

Table 1. Median values and 68% confidence interval for OGLE-TR-1073.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$1.29^{+0.53}_{-0.49}$
R_*	Radius (R_\odot)	$3.26^{+1.2}_{-0.37}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$3.37^{+1.3}_{-0.41}$
L_*	Luminosity (L_\odot)	$4.1^{+3.4}_{-1.3}$
F_{Bol}	Bolometric Flux (cgs)	$0.000000000266^{+0.0000000000028}_{-0.0000000000043}$
ρ_*	Density (cgs)	$0.048^{+0.027}_{-0.032}$
$\log g$	Surface gravity (cgs)	$3.49^{+0.17}_{-0.37}$
T_{eff}	Effective Temperature (K)	4530^{+180}_{-250}
$T_{eff,SED}$	Effective Temperature ¹ (K)	4480^{+150}_{-240}
[Fe/H]	Metallicity (dex)	$0.32^{+0.19}_{-0.30}$
[Fe/H] ₀	Initial Metallicity ²	$0.26^{+0.17}_{-0.28}$
Age	Age (Gyr)	$0.00059^{+0.00041}_{-0.00039}$
EEP	Equal Evolutionary Phase ³	119^{+18}_{-30}
A_V	V-band extinction (mag)	$1.78^{+0.20}_{-0.39}$
σ_{SED}	SED photometry error scaling	$10.9^{+1.7}_{-1.3}$
ϖ	Parallax (mas)	$0.448^{+0.071}_{-0.12}$
d	Distance (pc)	2230^{+820}_{-310}
Planetary Parameters:		
		b
P	Period (days)	$6.92345^{+0.00018}_{-0.00019}$
R_p	Radius (R_J)	$1.111^{+0.57}_{-0.094}$
M_p	Mass ⁴ (M_J)	46^{+100}_{-35}
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455380.819^{+0.051}_{-0.054}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455380.819^{+0.051}_{-0.054}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	2457104.756 ± 0.019
a	Semi-major axis (AU)	$0.0786^{+0.0093}_{-0.011}$
i	Inclination (Degrees)	$84.6^{+3.5}_{-7.5}$
T_{eq}	Equilibrium temperature ⁸ (K)	1425^{+220}_{-88}
τ_{circ}	Tidal circularization timescale (Gyr)	280^{+560}_{-230}
K	RV semi-amplitude ⁴ (m/s)	4300^{+8300}_{-3300}
R_p/R_*	Radius of planet in stellar radii	$0.0362^{+0.0044}_{-0.0036}$
a/R_*	Semi-major axis in stellar radii	$5.03^{+0.80}_{-1.4}$
δ	$(R_p/R_*)^2$	$0.00131^{+0.00034}_{-0.00025}$
δ_I	Transit depth in I (fraction)	$0.00153^{+0.00029}_{-0.00028}$
δ_V	Transit depth in V (fraction)	$0.00175^{+0.00042}_{-0.00048}$
τ	Ingress/egress transit duration (days)	$0.0176^{+0.025}_{-0.0036}$
T_{14}	Total transit duration (days)	$0.402^{+0.047}_{-0.040}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.374 ^{+0.045} _{-0.041}	
b	Transit Impact parameter	0.49 ^{+0.32} _{-0.31}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	55 ⁺⁷⁰ ₋₁₂	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	169 ⁺¹²⁰ ₋₃₀	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	234 ⁺¹⁴⁰ ₋₄₁	
ρ_P	Density ⁴ (cgs)	30 ⁺³⁸ ₋₂₂	
$\log g_P$..	Surface gravity ⁴	4.94 ^{+0.23} _{-0.60}	
Θ	Safronov Number	5.6 ^{+5.7} _{-4.4}	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	0.94 ^{+0.73} _{-0.21}	
T_P	Time of Periastron (BJD _{TDB})	2455380.819 ^{+0.051} _{-0.054}	
T_S	Time of eclipse (BJD _{TDB})	2455377.357 ^{+0.051} _{-0.054}	
T_A	Time of Ascending Node (BJD _{TDB})	2455386.012 ^{+0.051} _{-0.054}	
T_D	Time of Descending Node (BJD _{TDB})	2455382.550 ^{+0.051} _{-0.054}	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	46 ⁺¹⁰⁰ ₋₃₅	
M_P/M_* ..	Mass ratio ⁴	0.036 ^{+0.081} _{-0.028}	
d/R_* ..	Separation at mid transit	5.03 ^{+0.80} _{-1.4}	
P_T	A priori non-grazing transit prob	0.192 ^{+0.076} _{-0.027}	
$P_{T,G}$	A priori transit prob	0.206 ^{+0.085} _{-0.028}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.477 ^{+0.059} _{-0.060}	0.794 ^{+0.073} _{-0.076}
u_2	quadratic limb-darkening coeff	0.179 ^{+0.056} _{-0.055}	0.018 ^{+0.070} _{-0.068}
Transit Parameters:		OGLE UT 2010-07-03 (I)	OGLE UT 2010-07-03 (V)
σ^2	Added Variance	0.00002294 ^{+0.00000039} _{-0.00000038}	0.0000406 ^{+0.00000073} _{-0.00000065}
F_0	Baseline flux	1.000319 ^{+0.000049} _{-0.000050}	1.00002 \pm 0.00060

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