.0085}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.33^{+0.16}_{-0.16}$	$z_{\text{drag}}$	1060.12	$1060.1^{+1.5}_{-1.6}$
$100\theta_{\text{MC}}$	1.04153	$1.0414^{+0.0024}_{-0.0024}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$r_{\text{drag}}$	148.2	$148.0^{+5.1}_{-5.1}$
$\tau$	0.0881	$0.086^{+0.032}_{-0.034}$	$c_{100}$	0.99815	$0.9982^{+0.0015}_{-0.0016}$	$k_D$	0.13953	$0.1398^{+0.0047}_{-0.0045}$
$N_{\text{eff}}$	2.94	$2.98^{+0.57}_{-0.52}$	$c_{217}$	0.99602	$0.9960^{+0.0029}_{-0.0029}$	$100\theta_D$	0.16109	$0.16111^{+0.00093}_{-0.00094}$
$Y_P$	0.2572	$0.256^{+0.035}_{-0.038}$	$H_0$	67.30	$67.4^{+2.9}_{-2.8}$	$z_{\text{eq}}$	3387	$3384^{+62}_{-61}$
$\ln(10^{10} A_s)$	3.108	$3.105^{+0.064}_{-0.068}$	$\Omega_\Lambda$	0.6899	$0.690^{+0.014}_{-0.014}$	$k_{\text{eq}}$	0.010266	$0.01028^{+0.00031}_{-0.00028}$
$n_s$	0.9690	$0.969^{+0.014}_{-0.014}$	$\Omega_m$	0.3101	$0.310^{+0.014}_{-0.014}$	$100\theta_{\text{eq}}$	0.8165	$0.817^{+0.011}_{-0.011}$
$y_{\text{cal}}$	1.00026	$1.0005^{+0.0048}_{-0.0050}$	$\Omega_m h^2$	0.1404	$0.1409^{+0.0094}_{-0.0085}$	$100\theta_{s,\text{eq}}$	0.4511	$0.4513^{+0.0055}_{-0.0054}$
$A_{217}^{\text{CIB}}$	67.0	$64^{+10}_{-10}$	$\Omega_m h^3$	0.0945	$0.0951^{+0.010}_{-0.0091}$	$r_{\text{drag}}/D_V(0.57)$	0.07167	$0.07168^{+0.00075}_{-0.00073}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$\sigma_8$	0.8333	$0.833^{+0.032}_{-0.032}$	$H(0.57)$	92.53	$92.7^{+3.3}_{-3.2}$
$A_{143}^{\text{tSZ}}$	7.20	$5.34^{+3.6}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4640	$0.464^{+0.018}_{-0.017}$	$D_A(0.57)$	1394	$1392^{+54}_{-53}$
$A_{100}^{\text{PS}}$	256	$261^{+60}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6218	$0.621^{+0.023}_{-0.023}$	$F_{\text{AP}}(0.57)$	0.67567	$0.6756^{+0.0036}_{-0.0035}$
$A_{143}^{\text{PS}}$	39.5	$44^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0157	$1.014^{+0.034}_{-0.034}$	$f\sigma_8(0.57)$	0.4841	$0.484^{+0.018}_{-0.018}$
$A_{143 \times 217}^{\text{PS}}$	34.2	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.506	$2.502^{+0.076}_{-0.078}$	$\sigma_8(0.57)$	0.6202	$0.620^{+0.025}_{-0.025}$
$A_{217}^{\text{PS}}$	98.0	$98^{+20}_{-20}$	$z_{\text{re}}$	10.86	$10.6^{+2.9}_{-3.1}$	$f_{2000}^{143}$	29.6	$30^{+6}_{-6}$
$A^{\text{kSZ}}$	0.00	< 8.00	$10^9 A_s$	2.238	$2.23^{+0.15}_{-0.15}$	$f_{2000}^{143 \times 217}$	32.41	$33^{+4}_{-4}$
$A_{100}^{\text{dustTT}}$	7.45	$7.49^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8763	$1.878^{+0.037}_{-0.038}$	$f_{2000}^{217}$	106.07	$106.2^{+4.1}_{-4.2}$
$A_{143}^{\text{dustTT}}$	8.99	$8.99^{+3.7}_{-3.6}$	$D_{40}$	1233.8	$1234^{+29}_{-29}$	$\chi_{\text{lowTEB}}^2$	10497.07	$10497.5 (\nu: 3.2)$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.1^{+8.2}_{-8.2}$	$D_{220}$	5728	$5729^{+75}_{-76}$	$\chi_{\text{plik}}^2$	2431.0	$2451.6 (\nu: 25.3)$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{810}$	2534.9	$2536^{+27}_{-27}$	$\chi_{\text{H070p6}}^2$	0.99	$1.09 (\nu: 0.4)$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	814.7	$814.7^{+9.3}_{-9.5}$	$\chi_{\text{JLA}}^2$	706.709	$706.75 (\nu: 0.0)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0492^{+0.0096}_{-0.0095}$	$D_{2000}$	230.29	$230.2^{+3.7}_{-3.6}$	$\chi_{6\text{DF}}^2$	0.022	$0.053 (\nu: 0.0)$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0996^{+0.064}_{-0.063}$	$n_{s,0.002}$	0.9690	$0.969^{+0.014}_{-0.014}$	$\chi_{\text{MGS}}^2$	1.28	$1.36 (\nu: 0.1)$
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.014}_{-0.013}$	$Y_P$	0.2572	$0.256^{+0.035}_{-0.038}$	$\chi_{\text{DR11CMass}}^2$	2.44	$2.79 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.222^{+0.090}_{-0.090}$	$Y_P^{\text{BBN}}$	0.2586	$0.257^{+0.035}_{-0.038}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	$0.70 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.649	$0.65^{+0.26}_{-0.26}$	Age/Gyr	13.873	$13.85^{+0.48}_{-0.47}$	$\chi_{\text{prior}}^2$	7.19	$19.6 (\nu: 15.5)$
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.075}_{-0.075}$	$z_*$	1090.11	$1090.12^{+0.85}_{-0.86}$	$\chi_{\text{CMB}}^2$	12928.0	$12949.1 (\nu: 23.7)$
$A_{100 \times 143}^{\text{dustTE}}$	0.130	$0.131^{+0.060}_{-0.057}$	$r_*$	145.6	$145.3^{+5.0}_{-5.0}$	$\chi_{\text{BAO}}^2$	4.35	$4.91 (\nu: 0.3)$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	$100\theta_*$	1.04143	$1.0414^{+0.0018}_{-0.0017}$			

Best-fit  $\chi_{\text{eff}}^2 = 13647.30$ ;  $\bar{\chi}_{\text{eff}}^2 = 13681.50$ ;  $R - 1 = 0.01798$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 MGS: 1.28 DR11CMass: 2.44 DR11LOWZ: 0.61 CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10497.07 plik\_dx11dr2\_HM\_v18\_TTTEEE:

## 16.10 base\_nnu\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022159	$0.02217^{+0.00047}_{-0.00050}$	$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.059}_{-0.057}$	Age/Gyr	14.16	$14.11^{+0.55}_{-0.58}$
$\Omega_c h^2$	0.1138	$0.1148^{+0.0091}_{-0.0084}$	$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.31^{+0.16}_{-0.16}$	$z_*$	1090.11	$1090.14^{+0.85}_{-0.87}$
$100\theta_{\text{MC}}$	1.04223	$1.0421^{+0.0024}_{-0.0024}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.10}$	$r_*$	148.1	$147.6^{+5.3}_{-5.4}$
$\tau$	0.0616	$0.061^{+0.030}_{-0.028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.15}_{-0.16}$	$100\theta_*$	1.04213	$1.0420^{+0.0018}_{-0.0018}$
$N_{\text{eff}}$	2.67	$2.73^{+0.61}_{-0.58}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.51}_{-0.52}$	$D_A/\text{Gpc}$	14.213	$14.16^{+0.49}_{-0.50}$
$Y_{\text{P}}$	0.2611	$0.259^{+0.036}_{-0.037}$	$c_{100}$	0.99813	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.40	$1059.4^{+1.7}_{-1.8}$
$\ln(10^{10} A_s)$	3.046	$3.048^{+0.060}_{-0.058}$	$c_{217}$	0.99609	$0.9960^{+0.0029}_{-0.0028}$	$r_{\text{drag}}$	150.9	$150.4^{+5.5}_{-5.6}$
$n_s$	0.9600	$0.961^{+0.018}_{-0.019}$	$H_0$	65.40	$65.7^{+3.9}_{-3.5}$	$k_{\text{D}}$	0.13738	$0.1379^{+0.0050}_{-0.0049}$
$y_{\text{cal}}$	0.99999	$1.0002^{+0.0049}_{-0.0050}$	$\Omega_\Lambda$	0.6807	$0.681^{+0.023}_{-0.023}$	$100\theta_{\text{D}}$	0.16089	$0.16094^{+0.00091}_{-0.00096}$
$A_{217}^{\text{CIB}}$	67.7	$65^{+10}_{-10}$	$\Omega_m$	0.3193	$0.319^{+0.023}_{-0.023}$	$z_{\text{eq}}$	3421	$3418^{+92}_{-91}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\Omega_m h^2$	0.1366	$0.1376^{+0.0092}_{-0.0084}$	$k_{\text{eq}}$	0.010175	$0.01021^{+0.00029}_{-0.00028}$
$A_{143}^{\text{tSZ}}$	7.29	$5.25^{+3.7}_{-3.9}$	$\Omega_m h^3$	0.0893	$0.090^{+0.011}_{-0.010}$	$100\theta_{\text{eq}}$	0.8101	$0.811^{+0.017}_{-0.016}$
$A_{100}^{\text{PS}}$	257	$262^{+60}_{-60}$	$\sigma_8$	0.8028	$0.805^{+0.028}_{-0.027}$	$100\theta_{\text{s,eq}}$	0.4479	$0.4482^{+0.0085}_{-0.0082}$
$A_{143}^{\text{PS}}$	39.1	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4537	$0.454^{+0.014}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.07124	$0.0713^{+0.0012}_{-0.0011}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6035	$0.605^{+0.016}_{-0.016}$	$H(0.57)$	90.55	$90.9^{+4.0}_{-3.6}$
$A_{217}^{\text{PS}}$	97.1	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9927	$0.993^{+0.021}_{-0.021}$	$D_A(0.57)$	1430	$1424^{+68}_{-70}$
$A^{\text{kSZ}}$	0.00	$< 8.31$	$\langle d^2 \rangle^{1/2}$	2.460	$2.461^{+0.050}_{-0.052}$	$F_{\text{AP}}(0.57)$	0.6780	$0.6779^{+0.0058}_{-0.0059}$
$A_{100}^{\text{dustTT}}$	7.43	$7.49^{+3.7}_{-3.7}$	$z_{\text{re}}$	8.41	$8.33^{+2.7}_{-2.9}$	$f\sigma_8(0.57)$	0.4687	$0.470^{+0.013}_{-0.013}$
$A_{143}^{\text{dustTT}}$	9.07	$9.05^{+3.6}_{-3.6}$	$10^9 A_s$	2.103	$2.11^{+0.13}_{-0.13}$	$\sigma_8(0.57)$	0.5954	$0.597^{+0.025}_{-0.024}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.1}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8591	$1.863^{+0.039}_{-0.038}$	$f_{2000}^{143}$	29.9	$30^{+6}_{-6}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$D_{40}$	1232.8	$1234^{+31}_{-30}$	$f_{2000}^{143 \times 217}$	32.73	$33^{+4}_{-4}$
$A_{100}^{\text{dustEE}}$	0.0806	$0.081^{+0.012}_{-0.011}$	$D_{220}$	5719	$5721^{+74}_{-78}$	$f_{2000}^{217}$	106.27	$106.4^{+4.1}_{-4.2}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0482	$0.0485^{+0.0097}_{-0.010}$	$D_{810}$	2531.5	$2533^{+27}_{-27}$	$\chi_{\text{lensing}}^2$	9.59	$10.4 (\nu: 1.7)$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0998^{+0.065}_{-0.064}$	$D_{1420}$	814.8	$814.8^{+9.4}_{-9.6}$	$\chi_{\text{lowTEB}}^2$	10495.75	$10496.4 (\nu: 1.5)$
$A_{143}^{\text{dustEE}}$	0.0996	$0.0999^{+0.014}_{-0.014}$	$D_{2000}$	230.24	$230.2^{+3.5}_{-3.6}$	$\chi_{\text{plik}}^2$	2433.5	$2453.9 (\nu: 26.0)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.092}_{-0.092}$	$n_{\text{s},0.002}$	0.9600	$0.961^{+0.018}_{-0.019}$	$\chi_{\text{prior}}^2$	6.90	$19.4 (\nu: 15.4)$
$A_{217}^{\text{dustEE}}$	0.659	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	0.2611	$0.259^{+0.036}_{-0.037}$	$\chi_{\text{CMB}}^2$	12938.8	$12960.6 (\nu: 25.8)$
$A_{100}^{\text{dustTE}}$	0.141	$0.140^{+0.076}_{-0.074}$	$Y_{\text{P}}^{\text{BBN}}$	0.2625	$0.260^{+0.036}_{-0.037}$			

Best-fit  $\chi_{\text{eff}}^2 = 12945.71$ ;  $\Delta\chi_{\text{eff}}^2 = -1.47$ ;  $\bar{\chi}_{\text{eff}}^2 = 12979.99$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.87$ ;  $R - 1 = 0.02911$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.59 ( $\Delta$  -0.19) lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.75 ( $\Delta$  0.46) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2433.48 ( $\Delta$  -1.43)

# 17 nrun

## 17.1 base\_nrun\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02237	$0.02236^{+0.00054}_{-0.00052}$	$\Omega_m$	0.3128	$0.313^{+0.029}_{-0.027}$	$D_A/\text{Gpc}$	13.884	$13.883^{+0.092}_{-0.092}$
$\Omega_c h^2$	0.11956	$0.1196^{+0.0045}_{-0.0044}$	$\Omega_m h^2$	0.14257	$0.1426^{+0.0042}_{-0.0042}$	$z_{\text{drag}}$	1059.89	$1059.9^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	1.04093	$1.04093^{+0.00094}_{-0.00096}$	$\Omega_m h^3$	0.09624	$0.0962^{+0.0011}_{-0.0010}$	$r_{\text{drag}}$	147.21	$147.2^{+1.0}_{-1.0}$
$\tau$	0.0872	$0.088^{+0.045}_{-0.042}$	$\sigma_8$	0.8354	$0.836^{+0.032}_{-0.031}$	$k_D$	0.14074	$0.1407^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	3.110	$3.111^{+0.087}_{-0.082}$	$\sigma_8 \Omega_m^{0.5}$	0.4673	$0.468^{+0.027}_{-0.026}$	$100\theta_D$	0.16078	$0.16079^{+0.00062}_{-0.00062}$
$n_s$	0.9658	$0.965^{+0.013}_{-0.013}$	$\sigma_8 \Omega_m^{0.25}$	0.6248	$0.625^{+0.028}_{-0.027}$	$z_{\text{eq}}$	3392	$3393^{+100}_{-99}$
$dn_s/d \ln k$	-0.0071	$-0.008^{+0.016}_{-0.016}$	$\sigma_8/h^{0.5}$	1.0168	$1.017^{+0.041}_{-0.040}$	$k_{\text{eq}}$	0.010351	$0.01036^{+0.00031}_{-0.00030}$
$y_{\text{cal}}$	1.00034	$1.0004^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.503	$2.505^{+0.093}_{-0.090}$	$100\theta_{\text{eq}}$	0.8152	$0.815^{+0.019}_{-0.019}$
$A_{217}^{\text{CIB}}$	67.8	$65^{+10}_{-10}$	$z_{\text{re}}$	10.76	$10.7^{+3.8}_{-3.8}$	$100\theta_{\text{s,eq}}$	0.4504	$0.4503^{+0.0098}_{-0.0097}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.241	$2.25^{+0.20}_{-0.19}$	$r_{\text{drag}}/D_V(0.57)$	0.07149	$0.0715^{+0.0015}_{-0.0015}$
$A_{143}^{\text{tSZ}}$	7.11	$4.92^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8829	$1.884^{+0.029}_{-0.028}$	$H(0.57)$	93.01	$93.01^{+0.93}_{-0.86}$
$A_{100}^{\text{PS}}$	255	$261^{+60}_{-60}$	$D_{40}$	1221.9	$1222^{+44}_{-41}$	$D_A(0.57)$	1388.6	$1389^{+27}_{-27}$
$A_{143}^{\text{PS}}$	39.9	$45^{+20}_{-20}$	$D_{220}$	5720	$5721^{+81}_{-79}$	$F_{\text{AP}}(0.57)$	0.6764	$0.6765^{+0.0071}_{-0.0068}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2536.7	$2537^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4861	$0.486^{+0.020}_{-0.019}$
$A_{217}^{\text{PS}}$	97.1	$97^{+20}_{-20}$	$D_{1420}$	814.1	$813^{+10}_{-9.9}$	$\sigma_8(0.57)$	0.6212	$0.621^{+0.025}_{-0.024}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.12	$229.8^{+4.0}_{-3.8}$	$f_{2000}^{143}$	30.3	$31^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.42	$7.49^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	0.989	$0.992^{+0.054}_{-0.051}$	$f_{2000}^{143 \times 217}$	32.77	$33^{+4}_{-5}$
$A_{143}^{\text{dustTT}}$	9.08	$9.03^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245391	$0.24539^{+0.00024}_{-0.00024}$	$f_{2000}^{217}$	106.35	$106.6^{+4.2}_{-4.2}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.2}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.246718	$0.24671^{+0.00024}_{-0.00024}$	$\chi_{\text{lowTEB}}^2$	10495.0	10496.2 ( $\nu$ : 4.1)
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 D/H$	2.592	$2.59^{+0.10}_{-0.10}$	$\chi_{\text{plik}}^2$	764.1	778.6 ( $\nu$ : 17.7)
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.796	$13.796^{+0.083}_{-0.086}$	$\chi_{\text{prior}}^2$	2.03	7.30 ( $\nu$ : 6.2)
$c_{217}$	0.99604	$0.9960^{+0.0028}_{-0.0029}$	$z_*$	1089.88	$1089.90^{+0.94}_{-0.94}$	$\chi_{\text{CMB}}^2$	11259.1	11274.8 ( $\nu$ : 16.3)
$H_0$	67.51	$67.5^{+2.0}_{-2.0}$	$r_*$	144.55	$144.5^{+1.0}_{-0.99}$			
$\Omega_\Lambda$	0.6872	$0.687^{+0.027}_{-0.029}$	$100\theta_*$	1.04111	$1.04111^{+0.00092}_{-0.00093}$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.11$ ;  $\Delta\chi_{\text{eff}}^2 = -0.81$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.07$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.25$ ;  $R - 1 = 0.00699$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.01 ( $\Delta$  -1.46) plik\_dx11dr2\_HM\_v18\_TT: 764.08 ( $\Delta$  0.70)

## 17.2 base\_nrun\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022430	$0.02240^{+0.00047}_{-0.00046}$	$\Omega_m h^2$	0.14202	$0.1421^{+0.0024}_{-0.0024}$	$r_{\text{drag}}$	147.30	$147.33^{+0.76}_{-0.73}$
$\Omega_c h^2$	0.11894	$0.1190^{+0.0025}_{-0.0025}$	$\Omega_m h^3$	0.09630	$0.0962^{+0.0010}_{-0.0010}$	$k_D$	0.14069	$0.1406^{+0.0010}_{-0.0010}$
$100\theta_{\text{MC}}$	1.04101	$1.04101^{+0.00081}_{-0.00083}$	$\sigma_8$	0.8371	$0.836^{+0.032}_{-0.030}$	$100\theta_D$	0.16072	$0.16077^{+0.00061}_{-0.00059}$
$\tau$	0.0922	$0.090^{+0.041}_{-0.038}$	$\sigma_8 \Omega_m^{0.5}$	0.4652	$0.465^{+0.021}_{-0.020}$	$z_{\text{eq}}$	3378	$3379^{+58}_{-58}$
$\ln(10^{10} A_s)$	3.119	$3.115^{+0.083}_{-0.078}$	$\sigma_8 \Omega_m^{0.25}$	0.6241	$0.623^{+0.025}_{-0.024}$	$k_{\text{eq}}$	0.010311	$0.01031^{+0.00018}_{-0.00018}$
$n_s$	0.9673	$0.9666^{+0.0092}_{-0.0090}$	$\sigma_8/h^{0.5}$	1.0166	$1.015^{+0.039}_{-0.037}$	$100\theta_{\text{eq}}$	0.8178	$0.818^{+0.011}_{-0.011}$
$dn_s/d \ln k$	-0.0082	$-0.008^{+0.016}_{-0.016}$	$\langle d^2 \rangle^{1/2}$	2.502	$2.500^{+0.086}_{-0.084}$	$100\theta_{s,\text{eq}}$	0.4517	$0.4516^{+0.0056}_{-0.0055}$
$y_{\text{cal}}$	1.00036	$1.0004^{+0.0050}_{-0.0048}$	$z_{\text{re}}$	11.17	$11.0^{+3.3}_{-3.5}$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.07169^{+0.00085}_{-0.00082}$
$A_{217}^{\text{CIB}}$	67.5	$64^{+10}_{-10}$	$10^9 A_s$	2.262	$2.26^{+0.19}_{-0.18}$	$H(0.57)$	93.14	$93.12^{+0.59}_{-0.57}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8806	$1.881^{+0.024}_{-0.024}$	$D_A(0.57)$	1384.6	$1385^{+15}_{-16}$
$A_{143}^{\text{tSZ}}$	7.18	$4.94^{+3.8}_{-3.8}$	$D_{40}$	1218.5	$1219^{+39}_{-38}$	$F_{\text{AP}}(0.57)$	0.67537	$0.6755^{+0.0038}_{-0.0038}$
$A_{100}^{\text{PS}}$	255	$261^{+60}_{-60}$	$D_{220}$	5723	$5723^{+79}_{-78}$	$f\sigma_8(0.57)$	0.4860	$0.485^{+0.019}_{-0.018}$
$A_{143}^{\text{PS}}$	39.5	$45^{+20}_{-20}$	$D_{810}$	2536.4	$2536^{+28}_{-27}$	$\sigma_8(0.57)$	0.6234	$0.622^{+0.024}_{-0.023}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{1420}$	814.3	$814^{+10}_{-9.7}$	$f_{2000}^{143}$	30.1	$31^{+6}_{-6}$
$A_{217}^{\text{PS}}$	97.1	$97^{+20}_{-20}$	$D_{2000}$	230.26	$230.0^{+3.9}_{-3.6}$	$f_{2000}^{143 \times 217}$	32.62	$33^{+4}_{-5}$
$A^{\text{kSZ}}$	0.0	—	$n_{s,0.002}$	0.994	$0.994^{+0.052}_{-0.050}$	$f_{2000}^{217}$	106.18	$106.5^{+4.1}_{-4.1}$
$A_{100}^{\text{dustTT}}$	7.49	$7.48^{+3.6}_{-3.7}$	$Y_{\text{P}}$	0.245419	$0.24540^{+0.00021}_{-0.00021}$	$\chi_{\text{lowTEB}}^2$	10495.1	10496.1 ( $\nu: 3.9$ )
$A_{143}^{\text{dustTT}}$	9.09	$9.02^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246746	$0.24673^{+0.00021}_{-0.00021}$	$\chi_{\text{plik}}^2$	764.1	778.0 ( $\nu: 17.4$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.2}_{-8.1}$	$10^5 \text{D}/\text{H}$	2.580	$2.587^{+0.088}_{-0.086}$	$\chi_{6\text{DF}}^2$	0.015	0.059 ( $\nu: 0.0$ )
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-20}$	Age/Gyr	13.784	$13.788^{+0.062}_{-0.064}$	$\chi_{\text{MGS}}^2$	1.34	1.39 ( $\nu: 0.2$ )
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.75	$1089.80^{+0.67}_{-0.67}$	$\chi_{\text{DR11CMass}}^2$	2.43	2.90 ( $\nu: 0.2$ )
$c_{217}$	0.99596	$0.9960^{+0.0028}_{-0.0028}$	$r_*$	144.66	$144.67^{+0.68}_{-0.66}$	$\chi_{\text{DR11LOWZ}}^2$	0.55	0.72 ( $\nu: 0.2$ )
$H_0$	67.81	$67.8^{+1.2}_{-1.1}$	$100\theta_*$	1.04119	$1.04119^{+0.00080}_{-0.00081}$	$\chi_{\text{prior}}^2$	2.02	7.29 ( $\nu: 6.2$ )
$\Omega_\Lambda$	0.6911	$0.691^{+0.015}_{-0.015}$	$D_A/\text{Gpc}$	13.894	$13.894^{+0.066}_{-0.065}$	$\chi_{\text{CMB}}^2$	11259.2	11274.1 ( $\nu: 15.6$ )
$\Omega_m$	0.3089	$0.309^{+0.015}_{-0.015}$	$z_{\text{drag}}$	1060.01	$1059.9^{+1.1}_{-1.1}$	$\chi_{\text{BAO}}^2$	4.34	5.06 ( $\nu: 0.5$ )

Best-fit  $\chi_{\text{eff}}^2 = 11265.56$ ;  $\Delta\chi_{\text{eff}}^2 = -0.87$ ;  $\bar{\chi}_{\text{eff}}^2 = 11286.45$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.08$ ;  $R - 1 = 0.00796$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta -0.01$ ) MGS: 1.34 ( $\Delta 0.06$ ) DR11CMass: 2.43 ( $\Delta -0.02$ ) DR11LOWZ: 0.55 ( $\Delta -0.07$ ) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10495.11 ( $\Delta -1.31$ ) plik\_dx11dr2\_HM\_v18.TT: 764.09 ( $\Delta 0.49$ )

### 17.3 base\_nrun\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02240	$0.02239^{+0.00053}_{-0.00051}$	$\Omega_m$	0.3106	$0.311^{+0.026}_{-0.024}$	$D_A/\text{Gpc}$	13.889	$13.891^{+0.087}_{-0.085}$
$\Omega_c h^2$	0.11922	$0.1192^{+0.0041}_{-0.0041}$	$\Omega_m h^2$	0.14226	$0.1422^{+0.0039}_{-0.0038}$	$z_{\text{drag}}$	1059.97	$1059.9^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	1.04097	$1.04098^{+0.00092}_{-0.00094}$	$\Omega_m h^3$	0.09627	$0.0962^{+0.0010}_{-0.0010}$	$r_{\text{drag}}$	147.26	$147.29^{+0.95}_{-0.94}$
$\tau$	0.0895	$0.090^{+0.045}_{-0.042}$	$\sigma_8$	0.8361	$0.836^{+0.032}_{-0.031}$	$k_D$	0.14071	$0.1407^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	3.114	$3.115^{+0.087}_{-0.082}$	$\sigma_8 \Omega_m^{0.5}$	0.4660	$0.466^{+0.026}_{-0.025}$	$100\theta_D$	0.16075	$0.16077^{+0.00062}_{-0.00062}$
$n_s$	0.9669	$0.966^{+0.013}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	0.6242	$0.624^{+0.027}_{-0.026}$	$z_{\text{eq}}$	3384	$3383^{+94}_{-92}$
$dn_s/d \ln k$	-0.0077	$-0.009^{+0.016}_{-0.016}$	$\sigma_8/h^{0.5}$	1.0163	$1.016^{+0.040}_{-0.039}$	$k_{\text{eq}}$	0.010329	$0.01033^{+0.00029}_{-0.00028}$
$y_{\text{cal}}$	1.00037	$1.0004^{+0.0050}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.501	$2.502^{+0.090}_{-0.089}$	$100\theta_{\text{eq}}$	0.8166	$0.817^{+0.018}_{-0.017}$
$A_{217}^{\text{CIB}}$	67.4	$64^{+10}_{-10}$	$z_{\text{re}}$	10.95	$10.9^{+3.8}_{-3.7}$	$100\theta_{\text{s,eq}}$	0.4511	$0.4513^{+0.0091}_{-0.0089}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$10^9 A_s$	2.251	$2.25^{+0.20}_{-0.19}$	$r_{\text{drag}}/D_V(0.57)$	0.07161	$0.0716^{+0.0014}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	6.99	$4.94^{+3.9}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8817	$1.882^{+0.028}_{-0.027}$	$H(0.57)$	93.08	$93.09^{+0.88}_{-0.82}$
$A_{100}^{\text{PS}}$	254	$261^{+60}_{-60}$	$D_{40}$	1219.2	$1220^{+43}_{-41}$	$D_A(0.57)$	1386.3	$1386^{+25}_{-25}$
$A_{143}^{\text{PS}}$	40.2	$45^{+20}_{-20}$	$D_{220}$	5721	$5722^{+81}_{-79}$	$F_{\text{AP}}(0.57)$	0.6758	$0.6758^{+0.0065}_{-0.0062}$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{810}$	2536.9	$2536^{+28}_{-27}$	$f\sigma_8(0.57)$	0.4859	$0.486^{+0.020}_{-0.019}$
$A_{217}^{\text{PS}}$	97.5	$97^{+20}_{-20}$	$D_{1420}$	814.5	$814^{+10}_{-9.9}$	$\sigma_8(0.57)$	0.6222	$0.622^{+0.025}_{-0.024}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.29	$229.9^{+4.0}_{-3.7}$	$f_{2000}^{143}$	30.1	$31^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.53	$7.49^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	0.992	$0.994^{+0.054}_{-0.051}$	$f_{2000}^{143 \times 217}$	32.60	$33^{+4}_{-5}$
$A_{143}^{\text{dustTT}}$	9.05	$9.03^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245407	$0.24540^{+0.00024}_{-0.00023}$	$f_{2000}^{217}$	106.16	$106.5^{+4.1}_{-4.2}$
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.2^{+8.2}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246733	$0.24673^{+0.00024}_{-0.00023}$	$\chi_{\text{lowTEB}}^2$	10494.9	10496.2 ( $\nu$ : 4.1)
$A_{217}^{\text{dustTT}}$	81.4	$82^{+10}_{-10}$	$10^5 D/H$	2.585	$2.588^{+0.097}_{-0.098}$	$\chi_{\text{plik}}^2$	764.3	778.5 ( $\nu$ : 17.9)
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.789	$13.790^{+0.078}_{-0.082}$	$\chi_{\text{JLA}}^2$	706.72	706.86 ( $\nu$ : 0.1)
$c_{217}$	0.99589	$0.9960^{+0.0028}_{-0.0028}$	$z_*$	1089.81	$1089.83^{+0.89}_{-0.88}$	$\chi_{\text{prior}}^2$	1.94	7.29 ( $\nu$ : 6.2)
$H_0$	67.67	$67.7^{+1.9}_{-1.9}$	$r_*$	144.61	$144.63^{+0.93}_{-0.93}$	$\chi_{\text{CMB}}^2$	11259.2	11274.7 ( $\nu$ : 16.2)
$\Omega_\Lambda$	0.6894	$0.689^{+0.024}_{-0.026}$	$100\theta_*$	1.04116	$1.04117^{+0.00090}_{-0.00091}$			

Best-fit  $\chi_{\text{eff}}^2 = 11967.90$ ;  $\Delta\chi_{\text{eff}}^2 = -0.84$ ;  $\bar{\chi}_{\text{eff}}^2 = 11988.82$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.22$ ;  $R - 1 = 0.00688$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.94 ( $\Delta$  -1.50) plik\_dx11dr2\_HM\_v18\_TT: 764.30 ( $\Delta$  0.88) SN - JLA December\_2013: 706.72 ( $\Delta$  -0.04)



## 17.4 base\_nrun\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02231	$0.02229^{+0.00052}_{-0.00051}$	$\Omega_m$	0.3066	$0.307^{+0.026}_{-0.024}$	$D_A/\text{Gpc}$	13.915	$13.917^{+0.084}_{-0.084}$
$\Omega_c h^2$	0.11842	$0.1184^{+0.0042}_{-0.0040}$	$\Omega_m h^2$	0.14137	$0.1413^{+0.0039}_{-0.0036}$	$z_{\text{drag}}$	1059.67	$1059.6^{+1.1}_{-1.0}$
$100\theta_{\text{MC}}$	1.04104	$1.04106^{+0.00097}_{-0.00093}$	$\Omega_m h^3$	0.09599	$0.0960^{+0.0010}_{-0.00098}$	$r_{\text{drag}}$	147.58	$147.61^{+0.92}_{-0.91}$
$\tau$	0.0678	$0.068^{+0.035}_{-0.035}$	$\sigma_8$	0.8157	$0.816^{+0.019}_{-0.019}$	$k_D$	0.14030	$0.14026^{+0.00099}_{-0.0010}$
$\ln(10^{10} A_s)$	3.066	$3.068^{+0.063}_{-0.061}$	$\sigma_8 \Omega_m^{0.5}$	0.4517	$0.452^{+0.018}_{-0.017}$	$100\theta_D$	0.16091	$0.16094^{+0.00059}_{-0.00058}$
$n_s$	0.9682	$0.968^{+0.012}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	0.6070	$0.607^{+0.015}_{-0.015}$	$z_{\text{eq}}$	3363	$3362^{+94}_{-87}$
$dn_s/d \ln k$	-0.0023	$-0.003^{+0.015}_{-0.015}$	$\sigma_8/h^{0.5}$	0.9899	$0.990^{+0.022}_{-0.021}$	$k_{\text{eq}}$	0.010264	$0.01026^{+0.00029}_{-0.00027}$
$y_{\text{cal}}$	1.00010	$1.0002^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.445	$2.445^{+0.053}_{-0.050}$	$100\theta_{\text{eq}}$	0.8203	$0.821^{+0.017}_{-0.018}$
$A_{217}^{\text{CIB}}$	67.8	$65^{+10}_{-10}$	$z_{\text{re}}$	8.99	$8.96^{+3.0}_{-3.5}$	$100\theta_{\text{s,eq}}$	0.4531	$0.4532^{+0.0090}_{-0.0091}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.146	$2.15^{+0.14}_{-0.13}$	$r_{\text{drag}}/D_V(0.57)$	0.07186	$0.0719^{+0.0014}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	7.24	$4.79^{+4.0}_{-3.9}$	$10^9 A_s e^{-2\tau}$	1.8743	$1.875^{+0.025}_{-0.027}$	$H(0.57)$	93.11	$93.12^{+0.91}_{-0.83}$
$A_{100}^{\text{PS}}$	255	$263^{+50}_{-60}$	$D_{40}$	1219.3	$1219^{+42}_{-42}$	$D_A(0.57)$	1383.8	$1384^{+25}_{-26}$
$A_{143}^{\text{PS}}$	39.5	$45^{+20}_{-20}$	$D_{220}$	5717	$5718^{+80}_{-80}$	$F_{\text{AP}}(0.57)$	0.6748	$0.6748^{+0.0066}_{-0.0061}$
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$D_{810}$	2533.2	$2533^{+27}_{-26}$	$f\sigma_8(0.57)$	0.4730	$0.473^{+0.010}_{-0.010}$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$D_{1420}$	814.8	$814^{+11}_{-11}$	$\sigma_8(0.57)$	0.6080	$0.608^{+0.017}_{-0.017}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.05	$229.7^{+4.0}_{-3.8}$	$f_{2000}^{143}$	30.2	$31^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.44	$7.50^{+3.6}_{-3.5}$	$n_{\text{s},0.002}$	0.9756	$0.978^{+0.048}_{-0.047}$	$f_{2000}^{143 \times 217}$	32.75	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.15	$9.12^{+3.6}_{-3.7}$	$Y_{\text{P}}$	0.245365	$0.24536^{+0.00023}_{-0.00023}$	$f_{2000}^{217}$	106.24	$106.7^{+4.1}_{-4.1}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.3^{+8.4}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246692	$0.24668^{+0.00023}_{-0.00023}$	$\chi_{\text{lensing}}^2$	9.36	10.1 ( $\nu$ : 1.5)
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 D/H$	2.603	$2.606^{+0.098}_{-0.096}$	$\chi_{\text{lowTEB}}^2$	10494.21	10495.2 ( $\nu$ : 2.7)
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.794	$13.794^{+0.079}_{-0.084}$	$\chi_{\text{plik}}^2$	766.7	780.7 ( $\nu$ : 17.3)
$c_{217}$	0.99601	$0.9960^{+0.0029}_{-0.0029}$	$z_*$	1089.86	$1089.88^{+0.89}_{-0.88}$	$\chi_{\text{prior}}^2$	2.10	7.35 ( $\nu$ : 6.4)
$H_0$	67.90	$67.9^{+1.9}_{-1.9}$	$r_*$	144.89	$144.91^{+0.90}_{-0.91}$	$\chi_{\text{CMB}}^2$	11270.2	11286.0 ( $\nu$ : 16.4)
$\Omega_\Lambda$	0.6934	$0.693^{+0.024}_{-0.026}$	$100\theta_*$	1.04123	$1.04126^{+0.00093}_{-0.00091}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.34$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.36$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.06$ ;  $R - 1 = 0.02203$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.36 ( $\Delta$  0.18) lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.21 ( $\Delta$  -0.65) plik\_dx11dr2\_HM\_v18\_TT: 766.68 ( $\Delta$  0.35)

## 17.5 base\_nrun\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02240	$0.02241^{+0.00054}_{-0.00051}$	$\Omega_m$	0.3099	$0.310^{+0.027}_{-0.025}$	$D_A/\text{Gpc}$	13.892	$13.893^{+0.088}_{-0.088}$
$\Omega_c h^2$	0.11910	$0.1191^{+0.0043}_{-0.0042}$	$\Omega_m h^2$	0.14215	$0.1421^{+0.0041}_{-0.0040}$	$z_{\text{drag}}$	1059.93	$1060.0^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	1.04100	$1.04101^{+0.00093}_{-0.00094}$	$\Omega_m h^3$	0.09627	$0.0963^{+0.0010}_{-0.0010}$	$r_{\text{drag}}$	147.29	$147.30^{+0.97}_{-0.96}$
$\tau$	0.0894	$0.091^{+0.045}_{-0.042}$	$\sigma_8$	0.8354	$0.836^{+0.032}_{-0.031}$	$k_D$	0.14068	$0.1407^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	3.113	$3.116^{+0.088}_{-0.082}$	$\sigma_8 \Omega_m^{0.5}$	0.4650	$0.465^{+0.026}_{-0.026}$	$100\theta_D$	0.16075	$0.16076^{+0.00063}_{-0.00062}$
$n_s$	0.9670	$0.967^{+0.013}_{-0.013}$	$\sigma_8 \Omega_m^{0.25}$	0.6233	$0.624^{+0.027}_{-0.026}$	$z_{\text{eq}}$	3381	$3381^{+97}_{-95}$
$dn_s/d \ln k$	-0.0074	$-0.009^{+0.016}_{-0.016}$	$\sigma_8/h^{0.5}$	1.0151	$1.016^{+0.041}_{-0.040}$	$k_{\text{eq}}$	0.010320	$0.01032^{+0.00030}_{-0.00029}$
$y_{\text{cal}}$	1.00024	$1.0004^{+0.0050}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.499	$2.501^{+0.091}_{-0.090}$	$100\theta_{\text{eq}}$	0.8172	$0.817^{+0.018}_{-0.018}$
$A_{217}^{\text{CIB}}$	67.6	$64^{+10}_{-10}$	$z_{\text{re}}$	10.93	$11.0^{+3.8}_{-3.7}$	$100\theta_{\text{s,eq}}$	0.4514	$0.4515^{+0.0094}_{-0.0093}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.249	$2.26^{+0.20}_{-0.19}$	$r_{\text{drag}}/D_V(0.57)$	0.07165	$0.0717^{+0.0015}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	7.13	$4.95^{+3.9}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8805	$1.881^{+0.028}_{-0.027}$	$H(0.57)$	93.11	$93.12^{+0.90}_{-0.85}$
$A_{100}^{\text{PS}}$	255	$261^{+60}_{-60}$	$D_{40}$	1219.2	$1219^{+43}_{-41}$	$D_A(0.57)$	1385.6	$1385^{+26}_{-26}$
$A_{143}^{\text{PS}}$	39.4	$45^{+20}_{-20}$	$D_{220}$	5720	$5723^{+81}_{-79}$	$F_{\text{AP}}(0.57)$	0.6756	$0.6756^{+0.0068}_{-0.0065}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2536.0	$2536^{+28}_{-27}$	$f\sigma_8(0.57)$	0.4853	$0.486^{+0.020}_{-0.019}$
$A_{217}^{\text{PS}}$	97.0	$97^{+20}_{-20}$	$D_{1420}$	814.3	$814^{+11}_{-9.9}$	$\sigma_8(0.57)$	0.6219	$0.623^{+0.026}_{-0.024}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.23	$230.0^{+4.0}_{-3.7}$	$f_{2000}^{143}$	30.0	$31^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.49	$7.50^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	0.991	$0.995^{+0.055}_{-0.051}$	$f_{2000}^{143 \times 217}$	32.58	$33^{+4}_{-5}$
$A_{143}^{\text{dustTT}}$	9.09	$9.03^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245408	$0.24541^{+0.00024}_{-0.00023}$	$f_{2000}^{217}$	106.15	$106.5^{+4.1}_{-4.2}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.2}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246734	$0.24673^{+0.00024}_{-0.00023}$	$\chi_{\text{lowTEB}}^2$	10495.0	10496.2 ( $\nu$ : 4.2)
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$10^5 D/H$	2.585	$2.585^{+0.098}_{-0.099}$	$\chi_{\text{plik}}^2$	764.1	778.6 ( $\nu$ : 18.1)
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.788	$13.787^{+0.081}_{-0.082}$	$\chi_{\text{H070p6}}^2$	0.75	0.82 ( $\nu$ : 0.1)
$c_{217}$	0.99598	$0.9960^{+0.0028}_{-0.0029}$	$z_*$	1089.80	$1089.80^{+0.91}_{-0.90}$	$\chi_{\text{prior}}^2$	2.07	7.29 ( $\nu$ : 6.2)
$H_0$	67.73	$67.8^{+2.0}_{-1.9}$	$r_*$	144.64	$144.65^{+0.95}_{-0.96}$	$\chi_{\text{CMB}}^2$	11259.1	11274.8 ( $\nu$ : 16.4)
$\Omega_\Lambda$	0.6901	$0.690^{+0.025}_{-0.027}$	$100\theta_*$	1.04118	$1.04119^{+0.00090}_{-0.00092}$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.92$ ;  $\Delta\chi_{\text{eff}}^2 = -0.91$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.88$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.19$ ;  $R - 1 = 0.00688$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.98 ( $\Delta$  -1.34) plik\_dx11dr2\_HM\_v18\_TT: 764.12 ( $\Delta$  0.45) Hubble - H070p6: 0.75 ( $\Delta$  -0.08)

## 17.6 base\_nrun\_plikHM\_TT\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022322	$0.02230^{+0.00045}_{-0.00043}$	$\Omega_m h^3$	0.09602	$0.0960^{+0.0010}_{-0.00098}$	$100\theta_D$	0.16091	$0.16093^{+0.00054}_{-0.00056}$
$\Omega_c h^2$	0.11829	$0.1183^{+0.0024}_{-0.0024}$	$\sigma_8$	0.8169	$0.816^{+0.018}_{-0.017}$	$z_{\text{eq}}$	3360	$3360^{+56}_{-55}$
$100\theta_{\text{MC}}$	1.04110	$1.04107^{+0.00079}_{-0.00083}$	$\sigma_8 \Omega_m^{0.5}$	0.4517	$0.451^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010255	$0.01025^{+0.00017}_{-0.00017}$
$\tau$	0.0701	$0.069^{+0.025}_{-0.026}$	$\sigma_8 \Omega_m^{0.25}$	0.6075	$0.607^{+0.014}_{-0.014}$	$100\theta_{\text{eq}}$	0.8209	$0.821^{+0.010}_{-0.010}$
$\ln(10^{10} A_s)$	3.0703	$3.069^{+0.048}_{-0.048}$	$\sigma_8/h^{0.5}$	0.9909	$0.990^{+0.021}_{-0.021}$	$100\theta_{s,\text{eq}}$	0.4534	$0.4534^{+0.0053}_{-0.0053}$
$n_s$	0.9686	$0.9677^{+0.0091}_{-0.0088}$	$\langle d^2 \rangle^{1/2}$	2.447	$2.446^{+0.052}_{-0.049}$	$r_{\text{drag}}/D_V(0.57)$	0.07191	$0.07191^{+0.00080}_{-0.00081}$
$dn_s/d \ln k$	-0.0026	$-0.003^{+0.015}_{-0.014}$	$z_{\text{re}}$	9.20	$9.07^{+2.4}_{-2.5}$	$H(0.57)$	93.15	$93.13^{+0.57}_{-0.54}$
$y_{\text{cal}}$	0.99999	$1.0002^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.155	$2.15^{+0.11}_{-0.10}$	$D_A(0.57)$	1382.8	$1383^{+15}_{-15}$
$A_{217}^{\text{CIB}}$	67.8	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8732	$1.874^{+0.022}_{-0.022}$	$F_{\text{AP}}(0.57)$	0.67455	$0.6746^{+0.0037}_{-0.0035}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1217.9	$1219^{+39}_{-39}$	$f\sigma_8(0.57)$	0.4735	$0.473^{+0.010}_{-0.0099}$
$A_{143}^{\text{tSZ}}$	7.18	$4.77^{+3.9}_{-3.9}$	$D_{220}$	5715	$5719^{+78}_{-80}$	$\sigma_8(0.57)$	0.6092	$0.608^{+0.014}_{-0.014}$
$A_{100}^{\text{PS}}$	255	$264^{+50}_{-50}$	$D_{810}$	2532.4	$2533^{+27}_{-26}$	$f_{2000}^{143}$	30.3	$31^{+6}_{-6}$
$A_{143}^{\text{PS}}$	39.9	$45^{+20}_{-20}$	$D_{1420}$	814.5	$814^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	32.83	$33^{+4}_{-5}$
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$D_{2000}$	230.04	$229.7^{+3.8}_{-3.8}$	$f_{2000}^{217}$	106.26	$106.7^{+4.1}_{-4.0}$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$n_{s,0.002}$	0.9770	$0.978^{+0.047}_{-0.046}$	$\chi_{\text{lensing}}^2$	9.44	10.1 ( $\nu: 1.4$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245372	$0.24536^{+0.00020}_{-0.00020}$	$\chi_{\text{lowTEB}}^2$	10494.15	10494.9 ( $\nu: 2.3$ )
$A_{100}^{\text{dustTT}}$	7.51	$7.50^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246698	$0.24669^{+0.00020}_{-0.00020}$	$\chi_{\text{plik}}^2$	766.7	780.3 ( $\nu: 16.4$ )
$A_{143}^{\text{dustTT}}$	9.21	$9.12^{+3.6}_{-3.7}$	$10^5 D/H$	2.600	$2.604^{+0.082}_{-0.085}$	$\chi_{\text{H070p6}}^2$	0.63	0.66 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.2^{+8.4}_{-8.0}$	Age/Gyr	13.790	$13.792^{+0.059}_{-0.061}$	$\chi_{\text{JLA}}^2$	706.607	706.65 ( $\nu: 0.0$ )
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$z_*$	1089.83	$1089.86^{+0.61}_{-0.64}$	$\chi_{6\text{DF}}^2$	0.001	0.038 ( $\nu: 0.0$ )
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.91	$144.93^{+0.62}_{-0.61}$	$\chi_{\text{MGS}}^2$	1.61	1.67 ( $\nu: 0.2$ )
$c_{217}$	0.99600	$0.9960^{+0.0030}_{-0.0027}$	$100\theta_*$	1.04128	$1.04127^{+0.00076}_{-0.00081}$	$\chi_{\text{DR11CMass}}^2$	2.44	2.84 ( $\nu: 0.2$ )
$H_0$	67.98	$68.0^{+1.1}_{-1.1}$	$D_A/\text{Gpc}$	13.917	$13.918^{+0.060}_{-0.061}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	0.45 ( $\nu: 0.1$ )
$\Omega_\Lambda$	0.6943	$0.694^{+0.014}_{-0.014}$	$z_{\text{drag}}$	1059.70	$1059.7^{+1.0}_{-0.98}$	$\chi_{\text{prior}}^2$	2.12	7.29 ( $\nu: 6.4$ )
$\Omega_m$	0.3057	$0.306^{+0.014}_{-0.014}$	$r_{\text{drag}}$	147.60	$147.62^{+0.68}_{-0.66}$	$\chi_{\text{CMB}}^2$	11270.2	11285.3 ( $\nu: 15.3$ )
$\Omega_m h^2$	0.14125	$0.1412^{+0.0024}_{-0.0023}$	$k_D$	0.14030	$0.14025^{+0.00091}_{-0.00093}$	$\chi_{\text{BAO}}^2$	4.37	5.00 ( $\nu: 0.4$ )

Best-fit  $\chi_{\text{eff}}^2 = 11983.96$ ;  $\Delta\chi_{\text{eff}}^2 = -0.11$ ;  $\bar{\chi}_{\text{eff}}^2 = 12004.87$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.85$ ;  $R - 1 = 0.03030$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta -0.00$ ) MGS: 1.61 ( $\Delta 0.07$ ) DR11CMass: 2.44 ( $\Delta 0.02$ ) DR11LOWZ: 0.32 ( $\Delta -0.05$ ) CMB - smica\_g30\_ftl\_full\_pp: 9.44 ( $\Delta 0.17$ ) lowl\_SMW\_70\_dx11d\_2014\_10\_03 10494.15 ( $\Delta -0.76$ ) plik\_dx11dr2\_HM\_v18\_TT: 766.65 ( $\Delta 0.52$ ) Hubble - H070p6: 0.62 ( $\Delta -0.04$ ) SN - JLA December\_2013: 706.61 ( $\Delta -0.02$ )

## 17.7 base\_nrun\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02236^{+0.00054}_{-0.00052}$	$\Omega_m$	$0.313^{+0.029}_{-0.026}$	$D_A/\text{Gpc}$	$13.884^{+0.092}_{-0.092}$
$\Omega_c h^2$	$0.1196^{+0.0045}_{-0.0044}$	$\Omega_m h^2$	$0.1426^{+0.0043}_{-0.0041}$	$z_{\text{drag}}$	$1059.9^{+1.1}_{-1.1}$
$100\theta_{\text{MC}}$	$1.04093^{+0.00094}_{-0.00095}$	$\Omega_m h^3$	$0.0962^{+0.0010}_{-0.0010}$	$r_{\text{drag}}$	$147.2^{+1.0}_{-0.99}$
$\tau$	$0.089^{+0.043}_{-0.041}$	$\sigma_8$	$0.836^{+0.031}_{-0.031}$	$k_D$	$0.1407^{+0.0011}_{-0.0011}$
$\ln(10^{10} A_s)$	$3.113^{+0.083}_{-0.081}$	$\sigma_8 \Omega_m^{0.5}$	$0.468^{+0.027}_{-0.026}$	$100\theta_D$	$0.16079^{+0.00062}_{-0.00062}$
$n_s$	$0.965^{+0.013}_{-0.013}$	$\sigma_8 \Omega_m^{0.25}$	$0.626^{+0.027}_{-0.026}$	$z_{\text{eq}}$	$3392^{+100}_{-98}$
$dn_s/d \ln k$	$-0.009^{+0.016}_{-0.016}$	$\sigma_8/h^{0.5}$	$1.018^{+0.040}_{-0.039}$	$k_{\text{eq}}$	$0.01035^{+0.00031}_{-0.00030}$
$y_{\text{cal}}$	$1.0003^{+0.0050}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	$2.506^{+0.091}_{-0.087}$	$100\theta_{\text{eq}}$	$0.815^{+0.019}_{-0.019}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$z_{\text{re}}$	$10.8^{+3.5}_{-3.4}$	$100\theta_{\text{s,eq}}$	$0.4504^{+0.0097}_{-0.0098}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.25^{+0.19}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	$0.0715^{+0.0015}_{-0.0015}$
$A_{143}^{\text{tSZ}}$	$4.92^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	$1.883^{+0.029}_{-0.028}$	$H(0.57)$	$93.02^{+0.93}_{-0.85}$
$A_{100}^{\text{PS}}$	$261^{+60}_{-60}$	$D_{40}$	$1222^{+43}_{-41}$	$D_A(0.57)$	$1389^{+27}_{-27}$
$A_{143}^{\text{PS}}$	$45^{+20}_{-20}$	$D_{220}$	$5721^{+81}_{-78}$	$F_{\text{AP}}(0.57)$	$0.6764^{+0.0071}_{-0.0068}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{810}$	$2536^{+28}_{-27}$	$f\sigma_8(0.57)$	$0.487^{+0.020}_{-0.019}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$D_{1420}$	$813^{+11}_{-9.9}$	$\sigma_8(0.57)$	$0.622^{+0.024}_{-0.024}$
$A^{\text{kSZ}}$	—	$D_{2000}$	$229.8^{+4.0}_{-3.7}$	$f_{2000}^{143}$	$31^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	$7.49^{+3.6}_{-3.7}$	$n_{\text{s},0.002}$	$0.993^{+0.054}_{-0.051}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-5}$
$A_{143}^{\text{dustTT}}$	$9.03^{+3.6}_{-3.6}$	$Y_{\text{P}}$	$0.24539^{+0.00024}_{-0.00023}$	$f_{2000}^{217}$	$106.6^{+4.2}_{-4.2}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.1}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24671^{+0.00024}_{-0.00024}$	$\chi_{\text{lowTEB}}^2$	$10496.2 (\nu: 4.1)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^5 D/H$	$2.593^{+0.099}_{-0.099}$	$\chi_{\text{plik}}^2$	$778.5 (\nu: 17.8)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$\text{Age}/\text{Gyr}$	$13.795^{+0.082}_{-0.085}$	$\chi_{\text{prior}}^2$	$7.28 (\nu: 6.2)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0029}$	$z_*$	$1089.89^{+0.92}_{-0.93}$	$\chi_{\text{CMB}}^2$	$11274.7 (\nu: 16.1)$
$H_0$	$67.5^{+2.0}_{-2.0}$	$r_*$	$144.55^{+0.99}_{-1.0}$		
$\Omega_\Lambda$	$0.687^{+0.026}_{-0.029}$	$100\theta_*$	$1.04112^{+0.00092}_{-0.00093}$		

$$\bar{\chi}_{\text{eff}}^2 = 11281.97; \Delta \bar{\chi}_{\text{eff}}^2 = 0.33; R - 1 = 0.00630$$

## 17.8 base\_nrun\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022291	$0.02229^{+0.00033}_{-0.00032}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.16}$	Age/Gyr	13.809	$13.809^{+0.052}_{-0.052}$
$\Omega_c h^2$	0.11982	$0.1198^{+0.0029}_{-0.0029}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$z_*$	1090.00	$1090.00^{+0.60}_{-0.59}$
$100\theta_{\text{MC}}$	1.04076	$1.04078^{+0.00063}_{-0.00063}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$r_*$	144.54	$144.53^{+0.64}_{-0.64}$
$\tau$	0.0844	$0.083^{+0.036}_{-0.036}$	$A_{217}^{\text{dustTE}}$	1.672	$1.67^{+0.50}_{-0.49}$	$100\theta_*$	1.04096	$1.04097^{+0.00062}_{-0.00062}$
$\ln(10^{10} A_s)$	3.105	$3.103^{+0.071}_{-0.070}$	$c_{100}$	0.99821	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.885	$13.885^{+0.059}_{-0.059}$
$n_s$	0.9642	$0.9639^{+0.0098}_{-0.0099}$	$c_{217}$	0.99600	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.74	$1059.74^{+0.66}_{-0.65}$
$dn_s/d \ln k$	-0.0051	$-0.006^{+0.014}_{-0.014}$	$H_0$	67.30	$67.3^{+1.3}_{-1.3}$	$r_{\text{drag}}$	147.23	$147.22^{+0.63}_{-0.63}$
$y_{\text{cal}}$	1.00015	$1.0003^{+0.0049}_{-0.0050}$	$\Omega_\Lambda$	0.6848	$0.685^{+0.018}_{-0.018}$	$k_D$	0.14066	$0.14067^{+0.00067}_{-0.00067}$
$A_{217}^{\text{CIB}}$	67.4	$65^{+10}_{-10}$	$\Omega_m$	0.3152	$0.315^{+0.018}_{-0.018}$	$100\theta_D$	0.160849	$0.16085^{+0.00038}_{-0.00038}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$\Omega_m h^2$	0.14276	$0.1428^{+0.0027}_{-0.0027}$	$z_{\text{eq}}$	3396	$3396^{+66}_{-65}$
$A_{143}^{\text{tSZ}}$	7.18	$5.13^{+3.7}_{-3.8}$	$\Omega_m h^3$	0.09608	$0.09609^{+0.00061}_{-0.00061}$	$k_{\text{eq}}$	0.010365	$0.01037^{+0.00020}_{-0.00020}$
$A_{100}^{\text{PS}}$	258	$263^{+50}_{-50}$	$\sigma_8$	0.8343	$0.834^{+0.027}_{-0.027}$	$100\theta_{\text{eq}}$	0.8141	$0.814^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	40.5	$45^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4684	$0.468^{+0.019}_{-0.020}$	$100\theta_{s,\text{eq}}$	0.4498	$0.4498^{+0.0063}_{-0.0063}$
$A_{143 \times 217}^{\text{PS}}$	34.9	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6251	$0.625^{+0.021}_{-0.022}$	$r_{\text{drag}}/D_V(0.57)$	0.07136	$0.07137^{+0.00099}_{-0.00096}$
$A_{217}^{\text{PS}}$	97.9	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0169	$1.016^{+0.033}_{-0.033}$	$H(0.57)$	92.89	$92.90^{+0.57}_{-0.55}$
$A^{\text{kSZ}}$	0.0	—	$\langle d^2 \rangle^{1/2}$	2.509	$2.507^{+0.077}_{-0.079}$	$D_A(0.57)$	1391.6	$1392^{+17}_{-18}$
$A_{100}^{\text{dustTT}}$	7.41	$7.45^{+3.6}_{-3.6}$	$z_{\text{re}}$	10.55	$10.4^{+3.2}_{-3.3}$	$F_{\text{AP}}(0.57)$	0.67696	$0.6770^{+0.0046}_{-0.0045}$
$A_{143}^{\text{dustTT}}$	8.96	$8.91^{+3.6}_{-3.6}$	$10^9 A_s$	2.230	$2.23^{+0.16}_{-0.15}$	$f\sigma_8(0.57)$	0.4860	$0.486^{+0.016}_{-0.016}$
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.0^{+8.1}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8837	$1.885^{+0.025}_{-0.025}$	$\sigma_8(0.57)$	0.6197	$0.619^{+0.021}_{-0.021}$
$A_{217}^{\text{dustTT}}$	81.5	$82^{+10}_{-10}$	$D_{40}$	1230.0	$1230^{+38}_{-37}$	$f_{2000}^{143}$	30.0	$30^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0817	$0.082^{+0.011}_{-0.011}$	$D_{220}$	5724	$5727^{+76}_{-76}$	$f_{2000}^{143 \times 217}$	32.72	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0493^{+0.0097}_{-0.0099}$	$D_{810}$	2536.1	$2537^{+27}_{-27}$	$f_{2000}^{217}$	106.23	$106.4^{+4.0}_{-4.0}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.065}_{-0.063}$	$D_{1420}$	813.6	$813.6^{+9.6}_{-9.9}$	$\chi_{\text{lowTEB}}^2$	10495.7	10496.5 ( $\nu$ : 3.7)
$A_{143}^{\text{dustEE}}$	0.1005	$0.101^{+0.014}_{-0.014}$	$D_{2000}$	229.87	$229.8^{+3.5}_{-3.5}$	$\chi_{\text{plik}}^2$	2432.3	2452.1 ( $\nu$ : 24.6)
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.092}_{-0.091}$	$n_{s,0.002}$	0.9806	$0.982^{+0.045}_{-0.044}$	$\chi_{\text{prior}}^2$	7.08	19.4 ( $\nu$ : 15.0)
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.26}_{-0.26}$	$Y_P$	0.245358	$0.24536^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12928.0	12948.6 ( $\nu$ : 23.0)
$A_{100}^{\text{dustTE}}$	0.141	$0.140^{+0.074}_{-0.075}$	$Y_P^{\text{BBN}}$	0.246685	$0.24668^{+0.00015}_{-0.00015}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.606	$2.606^{+0.062}_{-0.061}$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.12$ ;  $\Delta\chi_{\text{eff}}^2 = -0.44$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.06$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.37$ ;  $R - 1 = 0.00882$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.74 ( $\Delta$  -1.19) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.30 ( $\Delta$  0.66)

## 17.9 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022330	$0.02233^{+0.00029}_{-0.00029}$	$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.10}$	$r_*$	144.659	$144.66^{+0.50}_{-0.50}$
$\Omega_c h^2$	0.11924	$0.1192^{+0.0021}_{-0.0021}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04103	$1.04104^{+0.00059}_{-0.00058}$
$100\theta_{\text{MC}}$	1.04085	$1.04085^{+0.00059}_{-0.00058}$	$A_{217}^{\text{dustTE}}$	1.668	$1.66^{+0.49}_{-0.48}$	$D_A/\text{Gpc}$	13.8957	$13.895^{+0.047}_{-0.047}$
$\tau$	0.0872	$0.087^{+0.0035}_{-0.0034}$	$c_{100}$	0.99819	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.78	$1059.80^{+0.64}_{-0.63}$
$\ln(10^{10} A_s)$	3.109	$3.108^{+0.069}_{-0.068}$	$c_{217}$	0.99603	$0.9960^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.34	$147.33^{+0.52}_{-0.52}$
$n_s$	0.9658	$0.9654^{+0.0083}_{-0.0082}$	$H_0$	67.56	$67.57^{+0.97}_{-0.94}$	$k_D$	0.14058	$0.14058^{+0.00062}_{-0.00063}$
$dn_s/d \ln k$	-0.0048	$-0.006^{+0.014}_{-0.014}$	$\Omega_\Lambda$	0.6884	$0.688^{+0.013}_{-0.013}$	$100\theta_D$	0.160826	$0.16082^{+0.00037}_{-0.00036}$
$y_{\text{cal}}$	1.00024	$1.0004^{+0.0049}_{-0.0050}$	$\Omega_m$	0.3116	$0.312^{+0.013}_{-0.013}$	$z_{\text{eq}}$	3383.1	$3383^{+48}_{-47}$
$A_{217}^{\text{CIB}}$	67.2	$64^{+10}_{-10}$	$\Omega_m h^2$	0.14221	$0.1422^{+0.0020}_{-0.0020}$	$k_{\text{eq}}$	0.010325	$0.01033^{+0.00015}_{-0.00014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$\Omega_m h^3$	0.09608	$0.09609^{+0.00061}_{-0.00060}$	$100\theta_{\text{eq}}$	0.8166	$0.8166^{+0.0090}_{-0.0090}$
$A_{143}^{\text{tSZ}}$	7.12	$5.19^{+3.6}_{-3.8}$	$\sigma_8$	0.8346	$0.834^{+0.027}_{-0.027}$	$100\theta_{s,\text{eq}}$	0.45111	$0.4511^{+0.0047}_{-0.0046}$
$A_{100}^{\text{PS}}$	258	$262^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.5}$	0.4658	$0.465^{+0.017}_{-0.018}$	$r_{\text{drag}}/D_V(0.57)$	0.07156	$0.07157^{+0.00072}_{-0.00070}$
$A_{143}^{\text{PS}}$	40.2	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6235	$0.623^{+0.021}_{-0.021}$	$H(0.57)$	92.995	$93.00^{+0.44}_{-0.42}$
$A_{143 \times 217}^{\text{PS}}$	34.7	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0153	$1.014^{+0.033}_{-0.033}$	$D_A(0.57)$	1388.2	$1388^{+13}_{-13}$
$A_{217}^{\text{PS}}$	97.7	$97^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.505	$2.503^{+0.076}_{-0.079}$	$F_{\text{AP}}(0.57)$	0.67605	$0.6760^{+0.0033}_{-0.0033}$
$A^{\text{kSZ}}$	0.00	< 8.25	$z_{\text{re}}$	10.77	$10.7^{+2.9}_{-3.1}$	$f\sigma_8(0.57)$	0.4852	$0.485^{+0.016}_{-0.016}$
$A_{100}^{\text{dustTT}}$	7.38	$7.43^{+3.6}_{-3.6}$	$10^9 A_s$	2.240	$2.24^{+0.16}_{-0.15}$	$\sigma_8(0.57)$	0.6208	$0.620^{+0.021}_{-0.020}$
$A_{143}^{\text{dustTT}}$	8.94	$8.91^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8812	$1.882^{+0.023}_{-0.023}$	$f_{2000}^{143}$	29.8	$30^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.0^{+8.2}_{-8.2}$	$D_{40}$	1228.3	$1228^{+37}_{-36}$	$f_{2000}^{143 \times 217}$	32.52	$33^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{220}$	5726	$5728^{+76}_{-76}$	$f_{2000}^{217}$	106.07	$106.3^{+3.9}_{-3.9}$
$A_{100}^{\text{dustEE}}$	0.0817	$0.082^{+0.011}_{-0.011}$	$D_{810}$	2535.7	$2536^{+27}_{-27}$	$\chi_{\text{lowTEB}}^2$	10495.9	10496.5 ( $\nu$ : 3.8)
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0495^{+0.0097}_{-0.010}$	$D_{1420}$	814.0	$813.8^{+9.6}_{-9.8}$	$\chi_{\text{plik}}^2$	2432.3	2451.7 ( $\nu$ : 24.2)
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.099^{+0.065}_{-0.063}$	$D_{2000}$	230.13	$230.0^{+3.4}_{-3.4}$	$\chi_{6\text{DF}}^2$	0.037	0.065 ( $\nu$ : 0.0)
$A_{143}^{\text{dustEE}}$	0.1008	$0.101^{+0.014}_{-0.013}$	$n_{s,0.002}$	0.9813	$0.984^{+0.045}_{-0.043}$	$\chi_{\text{MGS}}^2$	1.16	1.23 ( $\nu$ : 0.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.091}_{-0.091}$	$Y_P$	0.245375	$0.24538^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.55	2.87 ( $\nu$ : 0.2)
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.26}_{-0.26}$	$Y_P^{\text{BBN}}$	0.246701	$0.24670^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.75	0.84 ( $\nu$ : 0.2)
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.075}_{-0.077}$	$10^5 D/H$	2.599	$2.598^{+0.055}_{-0.055}$	$\chi_{\text{prior}}^2$	7.08	19.5 ( $\nu$ : 15.3)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.058}$	Age/Gyr	13.8007	$13.800^{+0.042}_{-0.042}$	$\chi_{\text{CMB}}^2$	12928.2	12948.2 ( $\nu$ : 22.3)
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.17}_{-0.16}$	$z_*$	1089.904	$1089.90^{+0.48}_{-0.48}$	$\chi_{\text{BAO}}^2$	4.49	5.00 ( $\nu$ : 0.4)

Best-fit  $\chi_{\text{eff}}^2 = 12939.75$ ;  $\Delta\chi_{\text{eff}}^2 = -0.41$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.72$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.24$ ;  $R - 1 = 0.01477$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.04 ( $\Delta$  0.01) MGS: 1.16 ( $\Delta$  -0.06) DR11CMass: 2.55 ( $\Delta$  0.05) DR11LOWZ: 0.75 ( $\Delta$  0.07) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10495.84 ( $\Delta$  -1.57) plik.dx11dr2.HM.v18.TTTEEE: 2432.33 ( $\Delta$  0.80)

### 17.10 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022307	$0.02231^{+0.00032}_{-0.00032}$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.16}$	Age/Gyr	13.806	$13.805^{+0.051}_{-0.051}$
$\Omega_c h^2$	0.11960	$0.1196^{+0.0028}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.97	$1089.96^{+0.57}_{-0.58}$
$100\theta_{\text{MC}}$	1.04080	$1.04081^{+0.00064}_{-0.00062}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$r_*$	144.58	$144.58^{+0.63}_{-0.63}$
$\tau$	0.0854	$0.085^{+0.036}_{-0.035}$	$A_{217}^{\text{dustTE}}$	1.658	$1.66^{+0.50}_{-0.49}$	$100\theta_*$	1.04098	$1.04100^{+0.00063}_{-0.00061}$
$\ln(10^{10} A_s)$	3.106	$3.105^{+0.071}_{-0.069}$	$c_{100}$	0.99820	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.889	$13.889^{+0.057}_{-0.058}$
$n_s$	0.9647	$0.9645^{+0.0097}_{-0.0096}$	$c_{217}$	0.99604	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.78	$1059.77^{+0.67}_{-0.63}$
$dn_s/d \ln k$	-0.0049	$-0.006^{+0.014}_{-0.014}$	$H_0$	67.40	$67.4^{+1.3}_{-1.2}$	$r_{\text{drag}}$	147.27	$147.26^{+0.63}_{-0.62}$
$y_{\text{cal}}$	1.00027	$1.0003^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6862	$0.686^{+0.017}_{-0.018}$	$k_D$	0.14063	$0.14064^{+0.00067}_{-0.00067}$
$A_{217}^{\text{CIB}}$	67.8	$64^{+10}_{-10}$	$\Omega_m$	0.3138	$0.314^{+0.018}_{-0.017}$	$100\theta_D$	0.160837	$0.16084^{+0.00038}_{-0.00038}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$\Omega_m h^2$	0.14255	$0.1426^{+0.0026}_{-0.0026}$	$z_{\text{eq}}$	3391	$3391^{+63}_{-63}$
$A_{143}^{\text{tSZ}}$	7.24	$5.16^{+3.7}_{-3.8}$	$\Omega_m h^3$	0.09608	$0.09609^{+0.00062}_{-0.00061}$	$k_{\text{eq}}$	0.010350	$0.01035^{+0.00019}_{-0.00019}$
$A_{100}^{\text{PS}}$	258	$263^{+50}_{-60}$	$\sigma_8$	0.8344	$0.834^{+0.027}_{-0.027}$	$100\theta_{\text{eq}}$	0.8150	$0.815^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	39.3	$45^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4674	$0.467^{+0.019}_{-0.019}$	$100\theta_{s,\text{eq}}$	0.4503	$0.4503^{+0.0061}_{-0.0061}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6245	$0.624^{+0.021}_{-0.022}$	$r_{\text{drag}}/D_V(0.57)$	0.07144	$0.07144^{+0.00096}_{-0.00094}$
$A_{217}^{\text{PS}}$	96.9	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0163	$1.015^{+0.033}_{-0.033}$	$H(0.57)$	92.93	$92.94^{+0.56}_{-0.53}$
$A^{\text{kSZ}}$	0.01	< 8.30	$\langle d^2 \rangle^{1/2}$	2.508	$2.505^{+0.077}_{-0.079}$	$D_A(0.57)$	1390.3	$1390^{+17}_{-17}$
$A_{100}^{\text{dustTT}}$	7.44	$7.44^{+3.6}_{-3.6}$	$z_{\text{re}}$	10.63	$10.5^{+3.0}_{-3.3}$	$F_{\text{AP}}(0.57)$	0.67661	$0.6766^{+0.0044}_{-0.0044}$
$A_{143}^{\text{dustTT}}$	8.95	$8.91^{+3.6}_{-3.6}$	$10^9 A_s$	2.234	$2.23^{+0.16}_{-0.15}$	$f\sigma_8(0.57)$	0.4857	$0.485^{+0.016}_{-0.016}$
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.0^{+8.3}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8828	$1.884^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	0.6201	$0.620^{+0.021}_{-0.021}$
$A_{217}^{\text{dustTT}}$	81.5	$81^{+10}_{-10}$	$D_{40}$	1229.8	$1229^{+38}_{-37}$	$f_{2000}^{143}$	29.9	$30^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0819	$0.082^{+0.011}_{-0.011}$	$D_{220}$	5726	$5727^{+76}_{-75}$	$f_{2000}^{143 \times 217}$	32.62	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0495	$0.0494^{+0.0097}_{-0.010}$	$D_{810}$	2536.1	$2537^{+27}_{-27}$	$f_{2000}^{217}$	106.18	$106.3^{+4.0}_{-3.9}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0996	$0.099^{+0.065}_{-0.063}$	$D_{1420}$	813.8	$813.7^{+9.6}_{-9.9}$	$\chi_{\text{lowTEB}}^2$	10495.8	10496.5 ( $\nu$ : 3.8)
$A_{143}^{\text{dustEE}}$	0.1008	$0.101^{+0.014}_{-0.014}$	$D_{2000}$	229.99	$229.9^{+3.4}_{-3.6}$	$\chi_{\text{plik}}^2$	2432.1	2452.0 ( $\nu$ : 24.5)
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.092}_{-0.091}$	$n_{s,0.002}$	0.9806	$0.983^{+0.045}_{-0.044}$	$\chi_{\text{JLA}}^2$	706.82	706.89 ( $\nu$ : 0.0)
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.26}$	$Y_P$	0.245365	$0.24537^{+0.00014}_{-0.00015}$	$\chi_{\text{prior}}^2$	7.21	19.5 ( $\nu$ : 15.3)
$A_{100}^{\text{dustTE}}$	0.142	$0.140^{+0.074}_{-0.076}$	$Y_P^{\text{BBN}}$	0.246692	$0.24669^{+0.00014}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12927.9	12948.6 ( $\nu$ : 22.8)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.056}_{-0.058}$	$10^5 \text{D}/\text{H}$	2.603	$2.603^{+0.060}_{-0.060}$			

Best-fit  $\chi_{\text{eff}}^2 = 13641.96$ ;  $\Delta\chi_{\text{eff}}^2 = -0.44$ ;  $\bar{\chi}_{\text{eff}}^2 = 13674.92$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.29$ ;  $R - 1 = 0.01157$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.80 ( $\Delta$  -1.56) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.12 ( $\Delta$  0.51) SN - JLA December\_2013: 706.82 ( $\Delta$  -0.04)

### 17.11 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022269	$0.02228^{+0.00033}_{-0.00032}$	$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.31^{+0.16}_{-0.16}$	Age/Gyr	13.806	$13.805^{+0.054}_{-0.051}$
$\Omega_c h^2$	0.11926	$0.1192^{+0.0029}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	0.154	$0.16^{+0.11}_{-0.11}$	$z_*$	1089.98	$1089.97^{+0.61}_{-0.59}$
$100\theta_{\text{MC}}$	1.04086	$1.04088^{+0.00061}_{-0.00063}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$r_*$	144.70	$144.70^{+0.59}_{-0.62}$
$\tau$	0.0632	$0.063^{+0.028}_{-0.027}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.51}_{-0.49}$	$100\theta_*$	1.04106	$1.04108^{+0.00061}_{-0.00061}$
$\ln(10^{10} A_s)$	3.059	$3.060^{+0.050}_{-0.051}$	$c_{100}$	0.99815	$0.9981^{+0.0016}_{-0.0016}$	$D_A/\text{Gpc}$	13.899	$13.899^{+0.055}_{-0.058}$
$n_s$	0.9657	$0.9653^{+0.0095}_{-0.0094}$	$c_{217}$	0.99604	$0.9961^{+0.0029}_{-0.0028}$	$z_{\text{drag}}$	1059.67	$1059.66^{+0.65}_{-0.64}$
$dn_s/d \ln k$	-0.0007	$-0.002^{+0.013}_{-0.013}$	$H_0$	67.51	$67.5^{+1.3}_{-1.3}$	$r_{\text{drag}}$	147.40	$147.40^{+0.58}_{-0.62}$
$y_{\text{cal}}$	1.0000	$1.0000^{+0.0051}_{-0.0051}$	$\Omega_\Lambda$	0.6881	$0.688^{+0.018}_{-0.018}$	$k_D$	0.14047	$0.14047^{+0.00066}_{-0.00066}$
$A_{217}^{\text{CIB}}$	67.7	$65^{+10}_{-10}$	$\Omega_m$	0.3119	$0.312^{+0.018}_{-0.018}$	$100\theta_D$	0.160912	$0.16091^{+0.00039}_{-0.00039}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\Omega_m h^2$	0.14217	$0.1422^{+0.0028}_{-0.0026}$	$z_{\text{eq}}$	3382	$3382^{+66}_{-62}$
$A_{143}^{\text{tSZ}}$	7.30	$5.13^{+3.6}_{-3.9}$	$\Omega_m h^3$	0.09598	$0.09600^{+0.00059}_{-0.00058}$	$k_{\text{eq}}$	0.010323	$0.01032^{+0.00020}_{-0.00019}$
$A_{100}^{\text{PS}}$	258	$263^{+60}_{-50}$	$\sigma_8$	0.8153	$0.815^{+0.017}_{-0.018}$	$100\theta_{\text{eq}}$	0.8166	$0.817^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	39.5	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4553	$0.455^{+0.014}_{-0.014}$	$100\theta_{s,\text{eq}}$	0.4512	$0.4513^{+0.0062}_{-0.0063}$
$A_{143 \times 217}^{\text{PS}}$	33.7	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6093	$0.609^{+0.013}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.07155	$0.07157^{+0.00095}_{-0.00098}$
$A_{217}^{\text{PS}}$	96.9	$96^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9922	$0.992^{+0.020}_{-0.022}$	$H(0.57)$	92.95	$92.97^{+0.56}_{-0.56}$
$A^{\text{kSZ}}$	0.0	—	$\langle d^2 \rangle^{1/2}$	2.454	$2.452^{+0.051}_{-0.052}$	$D_A(0.57)$	1389.0	$1389^{+17}_{-18}$
$A_{100}^{\text{dustTT}}$	7.47	$7.49^{+3.5}_{-3.6}$	$z_{\text{re}}$	8.58	$8.53^{+2.5}_{-2.7}$	$F_{\text{AP}}(0.57)$	0.67614	$0.6761^{+0.0045}_{-0.0046}$
$A_{143}^{\text{dustTT}}$	9.09	$9.01^{+3.6}_{-3.4}$	$10^9 A_s$	2.131	$2.13^{+0.11}_{-0.11}$	$f\sigma_8(0.57)$	0.4741	$0.4738^{+0.0098}_{-0.010}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+7.9}_{-8.3}$	$10^9 A_s e^{-2\tau}$	1.8780	$1.878^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	0.6064	$0.606^{+0.014}_{-0.015}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{40}$	1228.1	$1227^{+39}_{-37}$	$f_{2000}^{143}$	30.0	$30^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5722	$5723^{+79}_{-76}$	$f_{2000}^{143 \times 217}$	32.71	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0491^{+0.0096}_{-0.010}$	$D_{810}$	2534.0	$2534^{+27}_{-27}$	$f_{2000}^{217}$	106.16	$106.3^{+3.9}_{-3.9}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.100^{+0.066}_{-0.066}$	$D_{1420}$	814.6	$814.2^{+9.6}_{-10}$	$\chi_{\text{lensing}}^2$	9.86	10.6 ( $\nu$ : 1.9)
$A_{143}^{\text{dustEE}}$	0.1007	$0.100^{+0.014}_{-0.014}$	$D_{2000}$	230.00	$229.8^{+3.5}_{-3.6}$	$\chi_{\text{lowTEB}}^2$	10495.06	10495.6 ( $\nu$ : 2.6)
$A_{143 \times 217}^{\text{dustEE}}$	0.226	$0.224^{+0.088}_{-0.090}$	$n_{s,0.002}$	0.9681	$0.972^{+0.041}_{-0.042}$	$\chi_{\text{plik}}^2$	2435.1	2454.4 ( $\nu$ : 24.6)
$A_{217}^{\text{dustEE}}$	0.655	$0.65^{+0.26}_{-0.26}$	$Y_P$	0.245348	$0.24535^{+0.00015}_{-0.00015}$	$\chi_{\text{prior}}^2$	7.12	19.5 ( $\nu$ : 15.6)
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.076}_{-0.080}$	$Y_P^{\text{BBN}}$	0.246675	$0.24668^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12940.0	12960.6 ( $\nu$ : 23.8)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.055}_{-0.057}$	$10^5 D/H$	2.610	$2.609^{+0.062}_{-0.062}$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.16$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.06$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.94$ ;  $R - 1 = 0.03377$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.86 ( $\Delta$  0.09) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.06 ( $\Delta$  -0.23) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.13 ( $\Delta$  0.22)



17.12 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022322	$0.02232^{+0.00032}_{-0.00032}$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.16}$	Age/Gyr	13.804	$13.804^{+0.051}_{-0.052}$
$\Omega_c h^2$	0.11953	$0.1196^{+0.0029}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.94	$1089.95^{+0.58}_{-0.58}$
$100\theta_{\text{MC}}$	1.04080	$1.04082^{+0.00064}_{-0.00063}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$r_*$	144.59	$144.59^{+0.63}_{-0.64}$
$\tau$	0.0863	$0.085^{+0.036}_{-0.035}$	$A_{217}^{\text{dustTE}}$	1.658	$1.66^{+0.50}_{-0.49}$	$100\theta_*$	1.04099	$1.04101^{+0.00063}_{-0.00062}$
$\ln(10^{10} A_s)$	3.108	$3.106^{+0.072}_{-0.069}$	$c_{100}$	0.99820	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.889	$13.889^{+0.059}_{-0.059}$
$n_s$	0.9649	$0.9646^{+0.0098}_{-0.0097}$	$c_{217}$	0.99607	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.78	$1059.78^{+0.66}_{-0.64}$
$dn_s/d \ln k$	-0.0053	$-0.006^{+0.014}_{-0.014}$	$H_0$	67.44	$67.4^{+1.3}_{-1.3}$	$r_{\text{drag}}$	147.27	$147.27^{+0.63}_{-0.63}$
$y_{\text{cal}}$	1.00021	$1.0003^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	0.6867	$0.686^{+0.017}_{-0.018}$	$k_D$	0.14064	$0.14064^{+0.00067}_{-0.00068}$
$A_{217}^{\text{CIB}}$	67.7	$64^{+10}_{-10}$	$\Omega_m$	0.3133	$0.314^{+0.018}_{-0.017}$	$100\theta_D$	0.160822	$0.16083^{+0.00038}_{-0.00037}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$\Omega_m h^2$	0.14250	$0.1425^{+0.0027}_{-0.0026}$	$z_{\text{eq}}$	3390	$3390^{+64}_{-63}$
$A_{143}^{\text{tSZ}}$	7.12	$5.17^{+3.7}_{-3.8}$	$\Omega_m h^3$	0.09610	$0.09610^{+0.00062}_{-0.00061}$	$k_{\text{eq}}$	0.010346	$0.01035^{+0.00020}_{-0.00019}$
$A_{100}^{\text{PS}}$	259	$263^{+50}_{-60}$	$\sigma_8$	0.8347	$0.834^{+0.027}_{-0.027}$	$100\theta_{\text{eq}}$	0.8153	$0.815^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	40.0	$45^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4672	$0.467^{+0.019}_{-0.020}$	$100\theta_{s,\text{eq}}$	0.4504	$0.4504^{+0.0063}_{-0.0062}$
$A_{143 \times 217}^{\text{PS}}$	34	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6245	$0.624^{+0.021}_{-0.022}$	$r_{\text{drag}}/D_V(0.57)$	0.07146	$0.07146^{+0.00099}_{-0.00095}$
$A_{217}^{\text{PS}}$	97.3	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0164	$1.015^{+0.033}_{-0.034}$	$H(0.57)$	92.95	$92.95^{+0.57}_{-0.54}$
$A^{\text{kSZ}}$	0.00	< 8.30	$\langle d^2 \rangle^{1/2}$	2.508	$2.505^{+0.077}_{-0.079}$	$D_A(0.57)$	1389.7	$1390^{+17}_{-17}$
$A_{100}^{\text{dustTT}}$	7.44	$7.44^{+3.6}_{-3.6}$	$z_{\text{re}}$	10.70	$10.5^{+3.0}_{-3.3}$	$F_{\text{AP}}(0.57)$	0.67649	$0.6765^{+0.0045}_{-0.0044}$
$A_{143}^{\text{dustTT}}$	8.93	$8.91^{+3.6}_{-3.6}$	$10^9 A_s$	2.237	$2.23^{+0.17}_{-0.15}$	$f\sigma_8(0.57)$	0.4858	$0.485^{+0.016}_{-0.016}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.0^{+8.3}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8825	$1.883^{+0.025}_{-0.025}$	$\sigma_8(0.57)$	0.6205	$0.620^{+0.021}_{-0.021}$
$A_{217}^{\text{dustTT}}$	81.6	$81^{+10}_{-10}$	$D_{40}$	1228.6	$1229^{+38}_{-37}$	$f_{2000}^{143}$	30.0	$30^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	0.0817	$0.082^{+0.011}_{-0.011}$	$D_{220}$	5726	$5728^{+76}_{-76}$	$f_{2000}^{143 \times 217}$	32.68	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0494^{+0.0097}_{-0.010}$	$D_{810}$	2535.9	$2537^{+27}_{-27}$	$f_{2000}^{217}$	106.21	$106.3^{+4.0}_{-4.0}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.099^{+0.065}_{-0.063}$	$D_{1420}$	813.7	$813.7^{+9.6}_{-9.9}$	$\chi_{\text{lowTEB}}^2$	10495.7	10496.5 ( $\nu$ : 3.8)
$A_{143}^{\text{dustEE}}$	0.1006	$0.101^{+0.014}_{-0.014}$	$D_{2000}$	229.98	$229.9^{+3.4}_{-3.6}$	$\chi_{\text{plik}}^2$	2432.4	2452.1 ( $\nu$ : 24.6)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.092}_{-0.091}$	$n_{s,0.002}$	0.9821	$0.983^{+0.045}_{-0.044}$	$\chi_{\text{H070p6}}^2$	0.90	0.94 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.653	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}$	0.245371	$0.24537^{+0.00014}_{-0.00015}$	$\chi_{\text{prior}}^2$	7.04	19.5 ( $\nu$ : 15.3)
$A_{100}^{\text{dustTE}}$	0.141	$0.140^{+0.074}_{-0.076}$	$Y_{\text{P}}^{\text{BBN}}$	0.246698	$0.24669^{+0.00014}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12928.1	12948.6 ( $\nu$ : 22.9)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.056}_{-0.058}$	$10^5 \text{D}/\text{H}$	2.600	$2.602^{+0.061}_{-0.061}$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.06$ ;  $\Delta\chi_{\text{eff}}^2 = -0.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.03$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.28$ ;  $R - 1 = 0.01164$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.74 ( $\Delta$  -1.27) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.38 ( $\Delta$  0.61) Hubble - H070p6: 0.90 ( $\Delta$  0.00)

17.13 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022327	$0.02232^{+0.00030}_{-0.00028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.15}_{-0.16}$	$D_A/\text{Gpc}$	13.9092	$13.908^{+0.044}_{-0.045}$
$\Omega_c h^2$	0.11866	$0.1187^{+0.0020}_{-0.0020}$	$A_{217}^{\text{dustTE}}$	1.662	$1.66^{+0.49}_{-0.49}$	$z_{\text{drag}}$	1059.74	$1059.72^{+0.64}_{-0.62}$
$100\theta_{\text{MC}}$	1.04093	$1.04095^{+0.00056}_{-0.00059}$	$c_{100}$	0.99817	$0.9981^{+0.0016}_{-0.0016}$	$r_{\text{drag}}$	147.495	$147.49^{+0.47}_{-0.50}$
$\tau$	0.0662	$0.067^{+0.024}_{-0.024}$	$c_{217}$	0.99604	$0.9961^{+0.0029}_{-0.0028}$	$k_D$	0.14041	$0.14041^{+0.00059}_{-0.00061}$
$\ln(10^{10} A_s)$	3.0640	$3.065^{+0.045}_{-0.046}$	$H_0$	67.79	$67.77^{+0.93}_{-0.92}$	$100\theta_D$	0.160863	$0.16088^{+0.00037}_{-0.00035}$
$n_s$	0.9669	$0.9666^{+0.0081}_{-0.0079}$	$\Omega_\Lambda$	0.6918	$0.691^{+0.012}_{-0.013}$	$z_{\text{eq}}$	3369.1	$3371^{+45}_{-46}$
$dn_s/d \ln k$	-0.0007	$-0.002^{+0.013}_{-0.013}$	$\Omega_m$	0.3082	$0.309^{+0.013}_{-0.012}$	$k_{\text{eq}}$	0.010283	$0.01029^{+0.00014}_{-0.00014}$
$y_{\text{cal}}$	1.0000	$1.0001^{+0.0051}_{-0.0049}$	$\Omega_m h^2$	0.14163	$0.1417^{+0.0019}_{-0.0019}$	$100\theta_{\text{eq}}$	0.8191	$0.8189^{+0.0088}_{-0.0086}$
$A_{217}^{\text{CIB}}$	67.7	$64^{+10}_{-10}$	$\Omega_m h^3$	0.09602	$0.09602^{+0.00059}_{-0.00057}$	$100\theta_{s,\text{eq}}$	0.45246	$0.4523^{+0.0045}_{-0.0044}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$\sigma_8$	0.8153	$0.816^{+0.017}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.07176	$0.07174^{+0.00070}_{-0.00068}$
$A_{143}^{\text{tSZ}}$	7.35	$5.17^{+3.5}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4526	$0.453^{+0.012}_{-0.012}$	$H(0.57)$	93.074	$93.07^{+0.42}_{-0.42}$
$A_{100}^{\text{PS}}$	257	$263^{+60}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6075	$0.608^{+0.013}_{-0.014}$	$D_A(0.57)$	1385.2	$1386^{+12}_{-12}$
$A_{143}^{\text{PS}}$	38.5	$44^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9903	$0.991^{+0.020}_{-0.021}$	$F_{\text{AP}}(0.57)$	0.67518	$0.6753^{+0.0032}_{-0.0032}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.451	$2.450^{+0.051}_{-0.052}$	$f\sigma_8(0.57)$	0.4732	$0.4734^{+0.0098}_{-0.010}$
$A_{217}^{\text{PS}}$	96.6	$96^{+20}_{-20}$	$z_{\text{re}}$	8.84	$8.84^{+2.2}_{-2.4}$	$\sigma_8(0.57)$	0.6074	$0.607^{+0.014}_{-0.014}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.141	$2.144^{+0.099}_{-0.096}$	$f_{2000}^{143}$	29.7	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.55	$7.49^{+3.6}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8757	$1.876^{+0.023}_{-0.023}$	$f_{2000}^{143 \times 217}$	32.44	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.05	$9.04^{+3.6}_{-3.4}$	$D_{40}$	1227.0	$1225^{+37}_{-37}$	$f_{2000}^{217}$	105.99	$106.2^{+3.9}_{-3.8}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+7.9}_{-8.5}$	$D_{220}$	5728	$5726^{+78}_{-77}$	$\chi_{\text{lensing}}^2$	9.60	10.4 ( $\nu: 1.8$ )
$A_{217}^{\text{dustTT}}$	81.7	$82^{+20}_{-10}$	$D_{810}$	2533.8	$2534^{+27}_{-27}$	$\chi_{\text{lowTEB}}^2$	10494.96	10495.3 ( $\nu: 2.3$ )
$A_{100}^{\text{dustEE}}$	0.0818	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	815.0	$814.6^{+9.5}_{-9.6}$	$\chi_{\text{plik}}^2$	2435.5	2454.4 ( $\nu: 24.9$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0494^{+0.0097}_{-0.010}$	$D_{2000}$	230.21	$230.0^{+3.3}_{-3.5}$	$\chi_{\text{H070p6}}^2$	0.713	0.74 ( $\nu: 0.0$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.066}_{-0.065}$	$n_{s,0.002}$	0.9692	$0.973^{+0.041}_{-0.040}$	$\chi_{\text{JLA}}^2$	706.660	706.70 ( $\nu: 0.0$ )
$A_{143}^{\text{dustEE}}$	0.1005	$0.101^{+0.014}_{-0.013}$	$Y_P$	0.245374	$0.24537^{+0.00013}_{-0.00013}$	$\chi_{6\text{DF}}^2$	0.010	0.038 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.089}_{-0.090}$	$Y_P^{\text{BBN}}$	0.246700	$0.24669^{+0.00013}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.41	1.44 ( $\nu: 0.1$ )
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.26}_{-0.26}$	$10^5 D/H$	2.599	$2.601^{+0.054}_{-0.056}$	$\chi_{\text{DR11CMAS}}^2$	2.41	2.71 ( $\nu: 0.1$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.076}_{-0.082}$	Age/Gyr	13.7959	$13.797^{+0.042}_{-0.040}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	0.59 ( $\nu: 0.1$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.055}_{-0.059}$	$z_*$	1089.856	$1089.88^{+0.48}_{-0.47}$	$\chi_{\text{prior}}^2$	7.31	19.6 ( $\nu: 16.0$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.31^{+0.16}_{-0.16}$	$r_*$	144.811	$144.80^{+0.46}_{-0.47}$	$\chi_{\text{CMB}}^2$	12940.0	12960.1 ( $\nu: 23.3$ )
$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.11}$	$100\theta_*$	1.04112	$1.04114^{+0.00056}_{-0.00058}$	$\chi_{\text{BAO}}^2$	4.31	4.79 ( $\nu: 0.2$ )

Best-fit  $\chi_{\text{eff}}^2 = 13659.02$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 13691.95$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.84$ ;  $R - 1 = 0.05324$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMAS: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.48 ( $\Delta$  0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.60 ( $\Delta$  -0.15) low1.SMW\_70\_dx11d.2014.10.03

10494.96 ( $\Delta$  -0.26) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.46 ( $\Delta$  0.26) Hubble - H070p6: 0.71 ( $\Delta$  -0.01) SN - JLA December\_2013: 706.66 ( $\Delta$  0.00)

### 17.14 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02230^{+0.00033}_{-0.00032}$	$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.17}_{-0.16}$	Age/Gyr	$13.808^{+0.052}_{-0.051}$
$\Omega_c h^2$	$0.1198^{+0.0029}_{-0.0029}$	$A_{143}^{\text{dustTE}}$	$0.15^{+0.11}_{-0.10}$	$z_*$	$1090.00^{+0.60}_{-0.59}$
$100\theta_{\text{MC}}$	$1.04078^{+0.00064}_{-0.00062}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$r_*$	$144.54^{+0.65}_{-0.63}$
$\tau$	$0.084^{+0.035}_{-0.035}$	$A_{217}^{\text{dustTE}}$	$1.67^{+0.50}_{-0.49}$	$100\theta_*$	$1.04097^{+0.00063}_{-0.00061}$
$\ln(10^{10} A_s)$	$3.104^{+0.069}_{-0.069}$	$c_{100}$	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	$13.885^{+0.059}_{-0.059}$
$n_s$	$0.9640^{+0.0097}_{-0.0098}$	$c_{217}$	$0.9960^{+0.0029}_{-0.0028}$	$z_{\text{drag}}$	$1059.75^{+0.65}_{-0.65}$
$dn_s/d \ln k$	$-0.006^{+0.014}_{-0.014}$	$H_0$	$67.3^{+1.3}_{-1.3}$	$r_{\text{drag}}$	$147.23^{+0.63}_{-0.63}$
$y_{\text{cal}}$	$1.0003^{+0.0049}_{-0.0049}$	$\Omega_\Lambda$	$0.685^{+0.018}_{-0.018}$	$k_D$	$0.14067^{+0.00068}_{-0.00067}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$\Omega_m$	$0.315^{+0.018}_{-0.018}$	$100\theta_D$	$0.16085^{+0.00038}_{-0.00038}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1428^{+0.0027}_{-0.0027}$	$z_{\text{eq}}$	$3396^{+65}_{-65}$
$A_{143}^{\text{tSZ}}$	$5.15^{+3.7}_{-3.8}$	$\Omega_m h^3$	$0.09609^{+0.00062}_{-0.00061}$	$k_{\text{eq}}$	$0.01036^{+0.00020}_{-0.00020}$
$A_{100}^{\text{PS}}$	$263^{+50}_{-60}$	$\sigma_8$	$0.834^{+0.027}_{-0.026}$	$100\theta_{\text{eq}}$	$0.814^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	$45^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	$0.468^{+0.019}_{-0.019}$	$100\theta_{\text{s,eq}}$	$0.4499^{+0.0063}_{-0.0062}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.625^{+0.021}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	$0.07138^{+0.00099}_{-0.00095}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$1.016^{+0.033}_{-0.032}$	$H(0.57)$	$92.90^{+0.58}_{-0.54}$
$A^{\text{kSZ}}$	$< 8.31$	$\langle d^2 \rangle^{1/2}$	$2.508^{+0.076}_{-0.075}$	$D_A(0.57)$	$1391^{+17}_{-18}$
$A_{100}^{\text{dustTT}}$	$7.43^{+3.6}_{-3.6}$	$z_{\text{re}}$	$10.5^{+3.0}_{-3.0}$	$F_{\text{AP}}(0.57)$	$0.6769^{+0.0045}_{-0.0045}$
$A_{143}^{\text{dustTT}}$	$8.90^{+3.6}_{-3.6}$	$10^9 A_s$	$2.23^{+0.15}_{-0.15}$	$f\sigma_8(0.57)$	$0.486^{+0.016}_{-0.015}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0^{+8.3}_{-8.2}$	$10^9 A_s e^{-2\tau}$	$1.884^{+0.025}_{-0.025}$	$\sigma_8(0.57)$	$0.620^{+0.020}_{-0.020}$
$A_{217}^{\text{dustTT}}$	$81^{+10}_{-10}$	$D_{40}$	$1230^{+38}_{-37}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{100}^{\text{dustEE}}$	$0.082^{+0.011}_{-0.011}$	$D_{220}$	$5727^{+76}_{-75}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0493^{+0.0097}_{-0.010}$	$D_{810}$	$2537^{+27}_{-27}$	$f_{2000}^{217}$	$106.4^{+4.0}_{-4.0}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.099^{+0.065}_{-0.063}$	$D_{1420}$	$813.5^{+9.5}_{-9.9}$	$\chi_{\text{lowTEB}}^2$	$10496.5 (\nu: 3.7)$
$A_{143}^{\text{dustEE}}$	$0.101^{+0.014}_{-0.014}$	$D_{2000}$	$229.8^{+3.5}_{-3.5}$	$\chi_{\text{plik}}^2$	$2452.1 (\nu: 24.3)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.224^{+0.092}_{-0.090}$	$n_{\text{s},0.002}$	$0.983^{+0.045}_{-0.044}$	$\chi_{\text{prior}}^2$	$19.4 (\nu: 15.3)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}$	$0.24536^{+0.00014}_{-0.00015}$	$\chi_{\text{CMB}}^2$	$12948.5 (\nu: 22.6)$
$A_{100}^{\text{dustTE}}$	$0.140^{+0.074}_{-0.076}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668^{+0.00015}_{-0.00015}$		
$A_{100 \times 143}^{\text{dustTE}}$	$0.131^{+0.056}_{-0.058}$	$10^5 \text{D}/\text{H}$	$2.606^{+0.061}_{-0.061}$		

$\bar{\chi}_{\text{eff}}^2 = 12968.00; \Delta\chi_{\text{eff}}^2 = 0.32; R - 1 = 0.01051$

17.15 base\_nrun\_plikHM\_TE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022379	$0.02236^{+0.00049}_{-0.00050}$	$\sigma_8$	0.8068	$0.809^{+0.040}_{-0.038}$	$100\theta_*$	1.04127	$1.04120^{+0.00098}_{-0.0010}$
$\Omega_c h^2$	0.11827	$0.1182^{+0.0043}_{-0.0041}$	$\sigma_8 \Omega_m^{0.5}$	0.4458	$0.447^{+0.032}_{-0.030}$	$D_A/\text{Gpc}$	13.913	$13.918^{+0.091}_{-0.092}$
$100\theta_{\text{MC}}$	1.04108	$1.04101^{+0.00099}_{-0.0010}$	$\sigma_8 \Omega_m^{0.25}$	0.5997	$0.601^{+0.035}_{-0.033}$	$z_{\text{drag}}$	1059.82	$1059.8^{+1.1}_{-1.1}$
$\tau$	0.0613	$0.063^{+0.043}_{-0.041}$	$\sigma_8/h^{0.5}$	0.978	$0.981^{+0.053}_{-0.050}$	$r_{\text{drag}}$	147.54	$147.6^{+1.0}_{-1.0}$
$\ln(10^{10} A_s)$	3.048	$3.053^{+0.092}_{-0.089}$	$\langle d^2 \rangle^{1/2}$	2.407	$2.42^{+0.11}_{-0.11}$	$k_D$	0.14040	$0.1403^{+0.0011}_{-0.0012}$
$n_s$	0.9692	$0.970^{+0.027}_{-0.029}$	$z_{\text{re}}$	8.35	$8.40^{+4.2}_{-4.4}$	$100\theta_D$	0.16083	$0.16085^{+0.00063}_{-0.00060}$
$dn_s/d \ln k$	-0.0074	$-0.007^{+0.026}_{-0.026}$	$10^9 A_s$	2.107	$2.12^{+0.20}_{-0.20}$	$z_{\text{eq}}$	3361	$3359^{+97}_{-92}$
$y_{\text{cal}}$	0.9997	$1.0001^{+0.0050}_{-0.0051}$	$10^9 A_s e^{-2\tau}$	1.8642	$1.868^{+0.040}_{-0.040}$	$k_{\text{eq}}$	0.010258	$0.01025^{+0.00030}_{-0.00028}$
$A_{100}^{\text{dustTE}}$	0.141	$0.136^{+0.074}_{-0.075}$	$D_{40}$	1193.7	$1200^{+50}_{-48}$	$100\theta_{\text{eq}}$	0.8209	$0.821^{+0.018}_{-0.018}$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.133^{+0.057}_{-0.057}$	$D_{220}$	5676	$5688^{+110}_{-110}$	$100\theta_{s,\text{eq}}$	0.4533	$0.4536^{+0.0093}_{-0.0093}$
$A_{100 \times 217}^{\text{dustTE}}$	0.289	$0.30^{+0.16}_{-0.17}$	$D_{810}$	2521	$2526^{+51}_{-51}$	$r_{\text{drag}}/D_V(0.57)$	0.07193	$0.0719^{+0.0014}_{-0.0014}$
$A_{143}^{\text{dustTE}}$	0.145	$0.15^{+0.11}_{-0.10}$	$D_{1420}$	810.5	$812^{+28}_{-28}$	$H(0.57)$	93.19	$93.18^{+0.84}_{-0.81}$
$A_{143 \times 217}^{\text{dustTE}}$	0.325	$0.33^{+0.16}_{-0.16}$	$D_{2000}$	228.5	$229^{+11}_{-11}$	$D_A(0.57)$	1381.9	$1382^{+25}_{-24}$
$A_{217}^{\text{dustTE}}$	1.635	$1.65^{+0.49}_{-0.50}$	$n_{s,0.002}$	0.993	$0.991^{+0.068}_{-0.069}$	$F_{\text{AP}}(0.57)$	0.6744	$0.6745^{+0.0066}_{-0.0062}$
$c_{100}$	0.99922	$0.9993^{+0.0020}_{-0.0019}$	$Y_{\text{P}}$	0.245397	$0.24539^{+0.00022}_{-0.00023}$	$f\sigma_8(0.57)$	0.4675	$0.469^{+0.026}_{-0.024}$
$H_0$	68.03	$68.0^{+1.9}_{-1.9}$	$Y_{\text{P}}^{\text{BBN}}$	0.246723	$0.24671^{+0.00022}_{-0.00023}$	$\sigma_8(0.57)$	0.6017	$0.603^{+0.029}_{-0.028}$
$\Omega_\Lambda$	0.6947	$0.695^{+0.024}_{-0.026}$	$10^5 \text{D}/\text{H}$	2.590	$2.594^{+0.096}_{-0.091}$	$\chi_{\text{lowTEB}}^2$	10492.49	$10494.4 (\nu: 2.5)$
$\Omega_m$	0.3053	$0.305^{+0.026}_{-0.024}$	Age/Gyr	13.784	$13.788^{+0.078}_{-0.077}$	$\chi_{\text{plikTE}}^2$	932.6	$939.5 (\nu: 8.6)$
$\Omega_m h^2$	0.14129	$0.1412^{+0.0041}_{-0.0039}$	$z_*$	1089.76	$1089.78^{+0.87}_{-0.82}$	$\chi_{\text{prior}}^2$	1.90	$7.88 (\nu: 6.5)$
$\Omega_m h^3$	0.09612	$0.0960^{+0.0010}_{-0.0010}$	$r_*$	144.87	$144.91^{+0.98}_{-0.98}$	$\chi_{\text{CMB}}^2$	11425.0	$11433.9 (\nu: 9.2)$

