

**Table 1.** Median values and 68% confidence interval for OGLE-TR-1044.

Parameter	Units	Values
Stellar Parameters:		
$M_*$	Mass ( $M_\odot$ )	$1.010^{+0.070}_{-0.071}$
$R_*$	Radius ( $R_\odot$ )	$1.015^{+0.030}_{-0.029}$
$R_{*,SED}$	Radius <sup>1</sup> ( $R_\odot$ )	$1.074^{+0.037}_{-0.035}$
$L_*$	Luminosity ( $L_\odot$ )	$0.900^{+0.096}_{-0.084}$
$F_{Bol}$	Bolometric Flux (cgs)	$0.0000000000445^{+0.00000000000037}_{-0.00000000000033}$
$\rho_*$	Density (cgs)	$1.36 \pm 0.12$
$\log g$	Surface gravity (cgs)	$4.430^{+0.030}_{-0.033}$
$T_{eff}$	Effective Temperature (K)	$5580^{+130}_{-120}$
$T_{eff,SED}$	Effective Temperature <sup>1</sup> (K)	$5430 \pm 160$
[Fe/H]	Metallicity (dex)	$0.34^{+0.14}_{-0.16}$
[Fe/H] <sub>0</sub>	Initial Metallicity <sup>2</sup>	$0.32^{+0.11}_{-0.14}$
Age	Age (Gyr)	$5.5^{+4.4}_{-3.5}$
EEP	Equal Evolutionary Phase <sup>3</sup>	$364^{+36}_{-33}$
$A_V$	V-band extinction (mag)	$0.38 \pm 0.12$
$\sigma_{SED}$	SED photometry error scaling	$10.1^{+1.6}_{-1.3}$
$\varpi$	Parallax (mas)	$1.244 \pm 0.033$
$d$	Distance (pc)	$803^{+22}_{-21}$
Planetary Parameters:		
		b
$P$	Period (days)	$5.1944382^{+0.0000084}_{-0.0000085}$
$R_p$	Radius ( $R_J$ )	$2.017^{+0.067}_{-0.066}$
$M_p$	Mass <sup>4</sup> ( $M_J$ )	$0.4045^{+0.0070}_{-0.014}$
$T_C$	Time of conjunction <sup>5</sup> (BJD <sub>TDB</sub> )	$2455380.3003 \pm 0.0024$
$T_T$	Time of minimum projected separation <sup>6</sup> (BJD <sub>TDB</sub> )	$2455380.3003 \pm 0.0024$
$T_0$	Optimal conjunction Time <sup>7</sup> (BJD <sub>TDB</sub> )	$2456408.7990 \pm 0.0017$
$a$	Semi-major axis (AU)	$0.0589^{+0.0013}_{-0.0014}$
$i$	Inclination (Degrees)	$89.46^{+0.37}_{-0.53}$
$T_{eq}$	Equilibrium temperature <sup>8</sup> (K)	$1117^{+24}_{-22}$
$\tau_{circ}$	Tidal circularization timescale (Gyr)	$0.0465^{+0.0078}_{-0.0067}$
$K$	RV semi-amplitude <sup>4</sup> (m/s)	$46.8^{+2.5}_{-2.4}$
$R_p/R_*$	Radius of planet in stellar radii	$0.2043 \pm 0.0052$
$a/R_*$	Semi-major axis in stellar radii	$12.49^{+0.36}_{-0.38}$
$\delta$	$(R_p/R_*)^2$	$0.0417 \pm 0.0021$
$\delta_I$	Transit depth in I (fraction)	$0.0497 \pm 0.0025$
$\delta_V$	Transit depth in V (fraction)	$0.0564^{+0.0034}_{-0.0033}$
$\tau$	Ingress/egress transit duration (days)	$0.02740^{+0.0013}_{-0.00097}$
$T_{14}$	Total transit duration (days)	$0.1584^{+0.0043}_{-0.0041}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
$T_{FWHM}$ ..	FWHM transit duration (days) .....	0.1308 <sup>+0.0038</sup> <sub>-0.0036</sub>	
$b$ .....	Transit Impact parameter .....	0.117 <sup>+0.11</sup> <sub>-0.081</sub>	
$\delta_{S,2.5\mu m}$ ..	Blackbody eclipse depth at 2.5 $\mu m$ (ppm) .....	438 <sup>+42</sup> <sub>-38</sub>	
