

Table 1. Median values and 68% confidence interval for OGLE-TR-1080.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$1.599^{+0.13}_{-0.073}$
R_*	Radius (R_\odot)	$2.057^{+0.12}_{-0.077}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$2.19^{+0.15}_{-0.12}$
L_*	Luminosity (L_\odot)	$5.8^{+1.5}_{-1.0}$
F_{Bol}	Bolometric Flux (cgs)	$0.0000000000337^{+0.0000000000053}_{-0.0000000000043}$
ρ_*	Density (cgs)	$0.263^{+0.022}_{-0.034}$
$\log g$	Surface gravity (cgs)	$4.018^{+0.025}_{-0.036}$
T_{eff}	Effective Temperature (K)	6230^{+320}_{-300}
$T_{eff,SED}$	Effective Temperature ¹ (K)	6060^{+300}_{-280}
[Fe/H]	Metallicity (dex)	$0.40^{+0.14}_{-0.22}$
[Fe/H] ₀	Initial Metallicity ²	$0.33^{+0.13}_{-0.21}$
Age	Age (Gyr)	$0.0118^{+0.0018}_{-0.0026}$
EEP	Equal Evolutionary Phase ³	$194.0^{+2.7}_{-6.6}$
A_V	V-band extinction (mag)	1.46 ± 0.19
σ_{SED}	SED photometry error scaling	$6.48^{+1.0}_{-0.81}$
ϖ	Parallax (mas)	$0.427^{+0.027}_{-0.030}$
d	Distance (pc)	2340^{+180}_{-140}
Planetary Parameters:		
		b
P	Period (days)	$4.7576944^{+0.000010}_{-0.000093}$
R_p	Radius (R_J)	$1.334^{+0.083}_{-0.054}$
M_p	Mass ⁴ (M_J)	$1.6^{+5.5}_{-1.1}$
T_C	Time of conjunction ⁵ (BJD _{TDB})	2455377.9397 ± 0.0037
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	2455377.9397 ± 0.0037
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	$2456967.0097^{+0.0019}_{-0.0018}$
a	Semi-major axis (AU)	$0.06480^{+0.0017}_{-0.00098}$
i	Inclination (Degrees)	$88.4^{+1.1}_{-1.5}$
T_{eq}	Equilibrium temperature ⁸ (K)	1697^{+85}_{-81}
τ_{circ}	Tidal circularization timescale (Gyr)	$1.33^{+5.4}_{-0.98}$
K	RV semi-amplitude ⁴ (m/s)	138^{+490}_{-98}
R_p/R_*	Radius of planet in stellar radii	0.0668 ± 0.0014
a/R_*	Semi-major axis in stellar radii	$6.80^{+0.19}_{-0.31}$
δ	$(R_p/R_*)^2$	0.00446 ± 0.00019
δ_I	Transit depth in I (fraction)	$0.00496^{+0.00023}_{-0.00022}$
δ_V	Transit depth in V (fraction)	$0.00551^{+0.00032}_{-0.00029}$
τ	Ingress/egress transit duration (days)	$0.01527^{+0.0016}_{-0.00065}$
T_{14}	Total transit duration (days)	$0.2339^{+0.0046}_{-0.0042}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.2182 ^{+0.0041} _{-0.0038}	
b	Transit Impact parameter	0.19 ^{+0.16} _{-0.13}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	234 ⁺²⁸ ₋₂₆	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	584 ⁺⁴² ₋₃₈	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	762 ⁺⁴⁶ ₋₄₁	
ρ_P	Density ⁴ (cgs)	0.81 ^{+3.1} _{-0.59}	
$\log g_P$..	Surface gravity ⁴	3.34 ^{+0.67} _{-0.55}	
Θ	Safronov Number	0.094 ^{+0.35} _{-0.067}	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	1.88 ^{+0.40} _{-0.33}	
T_P	Time of Periastron (BJD _{TDB})	2455377.9397 \pm 0.0037	
T_S	Time of eclipse (BJD _{TDB})	2455380.3186 \pm 0.0037	
T_A	Time of Ascending Node (BJD _{TDB})	2455381.5080 \pm 0.0037	
T_D	Time of Descending Node (BJD _{TDB})	2455379.1292 \pm 0.0037	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	1.6 ^{+5.5} _{-1.1}	
M_P/M_* ..	Mass ratio ⁴	0.00093 ^{+0.0033} _{-0.00066}	
d/R_* ..	Separation at mid transit	6.80 ^{+0.19} _{-0.31}	
P_T	A priori non-grazing transit prob	0.1372 ^{+0.0065} _{-0.0037}	
$P_{T,G}$	A priori transit prob	0.1567 ^{+0.0075} _{-0.0041}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.216 ^{+0.063} _{-0.061}	0.406 ^{+0.070} _{-0.067}
u_2	quadratic limb-darkening coeff	0.310 \pm 0.054	0.296 ^{+0.056} _{-0.057}
Transit Parameters:		OGLE UT 2010-06-30 (I)	OGLE UT 2010-06-30 (V)
σ^2	Added Variance	0.00001331 \pm 0.00000025	0.0000107 ^{+0.0000020} _{-0.0000018}
F_0	Baseline flux	1.000199 \pm 0.000039	1.00048 ^{+0.00031} _{-0.00030}

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