Best-fit  $\chi_{\text{eff}}^2 = 11426.94$ ;  $\Delta\chi_{\text{eff}}^2 = -0.22$ ;  $\bar{\chi}_{\text{eff}}^2 = 11441.78$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.60$ ;  $R - 1 = 0.00865$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10492.49 ( $\Delta -1.01$ ) plik\_dx11dr2\_HM\_v18\_TE: 932.55 ( $\Delta 0.82$ )

17.16 base\_nrun\_plikHM\_EE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02406	$0.0243^{+0.0026}_{-0.0025}$	$\sigma_8 \Omega_m^{0.5}$	0.429	$0.426^{+0.069}_{-0.067}$	$D_A/\text{Gpc}$	13.894	$13.89^{+0.16}_{-0.15}$
$\Omega_c h^2$	0.1149	$0.1144^{+0.0099}_{-0.0092}$	$\sigma_8 \Omega_m^{0.25}$	0.588	$0.585^{+0.064}_{-0.061}$	$z_{\text{drag}}$	1063.4	$1063.7^{+5.1}_{-5.1}$
$100\theta_{\text{MC}}$	1.03977	$1.0399^{+0.0018}_{-0.0018}$	$\sigma_8/h^{0.5}$	0.962	$0.957^{+0.093}_{-0.090}$	$r_{\text{drag}}$	146.59	$146.5^{+1.9}_{-1.8}$
$\tau$	0.0766	$0.077^{+0.050}_{-0.046}$	$\langle d^2 \rangle^{1/2}$	2.404	$2.40^{+0.19}_{-0.18}$	$k_D$	0.14256	$0.1427^{+0.0030}_{-0.0031}$
$\ln(10^{10} A_s)$	3.105	$3.10^{+0.11}_{-0.11}$	$z_{\text{re}}$	9.27	$9.11^{+4.0}_{-4.4}$	$100\theta_D$	0.15861	$0.1585^{+0.0027}_{-0.0026}$
$n_s$	0.9699	$0.973^{+0.039}_{-0.037}$	$10^9 A_s$	2.231	$2.23^{+0.25}_{-0.24}$	$z_{\text{eq}}$	3320	$3313^{+190}_{-180}$
$dn_s/d \ln k$	-0.0200	$-0.019^{+0.034}_{-0.034}$	$10^9 A_s e^{-2\tau}$	1.914	$1.914^{+0.063}_{-0.063}$	$k_{\text{eq}}$	0.01013	$0.01011^{+0.00059}_{-0.00055}$
$y_{\text{cal}}$	1.00012	$1.0000^{+0.0048}_{-0.0048}$	$D_{40}$	1215	$1216^{+59}_{-56}$	$100\theta_{\text{eq}}$	0.8322	$0.835^{+0.041}_{-0.040}$
$A_{100}^{\text{dustEE}}$	0.0825	$0.082^{+0.012}_{-0.012}$	$D_{220}$	6021	$6041^{+420}_{-420}$	$100\theta_{s,\text{eq}}$	0.4579	$0.459^{+0.020}_{-0.020}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0494	$0.050^{+0.010}_{-0.010}$	$D_{810}$	2594	$2596^{+80}_{-83}$	$r_{\text{drag}}/D_V(0.57)$	0.07291	$0.0732^{+0.0037}_{-0.0035}$
$A_{100 \times 217}^{\text{dustEE}}$	0.101	$0.099^{+0.064}_{-0.063}$	$D_{1420}$	835.4	$837^{+41}_{-41}$	$H(0.57)$	94.54	$94.9^{+3.3}_{-3.2}$
$A_{143}^{\text{dustEE}}$	0.1001	$0.101^{+0.014}_{-0.014}$	$D_{2000}$	237.1	$238^{+17}_{-16}$	$D_A(0.57)$	1351	$1345^{+76}_{-75}$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.092}_{-0.092}$	$n_{s,0.002}$	1.034	$1.034^{+0.089}_{-0.087}$	$F_{\text{AP}}(0.57)$	0.6687	$0.668^{+0.016}_{-0.016}$
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.26}_{-0.25}$	$Y_{\text{P}}$	0.24611	$0.24617^{+0.00099}_{-0.0010}$	$f\sigma_8(0.57)$	0.4611	$0.458^{+0.044}_{-0.044}$
$H_0$	70.2	$70.7^{+5.7}_{-5.5}$	$Y_{\text{P}}^{\text{BBN}}$	0.24743	$0.2475^{+0.0010}_{-0.0011}$	$\sigma_8(0.57)$	0.6070	$0.606^{+0.033}_{-0.031}$
$\Omega_\Lambda$	0.717	$0.719^{+0.059}_{-0.062}$	$10^5 D/H$	2.304	$2.29^{+0.40}_{-0.39}$	$\chi_{\text{lowTEB}}^2$	10492.67	$10494.6 (\nu: 2.3)$
$\Omega_m$	0.283	$0.281^{+0.062}_{-0.059}$	Age/Gyr	13.639	$13.61^{+0.30}_{-0.32}$	$\chi_{\text{plikEE}}^2$	751.0	$758.7 (\nu: 10.2)$
$\Omega_m h^2$	0.1396	$0.1393^{+0.0081}_{-0.0075}$	$z_*$	1087.51	$1087.3^{+3.4}_{-3.4}$	$\chi_{\text{prior}}^2$	3.90	$8.27 (\nu: 6.1)$
$\Omega_m h^3$	0.09801	$0.0983^{+0.0041}_{-0.0037}$	$r_*$	144.46	$144.5^{+1.6}_{-1.6}$	$\chi_{\text{CMB}}^2$	11243.7	$11253.3 (\nu: 12.1)$
$\sigma_8$	0.806	$0.804^{+0.053}_{-0.053}$	$100\theta_*$	1.03978	$1.0399^{+0.0018}_{-0.0018}$			

Best-fit  $\chi_{\text{eff}}^2 = 11247.58$ ;  $\Delta\chi_{\text{eff}}^2 = -1.21$ ;  $\bar{\chi}_{\text{eff}}^2 = 11261.59$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.23$ ;  $R - 1 = 0.00766$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10492.67 ( $\Delta$  -0.94) plik\_dx11dr2\_HM\_v18\_EE: 751.02 ( $\Delta$  -0.18)

17.17 base\_nrun\_plikHM\_TE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02231	$0.02231^{+0.00051}_{-0.00050}$	$\sigma_8$	0.8070	$0.802^{+0.034}_{-0.033}$	$100\theta_*$	1.04117	$1.04118^{+0.00097}_{-0.00099}$
$\Omega_c h^2$	0.11790	$0.1179^{+0.0043}_{-0.0043}$	$\sigma_8 \Omega_m^{0.5}$	0.4450	$0.442^{+0.030}_{-0.029}$	$D_A/\text{Gpc}$	13.928	$13.928^{+0.095}_{-0.094}$
$100\theta_{\text{MC}}$	1.04099	$1.04099^{+0.00099}_{-0.0010}$	$\sigma_8 \Omega_m^{0.25}$	0.5992	$0.596^{+0.031}_{-0.030}$	$z_{\text{drag}}$	1059.67	$1059.6^{+1.1}_{-1.0}$
$\tau$	0.0523	$0.048^{+0.032}_{-0.038}$	$\sigma_8/h^{0.5}$	0.9782	$0.972^{+0.046}_{-0.045}$	$r_{\text{drag}}$	147.71	$147.7^{+1.0}_{-1.0}$
$\ln(10^{10} A_s)$	3.024	$3.016^{+0.078}_{-0.078}$	$\langle d^2 \rangle^{1/2}$	2.453	$2.44^{+0.11}_{-0.11}$	$k_D$	0.14017	$0.1402^{+0.0012}_{-0.0011}$
$n_s$	0.9784	$0.976^{+0.031}_{-0.031}$	$z_{\text{re}}$	7.45	$6.93^{+3.6}_{-3.9}$	$100\theta_D$	0.16091	$0.16092^{+0.00064}_{-0.00062}$
$dn_s/d \ln k$	0.0334	$0.027^{+0.049}_{-0.049}$	$10^9 A_s$	2.057	$2.04^{+0.16}_{-0.16}$	$z_{\text{eq}}$	3351	$3351^{+98}_{-98}$
$y_{\text{cal}}$	1.00032	$1.0002^{+0.0048}_{-0.0050}$	$10^9 A_s e^{-2\tau}$	1.8527	$1.852^{+0.044}_{-0.043}$	$k_{\text{eq}}$	0.010227	$0.01023^{+0.00030}_{-0.00030}$
$A_{100}^{\text{dustTE}}$	0.136	$0.138^{+0.075}_{-0.073}$	$D_{40}$	1284	$1273^{+100}_{-98}$	$100\theta_{\text{eq}}$	0.8225	$0.823^{+0.019}_{-0.018}$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.134^{+0.057}_{-0.059}$	$D_{220}$	5709	$5704^{+110}_{-110}$	$100\theta_{s,\text{eq}}$	0.4542	$0.4543^{+0.0098}_{-0.0094}$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.16}$	$D_{810}$	2521	$2517^{+52}_{-51}$	$r_{\text{drag}}/D_V(0.57)$	0.07200	$0.0720^{+0.0015}_{-0.0014}$
$A_{143}^{\text{dustTE}}$	0.152	$0.16^{+0.11}_{-0.11}$	$D_{1420}$	823.7	$820^{+32}_{-31}$	$H(0.57)$	93.16	$93.17^{+0.87}_{-0.81}$
$A_{143 \times 217}^{\text{dustTE}}$	0.351	$0.34^{+0.16}_{-0.16}$	$D_{2000}$	235.5	$234^{+14}_{-14}$	$D_A(0.57)$	1381.8	$1382^{+25}_{-25}$
$A_{217}^{\text{dustTE}}$	1.73	$1.66^{+0.51}_{-0.50}$	$n_{s,0.002}$	0.871	$0.89^{+0.14}_{-0.14}$	$F_{\text{AP}}(0.57)$	0.6741	$0.6742^{+0.0065}_{-0.0064}$
$c_{100}$	0.99922	$0.9992^{+0.0020}_{-0.0020}$	$Y_P$	0.245368	$0.24536^{+0.00023}_{-0.00023}$	$f\sigma_8(0.57)$	0.4673	$0.464^{+0.022}_{-0.022}$
$H_0$	68.07	$68.1^{+1.9}_{-1.9}$	$Y_P^{\text{BBN}}$	0.246694	$0.24669^{+0.00023}_{-0.00023}$	$\sigma_8(0.57)$	0.6022	$0.598^{+0.025}_{-0.023}$
$\Omega_\Lambda$	0.6960	$0.696^{+0.025}_{-0.026}$	$10^5 D/H$	2.602	$2.603^{+0.097}_{-0.096}$	$\chi_{\text{lowEB}}^2$	5430.76	$5431.6 (\nu: 0.7)$
$\Omega_m$	0.3040	$0.304^{+0.026}_{-0.025}$	Age/Gyr	13.792	$13.792^{+0.078}_{-0.078}$	$\chi_{\text{plikTE}}^2$	929.8	$938.0 (\nu: 8.5)$
$\Omega_m h^2$	0.14086	$0.1409^{+0.0041}_{-0.0041}$	$z_*$	1089.81	$1089.82^{+0.88}_{-0.87}$	$\chi_{\text{prior}}^2$	1.82	$7.81 (\nu: 6.8)$
$\Omega_m h^3$	0.09588	$0.0959^{+0.0011}_{-0.0010}$	$r_*$	145.02	$145.0^{+1.0}_{-1.0}$	$\chi_{\text{CMB}}^2$	6360.6	$6369.6 (\nu: 9.2)$

Best-fit  $\chi_{\text{eff}}^2 = 6362.40$ ;  $\Delta\chi_{\text{eff}}^2 = -1.49$ ;  $\bar{\chi}_{\text{eff}}^2 = 6377.41$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.45$ ;  $R - 1 = 0.00882$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.76 ( $\Delta$  -0.01) plik\_dx11dr2\_HM.v18\_TE: 929.83 ( $\Delta$  -1.41)

17.18 base\_nrun\_plikHM\_EE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02339	$0.0236^{+0.0029}_{-0.0028}$	$\sigma_8 \Omega_m^{0.5}$	0.424	$0.425^{+0.070}_{-0.065}$	$D_\Lambda/\text{Gpc}$	13.947	$13.93^{+0.18}_{-0.18}$
$\Omega_c h^2$	0.1146	$0.115^{+0.010}_{-0.010}$	$\sigma_8 \Omega_m^{0.25}$	0.581	$0.582^{+0.062}_{-0.061}$	$z_{\text{drag}}$	1061.9	$1062.2^{+5.9}_{-6.1}$
$100\theta_{\text{MC}}$	1.03992	$1.0399^{+0.0019}_{-0.0019}$	$\sigma_8/h^{0.5}$	0.952	$0.953^{+0.088}_{-0.088}$	$r_{\text{drag}}$	147.39	$147.2^{+2.3}_{-2.3}$
$\tau$	0.0506	$0.054^{+0.037}_{-0.043}$	$\langle d^2 \rangle^{1/2}$	2.414	$2.42^{+0.19}_{-0.18}$	$k_D$	0.14127	$0.1415^{+0.0038}_{-0.0040}$
$\ln(10^{10} A_s)$	3.037	$3.05^{+0.11}_{-0.10}$	$z_{\text{re}}$	7.01	$7.20^{+3.7}_{-4.1}$	$100\theta_D$	0.15945	$0.1594^{+0.0034}_{-0.0032}$
$n_s$	0.9822	$0.983^{+0.047}_{-0.043}$	$10^9 A_s$	2.084	$2.11^{+0.23}_{-0.21}$	$z_{\text{eq}}$	3298	$3303^{+200}_{-200}$
$dn_s/d \ln k$	0.029	$0.023^{+0.082}_{-0.083}$	$10^9 A_s e^{-2\tau}$	1.884	$1.889^{+0.082}_{-0.077}$	$k_{\text{eq}}$	0.01007	$0.01008^{+0.00060}_{-0.00060}$
$y_{\text{cal}}$	1.00017	$1.0001^{+0.0049}_{-0.0049}$	$D_{40}$	1299	$1291^{+100}_{-100}$	$100\theta_{\text{eq}}$	0.8345	$0.835^{+0.044}_{-0.041}$
$A_{100}^{\text{dustEE}}$	0.0790	$0.079^{+0.013}_{-0.013}$	$D_{220}$	5947	$5965^{+450}_{-470}$	$100\theta_{s,\text{eq}}$	0.4596	$0.460^{+0.022}_{-0.020}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0457	$0.046^{+0.012}_{-0.012}$	$D_{810}$	2574	$2578^{+89}_{-94}$	$r_{\text{drag}}/D_V(0.57)$	0.07293	$0.0730^{+0.0040}_{-0.0036}$
$A_{100 \times 217}^{\text{dustEE}}$	0.101	$0.099^{+0.065}_{-0.065}$	$D_{1420}$	844.4	$844^{+45}_{-43}$	$H(0.57)$	94.09	$94.3^{+3.5}_{-3.4}$
$A_{143}^{\text{dustEE}}$	0.0966	$0.097^{+0.015}_{-0.015}$	$D_{2000}$	242.6	$242^{+20}_{-19}$	$D_\Lambda(0.57)$	1358	$1355^{+82}_{-81}$
$A_{143 \times 217}^{\text{dustEE}}$	0.221	$0.223^{+0.093}_{-0.091}$	$n_{s,0.002}$	0.888	$0.91^{+0.24}_{-0.23}$	$F_{\text{AP}}(0.57)$	0.6691	$0.669^{+0.017}_{-0.016}$
$A_{217}^{\text{dustEE}}$	0.632	$0.65^{+0.26}_{-0.26}$	$Y_P$	0.24583	$0.2459^{+0.0011}_{-0.0012}$	$f\sigma_8(0.57)$	0.4552	$0.455^{+0.041}_{-0.043}$
$H_0$	69.8	$70.0^{+6.1}_{-5.8}$	$Y_P^{\text{BBN}}$	0.24716	$0.2472^{+0.0011}_{-0.0012}$	$\sigma_8(0.57)$	0.5983	$0.599^{+0.025}_{-0.026}$
$\Omega_\Lambda$	0.715	$0.715^{+0.064}_{-0.066}$	$10^5 D/H$	2.411	$2.40^{+0.50}_{-0.47}$	$\chi_{\text{lowEB}}^2$	5430.67	$5431.7 (\nu: 0.9)$
$\Omega_m$	0.285	$0.285^{+0.066}_{-0.064}$	Age/Gyr	13.701	$13.68^{+0.34}_{-0.35}$	$\chi_{\text{plikEE}}^2$	750.6	$759.2 (\nu: 10.5)$
$\Omega_m h^2$	0.1387	$0.1389^{+0.0082}_{-0.0083}$	$z_*$	1088.23	$1088.1^{+4.1}_{-3.9}$	$\chi_{\text{prior}}^2$	3.19	$7.58 (\nu: 5.9)$
$\Omega_m h^3$	0.09678	$0.0971^{+0.0046}_{-0.0043}$	$r_*$	145.05	$144.9^{+2.0}_{-1.9}$	$\chi_{\text{CMB}}^2$	6181.2	$6190.9 (\nu: 11.1)$
$\sigma_8$	0.7954	$0.797^{+0.045}_{-0.047}$	$100\theta_*$	1.04000	$1.0400^{+0.0018}_{-0.0018}$			

Best-fit  $\chi_{\text{eff}}^2 = 6184.41$ ;  $\Delta\chi_{\text{eff}}^2 = -0.49$ ;  $\bar{\chi}_{\text{eff}}^2 = 6198.47$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.50$ ;  $R - 1 = 0.00962$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.67 ( $\Delta -0.05$ ) plik\_dx11dr2\_HM\_v18\_EE: 750.55 ( $\Delta -0.20$ )

17.19 base\_nrun\_plikHM\_TT\_tau07

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02211	$0.02211^{+0.00052}_{-0.00054}$	$\Omega_\Lambda$	0.6790	$0.678^{+0.027}_{-0.029}$	$r_*$	144.46	$144.44^{+0.98}_{-0.99}$
$\Omega_c h^2$	0.12067	$0.1208^{+0.0044}_{-0.0043}$	$\Omega_m$	0.3210	$0.322^{+0.029}_{-0.027}$	$100\theta_*$	1.04096	$1.04095^{+0.00092}_{-0.00092}$
$100\theta_{MC}$	1.04076	$1.04074^{+0.00094}_{-0.00094}$	$\Omega_m h^2$	0.14343	$0.1435^{+0.0042}_{-0.0041}$	$D_A/\text{Gpc}$	13.877	$13.876^{+0.091}_{-0.092}$
$\tau$	0.0814	$0.081^{+0.037}_{-0.037}$	$\Omega_m h^3$	0.09588	$0.0959^{+0.0010}_{-0.0010}$	$z_{\text{drag}}$	1059.40	$1059.4^{+1.1}_{-1.1}$
$\ln(10^{10} A_s)$	3.098	$3.098^{+0.072}_{-0.072}$	$\sigma_8$	0.8372	$0.837^{+0.029}_{-0.028}$	$r_{\text{drag}}$	147.20	$147.19^{+0.99}_{-1.0}$
$n_s$	0.9632	$0.962^{+0.012}_{-0.012}$	$\sigma_8 \Omega_m^{0.5}$	0.4743	$0.475^{+0.028}_{-0.027}$	$k_D$	0.14055	$0.1406^{+0.0011}_{-0.0011}$
$dn_s/d \ln k$	0.0069	$0.006^{+0.019}_{-0.020}$	$\sigma_8 \Omega_m^{0.25}$	0.6301	$0.630^{+0.027}_{-0.026}$	$100\theta_D$	0.16107	$0.16108^{+0.00067}_{-0.00063}$
$A_{217}^{\text{CIB}}$	65.5	$63^{+10}_{-10}$	$\sigma_8/h^{0.5}$	1.0239	$1.024^{+0.040}_{-0.038}$	$z_{\text{eq}}$	3412	$3414^{+100}_{-97}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.12	—	$\langle d^2 \rangle^{1/2}$	2.541	$2.541^{+0.097}_{-0.095}$	$k_{\text{eq}}$	0.010414	$0.01042^{+0.00031}_{-0.00030}$
$A_{143}^{\text{tSZ}}$	7.18	$5.19^{+3.7}_{-3.8}$	$z_{\text{re}}$	10.35	$10.3^{+3.3}_{-3.4}$	$100\theta_{\text{eq}}$	0.8107	$0.810^{+0.019}_{-0.018}$
$A_{100}^{\text{PS}}$	251	$257^{+60}_{-50}$	$10^9 A_s$	2.215	$2.22^{+0.16}_{-0.16}$	$100\theta_{s,\text{eq}}$	0.4482	$0.4481^{+0.0095}_{-0.0094}$
$A_{143}^{\text{PS}}$	39.3	$43^{+20}_{-20}$	$10^9 A_s e^{-2\tau}$	1.8820	$1.883^{+0.029}_{-0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07108	$0.0711^{+0.0015}_{-0.0014}$
$A_{143 \times 217}^{\text{PS}}$	35.5	$39^{+20}_{-20}$	$D_{40}$	1263	$1263^{+56}_{-54}$	$H(0.57)$	92.67	$92.67^{+0.87}_{-0.82}$
$A_{217}^{\text{PS}}$	99.3	$98^{+20}_{-20}$	$D_{220}$	5721	$5723^{+80}_{-80}$	$D_A(0.57)$	1398.0	$1398^{+26}_{-26}$
$A^{\text{kSZ}}$	0.00	$< 8.23$	$D_{810}$	2532.0	$2532^{+27}_{-27}$	$F_{\text{AP}}(0.57)$	0.6784	$0.6786^{+0.0070}_{-0.0067}$
$A_{100}^{\text{dustTT}}$	7.27	$7.29^{+3.6}_{-3.7}$	$D_{1420}$	814.3	$814^{+10}_{-10}$	$f\sigma_8(0.57)$	0.4892	$0.489^{+0.019}_{-0.018}$
$A_{143}^{\text{dustTT}}$	8.95	$8.92^{+3.6}_{-3.6}$	$D_{2000}$	230.69	$230.4^{+3.8}_{-3.8}$	$\sigma_8(0.57)$	0.6205	$0.620^{+0.022}_{-0.021}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.0^{+8.2}_{-8.2}$	$n_{s,0.002}$	0.941	$0.944^{+0.063}_{-0.063}$	$f_{2000}^{143}$	28.9	$30^{+6}_{-6}$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$Y_P$	0.245273	$0.24527^{+0.00023}_{-0.00025}$	$f_{2000}^{143 \times 217}$	31.77	$32^{+4}_{-4}$
$c_{100}$	0.99795	$0.9979^{+0.0015}_{-0.0015}$	$Y_P^{\text{BBN}}$	0.246599	$0.24660^{+0.00024}_{-0.00025}$	$f_{2000}^{217}$	105.46	$105.8^{+4.2}_{-4.2}$
$c_{217}$	0.99582	$0.9958^{+0.0028}_{-0.0028}$	$10^5 D/H$	2.641	$2.64^{+0.11}_{-0.099}$	$\chi_{\text{plik}}^2$	762.1	777.0 ( $\nu$ : 15.9)
$y_{\text{cal}}$	1.00018	$1.0002^{+0.0048}_{-0.0049}$	Age/Gyr	13.832	$13.832^{+0.082}_{-0.082}$	$\chi_{\text{prior}}^2$	2.24	8.37 ( $\nu$ : 7.4)
$H_0$	66.85	$66.8^{+2.0}_{-1.9}$	$z_*$	1090.31	$1090.32^{+0.95}_{-0.92}$			

Best-fit  $\chi_{\text{eff}}^2 = 764.38$ ;  $\Delta\chi_{\text{eff}}^2 = -0.53$ ;  $\bar{\chi}_{\text{eff}}^2 = 785.35$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.37$ ;  $R - 1 = 0.00514$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM\_v18\_TT: 762.14 ( $\Delta$  -0.22)



## 17.20 base\_nrun\_plikHM\_TTTEEE\_tau07

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022216	$0.02220^{+0.00033}_{-0.00033}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	$Y_P^{\text{BBN}}$	0.246651	$0.24664^{+0.00015}_{-0.00015}$
$\Omega_c h^2$	0.12000	$0.1202^{+0.0029}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.11}_{-0.11}$	$10^5 \text{D}/\text{H}$	2.620	$2.623^{+0.064}_{-0.062}$
$100\theta_{\text{MC}}$	1.04074	$1.04073^{+0.00065}_{-0.00063}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.15}$	Age/Gyr	13.819	$13.820^{+0.052}_{-0.052}$
$\tau$	0.0874	$0.084^{+0.031}_{-0.032}$	$A_{217}^{\text{dustTE}}$	1.67	$1.68^{+0.50}_{-0.50}$	$z_*$	1090.11	$1090.15^{+0.61}_{-0.59}$
$\ln(10^{10} A_s)$	3.109	$3.103^{+0.062}_{-0.064}$	$c_{100}$	0.99830	$0.9982^{+0.0015}_{-0.0015}$	$r_*$	144.55	$144.51^{+0.64}_{-0.63}$
$n_s$	0.9651	$0.9631^{+0.0093}_{-0.0094}$	$c_{217}$	0.99569	$0.9959^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04094	$1.04093^{+0.00064}_{-0.00062}$
$dn_s/d \ln k$	0.0086	$0.006^{+0.016}_{-0.016}$	$y_{\text{cal}}$	1.00011	$1.0003^{+0.0049}_{-0.0049}$	$D_A/\text{Gpc}$	13.886	$13.883^{+0.059}_{-0.058}$
$A_{217}^{\text{CIB}}$	61.4	$63^{+10}_{-10}$	$H_0$	67.17	$67.1^{+1.3}_{-1.3}$	$z_{\text{drag}}$	1059.59	$1059.56^{+0.69}_{-0.65}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.63	—	$\Omega_\Lambda$	0.6833	$0.682^{+0.017}_{-0.018}$	$r_{\text{drag}}$	147.26	$147.23^{+0.63}_{-0.63}$
$A_{143}^{\text{tSZ}}$	6.83	$5.47^{+3.6}_{-3.9}$	$\Omega_m$	0.3167	$0.318^{+0.018}_{-0.017}$	$k_D$	0.14057	$0.14059^{+0.00069}_{-0.00068}$
$A_{100}^{\text{PS}}$	248	$259^{+50}_{-50}$	$\Omega_m h^2$	0.14286	$0.1430^{+0.0027}_{-0.0027}$	$100\theta_D$	0.160945	$0.16096^{+0.00039}_{-0.00039}$
$A_{143}^{\text{PS}}$	45.6	$42^{+20}_{-20}$	$\Omega_m h^3$	0.09595	$0.09596^{+0.00062}_{-0.00062}$	$z_{\text{eq}}$	3398	$3403^{+65}_{-64}$
$A_{143 \times 217}^{\text{PS}}$	49.6	$40^{+20}_{-20}$	$\sigma_8$	0.8402	$0.837^{+0.025}_{-0.025}$	$k_{\text{eq}}$	0.010372	$0.01039^{+0.00020}_{-0.00019}$
$A_{217}^{\text{PS}}$	105.2	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4728	$0.472^{+0.020}_{-0.019}$	$100\theta_{\text{eq}}$	0.8134	$0.813^{+0.012}_{-0.012}$
$A^{\text{kSZ}}$	0.00	$< 7.76$	$\sigma_8 \Omega_m^{0.25}$	0.6303	$0.629^{+0.021}_{-0.021}$	$100\theta_{s,\text{eq}}$	0.4495	$0.4492^{+0.0062}_{-0.0062}$
$A_{100}^{\text{dustTT}}$	7.31	$7.30^{+3.7}_{-3.7}$	$\sigma_8/h^{0.5}$	1.0251	$1.022^{+0.032}_{-0.033}$	$r_{\text{drag}}/D_V(0.57)$	0.07129	$0.07124^{+0.00096}_{-0.00096}$
$A_{143}^{\text{dustTT}}$	8.85	$8.88^{+3.6}_{-3.5}$	$\langle d^2 \rangle^{1/2}$	2.548	$2.540^{+0.080}_{-0.081}$	$H(0.57)$	92.81	$92.79^{+0.56}_{-0.55}$
$A_{143 \times 217}^{\text{dustTT}}$	18.1	$16.9^{+8.2}_{-8.1}$	$z_{\text{re}}$	10.84	$10.5^{+2.8}_{-2.9}$	$D_A(0.57)$	1393.6	$1395^{+18}_{-17}$
$A_{217}^{\text{dustTT}}$	82.8	$82^{+10}_{-10}$	$10^9 A_s$	2.240	$2.23^{+0.14}_{-0.14}$	$F_{\text{AP}}(0.57)$	0.67734	$0.6776^{+0.0046}_{-0.0044}$
$A_{100}^{\text{dustEE}}$	0.0802	$0.080^{+0.011}_{-0.011}$	$10^9 A_s e^{-2\tau}$	1.8805	$1.882^{+0.024}_{-0.024}$	$f\sigma_8(0.57)$	0.4898	$0.488^{+0.015}_{-0.016}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0475	$0.0477^{+0.010}_{-0.0099}$	$D_{40}$	1267.7	$1264^{+47}_{-46}$	$\sigma_8(0.57)$	0.6237	$0.621^{+0.019}_{-0.019}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.065}_{-0.063}$	$D_{220}$	5737	$5739^{+77}_{-74}$	$f_{2000}^{143}$	27.2	$29^{+6}_{-6}$
$A_{143}^{\text{dustEE}}$	0.0990	$0.099^{+0.014}_{-0.014}$	$D_{810}$	2533.7	$2533^{+27}_{-27}$	$f_{2000}^{143 \times 217}$	30.77	$32^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.224^{+0.091}_{-0.091}$	$D_{1420}$	816.1	$814.5^{+9.9}_{-9.9}$	$f_{2000}^{217}$	104.24	$105.3^{+4.1}_{-4.1}$
$A_{217}^{\text{dustEE}}$	0.646	$0.65^{+0.25}_{-0.25}$	$D_{2000}$	231.63	$230.8^{+3.7}_{-3.7}$	$\chi_{\text{plik}}^2$	2430.4	$2450.3 (\nu: 23.2)$
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.074}_{-0.072}$	$n_{s,0.002}$	0.937	$0.944^{+0.051}_{-0.051}$	$\chi_{\text{prior}}^2$	6.85	$20 (\nu: 15.7)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.058}_{-0.057}$	$Y_P$	0.245325	$0.24532^{+0.00015}_{-0.00015}$			

Best-fit  $\chi_{\text{eff}}^2 = 2437.28$ ;  $\Delta\chi_{\text{eff}}^2 = -0.88$ ;  $\bar{\chi}_{\text{eff}}^2 = 2470.34$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.08$ ;  $R - 1 = 0.00793$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM.v18\_TTTEEE: 2430.43 ( $\Delta$  -0.16)

# 18 nrun+r

## 18.1 base\_nrun\_r\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02235	$0.02245^{+0.00058}_{-0.00053}$	$\Omega_m h^2$	0.14270	$0.1422^{+0.0043}_{-0.0042}$	$k_D$	0.14075	$0.1408^{+0.0011}_{-0.0011}$
$\Omega_c h^2$	0.11970	$0.1191^{+0.0045}_{-0.0045}$	$\Omega_m h^3$	0.09624	$0.0963^{+0.0011}_{-0.0011}$	$100\theta_D$	0.16079	$0.16070^{+0.00063}_{-0.00066}$
$100\theta_{MC}$	1.04091	$1.04099^{+0.00096}_{-0.00097}$	$\sigma_8$	0.8359	$0.835^{+0.032}_{-0.032}$	$z_{eq}$	3395	$3384^{+100}_{-100}$
$\tau$	0.0874	$0.090^{+0.046}_{-0.043}$	$\sigma_8 \Omega_m^{0.5}$	0.4682	$0.465^{+0.027}_{-0.027}$	$k_{eq}$	0.010361	$0.01033^{+0.00031}_{-0.00030}$
$\ln(10^{10} A_s)$	3.110	$3.115^{+0.088}_{-0.084}$	$\sigma_8 \Omega_m^{0.25}$	0.6256	$0.623^{+0.027}_{-0.028}$	$100\theta_{eq}$	0.8146	$0.817^{+0.020}_{-0.019}$
$n_s$	0.9653	$0.967^{+0.013}_{-0.013}$	$\sigma_8/h^{0.5}$	1.0179	$1.015^{+0.041}_{-0.041}$	$100\theta_{s,eq}$	0.4501	$0.451^{+0.010}_{-0.0098}$
$dn_s/d \ln k$	-0.0074	$-0.013^{+0.017}_{-0.019}$	$\langle d^2 \rangle^{1/2}$	2.506	$2.492^{+0.094}_{-0.095}$	$r_{drag}/D_V(0.57)$	0.07144	$0.0717^{+0.0016}_{-0.0015}$
$r$	0.000	< 0.168	$z_{re}$	10.79	$10.9^{+3.8}_{-3.8}$	$H(0.57)$	92.98	$93.14^{+0.96}_{-0.89}$
$y_{cal}$	1.00010	$1.0004^{+0.0050}_{-0.0049}$	$10^9 A_s$	2.242	$2.26^{+0.20}_{-0.18}$	$D_A(0.57)$	1389.4	$1385^{+27}_{-28}$
$A_{217}^{CIB}$	67.8	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8828	$1.883^{+0.028}_{-0.028}$	$F_{AP}(0.57)$	0.6766	$0.6757^{+0.0071}_{-0.0069}$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1222.0	$1231^{+47}_{-44}$	$f\sigma_8(0.57)$	0.4866	$0.485^{+0.020}_{-0.020}$
$A_{143}^{tSZ}$	7.10	$4.85^{+3.8}_{-3.8}$	$D_{220}$	5717	$5717^{+82}_{-80}$	$\sigma_8(0.57)$	0.6213	$0.622^{+0.025}_{-0.024}$
$A_{100}^{PS}$	256	$262^{+60}_{-50}$	$D_{810}$	2535.7	$2538^{+28}_{-27}$	$r_{0.002}$	0.000	< 0.180
$A_{143}^{PS}$	40.0	$45^{+20}_{-20}$	$D_{1420}$	813.6	$814^{+11}_{-10}$	$r_{0.01}$	0.000	< 0.170
$A_{143 \times 217}^{PS}$	33	$38^{+20}_{-20}$	$D_{2000}$	229.92	$229.7^{+3.9}_{-3.8}$	$\ln(10^{10} A_t)$	-7.93	$-0.1^{+2.0}_{-2.5}$
$A_{217}^{PS}$	97.1	$96^{+20}_{-20}$	$n_{s,0.002}$	0.989	$1.007^{+0.062}_{-0.056}$	$r_{10}$	0.0000	< 0.0930
$A^{kSZ}$	0.0	—	$Y_P$	0.245386	$0.24542^{+0.00026}_{-0.00024}$	$10^9 A_t$	0.000	< 0.382
$A_{100}^{dustTT}$	7.45	$7.48^{+3.7}_{-3.7}$	$Y_P^{BBN}$	0.246713	$0.24675^{+0.00026}_{-0.00024}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.317
$A_{143}^{dustTT}$	9.09	$9.08^{+3.6}_{-3.6}$	$10^5 D/H$	2.594	$2.58^{+0.10}_{-0.10}$	$f_{2000}^{143}$	30.3	$31^{+6}_{-6}$
$A_{143 \times 217}^{dustTT}$	17.7	$17.2^{+8.1}_{-8.3}$	Age/Gyr	13.798	$13.784^{+0.086}_{-0.090}$	$f_{2000}^{143 \times 217}$	32.81	$33^{+4}_{-4}$
$A_{217}^{dustTT}$	81.8	$82^{+10}_{-10}$	$z_*$	1089.91	$1089.76^{+0.94}_{-0.97}$	$f_{2000}^{217}$	106.31	$106.7^{+4.2}_{-4.1}$
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.52	$144.60^{+0.99}_{-1.0}$	$\chi_{lowTEB}^2$	10495.1	10497.0 ( $\nu$ : 4.6)
$c_{217}$	0.99599	$0.9960^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04110	$1.04117^{+0.00093}_{-0.00094}$	$\chi_{plik}^2$	764.1	779.4 ( $\nu$ : 18.4)
$H_0$	67.44	$67.8^{+2.1}_{-2.0}$	$D_A/Gpc$	13.882	$13.888^{+0.091}_{-0.093}$	$\chi_{prior}^2$	1.99	7.41 ( $\nu$ : 6.5)
$\Omega_\Lambda$	0.6863	$0.690^{+0.027}_{-0.029}$	$z_{drag}$	1059.89	$1060.0^{+1.2}_{-1.1}$	$\chi_{CMB}^2$	11259.1	11276.4 ( $\nu$ : 17.8)
$\Omega_m$	0.3137	$0.310^{+0.029}_{-0.027}$	$r_{drag}$	147.19	$147.24^{+0.99}_{-1.0}$			

Best-fit  $\chi_{eff}^2 = 11261.12$ ;  $\Delta\chi_{eff}^2 = -0.80$ ;  $\bar{\chi}_{eff}^2 = 11283.76$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.95$ ;  $R - 1 = 0.00694$   
 $\chi_{eff}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.06 ( $\Delta$  -1.41) plik\_dx11dr2\_HM\_v18\_TT: 764.07 ( $\Delta$  0.70)

## 18.2 base\_nrun\_r\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022405	$0.02246^{+0.00049}_{-0.00047}$	$\sigma_8$	0.8361	$0.835^{+0.033}_{-0.031}$	$100\theta_{\text{eq}}$	0.8172	$0.818^{+0.011}_{-0.011}$
$\Omega_c h^2$	0.11910	$0.1189^{+0.0026}_{-0.0026}$	$\sigma_8 \Omega_m^{0.5}$	0.4654	$0.464^{+0.021}_{-0.021}$	$100\theta_{s,\text{eq}}$	0.4514	$0.4518^{+0.0057}_{-0.0056}$
$100\theta_{\text{MC}}$	1.04104	$1.04103^{+0.00082}_{-0.00084}$	$\sigma_8 \Omega_m^{0.25}$	0.6238	$0.622^{+0.025}_{-0.025}$	$r_{\text{drag}}/D_V(0.57)$	0.07166	$0.07173^{+0.00088}_{-0.00085}$
$\tau$	0.0899	$0.091^{+0.041}_{-0.040}$	$\sigma_8/h^{0.5}$	1.0158	$1.014^{+0.040}_{-0.038}$	$H(0.57)$	93.11	$93.18^{+0.62}_{-0.58}$
$\ln(10^{10} A_s)$	3.114	$3.116^{+0.083}_{-0.080}$	$\langle d^2 \rangle^{1/2}$	2.501	$2.489^{+0.089}_{-0.088}$	$D_A(0.57)$	1385.5	$1384^{+16}_{-16}$
$n_s$	0.9672	$0.9673^{+0.0091}_{-0.0091}$	$z_{\text{re}}$	10.98	$10.9^{+3.6}_{-3.5}$	$F_{\text{AP}}(0.57)$	0.67560	$0.6753^{+0.0039}_{-0.0039}$
$dn_s/d \ln k$	-0.0070	$-0.012^{+0.017}_{-0.018}$	$10^9 A_s$	2.251	$2.26^{+0.19}_{-0.18}$	$f\sigma_8(0.57)$	0.4857	$0.485^{+0.019}_{-0.019}$
$r$	0.000	< 0.166	$10^9 A_s e^{-2\tau}$	1.8808	$1.882^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	0.6224	$0.622^{+0.025}_{-0.024}$
$y_{\text{cal}}$	1.00034	$1.0005^{+0.0049}_{-0.0049}$	$D_{40}$	1220.4	$1230^{+46}_{-42}$	$r_{0.002}$	0.000	< 0.176
$A_{217}^{\text{CIB}}$	67.5	$65^{+10}_{-10}$	$D_{220}$	5721	$5719^{+81}_{-78}$	$r_{0.01}$	0.000	< 0.166
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{810}$	2536.3	$2538^{+28}_{-27}$	$\ln(10^{10} A_t)$	-6.83	$-0.1^{+2.0}_{-2.5}$
$A_{143}^{\text{tSZ}}$	7.10	$4.85^{+3.8}_{-3.8}$	$D_{1420}$	814.5	$814^{+10}_{-10}$	$r_{10}$	0.0000	< 0.0911
$A_{100}^{\text{PS}}$	255	$262^{+60}_{-50}$	$D_{2000}$	230.35	$229.8^{+3.7}_{-3.7}$	$10^9 A_t$	0.000	< 0.372
$A_{143}^{\text{PS}}$	39.6	$45^{+20}_{-20}$	$n_{s,0.002}$	0.990	$1.007^{+0.058}_{-0.055}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.312
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$Y_{\text{P}}$	0.245408	$0.24543^{+0.00022}_{-0.00022}$	$f_{2000}^{143}$	30.0	$31^{+6}_{-6}$
$A_{217}^{\text{PS}}$	96.9	$96^{+20}_{-20}$	$Y_{\text{P}}^{\text{BBN}}$	0.246735	$0.24676^{+0.00022}_{-0.00022}$	$f_{2000}^{143 \times 217}$	32.53	$33^{+4}_{-4}$
$A^{\text{kSZ}}$	0.0	—	$10^5 D/H$	2.585	$2.575^{+0.089}_{-0.090}$	$f_{2000}^{217}$	106.08	$106.7^{+4.1}_{-4.1}$
$A_{100}^{\text{dustTT}}$	7.45	$7.51^{+3.7}_{-3.7}$	Age/Gyr	13.787	$13.781^{+0.064}_{-0.066}$	$\chi_{\text{lowTEB}}^2$	10495.1	10496.8 ( $\nu$ : 4.5)
$A_{143}^{\text{dustTT}}$	8.99	$9.08^{+3.6}_{-3.5}$	$z_*$	1089.80	$1089.72^{+0.69}_{-0.70}$	$\chi_{\text{plik}}^2$	764.0	778.9 ( $\nu$ : 25.8)
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.0}_{-8.2}$	$r_*$	144.64	$144.65^{+0.67}_{-0.67}$	$\chi_{6\text{DF}}^2$	0.022	0.055 ( $\nu$ : 0.0)
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$100\theta_*$	1.04121	$1.04120^{+0.00081}_{-0.00083}$	$\chi_{\text{MGS}}^2$	1.28	1.45 ( $\nu$ : 0.2)
$c_{100}$	0.99792	$0.9979^{+0.0016}_{-0.0015}$	$D_A/\text{Gpc}$	13.891	$13.893^{+0.065}_{-0.065}$	$\chi_{\text{DR11CMass}}^2$	2.46	2.90 ( $\nu$ : 0.2)
$c_{217}$	0.99600	$0.9960^{+0.0028}_{-0.0029}$	$z_{\text{drag}}$	1059.97	$1060.1^{+1.1}_{-1.0}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	0.66 ( $\nu$ : 0.2)
$H_0$	67.74	$67.9^{+1.2}_{-1.1}$	$r_{\text{drag}}$	147.29	$147.29^{+0.75}_{-0.75}$	$\chi_{\text{prior}}^2$	2.03	7.39 ( $\nu$ : 6.5)
$\Omega_\Lambda$	0.6902	$0.691^{+0.015}_{-0.016}$	$k_{\text{D}}$	0.14068	$0.1407^{+0.0010}_{-0.0010}$	$\chi_{\text{CMB}}^2$	11259.2	11275.8 ( $\nu$ : 25.5)
$\Omega_m$	0.3098	$0.309^{+0.016}_{-0.015}$	$100\theta_{\text{D}}$	0.16076	$0.16069^{+0.00061}_{-0.00062}$	$\chi_{\text{BAO}}^2$	4.37	5.06 ( $\nu$ : 0.5)
$\Omega_m h^2$	0.14215	$0.1420^{+0.0025}_{-0.0025}$	$z_{\text{eq}}$	3381	$3378^{+60}_{-59}$			
$\Omega_m h^3$	0.09629	$0.0963^{+0.0011}_{-0.0010}$	$k_{\text{eq}}$	0.010321	$0.01031^{+0.00018}_{-0.00018}$			

Best-fit  $\chi_{\text{eff}}^2 = 11265.57$ ;  $\Delta\chi_{\text{eff}}^2 = -0.87$ ;  $\bar{\chi}_{\text{eff}}^2 = 11288.20$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.84$ ;  $R - 1 = 0.00475$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMass: 2.46 ( $\Delta$  0.01) DR11LOWZ: 0.61 ( $\Delta$  -0.01) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10495.15 ( $\Delta$  -1.27) plik\_dx11dr2\_HM\_v18.TT: 764.02 ( $\Delta$  0.42)

### 18.3 base\_nrun\_r\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02240	$0.02247^{+0.00056}_{-0.00052}$	$\Omega_m h^2$	0.14236	$0.1419^{+0.0039}_{-0.0038}$	$k_D$	0.14074	$0.1407^{+0.0011}_{-0.0011}$
$\Omega_c h^2$	0.11931	$0.1188^{+0.0041}_{-0.0041}$	$\Omega_m h^3$	0.09628	$0.0964^{+0.0011}_{-0.0011}$	$100\theta_D$	0.16074	$0.16068^{+0.00063}_{-0.00064}$
$100\theta_{MC}$	1.04095	$1.04104^{+0.00094}_{-0.00095}$	$\sigma_8$	0.8361	$0.835^{+0.033}_{-0.031}$	$z_{eq}$	3386	$3377^{+93}_{-92}$
$\tau$	0.0894	$0.091^{+0.045}_{-0.043}$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.464^{+0.026}_{-0.025}$	$k_{eq}$	0.010336	$0.01031^{+0.00028}_{-0.00028}$
$\ln(10^{10} A_s)$	3.114	$3.118^{+0.088}_{-0.084}$	$\sigma_8 \Omega_m^{0.25}$	0.6245	$0.622^{+0.027}_{-0.027}$	$100\theta_{eq}$	0.8162	$0.818^{+0.018}_{-0.017}$
$n_s$	0.9661	$0.968^{+0.012}_{-0.012}$	$\sigma_8/h^{0.5}$	1.0166	$1.014^{+0.041}_{-0.041}$	$100\theta_{s,eq}$	0.4509	$0.4520^{+0.0092}_{-0.0089}$
$dn_s/d \ln k$	-0.0079	$-0.013^{+0.017}_{-0.018}$	$\langle d^2 \rangle^{1/2}$	2.503	$2.489^{+0.092}_{-0.092}$	$r_{drag}/D_V(0.57)$	0.07158	$0.0718^{+0.0014}_{-0.0014}$
$r$	0.000	< 0.168	$z_{re}$	10.94	$11.0^{+3.7}_{-3.7}$	$H(0.57)$	93.07	$93.20^{+0.91}_{-0.83}$
$y_{cal}$	1.00039	$1.0005^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.251	$2.26^{+0.20}_{-0.18}$	$D_A(0.57)$	1386.8	$1383^{+25}_{-26}$
$A_{217}^{CIB}$	67.9	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8823	$1.882^{+0.028}_{-0.027}$	$F_{AP}(0.57)$	0.6760	$0.6752^{+0.0065}_{-0.0064}$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1220.4	$1229^{+47}_{-43}$	$f\sigma_8(0.57)$	0.4860	$0.485^{+0.020}_{-0.020}$
$A_{143}^{tSZ}$	7.20	$4.86^{+3.8}_{-3.8}$	$D_{220}$	5724	$5719^{+81}_{-78}$	$\sigma_8(0.57)$	0.6220	$0.622^{+0.026}_{-0.024}$
$A_{100}^{PS}$	255	$262^{+60}_{-50}$	$D_{810}$	2536.8	$2537^{+28}_{-28}$	$r_{0.002}$	0.000	< 0.179
$A_{143}^{PS}$	39.9	$45^{+20}_{-20}$	$D_{1420}$	814.1	$814^{+10}_{-10}$	$r_{0.01}$	0.000	< 0.169
$A_{143 \times 217}^{PS}$	33	$38^{+20}_{-20}$	$D_{2000}$	230.13	$229.8^{+3.9}_{-3.8}$	$\ln(10^{10} A_t)$	-7.08	$-0.1^{+2.0}_{-2.5}$
$A_{217}^{PS}$	97.0	$96^{+20}_{-20}$	$n_{s,0.002}$	0.992	$1.008^{+0.061}_{-0.056}$	$r_{10}$	0.0000	< 0.0929
$A^{kSZ}$	0.0	—	$Y_P$	0.245407	$0.24544^{+0.00025}_{-0.00024}$	$10^9 A_t$	0.000	< 0.380
$A_{100}^{dustTT}$	7.40	$7.49^{+3.7}_{-3.7}$	$Y_P^{BBN}$	0.246734	$0.24676^{+0.00025}_{-0.00024}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.315
$A_{143}^{dustTT}$	9.14	$9.07^{+3.6}_{-3.6}$	$10^5 D/H$	2.585	$2.573^{+0.098}_{-0.10}$	$f_{2000}^{143}$	30.3	$31^{+6}_{-6}$
$A_{143 \times 217}^{dustTT}$	17.9	$17.2^{+8.0}_{-8.3}$	Age/Gyr	13.790	$13.779^{+0.081}_{-0.085}$	$f_{2000}^{143 \times 217}$	32.80	$33^{+4}_{-4}$
$A_{217}^{dustTT}$	81.9	$82^{+10}_{-10}$	$z_*$	1089.82	$1089.69^{+0.89}_{-0.91}$	$f_{2000}^{217}$	106.36	$106.7^{+4.2}_{-4.2}$
$c_{100}$	0.99794	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	144.58	$144.66^{+0.92}_{-0.93}$	$\chi_{lowTEB}^2$	10495.0	10497.0 ( $\nu$ : 4.7)
$c_{217}$	0.99597	$0.9960^{+0.0028}_{-0.0029}$	$100\theta_*$	1.04113	$1.04121^{+0.00091}_{-0.00092}$	$\chi_{plik}^2$	764.1	779.4 ( $\nu$ : 30.5)
$H_0$	67.63	$67.9^{+1.9}_{-1.9}$	$D_A/Gpc$	13.887	$13.894^{+0.086}_{-0.087}$	$\chi_{JLA}^2$	706.74	706.80 ( $\nu$ : 0.1)
$\Omega_\Lambda$	0.6888	$0.692^{+0.025}_{-0.026}$	$z_{drag}$	1059.97	$1060.1^{+1.1}_{-1.1}$	$\chi_{prior}^2$	2.02	7.41 ( $\nu$ : 6.5)
$\Omega_m$	0.3112	$0.308^{+0.026}_{-0.025}$	$r_{drag}$	147.24	$147.29^{+0.94}_{-0.95}$	$\chi_{CMB}^2$	11259.1	11276.4 ( $\nu$ : 30.4)

Best-fit  $\chi_{eff}^2 = 11967.89$ ;  $\Delta\chi_{eff}^2 = -0.84$ ;  $\bar{\chi}_{eff}^2 = 11990.57$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.97$ ;  $R - 1 = 0.00459$

$\chi_{eff}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10494.99 ( $\Delta$  -1.45) plik\_dx11dr2\_HM.v18.TT: 764.14 ( $\Delta$  0.72) SN - JLA December\_2013: 706.74 ( $\Delta$  -0.02)

### 18.4 base\_nrun\_r\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02242	$0.02250^{+0.00057}_{-0.00053}$	$\Omega_m h^2$	0.14207	$0.1417^{+0.0041}_{-0.0040}$	$k_D$	0.14068	$0.1407^{+0.0011}_{-0.0011}$
$\Omega_c h^2$	0.11901	$0.1186^{+0.0043}_{-0.0042}$	$\Omega_m h^3$	0.09628	$0.0964^{+0.0011}_{-0.0011}$	$100\theta_D$	0.16074	$0.16066^{+0.00063}_{-0.00065}$
$100\theta_{MC}$	1.04102	$1.04107^{+0.00095}_{-0.00095}$	$\sigma_8$	0.8366	$0.835^{+0.032}_{-0.032}$	$z_{eq}$	3380	$3372^{+98}_{-96}$
$\tau$	0.0912	$0.093^{+0.045}_{-0.043}$	$\sigma_8 \Omega_m^{0.5}$	0.4653	$0.463^{+0.027}_{-0.026}$	$k_{eq}$	0.010315	$0.01029^{+0.00030}_{-0.00029}$
$\ln(10^{10} A_s)$	3.117	$3.120^{+0.088}_{-0.085}$	$\sigma_8 \Omega_m^{0.25}$	0.6239	$0.622^{+0.027}_{-0.028}$	$100\theta_{eq}$	0.8175	$0.819^{+0.019}_{-0.018}$
$n_s$	0.9673	$0.968^{+0.013}_{-0.013}$	$\sigma_8/h^{0.5}$	1.0163	$1.013^{+0.041}_{-0.042}$	$100\theta_{s,eq}$	0.4516	$0.4524^{+0.0095}_{-0.0094}$
$dn_s/d \ln k$	-0.0080	$-0.013^{+0.017}_{-0.019}$	$\langle d^2 \rangle^{1/2}$	2.501	$2.488^{+0.092}_{-0.094}$	$r_{drag}/D_V(0.57)$	0.07168	$0.0718^{+0.0015}_{-0.0015}$
$r$	0.000	< 0.173	$z_{re}$	11.09	$11.1^{+3.8}_{-3.7}$	$H(0.57)$	93.13	$93.25^{+0.94}_{-0.87}$
$y_{cal}$	1.00030	$1.0004^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.257	$2.27^{+0.21}_{-0.19}$	$D_A(0.57)$	1385.0	$1382^{+27}_{-27}$
$A_{217}^{CIB}$	67.3	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8807	$1.881^{+0.028}_{-0.027}$	$F_{AP}(0.57)$	0.6755	$0.6748^{+0.0068}_{-0.0066}$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1217.9	$1228^{+47}_{-44}$	$f\sigma_8(0.57)$	0.4859	$0.484^{+0.020}_{-0.020}$
$A_{143}^{tSZ}$	7.23	$4.86^{+3.8}_{-3.8}$	$D_{220}$	5720	$5720^{+82}_{-79}$	$\sigma_8(0.57)$	0.6229	$0.623^{+0.025}_{-0.025}$
$A_{100}^{PS}$	253	$262^{+50}_{-50}$	$D_{810}$	2536.3	$2537^{+28}_{-27}$	$r_{0.002}$	0.000	< 0.187
$A_{143}^{PS}$	39.1	$45^{+20}_{-20}$	$D_{1420}$	814.3	$814^{+11}_{-10}$	$r_{0.01}$	0.000	< 0.175
$A_{143 \times 217}^{PS}$	33	$38^{+20}_{-20}$	$D_{2000}$	230.27	$229.9^{+3.9}_{-3.8}$	$\ln(10^{10} A_t)$	-8.36	$-0.1^{+2.0}_{-2.5}$
$A_{217}^{PS}$	97.4	$96^{+20}_{-20}$	$n_{s,0.002}$	0.993	$1.010^{+0.061}_{-0.057}$	$r_{10}$	0.0000	< 0.0966
$A^{kSZ}$	0.0	—	$Y_P$	0.245413	$0.24545^{+0.00025}_{-0.00024}$	$10^9 A_t$	0.000	< 0.393
$A_{100}^{dustTT}$	7.44	$7.49^{+3.7}_{-3.7}$	$Y_P^{BBN}$	0.246740	$0.24677^{+0.00025}_{-0.00024}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.325
$A_{143}^{dustTT}$	9.08	$9.09^{+3.6}_{-3.6}$	$10^5 D/H$	2.583	$2.57^{+0.10}_{-0.10}$	$f_{2000}^{143}$	30.0	$31^{+6}_{-6}$
$A_{143 \times 217}^{dustTT}$	17.6	$17.2^{+8.0}_{-8.3}$	Age/Gyr	13.786	$13.774^{+0.083}_{-0.087}$	$f_{2000}^{143 \times 217}$	32.51	$33^{+4}_{-4}$
$A_{217}^{dustTT}$	81.7	$82^{+10}_{-10}$	$z_*$	1089.78	$1089.64^{+0.92}_{-0.94}$	$f_{2000}^{217}$	106.10	$106.6^{+4.2}_{-4.2}$
$c_{100}$	0.99791	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	144.65	$144.70^{+0.95}_{-0.97}$	$\chi_{lowTEB}^2$	10495.0	10497.0 ( $\nu$ : 4.8)
$c_{217}$	0.99589	$0.9960^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04120	$1.04124^{+0.00092}_{-0.00093}$	$\chi_{plik}^2$	764.1	779.4 ( $\nu$ : 21.6)
$H_0$	67.77	$68.0^{+2.0}_{-2.0}$	$D_A/Gpc$	13.893	$13.897^{+0.088}_{-0.090}$	$\chi_{H070p6}^2$	0.72	0.70 ( $\nu$ : 0.1)
$\Omega_\Lambda$	0.6907	$0.693^{+0.025}_{-0.027}$	$z_{drag}$	1059.97	$1060.1^{+1.2}_{-1.1}$	$\chi_{prior}^2$	2.09	7.42 ( $\nu$ : 6.5)
$\Omega_m$	0.3093	$0.307^{+0.027}_{-0.025}$	$r_{drag}$	147.30	$147.32^{+0.96}_{-0.98}$	$\chi_{CMB}^2$	11259.1	11276.5 ( $\nu$ : 21.0)

Best-fit  $\chi_{eff}^2 = 11261.93$ ;  $\Delta\chi_{eff}^2 = -0.89$ ;  $\bar{\chi}_{eff}^2 = 11284.60$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.90$ ;  $R - 1 = 0.00746$

$\chi_{eff}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10494.99 ( $\Delta$  -1.33) plik\_dx11dr2\_HM\_v18\_TT: 764.13 ( $\Delta$  0.46) Hubble - H070p6: 0.72 ( $\Delta$  -0.10)

### 18.5 base\_nrun\_r\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02245^{+0.00057}_{-0.00052}$	$\Omega_m h^2$	$0.1423^{+0.0042}_{-0.0041}$	$k_D$	$0.1408^{+0.0011}_{-0.0011}$
$\Omega_c h^2$	$0.1192^{+0.0044}_{-0.0044}$	$\Omega_m h^3$	$0.0964^{+0.0011}_{-0.0010}$	$100\theta_D$	$0.16070^{+0.00062}_{-0.00064}$
$100\theta_{MC}$	$1.04099^{+0.00096}_{-0.00096}$	$\sigma_8$	$0.836^{+0.032}_{-0.031}$	$z_{eq}$	$3384^{+100}_{-98}$
$\tau$	$0.091^{+0.043}_{-0.042}$	$\sigma_8 \Omega_m^{0.5}$	$0.465^{+0.027}_{-0.026}$	$k_{eq}$	$0.01033^{+0.00031}_{-0.00030}$
$\ln(10^{10} A_s)$	$3.116^{+0.084}_{-0.083}$	$\sigma_8 \Omega_m^{0.25}$	$0.624^{+0.027}_{-0.027}$	$100\theta_{eq}$	$0.817^{+0.019}_{-0.019}$
$n_s$	$0.967^{+0.013}_{-0.013}$	$\sigma_8/h^{0.5}$	$1.015^{+0.041}_{-0.040}$	$100\theta_{s,eq}$	$0.4512^{+0.0098}_{-0.0096}$
$dn_s/d \ln k$	$-0.013^{+0.017}_{-0.018}$	$\langle d^2 \rangle^{1/2}$	$2.493^{+0.093}_{-0.091}$	$r_{drag}/D_V(0.57)$	$0.0716^{+0.0016}_{-0.0015}$
$r$	$< 0.166$	$z_{re}$	$10.9^{+3.5}_{-3.5}$	$H(0.57)$	$93.14^{+0.95}_{-0.86}$
$y_{cal}$	$1.0004^{+0.0049}_{-0.0049}$	$10^9 A_s$	$2.26^{+0.19}_{-0.19}$	$D_A(0.57)$	$1385^{+27}_{-27}$
$A_{217}^{CIB}$	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.883^{+0.028}_{-0.028}$	$F_{AP}(0.57)$	$0.6757^{+0.0070}_{-0.0069}$
$\xi^{tSZ \times CIB}$	—	$D_{40}$	$1231^{+47}_{-44}$	$f\sigma_8(0.57)$	$0.485^{+0.020}_{-0.019}$
$A_{143}^{tSZ}$	$4.85^{+3.8}_{-3.8}$	$D_{220}$	$5718^{+82}_{-79}$	$\sigma_8(0.57)$	$0.622^{+0.025}_{-0.024}$
$A_{100}^{PS}$	$262^{+60}_{-50}$	$D_{810}$	$2538^{+28}_{-28}$	$r_{0.002}$	$< 0.177$
$A_{143}^{PS}$	$45^{+20}_{-20}$	$D_{1420}$	$814^{+10}_{-10}$	$r_{0.01}$	$< 0.167$
$A_{143 \times 217}^{PS}$	$38^{+20}_{-20}$	$D_{2000}$	$229.8^{+3.9}_{-3.8}$	$\ln(10^{10} A_t)$	$-0.1^{+2.0}_{-2.5}$
$A_{217}^{PS}$	$96^{+20}_{-20}$	$n_{s,0.002}$	$1.007^{+0.061}_{-0.056}$	$r_{10}$	$< 0.0914$
$A^{kSZ}$	—	$Y_P$	$0.24543^{+0.00025}_{-0.00024}$	$10^9 A_t$	$< 0.375$
$A_{100}^{dustTT}$	$7.49^{+3.7}_{-3.7}$	$Y_P^{BBN}$	$0.24675^{+0.00025}_{-0.00024}$	$10^9 A_t e^{-2\tau}$	$< 0.312$
$A_{143}^{dustTT}$	$9.07^{+3.6}_{-3.6}$	$10^5 D/H$	$2.578^{+0.099}_{-0.10}$	$f_{2000}^{143}$	$31^{+6}_{-6}$
$A_{143 \times 217}^{dustTT}$	$17.2^{+8.0}_{-8.3}$	Age/Gyr	$13.784^{+0.083}_{-0.089}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{217}^{dustTT}$	$82^{+10}_{-10}$	$z_*$	$1089.76^{+0.92}_{-0.96}$	$f_{2000}^{217}$	$106.7^{+4.2}_{-4.2}$
$c_{100}$	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	$144.59^{+0.97}_{-0.99}$	$\chi_{lowTEB}^2$	$10497.0 (\nu: 4.7)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0029}$	$100\theta_*$	$1.04117^{+0.00094}_{-0.00094}$	$\chi_{plik}^2$	$779.4 (\nu: 30.7)$
$H_0$	$67.7^{+2.1}_{-2.0}$	$D_A/\text{Gpc}$	$13.887^{+0.091}_{-0.092}$	$\chi_{prior}^2$	$7.41 (\nu: 6.5)$
$\Omega_\Lambda$	$0.690^{+0.027}_{-0.028}$	$z_{drag}$	$1060.1^{+1.2}_{-1.1}$	$\chi_{CMB}^2$	$11276.4 (\nu: 30.7)$
$\Omega_m$	$0.310^{+0.028}_{-0.027}$	$r_{drag}$	$147.23^{+0.98}_{-1.0}$		

$\bar{\chi}_{eff}^2 = 11283.76$ ;  $\Delta\bar{\chi}_{eff}^2 = 2.12$ ;  $R - 1 = 0.00414$

## 18.6 base\_nrun\_r\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022336	$0.02232^{+0.00033}_{-0.00032}$	$A_{143}^{\text{dustTE}}$	0.158	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	1.04098	$1.04099^{+0.00063}_{-0.00060}$
$\Omega_c h^2$	0.11968	$0.1197^{+0.0029}_{-0.0029}$	$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.885	$13.887^{+0.059}_{-0.059}$
$100\theta_{\text{MC}}$	1.04080	$1.04080^{+0.00064}_{-0.00061}$	$A_{217}^{\text{dustTE}}$	1.70	$1.66^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1059.82	$1059.79^{+0.69}_{-0.65}$
$\tau$	0.0860	$0.084^{+0.035}_{-0.035}$	$c_{100}$	0.99814	$0.9982^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.22	$147.24^{+0.63}_{-0.63}$
$\ln(10^{10} A_s)$	3.108	$3.104^{+0.068}_{-0.069}$	$c_{217}$	0.99594	$0.9961^{+0.0028}_{-0.0029}$	$k_D$	0.14071	$0.14067^{+0.00068}_{-0.00069}$
$n_s$	0.9645	$0.9644^{+0.0096}_{-0.0095}$	$H_0$	67.40	$67.4^{+1.3}_{-1.3}$	$100\theta_D$	0.160795	$0.16082^{+0.00039}_{-0.00038}$
$dn_s/d \ln k$	-0.0055	$-0.008^{+0.015}_{-0.015}$	$\Omega_\Lambda$	0.6859	$0.686^{+0.017}_{-0.018}$	$z_{\text{eq}}$	3394	$3393^{+66}_{-64}$
$r$	0.001	< 0.149	$\Omega_m$	0.3141	$0.314^{+0.018}_{-0.017}$	$k_{\text{eq}}$	0.010358	$0.01036^{+0.00020}_{-0.00019}$
$y_{\text{cal}}$	1.00034	$1.0004^{+0.0049}_{-0.0050}$	$\Omega_m h^2$	0.14266	$0.1426^{+0.0027}_{-0.0027}$	$100\theta_{\text{eq}}$	0.8146	$0.815^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	67.0	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09615	$0.09611^{+0.00062}_{-0.00060}$	$100\theta_{s,\text{eq}}$	0.4501	$0.4502^{+0.0063}_{-0.0063}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\sigma_8$	0.8351	$0.833^{+0.026}_{-0.026}$	$r_{\text{drag}}/D_V(0.57)$	0.07142	$0.07143^{+0.00098}_{-0.00097}$
$A_{143}^{\text{tSZ}}$	7.05	$5.05^{+3.8}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4680	$0.467^{+0.020}_{-0.019}$	$H(0.57)$	92.94	$92.94^{+0.57}_{-0.54}$
$A_{100}^{\text{PS}}$	257	$265^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6252	$0.623^{+0.022}_{-0.022}$	$D_A(0.57)$	1390.2	$1390^{+17}_{-17}$
$A_{143}^{\text{PS}}$	41.6	$45^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0173	$1.014^{+0.033}_{-0.033}$	$F_{\text{AP}}(0.57)$	0.67669	$0.6767^{+0.0046}_{-0.0044}$
$A_{143 \times 217}^{\text{PS}}$	36.5	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.510	$2.498^{+0.077}_{-0.079}$	$f\sigma_8(0.57)$	0.4862	$0.485^{+0.016}_{-0.016}$
$A_{217}^{\text{PS}}$	98.1	$97^{+20}_{-20}$	$z_{\text{re}}$	10.67	$10.4^{+3.1}_{-3.2}$	$\sigma_8(0.57)$	0.6206	$0.619^{+0.020}_{-0.020}$
$A^{\text{kSZ}}$	0.1	—	$10^9 A_s$	2.238	$2.23^{+0.16}_{-0.15}$	$r_{0.002}$	0.001	< 0.152
$A_{100}^{\text{dustTT}}$	7.10	$7.42^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8845	$1.885^{+0.025}_{-0.024}$	$r_{0.01}$	0.001	< 0.148
$A_{143}^{\text{dustTT}}$	8.82	$8.94^{+3.6}_{-3.6}$	$D_{40}$	1230.2	$1242^{+42}_{-40}$	$\ln(10^{10} A_t)$	-3.92	$-0.2^{+2.0}_{-2.4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.3	$17.0^{+8.1}_{-8.2}$	$D_{220}$	5731	$5724^{+78}_{-77}$	$r_{10}$	0.0004	< 0.0784
$A_{217}^{\text{dustTT}}$	81.0	$81^{+10}_{-10}$	$D_{810}$	2537.7	$2538^{+27}_{-27}$	$10^9 A_t$	0.002	< 0.333
$A_{100}^{\text{dustEE}}$	0.0823	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	814.3	$813.4^{+9.8}_{-9.6}$	$10^9 A_t e^{-2\tau}$	0.002	< 0.281
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0488^{+0.0099}_{-0.0099}$	$D_{2000}$	230.14	$229.6^{+3.5}_{-3.6}$	$f_{2000}^{143}$	29.9	$31^{+6}_{-6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.109	$0.0995^{+0.065}_{-0.063}$	$n_{s,0.002}$	0.9822	$0.992^{+0.050}_{-0.046}$	$f_{2000}^{143 \times 217}$	32.46	$33^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1011	$0.100^{+0.014}_{-0.014}$	$Y_P$	0.245378	$0.24537^{+0.00015}_{-0.00015}$	$f_{2000}^{217}$	105.91	$106.7^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.091}_{-0.091}$	$Y_P^{\text{BBN}}$	0.246704	$0.24670^{+0.00015}_{-0.00015}$	$\chi_{\text{lowTEB}}^2$	10495.8	$10497.5 (\nu: 4.3)$
$A_{217}^{\text{dustEE}}$	0.641	$0.65^{+0.25}_{-0.26}$	$10^5 D/H$	2.598	$2.601^{+0.062}_{-0.062}$	$\chi_{\text{plik}}^2$	2432.6	$2452.7 (\nu: 25.0)$
$A_{100}^{\text{dustTE}}$	0.139	$0.142^{+0.074}_{-0.074}$	Age/Gyr	13.803	$13.805^{+0.051}_{-0.053}$	$\chi_{\text{prior}}^2$	6.80	$19.3 (\nu: 15.0)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.058}_{-0.057}$	$z_*$	1089.94	$1089.96^{+0.60}_{-0.59}$	$\chi_{\text{CMB}}^2$	12928.4	$12950.2 (\nu: 24.3)$
$A_{100 \times 217}^{\text{dustTE}}$	0.294	$0.30^{+0.17}_{-0.17}$	$r_*$	144.54	$144.56^{+0.63}_{-0.64}$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.18$ ;  $\Delta\chi_{\text{eff}}^2 = -0.38$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.51$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.82$ ;  $R - 1 = 0.01111$

$\chi_{\text{eff}}^2$ : CMB - lowL.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10495.80 ( $\Delta$  -1.14) plik\_dx11dr2\_HM\_v18.TTTEEE: 2432.59 ( $\Delta$  0.94)





## 18.7 base\_nrun\_r\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022334	$0.02235^{+0.00030}_{-0.00029}$	$A_{217}^{\text{dustTE}}$	1.658	$1.65^{+0.50}_{-0.49}$	$k_D$	0.14059	$0.14060^{+0.00062}_{-0.00063}$
$\Omega_c h^2$	0.11925	$0.1192^{+0.0021}_{-0.0021}$	$c_{100}$	0.99822	$0.9982^{+0.0016}_{-0.0015}$	$100\theta_D$	0.160820	$0.16080^{+0.00037}_{-0.00037}$
$100\theta_{MC}$	1.04085	$1.04086^{+0.00060}_{-0.00058}$	$c_{217}$	0.99599	$0.9961^{+0.0028}_{-0.0029}$	$z_{eq}$	3383.5	$3382^{+48}_{-48}$
$\tau$	0.0873	$0.086^{+0.033}_{-0.034}$	$H_0$	67.56	$67.62^{+0.94}_{-0.94}$	$k_{eq}$	0.010327	$0.01032^{+0.00015}_{-0.00015}$
$\ln(10^{10} A_s)$	3.109	$3.108^{+0.067}_{-0.068}$	$\Omega_\Lambda$	0.6884	$0.689^{+0.012}_{-0.013}$	$100\theta_{eq}$	0.8165	$0.8169^{+0.0090}_{-0.0090}$
$n_s$	0.9661	$0.9656^{+0.0083}_{-0.0082}$	$\Omega_m$	0.3116	$0.311^{+0.013}_{-0.012}$	$100\theta_{s,eq}$	0.45108	$0.4513^{+0.0046}_{-0.0046}$
$dn_s/d \ln k$	-0.0054	$-0.008^{+0.015}_{-0.015}$	$\Omega_m h^2$	0.14223	$0.1422^{+0.0020}_{-0.0020}$	$r_{drag}/D_V(0.57)$	0.07156	$0.07160^{+0.00071}_{-0.00070}$
$r$	0.000	< 0.150	$\Omega_m h^3$	0.09609	$0.09612^{+0.00061}_{-0.00060}$	$H(0.57)$	92.998	$93.03^{+0.44}_{-0.43}$
$y_{cal}$	1.00021	$1.0005^{+0.0049}_{-0.0050}$	$\sigma_8$	0.8347	$0.833^{+0.026}_{-0.027}$	$D_A(0.57)$	1388.1	$1387^{+13}_{-13}$
$A_{217}^{\text{CIB}}$	66.2	$65^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.5}$	0.4660	$0.464^{+0.017}_{-0.017}$	$F_{AP}(0.57)$	0.67606	$0.6759^{+0.0033}_{-0.0032}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.19	—	$\sigma_8 \Omega_m^{0.25}$	0.6237	$0.622^{+0.021}_{-0.021}$	$f\sigma_8(0.57)$	0.4854	$0.484^{+0.016}_{-0.016}$
$A_{143}^{\text{tSZ}}$	7.01	$5.10^{+3.7}_{-3.9}$	$\sigma_8/h^{0.5}$	1.0155	$1.013^{+0.033}_{-0.033}$	$\sigma_8(0.57)$	0.6209	$0.620^{+0.020}_{-0.020}$
$A_{100}^{\text{PS}}$	256	$264^{+50}_{-60}$	$\langle d^2 \rangle^{1/2}$	2.504	$2.495^{+0.075}_{-0.078}$	$r_{0.002}$	0.000	< 0.155
$A_{143}^{\text{PS}}$	42.4	$45^{+20}_{-20}$	$z_{re}$	10.78	$10.6^{+3.0}_{-3.1}$	$r_{0.01}$	0.000	< 0.150
$A_{143 \times 217}^{\text{PS}}$	39.0	$40^{+20}_{-20}$	$10^9 A_s$	2.240	$2.24^{+0.15}_{-0.15}$	$\ln(10^{10} A_t)$	-5.61	$-0.2^{+2.0}_{-2.5}$
$A_{217}^{\text{PS}}$	99.7	$97^{+20}_{-20}$	$10^9 A_s e^{-2\tau}$	1.8816	$1.883^{+0.023}_{-0.023}$	$r_{10}$	0.0001	< 0.0795
$A^{\text{kSZ}}$	0.0	—	$D_{40}$	1226.2	$1240^{+42}_{-39}$	$10^9 A_t$	0.000	< 0.338
$A_{100}^{\text{dustTT}}$	7.44	$7.41^{+3.7}_{-3.7}$	$D_{220}$	5724	$5726^{+79}_{-77}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.284
$A_{143}^{\text{dustTT}}$	8.98	$8.94^{+3.6}_{-3.6}$	$D_{810}$	2536.3	$2537^{+27}_{-26}$	$f_{2000}^{143}$	29.6	$31^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.0^{+8.1}_{-8.2}$	$D_{1420}$	814.3	$813.7^{+9.8}_{-9.5}$	$f_{2000}^{143 \times 217}$	32.51	$33^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.1	$81^{+10}_{-10}$	$D_{2000}$	230.19	$229.8^{+3.5}_{-3.5}$	$f_{2000}^{217}$	105.97	$106.6^{+3.9}_{-3.9}$
$A_{100}^{\text{dustEE}}$	0.0819	$0.081^{+0.011}_{-0.011}$	$n_{s,0.002}$	0.9834	$0.993^{+0.049}_{-0.046}$	$\chi_{\text{lowTEB}}^2$	10495.6	10497.5 ( $\nu: 4.3$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0494	$0.0490^{+0.0099}_{-0.0098}$	$Y_P$	0.245377	$0.24539^{+0.00013}_{-0.00014}$	$\chi_{\text{plik}}^2$	2432.8	2452.3 ( $\nu: 24.8$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0996^{+0.064}_{-0.064}$	$Y_P^{\text{BBN}}$	0.246703	$0.24671^{+0.00013}_{-0.00014}$	$\chi_{6\text{DF}}^2$	0.038	0.060 ( $\nu: 0.0$ )
$A_{143}^{\text{dustEE}}$	0.1009	$0.100^{+0.013}_{-0.014}$	$10^5 D/H$	2.598	$2.594^{+0.055}_{-0.055}$	$\chi_{\text{MGS}}^2$	1.16	1.27 ( $\nu: 0.1$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.091}_{-0.092}$	Age/Gyr	13.8003	$13.797^{+0.042}_{-0.043}$	$\chi_{\text{DR11CMass}}^2$	2.55	2.83 ( $\nu: 0.2$ )
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.25}_{-0.26}$	$z_*$	1089.899	$1089.87^{+0.48}_{-0.47}$	$\chi_{\text{DR11LOWZ}}^2$	0.75	0.79 ( $\nu: 0.1$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.075}_{-0.074}$	$r_*$	144.652	$144.66^{+0.50}_{-0.49}$	$\chi_{\text{prior}}^2$	6.91	19.3 ( $\nu: 14.8$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.058}_{-0.058}$	$100\theta_*$	1.04103	$1.04105^{+0.00059}_{-0.00057}$	$\chi_{\text{CMB}}^2$	12928.4	12949.8 ( $\nu: 24.1$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.16}_{-0.17}$	$D_A/\text{Gpc}$	13.8951	$13.896^{+0.048}_{-0.047}$	$\chi_{\text{BAO}}^2$	4.50	4.95 ( $\nu: 0.4$ )
$A_{143}^{\text{dustTE}}$	0.154	$0.16^{+0.11}_{-0.10}$	$z_{\text{drag}}$	1059.78	$1059.84^{+0.63}_{-0.61}$			
$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.33^{+0.16}_{-0.16}$	$r_{\text{drag}}$	147.33	$147.33^{+0.52}_{-0.51}$			

Best-fit  $\chi_{\text{eff}}^2 = 12939.80$ ;  $\Delta\chi_{\text{eff}}^2 = -0.36$ ;  $\bar{\chi}_{\text{eff}}^2 = 12974.09$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.62$ ;  $R - 1 = 0.01017$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.04 ( $\Delta$  0.01) MGS: 1.16 ( $\Delta$  -0.06) DR11CMASS: 2.55 ( $\Delta$  0.05) DR11LOWZ: 0.75 ( $\Delta$  0.07) CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.60  
( $\Delta$  -1.82) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.79 ( $\Delta$  1.25)

## 18.8 base\_nrun\_r\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022309	$0.02233^{+0.00033}_{-0.00032}$	$A_{143}^{\text{dustTE}}$	0.154	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	1.04101	$1.04101^{+0.00062}_{-0.00060}$
$\Omega_c h^2$	0.11961	$0.1194^{+0.0028}_{-0.0028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.33^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.888	$13.891^{+0.058}_{-0.058}$
$100\theta_{\text{MC}}$	1.04082	$1.04082^{+0.00064}_{-0.00061}$	$A_{217}^{\text{dustTE}}$	1.660	$1.66^{+0.50}_{-0.49}$	$z_{\text{drag}}$	1059.78	$1059.81^{+0.66}_{-0.64}$
$\tau$	0.0856	$0.085^{+0.034}_{-0.035}$	$c_{100}$	0.99819	$0.9982^{+0.0016}_{-0.0015}$	$r_{\text{drag}}$	147.26	$147.28^{+0.62}_{-0.62}$
$\ln(10^{10} A_s)$	3.107	$3.105^{+0.068}_{-0.068}$	$c_{217}$	0.99607	$0.9961^{+0.0028}_{-0.0029}$	$k_D$	0.14064	$0.14064^{+0.00067}_{-0.00068}$
$n_s$	0.9646	$0.9649^{+0.0093}_{-0.0094}$	$H_0$	67.40	$67.5^{+1.3}_{-1.2}$	$100\theta_D$	0.160838	$0.16081^{+0.00038}_{-0.00038}$
$dn_s/d \ln k$	-0.0051	$-0.008^{+0.015}_{-0.015}$	$\Omega_\Lambda$	0.6862	$0.687^{+0.017}_{-0.018}$	$z_{\text{eq}}$	3392	$3388^{+64}_{-62}$
$r$	0.000	< 0.150	$\Omega_m$	0.3138	$0.313^{+0.018}_{-0.017}$	$k_{\text{eq}}$	0.010351	$0.01034^{+0.00019}_{-0.00019}$
$y_{\text{cal}}$	1.00029	$1.0004^{+0.0049}_{-0.0050}$	$\Omega_m h^2$	0.14257	$0.1424^{+0.0027}_{-0.0026}$	$100\theta_{\text{eq}}$	0.8150	$0.816^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	67.9	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09610	$0.09612^{+0.00062}_{-0.00060}$	$100\theta_{s,\text{eq}}$	0.4503	$0.4507^{+0.0061}_{-0.0061}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8346	$0.833^{+0.026}_{-0.027}$	$r_{\text{drag}}/D_V(0.57)$	0.07144	$0.07150^{+0.00095}_{-0.00094}$
$A_{143}^{\text{tSZ}}$	7.25	$5.09^{+3.7}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4675	$0.466^{+0.019}_{-0.019}$	$H(0.57)$	92.94	$92.98^{+0.56}_{-0.53}$
$A_{100}^{\text{PS}}$	258	$264^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6246	$0.623^{+0.021}_{-0.022}$	$D_A(0.57)$	1390.2	$1389^{+17}_{-17}$
$A_{143}^{\text{PS}}$	39.3	$45^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0165	$1.014^{+0.033}_{-0.033}$	$F_{\text{AP}}(0.57)$	0.67661	$0.6764^{+0.0044}_{-0.0043}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.508	$2.497^{+0.076}_{-0.079}$	$f\sigma_8(0.57)$	0.4858	$0.484^{+0.016}_{-0.016}$
$A_{217}^{\text{PS}}$	97.0	$97^{+20}_{-20}$	$z_{\text{re}}$	10.64	$10.5^{+3.1}_{-3.2}$	$\sigma_8(0.57)$	0.6203	$0.619^{+0.020}_{-0.020}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.235	$2.23^{+0.16}_{-0.15}$	$r_{0.002}$	0.000	< 0.153
$A_{100}^{\text{dustTT}}$	7.38	$7.41^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8830	$1.884^{+0.024}_{-0.024}$	$r_{0.01}$	0.000	< 0.149
$A_{143}^{\text{dustTT}}$	8.93	$8.95^{+3.6}_{-3.6}$	$D_{40}$	1229.9	$1241^{+43}_{-40}$	$\ln(10^{10} A_t)$	-6.44	$-0.2^{+2.0}_{-2.5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.0^{+8.1}_{-8.2}$	$D_{220}$	5726	$5725^{+79}_{-77}$	$r_{10}$	0.0000	< 0.0790
$A_{217}^{\text{dustTT}}$	81.7	$81^{+10}_{-10}$	$D_{810}$	2536.2	$2537^{+27}_{-27}$	$10^9 A_t$	0.000	< 0.335
$A_{100}^{\text{dustEE}}$	0.0816	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	813.8	$813.5^{+9.7}_{-9.7}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.282
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0489^{+0.0099}_{-0.0098}$	$D_{2000}$	229.98	$229.7^{+3.5}_{-3.6}$	$f_{2000}^{143}$	30.0	$31^{+6}_{-6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.0996^{+0.064}_{-0.063}$	$n_{s,0.002}$	0.9809	$0.992^{+0.049}_{-0.047}$	$f_{2000}^{143 \times 217}$	32.74	$33^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.013}_{-0.014}$	$Y_P$	0.245366	$0.24538^{+0.00014}_{-0.00015}$	$f_{2000}^{217}$	106.31	$106.6^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.223^{+0.091}_{-0.092}$	$Y_P^{\text{BBN}}$	0.246692	$0.24670^{+0.00015}_{-0.00015}$	$\chi_{\text{lowTEB}}^2$	10495.8	$10497.5 (\nu: 4.3)$
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.25}_{-0.26}$	$10^5 D/H$	2.603	$2.598^{+0.060}_{-0.061}$	$\chi_{\text{plik}}^2$	2432.2	$2452.6 (\nu: 25.2)$
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.075}_{-0.074}$	Age/Gyr	13.805	$13.801^{+0.050}_{-0.052}$	$\chi_{\text{JLA}}^2$	706.82	$706.85 (\nu: 0.0)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.059}_{-0.058}$	$z_*$	1089.96	$1089.92^{+0.58}_{-0.58}$	$\chi_{\text{prior}}^2$	7.11	$19.3 (\nu: 14.9)$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.17}$	$r_*$	144.58	$144.60^{+0.62}_{-0.62}$	$\chi_{\text{CMB}}^2$	12928.0	$12950.1 (\nu: 24.6)$

Best-fit  $\chi_{\text{eff}}^2 = 13641.97$ ;  $\Delta\chi_{\text{eff}}^2 = -0.43$ ;  $\bar{\chi}_{\text{eff}}^2 = 13676.29$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.66$ ;  $R - 1 = 0.01141$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c.Ap: 10495.80 ( $\Delta$  -1.56) plik\_dx11dr2\_HM.v18\_TTTEEE: 2432.24 ( $\Delta$  0.62) SN - JLA December\_2013: 706.82 ( $\Delta$  -0.04)

### 18.9 base\_nrun\_r\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022325	$0.02234^{+0.00033}_{-0.00032}$	$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	1.04101	$1.04102^{+0.00062}_{-0.00060}$
$\Omega_c h^2$	0.11950	$0.1194^{+0.0029}_{-0.0028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.33^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.890	$13.891^{+0.059}_{-0.059}$
$100\theta_{\text{MC}}$	1.04082	$1.04083^{+0.00064}_{-0.00061}$	$A_{217}^{\text{dustTE}}$	1.663	$1.66^{+0.50}_{-0.49}$	$z_{\text{drag}}$	1059.78	$1059.83^{+0.64}_{-0.65}$
$\tau$	0.0854	$0.085^{+0.035}_{-0.035}$	$c_{100}$	0.99821	$0.9982^{+0.0016}_{-0.0015}$	$r_{\text{drag}}$	147.27	$147.28^{+0.62}_{-0.62}$
$\ln(10^{10} A_s)$	3.106	$3.106^{+0.068}_{-0.068}$	$c_{217}$	0.99600	$0.9961^{+0.0028}_{-0.0029}$	$k_D$	0.14064	$0.14064^{+0.00067}_{-0.00069}$
$n_s$	0.9652	$0.9650^{+0.0094}_{-0.0095}$	$H_0$	67.46	$67.5^{+1.3}_{-1.3}$	$100\theta_D$	0.160821	$0.16081^{+0.00038}_{-0.00038}$
$dn_s/d \ln k$	-0.0045	$-0.009^{+0.015}_{-0.015}$	$\Omega_\Lambda$	0.6869	$0.687^{+0.017}_{-0.018}$	$z_{\text{eq}}$	3389	$3387^{+65}_{-63}$
$r$	0.000	< 0.150	$\Omega_m$	0.3131	$0.313^{+0.018}_{-0.017}$	$k_{\text{eq}}$	0.010344	$0.01034^{+0.00020}_{-0.00019}$
$y_{\text{cal}}$	1.00036	$1.0004^{+0.0049}_{-0.0050}$	$\Omega_m h^2$	0.14247	$0.1424^{+0.0027}_{-0.0026}$	$100\theta_{\text{eq}}$	0.8154	$0.816^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	66.8	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09611	$0.09612^{+0.00062}_{-0.00061}$	$100\theta_{s,\text{eq}}$	0.4505	$0.4508^{+0.0062}_{-0.0062}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.09	—	$\sigma_8$	0.8342	$0.833^{+0.026}_{-0.027}$	$r_{\text{drag}}/D_V(0.57)$	0.07148	$0.07152^{+0.00097}_{-0.00095}$
$A_{143}^{\text{tSZ}}$	7.07	$5.09^{+3.7}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4668	$0.466^{+0.020}_{-0.019}$	$H(0.57)$	92.96	$92.99^{+0.57}_{-0.54}$
$A_{100}^{\text{PS}}$	257	$264^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	0.6240	$0.623^{+0.021}_{-0.022}$	$D_A(0.57)$	1389.5	$1389^{+17}_{-17}$
$A_{143}^{\text{PS}}$	40.6	$45^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0157	$1.014^{+0.033}_{-0.033}$	$F_{\text{AP}}(0.57)$	0.67643	$0.6763^{+0.0045}_{-0.0044}$
$A_{143 \times 217}^{\text{PS}}$	35.7	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.507	$2.497^{+0.076}_{-0.080}$	$f\sigma_8(0.57)$	0.4855	$0.484^{+0.016}_{-0.016}$
$A_{217}^{\text{PS}}$	98.6	$97^{+20}_{-20}$	$z_{\text{re}}$	10.62	$10.5^{+3.1}_{-3.2}$	$\sigma_8(0.57)$	0.6202	$0.619^{+0.020}_{-0.020}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.234	$2.23^{+0.16}_{-0.15}$	$r_{0.002}$	0.000	< 0.154
$A_{100}^{\text{dustTT}}$	7.37	$7.41^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8830	$1.884^{+0.025}_{-0.024}$	$r_{0.01}$	0.000	< 0.149
$A_{143}^{\text{dustTT}}$	8.91	$8.95^{+3.6}_{-3.6}$	$D_{40}$	1230.4	$1241^{+42}_{-40}$	$\ln(10^{10} A_t)$	-7.46	$-0.2^{+2.0}_{-2.5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.0^{+8.1}_{-8.2}$	$D_{220}$	5729	$5725^{+78}_{-78}$	$r_{10}$	0.0000	< 0.0793
$A_{217}^{\text{dustTT}}$	81.8	$81^{+10}_{-10}$	$D_{810}$	2537.1	$2538^{+27}_{-27}$	$10^9 A_t$	0.000	< 0.336
$A_{100}^{\text{dustEE}}$	0.0817	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	814.4	$813.6^{+9.7}_{-9.7}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.283
$A_{100 \times 143}^{\text{dustEE}}$	0.0494	$0.0489^{+0.0099}_{-0.0098}$	$D_{2000}$	230.24	$229.7^{+3.5}_{-3.6}$	$f_{2000}^{143}$	29.7	$31^{+6}_{-6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.0996^{+0.064}_{-0.063}$	$n_{s,0.002}$	0.9797	$0.993^{+0.050}_{-0.047}$	$f_{2000}^{143 \times 217}$	32.46	$33^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1008	$0.100^{+0.013}_{-0.014}$	$Y_P$	0.245373	$0.24538^{+0.00014}_{-0.00015}$	$f_{2000}^{217}$	106.06	$106.6^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.091}_{-0.092}$	$Y_P^{\text{BBN}}$	0.246699	$0.24671^{+0.00014}_{-0.00015}$	$\chi_{\text{lowTEB}}^2$	10495.9	$10497.5 (\nu: 4.3)$
$A_{217}^{\text{dustEE}}$	0.653	$0.65^{+0.25}_{-0.26}$	$10^5 D/H$	2.600	$2.597^{+0.061}_{-0.061}$	$\chi_{\text{plik}}^2$	2432.4	$2452.6 (\nu: 25.4)$
$A_{100}^{\text{dustTE}}$	0.140	$0.142^{+0.075}_{-0.074}$	Age/Gyr	13.803	$13.800^{+0.051}_{-0.053}$	$\chi_{\text{H070p6}}^2$	0.89	$0.89 (\nu: 0.1)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.059}_{-0.058}$	$z_*$	1089.93	$1089.90^{+0.59}_{-0.59}$	$\chi_{\text{prior}}^2$	6.90	$19.3 (\nu: 14.9)$
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.17}$	$r_*$	144.59	$144.61^{+0.63}_{-0.63}$	$\chi_{\text{CMB}}^2$	12928.3	$12950.2 (\nu: 24.7)$

Best-fit  $\chi_{\text{eff}}^2 = 12936.05$ ;  $\Delta\chi_{\text{eff}}^2 = -0.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 12970.39$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.64$ ;  $R - 1 = 0.01160$

$\chi_{\text{eff}}^2$ : CMB - lowL.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10495.88 ( $\Delta$  -1.12) plik\_dx11dr2\_HM\_v18.TTTEEE: 2432.38 ( $\Delta$  0.62) Hubble - H070p6: 0.89 ( $\Delta$  -0.01)

## 18.10 base\_nrun\_r\_plikHM\_TTTEE\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02232^{+0.00033}_{-0.00032}$	$A_{143}^{\text{dustTE}}$	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	$1.04099^{+0.00063}_{-0.00060}$
$\Omega_c h^2$	$0.1196^{+0.0029}_{-0.0029}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	$13.887^{+0.059}_{-0.059}$
$100\theta_{\text{MC}}$	$1.04080^{+0.00064}_{-0.00061}$	$A_{217}^{\text{dustTE}}$	$1.66^{+0.50}_{-0.49}$	$z_{\text{drag}}$	$1059.80^{+0.67}_{-0.65}$
$\tau$	$0.084^{+0.034}_{-0.033}$	$c_{100}$	$0.9982^{+0.0016}_{-0.0015}$	$r_{\text{drag}}$	$147.24^{+0.64}_{-0.64}$
$\ln(10^{10} A_s)$	$3.105^{+0.067}_{-0.064}$	$c_{217}$	$0.9961^{+0.0028}_{-0.0029}$	$k_D$	$0.14067^{+0.00068}_{-0.00069}$
$n_s$	$0.9644^{+0.0096}_{-0.0096}$	$H_0$	$67.4^{+1.3}_{-1.3}$	$100\theta_D$	$0.16082^{+0.00038}_{-0.00038}$
$dn_s/d \ln k$	$-0.009^{+0.015}_{-0.015}$	$\Omega_\Lambda$	$0.686^{+0.017}_{-0.018}$	$z_{\text{eq}}$	$3393^{+65}_{-64}$
$r$	$< 0.149$	$\Omega_m$	$0.314^{+0.018}_{-0.017}$	$k_{\text{eq}}$	$0.01035^{+0.00020}_{-0.00020}$
$y_{\text{cal}}$	$1.0004^{+0.0049}_{-0.0050}$	$\Omega_m h^2$	$0.1426^{+0.0027}_{-0.0027}$	$100\theta_{\text{eq}}$	$0.815^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$\Omega_m h^3$	$0.09611^{+0.00062}_{-0.00060}$	$100\theta_{s,\text{eq}}$	$0.4502^{+0.0063}_{-0.0063}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\sigma_8$	$0.833^{+0.026}_{-0.025}$	$r_{\text{drag}}/D_V(0.57)$	$0.07143^{+0.00098}_{-0.00097}$
$A_{143}^{\text{tSZ}}$	$5.07^{+3.7}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	$0.467^{+0.020}_{-0.019}$	$H(0.57)$	$92.94^{+0.58}_{-0.54}$
$A_{100}^{\text{PS}}$	$264^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	$0.624^{+0.021}_{-0.021}$	$D_A(0.57)$	$1390^{+17}_{-17}$
$A_{143}^{\text{PS}}$	$45^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$1.015^{+0.033}_{-0.032}$	$F_{\text{AP}}(0.57)$	$0.6767^{+0.0046}_{-0.0044}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	$2.499^{+0.076}_{-0.076}$	$f\sigma_8(0.57)$	$0.485^{+0.016}_{-0.015}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$z_{\text{re}}$	$10.5^{+2.9}_{-3.0}$	$\sigma_8(0.57)$	$0.619^{+0.020}_{-0.020}$
$A^{\text{kSZ}}$	—	$10^9 A_s$	$2.23^{+0.15}_{-0.15}$	$r_{0.002}$	$< 0.152$
$A_{100}^{\text{dustTT}}$	$7.41^{+3.7}_{-3.6}$	$10^9 A_s e^{-2\tau}$	$1.885^{+0.025}_{-0.024}$	$r_{0.01}$	$< 0.148$
$A_{143}^{\text{dustTT}}$	$8.95^{+3.6}_{-3.6}$	$D_{40}$	$1241^{+42}_{-40}$	$\ln(10^{10} A_t)$	$-0.2^{+2.0}_{-2.5}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0^{+8.1}_{-8.2}$	$D_{220}$	$5724^{+78}_{-77}$	$r_{10}$	$< 0.0780$
$A_{217}^{\text{dustTT}}$	$81^{+10}_{-10}$	$D_{810}$	$2538^{+27}_{-27}$	$10^9 A_t$	$< 0.331$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	$813.4^{+9.7}_{-9.7}$	$10^9 A_t e^{-2\tau}$	$< 0.280$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0488^{+0.0099}_{-0.0098}$	$D_{2000}$	$229.6^{+3.5}_{-3.6}$	$f_{2000}^{143}$	$31^{+6}_{-6}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0996^{+0.064}_{-0.063}$	$n_{s,0.002}$	$0.992^{+0.049}_{-0.046}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.013}_{-0.014}$	$Y_P$	$0.24537^{+0.00015}_{-0.00015}$	$f_{2000}^{217}$	$106.7^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustEE}}$	$0.223^{+0.091}_{-0.092}$	$Y_P^{\text{BBN}}$	$0.24670^{+0.00015}_{-0.00015}$	$\chi_{\text{lowTEB}}^2$	$10497.5 (\nu: 4.3)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.26}$	$10^5 D/H$	$2.601^{+0.061}_{-0.062}$	$\chi_{\text{plik}}^2$	$2452.6 (\nu: 25.0)$
$A_{100}^{\text{dustTE}}$	$0.142^{+0.075}_{-0.074}$	Age/Gyr	$13.804^{+0.051}_{-0.053}$	$\chi_{\text{prior}}^2$	$19.3 (\nu: 14.9)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.132^{+0.059}_{-0.057}$	$z_*$	$1089.95^{+0.60}_{-0.59}$	$\chi_{\text{CMB}}^2$	$12950.1 (\nu: 24.3)$
$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.17}_{-0.17}$	$r_*$	$144.56^{+0.64}_{-0.64}$		

$$\bar{\chi}_{\text{eff}}^2 = 12969.39; \Delta \bar{\chi}_{\text{eff}}^2 = 1.71; R - 1 = 0.01187$$

### 18.11 base\_nrun\_r\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02228	$0.02238^{+0.00054}_{-0.00051}$	$\Omega_m h^2$	0.14143	$0.1410^{+0.0039}_{-0.0039}$	$k_D$	0.14028	$0.1403^{+0.0010}_{-0.0010}$
$\Omega_c h^2$	0.11850	$0.1180^{+0.0042}_{-0.0041}$	$\Omega_m h^3$	0.09596	$0.0961^{+0.0010}_{-0.00098}$	$100\theta_D$	0.16094	$0.16084^{+0.00060}_{-0.00060}$
$100\theta_{MC}$	1.04103	$1.04111^{+0.00093}_{-0.00093}$	$\sigma_8$	0.8160	$0.816^{+0.019}_{-0.019}$	$z_{eq}$	3364	$3354^{+93}_{-92}$
$\tau$	0.0677	$0.071^{+0.036}_{-0.035}$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.449^{+0.018}_{-0.018}$	$k_{eq}$	0.010268	$0.01024^{+0.00029}_{-0.00028}$
$\ln(10^{10} A_s)$	3.066	$3.073^{+0.067}_{-0.062}$	$\sigma_8 \Omega_m^{0.25}$	0.6075	$0.605^{+0.015}_{-0.015}$	$100\theta_{eq}$	0.8200	$0.822^{+0.018}_{-0.018}$
$n_s$	0.9681	$0.969^{+0.013}_{-0.012}$	$\sigma_8/h^{0.5}$	0.9906	$0.988^{+0.022}_{-0.022}$	$100\theta_{s,eq}$	0.4529	$0.4541^{+0.0093}_{-0.0091}$
$dn_s/d \ln k$	-0.0021	$-0.008^{+0.016}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	2.446	$2.434^{+0.055}_{-0.058}$	$r_{drag}/D_V(0.57)$	0.07183	$0.0720^{+0.0015}_{-0.0014}$
$r$	0.000	< 0.176	$z_{re}$	8.99	$9.18^{+3.1}_{-3.4}$	$H(0.57)$	93.08	$93.25^{+0.93}_{-0.85}$
$y_{cal}$	1.00001	$1.0002^{+0.0049}_{-0.0050}$	$10^9 A_s$	2.146	$2.16^{+0.15}_{-0.13}$	$D_A(0.57)$	1384.6	$1380^{+26}_{-26}$
$A_{217}^{CIB}$	68.0	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8742	$1.874^{+0.026}_{-0.026}$	$F_{AP}(0.57)$	0.6749	$0.6740^{+0.0066}_{-0.0064}$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1219.5	$1229^{+48}_{-45}$	$f\sigma_8(0.57)$	0.4733	$0.472^{+0.010}_{-0.011}$
$A_{143}^{tSZ}$	7.15	$4.84^{+3.8}_{-3.8}$	$D_{220}$	5713	$5716^{+83}_{-82}$	$\sigma_8(0.57)$	0.6081	$0.609^{+0.018}_{-0.017}$
$A_{100}^{PS}$	256	$263^{+50}_{-50}$	$D_{810}$	2532.7	$2534^{+27}_{-28}$	$r_{0.002}$	0.000	< 0.186
$A_{143}^{PS}$	39.9	$45^{+20}_{-20}$	$D_{1420}$	814.5	$814^{+10}_{-10}$	$r_{0.01}$	0.000	< 0.177
$A_{143 \times 217}^{PS}$	33	$38^{+20}_{-20}$	$D_{2000}$	229.96	$229.7^{+3.7}_{-3.8}$	$\ln(10^{10} A_t)$	-7.18	$-0.1^{+2.0}_{-2.5}$
$A_{217}^{PS}$	96.8	$95^{+20}_{-20}$	$n_{s,0.002}$	0.975	$0.993^{+0.058}_{-0.053}$	$r_{10}$	0.0000	< 0.0965
$A^{kSZ}$	0.0	—	$Y_P$	0.245355	$0.24540^{+0.00024}_{-0.00023}$	$10^9 A_t$	0.000	< 0.383
$A_{100}^{dustTT}$	7.46	$7.48^{+3.6}_{-3.7}$	$Y_P^{BBN}$	0.246681	$0.24672^{+0.00024}_{-0.00023}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.330
$A_{143}^{dustTT}$	9.10	$9.10^{+3.6}_{-3.6}$	$10^5 D/H$	2.608	$2.590^{+0.098}_{-0.10}$	$f_{2000}^{143}$	30.3	$31^{+6}_{-6}$
$A_{143 \times 217}^{dustTT}$	17.8	$17.3^{+8.2}_{-8.2}$	Age/Gyr	13.796	$13.782^{+0.082}_{-0.086}$	$f_{2000}^{143 \times 217}$	32.87	$33^{+4}_{-4}$
$A_{217}^{dustTT}$	82.0	$82^{+10}_{-10}$	$z_*$	1089.90	$1089.73^{+0.91}_{-0.92}$	$f_{2000}^{217}$	106.37	$106.8^{+4.2}_{-4.1}$
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.88	$144.95^{+0.91}_{-0.91}$	$\chi_{lensing}^2$	9.40	10.2 ( $\nu$ : 1.4)
$c_{217}$	0.99609	$0.9961^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04123	$1.04130^{+0.00091}_{-0.00091}$	$\chi_{lowTEB}^2$	10494.27	10496.0 ( $\nu$ : 3.3)
$H_0$	67.85	$68.2^{+2.0}_{-1.9}$	$D_A/Gpc$	13.915	$13.920^{+0.085}_{-0.085}$	$\chi_{plik}^2$	766.5	781.4 ( $\nu$ : 17.6)
$\Omega_\Lambda$	0.6928	$0.696^{+0.025}_{-0.026}$	$z_{drag}$	1059.63	$1059.8^{+1.1}_{-1.1}$	$\chi_{prior}^2$	2.14	7.49 ( $\nu$ : 6.6)
$\Omega_m$	0.3072	$0.304^{+0.026}_{-0.025}$	$r_{drag}$	147.58	$147.62^{+0.91}_{-0.90}$	$\chi_{CMB}^2$	11270.2	11287.6 ( $\nu$ : 17.9)

