

Table 1. Median values and 68% confidence interval for OGLE-TR-1097.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$0.874^{+0.15}_{-0.097}$
R_*	Radius (R_\odot)	$0.878^{+0.076}_{-0.072}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$0.883^{+0.088}_{-0.081}$
L_*	Luminosity (L_\odot)	$1.07^{+1.3}_{-0.71}$
F_{Bol}	Bolometric Flux (cgs)	$0.000000000198^{+0.0000000000073}_{-0.0000000000071}$
ρ_*	Density (cgs)	$1.91^{+0.42}_{-0.35}$
$\log g$	Surface gravity (cgs)	$4.511^{+0.061}_{-0.065}$
T_{eff}	Effective Temperature (K)	6300^{+1100}_{-1400}
$T_{eff,SED}$	Effective Temperature ¹ (K)	6300^{+1200}_{-1400}
[Fe/H]	Metallicity (dex)	$-1.2^{+1.5}_{-2.4}$
[Fe/H] ₀	Initial Metallicity ²	$-1.0^{+1.3}_{-2.1}$
Age	Age (Gyr)	$4.8^{+5.8}_{-3.9}$
EEP	Equal Evolutionary Phase ³	349^{+39}_{-31}
A_V	V-band extinction (mag)	$0.96^{+0.37}_{-0.36}$
σ_{SED}	SED photometry error scaling	53^{+30}_{-36}
ϖ	Parallax (mas)	$0.75^{+0.59}_{-0.29}$
d	Distance (pc)	1340^{+840}_{-590}
Planetary Parameters:		
		b
P	Period (days)	$10.756625^{+0.000019}_{-0.000020}$
R_P	Radius (R_J)	1.022 ± 0.097
M_P	Mass ⁴ (M_J)	45^{+27}_{-30}
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455385.3250^{+0.0034}_{-0.0035}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455385.3250^{+0.0034}_{-0.0035}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	2457074.1151 ± 0.0015
a	Semi-major axis (AU)	$0.0927^{+0.0048}_{-0.0034}$
i	Inclination (Degrees)	88.07 ± 0.24
T_{eq}	Equilibrium temperature ⁸ (K)	940^{+180}_{-230}
τ_{circ}	Tidal circularization timescale (Gyr)	3900^{+4200}_{-2900}
K	RV semi-amplitude ⁴ (m/s)	4300^{+2600}_{-2800}
R_P/R_*	Radius of planet in stellar radii	$0.1192^{+0.0040}_{-0.0037}$
a/R_*	Semi-major axis in stellar radii	23.0 ± 1.6
δ	$(R_P/R_*)^2$	$0.01422^{+0.00098}_{-0.00086}$
δ_I	Transit depth in I (fraction)	$0.01421^{+0.00077}_{-0.00076}$
δ_V	Transit depth in V (fraction)	$0.01410^{+0.00095}_{-0.00078}$
τ	Ingress/egress transit duration (days)	$0.0290^{+0.0066}_{-0.0049}$
T_{14}	Total transit duration (days)	$0.1202^{+0.0041}_{-0.0040}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.0910 ^{+0.0048} _{-0.0060}	
b	Transit Impact parameter	0.776 ^{+0.042} _{-0.051}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	45 ⁺⁵⁴ ₋₃₆	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	400 ⁺¹⁷⁰ ₋₂₀₀	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	750 ⁺²⁰⁰ ₋₂₅₀	
ρ_P	Density ⁴ (cgs)	53 ⁺⁴² ₋₃₈	
$\log g_P$...	Surface gravity ⁴	5.04 ^{+0.22} _{-0.51}	
Θ	Safronov Number	9.4 \pm 6.5	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	0.17 ^{+0.18} _{-0.12}	
T_P	Time of Periastron (BJD _{TDB})	2455385.3250 ^{+0.0034} _{-0.0035}	
T_S	Time of eclipse (BJD _{TDB})	2455379.9467 ^{+0.0034} _{-0.0035}	
T_A	Time of Ascending Node (BJD _{TDB})	2455393.3925 ^{+0.0034} _{-0.0035}	
T_D	Time of Descending Node (BJD _{TDB})	2455388.0142 ^{+0.0034} _{-0.0035}	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	45 ⁺²⁷ ₋₃₀	
M_P/M_* ..	Mass ratio ⁴	0.048 ^{+0.031} _{-0.033}	
d/R_* ...	Separation at mid transit	23.0 \pm 1.6	
P_T	A priori non-grazing transit prob	0.0382 ^{+0.0027} _{-0.0025}	
$P_{T,G}$	A priori transit prob	0.0486 ^{+0.0036} _{-0.0033}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.241 ^{+0.20} _{-0.082}	0.368 ^{+0.34} _{-0.092}
u_2	quadratic limb-darkening coeff	0.257 ^{+0.064} _{-0.067}	0.275 ^{+0.071} _{-0.18}
Transit Parameters:		OGLE UT 2010-07-07 (I)	OGLE UT 2010-07-07 (V)
σ^2	Added Variance	0.00002700 \pm 0.00000043	0.0000331 ^{+0.0000064} _{-0.0000053}
F_0	Baseline flux	1.000302 ^{+0.000051} _{-0.000053}	0.99982 ^{+0.00051} _{-0.00053}

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