## WMAP Cosmological Parameters

### Model: lcdm+nrel

### Data: wmap9+snls3+h0

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|---|---|---|---|
| $10^9\Delta_\mathcal{R}^2$ | $2.358^{+0.089}_{-0.090}$ | $H_0$ | $73.9 \pm 2.3$ km/s/Mpc |
| $N_\mathrm{eff}$ | $3.68 \pm 0.67$ | $\ell(\ell+1)C_{220}/(2\pi)$ | $5753 \pm 34$ $\mu$K$^2$ |
| $d_A(z_\mathrm{eq})$ | $13739^{+557}_{-556}$ Mpc | $d_A(z_*)$ | $13581^{+551}_{-550}$ Mpc |
| $D_v(z=0.57)/r_s(z_d)$ | $12.88^{+0.22}_{-0.23}$ | $\eta$ | $(6.23 \pm 0.13) \times 10^{-10}$ |
| $k_\mathrm{eq}$ | $0.01013 \pm 0.00054$ | $\ell_\mathrm{eq}$ | $137.3 \pm 2.7$ |
| $\ell_*$ | $302.9 \pm 1.1$ | $n_b$ | $(2.559^{+0.053}_{-0.054}) \times 10^{-7}$ cm$^{-3}$ |
| $n_s$ | $0.985 \pm 0.012$ | $\Omega_b$ | $0.0419 \pm 0.0027$ |
| $\Omega_b h^2$ | $0.02278 \pm 0.00048$ | $\Omega_c$ | $0.223 \pm 0.020$ |
| $\Omega_c h^2$ | $0.122 \pm 0.013$ | $\Omega_\Lambda$ | $0.735 \pm 0.020$ |
| $\Omega_m$ | $0.265 \pm 0.020$ | $\Omega_m h^2$ | $0.145 \pm 0.013$ |
| $r_s(z_d)$ | $147.1 \pm 6.3$ Mpc | $r_s(z_d)/D_v(z=0.106)$ | $0.3588 \pm 0.0083$ |
| $r_s(z_d)/D_v(z=0.2)$ | $0.1956 \pm 0.0043$ | $r_s(z_d)/D_v(z=0.35)$ | $0.1173 \pm 0.0023$ |
| $r_s(z_d)/D_v(z=0.44)$ | $0.0962 \pm 0.0018$ | $r_s(z_d)/D_v(z=0.54)$ | $0.0811 \pm 0.0014$ |
| $r_s(z_d)/D_v(z=0.57)$ | $0.0777 \pm 0.0014$ | $r_s(z_d)/D_v(z=0.6)$ | $0.0745 \pm 0.0013$ |
| $r_s(z_d)/D_v(z=0.73)$ | $0.0642^{+0.0011}_{-0.0010}$ | $r_s(z_*)$ | $140.9 \pm 6.1$ |
| $R$ | $1.719 \pm 0.013$ | $\sigma_8$ | $0.838 \pm 0.039$ |
| $\sigma_8\Omega_m^{0.5}$ | $0.432 \pm 0.034$ | $\sigma_8\Omega_m^{0.6}$ | $0.378 \pm 0.032$ |
| $\alpha_\mathrm{SNLS}$ | $1.43 \pm 0.11$ | $\beta_\mathrm{SNLS}$ | $3.26 \pm 0.11$ |
| $A_\mathrm{SZ}$ | $< 2.0$ (95% CL) | $t_0$ | $13.22^{+0.46}_{-0.47}$ Gyr |
| $\tau$ | $0.091 \pm 0.014$ | $\theta_*$ | $0.010372 \pm 0.000037$ |
| $\theta_*$ | $0.5943 \pm 0.0021$ ° | $\tau_\mathrm{rec}$ | $275 \pm 12$ |
| $t_\mathrm{reion}$ | $421^{+66}_{-67}$ Myr | $t_*$ | $364436^{+16698}_{-16654}$ yr |
| $z_d$ | $1021.6 \pm 1.3$ | $z_\mathrm{eq}$ | $3189 \pm 82$ |
| $z_\mathrm{rec}$ | $1088.8 \pm 1.4$ | $z_\mathrm{reion}$ | $11.0 \pm 1.2$ |
| $z_*$ | $1091.5 \pm 1.5$ | | |