Best-fit  $\chi_{eff}^2 = 11272.35$ ;  $\Delta\chi_{eff}^2 = -0.08$ ;  $\bar{\chi}_{eff}^2 = 11295.06$ ;  $\Delta\bar{\chi}_{eff}^2 = 2.75$ ;  $R - 1 = 0.00636$

$\chi_{eff}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.40 ( $\Delta$  0.22) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.27 ( $\Delta$  -0.59) plik\_dx11dr2\_HM\_v18\_TT: 766.54 ( $\Delta$  0.22)

## 18.12 base\_nrun\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022289	$0.02234^{+0.00045}_{-0.00044}$	$\sigma_8$	0.8154	$0.815^{+0.018}_{-0.018}$	$100\theta_{\text{eq}}$	0.8197	$0.820^{+0.011}_{-0.010}$
$\Omega_c h^2$	0.11856	$0.1184^{+0.0024}_{-0.0025}$	$\sigma_8 \Omega_m^{0.5}$	0.4521	$0.451^{+0.013}_{-0.013}$	$100\theta_{s,\text{eq}}$	0.4528	$0.4530^{+0.0055}_{-0.0053}$
$100\theta_{\text{MC}}$	1.04105	$1.04105^{+0.00082}_{-0.00081}$	$\sigma_8 \Omega_m^{0.25}$	0.6072	$0.606^{+0.014}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.07181	$0.07187^{+0.00085}_{-0.00082}$
$\tau$	0.0666	$0.068^{+0.027}_{-0.026}$	$\sigma_8/h^{0.5}$	0.9900	$0.989^{+0.021}_{-0.022}$	$H(0.57)$	93.09	$93.14^{+0.59}_{-0.57}$
$\ln(10^{10} A_s)$	3.064	$3.067^{+0.050}_{-0.050}$	$\langle d^2 \rangle^{1/2}$	2.446	$2.436^{+0.054}_{-0.056}$	$D_A(0.57)$	1384.7	$1383^{+16}_{-16}$
$n_s$	0.9678	$0.9678^{+0.0090}_{-0.0091}$	$z_{\text{re}}$	8.89	$8.92^{+2.4}_{-2.6}$	$F_{\text{AP}}(0.57)$	0.67501	$0.6748^{+0.0038}_{-0.0038}$
$dn_s/d \ln k$	-0.0016	$-0.007^{+0.016}_{-0.017}$	$10^9 A_s$	2.141	$2.15^{+0.11}_{-0.10}$	$f\sigma_8(0.57)$	0.4731	$0.472^{+0.010}_{-0.010}$
$r$	0.000	< 0.170	$10^9 A_s e^{-2\tau}$	1.8744	$1.876^{+0.023}_{-0.023}$	$\sigma_8(0.57)$	0.6076	$0.607^{+0.015}_{-0.014}$
$y_{\text{cal}}$	1.00000	$1.0002^{+0.0049}_{-0.0049}$	$D_{40}$	1221.4	$1231^{+47}_{-43}$	$r_{0.002}$	0.000	< 0.177
$A_{217}^{\text{CIB}}$	67.5	$65^{+10}_{-10}$	$D_{220}$	5716	$5714^{+80}_{-81}$	$r_{0.01}$	0.000	< 0.171
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{810}$	2532.8	$2534^{+27}_{-28}$	$\ln(10^{10} A_t)$	-4.98	$-0.2^{+2.0}_{-2.5}$
$A_{143}^{\text{tSZ}}$	7.21	$4.81^{+3.8}_{-3.8}$	$D_{1420}$	814.6	$814^{+10}_{-10}$	$r_{10}$	0.0001	< 0.0923
$A_{100}^{\text{PS}}$	255	$263^{+50}_{-50}$	$D_{2000}$	230.01	$229.5^{+3.6}_{-3.6}$	$10^9 A_t$	0.001	< 0.368
$A_{143}^{\text{PS}}$	39.9	$45^{+20}_{-20}$	$n_{s,0.002}$	0.973	$0.990^{+0.054}_{-0.051}$	$10^9 A_t e^{-2\tau}$	0.001	< 0.319
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$Y_{\text{P}}$	0.245357	$0.24538^{+0.00020}_{-0.00020}$	$f_{2000}^{143}$	30.3	$31^{+6}_{-6}$
$A_{217}^{\text{PS}}$	97.3	$95^{+20}_{-20}$	$Y_{\text{P}}^{\text{BBN}}$	0.246684	$0.24670^{+0.00020}_{-0.00020}$	$f_{2000}^{143 \times 217}$	32.81	$33^{+4}_{-4}$
$A^{\text{kSZ}}$	0.0	—	$10^5 D/H$	2.607	$2.597^{+0.084}_{-0.084}$	$f_{2000}^{217}$	106.31	$106.9^{+4.1}_{-4.0}$
$A_{100}^{\text{dustTT}}$	7.44	$7.48^{+3.6}_{-3.7}$	Age/Gyr	13.796	$13.790^{+0.062}_{-0.063}$	$\chi_{\text{lensing}}^2$	9.31	10.2 ( $\nu$ : 1.4)
$A_{143}^{\text{dustTT}}$	9.10	$9.10^{+3.6}_{-3.5}$	$z_*$	1089.89	$1089.82^{+0.65}_{-0.66}$	$\chi_{\text{lowTEB}}^2$	10494.45	10495.9 ( $\nu$ : 3.2)
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.3^{+8.0}_{-8.2}$	$r_*$	144.87	$144.86^{+0.63}_{-0.62}$	$\chi_{\text{plik}}^2$	766.6	780.8 ( $\nu$ : 16.8)
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$100\theta_*$	1.04124	$1.04124^{+0.00080}_{-0.00080}$	$\chi_{6\text{DF}}^2$	0.006	0.043 ( $\nu$ : 0.0)
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.913	$13.912^{+0.061}_{-0.061}$	$\chi_{\text{MGS}}^2$	1.47	1.62 ( $\nu$ : 0.2)
$c_{217}$	0.99600	$0.9961^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.63	$1059.8^{+1.0}_{-0.95}$	$\chi_{\text{DR11CMass}}^2$	2.40	2.86 ( $\nu$ : 0.2)
$H_0$	67.84	$67.9^{+1.2}_{-1.1}$	$r_{\text{drag}}$	147.56	$147.54^{+0.69}_{-0.68}$	$\chi_{\text{DR11LOWZ}}^2$	0.42	0.50 ( $\nu$ : 0.1)
$\Omega_\Lambda$	0.6925	$0.693^{+0.015}_{-0.015}$	$k_{\text{D}}$	0.14031	$0.14037^{+0.00094}_{-0.00091}$	$\chi_{\text{prior}}^2$	2.04	7.44 ( $\nu$ : 6.4)
$\Omega_m$	0.3075	$0.307^{+0.015}_{-0.015}$	$100\theta_{\text{D}}$	0.16094	$0.16087^{+0.00057}_{-0.00057}$	$\chi_{\text{CMB}}^2$	11270.3	11286.8 ( $\nu$ : 16.9)
$\Omega_m h^2$	0.14150	$0.1414^{+0.0023}_{-0.0024}$	$z_{\text{eq}}$	3366	$3364^{+56}_{-56}$	$\chi_{\text{BAO}}^2$	4.30	5.03 ( $\nu$ : 0.5)
$\Omega_m h^3$	0.09599	$0.0961^{+0.0010}_{-0.00097}$	$k_{\text{eq}}$	0.010273	$0.01027^{+0.00017}_{-0.00017}$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.66$ ;  $\Delta\chi_{\text{eff}}^2 = -0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 11299.30$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.61$ ;  $R - 1 = 0.00897$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.00) MGS: 1.47 ( $\Delta$  0.07) DR11CMass: 2.40 ( $\Delta$  0.00) DR11LOWZ: 0.42 ( $\Delta$  -0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.31 ( $\Delta$  0.07) lowl\_SMW\_70\_dx11d\_2014\_10\_03 10494.45 ( $\Delta$  -0.41) plik\_dx11dr2\_HM\_v18\_TT: 766.56 ( $\Delta$  0.36)

18.13 base\_nrun\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022329	$0.02237^{+0.00045}_{-0.00044}$	$\sigma_8 \Omega_m^{0.5}$	0.4515	$0.450^{+0.013}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.07191	$0.07195^{+0.00083}_{-0.00080}$
$\Omega_c h^2$	0.11828	$0.1182^{+0.0024}_{-0.0024}$	$\sigma_8 \Omega_m^{0.25}$	0.6072	$0.606^{+0.014}_{-0.014}$	$H(0.57)$	93.15	$93.20^{+0.58}_{-0.57}$
$100\theta_{\text{MC}}$	1.04106	$1.04109^{+0.00081}_{-0.00081}$	$\sigma_8/h^{0.5}$	0.9905	$0.988^{+0.021}_{-0.021}$	$D_A(0.57)$	1382.8	$1382^{+15}_{-15}$
$\tau$	0.0700	$0.069^{+0.027}_{-0.026}$	$\langle d^2 \rangle^{1/2}$	2.446	$2.435^{+0.054}_{-0.056}$	$F_{\text{AP}}(0.57)$	0.67455	$0.6744^{+0.0037}_{-0.0036}$
$\ln(10^{10} A_s)$	3.0702	$3.070^{+0.050}_{-0.049}$	$z_{\text{re}}$	9.19	$9.07^{+2.3}_{-2.6}$	$f\sigma_8(0.57)$	0.4733	$0.472^{+0.010}_{-0.010}$
$n_s$	0.9685	$0.9684^{+0.0089}_{-0.0089}$	$10^9 A_s$	2.155	$2.15^{+0.11}_{-0.10}$	$\sigma_8(0.57)$	0.6090	$0.608^{+0.015}_{-0.014}$
$dn_s/d \ln k$	-0.0029	$-0.007^{+0.016}_{-0.017}$	$10^9 A_s e^{-2\tau}$	1.8732	$1.875^{+0.023}_{-0.023}$	$r_{0.002}$	0.000	< 0.181
$r$	0.000	< 0.172	$D_{40}$	1217.5	$1230^{+47}_{-43}$	$r_{0.01}$	0.000	< 0.174
$y_{\text{cal}}$	0.99993	$1.0002^{+0.0049}_{-0.0049}$	$D_{220}$	5715	$5716^{+80}_{-80}$	$\ln(10^{10} A_t)$	-6.78	$-0.2^{+2.0}_{-2.5}$
$A_{217}^{\text{CIB}}$	67.9	$65^{+10}_{-10}$	$D_{810}$	2532.2	$2534^{+28}_{-27}$	$r_{10}$	0.0000	< 0.0941
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{1420}$	814.4	$814^{+10}_{-10}$	$10^9 A_t$	0.000	< 0.374
$A_{143}^{\text{tSZ}}$	7.14	$4.82^{+3.8}_{-3.8}$	$D_{2000}$	229.97	$229.6^{+3.6}_{-3.6}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.325
$A_{100}^{\text{PS}}$	256	$263^{+50}_{-50}$	$n_{s,0.002}$	0.978	$0.992^{+0.054}_{-0.051}$	$f_{2000}^{143}$	30.3	$31^{+6}_{-6}$
$A_{143}^{\text{PS}}$	39.9	$45^{+20}_{-20}$	$Y_{\text{P}}$	0.245375	$0.24539^{+0.00020}_{-0.00020}$	$f_{2000}^{143 \times 217}$	32.79	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$Y_{\text{P}}^{\text{BBN}}$	0.246701	$0.24672^{+0.00020}_{-0.00020}$	$f_{2000}^{217}$	106.22	$106.8^{+4.1}_{-4.0}$
$A_{217}^{\text{PS}}$	96.5	$95^{+20}_{-20}$	$10^5 \text{D}/\text{H}$	2.599	$2.592^{+0.083}_{-0.084}$	$\chi_{\text{lensing}}^2$	9.47	10.2 ( $\nu: 1.4$ )
$A^{\text{kSZ}}$	0.0	—	$\text{Age}/\text{Gyr}$	13.790	$13.785^{+0.061}_{-0.062}$	$\chi_{\text{lowTEB}}^2$	10494.10	10495.8 ( $\nu: 3.1$ )
$A_{100}^{\text{dustTT}}$	7.46	$7.48^{+3.7}_{-3.7}$	$z_*$	1089.82	$1089.77^{+0.65}_{-0.65}$	$\chi_{\text{plik}}^2$	766.8	780.9 ( $\nu: 16.8$ )
$A_{143}^{\text{dustTT}}$	9.19	$9.10^{+3.6}_{-3.5}$	$r_*$	144.91	$144.90^{+0.61}_{-0.61}$	$\chi_{\text{H070p6}}^2$	0.63	0.62 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.3^{+8.0}_{-8.2}$	$100\theta_*$	1.04125	$1.04127^{+0.00081}_{-0.00079}$	$\chi_{\text{JLA}}^2$	706.607	706.64 ( $\nu: 0.0$ )
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$D_A/\text{Gpc}$	13.917	$13.916^{+0.060}_{-0.059}$	$\chi_{6\text{DF}}^2$	0.001	0.038 ( $\nu: 0.0$ )
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.70	$1059.8^{+1.0}_{-0.97}$	$\chi_{\text{MGS}}^2$	1.61	1.73 ( $\nu: 0.2$ )
$c_{217}$	0.99605	$0.9961^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.60	$147.57^{+0.68}_{-0.68}$	$\chi_{\text{DR11CMass}}^2$	2.44	2.88 ( $\nu: 0.2$ )
$H_0$	67.98	$68.0^{+1.1}_{-1.1}$	$k_{\text{D}}$	0.14030	$0.14035^{+0.00094}_{-0.00091}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	0.41 ( $\nu: 0.1$ )
$\Omega_\Lambda$	0.6943	$0.695^{+0.014}_{-0.014}$	$100\theta_{\text{D}}$	0.16089	$0.16085^{+0.00056}_{-0.00057}$	$\chi_{\text{prior}}^2$	2.03	7.45 ( $\nu: 6.4$ )
$\Omega_m$	0.3057	$0.305^{+0.014}_{-0.014}$	$z_{\text{eq}}$	3360	$3359^{+54}_{-55}$	$\chi_{\text{CMB}}^2$	11270.3	11286.8 ( $\nu: 16.8$ )
$\Omega_m h^2$	0.14125	$0.1412^{+0.0023}_{-0.0023}$	$k_{\text{eq}}$	0.010255	$0.01025^{+0.00017}_{-0.00017}$	$\chi_{\text{BAO}}^2$	4.37	5.06 ( $\nu: 0.5$ )
$\Omega_m h^3$	0.09602	$0.0961^{+0.0010}_{-0.00097}$	$100\theta_{\text{eq}}$	0.8209	$0.821^{+0.010}_{-0.010}$			
$\sigma_8$	0.8167	$0.815^{+0.018}_{-0.018}$	$100\theta_{s,\text{eq}}$	0.4534	$0.4535^{+0.0054}_{-0.0052}$			

Best-fit  $\chi_{\text{eff}}^2 = 11983.97$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 12006.58$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.56$ ;  $R - 1 = 0.00779$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.44 ( $\Delta$  0.02) DR11LOWZ: 0.32 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.47 ( $\Delta$  0.20) lowl\_SMW\_70\_dx11d\_2014\_10\_03 10494.10 ( $\Delta$  -0.82) plik\_dx11dr2\_HM\_v18\_TT: 766.78 ( $\Delta$  0.65) Hubble - H070p6: 0.62 ( $\Delta$  -0.04) SN - JLA December\_2013: 706.61 ( $\Delta$  -0.02)



18.14 base\_nrun\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02240^{+0.00054}_{-0.00050}$	$\Omega_m h^2$	$0.1408^{+0.0035}_{-0.0037}$	$k_D$	$0.1403^{+0.0010}_{-0.0010}$
$\Omega_c h^2$	$0.1178^{+0.0038}_{-0.0040}$	$\Omega_m h^3$	$0.0961^{+0.0010}_{-0.00099}$	$100\theta_D$	$0.16083^{+0.00059}_{-0.00060}$
$100\theta_{MC}$	$1.04114^{+0.00092}_{-0.00091}$	$\sigma_8$	$0.816^{+0.018}_{-0.016}$	$z_{eq}$	$3350^{+84}_{-88}$
$\tau$	$0.073^{+0.032}_{-0.031}$	$\sigma_8 \Omega_m^{0.5}$	$0.449^{+0.018}_{-0.018}$	$k_{eq}$	$0.01022^{+0.00026}_{-0.00027}$
$\ln(10^{10} A_s)$	$3.077^{+0.059}_{-0.056}$	$\sigma_8 \Omega_m^{0.25}$	$0.605^{+0.015}_{-0.015}$	$100\theta_{eq}$	$0.823^{+0.018}_{-0.016}$
$n_s$	$0.970^{+0.012}_{-0.011}$	$\sigma_8/h^{0.5}$	$0.988^{+0.022}_{-0.022}$	$100\theta_{s,eq}$	$0.4545^{+0.0090}_{-0.0082}$
$dn_s/d \ln k$	$-0.008^{+0.016}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	$2.435^{+0.055}_{-0.057}$	$r_{drag}/D_V(0.57)$	$0.0721^{+0.0014}_{-0.0013}$
$r$	$< 0.179$	$z_{re}$	$< 11.8$	$H(0.57)$	$93.29^{+0.89}_{-0.86}$
$y_{cal}$	$1.0002^{+0.0049}_{-0.0049}$	$10^9 A_s$	$2.17^{+0.13}_{-0.12}$	$D_A(0.57)$	$1379^{+23}_{-25}$
$A_{217}^{CIB}$	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.873^{+0.025}_{-0.026}$	$F_{AP}(0.57)$	$0.6737^{+0.0059}_{-0.0061}$
$\xi^{tSZ \times CIB}$	—	$D_{40}$	$1229^{+47}_{-45}$	$f\sigma_8(0.57)$	$0.472^{+0.010}_{-0.011}$
$A_{143}^{tSZ}$	$4.86^{+3.8}_{-3.8}$	$D_{220}$	$5716^{+83}_{-82}$	$\sigma_8(0.57)$	$0.610^{+0.016}_{-0.015}$
$A_{100}^{PS}$	$262^{+50}_{-60}$	$D_{810}$	$2534^{+27}_{-27}$	$r_{0.002}$	$< 0.189$
$A_{143}^{PS}$	$45^{+20}_{-20}$	$D_{1420}$	$814^{+10}_{-10}$	$r_{0.01}$	$< 0.180$
$A_{143 \times 217}^{PS}$	$38^{+20}_{-20}$	$D_{2000}$	$229.7^{+3.7}_{-3.8}$	$\ln(10^{10} A_t)$	$-0.1^{+2.0}_{-2.5}$
$A_{217}^{PS}$	$95^{+20}_{-20}$	$n_{s,0.002}$	$0.995^{+0.058}_{-0.053}$	$r_{10}$	$< 0.0985$
$A^{kSZ}$	—	$Y_P$	$0.24540^{+0.00024}_{-0.00023}$	$10^9 A_t$	$< 0.391$
$A_{100}^{dustTT}$	$7.49^{+3.7}_{-3.7}$	$Y_P^{BBN}$	$0.24673^{+0.00024}_{-0.00023}$	$10^9 A_t e^{-2\tau}$	$< 0.335$
$A_{143}^{dustTT}$	$9.10^{+3.6}_{-3.6}$	$10^5 D/H$	$2.586^{+0.095}_{-0.098}$	$f_{2000}^{143}$	$31^{+6}_{-6}$
$A_{143 \times 217}^{dustTT}$	$17.3^{+8.1}_{-8.2}$	Age/Gyr	$13.778^{+0.078}_{-0.084}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{217}^{dustTT}$	$82^{+10}_{-10}$	$z_*$	$1089.69^{+0.85}_{-0.90}$	$f_{2000}^{217}$	$106.7^{+4.1}_{-4.1}$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	$144.99^{+0.88}_{-0.84}$	$\chi^2_{lensing}$	$10.2 (\nu: 1.5)$
$c_{217}$	$0.9961^{+0.0028}_{-0.0028}$	$100\theta_*$	$1.04132^{+0.00089}_{-0.00088}$	$\chi^2_{lowTEB}$	$10495.9 (\nu: 3.1)$
$H_0$	$68.3^{+1.9}_{-1.8}$	$D_A/Gpc$	$13.924^{+0.082}_{-0.078}$	$\chi^2_{plik}$	$781.4 (\nu: 17.5)$
$\Omega_\Lambda$	$0.697^{+0.024}_{-0.023}$	$z_{drag}$	$1059.8^{+1.1}_{-1.0}$	$\chi^2_{prior}$	$7.47 (\nu: 6.4)$
$\Omega_m$	$0.303^{+0.023}_{-0.024}$	$r_{drag}$	$147.66^{+0.89}_{-0.85}$	$\chi^2_{CMB}$	$11287.4 (\nu: 17.6)$

$\bar{\chi}^2_{eff} = 11294.89$ ;  $\Delta \bar{\chi}^2_{eff} = 2.83$ ;  $R - 1 = 0.00700$

18.15 base\_nrun\_r\_plikHM\_TTTEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022279	$0.02230^{+0.00034}_{-0.00031}$	$A_{143}^{dustTE}$	0.154	$0.16^{+0.11}_{-0.11}$	$100\theta_*$	1.04107	$1.04105^{+0.00062}_{-0.00061}$
$\Omega_c h^2$	0.11921	$0.1191^{+0.0027}_{-0.0027}$	$A_{143 \times 217}^{dustTE}$	0.335	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.900	$13.902^{+0.055}_{-0.056}$
$100\theta_{MC}$	1.04087	$1.04086^{+0.00063}_{-0.00062}$	$A_{217}^{dustTE}$	1.660	$1.66^{+0.49}_{-0.50}$	$z_{\text{drag}}$	1059.67	$1059.70^{+0.67}_{-0.64}$
$\tau$	0.0643	$0.064^{+0.028}_{-0.026}$	$c_{100}$	0.99817	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.40	$147.42^{+0.59}_{-0.60}$
$\ln(10^{10} A_s)$	3.061	$3.062^{+0.051}_{-0.049}$	$c_{217}$	0.99607	$0.9961^{+0.0029}_{-0.0028}$	$k_D$	0.14047	$0.14046^{+0.00065}_{-0.00065}$
$n_s$	0.9659	$0.9658^{+0.0094}_{-0.0092}$	$H_0$	67.54	$67.6^{+1.3}_{-1.2}$	$100\theta_D$	0.160902	$0.16088^{+0.00037}_{-0.00039}$
$dn_s/d \ln k$	-0.0007	$-0.005^{+0.014}_{-0.015}$	$\Omega_\Lambda$	0.6884	$0.689^{+0.016}_{-0.017}$	$z_{\text{eq}}$	3381	$3378^{+61}_{-61}$
$r$	0.000	< 0.146	$\Omega_m$	0.3116	$0.311^{+0.017}_{-0.016}$	$k_{\text{eq}}$	0.010319	$0.01031^{+0.00019}_{-0.00019}$
$y_{\text{cal}}$	1.00005	$1.0002^{+0.0050}_{-0.0049}$	$\Omega_m h^2$	0.14213	$0.1420^{+0.0026}_{-0.0025}$	$100\theta_{\text{eq}}$	0.8168	$0.817^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	67.8	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09600	$0.09600^{+0.00062}_{-0.00060}$	$100\theta_{s,\text{eq}}$	0.4513	$0.4516^{+0.0060}_{-0.0059}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8160	$0.815^{+0.017}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.07157	$0.07162^{+0.00093}_{-0.00091}$
$A_{143}^{\text{tSZ}}$	7.28	$5.08^{+3.8}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4555	$0.454^{+0.014}_{-0.013}$	$H(0.57)$	92.97	$93.00^{+0.56}_{-0.53}$
$A_{100}^{\text{PS}}$	257	$265^{+60}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6096	$0.608^{+0.013}_{-0.013}$	$D_A(0.57)$	1388.6	$1388^{+16}_{-17}$
$A_{143}^{\text{PS}}$	38.9	$45^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9929	$0.991^{+0.020}_{-0.020}$	$F_{\text{AP}}(0.57)$	0.67605	$0.6758^{+0.0043}_{-0.0042}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.455	$2.445^{+0.052}_{-0.051}$	$f\sigma_8(0.57)$	0.4745	$0.4734^{+0.0098}_{-0.0096}$
$A_{217}^{\text{PS}}$	96.7	$96^{+20}_{-20}$	$z_{\text{re}}$	8.68	$8.63^{+2.5}_{-2.7}$	$\sigma_8(0.57)$	0.6070	$0.606^{+0.014}_{-0.014}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.136	$2.14^{+0.11}_{-0.10}$	$r_{0.002}$	0.000	< 0.147
$A_{100}^{\text{dustTT}}$	7.47	$7.50^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8780	$1.879^{+0.023}_{-0.023}$	$r_{0.01}$	0.000	< 0.144
$A_{143}^{\text{dustTT}}$	8.97	$9.08^{+3.5}_{-3.6}$	$D_{40}$	1228.3	$1238^{+43}_{-39}$	$\ln(10^{10} A_t)$	-7.02	$-0.3^{+1.9}_{-2.4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.3^{+8.2}_{-8.2}$	$D_{220}$	5723	$5719^{+78}_{-78}$	$r_{10}$	0.0000	< 0.0763
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{810}$	2534.2	$2535^{+27}_{-27}$	$10^9 A_t$	0.000	< 0.314
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	814.8	$814.0^{+9.9}_{-9.8}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.274
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0488^{+0.0098}_{-0.0099}$	$D_{2000}$	230.10	$229.6^{+3.5}_{-3.6}$	$f_{2000}^{143}$	29.8	$31^{+6}_{-6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0998^{+0.064}_{-0.063}$	$n_{s,0.002}$	0.9681	$0.982^{+0.047}_{-0.044}$	$f_{2000}^{143 \times 217}$	32.58	$33^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1007	$0.100^{+0.013}_{-0.014}$	$Y_P$	0.245353	$0.24536^{+0.00015}_{-0.00015}$	$f_{2000}^{217}$	106.10	$106.7^{+4.0}_{-4.0}$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.091}_{-0.091}$	$Y_P^{\text{BBN}}$	0.246679	$0.24669^{+0.00015}_{-0.00015}$	$\chi_{\text{lensing}}^2$	9.98	10.6 ( $\nu: 1.9$ )
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.26}$	$10^5 D/H$	2.609	$2.605^{+0.060}_{-0.063}$	$\chi_{\text{lowTEB}}^2$	10495.08	10496.5 ( $\nu: 3.2$ )
$A_{100}^{\text{dustTE}}$	0.143	$0.142^{+0.074}_{-0.074}$	Age/Gyr	13.805	$13.803^{+0.050}_{-0.052}$	$\chi_{\text{plik}}^2$	2434.9	2455.1 ( $\nu: 24.3$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.057}$	$z_*$	1089.97	$1089.93^{+0.57}_{-0.59}$	$\chi_{\text{prior}}^2$	7.18	19.4 ( $\nu: 15.3$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.17}$	$r_*$	144.71	$144.73^{+0.60}_{-0.60}$	$\chi_{\text{CMB}}^2$	12940.0	12962.2 ( $\nu: 24.0$ )

Best-fit  $\chi_{\text{eff}}^2 = 12947.17$ ;  $\Delta\chi_{\text{eff}}^2 = -0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12981.61$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.50$ ;  $R - 1 = 0.01649$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.98 ( $\Delta$  0.20) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.08 ( $\Delta$  -0.21) plik\_dx11dr2\_HM\_v18\_TTTEE: 2434.94 ( $\Delta$  0.03)



## 18.16 base\_nrun\_r\_plikHM\_TTTEE\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022291	$0.02231^{+0.00030}_{-0.00029}$	$A_{217}^{\text{dustTE}}$	1.669	$1.66^{+0.49}_{-0.50}$	$k_D$	0.14046	$0.14043^{+0.00060}_{-0.00060}$
$\Omega_c h^2$	0.11909	$0.1188^{+0.0021}_{-0.0021}$	$c_{100}$	0.99816	$0.9981^{+0.0015}_{-0.0015}$	$100\theta_D$	0.160893	$0.16087^{+0.00036}_{-0.00038}$
$100\theta_{MC}$	1.04089	$1.04089^{+0.00059}_{-0.00058}$	$c_{217}$	0.99608	$0.9961^{+0.0029}_{-0.0028}$	$z_{eq}$	3378.5	$3373^{+47}_{-46}$
$\tau$	0.0650	$0.066^{+0.025}_{-0.023}$	$H_0$	67.60	$67.70^{+0.92}_{-0.91}$	$k_{eq}$	0.010312	$0.01030^{+0.00014}_{-0.00014}$
$\ln(10^{10} A_s)$	3.0625	$3.064^{+0.045}_{-0.045}$	$\Omega_\Lambda$	0.6892	$0.691^{+0.012}_{-0.013}$	$100\theta_{eq}$	0.8173	$0.8183^{+0.0089}_{-0.0087}$
$n_s$	0.9661	$0.9664^{+0.0082}_{-0.0080}$	$\Omega_m$	0.3108	$0.309^{+0.013}_{-0.012}$	$100\theta_{s,eq}$	0.45153	$0.4521^{+0.0045}_{-0.0045}$
$dn_s/d \ln k$	-0.0011	$-0.005^{+0.014}_{-0.015}$	$\Omega_m h^2$	0.14203	$0.1418^{+0.0020}_{-0.0019}$	$r_{drag}/D_V(0.57)$	0.07161	$0.07169^{+0.00069}_{-0.00069}$
$r$	0.000	< 0.146	$\Omega_m h^3$	0.09601	$0.09600^{+0.00062}_{-0.00058}$	$H(0.57)$	92.994	$93.03^{+0.43}_{-0.42}$
$y_{cal}$	1.00003	$1.0002^{+0.0049}_{-0.0048}$	$\sigma_8$	0.8159	$0.815^{+0.017}_{-0.016}$	$D_A(0.57)$	1387.8	$1386^{+12}_{-12}$
$A_{217}^{\text{CIB}}$	67.8	$65^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.5}$	0.4549	$0.453^{+0.012}_{-0.011}$	$F_{AP}(0.57)$	0.67585	$0.6755^{+0.0032}_{-0.0031}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8 \Omega_m^{0.25}$	0.6092	$0.608^{+0.013}_{-0.013}$	$f\sigma_8(0.57)$	0.4742	$0.4733^{+0.0098}_{-0.0095}$
$A_{143}^{\text{tSZ}}$	7.33	$5.11^{+3.8}_{-4.0}$	$\sigma_8/h^{0.5}$	0.9924	$0.990^{+0.020}_{-0.020}$	$\sigma_8(0.57)$	0.6072	$0.607^{+0.014}_{-0.013}$
$A_{100}^{\text{PS}}$	257	$265^{+50}_{-60}$	$\langle d^2 \rangle^{1/2}$	2.454	$2.444^{+0.053}_{-0.051}$	$r_{0.002}$	0.000	< 0.147
$A_{143}^{\text{PS}}$	38.8	$45^{+20}_{-20}$	$z_{re}$	8.74	$8.76^{+2.2}_{-2.3}$	$r_{0.01}$	0.000	< 0.144
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$10^9 A_s$	2.138	$2.142^{+0.099}_{-0.095}$	$\ln(10^{10} A_t)$	-6.89	$-0.2^{+1.9}_{-2.4}$
$A_{217}^{\text{PS}}$	96.6	$96^{+20}_{-20}$	$10^9 A_s e^{-2\tau}$	1.8775	$1.878^{+0.022}_{-0.022}$	$r_{10}$	0.0000	< 0.0766
$A^{\text{kSZ}}$	0.0	—	$D_{40}$	1227.1	$1237^{+43}_{-39}$	$10^9 A_t$	0.000	< 0.316
$A_{100}^{\text{dustTT}}$	7.48	$7.48^{+3.6}_{-3.6}$	$D_{220}$	5724	$5720^{+77}_{-78}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.274
$A_{143}^{\text{dustTT}}$	9.14	$9.08^{+3.5}_{-3.6}$	$D_{810}$	2534.1	$2535^{+27}_{-27}$	$f_{2000}^{143}$	29.9	$31^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.3^{+8.1}_{-8.3}$	$D_{1420}$	814.7	$814.1^{+9.7}_{-9.8}$	$f_{2000}^{143 \times 217}$	32.61	$33^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{2000}$	230.05	$229.6^{+3.5}_{-3.5}$	$f_{2000}^{217}$	106.14	$106.6^{+4.0}_{-3.9}$
$A_{100}^{\text{dustEE}}$	0.0816	$0.081^{+0.011}_{-0.011}$	$n_{s,0.002}$	0.9697	$0.982^{+0.047}_{-0.044}$	$\chi_{\text{lensing}}^2$	9.93	10.5 ( $\nu$ : 1.8)
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0488^{+0.0099}_{-0.010}$	$Y_P$	0.245358	$0.24537^{+0.00013}_{-0.00013}$	$\chi_{\text{lowTEB}}^2$	10494.93	10496.4 ( $\nu$ : 3.1)
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.0999^{+0.064}_{-0.063}$	$Y_P^{\text{BBN}}$	0.246684	$0.24669^{+0.00014}_{-0.00013}$	$\chi_{\text{plik}}^2$	2435.1	2455.0 ( $\nu$ : 24.0)
$A_{143}^{\text{dustEE}}$	0.1005	$0.100^{+0.013}_{-0.014}$	$10^5 D/H$	2.606	$2.603^{+0.054}_{-0.057}$	$\chi_{6DF}^2$	0.029	0.045 ( $\nu$ : 0.0)
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.223^{+0.092}_{-0.093}$	Age/Gyr	13.8025	$13.800^{+0.042}_{-0.044}$	$\chi_{\text{MGS}}^2$	1.22	1.38 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.25}_{-0.26}$	$z_*$	1089.940	$1089.89^{+0.47}_{-0.49}$	$\chi_{\text{DR11CMass}}^2$	2.49	2.74 ( $\nu$ : 0.1)
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.075}_{-0.075}$	$r_*$	144.727	$144.78^{+0.48}_{-0.48}$	$\chi_{\text{DR11LOWZ}}^2$	0.68	0.66 ( $\nu$ : 0.1)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.056}_{-0.058}$	$100\theta_*$	1.04109	$1.04108^{+0.00058}_{-0.00058}$	$\chi_{\text{prior}}^2$	7.21	19.5 ( $\nu$ : 15.6)
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.9016	$13.906^{+0.045}_{-0.046}$	$\chi_{\text{CMB}}^2$	12940.0	12961.8 ( $\nu$ : 23.7)
$A_{143}^{\text{dustTE}}$	0.153	$0.16^{+0.11}_{-0.11}$	$z_{\text{drag}}$	1059.70	$1059.71^{+0.65}_{-0.62}$	$\chi_{\text{BAO}}^2$	4.41	4.83 ( $\nu$ : 0.2)
$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$r_{\text{drag}}$	147.419	$147.46^{+0.50}_{-0.49}$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.58$ ;  $\Delta\chi_{\text{eff}}^2 = -0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12986.14$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.50$ ;  $R - 1 = 0.02288$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 ( $\Delta$  0.01) MGS: 1.22 ( $\Delta$  -0.06) DR11CMASS: 2.49 ( $\Delta$  0.04) DR11LOWZ: 0.68 ( $\Delta$  0.07) CMB - smica\_g30\_ftl\_full\_pp: 9.93 ( $\Delta$  0.25) lowL\_SMW\_70\_dx11d\_2014\_10\_03\_10494.93 ( $\Delta$  -0.28) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.11 ( $\Delta$  -0.19)



18.17 base\_nrun\_r\_plikHM\_TTTEE\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022312	$0.02233^{+0.00031}_{-0.00029}$	$c_{100}$	0.99820	$0.9981^{+0.0015}_{-0.0015}$	$z_{\text{eq}}$	3372.1	$3369^{+46}_{-46}$
$\Omega_c h^2$	0.11880	$0.1187^{+0.0020}_{-0.0020}$	$c_{217}$	0.99604	$0.9961^{+0.0029}_{-0.0028}$	$k_{\text{eq}}$	0.010292	$0.01028^{+0.00014}_{-0.00014}$
$100\theta_{\text{MC}}$	1.04090	$1.04091^{+0.00059}_{-0.00058}$	$H_0$	67.72	$67.79^{+0.90}_{-0.90}$	$100\theta_{\text{eq}}$	0.8185	$0.8192^{+0.0087}_{-0.0085}$
$\tau$	0.0664	$0.067^{+0.025}_{-0.023}$	$\Omega_\Lambda$	0.6909	$0.692^{+0.012}_{-0.012}$	$100\theta_{\text{s,eq}}$	0.45216	$0.4525^{+0.0045}_{-0.0044}$
$\ln(10^{10} A_s)$	3.0651	$3.066^{+0.046}_{-0.044}$	$\Omega_m$	0.3091	$0.308^{+0.012}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.07176^{+0.00067}_{-0.00067}$
$n_s$	0.9666	$0.9669^{+0.0080}_{-0.0080}$	$\Omega_m h^2$	0.14175	$0.1416^{+0.0019}_{-0.0019}$	$H(0.57)$	93.043	$93.07^{+0.43}_{-0.42}$
$dn_s/d \ln k$	-0.0017	$-0.005^{+0.014}_{-0.015}$	$\Omega_m h^3$	0.09600	$0.09601^{+0.00062}_{-0.00059}$	$D_A(0.57)$	1386.1	$1385^{+12}_{-12}$
$r$	0.000	< 0.147	$\sigma_8$	0.8160	$0.815^{+0.017}_{-0.017}$	$F_{\text{AP}}(0.57)$	0.67541	$0.6752^{+0.0031}_{-0.0030}$
$y_{\text{cal}}$	1.00007	$1.0002^{+0.0049}_{-0.0048}$	$\sigma_8 \Omega_m^{0.5}$	0.4536	$0.453^{+0.012}_{-0.011}$	$f\sigma_8(0.57)$	0.4738	$0.4732^{+0.0098}_{-0.0096}$
$A_{217}^{\text{CIB}}$	67.8	$65^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	0.6084	$0.607^{+0.013}_{-0.013}$	$\sigma_8(0.57)$	0.6076	$0.607^{+0.013}_{-0.013}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8/h^{0.5}$	0.9915	$0.990^{+0.020}_{-0.020}$	$r_{0.002}$	0.000	< 0.149
$A_{143}^{\text{tSZ}}$	7.29	$5.12^{+3.8}_{-3.9}$	$\langle d^2 \rangle^{1/2}$	2.452	$2.444^{+0.054}_{-0.051}$	$r_{0.01}$	0.000	< 0.145
$A_{100}^{\text{PS}}$	257	$265^{+50}_{-60}$	$z_{\text{re}}$	8.87	$8.87^{+2.2}_{-2.3}$	$\ln(10^{10} A_t)$	-7.13	$-0.2^{+1.9}_{-2.4}$
$A_{143}^{\text{PS}}$	38.8	$45^{+20}_{-20}$	$10^9 A_s$	2.144	$2.15^{+0.10}_{-0.094}$	$r_{10}$	0.0000	< 0.0774
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$10^9 A_s e^{-2\tau}$	1.8770	$1.877^{+0.022}_{-0.022}$	$10^9 A_t$	0.000	< 0.317
$A_{217}^{\text{PS}}$	96.6	$96^{+20}_{-20}$	$D_{40}$	1225.1	$1236^{+43}_{-38}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.276
$A^{\text{kSZ}}$	0.0	—	$D_{220}$	5726	$5721^{+77}_{-78}$	$f_{2000}^{143}$	29.8	$31^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.55	$7.47^{+3.6}_{-3.6}$	$D_{810}$	2534.4	$2535^{+27}_{-27}$	$f_{2000}^{143 \times 217}$	32.56	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.06	$9.09^{+3.5}_{-3.6}$	$D_{1420}$	814.8	$814.2^{+9.7}_{-9.7}$	$f_{2000}^{217}$	106.10	$106.6^{+4.0}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.3^{+8.1}_{-8.4}$	$D_{2000}$	230.07	$229.7^{+3.4}_{-3.5}$	$\chi_{\text{lensing}}^2$	9.87	10.4 ( $\nu$ : 1.8)
$A_{217}^{\text{dustTT}}$	81.6	$82^{+10}_{-10}$	$n_{\text{s},0.002}$	0.9722	$0.983^{+0.047}_{-0.044}$	$\chi_{\text{lowTEB}}^2$	10494.70	10496.3 ( $\nu$ : 3.1)
$A_{100}^{\text{dustEE}}$	0.0817	$0.081^{+0.011}_{-0.011}$	$Y_{\text{P}}$	0.245367	$0.24537^{+0.00014}_{-0.00013}$	$\chi_{\text{plik}}^2$	2435.6	2455.1 ( $\nu$ : 24.1)
$A_{100 \times 143}^{\text{dustEE}}$	0.0494	$0.0489^{+0.0098}_{-0.010}$	$Y_{\text{P}}^{\text{BBN}}$	0.246694	$0.24670^{+0.00014}_{-0.00013}$	$\chi_{\text{H070p6}}^2$	0.749	0.73 ( $\nu$ : 0.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.063}$	$10^5 \text{D}/\text{H}$	2.602	$2.599^{+0.054}_{-0.057}$	$\chi_{\text{JLA}}^2$	706.683	706.69 ( $\nu$ : 0.0)
$A_{143}^{\text{dustEE}}$	0.1008	$0.100^{+0.013}_{-0.014}$	$\text{Age}/\text{Gyr}$	13.7987	$13.796^{+0.042}_{-0.043}$	$\chi_{6\text{DF}}^2$	0.016	0.036 ( $\nu$ : 0.0)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.092}_{-0.093}$	$z_*$	1089.887	$1089.86^{+0.46}_{-0.48}$	$\chi_{\text{MGS}}^2$	1.34	1.46 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.25}_{-0.26}$	$r_*$	144.787	$144.81^{+0.47}_{-0.47}$	$\chi_{\text{DR11CMass}}^2$	2.43	2.70 ( $\nu$ : 0.1)
$A_{100}^{\text{dustTE}}$	0.140	$0.142^{+0.074}_{-0.076}$	$100\theta_*$	1.04110	$1.04110^{+0.00058}_{-0.00057}$	$\chi_{\text{DR11LOWZ}}^2$	0.55	0.57 ( $\nu$ : 0.1)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.056}_{-0.058}$	$D_A/\text{Gpc}$	13.9072	$13.909^{+0.045}_{-0.045}$	$\chi_{\text{prior}}^2$	7.14	19.5 ( $\nu$ : 15.5)
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.16}$	$z_{\text{drag}}$	1059.70	$1059.74^{+0.65}_{-0.60}$	$\chi_{\text{CMB}}^2$	12940.1	12961.9 ( $\nu$ : 23.6)
$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.11}_{-0.11}$	$r_{\text{drag}}$	147.476	$147.50^{+0.49}_{-0.48}$	$\chi_{\text{BAO}}^2$	4.33	4.78 ( $\nu$ : 0.2)
$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$k_{\text{D}}$	0.14042	$0.14041^{+0.00060}_{-0.00060}$			
$A_{217}^{\text{dustTE}}$	1.655	$1.66^{+0.49}_{-0.50}$	$100\theta_{\text{D}}$	0.160876	$0.16086^{+0.00036}_{-0.00038}$			

Best-fit  $\chi_{\text{eff}}^2 = 13659.04$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 13693.57$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.46$ ;  $R - 1 = 0.02159$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  0.01) MGS: 1.34 ( $\Delta$  -0.06) DR11CMASS: 2.43 ( $\Delta$  0.02) DR11LOWZ: 0.55 ( $\Delta$  0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.87 ( $\Delta$  0.12) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_10494.70 ( $\Delta$  -0.52) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.56 ( $\Delta$  0.37) Hubble - H070p6: 0.75 ( $\Delta$  0.03) SN - JLA December\_2013: 706.68 ( $\Delta$  0.02)



## 18.18 base\_nrun\_r\_plikHM\_TTTEE\_lowTEB\_lensing\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02230^{+0.00033}_{-0.00031}$	$A_{143}^{\text{dustTE}}$	$0.16^{+0.11}_{-0.11}$	$100\theta_*$	$1.04106^{+0.00061}_{-0.00061}$
$\Omega_c h^2$	$0.1190^{+0.0025}_{-0.0026}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	$13.904^{+0.054}_{-0.053}$
$100\theta_{\text{MC}}$	$1.04087^{+0.00062}_{-0.00062}$	$A_{217}^{\text{dustTE}}$	$1.66^{+0.48}_{-0.49}$	$z_{\text{drag}}$	$1059.71^{+0.69}_{-0.65}$
$\tau$	$0.066^{+0.024}_{-0.023}$	$c_{100}$	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	$147.44^{+0.58}_{-0.57}$
$\ln(10^{10} A_s)$	$3.065^{+0.045}_{-0.044}$	$c_{217}$	$0.9961^{+0.0029}_{-0.0028}$	$k_D$	$0.14045^{+0.00065}_{-0.00064}$
$n_s$	$0.9662^{+0.0092}_{-0.0086}$	$H_0$	$67.7^{+1.2}_{-1.1}$	$100\theta_D$	$0.16088^{+0.00037}_{-0.00039}$
$dn_s/d \ln k$	$-0.005^{+0.014}_{-0.015}$	$\Omega_\Lambda$	$0.690^{+0.016}_{-0.016}$	$z_{\text{eq}}$	$3376^{+57}_{-59}$
$r$	$< 0.146$	$\Omega_m$	$0.310^{+0.016}_{-0.016}$	$k_{\text{eq}}$	$0.01030^{+0.00017}_{-0.00018}$
$y_{\text{cal}}$	$1.0001^{+0.0049}_{-0.0048}$	$\Omega_m h^2$	$0.1419^{+0.0024}_{-0.0025}$	$100\theta_{\text{eq}}$	$0.818^{+0.011}_{-0.011}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$\Omega_m h^3$	$0.09600^{+0.00062}_{-0.00059}$	$100\theta_{s,\text{eq}}$	$0.4518^{+0.0059}_{-0.0055}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\sigma_8$	$0.815^{+0.016}_{-0.015}$	$r_{\text{drag}}/D_V(0.57)$	$0.07166^{+0.00091}_{-0.00085}$
$A_{143}^{\text{tSZ}}$	$5.10^{+3.8}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	$0.454^{+0.014}_{-0.013}$	$H(0.57)$	$93.02^{+0.55}_{-0.51}$
$A_{100}^{\text{PS}}$	$265^{+50}_{-60}$	$\sigma_8 \Omega_m^{0.25}$	$0.609^{+0.013}_{-0.013}$	$D_A(0.57)$	$1387^{+16}_{-16}$
$A_{143}^{\text{PS}}$	$45^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$0.991^{+0.020}_{-0.019}$	$F_{\text{AP}}(0.57)$	$0.6757^{+0.0040}_{-0.0041}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	$2.446^{+0.052}_{-0.050}$	$f\sigma_8(0.57)$	$0.4737^{+0.0096}_{-0.0091}$
$A_{217}^{\text{PS}}$	$96^{+20}_{-20}$	$z_{\text{re}}$	$< 10.7$	$\sigma_8(0.57)$	$0.607^{+0.013}_{-0.013}$
$A^{\text{kSZ}}$	—	$10^9 A_s$	$2.143^{+0.097}_{-0.093}$	$r_{0.002}$	$< 0.147$
$A_{100}^{\text{dustTT}}$	$7.48^{+3.6}_{-3.7}$	$10^9 A_s e^{-2\tau}$	$1.878^{+0.023}_{-0.023}$	$r_{0.01}$	$< 0.144$
$A_{143}^{\text{dustTT}}$	$9.08^{+3.5}_{-3.6}$	$D_{40}$	$1237^{+43}_{-39}$	$\ln(10^{10} A_t)$	$-0.2^{+1.9}_{-2.4}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.3^{+8.1}_{-8.3}$	$D_{220}$	$5719^{+77}_{-79}$	$r_{10}$	$< 0.0765$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{810}$	$2535^{+27}_{-27}$	$10^9 A_t$	$< 0.315$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	$814.0^{+9.8}_{-9.8}$	$10^9 A_t e^{-2\tau}$	$< 0.274$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0488^{+0.0099}_{-0.010}$	$D_{2000}$	$229.6^{+3.5}_{-3.5}$	$f_{2000}^{143}$	$31^{+6}_{-6}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0998^{+0.064}_{-0.063}$	$n_{s,0.002}$	$0.982^{+0.047}_{-0.044}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.013}_{-0.014}$	$Y_P$	$0.24536^{+0.00015}_{-0.00015}$	$f_{2000}^{217}$	$106.6^{+4.0}_{-3.9}$
$A_{143 \times 217}^{\text{dustEE}}$	$0.223^{+0.092}_{-0.093}$	$Y_P^{\text{BBN}}$	$0.24669^{+0.00015}_{-0.00015}$	$\chi_{\text{lensing}}^2$	$10.6 (\nu: 2.0)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.26}$	$10^5 D/H$	$2.604^{+0.059}_{-0.063}$	$\chi_{\text{lowTEB}}^2$	$10496.4 (\nu: 3.1)$
$A_{100}^{\text{dustTE}}$	$0.142^{+0.075}_{-0.075}$	$\text{Age}/\text{Gyr}$	$13.801^{+0.049}_{-0.051}$	$\chi_{\text{plik}}^2$	$2455.1 (\nu: 24.3)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.132^{+0.057}_{-0.057}$	$z_*$	$1089.91^{+0.54}_{-0.58}$	$\chi_{\text{prior}}^2$	$19.4 (\nu: 15.4)$
$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.16}_{-0.16}$	$r_*$	$144.75^{+0.58}_{-0.57}$	$\chi_{\text{CMB}}^2$	$12962.1 (\nu: 24.1)$

$$\bar{\chi}_{\text{eff}}^2 = 12981.52; \Delta \bar{\chi}_{\text{eff}}^2 = 2.60; R - 1 = 0.01928$$

18.19 base\_nrun\_r\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022284	$0.02235^{+0.00050}_{-0.00047}$	$\Omega_m h^2$	0.14297	$0.1429^{+0.0039}_{-0.0039}$	$k_D$	0.14071	$0.1408^{+0.0011}_{-0.0011}$
$\Omega_c h^2$	0.12004	$0.1199^{+0.0041}_{-0.0041}$	$\Omega_m h^3$	0.09613	$0.0962^{+0.0010}_{-0.00097}$	$100\theta_D$	0.16086	$0.16079^{+0.00057}_{-0.00059}$
$100\theta_{MC}$	1.04084	$1.04089^{+0.00090}_{-0.00094}$	$\sigma_8$	0.8287	$0.828^{+0.023}_{-0.022}$	$z_{eq}$	3401	$3398^{+93}_{-92}$
$\tau$	0.0767	$0.078^{+0.026}_{-0.024}$	$\sigma_8 \Omega_m^{0.5}$	0.4660	$0.465^{+0.027}_{-0.026}$	$k_{eq}$	0.010381	$0.01037^{+0.00028}_{-0.00028}$
$\ln(10^{10} A_s)$	3.090	$3.092^{+0.054}_{-0.049}$	$\sigma_8 \Omega_m^{0.25}$	0.6214	$0.620^{+0.025}_{-0.024}$	$100\theta_{eq}$	0.8132	$0.814^{+0.018}_{-0.017}$
$n_s$	0.9641	$0.965^{+0.012}_{-0.011}$	$\sigma_8/h^{0.5}$	1.0106	$1.009^{+0.035}_{-0.034}$	$100\theta_{s,eq}$	0.4494	$0.4498^{+0.0091}_{-0.0089}$
$dn_s/d \ln k$	-0.0060	$-0.010^{+0.016}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	2.490	$2.480^{+0.080}_{-0.081}$	$r_{drag}/D_V(0.57)$	0.07131	$0.0714^{+0.0014}_{-0.0014}$
$r$	0.000	< 0.140	$z_{re}$	9.86	$9.91^{+2.2}_{-2.2}$	$H(0.57)$	92.88	$92.97^{+0.84}_{-0.78}$
$y_{cal}$	1.00032	$1.0004^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.197	$2.20^{+0.12}_{-0.11}$	$D_A(0.57)$	1392.3	$1390^{+25}_{-25}$
$A_{217}^{CIB}$	68.0	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8843	$1.885^{+0.028}_{-0.027}$	$F_{AP}(0.57)$	0.6772	$0.6769^{+0.0065}_{-0.0063}$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1223.9	$1231^{+44}_{-43}$	$f\sigma_8(0.57)$	0.4830	$0.482^{+0.017}_{-0.017}$
$A_{143}^{tSZ}$	6.96	$4.81^{+3.8}_{-3.8}$	$D_{220}$	5718	$5715^{+82}_{-80}$	$\sigma_8(0.57)$	0.6153	$0.615^{+0.016}_{-0.015}$
$A_{100}^{PS}$	257	$263^{+50}_{-50}$	$D_{810}$	2536.8	$2538^{+27}_{-27}$	$r_{0.002}$	0.000	< 0.144
$A_{143}^{PS}$	41.1	$46^{+20}_{-20}$	$D_{1420}$	813.8	$813^{+10}_{-9.9}$	$r_{0.01}$	0.000	< 0.139
$A_{143 \times 217}^{PS}$	33	$39^{+20}_{-20}$	$D_{2000}$	229.75	$229.5^{+3.9}_{-3.7}$	$\ln(10^{10} A_t)$	-7.64	$-0.4^{+2.0}_{-2.5}$
$A_{217}^{PS}$	97.2	$96^{+20}_{-20}$	$n_{s,0.002}$	0.983	$0.998^{+0.054}_{-0.052}$	$r_{10}$	0.0000	< 0.0751
$A^{kSZ}$	0.1	—	$Y_P$	0.245355	$0.24538^{+0.00022}_{-0.00022}$	$10^9 A_t$	0.000	< 0.306
$A_{100}^{dustTT}$	7.43	$7.49^{+3.7}_{-3.7}$	$Y_P^{BBN}$	0.246681	$0.24671^{+0.00022}_{-0.00022}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.263
$A_{143}^{dustTT}$	9.06	$9.06^{+3.6}_{-3.6}$	$10^5 D/H$	2.607	$2.595^{+0.091}_{-0.093}$	$f_{2000}^{143}$	30.8	$31^{+6}_{-6}$
$A_{143 \times 217}^{dustTT}$	17.8	$17.2^{+8.3}_{-8.1}$	Age/Gyr	13.809	$13.799^{+0.075}_{-0.077}$	$f_{2000}^{143 \times 217}$	33.18	$34^{+4}_{-4}$
$A_{217}^{dustTT}$	82.0	$82^{+10}_{-10}$	$z_*$	1090.03	$1089.93^{+0.84}_{-0.84}$	$f_{2000}^{217}$	106.70	$107.0^{+4.1}_{-4.1}$
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.49	$144.48^{+0.95}_{-0.94}$	$\chi_{WMAPTEB}^2$	19732.7	19735.0 ( $\nu$ : 4.5)
$c_{217}$	0.99605	$0.9961^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04103	$1.04108^{+0.00089}_{-0.00092}$	$\chi_{plik}^2$	764.8	779.8 ( $\nu$ : 17.7)
$H_0$	67.24	$67.4^{+1.9}_{-1.8}$	$D_A/\text{Gpc}$	13.879	$13.878^{+0.088}_{-0.087}$	$\chi_{prior}^2$	1.99	7.45 ( $\nu$ : 6.3)
$\Omega_\Lambda$	0.6838	$0.685^{+0.025}_{-0.026}$	$z_{drag}$	1059.74	$1059.9^{+1.0}_{-1.0}$	$\chi_{CMB}^2$	20497.5	20514.8 ( $\nu$ : 18.0)
$\Omega_m$	0.3162	$0.315^{+0.026}_{-0.025}$	$r_{drag}$	147.18	$147.15^{+0.97}_{-0.95}$			

Best-fit  $\chi_{eff}^2 = 20499.51$ ;  $\Delta\chi_{eff}^2 = -0.64$ ;  $\bar{\chi}_{eff}^2 = 20522.23$ ;  $\Delta\bar{\chi}_{eff}^2 = 2.09$ ;  $R - 1 = 0.01420$   
 $\chi_{eff}^2$ : CMB - bflike-WMAP353ggf\_LFI312\_nw8: 19732.72 ( $\Delta$  -1.43) plik\_dx11dr2\_HM\_v18\_TT: 764.80 ( $\Delta$  0.73)

## 18.20 base\_nrun\_r\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02238^{+0.00049}_{-0.00045}$	$\Omega_m h^2$	$0.1411^{+0.0031}_{-0.0029}$	$k_D$	$0.14034^{+0.00094}_{-0.00087}$
$\Omega_c h^2$	$0.1181^{+0.0032}_{-0.0032}$	$\Omega_m h^3$	$0.09610^{+0.00095}_{-0.00096}$	$100\theta_D$	$0.16084^{+0.00055}_{-0.00055}$
$100\theta_{MC}$	$1.04112^{+0.00088}_{-0.00088}$	$\sigma_8$	$0.816^{+0.015}_{-0.015}$	$z_{eq}$	$3356^{+73}_{-70}$
$\tau$	$0.071^{+0.023}_{-0.022}$	$\sigma_8 \Omega_m^{0.5}$	$0.450^{+0.017}_{-0.017}$	$k_{eq}$	$0.01024^{+0.00022}_{-0.00021}$
$\ln(10^{10} A_s)$	$3.073^{+0.044}_{-0.042}$	$\sigma_8 \Omega_m^{0.25}$	$0.606^{+0.015}_{-0.015}$	$100\theta_{eq}$	$0.822^{+0.014}_{-0.014}$
$n_s$	$0.969^{+0.010}_{-0.010}$	$\sigma_8/h^{0.5}$	$0.989^{+0.021}_{-0.021}$	$100\theta_{s,eq}$	$0.4538^{+0.0072}_{-0.0071}$
$dn_s/d \ln k$	$-0.007^{+0.016}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	$2.437^{+0.054}_{-0.055}$	$r_{drag}/D_V(0.57)$	$0.0720^{+0.0012}_{-0.0011}$
$r$	$< 0.144$	$z_{re}$	$9.25^{+2.0}_{-2.0}$	$H(0.57)$	$93.23^{+0.77}_{-0.69}$
$y_{cal}$	$1.0002^{+0.0049}_{-0.0049}$	$10^9 A_s$	$2.161^{+0.097}_{-0.090}$	$D_A(0.57)$	$1381^{+20}_{-21}$
$A_{217}^{CIB}$	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.874^{+0.023}_{-0.023}$	$F_{AP}(0.57)$	$0.6742^{+0.0051}_{-0.0051}$
$\xi^{tSZ \times CIB}$	—	$D_{40}$	$1227^{+44}_{-43}$	$f\sigma_8(0.57)$	$0.473^{+0.010}_{-0.010}$
$A_{143}^{tSZ}$	$4.86^{+3.9}_{-3.8}$	$D_{220}$	$5716^{+81}_{-78}$	$\sigma_8(0.57)$	$0.609^{+0.012}_{-0.012}$
$A_{100}^{PS}$	$263^{+50}_{-50}$	$D_{810}$	$2534^{+27}_{-27}$	$r_{0.002}$	$< 0.150$
$A_{143}^{PS}$	$45^{+20}_{-20}$	$D_{1420}$	$814^{+10}_{-9.8}$	$r_{0.01}$	$< 0.144$
$A_{143 \times 217}^{PS}$	$38^{+20}_{-20}$	$D_{2000}$	$229.7^{+3.9}_{-3.6}$	$\ln(10^{10} A_t)$	$-0.3^{+2.0}_{-2.5}$
$A_{217}^{PS}$	$95^{+20}_{-20}$	$n_{s,0.002}$	$0.991^{+0.054}_{-0.054}$	$r_{10}$	$< 0.0778$
$A^{kSZ}$	—	$Y_P$	$0.24540^{+0.00022}_{-0.00021}$	$10^9 A_t$	$< 0.315$
$A_{100}^{dustTT}$	$7.52^{+3.7}_{-3.8}$	$Y_P^{BBN}$	$0.24672^{+0.00022}_{-0.00021}$	$10^9 A_t e^{-2\tau}$	$< 0.270$
$A_{143}^{dustTT}$	$9.11^{+3.3}_{-3.5}$	$10^5 D/H$	$2.590^{+0.085}_{-0.090}$	$f_{2000}^{143}$	$31^{+6}_{-6}$
$A_{143 \times 217}^{dustTT}$	$17.2^{+8.1}_{-7.7}$	Age/Gyr	$13.782^{+0.074}_{-0.073}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{217}^{dustTT}$	$82^{+10}_{-10}$	$z_*$	$1089.74^{+0.74}_{-0.79}$	$f_{2000}^{217}$	$106.7^{+4.2}_{-4.3}$
$c_{100}$	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	$144.93^{+0.74}_{-0.76}$	$\chi_{lensing}^2$	$10.2 (\nu: 1.4)$
$c_{217}$	$0.9960^{+0.0027}_{-0.0028}$	$100\theta_*$	$1.04130^{+0.00088}_{-0.00086}$	$\chi_{WMAPTEB}^2$	$19734.5 (\nu: 3.8)$
$H_0$	$68.1^{+1.6}_{-1.5}$	$D_A/\text{Gpc}$	$13.918^{+0.067}_{-0.070}$	$\chi_{plik}^2$	$781 (\nu: 92.7)$
$\Omega_\Lambda$	$0.696^{+0.020}_{-0.020}$	$z_{drag}$	$1059.82^{+0.99}_{-0.96}$	$\chi_{prior}^2$	$7.43 (\nu: 6.1)$
$\Omega_m$	$0.304^{+0.020}_{-0.020}$	$r_{drag}$	$147.59^{+0.72}_{-0.77}$	$\chi_{CMB}^2$	$20530 (\nu: 95.4)$

$$\bar{\chi}_{eff}^2 = 20533.29; \Delta \bar{\chi}_{eff}^2 = 2.54; R - 1 = 0.02821$$

## 18.21 base\_nrun\_r\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02240^{+0.00045}_{-0.00042}$	$\sigma_8$	$0.827^{+0.022}_{-0.021}$	$100\theta_{\text{eq}}$	$0.817^{+0.011}_{-0.011}$
$\Omega_c h^2$	$0.1191^{+0.0025}_{-0.0025}$	$\sigma_8 \Omega_m^{0.5}$	$0.460^{+0.018}_{-0.018}$	$100\theta_{\text{s,eq}}$	$0.4513^{+0.0057}_{-0.0054}$
$100\theta_{\text{MC}}$	$1.04099^{+0.00081}_{-0.00081}$	$\sigma_8 \Omega_m^{0.25}$	$0.617^{+0.019}_{-0.019}$	$r_{\text{drag}}/D_V(0.57)$	$0.07164^{+0.00084}_{-0.00081}$
$\tau$	$0.079^{+0.026}_{-0.025}$	$\sigma_8/h^{0.5}$	$1.005^{+0.029}_{-0.028}$	$H(0.57)$	$93.10^{+0.55}_{-0.54}$
$\ln(10^{10} A_s)$	$3.093^{+0.055}_{-0.050}$	$\langle d^2 \rangle^{1/2}$	$2.471^{+0.066}_{-0.068}$	$D_A(0.57)$	$1386^{+15}_{-15}$
$n_s$	$0.9663^{+0.0089}_{-0.0088}$	$z_{\text{re}}$	$10.0^{+2.2}_{-2.3}$	$F_{\text{AP}}(0.57)$	$0.6757^{+0.0037}_{-0.0038}$
$dn_s/d \ln k$	$-0.010^{+0.017}_{-0.017}$	$10^9 A_s$	$2.21^{+0.12}_{-0.11}$	$f\sigma_8(0.57)$	$0.480^{+0.014}_{-0.014}$
$r$	$< 0.143$	$10^9 A_s e^{-2\tau}$	$1.882^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	$0.615^{+0.016}_{-0.015}$
$y_{\text{cal}}$	$1.0004^{+0.0048}_{-0.0049}$	$D_{40}$	$1228^{+43}_{-42}$	$r_{0.002}$	$< 0.148$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$D_{220}$	$5719^{+80}_{-79}$	$r_{0.01}$	$< 0.142$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$D_{810}$	$2537^{+27}_{-27}$	$\ln(10^{10} A_t)$	$-0.3^{+2.0}_{-2.4}$
$A_{143}^{\text{tSZ}}$	$4.84^{+3.8}_{-3.8}$	$D_{1420}$	$814^{+10}_{-9.7}$	$r_{10}$	$< 0.0770$
$A_{100}^{\text{PS}}$	$264^{+60}_{-50}$	$D_{2000}$	$229.6^{+3.8}_{-3.6}$	$10^9 A_t$	$< 0.314$
$A_{143}^{\text{PS}}$	$45^{+20}_{-20}$	$n_{\text{s},0.002}$	$0.999^{+0.055}_{-0.053}$	$10^9 A_t e^{-2\tau}$	$< 0.268$
$A_{143 \times 217}^{\text{PS}}$	$38^{+20}_{-20}$	$Y_{\text{P}}$	$0.24540^{+0.00020}_{-0.00020}$	$f_{2000}^{143}$	$31^{+6}_{-6}$
$A_{217}^{\text{PS}}$	$96^{+20}_{-20}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24673^{+0.00020}_{-0.00020}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A^{\text{kSZ}}$	—	$10^5 \text{D}/\text{H}$	$2.587^{+0.081}_{-0.083}$	$f_{2000}^{217}$	$106.9^{+4.1}_{-4.1}$
$A_{100}^{\text{dustTT}}$	$7.48^{+3.6}_{-3.7}$	$\text{Age}/\text{Gyr}$	$13.789^{+0.059}_{-0.059}$	$\chi_{\text{WMAPTEB}}^2$	$19734.9 (\nu: 4.6)$
$A_{143}^{\text{dustTT}}$	$9.11^{+3.6}_{-3.6}$	$z_*$	$1089.82^{+0.63}_{-0.63}$	$\chi_{\text{plik}}^2$	$780 (\nu: 100.6)$
$A_{143 \times 217}^{\text{dustTT}}$	$17.3^{+8.0}_{-8.1}$	$r_*$	$144.64^{+0.66}_{-0.65}$	$\chi_{6\text{DF}}^2$	$0.063 (\nu: 0.0)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$100\theta_*$	$1.04117^{+0.00080}_{-0.00080}$	$\chi_{\text{MGS}}^2$	$1.33 (\nu: 0.1)$
$c_{100}$	$0.9979^{+0.0016}_{-0.0015}$	$D_A/\text{Gpc}$	$13.892^{+0.064}_{-0.064}$	$\chi_{\text{DR11CMass}}^2$	$2.91 (\nu: 0.2)$
$c_{217}$	$0.9961^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	$1059.9^{+1.0}_{-0.94}$	$\chi_{\text{DR11LOWZ}}^2$	$0.77 (\nu: 0.2)$
$H_0$	$67.7^{+1.1}_{-1.1}$	$r_{\text{drag}}$	$147.29^{+0.74}_{-0.73}$	$\chi_{\text{prior}}^2$	$7.41 (\nu: 6.4)$
$\Omega_\Lambda$	$0.690^{+0.015}_{-0.015}$	$k_{\text{D}}$	$0.14067^{+0.00098}_{-0.00096}$	$\chi_{\text{CMB}}^2$	$20510 (\nu: 102.6)$
$\Omega_m$	$0.310^{+0.015}_{-0.015}$	$100\theta_{\text{D}}$	$0.16077^{+0.00056}_{-0.00057}$	$\chi_{\text{BAO}}^2$	$5.07 (\nu: 0.5)$
$\Omega_m h^2$	$0.1422^{+0.0024}_{-0.0024}$	$z_{\text{eq}}$	$3382^{+58}_{-58}$		
$\Omega_m h^3$	$0.0963^{+0.0010}_{-0.00098}$	$k_{\text{eq}}$	$0.01032^{+0.00018}_{-0.00018}$		

$$\bar{\chi}_{\text{eff}}^2 = 20527.01; \Delta\bar{\chi}_{\text{eff}}^2 = 2.12; R - 1 = 0.01835$$

# 19 omegak

## 19.1 base\_omegak\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02250	$0.02257^{+0.00052}_{-0.00051}$	$\Omega_m$	0.441	$0.51^{+0.20}_{-0.18}$	$D_A/\text{Gpc}$	13.912	$13.918^{+0.091}_{-0.089}$
$\Omega_c h^2$	0.11794	$0.1175^{+0.0045}_{-0.0045}$	$\Omega_m h^2$	0.14109	$0.1407^{+0.0042}_{-0.0042}$	$z_{\text{drag}}$	1060.09	$1060.2^{+1.0}_{-0.99}$
$100\theta_{\text{MC}}$	1.04109	$1.0412^{+0.0010}_{-0.00099}$	$\Omega_m h^3$	0.0798	$0.075^{+0.015}_{-0.014}$	$r_{\text{drag}}$	147.49	$147.54^{+0.97}_{-0.95}$
$\tau$	0.0700	$0.058^{+0.039}_{-0.047}$	$\sigma_8$	0.797	$0.776^{+0.053}_{-0.058}$	$k_D$	0.14055	$0.1405^{+0.0010}_{-0.0010}$
$\Omega_K$	-0.033	$-0.052^{+0.049}_{-0.055}$	$\sigma_8 \Omega_m^{0.5}$	0.529	$0.550^{+0.070}_{-0.067}$	$100\theta_D$	0.16067	$0.16062^{+0.00057}_{-0.00055}$
$\ln(10^{10} A_s)$	3.070	$3.045^{+0.084}_{-0.087}$	$\sigma_8 \Omega_m^{0.25}$	0.6494	$0.652^{+0.028}_{-0.031}$	$z_{\text{eq}}$	3356	$3347^{+100}_{-100}$
$n_s$	0.9711	$0.972^{+0.013}_{-0.013}$	$\sigma_8/h^{0.5}$	1.0597	$1.065^{+0.044}_{-0.050}$	$k_{\text{eq}}$	0.010243	$0.01021^{+0.00030}_{-0.00031}$
$y_{\text{cal}}$	1.00004	$1.0002^{+0.0050}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.648	$2.68^{+0.15}_{-0.15}$	$100\theta_{\text{eq}}$	0.8221	$0.824^{+0.020}_{-0.019}$
$A_{217}^{\text{CIB}}$	63.2	$61^{+10}_{-10}$	$z_{\text{re}}$	9.03	$7.66^{+4.1}_{-4.6}$	$100\theta_{s,\text{eq}}$	0.4539	$0.455^{+0.010}_{-0.0098}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.31	—	$10^9 A_s$	2.154	$2.10^{+0.18}_{-0.18}$	$r_{\text{drag}}/D_V(0.57)$	0.0633	$0.0609^{+0.0076}_{-0.0069}$
$A_{143}^{\text{tSZ}}$	7.15	$5.65^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8722	$1.872^{+0.028}_{-0.027}$	$H(0.57)$	84.2	$81.8^{+7.8}_{-7.0}$
$A_{100}^{\text{PS}}$	244	$248^{+50}_{-50}$	$D_{40}$	1212.8	$1208^{+35}_{-35}$	$D_A(0.57)$	1592	$1671^{+200}_{-200}$
$A_{143}^{\text{PS}}$	38.3	$38^{+20}_{-20}$	$D_{220}$	5733	$5748^{+83}_{-82}$	$F_{\text{AP}}(0.57)$	0.7020	$0.713^{+0.033}_{-0.032}$
$A_{143 \times 217}^{\text{PS}}$	38.2	$37^{+20}_{-20}$	$D_{810}$	2529.6	$2530^{+28}_{-27}$	$f\sigma_8(0.57)$	0.4913	$0.485^{+0.019}_{-0.021}$
$A_{217}^{\text{PS}}$	99.8	$98^{+20}_{-20}$	$D_{1420}$	814.0	$814^{+10}_{-9.9}$	$\sigma_8(0.57)$	0.565	$0.541^{+0.062}_{-0.067}$
$A^{\text{kSZ}}$	0.00	< 7.10	$D_{2000}$	232.22	$232.5^{+4.0}_{-3.9}$	$f_{2000}^{143}$	26.8	$27^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.44	$7.46^{+3.6}_{-3.7}$	$n_{s,0.002}$	0.9711	$0.972^{+0.013}_{-0.013}$	$f_{2000}^{143 \times 217}$	29.99	$30^{+5}_{-5}$
$A_{143}^{\text{dustTT}}$	9.04	$8.92^{+3.7}_{-3.6}$	$Y_{\text{P}}$	0.245452	$0.24548^{+0.00023}_{-0.00023}$	$f_{2000}^{217}$	103.70	$103.4^{+4.4}_{-4.2}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$16.6^{+8.2}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.246779	$0.24681^{+0.00023}_{-0.00023}$	$\chi_{\text{lowTEB}}^2$	10493.74	10494.8 ( $\nu: 1.0$ )
$A_{217}^{\text{dustTT}}$	82.1	$81^{+10}_{-10}$	$10^5 D/H$	2.566	$2.555^{+0.096}_{-0.092}$	$\chi_{\text{plik}}^2$	759.9	774.7 ( $\nu: 14.9$ )
$c_{100}$	0.99795	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	15.03	$15.5^{+1.4}_{-1.3}$	$\chi_{\text{prior}}^2$	1.83	7.10 ( $\nu: 6.0$ )
$c_{217}$	0.99561	$0.9956^{+0.0028}_{-0.0028}$	$z_*$	1089.57	$1089.46^{+0.94}_{-0.93}$	$\chi_{\text{CMB}}^2$	11253.6	11269.5 ( $\nu: 15.9$ )
$H_0$	56.5	$53^{+10}_{-10}$	$r_*$	144.86	$144.94^{+0.99}_{-0.97}$			
$\Omega_\Lambda$	0.592	$0.54^{+0.14}_{-0.15}$	$100\theta_*$	1.04126	$1.04138^{+0.00098}_{-0.00097}$			

Best-fit  $\chi_{\text{eff}}^2 = 11255.46$ ;  $\Delta\chi_{\text{eff}}^2 = -6.46$ ;  $\bar{\chi}_{\text{eff}}^2 = 11276.56$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -5.26$ ;  $R - 1 = 0.02296$   
 $\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.74 ( $\Delta -2.73$ ) plik\_dx11dr2\_HM\_v18\_TT: 759.89 ( $\Delta -3.48$ )

## 19.2 base\_omegak\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022425	$0.02242^{+0.00034}_{-0.00033}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	Age/Gyr	15.04	$15.2^{+1.1}_{-1.1}$
$\Omega_c h^2$	0.11849	$0.1185^{+0.0030}_{-0.0029}$	$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.11}$	$z_*$	1089.72	$1089.72^{+0.62}_{-0.61}$
$100\theta_{\text{MC}}$	1.04093	$1.04096^{+0.00065}_{-0.00064}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.34^{+0.16}_{-0.16}$	$r_*$	144.78	$144.80^{+0.62}_{-0.64}$
$\tau$	0.0583	$0.054^{+0.036}_{-0.043}$	$A_{217}^{\text{dustTE}}$	1.65	$1.65^{+0.51}_{-0.50}$	$100\theta_*$	1.04110	$1.04114^{+0.00064}_{-0.00062}$
$\Omega_K$	-0.0329	$-0.040^{+0.038}_{-0.041}$	$c_{100}$	0.99827	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.907	$13.908^{+0.058}_{-0.059}$
$\ln(10^{10} A_s)$	3.049	$3.039^{+0.078}_{-0.081}$	$c_{217}$	0.99564	$0.9957^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.97	$1059.94^{+0.69}_{-0.65}$
$n_s$	0.9682	$0.9680^{+0.0092}_{-0.0095}$	$H_0$	56.4	$55^{+9}_{-8}$	$r_{\text{drag}}$	147.43	$147.45^{+0.60}_{-0.63}$
$y_{\text{cal}}$	0.9998	$0.99996^{+0.0051}_{-0.0050}$	$\Omega_\Lambda$	0.588	$0.57^{+0.11}_{-0.12}$	$k_D$	0.14055	$0.14052^{+0.00066}_{-0.00062}$
$A_{217}^{\text{CIB}}$	62.1	$62^{+10}_{-10}$	$\Omega_m$	0.445	$0.47^{+0.16}_{-0.15}$	$100\theta_D$	0.160731	$0.16075^{+0.00038}_{-0.00038}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.54	—	$\Omega_m h^2$	0.14156	$0.1415^{+0.0028}_{-0.0027}$	$z_{\text{eq}}$	3367	$3366^{+66}_{-63}$
$A_{143}^{\text{tSZ}}$	6.87	$5.66^{+3.4}_{-3.7}$	$\Omega_m h^3$	0.0798	$0.078^{+0.013}_{-0.012}$	$k_{\text{eq}}$	0.010278	$0.01027^{+0.00020}_{-0.00019}$
$A_{100}^{\text{PS}}$	247	$252^{+50}_{-50}$	$\sigma_8$	0.7896	$0.782^{+0.047}_{-0.049}$	$100\theta_{\text{eq}}$	0.8197	$0.820^{+0.012}_{-0.013}$
$A_{143}^{\text{PS}}$	43.3	$40^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.527	$0.534^{+0.057}_{-0.056}$	$100\theta_{s,\text{eq}}$	0.4527	$0.4528^{+0.0063}_{-0.0065}$
$A_{143 \times 217}^{\text{PS}}$	46.1	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6450	$0.646^{+0.024}_{-0.026}$	$r_{\text{drag}}/D_V(0.57)$	0.0632	$0.0624^{+0.0067}_{-0.0065}$
$A_{217}^{\text{PS}}$	103.2	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0516	$1.053^{+0.038}_{-0.042}$	$H(0.57)$	84.2	$83.4^{+6.9}_{-6.7}$
$A^{\text{kSZ}}$	0.00	< 6.98	$\langle d^2 \rangle^{1/2}$	2.631	$2.64^{+0.13}_{-0.13}$	$D_A(0.57)$	1594	$1622^{+200}_{-200}$
$A_{100}^{\text{dustTT}}$	7.35	$7.48^{+3.7}_{-3.6}$	$z_{\text{re}}$	7.94	$7.31^{+3.9}_{-4.4}$	$F_{\text{AP}}(0.57)$	0.7029	$0.707^{+0.027}_{-0.026}$
$A_{143}^{\text{dustTT}}$	8.90	$8.84^{+3.6}_{-3.6}$	$10^9 A_s$	2.109	$2.09^{+0.17}_{-0.17}$	$f\sigma_8(0.57)$	0.4872	$0.484^{+0.017}_{-0.017}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$16.6^{+8.1}_{-8.1}$	$10^9 A_s e^{-2\tau}$	1.8767	$1.876^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	0.560	$0.551^{+0.056}_{-0.057}$
$A_{217}^{\text{dustTT}}$	82.0	$81^{+10}_{-10}$	$D_{40}$	1217.0	$1216^{+31}_{-29}$	$f_{2000}^{143}$	27.0	$27^{+6}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.082^{+0.011}_{-0.011}$	$D_{220}$	5742	$5743^{+78}_{-76}$	$f_{2000}^{143 \times 217}$	30.41	$30^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0493^{+0.0097}_{-0.0098}$	$D_{810}$	2532.5	$2531^{+28}_{-27}$	$f_{2000}^{217}$	103.89	$104.2^{+3.9}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.063}_{-0.063}$	$D_{1420}$	813.8	$813.3^{+9.4}_{-9.3}$	$\chi_{\text{lowTEB}}^2$	10493.88	10495.0 ( $\nu$ : 0.9)
$A_{143}^{\text{dustEE}}$	0.1008	$0.101^{+0.014}_{-0.013}$	$D_{2000}$	231.70	$231.5^{+3.2}_{-3.1}$	$\chi_{\text{plik}}^2$	2428.5	2448.1 ( $\nu$ : 22.0)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.091}_{-0.090}$	$n_{s,0.002}$	0.9682	$0.9680^{+0.0092}_{-0.0095}$	$\chi_{\text{prior}}^2$	6.51	19.2 ( $\nu$ : 14.7)
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.26}_{-0.25}$	$Y_P$	0.245417	$0.24541^{+0.00015}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12922.4	12943.1 ( $\nu$ : 22.9)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.074}$	$Y_P^{\text{BBN}}$	0.246744	$0.24674^{+0.00015}_{-0.00015}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.058}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.581	$2.582^{+0.063}_{-0.063}$			

Best-fit  $\chi_{\text{eff}}^2 = 12928.92$ ;  $\Delta\chi_{\text{eff}}^2 = -6.64$ ;  $\bar{\chi}_{\text{eff}}^2 = 12962.34$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -5.35$ ;  $R - 1 = 0.01122$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10493.88 ( $\Delta$  -3.05) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2428.53 ( $\Delta$  -3.12)

### 19.3 base\_omegak\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022279	$0.02230^{+0.00047}_{-0.00050}$	$\Omega_m h^2$	0.14172	$0.1418^{+0.0043}_{-0.0042}$	$r_{\text{drag}}$	147.51	$147.47^{+0.97}_{-0.97}$
$\Omega_c h^2$	0.11880	$0.1189^{+0.0045}_{-0.0045}$	$\Omega_m h^3$	0.09584	$0.0959^{+0.0037}_{-0.0035}$	$k_D$	0.14036	$0.1404^{+0.0010}_{-0.0010}$
$100\theta_{\text{MC}}$	1.04098	$1.04098^{+0.00096}_{-0.0010}$	$\sigma_8$	0.8277	$0.829^{+0.030}_{-0.030}$	$100\theta_D$	0.16093	$0.16090^{+0.00056}_{-0.00053}$
$\tau$	0.0801	$0.081^{+0.038}_{-0.039}$	$\sigma_8 \Omega_m^{0.5}$	0.4608	$0.461^{+0.021}_{-0.020}$	$z_{\text{eq}}$	3371	$3374^{+100}_{-100}$
$\Omega_K$	-0.0002	$-0.0002^{+0.0053}_{-0.0051}$	$\sigma_8 \Omega_m^{0.25}$	0.6176	$0.618^{+0.024}_{-0.023}$	$k_{\text{eq}}$	0.010289	$0.01030^{+0.00031}_{-0.00031}$
$\ln(10^{10} A_s)$	3.092	$3.094^{+0.074}_{-0.075}$	$\sigma_8/h^{0.5}$	1.0065	$1.008^{+0.036}_{-0.036}$	$100\theta_{\text{eq}}$	0.8187	$0.818^{+0.020}_{-0.019}$
$n_s$	0.9676	$0.968^{+0.013}_{-0.013}$	$\langle d^2 \rangle^{1/2}$	2.489	$2.491^{+0.086}_{-0.087}$	$100\theta_{s,\text{eq}}$	0.4522	$0.452^{+0.010}_{-0.0099}$
$y_{\text{cal}}$	1.00038	$1.0004^{+0.0049}_{-0.0048}$	$z_{\text{re}}$	10.15	$10.1^{+3.5}_{-3.5}$	$r_{\text{drag}}/D_V(0.57)$	0.07165	$0.0716^{+0.0011}_{-0.0011}$
$A_{217}^{\text{CIB}}$	67.3	$64^{+10}_{-10}$	$10^9 A_s$	2.202	$2.21^{+0.17}_{-0.16}$	$H(0.57)$	92.96	$93.0^{+1.5}_{-1.4}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$10^9 A_s e^{-2\tau}$	1.8760	$1.877^{+0.027}_{-0.028}$	$D_A(0.57)$	1387.7	$1388^{+24}_{-24}$
$A_{143}^{\text{tSZ}}$	7.11	$5.20^{+3.7}_{-3.8}$	$D_{40}$	1231.8	$1233^{+31}_{-31}$	$F_{\text{AP}}(0.57)$	0.67559	$0.6757^{+0.0040}_{-0.0038}$
$A_{100}^{\text{PS}}$	254	$257^{+50}_{-50}$	$D_{220}$	5719	$5723^{+82}_{-82}$	$f\sigma_8(0.57)$	0.4809	$0.481^{+0.018}_{-0.017}$
$A_{143}^{\text{PS}}$	38.9	$43^{+20}_{-20}$	$D_{810}$	2533.4	$2534^{+27}_{-27}$	$\sigma_8(0.57)$	0.6162	$0.617^{+0.023}_{-0.023}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$D_{1420}$	814.7	$815.0^{+9.7}_{-9.8}$	$f_{2000}^{143}$	29.7	$30^{+6}_{-6}$
$A_{217}^{\text{PS}}$	96.9	$97^{+20}_{-20}$	$D_{2000}$	230.53	$230.6^{+3.8}_{-3.7}$	$f_{2000}^{143 \times 217}$	32.26	$32^{+4}_{-4}$
$A^{\text{kSZ}}$	0.00	< 8.25	$n_{s,0.002}$	0.9676	$0.968^{+0.013}_{-0.013}$	$f_{2000}^{217}$	105.90	$105.7^{+4.1}_{-4.1}$
$A_{100}^{\text{dustTT}}$	7.43	$7.44^{+3.7}_{-3.7}$	$Y_{\text{P}}$	0.245353	$0.24536^{+0.00021}_{-0.00023}$	$\chi_{\text{lowTEB}}^2$	10496.20	10497.3 ( $\nu$ : 3.2)
$A_{143}^{\text{dustTT}}$	9.05	$9.00^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246679	$0.24669^{+0.00021}_{-0.00023}$	$\chi_{\text{plik}}^2$	763.7	777.6 ( $\nu$ : 16.7)
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.1^{+8.2}_{-8.2}$	$10^5 \text{D}/\text{H}$	2.608	$2.605^{+0.096}_{-0.089}$	$\chi_{6\text{DF}}^2$	0.022	0.075 ( $\nu$ : 0.0)
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	Age/Gyr	13.809	$13.81^{+0.20}_{-0.20}$	$\chi_{\text{MGS}}^2$	1.28	1.34 ( $\nu$ : 0.2)
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.93	$1089.91^{+0.93}_{-0.88}$	$\chi_{\text{DR11CMass}}^2$	2.47	3.19 ( $\nu$ : 0.7)
$c_{217}$	0.99599	$0.9959^{+0.0028}_{-0.0028}$	$r_*$	144.81	$144.8^{+1.0}_{-0.99}$	$\chi_{\text{DR11LOWZ}}^2$	0.62	0.83 ( $\nu$ : 0.3)
$H_0$	67.63	$67.6^{+1.4}_{-1.4}$	$100\theta_*$	1.04116	$1.04117^{+0.00094}_{-0.00098}$	$\chi_{\text{prior}}^2$	2.01	7.32 ( $\nu$ : 6.2)
$\Omega_\Lambda$	0.6903	$0.690^{+0.015}_{-0.017}$	$D_A/\text{Gpc}$	13.909	$13.905^{+0.092}_{-0.090}$	$\chi_{\text{CMB}}^2$	11259.9	11274.8 ( $\nu$ : 16.0)
$\Omega_m$	0.3099	$0.310^{+0.016}_{-0.015}$	$z_{\text{drag}}$	1059.63	$1059.69^{+0.93}_{-0.98}$	$\chi_{\text{BAO}}^2$	4.38	5.44 ( $\nu$ : 1.3)

Best-fit  $\chi_{\text{eff}}^2 = 11266.31$ ;  $\Delta\chi_{\text{eff}}^2 = -0.13$ ;  $\bar{\chi}_{\text{eff}}^2 = 11287.59$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.23$ ;  $R - 1 = 0.00885$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMass: 2.47 ( $\Delta$  0.02) DR11LOWZ: 0.61 ( $\Delta$  0.00) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10496.20 ( $\Delta$  -0.22) plik\_dx11dr2\_HM\_v18\_TT: 763.72 ( $\Delta$  0.12)

## 19.4 base\_omegak\_plikHM\_TT\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022269	$0.02227^{+0.00047}_{-0.00047}$	$\Omega_m h^3$	0.09563	$0.0958^{+0.0037}_{-0.0036}$	$100\theta_D$	0.16097	$0.16096^{+0.00055}_{-0.00052}$
$\Omega_c h^2$	0.11830	$0.1185^{+0.0042}_{-0.0044}$	$\sigma_8$	0.8149	$0.814^{+0.019}_{-0.019}$	$z_{\text{eq}}$	3359	$3364^{+94}_{-98}$
$100\theta_{\text{MC}}$	1.04106	$1.04102^{+0.00094}_{-0.00099}$	$\sigma_8 \Omega_m^{0.5}$	0.4522	$0.452^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010252	$0.01027^{+0.00029}_{-0.00030}$
$\tau$	0.0673	$0.066^{+0.029}_{-0.029}$	$\sigma_8 \Omega_m^{0.25}$	0.6070	$0.607^{+0.015}_{-0.014}$	$100\theta_{\text{eq}}$	0.8209	$0.820^{+0.019}_{-0.018}$
$\Omega_K$	-0.0004	$-0.0002^{+0.0053}_{-0.0052}$	$\sigma_8/h^{0.5}$	0.9903	$0.989^{+0.022}_{-0.021}$	$100\theta_{\text{s,eq}}$	0.4534	$0.4530^{+0.0099}_{-0.0093}$
$\ln(10^{10} A_s)$	3.064	$3.062^{+0.051}_{-0.053}$	$\langle d^2 \rangle^{1/2}$	2.449	$2.447^{+0.051}_{-0.050}$	$r_{\text{drag}}/D_V(0.57)$	0.07175	$0.0718^{+0.0011}_{-0.0011}$
$n_s$	0.9686	$0.968^{+0.013}_{-0.012}$	$z_{\text{re}}$	8.95	$8.72^{+2.7}_{-2.8}$	$H(0.57)$	92.94	$93.0^{+1.5}_{-1.4}$
$y_{\text{cal}}$	1.00011	$1.0002^{+0.0048}_{-0.0049}$	$10^9 A_s$	2.142	$2.14^{+0.11}_{-0.11}$	$D_A(0.57)$	1386.9	$1386^{+25}_{-25}$
$A_{217}^{\text{CIB}}$	67.6	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8721	$1.874^{+0.027}_{-0.027}$	$F_{\text{AP}}(0.57)$	0.67505	$0.6752^{+0.0038}_{-0.0037}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1223.0	$1225^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4730	$0.473^{+0.011}_{-0.011}$
$A_{143}^{\text{tSZ}}$	7.18	$5.07^{+3.7}_{-3.8}$	$D_{220}$	5714	$5719^{+81}_{-80}$	$\sigma_8(0.57)$	0.6071	$0.607^{+0.016}_{-0.016}$
$A_{100}^{\text{PS}}$	255	$260^{+50}_{-50}$	$D_{810}$	2531.7	$2532^{+26}_{-28}$	$f_{2000}^{143}$	30.1	$30^{+6}_{-6}$
$A_{143}^{\text{PS}}$	39.4	$44^{+20}_{-20}$	$D_{1420}$	814.5	$815^{+10}_{-9.9}$	$f_{2000}^{143 \times 217}$	32.63	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$D_{2000}$	230.17	$230.1^{+3.5}_{-3.6}$	$f_{2000}^{217}$	106.14	$106.3^{+3.9}_{-4.0}$
$A_{217}^{\text{PS}}$	96.9	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9686	$0.968^{+0.013}_{-0.012}$	$\chi_{\text{lensing}}^2$	9.24	9.87 ( $\nu: 1.1$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245348	$0.24535^{+0.00021}_{-0.00021}$	$\chi_{\text{lowTEB}}^2$	10494.74	10495.5 ( $\nu: 1.0$ )
$A_{100}^{\text{dustTT}}$	7.37	$7.51^{+3.8}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246675	$0.24667^{+0.00021}_{-0.00021}$	$\chi_{\text{plik}}^2$	766.2	779.7 ( $\nu: 15.2$ )
$A_{143}^{\text{dustTT}}$	9.10	$9.05^{+3.6}_{-3.6}$	$10^5 D/H$	2.610	$2.611^{+0.092}_{-0.088}$	$\chi_{6\text{DF}}^2$	0.010	0.060 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.3}_{-8.1}$	Age/Gyr	13.815	$13.81^{+0.20}_{-0.21}$	$\chi_{\text{MGS}}^2$	1.41	1.49 ( $\nu: 0.2$ )
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$z_*$	1089.90	$1089.92^{+0.89}_{-0.84}$	$\chi_{\text{DR11CMass}}^2$	2.43	3.13 ( $\nu: 0.6$ )
$c_{100}$	0.99791	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	144.95	$144.90^{+0.98}_{-0.91}$	$\chi_{\text{DR11LOWZ}}^2$	0.49	0.68 ( $\nu: 0.2$ )
$c_{217}$	0.99598	$0.9960^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04125	$1.04122^{+0.00092}_{-0.00097}$	$\chi_{\text{prior}}^2$	2.07	7.41 ( $\nu: 6.3$ )
$H_0$	67.72	$67.7^{+1.5}_{-1.4}$	$D_A/\text{Gpc}$	13.921	$13.916^{+0.088}_{-0.083}$	$\chi_{\text{CMB}}^2$	11270.1	11285.1 ( $\nu: 15.4$ )
$\Omega_\Lambda$	0.6925	$0.692^{+0.015}_{-0.015}$	$z_{\text{drag}}$	1059.59	$1059.60^{+0.91}_{-0.92}$	$\chi_{\text{BAO}}^2$	4.34	5.36 ( $\nu: 1.1$ )
$\Omega_m$	0.3079	$0.308^{+0.015}_{-0.014}$	$r_{\text{drag}}$	147.66	$147.60^{+0.96}_{-0.89}$			
$\Omega_m h^2$	0.14121	$0.1414^{+0.0039}_{-0.0041}$	$k_D$	0.14020	$0.14025^{+0.00095}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.56$ ;  $\Delta\chi_{\text{eff}}^2 = -0.18$ ;  $\bar{\chi}_{\text{eff}}^2 = 11297.85$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.16$ ;  $R - 1 = 0.02254$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMass: 2.43 ( $\Delta$  0.03) DR11LOWZ: 0.49 ( $\Delta$  0.01) CMB - smica\_g30\_ftl\_full\_pp: 9.24 ( $\Delta$  -0.00) low1.SMW\_70\_dx11d.2014.10.03.10494.74 ( $\Delta$  -0.12) plik\_dx11dr2\_HM\_v18\_TT: 766.17 ( $\Delta$  -0.03)



## 19.5 base\_omegak\_plikHM\_TTTEE\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022314	$0.02229_{-0.00031}^{+0.00032}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15_{-0.10}^{+0.11}$	$r_*$	144.70	$144.66_{-0.63}^{+0.63}$
$\Omega_c h^2$	0.11912	$0.1194_{-0.0029}^{+0.0030}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34_{-0.16}^{+0.16}$	$100\theta_*$	1.04102	$1.04102_{-0.00063}^{+0.00062}$
$100\theta_{\text{MC}}$	1.04083	$1.04082_{-0.00064}^{+0.00063}$	$A_{217}^{\text{dustTE}}$	1.662	$1.66_{-0.50}^{+0.50}$	$D_A/\text{Gpc}$	13.900	$13.896_{-0.058}^{+0.059}$
$\tau$	0.0855	$0.081_{-0.033}^{+0.032}$	$c_{100}$	0.99821	$0.9982_{-0.0015}^{+0.0015}$	$z_{\text{drag}}$	1059.74	$1059.70_{-0.60}^{+0.63}$
$\Omega_K$	-0.00005	$0.0002_{-0.0040}^{+0.0041}$	$c_{217}$	0.99589	$0.9959_{-0.0028}^{+0.0029}$	$r_{\text{drag}}$	147.39	$147.35_{-0.62}^{+0.62}$
$\ln(10^{10} A_s)$	3.104	$3.097_{-0.064}^{+0.062}$	$H_0$	67.57	$67.6_{-1.4}^{+1.4}$	$k_D$	0.14051	$0.14053_{-0.00064}^{+0.00063}$
$n_s$	0.9669	$0.9657_{-0.0097}^{+0.0097}$	$\Omega_\Lambda$	0.6888	$0.688_{-0.013}^{+0.012}$	$100\theta_D$	0.160850	$0.16088_{-0.00035}^{+0.00036}$
$y_{\text{cal}}$	1.00018	$1.0004_{-0.0050}^{+0.0049}$	$\Omega_m$	0.3112	$0.312_{-0.013}^{+0.014}$	$z_{\text{eq}}$	3380	$3385_{-65}^{+66}$
$A_{217}^{\text{CIB}}$	65.1	$64_{-10}^{+10}$	$\Omega_m h^2$	0.14207	$0.1423_{-0.0027}^{+0.0028}$	$k_{\text{eq}}$	0.010315	$0.01033_{-0.00020}^{+0.00020}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.26	—	$\Omega_m h^3$	0.09599	$0.0962_{-0.0029}^{+0.0029}$	$100\theta_{\text{eq}}$	0.8171	$0.816_{-0.012}^{+0.013}$
$A_{143}^{\text{tSZ}}$	7.09	$5.35_{-3.8}^{+3.6}$	$\sigma_8$	0.8334	$0.831_{-0.026}^{+0.026}$	$100\theta_{s,\text{eq}}$	0.4514	$0.4509_{-0.0064}^{+0.0064}$
$A_{100}^{\text{PS}}$	253	$260_{-50}^{+50}$	$\sigma_8 \Omega_m^{0.5}$	0.4649	$0.464_{-0.017}^{+0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.07158	$0.0716_{-0.0010}^{+0.0011}$
$A_{143}^{\text{PS}}$	41.5	$43_{-20}^{+10}$	$\sigma_8 \Omega_m^{0.25}$	0.6224	$0.621_{-0.020}^{+0.020}$	$H(0.57)$	92.98	$93.0_{-1.2}^{+1.3}$
$A_{143 \times 217}^{\text{PS}}$	39.7	$40_{-20}^{+20}$	$\sigma_8/h^{0.5}$	1.0138	$1.011_{-0.031}^{+0.031}$	$D_A(0.57)$	1388.3	$1388_{-23}^{+23}$
$A_{217}^{\text{PS}}$	100.1	$98_{-20}^{+20}$	$\langle d^2 \rangle^{1/2}$	2.507	$2.501_{-0.076}^{+0.075}$	$F_{\text{AP}}(0.57)$	0.67595	$0.6761_{-0.0033}^{+0.0034}$
$A^{\text{kSZ}}$	0.00	$< 7.79$	$z_{\text{re}}$	10.62	$10.2_{-3.0}^{+2.9}$	$f\sigma_8(0.57)$	0.4845	$0.483_{-0.015}^{+0.015}$
$A_{100}^{\text{dustTT}}$	7.38	$7.41_{-3.7}^{+3.6}$	$10^9 A_s$	2.229	$2.21_{-0.14}^{+0.14}$	$\sigma_8(0.57)$	0.6200	$0.618_{-0.020}^{+0.020}$
$A_{143}^{\text{dustTT}}$	8.94	$8.92_{-3.6}^{+3.6}$	$10^9 A_s e^{-2\tau}$	1.8782	$1.880_{-0.023}^{+0.024}$	$f_{2000}^{143}$	28.6	$29_{-5}^{+5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.0_{-8.1}^{+8.0}$	$D_{40}$	1237.1	$1239_{-27}^{+27}$	$f_{2000}^{143 \times 217}$	31.72	$32_{-4}^{+4}$
$A_{217}^{\text{dustTT}}$	82.1	$82_{-10}^{+10}$	$D_{220}$	5727	$5731_{-78}^{+76}$	$f_{2000}^{217}$	105.26	$105.7_{-3.6}^{+3.7}$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081_{-0.011}^{+0.011}$	$D_{810}$	2534.6	$2535_{-27}^{+26}$	$\chi_{\text{lowTEB}}^2$	10497.29	$10497.7 (\nu: 2.5)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0490_{-0.0098}^{+0.0098}$	$D_{1420}$	814.9	$814.9_{-9.4}^{+9.1}$	$\chi_{\text{plik}}^2$	2431.1	$2450.5 (\nu: 22.8)$
$A_{100 \times 217}^{\text{dustEE}}$	0.0996	$0.099_{-0.064}^{+0.064}$	$D_{2000}$	230.82	$230.5_{-3.2}^{+3.2}$	$\chi_{6\text{DF}}^2$	0.034	$0.08 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	0.1005	$0.100_{-0.013}^{+0.013}$	$n_{s,0.002}$	0.9669	$0.9657_{-0.0097}^{+0.0097}$	$\chi_{\text{MGS}}^2$	1.22	$1.26 (\nu: 0.2)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223_{-0.091}^{+0.091}$	$Y_P$	0.245368	$0.24535_{-0.00015}^{+0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.53	$3.18 (\nu: 0.7)$
$A_{217}^{\text{dustEE}}$	0.652	$0.65_{-0.25}^{+0.25}$	$Y_P^{\text{BBN}}$	0.246695	$0.24668_{-0.00015}^{+0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.72	$0.90 (\nu: 0.3)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141_{-0.073}^{+0.074}$	$10^5 \text{D}/\text{H}$	2.602	$2.607_{-0.059}^{+0.060}$	$\chi_{\text{prior}}^2$	6.82	$19.2 (\nu: 15.0)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132_{-0.057}^{+0.057}$	Age/Gyr	13.804	$13.80_{-0.17}^{+0.16}$	$\chi_{\text{CMB}}^2$	12928.4	$12948.2 (\nu: 22.1)$
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30_{-0.16}^{+0.16}$	$z_*$	1089.91	$1089.97_{-0.60}^{+0.61}$	$\chi_{\text{BAO}}^2$	4.51	$5.43 (\nu: 1.4)$

Best-fit  $\chi_{\text{eff}}^2 = 12939.67$ ;  $\Delta\chi_{\text{eff}}^2 = -0.49$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.91$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.44$ ;  $R - 1 = 0.00709$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 ( $\Delta$  0.01) MGS: 1.22 ( $\Delta$  0.00) DR11CMass: 2.53 ( $\Delta$  0.04) DR11LOWZ: 0.72 ( $\Delta$  0.04) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10497.29 ( $\Delta$  -0.12) plik.dx11dr2.HM.v18.TTTEE: 2431.05 ( $\Delta$  -0.48)

