

Table 1. Median values and 68% confidence interval for OGLE-TR-1008.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$0.98^{+0.29}_{-0.35}$
R_*	Radius (R_\odot)	$2.10^{+0.19}_{-0.16}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$2.23^{+0.20}_{-0.17}$
L_*	Luminosity (L_\odot)	$2.82^{+0.83}_{-0.75}$
F_{Bol}	Bolometric Flux (cgs)	$0.000000000290^{+0.0000000000062}_{-0.0000000000063}$
ρ_*	Density (cgs)	$0.146^{+0.069}_{-0.057}$
$\log g$	Surface gravity (cgs)	$3.78^{+0.15}_{-0.20}$
T_{eff}	Effective Temperature (K)	5130^{+430}_{-390}
$T_{eff,SED}$	Effective Temperature ¹ (K)	4980^{+440}_{-390}
[Fe/H]	Metallicity (dex)	$-2.3^{+2.0}_{-1.4}$
[Fe/H] ₀	Initial Metallicity ²	$-2.3^{+2.0}_{-1.4}$
Age	Age (Gyr)	$0.00077^{+0.00066}_{-0.00039}$
EEP	Equal Evolutionary Phase ³	134^{+18}_{-26}
A_V	V-band extinction (mag)	$1.48^{+0.36}_{-0.42}$
σ_{SED}	SED photometry error scaling	$8.7^{+1.3}_{-1.1}$
ϖ	Parallax (mas)	$0.566^{+0.043}_{-0.039}$
d	Distance (pc)	1770^{+130}_{-120}
Planetary Parameters:		
		b
P	Period (days)	$63.2215^{+0.0029}_{-0.0028}$
R_p	Radius (R_J)	$1.170^{+0.11}_{-0.087}$
M_p	Mass ⁴ (M_J)	21^{+46}_{-18}
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455416.535^{+0.079}_{-0.062}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455416.535^{+0.079}_{-0.062}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	$2456744.191^{+0.033}_{-0.031}$
a	Semi-major axis (AU)	$0.312^{+0.028}_{-0.041}$
i	Inclination (Degrees)	$88.87^{+0.49}_{-0.44}$
T_{eq}	Equilibrium temperature ⁸ (K)	652^{+51}_{-56}
τ_{circ}	Tidal circularization timescale (Gyr)	$2200000^{+5100000}_{-2000000}$
K	RV semi-amplitude ⁴ (m/s)	1110^{+2400}_{-940}
R_p/R_*	Radius of planet in stellar radii	$0.0575^{+0.0050}_{-0.0051}$
a/R_*	Semi-major axis in stellar radii	$31.6^{+4.3}_{-4.7}$
δ	$(R_p/R_*)^2$	$0.00331^{+0.00060}_{-0.00056}$
δ_I	Transit depth in I (fraction)	$0.00358^{+0.00061}_{-0.00060}$
δ_V	Transit depth in V (fraction)	$0.00376^{+0.00073}_{-0.00069}$
τ	Ingress/egress transit duration (days)	$0.047^{+0.021}_{-0.011}$
T_{14}	Total transit duration (days)	$0.552^{+0.067}_{-0.074}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.501 ^{+0.072} _{-0.079}	
b	Transit Impact parameter	0.63 ^{+0.14} _{-0.25}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	1.01 ^{+0.80} _{-0.56}	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	30.1 ⁺¹² _{-9.8}	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	81 ⁺²⁵ ₋₁₉	
ρ_P	Density ⁴ (cgs)	17 ⁺³⁸ ₋₁₆	
$\log g_P$	Surface gravity ⁴	4.61 ^{+0.52} _{-0.92}	
Θ	Safronov Number	11 ⁺³⁰ ₋₁₀	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	0.041 ^{+0.014} _{-0.012}	
T_P	Time of Periastron (BJD _{TDB})	2455416.535 ^{+0.079} _{-0.062}	
T_S	Time of eclipse (BJD _{TDB})	2455448.146 ^{+0.079} _{-0.062}	
T_A	Time of Ascending Node (BJD _{TDB})	2455463.952 ^{+0.077} _{-0.060}	
T_D	Time of Descending Node (BJD _{TDB})	2455432.341 ^{+0.078} _{-0.062}	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	21 ⁺⁴⁶ ₋₁₈	
M_P/M_*	Mass ratio ⁴	0.021 ^{+0.054} _{-0.017}	
d/R_*	Separation at mid transit	31.6 ^{+4.3} _{-4.7}	
P_T	A priori non-grazing transit prob	0.0298 ^{+0.0053} _{-0.0035}	
$P_{T,G}$	A priori transit prob	0.0334 ^{+0.0058} _{-0.0039}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.265 ^{+0.17} _{-0.089}	0.408 ^{+0.27} _{-0.096}
u_2	quadratic limb-darkening coeff	0.278 ^{+0.073} _{-0.083}	0.275 ^{+0.087} _{-0.17}
Transit Parameters:		OGLE UT 2010-08-08 (I)	OGLE UT 2010-08-08 (V)
σ^2	Added Variance	0.00001829 ^{+0.00000031} _{-0.00000032}	0.0000616 ^{+0.00000077} _{-0.00000068}
F_0	Baseline flux	1.000163 ^{+0.000043} _{-0.000041}	1.00052 ^{+0.00057} _{-0.00056}

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

¹This value ignores the systematic error and is for reference only

²The metallicity of the star at birth

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

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

⁵Time of conjunction is commonly reported as the "transit time"

⁶Time of minimum projected separation is a more correct "transit time"

⁷Optimal time of conjunction minimizes the covariance between T_C and Period

⁸Assumes no albedo and perfect redistribution