$\delta_{S,5.0\mu m}$ ..	Blackbody eclipse depth at 5.0 $\mu m$ (ppm) .....	2310 <sup>+140</sup> <sub>-130</sub>	
$\delta_{S,7.5\mu m}$ ..	Blackbody eclipse depth at 7.5 $\mu m$ (ppm) .....	3730 <sup>+200</sup> <sub>-190</sub>	
$\rho_P$ .....	Density <sup>4</sup> (cgs) .....	0.0606 <sup>+0.0064</sup> <sub>-0.0058</sub>	
$\log g_P$ ..	Surface gravity <sup>4</sup> .....	2.388 $\pm$ 0.030	
$\Theta$ .....	Safronov Number .....	0.0232 <sup>+0.0016</sup> <sub>-0.0015</sub>	
$\langle F \rangle$ .....	Incident Flux (10 <sup>9</sup> erg s <sup>-1</sup> cm <sup>-2</sup> ) .....	0.353 <sup>+0.031</sup> <sub>-0.027</sub>	
$T_P$ .....	Time of Periastron (BJD <sub>TDB</sub> ) .....	2455380.3003 $\pm$ 0.0024	
$T_S$ .....	Time of eclipse (BJD <sub>TDB</sub> ) .....	2455382.8975 $\pm$ 0.0024	
$T_A$ .....	Time of Ascending Node (BJD <sub>TDB</sub> ) .....	2455384.1961 $\pm$ 0.0024	
$T_D$ .....	Time of Descending Node (BJD <sub>TDB</sub> ) .....	2455381.5989 $\pm$ 0.0024	
$V_c/V_e$ ..	.....	1.00	
$M_P \sin i$ ..	Minimum mass <sup>4</sup> ( $M_J$ ) .....	0.4045 <sup>+0.0070</sup> <sub>-0.014</sub>	
$M_P/M_*$ ..	Mass ratio <sup>4</sup> .....	0.000379 <sup>+0.000030</sup> <sub>-0.000026</sub>	
$d/R_*$ ..	Separation at mid transit .....	12.49 <sup>+0.36</sup> <sub>-0.38</sub>	
$P_T$ .....	A priori non-grazing transit prob .....	0.0637 <sup>+0.0022</sup> <sub>-0.0020</sub>	
$P_{T,G}$ .....	A priori transit prob .....	0.0964 <sup>+0.0029</sup> <sub>-0.0026</sub>	
Wavelength Parameters:		I	V
$u_1$ .....	linear limb-darkening coeff .....	0.334 <sup>+0.055</sup> <sub>-0.053</sub>	0.539 $\pm$ 0.058
$u_2$ .....	quadratic limb-darkening coeff .....	0.262 <sup>+0.051</sup> <sub>-0.050</sub>	0.211 $\pm$ 0.054
Transit Parameters:		OGLE UT 2010-07-02 (I)	OGLE UT 2010-07-02 (V)
$\sigma^2$ .....	Added Variance .....	0.0002229 <sup>+0.0000078</sup> <sub>-0.0000073</sub>	0.00031 <sup>+0.00018</sup> <sub>-0.00010</sub>
$F_0$ .....	Baseline flux .....	1.00237 $\pm$ 0.00036	1.0037 $\pm$ 0.0047

See Table 3 in Eastman, J. et al., 2019, arXiv:1907.09480 for a detailed description of all parameters

<sup>1</sup>This value ignores the systematic error and is for reference only

<sup>2</sup>The metallicity of the star at birth

<sup>3</sup>Corresponds to static points in a star's evolutionary history. See §2 in Dotter, A., 2016, ApJS, 222, 8

<sup>4</sup>Uses measured radius and estimated mass from Chen, J., & Kipping, D. 2017, ApJ, 834, 17

<sup>5</sup>Time of conjunction is commonly reported as the "transit time"

<sup>6</sup>Time of minimum projected separation is a more correct "transit time"

<sup>7</sup>Optimal time of conjunction minimizes the covariance between  $T_C$  and Period

<sup>8</sup>Assumes no albedo and perfect redistribution