## 19.6 base\_omegak\_plikHM\_TTTEE\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022273	$0.02227^{+0.00032}_{-0.00029}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.901	$13.900^{+0.060}_{-0.059}$
$\Omega_c h^2$	0.11920	$0.1193^{+0.0030}_{-0.0030}$	$A_{217}^{\text{dustTE}}$	1.671	$1.66^{+0.48}_{-0.51}$	$z_{\text{drag}}$	1059.67	$1059.64^{+0.60}_{-0.58}$
$100\theta_{\text{MC}}$	1.04086	$1.04085^{+0.00059}_{-0.00063}$	$c_{100}$	0.99813	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.41	$147.41^{+0.64}_{-0.62}$
$\tau$	0.0645	$0.064^{+0.025}_{-0.024}$	$c_{217}$	0.99610	$0.9961^{+0.0027}_{-0.0029}$	$k_D$	0.14045	$0.14045^{+0.00066}_{-0.00065}$
$\Omega_K$	0.00043	$0.0004^{+0.0040}_{-0.0039}$	$H_0$	67.75	$67.7^{+1.4}_{-1.3}$	$100\theta_D$	0.160910	$0.16092^{+0.00034}_{-0.00034}$
$\ln(10^{10} A_s)$	3.0610	$3.060^{+0.045}_{-0.044}$	$\Omega_\Lambda$	0.6899	$0.689^{+0.012}_{-0.013}$	$z_{\text{eq}}$	3381	$3382^{+67}_{-67}$
$n_s$	0.9660	$0.9654^{+0.0094}_{-0.0094}$	$\Omega_m$	0.3097	$0.310^{+0.014}_{-0.013}$	$k_{\text{eq}}$	0.010318	$0.01032^{+0.00020}_{-0.00020}$
$y_{\text{cal}}$	0.99987	$1.0001^{+0.0047}_{-0.0052}$	$\Omega_m h^2$	0.14212	$0.1422^{+0.0028}_{-0.0028}$	$100\theta_{\text{eq}}$	0.8168	$0.817^{+0.013}_{-0.013}$
$A_{217}^{\text{CIB}}$	67.8	$64^{+10}_{-10}$	$\Omega_m h^3$	0.09628	$0.0963^{+0.0029}_{-0.0028}$	$100\theta_{s,\text{eq}}$	0.4513	$0.4512^{+0.0066}_{-0.0064}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\sigma_8$	0.8162	$0.816^{+0.018}_{-0.018}$	$r_{\text{drag}}/D_V(0.57)$	0.07173	$0.0717^{+0.0010}_{-0.0010}$
$A_{143}^{\text{tSZ}}$	7.18	$5.28^{+3.8}_{-3.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4542	$0.454^{+0.012}_{-0.012}$	$H(0.57)$	93.13	$93.1^{+1.2}_{-1.3}$
$A_{100}^{\text{PS}}$	257	$262^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6088	$0.609^{+0.013}_{-0.012}$	$D_A(0.57)$	1385.3	$1386^{+22}_{-23}$
$A_{143}^{\text{PS}}$	39.1	$44^{+10}_{-20}$	$\sigma_8/h^{0.5}$	0.9916	$0.991^{+0.020}_{-0.019}$	$F_{\text{AP}}(0.57)$	0.67562	$0.6757^{+0.0034}_{-0.0032}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4533	$2.454^{+0.047}_{-0.047}$	$f\sigma_8(0.57)$	0.4740	$0.4739^{+0.0096}_{-0.0096}$
$A_{217}^{\text{PS}}$	96.5	$97^{+20}_{-20}$	$z_{\text{re}}$	8.70	$8.58^{+2.2}_{-2.4}$	$\sigma_8(0.57)$	0.6076	$0.607^{+0.015}_{-0.015}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.135	$2.133^{+0.098}_{-0.092}$	$f_{2000}^{143}$	29.7	$30^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	7.37	$7.45^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8765	$1.878^{+0.023}_{-0.024}$	$f_{2000}^{143 \times 217}$	32.45	$32.7^{+3.6}_{-3.6}$
$A_{143}^{\text{dustTT}}$	9.07	$8.99^{+3.7}_{-3.6}$	$D_{40}$	1228.8	$1231^{+25}_{-25}$	$f_{2000}^{217}$	105.97	$106.3^{+3.6}_{-3.6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.4}_{-8.3}$	$D_{220}$	5719	$5726^{+73}_{-73}$	$\chi_{\text{lensing}}^2$	9.73	10.3 ( $\nu: 1.5$ )
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{810}$	2533.2	$2534^{+25}_{-27}$	$\chi_{\text{lowTEB}}^2$	10495.32	10495.9 ( $\nu: 0.8$ )
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.012}_{-0.011}$	$D_{1420}$	814.5	$814.6^{+9.1}_{-9.4}$	$\chi_{\text{plik}}^2$	2434.9	2453.2 ( $\nu: 21.8$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0490^{+0.0099}_{-0.0096}$	$D_{2000}$	230.10	$230.0^{+3.1}_{-3.0}$	$\chi_{6\text{DF}}^2$	0.016	0.062 ( $\nu: 0.0$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.098^{+0.065}_{-0.066}$	$n_{s,0.002}$	0.9660	$0.9654^{+0.0094}_{-0.0094}$	$\chi_{\text{MGS}}^2$	1.34	1.40 ( $\nu: 0.2$ )
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.014}_{-0.013}$	$Y_P$	0.245350	$0.24534^{+0.00014}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.39	3.03 ( $\nu: 0.5$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.095}_{-0.090}$	$Y_P^{\text{BBN}}$	0.246676	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.54	0.73 ( $\nu: 0.2$ )
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.25}_{-0.25}$	$10^5 D/H$	2.610	$2.611^{+0.055}_{-0.060}$	$\chi_{\text{prior}}^2$	7.08	19.5 ( $\nu: 16.1$ )
$A_{100}^{\text{dustTE}}$	0.139	$0.142^{+0.076}_{-0.074}$	Age/Gyr	13.785	$13.79^{+0.17}_{-0.16}$	$\chi_{\text{CMB}}^2$	12940.0	12959.4 ( $\nu: 21.6$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.060}_{-0.056}$	$z_*$	1089.97	$1089.99^{+0.58}_{-0.60}$	$\chi_{\text{BAO}}^2$	4.28	5.22 ( $\nu: 1.0$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.17}$	$r_*$	144.71	$144.70^{+0.64}_{-0.64}$			
$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.11}_{-0.10}$	$100\theta_*$	1.04106	$1.04104^{+0.00059}_{-0.00062}$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.33$ ;  $\Delta\chi_{\text{eff}}^2 = -0.26$ ;  $\bar{\chi}_{\text{eff}}^2 = 12984.11$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.46$ ;  $R - 1 = 0.03333$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta -0.01$ ) MGS: 1.34 ( $\Delta 0.06$ ) DR11CMass: 2.39 ( $\Delta -0.06$ ) DR11LOWZ: 0.54 ( $\Delta -0.07$ ) CMB - smica\_g30.ftl.full\_pp: 9.73 ( $\Delta 0.06$ ) low1\_SMW\_70\_dx11d\_2014\_10\_03

## 19.7 base\_omegak\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022336	$0.02230^{+0.00048}_{-0.00047}$	$\Omega_m h^2$	0.14157	$0.1417^{+0.0044}_{-0.0041}$	$100\theta_D$	0.16088	$0.16091^{+0.00054}_{-0.00053}$
$\Omega_c h^2$	0.11859	$0.1188^{+0.0047}_{-0.0044}$	$\Omega_m h^3$	0.09607	$0.0961^{+0.0038}_{-0.0037}$	$z_{\text{eq}}$	3368	$3372^{+100}_{-98}$
$100\theta_{\text{MC}}$	1.04107	$1.04099^{+0.00097}_{-0.00095}$	$\sigma_8$	0.8289	$0.829^{+0.030}_{-0.030}$	$k_{\text{eq}}$	0.010278	$0.01029^{+0.00032}_{-0.00030}$
$\tau$	0.0822	$0.081^{+0.038}_{-0.038}$	$\sigma_8 \Omega_m^{0.5}$	0.4596	$0.460^{+0.020}_{-0.019}$	$100\theta_{\text{eq}}$	0.8196	$0.819^{+0.019}_{-0.020}$
$\Omega_K$	0.0000	$0.0001^{+0.0055}_{-0.0050}$	$\sigma_8 \Omega_m^{0.25}$	0.6172	$0.618^{+0.023}_{-0.023}$	$100\theta_{\text{s,eq}}$	0.4527	$0.4523^{+0.0098}_{-0.010}$
$\ln(10^{10} A_s)$	3.096	$3.095^{+0.073}_{-0.072}$	$\sigma_8/h^{0.5}$	1.0062	$1.007^{+0.035}_{-0.036}$	$r_{\text{drag}}/D_V(0.57)$	0.07181	$0.0718^{+0.0011}_{-0.0010}$
$n_s$	0.9683	$0.968^{+0.013}_{-0.013}$	$\langle d^2 \rangle^{1/2}$	2.488	$2.489^{+0.084}_{-0.086}$	$H(0.57)$	93.11	$93.1^{+1.5}_{-1.4}$
$y_{\text{cal}}$	1.00055	$1.0004^{+0.0048}_{-0.0050}$	$z_{\text{re}}$	10.31	$10.2^{+3.4}_{-3.5}$	$D_A(0.57)$	1384.2	$1385^{+23}_{-24}$
$\alpha_{\text{JLA}}$	0.1411	$0.141^{+0.013}_{-0.013}$	$10^9 A_s$	2.211	$2.21^{+0.16}_{-0.16}$	$F_{\text{AP}}(0.57)$	0.67498	$0.6752^{+0.0038}_{-0.0037}$
$\beta_{\text{JLA}}$	3.099	$3.10^{+0.16}_{-0.15}$	$10^9 A_s e^{-2\tau}$	1.8760	$1.876^{+0.028}_{-0.028}$	$f\sigma_8(0.57)$	0.4809	$0.481^{+0.017}_{-0.017}$
$A_{217}^{\text{CIB}}$	67.0	$64^{+10}_{-10}$	$D_{40}$	1231.6	$1233^{+31}_{-31}$	$\sigma_8(0.57)$	0.6176	$0.618^{+0.023}_{-0.023}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$D_{220}$	5726	$5723^{+81}_{-81}$	$f_{2000}^{143}$	29.3	$30^{+6}_{-6}$
$A_{143}^{\text{tSZ}}$	7.18	$5.22^{+3.7}_{-3.8}$	$D_{810}$	2534.5	$2533^{+28}_{-28}$	$f_{2000}^{143 \times 217}$	31.98	$32^{+4}_{-4}$
$A_{100}^{\text{PS}}$	253	$257^{+50}_{-50}$	$D_{1420}$	815.5	$815.1^{+9.9}_{-10}$	$f_{2000}^{217}$	105.67	$105.7^{+4.1}_{-4.1}$
$A_{143}^{\text{PS}}$	38.0	$43^{+20}_{-20}$	$D_{2000}$	230.93	$230.6^{+3.7}_{-3.7}$	$\chi_{\text{lowTEB}}^2$	10496.39	10497.3 ( $\nu$ : 3.2)
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9683	$0.968^{+0.013}_{-0.013}$	$\chi_{\text{plik}}^2$	763.4	777.6 ( $\nu$ : 16.6)
$A_{217}^{\text{PS}}$	97.0	$97^{+20}_{-20}$	$Y_{\text{P}}$	0.245378	$0.24536^{+0.00021}_{-0.00022}$	$\chi_{\text{H070p6}}^2$	0.68	0.75 ( $\nu$ : 0.1)
$A^{\text{kSZ}}$	0.00	< 8.23	$Y_{\text{P}}^{\text{BBN}}$	0.246704	$0.24669^{+0.00021}_{-0.00022}$	$\chi_{\text{JLA}}^2$	695.21	697.3 ( $\nu$ : 2.1)
$A_{100}^{\text{dustTT}}$	7.35	$7.43^{+3.7}_{-3.7}$	$10^5 \text{D}/\text{H}$	2.598	$2.604^{+0.092}_{-0.089}$	$\chi_{6\text{DF}}^2$	0.006	0.055 ( $\nu$ : 0.0)
$A_{143}^{\text{dustTT}}$	9.02	$8.99^{+3.6}_{-3.6}$	$\text{Age}/\text{Gyr}$	13.791	$13.79^{+0.19}_{-0.21}$	$\chi_{\text{MGS}}^2$	1.47	1.49 ( $\nu$ : 0.2)
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.1^{+8.1}_{-8.2}$	$z_*$	1089.84	$1089.90^{+0.91}_{-0.88}$	$\chi_{\text{DR11CMass}}^2$	2.41	3.05 ( $\nu$ : 0.4)
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$r_*$	144.82	$144.80^{+0.98}_{-1.0}$	$\chi_{\text{DR11LOWZ}}^2$	0.43	0.65 ( $\nu$ : 0.2)
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04127	$1.04119^{+0.00094}_{-0.00093}$	$\chi_{\text{prior}}^2$	2.10	7.30 ( $\nu$ : 6.2)
$c_{217}$	0.99592	$0.9959^{+0.0028}_{-0.0029}$	$D_A/\text{Gpc}$	13.908	$13.907^{+0.090}_{-0.093}$	$\chi_{\text{CMB}}^2$	11259.8	11274.9 ( $\nu$ : 15.6)
$H_0$	67.86	$67.8^{+1.4}_{-1.4}$	$z_{\text{drag}}$	1059.74	$1059.69^{+0.97}_{-0.94}$	$\chi_{\text{BAO}}^2$	4.31	5.24 ( $\nu$ : 0.9)
$\Omega_\Lambda$	0.6926	$0.691^{+0.015}_{-0.016}$	$r_{\text{drag}}$	147.51	$147.49^{+0.96}_{-0.99}$			
$\Omega_m$	0.3074	$0.308^{+0.015}_{-0.014}$	$k_D$	0.14040	$0.1404^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11962.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 11985.52$ ;  $R - 1 = 0.00926$  $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.41 DR11LOWZ: 0.43 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.39 plik\_dx11dr2\_HM.v18.TT: 763.40 Hubble - H070p6: 0.68 SN - JLA December\_2013: 695.21

## 19.8 base\_omegak\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022318	$0.02228^{+0.00047}_{-0.00047}$	$\Omega_m h^2$	0.14107	$0.1413^{+0.0042}_{-0.0040}$	$100\theta_D$	0.16091	$0.16096^{+0.00052}_{-0.00052}$
$\Omega_c h^2$	0.11811	$0.1184^{+0.0045}_{-0.0043}$	$\Omega_m h^3$	0.09593	$0.0959^{+0.0039}_{-0.0035}$	$z_{\text{eq}}$	3356	$3361^{+100}_{-95}$
$100\theta_{\text{MC}}$	1.04105	$1.04105^{+0.00099}_{-0.00094}$	$\sigma_8$	0.8160	$0.815^{+0.019}_{-0.019}$	$k_{\text{eq}}$	0.010242	$0.01026^{+0.00031}_{-0.00029}$
$\tau$	0.0696	$0.067^{+0.028}_{-0.028}$	$\sigma_8 \Omega_m^{0.5}$	0.4507	$0.451^{+0.013}_{-0.013}$	$100\theta_{\text{eq}}$	0.8217	$0.821^{+0.019}_{-0.019}$
$\Omega_K$	0.0000	$-0.0001^{+0.0054}_{-0.0052}$	$\sigma_8 \Omega_m^{0.25}$	0.6065	$0.607^{+0.015}_{-0.014}$	$100\theta_{\text{s,eq}}$	0.4538	$0.4534^{+0.0098}_{-0.0099}$
$\ln(10^{10} A_s)$	3.068	$3.064^{+0.049}_{-0.051}$	$\sigma_8/h^{0.5}$	0.9896	$0.989^{+0.021}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	0.07194	$0.0719^{+0.0010}_{-0.00099}$
$n_s$	0.9696	$0.968^{+0.012}_{-0.013}$	$\langle d^2 \rangle^{1/2}$	2.446	$2.447^{+0.050}_{-0.051}$	$H(0.57)$	93.14	$93.1^{+1.5}_{-1.4}$
$y_{\text{cal}}$	0.99971	$1.0001^{+0.0049}_{-0.0050}$	$z_{\text{re}}$	9.15	$8.88^{+2.7}_{-2.7}$	$D_A(0.57)$	1382.6	$1384^{+23}_{-24}$
$\alpha_{\text{JLA}}$	0.1411	$0.141^{+0.013}_{-0.013}$	$10^9 A_s$	2.150	$2.14^{+0.11}_{-0.11}$	$F_{\text{AP}}(0.57)$	0.67438	$0.6748^{+0.0036}_{-0.0036}$
$\beta_{\text{JLA}}$	3.100	$3.10^{+0.16}_{-0.15}$	$10^9 A_s e^{-2\tau}$	1.8702	$1.873^{+0.028}_{-0.027}$	$f\sigma_8(0.57)$	0.4728	$0.473^{+0.011}_{-0.011}$
$A_{217}^{\text{CIB}}$	66.8	$64^{+10}_{-10}$	$D_{40}$	1221.5	$1224^{+30}_{-29}$	$\sigma_8(0.57)$	0.6086	$0.608^{+0.016}_{-0.015}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$D_{220}$	5710	$5718^{+79}_{-80}$	$f_{2000}^{143}$	29.4	$30^{+6}_{-6}$
$A_{143}^{\text{tSZ}}$	7.15	$5.06^{+3.8}_{-3.9}$	$D_{810}$	2530.7	$2532^{+28}_{-28}$	$f_{2000}^{143 \times 217}$	32.08	$33^{+4}_{-4}$
$A_{100}^{\text{PS}}$	251	$259^{+50}_{-50}$	$D_{1420}$	814.8	$814.7^{+9.9}_{-10}$	$f_{2000}^{217}$	105.72	$106.2^{+4.0}_{-4.1}$
$A_{143}^{\text{PS}}$	38.3	$44^{+10}_{-20}$	$D_{2000}$	230.39	$230.1^{+3.6}_{-3.6}$	$\chi_{\text{lensing}}^2$	9.20	$9.84 (\nu: 1.1)$
$A_{143 \times 217}^{\text{PS}}$	32	$38^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9696	$0.968^{+0.012}_{-0.013}$	$\chi_{\text{lowTEB}}^2$	10494.75	$10495.4 (\nu: 1.0)$
$A_{217}^{\text{PS}}$	97.2	$96^{+20}_{-20}$	$Y_{\text{P}}$	0.245370	$0.24535^{+0.00021}_{-0.00021}$	$\chi_{\text{plik}}^2$	765.9	$779.8 (\nu: 15.8)$
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}^{\text{BBN}}$	0.246696	$0.24668^{+0.00021}_{-0.00022}$	$\chi_{\text{H070p6}}^2$	0.61	$0.71 (\nu: 0.1)$
$A_{100}^{\text{dustTT}}$	7.52	$7.51^{+3.7}_{-3.6}$	$10^5 D/H$	2.601	$2.609^{+0.092}_{-0.088}$	$\chi_{\text{JLA}}^2$	695.16	$697.3 (\nu: 2.0)$
$A_{143}^{\text{dustTT}}$	9.05	$9.11^{+3.5}_{-3.5}$	Age/Gyr	13.793	$13.80^{+0.20}_{-0.20}$	$\chi_{6\text{DF}}^2$	0.000	$0.047 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.1}_{-8.1}$	$z_*$	1089.82	$1089.89^{+0.88}_{-0.86}$	$\chi_{\text{MGS}}^2$	1.68	$1.62 (\nu: 0.2)$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$r_*$	144.96	$144.93^{+0.94}_{-0.99}$	$\chi_{\text{DR11CMass}}^2$	2.46	$3.04 (\nu: 0.4)$
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0016}$	$100\theta_*$	1.04124	$1.04125^{+0.00096}_{-0.00092}$	$\chi_{\text{DR11LOWZ}}^2$	0.29	$0.54 (\nu: 0.2)$
$c_{217}$	0.99600	$0.9960^{+0.0028}_{-0.0028}$	$D_A/\text{Gpc}$	13.922	$13.919^{+0.088}_{-0.091}$	$\chi_{\text{prior}}^2$	2.10	$7.43 (\nu: 6.2)$
$H_0$	68.00	$67.9^{+1.4}_{-1.3}$	$z_{\text{drag}}$	1059.67	$1059.61^{+0.94}_{-0.89}$	$\chi_{\text{CMB}}^2$	11269.9	$11285.1 (\nu: 15.8)$
$\Omega_\Lambda$	0.6950	$0.693^{+0.015}_{-0.015}$	$r_{\text{drag}}$	147.65	$147.63^{+0.93}_{-0.98}$	$\chi_{\text{BAO}}^2$	4.43	$5.24 (\nu: 0.8)$
$\Omega_m$	0.3051	$0.307^{+0.014}_{-0.014}$	$k_D$	0.14024	$0.1402^{+0.0010}_{-0.00096}$			

Best-fit  $\chi_{\text{eff}}^2 = 11972.16$ ;  $\Delta\chi_{\text{eff}}^2 = -11.90$ ;  $\bar{\chi}_{\text{eff}}^2 = 11995.77$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -8.25$ ;  $R - 1 = 0.02258$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.68 ( $\Delta$  0.14) DR11CMass: 2.46 ( $\Delta$  0.05) DR11LOWZ: 0.29 ( $\Delta$  -0.08) CMB - smica\_g30\_ftl\_full\_pp: 9.20 ( $\Delta$  -0.06) lowl\_SMW\_70\_dx11d\_2014\_10\_03: 10494.75 ( $\Delta$  -0.16) plik\_dx11dr2\_HM\_v18\_TT: 765.90 ( $\Delta$  -0.23) Hubble - H070p6: 0.61 ( $\Delta$  -0.06) SN - JLA December\_2013: 695.16 ( $\Delta$  -11.47)

19.9 base\_omegak\_plikHM\_TTTEE\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022305	$0.02229^{+0.00032}_{-0.00031}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$D_A/\text{Gpc}$	13.902	$13.896^{+0.058}_{-0.058}$
$\Omega_c h^2$	0.11909	$0.1193^{+0.0029}_{-0.0029}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$z_{\text{drag}}$	1059.70	$1059.71^{+0.64}_{-0.60}$
$100\theta_{\text{MC}}$	1.04082	$1.04083^{+0.00064}_{-0.00062}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.50}_{-0.50}$	$r_{\text{drag}}$	147.41	$147.35^{+0.62}_{-0.62}$
$\tau$	0.0841	$0.082^{+0.032}_{-0.033}$	$c_{100}$	0.99819	$0.9982^{+0.0015}_{-0.0015}$	$k_D$	0.14049	$0.14053^{+0.00066}_{-0.00065}$
$\Omega_K$	0.00033	$0.0006^{+0.0039}_{-0.0039}$	$c_{217}$	0.99594	$0.9959^{+0.0029}_{-0.0028}$	$100\theta_D$	0.160862	$0.16087^{+0.00036}_{-0.00036}$
$\ln(10^{10} A_s)$	3.101	$3.097^{+0.063}_{-0.065}$	$H_0$	67.75	$67.8^{+1.3}_{-1.3}$	$z_{\text{eq}}$	3379	$3385^{+65}_{-65}$
$n_s$	0.9669	$0.9657^{+0.0093}_{-0.0095}$	$\Omega_\Lambda$	0.6902	$0.690^{+0.012}_{-0.012}$	$k_{\text{eq}}$	0.010312	$0.01033^{+0.00020}_{-0.00020}$
$y_{\text{cal}}$	1.00033	$1.0004^{+0.0048}_{-0.0048}$	$\Omega_m$	0.3094	$0.310^{+0.013}_{-0.012}$	$100\theta_{\text{eq}}$	0.8172	$0.816^{+0.013}_{-0.012}$
$\alpha_{\text{JLA}}$	0.1412	$0.141^{+0.013}_{-0.013}$	$\Omega_m h^2$	0.14204	$0.1423^{+0.0027}_{-0.0027}$	$100\theta_{s,\text{eq}}$	0.4515	$0.4510^{+0.0065}_{-0.0063}$
$\beta_{\text{JLA}}$	3.099	$3.10^{+0.16}_{-0.16}$	$\Omega_m h^3$	0.09623	$0.0964^{+0.0028}_{-0.0027}$	$r_{\text{drag}}/D_V(0.57)$	0.07172	$0.07174^{+0.00098}_{-0.00096}$
$A_{217}^{\text{CIB}}$	65.1	$64^{+10}_{-10}$	$\sigma_8$	0.8324	$0.831^{+0.026}_{-0.027}$	$H(0.57)$	93.12	$93.2^{+1.2}_{-1.2}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.26	—	$\sigma_8 \Omega_m^{0.5}$	0.4630	$0.463^{+0.017}_{-0.017}$	$D_A(0.57)$	1385.3	$1385^{+21}_{-21}$
$A_{143}^{\text{tSZ}}$	7.04	$5.38^{+3.6}_{-3.7}$	$\sigma_8 \Omega_m^{0.25}$	0.6208	$0.620^{+0.020}_{-0.021}$	$F_{\text{AP}}(0.57)$	0.67555	$0.6757^{+0.0032}_{-0.0030}$
$A_{100}^{\text{PS}}$	253	$260^{+50}_{-50}$	$\sigma_8/h^{0.5}$	1.0113	$1.010^{+0.032}_{-0.033}$	$f\sigma_8(0.57)$	0.4834	$0.483^{+0.015}_{-0.016}$
$A_{143}^{\text{PS}}$	41.9	$43^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.501	$2.498^{+0.076}_{-0.077}$	$\sigma_8(0.57)$	0.6198	$0.619^{+0.020}_{-0.020}$
$A_{143 \times 217}^{\text{PS}}$	39.9	$40^{+20}_{-20}$	$z_{\text{re}}$	10.50	$10.2^{+2.9}_{-3.0}$	$f_{2000}^{143}$	28.8	$29^{+5}_{-5}$
$A_{217}^{\text{PS}}$	100.5	$98^{+20}_{-20}$	$10^9 A_s$	2.223	$2.21^{+0.14}_{-0.14}$	$f_{2000}^{143 \times 217}$	31.86	$32^{+4}_{-4}$
$A_{\text{KSZ}}$	0.00	$< 7.85$	$10^9 A_s e^{-2\tau}$	1.8787	$1.880^{+0.023}_{-0.024}$	$f_{2000}^{217}$	105.44	$105.7^{+3.7}_{-3.6}$
$A_{100}^{\text{dustTT}}$	7.39	$7.44^{+3.7}_{-3.7}$	$D_{40}$	1236.7	$1239^{+27}_{-26}$	$\chi_{\text{lowTEB}}^2$	10497.10	$10497.8 (\nu: 2.7)$
$A_{143}^{\text{dustTT}}$	8.93	$8.90^{+3.6}_{-3.6}$	$D_{220}$	5727	$5732^{+75}_{-75}$	$\chi_{\text{plik}}^2$	2431.9	$2450.9 (\nu: 23.7)$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$16.9^{+8.1}_{-8.2}$	$D_{810}$	2535.3	$2535^{+26}_{-26}$	$\chi_{\text{H070p6}}^2$	0.73	$0.76 (\nu: 0.1)$
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	$D_{1420}$	815.2	$814.9^{+9.4}_{-9.1}$	$\chi_{\text{JLA}}^2$	695.26	$697.3 (\nu: 2.1)$
$A_{100}^{\text{dustEE}}$	0.0817	$0.081^{+0.011}_{-0.011}$	$D_{2000}$	230.80	$230.5^{+3.2}_{-3.2}$	$\chi_{6\text{DF}}^2$	0.016	$0.056 (\nu: 0.0)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0489^{+0.0098}_{-0.0098}$	$n_{s,0.002}$	0.9669	$0.9657^{+0.0093}_{-0.0095}$	$\chi_{\text{MGS}}^2$	1.34	$1.42 (\nu: 0.2)$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.0996^{+0.064}_{-0.064}$	$Y_{\text{P}}$	0.245364	$0.24536^{+0.00014}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.40	$2.97 (\nu: 0.4)$
$A_{143}^{\text{dustEE}}$	0.1006	$0.100^{+0.014}_{-0.014}$	$Y_{\text{P}}^{\text{BBN}}$	0.246691	$0.24668^{+0.00014}_{-0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.54	$0.69 (\nu: 0.2)$
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.091}_{-0.092}$	$10^5 D/H$	2.604	$2.606^{+0.059}_{-0.059}$	$\chi_{\text{prior}}^2$	6.84	$19.2 (\nu: 14.8)$
$A_{217}^{\text{dustEE}}$	0.656	$0.65^{+0.26}_{-0.25}$	Age/Gyr	13.787	$13.78^{+0.16}_{-0.16}$	$\chi_{\text{CMB}}^2$	12929.0	$12948.6 (\nu: 22.7)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.073}_{-0.075}$	$z_*$	1089.92	$1089.96^{+0.58}_{-0.58}$	$\chi_{\text{BAO}}^2$	4.30	$5.13 (\nu: 0.7)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.056}$	$r_*$	144.72	$144.66^{+0.64}_{-0.63}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.16}$	$100\theta_*$	1.04101	$1.04102^{+0.00063}_{-0.00061}$			

Best-fit  $\chi_{\text{eff}}^2 = 13636.15$ ;  $\bar{\chi}_{\text{eff}}^2 = 13671.07$ ;  $R - 1 = 0.01192$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 MGS: 1.34 DR11CMass: 2.40 DR11LOWZ: 0.54 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.10 plik\_dx11dr2\_HM\_v18\_TTTEEE:  
2431.92 Hubble - H070p6: 0.73 SN - JLA December\_2013: 695.26

19.10 base\_omegak\_plikHM\_TTTEEE\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022282	$0.02228^{+0.00032}_{-0.00031}$	$A_{143}^{\text{dustTE}}$	0.156	$0.15^{+0.10}_{-0.10}$	$D_A/\text{Gpc}$	13.901	$13.901^{+0.061}_{-0.058}$
$\Omega_c h^2$	0.11913	$0.1192^{+0.0029}_{-0.0030}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.15}_{-0.15}$	$z_{\text{drag}}$	1059.67	$1059.66^{+0.62}_{-0.60}$
$100\theta_{\text{MC}}$	1.04086	$1.04086^{+0.00063}_{-0.00063}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.52}_{-0.50}$	$r_{\text{drag}}$	147.42	$147.42^{+0.63}_{-0.60}$
$\tau$	0.0658	$0.064^{+0.025}_{-0.023}$	$c_{100}$	0.99816	$0.9982^{+0.0015}_{-0.0016}$	$k_D$	0.14046	$0.14045^{+0.00062}_{-0.00064}$
$\Omega_K$	0.00081	$0.0008^{+0.0040}_{-0.0039}$	$c_{217}$	0.99610	$0.9960^{+0.0028}_{-0.0028}$	$100\theta_D$	0.160898	$0.16090^{+0.00035}_{-0.00035}$
$\ln(10^{10} A_s)$	3.0638	$3.061^{+0.045}_{-0.045}$	$H_0$	67.97	$67.9^{+1.3}_{-1.2}$	$z_{\text{eq}}$	3379	$3380^{+65}_{-67}$
$n_s$	0.9659	$0.9654^{+0.0092}_{-0.0096}$	$\Omega_\Lambda$	0.6917	$0.691^{+0.012}_{-0.012}$	$k_{\text{eq}}$	0.010314	$0.01032^{+0.00020}_{-0.00020}$
$y_{\text{cal}}$	1.00009	$1.0001^{+0.0046}_{-0.0048}$	$\Omega_m$	0.3075	$0.308^{+0.012}_{-0.012}$	$100\theta_{\text{eq}}$	0.8171	$0.817^{+0.013}_{-0.012}$
$\alpha_{\text{JLA}}$	0.1412	$0.141^{+0.013}_{-0.013}$	$\Omega_m h^2$	0.14206	$0.1421^{+0.0027}_{-0.0028}$	$100\theta_{s,\text{eq}}$	0.4514	$0.4514^{+0.0066}_{-0.0063}$
$\beta_{\text{JLA}}$	3.102	$3.10^{+0.16}_{-0.15}$	$\Omega_m h^3$	0.09655	$0.0965^{+0.0028}_{-0.0027}$	$r_{\text{drag}}/D_V(0.57)$	0.07190	$0.07187^{+0.00095}_{-0.00090}$
$A_{217}^{\text{CIB}}$	68.1	$65^{+10}_{-10}$	$\sigma_8$	0.8172	$0.816^{+0.018}_{-0.018}$	$H(0.57)$	93.30	$93.3^{+1.2}_{-1.2}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8 \Omega_m^{0.5}$	0.4532	$0.453^{+0.012}_{-0.011}$	$D_A(0.57)$	1381.8	$1382^{+20}_{-21}$
$A_{143}^{\text{tSZ}}$	7.29	$5.25^{+3.7}_{-3.7}$	$\sigma_8 \Omega_m^{0.25}$	0.6086	$0.608^{+0.014}_{-0.013}$	$F_{\text{AP}}(0.57)$	0.67514	$0.6752^{+0.0030}_{-0.0030}$
$A_{100}^{\text{PS}}$	258	$263^{+50}_{-50}$	$\sigma_8/h^{0.5}$	0.9913	$0.990^{+0.021}_{-0.020}$	$f\sigma_8(0.57)$	0.4740	$0.473^{+0.010}_{-0.0097}$
$A_{143}^{\text{PS}}$	38.7	$44^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4533	$2.451^{+0.049}_{-0.049}$	$\sigma_8(0.57)$	0.6089	$0.608^{+0.015}_{-0.015}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$z_{\text{re}}$	8.82	$8.65^{+2.2}_{-2.4}$	$f_{2000}^{143}$	29.9	$30^{+5}_{-5}$
$A_{217}^{\text{PS}}$	96.2	$96^{+20}_{-20}$	$10^9 A_s$	2.141	$2.136^{+0.098}_{-0.094}$	$f_{2000}^{143 \times 217}$	32.59	$33^{+4}_{-4}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s e^{-2\tau}$	1.8770	$1.878^{+0.023}_{-0.024}$	$f_{2000}^{217}$	106.12	$106.1^{+3.6}_{-3.6}$
$A_{100}^{\text{dustTT}}$	7.46	$7.47^{+3.7}_{-3.8}$	$D_{40}$	1230.4	$1232^{+25}_{-24}$	$\chi_{\text{lensing}}^2$	9.67	10.2 ( $\nu: 1.5$ )
$A_{143}^{\text{dustTT}}$	9.07	$9.02^{+3.6}_{-3.5}$	$D_{220}$	5723	$5728^{+75}_{-77}$	$\chi_{\text{lowTEB}}^2$	10495.46	10495.9 ( $\nu: 0.8$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.1^{+8.2}_{-8.1}$	$D_{810}$	2533.9	$2534^{+26}_{-26}$	$\chi_{\text{plik}}^2$	2434.8	2453.8 ( $\nu: 22.9$ )
$A_{217}^{\text{dustTT}}$	81.7	$81^{+10}_{-10}$	$D_{1420}$	814.6	$814.6^{+9.3}_{-9.3}$	$\chi_{\text{H070p6}}^2$	0.63	0.68 ( $\nu: 0.0$ )
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{2000}$	230.15	$230.0^{+3.2}_{-3.1}$	$\chi_{\text{JLA}}^2$	695.21	697.3 ( $\nu: 2.0$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0490^{+0.0092}_{-0.010}$	$n_{s,0.002}$	0.9659	$0.9654^{+0.0092}_{-0.0096}$	$\chi_{6\text{DF}}^2$	0.003	0.043 ( $\nu: 0.0$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0999^{+0.065}_{-0.060}$	$Y_P$	0.245354	$0.24535^{+0.00014}_{-0.00015}$	$\chi_{\text{MGS}}^2$	1.54	1.58 ( $\nu: 0.2$ )
$A_{143}^{\text{dustEE}}$	0.1003	$0.100^{+0.014}_{-0.014}$	$Y_P^{\text{BBN}}$	0.246681	$0.24668^{+0.00014}_{-0.00015}$	$\chi_{\text{DR11CMass}}^2$	2.37	2.91 ( $\nu: 0.3$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.091}_{-0.093}$	$10^5 D/H$	2.608	$2.609^{+0.060}_{-0.061}$	$\chi_{\text{DR11LOWZ}}^2$	0.36	0.53 ( $\nu: 0.1$ )
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.25}_{-0.25}$	Age/Gyr	13.765	$13.77^{+0.15}_{-0.16}$	$\chi_{\text{prior}}^2$	7.10	19.2 ( $\nu: 14.7$ )
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.078}_{-0.074}$	$z_*$	1089.96	$1089.96^{+0.58}_{-0.59}$	$\chi_{\text{CMB}}^2$	12940.0	12959.9 ( $\nu: 22.2$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.055}$	$r_*$	144.72	$144.72^{+0.66}_{-0.62}$	$\chi_{\text{BAO}}^2$	4.27	5.06 ( $\nu: 0.6$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.17}_{-0.17}$	$100\theta_*$	1.04106	$1.04105^{+0.00061}_{-0.00062}$			

Best-fit  $\chi_{\text{eff}}^2 = 13647.18$ ;  $\Delta\chi_{\text{eff}}^2 = -11.86$ ;  $\bar{\chi}_{\text{eff}}^2 = 13682.17$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -8.93$ ;  $R - 1 = 0.04475$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.54 ( $\Delta$  0.13) DR11CMASS: 2.37 ( $\Delta$  -0.04) DR11LOWZ: 0.36 ( $\Delta$  -0.12) CMB - smica\_g30\_ftl\_full\_pp: 9.67 ( $\Delta$  -0.08) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.46 ( $\Delta$  0.24) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.84 ( $\Delta$  -0.35) Hubble - H070p6: 0.63 ( $\Delta$  -0.09) SN - JLA December\_2013: 695.21 ( $\Delta$  -11.45)

### 19.11 base\_omegak\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022303	$0.02231^{+0.00045}_{-0.00045}$	$\Omega_m$	0.314	$0.327^{+0.064}_{-0.061}$	$D_A/\text{Gpc}$	13.923	$13.926^{+0.086}_{-0.088}$
$\Omega_c h^2$	0.11813	$0.1180^{+0.0044}_{-0.0042}$	$\Omega_m h^2$	0.14107	$0.1409^{+0.0041}_{-0.0040}$	$z_{\text{drag}}$	1059.63	$1059.64^{+0.87}_{-0.88}$
$100\theta_{\text{MC}}$	1.04104	$1.04111^{+0.00097}_{-0.00093}$	$\Omega_m h^3$	0.0946	$0.0929^{+0.010}_{-0.0094}$	$r_{\text{drag}}$	147.67	$147.71^{+0.92}_{-0.94}$
$\tau$	0.0635	$0.058^{+0.039}_{-0.038}$	$\sigma_8$	0.8104	$0.804^{+0.039}_{-0.038}$	$k_D$	0.14021	$0.1402^{+0.0010}_{-0.00097}$
$\Omega_K$	-0.0020	$-0.005^{+0.016}_{-0.017}$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.458^{+0.027}_{-0.026}$	$100\theta_D$	0.16093	$0.16095^{+0.00051}_{-0.00049}$
$\ln(10^{10} A_s)$	3.057	$3.046^{+0.076}_{-0.075}$	$\sigma_8 \Omega_m^{0.25}$	0.6066	$0.607^{+0.015}_{-0.015}$	$z_{\text{eq}}$	3356	$3352^{+99}_{-94}$
$n_s$	0.9690	$0.969^{+0.013}_{-0.012}$	$\sigma_8/h^{0.5}$	0.9897	$0.990^{+0.022}_{-0.022}$	$k_{\text{eq}}$	0.010242	$0.01023^{+0.00030}_{-0.00029}$
$y_{\text{cal}}$	1.00026	$1.0000^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.449	$2.454^{+0.056}_{-0.056}$	$100\theta_{\text{eq}}$	0.8216	$0.822^{+0.019}_{-0.019}$
$A_{217}^{\text{CIB}}$	67.5	$64^{+10}_{-10}$	$z_{\text{re}}$	8.57	$7.93^{+3.9}_{-4.2}$	$100\theta_{s,\text{eq}}$	0.4538	$0.4542^{+0.0096}_{-0.0097}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.126	$2.10^{+0.16}_{-0.16}$	$r_{\text{drag}}/D_V(0.57)$	0.07122	$0.0704^{+0.0049}_{-0.0046}$
$A_{143}^{\text{tSZ}}$	7.20	$5.09^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8722	$1.871^{+0.027}_{-0.026}$	$H(0.57)$	92.4	$91.5^{+5.4}_{-5.0}$
$A_{100}^{\text{PS}}$	254	$259^{+50}_{-50}$	$D_{40}$	1220.8	$1219^{+33}_{-32}$	$D_A(0.57)$	1398	$1419^{+110}_{-100}$
$A_{143}^{\text{PS}}$	38.9	$44^{+20}_{-20}$	$D_{220}$	5719	$5721^{+80}_{-82}$	$F_{\text{AP}}(0.57)$	0.6763	$0.679^{+0.014}_{-0.013}$
$A_{143 \times 217}^{\text{PS}}$	32	$38^{+20}_{-20}$	$D_{810}$	2532.9	$2531^{+27}_{-27}$	$f\sigma_8(0.57)$	0.4721	$0.471^{+0.011}_{-0.011}$
$A_{217}^{\text{PS}}$	96.7	$96^{+20}_{-20}$	$D_{1420}$	815.1	$814^{+10}_{-9.8}$	$\sigma_8(0.57)$	0.6022	$0.595^{+0.042}_{-0.041}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.42	$230.2^{+3.6}_{-3.5}$	$f_{2000}^{143}$	29.8	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.46	$7.49^{+3.6}_{-3.7}$	$n_{s,0.002}$	0.9690	$0.969^{+0.013}_{-0.012}$	$f_{2000}^{143 \times 217}$	32.45	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.10	$9.05^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245363	$0.24536^{+0.00020}_{-0.00020}$	$f_{2000}^{217}$	106.01	$106.1^{+3.8}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.1}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	0.246690	$0.24669^{+0.00020}_{-0.00020}$	$\chi_{\text{lensing}}^2$	9.34	10.5 ( $\nu$ : 2.4)
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$10^5 D/H$	2.604	$2.604^{+0.086}_{-0.085}$	$\chi_{\text{lowTEB}}^2$	10494.34	10495.3 ( $\nu$ : 1.7)
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.89	$14.02^{+0.68}_{-0.67}$	$\chi_{\text{plik}}^2$	766.2	779.9 ( $\nu$ : 15.9)
$c_{217}$	0.99599	$0.9960^{+0.0029}_{-0.0028}$	$z_*$	1089.84	$1089.83^{+0.86}_{-0.86}$	$\chi_{\text{prior}}^2$	2.11	7.39 ( $\nu$ : 6.4)
$H_0$	67.0	$65.9^{+6.4}_{-6.1}$	$r_*$	144.97	$145.01^{+0.94}_{-0.98}$	$\chi_{\text{CMB}}^2$	11269.9	11285.7 ( $\nu$ : 15.8)
$\Omega_\Lambda$	0.6882	$0.679^{+0.047}_{-0.049}$	$100\theta_*$	1.04124	$1.04130^{+0.00095}_{-0.00091}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.04$ ;  $\Delta\chi_{\text{eff}}^2 = -0.39$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.13$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.82$ ;  $R - 1 = 0.00816$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.34 ( $\Delta$  0.16) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.34 ( $\Delta$  -0.51) plik\_dx11dr2\_HM\_v18\_TT: 766.24 ( $\Delta$  -0.08)



## 19.12 base\_omegak\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022252	$0.02228^{+0.00031}_{-0.00031}$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.17}$	Age/Gyr	13.90	$13.96^{+0.65}_{-0.63}$
$\Omega_c h^2$	0.11918	$0.1190^{+0.0030}_{-0.0029}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.10}$	$z_*$	1090.00	$1089.95^{+0.60}_{-0.59}$
$100\theta_{\text{MC}}$	1.04085	$1.04089^{+0.00064}_{-0.00066}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$r_*$	144.73	$144.75^{+0.64}_{-0.65}$
$\tau$	0.0584	$0.056^{+0.037}_{-0.037}$	$A_{217}^{\text{dustTE}}$	1.668	$1.66^{+0.50}_{-0.49}$	$100\theta_*$	1.04104	$1.04108^{+0.00063}_{-0.00065}$
$\Omega_K$	-0.0020	$-0.004^{+0.015}_{-0.015}$	$c_{100}$	0.99817	$0.9981^{+0.0016}_{-0.0015}$	$D_A/\text{Gpc}$	13.903	$13.904^{+0.059}_{-0.060}$
$\ln(10^{10} A_s)$	3.049	$3.045^{+0.074}_{-0.074}$	$c_{217}$	0.99604	$0.9960^{+0.0029}_{-0.0028}$	$z_{\text{drag}}$	1059.59	$1059.66^{+0.63}_{-0.60}$
$n_s$	0.9659	$0.9659^{+0.0094}_{-0.0095}$	$H_0$	66.6	$66.2^{+6.3}_{-6.0}$	$r_{\text{drag}}$	147.44	$147.45^{+0.62}_{-0.64}$
$y_{\text{cal}}$	0.9998	$1.0001^{+0.0050}_{-0.0051}$	$\Omega_\Lambda$	0.6813	$0.677^{+0.046}_{-0.048}$	$k_D$	0.14041	$0.14042^{+0.00065}_{-0.00064}$
$A_{217}^{\text{CIB}}$	67.9	$65^{+10}_{-10}$	$\Omega_m$	0.321	$0.326^{+0.063}_{-0.060}$	$100\theta_D$	0.160936	$0.16091^{+0.00036}_{-0.00034}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14208	$0.1420^{+0.0029}_{-0.0027}$	$z_{\text{eq}}$	3380	$3377^{+68}_{-65}$
$A_{143}^{\text{tSZ}}$	7.35	$5.31^{+3.7}_{-3.9}$	$\Omega_m h^3$	0.0946	$0.0939^{+0.0095}_{-0.0089}$	$k_{\text{eq}}$	0.010316	$0.01031^{+0.00021}_{-0.00020}$
$A_{100}^{\text{PS}}$	257	$262^{+60}_{-50}$	$\sigma_8$	0.8097	$0.807^{+0.037}_{-0.038}$	$100\theta_{\text{eq}}$	0.8169	$0.818^{+0.013}_{-0.013}$
$A_{143}^{\text{PS}}$	38.5	$43^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4586	$0.460^{+0.025}_{-0.025}$	$100\theta_{s,\text{eq}}$	0.4514	$0.4517^{+0.0065}_{-0.0066}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6093	$0.609^{+0.013}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.07084	$0.0705^{+0.0048}_{-0.0045}$
$A_{217}^{\text{PS}}$	96.4	$96^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9925	$0.992^{+0.020}_{-0.020}$	$H(0.57)$	92.2	$91.9^{+5.2}_{-4.8}$
$A^{\text{kSZ}}$	0.00	$< 8.27$	$\langle d^2 \rangle^{1/2}$	2.457	$2.459^{+0.052}_{-0.053}$	$D_A(0.57)$	1405	$1413^{+110}_{-100}$
$A_{100}^{\text{dustTT}}$	7.50	$7.50^{+3.7}_{-3.6}$	$z_{\text{re}}$	8.10	$7.77^{+3.8}_{-4.2}$	$F_{\text{AP}}(0.57)$	0.6781	$0.679^{+0.013}_{-0.012}$
$A_{143}^{\text{dustTT}}$	9.08	$9.05^{+3.6}_{-3.6}$	$10^9 A_s$	2.109	$2.10^{+0.16}_{-0.16}$	$f\sigma_8(0.57)$	0.4734	$0.473^{+0.010}_{-0.010}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.2}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8760	$1.877^{+0.024}_{-0.024}$	$\sigma_8(0.57)$	0.6001	$0.597^{+0.041}_{-0.041}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{40}$	1225.8	$1227^{+31}_{-29}$	$f_{2000}^{143}$	29.8	$30^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5717	$5727^{+77}_{-76}$	$f_{2000}^{143 \times 217}$	32.54	$33^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0491^{+0.0099}_{-0.0097}$	$D_{810}$	2532.6	$2533^{+27}_{-27}$	$f_{2000}^{217}$	106.04	$106.1^{+3.7}_{-3.6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.064}_{-0.063}$	$D_{1420}$	814.1	$814.5^{+9.6}_{-9.6}$	$\chi_{\text{lensing}}^2$	10.06	11.0 ( $\nu$ : 3.1)
$A_{143}^{\text{dustEE}}$	0.1003	$0.100^{+0.014}_{-0.013}$	$D_{2000}$	229.97	$230.1^{+3.1}_{-3.2}$	$\chi_{\text{lowTEB}}^2$	10494.87	10495.9 ( $\nu$ : 1.6)
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.091}_{-0.092}$	$n_{s,0.002}$	0.9659	$0.9659^{+0.0094}_{-0.0095}$	$\chi_{\text{plik}}^2$	2434.8	2453.5 ( $\nu$ : 23.2)
$A_{217}^{\text{dustEE}}$	0.653	$0.65^{+0.25}_{-0.25}$	$Y_P$	0.245341	$0.24535^{+0.00014}_{-0.00014}$	$\chi_{\text{prior}}^2$	7.12	19.5 ( $\nu$ : 15.5)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.075}_{-0.074}$	$Y_P^{\text{BBN}}$	0.246667	$0.24668^{+0.00014}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12939.7	12960.4 ( $\nu$ : 23.0)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.057}$	$10^5 \text{D}/\text{H}$	2.614	$2.608^{+0.059}_{-0.059}$			

Best-fit  $\chi_{\text{eff}}^2 = 12946.82$ ;  $\Delta\chi_{\text{eff}}^2 = -0.35$ ;  $\bar{\chi}_{\text{eff}}^2 = 12979.96$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.84$ ;  $R - 1 = 0.01082$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.06 ( $\Delta$  0.29) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c.Ap: 10494.87 ( $\Delta$  -0.41) plik\_dx11dr2\_HM\_v18.TTTEEE: 2434.77 ( $\Delta$  -0.14)

## 20 r

### 20.1 base\_r\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022242	$0.02224^{+0.00046}_{-0.00045}$	$\Omega_m h^3$	0.09601	$0.09597^{+0.00091}_{-0.00090}$	$100\theta_D$	0.16094	$0.16096^{+0.00054}_{-0.00053}$
$\Omega_c h^2$	0.11961	$0.1195^{+0.0044}_{-0.0042}$	$\sigma_8$	0.8307	$0.828^{+0.028}_{-0.028}$	$z_{\text{eq}}$	3390	$3387^{+99}_{-95}$
$100\theta_{\text{MC}}$	1.04089	$1.04089^{+0.00093}_{-0.00095}$	$\sigma_8 \Omega_m^{0.5}$	0.4654	$0.463^{+0.026}_{-0.026}$	$k_{\text{eq}}$	0.010346	$0.01034^{+0.00030}_{-0.00029}$
$\tau$	0.0795	$0.077^{+0.038}_{-0.037}$	$\sigma_8 \Omega_m^{0.25}$	0.6218	$0.619^{+0.026}_{-0.026}$	$100\theta_{\text{eq}}$	0.8151	$0.816^{+0.018}_{-0.018}$
$\ln(10^{10} A_s)$	3.093	$3.087^{+0.071}_{-0.072}$	$\sigma_8/h^{0.5}$	1.0120	$1.008^{+0.038}_{-0.038}$	$100\theta_{s,\text{eq}}$	0.4504	$0.4508^{+0.0095}_{-0.0094}$
$n_s$	0.9663	$0.967^{+0.012}_{-0.012}$	$\langle d^2 \rangle^{1/2}$	2.499	$2.490^{+0.089}_{-0.090}$	$r_{\text{drag}}/D_V(0.57)$	0.07145	$0.0715^{+0.0015}_{-0.0015}$
$r$	0.000	< 0.109	$z_{\text{re}}$	10.12	$9.78^{+3.4}_{-3.6}$	$H(0.57)$	92.90	$92.92^{+0.85}_{-0.82}$
$y_{\text{cal}}$	1.00034	$1.0004^{+0.0049}_{-0.0048}$	$10^9 A_s$	2.204	$2.19^{+0.16}_{-0.15}$	$D_A(0.57)$	1390.7	$1390^{+26}_{-26}$
$A_{217}^{\text{CIB}}$	66.6	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8797	$1.879^{+0.027}_{-0.027}$	$F_{\text{AP}}(0.57)$	0.6766	$0.6765^{+0.0069}_{-0.0065}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.07	—	$D_{40}$	1235.3	$1248^{+36}_{-35}$	$f\sigma_8(0.57)$	0.4836	$0.482^{+0.018}_{-0.018}$
$A_{143}^{\text{tSZ}}$	7.06	$5.19^{+3.7}_{-3.8}$	$D_{220}$	5716	$5715^{+81}_{-80}$	$\sigma_8(0.57)$	0.6174	$0.615^{+0.022}_{-0.022}$
$A_{100}^{\text{PS}}$	253	$257^{+50}_{-50}$	$D_{810}$	2534.4	$2534^{+27}_{-27}$	$r_{0.002}$	0.000	< 0.103
$A_{143}^{\text{PS}}$	39.7	$44^{+20}_{-20}$	$D_{1420}$	814.9	$814.8^{+9.9}_{-9.9}$	$r_{0.01}$	0.000	< 0.106
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{2000}$	230.53	$230.4^{+3.6}_{-3.7}$	$\ln(10^{10} A_t)$	-8.41	$-0.7^{+2.1}_{-2.5}$
$A_{217}^{\text{PS}}$	98.2	$97^{+20}_{-20}$	$n_{s,0.002}$	0.9663	$0.967^{+0.012}_{-0.012}$	$r_{10}$	0.0000	< 0.0522
$A^{\text{kSZ}}$	0.01	< 8.16	$Y_{\text{P}}$	0.245336	$0.24533^{+0.00021}_{-0.00021}$	$10^9 A_t$	0.000	< 0.238
$A_{100}^{\text{dustTT}}$	7.39	$7.39^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246663	$0.24666^{+0.00021}_{-0.00021}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.205
$A_{143}^{\text{dustTT}}$	9.02	$8.99^{+3.6}_{-3.6}$	$10^5 D/H$	2.616	$2.617^{+0.089}_{-0.087}$	$f_{2000}^{143}$	29.5	$30^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.1^{+8.2}_{-8.2}$	Age/Gyr	13.810	$13.810^{+0.077}_{-0.077}$	$f_{2000}^{143 \times 217}$	32.19	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$z_*$	1090.05	$1090.05^{+0.86}_{-0.84}$	$f_{2000}^{217}$	105.86	$105.9^{+4.0}_{-4.0}$
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.63	$144.67^{+0.97}_{-0.97}$	$\chi_{\text{lowTEB}}^2$	10496.5	10498.7 ( $\nu: 3.6$ )
$c_{217}$	0.99595	$0.9959^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04109	$1.04109^{+0.00091}_{-0.00093}$	$\chi_{\text{plik}}^2$	763.4	777.5 ( $\nu: 16.3$ )
$H_0$	67.38	$67.4^{+1.9}_{-1.9}$	$D_A/\text{Gpc}$	13.892	$13.896^{+0.089}_{-0.089}$	$\chi_{\text{prior}}^2$	2.04	7.33 ( $\nu: 6.4$ )
$\Omega_\Lambda$	0.6861	$0.687^{+0.025}_{-0.028}$	$z_{\text{drag}}$	1059.63	$1059.58^{+0.96}_{-0.91}$	$\chi_{\text{CMB}}^2$	11259.9	11276.2 ( $\nu: 16.6$ )
$\Omega_m$	0.3139	$0.313^{+0.028}_{-0.025}$	$r_{\text{drag}}$	147.34	$147.38^{+0.96}_{-0.95}$			
$\Omega_m h^2$	0.14250	$0.1424^{+0.0041}_{-0.0040}$	$k_D$	0.14051	$0.1405^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.94$ ;  $\Delta\chi_{\text{eff}}^2 = 0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.56$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.74$ ;  $R - 1 = 0.00544$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.51 ( $\Delta 0.04$ ) plik\_dx11dr2\_HM\_v18\_TT: 763.39 ( $\Delta 0.02$ )

## 20.2 base\_r\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022277	$0.02227^{+0.00040}_{-0.00040}$	$\sigma_8$	0.8295	$0.827^{+0.028}_{-0.028}$	$k_{\text{eq}}$	0.010302	$0.01030^{+0.00018}_{-0.00018}$
$\Omega_c h^2$	0.11897	$0.1189^{+0.0025}_{-0.0025}$	$\sigma_8 \Omega_m^{0.5}$	0.4619	$0.460^{+0.020}_{-0.020}$	$100\theta_{\text{eq}}$	0.8179	$0.818^{+0.011}_{-0.011}$
$100\theta_{\text{MC}}$	1.04095	$1.04096^{+0.00082}_{-0.00081}$	$\sigma_8 \Omega_m^{0.25}$	0.6190	$0.617^{+0.023}_{-0.023}$	$100\theta_{s,\text{eq}}$	0.4518	$0.4521^{+0.0057}_{-0.0056}$
$\tau$	0.0813	$0.079^{+0.035}_{-0.035}$	$\sigma_8/h^{0.5}$	1.0085	$1.006^{+0.036}_{-0.035}$	$r_{\text{drag}}/D_V(0.57)$	0.07166	$0.07170^{+0.00085}_{-0.00084}$
$\ln(10^{10} A_s)$	3.094	$3.090^{+0.068}_{-0.069}$	$\langle d^2 \rangle^{1/2}$	2.493	$2.485^{+0.085}_{-0.085}$	$H(0.57)$	93.01	$93.02^{+0.55}_{-0.53}$
$n_s$	0.9674	$0.9680^{+0.0087}_{-0.0087}$	$z_{\text{re}}$	10.25	$9.97^{+3.2}_{-3.3}$	$D_A(0.57)$	1387.2	$1387^{+15}_{-15}$
$r$	0.000	< 0.113	$10^9 A_s$	2.208	$2.20^{+0.15}_{-0.15}$	$F_{\text{AP}}(0.57)$	0.67567	$0.6755^{+0.0039}_{-0.0038}$
$y_{\text{cal}}$	1.00022	$1.0004^{+0.0049}_{-0.0049}$	$10^9 A_s e^{-2\tau}$	1.8765	$1.876^{+0.023}_{-0.023}$	$f\sigma_8(0.57)$	0.4819	$0.481^{+0.017}_{-0.017}$
$A_{217}^{\text{CIB}}$	67.2	$64^{+10}_{-10}$	$D_{40}$	1233.3	$1246^{+35}_{-33}$	$\sigma_8(0.57)$	0.6174	$0.616^{+0.021}_{-0.021}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{220}$	5718	$5717^{+80}_{-79}$	$r_{0.002}$	0.000	< 0.107
$A_{143}^{\text{tSZ}}$	7.19	$5.24^{+3.7}_{-3.8}$	$D_{810}$	2532.8	$2534^{+27}_{-27}$	$r_{0.01}$	0.000	< 0.110
$A_{100}^{\text{PS}}$	252	$256^{+60}_{-50}$	$D_{1420}$	814.7	$815.1^{+9.7}_{-9.7}$	$\ln(10^{10} A_t)$	-6.78	$-0.6^{+2.0}_{-2.5}$
$A_{143}^{\text{PS}}$	38.1	$43^{+20}_{-20}$	$D_{2000}$	230.48	$230.6^{+3.5}_{-3.5}$	$r_{10}$	0.0000	< 0.0544
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$n_{s,0.002}$	0.9674	$0.9680^{+0.0087}_{-0.0087}$	$10^9 A_t$	0.000	< 0.247
$A_{217}^{\text{PS}}$	96.8	$98^{+20}_{-20}$	$Y_{\text{P}}$	0.245352	$0.24535^{+0.00018}_{-0.00018}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.212
$A^{\text{kSZ}}$	0.00	< 8.05	$Y_{\text{P}}^{\text{BBN}}$	0.246678	$0.24667^{+0.00018}_{-0.00018}$	$f_{2000}^{143}$	29.5	$30^{+6}_{-5}$
$A_{100}^{\text{dustTT}}$	7.42	$7.41^{+3.7}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.609	$2.610^{+0.076}_{-0.075}$	$f_{2000}^{143 \times 217}$	32.14	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.01	$9.00^{+3.6}_{-3.6}$	Age/Gyr	13.802	$13.801^{+0.057}_{-0.058}$	$f_{2000}^{217}$	105.79	$105.8^{+3.9}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.2^{+8.1}_{-8.1}$	$z_*$	1089.95	$1089.95^{+0.61}_{-0.60}$	$\chi_{\text{lowTEB}}^2$	10496.5	10498.5 ( $\nu$ : 3.7)
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$r_*$	144.77	$144.80^{+0.64}_{-0.65}$	$\chi_{\text{plik}}^2$	763.5	777.1 ( $\nu$ : 16.0)
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$100\theta_*$	1.04115	$1.04116^{+0.00081}_{-0.00079}$	$\chi_{6\text{DF}}^2$	0.022	0.059 ( $\nu$ : 0.0)
$c_{217}$	0.99598	$0.9959^{+0.0029}_{-0.0028}$	$D_A/\text{Gpc}$	13.905	$13.907^{+0.062}_{-0.062}$	$\chi_{\text{MGS}}^2$	1.28	1.39 ( $\nu$ : 0.2)
$H_0$	67.65	$67.7^{+1.1}_{-1.1}$	$z_{\text{drag}}$	1059.63	$1059.63^{+0.92}_{-0.88}$	$\chi_{\text{DR11CMAS}}^2$	2.45	2.89 ( $\nu$ : 0.2)
$\Omega_\Lambda$	0.6899	$0.690^{+0.015}_{-0.015}$	$r_{\text{drag}}$	147.47	$147.50^{+0.69}_{-0.70}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	0.71 ( $\nu$ : 0.2)
$\Omega_m$	0.3101	$0.310^{+0.015}_{-0.015}$	$k_{\text{D}}$	0.14040	$0.14036^{+0.00089}_{-0.00088}$	$\chi_{\text{prior}}^2$	2.12	7.34 ( $\nu$ : 6.2)
$\Omega_m h^2$	0.14190	$0.1418^{+0.0024}_{-0.0024}$	$100\theta_{\text{D}}$	0.16093	$0.16094^{+0.00052}_{-0.00051}$	$\chi_{\text{CMB}}^2$	11259.9	11275.6 ( $\nu$ : 15.8)
$\Omega_m h^3$	0.09599	$0.09597^{+0.00092}_{-0.00091}$	$z_{\text{eq}}$	3375	$3373^{+58}_{-58}$	$\chi_{\text{BAO}}^2$	4.36	5.05 ( $\nu$ : 0.5)

Best-fit  $\chi_{\text{eff}}^2 = 11266.41$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11288.02$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.65$ ;  $R - 1 = 0.00859$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMAS: 2.45 ( $\Delta$  -0.00) DR11LOWZ: 0.61 ( $\Delta$  -0.01) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10496.46 ( $\Delta$  0.04) plik\_dx11dr2\_HM.v18.TT: 763.48 ( $\Delta$  -0.12)

### 20.3 base\_r\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022264	$0.02226^{+0.00046}_{-0.00044}$	$\Omega_m h^3$	0.09600	$0.09597^{+0.00091}_{-0.00090}$	$100\theta_D$	0.16092	$0.16094^{+0.00053}_{-0.00052}$
$\Omega_c h^2$	0.11935	$0.1191^{+0.0041}_{-0.0039}$	$\sigma_8$	0.8279	$0.827^{+0.028}_{-0.028}$	$z_{\text{eq}}$	3384	$3377^{+92}_{-89}$
$100\theta_{\text{MC}}$	1.04089	$1.04094^{+0.00091}_{-0.00092}$	$\sigma_8 \Omega_m^{0.5}$	0.4627	$0.461^{+0.025}_{-0.024}$	$k_{\text{eq}}$	0.010329	$0.01031^{+0.00028}_{-0.00027}$
$\tau$	0.0774	$0.078^{+0.037}_{-0.037}$	$\sigma_8 \Omega_m^{0.25}$	0.6189	$0.618^{+0.025}_{-0.025}$	$100\theta_{\text{eq}}$	0.8162	$0.818^{+0.017}_{-0.017}$
$\ln(10^{10} A_s)$	3.088	$3.089^{+0.071}_{-0.071}$	$\sigma_8/h^{0.5}$	1.0078	$1.006^{+0.038}_{-0.037}$	$100\theta_{s,\text{eq}}$	0.4510	$0.4517^{+0.0089}_{-0.0088}$
$n_s$	0.9667	$0.968^{+0.012}_{-0.012}$	$\langle d^2 \rangle^{1/2}$	2.490	$2.486^{+0.088}_{-0.089}$	$r_{\text{drag}}/D_V(0.57)$	0.07153	$0.0716^{+0.0014}_{-0.0014}$
$r$	0.000	< 0.111	$z_{\text{re}}$	9.91	$9.92^{+3.3}_{-3.5}$	$H(0.57)$	92.95	$93.00^{+0.81}_{-0.76}$
$y_{\text{cal}}$	1.00038	$1.0004^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.193	$2.20^{+0.16}_{-0.15}$	$D_A(0.57)$	1389.3	$1388^{+24}_{-24}$
$A_{217}^{\text{CIB}}$	66.5	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8789	$1.877^{+0.026}_{-0.026}$	$F_{\text{AP}}(0.57)$	0.6763	$0.6758^{+0.0064}_{-0.0061}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$D_{40}$	1233.8	$1247^{+36}_{-35}$	$f\sigma_8(0.57)$	0.4816	$0.481^{+0.018}_{-0.018}$
$A_{143}^{\text{tSZ}}$	7.08	$5.23^{+3.7}_{-3.8}$	$D_{220}$	5719	$5717^{+80}_{-80}$	$\sigma_8(0.57)$	0.6156	$0.616^{+0.022}_{-0.021}$
$A_{100}^{\text{PS}}$	253	$257^{+50}_{-50}$	$D_{810}$	2534.6	$2534^{+27}_{-27}$	$r_{0.002}$	0.000	< 0.105
$A_{143}^{\text{PS}}$	39.5	$43^{+20}_{-20}$	$D_{1420}$	815.2	$815.1^{+9.8}_{-9.8}$	$r_{0.01}$	0.000	< 0.108
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{2000}$	230.56	$230.5^{+3.6}_{-3.6}$	$\ln(10^{10} A_t)$	-10.73	$-0.6^{+2.0}_{-2.5}$
$A_{217}^{\text{PS}}$	98.3	$98^{+20}_{-20}$	$n_{s,0.002}$	0.9667	$0.968^{+0.012}_{-0.012}$	$r_{10}$	0.0000	< 0.0533
$A^{\text{kSZ}}$	0.00	< 8.08	$Y_{\text{P}}$	0.245346	$0.24534^{+0.00020}_{-0.00020}$	$10^9 A_t$	0.000	< 0.243
$A_{100}^{\text{dustTT}}$	7.40	$7.40^{+3.7}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246673	$0.24667^{+0.00020}_{-0.00020}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.208
$A_{143}^{\text{dustTT}}$	9.01	$9.00^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.611	$2.612^{+0.086}_{-0.086}$	$f_{2000}^{143}$	29.5	$30^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.2}_{-8.1}$	$\text{Age}/\text{Gyr}$	13.806	$13.803^{+0.072}_{-0.074}$	$f_{2000}^{143 \times 217}$	32.15	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$z_*$	1090.00	$1089.97^{+0.81}_{-0.80}$	$f_{2000}^{217}$	105.87	$105.8^{+4.0}_{-4.0}$
$c_{100}$	0.99790	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.68	$144.76^{+0.91}_{-0.91}$	$\chi_{\text{lowTEB}}^2$	10496.2	10498.6 ( $\nu$ : 3.7)
$c_{217}$	0.99591	$0.9959^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04108	$1.04113^{+0.00089}_{-0.00090}$	$\chi_{\text{plik}}^2$	763.8	777.5 ( $\nu$ : 16.5)
$H_0$	67.48	$67.6^{+1.8}_{-1.8}$	$D_A/\text{Gpc}$	13.897	$13.904^{+0.085}_{-0.085}$	$\chi_{\text{JLA}}^2$	706.78	706.86 ( $\nu$ : 0.1)
$\Omega_\Lambda$	0.6876	$0.689^{+0.024}_{-0.025}$	$z_{\text{drag}}$	1059.63	$1059.62^{+0.92}_{-0.89}$	$\chi_{\text{prior}}^2$	2.02	7.35 ( $\nu$ : 6.3)
$\Omega_m$	0.3124	$0.311^{+0.025}_{-0.024}$	$r_{\text{drag}}$	147.38	$147.46^{+0.91}_{-0.91}$	$\chi_{\text{CMB}}^2$	11260.0	11276.1 ( $\nu$ : 16.5)
$\Omega_m h^2$	0.14226	$0.1420^{+0.0039}_{-0.0037}$	$k_D$	0.14048	$0.1404^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11968.76$ ;  $\Delta\chi_{\text{eff}}^2 = 0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11990.32$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.72$ ;  $R - 1 = 0.00627$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10496.17 ( $\Delta$  -0.27) plik\_dx11dr2\_HM\_v18\_TT: 763.79 ( $\Delta$  0.37) SN - JLA December\_2013: 706.77 ( $\Delta$  0.01)

## 20.4 base\_r\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022286	$0.02228^{+0.00046}_{-0.00045}$	$\Omega_m h^3$	0.09605	$0.09598^{+0.00091}_{-0.00090}$	$100\theta_D$	0.16090	$0.16093^{+0.00053}_{-0.00053}$
$\Omega_c h^2$	0.11921	$0.1189^{+0.0042}_{-0.0040}$	$\sigma_8$	0.8305	$0.827^{+0.028}_{-0.028}$	$z_{\text{eq}}$	3381	$3374^{+95}_{-92}$
$100\theta_{\text{MC}}$	1.04095	$1.04096^{+0.00091}_{-0.00092}$	$\sigma_8 \Omega_m^{0.5}$	0.4634	$0.461^{+0.026}_{-0.025}$	$k_{\text{eq}}$	0.010320	$0.01030^{+0.00029}_{-0.00028}$
$\tau$	0.0813	$0.079^{+0.037}_{-0.037}$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.617^{+0.025}_{-0.025}$	$100\theta_{\text{eq}}$	0.8168	$0.818^{+0.018}_{-0.018}$
$\ln(10^{10} A_s)$	3.095	$3.090^{+0.071}_{-0.071}$	$\sigma_8/h^{0.5}$	1.0104	$1.006^{+0.038}_{-0.037}$	$100\theta_{s,\text{eq}}$	0.4513	$0.4520^{+0.0092}_{-0.0091}$
$n_s$	0.9674	$0.968^{+0.012}_{-0.012}$	$\langle d^2 \rangle^{1/2}$	2.496	$2.485^{+0.088}_{-0.089}$	$r_{\text{drag}}/D_V(0.57)$	0.07159	$0.0717^{+0.0014}_{-0.0014}$
$r$	0.000	< 0.113	$z_{\text{re}}$	10.26	$9.96^{+3.3}_{-3.5}$	$H(0.57)$	92.99	$93.03^{+0.82}_{-0.78}$
$y_{\text{cal}}$	1.00028	$1.0004^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.209	$2.20^{+0.16}_{-0.15}$	$D_A(0.57)$	1388.1	$1387^{+25}_{-25}$
$A_{217}^{\text{CIB}}$	66.8	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8777	$1.877^{+0.027}_{-0.027}$	$F_{\text{AP}}(0.57)$	0.6760	$0.6756^{+0.0066}_{-0.0063}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$D_{40}$	1233.7	$1246^{+36}_{-35}$	$f\sigma_8(0.57)$	0.4828	$0.481^{+0.018}_{-0.018}$
$A_{143}^{\text{tSZ}}$	7.15	$5.24^{+3.7}_{-3.8}$	$D_{220}$	5718	$5718^{+81}_{-80}$	$\sigma_8(0.57)$	0.6179	$0.616^{+0.022}_{-0.021}$
$A_{100}^{\text{PS}}$	252	$256^{+50}_{-50}$	$D_{810}$	2533.8	$2534^{+27}_{-27}$	$r_{0.002}$	0.000	< 0.107
$A_{143}^{\text{PS}}$	38.4	$43^{+20}_{-20}$	$D_{1420}$	815.2	$815.2^{+9.8}_{-9.8}$	$r_{0.01}$	0.000	< 0.110
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.68	$230.6^{+3.6}_{-3.6}$	$\ln(10^{10} A_t)$	-6.13	$-0.6^{+2.1}_{-2.5}$
$A_{217}^{\text{PS}}$	97.3	$98^{+20}_{-20}$	$n_{s,0.002}$	0.9674	$0.968^{+0.012}_{-0.012}$	$r_{10}$	0.0000	< 0.0542
$A^{\text{kSZ}}$	0.00	< 8.07	$Y_{\text{P}}$	0.245356	$0.24535^{+0.00020}_{-0.00020}$	$10^9 A_t$	0.000	< 0.247
$A_{100}^{\text{dustTT}}$	7.48	$7.40^{+3.7}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246682	$0.24668^{+0.00021}_{-0.00020}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.211
$A_{143}^{\text{dustTT}}$	9.04	$9.00^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.607	$2.609^{+0.087}_{-0.086}$	$f_{2000}^{143}$	29.2	$30^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.2^{+8.1}_{-8.1}$	$\text{Age}/\text{Gyr}$	13.802	$13.801^{+0.074}_{-0.075}$	$f_{2000}^{143 \times 217}$	31.93	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$z_*$	1089.96	$1089.95^{+0.83}_{-0.81}$	$f_{2000}^{217}$	105.62	$105.8^{+4.0}_{-4.0}$
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.70	$144.78^{+0.93}_{-0.94}$	$\chi_{\text{lowTEB}}^2$	10496.5	10498.6 ( $\nu$ : 3.8)
$c_{217}$	0.99592	$0.9959^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04114	$1.04116^{+0.00090}_{-0.00090}$	$\chi_{\text{plik}}^2$	763.5	777.6 ( $\nu$ : 16.7)
$H_0$	67.57	$67.7^{+1.9}_{-1.9}$	$D_A/\text{Gpc}$	13.898	$13.906^{+0.086}_{-0.087}$	$\chi_{\text{H070p6}}^2$	0.83	0.85 ( $\nu$ : 0.1)
$\Omega_\Lambda$	0.6887	$0.690^{+0.024}_{-0.026}$	$z_{\text{drag}}$	1059.70	$1059.64^{+0.94}_{-0.92}$	$\chi_{\text{prior}}^2$	2.00	7.34 ( $\nu$ : 6.4)
$\Omega_m$	0.3113	$0.310^{+0.026}_{-0.024}$	$r_{\text{drag}}$	147.39	$147.48^{+0.93}_{-0.94}$	$\chi_{\text{CMB}}^2$	11260.0	11276.2 ( $\nu$ : 16.8)
$\Omega_m h^2$	0.14214	$0.1419^{+0.0040}_{-0.0038}$	$k_D$	0.14048	$0.1404^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 11262.83$ ;  $\Delta\chi_{\text{eff}}^2 = 0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.42$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.73$ ;  $R - 1 = 0.00723$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10496.48 ( $\Delta$  0.16) plik\_dx11dr2\_HM.v18\_TT: 763.51 ( $\Delta$  -0.15) Hubble - H070p6: 0.83 ( $\Delta$  0.00)

## 20.5 base\_r\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02224^{+0.00046}_{-0.00045}$	$\Omega_m h^3$	$0.09597^{+0.00090}_{-0.00089}$	$100\theta_D$	$0.16096^{+0.00053}_{-0.00053}$
$\Omega_c h^2$	$0.1194^{+0.0043}_{-0.0042}$	$\sigma_8$	$0.829^{+0.027}_{-0.025}$	$z_{\text{eq}}$	$3385^{+97}_{-95}$
$100\theta_{\text{MC}}$	$1.04090^{+0.00092}_{-0.00093}$	$\sigma_8 \Omega_m^{0.5}$	$0.464^{+0.026}_{-0.025}$	$k_{\text{eq}}$	$0.01033^{+0.00030}_{-0.00029}$
$\tau$	$0.078^{+0.034}_{-0.034}$	$\sigma_8 \Omega_m^{0.25}$	$0.620^{+0.025}_{-0.025}$	$100\theta_{\text{eq}}$	$0.816^{+0.018}_{-0.018}$
$\ln(10^{10} A_s)$	$3.089^{+0.066}_{-0.065}$	$\sigma_8/h^{0.5}$	$1.009^{+0.037}_{-0.036}$	$100\theta_{\text{s,eq}}$	$0.4510^{+0.0094}_{-0.0093}$
$n_s$	$0.967^{+0.012}_{-0.012}$	$\langle d^2 \rangle^{1/2}$	$2.492^{+0.087}_{-0.085}$	$r_{\text{drag}}/D_V(0.57)$	$0.0715^{+0.0015}_{-0.0014}$
$r$	$< 0.110$	$z_{\text{re}}$	$9.92^{+2.8}_{-3.3}$	$H(0.57)$	$92.94^{+0.85}_{-0.80}$
$y_{\text{cal}}$	$1.0004^{+0.0049}_{-0.0049}$	$10^9 A_s$	$2.20^{+0.15}_{-0.14}$	$D_A(0.57)$	$1390^{+26}_{-25}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.879^{+0.027}_{-0.027}$	$F_{\text{AP}}(0.57)$	$0.6764^{+0.0068}_{-0.0065}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$D_{40}$	$1248^{+36}_{-35}$	$f\sigma_8(0.57)$	$0.482^{+0.018}_{-0.017}$
$A_{143}^{\text{tSZ}}$	$5.22^{+3.7}_{-3.8}$	$D_{220}$	$5715^{+81}_{-80}$	$\sigma_8(0.57)$	$0.616^{+0.020}_{-0.020}$
$A_{100}^{\text{PS}}$	$257^{+50}_{-50}$	$D_{810}$	$2534^{+27}_{-27}$	$r_{0.002}$	$< 0.104$
$A_{143}^{\text{PS}}$	$43^{+20}_{-20}$	$D_{1420}$	$814.9^{+9.8}_{-9.8}$	$r_{0.01}$	$< 0.107$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{2000}$	$230.5^{+3.6}_{-3.6}$	$\ln(10^{10} A_t)$	$-0.6^{+2.1}_{-2.5}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$n_{\text{s},0.002}$	$0.967^{+0.012}_{-0.012}$	$r_{10}$	$< 0.0529$
$A^{\text{kSZ}}$	$< 8.08$	$Y_{\text{P}}$	$0.24533^{+0.00020}_{-0.00020}$	$10^9 A_t$	$< 0.242$
$A_{100}^{\text{dustTT}}$	$7.40^{+3.7}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24666^{+0.00021}_{-0.00021}$	$10^9 A_t e^{-2\tau}$	$< 0.207$
$A_{143}^{\text{dustTT}}$	$9.00^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	$2.616^{+0.087}_{-0.086}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.1}_{-8.1}$	$\text{Age}/\text{Gyr}$	$13.808^{+0.075}_{-0.077}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$z_*$	$1090.03^{+0.85}_{-0.84}$	$f_{2000}^{217}$	$105.9^{+4.0}_{-4.0}$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	$144.68^{+0.96}_{-0.96}$	$\chi_{\text{lowTEB}}^2$	$10498.7 (\nu: 3.6)$
$c_{217}$	$0.9959^{+0.0028}_{-0.0028}$	$100\theta_*$	$1.04109^{+0.00090}_{-0.00091}$	$\chi_{\text{plik}}^2$	$777.4 (\nu: 16.2)$
$H_0$	$67.5^{+1.9}_{-1.9}$	$D_A/\text{Gpc}$	$13.897^{+0.089}_{-0.088}$	$\chi_{\text{prior}}^2$	$7.32 (\nu: 6.3)$
$\Omega_\Lambda$	$0.687^{+0.025}_{-0.027}$	$z_{\text{drag}}$	$1059.60^{+0.97}_{-0.92}$	$\chi_{\text{CMB}}^2$	$11276.1 (\nu: 16.4)$
$\Omega_m$	$0.313^{+0.027}_{-0.025}$	$r_{\text{drag}}$	$147.39^{+0.96}_{-0.95}$		
$\Omega_m h^2$	$0.1423^{+0.0041}_{-0.0040}$	$k_D$	$0.1404^{+0.0010}_{-0.0010}$		

$$\bar{\chi}_{\text{eff}}^2 = 11283.39; \Delta\bar{\chi}_{\text{eff}}^2 = 1.75; R - 1 = 0.00636$$

## 20.6 base\_r\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022283	$0.02225^{+0.00031}_{-0.00030}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.887	$13.891^{+0.057}_{-0.057}$
$\Omega_c h^2$	0.11977	$0.1197^{+0.0028}_{-0.0028}$	$A_{217}^{\text{dustTE}}$	1.68	$1.67^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1059.70	$1059.64^{+0.60}_{-0.62}$
$100\theta_{\text{MC}}$	1.04078	$1.04077^{+0.00062}_{-0.00063}$	$c_{100}$	0.99826	$0.9982^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.25	$147.30^{+0.61}_{-0.61}$
$\tau$	0.0829	$0.078^{+0.033}_{-0.033}$	$c_{217}$	0.99577	$0.9960^{+0.0028}_{-0.0028}$	$k_D$	0.14063	$0.14055^{+0.00065}_{-0.00064}$
$\ln(10^{10} A_s)$	3.101	$3.092^{+0.064}_{-0.063}$	$H_0$	67.32	$67.3^{+1.3}_{-1.2}$	$100\theta_D$	0.160864	$0.16091^{+0.00036}_{-0.00036}$
$n_s$	0.9659	$0.9652^{+0.0093}_{-0.0091}$	$\Omega_\Lambda$	0.6851	$0.685^{+0.017}_{-0.018}$	$z_{\text{eq}}$	3395	$3392^{+64}_{-63}$
$r$	0.000	< 0.106	$\Omega_m$	0.3149	$0.315^{+0.018}_{-0.017}$	$k_{\text{eq}}$	0.010361	$0.01035^{+0.00019}_{-0.00019}$
$y_{\text{cal}}$	1.00023	$1.0004^{+0.0049}_{-0.0049}$	$\Omega_m h^2$	0.14270	$0.1426^{+0.0027}_{-0.0026}$	$100\theta_{\text{eq}}$	0.8143	$0.815^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	63.2	$64^{+10}_{-10}$	$\Omega_m h^3$	0.09606	$0.09598^{+0.00061}_{-0.00057}$	$100\theta_{s,\text{eq}}$	0.4500	$0.4502^{+0.0062}_{-0.0061}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.48	—	$\sigma_8$	0.8342	$0.830^{+0.026}_{-0.025}$	$r_{\text{drag}}/D_V(0.57)$	0.07138	$0.07140^{+0.00095}_{-0.00093}$
$A_{143}^{\text{tSZ}}$	6.88	$5.37^{+3.6}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4681	$0.466^{+0.019}_{-0.019}$	$H(0.57)$	92.89	$92.88^{+0.55}_{-0.53}$
$A_{100}^{\text{PS}}$	251	$260^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6249	$0.622^{+0.021}_{-0.021}$	$D_A(0.57)$	1391.4	$1392^{+17}_{-17}$
$A_{143}^{\text{PS}}$	45.3	$43^{+10}_{-20}$	$\sigma_8/h^{0.5}$	1.0168	$1.012^{+0.032}_{-0.032}$	$F_{\text{AP}}(0.57)$	0.67689	$0.6769^{+0.0044}_{-0.0043}$
$A_{143 \times 217}^{\text{PS}}$	46.7	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.512	$2.502^{+0.078}_{-0.077}$	$f\sigma_8(0.57)$	0.4859	$0.483^{+0.015}_{-0.015}$
$A_{217}^{\text{PS}}$	103.9	$98^{+20}_{-20}$	$z_{\text{re}}$	10.41	$9.96^{+3.0}_{-3.1}$	$\sigma_8(0.57)$	0.6198	$0.617^{+0.020}_{-0.019}$
$A^{\text{kSZ}}$	0.01	< 7.80	$10^9 A_s$	2.222	$2.20^{+0.14}_{-0.14}$	$r_{0.002}$	0.0001	< 0.0987
$A_{100}^{\text{dustTT}}$	7.42	$7.38^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8826	$1.881^{+0.024}_{-0.023}$	$r_{0.01}$	0.000	< 0.102
$A_{143}^{\text{dustTT}}$	8.93	$8.93^{+3.6}_{-3.6}$	$D_{40}$	1239.5	$1253^{+33}_{-31}$	$\ln(10^{10} A_t)$	-6.35	$-0.7^{+2.0}_{-2.5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.0^{+8.1}_{-8.1}$	$D_{220}$	5726	$5726^{+75}_{-75}$	$r_{10}$	0.0000	< 0.0500
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	$D_{810}$	2537.0	$2535^{+27}_{-26}$	$10^9 A_t$	0.000	< 0.232
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	815.8	$814.9^{+9.4}_{-9.4}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.199
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0483^{+0.0099}_{-0.0097}$	$D_{2000}$	230.93	$230.5^{+3.2}_{-3.2}$	$f_{2000}^{143}$	28.4	$29^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0999^{+0.064}_{-0.063}$	$n_{s,0.002}$	0.9659	$0.9652^{+0.0093}_{-0.0091}$	$f_{2000}^{143 \times 217}$	31.66	$32^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1004	$0.0996^{+0.014}_{-0.013}$	$Y_P$	0.245355	$0.24534^{+0.00014}_{-0.00014}$	$f_{2000}^{217}$	105.12	$105.8^{+3.7}_{-3.7}$
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.223^{+0.091}_{-0.092}$	$Y_P^{\text{BBN}}$	0.246681	$0.24666^{+0.00014}_{-0.00014}$	$\chi_{\text{lowTEB}}^2$	10497.2	$10499.2 (\nu: 3.4)$
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	2.608	$2.614^{+0.058}_{-0.058}$	$\chi_{\text{plik}}^2$	2431.8	$2450.7 (\nu: 22.8)$
$A_{100}^{\text{dustTE}}$	0.140	$0.142^{+0.074}_{-0.074}$	Age/Gyr	13.8094	$13.813^{+0.049}_{-0.050}$	$\chi_{\text{prior}}^2$	6.61	$19.1 (\nu: 15.1)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.058}_{-0.057}$	$z_*$	1090.01	$1090.05^{+0.57}_{-0.57}$	$\chi_{\text{CMB}}^2$	12929.0	$12949.9 (\nu: 23.5)$
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.16}_{-0.17}$	$r_*$	144.56	$144.60^{+0.62}_{-0.62}$			
$A_{143}^{\text{dustTE}}$	0.153	$0.16^{+0.10}_{-0.10}$	$100\theta_*$	1.04098	$1.04097^{+0.00061}_{-0.00062}$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.59$ ;  $\Delta\chi_{\text{eff}}^2 = 0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.99$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.29$ ;  $R - 1 = 0.00631$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.21 ( $\Delta$  0.28) plik\_dx11dr2\_HM.v18\_TTTEEE: 2431.77 ( $\Delta$  0.12)

## 20.7 base\_r\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022317	$0.02229^{+0.00028}_{-0.00028}$	$A_{217}^{\text{dustTE}}$	1.671	$1.67^{+0.50}_{-0.49}$	$r_{\text{drag}}$	147.36	$147.40^{+0.50}_{-0.50}$
$\Omega_c h^2$	0.11922	$0.1192^{+0.0021}_{-0.0021}$	$c_{100}$	0.99819	$0.9982^{+0.0015}_{-0.0015}$	$k_D$	0.14055	$0.14048^{+0.00060}_{-0.00058}$
$100\theta_{\text{MC}}$	1.04081	$1.04084^{+0.00058}_{-0.00058}$	$c_{217}$	0.99586	$0.9960^{+0.0029}_{-0.0028}$	$100\theta_D$	0.160841	$0.16089^{+0.00035}_{-0.00034}$
$\tau$	0.0836	$0.081^{+0.031}_{-0.032}$	$H_0$	67.55	$67.55^{+0.93}_{-0.92}$	$z_{\text{eq}}$	3382.2	$3381^{+47}_{-47}$
$\ln(10^{10} A_s)$	3.101	$3.095^{+0.062}_{-0.063}$	$\Omega_\Lambda$	0.6884	$0.688^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010323	$0.01032^{+0.00014}_{-0.00014}$
$n_s$	0.9671	$0.9665^{+0.0079}_{-0.0080}$	$\Omega_m$	0.3116	$0.312^{+0.013}_{-0.013}$	$100\theta_{\text{eq}}$	0.8167	$0.8169^{+0.0090}_{-0.0088}$
$r$	0.000	< 0.108	$\Omega_m h^2$	0.14218	$0.1421^{+0.0020}_{-0.0020}$	$100\theta_{s,\text{eq}}$	0.45117	$0.4513^{+0.0046}_{-0.0045}$
$y_{\text{cal}}$	1.00009	$1.0004^{+0.0049}_{-0.0049}$	$\Omega_m h^3$	0.09604	$0.09599^{+0.00062}_{-0.00058}$	$r_{\text{drag}}/D_V(0.57)$	0.07156	$0.07157^{+0.00071}_{-0.00069}$
$A_{217}^{\text{CIB}}$	64.0	$64^{+10}_{-10}$	$\sigma_8$	0.8324	$0.830^{+0.026}_{-0.025}$	$H(0.57)$	92.982	$92.97^{+0.42}_{-0.42}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.37	—	$\sigma_8 \Omega_m^{0.5}$	0.4646	$0.463^{+0.017}_{-0.017}$	$D_A(0.57)$	1388.4	$1389^{+13}_{-13}$
$A_{143}^{\text{tSZ}}$	7.02	$5.40^{+3.6}_{-3.8}$	$\sigma_8 \Omega_m^{0.25}$	0.6219	$0.620^{+0.020}_{-0.020}$	$F_{\text{AP}}(0.57)$	0.67605	$0.6760^{+0.0032}_{-0.0032}$
$A_{100}^{\text{PS}}$	252	$259^{+50}_{-50}$	$\sigma_8/h^{0.5}$	1.0128	$1.010^{+0.032}_{-0.031}$	$f\sigma_8(0.57)$	0.4840	$0.483^{+0.015}_{-0.015}$
$A_{143}^{\text{PS}}$	43.4	$43^{+10}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.503	$2.498^{+0.077}_{-0.076}$	$\sigma_8(0.57)$	0.6192	$0.618^{+0.019}_{-0.019}$
$A_{143 \times 217}^{\text{PS}}$	43.4	$40^{+20}_{-20}$	$z_{\text{re}}$	10.46	$10.2^{+2.9}_{-3.0}$	$r_{0.002}$	0.000	< 0.101
$A_{217}^{\text{PS}}$	102.1	$98^{+20}_{-20}$	$10^9 A_s$	2.221	$2.21^{+0.14}_{-0.14}$	$r_{0.01}$	0.000	< 0.105
$A^{\text{kSZ}}$	0.00	< 7.72	$10^9 A_s e^{-2\tau}$	1.8790	$1.879^{+0.022}_{-0.022}$	$\ln(10^{10} A_t)$	-6.08	$-0.6^{+2.0}_{-2.5}$
$A_{100}^{\text{dustTT}}$	7.31	$7.40^{+3.7}_{-3.7}$	$D_{40}$	1236.3	$1251^{+33}_{-31}$	$r_{10}$	0.0000	< 0.0513
$A_{143}^{\text{dustTT}}$	8.97	$8.90^{+3.6}_{-3.6}$	$D_{220}$	5725	$5727^{+75}_{-75}$	$10^9 A_t$	0.000	< 0.238
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.0^{+8.2}_{-8.2}$	$D_{810}$	2534.9	$2535^{+26}_{-26}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.203
$A_{217}^{\text{dustTT}}$	82.4	$82^{+10}_{-10}$	$D_{1420}$	815.5	$815.2^{+9.5}_{-9.3}$	$f_{2000}^{143}$	28.5	$29^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{2000}$	230.87	$230.6^{+3.2}_{-3.1}$	$f_{2000}^{143 \times 217}$	31.66	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0485^{+0.0098}_{-0.0097}$	$n_{s,0.002}$	0.9671	$0.9665^{+0.0079}_{-0.0080}$	$f_{2000}^{217}$	105.15	$105.6^{+3.6}_{-3.6}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0999	$0.100^{+0.064}_{-0.063}$	$Y_{\text{P}}$	0.245369	$0.24535^{+0.00012}_{-0.00013}$	$\chi_{\text{lowTEB}}^2$	10497.0	10499.1 ( $\nu$ : 3.7)
$A_{143}^{\text{dustEE}}$	0.1004	$0.0998^{+0.014}_{-0.013}$	$Y_{\text{P}}^{\text{BBN}}$	0.246696	$0.24668^{+0.00012}_{-0.00013}$	$\chi_{\text{plik}}^2$	2432.0	2450.4 ( $\nu$ : 22.7)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224^{+0.090}_{-0.091}$	$10^5 D/H$	2.601	$2.607^{+0.053}_{-0.052}$	$\chi_{6\text{DF}}^2$	0.037	0.063 ( $\nu$ : 0.0)
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.26}_{-0.25}$	Age/Gyr	13.8026	$13.805^{+0.042}_{-0.042}$	$\chi_{\text{MGS}}^2$	1.16	1.23 ( $\nu$ : 0.1)
$A_{100}^{\text{dustTE}}$	0.139	$0.141^{+0.074}_{-0.074}$	$z_*$	1089.918	$1089.95^{+0.47}_{-0.45}$	$\chi_{\text{DR11CMass}}^2$	2.55	2.85 ( $\nu$ : 0.2)
$A_{100 \times 143}^{\text{dustTE}}$	0.130	$0.132^{+0.058}_{-0.057}$	$r_*$	144.674	$144.71^{+0.49}_{-0.48}$	$\chi_{\text{DR11LOWZ}}^2$	0.75	0.83 ( $\nu$ : 0.1)
$A_{100 \times 217}^{\text{dustTE}}$	0.306	$0.30^{+0.16}_{-0.16}$	$100\theta_*$	1.04101	$1.04103^{+0.00057}_{-0.00058}$	$\chi_{\text{prior}}^2$	6.73	19.2 ( $\nu$ : 15.1)
$A_{143}^{\text{dustTE}}$	0.154	$0.16^{+0.10}_{-0.10}$	$D_A/\text{Gpc}$	13.8975	$13.900^{+0.047}_{-0.046}$	$\chi_{\text{CMB}}^2$	12929.0	12949.5 ( $\nu$ : 23.2)
$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$z_{\text{drag}}$	1059.74	$1059.68^{+0.60}_{-0.58}$	$\chi_{\text{BAO}}^2$	4.49	4.97 ( $\nu$ : 0.4)

Best-fit  $\chi_{\text{eff}}^2 = 12940.19$ ;  $\Delta\chi_{\text{eff}}^2 = 0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.68$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.20$ ;  $R - 1 = 0.00847$



$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.04 ( $\Delta$  0.01) MGS: 1.16 ( $\Delta$  -0.06) DR11CMass: 2.55 ( $\Delta$  0.05) DR11LOWZ: 0.75 ( $\Delta$  0.07) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10496.98  
( $\Delta$  -0.44) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.99 ( $\Delta$  0.46)

20.8 base\_r\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022279	$0.02226^{+0.00030}_{-0.00030}$	$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.889	$13.894^{+0.057}_{-0.056}$
$\Omega_c h^2$	0.11967	$0.1195^{+0.0027}_{-0.0028}$	$A_{217}^{\text{dustTE}}$	1.673	$1.67^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1059.70	$1059.66^{+0.62}_{-0.60}$
$100\theta_{\text{MC}}$	1.04082	$1.04079^{+0.00062}_{-0.00062}$	$c_{100}$	0.99820	$0.9982^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.28	$147.34^{+0.60}_{-0.60}$
$\tau$	0.0813	$0.079^{+0.033}_{-0.033}$	$c_{217}$	0.99598	$0.9960^{+0.0029}_{-0.0028}$	$k_D$	0.14060	$0.14052^{+0.00065}_{-0.00063}$
$\ln(10^{10} A_s)$	3.097	$3.093^{+0.063}_{-0.064}$	$H_0$	67.36	$67.4^{+1.2}_{-1.2}$	$100\theta_D$	0.160879	$0.16090^{+0.00036}_{-0.00035}$
$n_s$	0.9653	$0.9657^{+0.0092}_{-0.0091}$	$\Omega_\Lambda$	0.6857	$0.686^{+0.016}_{-0.017}$	$z_{\text{eq}}$	3392	$3388^{+61}_{-62}$
$r$	0.000	< 0.107	$\Omega_m$	0.3143	$0.314^{+0.017}_{-0.016}$	$k_{\text{eq}}$	0.010353	$0.01034^{+0.00019}_{-0.00019}$
$y_{\text{cal}}$	1.00013	$1.0004^{+0.0049}_{-0.0049}$	$\Omega_m h^2$	0.14259	$0.1424^{+0.0026}_{-0.0026}$	$100\theta_{\text{eq}}$	0.8148	$0.816^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	66.1	$64^{+10}_{-10}$	$\Omega_m h^3$	0.09605	$0.09598^{+0.00061}_{-0.00058}$	$100\theta_{s,\text{eq}}$	0.4502	$0.4506^{+0.0061}_{-0.0059}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\sigma_8$	0.8321	$0.830^{+0.026}_{-0.025}$	$r_{\text{drag}}/D_V(0.57)$	0.07142	$0.07146^{+0.00092}_{-0.00091}$
$A_{143}^{\text{tSZ}}$	7.22	$5.39^{+3.6}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.465^{+0.019}_{-0.019}$	$H(0.57)$	92.91	$92.91^{+0.54}_{-0.52}$
$A_{100}^{\text{PS}}$	253	$259^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.621^{+0.021}_{-0.021}$	$D_A(0.57)$	1390.9	$1390^{+16}_{-16}$
$A_{143}^{\text{PS}}$	39.7	$43^{+10}_{-20}$	$\sigma_8/h^{0.5}$	1.0138	$1.011^{+0.032}_{-0.032}$	$F_{\text{AP}}(0.57)$	0.67673	$0.6766^{+0.0043}_{-0.0042}$
$A_{143 \times 217}^{\text{PS}}$	36.2	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.507	$2.500^{+0.077}_{-0.078}$	$f\sigma_8(0.57)$	0.4845	$0.483^{+0.015}_{-0.015}$
$A_{217}^{\text{PS}}$	99.0	$98^{+20}_{-20}$	$z_{\text{re}}$	10.27	$10.0^{+3.0}_{-3.1}$	$\sigma_8(0.57)$	0.6183	$0.617^{+0.020}_{-0.019}$
$A^{\text{kSZ}}$	0.00	< 7.76	$10^9 A_s$	2.213	$2.21^{+0.14}_{-0.14}$	$r_{0.002}$	0.000	< 0.100
$A_{100}^{\text{dustTT}}$	7.42	$7.40^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8809	$1.881^{+0.023}_{-0.023}$	$r_{0.01}$	0.000	< 0.104
$A_{143}^{\text{dustTT}}$	8.87	$8.91^{+3.6}_{-3.6}$	$D_{40}$	1239.7	$1252^{+34}_{-31}$	$\ln(10^{10} A_t)$	-8.08	$-0.7^{+2.0}_{-2.5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.0^{+8.1}_{-8.2}$	$D_{220}$	5727	$5726^{+75}_{-75}$	$r_{10}$	0.0000	< 0.0506
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{810}$	2534.8	$2535^{+27}_{-26}$	$10^9 A_t$	0.000	< 0.235
$A_{100}^{\text{dustEE}}$	0.0811	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	814.8	$815.0^{+9.5}_{-9.4}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.201
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0484^{+0.0099}_{-0.0097}$	$D_{2000}$	230.53	$230.5^{+3.2}_{-3.2}$	$f_{2000}^{143}$	29.0	$29^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.064}$	$n_{s,0.002}$	0.9653	$0.9657^{+0.0092}_{-0.0091}$	$f_{2000}^{143 \times 217}$	32.03	$32^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1003	$0.0997^{+0.013}_{-0.013}$	$Y_P$	0.245353	$0.24534^{+0.00014}_{-0.00014}$	$f_{2000}^{217}$	105.66	$105.7^{+3.6}_{-3.6}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.090}_{-0.092}$	$Y_P^{\text{BBN}}$	0.246679	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{lowTEB}}^2$	10497.1	10499.1 ( $\nu$ : 3.5)
$A_{217}^{\text{dustEE}}$	0.649	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	2.609	$2.611^{+0.058}_{-0.057}$	$\chi_{\text{plik}}^2$	2431.5	2450.7 ( $\nu$ : 22.7)
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.074}_{-0.074}$	Age/Gyr	13.8084	$13.810^{+0.048}_{-0.050}$	$\chi_{\text{JLA}}^2$	706.83	706.87 ( $\nu$ : 0.0)
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.058}_{-0.057}$	$z_*$	1090.01	$1090.01^{+0.56}_{-0.55}$	$\chi_{\text{prior}}^2$	6.98	19.1 ( $\nu$ : 15.1)
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.16}_{-0.16}$	$r_*$	144.59	$144.64^{+0.60}_{-0.61}$	$\chi_{\text{CMB}}^2$	12928.6	12949.8 ( $\nu$ : 23.5)
$A_{143}^{\text{dustTE}}$	0.153	$0.16^{+0.10}_{-0.10}$	$100\theta_*$	1.04101	$1.04099^{+0.00061}_{-0.00062}$			

Best-fit  $\chi_{\text{eff}}^2 = 13642.42$ ;  $\Delta\chi_{\text{eff}}^2 = 0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 13675.83$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.19$ ;  $R - 1 = 0.00659$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03.v5c.Ap: 10497.13 ( $\Delta$  -0.23) plik\_dx11dr2.HM.v18.TTTEEE: 2431.47 ( $\Delta$  -0.14) SN - JLA December\_2013: 706.84 ( $\Delta$  -0.02)

20.9 base\_r\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022279	$0.02227^{+0.00031}_{-0.00030}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.892	$13.895^{+0.057}_{-0.057}$
$\Omega_c h^2$	0.11956	$0.1195^{+0.0028}_{-0.0028}$	$A_{217}^{\text{dustTE}}$	1.669	$1.67^{+0.50}_{-0.49}$	$z_{\text{drag}}$	1059.70	$1059.67^{+0.61}_{-0.61}$
$100\theta_{\text{MC}}$	1.04079	$1.04080^{+0.00062}_{-0.00063}$	$c_{100}$	0.99821	$0.9982^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.31	$147.35^{+0.60}_{-0.61}$
$\tau$	0.0822	$0.080^{+0.033}_{-0.033}$	$c_{217}$	0.99591	$0.9960^{+0.0029}_{-0.0028}$	$k_D$	0.14057	$0.14052^{+0.00065}_{-0.00063}$
$\ln(10^{10} A_s)$	3.099	$3.093^{+0.063}_{-0.064}$	$H_0$	67.39	$67.4^{+1.2}_{-1.2}$	$100\theta_D$	0.160878	$0.16090^{+0.00036}_{-0.00035}$
$n_s$	0.9659	$0.9658^{+0.0092}_{-0.0092}$	$\Omega_\Lambda$	0.6862	$0.687^{+0.017}_{-0.017}$	$z_{\text{eq}}$	3390	$3387^{+62}_{-62}$
$r$	0.000	< 0.107	$\Omega_m$	0.3138	$0.313^{+0.017}_{-0.017}$	$k_{\text{eq}}$	0.010345	$0.01034^{+0.00019}_{-0.00019}$
$y_{\text{cal}}$	1.00024	$1.0004^{+0.0049}_{-0.0049}$	$\Omega_m h^2$	0.14249	$0.1424^{+0.0026}_{-0.0026}$	$100\theta_{\text{eq}}$	0.8152	$0.816^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	64.8	$64^{+10}_{-10}$	$\Omega_m h^3$	0.09602	$0.09599^{+0.00062}_{-0.00058}$	$100\theta_{s,\text{eq}}$	0.4504	$0.4507^{+0.0061}_{-0.0060}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.31	—	$\sigma_8$	0.8326	$0.830^{+0.026}_{-0.025}$	$r_{\text{drag}}/D_V(0.57)$	0.07144	$0.07148^{+0.00094}_{-0.00092}$
$A_{143}^{\text{tSZ}}$	7.02	$5.39^{+3.6}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.465^{+0.019}_{-0.019}$	$H(0.57)$	92.91	$92.92^{+0.55}_{-0.52}$
$A_{100}^{\text{PS}}$	253	$259^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6232	$0.621^{+0.021}_{-0.021}$	$D_A(0.57)$	1390.5	$1390^{+17}_{-17}$
$A_{143}^{\text{PS}}$	43.0	$43^{+10}_{-20}$	$\sigma_8/h^{0.5}$	1.0143	$1.011^{+0.032}_{-0.032}$	$F_{\text{AP}}(0.57)$	0.67660	$0.6765^{+0.0043}_{-0.0042}$
$A_{143 \times 217}^{\text{PS}}$	41.8	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.507	$2.500^{+0.078}_{-0.077}$	$f\sigma_8(0.57)$	0.4847	$0.483^{+0.015}_{-0.015}$
$A_{217}^{\text{PS}}$	101.3	$98^{+20}_{-20}$	$z_{\text{re}}$	10.35	$10.1^{+3.0}_{-3.1}$	$\sigma_8(0.57)$	0.6189	$0.617^{+0.020}_{-0.019}$
$A^{\text{kSZ}}$	0.00	< 7.75	$10^9 A_s$	2.217	$2.21^{+0.14}_{-0.14}$	$r_{0.002}$	0.000	< 0.100
$A_{100}^{\text{dustTT}}$	7.37	$7.40^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8810	$1.880^{+0.023}_{-0.023}$	$r_{0.01}$	0.000	< 0.104
$A_{143}^{\text{dustTT}}$	8.86	$8.91^{+3.6}_{-3.6}$	$D_{40}$	1238.6	$1252^{+34}_{-31}$	$\ln(10^{10} A_t)$	-8.01	$-0.6^{+2.0}_{-2.5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.0^{+8.1}_{-8.2}$	$D_{220}$	5726	$5727^{+75}_{-75}$	$r_{10}$	0.0000	< 0.0506
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$D_{810}$	2535.7	$2535^{+26}_{-26}$	$10^9 A_t$	0.000	< 0.235
$A_{100}^{\text{dustEE}}$	0.0811	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	815.3	$815.0^{+9.5}_{-9.4}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.201
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0484^{+0.0099}_{-0.0097}$	$D_{2000}$	230.72	$230.6^{+3.2}_{-3.2}$	$f_{2000}^{143}$	28.8	$29^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0996	$0.100^{+0.064}_{-0.064}$	$n_{s,0.002}$	0.9659	$0.9658^{+0.0092}_{-0.0092}$	$f_{2000}^{143 \times 217}$	31.89	$32^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1004	$0.0997^{+0.013}_{-0.013}$	$Y_P$	0.245353	$0.24535^{+0.00014}_{-0.00014}$	$f_{2000}^{217}$	105.43	$105.7^{+3.6}_{-3.6}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.091}_{-0.092}$	$Y_P^{\text{BBN}}$	0.246679	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{lowTEB}}^2$	10497.1	10499.1 ( $\nu$ : 3.6)
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	2.609	$2.610^{+0.058}_{-0.057}$	$\chi_{\text{plik}}^2$	2431.8	2450.7 ( $\nu$ : 22.8)
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.074}_{-0.074}$	$\text{Age}/\text{Gyr}$	13.8086	$13.809^{+0.049}_{-0.050}$	$\chi_{\text{H070p6}}^2$	0.93	0.94 ( $\nu$ : 0.1)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.058}_{-0.057}$	$z_*$	1090.00	$1090.00^{+0.57}_{-0.56}$	$\chi_{\text{prior}}^2$	6.71	19.1 ( $\nu$ : 15.1)
$A_{100 \times 217}^{\text{dustTE}}$	0.300	$0.30^{+0.16}_{-0.16}$	$r_*$	144.61	$144.65^{+0.61}_{-0.62}$	$\chi_{\text{CMB}}^2$	12928.8	12949.9 ( $\nu$ : 23.6)
$A_{143}^{\text{dustTE}}$	0.153	$0.16^{+0.10}_{-0.10}$	$100\theta_*$	1.04099	$1.04100^{+0.00061}_{-0.00062}$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.47$ ;  $\Delta\chi_{\text{eff}}^2 = -0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.93$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.18$ ;  $R - 1 = 0.00665$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.06 ( $\Delta$  0.06) plik\_dx11dr2\_HM.v18\_TTTEEE: 2431.78 ( $\Delta$  0.01) Hubble - H070p6: 0.93 ( $\Delta$  0.03)

20.10 base\_r\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02225^{+0.00031}_{-0.00030}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	$13.891^{+0.057}_{-0.057}$
$\Omega_c h^2$	$0.1197^{+0.0028}_{-0.0028}$	$A_{217}^{\text{dustTE}}$	$1.67^{+0.50}_{-0.49}$	$z_{\text{drag}}$	$1059.64^{+0.64}_{-0.61}$
$100\theta_{\text{MC}}$	$1.04078^{+0.00063}_{-0.00063}$	$c_{100}$	$0.9982^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	$147.31^{+0.61}_{-0.61}$
$\tau$	$0.079^{+0.031}_{-0.032}$	$c_{217}$	$0.9960^{+0.0028}_{-0.0028}$	$k_D$	$0.14055^{+0.00065}_{-0.00064}$
$\ln(10^{10} A_s)$	$3.093^{+0.061}_{-0.062}$	$H_0$	$67.3^{+1.3}_{-1.2}$	$100\theta_D$	$0.16091^{+0.00036}_{-0.00035}$
$n_s$	$0.9653^{+0.0093}_{-0.0091}$	$\Omega_\Lambda$	$0.685^{+0.017}_{-0.017}$	$z_{\text{eq}}$	$3392^{+64}_{-63}$
$r$	$< 0.106$	$\Omega_m$	$0.315^{+0.017}_{-0.017}$	$k_{\text{eq}}$	$0.01035^{+0.00019}_{-0.00019}$
$y_{\text{cal}}$	$1.0004^{+0.0049}_{-0.0049}$	$\Omega_m h^2$	$0.1426^{+0.0027}_{-0.0026}$	$100\theta_{\text{eq}}$	$0.815^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$\Omega_m h^3$	$0.09598^{+0.00061}_{-0.00057}$	$100\theta_{\text{s,eq}}$	$0.4502^{+0.0062}_{-0.0061}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\sigma_8$	$0.830^{+0.025}_{-0.025}$	$r_{\text{drag}}/D_V(0.57)$	$0.07140^{+0.00095}_{-0.00092}$
$A_{143}^{\text{tSZ}}$	$5.37^{+3.6}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	$0.466^{+0.019}_{-0.019}$	$H(0.57)$	$92.88^{+0.55}_{-0.52}$
$A_{100}^{\text{PS}}$	$259^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	$0.622^{+0.021}_{-0.020}$	$D_A(0.57)$	$1392^{+17}_{-17}$
$A_{143}^{\text{PS}}$	$43^{+10}_{-20}$	$\sigma_8/h^{0.5}$	$1.012^{+0.032}_{-0.031}$	$F_{\text{AP}}(0.57)$	$0.6768^{+0.0044}_{-0.0043}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	$2.503^{+0.076}_{-0.073}$	$f\sigma_8(0.57)$	$0.484^{+0.015}_{-0.015}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$z_{\text{re}}$	$10.0^{+2.7}_{-2.8}$	$\sigma_8(0.57)$	$0.617^{+0.019}_{-0.019}$
$A^{\text{kSZ}}$	$< 7.74$	$10^9 A_s$	$2.20^{+0.14}_{-0.14}$	$r_{0.002}$	$< 0.0992$
$A_{100}^{\text{dustTT}}$	$7.40^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	$1.881^{+0.024}_{-0.023}$	$r_{0.01}$	$< 0.103$
$A_{143}^{\text{dustTT}}$	$8.91^{+3.6}_{-3.6}$	$D_{40}$	$1253^{+34}_{-31}$	$\ln(10^{10} A_t)$	$-0.7^{+2.0}_{-2.5}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0^{+8.1}_{-8.2}$	$D_{220}$	$5726^{+75}_{-75}$	$r_{10}$	$< 0.0502$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{810}$	$2535^{+27}_{-26}$	$10^9 A_t$	$< 0.233$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	$814.9^{+9.5}_{-9.4}$	$10^9 A_t e^{-2\tau}$	$< 0.200$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0483^{+0.0099}_{-0.0096}$	$D_{2000}$	$230.5^{+3.2}_{-3.2}$	$f_{2000}^{143}$	$29^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.100^{+0.064}_{-0.064}$	$n_{\text{s},0.002}$	$0.9653^{+0.0093}_{-0.0091}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	$0.0996^{+0.013}_{-0.013}$	$Y_{\text{P}}$	$0.24534^{+0.00014}_{-0.00014}$	$f_{2000}^{217}$	$105.8^{+3.6}_{-3.6}$
$A_{143 \times 217}^{\text{dustEE}}$	$0.224^{+0.090}_{-0.092}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{lowTEB}}^2$	$10499.2 (\nu: 3.4)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	$2.614^{+0.058}_{-0.058}$	$\chi_{\text{plik}}^2$	$2450.6 (\nu: 22.4)$
$A_{100}^{\text{dustTE}}$	$0.142^{+0.073}_{-0.074}$	$\text{Age}/\text{Gyr}$	$13.812^{+0.049}_{-0.051}$	$\chi_{\text{prior}}^2$	$19.1 (\nu: 15.2)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.132^{+0.058}_{-0.057}$	$z_*$	$1090.04^{+0.57}_{-0.56}$	$\chi_{\text{CMB}}^2$	$12949.8 (\nu: 23.3)$
$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.16}_{-0.16}$	$r_*$	$144.60^{+0.62}_{-0.61}$		
$A_{143}^{\text{dustTE}}$	$0.16^{+0.10}_{-0.10}$	$100\theta_*$	$1.04097^{+0.00061}_{-0.00062}$		

$$\bar{\chi}_{\text{eff}}^2 = 12968.88; \Delta\bar{\chi}_{\text{eff}}^2 = 1.20; R - 1 = 0.00728$$

## 20.11 base\_r\_plikHM\_TE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022403	$0.02241^{+0.00049}_{-0.00048}$	$\sigma_8 \Omega_m^{0.25}$	0.5998	$0.598^{+0.034}_{-0.033}$	$k_D$	0.14029	$0.1403^{+0.0011}_{-0.0011}$
$\Omega_c h^2$	0.11771	$0.1176^{+0.0039}_{-0.0039}$	$\sigma_8/h^{0.5}$	0.979	$0.977^{+0.052}_{-0.050}$	$100\theta_D$	0.16080	$0.16081^{+0.00063}_{-0.00061}$
$100\theta_{MC}$	1.04101	$1.0410^{+0.0010}_{-0.0010}$	$\langle d^2 \rangle^{1/2}$	2.407	$2.40^{+0.11}_{-0.11}$	$z_{eq}$	3348	$3346^{+91}_{-88}$
$\tau$	0.0625	$0.061^{+0.041}_{-0.041}$	$z_{re}$	8.45	$8.13^{+4.1}_{-4.4}$	$k_{eq}$	0.010220	$0.01021^{+0.00028}_{-0.00027}$
$\ln(10^{10} A_s)$	3.050	$3.046^{+0.089}_{-0.087}$	$10^9 A_s$	2.111	$2.10^{+0.19}_{-0.19}$	$100\theta_{eq}$	0.8232	$0.824^{+0.017}_{-0.017}$
$n_s$	0.9756	$0.977^{+0.021}_{-0.020}$	$10^9 A_s e^{-2\tau}$	1.8628	$1.863^{+0.037}_{-0.037}$	$100\theta_{s,eq}$	0.4545	$0.4548^{+0.0089}_{-0.0088}$
$r$	0.001	< 0.147	$D_{40}$	1201	$1217^{+52}_{-49}$	$r_{drag}/D_V(0.57)$	0.07208	$0.0721^{+0.0014}_{-0.0013}$
$y_{cal}$	0.99998	$1.0001^{+0.0049}_{-0.0049}$	$D_{220}$	5673	$5670^{+110}_{-110}$	$H(0.57)$	93.25	$93.29^{+0.81}_{-0.77}$
$A_{100}^{dustTE}$	0.137	$0.138^{+0.074}_{-0.074}$	$D_{810}$	2527	$2528^{+51}_{-50}$	$D_A(0.57)$	1379.6	$1379^{+23}_{-23}$
$A_{100 \times 143}^{dustTE}$	0.130	$0.133^{+0.057}_{-0.057}$	$D_{1420}$	816.7	$818^{+23}_{-23}$	$F_{AP}(0.57)$	0.6737	$0.6735^{+0.0060}_{-0.0058}$
$A_{100 \times 217}^{dustTE}$	0.308	$0.30^{+0.17}_{-0.16}$	$D_{2000}$	231.2	$231.5^{+8.6}_{-8.4}$	$f\sigma_8(0.57)$	0.4679	$0.467^{+0.025}_{-0.024}$
$A_{143}^{dustTE}$	0.143	$0.15^{+0.11}_{-0.11}$	$n_{s,0.002}$	0.9756	$0.977^{+0.021}_{-0.020}$	$\sigma_8(0.57)$	0.6039	$0.603^{+0.029}_{-0.028}$
$A_{143 \times 217}^{dustTE}$	0.347	$0.33^{+0.16}_{-0.16}$	$Y_P$	0.245407	$0.24541^{+0.00022}_{-0.00022}$	$r_{0.002}$	0.001	< 0.146
$A_{217}^{dustTE}$	1.68	$1.65^{+0.50}_{-0.50}$	$Y_P^{BBN}$	0.246734	$0.24674^{+0.00022}_{-0.00022}$	$r_{0.01}$	0.001	< 0.146
$c_{100}$	0.99920	$0.9992^{+0.0019}_{-0.0020}$	$10^5 D/H$	2.585	$2.585^{+0.092}_{-0.090}$	$\ln(10^{10} A_t)$	-3.58	$-0.4^{+2.0}_{-2.5}$
$H_0$	68.22	$68.3^{+1.8}_{-1.7}$	Age/Gyr	13.782	$13.779^{+0.073}_{-0.075}$	$r_{10}$	0.0006	< 0.0751
$\Omega_\Lambda$	0.6975	$0.698^{+0.022}_{-0.024}$	$z_*$	1089.68	$1089.66^{+0.81}_{-0.79}$	$10^9 A_t$	0.003	< 0.307
$\Omega_m$	0.3025	$0.302^{+0.024}_{-0.022}$	$r_*$	145.00	$145.03^{+0.95}_{-0.95}$	$10^9 A_t e^{-2\tau}$	0.002	< 0.273
$\Omega_m h^2$	0.14076	$0.1407^{+0.0038}_{-0.0037}$	$100\theta_*$	1.04119	$1.0412^{+0.0010}_{-0.0010}$	$\chi_{lowTEB}^2$	10493.14	10495.7 ( $\nu$ : 3.1)
$\Omega_m h^3$	0.09603	$0.0960^{+0.0011}_{-0.0010}$	$D_A/\text{Gpc}$	13.926	$13.928^{+0.089}_{-0.088}$	$\chi_{plikTE}^2$	931.9	939.4 ( $\nu$ : 9.2)
$\sigma_8$	0.8088	$0.807^{+0.040}_{-0.038}$	$z_{drag}$	1059.86	$1059.9^{+1.1}_{-1.1}$	$\chi_{prior}^2$	2.15	7.84 ( $\nu$ : 6.6)
$\sigma_8 \Omega_m^{0.5}$	0.4448	$0.444^{+0.031}_{-0.030}$	$r_{drag}$	147.66	$147.69^{+0.98}_{-0.98}$	$\chi_{CMB}^2$	11425.0	11435.0 ( $\nu$ : 10.3)

Best-fit  $\chi_{eff}^2 = 11427.16$ ;  $\Delta\chi_{eff}^2 = -0.00$ ;  $\bar{\chi}_{eff}^2 = 11442.90$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.72$ ;  $R - 1 = 0.00749$

$\chi_{eff}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.14 ( $\Delta$  -0.36) plik\_dx11dr2\_HM\_v18\_TE: 931.87 ( $\Delta$  0.14)

## 20.12 base\_r\_plikHM\_EE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02412	$0.0242^{+0.0028}_{-0.0026}$	$\sigma_8/h^{0.5}$	0.941	$0.932^{+0.092}_{-0.089}$	$100\theta_D$	0.15869	$0.1588^{+0.0028}_{-0.0027}$
$\Omega_c h^2$	0.1124	$0.1116^{+0.0097}_{-0.0090}$	$\langle d^2 \rangle^{1/2}$	2.355	$2.33^{+0.18}_{-0.17}$	$z_{\text{eq}}$	3262	$3246^{+180}_{-160}$
$100\theta_{\text{MC}}$	1.04010	$1.0402^{+0.0018}_{-0.0018}$	$z_{\text{re}}$	8.42	$8.00^{+3.9}_{-4.0}$	$k_{\text{eq}}$	0.00996	$0.00991^{+0.00055}_{-0.00050}$
$\tau$	0.0675	$0.064^{+0.042}_{-0.041}$	$10^9 A_s$	2.168	$2.15^{+0.19}_{-0.18}$	$100\theta_{\text{eq}}$	0.8437	$0.848^{+0.040}_{-0.040}$
$\ln(10^{10} A_s)$	3.076	$3.067^{+0.086}_{-0.085}$	$10^9 A_s e^{-2\tau}$	1.894	$1.889^{+0.052}_{-0.051}$	$100\theta_{s,\text{eq}}$	0.4638	$0.466^{+0.019}_{-0.019}$
$n_s$	0.9867	$0.993^{+0.030}_{-0.029}$	$D_{40}$	1223	$1235^{+61}_{-60}$	$r_{\text{drag}}/D_V(0.57)$	0.07383	$0.0742^{+0.0038}_{-0.0036}$
$r$	0.000	< 0.199	$D_{220}$	5991	$5971^{+430}_{-420}$	$H(0.57)$	94.99	$95.2^{+3.6}_{-3.4}$
$y_{\text{cal}}$	1.00010	$0.99998^{+0.0048}_{-0.0049}$	$D_{810}$	2592	$2591^{+81}_{-82}$	$D_A(0.57)$	1337	$1332^{+80}_{-77}$
$A_{100}^{\text{dustEE}}$	0.0826	$0.082^{+0.012}_{-0.012}$	$D_{1420}$	846.3	$848^{+39}_{-40}$	$F_{\text{AP}}(0.57)$	0.6651	$0.664^{+0.016}_{-0.015}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0500	$0.050^{+0.011}_{-0.011}$	$D_{2000}$	242.2	$243^{+15}_{-15}$	$f\sigma_8(0.57)$	0.4503	$0.446^{+0.043}_{-0.044}$
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.099^{+0.064}_{-0.065}$	$n_{s,0.002}$	0.9867	$0.993^{+0.030}_{-0.029}$	$\sigma_8(0.57)$	0.6017	$0.598^{+0.029}_{-0.029}$
$A_{143}^{\text{dustEE}}$	0.1013	$0.101^{+0.014}_{-0.014}$	$Y_{\text{P}}$	0.24613	$0.2461^{+0.0011}_{-0.0011}$	$r_{0.002}$	0.000	< 0.218
$A_{143 \times 217}^{\text{dustEE}}$	0.222	$0.224^{+0.091}_{-0.091}$	$Y_{\text{P}}^{\text{BBN}}$	0.24746	$0.2475^{+0.0011}_{-0.0011}$	$r_{0.01}$	0.000	< 0.208
$A_{217}^{\text{dustEE}}$	0.645	$0.65^{+0.26}_{-0.25}$	$10^5 \text{D/H}$	2.296	$2.30^{+0.43}_{-0.41}$	$\ln(10^{10} A_t)$	-6.86	$0.0^{+2.0}_{-2.5}$
$H_0$	71.3	$71.7^{+5.9}_{-5.8}$	Age/Gyr	13.611	$13.60^{+0.32}_{-0.34}$	$r_{10}$	0.000	< 0.111
$\Omega_\Lambda$	0.730	$0.733^{+0.057}_{-0.060}$	$z_*$	1087.24	$1087.2^{+3.7}_{-3.6}$	$10^9 A_t$	0.000	< 0.422
$\Omega_m$	0.270	$0.267^{+0.060}_{-0.057}$	$r_*$	145.08	$145.2^{+1.4}_{-1.3}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.373
$\Omega_m h^2$	0.1371	$0.1365^{+0.0075}_{-0.0069}$	$100\theta_*$	1.04011	$1.0402^{+0.0018}_{-0.0018}$	$\chi_{\text{lowTEB}}^2$	10493.6	10496.1 ( $\nu$ : 4.0)
$\Omega_m h^3$	0.09779	$0.0978^{+0.0041}_{-0.0037}$	$D_A/\text{Gpc}$	13.948	$13.96^{+0.13}_{-0.12}$	$\chi_{\text{plikEE}}^2$	751.0	758.9 ( $\nu$ : 10.2)
$\sigma_8$	0.795	$0.789^{+0.050}_{-0.050}$	$z_{\text{drag}}$	1063.3	$1063.4^{+5.3}_{-5.3}$	$\chi_{\text{prior}}^2$	4.11	8.23 ( $\nu$ : 6.1)
$\sigma_8 \Omega_m^{0.5}$	0.413	$0.408^{+0.068}_{-0.065}$	$r_{\text{drag}}$	147.20	$147.3^{+1.6}_{-1.6}$	$\chi_{\text{CMB}}^2$	11244.7	11255.0 ( $\nu$ : 11.5)
$\sigma_8 \Omega_m^{0.25}$	0.573	$0.567^{+0.063}_{-0.060}$	$k_D$	0.14194	$0.1418^{+0.0028}_{-0.0028}$			

Best-fit  $\chi_{\text{eff}}^2 = 11248.79$ ;  $\Delta\chi_{\text{eff}}^2 = 0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 11263.21$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.39$ ;  $R - 1 = 0.00738$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.64 ( $\Delta$  0.02) plik\_dx11dr2\_HM\_v18\_EE: 751.05 ( $\Delta$  -0.15)

### 20.13 base\_r\_plikHM\_TE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02228	$0.02227^{+0.00050}_{-0.00050}$	$\sigma_8 \Omega_m^{0.25}$	0.5975	$0.597^{+0.032}_{-0.030}$	$k_D$	0.14032	$0.1403^{+0.0011}_{-0.0011}$
$\Omega_c h^2$	0.11868	$0.1187^{+0.0042}_{-0.0041}$	$\sigma_8/h^{0.5}$	0.9740	$0.974^{+0.048}_{-0.045}$	$100\theta_D$	0.16093	$0.16094^{+0.00063}_{-0.00061}$
$100\theta_{MC}$	1.04095	$1.0409^{+0.0010}_{-0.0010}$	$\langle d^2 \rangle^{1/2}$	2.418	$2.41^{+0.11}_{-0.11}$	$z_{eq}$	3369	$3368^{+96}_{-93}$
$\tau$	0.0525	$< 0.0841$	$z_{re}$	7.50	$7.30^{+3.7}_{-4.3}$	$k_{eq}$	0.010281	$0.01028^{+0.00029}_{-0.00028}$
$\ln(10^{10} A_s)$	3.031	$3.029^{+0.079}_{-0.084}$	$10^9 A_s$	2.072	$2.07^{+0.17}_{-0.17}$	$100\theta_{eq}$	0.8191	$0.819^{+0.018}_{-0.018}$
$n_s$	0.9646	$0.966^{+0.023}_{-0.024}$	$10^9 A_s e^{-2\tau}$	1.8654	$1.864^{+0.037}_{-0.037}$	$100\theta_{s,eq}$	0.4525	$0.4526^{+0.0092}_{-0.0092}$
$r$	0.105	$< 0.378$	$D_{40}$	1261	$1279^{+100}_{-92}$	$r_{drag}/D_V(0.57)$	0.07175	$0.0718^{+0.0014}_{-0.0014}$
$y_{cal}$	1.00002	$1.0000^{+0.0050}_{-0.0048}$	$D_{220}$	5707	$5694^{+120}_{-120}$	$H(0.57)$	93.04	$93.04^{+0.82}_{-0.79}$
$A_{100}^{dustTE}$	0.141	$0.141^{+0.074}_{-0.074}$	$D_{810}$	2519	$2519^{+50}_{-51}$	$D_A(0.57)$	1385.9	$1386^{+24}_{-24}$
$A_{100 \times 143}^{dustTE}$	0.129	$0.135^{+0.057}_{-0.057}$	$D_{1420}$	809.6	$810^{+24}_{-24}$	$F_{AP}(0.57)$	0.6753	$0.6753^{+0.0065}_{-0.0061}$
$A_{100 \times 217}^{dustTE}$	0.298	$0.30^{+0.17}_{-0.16}$	$D_{2000}$	228.2	$228.4^{+9.0}_{-8.9}$	$f\sigma_8(0.57)$	0.4654	$0.465^{+0.023}_{-0.022}$
$A_{143}^{dustTE}$	0.153	$0.16^{+0.11}_{-0.10}$	$n_{s,0.002}$	0.9646	$0.966^{+0.023}_{-0.024}$	$\sigma_8(0.57)$	0.5971	$0.597^{+0.026}_{-0.026}$
$A_{143 \times 217}^{dustTE}$	0.351	$0.34^{+0.16}_{-0.16}$	$Y_P$	0.245354	$0.24535^{+0.00022}_{-0.00023}$	$r_{0.002}$	0.098	$< 0.400$
$A_{217}^{dustTE}$	1.70	$1.65^{+0.51}_{-0.51}$	$Y_P^{BBN}$	0.246680	$0.24667^{+0.00022}_{-0.00023}$	$r_{0.01}$	0.101	$< 0.389$
$c_{100}$	0.99937	$0.9992^{+0.0020}_{-0.0020}$	$10^5 D/H$	2.608	$2.610^{+0.096}_{-0.094}$	$\ln(10^{10} A_t)$	0.78	$0.8^{+1.7}_{-2.2}$
$H_0$	67.75	$67.7^{+1.8}_{-1.8}$	Age/Gyr	13.800	$13.802^{+0.076}_{-0.078}$	$r_{10}$	0.050	$< 0.213$
$\Omega_\Lambda$	0.6915	$0.691^{+0.024}_{-0.026}$	$z_*$	1089.92	$1089.93^{+0.86}_{-0.85}$	$10^9 A_t$	0.218	$< 0.780$
$\Omega_m$	0.3085	$0.309^{+0.026}_{-0.024}$	$r_*$	144.84	$144.85^{+0.97}_{-0.96}$	$10^9 A_t e^{-2\tau}$	0.196	$< 0.706$
$\Omega_m h^2$	0.14161	$0.1416^{+0.0040}_{-0.0039}$	$100\theta_*$	1.04114	$1.0411^{+0.0010}_{-0.00099}$	$\chi_{lowEB}^2$	5430.50	$5431.3 (\nu: 0.8)$
$\Omega_m h^3$	0.09594	$0.0959^{+0.0011}_{-0.0010}$	$D_A/Gpc$	13.912	$13.913^{+0.091}_{-0.090}$	$\chi_{plikTE}^2$	931.4	$939.4 (\nu: 9.0)$
$\sigma_8$	0.8017	$0.801^{+0.036}_{-0.036}$	$z_{drag}$	1059.63	$1059.6^{+1.1}_{-1.1}$	$\chi_{prior}^2$	1.85	$7.72 (\nu: 6.5)$
$\sigma_8 \Omega_m^{0.5}$	0.4453	$0.445^{+0.030}_{-0.028}$	$r_{drag}$	147.54	$147.6^{+1.0}_{-0.98}$	$\chi_{CMB}^2$	6361.9	$6370.8 (\nu: 9.4)$

Best-fit  $\chi_{eff}^2 = 6363.76$ ;  $\Delta\chi_{eff}^2 = -0.13$ ;  $\bar{\chi}_{eff}^2 = 6378.47$ ;  $\Delta\bar{\chi}_{eff}^2 = 0.62$ ;  $R - 1 = 0.00621$

$\chi_{eff}^2$ : CMB - lowl\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.50 ( $\Delta -0.27$ ) plik\_dx11dr2\_HM\_v18\_TE: 931.42 ( $\Delta 0.18$ )

## 20.14 base\_r\_plikHM\_EE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02376	$0.0238^{+0.0027}_{-0.0025}$	$\sigma_8/h^{0.5}$	0.931	$0.926^{+0.093}_{-0.093}$	$100\theta_D$	0.15911	$0.1592^{+0.0029}_{-0.0028}$
$\Omega_c h^2$	0.1123	$0.112^{+0.010}_{-0.010}$	$\langle d^2 \rangle^{1/2}$	2.319	$2.30^{+0.21}_{-0.20}$	$z_{\text{eq}}$	3252	$3246^{+200}_{-200}$
$100\theta_{\text{MC}}$	1.04011	$1.0402^{+0.0019}_{-0.0019}$	$z_{\text{re}}$	7.48	$7.03^{+3.4}_{-3.8}$	$k_{\text{eq}}$	0.00992	$0.00991^{+0.00062}_{-0.00060}$
$\tau$	0.0565	$0.053^{+0.035}_{-0.038}$	$10^9 A_s$	2.105	$2.09^{+0.17}_{-0.17}$	$100\theta_{\text{eq}}$	0.8447	$0.847^{+0.047}_{-0.044}$
$\ln(10^{10} A_s)$	3.047	$3.040^{+0.082}_{-0.079}$	$10^9 A_s e^{-2\tau}$	1.881	$1.880^{+0.059}_{-0.060}$	$100\theta_{s,\text{eq}}$	0.4646	$0.466^{+0.022}_{-0.021}$
$n_s$	0.9883	$0.991^{+0.039}_{-0.036}$	$D_{40}$	1425	$1426^{+200}_{-200}$	$r_{\text{drag}}/D_V(0.57)$	0.07380	$0.0740^{+0.0041}_{-0.0038}$
$r$	0.534	< 0.985	$D_{220}$	5914	$5911^{+430}_{-450}$	$H(0.57)$	94.72	$94.9^{+3.6}_{-3.4}$
$y_{\text{cal}}$	0.99995	$1.0003^{+0.0048}_{-0.0048}$	$D_{810}$	2577	$2577^{+81}_{-83}$	$D_A(0.57)$	1341	$1339^{+80}_{-81}$
$A_{100}^{\text{dustEE}}$	0.0753	$0.075^{+0.013}_{-0.014}$	$D_{1420}$	840.8	$842^{+39}_{-41}$	$F_{\text{AP}}(0.57)$	0.6654	$0.665^{+0.017}_{-0.017}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0412	$0.041^{+0.013}_{-0.013}$	$D_{2000}$	240.0	$240^{+15}_{-16}$	$f\sigma_8(0.57)$	0.4452	$0.442^{+0.044}_{-0.046}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.0996^{+0.064}_{-0.064}$	$n_{s,0.002}$	0.9883	$0.991^{+0.039}_{-0.036}$	$\sigma_8(0.57)$	0.5941	$0.591^{+0.027}_{-0.027}$
$A_{143}^{\text{dustEE}}$	0.0915	$0.092^{+0.016}_{-0.016}$	$Y_{\text{P}}$	0.24598	$0.2460^{+0.0011}_{-0.0011}$	$r_{0.002}$	0.64	< 1.56
$A_{143 \times 217}^{\text{dustEE}}$	0.216	$0.224^{+0.092}_{-0.092}$	$Y_{\text{P}}^{\text{BBN}}$	0.24731	$0.2473^{+0.0011}_{-0.0011}$	$r_{0.01}$	0.58	< 1.21
$A_{217}^{\text{dustEE}}$	0.677	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	2.352	$2.36^{+0.44}_{-0.42}$	$\ln(10^{10} A_t)$	2.42	$2.17^{+1.2}_{-1.7}$
$H_0$	71.0	$71.3^{+6.2}_{-5.8}$	Age/Gyr	13.646	$13.64^{+0.31}_{-0.34}$	$r_{10}$	0.342	< 0.891
$\Omega_\Lambda$	0.729	$0.729^{+0.061}_{-0.064}$	$z_*$	1087.63	$1087.6^{+3.7}_{-3.6}$	$10^9 A_t$	1.12	< 2.00
$\Omega_m$	0.271	$0.271^{+0.064}_{-0.061}$	$r_*$	145.38	$145.4^{+1.9}_{-1.7}$	$10^9 A_t e^{-2\tau}$	1.00	< 1.83
$\Omega_m h^2$	0.1367	$0.1365^{+0.0085}_{-0.0083}$	$100\theta_*$	1.04016	$1.0402^{+0.0019}_{-0.0019}$	$\chi_{\text{lowEB}}^2$	5429.68	5430.6 ( $\nu$ : 1.2)
$\Omega_m h^3$	0.09712	$0.0972^{+0.0041}_{-0.0037}$	$D_A/\text{Gpc}$	13.976	$13.98^{+0.17}_{-0.16}$	$\chi_{\text{plikEE}}^2$	750.6	758.9 ( $\nu$ : 9.7)
$\sigma_8$	0.785	$0.781^{+0.050}_{-0.051}$	$z_{\text{drag}}$	1062.5	$1062.6^{+5.4}_{-5.3}$	$\chi_{\text{prior}}^2$	2.43	6.98 ( $\nu$ : 5.3)
$\sigma_8 \Omega_m^{0.5}$	0.409	$0.406^{+0.071}_{-0.066}$	$r_{\text{drag}}$	147.61	$147.7^{+2.1}_{-1.9}$	$\chi_{\text{CMB}}^2$	6180.3	6189.5 ( $\nu$ : 9.9)
$\sigma_8 \Omega_m^{0.25}$	0.566	$0.563^{+0.065}_{-0.064}$	$k_D$	0.14127	$0.1412^{+0.0031}_{-0.0033}$			

Best-fit  $\chi_{\text{eff}}^2 = 6182.76$ ;  $\Delta\chi_{\text{eff}}^2 = -2.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 6196.45$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.51$ ;  $R - 1 = 0.00867$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014\_10.03\_v5c\_Ap: 5429.68 ( $\Delta$  -1.05) plik\_dx11dr2\_HM\_v18\_EE: 750.65 ( $\Delta$  -0.10)



## 20.15 base\_r\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022279	$0.02226^{+0.00046}_{-0.00044}$	$\Omega_m h^3$	0.09596	$0.09588^{+0.00089}_{-0.00088}$	$100\theta_D$	0.16095	$0.16098^{+0.00052}_{-0.00051}$
$\Omega_c h^2$	0.11850	$0.1183^{+0.0040}_{-0.0039}$	$\sigma_8$	0.8160	$0.815^{+0.019}_{-0.018}$	$z_{\text{eq}}$	3364	$3360^{+90}_{-88}$
$100\theta_{\text{MC}}$	1.04104	$1.04103^{+0.00091}_{-0.00090}$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.451^{+0.017}_{-0.018}$	$k_{\text{eq}}$	0.010268	$0.01026^{+0.00027}_{-0.00027}$
$\tau$	0.0671	$0.067^{+0.033}_{-0.032}$	$\sigma_8 \Omega_m^{0.25}$	0.6075	$0.606^{+0.015}_{-0.015}$	$100\theta_{\text{eq}}$	0.8200	$0.821^{+0.017}_{-0.017}$
$\ln(10^{10} A_s)$	3.065	$3.063^{+0.059}_{-0.058}$	$\sigma_8/h^{0.5}$	0.9906	$0.989^{+0.022}_{-0.022}$	$100\theta_{s,\text{eq}}$	0.4529	$0.4534^{+0.0089}_{-0.0087}$
$n_s$	0.9682	$0.969^{+0.012}_{-0.012}$	$\langle d^2 \rangle^{1/2}$	2.449	$2.445^{+0.051}_{-0.051}$	$r_{\text{drag}}/D_V(0.57)$	0.07183	$0.0719^{+0.0014}_{-0.0013}$
$r$	0.000	< 0.120	$z_{\text{re}}$	8.94	$8.83^{+2.9}_{-3.2}$	$H(0.57)$	93.08	$93.09^{+0.83}_{-0.78}$
$y_{\text{cal}}$	1.00011	$1.0002^{+0.0049}_{-0.0049}$	$10^9 A_s$	2.143	$2.14^{+0.13}_{-0.12}$	$D_A(0.57)$	1384.6	$1384^{+24}_{-24}$
$A_{217}^{\text{CIB}}$	67.4	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8738	$1.873^{+0.026}_{-0.026}$	$F_{\text{AP}}(0.57)$	0.6749	$0.6748^{+0.0062}_{-0.0061}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1225.2	$1239^{+36}_{-34}$	$f\sigma_8(0.57)$	0.4733	$0.472^{+0.010}_{-0.011}$
$A_{143}^{\text{tSZ}}$	7.16	$5.09^{+3.7}_{-3.9}$	$D_{220}$	5717	$5713^{+80}_{-79}$	$\sigma_8(0.57)$	0.6081	$0.607^{+0.017}_{-0.016}$
$A_{100}^{\text{PS}}$	254	$259^{+50}_{-50}$	$D_{810}$	2532.7	$2532^{+26}_{-27}$	$r_{0.002}$	0.000	< 0.114
$A_{143}^{\text{PS}}$	39.3	$44^{+20}_{-20}$	$D_{1420}$	815.0	$815^{+10}_{-10}$	$r_{0.01}$	0.000	< 0.117
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.26	$230.1^{+3.6}_{-3.7}$	$\ln(10^{10} A_t)$	-7.20	$-0.5^{+2.0}_{-2.5}$
$A_{217}^{\text{PS}}$	97.2	$97^{+20}_{-20}$	$n_{s,0.002}$	0.9682	$0.969^{+0.012}_{-0.012}$	$r_{10}$	0.0000	< 0.0580
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245353	$0.24534^{+0.00020}_{-0.00020}$	$10^9 A_t$	0.000	< 0.257
$A_{100}^{\text{dustTT}}$	7.51	$7.45^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246679	$0.24667^{+0.00020}_{-0.00020}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.224
$A_{143}^{\text{dustTT}}$	9.03	$9.06^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	2.608	$2.612^{+0.085}_{-0.085}$	$f_{2000}^{143}$	30.0	$30^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.2}_{-8.2}$	$\text{Age}/\text{Gyr}$	13.797	$13.798^{+0.073}_{-0.076}$	$f_{2000}^{143 \times 217}$	32.54	$33^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$z_*$	1089.90	$1089.92^{+0.81}_{-0.81}$	$f_{2000}^{217}$	106.13	$106.2^{+3.9}_{-3.9}$
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.89	$144.95^{+0.89}_{-0.88}$	$\chi_{\text{lensing}}^2$	9.29	9.79 ( $\nu: 1.0$ )
$c_{217}$	0.99603	$0.9960^{+0.0029}_{-0.0029}$	$100\theta_*$	1.04124	$1.04123^{+0.00089}_{-0.00088}$	$\chi_{\text{lowTEB}}^2$	10494.92	10497.1 ( $\nu: 2.1$ )
$H_0$	67.85	$67.9^{+1.8}_{-1.8}$	$D_A/\text{Gpc}$	13.915	$13.921^{+0.082}_{-0.082}$	$\chi_{\text{plik}}^2$	766.2	779.7 ( $\nu: 15.7$ )
$\Omega_\Lambda$	0.6928	$0.693^{+0.023}_{-0.025}$	$z_{\text{drag}}$	1059.63	$1059.56^{+0.91}_{-0.92}$	$\chi_{\text{prior}}^2$	2.05	7.45 ( $\nu: 6.5$ )
$\Omega_m$	0.3072	$0.307^{+0.025}_{-0.023}$	$r_{\text{drag}}$	147.59	$147.66^{+0.88}_{-0.88}$	$\chi_{\text{CMB}}^2$	11270.4	11286.6 ( $\nu: 16.9$ )
$\Omega_m h^2$	0.14143	$0.1413^{+0.0038}_{-0.0037}$	$k_D$	0.14027	$0.14019^{+0.00095}_{-0.00094}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.43$ ;  $\Delta\chi_{\text{eff}}^2 = 0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 11294.05$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.75$ ;  $R - 1 = 0.00754$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.29 ( $\Delta$  0.11) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.92 ( $\Delta$  0.06) plik\_dx11dr2\_HM\_v18\_TT: 766.18 ( $\Delta$  -0.15)

## 20.16 base\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022268	$0.02225_{-0.00039}^{+0.00039}$	$\sigma_8 \Omega_m^{0.5}$	0.4526	$0.452_{-0.013}^{+0.013}$	$100\theta_{s,eq}$	0.4529	$0.4530_{-0.0054}^{+0.0055}$
$\Omega_c h^2$	0.11852	$0.1185_{-0.0024}^{+0.0024}$	$\sigma_8 \Omega_m^{0.25}$	0.6078	$0.607_{-0.014}^{+0.014}$	$r_{drag}/D_V(0.57)$	0.07181	$0.07182_{-0.00081}^{+0.00083}$
$100\theta_{MC}$	1.04101	$1.04102_{-0.00081}^{+0.00081}$	$\sigma_8/h^{0.5}$	0.9910	$0.989_{-0.021}^{+0.021}$	$H(0.57)$	93.06	$93.05_{-0.53}^{+0.54}$
$\tau$	0.0673	$0.066_{-0.025}^{+0.025}$	$\langle d^2 \rangle^{1/2}$	2.4500	$2.445_{-0.049}^{+0.050}$	$D_A(0.57)$	1385.0	$1385_{-15}^{+15}$
$\ln(10^{10} A_s)$	3.0651	$3.061_{-0.047}^{+0.047}$	$z_{re}$	8.96	$8.75_{-2.5}^{+2.4}$	$F_{AP}(0.57)$	0.67501	$0.6750_{-0.0037}^{+0.0037}$
$n_s$	0.9682	$0.9683_{-0.0087}^{+0.0088}$	$10^9 A_s$	2.144	$2.14_{-0.099}^{+0.10}$	$f\sigma_8(0.57)$	0.4735	$0.473_{-0.010}^{+0.010}$
$r$	0.000	< 0.119	$10^9 A_s e^{-2\tau}$	1.8738	$1.873_{-0.022}^{+0.022}$	$\sigma_8(0.57)$	0.6081	$0.607_{-0.014}^{+0.014}$
$y_{cal}$	1.00016	$1.0002_{-0.0050}^{+0.0049}$	$D_{40}$	1225.1	$1240_{-33}^{+35}$	$r_{0.002}$	0.000	< 0.113
$A_{217}^{CIB}$	67.4	$64_{-10}^{+10}$	$D_{220}$	5716	$5712_{-78}^{+79}$	$r_{0.01}$	0.000	< 0.116
$\xi^{tSZ \times CIB}$	0.00	—	$D_{810}$	2532.5	$2532_{-27}^{+27}$	$\ln(10^{10} A_t)$	-5.92	$-0.5_{-2.5}^{+2.0}$
$A_{143}^{tSZ}$	7.19	$5.08_{-3.9}^{+3.7}$	$D_{1420}$	814.9	$814.7_{-10}^{+9.9}$	$r_{10}$	0.0001	< 0.0576
$A_{100}^{PS}$	256	$259_{-60}^{+50}$	$D_{2000}$	230.21	$230.1_{-3.5}^{+3.5}$	$10^9 A_t$	0.000	< 0.254
$A_{143}^{PS}$	39.5	$44_{-20}^{+20}$	$n_{s,0.002}$	0.9682	$0.9683_{-0.0087}^{+0.0088}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.223
$A_{143 \times 217}^{PS}$	33	$39_{-20}^{+20}$	$Y_P$	0.245348	$0.24534_{-0.00018}^{+0.00018}$	$f_{2000}^{143}$	30.1	$30_{-5}^{+6}$
$A_{217}^{PS}$	97.3	$97_{-20}^{+20}$	$Y_P^{BBN}$	0.246674	$0.24666_{-0.00018}^{+0.00018}$	$f_{2000}^{143 \times 217}$	32.64	$33_{-4}^{+4}$
$A^{kSZ}$	0.0	—	$10^5 D/H$	2.611	$2.615_{-0.074}^{+0.075}$	$f_{2000}^{217}$	106.15	$106.2_{-3.8}^{+3.8}$
$A_{100}^{dustTT}$	7.34	$7.45_{-3.6}^{+3.7}$	Age/Gyr	13.799	$13.801_{-0.057}^{+0.057}$	$\chi_{lensing}^2$	9.34	9.77 ( $\nu$ : 0.9)
$A_{143}^{dustTT}$	9.14	$9.06_{-3.6}^{+3.6}$	$z_*$	1089.92	$1089.95_{-0.59}^{+0.60}$	$\chi_{lowTEB}^2$	10494.92	10496.9 ( $\nu$ : 1.8)
$A_{143 \times 217}^{dustTT}$	17.7	$17.3_{-8.2}^{+8.2}$	$r_*$	144.89	$144.91_{-0.61}^{+0.61}$	$\chi_{plik}^2$	766.2	779.2 ( $\nu$ : 15.1)
$A_{217}^{dustTT}$	81.9	$82_{-10}^{+10}$	$100\theta_*$	1.04120	$1.04121_{-0.00080}^{+0.00080}$	$\chi_{6DF}^2$	0.006	0.045 ( $\nu$ : 0.0)
$c_{100}$	0.99795	$0.9979_{-0.0015}^{+0.0015}$	$D_A/Gpc$	13.916	$13.918_{-0.060}^{+0.060}$	$\chi_{MGS}^2$	1.47	1.54 ( $\nu$ : 0.2)
$c_{217}$	0.99596	$0.9960_{-0.0028}^{+0.0028}$	$z_{drag}$	1059.59	$1059.54_{-0.85}^{+0.90}$	$\chi_{DR11CMass}^2$	2.40	2.83 ( $\nu$ : 0.2)
$H_0$	67.82	$67.8_{-1.1}^{+1.1}$	$r_{drag}$	147.60	$147.62_{-0.66}^{+0.65}$	$\chi_{DR11LOWZ}^2$	0.43	0.56 ( $\nu$ : 0.1)
$\Omega_\Lambda$	0.6925	$0.692_{-0.015}^{+0.014}$	$k_D$	0.14026	$0.14021_{-0.00084}^{+0.00085}$	$\chi_{prior}^2$	1.97	7.44 ( $\nu$ : 6.4)
$\Omega_m$	0.3075	$0.308_{-0.014}^{+0.015}$	$100\theta_D$	0.16096	$0.16100_{-0.00049}^{+0.00050}$	$\chi_{CMB}^2$	11270.5	11285.9 ( $\nu$ : 16.1)
$\Omega_m h^2$	0.14143	$0.1414_{-0.0023}^{+0.0023}$	$z_{eq}$	3364	$3364_{-56}^{+56}$	$\chi_{BAO}^2$	4.31	4.97 ( $\nu$ : 0.4)
$\Omega_m h^3$	0.09592	$0.09588_{-0.00088}^{+0.00090}$	$k_{eq}$	0.010269	$0.01027_{-0.00017}^{+0.00017}$			
$\sigma_8$	0.8161	$0.815_{-0.017}^{+0.017}$	$100\theta_{eq}$	0.8199	$0.820_{-0.010}^{+0.011}$			

Best-fit  $\chi_{eff}^2 = 11276.77$ ;  $\Delta\chi_{eff}^2 = 0.03$ ;  $\bar{\chi}_{eff}^2 = 11298.35$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.66$ ;  $R - 1 = 0.00674$

$\chi_{eff}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.00) MGS: 1.47 ( $\Delta$  0.07) DR11CMass: 2.40 ( $\Delta$  0.00) DR11LOWZ: 0.43 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.34 ( $\Delta$  0.10) lowl\_SMW\_70\_dx11d\_2014\_10\_03 10494.92 ( $\Delta$  0.06) plik\_dx11dr2\_HM.v18.TT: 766.23 ( $\Delta$  0.03)

20.17 base\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022284	$0.02227^{+0.00039}_{-0.00038}$	$\sigma_8 \Omega_m^{0.5}$	0.4518	$0.451^{+0.013}_{-0.013}$	$100\theta_{s,eq}$	0.4532	$0.4535^{+0.0053}_{-0.0052}$
$\Omega_c h^2$	0.11841	$0.1183^{+0.0023}_{-0.0024}$	$\sigma_8 \Omega_m^{0.25}$	0.6071	$0.606^{+0.014}_{-0.013}$	$r_{drag}/D_V(0.57)$	0.07186	$0.07190^{+0.00081}_{-0.00078}$
$100\theta_{MC}$	1.04106	$1.04105^{+0.00081}_{-0.00081}$	$\sigma_8/h^{0.5}$	0.9902	$0.989^{+0.021}_{-0.021}$	$H(0.57)$	93.10	$93.10^{+0.53}_{-0.52}$
$\tau$	0.0676	$0.067^{+0.025}_{-0.025}$	$\langle d^2 \rangle^{1/2}$	2.4469	$2.445^{+0.050}_{-0.049}$	$D_A(0.57)$	1384.0	$1384^{+15}_{-15}$
$\ln(10^{10} A_s)$	3.0649	$3.064^{+0.047}_{-0.047}$	$z_{re}$	8.98	$8.90^{+2.2}_{-2.5}$	$F_{AP}(0.57)$	0.67479	$0.6746^{+0.0036}_{-0.0035}$
$n_s$	0.9689	$0.9689^{+0.0086}_{-0.0087}$	$10^9 A_s$	2.143	$2.14^{+0.10}_{-0.099}$	$f\sigma_8(0.57)$	0.4731	$0.472^{+0.010}_{-0.010}$
$r$	0.000	< 0.119	$10^9 A_s e^{-2\tau}$	1.8723	$1.872^{+0.022}_{-0.022}$	$\sigma_8(0.57)$	0.6081	$0.608^{+0.014}_{-0.014}$
$y_{cal}$	0.99994	$1.0002^{+0.0049}_{-0.0050}$	$D_{40}$	1222.9	$1239^{+35}_{-33}$	$r_{0.002}$	0.000	< 0.114
$A_{217}^{CIB}$	67.2	$64^{+10}_{-10}$	$D_{220}$	5712	$5714^{+78}_{-78}$	$r_{0.01}$	0.000	< 0.117
$\xi^{tSZ \times CIB}$	0.00	—	$D_{810}$	2531.4	$2532^{+27}_{-27}$	$\ln(10^{10} A_t)$	-6.13	$-0.5^{+2.0}_{-2.5}$
$A_{143}^{tSZ}$	7.15	$5.10^{+3.7}_{-3.9}$	$D_{1420}$	814.9	$814.9^{+9.9}_{-10}$	$r_{10}$	0.0000	< 0.0579
$A_{100}^{PS}$	254	$259^{+50}_{-60}$	$D_{2000}$	230.25	$230.2^{+3.4}_{-3.5}$	$10^9 A_t$	0.000	< 0.256
$A_{143}^{PS}$	39.0	$44^{+20}_{-20}$	$n_{s,0.002}$	0.9689	$0.9689^{+0.0086}_{-0.0087}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.223
$A_{143 \times 217}^{PS}$	32	$39^{+20}_{-20}$	$Y_P$	0.245355	$0.24535^{+0.00017}_{-0.00018}$	$f_{2000}^{143}$	29.9	$30^{+6}_{-5}$
$A_{217}^{PS}$	97.0	$97^{+20}_{-20}$	$Y_P^{BBN}$	0.246681	$0.24667^{+0.00017}_{-0.00018}$	$f_{2000}^{143 \times 217}$	32.41	$33^{+4}_{-4}$
$A^{kSZ}$	0.0	—	$10^5 D/H$	2.608	$2.611^{+0.074}_{-0.073}$	$f_{2000}^{217}$	105.94	$106.1^{+3.8}_{-3.8}$
$A_{100}^{dustTT}$	7.49	$7.45^{+3.7}_{-3.6}$	Age/Gyr	13.795	$13.796^{+0.055}_{-0.056}$	$\chi_{lensing}^2$	9.17	9.72 ( $\nu$ : 0.9)
$A_{143}^{dustTT}$	9.08	$9.05^{+3.6}_{-3.6}$	$z_*$	1089.89	$1089.90^{+0.58}_{-0.58}$	$\chi_{lowTEB}^2$	10494.77	10496.9 ( $\nu$ : 1.8)
$A_{143 \times 217}^{dustTT}$	17.7	$17.3^{+8.2}_{-8.2}$	$r_*$	144.91	$144.96^{+0.60}_{-0.60}$	$\chi_{plik}^2$	766.4	779.3 ( $\nu$ : 15.1)
$A_{217}^{dustTT}$	82.0	$82^{+10}_{-10}$	$100\theta_*$	1.04126	$1.04125^{+0.00080}_{-0.00080}$	$\chi_{H070p6}^2$	0.67	0.68 ( $\nu$ : 0.0)
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0015}$	$D_A/Gpc$	13.917	$13.921^{+0.059}_{-0.059}$	$\chi_{JLA}^2$	706.626	706.66 ( $\nu$ : 0.0)
$c_{217}$	0.99594	$0.9960^{+0.0028}_{-0.0028}$	$z_{drag}$	1059.63	$1059.58^{+0.86}_{-0.86}$	$\chi_{6DF}^2$	0.003	0.038 ( $\nu$ : 0.0)
$H_0$	67.89	$67.9^{+1.1}_{-1.1}$	$r_{drag}$	147.61	$147.66^{+0.65}_{-0.66}$	$\chi_{MGS}^2$	1.54	1.66 ( $\nu$ : 0.2)
$\Omega_\Lambda$	0.6934	$0.694^{+0.014}_{-0.014}$	$k_D$	0.14025	$0.14019^{+0.00086}_{-0.00084}$	$\chi_{DR11CMass}^2$	2.41	2.83 ( $\nu$ : 0.2)
$\Omega_m$	0.3066	$0.306^{+0.014}_{-0.014}$	$100\theta_D$	0.160951	$0.16098^{+0.00050}_{-0.00049}$	$\chi_{DR11LOWZ}^2$	0.37	0.46 ( $\nu$ : 0.1)
$\Omega_m h^2$	0.14134	$0.1412^{+0.0023}_{-0.0023}$	$z_{eq}$	3362	$3359^{+55}_{-54}$	$\chi_{prior}^2$	2.10	7.44 ( $\nu$ : 6.4)
$\Omega_m h^3$	0.09596	$0.09590^{+0.00090}_{-0.00088}$	$k_{eq}$	0.010261	$0.01025^{+0.00017}_{-0.00017}$	$\chi_{CMB}^2$	11270.4	11285.9 ( $\nu$ : 16.1)
$\sigma_8$	0.8159	$0.815^{+0.017}_{-0.017}$	$100\theta_{eq}$	0.8204	$0.821^{+0.010}_{-0.010}$	$\chi_{BAO}^2$	4.33	4.98 ( $\nu$ : 0.4)

Best-fit  $\chi_{eff}^2 = 11984.07$ ;  $\Delta\chi_{eff}^2 = 0.01$ ;  $\bar{\chi}_{eff}^2 = 12005.68$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.66$ ;  $R - 1 = 0.00663$   
 $\chi_{eff}^2$ : BAO - 6DF: 0.00 ( $\Delta$  0.00) MGS: 1.54 ( $\Delta$  0.00) DR11CMass: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.37 ( $\Delta$  0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.17 ( $\Delta$  -0.09) low1\_SMW\_70\_dx11d\_2014.10.03.  
10494.77 ( $\Delta$  -0.15) plik\_dx11dr2\_HM\_v18\_TT: 766.41 ( $\Delta$  0.28) Hubble - H070p6: 0.67 ( $\Delta$  -0.00) SN - JLA December\_2013: 706.63 ( $\Delta$  -0.00)

20.18 base\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02228^{+0.00045}_{-0.00043}$	$\Omega_m h^3$	$0.09589^{+0.00090}_{-0.00088}$	$100\theta_D$	$0.16097^{+0.00052}_{-0.00051}$
$\Omega_c h^2$	$0.1181^{+0.0036}_{-0.0038}$	$\sigma_8$	$0.816^{+0.017}_{-0.017}$	$z_{\text{eq}}$	$3355^{+81}_{-85}$
$100\theta_{\text{MC}}$	$1.04107^{+0.00089}_{-0.00087}$	$\sigma_8 \Omega_m^{0.5}$	$0.451^{+0.017}_{-0.018}$	$k_{\text{eq}}$	$0.01024^{+0.00025}_{-0.00026}$
$\tau$	$0.069^{+0.028}_{-0.027}$	$\sigma_8 \Omega_m^{0.25}$	$0.607^{+0.015}_{-0.015}$	$100\theta_{\text{eq}}$	$0.822^{+0.017}_{-0.016}$
$\ln(10^{10} A_s)$	$3.067^{+0.052}_{-0.049}$	$\sigma_8/h^{0.5}$	$0.990^{+0.021}_{-0.022}$	$100\theta_{\text{s,eq}}$	$0.4539^{+0.0085}_{-0.0083}$
$n_s$	$0.969^{+0.012}_{-0.011}$	$\langle d^2 \rangle^{1/2}$	$2.446^{+0.050}_{-0.049}$	$r_{\text{drag}}/D_V(0.57)$	$0.0720^{+0.0013}_{-0.0013}$
$r$	$< 0.119$	$z_{\text{re}}$	$< 11.3$	$H(0.57)$	$93.13^{+0.79}_{-0.76}$
$y_{\text{cal}}$	$1.0002^{+0.0049}_{-0.0050}$	$10^9 A_s$	$2.15^{+0.11}_{-0.11}$	$D_A(0.57)$	$1383^{+21}_{-23}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.871^{+0.024}_{-0.025}$	$F_{\text{AP}}(0.57)$	$0.6744^{+0.0055}_{-0.0059}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$D_{40}$	$1239^{+36}_{-33}$	$f\sigma_8(0.57)$	$0.473^{+0.010}_{-0.011}$
$A_{143}^{\text{tSZ}}$	$5.10^{+3.7}_{-3.9}$	$D_{220}$	$5713^{+80}_{-79}$	$\sigma_8(0.57)$	$0.609^{+0.015}_{-0.014}$
$A_{100}^{\text{PS}}$	$259^{+50}_{-60}$	$D_{810}$	$2531^{+26}_{-27}$	$r_{0.002}$	$< 0.114$
$A_{143}^{\text{PS}}$	$44^{+20}_{-20}$	$D_{1420}$	$814.9^{+9.9}_{-10}$	$r_{0.01}$	$< 0.117$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{2000}$	$230.2^{+3.6}_{-3.6}$	$\ln(10^{10} A_t)$	$-0.5^{+2.0}_{-2.5}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$n_{\text{s},0.002}$	$0.969^{+0.012}_{-0.011}$	$r_{10}$	$< 0.0579$
$A^{\text{kSZ}}$	—	$Y_{\text{P}}$	$0.24535^{+0.00020}_{-0.00019}$	$10^9 A_t$	$< 0.257$
$A_{100}^{\text{dustTT}}$	$7.46^{+3.7}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668^{+0.00020}_{-0.00020}$	$10^9 A_t e^{-2\tau}$	$< 0.223$
$A_{143}^{\text{dustTT}}$	$9.06^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	$2.609^{+0.082}_{-0.083}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.2}_{-8.3}$	$\text{Age}/\text{Gyr}$	$13.794^{+0.069}_{-0.074}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$z_*$	$1089.88^{+0.76}_{-0.78}$	$f_{2000}^{217}$	$106.1^{+3.9}_{-3.9}$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	$144.99^{+0.87}_{-0.81}$	$\chi_{\text{lensing}}^2$	$9.80 (\nu: 1.1)$
$c_{217}$	$0.9960^{+0.0029}_{-0.0028}$	$100\theta_*$	$1.04126^{+0.00087}_{-0.00085}$	$\chi_{\text{lowTEB}}^2$	$10497.0 (\nu: 1.9)$
$H_0$	$68.0^{+1.7}_{-1.7}$	$D_A/\text{Gpc}$	$13.925^{+0.080}_{-0.077}$	$\chi_{\text{plik}}^2$	$779.6 (\nu: 16.0)$
$\Omega_\Lambda$	$0.695^{+0.023}_{-0.022}$	$z_{\text{drag}}$	$1059.58^{+0.93}_{-0.89}$	$\chi_{\text{prior}}^2$	$7.44 (\nu: 6.4)$
$\Omega_m$	$0.305^{+0.022}_{-0.023}$	$r_{\text{drag}}$	$147.70^{+0.86}_{-0.82}$	$\chi_{\text{CMB}}^2$	$11286.4 (\nu: 16.8)$
$\Omega_m h^2$	$0.1411^{+0.0034}_{-0.0036}$	$k_D$	$0.14016^{+0.00092}_{-0.00092}$		

$$\bar{\chi}_{\text{eff}}^2 = 11293.84; \Delta\bar{\chi}_{\text{eff}}^2 = 1.78; R - 1 = 0.00588$$

20.19 base\_r\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022264	$0.02226^{+0.00032}_{-0.00031}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.901	$13.904^{+0.056}_{-0.057}$
$\Omega_c h^2$	0.11920	$0.1191^{+0.0029}_{-0.0028}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1059.63	$1059.63^{+0.64}_{-0.65}$
$100\theta_{\text{MC}}$	1.04085	$1.04087^{+0.00063}_{-0.00063}$	$c_{100}$	0.99817	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.42	$147.45^{+0.59}_{-0.59}$
$\tau$	0.0629	$0.063^{+0.027}_{-0.027}$	$c_{217}$	0.99608	$0.9961^{+0.0028}_{-0.0028}$	$k_D$	0.14044	$0.14041^{+0.00062}_{-0.00062}$
$\ln(10^{10} A_s)$	3.0582	$3.059^{+0.050}_{-0.049}$	$H_0$	67.52	$67.6^{+1.3}_{-1.3}$	$100\theta_D$	0.160918	$0.16093^{+0.00036}_{-0.00036}$
$n_s$	0.9657	$0.9663^{+0.0095}_{-0.0095}$	$\Omega_\Lambda$	0.6883	$0.689^{+0.017}_{-0.018}$	$z_{\text{eq}}$	3381	$3378^{+64}_{-62}$
$r$	0.000	< 0.119	$\Omega_m$	0.3117	$0.311^{+0.018}_{-0.017}$	$k_{\text{eq}}$	0.010318	$0.01031^{+0.00019}_{-0.00019}$
$y_{\text{cal}}$	1.00001	$1.0002^{+0.0050}_{-0.0048}$	$\Omega_m h^2$	0.14211	$0.1420^{+0.0027}_{-0.0026}$	$100\theta_{\text{eq}}$	0.8168	$0.817^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	68.1	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09596	$0.09595^{+0.00059}_{-0.00058}$	$100\theta_{s,\text{eq}}$	0.4513	$0.4516^{+0.0061}_{-0.0062}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8148	$0.815^{+0.017}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.07157	$0.07160^{+0.00095}_{-0.00096}$
$A_{143}^{\text{tSZ}}$	7.31	$5.30^{+3.6}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4549	$0.455^{+0.014}_{-0.014}$	$H(0.57)$	92.95	$92.97^{+0.56}_{-0.55}$
$A_{100}^{\text{PS}}$	259	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6088	$0.609^{+0.013}_{-0.014}$	$D_A(0.57)$	1388.9	$1388^{+17}_{-17}$
$A_{143}^{\text{PS}}$	39.0	$44^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9915	$0.991^{+0.020}_{-0.021}$	$F_{\text{AP}}(0.57)$	0.67608	$0.6759^{+0.0045}_{-0.0043}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4538	$2.453^{+0.049}_{-0.050}$	$f\sigma_8(0.57)$	0.4738	$0.4737^{+0.0097}_{-0.010}$
$A_{217}^{\text{PS}}$	96.3	$96^{+20}_{-20}$	$z_{\text{re}}$	8.55	$8.53^{+2.6}_{-2.7}$	$\sigma_8(0.57)$	0.6061	$0.606^{+0.015}_{-0.014}$
$A^{\text{kSZ}}$	0.00	< 8.17	$10^9 A_s$	2.129	$2.13^{+0.11}_{-0.10}$	$r_{0.002}$	0.000	< 0.112
$A_{100}^{\text{dustTT}}$	7.50	$7.48^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8773	$1.877^{+0.023}_{-0.023}$	$r_{0.01}$	0.000	< 0.116
$A_{143}^{\text{dustTT}}$	9.03	$9.05^{+3.5}_{-3.6}$	$D_{40}$	1230.1	$1245^{+34}_{-31}$	$\ln(10^{10} A_t)$	-5.19	$-0.5^{+1.9}_{-2.4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.1}_{-8.0}$	$D_{220}$	5723	$5722^{+77}_{-76}$	$r_{10}$	0.0001	< 0.0575
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{810}$	2533.4	$2534^{+27}_{-26}$	$10^9 A_t$	0.001	< 0.253
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	814.5	$814.9^{+9.7}_{-9.4}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.223
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0485^{+0.0097}_{-0.0098}$	$D_{2000}$	229.99	$230.1^{+3.3}_{-3.2}$	$f_{2000}^{143}$	30.0	$30^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.064}_{-0.063}$	$n_{s,0.002}$	0.9657	$0.9663^{+0.0095}_{-0.0095}$	$f_{2000}^{143 \times 217}$	32.68	$33^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	0.1004	$0.0997^{+0.014}_{-0.013}$	$Y_P$	0.245346	$0.24534^{+0.00014}_{-0.00014}$	$f_{2000}^{217}$	106.17	$106.1^{+3.7}_{-3.6}$
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.092}_{-0.091}$	$Y_P^{\text{BBN}}$	0.246673	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{lensing}}^2$	9.72	10.3 ( $\nu$ : 1.6)
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.25}_{-0.25}$	$10^5 D/H$	2.611	$2.611^{+0.059}_{-0.060}$	$\chi_{\text{lowTEB}}^2$	10495.31	10497.5 ( $\nu$ : 1.9)
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.075}_{-0.074}$	Age/Gyr	13.807	$13.806^{+0.051}_{-0.052}$	$\chi_{\text{plik}}^2$	2435.0	2453.6 ( $\nu$ : 23.1)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.058}$	$z_*$	1089.98	$1089.98^{+0.59}_{-0.57}$	$\chi_{\text{prior}}^2$	7.10	19.3 ( $\nu$ : 15.1)
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.30^{+0.17}_{-0.17}$	$r_*$	144.72	$144.74^{+0.60}_{-0.61}$	$\chi_{\text{CMB}}^2$	12940.1	12961.4 ( $\nu$ : 23.8)
$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.11}$	$100\theta_*$	1.04104	$1.04106^{+0.00062}_{-0.00062}$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.18$ ;  $\Delta\chi_{\text{eff}}^2 = 0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.75$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.63$ ;  $R - 1 = 0.01158$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.72 ( $\Delta$  -0.06) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.32 ( $\Delta$  0.03) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.04 ( $\Delta$  0.13)



## 20.20 base\_r\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022286	$0.02228^{+0.00028}_{-0.00028}$	$c_{100}$	0.99818	$0.9981^{+0.0015}_{-0.0015}$	$100\theta_D$	0.160909	$0.16091^{+0.00035}_{-0.00035}$
$\Omega_c h^2$	0.11895	$0.1189^{+0.0021}_{-0.0020}$	$c_{217}$	0.99605	$0.9960^{+0.0028}_{-0.0029}$	$z_{\text{eq}}$	3375.0	$3373^{+46}_{-45}$
$100\theta_{\text{MC}}$	1.04092	$1.04090^{+0.00059}_{-0.00060}$	$H_0$	67.65	$67.68^{+0.92}_{-0.93}$	$k_{\text{eq}}$	0.010301	$0.01029^{+0.00014}_{-0.00014}$
$\tau$	0.0669	$0.065^{+0.024}_{-0.024}$	$\Omega_\Lambda$	0.6900	$0.690^{+0.012}_{-0.013}$	$100\theta_{\text{eq}}$	0.8179	$0.8183^{+0.0087}_{-0.0087}$
$\ln(10^{10} A_s)$	3.0657	$3.062^{+0.045}_{-0.045}$	$\Omega_m$	0.3100	$0.310^{+0.013}_{-0.012}$	$100\theta_{s,\text{eq}}$	0.45187	$0.4521^{+0.0045}_{-0.0045}$
$n_s$	0.9665	$0.9669^{+0.0080}_{-0.0080}$	$\Omega_m h^2$	0.14188	$0.1418^{+0.0019}_{-0.0019}$	$r_{\text{drag}}/D_V(0.57)$	0.07166	$0.07169^{+0.00070}_{-0.00069}$
$r$	0.000	< 0.119	$\Omega_m h^3$	0.09599	$0.09595^{+0.00059}_{-0.00059}$	$H(0.57)$	93.011	$93.01^{+0.44}_{-0.42}$
$y_{\text{cal}}$	0.99995	$1.0003^{+0.0050}_{-0.0047}$	$\sigma_8$	0.8172	$0.815^{+0.017}_{-0.017}$	$D_A(0.57)$	1387.1	$1387^{+13}_{-12}$
$A_{217}^{\text{CIB}}$	67.6	$65^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.5}$	0.4550	$0.454^{+0.012}_{-0.012}$	$F_{\text{AP}}(0.57)$	0.67564	$0.6756^{+0.0032}_{-0.0031}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8 \Omega_m^{0.25}$	0.6098	$0.608^{+0.013}_{-0.013}$	$f\sigma_8(0.57)$	0.4747	$0.4735^{+0.0098}_{-0.0098}$
$A_{143}^{\text{tSZ}}$	7.30	$5.34^{+3.6}_{-3.8}$	$\sigma_8/h^{0.5}$	0.9935	$0.991^{+0.020}_{-0.020}$	$\sigma_8(0.57)$	0.6083	$0.607^{+0.014}_{-0.013}$
$A_{100}^{\text{PS}}$	258	$261^{+50}_{-50}$	$\langle d^2 \rangle^{1/2}$	2.4583	$2.452^{+0.048}_{-0.049}$	$r_{0.002}$	0.000	< 0.113
$A_{143}^{\text{PS}}$	38.5	$43^{+20}_{-20}$	$z_{\text{re}}$	8.93	$8.68^{+2.2}_{-2.4}$	$r_{0.01}$	0.000	< 0.116
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$10^9 A_s$	2.145	$2.137^{+0.097}_{-0.094}$	$\ln(10^{10} A_t)$	-6.98	$-0.5^{+1.9}_{-2.4}$
$A_{217}^{\text{PS}}$	96.7	$96^{+20}_{-20}$	$10^9 A_s e^{-2\tau}$	1.8762	$1.876^{+0.022}_{-0.021}$	$r_{10}$	0.0000	< 0.0577
$A^{\text{kSZ}}$	0.00	< 8.05	$D_{40}$	1229.4	$1244^{+34}_{-31}$	$10^9 A_t$	0.000	< 0.254
$A_{100}^{\text{dustTT}}$	7.52	$7.49^{+3.7}_{-3.7}$	$D_{220}$	5723	$5724^{+76}_{-74}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.223
$A_{143}^{\text{dustTT}}$	9.02	$9.06^{+3.5}_{-3.6}$	$D_{810}$	2533.0	$2534^{+27}_{-26}$	$f_{2000}^{143}$	29.7	$30^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.2}_{-8.1}$	$D_{1420}$	814.7	$815.1^{+9.6}_{-9.3}$	$f_{2000}^{143 \times 217}$	32.46	$32.5^{+3.6}_{-3.6}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{2000}$	230.16	$230.2^{+3.1}_{-3.1}$	$f_{2000}^{217}$	106.05	$106.0^{+3.6}_{-3.4}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$n_{s,0.002}$	0.9665	$0.9669^{+0.0080}_{-0.0080}$	$\chi_{\text{lensing}}^2$	9.99	10.2 ( $\nu: 1.5$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0485^{+0.0097}_{-0.0098}$	$Y_{\text{P}}$	0.245356	$0.24535^{+0.00013}_{-0.00013}$	$\chi_{\text{lowTEB}}^2$	10495.32	10497.3 ( $\nu: 1.8$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0998^{+0.064}_{-0.063}$	$Y_{\text{P}}^{\text{BBN}}$	0.246682	$0.24668^{+0.00013}_{-0.00013}$	$\chi_{\text{plik}}^2$	2434.8	2453.4 ( $\nu: 22.7$ )
$A_{143}^{\text{dustEE}}$	0.1005	$0.0998^{+0.014}_{-0.013}$	$10^5 D/H$	2.607	$2.608^{+0.053}_{-0.053}$	$\chi_{6\text{DF}}^2$	0.022	0.046 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.093}_{-0.092}$	Age/Gyr	13.8015	$13.802^{+0.042}_{-0.043}$	$\chi_{\text{MGS}}^2$	1.28	1.37 ( $\nu: 0.1$ )
$A_{217}^{\text{dustEE}}$	0.653	$0.65^{+0.26}_{-0.26}$	$z_*$	1089.933	$1089.93^{+0.46}_{-0.46}$	$\chi_{\text{DR11CMass}}^2$	2.45	2.74 ( $\nu: 0.1$ )
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.074}_{-0.074}$	$r_*$	144.768	$144.80^{+0.47}_{-0.48}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	0.67 ( $\nu: 0.1$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.057}_{-0.057}$	$100\theta_*$	1.04112	$1.04109^{+0.00058}_{-0.00059}$	$\chi_{\text{prior}}^2$	7.14	19.4 ( $\nu: 15.0$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.17}$	$D_A/\text{Gpc}$	13.9051	$13.908^{+0.044}_{-0.045}$	$\chi_{\text{CMB}}^2$	12940.1	12961.0 ( $\nu: 23.0$ )
$A_{143}^{\text{dustTE}}$	0.154	$0.16^{+0.11}_{-0.11}$	$z_{\text{drag}}$	1059.67	$1059.65^{+0.60}_{-0.58}$	$\chi_{\text{BAO}}^2$	4.36	4.83 ( $\nu: 0.2$ )
$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$r_{\text{drag}}$	147.464	$147.49^{+0.48}_{-0.49}$			
$A_{217}^{\text{dustTE}}$	1.65	$1.66^{+0.50}_{-0.51}$	$k_D$	0.14041	$0.14038^{+0.00057}_{-0.00056}$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.61$ ;  $\Delta\chi_{\text{eff}}^2 = 0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 12985.21$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.56$ ;  $R - 1 = 0.01694$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMASS: 2.45 ( $\Delta$  -0.00) DR11LOWZ: 0.61 ( $\Delta$  -0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.98 ( $\Delta$  0.31) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.32 ( $\Delta$  0.12) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.81 ( $\Delta$  -0.49)





20.21 base\_r\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022311	$0.02230^{+0.00028}_{-0.00028}$	$\mathbf{c}_{100}$	0.99816	$0.9981^{+0.0015}_{-0.0015}$	$100\theta_D$	0.160878	$0.16090^{+0.00035}_{-0.00035}$
$\Omega_c h^2$	0.11880	$0.1187^{+0.0020}_{-0.0020}$	$\mathbf{c}_{217}$	0.99603	$0.9960^{+0.0028}_{-0.0029}$	$z_{\text{eq}}$	3372.1	$3369^{+46}_{-44}$
$100\theta_{\text{MC}}$	1.04091	$1.04092^{+0.00058}_{-0.00059}$	$H_0$	67.72	$67.77^{+0.90}_{-0.90}$	$k_{\text{eq}}$	0.010292	$0.01028^{+0.00014}_{-0.00014}$
$\tau$	0.0665	$0.066^{+0.024}_{-0.024}$	$\Omega_\Lambda$	0.6909	$0.692^{+0.012}_{-0.012}$	$100\theta_{\text{eq}}$	0.8185	$0.8192^{+0.0086}_{-0.0086}$
$\ln(10^{10} A_s)$	3.0649	$3.064^{+0.045}_{-0.045}$	$\Omega_m$	0.3091	$0.308^{+0.012}_{-0.012}$	$100\theta_{s,\text{eq}}$	0.45216	$0.4525^{+0.0044}_{-0.0044}$
$n_s$	0.9669	$0.9674^{+0.0079}_{-0.0080}$	$\Omega_m h^2$	0.14176	$0.1416^{+0.0019}_{-0.0019}$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.07175^{+0.00067}_{-0.00067}$
$r$	0.000	< 0.119	$\Omega_m h^3$	0.09600	$0.09596^{+0.00059}_{-0.00059}$	$H(0.57)$	93.043	$93.05^{+0.43}_{-0.41}$
$y_{\text{cal}}$	1.00010	$1.0003^{+0.0050}_{-0.0047}$	$\sigma_8$	0.8164	$0.816^{+0.017}_{-0.017}$	$D_A(0.57)$	1386.1	$1386^{+12}_{-12}$
$A_{217}^{\text{CIB}}$	67.3	$64^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.5}$	0.4539	$0.453^{+0.012}_{-0.012}$	$F_{\text{AP}}(0.57)$	0.67541	$0.6752^{+0.0031}_{-0.0030}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$\sigma_8 \Omega_m^{0.25}$	0.6087	$0.608^{+0.013}_{-0.013}$	$f\sigma_8(0.57)$	0.4740	$0.4734^{+0.0097}_{-0.0098}$
$A_{143}^{\text{tSZ}}$	7.30	$5.36^{+3.6}_{-3.8}$	$\sigma_8/h^{0.5}$	0.9920	$0.991^{+0.020}_{-0.020}$	$\sigma_8(0.57)$	0.6079	$0.608^{+0.013}_{-0.013}$
$A_{100}^{\text{PS}}$	256	$261^{+50}_{-50}$	$\langle d^2 \rangle^{1/2}$	2.4550	$2.451^{+0.048}_{-0.049}$	$r_{0.002}$	0.000	< 0.113
$A_{143}^{\text{PS}}$	39.0	$43^{+20}_{-20}$	$z_{\text{re}}$	8.88	$8.80^{+2.2}_{-2.4}$	$r_{0.01}$	0.000	< 0.116
$A_{143 \times 217}^{\text{PS}}$	34.2	$39^{+20}_{-20}$	$10^9 A_s$	2.143	$2.141^{+0.098}_{-0.094}$	$\ln(10^{10} A_t)$	-6.26	$-0.5^{+1.9}_{-2.4}$
$A_{217}^{\text{PS}}$	97.2	$96^{+20}_{-20}$	$10^9 A_s e^{-2\tau}$	1.8762	$1.876^{+0.022}_{-0.021}$	$r_{10}$	0.0000	< 0.0579
$A^{\text{kSZ}}$	0.00	< 7.98	$D_{40}$	1229.0	$1244^{+34}_{-31}$	$10^9 A_t$	0.000	< 0.255
$A_{100}^{\text{dustTT}}$	7.43	$7.48^{+3.7}_{-3.7}$	$D_{220}$	5727	$5725^{+76}_{-73}$	$10^9 A_t e^{-2\tau}$	0.000	< 0.224
$A_{143}^{\text{dustTT}}$	9.13	$9.05^{+3.5}_{-3.5}$	$D_{810}$	2534.0	$2534^{+27}_{-26}$	$f_{2000}^{143}$	29.5	$30^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.2}_{-8.1}$	$D_{1420}$	815.2	$815.3^{+9.6}_{-9.2}$	$f_{2000}^{143 \times 217}$	32.32	$32.4^{+3.6}_{-3.6}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{2000}$	230.34	$230.3^{+3.1}_{-3.1}$	$f_{2000}^{217}$	105.86	$105.9^{+3.6}_{-3.5}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$n_{s,0.002}$	0.9669	$0.9674^{+0.0079}_{-0.0080}$	$\chi_{\text{lensing}}^2$	9.81	10.2 ( $\nu: 1.5$ )
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0486^{+0.0097}_{-0.0098}$	$Y_{\text{P}}$	0.245367	$0.24536^{+0.00012}_{-0.00013}$	$\chi_{\text{lowTEB}}^2$	10495.22	10497.3 ( $\nu: 1.8$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.0999	$0.0999^{+0.064}_{-0.063}$	$Y_{\text{P}}^{\text{BBN}}$	0.246693	$0.24669^{+0.00012}_{-0.00013}$	$\chi_{\text{plik}}^2$	2435.2	2453.6 ( $\nu: 22.8$ )
$A_{143}^{\text{dustEE}}$	0.1006	$0.0999^{+0.014}_{-0.013}$	$10^5 D/H$	2.603	$2.605^{+0.053}_{-0.052}$	$\chi_{\text{H070p6}}^2$	0.749	0.74 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.224^{+0.093}_{-0.093}$	Age/Gyr	13.7987	$13.799^{+0.041}_{-0.042}$	$\chi_{\text{JLA}}^2$	706.683	706.70 ( $\nu: 0.0$ )
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.26}_{-0.26}$	$z_*$	1089.889	$1089.89^{+0.45}_{-0.45}$	$\chi_{6\text{DF}}^2$	0.016	0.037 ( $\nu: 0.0$ )
$A_{100}^{\text{dustTE}}$	0.140	$0.142^{+0.074}_{-0.074}$	$r_*$	144.787	$144.83^{+0.46}_{-0.46}$	$\chi_{\text{MGS}}^2$	1.34	1.46 ( $\nu: 0.1$ )
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.057}$	$100\theta_*$	1.04110	$1.04111^{+0.00057}_{-0.00059}$	$\chi_{\text{DR11CMass}}^2$	2.43	2.70 ( $\nu: 0.1$ )
$A_{100 \times 217}^{\text{dustTE}}$	0.306	$0.30^{+0.17}_{-0.17}$	$D_A/\text{Gpc}$	13.9071	$13.911^{+0.044}_{-0.045}$	$\chi_{\text{DR11LOWZ}}^2$	0.54	0.58 ( $\nu: 0.1$ )
$A_{143}^{\text{dustTE}}$	0.154	$0.16^{+0.11}_{-0.11}$	$z_{\text{drag}}$	1059.70	$1059.67^{+0.60}_{-0.57}$	$\chi_{\text{prior}}^2$	7.06	19.4 ( $\nu: 15.0$ )
$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$r_{\text{drag}}$	147.476	$147.53^{+0.47}_{-0.48}$	$\chi_{\text{CMB}}^2$	12940.2	12961.0 ( $\nu: 23.0$ )
$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.50}_{-0.51}$	$k_D$	0.14042	$0.14036^{+0.00057}_{-0.00056}$	$\chi_{\text{BAO}}^2$	4.33	4.78 ( $\nu: 0.2$ )

Best-fit  $\chi_{\text{eff}}^2 = 13659.05$ ;  $\Delta\chi_{\text{eff}}^2 = 0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 13692.64$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.53$ ;  $R - 1 = 0.01680$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  0.01) MGS: 1.34 ( $\Delta$  -0.06) DR11CMASS: 2.43 ( $\Delta$  0.02) DR11LOWZ: 0.55 ( $\Delta$  0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.81 ( $\Delta$  0.06) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_10495.22 ( $\Delta$  0.00) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.20 ( $\Delta$  0.00) Hubble - H070p6: 0.75 ( $\Delta$  0.03) SN - JLA December\_2013: 706.68 ( $\Delta$  0.02)

20.22 base\_r\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02227^{+0.00031}_{-0.00030}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	$13.905^{+0.055}_{-0.054}$
$\Omega_c h^2$	$0.1190^{+0.0027}_{-0.0027}$	$A_{217}^{\text{dustTE}}$	$1.66^{+0.50}_{-0.51}$	$z_{\text{drag}}$	$1059.64^{+0.64}_{-0.62}$
$100\theta_{\text{MC}}$	$1.04088^{+0.00062}_{-0.00062}$	$c_{100}$	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	$147.47^{+0.58}_{-0.56}$
$\tau$	$0.065^{+0.024}_{-0.023}$	$c_{217}$	$0.9960^{+0.0028}_{-0.0029}$	$k_D$	$0.14040^{+0.00060}_{-0.00061}$
$\ln(10^{10} A_s)$	$3.062^{+0.045}_{-0.043}$	$H_0$	$67.6^{+1.2}_{-1.2}$	$100\theta_D$	$0.16092^{+0.00036}_{-0.00037}$
$n_s$	$0.9666^{+0.0093}_{-0.0090}$	$\Omega_\Lambda$	$0.690^{+0.016}_{-0.017}$	$z_{\text{eq}}$	$3376^{+60}_{-60}$
$r$	$< 0.119$	$\Omega_m$	$0.310^{+0.017}_{-0.016}$	$k_{\text{eq}}$	$0.01030^{+0.00018}_{-0.00018}$
$y_{\text{cal}}$	$1.0002^{+0.0050}_{-0.0047}$	$\Omega_m h^2$	$0.1419^{+0.0025}_{-0.0025}$	$100\theta_{\text{eq}}$	$0.818^{+0.012}_{-0.011}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$\Omega_m h^3$	$0.09595^{+0.00059}_{-0.00058}$	$100\theta_{\text{s,eq}}$	$0.4518^{+0.0060}_{-0.0057}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\sigma_8$	$0.816^{+0.016}_{-0.016}$	$r_{\text{drag}}/D_V(0.57)$	$0.07164^{+0.00093}_{-0.00089}$
$A_{143}^{\text{tSZ}}$	$5.33^{+3.6}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	$0.455^{+0.014}_{-0.014}$	$H(0.57)$	$92.99^{+0.55}_{-0.52}$
$A_{100}^{\text{PS}}$	$261^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	$0.609^{+0.013}_{-0.013}$	$D_A(0.57)$	$1388^{+16}_{-16}$
$A_{143}^{\text{PS}}$	$43^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$0.992^{+0.020}_{-0.019}$	$F_{\text{AP}}(0.57)$	$0.6758^{+0.0042}_{-0.0042}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	$2.455^{+0.048}_{-0.047}$	$f\sigma_8(0.57)$	$0.4741^{+0.0096}_{-0.0094}$
$A_{217}^{\text{PS}}$	$96^{+20}_{-20}$	$z_{\text{re}}$	$< 10.7$	$\sigma_8(0.57)$	$0.607^{+0.013}_{-0.013}$
$A^{\text{kSZ}}$	$< 8.07$	$10^9 A_s$	$2.138^{+0.096}_{-0.091}$	$r_{0.002}$	$< 0.112$
$A_{100}^{\text{dustTT}}$	$7.49^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	$1.877^{+0.022}_{-0.022}$	$r_{0.01}$	$< 0.116$
$A_{143}^{\text{dustTT}}$	$9.06^{+3.6}_{-3.5}$	$D_{40}$	$1245^{+34}_{-31}$	$\ln(10^{10} A_t)$	$-0.5^{+1.9}_{-2.4}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.2}_{-8.1}$	$D_{220}$	$5722^{+76}_{-75}$	$r_{10}$	$< 0.0574$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{810}$	$2534^{+27}_{-26}$	$10^9 A_t$	$< 0.254$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	$814.9^{+9.6}_{-9.4}$	$10^9 A_t e^{-2\tau}$	$< 0.223$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0484^{+0.0097}_{-0.0098}$	$D_{2000}$	$230.2^{+3.2}_{-3.2}$	$f_{2000}^{143}$	$30^{+5}_{-5}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0996^{+0.064}_{-0.063}$	$n_{\text{s},0.002}$	$0.9666^{+0.0093}_{-0.0090}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{143}^{\text{dustEE}}$	$0.0998^{+0.014}_{-0.014}$	$Y_{\text{P}}$	$0.24535^{+0.00014}_{-0.00014}$	$f_{2000}^{217}$	$106.0^{+3.6}_{-3.5}$
$A_{143 \times 217}^{\text{dustEE}}$	$0.224^{+0.093}_{-0.092}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668^{+0.00014}_{-0.00014}$	$\chi_{\text{lensing}}^2$	$10.4 (\nu: 1.7)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.25}$	$10^5 D/H$	$2.610^{+0.057}_{-0.059}$	$\chi_{\text{lowTEB}}^2$	$10497.4 (\nu: 1.9)$
$A_{100}^{\text{dustTE}}$	$0.142^{+0.073}_{-0.074}$	$\text{Age}/\text{Gyr}$	$13.804^{+0.049}_{-0.051}$	$\chi_{\text{plik}}^2$	$2453.5 (\nu: 23.0)$
$A_{100 \times 143}^{\text{dustTE}}$	$0.132^{+0.057}_{-0.057}$	$z_*$	$1089.95^{+0.56}_{-0.57}$	$\chi_{\text{prior}}^2$	$19.4 (\nu: 14.9)$
$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.17}_{-0.17}$	$r_*$	$144.77^{+0.59}_{-0.57}$	$\chi_{\text{CMB}}^2$	$12961.2 (\nu: 23.5)$
$A_{143}^{\text{dustTE}}$	$0.16^{+0.11}_{-0.11}$	$100\theta_*$	$1.04108^{+0.00061}_{-0.00061}$		

$\bar{\chi}_{\text{eff}}^2 = 12980.61; \Delta\bar{\chi}_{\text{eff}}^2 = 1.68; R - 1 = 0.01566$

## 20.23 base\_r\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022213	$0.02220^{+0.00044}_{-0.00043}$	$\Omega_m h^3$	0.09602	$0.09596^{+0.00090}_{-0.00090}$	$100\theta_D$	0.16096	$0.16099^{+0.00052}_{-0.00051}$
$\Omega_c h^2$	0.12016	$0.1198^{+0.0042}_{-0.0040}$	$\sigma_8$	0.8273	$0.826^{+0.021}_{-0.020}$	$z_{\text{eq}}$	3402	$3395^{+95}_{-92}$
$100\theta_{\text{MC}}$	1.04083	$1.04086^{+0.00092}_{-0.00091}$	$\sigma_8 \Omega_m^{0.5}$	0.4660	$0.464^{+0.027}_{-0.025}$	$k_{\text{eq}}$	0.010384	$0.01036^{+0.00029}_{-0.00028}$
$\tau$	0.0732	$0.073^{+0.024}_{-0.021}$	$\sigma_8 \Omega_m^{0.25}$	0.6210	$0.619^{+0.024}_{-0.023}$	$100\theta_{\text{eq}}$	0.8128	$0.814^{+0.017}_{-0.018}$
$\ln(10^{10} A_s)$	3.0813	$3.080^{+0.046}_{-0.043}$	$\sigma_8/h^{0.5}$	1.0097	$1.007^{+0.034}_{-0.033}$	$100\theta_{s,\text{eq}}$	0.4492	$0.4500^{+0.0090}_{-0.0091}$
$n_s$	0.9647	$0.966^{+0.011}_{-0.012}$	$\langle d^2 \rangle^{1/2}$	2.494	$2.488^{+0.081}_{-0.077}$	$r_{\text{drag}}/D_V(0.57)$	0.07126	$0.0714^{+0.0014}_{-0.0014}$
$r$	0.0000	$< 0.0975$	$z_{\text{re}}$	9.56	$9.51^{+2.1}_{-2.0}$	$H(0.57)$	92.81	$92.85^{+0.78}_{-0.76}$
$y_{\text{cal}}$	1.00022	$1.0004^{+0.0048}_{-0.0049}$	$10^9 A_s$	2.179	$2.18^{+0.10}_{-0.092}$	$D_A(0.57)$	1393.9	$1392^{+25}_{-24}$
$A_{217}^{\text{CIB}}$	66.9	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8821	$1.881^{+0.027}_{-0.026}$	$F_{\text{AP}}(0.57)$	0.6775	$0.6771^{+0.0065}_{-0.0065}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$D_{40}$	1236.4	$1247^{+36}_{-35}$	$f\sigma_8(0.57)$	0.4825	$0.481^{+0.016}_{-0.016}$
$A_{143}^{\text{tSZ}}$	7.06	$5.15^{+3.7}_{-3.8}$	$D_{220}$	5715	$5713^{+82}_{-78}$	$\sigma_8(0.57)$	0.6141	$0.614^{+0.014}_{-0.013}$
$A_{100}^{\text{PS}}$	255	$258^{+60}_{-50}$	$D_{810}$	2534.8	$2534^{+27}_{-27}$	$r_{0.002}$	0.0000	$< 0.0912$
$A_{143}^{\text{PS}}$	39.8	$44^{+20}_{-20}$	$D_{1420}$	814.6	$814.6^{+9.8}_{-10}$	$r_{0.01}$	0.0000	$< 0.0943$
$A_{143 \times 217}^{\text{PS}}$	34	$39^{+20}_{-20}$	$D_{2000}$	230.28	$230.2^{+3.5}_{-3.6}$	$\ln(10^{10} A_t)$	-7.21	$-0.8^{+2.1}_{-2.6}$
$A_{217}^{\text{PS}}$	97.8	$97^{+20}_{-20}$	$n_{s,0.002}$	0.9647	$0.966^{+0.011}_{-0.012}$	$r_{10}$	0.0000	$< 0.0465$
$A^{\text{kSZ}}$	0.00	$< 8.22$	$Y_{\text{P}}$	0.245323	$0.24532^{+0.00020}_{-0.00020}$	$10^9 A_t$	0.000	$< 0.212$
$A_{100}^{\text{dustTT}}$	7.31	$7.42^{+3.7}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.246650	$0.24664^{+0.00020}_{-0.00020}$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.183$
$A_{143}^{\text{dustTT}}$	8.96	$9.00^{+3.6}_{-3.6}$	$10^5 D/H$	2.621	$2.624^{+0.084}_{-0.082}$	$f_{2000}^{143}$	29.8	$30^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.2^{+8.0}_{-8.1}$	Age/Gyr	13.817	$13.815^{+0.073}_{-0.071}$	$f_{2000}^{143 \times 217}$	32.41	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$z_*$	1090.13	$1090.12^{+0.82}_{-0.77}$	$f_{2000}^{217}$	105.98	$106.1^{+3.9}_{-3.8}$
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.51	$144.60^{+0.94}_{-0.94}$	$\chi_{\text{WMAPTEB}}^2$	19734.4	$19736.8 (\nu: 3.7)$
$c_{217}$	0.99596	$0.9960^{+0.0028}_{-0.0028}$	$100\theta_*$	1.04103	$1.04106^{+0.00090}_{-0.00089}$	$\chi_{\text{plik}}^2$	763.8	$777.6 (\nu: 15.3)$
$H_0$	67.14	$67.3^{+1.8}_{-1.8}$	$D_A/\text{Gpc}$	13.881	$13.890^{+0.088}_{-0.087}$	$\chi_{\text{prior}}^2$	1.94	$7.34 (\nu: 6.3)$
$\Omega_\Lambda$	0.6827	$0.684^{+0.026}_{-0.026}$	$z_{\text{drag}}$	1059.59	$1059.53^{+0.90}_{-0.89}$	$\chi_{\text{CMB}}^2$	20498.2	$20514.4 (\nu: 16.8)$
$\Omega_m$	0.3173	$0.316^{+0.026}_{-0.026}$	$r_{\text{drag}}$	147.22	$147.32^{+0.94}_{-0.94}$			
$\Omega_m h^2$	0.14302	$0.1427^{+0.0040}_{-0.0039}$	$k_D$	0.14061	$0.1405^{+0.0010}_{-0.0010}$			

Best-fit  $\chi_{\text{eff}}^2 = 20500.14$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 20521.78$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.64$ ;  $R - 1 = 0.01261$   
 $\chi_{\text{eff}}^2$ : CMB - bflike-WMAP353ggf\_LFI312\_nw8: 19734.37 ( $\Delta$  0.22) plik\_dx11dr2\_HM\_v18\_TT: 763.84 ( $\Delta$  -0.24)

## 20.24 base\_r\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02226^{+0.00040}_{-0.00042}$	$\Omega_m h^3$	$0.09589^{+0.00088}_{-0.00091}$	$100\theta_D$	$0.16099^{+0.00051}_{-0.00049}$
$\Omega_c h^2$	$0.1182^{+0.0031}_{-0.0031}$	$\sigma_8$	$0.817^{+0.014}_{-0.014}$	$z_{\text{eq}}$	$3357^{+72}_{-69}$
$100\theta_{\text{MC}}$	$1.04107^{+0.00089}_{-0.00087}$	$\sigma_8 \Omega_m^{0.5}$	$0.452^{+0.017}_{-0.016}$	$k_{\text{eq}}$	$0.01025^{+0.00022}_{-0.00021}$
$\tau$	$0.069^{+0.022}_{-0.019}$	$\sigma_8 \Omega_m^{0.25}$	$0.607^{+0.015}_{-0.014}$	$100\theta_{\text{eq}}$	$0.821^{+0.013}_{-0.014}$
$\ln(10^{10} A_s)$	$3.068^{+0.039}_{-0.039}$	$\sigma_8/h^{0.5}$	$0.991^{+0.020}_{-0.020}$	$100\theta_{\text{s,eq}}$	$0.4536^{+0.0068}_{-0.0069}$
$n_s$	$0.9692^{+0.0097}_{-0.010}$	$\langle d^2 \rangle^{1/2}$	$2.449^{+0.048}_{-0.046}$	$r_{\text{drag}}/D_V(0.57)$	$0.0719^{+0.0010}_{-0.0011}$
$r$	$< 0.107$	$z_{\text{re}}$	$9.12^{+1.9}_{-1.8}$	$H(0.57)$	$93.11^{+0.64}_{-0.66}$
$y_{\text{cal}}$	$1.0002^{+0.0046}_{-0.0048}$	$10^9 A_s$	$2.151^{+0.083}_{-0.083}$	$D_A(0.57)$	$1383^{+20}_{-19}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.872^{+0.022}_{-0.022}$	$F_{\text{AP}}(0.57)$	$0.6746^{+0.0049}_{-0.0046}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$D_{40}$	$1237^{+34}_{-33}$	$f\sigma_8(0.57)$	$0.4734^{+0.0098}_{-0.0099}$
$A_{143}^{\text{tSZ}}$	$5.14^{+3.7}_{-3.8}$	$D_{220}$	$5712^{+79}_{-77}$	$\sigma_8(0.57)$	$0.609^{+0.011}_{-0.011}$
$A_{100}^{\text{PS}}$	$258^{+50}_{-50}$	$D_{810}$	$2532^{+25}_{-26}$	$r_{0.002}$	$< 0.101$
$A_{143}^{\text{PS}}$	$44^{+10}_{-20}$	$D_{1420}$	$814.9^{+9.7}_{-9.6}$	$r_{0.01}$	$< 0.104$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{2000}$	$230.2^{+3.4}_{-3.4}$	$\ln(10^{10} A_t)$	$-0.6^{+2.1}_{-2.5}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$n_{\text{s},0.002}$	$0.9692^{+0.0097}_{-0.010}$	$r_{10}$	$< 0.0513$
$A^{\text{kSZ}}$	$< 8.36$	$Y_{\text{P}}$	$0.24534^{+0.00018}_{-0.00019}$	$10^9 A_t$	$< 0.230$
$A_{100}^{\text{dustTT}}$	$7.48^{+3.8}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24667^{+0.00018}_{-0.00019}$	$10^9 A_t e^{-2\tau}$	$< 0.200$
$A_{143}^{\text{dustTT}}$	$9.07^{+3.6}_{-3.6}$	$10^5 \text{D}/\text{H}$	$2.612^{+0.080}_{-0.075}$	$f_{2000}^{143}$	$30^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.3^{+8.3}_{-8.1}$	$\text{Age}/\text{Gyr}$	$13.796^{+0.065}_{-0.062}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$z_*$	$1089.90^{+0.71}_{-0.67}$	$f_{2000}^{217}$	$106.1^{+3.9}_{-3.8}$
$c_{100}$	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	$144.97^{+0.77}_{-0.73}$	$\chi_{\text{lensing}}^2$	$9.87 (\nu: 1.1)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0028}$	$100\theta_*$	$1.04127^{+0.00088}_{-0.00085}$	$\chi_{\text{WMAPTEB}}^2$	$19735.5 (\nu: 2.4)$
$H_0$	$67.9^{+1.4}_{-1.4}$	$D_A/\text{Gpc}$	$13.923^{+0.071}_{-0.070}$	$\chi_{\text{plik}}^2$	$779.4 (\nu: 30.5)$
$\Omega_\Lambda$	$0.694^{+0.018}_{-0.019}$	$z_{\text{drag}}$	$1059.56^{+0.87}_{-0.88}$	$\chi_{\text{prior}}^2$	$7.45 (\nu: 6.5)$
$\Omega_m$	$0.306^{+0.019}_{-0.018}$	$r_{\text{drag}}$	$147.68^{+0.77}_{-0.75}$	$\chi_{\text{CMB}}^2$	$20524.8 (\nu: 31.8)$
$\Omega_m h^2$	$0.1411^{+0.0030}_{-0.0029}$	$k_D$	$0.14016^{+0.00089}_{-0.00089}$		

$$\bar{\chi}_{\text{eff}}^2 = 20532.21; \Delta\bar{\chi}_{\text{eff}}^2 = 1.46; R - 1 = 0.03993$$

## 20.25 base\_r\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02225^{+0.00039}_{-0.00038}$	$\sigma_8$	$0.824^{+0.020}_{-0.019}$	$k_{\text{eq}}$	$0.01031^{+0.00018}_{-0.00018}$
$\Omega_c h^2$	$0.1190^{+0.0025}_{-0.0025}$	$\sigma_8 \Omega_m^{0.5}$	$0.459^{+0.017}_{-0.017}$	$100\theta_{\text{eq}}$	$0.818^{+0.011}_{-0.011}$
$100\theta_{\text{MC}}$	$1.04097^{+0.00083}_{-0.00084}$	$\sigma_8 \Omega_m^{0.25}$	$0.615^{+0.018}_{-0.017}$	$100\theta_{\text{s,eq}}$	$0.4518^{+0.0056}_{-0.0055}$
$\tau$	$0.074^{+0.023}_{-0.022}$	$\sigma_8/h^{0.5}$	$1.003^{+0.027}_{-0.026}$	$r_{\text{drag}}/D_V(0.57)$	$0.07165^{+0.00083}_{-0.00081}$
$\ln(10^{10} A_s)$	$3.081^{+0.045}_{-0.044}$	$\langle d^2 \rangle^{1/2}$	$2.477^{+0.065}_{-0.063}$	$H(0.57)$	$92.99^{+0.54}_{-0.52}$
$n_s$	$0.9674^{+0.0087}_{-0.0086}$	$z_{\text{re}}$	$9.61^{+2.0}_{-1.9}$	$D_A(0.57)$	$1388^{+15}_{-15}$
$r$	$< 0.0992$	$10^9 A_s$	$2.18^{+0.10}_{-0.094}$	$F_{\text{AP}}(0.57)$	$0.6758^{+0.0038}_{-0.0037}$
$y_{\text{cal}}$	$1.0004^{+0.0048}_{-0.0048}$	$10^9 A_s e^{-2\tau}$	$1.877^{+0.023}_{-0.022}$	$f\sigma_8(0.57)$	$0.479^{+0.013}_{-0.013}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$D_{40}$	$1243^{+33}_{-32}$	$\sigma_8(0.57)$	$0.613^{+0.014}_{-0.014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$D_{220}$	$5716^{+80}_{-77}$	$r_{0.002}$	$< 0.0937$
$A_{143}^{\text{tSZ}}$	$5.16^{+3.7}_{-3.8}$	$D_{810}$	$2534^{+26}_{-27}$	$r_{0.01}$	$< 0.0965$
$A_{100}^{\text{PS}}$	$257^{+50}_{-50}$	$D_{1420}$	$815.1^{+9.4}_{-9.8}$	$\ln(10^{10} A_t)$	$-0.7^{+2.1}_{-2.5}$
$A_{143}^{\text{PS}}$	$44^{+10}_{-20}$	$D_{2000}$	$230.4^{+3.4}_{-3.5}$	$r_{10}$	$< 0.0473$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$n_{\text{s},0.002}$	$0.9674^{+0.0087}_{-0.0086}$	$10^9 A_t$	$< 0.216$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$Y_{\text{P}}$	$0.24534^{+0.00018}_{-0.00017}$	$10^9 A_t e^{-2\tau}$	$< 0.186$
$A^{\text{kSZ}}$	$< 8.18$	$Y_{\text{P}}^{\text{BBN}}$	$0.24666^{+0.00018}_{-0.00017}$	$f_{2000}^{143}$	$30^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	$7.40^{+3.7}_{-3.7}$	$10^5 \text{D}/\text{H}$	$2.615^{+0.073}_{-0.074}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	$8.98^{+3.6}_{-3.6}$	$\text{Age}/\text{Gyr}$	$13.804^{+0.056}_{-0.056}$	$f_{2000}^{217}$	$106.0^{+3.8}_{-3.8}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2^{+8.2}_{-8.2}$	$z_*$	$1089.99^{+0.59}_{-0.58}$	$\chi_{\text{WMAPTEB}}^2$	$19736.5 (\nu: 3.7)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$r_*$	$144.77^{+0.63}_{-0.64}$	$\chi_{\text{plik}}^2$	$777.6 (\nu: 27.3)$
$c_{100}$	$0.9979^{+0.0016}_{-0.0015}$	$100\theta_*$	$1.04117^{+0.00081}_{-0.00082}$	$\chi_{6\text{DF}}^2$	$0.064 (\nu: 0.0)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0028}$	$D_A/\text{Gpc}$	$13.905^{+0.062}_{-0.062}$	$\chi_{\text{MGS}}^2$	$1.32 (\nu: 0.1)$
$H_0$	$67.6^{+1.1}_{-1.1}$	$z_{\text{drag}}$	$1059.58^{+0.89}_{-0.86}$	$\chi_{\text{DR11CMass}}^2$	$2.90 (\nu: 0.2)$
$\Omega_\Lambda$	$0.689^{+0.014}_{-0.015}$	$r_{\text{drag}}$	$147.48^{+0.70}_{-0.69}$	$\chi_{\text{DR11LOWZ}}^2$	$0.77 (\nu: 0.2)$
$\Omega_m$	$0.311^{+0.015}_{-0.014}$	$k_{\text{D}}$	$0.14036^{+0.00088}_{-0.00087}$	$\chi_{\text{prior}}^2$	$7.37 (\nu: 6.4)$
$\Omega_m h^2$	$0.1419^{+0.0024}_{-0.0024}$	$100\theta_{\text{D}}$	$0.16097^{+0.00050}_{-0.00051}$	$\chi_{\text{CMB}}^2$	$20514.1 (\nu: 28.5)$
$\Omega_m h^3$	$0.09596^{+0.00089}_{-0.00090}$	$z_{\text{eq}}$	$3376^{+58}_{-57}$	$\chi_{\text{BAO}}^2$	$5.06 (\nu: 0.5)$

$$\bar{\chi}_{\text{eff}}^2 = 20526.53; \Delta\chi_{\text{eff}}^2 = 1.63; R - 1 = 0.01956$$

## 21 w

### 21.1 base\_w\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022334	$0.02228^{+0.00047}_{-0.00045}$	$\Omega_m$	0.142	$0.205^{+0.12}_{-0.084}$	$D_A/\text{Gpc}$	13.897	$13.891^{+0.089}_{-0.089}$
$\Omega_c h^2$	0.11911	$0.1195^{+0.0043}_{-0.0043}$	$\Omega_m h^2$	0.14209	$0.1425^{+0.0041}_{-0.0040}$	$z_{\text{drag}}$	1059.78	$1059.69^{+0.98}_{-0.92}$
$100\theta_{\text{MC}}$	1.04097	$1.04092^{+0.00097}_{-0.00092}$	$\Omega_m h^3$	0.1421	$0.122^{+0.024}_{-0.029}$	$r_{\text{drag}}$	147.37	$147.32^{+0.96}_{-0.96}$
$\tau$	0.0778	$0.076^{+0.038}_{-0.038}$	$\sigma_8$	1.093	$0.98^{+0.14}_{-0.17}$	$k_D$	0.14055	$0.1406^{+0.0010}_{-0.0010}$
$w$	-1.94	$-1.54^{+0.62}_{-0.50}$	$\sigma_8 \Omega_m^{0.5}$	0.4119	$0.436^{+0.042}_{-0.038}$	$100\theta_D$	0.16084	$0.16091^{+0.00054}_{-0.00054}$
$\ln(10^{10} A_s)$	3.088	$3.085^{+0.072}_{-0.073}$	$\sigma_8 \Omega_m^{0.25}$	0.6708	$0.652^{+0.041}_{-0.046}$	$z_{\text{eq}}$	3380	$3389^{+97}_{-97}$
$n_s$	0.9674	$0.966^{+0.012}_{-0.012}$	$\sigma_8/h^{0.5}$	1.093	$1.062^{+0.063}_{-0.072}$	$k_{\text{eq}}$	0.010316	$0.01034^{+0.00030}_{-0.00030}$
$y_{\text{cal}}$	1.00011	$1.0004^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.573	$2.55^{+0.10}_{-0.11}$	$100\theta_{\text{eq}}$	0.8172	$0.816^{+0.019}_{-0.018}$
$A_{217}^{\text{CIB}}$	65.4	$63^{+10}_{-10}$	$z_{\text{re}}$	9.86	$9.64^{+3.5}_{-3.6}$	$100\theta_{s,\text{eq}}$	0.4515	$0.4506^{+0.0096}_{-0.0093}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.16	—	$10^9 A_s$	2.194	$2.19^{+0.16}_{-0.16}$	$r_{\text{drag}}/D_V(0.57)$	0.07623	$0.0745^{+0.0033}_{-0.0039}$
$A_{143}^{\text{tSZ}}$	7.03	$5.22^{+3.6}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8777	$1.880^{+0.028}_{-0.026}$	$H(0.57)$	88.99	$90.9^{+2.6}_{-2.7}$
$A_{100}^{\text{PS}}$	250	$256^{+50}_{-50}$	$D_{40}$	1227.1	$1233^{+30}_{-28}$	$D_A(0.57)$	1235	$1294^{+110}_{-82}$
$A_{143}^{\text{PS}}$	40.1	$43^{+20}_{-20}$	$D_{220}$	5722	$5722^{+80}_{-78}$	$F_{\text{AP}}(0.57)$	0.576	$0.616^{+0.068}_{-0.050}$
$A_{143 \times 217}^{\text{PS}}$	36.4	$39^{+20}_{-20}$	$D_{810}$	2532.4	$2534^{+28}_{-26}$	$f\sigma_8(0.57)$	0.690	$0.60^{+0.11}_{-0.14}$
$A_{217}^{\text{PS}}$	99.1	$98^{+20}_{-20}$	$D_{1420}$	814.5	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.837	$0.74^{+0.12}_{-0.15}$
$A^{\text{kSZ}}$	0.00	< 7.96	$D_{2000}$	230.88	$230.6^{+3.7}_{-3.5}$	$f_{2000}^{143}$	28.8	$29^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.39	$7.45^{+3.7}_{-3.7}$	$n_{s,0.002}$	0.9674	$0.966^{+0.012}_{-0.012}$	$f_{2000}^{143 \times 217}$	31.60	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	8.94	$8.97^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245377	$0.24535^{+0.00021}_{-0.00021}$	$f_{2000}^{217}$	105.19	$105.7^{+4.0}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.0^{+8.1}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.246703	$0.24668^{+0.00021}_{-0.00021}$	$\chi_{\text{lowTEB}}^2$	10495.14	10496.4 ( $\nu$ : 2.1)
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^5 D/H$	2.598	$2.609^{+0.088}_{-0.088}$	$\chi_{\text{plik}}^2$	761.9	776.1 ( $\nu$ : 15.0)
$c_{100}$	0.99794	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.432	$13.57^{+0.28}_{-0.21}$	$\chi_{\text{prior}}^2$	1.86	7.20 ( $\nu$ : 6.0)
$c_{217}$	0.99581	$0.9959^{+0.0028}_{-0.0028}$	$z_*$	1089.89	$1090.00^{+0.84}_{-0.86}$	$\chi_{\text{CMB}}^2$	11257.0	11272.6 ( $\nu$ : 15.5)
$H_0$	99.99	> 66.6	$r_*$	144.69	$144.62^{+0.97}_{-0.96}$			
$\Omega_\Lambda$	0.858	$0.795^{+0.084}_{-0.12}$	$100\theta_*$	1.04116	$1.04111^{+0.00095}_{-0.00091}$			

Best-fit  $\chi_{\text{eff}}^2 = 11258.91$ ;  $\Delta\chi_{\text{eff}}^2 = -3.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11279.77$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -2.05$ ;  $R - 1 = 0.01604$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.14 ( $\Delta$  -1.33) plik\_dx11dr2\_HM\_v18\_TT: 761.92 ( $\Delta$  -1.46)



## 21.2 base\_w\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022254	$0.02223^{+0.00047}_{-0.00043}$	$\Omega_m$	0.3054	$0.306^{+0.032}_{-0.032}$	$D_A/\text{Gpc}$	13.891	$13.891^{+0.088}_{-0.089}$
$\Omega_c h^2$	0.11962	$0.1197^{+0.0044}_{-0.0046}$	$\Omega_m h^2$	0.14252	$0.1426^{+0.0040}_{-0.0041}$	$z_{\text{drag}}$	1059.63	$1059.59^{+0.95}_{-0.95}$
$100\theta_{\text{MC}}$	1.04088	$1.04089^{+0.00094}_{-0.00091}$	$\Omega_m h^3$	0.09737	$0.0974^{+0.0046}_{-0.0049}$	$r_{\text{drag}}$	147.32	$147.33^{+0.90}_{-0.95}$
$\tau$	0.0788	$0.078^{+0.038}_{-0.037}$	$\sigma_8$	0.8395	$0.838^{+0.041}_{-0.042}$	$k_D$	0.14054	$0.14051^{+0.00099}_{-0.0010}$
$w$	-1.032	$-1.03^{+0.11}_{-0.11}$	$\sigma_8 \Omega_m^{0.5}$	0.4639	$0.464^{+0.025}_{-0.024}$	$100\theta_D$	0.16092	$0.16096^{+0.00054}_{-0.00055}$
$\ln(10^{10} A_s)$	3.092	$3.090^{+0.071}_{-0.069}$	$\sigma_8 \Omega_m^{0.25}$	0.6241	$0.623^{+0.027}_{-0.026}$	$z_{\text{eq}}$	3390	$3391^{+95}_{-99}$
$n_s$	0.9665	$0.966^{+0.012}_{-0.012}$	$\sigma_8/h^{0.5}$	1.0157	$1.015^{+0.041}_{-0.040}$	$k_{\text{eq}}$	0.010348	$0.01035^{+0.00029}_{-0.00030}$
$y_{\text{cal}}$	1.00048	$1.0001^{+0.0046}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	2.503	$2.502^{+0.093}_{-0.088}$	$100\theta_{\text{eq}}$	0.8150	$0.815^{+0.020}_{-0.019}$
$A_{217}^{\text{CIB}}$	65.8	$64^{+10}_{-10}$	$z_{\text{re}}$	10.05	$9.92^{+3.4}_{-3.6}$	$100\theta_{s,\text{eq}}$	0.4504	$0.450^{+0.010}_{-0.0096}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$10^9 A_s$	2.202	$2.20^{+0.16}_{-0.16}$	$r_{\text{drag}}/D_V(0.57)$	0.07169	$0.0717^{+0.0015}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	7.02	$5.25^{+3.7}_{-3.9}$	$10^9 A_s e^{-2\tau}$	1.8806	$1.879^{+0.027}_{-0.027}$	$H(0.57)$	92.87	$92.84^{+0.94}_{-0.89}$
$A_{100}^{\text{PS}}$	252	$256^{+50}_{-50}$	$D_{40}$	1234.7	$1236^{+28}_{-25}$	$D_A(0.57)$	1383.2	$1384^{+28}_{-30}$
$A_{143}^{\text{PS}}$	40.7	$43^{+20}_{-10}$	$D_{220}$	5718	$5713^{+89}_{-86}$	$F_{\text{AP}}(0.57)$	0.6727	$0.673^{+0.013}_{-0.013}$
$A_{143 \times 217}^{\text{PS}}$	36.4	$39^{+20}_{-20}$	$D_{810}$	2535.6	$2532^{+27}_{-29}$	$f\sigma_8(0.57)$	0.4899	$0.489^{+0.029}_{-0.031}$
$A_{217}^{\text{PS}}$	99.4	$98^{+20}_{-20}$	$D_{1420}$	815.4	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.6249	$0.624^{+0.032}_{-0.034}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.72	$230.2^{+3.8}_{-3.4}$	$f_{2000}^{143}$	29.3	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.46	$7.48^{+3.7}_{-3.5}$	$n_{s,0.002}$	0.9665	$0.966^{+0.012}_{-0.012}$	$f_{2000}^{143 \times 217}$	32.06	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.00	$9.01^{+3.8}_{-4.0}$	$Y_{\text{P}}$	0.245342	$0.24533^{+0.00021}_{-0.00021}$	$f_{2000}^{217}$	105.70	$105.9^{+3.7}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.1^{+8.0}_{-8.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246668	$0.24666^{+0.00021}_{-0.00020}$	$\chi_{\text{lowTEB}}^2$	10496.31	10497.4 ( $\nu$ : 2.8)
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-20}$	$10^5 \text{D}/\text{H}$	2.613	$2.618^{+0.084}_{-0.089}$	$\chi_{\text{plik}}^2$	763.4	780 ( $\nu$ : 418.0)
$c_{100}$	0.99792	$0.9979^{+0.0016}_{-0.0016}$	Age/Gyr	13.790	$13.793^{+0.086}_{-0.086}$	$\chi_{\text{JLA}}^2$	706.69	707.7 ( $\nu$ : 1.0)
$c_{217}$	0.99590	$0.9958^{+0.0030}_{-0.0029}$	$z_*$	1090.04	$1090.07^{+0.83}_{-0.85}$	$\chi_{\text{prior}}^2$	1.94	7.55 ( $\nu$ : 10.2)
$H_0$	68.32	$68.3^{+3.3}_{-3.1}$	$r_*$	144.62	$144.62^{+0.95}_{-0.94}$	$\chi_{\text{CMB}}^2$	11259.8	11280 ( $\nu$ : 429.2)
$\Omega_\Lambda$	0.6946	$0.694^{+0.032}_{-0.032}$	$100\theta_*$	1.04107	$1.04109^{+0.00092}_{-0.00090}$			

Best-fit  $\chi_{\text{eff}}^2 = 11968.38$ ;  $\Delta\chi_{\text{eff}}^2 = -0.35$ ;  $\bar{\chi}_{\text{eff}}^2 = 11992.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 3.68$ ;  $R - 1 = 0.08168$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.31 ( $\Delta$  -0.13) plik\_dx11dr2\_HM\_v18\_TT: 763.44 ( $\Delta$  0.02) SN - JLA December\_2013: 706.68 ( $\Delta$  -0.08)

### 21.3 base\_w\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022332	$0.02229^{+0.00047}_{-0.00045}$	$\Omega_m$	0.152	$0.22^{+0.15}_{-0.10}$	$D_A/\text{Gpc}$	13.930	$13.919^{+0.085}_{-0.080}$
$\Omega_c h^2$	0.11767	$0.1183^{+0.0038}_{-0.0040}$	$\Omega_m h^2$	0.14065	$0.1412^{+0.0037}_{-0.0037}$	$z_{\text{drag}}$	1059.67	$1059.6^{+1.0}_{-0.93}$
$100\theta_{\text{MC}}$	1.04117	$1.04110^{+0.00097}_{-0.00098}$	$\Omega_m h^3$	0.1354	$0.116^{+0.027}_{-0.030}$	$r_{\text{drag}}$	147.75	$147.64^{+0.86}_{-0.86}$
$\tau$	0.0575	$0.059^{+0.036}_{-0.034}$	$\sigma_8$	1.031	$0.92^{+0.15}_{-0.17}$	$k_D$	0.14014	$0.14022^{+0.00091}_{-0.00091}$
$w$	-1.80	$-1.41^{+0.64}_{-0.56}$	$\sigma_8 \Omega_m^{0.5}$	0.4013	$0.427^{+0.044}_{-0.038}$	$100\theta_D$	0.16092	$0.16096^{+0.00053}_{-0.00057}$
$\ln(10^{10} A_s)$	3.043	$3.049^{+0.066}_{-0.064}$	$\sigma_8 \Omega_m^{0.25}$	0.6431	$0.626^{+0.032}_{-0.035}$	$z_{\text{eq}}$	3346	$3360^{+88}_{-89}$
$n_s$	0.9698	$0.968^{+0.012}_{-0.011}$	$\sigma_8/h^{0.5}$	1.050	$1.022^{+0.050}_{-0.056}$	$k_{\text{eq}}$	0.010211	$0.01025^{+0.00027}_{-0.00027}$
$y_{\text{cal}}$	0.99988	$1.0001^{+0.0050}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.490	$2.471^{+0.060}_{-0.065}$	$100\theta_{\text{eq}}$	0.8237	$0.821^{+0.018}_{-0.016}$
$A_{217}^{\text{CIB}}$	67.5	$64^{+10}_{-10}$	$z_{\text{re}}$	7.91	$8.06^{+3.4}_{-3.6}$	$100\theta_{s,\text{eq}}$	0.4548	$0.4535^{+0.0089}_{-0.0085}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.097	$2.11^{+0.14}_{-0.13}$	$r_{\text{drag}}/D_V(0.57)$	0.07659	$0.0743^{+0.0037}_{-0.0047}$
$A_{143}^{\text{tSZ}}$	7.16	$5.19^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8695	$1.873^{+0.024}_{-0.026}$	$H(0.57)$	90.02	$91.6^{+2.2}_{-2.6}$
$A_{100}^{\text{PS}}$	254	$259^{+50}_{-50}$	$D_{40}$	1213.1	$1221^{+26}_{-25}$	$D_A(0.57)$	1239	$1308^{+130}_{-100}$
$A_{143}^{\text{PS}}$	38.8	$44^{+10}_{-20}$	$D_{220}$	5720	$5720^{+81}_{-80}$	$F_{\text{AP}}(0.57)$	0.584	$0.628^{+0.075}_{-0.060}$
$A_{143 \times 217}^{\text{PS}}$	32	$39^{+20}_{-20}$	$D_{810}$	2530.1	$2531^{+28}_{-27}$	$f\sigma_8(0.57)$	0.640	$0.56^{+0.12}_{-0.13}$
$A_{217}^{\text{PS}}$	96.5	$96^{+20}_{-20}$	$D_{1420}$	814.5	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.790	$0.70^{+0.12}_{-0.14}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.28	$230.1^{+3.7}_{-3.8}$	$f_{2000}^{143}$	29.8	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.43	$7.48^{+3.5}_{-3.8}$	$n_{s,0.002}$	0.9698	$0.968^{+0.012}_{-0.011}$	$f_{2000}^{143 \times 217}$	32.35	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.16	$9.12^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.245376	$0.24535^{+0.00021}_{-0.00020}$	$f_{2000}^{217}$	105.86	$106.3^{+3.9}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.1^{+8.5}_{-8.2}$	$Y_{\text{P}}^{\text{BBN}}$	0.246703	$0.24668^{+0.00021}_{-0.00021}$	$\chi_{\text{lensing}}^2$	9.50	10.1 ( $\nu$ : 1.6)
$A_{217}^{\text{dustTT}}$	81.8	$81^{+10}_{-10}$	$10^5 D/H$	2.598	$2.608^{+0.087}_{-0.088}$	$\chi_{\text{lowTEB}}^2$	10493.77	10495.1 ( $\nu$ : 1.0)
$c_{100}$	0.99793	$0.9979^{+0.0016}_{-0.0015}$	Age/Gyr	13.445	$13.61^{+0.35}_{-0.25}$	$\chi_{\text{plik}}^2$	766.0	780 ( $\nu$ : 61.0)
$c_{217}$	0.99597	$0.9959^{+0.0029}_{-0.0029}$	$z_*$	1089.76	$1089.88^{+0.78}_{-0.83}$	$\chi_{\text{prior}}^2$	2.01	7.50 ( $\nu$ : 7.2)
$H_0$	96.3	> 62.5	$r_*$	145.07	$144.94^{+0.93}_{-0.86}$	$\chi_{\text{CMB}}^2$	11269.3	11280 ( $\nu$ : 61.6)
$\Omega_\Lambda$	0.848	$0.78^{+0.10}_{-0.15}$	$100\theta_*$	1.04137	$1.04129^{+0.00094}_{-0.00096}$			

Best-fit  $\chi_{\text{eff}}^2 = 11271.28$ ;  $\Delta\chi_{\text{eff}}^2 = -1.15$ ;  $\bar{\chi}_{\text{eff}}^2 = 11292.49$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.19$ ;  $R - 1 = 0.04349$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.50 ( $\Delta$  0.32) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.77 ( $\Delta$  -1.08) plik\_dx11dr2\_HM\_v18\_TT: 766.00 ( $\Delta$  -0.32)

## 21.4 base\_w\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022258	$0.02223^{+0.00046}_{-0.00044}$	$\Omega_m$	0.276	$0.279^{+0.055}_{-0.053}$	$D_A/\text{Gpc}$	13.889	$13.887^{+0.090}_{-0.093}$
$\Omega_c h^2$	0.11968	$0.1199^{+0.0043}_{-0.0044}$	$\Omega_m h^2$	0.14259	$0.1428^{+0.0041}_{-0.0041}$	$z_{\text{drag}}$	1059.67	$1059.59^{+0.95}_{-0.95}$
$100\theta_{\text{MC}}$	1.04088	$1.04087^{+0.00095}_{-0.00095}$	$\Omega_m h^3$	0.1025	$0.103^{+0.010}_{-0.0098}$	$r_{\text{drag}}$	147.30	$147.28^{+0.94}_{-1.0}$
$\tau$	0.0775	$0.076^{+0.037}_{-0.038}$	$\sigma_8$	0.872	$0.871^{+0.070}_{-0.071}$	$k_D$	0.14056	$0.1406^{+0.0010}_{-0.0010}$
$w$	-1.148	$-1.15^{+0.22}_{-0.23}$	$\sigma_8 \Omega_m^{0.5}$	0.4582	$0.459^{+0.027}_{-0.026}$	$100\theta_D$	0.16092	$0.16096^{+0.00053}_{-0.00055}$
$\ln(10^{10} A_s)$	3.089	$3.086^{+0.070}_{-0.072}$	$\sigma_8 \Omega_m^{0.25}$	0.6321	$0.632^{+0.033}_{-0.032}$	$z_{\text{eq}}$	3392	$3396^{+98}_{-98}$
$n_s$	0.9663	$0.965^{+0.012}_{-0.012}$	$\sigma_8/h^{0.5}$	1.0287	$1.028^{+0.048}_{-0.047}$	$k_{\text{eq}}$	0.010353	$0.01037^{+0.00030}_{-0.00030}$
$y_{\text{cal}}$	1.00026	$1.0002^{+0.0048}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	2.518	$2.518^{+0.098}_{-0.097}$	$100\theta_{\text{eq}}$	0.8148	$0.814^{+0.019}_{-0.018}$
$A_{217}^{\text{CIB}}$	65.3	$64^{+10}_{-10}$	$z_{\text{re}}$	9.92	$9.71^{+3.5}_{-3.6}$	$100\theta_{s,\text{eq}}$	0.4502	$0.4499^{+0.0096}_{-0.0092}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.22	—	$10^9 A_s$	2.196	$2.19^{+0.16}_{-0.15}$	$r_{\text{drag}}/D_V(0.57)$	0.07251	$0.0724^{+0.0019}_{-0.0018}$
$A_{143}^{\text{tSZ}}$	6.96	$5.11^{+3.6}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8804	$1.881^{+0.028}_{-0.026}$	$H(0.57)$	92.62	$92.5^{+1.1}_{-1.3}$
$A_{100}^{\text{PS}}$	251	$258^{+50}_{-60}$	$D_{40}$	1233.1	$1236^{+28}_{-26}$	$D_A(0.57)$	1357.6	$1360^{+51}_{-45}$
$A_{143}^{\text{PS}}$	42.1	$44^{+10}_{-10}$	$D_{220}$	5717	$5716^{+82}_{-81}$	$F_{\text{AP}}(0.57)$	0.6585	$0.659^{+0.027}_{-0.025}$
$A_{143 \times 217}^{\text{PS}}$	39.1	$39^{+20}_{-20}$	$D_{810}$	2534.6	$2533^{+27}_{-27}$	$f\sigma_8(0.57)$	0.514	$0.514^{+0.054}_{-0.051}$
$A_{217}^{\text{PS}}$	100.4	$98^{+20}_{-20}$	$D_{1420}$	815.0	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.652	$0.651^{+0.055}_{-0.056}$
$A^{\text{kSZ}}$	0.01	< 8.24	$D_{2000}$	230.67	$230.3^{+3.7}_{-3.5}$	$f_{2000}^{143}$	29.2	$30^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.37	$7.45^{+3.7}_{-3.5}$	$n_{s,0.002}$	0.9663	$0.965^{+0.012}_{-0.012}$	$f_{2000}^{143 \times 217}$	32.05	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.00	$9.01^{+3.7}_{-3.7}$	$Y_{\text{P}}$	0.245343	$0.24533^{+0.00021}_{-0.00020}$	$f_{2000}^{217}$	105.61	$106.0^{+3.9}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.1^{+8.3}_{-8.3}$	$Y_{\text{P}}^{\text{BBN}}$	0.246670	$0.24665^{+0.00021}_{-0.00020}$	$\chi_{\text{lowTEB}}^2$	10495.99	10497.1 ( $\nu$ : 2.6)
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-20}$	$10^5 \text{D}/\text{H}$	2.612	$2.619^{+0.086}_{-0.087}$	$\chi_{\text{plik}}^2$	763.2	778 ( $\nu$ : 133.0)
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.724	$13.73^{+0.13}_{-0.13}$	$\chi_{\text{H070p6}}^2$	0.09	0.99 ( $\nu$ : 1.0)
$c_{217}$	0.99584	$0.9959^{+0.0029}_{-0.0029}$	$z_*$	1090.04	$1090.10^{+0.84}_{-0.88}$	$\chi_{\text{prior}}^2$	1.83	7.34 ( $\nu$ : 7.5)
$H_0$	71.9	$71.8^{+6.7}_{-6.5}$	$r_*$	144.60	$144.57^{+0.98}_{-1.0}$	$\chi_{\text{CMB}}^2$	11259.1	11270 ( $\nu$ : 138.1)
$\Omega_\Lambda$	0.724	$0.721^{+0.053}_{-0.055}$	$100\theta_*$	1.04107	$1.04107^{+0.00094}_{-0.00092}$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.07$ ;  $\Delta\chi_{\text{eff}}^2 = -1.75$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.02$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.32$ ;  $R - 1 = 0.03023$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.99 ( $\Delta$  -0.34) plik\_dx11dr2\_HM\_v18\_TT: 763.16 ( $\Delta$  -0.50) Hubble - H070p6: 0.09 ( $\Delta$  -0.74)

## 21.5 base\_w\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02228^{+0.00046}_{-0.00045}$	$\Omega_m$	$0.207^{+0.12}_{-0.085}$	$D_A/\text{Gpc}$	$13.893^{+0.089}_{-0.089}$
$\Omega_c h^2$	$0.1195^{+0.0042}_{-0.0042}$	$\Omega_m h^2$	$0.1424^{+0.0040}_{-0.0040}$	$z_{\text{drag}}$	$1059.70^{+0.96}_{-0.94}$
$100\theta_{\text{MC}}$	$1.04094^{+0.00097}_{-0.00092}$	$\Omega_m h^3$	$0.121^{+0.024}_{-0.029}$	$r_{\text{drag}}$	$147.33^{+0.95}_{-0.95}$
$\tau$	$0.078^{+0.035}_{-0.034}$	$\sigma_8$	$0.98^{+0.14}_{-0.17}$	$k_D$	$0.1405^{+0.0010}_{-0.0010}$
$w$	$-1.53^{+0.61}_{-0.50}$	$\sigma_8 \Omega_m^{0.5}$	$0.436^{+0.042}_{-0.038}$	$100\theta_D$	$0.16090^{+0.00054}_{-0.00054}$
$\ln(10^{10} A_s)$	$3.089^{+0.067}_{-0.066}$	$\sigma_8 \Omega_m^{0.25}$	$0.652^{+0.041}_{-0.045}$	$z_{\text{eq}}$	$3387^{+96}_{-96}$
$n_s$	$0.966^{+0.012}_{-0.011}$	$\sigma_8/h^{0.5}$	$1.062^{+0.064}_{-0.072}$	$k_{\text{eq}}$	$0.01034^{+0.00029}_{-0.00029}$
$y_{\text{cal}}$	$1.0003^{+0.0049}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	$2.549^{+0.099}_{-0.11}$	$100\theta_{\text{eq}}$	$0.816^{+0.018}_{-0.018}$
$A_{217}^{\text{CIB}}$	$63^{+10}_{-10}$	$z_{\text{re}}$	$9.82^{+2.7}_{-3.3}$	$100\theta_{\text{s,eq}}$	$0.4508^{+0.0095}_{-0.0091}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.20^{+0.15}_{-0.14}$	$r_{\text{drag}}/D_V(0.57)$	$0.0745^{+0.0032}_{-0.0039}$
$A_{143}^{\text{tSZ}}$	$5.21^{+3.6}_{-3.8}$	$10^9 A_s e^{-2\tau}$	$1.879^{+0.027}_{-0.027}$	$H(0.57)$	$91.0^{+2.5}_{-2.6}$
$A_{100}^{\text{PS}}$	$256^{+50}_{-50}$	$D_{40}$	$1232^{+30}_{-28}$	$D_A(0.57)$	$1295^{+110}_{-83}$
$A_{143}^{\text{PS}}$	$43^{+20}_{-20}$	$D_{220}$	$5722^{+81}_{-80}$	$F_{\text{AP}}(0.57)$	$0.617^{+0.068}_{-0.050}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{810}$	$2533^{+27}_{-27}$	$f\sigma_8(0.57)$	$0.60^{+0.12}_{-0.14}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$D_{1420}$	$814.3^{+9.8}_{-9.6}$	$\sigma_8(0.57)$	$0.74^{+0.12}_{-0.15}$
$A^{\text{kSZ}}$	$< 8.08$	$D_{2000}$	$230.6^{+3.7}_{-3.5}$	$f_{2000}^{143}$	$29^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	$7.45^{+3.7}_{-3.6}$	$n_{\text{s},0.002}$	$0.966^{+0.012}_{-0.011}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	$9.00^{+3.7}_{-3.6}$	$Y_{\text{P}}$	$0.24535^{+0.00021}_{-0.00020}$	$f_{2000}^{217}$	$105.7^{+3.9}_{-3.9}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0^{+8.2}_{-8.1}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668^{+0.00021}_{-0.00021}$	$\chi_{\text{lowTEB}}^2$	$10496.4 (\nu: 2.4)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^5 D/H$	$2.608^{+0.087}_{-0.086}$	$\chi_{\text{plik}}^2$	$776 (\nu: 55.0)$
$c_{100}$	$0.9979^{+0.0016}_{-0.0015}$	$\text{Age}/\text{Gyr}$	$13.57^{+0.28}_{-0.21}$	$\chi_{\text{prior}}^2$	$7.33 (\nu: 6.6)$
$c_{217}$	$0.9959^{+0.0028}_{-0.0029}$	$z_*$	$1089.98^{+0.83}_{-0.85}$	$\chi_{\text{CMB}}^2$	$11270 (\nu: 57.6)$
$H_0$	$> 66.5$	$r_*$	$144.64^{+0.97}_{-0.95}$		
$\Omega_\Lambda$	$0.793^{+0.085}_{-0.12}$	$100\theta_*$	$1.04113^{+0.00095}_{-0.00091}$		

$$\bar{\chi}_{\text{eff}}^2 = 11280.10; \Delta \bar{\chi}_{\text{eff}}^2 = -1.54; R - 1 = 0.01069$$

## 21.6 base\_w\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022303	$0.02229^{+0.00031}_{-0.00031}$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.17}_{-0.16}$	Age/Gyr	13.441	$13.57^{+0.25}_{-0.18}$
$\Omega_c h^2$	0.11947	$0.1196^{+0.0029}_{-0.0029}$	$A_{143}^{\text{dustTE}}$	0.152	$0.15^{+0.11}_{-0.10}$	$z_*$	1089.96	$1089.99^{+0.59}_{-0.57}$
$100\theta_{\text{MC}}$	1.04083	$1.04080^{+0.00062}_{-0.00062}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34^{+0.16}_{-0.16}$	$r_*$	144.62	$144.60^{+0.63}_{-0.62}$
$\tau$	0.0742	$0.075^{+0.034}_{-0.033}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.50}_{-0.51}$	$100\theta_*$	1.04101	$1.04100^{+0.00060}_{-0.00061}$
$w$	-1.95	$-1.55^{+0.58}_{-0.48}$	$c_{100}$	0.99819	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.892	$13.891^{+0.059}_{-0.057}$
$\ln(10^{10} A_s)$	3.082	$3.085^{+0.066}_{-0.063}$	$c_{217}$	0.99585	$0.9959^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.74	$1059.71^{+0.61}_{-0.61}$
$n_s$	0.9654	$0.9649^{+0.0097}_{-0.0093}$	$H_0$	99.9	$> 67.9$	$r_{\text{drag}}$	147.31	$147.30^{+0.62}_{-0.61}$
$y_{\text{cal}}$	0.999996	$1.0003^{+0.0048}_{-0.0050}$	$\Omega_\Lambda$	0.857	$0.797^{+0.079}_{-0.11}$	$k_D$	0.14059	$0.14058^{+0.00064}_{-0.00065}$
$A_{217}^{\text{CIB}}$	65.1	$64^{+10}_{-10}$	$\Omega_m$	0.143	$0.203^{+0.11}_{-0.079}$	$100\theta_D$	0.160852	$0.16087^{+0.00036}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.22	—	$\Omega_m h^2$	0.14242	$0.1425^{+0.0027}_{-0.0027}$	$z_{\text{eq}}$	3388	$3390^{+64}_{-64}$
$A_{143}^{\text{tSZ}}$	7.12	$5.41^{+3.6}_{-3.8}$	$\Omega_m h^3$	0.1423	$0.122^{+0.023}_{-0.027}$	$k_{\text{eq}}$	0.010340	$0.01035^{+0.00020}_{-0.00020}$
$A_{100}^{\text{PS}}$	253	$259^{+50}_{-50}$	$\sigma_8$	1.092	$0.98^{+0.14}_{-0.16}$	$100\theta_{\text{eq}}$	0.8156	$0.815^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	41.0	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4123	$0.435^{+0.038}_{-0.033}$	$100\theta_{s,\text{eq}}$	0.4506	$0.4504^{+0.0063}_{-0.0062}$
$A_{143 \times 217}^{\text{PS}}$	38.8	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6709	$0.653^{+0.035}_{-0.038}$	$r_{\text{drag}}/D_V(0.57)$	0.07603	$0.0745^{+0.0027}_{-0.0034}$
$A_{217}^{\text{PS}}$	100.3	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.092	$1.063^{+0.056}_{-0.062}$	$H(0.57)$	88.82	$90.8^{+2.4}_{-2.4}$
$A^{\text{kSZ}}$	0.00	$< 7.68$	$\langle d^2 \rangle^{1/2}$	2.574	$2.551^{+0.085}_{-0.090}$	$D_A(0.57)$	1238	$1293^{+100}_{-75}$
$A_{100}^{\text{dustTT}}$	7.33	$7.43^{+3.6}_{-3.6}$	$z_{\text{re}}$	9.55	$9.62^{+3.1}_{-3.1}$	$F_{\text{AP}}(0.57)$	0.576	$0.615^{+0.064}_{-0.048}$
$A_{143}^{\text{dustTT}}$	8.95	$8.89^{+3.6}_{-3.6}$	$10^9 A_s$	2.181	$2.19^{+0.15}_{-0.14}$	$f\sigma_8(0.57)$	0.691	$0.60^{+0.11}_{-0.13}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.0^{+8.1}_{-8.2}$	$10^9 A_s e^{-2\tau}$	1.8801	$1.881^{+0.023}_{-0.024}$	$\sigma_8(0.57)$	0.835	$0.74^{+0.11}_{-0.14}$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{40}$	1231.3	$1236^{+26}_{-26}$	$f_{2000}^{143}$	28.8	$29^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5730	$5733^{+75}_{-76}$	$f_{2000}^{143 \times 217}$	31.81	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0488^{+0.0098}_{-0.0098}$	$D_{810}$	2533.2	$2535^{+26}_{-27}$	$f_{2000}^{217}$	105.38	$105.6^{+3.7}_{-3.8}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.0997^{+0.064}_{-0.064}$	$D_{1420}$	814.0	$814.3^{+8.8}_{-9.5}$	$\chi_{\text{lowTEB}}^2$	10495.27	$10496.5 (\nu: 1.8)$
$A_{143}^{\text{dustEE}}$	0.1003	$0.100^{+0.013}_{-0.014}$	$D_{2000}$	230.55	$230.5^{+3.0}_{-3.2}$	$\chi_{\text{plik}}^2$	2430.1	$2449.4 (\nu: 21.8)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.091}_{-0.091}$	$n_{s,0.002}$	0.9654	$0.9649^{+0.0097}_{-0.0093}$	$\chi_{\text{prior}}^2$	6.90	$19.2 (\nu: 14.7)$
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.26}_{-0.26}$	$Y_P$	0.245363	$0.24535^{+0.00014}_{-0.00015}$	$\chi_{\text{CMB}}^2$	12925.4	$12945.8 (\nu: 22.6)$
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.073}_{-0.075}$	$Y_P^{\text{BBN}}$	0.246690	$0.24668^{+0.00014}_{-0.00015}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.057}_{-0.058}$	$10^5 \text{D}/\text{H}$	2.604	$2.607^{+0.060}_{-0.058}$			

Best-fit  $\chi_{\text{eff}}^2 = 12932.27$ ;  $\Delta\chi_{\text{eff}}^2 = -3.29$ ;  $\bar{\chi}_{\text{eff}}^2 = 12965.06$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -2.63$ ;  $R - 1 = 0.00999$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.27 ( $\Delta$  -1.67) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2430.09 ( $\Delta$  -1.55)

## 21.7 base\_w\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022298	$0.02228_{-0.00030}^{+0.00030}$	$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30_{-0.16}^{+0.16}$	Age/Gyr	13.521	$13.62_{-0.24}^{+0.32}$
$\Omega_c h^2$	0.11884	$0.1190_{-0.0029}^{+0.0027}$	$A_{143}^{\text{dustTE}}$	0.154	$0.16_{-0.11}^{+0.10}$	$z_*$	1089.91	$1089.94_{-0.54}^{+0.55}$
$100\theta_{\text{MC}}$	1.04092	$1.04089_{-0.00064}^{+0.00060}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.34_{-0.16}^{+0.15}$	$r_*$	144.79	$144.76_{-0.60}^{+0.62}$
$\tau$	0.0529	$0.056_{-0.029}^{+0.031}$	$A_{217}^{\text{dustTE}}$	1.668	$1.66_{-0.51}^{+0.48}$	$100\theta_*$	1.04111	$1.04108_{-0.00063}^{+0.00059}$
$w$	-1.62	$-1.42_{-0.56}^{+0.62}$	$c_{100}$	0.99816	$0.9981_{-0.0015}^{+0.0016}$	$D_A/\text{Gpc}$	13.907	$13.905_{-0.055}^{+0.054}$
$\ln(10^{10} A_s)$	3.037	$3.045_{-0.056}^{+0.055}$	$c_{217}$	0.99602	$0.9960_{-0.0027}^{+0.0028}$	$z_{\text{drag}}$	1059.70	$1059.66_{-0.61}^{+0.63}$
$n_s$	0.9664	$0.9658_{-0.0090}^{+0.0096}$	$H_0$	88.2	> 63.1	$r_{\text{drag}}$	147.48	$147.45_{-0.58}^{+0.58}$
$y_{\text{cal}}$	0.99972	$1.0001_{-0.0048}^{+0.0047}$	$\Omega_\Lambda$	0.818	$0.77_{-0.14}^{+0.10}$	$k_D$	0.14040	$0.14042_{-0.00061}^{+0.00062}$
$A_{217}^{\text{CIB}}$	67.8	$65_{-10}^{+10}$	$\Omega_m$	0.182	$0.23_{-0.10}^{+0.14}$	$100\theta_D$	0.160895	$0.16091_{-0.00036}^{+0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\Omega_m h^2$	0.14178	$0.1419_{-0.0027}^{+0.0026}$	$z_{\text{eq}}$	3373	$3376_{-64}^{+62}$
$A_{143}^{\text{tSZ}}$	7.26	$5.32_{-3.8}^{+3.8}$	$\Omega_m h^3$	0.1251	$0.116_{-0.029}^{+0.027}$	$k_{\text{eq}}$	0.010294	$0.01030_{-0.00020}^{+0.00019}$
$A_{100}^{\text{PS}}$	258	$263_{-50}^{+60}$	$\sigma_8$	0.978	$0.92_{-0.17}^{+0.15}$	$100\theta_{\text{eq}}$	0.8184	$0.818_{-0.012}^{+0.012}$
$A_{143}^{\text{PS}}$	38.9	$43_{-20}^{+20}$	$\sigma_8 \Omega_m^{0.5}$	0.4173	$0.430_{-0.037}^{+0.041}$	$100\theta_{s,\text{eq}}$	0.4521	$0.4518_{-0.0059}^{+0.0064}$
$A_{143 \times 217}^{\text{PS}}$	33	$39_{-20}^{+20}$	$\sigma_8 \Omega_m^{0.25}$	0.6388	$0.629_{-0.034}^{+0.028}$	$r_{\text{drag}}/D_V(0.57)$	0.07532	$0.0740_{-0.0043}^{+0.0033}$
$A_{217}^{\text{PS}}$	96.5	$96_{-20}^{+20}$	$\sigma_8/h^{0.5}$	1.041	$1.024_{-0.057}^{+0.048}$	$H(0.57)$	90.77	$91.4_{-2.5}^{+2.1}$
$A^{\text{kSZ}}$	0.00	< 8.26	$\langle d^2 \rangle^{1/2}$	2.489	$2.478_{-0.060}^{+0.058}$	$D_A(0.57)$	1272	$1312_{-96}^{+130}$
$A_{100}^{\text{dustTT}}$	7.44	$7.47_{-3.6}^{+3.5}$	$z_{\text{re}}$	7.48	$7.77_{-3.1}^{+2.9}$	$F_{\text{AP}}(0.57)$	0.605	$0.628_{-0.060}^{+0.072}$
$A_{143}^{\text{dustTT}}$	9.05	$9.03_{-3.6}^{+3.8}$	$10^9 A_s$	2.084	$2.10_{-0.12}^{+0.12}$	$f\sigma_8(0.57)$	0.599	$0.56_{-0.13}^{+0.12}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.2_{-8.3}^{+8.1}$	$10^9 A_s e^{-2\tau}$	1.8749	$1.877_{-0.021}^{+0.024}$	$\sigma_8(0.57)$	0.744	$0.70_{-0.14}^{+0.12}$
$A_{217}^{\text{dustTT}}$	81.5	$82_{-10}^{+10}$	$D_{40}$	1220.8	$1226_{-27}^{+27}$	$f_{2000}^{143}$	29.9	$30_{-5}^{+5}$
$A_{100}^{\text{dustEE}}$	0.0815	$0.082_{-0.010}^{+0.011}$	$D_{220}$	5723	$5727_{-75}^{+74}$	$f_{2000}^{143 \times 217}$	32.53	$33_{-4}^{+4}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.049_{-0.010}^{+0.010}$	$D_{810}$	2531.2	$2533_{-26}^{+27}$	$f_{2000}^{217}$	106.00	$106.2_{-3.8}^{+3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100_{-0.065}^{+0.069}$	$D_{1420}$	814.0	$814.4_{-9.2}^{+9.0}$	$\chi_{\text{lensing}}^2$	10.25	10.8 ( $\nu$ : 2.4)
$A_{143}^{\text{dustEE}}$	0.1004	$0.100_{-0.014}^{+0.013}$	$D_{2000}$	229.96	$230.0_{-3.2}^{+3.1}$	$\chi_{\text{lowTEB}}^2$	10494.42	10495.3 ( $\nu$ : 0.9)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.222_{-0.094}^{+0.089}$	$n_{s,0.002}$	0.9664	$0.9658_{-0.0090}^{+0.0096}$	$\chi_{\text{plik}}^2$	2434.4	2452.6 ( $\nu$ : 22.7)
$A_{217}^{\text{dustEE}}$	0.651	$0.64_{-0.27}^{+0.26}$	$Y_P$	0.245361	$0.24535_{-0.00014}^{+0.00013}$	$\chi_{\text{prior}}^2$	7.13	19.7 ( $\nu$ : 15.9)
$A_{100}^{\text{dustTE}}$	0.141	$0.140_{-0.076}^{+0.073}$	$Y_P^{\text{BBN}}$	0.246688	$0.24668_{-0.00014}^{+0.00013}$	$\chi_{\text{CMB}}^2$	12939.0	12958.8 ( $\nu$ : 23.2)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131_{-0.059}^{+0.060}$	$10^5 \text{D}/\text{H}$	2.605	$2.608_{-0.056}^{+0.058}$			

Best-fit  $\chi_{\text{eff}}^2 = 12946.18$ ;  $\Delta\chi_{\text{eff}}^2 = -1.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12978.43$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.69$ ;  $R - 1 = 0.06336$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.25 ( $\Delta$  0.48) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.42 ( $\Delta$  -0.86) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.37 ( $\Delta$  -0.54)

## 21.8 base\_w\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022282	$0.02226_{-0.00032}^{+0.00032}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.31_{-0.17}^{+0.17}$	Age/Gyr	13.721	$13.73_{-0.12}^{+0.12}$
$\Omega_c h^2$	0.11970	$0.1198_{-0.0029}^{+0.0030}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16_{-0.10}^{+0.10}$	$z_*$	1090.01	$1090.05_{-0.58}^{+0.60}$
$100\theta_{\text{MC}}$	1.04078	$1.04077_{-0.00061}^{+0.00062}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34_{-0.16}^{+0.16}$	$r_*$	144.58	$144.56_{-0.66}^{+0.64}$
$\tau$	0.0791	$0.077_{-0.031}^{+0.033}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67_{-0.50}^{+0.50}$	$100\theta_*$	1.04097	$1.04097_{-0.00060}^{+0.00061}$
$w$	-1.155	$-1.16_{-0.21}^{+0.22}$	$c_{100}$	0.99822	$0.9982_{-0.0016}^{+0.0016}$	$D_A/\text{Gpc}$	13.888	$13.887_{-0.061}^{+0.059}$
$\ln(10^{10} A_s)$	3.093	$3.089_{-0.060}^{+0.061}$	$c_{217}$	0.99587	$0.9960_{-0.0026}^{+0.0028}$	$z_{\text{drag}}$	1059.70	$1059.66_{-0.63}^{+0.63}$
$n_s$	0.9657	$0.9643_{-0.0098}^{+0.0091}$	$H_0$	72.0	$72.1_{-6.5}^{+6.6}$	$r_{\text{drag}}$	147.27	$147.26_{-0.64}^{+0.63}$
$y_{\text{cal}}$	1.0002	$1.0003_{-0.0052}^{+0.0049}$	$\Omega_\Lambda$	0.725	$0.723_{-0.055}^{+0.051}$	$k_D$	0.14061	$0.14060_{-0.00066}^{+0.00067}$
$A_{217}^{\text{CIB}}$	64.6	$64_{-10}^{+10}$	$\Omega_m$	0.275	$0.277_{-0.051}^{+0.055}$	$100\theta_D$	0.160868	$0.16090_{-0.00037}^{+0.00038}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.31	—	$\Omega_m h^2$	0.14263	$0.1428_{-0.0027}^{+0.0028}$	$z_{\text{eq}}$	3393	$3396_{-65}^{+66}$
$A_{143}^{\text{tSZ}}$	7.04	$5.36_{-3.7}^{+3.7}$	$\Omega_m h^3$	0.1028	$0.1029_{-0.0093}^{+0.0095}$	$k_{\text{eq}}$	0.010356	$0.01036_{-0.00020}^{+0.00020}$
$A_{100}^{\text{PS}}$	253	$259_{-50}^{+60}$	$\sigma_8$	0.875	$0.874_{-0.065}^{+0.064}$	$100\theta_{\text{eq}}$	0.8146	$0.814_{-0.012}^{+0.013}$
$A_{143}^{\text{PS}}$	42.7	$43_{-20}^{+20}$	$\sigma_8 \Omega_m^{0.5}$	0.4588	$0.458_{-0.021}^{+0.022}$	$100\theta_{s,\text{eq}}$	0.4501	$0.4499_{-0.0063}^{+0.0064}$
$A_{143 \times 217}^{\text{PS}}$	41.7	$40_{-20}^{+20}$	$\sigma_8 \Omega_m^{0.25}$	0.6336	$0.633_{-0.027}^{+0.026}$	$r_{\text{drag}}/D_V(0.57)$	0.07253	$0.0724_{-0.0018}^{+0.0016}$
$A_{217}^{\text{PS}}$	101.3	$98_{-20}^{+20}$	$\sigma_8/h^{0.5}$	1.0311	$1.029_{-0.043}^{+0.040}$	$H(0.57)$	92.59	$92.50_{-0.96}^{+0.87}$
$A^{\text{kSZ}}$	0.00	< 8.01	$\langle d^2 \rangle^{1/2}$	2.525	$2.523_{-0.082}^{+0.079}$	$D_A(0.57)$	1356.5	$1359_{-46}^{+48}$
$A_{100}^{\text{dustTT}}$	7.41	$7.44_{-3.6}^{+3.7}$	$z_{\text{re}}$	10.05	$9.80_{-3.0}^{+2.8}$	$F_{\text{AP}}(0.57)$	0.6578	$0.658_{-0.024}^{+0.026}$
$A_{143}^{\text{dustTT}}$	8.88	$8.89_{-3.6}^{+3.6}$	$10^9 A_s$	2.204	$2.20_{-0.13}^{+0.14}$	$f\sigma_8(0.57)$	0.5159	$0.516_{-0.047}^{+0.047}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.1_{-8.1}^{+7.8}$	$10^9 A_s e^{-2\tau}$	1.8816	$1.882_{-0.024}^{+0.026}$	$\sigma_8(0.57)$	0.655	$0.653_{-0.054}^{+0.052}$
$A_{217}^{\text{dustTT}}$	82.1	$82_{-10}^{+10}$	$D_{40}$	1236.2	$1240_{-26}^{+28}$	$f_{2000}^{143}$	28.7	$30_{-5}^{+5}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081_{-0.011}^{+0.011}$	$D_{220}$	5725	$5730_{-81}^{+79}$	$f_{2000}^{143 \times 217}$	31.79	$32.2_{-3.8}^{+3.5}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0488_{-0.0099}^{+0.0094}$	$D_{810}$	2535.5	$2535_{-28}^{+26}$	$f_{2000}^{217}$	105.31	$105.8_{-3.8}^{+3.9}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.098_{-0.064}^{+0.062}$	$D_{1420}$	815.1	$814.3_{-9.7}^{+8.9}$	$\chi_{\text{lowTEB}}^2$	10496.38	10497.1 ( $\nu$ : 1.9)
$A_{143}^{\text{dustEE}}$	0.1002	$0.100_{-0.014}^{+0.013}$	$D_{2000}$	230.75	$230.4_{-3.2}^{+3.1}$	$\chi_{\text{plik}}^2$	2431.3	2450.0 ( $\nu$ : 22.1)
$A_{143 \times 217}^{\text{dustEE}}$	0.225	$0.221_{-0.089}^{+0.090}$	$n_{s,0.002}$	0.9657	$0.9643_{-0.0098}^{+0.0091}$	$\chi_{\text{H070p6}}^2$	0.12	1.04 ( $\nu$ : 1.0)
$A_{217}^{\text{dustEE}}$	0.653	$0.65_{-0.27}^{+0.26}$	$Y_P$	0.245354	$0.24534_{-0.00015}^{+0.00014}$	$\chi_{\text{prior}}^2$	6.73	19.4 ( $\nu$ : 14.9)
$A_{100}^{\text{dustTE}}$	0.143	$0.141_{-0.075}^{+0.073}$	$Y_P^{\text{BBN}}$	0.246680	$0.24667_{-0.00015}^{+0.00014}$	$\chi_{\text{CMB}}^2$	12927.7	12947.2 ( $\nu$ : 22.4)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131_{-0.056}^{+0.059}$	$10^5 \text{D}/\text{H}$	2.608	$2.613_{-0.060}^{+0.062}$			

Best-fit  $\chi_{\text{eff}}^2 = 12934.51$ ;  $\Delta\chi_{\text{eff}}^2 = -1.96$ ;  $\bar{\chi}_{\text{eff}}^2 = 12967.62$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.13$ ;  $R - 1 = 0.03284$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.38 ( $\Delta$  -0.62) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.28 ( $\Delta$  -0.48) Hubble - H070p6: 0.12 ( $\Delta$  -0.78)

## 21.9 base\_w\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02229^{+0.00031}_{-0.00031}$	$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.17}_{-0.16}$	Age/Gyr	$13.57^{+0.25}_{-0.18}$
$\Omega_c h^2$	$0.1196^{+0.0028}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	$0.15^{+0.11}_{-0.10}$	$z_*$	$1089.98^{+0.58}_{-0.57}$
$100\theta_{\text{MC}}$	$1.04081^{+0.00062}_{-0.00062}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.16}_{-0.16}$	$r_*$	$144.61^{+0.64}_{-0.61}$
$\tau$	$0.076^{+0.032}_{-0.031}$	$A_{217}^{\text{dustTE}}$	$1.67^{+0.50}_{-0.50}$	$100\theta_*$	$1.04100^{+0.00061}_{-0.00061}$
$w$	$-1.55^{+0.58}_{-0.48}$	$c_{100}$	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	$13.891^{+0.059}_{-0.056}$
$\ln(10^{10} A_s)$	$3.087^{+0.061}_{-0.061}$	$c_{217}$	$0.9959^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	$1059.72^{+0.60}_{-0.61}$
$n_s$	$0.9650^{+0.0096}_{-0.0091}$	$H_0$	$> 67.8$	$r_{\text{drag}}$	$147.30^{+0.62}_{-0.60}$
$y_{\text{cal}}$	$1.0003^{+0.0049}_{-0.0050}$	$\Omega_\Lambda$	$0.797^{+0.079}_{-0.11}$	$k_D$	$0.14058^{+0.00064}_{-0.00065}$
$A_{217}^{\text{CIB}}$	$63^{+10}_{-10}$	$\Omega_m$	$0.203^{+0.11}_{-0.079}$	$100\theta_D$	$0.16087^{+0.00037}_{-0.00036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1425^{+0.0027}_{-0.0027}$	$z_{\text{eq}}$	$3390^{+64}_{-64}$
$A_{143}^{\text{tSZ}}$	$5.42^{+3.5}_{-3.8}$	$\Omega_m h^3$	$0.122^{+0.023}_{-0.027}$	$k_{\text{eq}}$	$0.01035^{+0.00019}_{-0.00020}$
$A_{100}^{\text{PS}}$	$259^{+50}_{-50}$	$\sigma_8$	$0.98^{+0.13}_{-0.16}$	$100\theta_{\text{eq}}$	$0.815^{+0.012}_{-0.012}$
$A_{143}^{\text{PS}}$	$43^{+10}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	$0.436^{+0.038}_{-0.033}$	$100\theta_{\text{s,eq}}$	$0.4505^{+0.0063}_{-0.0061}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.653^{+0.035}_{-0.039}$	$r_{\text{drag}}/D_V(0.57)$	$0.0745^{+0.0027}_{-0.0034}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	$1.063^{+0.056}_{-0.062}$	$H(0.57)$	$90.8^{+2.4}_{-2.4}$
$A^{\text{kSZ}}$	$< 7.60$	$\langle d^2 \rangle^{1/2}$	$2.553^{+0.084}_{-0.087}$	$D_A(0.57)$	$1293^{+100}_{-75}$
$A_{100}^{\text{dustTT}}$	$7.43^{+3.6}_{-3.6}$	$z_{\text{re}}$	$9.73^{+2.7}_{-3.0}$	$F_{\text{AP}}(0.57)$	$0.615^{+0.064}_{-0.048}$
$A_{143}^{\text{dustTT}}$	$8.88^{+3.6}_{-3.6}$	$10^9 A_s$	$2.19^{+0.14}_{-0.13}$	$f\sigma_8(0.57)$	$0.60^{+0.11}_{-0.13}$
$A_{143 \times 217}^{\text{dustTT}}$	$16.9^{+8.0}_{-8.2}$	$10^9 A_s e^{-2\tau}$	$1.881^{+0.023}_{-0.024}$	$\sigma_8(0.57)$	$0.75^{+0.11}_{-0.14}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$D_{40}$	$1236^{+26}_{-26}$	$f_{2000}^{143}$	$29^{+5}_{-5}$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{220}$	$5732^{+75}_{-76}$	$f_{2000}^{143 \times 217}$	$32^{+4}_{-4}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0489^{+0.0098}_{-0.0099}$	$D_{810}$	$2534^{+26}_{-27}$	$f_{2000}^{217}$	$105.6^{+3.7}_{-3.7}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0997^{+0.066}_{-0.065}$	$D_{1420}$	$814.3^{+9.0}_{-9.6}$	$\chi_{\text{lowTEB}}^2$	$10496.5 (\nu: 1.8)$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.013}_{-0.013}$	$D_{2000}$	$230.5^{+3.1}_{-3.2}$	$\chi_{\text{plik}}^2$	$2449.2 (\nu: 21.6)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.223^{+0.091}_{-0.091}$	$n_{\text{s},0.002}$	$0.9650^{+0.0096}_{-0.0091}$	$\chi_{\text{prior}}^2$	$19.3 (\nu: 15.0)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	$0.24536^{+0.00014}_{-0.00015}$	$\chi_{\text{CMB}}^2$	$12945.7 (\nu: 22.3)$
$A_{100}^{\text{dustTE}}$	$0.140^{+0.074}_{-0.075}$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668^{+0.00014}_{-0.00015}$		
$A_{100 \times 143}^{\text{dustTE}}$	$0.131^{+0.058}_{-0.058}$	$10^5 \text{D}/\text{H}$	$2.607^{+0.059}_{-0.058}$		

$$\bar{\chi}_{\text{eff}}^2 = 12964.96; \Delta\bar{\chi}_{\text{eff}}^2 = -2.72; R - 1 = 0.01324$$



## 21.10 base\_w\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022289	$0.02225^{+0.00043}_{-0.00042}$	$\Omega_m h^2$	0.14207	$0.1422^{+0.0035}_{-0.0034}$	$r_{\text{drag}}$	147.41	$147.40^{+0.85}_{-0.88}$
$\Omega_c h^2$	0.11914	$0.1193^{+0.0037}_{-0.0036}$	$\Omega_m h^3$	0.0966	$0.0968^{+0.0066}_{-0.0063}$	$k_D$	0.14047	$0.1404^{+0.0010}_{-0.00097}$
$100\theta_{\text{MC}}$	1.04095	$1.04093^{+0.00090}_{-0.00090}$	$\sigma_8$	0.835	$0.835^{+0.053}_{-0.049}$	$100\theta_D$	0.16090	$0.16095^{+0.00053}_{-0.00051}$
$\tau$	0.0820	$0.079^{+0.037}_{-0.037}$	$\sigma_8 \Omega_m^{0.5}$	0.4628	$0.462^{+0.020}_{-0.020}$	$z_{\text{eq}}$	3380	$3383^{+84}_{-82}$
$w$	-1.013	$-1.02^{+0.15}_{-0.15}$	$\sigma_8 \Omega_m^{0.25}$	0.6215	$0.621^{+0.030}_{-0.030}$	$k_{\text{eq}}$	0.010315	$0.01033^{+0.00026}_{-0.00025}$
$\ln(10^{10} A_s)$	3.097	$3.092^{+0.071}_{-0.073}$	$\sigma_8/h^{0.5}$	1.0124	$1.012^{+0.045}_{-0.045}$	$100\theta_{\text{eq}}$	0.8171	$0.817^{+0.016}_{-0.016}$
$n_s$	0.9677	$0.967^{+0.011}_{-0.011}$	$\langle d^2 \rangle^{1/2}$	2.498	$2.498^{+0.092}_{-0.095}$	$100\theta_{s,\text{eq}}$	0.4515	$0.4511^{+0.0081}_{-0.0081}$
$y_{\text{cal}}$	1.0002	$1.0004^{+0.0050}_{-0.0050}$	$z_{\text{re}}$	10.32	$10.0^{+3.4}_{-3.5}$	$r_{\text{drag}}/D_V(0.57)$	0.07172	$0.07167^{+0.00086}_{-0.00082}$
$A_{217}^{\text{CIB}}$	65.3	$64^{+10}_{-10}$	$10^9 A_s$	2.213	$2.20^{+0.16}_{-0.16}$	$H(0.57)$	92.99	$92.89^{+0.88}_{-0.92}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.22	—	$10^9 A_s e^{-2\tau}$	1.8777	$1.879^{+0.026}_{-0.026}$	$D_A(0.57)$	1384.6	$1385^{+23}_{-23}$
$A_{143}^{\text{tSZ}}$	6.97	$5.17^{+3.6}_{-3.7}$	$D_{40}$	1233.2	$1236^{+27}_{-27}$	$F_{\text{AP}}(0.57)$	0.6743	$0.674^{+0.014}_{-0.015}$
$A_{100}^{\text{PS}}$	250	$258^{+50}_{-50}$	$D_{220}$	5718	$5720^{+81}_{-81}$	$f\sigma_8(0.57)$	0.4856	$0.487^{+0.040}_{-0.039}$
$A_{143}^{\text{PS}}$	41.8	$43^{+20}_{-20}$	$D_{810}$	2534.1	$2534^{+27}_{-28}$	$\sigma_8(0.57)$	0.6215	$0.621^{+0.039}_{-0.037}$
$A_{143 \times 217}^{\text{PS}}$	38.9	$39^{+20}_{-20}$	$D_{1420}$	815.3	$815^{+10}_{-10}$	$f_{2000}^{143}$	29.0	$30^{+6}_{-6}$
$A_{217}^{\text{PS}}$	100.2	$97^{+20}_{-20}$	$D_{2000}$	230.77	$230.5^{+3.6}_{-3.6}$	$f_{2000}^{143 \times 217}$	31.95	$32^{+4}_{-4}$
$A^{\text{kSZ}}$	0.01	< 8.17	$n_{s,0.002}$	0.9677	$0.967^{+0.011}_{-0.011}$	$f_{2000}^{217}$	105.53	$105.9^{+3.9}_{-4.0}$
$A_{100}^{\text{dustTT}}$	7.42	$7.41^{+3.6}_{-3.7}$	$Y_{\text{P}}$	0.245357	$0.24534^{+0.00019}_{-0.00019}$	$\chi_{\text{lowTEB}}^2$	10496.48	10497.3 ( $\nu$ : 2.8)
$A_{143}^{\text{dustTT}}$	9.04	$8.99^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246684	$0.24667^{+0.00019}_{-0.00019}$	$\chi_{\text{plik}}^2$	763.6	777.0 ( $\nu$ : 15.9)
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.1^{+8.1}_{-8.1}$	$10^5 \text{D}/\text{H}$	2.607	$2.614^{+0.082}_{-0.081}$	$\chi_{6\text{DF}}^2$	0.005	0.16 ( $\nu$ : 0.0)
$A_{217}^{\text{dustTT}}$	82.2	$82^{+10}_{-10}$	Age/Gyr	13.793	$13.796^{+0.074}_{-0.073}$	$\chi_{\text{MGS}}^2$	1.47	1.66 ( $\nu$ : 0.5)
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1089.95	$1090.01^{+0.74}_{-0.74}$	$\chi_{\text{DR11CMass}}^2$	2.54	3.19 ( $\nu$ : 0.5)
$c_{217}$	0.99589	$0.9959^{+0.0028}_{-0.0028}$	$r_*$	144.72	$144.70^{+0.84}_{-0.85}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	0.74 ( $\nu$ : 0.3)
$H_0$	67.99	$68.1^{+3.5}_{-3.3}$	$100\theta_*$	1.04114	$1.04113^{+0.00088}_{-0.00089}$	$\chi_{\text{prior}}^2$	1.88	7.32 ( $\nu$ : 6.3)
$\Omega_\Lambda$	0.6926	$0.693^{+0.028}_{-0.026}$	$D_A/\text{Gpc}$	13.900	$13.898^{+0.078}_{-0.080}$	$\chi_{\text{CMB}}^2$	11260.0	11274.4 ( $\nu$ : 15.1)
$\Omega_m$	0.3074	$0.307^{+0.026}_{-0.028}$	$z_{\text{drag}}$	1059.70	$1059.62^{+0.90}_{-0.90}$	$\chi_{\text{BAO}}^2$	4.49	5.74 ( $\nu$ : 1.5)

Best-fit  $\chi_{\text{eff}}^2 = 11266.42$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11287.43$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.06$ ;  $R - 1 = 0.00570$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.02) MGS: 1.47 ( $\Delta$  0.19) DR11CMass: 2.54 ( $\Delta$  0.09) DR11LOWZ: 0.48 ( $\Delta$  -0.14) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10496.49  
( $\Delta$  0.06) plik.dx11dr2\_HM.v18\_TT: 763.55 ( $\Delta$  -0.04)

## 21.11 base\_w\_plikHM\_TT\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022279	$0.02226^{+0.00043}_{-0.00043}$	$\Omega_m h^3$	0.0952	$0.0953^{+0.0056}_{-0.0056}$	$100\theta_D$	0.16097	$0.16099^{+0.00054}_{-0.00051}$
$\Omega_c h^2$	0.11817	$0.1184^{+0.0034}_{-0.0034}$	$\sigma_8$	0.8110	$0.812^{+0.036}_{-0.036}$	$z_{\text{eq}}$	3356	$3360^{+76}_{-76}$
$100\theta_{\text{MC}}$	1.04107	$1.04106^{+0.00084}_{-0.00085}$	$\sigma_8 \Omega_m^{0.5}$	0.4516	$0.452^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010244	$0.01026^{+0.00023}_{-0.00023}$
$\tau$	0.0687	$0.068^{+0.034}_{-0.033}$	$\sigma_8 \Omega_m^{0.25}$	0.6052	$0.606^{+0.018}_{-0.019}$	$100\theta_{\text{eq}}$	0.8215	$0.821^{+0.015}_{-0.014}$
$w$	-0.983	$-0.99^{+0.13}_{-0.13}$	$\sigma_8/h^{0.5}$	0.9874	$0.988^{+0.027}_{-0.027}$	$100\theta_{\text{s,eq}}$	0.4537	$0.4533^{+0.0077}_{-0.0074}$
$\ln(10^{10} A_s)$	3.067	$3.066^{+0.061}_{-0.060}$	$\langle d^2 \rangle^{1/2}$	2.444	$2.447^{+0.053}_{-0.054}$	$r_{\text{drag}}/D_V(0.57)$	0.07180	$0.07173^{+0.00084}_{-0.00083}$
$n_s$	0.9690	$0.968^{+0.011}_{-0.010}$	$z_{\text{re}}$	9.09	$8.95^{+3.0}_{-3.3}$	$H(0.57)$	93.14	$93.07^{+0.79}_{-0.83}$
$y_{\text{cal}}$	1.00003	$1.0002^{+0.0048}_{-0.0049}$	$10^9 A_s$	2.148	$2.15^{+0.14}_{-0.13}$	$D_A(0.57)$	1387.2	$1388^{+23}_{-23}$
$A_{217}^{\text{CIB}}$	67.4	$65^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8718	$1.873^{+0.024}_{-0.024}$	$F_{\text{AP}}(0.57)$	0.6766	$0.677^{+0.013}_{-0.014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1223.5	$1227^{+23}_{-23}$	$f\sigma_8(0.57)$	0.4694	$0.471^{+0.028}_{-0.029}$
$A_{143}^{\text{tSZ}}$	7.26	$5.00^{+3.7}_{-3.8}$	$D_{220}$	5715	$5718^{+82}_{-82}$	$\sigma_8(0.57)$	0.6043	$0.605^{+0.028}_{-0.028}$
$A_{100}^{\text{PS}}$	253	$260^{+50}_{-60}$	$D_{810}$	2531.7	$2532^{+27}_{-28}$	$f_{2000}^{143}$	29.9	$30^{+6}_{-6}$
$A_{143}^{\text{PS}}$	39.0	$44^{+20}_{-20}$	$D_{1420}$	814.9	$815^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	32.51	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$D_{2000}$	230.21	$230.1^{+3.6}_{-3.6}$	$f_{2000}^{217}$	106.06	$106.3^{+3.9}_{-3.8}$
$A_{217}^{\text{PS}}$	97.0	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9690	$0.968^{+0.011}_{-0.010}$	$\chi_{\text{lensing}}^2$	9.06	9.88 ( $\nu: 1.1$ )
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.245353	$0.24534^{+0.00019}_{-0.00020}$	$\chi_{\text{lowTEB}}^2$	10494.85	10495.7 ( $\nu: 0.9$ )
$A_{100}^{\text{dustTT}}$	7.40	$7.43^{+3.6}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.246679	$0.24667^{+0.00019}_{-0.00020}$	$\chi_{\text{plik}}^2$	766.5	779.6 ( $\nu: 15.1$ )
$A_{143}^{\text{dustTT}}$	9.04	$8.97^{+3.6}_{-3.6}$	$10^5 D/H$	2.608	$2.613^{+0.084}_{-0.081}$	$\chi_{6\text{DF}}^2$	0.024	0.17 ( $\nu: 0.0$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.1^{+8.0}_{-8.0}$	Age/Gyr	13.805	$13.809^{+0.070}_{-0.074}$	$\chi_{\text{MGS}}^2$	1.28	1.42 ( $\nu: 0.5$ )
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$z_*$	1089.87	$1089.92^{+0.75}_{-0.74}$	$\chi_{\text{DR11CMAS}}^2$	2.24	2.87 ( $\nu: 0.4$ )
$c_{100}$	0.99789	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	144.98	$144.94^{+0.75}_{-0.75}$	$\chi_{\text{DR11LOWZ}}^2$	0.53	0.83 ( $\nu: 0.3$ )
$c_{217}$	0.99597	$0.9960^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04127	$1.04126^{+0.00082}_{-0.00083}$	$\chi_{\text{prior}}^2$	2.16	7.41 ( $\nu: 6.4$ )
$H_0$	67.46	$67.5^{+3.2}_{-3.0}$	$D_A/\text{Gpc}$	13.923	$13.920^{+0.070}_{-0.071}$	$\chi_{\text{CMB}}^2$	11270.4	11285.1 ( $\nu: 15.1$ )
$\Omega_\Lambda$	0.6899	$0.689^{+0.027}_{-0.026}$	$z_{\text{drag}}$	1059.59	$1059.55^{+0.89}_{-0.92}$	$\chi_{\text{BAO}}^2$	4.07	5.29 ( $\nu: 1.3$ )
$\Omega_m$	0.3101	$0.311^{+0.026}_{-0.027}$	$r_{\text{drag}}$	147.68	$147.65^{+0.75}_{-0.76}$			
$\Omega_m h^2$	0.14109	$0.1413^{+0.0032}_{-0.0032}$	$k_D$	0.14018	$0.14019^{+0.00087}_{-0.00088}$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.64$ ;  $\Delta\chi_{\text{eff}}^2 = -0.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 11297.85$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.16$ ;  $R - 1 = 0.02226$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  0.01) MGS: 1.28 ( $\Delta$  -0.13) DR11CMAS: 2.24 ( $\Delta$  -0.16) DR11LOWZ: 0.53 ( $\Delta$  0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.05 ( $\Delta$  -0.19) low1\_SMW\_70\_dx11d\_2014\_10\_03\_10494.85 ( $\Delta$  -0.01) plik\_dx11dr2\_HM\_v18\_TT: 766.50 ( $\Delta$  0.30)

## 21.12 base\_w\_plikHM\_TTTEEE\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022300	$0.02227^{+0.00031}_{-0.00030}$	$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.11}_{-0.11}$	$r_*$	144.63	$144.60^{+0.59}_{-0.58}$
$\Omega_c h^2$	0.11944	$0.1196^{+0.0027}_{-0.0026}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04100	$1.04100^{+0.00062}_{-0.00060}$
$100\theta_{\text{MC}}$	1.04082	$1.04081^{+0.00063}_{-0.00061}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.893	$13.891^{+0.054}_{-0.054}$
$\tau$	0.0829	$0.080^{+0.033}_{-0.034}$	$c_{100}$	0.99825	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.74	$1059.68^{+0.64}_{-0.62}$
$w$	-1.021	$-1.03^{+0.12}_{-0.13}$	$c_{217}$	0.99583	$0.9960^{+0.0029}_{-0.0028}$	$r_{\text{drag}}$	147.32	$147.30^{+0.57}_{-0.57}$
$\ln(10^{10} A_s)$	3.100	$3.094^{+0.064}_{-0.066}$	$H_0$	68.07	$68.3^{+3.2}_{-3.1}$	$k_D$	0.14058	$0.14057^{+0.00062}_{-0.00062}$
$n_s$	0.9662	$0.9650^{+0.0091}_{-0.0089}$	$\Omega_\Lambda$	0.6927	$0.694^{+0.026}_{-0.025}$	$100\theta_D$	0.160854	$0.16089^{+0.00036}_{-0.00036}$
$y_{\text{cal}}$	1.00040	$1.0004^{+0.0048}_{-0.0049}$	$\Omega_m$	0.3073	$0.306^{+0.025}_{-0.026}$	$z_{\text{eq}}$	3387	$3391^{+60}_{-59}$
$A_{217}^{\text{CIB}}$	64.0	$64^{+10}_{-10}$	$\Omega_m h^2$	0.14239	$0.1425^{+0.0025}_{-0.0025}$	$k_{\text{eq}}$	0.010338	$0.01035^{+0.00018}_{-0.00018}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.36	—	$\Omega_m h^3$	0.0969	$0.0973^{+0.0055}_{-0.0050}$	$100\theta_{\text{eq}}$	0.8157	$0.815^{+0.011}_{-0.011}$
$A_{143}^{\text{tSZ}}$	6.99	$5.37^{+3.6}_{-3.8}$	$\sigma_8$	0.8390	$0.839^{+0.043}_{-0.041}$	$100\theta_{s,\text{eq}}$	0.4507	$0.4503^{+0.0058}_{-0.0058}$
$A_{100}^{\text{PS}}$	252	$260^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.5}$	0.4651	$0.464^{+0.017}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.07165	$0.07164^{+0.00080}_{-0.00078}$
$A_{143}^{\text{PS}}$	43.5	$43^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6246	$0.624^{+0.025}_{-0.025}$	$H(0.57)$	92.92	$92.84^{+0.66}_{-0.68}$
$A_{143 \times 217}^{\text{PS}}$	43.1	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0169	$1.016^{+0.037}_{-0.038}$	$D_A(0.57)$	1384.7	$1384^{+22}_{-23}$
$A_{217}^{\text{PS}}$	102.4	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.511	$2.508^{+0.081}_{-0.084}$	$F_{\text{AP}}(0.57)$	0.6738	$0.673^{+0.012}_{-0.014}$
$A^{\text{kSZ}}$	0.00	< 7.83	$z_{\text{re}}$	10.40	$10.1^{+3.1}_{-3.2}$	$f\sigma_8(0.57)$	0.4889	$0.490^{+0.032}_{-0.030}$
$A_{100}^{\text{dustTT}}$	7.45	$7.43^{+3.7}_{-3.7}$	$10^9 A_s$	2.221	$2.21^{+0.14}_{-0.14}$	$\sigma_8(0.57)$	0.6244	$0.624^{+0.033}_{-0.032}$
$A_{143}^{\text{dustTT}}$	8.94	$8.93^{+3.6}_{-3.6}$	$10^9 A_s e^{-2\tau}$	1.8813	$1.881^{+0.023}_{-0.023}$	$f_{2000}^{143}$	28.6	$29^{+5}_{-5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.0^{+8.2}_{-8.1}$	$D_{40}$	1238.6	$1240^{+25}_{-25}$	$f_{2000}^{143 \times 217}$	31.79	$32^{+4}_{-4}$
$A_{217}^{\text{dustTT}}$	82.5	$82^{+10}_{-10}$	$D_{220}$	5730	$5729^{+76}_{-76}$	$f_{2000}^{217}$	105.35	$105.7^{+3.6}_{-3.7}$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2536.5	$2535^{+26}_{-26}$	$\chi_{\text{lowTEB}}^2$	10497.05	$10497.6 (\nu: 2.5)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0487^{+0.0098}_{-0.0097}$	$D_{1420}$	815.7	$814.7^{+9.3}_{-9.2}$	$\chi_{\text{plik}}^2$	2431.7	$2450.5 (\nu: 23.5)$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.0998^{+0.064}_{-0.064}$	$D_{2000}$	230.90	$230.5^{+3.1}_{-3.1}$	$\chi_{6\text{DF}}^2$	0.005	$0.15 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	0.1005	$0.100^{+0.013}_{-0.013}$	$n_{s,0.002}$	0.9662	$0.9650^{+0.0091}_{-0.0089}$	$\chi_{\text{MGS}}^2$	1.47	$1.71 (\nu: 0.5)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.092}_{-0.092}$	$Y_{\text{P}}$	0.245362	$0.24535^{+0.00014}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.65	$3.26 (\nu: 0.4)$
$A_{217}^{\text{dustEE}}$	0.651	$0.65^{+0.26}_{-0.25}$	$Y_{\text{P}}^{\text{BBN}}$	0.246689	$0.24667^{+0.00014}_{-0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.51	$0.72 (\nu: 0.3)$
$A_{100}^{\text{dustTE}}$	0.140	$0.140^{+0.074}_{-0.074}$	$10^5 D/H$	2.605	$2.610^{+0.058}_{-0.059}$	$\chi_{\text{prior}}^2$	6.64	$19.3 (\nu: 15.2)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.056}_{-0.057}$	Age/Gyr	13.793	$13.793^{+0.064}_{-0.064}$	$\chi_{\text{CMB}}^2$	12928.8	$12948.2 (\nu: 22.5)$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.16}$	$z_*$	1089.96	$1090.01^{+0.55}_{-0.55}$	$\chi_{\text{BAO}}^2$	4.64	$5.84 (\nu: 1.4)$

Best-fit  $\chi_{\text{eff}}^2 = 12940.03$ ;  $\Delta\chi_{\text{eff}}^2 = -0.13$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.27$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.80$ ;  $R - 1 = 0.01035$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta -0.02$ ) MGS: 1.47 ( $\Delta 0.26$ ) DR11CMass: 2.65 ( $\Delta 0.15$ ) DR11LOWZ: 0.51 ( $\Delta -0.17$ ) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10497.05 ( $\Delta -0.37$ ) plik.dx11dr2.HM.v18.TTTEEE: 2431.71 ( $\Delta 0.17$ )

21.13 base\_w\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022286	$0.02228^{+0.00031}_{-0.00030}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.15}$	$D_A/\text{Gpc}$	13.907	$13.904^{+0.051}_{-0.054}$
$\Omega_c h^2$	0.11889	$0.1190^{+0.0027}_{-0.0024}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.52}_{-0.54}$	$z_{\text{drag}}$	1059.67	$1059.66^{+0.61}_{-0.60}$
$100\theta_{\text{MC}}$	1.04092	$1.04089^{+0.00063}_{-0.00060}$	$c_{100}$	0.99818	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.48	$147.45^{+0.53}_{-0.55}$
$\tau$	0.0653	$0.064^{+0.028}_{-0.027}$	$c_{217}$	0.99611	$0.9960^{+0.0029}_{-0.0027}$	$k_D$	0.14039	$0.14042^{+0.00059}_{-0.00061}$
$w$	-0.999	$-1.01^{+0.12}_{-0.12}$	$H_0$	67.64	$67.8^{+2.9}_{-3.0}$	$100\theta_D$	0.160909	$0.16091^{+0.00036}_{-0.00035}$
$\ln(10^{10} A_s)$	3.063	$3.060^{+0.051}_{-0.049}$	$\Omega_\Lambda$	0.6900	$0.691^{+0.025}_{-0.025}$	$z_{\text{eq}}$	3374	$3377^{+60}_{-55}$
$n_s$	0.9665	$0.9660^{+0.0089}_{-0.0087}$	$\Omega_m$	0.3100	$0.309^{+0.025}_{-0.025}$	$k_{\text{eq}}$	0.010297	$0.01031^{+0.00018}_{-0.00017}$
$y_{\text{cal}}$	1.0002	$1.0001^{+0.0052}_{-0.0050}$	$\Omega_m h^2$	0.14182	$0.1419^{+0.0025}_{-0.0023}$	$100\theta_{\text{eq}}$	0.8182	$0.818^{+0.011}_{-0.011}$
$A_{217}^{\text{CIB}}$	68.1	$65^{+10}_{-10}$	$\Omega_m h^3$	0.0959	$0.0963^{+0.0049}_{-0.0051}$	$100\theta_{s,\text{eq}}$	0.4520	$0.4517^{+0.0055}_{-0.0058}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8155	$0.816^{+0.034}_{-0.033}$	$r_{\text{drag}}/D_V(0.57)$	0.07167	$0.07166^{+0.00079}_{-0.00080}$
$A_{143}^{\text{tSZ}}$	7.29	$5.29^{+3.8}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.454^{+0.012}_{-0.012}$	$H(0.57)$	93.02	$92.97^{+0.58}_{-0.65}$
$A_{100}^{\text{PS}}$	259	$262^{+60}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6085	$0.609^{+0.017}_{-0.015}$	$D_A(0.57)$	1387.1	$1387^{+23}_{-22}$
$A_{143}^{\text{PS}}$	38.8	$44^{+10}_{-20}$	$\sigma_8/h^{0.5}$	0.9915	$0.991^{+0.025}_{-0.023}$	$F_{\text{AP}}(0.57)$	0.6757	$0.675^{+0.012}_{-0.013}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.454	$2.453^{+0.051}_{-0.053}$	$f\sigma_8(0.57)$	0.4736	$0.475^{+0.026}_{-0.025}$
$A_{217}^{\text{PS}}$	96.2	$96^{+20}_{-20}$	$z_{\text{re}}$	8.77	$8.57^{+2.5}_{-2.7}$	$\sigma_8(0.57)$	0.6071	$0.608^{+0.026}_{-0.026}$
$A^{\text{kSZ}}$	0.00	< 8.06	$10^9 A_s$	2.139	$2.13^{+0.11}_{-0.11}$	$f_{2000}^{143}$	29.9	$30^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	7.50	$7.45^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8767	$1.877^{+0.022}_{-0.023}$	$f_{2000}^{143 \times 217}$	32.60	$33^{+4}_{-4}$
$A_{143}^{\text{dustTT}}$	9.07	$9.05^{+3.8}_{-3.6}$	$D_{40}$	1229.5	$1230^{+23}_{-23}$	$f_{2000}^{217}$	106.13	$106.1^{+3.5}_{-3.6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.1}_{-8.3}$	$D_{220}$	5726	$5725^{+75}_{-76}$	$\chi_{\text{lensing}}^2$	9.69	10.3 ( $\nu$ : 1.6)
$A_{217}^{\text{dustTT}}$	81.9	$81^{+10}_{-10}$	$D_{810}$	2534.2	$2533^{+26}_{-27}$	$\chi_{\text{lowTEB}}^2$	10495.24	10495.8 ( $\nu$ : 0.6)
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	815.1	$814.6^{+9.9}_{-9.4}$	$\chi_{\text{plik}}^2$	2435.2	2453.9 ( $\nu$ : 24.0)
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0491^{+0.0099}_{-0.0095}$	$D_{2000}$	230.21	$230.0^{+3.3}_{-3.0}$	$\chi_{6\text{DF}}^2$	0.022	0.15 ( $\nu$ : 0.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.101^{+0.065}_{-0.065}$	$n_{s,0.002}$	0.9665	$0.9660^{+0.0089}_{-0.0087}$	$\chi_{\text{MGS}}^2$	1.28	1.51 ( $\nu$ : 0.4)
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.013}_{-0.013}$	$Y_{\text{P}}$	0.245356	$0.24535^{+0.00014}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.44	3.04 ( $\nu$ : 0.4)
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.091}_{-0.094}$	$Y_{\text{P}}^{\text{BBN}}$	0.246682	$0.24668^{+0.00014}_{-0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.60	0.81 ( $\nu$ : 0.3)
$A_{217}^{\text{dustEE}}$	0.649	$0.65^{+0.26}_{-0.25}$	$10^5 D/H$	2.607	$2.608^{+0.058}_{-0.059}$	$\chi_{\text{prior}}^2$	7.07	19.6 ( $\nu$ : 14.7)
$A_{100}^{\text{dustTE}}$	0.140	$0.140^{+0.073}_{-0.071}$	Age/Gyr	13.802	$13.801^{+0.067}_{-0.064}$	$\chi_{\text{CMB}}^2$	12940.2	12960.0 ( $\nu$ : 23.2)
$A_{100 \times 143}^{\text{dustTE}}$	0.130	$0.131^{+0.056}_{-0.056}$	$z_*$	1089.93	$1089.94^{+0.55}_{-0.57}$	$\chi_{\text{BAO}}^2$	4.34	5.51 ( $\nu$ : 1.4)
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.17}_{-0.17}$	$r_*$	144.78	$144.75^{+0.54}_{-0.56}$			
$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.11}_{-0.11}$	$100\theta_*$	1.04111	$1.04109^{+0.00062}_{-0.00059}$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.59$ ;  $\Delta\chi_{\text{eff}}^2 = 0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 12985.07$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.43$ ;  $R - 1 = 0.03760$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMass: 2.44 ( $\Delta$  -0.02) DR11LOWZ: 0.60 ( $\Delta$  -0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.69 ( $\Delta$  0.02) lowl\_SMW\_70\_dx11d\_2014.10.03

## 21.14 base\_w\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022271	$0.02226_{-0.00041}^{+0.00042}$	$\Omega_m h^2$	0.14205	$0.1422_{-0.0032}^{+0.0032}$	$100\theta_D$	0.16093	$0.16093_{-0.00051}^{+0.00051}$
$\Omega_c h^2$	0.11914	$0.1193_{-0.0034}^{+0.0033}$	$\Omega_m h^3$	0.09697	$0.0970_{-0.0040}^{+0.0041}$	$z_{\text{eq}}$	3379	$3383_{-77}^{+75}$
$100\theta_{\text{MC}}$	1.04095	$1.04093_{-0.00087}^{+0.00085}$	$\sigma_8$	0.8363	$0.836_{-0.039}^{+0.039}$	$k_{\text{eq}}$	0.010314	$0.01033_{-0.00024}^{+0.00023}$
$\tau$	0.0805	$0.080_{-0.035}^{+0.036}$	$\sigma_8 \Omega_m^{0.5}$	0.4617	$0.462_{-0.021}^{+0.020}$	$100\theta_{\text{eq}}$	0.8172	$0.817_{-0.014}^{+0.015}$
$w$	-1.023	$-1.023_{-0.096}^{+0.091}$	$\sigma_8 \Omega_m^{0.25}$	0.6214	$0.622_{-0.027}^{+0.026}$	$100\theta_{s,\text{eq}}$	0.4515	$0.4512_{-0.0073}^{+0.0076}$
$\ln(10^{10} A_s)$	3.094	$3.092_{-0.069}^{+0.070}$	$\sigma_8/h^{0.5}$	1.0122	$1.012_{-0.040}^{+0.040}$	$r_{\text{drag}}/D_V(0.57)$	0.07179	$0.07172_{-0.00082}^{+0.00084}$
$n_s$	0.9674	$0.966_{-0.010}^{+0.010}$	$\langle d^2 \rangle^{1/2}$	2.497	$2.498_{-0.090}^{+0.088}$	$H(0.57)$	92.96	$92.92_{-0.79}^{+0.75}$
$y_{\text{cal}}$	1.00028	$1.0004_{-0.0050}^{+0.0049}$	$z_{\text{re}}$	10.19	$10.0_{-3.4}^{+3.1}$	$D_A(0.57)$	1382.5	$1384_{-17}^{+17}$
$\alpha_{\text{JLA}}$	0.1415	$0.141_{-0.013}^{+0.013}$	$10^9 A_s$	2.206	$2.20_{-0.15}^{+0.16}$	$F_{\text{AP}}(0.57)$	0.6731	$0.6734_{-0.0087}^{+0.0088}$
$\beta_{\text{JLA}}$	3.103	$3.11_{-0.16}^{+0.16}$	$10^9 A_s e^{-2\tau}$	1.8775	$1.878_{-0.025}^{+0.025}$	$f\sigma_8(0.57)$	0.4869	$0.487_{-0.028}^{+0.029}$
$A_{217}^{\text{CIB}}$	66.5	$64_{-10}^{+10}$	$D_{40}$	1232.8	$1236_{-27}^{+27}$	$\sigma_8(0.57)$	0.6229	$0.622_{-0.029}^{+0.029}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$D_{220}$	5717	$5720_{-79}^{+80}$	$f_{2000}^{143}$	29.3	$30_{-6}^{+6}$
$A_{143}^{\text{tSZ}}$	7.12	$5.15_{-3.8}^{+3.6}$	$D_{810}$	2533.7	$2534_{-27}^{+27}$	$f_{2000}^{143 \times 217}$	31.99	$32_{-4}^{+4}$
$A_{100}^{\text{PS}}$	252	$258_{-50}^{+50}$	$D_{1420}$	815.0	$815_{-9.9}^{+10}$	$f_{2000}^{217}$	105.65	$105.9_{-3.8}^{+3.9}$
$A_{143}^{\text{PS}}$	38.8	$43_{-20}^{+20}$	$D_{2000}$	230.61	$230.5_{-3.5}^{+3.6}$	$\chi_{\text{lowTEB}}^2$	10496.30	10497.3 ( $\nu$ : 2.8)
$A_{143 \times 217}^{\text{PS}}$	33	$39_{-20}^{+20}$	$n_{s,0.002}$	0.9674	$0.966_{-0.010}^{+0.010}$	$\chi_{\text{plik}}^2$	763.5	776.8 ( $\nu$ : 15.6)
$A_{217}^{\text{PS}}$	97.9	$97_{-20}^{+20}$	$Y_{\text{P}}$	0.245349	$0.24534_{-0.00019}^{+0.00019}$	$\chi_{\text{H070p6}}^2$	0.51	0.63 ( $\nu$ : 0.1)
$A^{\text{kSZ}}$	0.01	< 8.29	$Y_{\text{P}}^{\text{BBN}}$	0.246676	$0.24667_{-0.00019}^{+0.00019}$	$\chi_{\text{JLA}}^2$	695.20	697.8 ( $\nu$ : 2.4)
$A_{100}^{\text{dustTT}}$	7.38	$7.40_{-3.8}^{+3.7}$	$10^5 \text{D}/\text{H}$	2.610	$2.612_{-0.079}^{+0.079}$	$\chi_{6\text{DF}}^2$	0.000	0.070 ( $\nu$ : 0.0)
$A_{143}^{\text{dustTT}}$	9.00	$9.01_{-3.5}^{+3.6}$	$\text{Age}/\text{Gyr}$	13.789	$13.792_{-0.060}^{+0.061}$	$\chi_{\text{MGS}}^2$	1.68	1.68 ( $\nu$ : 0.3)
$A_{143 \times 217}^{\text{dustTT}}$	17.3	$17.0_{-8.1}^{+8.2}$	$z_*$	1089.97	$1090.00_{-0.71}^{+0.70}$	$\chi_{\text{DR11CMAS}}^2$	2.62	3.08 ( $\nu$ : 0.3)
$A_{217}^{\text{dustTT}}$	81.5	$82_{-10}^{+10}$	$r_*$	144.73	$144.70_{-0.77}^{+0.79}$	$\chi_{\text{DR11LOWZ}}^2$	0.35	0.57 ( $\nu$ : 0.1)
$c_{100}$	0.99788	$0.9979_{-0.0015}^{+0.0015}$	$100\theta_*$	1.04114	$1.04113_{-0.00086}^{+0.00084}$	$\chi_{\text{prior}}^2$	2.06	7.30 ( $\nu$ : 6.3)
$c_{217}$	0.99583	$0.9959_{-0.0028}^{+0.0029}$	$D_A/\text{Gpc}$	13.901	$13.898_{-0.072}^{+0.074}$	$\chi_{\text{CMB}}^2$	11259.8	11274.1 ( $\nu$ : 14.7)
$H_0$	68.26	$68.2_{-2.0}^{+2.1}$	$z_{\text{drag}}$	1059.63	$1059.64_{-0.86}^{+0.91}$	$\chi_{\text{BAO}}^2$	4.65	5.41 ( $\nu$ : 0.7)
$\Omega_\Lambda$	0.6952	$0.694_{-0.018}^{+0.018}$	$r_{\text{drag}}$	147.43	$147.40_{-0.79}^{+0.81}$			
$\Omega_m$	0.3048	$0.306_{-0.018}^{+0.018}$	$k_D$	0.14043	$0.14046_{-0.00093}^{+0.00092}$			

Best-fit  $\chi_{\text{eff}}^2 = 11962.18$ ;  $\bar{\chi}_{\text{eff}}^2 = 11985.16$ ;  $R - 1 = 0.00509$  $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.68 DR11CMAS: 2.62 DR11LOWZ: 0.35 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.30 plik\_dx11dr2\_HM.v18.TT: 763.46 Hubble - H070p6: 0.51 SN - JLA December\_2013: 695.20

21.15 base\_w\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022285	$0.02226^{+0.00042}_{-0.00040}$	$\Omega_m h^2$	0.14137	$0.1414^{+0.0029}_{-0.0031}$	$100\theta_D$	0.16094	$0.16098^{+0.00049}_{-0.00051}$
$\Omega_c h^2$	0.11844	$0.1185^{+0.0031}_{-0.0032}$	$\Omega_m h^3$	0.09614	$0.0961^{+0.0040}_{-0.0038}$	$z_{\text{eq}}$	3363	$3364^{+69}_{-73}$
$100\theta_{\text{MC}}$	1.04103	$1.04104^{+0.00082}_{-0.00084}$	$\sigma_8$	0.8169	$0.817^{+0.027}_{-0.026}$	$k_{\text{eq}}$	0.010264	$0.01027^{+0.00021}_{-0.00022}$
$\tau$	0.0672	$0.066^{+0.032}_{-0.029}$	$\sigma_8 \Omega_m^{0.5}$	0.4517	$0.452^{+0.013}_{-0.014}$	$100\theta_{\text{eq}}$	0.8202	$0.820^{+0.014}_{-0.013}$
$w$	-1.004	$-1.006^{+0.085}_{-0.091}$	$\sigma_8 \Omega_m^{0.25}$	0.6074	$0.607^{+0.016}_{-0.015}$	$100\theta_{s,\text{eq}}$	0.4531	$0.4530^{+0.0073}_{-0.0068}$
$\ln(10^{10} A_s)$	3.064	$3.063^{+0.057}_{-0.053}$	$\sigma_8/h^{0.5}$	0.9906	$0.990^{+0.024}_{-0.023}$	$r_{\text{drag}}/D_V(0.57)$	0.07188	$0.07185^{+0.00081}_{-0.00077}$
$n_s$	0.9684	$0.968^{+0.011}_{-0.010}$	$\langle d^2 \rangle^{1/2}$	2.448	$2.449^{+0.052}_{-0.052}$	$H(0.57)$	93.09	$93.05^{+0.71}_{-0.73}$
$y_{\text{cal}}$	0.99999	$1.0001^{+0.0047}_{-0.0048}$	$z_{\text{re}}$	8.94	$8.81^{+2.8}_{-2.9}$	$D_A(0.57)$	1383.2	$1384^{+17}_{-18}$
$\alpha_{\text{JLA}}$	0.1414	$0.141^{+0.013}_{-0.013}$	$10^9 A_s$	2.142	$2.14^{+0.12}_{-0.11}$	$F_{\text{AP}}(0.57)$	0.6743	$0.6744^{+0.0086}_{-0.0089}$
$\beta_{\text{JLA}}$	3.099	$3.10^{+0.16}_{-0.16}$	$10^9 A_s e^{-2\tau}$	1.8729	$1.874^{+0.023}_{-0.024}$	$f\sigma_8(0.57)$	0.4739	$0.474^{+0.021}_{-0.020}$
$A_{217}^{\text{CIB}}$	67.5	$65^{+10}_{-10}$	$D_{40}$	1224.1	$1226^{+23}_{-23}$	$\sigma_8(0.57)$	0.6089	$0.609^{+0.020}_{-0.019}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$D_{220}$	5715	$5717^{+80}_{-79}$	$f_{2000}^{143}$	29.9	$30^{+5}_{-6}$
$A_{143}^{\text{tSZ}}$	7.11	$5.06^{+3.7}_{-3.9}$	$D_{810}$	2531.8	$2532^{+26}_{-27}$	$f_{2000}^{143 \times 217}$	32.53	$33^{+4}_{-4}$
$A_{100}^{\text{PS}}$	255	$260^{+50}_{-50}$	$D_{1420}$	814.9	$814^{+10}_{-9.8}$	$f_{2000}^{217}$	106.04	$106.3^{+3.7}_{-3.8}$
$A_{143}^{\text{PS}}$	39.4	$44^{+10}_{-20}$	$D_{2000}$	230.22	$230.0^{+3.6}_{-3.4}$	$\chi_{\text{lensing}}^2$	9.25	$9.92 (\nu: 1.2)$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$n_{s,0.002}$	0.9684	$0.968^{+0.011}_{-0.010}$	$\chi_{\text{lowTEB}}^2$	10494.85	$10495.5 (\nu: 0.7)$
$A_{217}^{\text{PS}}$	97.0	$96^{+20}_{-20}$	$Y_{\text{P}}$	0.245356	$0.24534^{+0.00019}_{-0.00018}$	$\chi_{\text{plik}}^2$	766.3	$779.2 (\nu: 15.0)$
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}^{\text{BBN}}$	0.246682	$0.24667^{+0.00019}_{-0.00018}$	$\chi_{\text{H070p6}}^2$	0.62	$0.71 (\nu: 0.1)$
$A_{100}^{\text{dustTT}}$	7.51	$7.43^{+3.5}_{-3.7}$	$10^5 D/H$	2.607	$2.613^{+0.077}_{-0.078}$	$\chi_{\text{JLA}}^2$	695.17	$697.7 (\nu: 2.3)$
$A_{143}^{\text{dustTT}}$	9.10	$9.05^{+3.5}_{-3.5}$	Age/Gyr	13.793	$13.796^{+0.060}_{-0.061}$	$\chi_{6\text{DF}}^2$	0.001	$0.072 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.3}_{-8.2}$	$z_*$	1089.89	$1089.93^{+0.68}_{-0.71}$	$\chi_{\text{MGS}}^2$	1.61	$1.68 (\nu: 0.3)$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$r_*$	144.90	$144.90^{+0.76}_{-0.75}$	$\chi_{\text{DR11CMass}}^2$	2.46	$2.90 (\nu: 0.3)$
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0016}$	$100\theta_*$	1.04123	$1.04123^{+0.00080}_{-0.00083}$	$\chi_{\text{DR11LOWZ}}^2$	0.33	$0.51 (\nu: 0.1)$
$c_{217}$	0.99601	$0.9960^{+0.0029}_{-0.0029}$	$D_A/\text{Gpc}$	13.916	$13.916^{+0.071}_{-0.066}$	$\chi_{\text{prior}}^2$	2.06	$7.37 (\nu: 6.5)$
$H_0$	68.00	$68.0^{+2.1}_{-2.0}$	$z_{\text{drag}}$	1059.63	$1059.57^{+0.86}_{-0.86}$	$\chi_{\text{CMB}}^2$	11270.4	$11284.7 (\nu: 14.8)$
$\Omega_\Lambda$	0.6943	$0.694^{+0.018}_{-0.018}$	$r_{\text{drag}}$	147.60	$147.61^{+0.78}_{-0.72}$	$\chi_{\text{BAO}}^2$	4.41	$5.16 (\nu: 0.8)$
$\Omega_m$	0.3057	$0.306^{+0.018}_{-0.018}$	$k_D$	0.14027	$0.14023^{+0.00085}_{-0.00089}$			

Best-fit  $\chi_{\text{eff}}^2 = 11972.61$ ;  $\Delta\chi_{\text{eff}}^2 = -11.45$ ;  $\bar{\chi}_{\text{eff}}^2 = 11995.62$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -8.40$ ;  $R - 1 = 0.02377$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.46 ( $\Delta$  0.05) DR11LOWZ: 0.33 ( $\Delta$  -0.04) CMB - smica\_g30\_ftl\_full\_pp: 9.25 ( $\Delta$  -0.02) lowl\_SMW\_70\_dx11d\_2014\_10\_01  
10494.85 ( $\Delta$  -0.07) plik\_dx11dr2\_HM\_v18\_TT: 766.27 ( $\Delta$  0.14) Hubble - H070p6: 0.62 ( $\Delta$  -0.05) SN - JLA December\_2013: 695.17 ( $\Delta$  -11.46)

21.16 base\_w\_plikHM\_TTTEEE\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022303	$0.02227^{+0.00029}_{-0.00029}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$D_A/\text{Gpc}$	13.894	$13.893^{+0.053}_{-0.052}$
$\Omega_c h^2$	0.11940	$0.1195^{+0.0025}_{-0.0025}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$z_{\text{drag}}$	1059.74	$1059.68^{+0.60}_{-0.58}$
$100\theta_{\text{MC}}$	1.04083	$1.04081^{+0.00061}_{-0.00061}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.50}_{-0.50}$	$r_{\text{drag}}$	147.32	$147.32^{+0.56}_{-0.56}$
$\tau$	0.0836	$0.080^{+0.033}_{-0.034}$	$c_{100}$	0.99826	$0.9982^{+0.0015}_{-0.0015}$	$k_D$	0.14057	$0.14055^{+0.00062}_{-0.00060}$
$w$	-1.023	$-1.030^{+0.078}_{-0.082}$	$c_{217}$	0.99584	$0.9960^{+0.0028}_{-0.0029}$	$100\theta_D$	0.160856	$0.16089^{+0.00036}_{-0.00035}$
$\ln(10^{10} A_s)$	3.102	$3.094^{+0.064}_{-0.065}$	$H_0$	68.16	$68.3^{+2.0}_{-1.9}$	$z_{\text{eq}}$	3386	$3389^{+56}_{-56}$
$n_s$	0.9666	$0.9652^{+0.0086}_{-0.0085}$	$\Omega_\Lambda$	0.6936	$0.694^{+0.017}_{-0.018}$	$k_{\text{eq}}$	0.010335	$0.01034^{+0.00017}_{-0.00017}$
$y_{\text{cal}}$	1.00043	$1.0004^{+0.0048}_{-0.0048}$	$\Omega_m$	0.3064	$0.306^{+0.018}_{-0.017}$	$100\theta_{\text{eq}}$	0.8159	$0.815^{+0.011}_{-0.010}$
$\alpha_{\text{JLA}}$	0.1413	$0.141^{+0.013}_{-0.013}$	$\Omega_m h^2$	0.14235	$0.1425^{+0.0024}_{-0.0023}$	$100\theta_{s,\text{eq}}$	0.4508	$0.4505^{+0.0055}_{-0.0054}$
$\beta_{\text{JLA}}$	3.103	$3.11^{+0.16}_{-0.15}$	$\Omega_m h^3$	0.09703	$0.0973^{+0.0035}_{-0.0033}$	$r_{\text{drag}}/D_V(0.57)$	0.07169	$0.07168^{+0.00070}_{-0.00069}$
$A_{217}^{\text{CIB}}$	63.9	$64^{+10}_{-10}$	$\sigma_8$	0.8402	$0.839^{+0.034}_{-0.034}$	$H(0.57)$	92.93	$92.87^{+0.55}_{-0.58}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.41	—	$\sigma_8 \Omega_m^{0.5}$	0.4651	$0.464^{+0.017}_{-0.017}$	$D_A(0.57)$	1383.8	$1384^{+16}_{-16}$
$A_{143}^{\text{tSZ}}$	6.96	$5.38^{+3.6}_{-3.8}$	$\sigma_8 \Omega_m^{0.25}$	0.6251	$0.624^{+0.023}_{-0.022}$	$F_{\text{AP}}(0.57)$	0.6735	$0.6729^{+0.0082}_{-0.0083}$
$A_{100}^{\text{PS}}$	253	$259^{+50}_{-50}$	$\sigma_8/h^{0.5}$	1.0176	$1.015^{+0.035}_{-0.034}$	$f\sigma_8(0.57)$	0.4896	$0.489^{+0.024}_{-0.023}$
$A_{143}^{\text{PS}}$	44.2	$43^{+10}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.512	$2.507^{+0.079}_{-0.078}$	$\sigma_8(0.57)$	0.6254	$0.624^{+0.026}_{-0.026}$
$A_{143 \times 217}^{\text{PS}}$	44.4	$40^{+20}_{-20}$	$z_{\text{re}}$	10.46	$10.1^{+3.0}_{-3.1}$	$f_{2000}^{143}$	28.5	$29^{+5}_{-5}$
$A_{217}^{\text{PS}}$	102.5	$98^{+20}_{-20}$	$10^9 A_s$	2.224	$2.21^{+0.14}_{-0.14}$	$f_{2000}^{143 \times 217}$	31.74	$32^{+4}_{-4}$
$A_{\text{kSZ}}$	0.00	$< 7.78$	$10^9 A_s e^{-2\tau}$	1.8814	$1.881^{+0.022}_{-0.022}$	$f_{2000}^{217}$	105.23	$105.7^{+3.7}_{-3.7}$
$A_{100}^{\text{dustTT}}$	7.40	$7.43^{+3.7}_{-3.6}$	$D_{40}$	1238.3	$1240^{+24}_{-25}$	$\chi_{\text{lowTEB}}^2$	10497.06	$10497.6 (\nu: 2.4)$
$A_{143}^{\text{dustTT}}$	8.97	$8.92^{+3.6}_{-3.6}$	$D_{220}$	5729	$5730^{+74}_{-75}$	$\chi_{\text{plik}}^2$	2431.7	$2450.3 (\nu: 22.4)$
$A_{143 \times 217}^{\text{dustTT}}$	18.0	$17.0^{+8.1}_{-8.2}$	$D_{810}$	2536.9	$2535^{+26}_{-26}$	$\chi_{\text{H070p6}}^2$	0.55	$0.59 (\nu: 0.1)$
$A_{217}^{\text{dustTT}}$	82.5	$82^{+10}_{-10}$	$D_{1420}$	815.9	$814.8^{+9.2}_{-9.2}$	$\chi_{\text{JLA}}^2$	695.21	$697.7 (\nu: 2.3)$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{2000}$	231.00	$230.5^{+3.1}_{-3.1}$	$\chi_{6\text{DF}}^2$	0.002	$0.066 (\nu: 0.0)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0489^{+0.0098}_{-0.0098}$	$n_{s,0.002}$	0.9666	$0.9652^{+0.0086}_{-0.0085}$	$\chi_{\text{MGS}}^2$	1.54	$1.69 (\nu: 0.2)$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.064}_{-0.063}$	$Y_{\text{P}}$	0.245363	$0.24535^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.65	$3.07 (\nu: 0.2)$
$A_{143}^{\text{dustEE}}$	0.1005	$0.100^{+0.014}_{-0.013}$	$Y_{\text{P}}^{\text{BBN}}$	0.246690	$0.24668^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.46	$0.57 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.092}_{-0.091}$	$10^5 D/H$	2.604	$2.610^{+0.056}_{-0.054}$	$\chi_{\text{prior}}^2$	6.61	$19.2 (\nu: 14.5)$
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.25}_{-0.25}$	Age/Gyr	13.7904	$13.791^{+0.050}_{-0.049}$	$\chi_{\text{CMB}}^2$	12928.8	$12947.9 (\nu: 21.5)$
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.074}_{-0.075}$	$z_*$	1089.95	$1090.00^{+0.52}_{-0.51}$	$\chi_{\text{BAO}}^2$	4.65	$5.40 (\nu: 0.5)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.057}_{-0.057}$	$r_*$	144.64	$144.62^{+0.56}_{-0.56}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.17}$	$100\theta_*$	1.04102	$1.04100^{+0.00060}_{-0.00060}$			

Best-fit  $\chi_{\text{eff}}^2 = 13635.80$ ;  $\bar{\chi}_{\text{eff}}^2 = 13670.82$ ;  $R - 1 = 0.00718$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.65 DR11LOWZ: 0.46 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.06 plik\_dx11dr2\_HM\_v18\_TTTEEE:  
2431.72 Hubble - H070p6: 0.55 SN - JLA December\_2013: 695.21



21.17 base\_w\_plikHM\_TTTEEE\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022285	$0.02227^{+0.00027}_{-0.00029}$	$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.11}$	$D_A/\text{Gpc}$	13.9047	$13.903^{+0.050}_{-0.050}$
$\Omega_c h^2$	0.11899	$0.1191^{+0.0024}_{-0.0023}$	$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.34^{+0.16}_{-0.16}$	$z_{\text{drag}}$	1059.67	$1059.63^{+0.57}_{-0.61}$
$100\theta_{\text{MC}}$	1.04087	$1.04088^{+0.00059}_{-0.00062}$	$A_{217}^{\text{dustTE}}$	1.668	$1.66^{+0.48}_{-0.50}$	$r_{\text{drag}}$	147.45	$147.44^{+0.53}_{-0.53}$
$\tau$	0.0640	$0.063^{+0.026}_{-0.026}$	$c_{100}$	0.99816	$0.9981^{+0.0016}_{-0.0015}$	$k_D$	0.14042	$0.14042^{+0.00060}_{-0.00058}$
$w$	-1.017	$-1.019^{+0.075}_{-0.080}$	$c_{217}$	0.99610	$0.9961^{+0.0028}_{-0.0027}$	$100\theta_D$	0.160901	$0.16092^{+0.00035}_{-0.00034}$
$\ln(10^{10} A_s)$	3.0602	$3.058^{+0.048}_{-0.047}$	$H_0$	68.15	$68.1^{+2.1}_{-1.9}$	$z_{\text{eq}}$	3376	$3379^{+54}_{-52}$
$n_s$	0.9662	$0.9656^{+0.0082}_{-0.0084}$	$\Omega_\Lambda$	0.6944	$0.694^{+0.018}_{-0.018}$	$k_{\text{eq}}$	0.010304	$0.01031^{+0.00017}_{-0.00016}$
$y_{\text{cal}}$	1.00008	$1.0001^{+0.0049}_{-0.0049}$	$\Omega_m$	0.3056	$0.306^{+0.018}_{-0.018}$	$100\theta_{\text{eq}}$	0.8177	$0.817^{+0.010}_{-0.010}$
$\alpha_{\text{JLA}}$	0.1414	$0.141^{+0.014}_{-0.013}$	$\Omega_m h^2$	0.14192	$0.1420^{+0.0023}_{-0.0022}$	$100\theta_{s,\text{eq}}$	0.4518	$0.4515^{+0.0051}_{-0.0052}$
$\beta_{\text{JLA}}$	3.102	$3.11^{+0.16}_{-0.15}$	$\Omega_m h^3$	0.09671	$0.0968^{+0.0035}_{-0.0033}$	$r_{\text{drag}}/D_V(0.57)$	0.07178	$0.07174^{+0.00069}_{-0.00071}$
$A_{217}^{\text{CIB}}$	67.9	$65^{+10}_{-10}$	$\sigma_8$	0.8199	$0.820^{+0.025}_{-0.024}$	$H(0.57)$	92.97	$92.94^{+0.52}_{-0.56}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$\sigma_8 \Omega_m^{0.5}$	0.4533	$0.453^{+0.011}_{-0.012}$	$D_A(0.57)$	1383.3	$1384^{+17}_{-16}$
$A_{143}^{\text{tSZ}}$	7.26	$5.28^{+3.6}_{-3.9}$	$\sigma_8 \Omega_m^{0.25}$	0.6096	$0.610^{+0.014}_{-0.014}$	$F_{\text{AP}}(0.57)$	0.6736	$0.6736^{+0.0082}_{-0.0084}$
$A_{100}^{\text{PS}}$	257	$262^{+50}_{-60}$	$\sigma_8/h^{0.5}$	0.9932	$0.993^{+0.022}_{-0.022}$	$f\sigma_8(0.57)$	0.4770	$0.477^{+0.018}_{-0.018}$
$A_{143}^{\text{PS}}$	38.9	$44^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4557	$2.456^{+0.048}_{-0.050}$	$\sigma_8(0.57)$	0.6107	$0.610^{+0.020}_{-0.018}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$z_{\text{re}}$	8.64	$8.49^{+2.4}_{-2.6}$	$f_{2000}^{143}$	29.8	$30^{+5}_{-5}$
$A_{217}^{\text{PS}}$	96.5	$96^{+20}_{-20}$	$10^9 A_s$	2.133	$2.13^{+0.10}_{-0.099}$	$f_{2000}^{143 \times 217}$	32.53	$33^{+4}_{-4}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s e^{-2\tau}$	1.8770	$1.878^{+0.022}_{-0.021}$	$f_{2000}^{217}$	106.06	$106.2^{+3.6}_{-3.7}$
$A_{100}^{\text{dustTT}}$	7.48	$7.47^{+3.6}_{-3.6}$	$D_{40}$	1229.5	$1231^{+22}_{-21}$	$\chi_{\text{lensing}}^2$	9.79	10.3 ( $\nu$ : 1.6)
$A_{143}^{\text{dustTT}}$	9.05	$9.09^{+3.4}_{-3.4}$	$D_{220}$	5726	$5726^{+74}_{-75}$	$\chi_{\text{lowTEB}}^2$	10495.22	10495.8 ( $\nu$ : 0.6)
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.4^{+8.1}_{-8.0}$	$D_{810}$	2533.9	$2534^{+26}_{-26}$	$\chi_{\text{plik}}^2$	2435.0	2454 ( $\nu$ : 99.2)
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{1420}$	814.9	$814.6^{+9.4}_{-9.1}$	$\chi_{\text{H070p6}}^2$	0.56	0.65 ( $\nu$ : 0.1)
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.012}_{-0.011}$	$D_{2000}$	230.15	$230.0^{+3.0}_{-3.0}$	$\chi_{\text{JLA}}^2$	695.18	697.6 ( $\nu$ : 2.3)
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0490^{+0.0099}_{-0.0098}$	$n_{s,0.002}$	0.9662	$0.9656^{+0.0082}_{-0.0084}$	$\chi_{6\text{DF}}^2$	0.001	0.068 ( $\nu$ : 0.0)
$A_{100 \times 217}^{\text{dustEE}}$	0.0996	$0.100^{+0.065}_{-0.063}$	$Y_P$	0.245356	$0.24535^{+0.00012}_{-0.00013}$	$\chi_{\text{MGS}}^2$	1.61	1.66 ( $\nu$ : 0.2)
$A_{143}^{\text{dustEE}}$	0.1005	$0.100^{+0.014}_{-0.014}$	$Y_P^{\text{BBN}}$	0.246682	$0.24667^{+0.00012}_{-0.00013}$	$\chi_{\text{DR11CMass}}^2$	2.57	2.94 ( $\nu$ : 0.2)
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.225^{+0.091}_{-0.092}$	$10^5 D/H$	2.607	$2.611^{+0.055}_{-0.052}$	$\chi_{\text{DR11LOWZ}}^2$	0.38	0.56 ( $\nu$ : 0.1)
$A_{217}^{\text{dustEE}}$	0.655	$0.65^{+0.25}_{-0.25}$	Age/Gyr	13.792	$13.794^{+0.052}_{-0.051}$	$\chi_{\text{prior}}^2$	7.10	19.3 ( $\nu$ : 16.4)
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.074}_{-0.076}$	$z_*$	1089.94	$1089.97^{+0.51}_{-0.50}$	$\chi_{\text{CMB}}^2$	12940.0	12960 ( $\nu$ : 98.1)
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.131^{+0.056}_{-0.055}$	$r_*$	144.76	$144.74^{+0.53}_{-0.53}$	$\chi_{\text{BAO}}^2$	4.57	5.22 ( $\nu$ : 0.5)
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.16}$	$100\theta_*$	1.04107	$1.04107^{+0.00059}_{-0.00061}$			

Best-fit  $\chi_{\text{eff}}^2 = 13647.43$ ;  $\Delta\chi_{\text{eff}}^2 = -11.61$ ;  $\bar{\chi}_{\text{eff}}^2 = 13682.56$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -8.54$ ;  $R - 1 = 0.02987$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.61 ( $\Delta$  0.20) DR11CMASS: 2.57 ( $\Delta$  0.16) DR11LOWZ: 0.38 ( $\Delta$  -0.10) CMB - smica\_g30\_ftl\_full\_pp: 9.79 ( $\Delta$  0.05) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.22 ( $\Delta$  -0.00) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.01 ( $\Delta$  -0.19) Hubble - H070p6: 0.56 ( $\Delta$  -0.16) SN - JLA December\_2013: 695.18 ( $\Delta$  -11.48)

## 22 w+wa

### 22.1 base\_w\_wa\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022247	$0.02222^{+0.00042}_{-0.00043}$	$\Omega_m h^2$	0.14280	$0.1430^{+0.0037}_{-0.0037}$	$k_D$	0.14060	$0.14061^{+0.00096}_{-0.00098}$
$\Omega_c h^2$	0.11990	$0.1202^{+0.0039}_{-0.0039}$	$\Omega_m h^3$	0.0913	$0.0915^{+0.0086}_{-0.0081}$	$100\theta_D$	0.16092	$0.16096^{+0.00052}_{-0.00050}$
$100\theta_{MC}$	1.04085	$1.04081^{+0.00089}_{-0.00091}$	$\sigma_8$	0.803	$0.804^{+0.061}_{-0.055}$	$z_{eq}$	3397	$3403^{+90}_{-89}$
$\tau$	0.0754	$0.075^{+0.037}_{-0.037}$	$\sigma_8 \Omega_m^{0.5}$	0.4744	$0.476^{+0.025}_{-0.026}$	$k_{eq}$	0.010368	$0.01039^{+0.00027}_{-0.00027}$
$w$	-0.53	$-0.50^{+0.55}_{-0.59}$	$\sigma_8 \Omega_m^{0.25}$	0.6170	$0.618^{+0.030}_{-0.030}$	$100\theta_{eq}$	0.8138	$0.813^{+0.017}_{-0.016}$
$w_a$	-1.35	$< -0.0453$	$\sigma_8/h^{0.5}$	1.0037	$1.006^{+0.046}_{-0.045}$	$100\theta_{s,eq}$	0.4498	$0.4492^{+0.0088}_{-0.0085}$
$\ln(10^{10} A_s)$	3.085	$3.084^{+0.071}_{-0.072}$	$\langle d^2 \rangle^{1/2}$	2.510	$2.515^{+0.097}_{-0.096}$	$r_{drag}/D_V(0.57)$	0.07234	$0.0723^{+0.0011}_{-0.0012}$
$n_s$	0.9654	$0.964^{+0.011}_{-0.011}$	$z_{re}$	9.73	$9.59^{+3.5}_{-3.5}$	$H(0.57)$	95.12	$95.1^{+2.5}_{-2.8}$
$y_{cal}$	1.00015	$1.0003^{+0.0048}_{-0.0048}$	$10^9 A_s$	2.187	$2.19^{+0.16}_{-0.15}$	$D_A(0.57)$	1380.3	$1379^{+24}_{-24}$
$A_{217}^{CIB}$	66.6	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8806	$1.882^{+0.026}_{-0.026}$	$F_{AP}(0.57)$	0.6876	$0.687^{+0.022}_{-0.022}$
$\xi^{tSZ \times CIB}$	0.03	—	$D_{40}$	1234.8	$1238^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4579	$0.460^{+0.049}_{-0.048}$
$A_{143}^{tSZ}$	7.08	$5.13^{+3.7}_{-3.8}$	$D_{220}$	5716	$5717^{+80}_{-80}$	$\sigma_8(0.57)$	0.5981	$0.599^{+0.045}_{-0.041}$
$A_{100}^{PS}$	252	$258^{+50}_{-50}$	$D_{810}$	2533.7	$2534^{+27}_{-27}$	$f_{2000}^{143}$	29.4	$30^{+6}_{-6}$
$A_{143}^{PS}$	38.9	$44^{+20}_{-20}$	$D_{1420}$	814.4	$814^{+10}_{-9.9}$	$f_{2000}^{143 \times 217}$	32.09	$32^{+4}_{-4}$
$A_{143 \times 217}^{PS}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.43	$230.3^{+3.6}_{-3.6}$	$f_{2000}^{217}$	105.75	$106.0^{+3.9}_{-3.9}$
$A_{217}^{PS}$	97.8	$97^{+20}_{-20}$	$n_{s,0.002}$	0.9654	$0.964^{+0.011}_{-0.011}$	$\chi_{lowTEB}^2$	10496.45	10497.5 ( $\nu: 2.3$ )
$A^{kSZ}$	0.0	—	$Y_P$	0.245339	$0.24532^{+0.00019}_{-0.00019}$	$\chi_{plik}^2$	762.9	776.5 ( $\nu: 15.2$ )
$A_{100}^{dustTT}$	7.31	$7.42^{+3.7}_{-3.6}$	$Y_P^{BBN}$	0.246665	$0.24665^{+0.00019}_{-0.00019}$	$\chi_{6DF}^2$	0.60	0.87 ( $\nu: 0.4$ )
$A_{143}^{dustTT}$	8.96	$9.02^{+3.6}_{-3.5}$	$10^5 D/H$	2.614	$2.621^{+0.083}_{-0.079}$	$\chi_{MGS}^2$	0.31	0.65 ( $\nu: 0.3$ )
$A_{143 \times 217}^{dustTT}$	17.5	$17.1^{+8.0}_{-8.2}$	Age/Gyr	13.777	$13.779^{+0.072}_{-0.069}$	$\chi_{DR11CMass}^2$	1.45	2.36 ( $\nu: 1.2$ )
$A_{217}^{dustTT}$	81.9	$82^{+10}_{-10}$	$z_*$	1090.07	$1090.13^{+0.78}_{-0.75}$	$\chi_{DR11LOWZ}^2$	0.55	0.76 ( $\nu: 0.3$ )
$c_{100}$	0.99786	$0.9979^{+0.0015}_{-0.0015}$	$r_*$	144.55	$144.51^{+0.89}_{-0.88}$	$\chi_{prior}^2$	2.07	7.28 ( $\nu: 6.2$ )
$c_{217}$	0.99588	$0.9959^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04104	$1.04101^{+0.00087}_{-0.00089}$	$\chi_{CMB}^2$	11259.4	11274.0 ( $\nu: 14.9$ )
$H_0$	63.9	$63.9^{+5.5}_{-5.1}$	$D_A/\text{Gpc}$	13.885	$13.882^{+0.084}_{-0.082}$	$\chi_{BAO}^2$	2.91	4.64 ( $\nu: 1.5$ )
$\Omega_\Lambda$	0.651	$0.648^{+0.058}_{-0.053}$	$z_{drag}$	1059.63	$1059.59^{+0.88}_{-0.91}$			
$\Omega_m$	0.349	$0.352^{+0.053}_{-0.058}$	$r_{drag}$	147.26	$147.22^{+0.90}_{-0.88}$			

Best-fit  $\chi_{eff}^2 = 11264.38$ ;  $\Delta\chi_{eff}^2 = -2.06$ ;  $\bar{\chi}_{eff}^2 = 11285.97$ ;  $\Delta\bar{\chi}_{eff}^2 = -0.40$ ;  $R - 1 = 0.00522$

$\chi_{eff}^2$ : BAO - 6DF: 0.60 ( $\Delta$  0.58) MGS: 0.31 ( $\Delta$  -0.97) DR11CMass: 1.45 ( $\Delta$  -1.00) DR11LOWZ: 0.55 ( $\Delta$  -0.06) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10496.45 ( $\Delta$  0.03) plik.dx11dr2\_HM.v18.TT: 762.95 ( $\Delta$  -0.65)

## 22.2 base\_w\_wa\_plikHM\_TT\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022276	$0.02224^{+0.00041}_{-0.00044}$	$\Omega_m h^2$	0.14135	$0.1417^{+0.0032}_{-0.0034}$	$k_D$	0.14025	$0.14027^{+0.00089}_{-0.00088}$
$\Omega_c h^2$	0.11843	$0.1188^{+0.0034}_{-0.0035}$	$\Omega_m h^3$	0.0908	$0.0906^{+0.0086}_{-0.0082}$	$100\theta_D$	0.16096	$0.16099^{+0.00053}_{-0.00049}$
$100\theta_{MC}$	1.04104	$1.04099^{+0.00085}_{-0.00091}$	$\sigma_8$	0.785	$0.782^{+0.054}_{-0.048}$	$z_{eq}$	3362	$3370^{+77}_{-80}$
$\tau$	0.0646	$0.062^{+0.034}_{-0.033}$	$\sigma_8 \Omega_m^{0.5}$	0.4591	$0.461^{+0.017}_{-0.018}$	$k_{eq}$	0.010262	$0.01029^{+0.00023}_{-0.00024}$
$w$	-0.62	$-0.54^{+0.59}_{-0.61}$	$\sigma_8 \Omega_m^{0.25}$	0.6002	$0.600^{+0.020}_{-0.020}$	$100\theta_{eq}$	0.8203	$0.819^{+0.015}_{-0.015}$
$w_a$	-0.95	$-1.25^{+1.5}_{-1.7}$	$\sigma_8/h^{0.5}$	0.9789	$0.978^{+0.030}_{-0.029}$	$100\theta_{s,eq}$	0.4531	$0.4524^{+0.0079}_{-0.0079}$
$\ln(10^{10} A_s)$	3.060	$3.054^{+0.060}_{-0.060}$	$\langle d^2 \rangle^{1/2}$	2.448	$2.451^{+0.052}_{-0.054}$	$r_{drag}/D_V(0.57)$	0.07228	$0.0724^{+0.0012}_{-0.0011}$
$n_s$	0.9686	$0.967^{+0.011}_{-0.010}$	$z_{re}$	8.69	$8.33^{+3.3}_{-3.4}$	$H(0.57)$	94.87	$95.1^{+2.8}_{-2.9}$
$y_{cal}$	1.00013	$1.0001^{+0.0052}_{-0.0047}$	$10^9 A_s$	2.132	$2.12^{+0.13}_{-0.12}$	$D_A(0.57)$	1385.1	$1383^{+23}_{-24}$
$A_{217}^{CIB}$	67.1	$64^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8735	$1.875^{+0.024}_{-0.024}$	$F_{AP}(0.57)$	0.6882	$0.689^{+0.024}_{-0.022}$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1223.1	$1226^{+23}_{-24}$	$f\sigma_8(0.57)$	0.4463	$0.445^{+0.046}_{-0.041}$
$A_{143}^{tSZ}$	7.18	$4.99^{+3.7}_{-3.8}$	$D_{220}$	5715	$5716^{+84}_{-83}$	$\sigma_8(0.57)$	0.5852	$0.583^{+0.040}_{-0.036}$
$A_{100}^{PS}$	254	$260^{+60}_{-50}$	$D_{810}$	2532.6	$2532^{+28}_{-26}$	$f_{2000}^{143}$	29.8	$31^{+6}_{-5}$
$A_{143}^{PS}$	39.0	$44^{+20}_{-20}$	$D_{1420}$	815.1	$814^{+10}_{-9.7}$	$f_{2000}^{143 \times 217}$	32.45	$33^{+4}_{-4}$
$A_{143 \times 217}^{PS}$	33	$39^{+20}_{-20}$	$D_{2000}$	230.29	$229.9^{+3.6}_{-3.6}$	$f_{2000}^{217}$	106.03	$106.4^{+3.8}_{-3.9}$
$A_{217}^{PS}$	97.3	$96^{+20}_{-20}$	$n_{s,0.002}$	0.9686	$0.967^{+0.011}_{-0.010}$	$\chi^2_{lensing}$	9.32	10.2 ( $\nu: 1.5$ )
$A^{kSZ}$	0.0	—	$Y_P$	0.245352	$0.24533^{+0.00018}_{-0.00020}$	$\chi^2_{lowTEB}$	10494.90	10495.8 ( $\nu: 0.8$ )
$A_{100}^{dustTT}$	7.40	$7.45^{+3.7}_{-3.6}$	$Y_P^{BBN}$	0.246678	$0.24666^{+0.00019}_{-0.00020}$	$\chi^2_{plik}$	766.2	779.1 ( $\nu: 14.4$ )
$A_{143}^{dustTT}$	9.09	$9.12^{+3.6}_{-3.5}$	$10^5 D/H$	2.609	$2.617^{+0.085}_{-0.077}$	$\chi^2_{6DF}$	0.52	0.89 ( $\nu: 0.4$ )
$A_{143 \times 217}^{dustTT}$	17.7	$17.3^{+7.8}_{-8.6}$	Age/Gyr	13.792	$13.790^{+0.072}_{-0.069}$	$\chi^2_{MGS}$	0.35	0.64 ( $\nu: 0.3$ )
$A_{217}^{dustTT}$	82.1	$82^{+10}_{-20}$	$z_*$	1089.90	$1089.98^{+0.77}_{-0.74}$	$\chi^2_{DR11CMass}$	1.33	2.28 ( $\nu: 1.2$ )
$c_{100}$	0.99789	$0.9979^{+0.0015}_{-0.0016}$	$r_*$	144.91	$144.85^{+0.79}_{-0.78}$	$\chi^2_{DR11LOWZ}$	0.66	0.79 ( $\nu: 0.3$ )
$c_{217}$	0.99594	$0.9960^{+0.0029}_{-0.0028}$	$100\theta_*$	1.04124	$1.04119^{+0.00089}_{-0.00087}$	$\chi^2_{prior}$	2.10	7.37 ( $\nu: 6.5$ )
$H_0$	64.2	$63.9^{+5.7}_{-5.4}$	$D_A/\text{Gpc}$	13.917	$13.912^{+0.072}_{-0.073}$	$\chi^2_{CMB}$	11270.4	11285.1 ( $\nu: 14.6$ )
$\Omega_\Lambda$	0.658	$0.651^{+0.057}_{-0.057}$	$z_{drag}$	1059.59	$1059.54^{+0.85}_{-0.94}$	$\chi^2_{BAO}$	2.86	4.60 ( $\nu: 1.4$ )
$\Omega_m$	0.342	$0.349^{+0.057}_{-0.057}$	$r_{drag}$	147.61	$147.56^{+0.78}_{-0.79}$			

Best-fit  $\chi^2_{eff} = 11275.37$ ;  $\Delta\chi^2_{eff} = -1.37$ ;  $\bar{\chi}^2_{eff} = 11297.07$ ;  $\Delta\bar{\chi}^2_{eff} = 0.38$ ;  $R - 1 = 0.01814$

$\chi^2_{eff}$ : BAO - 6DF: 0.52 ( $\Delta$  0.51) MGS: 0.35 ( $\Delta$  -1.06) DR11CMass: 1.33 ( $\Delta$  -1.07) DR11LOWZ: 0.66 ( $\Delta$  0.18) CMB - smica\_g30\_ftl\_full\_pp: 9.32 ( $\Delta$  0.08) lowl\_SMW\_70\_dx11d\_2014\_10\_03 10494.90 ( $\Delta$  0.05) plik\_dx11dr2\_HM.v18.TT: 766.19 ( $\Delta$  -0.01)

### 22.3 base\_w\_wa\_plikHM\_TTTEE\_lowTEB\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022258	$0.02224_{-0.00030}^{+0.00030}$	$A_{143}^{\text{dustTE}}$	0.156	$0.16_{-0.11}^{+0.11}$	$100\theta_*$	1.04095	$1.04095_{-0.00060}^{+0.00060}$
$\Omega_c h^2$	0.12000	$0.1200_{-0.0027}^{+0.0027}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34_{-0.16}^{+0.16}$	$D_A/\text{Gpc}$	13.883	$13.884_{-0.056}^{+0.056}$
$100\theta_{\text{MC}}$	1.04074	$1.04075_{-0.00061}^{+0.00062}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67_{-0.50}^{+0.50}$	$z_{\text{drag}}$	1059.67	$1059.64_{-0.62}^{+0.60}$
$\tau$	0.0770	$0.076_{-0.033}^{+0.033}$	$c_{100}$	0.99820	$0.9982_{-0.0015}^{+0.0015}$	$r_{\text{drag}}$	147.22	$147.23_{-0.59}^{+0.60}$
$w$	-0.50	$-0.51_{-0.60}^{+0.57}$	$c_{217}$	0.99593	$0.9959_{-0.0028}^{+0.0028}$	$k_D$	0.14065	$0.14062_{-0.00064}^{+0.00063}$
$w_a$	-1.44	$< -0.0299$	$H_0$	63.8	$64.0_{-5.2}^{+5.7}$	$100\theta_D$	0.160888	$0.16091_{-0.00035}^{+0.00036}$
$\ln(10^{10} A_s)$	3.089	$3.088_{-0.064}^{+0.062}$	$\Omega_\Lambda$	0.648	$0.649_{-0.054}^{+0.060}$	$z_{\text{eq}}$	3399	$3400_{-62}^{+61}$
$n_s$	0.9648	$0.9641_{-0.0089}^{+0.0090}$	$\Omega_m$	0.352	$0.351_{-0.060}^{+0.054}$	$k_{\text{eq}}$	0.010375	$0.01038_{-0.00019}^{+0.00019}$
$y_{\text{cal}}$	1.00016	$1.0004_{-0.0048}^{+0.0049}$	$\Omega_m h^2$	0.14290	$0.1429_{-0.0026}^{+0.0025}$	$100\theta_{\text{eq}}$	0.8134	$0.813_{-0.011}^{+0.012}$
$A_{217}^{\text{CIB}}$	64.5	$64_{-10}^{+10}$	$\Omega_m h^3$	0.0911	$0.0915_{-0.0079}^{+0.0084}$	$100\theta_{s,\text{eq}}$	0.4495	$0.4495_{-0.0058}^{+0.0060}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.33	—	$\sigma_8$	0.803	$0.805_{-0.056}^{+0.058}$	$r_{\text{drag}}/D_V(0.57)$	0.07236	$0.0724_{-0.0011}^{+0.0011}$
$A_{143}^{\text{tSZ}}$	6.98	$5.35_{-3.7}^{+3.6}$	$\sigma_8 \Omega_m^{0.5}$	0.4763	$0.476_{-0.021}^{+0.020}$	$H(0.57)$	95.21	$95.1_{-2.8}^{+2.7}$
$A_{100}^{\text{PS}}$	253	$260_{-50}^{+50}$	$\sigma_8 \Omega_m^{0.25}$	0.6186	$0.619_{-0.024}^{+0.025}$	$D_A(0.57)$	1379.8	$1379_{-23}^{+23}$
$A_{143}^{\text{PS}}$	43.4	$44_{-20}^{+10}$	$\sigma_8/h^{0.5}$	1.0062	$1.006_{-0.037}^{+0.038}$	$F_{\text{AP}}(0.57)$	0.6880	$0.687_{-0.022}^{+0.022}$
$A_{143 \times 217}^{\text{PS}}$	42.5	$40_{-20}^{+20}$	$\langle d^2 \rangle^{1/2}$	2.519	$2.519_{-0.079}^{+0.080}$	$f\sigma_8(0.57)$	0.4582	$0.460_{-0.045}^{+0.047}$
$A_{217}^{\text{PS}}$	101.7	$98_{-20}^{+20}$	$z_{\text{re}}$	9.87	$9.73_{-3.2}^{+3.0}$	$\sigma_8(0.57)$	0.5988	$0.600_{-0.042}^{+0.043}$
$A^{\text{kSZ}}$	0.00	$< 7.66$	$10^9 A_s$	2.196	$2.19_{-0.14}^{+0.14}$	$f_{2000}^{143}$	28.9	$29_{-5}^{+5}$
$A_{100}^{\text{dustTT}}$	7.35	$7.43_{-3.7}^{+3.7}$	$10^9 A_s e^{-2\tau}$	1.8828	$1.883_{-0.023}^{+0.023}$	$f_{2000}^{143 \times 217}$	31.97	$32_{-4}^{+4}$
$A_{143}^{\text{dustTT}}$	8.99	$8.90_{-3.6}^{+3.6}$	$D_{40}$	1238.2	$1241_{-24}^{+25}$	$f_{2000}^{217}$	105.47	$105.8_{-3.6}^{+3.7}$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$16.9_{-8.1}^{+8.1}$	$D_{220}$	5725	$5728_{-73}^{+74}$	$\chi_{\text{lowTEB}}^2$	10496.87	$10497.7 (\nu: 2.0)$
$A_{217}^{\text{dustTT}}$	82.5	$82_{-10}^{+10}$	$D_{810}$	2535.7	$2536_{-26}^{+27}$	$\chi_{\text{plik}}^2$	2431.5	$2450.0 (\nu: 22.4)$
$A_{100}^{\text{dustEE}}$	0.0811	$0.081_{-0.011}^{+0.011}$	$D_{1420}$	814.9	$814.5_{-9.2}^{+9.4}$	$\chi_{6\text{DF}}^2$	0.65	$0.88 (\nu: 0.4)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0487_{-0.0098}^{+0.0098}$	$D_{2000}$	230.62	$230.4_{-3.1}^{+3.1}$	$\chi_{\text{MGS}}^2$	0.28	$0.67 (\nu: 0.3)$
$A_{100 \times 217}^{\text{dustEE}}$	0.0997	$0.0995_{-0.063}^{+0.064}$	$n_{s,0.002}$	0.9648	$0.9641_{-0.0089}^{+0.0090}$	$\chi_{\text{DR11CMass}}^2$	1.44	$2.34 (\nu: 1.2)$
$A_{143}^{\text{dustEE}}$	0.1001	$0.100_{-0.013}^{+0.014}$	$Y_P$	0.245344	$0.24533_{-0.00014}^{+0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.55	$0.74 (\nu: 0.3)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.224_{-0.092}^{+0.091}$	$Y_P^{\text{BBN}}$	0.246670	$0.24666_{-0.00014}^{+0.00014}$	$\chi_{\text{prior}}^2$	6.61	$19.2 (\nu: 14.7)$
$A_{217}^{\text{dustEE}}$	0.652	$0.65_{-0.25}^{+0.25}$	$10^5 D/H$	2.612	$2.616_{-0.057}^{+0.057}$	$\chi_{\text{CMB}}^2$	12928.3	$12947.7 (\nu: 22.2)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141_{-0.074}^{+0.074}$	Age/Gyr	13.777	$13.778_{-0.062}^{+0.063}$	$\chi_{\text{BAO}}^2$	2.92	$4.63 (\nu: 1.5)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132_{-0.057}^{+0.058}$	$z_*$	1090.06	$1090.09_{-0.55}^{+0.56}$			
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30_{-0.17}^{+0.17}$	$r_*$	144.52	$144.52_{-0.59}^{+0.60}$			

Best-fit  $\chi_{\text{eff}}^2 = 12937.86$ ;  $\Delta\chi_{\text{eff}}^2 = -2.30$ ;  $\bar{\chi}_{\text{eff}}^2 = 12971.50$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.97$ ;  $R - 1 = 0.00886$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.65 ( $\Delta$  0.62) MGS: 0.28 ( $\Delta$  -0.94) DR11CMass: 1.44 ( $\Delta$  -1.06) DR11LOWZ: 0.55 ( $\Delta$  -0.13) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10496.87

( $\Delta$  -0.55) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.46 ( $\Delta$  -0.08)

## 22.4 base\_w\_wa\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022277	$0.02225^{+0.00030}_{-0.00029}$	$A_{143}^{\text{dustTE}}$	0.155	$0.16^{+0.10}_{-0.11}$	$100\theta_*$	1.04107	$1.04106^{+0.00056}_{-0.00060}$
$\Omega_c h^2$	0.11909	$0.1194^{+0.0026}_{-0.0028}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.16}_{-0.16}$	$D_A/\text{Gpc}$	13.903	$13.898^{+0.057}_{-0.052}$
$100\theta_{\text{MC}}$	1.04088	$1.04086^{+0.00058}_{-0.00060}$	$A_{217}^{\text{dustTE}}$	1.68	$1.67^{+0.49}_{-0.52}$	$z_{\text{drag}}$	1059.67	$1059.60^{+0.60}_{-0.58}$
$\tau$	0.0607	$0.058^{+0.029}_{-0.029}$	$c_{100}$	0.99815	$0.9981^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.44	$147.40^{+0.59}_{-0.56}$
$w$	-0.60	$-0.54^{+0.61}_{-0.62}$	$c_{217}$	0.99607	$0.9961^{+0.0029}_{-0.0029}$	$k_D$	0.14043	$0.14045^{+0.00060}_{-0.00064}$
$w_a$	-1.08	< 0.141	$H_0$	64.2	$64.1^{+5.8}_{-5.4}$	$100\theta_D$	0.160910	$0.16094^{+0.00035}_{-0.00035}$
$\ln(10^{10} A_s)$	3.053	$3.050^{+0.052}_{-0.055}$	$\Omega_\Lambda$	0.656	$0.651^{+0.059}_{-0.055}$	$z_{\text{eq}}$	3378	$3384^{+57}_{-62}$
$n_s$	0.9660	$0.9651^{+0.0085}_{-0.0090}$	$\Omega_m$	0.344	$0.349^{+0.055}_{-0.059}$	$k_{\text{eq}}$	0.010311	$0.01033^{+0.00018}_{-0.00019}$
$y_{\text{cal}}$	0.99986	$1.0001^{+0.0047}_{-0.0047}$	$\Omega_m h^2$	0.14201	$0.1423^{+0.0024}_{-0.0026}$	$100\theta_{\text{eq}}$	0.8173	$0.816^{+0.012}_{-0.012}$
$A_{217}^{\text{CIB}}$	67.7	$65^{+10}_{-10}$	$\Omega_m h^3$	0.0912	$0.0911^{+0.0086}_{-0.0080}$	$100\theta_{s,\text{eq}}$	0.4516	$0.4510^{+0.0061}_{-0.0056}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$\sigma_8$	0.786	$0.785^{+0.054}_{-0.051}$	$r_{\text{drag}}/D_V(0.57)$	0.07227	$0.0724^{+0.0012}_{-0.0012}$
$A_{143}^{\text{tSZ}}$	7.30	$5.31^{+3.7}_{-3.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4614	$0.463^{+0.016}_{-0.016}$	$H(0.57)$	94.91	$95.1^{+2.9}_{-2.9}$
$A_{100}^{\text{PS}}$	257	$262^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6024	$0.603^{+0.018}_{-0.019}$	$D_A(0.57)$	1383.3	$1381^{+23}_{-23}$
$A_{143}^{\text{PS}}$	38.9	$44^{+10}_{-20}$	$\sigma_8/h^{0.5}$	0.9812	$0.981^{+0.029}_{-0.027}$	$F_{\text{AP}}(0.57)$	0.6875	$0.688^{+0.021}_{-0.023}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4560	$2.459^{+0.048}_{-0.046}$	$f\sigma_8(0.57)$	0.4483	$0.448^{+0.045}_{-0.043}$
$A_{217}^{\text{PS}}$	96.8	$97^{+20}_{-20}$	$z_{\text{re}}$	8.31	$8.03^{+2.9}_{-3.0}$	$\sigma_8(0.57)$	0.5863	$0.586^{+0.040}_{-0.038}$
$A^{\text{kSZ}}$	0.00	< 8.06	$10^9 A_s$	2.119	$2.11^{+0.11}_{-0.11}$	$f_{2000}^{143}$	29.8	$30^{+5}_{-5}$
$A_{100}^{\text{dustTT}}$	7.47	$7.52^{+3.8}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8764	$1.878^{+0.022}_{-0.023}$	$f_{2000}^{143 \times 217}$	32.56	$32.8^{+3.5}_{-3.4}$
$A_{143}^{\text{dustTT}}$	9.12	$9.07^{+3.6}_{-3.5}$	$D_{40}$	1227.9	$1231^{+22}_{-20}$	$f_{2000}^{217}$	106.07	$106.3^{+3.5}_{-3.5}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.4^{+8.2}_{-8.4}$	$D_{220}$	5722	$5724^{+72}_{-69}$	$\chi_{\text{lensing}}^2$	9.94	$10.7 (\nu: 2.0)$
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	$D_{810}$	2532.7	$2534^{+25}_{-25}$	$\chi_{\text{lowTEB}}^2$	10495.34	$10496.0 (\nu: 0.7)$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{1420}$	814.5	$814.4^{+9.1}_{-8.8}$	$\chi_{\text{plik}}^2$	2434.8	$2453.1 (\nu: 22.1)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0491^{+0.010}_{-0.0099}$	$D_{2000}$	230.03	$229.9^{+3.1}_{-3.0}$	$\chi_{6\text{DF}}^2$	0.53	$0.87 (\nu: 0.4)$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.100^{+0.063}_{-0.062}$	$n_{s,0.002}$	0.9660	$0.9651^{+0.0085}_{-0.0090}$	$\chi_{\text{MGS}}^2$	0.35	$0.68 (\nu: 0.4)$
$A_{143}^{\text{dustEE}}$	0.1006	$0.100^{+0.013}_{-0.013}$	$Y_{\text{P}}$	0.245352	$0.24534^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	1.37	$2.34 (\nu: 1.2)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.226^{+0.090}_{-0.090}$	$Y_{\text{P}}^{\text{BBN}}$	0.246678	$0.24666^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.63	$0.78 (\nu: 0.3)$
$A_{217}^{\text{dustEE}}$	0.655	$0.65^{+0.25}_{-0.25}$	$10^5 D/H$	2.609	$2.615^{+0.056}_{-0.057}$	$\chi_{\text{prior}}^2$	7.11	$19.3 (\nu: 14.4)$
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.071}_{-0.076}$	$\text{Age}/\text{Gyr}$	13.787	$13.785^{+0.063}_{-0.061}$	$\chi_{\text{CMB}}^2$	12940.1	$12959.8 (\nu: 22.0)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.056}_{-0.055}$	$z_*$	1089.96	$1090.02^{+0.56}_{-0.54}$	$\chi_{\text{BAO}}^2$	2.88	$4.68 (\nu: 1.7)$
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.17}_{-0.16}$	$r_*$	144.74	$144.69^{+0.60}_{-0.57}$			

Best-fit  $\chi_{\text{eff}}^2 = 12950.11$ ;  $\Delta\chi_{\text{eff}}^2 = -1.47$ ;  $\bar{\chi}_{\text{eff}}^2 = 12983.72$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.08$ ;  $R - 1 = 0.04096$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.53 ( $\Delta$  0.51) MGS: 0.35 ( $\Delta$  -0.93) DR11CMass: 1.37 ( $\Delta$  -1.08) DR11LOWZ: 0.63 ( $\Delta$  0.02) CMB - smica\_g30\_ftl\_full\_pp: 9.94 ( $\Delta$  0.26) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.34 ( $\Delta$  0.14) plik\_dx11dr2\_HM.v18.TTTEEE: 2434.85 ( $\Delta$  -0.45)

## 22.5 base\_w\_wa\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022224	$0.02220_{-0.00042}^{+0.00043}$	$\Omega_m$	0.3087	$0.309_{-0.020}^{+0.020}$	$k_D$	0.14060	$0.1406_{-0.0010}^{+0.0010}$
$\Omega_c h^2$	0.12007	$0.1203_{-0.0039}^{+0.0039}$	$\Omega_m h^2$	0.14294	$0.1432_{-0.0037}^{+0.0037}$	$100\theta_D$	0.16095	$0.16097_{-0.00051}^{+0.00051}$
$100\theta_{\text{MC}}$	1.04085	$1.04080_{-0.00089}^{+0.00089}$	$\Omega_m h^3$	0.09726	$0.0975_{-0.0041}^{+0.0041}$	$z_{\text{eq}}$	3400	$3406_{-90}^{+89}$
$\tau$	0.0760	$0.074_{-0.038}^{+0.037}$	$\sigma_8$	0.8398	$0.841_{-0.040}^{+0.041}$	$k_{\text{eq}}$	0.010378	$0.01040_{-0.00027}^{+0.00027}$
$w$	-0.948	$-0.93_{-0.22}^{+0.23}$	$\sigma_8 \Omega_m^{0.5}$	0.4666	$0.467_{-0.024}^{+0.024}$	$100\theta_{\text{eq}}$	0.8132	$0.812_{-0.016}^{+0.017}$
$w_a$	-0.31	$-0.41_{-0.91}^{+0.87}$	$\sigma_8 \Omega_m^{0.25}$	0.6260	$0.627_{-0.029}^{+0.030}$	$100\theta_{s,\text{eq}}$	0.4494	$0.4489_{-0.0084}^{+0.0088}$
$\ln(10^{10} A_s)$	3.087	$3.084_{-0.073}^{+0.071}$	$\sigma_8/h^{0.5}$	1.0181	$1.019_{-0.043}^{+0.044}$	$r_{\text{drag}}/D_V(0.57)$	0.07197	$0.07197_{-0.00098}^{+0.00098}$
$n_s$	0.9652	$0.964_{-0.011}^{+0.012}$	$\langle d^2 \rangle^{1/2}$	2.512	$2.515_{-0.099}^{+0.097}$	$H(0.57)$	93.27	$93.2_{-1.1}^{+1.1}$
$y_{\text{cal}}$	1.00035	$1.0003_{-0.0048}^{+0.0049}$	$z_{\text{re}}$	9.80	$9.56_{-3.6}^{+3.5}$	$D_A(0.57)$	1377.0	$1376_{-22}^{+23}$
$\alpha_{\text{JLA}}$	0.1411	$0.141_{-0.013}^{+0.013}$	$10^9 A_s$	2.191	$2.19_{-0.15}^{+0.16}$	$F_{\text{AP}}(0.57)$	0.6726	$0.6717_{-0.0099}^{+0.0095}$
$\beta_{\text{JLA}}$	3.098	$3.10_{-0.16}^{+0.16}$	$10^9 A_s e^{-2\tau}$	1.8820	$1.883_{-0.026}^{+0.026}$	$f\sigma_8(0.57)$	0.4893	$0.491_{-0.030}^{+0.031}$
$A_{217}^{\text{CIB}}$	66.4	$64_{-10}^{+10}$	$D_{40}$	1235.6	$1238_{-27}^{+28}$	$\sigma_8(0.57)$	0.6257	$0.626_{-0.030}^{+0.030}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.08	—	$D_{220}$	5715	$5716_{-79}^{+81}$	$f_{2000}^{143}$	29.4	$30_{-6}^{+6}$
$A_{143}^{\text{tSZ}}$	7.19	$5.14_{-3.8}^{+3.7}$	$D_{810}$	2534.9	$2535_{-26}^{+27}$	$f_{2000}^{143 \times 217}$	32.20	$32_{-4}^{+4}$
$A_{100}^{\text{PS}}$	252	$258_{-50}^{+50}$	$D_{1420}$	814.8	$814.2_{-9.7}^{+9.8}$	$f_{2000}^{217}$	105.84	$106.1_{-3.9}^{+3.9}$
$A_{143}^{\text{PS}}$	39.5	$44_{-20}^{+20}$	$D_{2000}$	230.49	$230.2_{-3.5}^{+3.5}$	$\chi_{\text{lowTEB}}^2$	10496.29	10497.3 ( $\nu$ : 2.3)
$A_{143 \times 217}^{\text{PS}}$	34.7	$39_{-20}^{+20}$	$n_{s,0.002}$	0.9652	$0.964_{-0.011}^{+0.012}$	$\chi_{\text{plik}}^2$	763.1	776.8 ( $\nu$ : 15.5)
$A_{217}^{\text{PS}}$	98.5	$98_{-20}^{+20}$	$Y_{\text{P}}$	0.245328	$0.24531_{-0.00019}^{+0.00019}$	$\chi_{\text{H070p6}}^2$	0.56	0.62 ( $\nu$ : 0.1)
$A^{\text{kSZ}}$	0.00	< 8.25	$Y_{\text{P}}^{\text{BBN}}$	0.246655	$0.24664_{-0.00019}^{+0.00019}$	$\chi_{\text{JLA}}^2$	695.04	698.0 ( $\nu$ : 2.9)
$A_{100}^{\text{dustTT}}$	7.39	$7.43_{-3.7}^{+3.7}$	$10^5 D/H$	2.619	$2.624_{-0.081}^{+0.081}$	$\chi_{6\text{DF}}^2$	0.000	0.071 ( $\nu$ : 0.0)
$A_{143}^{\text{dustTT}}$	9.04	$8.99_{-3.6}^{+3.6}$	Age/Gyr	13.772	$13.771_{-0.070}^{+0.077}$	$\chi_{\text{MGS}}^2$	1.75	1.91 ( $\nu$ : 0.3)
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.1_{-8.2}^{+8.2}$	$z_*$	1090.11	$1090.17_{-0.77}^{+0.77}$	$\chi_{\text{DR11CMass}}^2$	2.68	3.41 ( $\nu$ : 0.6)
$A_{217}^{\text{dustTT}}$	82.0	$82_{-10}^{+10}$	$r_*$	144.53	$144.48_{-0.89}^{+0.90}$	$\chi_{\text{DR11LOWZ}}^2$	0.20	0.37 ( $\nu$ : 0.1)
$c_{100}$	0.99792	$0.9979_{-0.0015}^{+0.0015}$	$100\theta_*$	1.04105	$1.04100_{-0.00087}^{+0.00088}$	$\chi_{\text{prior}}^2$	2.04	7.27 ( $\nu$ : 6.2)
$c_{217}$	0.99589	$0.9959_{-0.0028}^{+0.0028}$	$D_A/\text{Gpc}$	13.883	$13.879_{-0.083}^{+0.084}$	$\chi_{\text{CMB}}^2$	11259.4	11274.1 ( $\nu$ : 15.3)
$H_0$	68.04	$68.1_{-2.0}^{+2.1}$	$z_{\text{drag}}$	1059.59	$1059.57_{-0.88}^{+0.90}$	$\chi_{\text{BAO}}^2$	4.63	5.76 ( $\nu$ : 1.4)
$\Omega_\Lambda$	0.6913	$0.691_{-0.020}^{+0.020}$	$r_{\text{drag}}$	147.24	$147.19_{-0.90}^{+0.92}$			

Best-fit  $\chi_{\text{eff}}^2 = 11961.65$ ;  $\bar{\chi}_{\text{eff}}^2 = 11985.69$ ;  $R - 1 = 0.00884$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.75 DR11CMass: 2.68 DR11LOWZ: 0.20 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.29 plik\_dx11dr2\_HM.v18.TT: 763.10

## 22.6 base\_w\_wa\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022279	$0.02223^{+0.00044}_{-0.00042}$	$\Omega_m$	0.3066	$0.307^{+0.020}_{-0.020}$	$k_D$	0.14029	$0.14029^{+0.00088}_{-0.00091}$
$\Omega_c h^2$	0.11859	$0.1189^{+0.0037}_{-0.0036}$	$\Omega_m h^2$	0.14151	$0.1418^{+0.0034}_{-0.0034}$	$100\theta_D$	0.16095	$0.16100^{+0.00050}_{-0.00050}$
$100\theta_{MC}$	1.04102	$1.04096^{+0.00087}_{-0.00087}$	$\Omega_m h^3$	0.09613	$0.0964^{+0.0040}_{-0.0039}$	$z_{eq}$	3366	$3373^{+82}_{-81}$
$\tau$	0.0651	$0.062^{+0.036}_{-0.035}$	$\sigma_8$	0.8166	$0.817^{+0.027}_{-0.027}$	$k_{eq}$	0.010274	$0.01030^{+0.00025}_{-0.00025}$
$w$	-0.974	$-0.96^{+0.22}_{-0.21}$	$\sigma_8 \Omega_m^{0.5}$	0.4522	$0.453^{+0.015}_{-0.014}$	$100\theta_{eq}$	0.8196	$0.818^{+0.016}_{-0.016}$
$w_a$	-0.11	$-0.19^{+0.77}_{-0.80}$	$\sigma_8 \Omega_m^{0.25}$	0.6077	$0.608^{+0.017}_{-0.017}$	$100\theta_{s,eq}$	0.4527	$0.4520^{+0.0080}_{-0.0080}$
$\ln(10^{10} A_s)$	3.061	$3.056^{+0.065}_{-0.063}$	$\sigma_8/h^{0.5}$	0.9908	$0.991^{+0.024}_{-0.024}$	$r_{drag}/D_V(0.57)$	0.07200	$0.07200^{+0.00099}_{-0.0010}$
$n_s$	0.9681	$0.967^{+0.011}_{-0.011}$	$\langle d^2 \rangle^{1/2}$	2.450	$2.451^{+0.054}_{-0.053}$	$H(0.57)$	93.26	$93.2^{+1.2}_{-1.2}$
$y_{cal}$	1.00019	$1.0002^{+0.0048}_{-0.0048}$	$z_{re}$	8.74	$8.37^{+3.4}_{-3.6}$	$D_A(0.57)$	1380.5	$1380^{+23}_{-23}$
$\alpha_{JLA}$	0.1412	$0.141^{+0.013}_{-0.013}$	$10^9 A_s$	2.135	$2.12^{+0.14}_{-0.13}$	$F_{AP}(0.57)$	0.6742	$0.6734^{+0.0090}_{-0.0094}$
$\beta_{JLA}$	3.101	$3.10^{+0.16}_{-0.16}$	$10^9 A_s e^{-2\tau}$	1.8745	$1.876^{+0.024}_{-0.024}$	$f\sigma_8(0.57)$	0.4734	$0.475^{+0.022}_{-0.021}$
$A_{217}^{CIB}$	67.3	$65^{+10}_{-10}$	$D_{40}$	1224.5	$1227^{+24}_{-24}$	$\sigma_8(0.57)$	0.6090	$0.609^{+0.020}_{-0.021}$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{220}$	5717	$5716^{+81}_{-77}$	$f_{2000}^{143}$	29.9	$31^{+6}_{-6}$
$A_{143}^{tSZ}$	7.20	$5.04^{+3.8}_{-3.8}$	$D_{810}$	2533.3	$2533^{+27}_{-26}$	$f_{2000}^{143 \times 217}$	32.47	$33^{+4}_{-4}$
$A_{100}^{PS}$	254	$260^{+50}_{-60}$	$D_{1420}$	815.3	$814^{+10}_{-10}$	$f_{2000}^{217}$	106.03	$106.4^{+4.0}_{-3.8}$
$A_{143}^{PS}$	39.0	$44^{+20}_{-20}$	$D_{2000}$	230.31	$229.9^{+3.6}_{-3.7}$	$\chi_{lensing}^2$	9.31	10.1 ( $\nu: 1.4$ )
$A_{143 \times 217}^{PS}$	33	$39^{+20}_{-20}$	$n_{s,0.002}$	0.9681	$0.967^{+0.011}_{-0.011}$	$\chi_{lowTEB}^2$	10494.81	10495.7 ( $\nu: 0.9$ )
$A_{217}^{PS}$	97.2	$96^{+20}_{-20}$	$Y_P$	0.245353	$0.24533^{+0.00020}_{-0.00019}$	$\chi_{plik}^2$	766.2	779.2 ( $\nu: 28.4$ )
$A^{kSZ}$	0.0	—	$Y_P^{BBN}$	0.246679	$0.24665^{+0.00020}_{-0.00019}$	$\chi_{H070p6}^2$	0.63	0.70 ( $\nu: 0.1$ )
$A_{100}^{dustTT}$	7.51	$7.45^{+3.7}_{-3.7}$	$10^5 D/H$	2.609	$2.619^{+0.082}_{-0.082}$	$\chi_{JLA}^2$	695.13	698.1 ( $\nu: 2.9$ )
$A_{143}^{dustTT}$	9.04	$9.05^{+3.7}_{-3.5}$	Age/Gyr	13.785	$13.787^{+0.078}_{-0.071}$	$\chi_{6DF}^2$	0.000	0.073 ( $\nu: 0.0$ )
$A_{143 \times 217}^{dustTT}$	17.5	$17.1^{+8.2}_{-8.1}$	$z_*$	1089.91	$1090.01^{+0.76}_{-0.79}$	$\chi_{MGS}^2$	1.68	1.83 ( $\nu: 0.3$ )
$A_{217}^{dustTT}$	81.8	$82^{+10}_{-10}$	$r_*$	144.87	$144.82^{+0.79}_{-0.81}$	$\chi_{DR11CMass}^2$	2.50	3.25 ( $\nu: 0.6$ )
$c_{100}$	0.99795	$0.9979^{+0.0015}_{-0.0016}$	$100\theta_*$	1.04121	$1.04116^{+0.00085}_{-0.00085}$	$\chi_{DR11LOWZ}^2$	0.24	0.42 ( $\nu: 0.1$ )
$c_{217}$	0.99596	$0.9960^{+0.0028}_{-0.0029}$	$D_A/Gpc$	13.913	$13.909^{+0.075}_{-0.075}$	$\chi_{prior}^2$	2.04	7.47 ( $\nu: 6.5$ )
$H_0$	67.93	$68.0^{+2.1}_{-2.0}$	$z_{drag}$	1059.63	$1059.52^{+0.91}_{-0.88}$	$\chi_{CMB}^2$	11270.3	11285.0 ( $\nu: 28.7$ )
$\Omega_\Lambda$	0.6934	$0.693^{+0.020}_{-0.020}$	$r_{drag}$	147.57	$147.54^{+0.80}_{-0.80}$	$\chi_{BAO}^2$	4.42	5.56 ( $\nu: 1.4$ )

Best-fit  $\chi_{eff}^2 = 11972.55$ ;  $\Delta\chi_{eff}^2 = -11.51$ ;  $\bar{\chi}_{eff}^2 = 11996.80$ ;  $\Delta\bar{\chi}_{eff}^2 = -7.22$ ;  $R - 1 = 0.02467$   
 $\chi_{eff}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.68 ( $\Delta$  0.14) DR11CMass: 2.50 ( $\Delta$  0.09) DR11LOWZ: 0.24 ( $\Delta$  -0.13) CMB - smica\_g30\_ftl\_full\_pp: 9.31 ( $\Delta$  0.05) lowL\_SMW\_70\_dx11d\_2014\_10\_03  
10494.81 ( $\Delta$  -0.11) plik\_dx11dr2\_HM\_v18\_TT: 766.21 ( $\Delta$  0.08) Hubble - H070p6: 0.63 ( $\Delta$  -0.04) SN - JLA December\_2013: 695.13 ( $\Delta$  -11.50)



## 22.7 base\_w\_wa\_plikHM\_TTTEEE\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022262	$0.02224^{+0.00029}_{-0.00030}$	$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.17}_{-0.17}$	$100\theta_*$	1.04096	$1.04093^{+0.00061}_{-0.00061}$
$\Omega_c h^2$	0.11980	$0.1201^{+0.0028}_{-0.0027}$	$A_{143}^{\text{dustTE}}$	0.153	$0.16^{+0.11}_{-0.11}$	$D_A/\text{Gpc}$	13.888	$13.882^{+0.056}_{-0.057}$
$100\theta_{\text{MC}}$	1.04076	$1.04073^{+0.00062}_{-0.00062}$	$A_{143 \times 217}^{\text{dustTE}}$	0.334	$0.34^{+0.16}_{-0.16}$	$z_{\text{drag}}$	1059.67	$1059.63^{+0.62}_{-0.61}$
$\tau$	0.0798	$0.077^{+0.034}_{-0.034}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.50}_{-0.50}$	$r_{\text{drag}}$	147.27	$147.21^{+0.60}_{-0.61}$
$w$	-0.953	$-0.94^{+0.22}_{-0.21}$	$c_{100}$	0.99815	$0.9982^{+0.0015}_{-0.0015}$	$k_D$	0.14060	$0.14064^{+0.00064}_{-0.00064}$
$w_a$	-0.28	$-0.38^{+0.80}_{-0.84}$	$c_{217}$	0.99587	$0.9960^{+0.0028}_{-0.0028}$	$100\theta_D$	0.160891	$0.16091^{+0.00036}_{-0.00035}$
$\ln(10^{10} A_s)$	3.095	$3.089^{+0.065}_{-0.065}$	$H_0$	68.06	$68.1^{+2.1}_{-2.0}$	$z_{\text{eq}}$	3395	$3402^{+63}_{-61}$
$n_s$	0.9650	$0.9637^{+0.0091}_{-0.0090}$	$\Omega_\Lambda$	0.6919	$0.691^{+0.019}_{-0.019}$	$k_{\text{eq}}$	0.010361	$0.01038^{+0.00019}_{-0.00018}$
$y_{\text{cal}}$	1.00030	$1.0004^{+0.0049}_{-0.0048}$	$\Omega_m$	0.3081	$0.309^{+0.019}_{-0.019}$	$100\theta_{\text{eq}}$	0.8142	$0.813^{+0.012}_{-0.012}$
$\alpha_{\text{JLA}}$	0.1411	$0.141^{+0.013}_{-0.013}$	$\Omega_m h^2$	0.14271	$0.1430^{+0.0026}_{-0.0025}$	$100\theta_{s,\text{eq}}$	0.4499	$0.4493^{+0.0059}_{-0.0060}$
$\beta_{\text{JLA}}$	3.102	$3.10^{+0.16}_{-0.16}$	$\Omega_m h^3$	0.09713	$0.0974^{+0.0037}_{-0.0035}$	$r_{\text{drag}}/D_V(0.57)$	0.07197	$0.0720^{+0.0010}_{-0.00097}$
$A_{217}^{\text{CIB}}$	66.0	$64^{+10}_{-10}$	$\sigma_8$	0.8408	$0.841^{+0.034}_{-0.034}$	$H(0.57)$	93.26	$93.3^{+1.1}_{-1.1}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.16	—	$\sigma_8 \Omega_m^{0.5}$	0.4667	$0.467^{+0.018}_{-0.017}$	$D_A(0.57)$	1377.4	$1376^{+22}_{-23}$
$A_{143}^{\text{tSZ}}$	7.18	$5.34^{+3.6}_{-3.8}$	$\sigma_8 \Omega_m^{0.25}$	0.6264	$0.627^{+0.023}_{-0.022}$	$F_{\text{AP}}(0.57)$	0.6727	$0.6719^{+0.0089}_{-0.0098}$
$A_{100}^{\text{PS}}$	253	$260^{+50}_{-50}$	$\sigma_8/h^{0.5}$	1.0192	$1.020^{+0.035}_{-0.034}$	$f\sigma_8(0.57)$	0.4896	$0.491^{+0.025}_{-0.024}$
$A_{143}^{\text{PS}}$	40.3	$43^{+10}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.518	$2.520^{+0.079}_{-0.080}$	$\sigma_8(0.57)$	0.6265	$0.627^{+0.026}_{-0.026}$
$A_{143 \times 217}^{\text{PS}}$	37.2	$40^{+20}_{-20}$	$z_{\text{re}}$	10.13	$9.80^{+3.1}_{-3.2}$	$f_{2000}^{143}$	29.1	$30^{+5}_{-5}$
$A_{217}^{\text{PS}}$	99.3	$98^{+20}_{-20}$	$10^9 A_s$	2.208	$2.20^{+0.15}_{-0.14}$	$f_{2000}^{143 \times 217}$	32.04	$32^{+4}_{-4}$
$A_{\text{KSZ}}$	0.00	< 7.88	$10^9 A_s e^{-2\tau}$	1.8820	$1.884^{+0.023}_{-0.023}$	$f_{2000}^{217}$	105.63	$105.8^{+3.7}_{-3.6}$
$A_{100}^{\text{dustTT}}$	7.38	$7.39^{+3.7}_{-3.7}$	$D_{40}$	1239.1	$1242^{+25}_{-25}$	$\chi_{\text{lowTEB}}^2$	10496.89	$10497.6 (\nu: 2.0)$
$A_{143}^{\text{dustTT}}$	8.93	$8.90^{+3.6}_{-3.6}$	$D_{220}$	5727	$5729^{+76}_{-76}$	$\chi_{\text{plik}}^2$	2431.1	$2450.2 (\nu: 22.4)$
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$16.9^{+8.1}_{-8.1}$	$D_{810}$	2535.3	$2536^{+26}_{-26}$	$\chi_{\text{H070p6}}^2$	0.56	$0.62 (\nu: 0.1)$
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{1420}$	814.7	$814.4^{+9.3}_{-9.3}$	$\chi_{\text{JLA}}^2$	695.04	$698.0 (\nu: 2.9)$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{2000}$	230.55	$230.4^{+3.1}_{-3.2}$	$\chi_{6\text{DF}}^2$	0.000	$0.07 (\nu: 0.0)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0486^{+0.0099}_{-0.0098}$	$n_{s,0.002}$	0.9650	$0.9637^{+0.0091}_{-0.0090}$	$\chi_{\text{MGS}}^2$	1.75	$1.91 (\nu: 0.3)$
$A_{100 \times 217}^{\text{dustEE}}$	0.0997	$0.099^{+0.065}_{-0.063}$	$Y_{\text{P}}$	0.245345	$0.24533^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.66	$3.40 (\nu: 0.7)$
$A_{143}^{\text{dustEE}}$	0.1002	$0.0999^{+0.013}_{-0.013}$	$Y_{\text{P}}^{\text{BBN}}$	0.246671	$0.24666^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11LOWZ}}^2$	0.20	$0.37 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.091}_{-0.091}$	$10^5 D/H$	2.612	$2.617^{+0.057}_{-0.055}$	$\chi_{\text{prior}}^2$	6.99	$19.2 (\nu: 15.0)$
$A_{217}^{\text{dustEE}}$	0.648	$0.65^{+0.26}_{-0.26}$	$\text{Age}/\text{Gyr}$	13.773	$13.771^{+0.066}_{-0.063}$	$\chi_{\text{CMB}}^2$	12928.0	$12947.7 (\nu: 22.0)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.074}$	$z_*$	1090.04	$1090.10^{+0.55}_{-0.54}$	$\chi_{\text{BAO}}^2$	4.61	$5.76 (\nu: 1.7)$
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.131^{+0.058}_{-0.057}$	$r_*$	144.57	$144.50^{+0.61}_{-0.62}$			

Best-fit  $\chi_{\text{eff}}^2 = 13635.20$ ;  $\bar{\chi}_{\text{eff}}^2 = 13671.28$ ;  $R - 1 = 0.01182$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.75 DR11CMass: 2.66 DR11LOWZ: 0.20 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.89 plik\_dx11dr2\_HM\_v18\_TTTEEE:  
2431.11 Hubble - H070p6: 0.56 SN - JLA December\_2013: 695.04

## 22.8 base\_w\_wa\_plikHM\_TTTEEE\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022269	$0.02225^{+0.00030}_{-0.00029}$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.30^{+0.16}_{-0.17}$	$100\theta_*$	1.04107	$1.04104^{+0.00062}_{-0.00066}$
$\Omega_c h^2$	0.11916	$0.1194^{+0.0027}_{-0.0027}$	$A_{143}^{\text{dustTE}}$	0.156	$0.16^{+0.10}_{-0.11}$	$D_A/\text{Gpc}$	13.902	$13.896^{+0.051}_{-0.055}$
$100\theta_{\text{MC}}$	1.04087	$1.04084^{+0.00063}_{-0.00067}$	$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34^{+0.15}_{-0.15}$	$z_{\text{drag}}$	1059.63	$1059.62^{+0.58}_{-0.60}$
$\tau$	0.0625	$0.060^{+0.029}_{-0.029}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.50}_{-0.50}$	$r_{\text{drag}}$	147.43	$147.37^{+0.56}_{-0.57}$
$w$	-0.976	$-0.95^{+0.21}_{-0.20}$	$c_{100}$	0.99817	$0.9981^{+0.0015}_{-0.0015}$	$k_D$	0.14044	$0.14048^{+0.00063}_{-0.00060}$
$w_a$	-0.14	$-0.25^{+0.68}_{-0.80}$	$c_{217}$	0.99605	$0.9961^{+0.0027}_{-0.0028}$	$100\theta_D$	0.160917	$0.16093^{+0.00034}_{-0.00034}$
$\ln(10^{10} A_s)$	3.057	$3.053^{+0.053}_{-0.054}$	$H_0$	67.94	$68.0^{+2.0}_{-2.0}$	$z_{\text{eq}}$	3380	$3386^{+61}_{-60}$
$n_s$	0.9660	$0.9649^{+0.0090}_{-0.0087}$	$\Omega_\Lambda$	0.6922	$0.692^{+0.019}_{-0.019}$	$k_{\text{eq}}$	0.010315	$0.01033^{+0.00019}_{-0.00018}$
$y_{\text{cal}}$	1.00003	$1.0002^{+0.0047}_{-0.0049}$	$\Omega_m$	0.3078	$0.308^{+0.019}_{-0.019}$	$100\theta_{\text{eq}}$	0.8170	$0.816^{+0.011}_{-0.011}$
$\alpha_{\text{JLA}}$	0.1411	$0.142^{+0.013}_{-0.012}$	$\Omega_m h^2$	0.14208	$0.1423^{+0.0025}_{-0.0025}$	$100\theta_{s,\text{eq}}$	0.4514	$0.4508^{+0.0059}_{-0.0059}$
$\beta_{\text{JLA}}$	3.098	$3.10^{+0.17}_{-0.16}$	$\Omega_m h^3$	0.09652	$0.0967^{+0.0036}_{-0.0034}$	$r_{\text{drag}}/D_V(0.57)$	0.07190	$0.0720^{+0.0010}_{-0.00099}$
$A_{217}^{\text{CIB}}$	67.9	$65^{+10}_{-10}$	$\sigma_8$	0.8190	$0.820^{+0.025}_{-0.025}$	$H(0.57)$	93.18	$93.2^{+1.1}_{-1.1}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8 \Omega_m^{0.5}$	0.4544	$0.455^{+0.012}_{-0.012}$	$D_A(0.57)$	1381.0	$1379^{+22}_{-23}$
$A_{143}^{\text{tSZ}}$	7.28	$5.22^{+3.8}_{-3.7}$	$\sigma_8 \Omega_m^{0.25}$	0.6101	$0.611^{+0.015}_{-0.014}$	$F_{\text{AP}}(0.57)$	0.6739	$0.6732^{+0.0085}_{-0.0088}$
$A_{100}^{\text{PS}}$	258	$263^{+50}_{-50}$	$\sigma_8/h^{0.5}$	0.9937	$0.994^{+0.022}_{-0.021}$	$f\sigma_8(0.57)$	0.4760	$0.477^{+0.020}_{-0.019}$
$A_{143}^{\text{PS}}$	38.7	$44^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4578	$2.460^{+0.049}_{-0.050}$	$\sigma_8(0.57)$	0.6103	$0.611^{+0.019}_{-0.019}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$z_{\text{re}}$	8.50	$8.19^{+2.7}_{-3.1}$	$f_{2000}^{143}$	29.85	$30^{+5}_{-5}$
$A_{217}^{\text{PS}}$	96.5	$96^{+20}_{-20}$	$10^9 A_s$	2.127	$2.12^{+0.11}_{-0.11}$	$f_{2000}^{143 \times 217}$	32.56	$33^{+4}_{-4}$
$A_{\text{KSZ}}$	0.00	$< 8.29$	$10^9 A_s e^{-2\tau}$	1.8771	$1.879^{+0.022}_{-0.022}$	$f_{2000}^{217}$	106.08	$106.2^{+3.5}_{-3.3}$
$A_{100}^{\text{dustTT}}$	7.60	$7.45^{+3.8}_{-3.7}$	$D_{40}$	1228.7	$1232^{+22}_{-21}$	$\chi_{\text{lensing}}^2$	9.89	$10.7 (\nu: 2.0)$
$A_{143}^{\text{dustTT}}$	9.11	$9.03^{+3.5}_{-3.5}$	$D_{220}$	5722	$5727^{+75}_{-75}$	$\chi_{\text{lowTEB}}^2$	10495.18	$10495.9 (\nu: 0.7)$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.5}_{-8.2}$	$D_{810}$	2533.4	$2535^{+26}_{-27}$	$\chi_{\text{plik}}^2$	2434.8	$2453.2 (\nu: 22.0)$
$A_{217}^{\text{dustTT}}$	81.7	$81^{+20}_{-10}$	$D_{1420}$	814.7	$814.7^{+9.4}_{-9.1}$	$\chi_{\text{H070p6}}^2$	0.63	$0.69 (\nu: 0.1)$
$A_{100}^{\text{dustEE}}$	0.0814	$0.081^{+0.011}_{-0.011}$	$D_{2000}$	230.08	$230.0^{+3.0}_{-3.1}$	$\chi_{\text{JLA}}^2$	695.11	$698.0 (\nu: 2.7)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0490^{+0.0098}_{-0.0097}$	$n_{s,0.002}$	0.9660	$0.9649^{+0.0090}_{-0.0087}$	$\chi_{\text{6DF}}^2$	0.001	$0.07 (\nu: 0.0)$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.067}_{-0.064}$	$Y_{\text{P}}$	0.245348	$0.24534^{+0.00013}_{-0.00014}$	$\chi_{\text{MGS}}^2$	1.61	$1.78 (\nu: 0.3)$
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.014}_{-0.014}$	$Y_{\text{P}}^{\text{BBN}}$	0.246675	$0.24666^{+0.00013}_{-0.00014}$	$\chi_{\text{DR11CMass}}^2$	2.51	$3.26 (\nu: 0.6)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.092}_{-0.093}$	$10^5 D/H$	2.610	$2.614^{+0.057}_{-0.056}$	$\chi_{\text{DR11LOWZ}}^2$	0.30	$0.44 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.646	$0.66^{+0.25}_{-0.26}$	$\text{Age}/\text{Gyr}$	13.785	$13.781^{+0.065}_{-0.063}$	$\chi_{\text{prior}}^2$	7.15	$19.2 (\nu: 15.5)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.079}_{-0.070}$	$z_*$	1089.97	$1090.02^{+0.54}_{-0.55}$	$\chi_{\text{CMB}}^2$	12939.9	$12959.8 (\nu: 21.6)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.058}_{-0.058}$	$r_*$	144.72	$144.67^{+0.58}_{-0.58}$	$\chi_{\text{BAO}}^2$	4.42	$5.56 (\nu: 1.4)$

Best-fit  $\chi_{\text{eff}}^2 = 13647.22$ ;  $\Delta\chi_{\text{eff}}^2 = -11.82$ ;  $\bar{\chi}_{\text{eff}}^2 = 13683.14$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -7.96$ ;  $R - 1 = 0.04505$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.61 ( $\Delta$  0.20) DR11CMASS: 2.51 ( $\Delta$  0.10) DR11LOWZ: 0.30 ( $\Delta$  -0.18) CMB - smica\_g30\_ftl\_full\_pp: 9.89 ( $\Delta$  0.14) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.18 ( $\Delta$  -0.04) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.83 ( $\Delta$  -0.36) Hubble - H070p6: 0.63 ( $\Delta$  -0.09) SN - JLA December\_2013: 695.11 ( $\Delta$  -11.55)

## 23 yhe

### 23.1 base\_yhe\_plikHM\_TT\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02226	$0.02231^{+0.00069}_{-0.00064}$	$\Omega_\Lambda$	0.6856	$0.688^{+0.031}_{-0.032}$	$100\theta_*$	1.04108	$1.0411^{+0.0010}_{-0.0010}$
$\Omega_c h^2$	0.11974	$0.1194^{+0.0046}_{-0.0047}$	$\Omega_m$	0.3144	$0.312^{+0.032}_{-0.031}$	$D_A/\text{Gpc}$	13.887	$13.890^{+0.089}_{-0.087}$
$100\theta_{\text{MC}}$	1.04095	$1.0411^{+0.0019}_{-0.0018}$	$\Omega_m h^2$	0.14264	$0.1424^{+0.0042}_{-0.0042}$	$z_{\text{drag}}$	1059.74	$1060.0^{+2.6}_{-2.5}$
$\tau$	0.0773	$0.081^{+0.043}_{-0.041}$	$\Omega_m h^3$	0.09609	$0.0962^{+0.0017}_{-0.0016}$	$r_{\text{drag}}$	147.28	$147.30^{+0.97}_{-0.95}$
$Y_{\text{P}}$	0.2478	$0.252^{+0.041}_{-0.042}$	$\sigma_8$	0.8299	$0.832^{+0.035}_{-0.032}$	$k_{\text{D}}$	0.14048	$0.1403^{+0.0015}_{-0.0015}$
$\ln(10^{10} A_s)$	3.090	$3.096^{+0.086}_{-0.081}$	$\sigma_8 \Omega_m^{0.5}$	0.4653	$0.465^{+0.026}_{-0.026}$	$100\theta_{\text{D}}$	0.16103	$0.1612^{+0.0015}_{-0.0015}$
$n_s$	0.9666	$0.969^{+0.025}_{-0.023}$	$\sigma_8 \Omega_m^{0.25}$	0.6214	$0.622^{+0.026}_{-0.026}$	$z_{\text{eq}}$	3393	$3387^{+100}_{-100}$
$y_{\text{cal}}$	1.00039	$1.0004^{+0.0049}_{-0.0049}$	$\sigma_8/h^{0.5}$	1.0111	$1.012^{+0.039}_{-0.039}$	$k_{\text{eq}}$	0.010357	$0.01034^{+0.00031}_{-0.00031}$
$A_{217}^{\text{CIB}}$	67.2	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.496	$2.495^{+0.090}_{-0.093}$	$100\theta_{\text{eq}}$	0.8146	$0.816^{+0.021}_{-0.020}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$z_{\text{re}}$	9.93	$10.1^{+3.6}_{-4.0}$	$100\theta_{\text{s,eq}}$	0.4501	$0.451^{+0.010}_{-0.010}$
$A_{143}^{\text{tSZ}}$	7.15	$4.99^{+3.7}_{-3.9}$	$10^9 A_s$	2.197	$2.21^{+0.19}_{-0.19}$	$r_{\text{drag}}/D_V(0.57)$	0.07142	$0.0716^{+0.0018}_{-0.0017}$
$A_{100}^{\text{PS}}$	254	$260^{+60}_{-60}$	$10^9 A_s e^{-2\tau}$	1.8819	$1.882^{+0.030}_{-0.030}$	$H(0.57)$	92.92	$93.0^{+1.3}_{-1.3}$
$A_{143}^{\text{PS}}$	39.2	$45^{+20}_{-20}$	$D_{40}$	1234.6	$1233^{+42}_{-41}$	$D_A(0.57)$	1390.8	$1388^{+34}_{-35}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{220}$	5718	$5719^{+80}_{-78}$	$F_{\text{AP}}(0.57)$	0.6768	$0.6761^{+0.0080}_{-0.0079}$
$A_{217}^{\text{PS}}$	97.8	$97^{+20}_{-20}$	$D_{810}$	2535.3	$2535^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4832	$0.484^{+0.019}_{-0.019}$
$A^{\text{kSZ}}$	0.0	—	$D_{1420}$	814.7	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.6167	$0.619^{+0.029}_{-0.027}$
$A_{100}^{\text{dustTT}}$	7.46	$7.45^{+3.7}_{-3.7}$	$D_{2000}$	230.24	$229.9^{+4.7}_{-4.7}$	$f_{2000}^{143}$	29.9	$31^{+7}_{-7}$
$A_{143}^{\text{dustTT}}$	8.97	$9.04^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	0.9666	$0.969^{+0.025}_{-0.023}$	$f_{2000}^{143 \times 217}$	32.5	$33^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.5	$17.1^{+8.1}_{-8.2}$	$Y_{\text{P}}$	0.2478	$0.252^{+0.041}_{-0.042}$	$f_{2000}^{217}$	106.2	$106.5^{+5.2}_{-5.2}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.2491	$0.253^{+0.041}_{-0.042}$	$\chi_{\text{lowTEB}}^2$	10496.2	$10497.3 (\nu: 3.8)$
$c_{100}$	0.99793	$0.9979^{+0.0015}_{-0.0015}$	Age/Gyr	13.807	$13.80^{+0.13}_{-0.13}$	$\chi_{\text{plik}}^2$	763.6	$778.1 (\nu: 17.7)$
$c_{217}$	0.99598	$0.9960^{+0.0029}_{-0.0028}$	$z_*$	1090.14	$1090.2^{+1.3}_{-1.2}$	$\chi_{\text{prior}}^2$	2.06	$7.39 (\nu: 6.3)$
$H_0$	67.36	$67.6^{+2.5}_{-2.4}$	$r_*$	144.58	$144.61^{+0.96}_{-0.94}$	$\chi_{\text{CMB}}^2$	11259.9	$11275.5 (\nu: 16.1)$

Best-fit  $\chi_{\text{eff}}^2 = 11261.91$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.84$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.02$ ;  $R - 1 = 0.00920$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.23 ( $\Delta -0.24$ ) plik\_dx11dr2\_HM\_v18\_TT: 763.62 ( $\Delta 0.25$ )

## 23.2 base\_yhe\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02235	$0.02235^{+0.00052}_{-0.00049}$	$\Omega_m h^2$	0.14199	$0.1420^{+0.0024}_{-0.0024}$	$k_D$	0.14023	$0.1402^{+0.0011}_{-0.0012}$
$\Omega_c h^2$	0.11900	$0.1190^{+0.0025}_{-0.0024}$	$\Omega_m h^3$	0.09624	$0.0963^{+0.0015}_{-0.0015}$	$100\theta_D$	0.16123	$0.1613^{+0.0014}_{-0.0014}$
$100\theta_{MC}$	1.04120	$1.0412^{+0.0015}_{-0.0015}$	$\sigma_8$	0.8321	$0.833^{+0.034}_{-0.032}$	$z_{eq}$	3378	$3378^{+58}_{-57}$
$\tau$	0.0819	$0.083^{+0.037}_{-0.037}$	$\sigma_8 \Omega_m^{0.5}$	0.4626	$0.463^{+0.020}_{-0.020}$	$k_{eq}$	0.010309	$0.01031^{+0.00018}_{-0.00017}$
$Y_P$	0.2537	$0.254^{+0.036}_{-0.038}$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.621^{+0.025}_{-0.024}$	$100\theta_{eq}$	0.8179	$0.818^{+0.011}_{-0.011}$
$\ln(10^{10} A_s)$	3.098	$3.100^{+0.077}_{-0.075}$	$\sigma_8/h^{0.5}$	1.0107	$1.011^{+0.040}_{-0.038}$	$100\theta_{s,eq}$	0.4518	$0.4518^{+0.0055}_{-0.0055}$
$n_s$	0.9709	$0.971^{+0.017}_{-0.017}$	$\langle d^2 \rangle^{1/2}$	2.489	$2.492^{+0.084}_{-0.086}$	$r_{drag}/D_V(0.57)$	0.07171	$0.07173^{+0.00088}_{-0.00086}$
$y_{cal}$	1.00030	$1.0005^{+0.0049}_{-0.0049}$	$z_{re}$	10.34	$10.3^{+3.2}_{-3.5}$	$H(0.57)$	93.12	$93.14^{+0.77}_{-0.75}$
$A_{217}^{CIB}$	67.7	$65^{+10}_{-10}$	$10^9 A_s$	2.215	$2.22^{+0.18}_{-0.16}$	$D_A(0.57)$	1385.0	$1385^{+18}_{-18}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8806	$1.882^{+0.030}_{-0.029}$	$F_{AP}(0.57)$	0.67541	$0.6754^{+0.0040}_{-0.0039}$
$A_{143}^{tSZ}$	7.12	$4.98^{+3.8}_{-3.9}$	$D_{40}$	1227.6	$1230^{+33}_{-32}$	$f\sigma_8(0.57)$	0.4831	$0.484^{+0.019}_{-0.019}$
$A_{100}^{PS}$	257	$261^{+60}_{-60}$	$D_{220}$	5716	$5721^{+79}_{-78}$	$\sigma_8(0.57)$	0.6196	$0.620^{+0.027}_{-0.025}$
$A_{143}^{PS}$	40.5	$45^{+20}_{-20}$	$D_{810}$	2534.7	$2535^{+28}_{-28}$	$f_{2000}^{143}$	30.5	$31^{+7}_{-7}$
$A_{143 \times 217}^{PS}$	33	$39^{+20}_{-20}$	$D_{1420}$	814.2	$814^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	33.0	$33^{+6}_{-6}$
$A_{217}^{PS}$	97.6	$97^{+20}_{-20}$	$D_{2000}$	229.85	$229.8^{+4.7}_{-4.7}$	$f_{2000}^{217}$	106.5	$106.7^{+5.1}_{-5.2}$
$A^{kSZ}$	0.0	—	$n_{s,0.002}$	0.9709	$0.971^{+0.017}_{-0.017}$	$\chi_{lowTEB}^2$	10495.83	$10496.9 (\nu: 3.3)$
$A_{100}^{dustTT}$	7.41	$7.47^{+3.7}_{-3.8}$	$Y_P$	0.2537	$0.254^{+0.036}_{-0.038}$	$\chi_{plik}^2$	764.2	$777.9 (\nu: 17.3)$
$A_{143}^{dustTT}$	9.10	$9.05^{+3.6}_{-3.6}$	$Y_P^{BBN}$	0.2551	$0.255^{+0.036}_{-0.038}$	$\chi_{6DF}^2$	0.015	$0.058 (\nu: 0.0)$
$A_{143 \times 217}^{dustTT}$	17.7	$17.2^{+7.9}_{-8.1}$	Age/Gyr	13.787	$13.785^{+0.089}_{-0.090}$	$\chi_{MGS}^2$	1.34	$1.44 (\nu: 0.2)$
$A_{217}^{dustTT}$	81.8	$82^{+10}_{-10}$	$z_*$	1090.20	$1090.2^{+1.3}_{-1.3}$	$\chi_{DR11CMAS}^2$	2.42	$2.91 (\nu: 0.3)$
$c_{100}$	0.99793	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	144.68	$144.68^{+0.73}_{-0.73}$	$\chi_{DR11LOWZ}^2$	0.54	$0.68 (\nu: 0.2)$
$c_{217}$	0.99595	$0.9960^{+0.0028}_{-0.0029}$	$100\theta_*$	1.04117	$1.04120^{+0.00084}_{-0.00083}$	$\chi_{prior}^2$	1.99	$7.50 (\nu: 6.5)$
$H_0$	67.78	$67.8^{+1.3}_{-1.3}$	$D_A/Gpc$	13.896	$13.895^{+0.073}_{-0.073}$	$\chi_{CMB}^2$	11260.0	$11274.8 (\nu: 15.4)$
$\Omega_\Lambda$	0.6909	$0.691^{+0.015}_{-0.016}$	$z_{drag}$	1060.09	$1060.1^{+2.2}_{-2.1}$	$\chi_{BAO}^2$	4.33	$5.08 (\nu: 0.6)$
$\Omega_m$	0.3091	$0.309^{+0.016}_{-0.015}$	$r_{drag}$	147.36	$147.36^{+0.82}_{-0.83}$			

Best-fit  $\chi_{eff}^2 = 11266.31$ ;  $\Delta\chi_{eff}^2 = -0.12$ ;  $\bar{\chi}_{eff}^2 = 11287.38$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.01$ ;  $R - 1 = 0.01718$

$\chi_{eff}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMAS: 2.42 ( $\Delta$  -0.03) DR11LOWZ: 0.54 ( $\Delta$  -0.07) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10495.83 ( $\Delta$  -0.59) plik\_dx11dr2\_HM.v18.TT: 764.16 ( $\Delta$  0.56)

### 23.3 base\_yhe\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02233	$0.02236^{+0.00064}_{-0.00061}$	$\Omega_m$	0.3104	$0.309^{+0.029}_{-0.028}$	$z_{\text{drag}}$	1059.97	$1060.1^{+2.5}_{-2.4}$
$\Omega_c h^2$	0.11919	$0.1190^{+0.0042}_{-0.0042}$	$\Omega_m h^2$	0.14216	$0.1420^{+0.0038}_{-0.0039}$	$r_{\text{drag}}$	147.33	$147.35^{+0.94}_{-0.91}$
$100\theta_{\text{MC}}$	1.04112	$1.0413^{+0.0018}_{-0.0017}$	$\Omega_m h^3$	0.09621	$0.0963^{+0.0016}_{-0.0016}$	$k_D$	0.14035	$0.1402^{+0.0014}_{-0.0014}$
$\tau$	0.0818	$0.083^{+0.042}_{-0.040}$	$\sigma_8$	0.8321	$0.833^{+0.035}_{-0.032}$	$100\theta_D$	0.16111	$0.1613^{+0.0015}_{-0.0015}$
$Y_P$	0.2511	$0.254^{+0.040}_{-0.041}$	$\sigma_8 \Omega_m^{0.5}$	0.4636	$0.463^{+0.024}_{-0.024}$	$z_{\text{eq}}$	3382	$3377^{+92}_{-93}$
$\ln(10^{10} A_s)$	3.098	$3.100^{+0.084}_{-0.081}$	$\sigma_8 \Omega_m^{0.25}$	0.6211	$0.621^{+0.026}_{-0.025}$	$k_{\text{eq}}$	0.010322	$0.01031^{+0.00028}_{-0.00028}$
$n_s$	0.9695	$0.971^{+0.023}_{-0.022}$	$\sigma_8/h^{0.5}$	1.0115	$1.011^{+0.040}_{-0.038}$	$100\theta_{\text{eq}}$	0.8170	$0.818^{+0.019}_{-0.018}$
$y_{\text{cal}}$	1.00032	$1.0004^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.494	$2.491^{+0.089}_{-0.091}$	$100\theta_{\text{s,eq}}$	0.4513	$0.4519^{+0.0096}_{-0.0091}$
$A_{217}^{\text{CIB}}$	67.3	$65^{+10}_{-10}$	$z_{\text{re}}$	10.33	$10.3^{+3.5}_{-3.9}$	$r_{\text{drag}}/D_V(0.57)$	0.07164	$0.0717^{+0.0016}_{-0.0015}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.215	$2.22^{+0.19}_{-0.17}$	$H(0.57)$	93.07	$93.2^{+1.2}_{-1.1}$
$A_{143}^{\text{tSZ}}$	7.24	$4.98^{+3.7}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8805	$1.882^{+0.030}_{-0.030}$	$D_A(0.57)$	1386.5	$1384^{+31}_{-32}$
$A_{100}^{\text{PS}}$	252	$260^{+60}_{-60}$	$D_{40}$	1230.5	$1230^{+40}_{-39}$	$F_{\text{AP}}(0.57)$	0.6758	$0.6754^{+0.0072}_{-0.0072}$
$A_{143}^{\text{PS}}$	39.2	$45^{+20}_{-20}$	$D_{220}$	5718	$5721^{+79}_{-78}$	$f\sigma_8(0.57)$	0.4835	$0.483^{+0.019}_{-0.019}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2534.8	$2535^{+28}_{-28}$	$\sigma_8(0.57)$	0.6193	$0.620^{+0.028}_{-0.026}$
$A_{217}^{\text{PS}}$	97.6	$97^{+20}_{-20}$	$D_{1420}$	814.6	$814^{+10}_{-10}$	$f_{2000}^{143}$	30.0	$31^{+7}_{-7}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.16	$229.8^{+4.7}_{-4.8}$	$f_{2000}^{143 \times 217}$	32.6	$33^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.52	$7.48^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	0.9695	$0.971^{+0.023}_{-0.022}$	$f_{2000}^{217}$	106.2	$106.6^{+5.2}_{-5.2}$
$A_{143}^{\text{dustTT}}$	9.15	$9.06^{+3.6}_{-3.6}$	$Y_P$	0.2511	$0.254^{+0.040}_{-0.041}$	$\chi_{\text{lowTEB}}^2$	10496.1	10497.1 ( $\nu: 3.7$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.2^{+8.0}_{-8.2}$	$Y_P^{\text{BBN}}$	0.2524	$0.255^{+0.040}_{-0.041}$	$\chi_{\text{plik}}^2$	763.7	778.2 ( $\nu: 17.8$ )
$A_{217}^{\text{dustTT}}$	81.8	$82^{+10}_{-10}$	Age/Gyr	13.792	$13.78^{+0.12}_{-0.12}$	$\chi_{\text{JLA}}^2$	706.72	706.85 ( $\nu: 0.1$ )
$c_{100}$	0.99792	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1090.13	$1090.2^{+1.3}_{-1.3}$	$\chi_{\text{prior}}^2$	2.10	7.45 ( $\nu: 6.4$ )
$c_{217}$	0.99591	$0.9960^{+0.0029}_{-0.0029}$	$r_*$	144.65	$144.68^{+0.92}_{-0.89}$	$\chi_{\text{CMB}}^2$	11259.8	11275.3 ( $\nu: 15.8$ )
$H_0$	67.67	$67.8^{+2.3}_{-2.2}$	$100\theta_*$	1.04116	$1.0412^{+0.0010}_{-0.00098}$			
$\Omega_\Lambda$	0.6896	$0.691^{+0.028}_{-0.029}$	$D_\Lambda/\text{Gpc}$	13.893	$13.895^{+0.087}_{-0.083}$			

Best-fit  $\chi_{\text{eff}}^2 = 11968.66$ ;  $\Delta\chi_{\text{eff}}^2 = -0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 11989.60$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.00$ ;  $R - 1 = 0.01367$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03.v5c.Ap: 10496.12 ( $\Delta -0.32$ ) plik\_dx11dr2\_HM\_v18\_TT: 763.71 ( $\Delta 0.29$ ) SN - JLA December\_2013: 706.72 ( $\Delta -0.05$ )

### 23.4 base\_yhe\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02230	$0.02232^{+0.00065}_{-0.00062}$	$\Omega_m$	0.3063	$0.306^{+0.029}_{-0.029}$	$z_{\text{drag}}$	1059.74	$1059.9^{+2.5}_{-2.4}$
$\Omega_c h^2$	0.11839	$0.1183^{+0.0042}_{-0.0045}$	$\Omega_m h^2$	0.14133	$0.1413^{+0.0038}_{-0.0041}$	$r_{\text{drag}}$	147.59	$147.58^{+0.94}_{-0.89}$
$100\theta_{\text{MC}}$	1.04113	$1.0412^{+0.0018}_{-0.0019}$	$\Omega_m h^3$	0.09601	$0.0961^{+0.0016}_{-0.0015}$	$k_{\text{D}}$	0.14019	$0.1401^{+0.0014}_{-0.0015}$
$\tau$	0.0681	$0.068^{+0.038}_{-0.035}$	$\sigma_8$	0.8169	$0.817^{+0.024}_{-0.023}$	$100\theta_{\text{D}}$	0.16104	$0.1612^{+0.0015}_{-0.0015}$
$Y_{\text{P}}$	0.2476	$0.251^{+0.040}_{-0.039}$	$\sigma_8 \Omega_m^{0.5}$	0.4521	$0.452^{+0.017}_{-0.018}$	$z_{\text{eq}}$	3362	$3361^{+91}_{-98}$
$\ln(10^{10} A_s)$	3.067	$3.067^{+0.072}_{-0.068}$	$\sigma_8 \Omega_m^{0.25}$	0.6077	$0.607^{+0.015}_{-0.015}$	$k_{\text{eq}}$	0.010261	$0.01026^{+0.00028}_{-0.00030}$
$n_s$	0.9694	$0.970^{+0.024}_{-0.024}$	$\sigma_8/h^{0.5}$	0.9911	$0.991^{+0.023}_{-0.023}$	$100\theta_{\text{eq}}$	0.8205	$0.821^{+0.020}_{-0.019}$
$y_{\text{cal}}$	1.00013	$1.0001^{+0.0048}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	2.448	$2.445^{+0.055}_{-0.056}$	$100\theta_{\text{s,eq}}$	0.4532	$0.4534^{+0.0099}_{-0.0099}$
$A_{217}^{\text{CIB}}$	67.6	$65^{+10}_{-10}$	$z_{\text{re}}$	9.04	$8.95^{+3.3}_{-3.6}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07188	$0.0719^{+0.0017}_{-0.0017}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.148	$2.15^{+0.16}_{-0.14}$	$H(0.57)$	93.13	$93.2^{+1.3}_{-1.2}$
$A_{143}^{\text{tSZ}}$	7.18	$4.93^{+3.8}_{-3.9}$	$10^9 A_s e^{-2\tau}$	1.8742	$1.875^{+0.029}_{-0.028}$	$D_{\text{A}}(0.57)$	1383.4	$1382^{+32}_{-33}$
$A_{100}^{\text{PS}}$	255	$262^{+60}_{-60}$	$D_{40}$	1223.0	$1223^{+38}_{-39}$	$F_{\text{AP}}(0.57)$	0.6747	$0.6746^{+0.0074}_{-0.0075}$
$A_{143}^{\text{PS}}$	39.8	$45^{+20}_{-20}$	$D_{220}$	5716	$5716^{+80}_{-78}$	$f\sigma_8(0.57)$	0.4736	$0.473^{+0.011}_{-0.011}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$D_{810}$	2532.7	$2533^{+27}_{-27}$	$\sigma_8(0.57)$	0.6090	$0.609^{+0.023}_{-0.021}$
$A_{217}^{\text{PS}}$	97.2	$96^{+20}_{-20}$	$D_{1420}$	814.8	$814^{+10}_{-10}$	$f_{2000}^{143}$	30.2	$31^{+7}_{-7}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.07	$229.6^{+4.7}_{-4.8}$	$f_{2000}^{143 \times 217}$	32.8	$33^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.40	$7.50^{+3.6}_{-3.6}$	$n_{\text{s},0.002}$	0.9694	$0.970^{+0.024}_{-0.024}$	$f_{2000}^{217}$	106.3	$106.8^{+5.2}_{-5.3}$
$A_{143}^{\text{dustTT}}$	9.11	$9.16^{+3.6}_{-3.6}$	$Y_{\text{P}}$	0.2476	$0.251^{+0.040}_{-0.039}$	$\chi_{\text{lensing}}^2$	9.28	$9.95 (\nu: 1.2)$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.4^{+7.9}_{-7.9}$	$Y_{\text{P}}^{\text{BBN}}$	0.2490	$0.252^{+0.041}_{-0.039}$	$\chi_{\text{lowTEB}}^2$	10494.73	$10495.5 (\nu: 1.8)$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	Age/Gyr	13.792	$13.79^{+0.12}_{-0.13}$	$\chi_{\text{plik}}^2$	766.3	$780.5 (\nu: 17.4)$
$c_{100}$	0.99790	$0.9979^{+0.0016}_{-0.0015}$	$z_*$	1089.96	$1090.1^{+1.2}_{-1.2}$	$\chi_{\text{prior}}^2$	2.07	$7.55 (\nu: 6.8)$
$c_{217}$	0.99594	$0.9961^{+0.0029}_{-0.0029}$	$r_*$	144.90	$144.89^{+0.96}_{-0.87}$	$\chi_{\text{CMB}}^2$	11270.3	$11285.9 (\nu: 17.0)$
$H_0$	67.93	$68.0^{+2.5}_{-2.3}$	$100\theta_*$	1.04127	$1.0413^{+0.0010}_{-0.0010}$			
$\Omega_{\Lambda}$	0.6937	$0.694^{+0.029}_{-0.029}$	$D_{\Lambda}/\text{Gpc}$	13.915	$13.915^{+0.088}_{-0.081}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.42$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.46$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.16$ ;  $R - 1 = 0.03263$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.28 ( $\Delta$  0.10) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.73 ( $\Delta$  -0.13) plik\_dx11dr2\_HM\_v18\_TT: 766.34 ( $\Delta$  0.01)



### 23.5 base\_yhe\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02238	$0.02239^{+0.00066}_{-0.00062}$	$\Omega_m$	0.3077	$0.308^{+0.030}_{-0.029}$	$z_{\text{drag}}$	1060.16	$1060.3^{+2.5}_{-2.5}$
$\Omega_c h^2$	0.11882	$0.1188^{+0.0043}_{-0.0044}$	$\Omega_m h^2$	0.14185	$0.1418^{+0.0040}_{-0.0040}$	$r_{\text{drag}}$	147.36	$147.36^{+0.98}_{-0.93}$
$100\theta_{\text{MC}}$	1.04126	$1.0413^{+0.0018}_{-0.0018}$	$\Omega_m h^3$	0.09630	$0.0963^{+0.0016}_{-0.0016}$	$k_D$	0.14025	$0.1402^{+0.0014}_{-0.0015}$
$\tau$	0.0836	$0.084^{+0.043}_{-0.041}$	$\sigma_8$	0.8330	$0.834^{+0.035}_{-0.033}$	$100\theta_D$	0.16119	$0.1613^{+0.0015}_{-0.0015}$
$Y_P$	0.2537	$0.256^{+0.040}_{-0.041}$	$\sigma_8 \Omega_m^{0.5}$	0.4621	$0.462^{+0.025}_{-0.025}$	$z_{\text{eq}}$	3374	$3374^{+96}_{-96}$
$\ln(10^{10} A_s)$	3.101	$3.103^{+0.084}_{-0.081}$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.621^{+0.026}_{-0.025}$	$k_{\text{eq}}$	0.010299	$0.01030^{+0.00029}_{-0.00029}$
$n_s$	0.9716	$0.972^{+0.024}_{-0.023}$	$\sigma_8/h^{0.5}$	1.0109	$1.011^{+0.040}_{-0.039}$	$100\theta_{\text{eq}}$	0.8186	$0.819^{+0.020}_{-0.019}$
$y_{\text{cal}}$	1.00041	$1.0005^{+0.0049}_{-0.0049}$	$\langle d^2 \rangle^{1/2}$	2.489	$2.490^{+0.089}_{-0.093}$	$100\theta_{\text{s,eq}}$	0.4522	$0.452^{+0.010}_{-0.0095}$
$A_{217}^{\text{CIB}}$	67.2	$65^{+10}_{-10}$	$z_{\text{re}}$	10.48	$10.5^{+3.5}_{-3.9}$	$r_{\text{drag}}/D_V(0.57)$	0.07179	$0.0718^{+0.0017}_{-0.0016}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$10^9 A_s$	2.223	$2.23^{+0.19}_{-0.18}$	$H(0.57)$	93.18	$93.2^{+1.2}_{-1.2}$
$A_{143}^{\text{tSZ}}$	7.16	$4.97^{+3.8}_{-3.8}$	$10^9 A_s e^{-2\tau}$	1.8805	$1.882^{+0.031}_{-0.030}$	$D_A(0.57)$	1383.4	$1383^{+32}_{-33}$
$A_{100}^{\text{PS}}$	254	$261^{+60}_{-60}$	$D_{40}$	1227.2	$1228^{+40}_{-40}$	$F_{\text{AP}}(0.57)$	0.6751	$0.6750^{+0.0075}_{-0.0075}$
$A_{143}^{\text{PS}}$	40.0	$45^{+20}_{-20}$	$D_{220}$	5719	$5722^{+79}_{-78}$	$f\sigma_8(0.57)$	0.4833	$0.484^{+0.020}_{-0.019}$
$A_{143 \times 217}^{\text{PS}}$	34	$40^{+20}_{-20}$	$D_{810}$	2535.6	$2535^{+28}_{-28}$	$\sigma_8(0.57)$	0.6206	$0.621^{+0.028}_{-0.026}$
$A_{217}^{\text{PS}}$	97.8	$97^{+20}_{-20}$	$D_{1420}$	814.9	$814^{+10}_{-10}$	$f_{2000}^{143}$	30.1	$31^{+7}_{-7}$
$A^{\text{kSZ}}$	0.0	—	$D_{2000}$	230.16	$229.8^{+4.7}_{-4.8}$	$f_{2000}^{143 \times 217}$	32.7	$33^{+6}_{-6}$
$A_{100}^{\text{dustTT}}$	7.50	$7.49^{+3.7}_{-3.7}$	$n_{\text{s},0.002}$	0.9716	$0.972^{+0.024}_{-0.023}$	$f_{2000}^{217}$	106.3	$106.7^{+5.2}_{-5.2}$
$A_{143}^{\text{dustTT}}$	8.96	$9.06^{+3.6}_{-3.6}$	$Y_P$	0.2537	$0.256^{+0.040}_{-0.041}$	$\chi_{\text{lowTEB}}^2$	10495.9	10497.1 ( $\nu: 3.9$ )
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.2^{+8.0}_{-8.1}$	$Y_P^{\text{BBN}}$	0.2550	$0.257^{+0.040}_{-0.041}$	$\chi_{\text{plik}}^2$	764.0	778.3 ( $\nu: 18.2$ )
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	Age/Gyr	13.781	$13.78^{+0.12}_{-0.13}$	$\chi_{\text{H070p6}}^2$	0.66	0.76 ( $\nu: 0.2$ )
$c_{100}$	0.99791	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	1090.14	$1090.2^{+1.3}_{-1.3}$	$\chi_{\text{prior}}^2$	2.12	7.45 ( $\nu: 6.4$ )
$c_{217}$	0.99603	$0.9960^{+0.0028}_{-0.0029}$	$r_*$	144.70	$144.69^{+0.95}_{-0.92}$	$\chi_{\text{CMB}}^2$	11259.9	11275.4 ( $\nu: 16.0$ )
$H_0$	67.89	$68.0^{+2.4}_{-2.3}$	$100\theta_*$	1.04123	$1.0412^{+0.0010}_{-0.00099}$			
$\Omega_\Lambda$	0.6923	$0.692^{+0.029}_{-0.030}$	$D_A/\text{Gpc}$	13.897	$13.896^{+0.089}_{-0.085}$			

Best-fit  $\chi_{\text{eff}}^2 = 11262.68$ ;  $\Delta\chi_{\text{eff}}^2 = -0.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.62$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.93$ ;  $R - 1 = 0.01383$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.90 ( $\Delta -0.43$ ) plik\_dx11dr2\_HM\_v18\_TT: 763.99 ( $\Delta 0.33$ ) Hubble - H070p6: 0.66 ( $\Delta -0.16$ )

### 23.6 base\_yhe\_plikHM\_TT\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022319	$0.02232^{+0.00049}_{-0.00046}$	$\Omega_m h^3$	0.09608	$0.0961^{+0.0015}_{-0.0014}$	$z_{\text{eq}}$	3362	$3362^{+55}_{-55}$
$\Omega_c h^2$	0.11835	$0.1184^{+0.0024}_{-0.0024}$	$\sigma_8$	0.8166	$0.817^{+0.021}_{-0.020}$	$k_{\text{eq}}$	0.010260	$0.01026^{+0.00017}_{-0.00017}$
$100\theta_{\text{MC}}$	1.04120	$1.0412^{+0.0014}_{-0.0015}$	$\sigma_8 \Omega_m^{0.5}$	0.4515	$0.452^{+0.013}_{-0.013}$	$100\theta_{\text{eq}}$	0.8207	$0.821^{+0.010}_{-0.010}$
$\tau$	0.0676	$0.068^{+0.026}_{-0.026}$	$\sigma_8 \Omega_m^{0.25}$	0.6072	$0.608^{+0.015}_{-0.015}$	$100\theta_{\text{s,eq}}$	0.4533	$0.4533^{+0.0053}_{-0.0052}$
$Y_{\text{P}}$	0.2498	$0.251^{+0.035}_{-0.036}$	$\sigma_8/h^{0.5}$	0.9903	$0.991^{+0.023}_{-0.022}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07191	$0.07192^{+0.00083}_{-0.00082}$
$\ln(10^{10} A_{\text{s}})$	3.066	$3.067^{+0.049}_{-0.051}$	$\langle d^2 \rangle^{1/2}$	2.444	$2.445^{+0.053}_{-0.054}$	$H(0.57)$	93.17	$93.18^{+0.75}_{-0.72}$
$n_{\text{s}}$	0.9704	$0.970^{+0.016}_{-0.017}$	$z_{\text{re}}$	8.99	$8.95^{+2.3}_{-2.6}$	$D_{\text{A}}(0.57)$	1382.5	$1382^{+18}_{-17}$
$y_{\text{cal}}$	0.9999	$1.0002^{+0.0048}_{-0.0051}$	$10^9 A_{\text{s}}$	2.146	$2.15^{+0.11}_{-0.11}$	$F_{\text{AP}}(0.57)$	0.67456	$0.6746^{+0.0038}_{-0.0037}$
$A_{217}^{\text{CIB}}$	68.1	$65^{+10}_{-10}$	$10^9 A_{\text{s}} e^{-2\tau}$	1.8743	$1.876^{+0.029}_{-0.029}$	$f\sigma_8(0.57)$	0.4733	$0.474^{+0.011}_{-0.011}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1220.7	$1222^{+32}_{-30}$	$\sigma_8(0.57)$	0.6089	$0.609^{+0.017}_{-0.017}$
$A_{143}^{\text{tSZ}}$	7.18	$4.93^{+3.8}_{-3.9}$	$D_{220}$	5713	$5718^{+79}_{-79}$	$f_{2000}^{143}$	30.5	$31^{+7}_{-7}$
$A_{100}^{\text{PS}}$	256	$262^{+60}_{-60}$	$D_{810}$	2532.1	$2533^{+29}_{-28}$	$f_{2000}^{143 \times 217}$	33.0	$33^{+5}_{-6}$
$A_{143}^{\text{PS}}$	40.3	$45^{+20}_{-20}$	$D_{1420}$	814.4	$814^{+11}_{-10}$	$f_{2000}^{217}$	106.4	$106.8^{+5.2}_{-5.2}$
$A_{143 \times 217}^{\text{PS}}$	33	$38^{+20}_{-20}$	$D_{2000}$	229.79	$229.5^{+4.6}_{-4.7}$	$\chi_{\text{lensing}}^2$	9.17	$9.93 (\nu: 1.2)$
$A_{217}^{\text{PS}}$	96.8	$96^{+20}_{-20}$	$n_{\text{s},0.002}$	0.9704	$0.970^{+0.016}_{-0.017}$	$\chi_{\text{lowTEB}}^2$	10494.54	$10495.1 (\nu: 1.1)$
$A^{\text{kSZ}}$	0.0	—	$Y_{\text{P}}$	0.2498	$0.251^{+0.035}_{-0.036}$	$\chi_{\text{plik}}^2$	766.6	$780.2 (\nu: 16.4)$
$A_{100}^{\text{dustTT}}$	7.37	$7.52^{+3.6}_{-3.7}$	$Y_{\text{P}}^{\text{BBN}}$	0.2512	$0.253^{+0.035}_{-0.037}$	$\chi_{\text{H070p6}}^2$	0.62	$0.65 (\nu: 0.0)$
$A_{143}^{\text{dustTT}}$	9.15	$9.17^{+3.6}_{-3.6}$	Age/Gyr	13.787	$13.786^{+0.084}_{-0.086}$	$\chi_{\text{JLA}}^2$	706.608	$706.66 (\nu: 0.0)$
$A_{143 \times 217}^{\text{dustTT}}$	17.9	$17.4^{+7.7}_{-7.9}$	$z_*$	1090.02	$1090.1^{+1.2}_{-1.2}$	$\chi_{6\text{DF}}^2$	0.001	$0.041 (\nu: 0.0)$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$r_*$	144.88	$144.87^{+0.72}_{-0.72}$	$\chi_{\text{MGS}}^2$	1.61	$1.69 (\nu: 0.2)$
$c_{100}$	0.99790	$0.9979^{+0.0016}_{-0.0015}$	$100\theta_*$	1.04128	$1.04127^{+0.00082}_{-0.00083}$	$\chi_{\text{DR11CMASS}}^2$	2.44	$2.88 (\nu: 0.2)$
$c_{217}$	0.99601	$0.9961^{+0.0028}_{-0.0029}$	$D_{\text{A}}/\text{Gpc}$	13.914	$13.913^{+0.070}_{-0.073}$	$\chi_{\text{DR11LOWZ}}^2$	0.32	$0.45 (\nu: 0.1)$
$H_0$	67.99	$68.0^{+1.2}_{-1.2}$	$z_{\text{drag}}$	1059.86	$1059.9^{+2.0}_{-2.0}$	$\chi_{\text{prior}}^2$	2.09	$7.60 (\nu: 6.8)$
$\Omega_{\Lambda}$	0.6943	$0.694^{+0.014}_{-0.015}$	$r_{\text{drag}}$	147.57	$147.56^{+0.84}_{-0.81}$	$\chi_{\text{CMB}}^2$	11270.4	$11285.2 (\nu: 16.2)$
$\Omega_{\text{m}}$	0.3057	$0.306^{+0.015}_{-0.014}$	$k_{\text{D}}$	0.14014	$0.1401^{+0.0011}_{-0.0012}$	$\chi_{\text{BAO}}^2$	4.37	$5.06 (\nu: 0.5)$
$\Omega_{\text{m}} h^2$	0.14132	$0.1413^{+0.0023}_{-0.0023}$	$100\theta_{\text{D}}$	0.16112	$0.1612^{+0.0014}_{-0.0014}$			

Best-fit  $\chi_{\text{eff}}^2 = 11984.04$ ;  $\Delta\chi_{\text{eff}}^2 = -0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 12005.15$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.13$ ;  $R - 1 = 0.04133$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta -0.00$ ) MGS: 1.61 ( $\Delta 0.07$ ) DR11CMASS: 2.44 ( $\Delta 0.02$ ) DR11LOWZ: 0.32 ( $\Delta -0.05$ ) CMB - smica\_g30\_ftl\_full\_pp: 9.17 ( $\Delta -0.09$ ) low1\_SMW\_70\_dx11d\_2014\_10\_03: 10494.54 ( $\Delta -0.38$ ) plik\_dx11dr2\_HM\_v18\_TT: 766.64 ( $\Delta 0.51$ ) Hubble - H070p6: 0.62 ( $\Delta -0.05$ ) SN - JLA December\_2013: 706.61 ( $\Delta -0.02$ )

## 23.7 base\_yhe\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02232^{+0.00067}_{-0.00062}$	$\Omega_\Lambda$	$0.688^{+0.030}_{-0.032}$	$100\theta_*$	$1.0411^{+0.0010}_{-0.0010}$
$\Omega_c h^2$	$0.1194^{+0.0046}_{-0.0046}$	$\Omega_m$	$0.312^{+0.032}_{-0.030}$	$D_A/\text{Gpc}$	$13.890^{+0.090}_{-0.087}$
$100\theta_{\text{MC}}$	$1.0411^{+0.0019}_{-0.0018}$	$\Omega_m h^2$	$0.1423^{+0.0042}_{-0.0042}$	$z_{\text{drag}}$	$1060.0^{+2.6}_{-2.5}$
$\tau$	$0.082^{+0.039}_{-0.038}$	$\Omega_m h^3$	$0.0962^{+0.0016}_{-0.0016}$	$r_{\text{drag}}$	$147.30^{+0.97}_{-0.96}$
$Y_{\text{P}}$	$0.252^{+0.041}_{-0.041}$	$\sigma_8$	$0.833^{+0.033}_{-0.031}$	$k_{\text{D}}$	$0.1403^{+0.0015}_{-0.0015}$
$\ln(10^{10} A_s)$	$3.099^{+0.078}_{-0.076}$	$\sigma_8 \Omega_m^{0.5}$	$0.465^{+0.026}_{-0.025}$	$100\theta_{\text{D}}$	$0.1612^{+0.0015}_{-0.0015}$
$n_s$	$0.969^{+0.024}_{-0.023}$	$\sigma_8 \Omega_m^{0.25}$	$0.622^{+0.026}_{-0.025}$	$z_{\text{eq}}$	$3386^{+100}_{-100}$
$y_{\text{cal}}$	$1.0004^{+0.0049}_{-0.0049}$	$\sigma_8/h^{0.5}$	$1.013^{+0.038}_{-0.036}$	$k_{\text{eq}}$	$0.01033^{+0.00030}_{-0.00031}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	$2.498^{+0.088}_{-0.088}$	$100\theta_{\text{eq}}$	$0.816^{+0.020}_{-0.019}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$z_{\text{re}}$	$10.3^{+3.1}_{-3.6}$	$100\theta_{\text{s,eq}}$	$0.451^{+0.010}_{-0.0098}$
$A_{143}^{\text{tSZ}}$	$5.00^{+3.7}_{-3.8}$	$10^9 A_s$	$2.22^{+0.18}_{-0.17}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	$0.0716^{+0.0018}_{-0.0017}$
$A_{100}^{\text{PS}}$	$260^{+60}_{-60}$	$10^9 A_s e^{-2\tau}$	$1.882^{+0.031}_{-0.030}$	$H(0.57)$	$93.1^{+1.3}_{-1.2}$
$A_{143}^{\text{PS}}$	$45^{+20}_{-20}$	$D_{40}$	$1233^{+42}_{-40}$	$D_A(0.57)$	$1387^{+34}_{-34}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{220}$	$5719^{+80}_{-78}$	$F_{\text{AP}}(0.57)$	$0.6760^{+0.0080}_{-0.0078}$
$A_{217}^{\text{PS}}$	$97^{+20}_{-20}$	$D_{810}$	$2535^{+28}_{-28}$	$f\sigma_8(0.57)$	$0.484^{+0.019}_{-0.018}$
$A^{\text{kSZ}}$	—	$D_{1420}$	$814^{+10}_{-10}$	$\sigma_8(0.57)$	$0.620^{+0.027}_{-0.025}$
$A_{100}^{\text{dustTT}}$	$7.47^{+3.7}_{-3.7}$	$D_{2000}$	$229.9^{+4.7}_{-4.8}$	$f_{2000}^{143}$	$31^{+7}_{-7}$
$A_{143}^{\text{dustTT}}$	$9.05^{+3.7}_{-3.6}$	$n_{\text{s},0.002}$	$0.969^{+0.024}_{-0.023}$	$f_{2000}^{143 \times 217}$	$33^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.1^{+8.1}_{-8.3}$	$Y_{\text{P}}$	$0.252^{+0.041}_{-0.041}$	$f_{2000}^{217}$	$106.5^{+5.2}_{-5.2}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	$0.254^{+0.041}_{-0.041}$	$\chi_{\text{lowTEB}}^2$	$10497.3 (\nu: 3.8)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$\text{Age}/\text{Gyr}$	$13.79^{+0.12}_{-0.13}$	$\chi_{\text{plik}}^2$	$778.0 (\nu: 17.3)$
$c_{217}$	$0.9960^{+0.0028}_{-0.0029}$	$z_*$	$1090.2^{+1.3}_{-1.2}$	$\chi_{\text{prior}}^2$	$7.44 (\nu: 6.4)$
$H_0$	$67.6^{+2.5}_{-2.4}$	$r_*$	$144.61^{+0.96}_{-0.94}$	$\chi_{\text{CMB}}^2$	$11275.3 (\nu: 15.5)$

$$\bar{\chi}_{\text{eff}}^2 = 11282.69; \Delta \bar{\chi}_{\text{eff}}^2 = 1.05; R - 1 = 0.01267$$

## 23.8 base\_yhe\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022302	$0.02230^{+0.00044}_{-0.00044}$	$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.057}_{-0.057}$	$Y_P^{\text{BBN}}$	0.2504	$0.251^{+0.026}_{-0.027}$
$\Omega_c h^2$	0.11969	$0.1197^{+0.0029}_{-0.0029}$	$A_{100 \times 217}^{\text{dustTE}}$	0.306	$0.30^{+0.17}_{-0.17}$	Age/Gyr	13.803	$13.802^{+0.082}_{-0.082}$
$100\theta_{\text{MC}}$	1.04092	$1.0410^{+0.0012}_{-0.0012}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$z_*$	1090.13	$1090.18^{+0.87}_{-0.87}$
$\tau$	0.0828	$0.082^{+0.034}_{-0.035}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.16}_{-0.16}$	$r_*$	144.55	$144.53^{+0.65}_{-0.64}$
$Y_P$	0.2491	$0.250^{+0.026}_{-0.027}$	$A_{217}^{\text{dustTE}}$	1.66	$1.67^{+0.50}_{-0.50}$	$100\theta_*$	1.04101	$1.04102^{+0.00067}_{-0.00066}$
$\ln(10^{10} A_s)$	3.101	$3.099^{+0.068}_{-0.069}$	$c_{100}$	0.99818	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	13.885	$13.884^{+0.062}_{-0.061}$
$n_s$	0.9668	$0.967^{+0.016}_{-0.016}$	$c_{217}$	0.99595	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	1059.89	$1059.9^{+1.7}_{-1.7}$
$y_{\text{cal}}$	1.00027	$1.0005^{+0.0049}_{-0.0048}$	$H_0$	67.40	$67.4^{+1.5}_{-1.5}$	$r_{\text{drag}}$	147.24	$147.22^{+0.67}_{-0.67}$
$A_{217}^{\text{CIB}}$	66.3	$64^{+10}_{-10}$	$\Omega_\Lambda$	0.6860	$0.686^{+0.019}_{-0.020}$	$k_D$	0.14051	$0.14048^{+0.00083}_{-0.00084}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\Omega_m$	0.3140	$0.314^{+0.020}_{-0.019}$	$100\theta_D$	0.16102	$0.16107^{+0.00096}_{-0.00095}$
$A_{143}^{\text{tSZ}}$	7.18	$5.27^{+3.6}_{-3.9}$	$\Omega_m h^2$	0.14264	$0.1427^{+0.0027}_{-0.0026}$	$z_{\text{eq}}$	3393	$3394^{+64}_{-63}$
$A_{100}^{\text{PS}}$	255	$262^{+50}_{-60}$	$\Omega_m h^3$	0.09615	$0.0962^{+0.0011}_{-0.0011}$	$k_{\text{eq}}$	0.010357	$0.01036^{+0.00020}_{-0.00019}$
$A_{143}^{\text{PS}}$	40.8	$44^{+20}_{-20}$	$\sigma_8$	0.8344	$0.834^{+0.029}_{-0.028}$	$100\theta_{\text{eq}}$	0.8147	$0.815^{+0.012}_{-0.012}$
$A_{143 \times 217}^{\text{PS}}$	36.9	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4675	$0.467^{+0.019}_{-0.019}$	$100\theta_{\text{s,eq}}$	0.4502	$0.4501^{+0.0063}_{-0.0063}$
$A_{217}^{\text{PS}}$	99.2	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6245	$0.624^{+0.021}_{-0.022}$	$r_{\text{drag}}/D_V(0.57)$	0.07143	$0.0714^{+0.0011}_{-0.0011}$
$A^{\text{kSZ}}$	0.00	$< 8.14$	$\sigma_8/h^{0.5}$	1.0163	$1.015^{+0.033}_{-0.034}$	$H(0.57)$	92.95	$92.96^{+0.79}_{-0.76}$
$A_{100}^{\text{dustTT}}$	7.46	$7.47^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	2.509	$2.507^{+0.075}_{-0.077}$	$D_A(0.57)$	1390.1	$1390^{+21}_{-21}$
$A_{143}^{\text{dustTT}}$	8.98	$8.99^{+3.6}_{-3.6}$	$z_{\text{re}}$	10.42	$10.3^{+3.1}_{-3.3}$	$F_{\text{AP}}(0.57)$	0.67665	$0.6767^{+0.0050}_{-0.0049}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.1^{+8.2}_{-8.2}$	$10^9 A_s$	2.222	$2.22^{+0.16}_{-0.15}$	$f\sigma_8(0.57)$	0.4857	$0.485^{+0.016}_{-0.016}$
$A_{217}^{\text{dustTT}}$	82.0	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	1.8831	$1.884^{+0.025}_{-0.025}$	$\sigma_8(0.57)$	0.6201	$0.620^{+0.023}_{-0.022}$
$A_{100}^{\text{dustEE}}$	0.0812	$0.081^{+0.011}_{-0.011}$	$D_{40}$	1237.8	$1239^{+31}_{-32}$	$f_{2000}^{143}$	29.5	$30^{+6}_{-6}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0488^{+0.0097}_{-0.0097}$	$D_{220}$	5726	$5728^{+76}_{-75}$	$f_{2000}^{143 \times 217}$	32.37	$33^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.064}_{-0.064}$	$D_{810}$	2535.9	$2536^{+27}_{-26}$	$f_{2000}^{217}$	105.94	$106.2^{+4.2}_{-4.1}$
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.013}_{-0.014}$	$D_{1420}$	814.6	$814.3^{+9.5}_{-9.4}$	$\chi_{\text{lowTEB}}^2$	10496.98	$10497.6 (\nu: 2.7)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.092}_{-0.092}$	$D_{2000}$	230.27	$230.1^{+3.7}_{-3.6}$	$\chi_{\text{plik}}^2$	2431.5	$2451.3 (\nu: 24.4)$
$A_{217}^{\text{dustEE}}$	0.644	$0.65^{+0.26}_{-0.26}$	$n_{\text{s},0.002}$	0.9668	$0.967^{+0.016}_{-0.016}$	$\chi_{\text{prior}}^2$	6.98	$19.4 (\nu: 15.2)$
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.074}_{-0.074}$	$Y_P$	0.2491	$0.250^{+0.026}_{-0.027}$	$\chi_{\text{CMB}}^2$	12928.5	$12949.0 (\nu: 23.2)$

Best-fit  $\chi_{\text{eff}}^2 = 12935.48$ ;  $\Delta\chi_{\text{eff}}^2 = -0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.35$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.66$ ;  $R - 1 = 0.00815$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.98 ( $\Delta$  0.04) plik\_dx11dr2\_HM.v18\_TTTEEE: 2431.52 ( $\Delta$  -0.13)

### 23.9 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022350	$0.02236^{+0.00037}_{-0.00038}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$100\theta_*$	1.04107	$1.04109^{+0.00060}_{-0.00060}$
$\Omega_c h^2$	0.11918	$0.1192^{+0.0021}_{-0.0021}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.15}_{-0.15}$	$D_A/\text{Gpc}$	13.894	$13.890^{+0.055}_{-0.055}$
$100\theta_{\text{MC}}$	1.04098	$1.0411^{+0.0010}_{-0.0010}$	$A_{217}^{\text{dustTE}}$	1.66	$1.66^{+0.50}_{-0.50}$	$z_{\text{drag}}$	1059.93	$1060.1^{+1.6}_{-1.5}$
$\tau$	0.0871	$0.084^{+0.032}_{-0.033}$	$c_{100}$	0.99820	$0.9982^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.32	$147.29^{+0.62}_{-0.61}$
$Y_{\text{P}}$	0.2488	$0.252^{+0.025}_{-0.026}$	$c_{217}$	0.99588	$0.9960^{+0.0028}_{-0.0028}$	$k_{\text{D}}$	0.14047	$0.14039^{+0.00073}_{-0.00073}$
$\ln(10^{10} A_s)$	3.109	$3.104^{+0.065}_{-0.067}$	$H_0$	67.64	$67.7^{+1.1}_{-1.0}$	$100\theta_{\text{D}}$	0.16097	$0.16111^{+0.00095}_{-0.00094}$
$n_s$	0.9685	$0.969^{+0.014}_{-0.013}$	$\Omega_{\Lambda}$	0.6893	$0.689^{+0.013}_{-0.013}$	$z_{\text{eq}}$	3382.0	$3384^{+47}_{-47}$
$y_{\text{cal}}$	1.00016	$1.0005^{+0.0050}_{-0.0048}$	$\Omega_{\text{m}}$	0.3107	$0.311^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010322	$0.01033^{+0.00014}_{-0.00014}$
$A_{217}^{\text{CIB}}$	64.7	$64^{+10}_{-10}$	$\Omega_{\text{m}} h^2$	0.14217	$0.1423^{+0.0020}_{-0.0020}$	$100\theta_{\text{eq}}$	0.8169	$0.8167^{+0.0088}_{-0.0088}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.33	—	$\Omega_{\text{m}} h^3$	0.09617	$0.0962^{+0.0011}_{-0.0011}$	$100\theta_{\text{s,eq}}$	0.45128	$0.4512^{+0.0045}_{-0.0045}$
$A_{143}^{\text{tSZ}}$	7.06	$5.28^{+3.7}_{-3.9}$	$\sigma_8$	0.8361	$0.835^{+0.029}_{-0.029}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07161	$0.07161^{+0.00074}_{-0.00071}$
$A_{100}^{\text{PS}}$	252	$262^{+60}_{-50}$	$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4660	$0.465^{+0.018}_{-0.018}$	$H(0.57)$	93.05	$93.08^{+0.59}_{-0.58}$
$A_{143}^{\text{PS}}$	43.3	$44^{+20}_{-20}$	$\sigma_8 \Omega_{\text{m}}^{0.25}$	0.6242	$0.623^{+0.021}_{-0.021}$	$D_A(0.57)$	1386.9	$1387^{+15}_{-15}$
$A_{143 \times 217}^{\text{PS}}$	42.6	$40^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0165	$1.015^{+0.033}_{-0.034}$	$F_{\text{AP}}(0.57)$	0.67583	$0.6758^{+0.0033}_{-0.0034}$
$A_{217}^{\text{PS}}$	101.6	$98^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.509	$2.504^{+0.075}_{-0.076}$	$f\sigma_8(0.57)$	0.4859	$0.485^{+0.016}_{-0.016}$
$A^{\text{kSZ}}$	0.00	$< 8.09$	$z_{\text{re}}$	10.78	$10.5^{+2.9}_{-3.1}$	$\sigma_8(0.57)$	0.6221	$0.621^{+0.022}_{-0.022}$
$A_{100}^{\text{dustTT}}$	7.39	$7.48^{+3.7}_{-3.7}$	$10^9 A_s$	2.239	$2.23^{+0.15}_{-0.15}$	$f_{2000}^{143}$	28.9	$30^{+6}_{-6}$
$A_{143}^{\text{dustTT}}$	8.98	$9.00^{+3.7}_{-3.7}$	$10^9 A_s e^{-2\tau}$	1.8808	$1.883^{+0.025}_{-0.024}$	$f_{2000}^{143 \times 217}$	31.99	$33^{+4}_{-4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.1^{+8.2}_{-8.0}$	$D_{40}$	1235.9	$1236^{+29}_{-30}$	$f_{2000}^{217}$	105.46	$106.2^{+4.2}_{-4.1}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$D_{220}$	5726	$5730^{+75}_{-75}$	$\chi_{\text{lowTEB}}^2$	10497.21	$10497.5 (\nu: 2.9)$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{810}$	2535.7	$2536^{+27}_{-27}$	$\chi_{\text{plik}}^2$	2431.5	$2451.0 (\nu: 24.0)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0491^{+0.0094}_{-0.0099}$	$D_{1420}$	815.2	$814.5^{+9.6}_{-9.3}$	$\chi_{6\text{DF}}^2$	0.029	$0.059 (\nu: 0.0)$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.099^{+0.065}_{-0.064}$	$D_{2000}$	230.64	$230.1^{+3.7}_{-3.6}$	$\chi_{\text{MGS}}^2$	1.22	$1.28 (\nu: 0.1)$
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.013}_{-0.014}$	$n_{\text{s},0.002}$	0.9685	$0.969^{+0.014}_{-0.013}$	$\chi_{\text{DR11CMass}}^2$	2.50	$2.83 (\nu: 0.2)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.223^{+0.091}_{-0.091}$	$Y_{\text{P}}$	0.2488	$0.252^{+0.025}_{-0.026}$	$\chi_{\text{DR11LOWZ}}^2$	0.68	$0.78 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.650	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}^{\text{BBN}}$	0.2502	$0.253^{+0.025}_{-0.026}$	$\chi_{\text{prior}}^2$	6.85	$19.4 (\nu: 15.2)$
$A_{100}^{\text{dustTE}}$	0.142	$0.141^{+0.073}_{-0.074}$	$\text{Age}/\text{Gyr}$	13.794	$13.791^{+0.066}_{-0.066}$	$\chi_{\text{CMB}}^2$	12928.8	$12948.5 (\nu: 22.3)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.056}_{-0.056}$	$z_*$	1090.01	$1090.14^{+0.87}_{-0.85}$	$\chi_{\text{BAO}}^2$	4.42	$4.96 (\nu: 0.4)$
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.30^{+0.16}_{-0.17}$	$r_*$	144.65	$144.61^{+0.56}_{-0.56}$			

Best-fit  $\chi_{\text{eff}}^2 = 12940.03$ ;  $\Delta\chi_{\text{eff}}^2 = -0.13$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.84$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.37$ ;  $R - 1 = 0.01208$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 ( $\Delta$  0.00) MGS: 1.22 ( $\Delta$  0.00) DR11CMass: 2.50 ( $\Delta$  0.00) DR11LOWZ: 0.68 ( $\Delta$  -0.00) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c.Ap: 10497.21 ( $\Delta$  -0.21) plik.dx11dr2.HM.v18.TTTEEE: 2431.55 ( $\Delta$  0.01)

### 23.10 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022329	$0.02233^{+0.00043}_{-0.00044}$	$A_{100 \times 217}^{\text{dustTE}}$	0.307	$0.30^{+0.16}_{-0.17}$	$z_*$	1090.10	$1090.16^{+0.87}_{-0.87}$
$\Omega_c h^2$	0.11946	$0.1195^{+0.0029}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	0.154	$0.15^{+0.11}_{-0.10}$	$r_*$	144.59	$144.57^{+0.65}_{-0.63}$
$100\theta_{\text{MC}}$	1.04095	$1.0410^{+0.0012}_{-0.0012}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.34^{+0.15}_{-0.15}$	$100\theta_*$	1.04103	$1.04105^{+0.00066}_{-0.00066}$
$\tau$	0.0837	$0.083^{+0.034}_{-0.035}$	$A_{217}^{\text{dustTE}}$	1.67	$1.67^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.889	$13.887^{+0.061}_{-0.060}$
$Y_{\text{P}}$	0.2496	$0.251^{+0.026}_{-0.027}$	$c_{100}$	0.99819	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.93	$1060.0^{+1.7}_{-1.7}$
$\ln(10^{10} A_s)$	3.103	$3.102^{+0.068}_{-0.069}$	$c_{217}$	0.99603	$0.9960^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.27	$147.25^{+0.67}_{-0.66}$
$n_s$	0.9676	$0.968^{+0.016}_{-0.015}$	$H_0$	67.52	$67.5^{+1.5}_{-1.4}$	$k_{\text{D}}$	0.14048	$0.14044^{+0.00082}_{-0.00083}$
$y_{\text{cal}}$	1.00028	$1.0005^{+0.0049}_{-0.0048}$	$\Omega_\Lambda$	0.6875	$0.687^{+0.018}_{-0.019}$	$100\theta_{\text{D}}$	0.16102	$0.16109^{+0.00096}_{-0.00095}$
$A_{217}^{\text{CIB}}$	66.3	$64^{+10}_{-10}$	$\Omega_m$	0.3125	$0.313^{+0.019}_{-0.018}$	$z_{\text{eq}}$	3388	$3390^{+63}_{-61}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.14	—	$\Omega_m h^2$	0.14244	$0.1425^{+0.0026}_{-0.0025}$	$k_{\text{eq}}$	0.010342	$0.01035^{+0.00019}_{-0.00019}$
$A_{143}^{\text{tSZ}}$	7.16	$5.27^{+3.7}_{-3.9}$	$\Omega_m h^3$	0.09617	$0.0962^{+0.0011}_{-0.0011}$	$100\theta_{\text{eq}}$	0.8157	$0.816^{+0.012}_{-0.012}$
$A_{100}^{\text{PS}}$	255	$262^{+60}_{-50}$	$\sigma_8$	0.8343	$0.834^{+0.029}_{-0.028}$	$100\theta_{\text{s,eq}}$	0.4507	$0.4506^{+0.0062}_{-0.0062}$
$A_{143}^{\text{PS}}$	40.6	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.466^{+0.019}_{-0.019}$	$r_{\text{drag}}/D_V(0.57)$	0.07151	$0.0715^{+0.0010}_{-0.0010}$
$A_{143 \times 217}^{\text{PS}}$	36.9	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6238	$0.624^{+0.021}_{-0.022}$	$H(0.57)$	93.00	$93.02^{+0.78}_{-0.73}$
$A_{217}^{\text{PS}}$	99.0	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0154	$1.015^{+0.033}_{-0.034}$	$D_A(0.57)$	1388.6	$1388^{+20}_{-21}$
$A^{\text{kSZ}}$	0.00	< 8.10	$\langle d^2 \rangle^{1/2}$	2.507	$2.506^{+0.076}_{-0.077}$	$F_{\text{AP}}(0.57)$	0.67627	$0.6763^{+0.0048}_{-0.0047}$
$A_{100}^{\text{dustTT}}$	7.44	$7.47^{+3.7}_{-3.7}$	$z_{\text{re}}$	10.49	$10.4^{+3.1}_{-3.2}$	$f\sigma_8(0.57)$	0.4853	$0.485^{+0.016}_{-0.016}$
$A_{143}^{\text{dustTT}}$	9.01	$9.00^{+3.7}_{-3.7}$	$10^9 A_s$	2.225	$2.22^{+0.15}_{-0.15}$	$\sigma_8(0.57)$	0.6204	$0.620^{+0.023}_{-0.022}$
$A_{143 \times 217}^{\text{dustTT}}$	17.8	$17.1^{+8.2}_{-8.1}$	$10^9 A_s e^{-2\tau}$	1.8823	$1.883^{+0.025}_{-0.025}$	$f_{2000}^{143}$	29.3	$30^{+6}_{-6}$
$A_{217}^{\text{dustTT}}$	82.3	$82^{+10}_{-10}$	$D_{40}$	1236.6	$1237^{+31}_{-32}$	$f_{2000}^{143 \times 217}$	32.30	$33^{+4}_{-4}$
$A_{100}^{\text{dustEE}}$	0.0815	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5727	$5729^{+76}_{-76}$	$f_{2000}^{217}$	105.89	$106.2^{+4.2}_{-4.1}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0490^{+0.0095}_{-0.0098}$	$D_{810}$	2535.8	$2536^{+27}_{-26}$	$\chi_{\text{lowTEB}}^2$	10496.93	10497.6 ( $\nu$ : 2.9)
$A_{100 \times 217}^{\text{dustEE}}$	0.098	$0.099^{+0.065}_{-0.064}$	$D_{1420}$	814.7	$814.4^{+9.5}_{-9.3}$	$\chi_{\text{plik}}^2$	2431.5	2451.3 ( $\nu$ : 24.3)
$A_{143}^{\text{dustEE}}$	0.1004	$0.100^{+0.013}_{-0.014}$	$D_{2000}$	230.32	$230.1^{+3.7}_{-3.6}$	$\chi_{\text{JLA}}^2$	706.78	706.85 ( $\nu$ : 0.0)
$A_{143 \times 217}^{\text{dustEE}}$	0.221	$0.223^{+0.092}_{-0.092}$	$n_{\text{s},0.002}$	0.9676	$0.968^{+0.016}_{-0.015}$	$\chi_{\text{prior}}^2$	7.09	19.4 ( $\nu$ : 15.2)
$A_{217}^{\text{dustEE}}$	0.652	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}$	0.2496	$0.251^{+0.026}_{-0.027}$	$\chi_{\text{CMB}}^2$	12928.4	12948.9 ( $\nu$ : 22.9)
$A_{100}^{\text{dustTE}}$	0.141	$0.141^{+0.073}_{-0.074}$	$Y_{\text{P}}^{\text{BBN}}$	0.2509	$0.252^{+0.026}_{-0.027}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.132^{+0.056}_{-0.056}$	Age/Gyr	13.799	$13.797^{+0.080}_{-0.081}$			

Best-fit  $\chi_{\text{eff}}^2 = 13642.28$ ;  $\Delta\chi_{\text{eff}}^2 = -0.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 13675.08$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.44$ ;  $R - 1 = 0.01066$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.93 ( $\Delta$  -0.43) plik\_dx11dr2.HM.v18.TTTEEE: 2431.48 ( $\Delta$  -0.13) SN - JLA December\_2013: 706.78 ( $\Delta$  -0.08)

### 23.11 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022271	$0.02228^{+0.00045}_{-0.00044}$	$A_{100 \times 217}^{\text{dustTE}}$	0.306	$0.30^{+0.16}_{-0.16}$	$z_*$	1090.01	$1090.04^{+0.86}_{-0.84}$
$\Omega_c h^2$	0.11924	$0.1192^{+0.0028}_{-0.0029}$	$A_{143}^{\text{dustTE}}$	0.154	$0.16^{+0.11}_{-0.10}$	$r_*$	144.70	$144.70^{+0.63}_{-0.61}$
$100\theta_{\text{MC}}$	1.04087	$1.0409^{+0.0011}_{-0.0012}$	$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.34^{+0.16}_{-0.16}$	$100\theta_*$	1.04105	$1.04108^{+0.00064}_{-0.00065}$
$\tau$	0.0629	$0.063^{+0.028}_{-0.028}$	$A_{217}^{\text{dustTE}}$	1.67	$1.66^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.899	$13.899^{+0.060}_{-0.058}$
$Y_{\text{P}}$	0.2460	$0.247^{+0.026}_{-0.027}$	$c_{100}$	0.99818	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1059.67	$1059.7^{+1.7}_{-1.6}$
$\ln(10^{10} A_s)$	3.058	$3.060^{+0.053}_{-0.052}$	$c_{217}$	0.99604	$0.9960^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.40	$147.40^{+0.65}_{-0.62}$
$n_s$	0.9659	$0.966^{+0.016}_{-0.015}$	$H_0$	67.52	$67.6^{+1.5}_{-1.5}$	$k_{\text{D}}$	0.14044	$0.14041^{+0.00084}_{-0.00080}$
$y_{\text{cal}}$	0.99999	$1.0001^{+0.0048}_{-0.0046}$	$\Omega_\Lambda$	0.6882	$0.688^{+0.019}_{-0.019}$	$100\theta_{\text{D}}$	0.16094	$0.16098^{+0.00094}_{-0.0010}$
$A_{217}^{\text{CIB}}$	67.8	$65^{+10}_{-10}$	$\Omega_m$	0.3118	$0.312^{+0.019}_{-0.019}$	$z_{\text{eq}}$	3382	$3381^{+61}_{-63}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14216	$0.1421^{+0.0026}_{-0.0026}$	$k_{\text{eq}}$	0.010321	$0.01032^{+0.00019}_{-0.00019}$
$A_{143}^{\text{tSZ}}$	7.34	$5.17^{+3.8}_{-3.9}$	$\Omega_m h^3$	0.09599	$0.0960^{+0.0011}_{-0.0011}$	$100\theta_{\text{eq}}$	0.8167	$0.817^{+0.012}_{-0.012}$
$A_{100}^{\text{PS}}$	259	$264^{+50}_{-50}$	$\sigma_8$	0.8150	$0.816^{+0.020}_{-0.019}$	$100\theta_{\text{s,eq}}$	0.4512	$0.4513^{+0.0063}_{-0.0061}$
$A_{143}^{\text{PS}}$	39.1	$44^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	0.4551	$0.455^{+0.014}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.07156	$0.0716^{+0.0011}_{-0.0010}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	0.6090	$0.609^{+0.014}_{-0.014}$	$H(0.57)$	92.96	$92.98^{+0.79}_{-0.75}$
$A_{217}^{\text{PS}}$	96.9	$97^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9919	$0.992^{+0.021}_{-0.021}$	$D_A(0.57)$	1388.8	$1388^{+21}_{-21}$
$A^{\text{kSZ}}$	0.0	—	$\langle d^2 \rangle^{1/2}$	2.4539	$2.455^{+0.049}_{-0.050}$	$F_{\text{AP}}(0.57)$	0.67611	$0.6760^{+0.0049}_{-0.0047}$
$A_{100}^{\text{dustTT}}$	7.46	$7.58^{+3.8}_{-3.9}$	$z_{\text{re}}$	8.55	$8.55^{+2.8}_{-2.7}$	$f\sigma_8(0.57)$	0.4740	$0.474^{+0.010}_{-0.010}$
$A_{143}^{\text{dustTT}}$	9.09	$9.10^{+3.6}_{-3.5}$	$10^9 A_s$	2.129	$2.13^{+0.11}_{-0.11}$	$\sigma_8(0.57)$	0.6062	$0.607^{+0.017}_{-0.017}$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.3}_{-8.0}$	$10^9 A_s e^{-2\tau}$	1.8779	$1.879^{+0.024}_{-0.025}$	$f_{2000}^{143}$	30.1	$30^{+6}_{-6}$
$A_{217}^{\text{dustTT}}$	81.9	$82^{+10}_{-10}$	$D_{40}$	1229.8	$1230^{+30}_{-31}$	$f_{2000}^{143 \times 217}$	32.73	$33^{+4}_{-4}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5723	$5725^{+74}_{-75}$	$f_{2000}^{217}$	106.22	$106.3^{+4.2}_{-4.0}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0490	$0.0492^{+0.0097}_{-0.0099}$	$D_{810}$	2533.7	$2534^{+26}_{-27}$	$\chi_{\text{lensing}}^2$	9.77	$10.4 (\nu: 1.8)$
$A_{100 \times 217}^{\text{dustEE}}$	0.100	$0.099^{+0.065}_{-0.064}$	$D_{1420}$	814.6	$814.5^{+9.8}_{-9.3}$	$\chi_{\text{lowTEB}}^2$	10495.28	$10495.8 (\nu: 1.2)$
$A_{143}^{\text{dustEE}}$	0.1005	$0.100^{+0.013}_{-0.014}$	$D_{2000}$	229.96	$229.9^{+3.8}_{-3.5}$	$\chi_{\text{plik}}^2$	2435.0	$2454.4 (\nu: 23.7)$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.225^{+0.093}_{-0.092}$	$n_{\text{s},0.002}$	0.9659	$0.966^{+0.016}_{-0.015}$	$\chi_{\text{prior}}^2$	7.10	$19.6 (\nu: 15.7)$
$A_{217}^{\text{dustEE}}$	0.650	$0.66^{+0.25}_{-0.27}$	$Y_{\text{P}}$	0.2460	$0.247^{+0.026}_{-0.027}$	$\chi_{\text{CMB}}^2$	12940.1	$12960.7 (\nu: 22.8)$
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.077}_{-0.073}$	$Y_{\text{P}}^{\text{BBN}}$	0.2473	$0.248^{+0.026}_{-0.027}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.059}_{-0.057}$	Age/Gyr	13.806	$13.803^{+0.081}_{-0.082}$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.17$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.16$ ;  $R - 1 = 0.03526$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.77 ( $\Delta -0.00$ ) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.28 ( $\Delta -0.01$ ) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.02 ( $\Delta 0.11$ )

23.12 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022358	$0.02234^{+0.00043}_{-0.00044}$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.30^{+0.16}_{-0.17}$	$z_*$	1090.13	$1090.16^{+0.88}_{-0.86}$
$\Omega_c h^2$	0.11943	$0.1194^{+0.0029}_{-0.0028}$	$A_{143}^{\text{dustTE}}$	0.153	$0.15^{+0.11}_{-0.10}$	$r_*$	144.57	$144.57^{+0.65}_{-0.64}$
$100\theta_{\text{MC}}$	1.04105	$1.0410^{+0.0012}_{-0.0012}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.34^{+0.15}_{-0.15}$	$100\theta_*$	1.04108	$1.04107^{+0.00066}_{-0.00066}$
$\tau$	0.0835	$0.083^{+0.034}_{-0.035}$	$A_{217}^{\text{dustTE}}$	1.68	$1.67^{+0.50}_{-0.50}$	$D_A/\text{Gpc}$	13.886	$13.887^{+0.061}_{-0.061}$
$Y_{\text{P}}$	0.2513	$0.252^{+0.026}_{-0.027}$	$c_{100}$	0.99817	$0.9982^{+0.0015}_{-0.0015}$	$z_{\text{drag}}$	1060.05	$1060.0^{+1.7}_{-1.7}$
$\ln(10^{10} A_s)$	3.102	$3.103^{+0.068}_{-0.070}$	$c_{217}$	0.99602	$0.9960^{+0.0028}_{-0.0028}$	$r_{\text{drag}}$	147.24	$147.25^{+0.67}_{-0.66}$
$n_s$	0.9682	$0.968^{+0.016}_{-0.015}$	$H_0$	67.59	$67.6^{+1.5}_{-1.5}$	$k_{\text{D}}$	0.14046	$0.14042^{+0.00083}_{-0.00083}$
$y_{\text{cal}}$	1.00030	$1.0005^{+0.0049}_{-0.0048}$	$\Omega_\Lambda$	0.6882	$0.688^{+0.018}_{-0.019}$	$100\theta_{\text{D}}$	0.16107	$0.16110^{+0.00096}_{-0.00095}$
$A_{217}^{\text{CIB}}$	67.6	$64^{+10}_{-10}$	$\Omega_{\text{m}}$	0.3118	$0.312^{+0.019}_{-0.018}$	$z_{\text{eq}}$	3388	$3388^{+64}_{-62}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$\Omega_{\text{m}} h^2$	0.14243	$0.1424^{+0.0027}_{-0.0026}$	$k_{\text{eq}}$	0.010341	$0.01034^{+0.00020}_{-0.00019}$
$A_{143}^{\text{tSZ}}$	7.23	$5.27^{+3.7}_{-3.9}$	$\Omega_{\text{m}} h^3$	0.09626	$0.0962^{+0.0011}_{-0.0011}$	$100\theta_{\text{eq}}$	0.8159	$0.816^{+0.012}_{-0.012}$
$A_{100}^{\text{PS}}$	258	$262^{+60}_{-50}$	$\sigma_8$	0.8342	$0.835^{+0.029}_{-0.029}$	$100\theta_{\text{s,eq}}$	0.4507	$0.4507^{+0.0062}_{-0.0063}$
$A_{143}^{\text{PS}}$	39.5	$44^{+20}_{-20}$	$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4659	$0.466^{+0.019}_{-0.019}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07155	$0.0715^{+0.0010}_{-0.0010}$
$A_{143 \times 217}^{\text{PS}}$	34	$40^{+20}_{-20}$	$\sigma_8 \Omega_{\text{m}}^{0.25}$	0.6234	$0.624^{+0.021}_{-0.022}$	$H(0.57)$	93.05	$93.04^{+0.79}_{-0.74}$
$A_{217}^{\text{PS}}$	97.4	$98^{+20}_{-20}$	$\sigma_8/h^{0.5}$	1.0148	$1.015^{+0.033}_{-0.034}$	$D_A(0.57)$	1387.5	$1388^{+21}_{-21}$
$A^{\text{kSZ}}$	0.00	$< 8.11$	$\langle d^2 \rangle^{1/2}$	2.504	$2.505^{+0.076}_{-0.077}$	$F_{\text{AP}}(0.57)$	0.67611	$0.6762^{+0.0049}_{-0.0047}$
$A_{100}^{\text{dustTT}}$	7.40	$7.48^{+3.7}_{-3.7}$	$z_{\text{re}}$	10.47	$10.4^{+3.1}_{-3.2}$	$f\sigma_8(0.57)$	0.4851	$0.485^{+0.016}_{-0.016}$
$A_{143}^{\text{dustTT}}$	9.05	$9.01^{+3.7}_{-3.7}$	$10^9 A_s$	2.225	$2.23^{+0.16}_{-0.15}$	$\sigma_8(0.57)$	0.6205	$0.621^{+0.023}_{-0.023}$
$A_{143 \times 217}^{\text{dustTT}}$	17.4	$17.1^{+8.2}_{-8.1}$	$10^9 A_s e^{-2\tau}$	1.8827	$1.884^{+0.025}_{-0.025}$	$f_{2000}^{143}$	29.8	$30^{+6}_{-6}$
$A_{217}^{\text{dustTT}}$	81.5	$82^{+10}_{-10}$	$D_{40}$	1235.5	$1237^{+31}_{-32}$	$f_{2000}^{143 \times 217}$	32.60	$33^{+4}_{-4}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.081^{+0.011}_{-0.011}$	$D_{220}$	5728	$5729^{+76}_{-76}$	$f_{2000}^{217}$	106.15	$106.3^{+4.2}_{-4.1}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0490^{+0.0095}_{-0.0098}$	$D_{810}$	2535.7	$2536^{+27}_{-26}$	$\chi_{\text{lowTEB}}^2$	10496.76	10497.6 ( $\nu: 2.9$ )
$A_{100 \times 217}^{\text{dustEE}}$	0.099	$0.099^{+0.065}_{-0.064}$	$D_{1420}$	814.4	$814.4^{+9.5}_{-9.3}$	$\chi_{\text{plik}}^2$	2431.7	2451.3 ( $\nu: 24.5$ )
$A_{143}^{\text{dustEE}}$	0.1002	$0.100^{+0.013}_{-0.014}$	$D_{2000}$	230.15	$230.1^{+3.7}_{-3.6}$	$\chi_{\text{H070p6}}^2$	0.82	0.88 ( $\nu: 0.1$ )
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.223^{+0.092}_{-0.091}$	$n_{\text{s},0.002}$	0.9682	$0.968^{+0.016}_{-0.015}$	$\chi_{\text{prior}}^2$	7.11	19.4 ( $\nu: 15.2$ )
$A_{217}^{\text{dustEE}}$	0.645	$0.65^{+0.25}_{-0.26}$	$Y_{\text{P}}$	0.2513	$0.252^{+0.026}_{-0.027}$	$\chi_{\text{CMB}}^2$	12928.5	12948.9 ( $\nu: 23.0$ )
$A_{100}^{\text{dustTE}}$	0.140	$0.141^{+0.073}_{-0.074}$	$Y_{\text{P}}^{\text{BBN}}$	0.2526	$0.253^{+0.026}_{-0.027}$			
$A_{100 \times 143}^{\text{dustTE}}$	0.131	$0.132^{+0.056}_{-0.056}$	Age/Gyr	13.793	$13.794^{+0.080}_{-0.081}$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.39$ ;  $\Delta\chi_{\text{eff}}^2 = -0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.14$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.39$ ;  $R - 1 = 0.01089$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.76 ( $\Delta -0.25$ ) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.70 ( $\Delta -0.06$ ) Hubble - H070p6: 0.82 ( $\Delta -0.08$ )



23.13 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.022340	$0.02234^{+0.00038}_{-0.00038}$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.34^{+0.16}_{-0.16}$	$z_{\text{drag}}$	1059.89	$1059.9^{+1.5}_{-1.5}$
$\Omega_c h^2$	0.11875	$0.1188^{+0.0020}_{-0.0021}$	$A_{217}^{\text{dustTE}}$	1.655	$1.66^{+0.49}_{-0.50}$	$r_{\text{drag}}$	147.45	$147.44^{+0.61}_{-0.58}$
$100\theta_{\text{MC}}$	1.04106	$1.0411^{+0.0010}_{-0.0010}$	$c_{100}$	0.99816	$0.9982^{+0.0014}_{-0.0015}$	$k_D$	0.14031	$0.14031^{+0.00075}_{-0.00071}$
$\tau$	0.0669	$0.067^{+0.025}_{-0.023}$	$c_{217}$	0.99607	$0.9960^{+0.0028}_{-0.0028}$	$100\theta_D$	0.16103	$0.16104^{+0.00095}_{-0.00094}$
$Y_P$	0.2492	$0.249^{+0.025}_{-0.026}$	$H_0$	67.82	$67.8^{+1.1}_{-1.0}$	$z_{\text{eq}}$	3371.5	$3372^{+45}_{-46}$
$\ln(10^{10} A_s)$	3.0663	$3.066^{+0.047}_{-0.046}$	$\Omega_\Lambda$	0.6918	$0.692^{+0.013}_{-0.013}$	$k_{\text{eq}}$	0.010290	$0.01029^{+0.00014}_{-0.00014}$
$n_s$	0.9686	$0.968^{+0.013}_{-0.013}$	$\Omega_m$	0.3082	$0.308^{+0.013}_{-0.013}$	$100\theta_{\text{eq}}$	0.8188	$0.8188^{+0.0090}_{-0.0084}$
$y_{\text{cal}}$	1.00007	$1.0001^{+0.0049}_{-0.0049}$	$\Omega_m h^2$	0.14173	$0.1418^{+0.0019}_{-0.0019}$	$100\theta_{s,\text{eq}}$	0.45230	$0.4523^{+0.0045}_{-0.0043}$
$A_{217}^{\text{CIB}}$	68.1	$65^{+10}_{-10}$	$\Omega_m h^3$	0.09612	$0.0961^{+0.0010}_{-0.0010}$	$r_{\text{drag}}/D_V(0.57)$	0.07176	$0.07176^{+0.00073}_{-0.00068}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8173	$0.817^{+0.019}_{-0.019}$	$H(0.57)$	93.11	$93.11^{+0.59}_{-0.58}$
$A_{143}^{\text{tSZ}}$	7.32	$5.16^{+3.8}_{-4.0}$	$\sigma_8 \Omega_m^{0.5}$	0.4537	$0.454^{+0.012}_{-0.012}$	$D_A(0.57)$	1384.7	$1385^{+15}_{-15}$
$A_{100}^{\text{PS}}$	258	$264^{+50}_{-50}$	$\sigma_8 \Omega_m^{0.25}$	0.6090	$0.609^{+0.013}_{-0.013}$	$F_{\text{AP}}(0.57)$	0.67519	$0.6752^{+0.0032}_{-0.0033}$
$A_{143}^{\text{PS}}$	39.1	$44^{+20}_{-20}$	$\sigma_8/h^{0.5}$	0.9925	$0.992^{+0.021}_{-0.021}$	$f\sigma_8(0.57)$	0.4743	$0.474^{+0.010}_{-0.010}$
$A_{143 \times 217}^{\text{PS}}$	33	$39^{+20}_{-20}$	$\langle d^2 \rangle^{1/2}$	2.4521	$2.452^{+0.049}_{-0.050}$	$\sigma_8(0.57)$	0.6088	$0.609^{+0.016}_{-0.015}$
$A_{217}^{\text{PS}}$	96.5	$96^{+20}_{-20}$	$z_{\text{re}}$	8.93	$8.85^{+2.2}_{-2.3}$	$f_{2000}^{143}$	30.1	$31^{+6}_{-6}$
$A^{\text{kSZ}}$	0.0	—	$10^9 A_s$	2.146	$2.15^{+0.10}_{-0.097}$	$f_{2000}^{143 \times 217}$	32.78	$33^{+4}_{-4}$
$A_{100}^{\text{dustTT}}$	7.49	$7.60^{+3.9}_{-3.9}$	$10^9 A_s e^{-2\tau}$	1.8774	$1.878^{+0.023}_{-0.024}$	$f_{2000}^{217}$	106.26	$106.4^{+4.3}_{-4.1}$
$A_{143}^{\text{dustTT}}$	9.10	$9.12^{+3.7}_{-3.4}$	$D_{40}$	1225.8	$1227^{+27}_{-30}$	$\chi_{\text{lensing}}^2$	9.74	$10.4 (\nu: 1.7)$
$A_{143 \times 217}^{\text{dustTT}}$	17.7	$17.3^{+8.2}_{-8.0}$	$D_{220}$	5724	$5726^{+72}_{-77}$	$\chi_{\text{lowTEB}}^2$	10494.92	$10495.4 (\nu: 0.9)$
$A_{217}^{\text{dustTT}}$	81.7	$82^{+10}_{-10}$	$D_{810}$	2534.1	$2534^{+26}_{-27}$	$\chi_{\text{plik}}^2$	2435.4	$2454.4 (\nu: 23.4)$
$A_{100}^{\text{dustEE}}$	0.0816	$0.082^{+0.011}_{-0.011}$	$D_{1420}$	814.8	$814.5^{+9.9}_{-9.6}$	$\chi_{\text{H070p6}}^2$	0.70	$0.73 (\nu: 0.0)$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0494^{+0.0096}_{-0.0099}$	$D_{2000}$	229.96	$229.8^{+3.8}_{-3.6}$	$\chi_{\text{JLA}}^2$	706.661	$706.70 (\nu: 0.0)$
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.099^{+0.064}_{-0.063}$	$n_{s,0.002}$	0.9686	$0.968^{+0.013}_{-0.013}$	$\chi_{6\text{DF}}^2$	0.010	$0.040 (\nu: 0.0)$
$A_{143}^{\text{dustEE}}$	0.1008	$0.100^{+0.013}_{-0.014}$	$Y_P$	0.2492	$0.249^{+0.025}_{-0.026}$	$\chi_{\text{MGS}}^2$	1.41	$1.46 (\nu: 0.1)$
$A_{143 \times 217}^{\text{dustEE}}$	0.223	$0.225^{+0.091}_{-0.090}$	$Y_P^{\text{BBN}}$	0.2506	$0.251^{+0.025}_{-0.026}$	$\chi_{\text{DR11CMass}}^2$	2.41	$2.74 (\nu: 0.1)$
$A_{217}^{\text{dustEE}}$	0.652	$0.66^{+0.25}_{-0.27}$	Age/Gyr	13.791	$13.791^{+0.066}_{-0.067}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	$0.59 (\nu: 0.1)$
$A_{100}^{\text{dustTE}}$	0.141	$0.142^{+0.077}_{-0.078}$	$z_*$	1090.00	$1090.02^{+0.85}_{-0.84}$	$\chi_{\text{prior}}^2$	7.27	$19.7 (\nu: 15.6)$
$A_{100 \times 143}^{\text{dustTE}}$	0.132	$0.133^{+0.059}_{-0.058}$	$r_*$	144.76	$144.76^{+0.55}_{-0.53}$	$\chi_{\text{CMB}}^2$	12940.0	$12960.2 (\nu: 22.1)$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.30^{+0.16}_{-0.17}$	$100\theta_*$	1.04114	$1.04115^{+0.00057}_{-0.00059}$	$\chi_{\text{BAO}}^2$	4.31	$4.83 (\nu: 0.2)$
$A_{143}^{\text{dustTE}}$	0.152	$0.16^{+0.11}_{-0.10}$	$D_A/\text{Gpc}$	13.904	$13.904^{+0.054}_{-0.053}$			

Best-fit  $\chi_{\text{eff}}^2 = 13658.97$ ;  $\Delta\chi_{\text{eff}}^2 = -0.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 13692.15$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.05$ ;  $R - 1 = 0.04496$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMass: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.48 ( $\Delta$  0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.74 ( $\Delta$  -0.00) low1.SMW\_70\_dx11d.2014.10.03

10494.92 ( $\Delta$  -0.30) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.36 ( $\Delta$  0.17) Hubble - H070p6: 0.70 ( $\Delta$  -0.02) SN - JLA December\_2013: 706.66 ( $\Delta$  0.00)

### 23.14 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02231^{+0.00044}_{-0.00044}$	$A_{100 \times 143}^{\text{dustTE}}$	$0.132^{+0.056}_{-0.057}$	$Y_P^{\text{BBN}}$	$0.252^{+0.026}_{-0.027}$
$\Omega_c h^2$	$0.1197^{+0.0029}_{-0.0029}$	$A_{100 \times 217}^{\text{dustTE}}$	$0.30^{+0.16}_{-0.17}$	Age/Gyr	$13.801^{+0.081}_{-0.082}$
$100\theta_{\text{MC}}$	$1.0410^{+0.0012}_{-0.0012}$	$A_{143}^{\text{dustTE}}$	$0.15^{+0.11}_{-0.10}$	$z_*$	$1090.18^{+0.87}_{-0.87}$
$\tau$	$0.082^{+0.033}_{-0.034}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.34^{+0.15}_{-0.15}$	$r_*$	$144.54^{+0.65}_{-0.64}$
$Y_P$	$0.250^{+0.026}_{-0.027}$	$A_{217}^{\text{dustTE}}$	$1.67^{+0.50}_{-0.50}$	$100\theta_*$	$1.04103^{+0.00067}_{-0.00066}$
$\ln(10^{10} A_s)$	$3.100^{+0.068}_{-0.068}$	$c_{100}$	$0.9982^{+0.0015}_{-0.0015}$	$D_A/\text{Gpc}$	$13.884^{+0.062}_{-0.061}$
$n_s$	$0.967^{+0.016}_{-0.016}$	$c_{217}$	$0.9960^{+0.0028}_{-0.0028}$	$z_{\text{drag}}$	$1059.9^{+1.7}_{-1.7}$
$y_{\text{cal}}$	$1.0005^{+0.0049}_{-0.0048}$	$H_0$	$67.4^{+1.5}_{-1.5}$	$r_{\text{drag}}$	$147.22^{+0.67}_{-0.67}$
$A_{217}^{\text{CIB}}$	$64^{+10}_{-10}$	$\Omega_\Lambda$	$0.686^{+0.019}_{-0.020}$	$k_D$	$0.14048^{+0.00083}_{-0.00084}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m$	$0.314^{+0.020}_{-0.019}$	$100\theta_D$	$0.16108^{+0.00096}_{-0.00095}$
$A_{143}^{\text{tSZ}}$	$5.27^{+3.6}_{-3.9}$	$\Omega_m h^2$	$0.1427^{+0.0027}_{-0.0026}$	$z_{\text{eq}}$	$3394^{+64}_{-63}$
$A_{100}^{\text{PS}}$	$262^{+60}_{-50}$	$\Omega_m h^3$	$0.0962^{+0.0011}_{-0.0011}$	$k_{\text{eq}}$	$0.01036^{+0.00020}_{-0.00019}$
$A_{143}^{\text{PS}}$	$44^{+20}_{-20}$	$\sigma_8$	$0.834^{+0.028}_{-0.028}$	$100\theta_{\text{eq}}$	$0.815^{+0.012}_{-0.012}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.5}$	$0.467^{+0.019}_{-0.019}$	$100\theta_{\text{s,eq}}$	$0.4502^{+0.0063}_{-0.0063}$
$A_{217}^{\text{PS}}$	$98^{+20}_{-20}$	$\sigma_8 \Omega_m^{0.25}$	$0.624^{+0.021}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	$0.0714^{+0.0011}_{-0.0010}$
$A^{\text{kSZ}}$	$< 8.09$	$\sigma_8/h^{0.5}$	$1.016^{+0.033}_{-0.032}$	$H(0.57)$	$92.97^{+0.79}_{-0.75}$
$A_{100}^{\text{dustTT}}$	$7.46^{+3.7}_{-3.7}$	$\langle d^2 \rangle^{1/2}$	$2.508^{+0.075}_{-0.074}$	$D_A(0.57)$	$1390^{+21}_{-21}$
$A_{143}^{\text{dustTT}}$	$9.00^{+3.7}_{-3.7}$	$z_{\text{re}}$	$10.3^{+2.9}_{-3.1}$	$F_{\text{AP}}(0.57)$	$0.6766^{+0.0049}_{-0.0048}$
$A_{143 \times 217}^{\text{dustTT}}$	$17.1^{+8.2}_{-8.1}$	$10^9 A_s$	$2.22^{+0.15}_{-0.15}$	$f\sigma_8(0.57)$	$0.486^{+0.016}_{-0.016}$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	$10^9 A_s e^{-2\tau}$	$1.884^{+0.025}_{-0.025}$	$\sigma_8(0.57)$	$0.620^{+0.022}_{-0.022}$
$A_{100}^{\text{dustEE}}$	$0.081^{+0.011}_{-0.011}$	$D_{40}$	$1239^{+32}_{-32}$	$f_{2000}^{143}$	$30^{+6}_{-6}$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0489^{+0.0095}_{-0.0098}$	$D_{220}$	$5728^{+76}_{-76}$	$f_{2000}^{143 \times 217}$	$33^{+4}_{-4}$
$A_{100 \times 217}^{\text{dustEE}}$	$0.0995^{+0.064}_{-0.064}$	$D_{810}$	$2536^{+27}_{-26}$	$f_{2000}^{217}$	$106.2^{+4.2}_{-4.1}$
$A_{143}^{\text{dustEE}}$	$0.100^{+0.013}_{-0.014}$	$D_{1420}$	$814.3^{+9.6}_{-9.3}$	$\chi_{\text{lowTEB}}^2$	$10497.6 (\nu: 2.8)$
$A_{143 \times 217}^{\text{dustEE}}$	$0.223^{+0.092}_{-0.092}$	$D_{2000}$	$230.1^{+3.6}_{-3.6}$	$\chi_{\text{plik}}^2$	$2451.2 (\nu: 24.2)$
$A_{217}^{\text{dustEE}}$	$0.65^{+0.25}_{-0.26}$	$n_{\text{s},0.002}$	$0.967^{+0.016}_{-0.016}$	$\chi_{\text{prior}}^2$	$19.3 (\nu: 15.2)$
$A_{100}^{\text{dustTE}}$	$0.141^{+0.073}_{-0.074}$	$Y_P$	$0.250^{+0.026}_{-0.027}$	$\chi_{\text{CMB}}^2$	$12948.9 (\nu: 23.0)$

$$\bar{\chi}_{\text{eff}}^2 = 12968.22; \Delta\bar{\chi}_{\text{eff}}^2 = 0.54; R - 1 = 0.01017$$

### 23.15 base\_yhe\_plikHM\_TE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02240	$0.02239^{+0.00063}_{-0.00062}$	$\sigma_8$	0.8071	$0.807^{+0.040}_{-0.040}$	$D_A/\text{Gpc}$	13.925	$13.93^{+0.10}_{-0.10}$
$\Omega_c h^2$	0.11772	$0.1177^{+0.0040}_{-0.0039}$	$\sigma_8 \Omega_m^{0.5}$	0.4437	$0.444^{+0.031}_{-0.030}$	$z_{\text{drag}}$	1059.93	$1059.8^{+4.0}_{-3.9}$
$100\theta_{\text{MC}}$	1.04111	$1.0410^{+0.0033}_{-0.0034}$	$\sigma_8 \Omega_m^{0.25}$	0.5984	$0.599^{+0.033}_{-0.031}$	$r_{\text{drag}}$	147.66	$147.7^{+1.1}_{-1.1}$
$\tau$	0.0606	$0.061^{+0.042}_{-0.040}$	$\sigma_8/h^{0.5}$	0.9769	$0.978^{+0.051}_{-0.047}$	$k_D$	0.14020	$0.1404^{+0.0029}_{-0.0028}$
$Y_{\text{P}}$	0.248	$0.242^{+0.084}_{-0.095}$	$\langle d^2 \rangle^{1/2}$	2.405	$2.41^{+0.12}_{-0.11}$	$100\theta_D$	0.16091	$0.1607^{+0.0037}_{-0.0038}$
$\ln(10^{10} A_s)$	3.046	$3.047^{+0.090}_{-0.085}$	$z_{\text{re}}$	8.28	$8.15^{+3.9}_{-4.4}$	$z_{\text{eq}}$	3348	$3349^{+88}_{-88}$
$n_s$	0.9743	$0.974^{+0.030}_{-0.028}$	$10^9 A_s$	2.103	$2.11^{+0.19}_{-0.19}$	$k_{\text{eq}}$	0.010220	$0.01022^{+0.00027}_{-0.00027}$
$y_{\text{cal}}$	1.00003	$1.0002^{+0.0048}_{-0.0049}$	$10^9 A_s e^{-2\tau}$	1.8630	$1.864^{+0.036}_{-0.036}$	$100\theta_{\text{eq}}$	0.8233	$0.823^{+0.018}_{-0.017}$
$A_{100}^{\text{dustTE}}$	0.135	$0.137^{+0.075}_{-0.075}$	$D_{40}$	1203	$1205^{+63}_{-61}$	$100\theta_{s,\text{eq}}$	0.4546	$0.4545^{+0.0091}_{-0.0090}$
$A_{100 \times 143}^{\text{dustTE}}$	0.133	$0.133^{+0.058}_{-0.057}$	$D_{220}$	5680	$5682^{+130}_{-130}$	$r_{\text{drag}}/D_V(0.57)$	0.07210	$0.0721^{+0.0016}_{-0.0016}$
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.30^{+0.17}_{-0.16}$	$D_{810}$	2524	$2528^{+67}_{-65}$	$H(0.57)$	93.27	$93.2^{+1.4}_{-1.4}$
$A_{143}^{\text{dustTE}}$	0.155	$0.15^{+0.11}_{-0.10}$	$D_{1420}$	814.6	$817^{+42}_{-41}$	$D_A(0.57)$	1379.1	$1380^{+34}_{-34}$
$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.34^{+0.16}_{-0.16}$	$D_{2000}$	230.2	$232^{+20}_{-19}$	$F_{\text{AP}}(0.57)$	0.6737	$0.6738^{+0.0072}_{-0.0068}$
$A_{217}^{\text{dustTE}}$	1.64	$1.65^{+0.50}_{-0.50}$	$n_{s,0.002}$	0.9743	$0.974^{+0.030}_{-0.028}$	$f\sigma_8(0.57)$	0.4668	$0.467^{+0.025}_{-0.023}$
$c_{100}$	0.99921	$0.9992^{+0.0020}_{-0.0019}$	$Y_{\text{P}}$	0.248	$0.242^{+0.084}_{-0.095}$	$\sigma_8(0.57)$	0.6026	$0.603^{+0.030}_{-0.030}$
$H_0$	68.25	$68.2^{+2.4}_{-2.4}$	$Y_{\text{P}}^{\text{BBN}}$	0.249	$0.243^{+0.084}_{-0.095}$	$\chi_{\text{lowTEB}}^2$	10493.28	10494.8 ( $\nu$ : 3.2)
$\Omega_\Lambda$	0.6978	$0.697^{+0.026}_{-0.028}$	Age/Gyr	13.779	$13.78^{+0.16}_{-0.16}$	$\chi_{\text{plikTE}}^2$	932.1	939.4 ( $\nu$ : 10.1)
$\Omega_m$	0.3022	$0.303^{+0.028}_{-0.026}$	$z_*$	1089.77	$1089.6^{+3.1}_{-3.1}$	$\chi_{\text{prior}}^2$	1.82	7.87 ( $\nu$ : 6.7)
$\Omega_m h^2$	0.14076	$0.1408^{+0.0037}_{-0.0037}$	$r_*$	144.99	$145.0^{+1.0}_{-1.0}$	$\chi_{\text{CMB}}^2$	11425.4	11434.2 ( $\nu$ : 9.6)
$\Omega_m h^3$	0.09607	$0.0960^{+0.0024}_{-0.0024}$	$100\theta_*$	1.04123	$1.0412^{+0.0013}_{-0.0014}$			

Best-fit  $\chi_{\text{eff}}^2 = 11427.17$ ;  $\Delta\chi_{\text{eff}}^2 = 0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11442.04$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.87$ ;  $R - 1 = 0.00935$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.28 ( $\Delta$  -0.22) plik\_dx11dr2\_HM\_v18\_TE: 932.07 ( $\Delta$  0.34)

### 23.16 base\_yhe\_plikHM\_EE\_lowTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02454	$0.0245^{+0.0028}_{-0.0027}$	$\sigma_8 \Omega_m^{0.5}$	0.416	$0.415^{+0.066}_{-0.063}$	$z_{\text{drag}}$	1066.0	$1065.6^{+7.8}_{-7.9}$
$\Omega_c h^2$	0.1133	$0.1131^{+0.0097}_{-0.0095}$	$\sigma_8 \Omega_m^{0.25}$	0.579	$0.577^{+0.063}_{-0.061}$	$r_{\text{drag}}$	146.34	$146.5^{+2.5}_{-2.4}$
$100\theta_{\text{MC}}$	1.04184	$1.0417^{+0.0047}_{-0.0046}$	$\sigma_8/h^{0.5}$	0.948	$0.946^{+0.092}_{-0.089}$	$k_{\text{D}}$	0.14112	$0.1413^{+0.0034}_{-0.0033}$
$\tau$	0.0704	$0.070^{+0.046}_{-0.043}$	$\langle d^2 \rangle^{1/2}$	2.346	$2.34^{+0.17}_{-0.15}$	$100\theta_{\text{D}}$	0.1605	$0.1602^{+0.0052}_{-0.0051}$
$Y_{\text{P}}$	0.295	$0.28^{+0.12}_{-0.12}$	$z_{\text{re}}$	8.85	$8.65^{+4.1}_{-4.4}$	$z_{\text{eq}}$	3294	$3288^{+190}_{-180}$
$\ln(10^{10} A_s)$	3.084	$3.083^{+0.098}_{-0.092}$	$10^9 A_s$	2.185	$2.18^{+0.21}_{-0.21}$	$k_{\text{eq}}$	0.01005	$0.01004^{+0.00059}_{-0.00054}$
$n_s$	0.9969	$0.997^{+0.037}_{-0.035}$	$10^9 A_s e^{-2\tau}$	1.898	$1.898^{+0.052}_{-0.052}$	$100\theta_{\text{eq}}$	0.8401	$0.842^{+0.039}_{-0.040}$
$y_{\text{cal}}$	0.99985	$0.99998^{+0.0049}_{-0.0049}$	$D_{40}$	1201	$1203^{+76}_{-73}$	$100\theta_{s,\text{eq}}$	0.4617	$0.462^{+0.019}_{-0.020}$
$A_{100}^{\text{dustEE}}$	0.0826	$0.083^{+0.012}_{-0.012}$	$D_{220}$	5950	$5958^{+420}_{-410}$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07395	$0.0741^{+0.0036}_{-0.0036}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0498	$0.050^{+0.010}_{-0.011}$	$D_{810}$	2566	$2570^{+100}_{-100}$	$H(0.57)$	95.65	$95.7^{+3.8}_{-3.5}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.099^{+0.064}_{-0.064}$	$D_{1420}$	827	$831^{+60}_{-59}$	$D_{\text{A}}(0.57)$	1327	$1327^{+82}_{-76}$
$A_{143}^{\text{dustEE}}$	0.1008	$0.101^{+0.014}_{-0.014}$	$D_{2000}$	232.9	$235^{+30}_{-30}$	$F_{\text{AP}}(0.57)$	0.6646	$0.665^{+0.016}_{-0.015}$
$A_{143 \times 217}^{\text{dustEE}}$	0.224	$0.224^{+0.093}_{-0.089}$	$n_{s,0.002}$	0.9969	$0.997^{+0.037}_{-0.035}$	$f\sigma_8(0.57)$	0.4551	$0.453^{+0.044}_{-0.042}$
$A_{217}^{\text{dustEE}}$	0.654	$0.65^{+0.26}_{-0.26}$	$Y_{\text{P}}$	0.295	$0.28^{+0.12}_{-0.12}$	$\sigma_8(0.57)$	0.6094	$0.608^{+0.038}_{-0.037}$
$H_0$	71.9	$72.0^{+5.8}_{-5.9}$	$Y_{\text{P}}^{\text{BBN}}$	0.296	$0.29^{+0.12}_{-0.12}$	$\chi_{\text{lowTEB}}^2$	10492.43	$10494.2 (\nu: 2.7)$
$\Omega_{\Lambda}$	0.732	$0.732^{+0.055}_{-0.059}$	Age/Gyr	13.522	$13.53^{+0.37}_{-0.37}$	$\chi_{\text{plikEE}}^2$	751.8	$759.7 (\nu: 10.8)$
$\Omega_{\text{m}}$	0.268	$0.268^{+0.059}_{-0.055}$	$z_*$	1088.8	$1088.6^{+5.3}_{-4.9}$	$\chi_{\text{prior}}^2$	3.96	$8.32 (\nu: 6.4)$
$\Omega_{\text{m}} h^2$	0.1385	$0.1382^{+0.0081}_{-0.0074}$	$r_*$	144.34	$144.4^{+2.2}_{-2.1}$	$\chi_{\text{CMB}}^2$	11244.2	$11254.0 (\nu: 11.8)$
$\Omega_{\text{m}} h^3$	0.0996	$0.0995^{+0.0058}_{-0.0055}$	$100\theta_*$	1.04059	$1.0406^{+0.0022}_{-0.0021}$			
$\sigma_8$	0.804	$0.802^{+0.057}_{-0.053}$	$D_{\text{A}}/\text{Gpc}$	13.871	$13.88^{+0.22}_{-0.21}$			

Best-fit  $\chi_{\text{eff}}^2 = 11248.14$ ;  $\Delta\chi_{\text{eff}}^2 = -0.64$ ;  $\bar{\chi}_{\text{eff}}^2 = 11262.26$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.45$ ;  $R - 1 = 0.00801$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10492.43 ( $\Delta -1.18$ ) plik\_dx11dr2\_HM\_v18\_EE: 751.75 ( $\Delta 0.55$ )

### 23.17 base\_yhe\_plikHM\_TE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02183	$0.02192^{+0.00072}_{-0.00069}$	$\sigma_8$	0.7956	$0.798^{+0.036}_{-0.034}$	$D_A/\text{Gpc}$	13.961	$13.942^{+0.097}_{-0.10}$
$\Omega_c h^2$	0.11973	$0.1198^{+0.0044}_{-0.0043}$	$\sigma_8 \Omega_m^{0.5}$	0.4550	$0.454^{+0.033}_{-0.033}$	$z_{\text{drag}}$	1055.85	$1056.8^{+4.3}_{-3.5}$
$100\theta_{\text{MC}}$	1.03773	$1.0385^{+0.0036}_{-0.0031}$	$\sigma_8 \Omega_m^{0.25}$	0.6017	$0.602^{+0.033}_{-0.032}$	$r_{\text{drag}}$	148.03	$147.8^{+1.0}_{-1.1}$
$\tau$	0.0519	$0.052^{+0.033}_{-0.040}$	$\sigma_8/h^{0.5}$	0.9798	$0.980^{+0.049}_{-0.047}$	$k_D$	0.14301	$0.1424^{+0.0028}_{-0.0032}$
$Y_P$	0.152	< 0.265	$\langle d^2 \rangle^{1/2}$	2.492	$2.48^{+0.13}_{-0.14}$	$100\theta_D$	0.15735	$0.1583^{+0.0038}_{-0.0032}$
$\ln(10^{10} A_s)$	3.030	$3.029^{+0.077}_{-0.082}$	$z_{\text{re}}$	7.17	$7.10^{+3.5}_{-4.0}$	$z_{\text{eq}}$	3383	$3386^{+98}_{-95}$
$n_s$	0.9384	$0.945^{+0.037}_{-0.034}$	$10^9 A_s$	2.069	$2.07^{+0.16}_{-0.17}$	$k_{\text{eq}}$	0.010325	$0.01034^{+0.00030}_{-0.00029}$
$y_{\text{cal}}$	1.00014	$0.99998^{+0.0049}_{-0.0049}$	$10^9 A_s e^{-2\tau}$	1.8648	$1.865^{+0.039}_{-0.038}$	$100\theta_{\text{eq}}$	0.8128	$0.813^{+0.020}_{-0.019}$
$A_{100}^{\text{dustTE}}$	0.134	$0.137^{+0.073}_{-0.074}$	$D_{40}$	1286	$1271^{+83}_{-87}$	$100\theta_{s,\text{eq}}$	0.4495	$0.450^{+0.010}_{-0.0096}$
$A_{100 \times 143}^{\text{dustTE}}$	0.140	$0.134^{+0.057}_{-0.058}$	$D_{220}$	5796	$5766^{+140}_{-150}$	$r_{\text{drag}}/D_V(0.57)$	0.07072	$0.0709^{+0.0019}_{-0.0018}$
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.31^{+0.16}_{-0.17}$	$D_{810}$	2559	$2547^{+64}_{-68}$	$H(0.57)$	91.82	$92.1^{+1.6}_{-1.4}$
$A_{143}^{\text{dustTE}}$	0.159	$0.16^{+0.11}_{-0.11}$	$D_{1420}$	839.6	$832^{+39}_{-41}$	$D_A(0.57)$	1414.0	$1409^{+38}_{-41}$
$A_{143 \times 217}^{\text{dustTE}}$	0.341	$0.34^{+0.16}_{-0.16}$	$D_{2000}$	243.8	$240^{+18}_{-19}$	$F_{\text{AP}}(0.57)$	0.6799	$0.6793^{+0.0081}_{-0.0087}$
$A_{217}^{\text{dustTE}}$	1.65	$1.65^{+0.51}_{-0.50}$	$n_{s,0.002}$	0.9384	$0.945^{+0.037}_{-0.034}$	$f\sigma_8(0.57)$	0.4663	$0.467^{+0.023}_{-0.022}$
$c_{100}$	0.99935	$0.9992^{+0.0019}_{-0.0020}$	$Y_P$	0.152	$0.174^{+0.098}_{-0.084}$	$\sigma_8(0.57)$	0.5883	$0.591^{+0.027}_{-0.026}$
$H_0$	65.94	$66.3^{+2.8}_{-2.6}$	$Y_P^{\text{BBN}}$	0.153	$0.175^{+0.098}_{-0.084}$	$\chi_{\text{lowEB}}^2$	5430.72	$5431.7 (\nu: 0.8)$
$\Omega_\Lambda$	0.6729	$0.675^{+0.034}_{-0.033}$	Age/Gyr	13.948	$13.91^{+0.16}_{-0.18}$	$\chi_{\text{plikTE}}^2$	929.3	$937.0 (\nu: 8.3)$
$\Omega_m$	0.3271	$0.325^{+0.033}_{-0.034}$	$z_*$	1087.15	$1087.9^{+3.0}_{-2.6}$	$\chi_{\text{prior}}^2$	1.83	$7.78 (\nu: 6.5)$
$\Omega_m h^2$	0.14221	$0.1424^{+0.0041}_{-0.0040}$	$r_*$	145.22	$145.1^{+1.0}_{-1.0}$	$\chi_{\text{CMB}}^2$	6360.0	$6368.7 (\nu: 9.1)$
$\Omega_m h^3$	0.09377	$0.0943^{+0.0026}_{-0.0022}$	$100\theta_*$	1.04018	$1.0404^{+0.0015}_{-0.0014}$			

Best-fit  $\chi_{\text{eff}}^2 = 6361.86$ ;  $\Delta\chi_{\text{eff}}^2 = -2.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 6376.48$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.37$ ;  $R - 1 = 0.00468$

$\chi_{\text{eff}}^2$ : CMB - lowL\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.72 ( $\Delta$  -0.05) plik\_dx11dr2\_HM.v18\_TE: 929.32 ( $\Delta$  -1.92)

### 23.18 base\_yhe\_plikHM\_EE\_lowEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02277	$0.0235^{+0.0031}_{-0.0028}$	$\sigma_8 \Omega_m^{0.5}$	0.437	$0.430^{+0.073}_{-0.072}$	$z_{\text{drag}}$	1057.7	$1060.7^{+9.1}_{-8.6}$
$\Omega_c h^2$	0.1159	$0.115^{+0.010}_{-0.0099}$	$\sigma_8 \Omega_m^{0.25}$	0.588	$0.583^{+0.065}_{-0.062}$	$r_{\text{drag}}$	148.00	$147.2^{+2.2}_{-2.3}$
$100\theta_{\text{MC}}$	1.03647	$1.0382^{+0.0053}_{-0.0046}$	$\sigma_8/h^{0.5}$	0.962	$0.955^{+0.093}_{-0.091}$	$k_D$	0.14393	$0.1432^{+0.0035}_{-0.0038}$
$\tau$	0.0575	$0.058^{+0.039}_{-0.041}$	$\langle d^2 \rangle^{1/2}$	2.478	$2.43^{+0.21}_{-0.21}$	$100\theta_D$	0.1559	$0.1574^{+0.0053}_{-0.0047}$
$Y_P$	0.146	$< 0.317$	$z_{\text{re}}$	7.42	$7.39^{+3.6}_{-3.9}$	$z_{\text{eq}}$	3314	$3318^{+190}_{-190}$
$\ln(10^{10} A_s)$	3.060	$3.062^{+0.085}_{-0.080}$	$10^9 A_s$	2.133	$2.14^{+0.18}_{-0.18}$	$k_{\text{eq}}$	0.01012	$0.01013^{+0.00059}_{-0.00057}$
$n_s$	0.943	$0.960^{+0.053}_{-0.050}$	$10^9 A_s e^{-2\tau}$	1.901	$1.906^{+0.051}_{-0.051}$	$100\theta_{\text{eq}}$	0.8270	$0.830^{+0.043}_{-0.042}$
$y_{\text{cal}}$	0.99975	$1.0000^{+0.0048}_{-0.0048}$	$D_{40}$	1318	$1287^{+110}_{-120}$	$100\theta_{s,\text{eq}}$	0.4561	$0.457^{+0.020}_{-0.020}$
$A_{100}^{\text{dustEE}}$	0.0794	$0.080^{+0.012}_{-0.012}$	$D_{220}$	6063	$6059^{+420}_{-430}$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.0724^{+0.0042}_{-0.0039}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0463	$0.047^{+0.011}_{-0.011}$	$D_{810}$	2626	$2609^{+96}_{-100}$	$H(0.57)$	92.61	$93.7^{+4.2}_{-4.0}$
$A_{100 \times 217}^{\text{dustEE}}$	0.103	$0.099^{+0.064}_{-0.065}$	$D_{1420}$	867	$854^{+53}_{-60}$	$D_A(0.57)$	1390	$1369^{+95}_{-95}$
$A_{143}^{\text{dustEE}}$	0.0974	$0.098^{+0.015}_{-0.015}$	$D_{2000}$	253.8	$247^{+25}_{-27}$	$F_{\text{AP}}(0.57)$	0.6742	$0.672^{+0.020}_{-0.017}$
$A_{143 \times 217}^{\text{dustEE}}$	0.220	$0.223^{+0.092}_{-0.092}$	$n_{s,0.002}$	0.943	$0.960^{+0.053}_{-0.050}$	$f\sigma_8(0.57)$	0.4583	$0.456^{+0.042}_{-0.043}$
$A_{217}^{\text{dustEE}}$	0.642	$0.64^{+0.26}_{-0.25}$	$Y_P$	0.146	$0.20^{+0.13}_{-0.11}$	$\sigma_8(0.57)$	0.5903	$0.594^{+0.032}_{-0.029}$
$H_0$	67.6	$69.1^{+6.9}_{-6.5}$	$Y_P^{\text{BBN}}$	0.147	$0.20^{+0.13}_{-0.11}$	$\chi_{\text{lowEB}}^2$	5430.78	$5431.8 (\nu: 1.1)$
$\Omega_\Lambda$	0.695	$0.705^{+0.071}_{-0.076}$	Age/Gyr	13.873	$13.74^{+0.41}_{-0.46}$	$\chi_{\text{plikEE}}^2$	750.0	$758.2 (\nu: 9.8)$
$\Omega_m$	0.305	$0.295^{+0.076}_{-0.071}$	$z_*$	1085.58	$1086.6^{+4.9}_{-4.6}$	$\chi_{\text{prior}}^2$	3.17	$7.61 (\nu: 5.8)$
$\Omega_m h^2$	0.1393	$0.1395^{+0.0081}_{-0.0078}$	$r_*$	145.49	$144.9^{+1.8}_{-1.9}$	$\chi_{\text{CMB}}^2$	6180.8	$6190.0 (\nu: 10.6)$
$\Omega_m h^3$	0.0943	$0.0963^{+0.0063}_{-0.0058}$	$100\theta_*$	1.03885	$1.0394^{+0.0025}_{-0.0022}$			
$\sigma_8$	0.7912	$0.792^{+0.050}_{-0.049}$	$D_A/\text{Gpc}$	14.005	$13.94^{+0.19}_{-0.19}$			

Best-fit  $\chi_{\text{eff}}^2 = 6183.95$ ;  $\Delta\chi_{\text{eff}}^2 = -0.94$ ;  $\bar{\chi}_{\text{eff}}^2 = 6197.61$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.35$ ;  $R - 1 = 0.01270$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.78 ( $\Delta$  0.06) plik\_dx11dr2\_HM\_v18\_EE: 750.00 ( $\Delta$  -0.75)

### 23.19 base\_yhe\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	95% limits	Parameter	Best fit	95% limits	Parameter	Best fit	95% limits
$\Omega_b h^2$	0.02223	$0.02226^{+0.00060}_{-0.00059}$	$\Omega_\Lambda$	0.6844	$0.685^{+0.027}_{-0.029}$	$100\theta_*$	1.04107	$1.04112^{+0.00097}_{-0.00098}$
$\Omega_c h^2$	0.11992	$0.1198^{+0.0043}_{-0.0042}$	$\Omega_m$	0.3156	$0.315^{+0.029}_{-0.027}$	$D_A/\text{Gpc}$	13.885	$13.884^{+0.088}_{-0.089}$
$100\theta_{\text{MC}}$	1.04093	$1.0411^{+0.0017}_{-0.0017}$	$\Omega_m h^2$	0.14279	$0.1427^{+0.0040}_{-0.0039}$	$z_{\text{drag}}$	1059.67	$1059.9^{+2.3}_{-2.3}$
$\tau$	0.0726	$0.074^{+0.025}_{-0.023}$	$\Omega_m h^3$	0.09605	$0.0962^{+0.0015}_{-0.0015}$	$r_{\text{drag}}$	147.27	$147.25^{+0.97}_{-0.98}$
$Y_{\text{P}}$	0.2474	$0.250^{+0.039}_{-0.040}$	$\sigma_8$	0.8267	$0.828^{+0.023}_{-0.023}$	$k_{\text{D}}$	0.14049	$0.1404^{+0.0014}_{-0.0014}$
$\ln(10^{10} A_s)$	3.0804	$3.084^{+0.050}_{-0.047}$	$\sigma_8 \Omega_m^{0.5}$	0.4644	$0.464^{+0.027}_{-0.026}$	$100\theta_{\text{D}}$	0.16105	$0.1612^{+0.0015}_{-0.0015}$
$n_s$	0.9660	$0.967^{+0.022}_{-0.021}$	$\sigma_8 \Omega_m^{0.25}$	0.6196	$0.620^{+0.024}_{-0.023}$	$z_{\text{eq}}$	3397	$3395^{+95}_{-94}$
$y_{\text{cal}}$	1.00048	$1.0004^{+0.0049}_{-0.0050}$	$\sigma_8/h^{0.5}$	1.0079	$1.009^{+0.034}_{-0.033}$	$k_{\text{eq}}$	0.010368	$0.01036^{+0.00029}_{-0.00029}$
$A_{217}^{\text{CIB}}$	67.4	$64^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.488	$2.488^{+0.085}_{-0.081}$	$100\theta_{\text{eq}}$	0.8138	$0.814^{+0.018}_{-0.018}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	9.50	$9.63^{+2.2}_{-2.2}$	$100\theta_{\text{s,eq}}$	0.4498	$0.4501^{+0.0093}_{-0.0093}$
$A_{143}^{\text{tSZ}}$	7.12	$5.00^{+3.8}_{-3.8}$	$10^9 A_s$	2.177	$2.19^{+0.11}_{-0.10}$	$r_{\text{drag}}/D_V(0.57)$	0.07136	$0.0714^{+0.0016}_{-0.0015}$
$A_{100}^{\text{PS}}$	254	$260^{+60}_{-60}$	$10^9 A_s e^{-2\tau}$	1.8828	$1.884^{+0.030}_{-0.030}$	$H(0.57)$	92.87	$93.0^{+1.1}_{-1.1}$
$A_{143}^{\text{PS}}$	39.8	$45^{+20}_{-20}$	$D_{40}$	1234.0	$1233^{+41}_{-40}$	$D_A(0.57)$	1392.2	$1390^{+30}_{-30}$
$A_{143 \times 217}^{\text{PS}}$	33	$40^{+20}_{-20}$	$D_{220}$	5717	$5718^{+80}_{-81}$	$F_{\text{AP}}(0.57)$	0.6771	$0.6768^{+0.0073}_{-0.0070}$
$A_{217}^{\text{PS}}$	97.6	$97^{+20}_{-20}$	$D_{810}$	2536.1	$2536^{+28}_{-28}$	$f\sigma_8(0.57)$	0.4817	$0.482^{+0.016}_{-0.016}$
$A^{\text{kSZ}}$	0.0	—	$D_{1420}$	814.9	$814^{+10}_{-10}$	$\sigma_8(0.57)$	0.6140	$0.615^{+0.018}_{-0.017}$
$A_{100}^{\text{dustTT}}$	7.48	$7.50^{+3.7}_{-3.7}$	$D_{2000}$	230.18	$229.8^{+4.7}_{-4.7}$	$f_{2000}^{143}$	30.1	$31^{+7}_{-7}$
$A_{143}^{\text{dustTT}}$	9.08	$9.04^{+3.7}_{-3.6}$	$n_{\text{s},0.002}$	0.9660	$0.967^{+0.022}_{-0.021}$	$f_{2000}^{143 \times 217}$	32.7	$33^{+6}_{-6}$
$A_{143 \times 217}^{\text{dustTT}}$	17.6	$17.2^{+8.2}_{-8.2}$	$Y_{\text{P}}$	0.2474	$0.250^{+0.039}_{-0.040}$	$f_{2000}^{217}$	106.3	$106.6^{+5.1}_{-5.1}$
$A_{217}^{\text{dustTT}}$	82.1	$82^{+10}_{-10}$	$Y_{\text{P}}^{\text{BBN}}$	0.2487	$0.252^{+0.039}_{-0.040}$	$\chi_{\text{WMAPTEB}}^2$	19734.0	19735.2 ( $\nu: 3.4$ )
$c_{100}$	0.99792	$0.9979^{+0.0016}_{-0.0015}$	Age/Gyr	13.812	$13.80^{+0.11}_{-0.11}$	$\chi_{\text{plik}}^2$	764.1	778.5 ( $\nu: 17.1$ )
$c_{217}$	0.99597	$0.9960^{+0.0029}_{-0.0028}$	$z_*$	1090.18	$1090.3^{+1.3}_{-1.3}$	$\chi_{\text{prior}}^2$	2.07	7.42 ( $\nu: 6.4$ )
$H_0$	67.26	$67.4^{+2.2}_{-2.1}$	$r_*$	144.55	$144.54^{+0.94}_{-0.96}$	$\chi_{\text{CMB}}^2$	20498.1	20513.7 ( $\nu: 16.1$ )

Best-fit  $\chi_{\text{eff}}^2 = 20500.13$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 20521.09$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.96$ ;  $R - 1 = 0.01182$

$\chi_{\text{eff}}^2$ : CMB - bflike\_WMAP353ggf\_LFI312\_nw8: 19733.98 ( $\Delta -0.17$ ) plik\_dx11dr2\_HM\_v18\_TT: 764.09 ( $\Delta 0.01$ )

## 23.20 base\_yhe\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02235^{+0.00058}_{-0.00058}$	$\Omega_m$	$0.304^{+0.023}_{-0.022}$	$z_{\text{drag}}$	$1060.0^{+2.4}_{-2.2}$
$\Omega_c h^2$	$0.1181^{+0.0034}_{-0.0034}$	$\Omega_m h^2$	$0.1411^{+0.0031}_{-0.0031}$	$r_{\text{drag}}$	$147.59^{+0.84}_{-0.83}$
$100\theta_{\text{MC}}$	$1.0413^{+0.0016}_{-0.0016}$	$\Omega_m h^3$	$0.0962^{+0.0015}_{-0.0015}$	$k_D$	$0.1401^{+0.0013}_{-0.0014}$
$\tau$	$0.070^{+0.024}_{-0.023}$	$\sigma_8$	$0.819^{+0.018}_{-0.018}$	$100\theta_D$	$0.1612^{+0.0015}_{-0.0015}$
$Y_P$	$0.252^{+0.039}_{-0.038}$	$\sigma_8 \Omega_m^{0.5}$	$0.451^{+0.017}_{-0.017}$	$z_{\text{eq}}$	$3357^{+75}_{-75}$
$\ln(10^{10} A_s)$	$3.072^{+0.047}_{-0.044}$	$\sigma_8 \Omega_m^{0.25}$	$0.608^{+0.015}_{-0.015}$	$k_{\text{eq}}$	$0.01025^{+0.00023}_{-0.00023}$
$n_s$	$0.971^{+0.021}_{-0.019}$	$\sigma_8/h^{0.5}$	$0.992^{+0.022}_{-0.021}$	$100\theta_{\text{eq}}$	$0.822^{+0.015}_{-0.015}$
$y_{\text{cal}}$	$1.0001^{+0.0050}_{-0.0048}$	$\langle d^2 \rangle^{1/2}$	$2.446^{+0.054}_{-0.052}$	$100\theta_{s,\text{eq}}$	$0.4538^{+0.0077}_{-0.0075}$
$A_{217}^{\text{CIB}}$	$65^{+10}_{-10}$	$z_{\text{re}}$	$9.22^{+2.1}_{-2.1}$	$r_{\text{drag}}/D_V(0.57)$	$0.0720^{+0.0013}_{-0.0013}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.16^{+0.10}_{-0.093}$	$H(0.57)$	$93.3^{+1.1}_{-0.99}$
$A_{143}^{\text{tSZ}}$	$4.99^{+3.9}_{-3.8}$	$10^9 A_s e^{-2\tau}$	$1.875^{+0.027}_{-0.027}$	$D_A(0.57)$	$1380^{+26}_{-26}$
$A_{100}^{\text{PS}}$	$261^{+60}_{-50}$	$D_{40}$	$1221^{+35}_{-36}$	$F_{\text{AP}}(0.57)$	$0.6742^{+0.0059}_{-0.0058}$
$A_{143}^{\text{PS}}$	$45^{+20}_{-20}$	$D_{220}$	$5717^{+81}_{-81}$	$f\sigma_8(0.57)$	$0.474^{+0.011}_{-0.011}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+20}_{-20}$	$D_{810}$	$2533^{+28}_{-28}$	$\sigma_8(0.57)$	$0.611^{+0.017}_{-0.015}$
$A_{217}^{\text{PS}}$	$96^{+20}_{-20}$	$D_{1420}$	$814^{+11}_{-10}$	$f_{2000}^{143}$	$31^{+7}_{-7}$
$A^{\text{kSZ}}$	—	$D_{2000}$	$229.6^{+4.8}_{-4.6}$	$f_{2000}^{143 \times 217}$	$33^{+6}_{-5}$
$A_{100}^{\text{dustTT}}$	$7.60^{+3.7}_{-3.6}$	$n_{s,0.002}$	$0.971^{+0.021}_{-0.019}$	$f_{2000}^{217}$	$106.7^{+5.2}_{-5.0}$
$A_{143}^{\text{dustTT}}$	$9.17^{+3.7}_{-3.6}$	$Y_P$	$0.252^{+0.039}_{-0.038}$	$\chi_{\text{lensing}}^2$	$9.91 (\nu: 1.2)$
$A_{143 \times 217}^{\text{dustTT}}$	$17.3^{+8.0}_{-8.2}$	$Y_P^{\text{BBN}}$	$0.253^{+0.039}_{-0.038}$	$\chi_{\text{WMAPTEB}}^2$	$19733.7 (\nu: 2.1)$
$A_{217}^{\text{dustTT}}$	$82^{+10}_{-10}$	Age/Gyr	$13.78^{+0.11}_{-0.11}$	$\chi_{\text{plik}}^2$	$780.3 (\nu: 28.9)$
$c_{100}$	$0.9979^{+0.0015}_{-0.0015}$	$z_*$	$1090.1^{+1.2}_{-1.3}$	$\chi_{\text{prior}}^2$	$7.61 (\nu: 6.4)$
$c_{217}$	$0.9960^{+0.0029}_{-0.0028}$	$r_*$	$144.91^{+0.80}_{-0.77}$	$\chi_{\text{CMB}}^2$	$20523.9 (\nu: 29.5)$
$H_0$	$68.1^{+1.9}_{-1.9}$	$100\theta_*$	$1.04135^{+0.00089}_{-0.00087}$		
$\Omega_\Lambda$	$0.696^{+0.022}_{-0.023}$	$D_A/\text{Gpc}$	$13.915^{+0.075}_{-0.075}$		

$$\bar{\chi}_{\text{eff}}^2 = 20531.55; \Delta \bar{\chi}_{\text{eff}}^2 = 0.79; R - 1 = 0.02408$$



### 23.21 base\_yhe\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	95% limits	Parameter	95% limits	Parameter	95% limits
$\Omega_b h^2$	$0.02232^{+0.00048}_{-0.00049}$	$\Omega_m h^2$	$0.1421^{+0.0025}_{-0.0024}$	$k_D$	$0.1402^{+0.0011}_{-0.0011}$
$\Omega_c h^2$	$0.1191^{+0.0025}_{-0.0025}$	$\Omega_m h^3$	$0.0962^{+0.0015}_{-0.0014}$	$100\theta_D$	$0.1612^{+0.0014}_{-0.0014}$
$100\theta_{MC}$	$1.0412^{+0.0014}_{-0.0014}$	$\sigma_8$	$0.827^{+0.023}_{-0.022}$	$z_{eq}$	$3380^{+59}_{-58}$
$\tau$	$0.076^{+0.023}_{-0.022}$	$\sigma_8 \Omega_m^{0.5}$	$0.461^{+0.018}_{-0.017}$	$k_{eq}$	$0.01032^{+0.00018}_{-0.00018}$
$Y_P$	$0.253^{+0.036}_{-0.037}$	$\sigma_8 \Omega_m^{0.25}$	$0.617^{+0.019}_{-0.019}$	$100\theta_{eq}$	$0.817^{+0.011}_{-0.011}$
$\ln(10^{10} A_s)$	$3.086^{+0.048}_{-0.046}$	$\sigma_8/h^{0.5}$	$1.005^{+0.028}_{-0.028}$	$100\theta_{s,eq}$	$0.4516^{+0.0055}_{-0.0055}$
$n_s$	$0.970^{+0.016}_{-0.016}$	$\langle d^2 \rangle^{1/2}$	$2.478^{+0.066}_{-0.064}$	$r_{drag}/D_V(0.57)$	$0.07168^{+0.00086}_{-0.00085}$
$y_{cal}$	$1.0005^{+0.0050}_{-0.0049}$	$z_{re}$	$9.75^{+2.1}_{-2.1}$	$H(0.57)$	$93.10^{+0.73}_{-0.70}$
$A_{217}^{CIB}$	$65^{+10}_{-10}$	$10^9 A_s$	$2.19^{+0.11}_{-0.11}$	$D_A(0.57)$	$1386^{+17}_{-18}$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.882^{+0.030}_{-0.029}$	$F_{AP}(0.57)$	$0.6756^{+0.0039}_{-0.0038}$
$A_{143}^{tSZ}$	$4.97^{+3.8}_{-3.8}$	$D_{40}$	$1228^{+33}_{-32}$	$f\sigma_8(0.57)$	$0.481^{+0.014}_{-0.014}$
$A_{100}^{PS}$	$261^{+60}_{-60}$	$D_{220}$	$5721^{+80}_{-81}$	$\sigma_8(0.57)$	$0.616^{+0.017}_{-0.017}$
$A_{143}^{PS}$	$45^{+20}_{-20}$	$D_{810}$	$2536^{+29}_{-28}$	$f_{2000}^{143}$	$31^{+7}_{-7}$
$A_{143 \times 217}^{PS}$	$40^{+20}_{-20}$	$D_{1420}$	$814^{+10}_{-10}$	$f_{2000}^{143 \times 217}$	$33^{+6}_{-5}$
$A_{217}^{PS}$	$97^{+20}_{-20}$	$D_{2000}$	$229.8^{+4.8}_{-4.8}$	$f_{2000}^{217}$	$106.8^{+5.1}_{-5.1}$
$A^{kSZ}$	—	$n_{s,0.002}$	$0.970^{+0.016}_{-0.016}$	$\chi_{WMAPTEB}^2$	$19734.6 (\nu: 2.9)$
$A_{100}^{dustTT}$	$7.51^{+3.7}_{-3.7}$	$Y_P$	$0.253^{+0.036}_{-0.037}$	$\chi_{plik}^2$	$778.5 (\nu: 26.5)$
$A_{143}^{dustTT}$	$9.07^{+3.7}_{-3.6}$	$Y_P^{BBN}$	$0.254^{+0.036}_{-0.037}$	$\chi_{6DF}^2$	$0.061 (\nu: 0.0)$
$A_{143 \times 217}^{dustTT}$	$17.2^{+8.1}_{-8.0}$	Age/Gyr	$13.789^{+0.083}_{-0.085}$	$\chi_{MGS}^2$	$1.38 (\nu: 0.2)$
$A_{217}^{dustTT}$	$82^{+10}_{-10}$	$z_*$	$1090.2^{+1.3}_{-1.3}$	$\chi_{DR11CMass}^2$	$2.90 (\nu: 0.3)$
$c_{100}$	$0.9979^{+0.0016}_{-0.0015}$	$r_*$	$144.66^{+0.73}_{-0.76}$	$\chi_{DR11LOWZ}^2$	$0.73 (\nu: 0.2)$
$c_{217}$	$0.9960^{+0.0029}_{-0.0028}$	$100\theta_*$	$1.04123^{+0.00084}_{-0.00082}$	$\chi_{prior}^2$	$7.46 (\nu: 6.4)$
$H_0$	$67.7^{+1.2}_{-1.2}$	$D_A/Gpc$	$13.894^{+0.073}_{-0.073}$	$\chi_{CMB}^2$	$20513.1 (\nu: 26.3)$
$\Omega_\Lambda$	$0.690^{+0.015}_{-0.016}$	$z_{drag}$	$1060.0^{+2.1}_{-2.0}$	$\chi_{BAO}^2$	$5.07 (\nu: 0.5)$
$\Omega_m$	$0.310^{+0.016}_{-0.015}$	$r_{drag}$	$147.35^{+0.83}_{-0.85}$		

$$\bar{\chi}_{eff}^2 = 20525.63; \Delta\bar{\chi}_{eff}^2 = 0.74; R - 1 = 0.01591$$