

Table 1. Median values and 68% confidence interval for OGLE-TR-1047.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$0.91^{+0.12}_{-0.19}$
R_*	Radius (R_\odot)	$1.347^{+0.082}_{-0.085}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$1.417^{+0.10}_{-0.099}$
L_*	Luminosity (L_\odot)	$1.50^{+0.49}_{-0.36}$
F_{Bol}	Bolometric Flux (cgs)	$0.000000000164^{+0.0000000000026}_{-0.0000000000023}$
ρ_*	Density (cgs)	$0.524^{+0.047}_{-0.084}$
$\log g$	Surface gravity (cgs)	$4.134^{+0.036}_{-0.064}$
T_{eff}	Effective Temperature (K)	5520^{+280}_{-270}
$T_{eff,SED}$	Effective Temperature ¹ (K)	5400^{+290}_{-310}
[Fe/H]	Metallicity (dex)	$-3.45^{+0.93}_{-0.39}$
[Fe/H] ₀	Initial Metallicity ²	$-3.47^{+0.93}_{-0.39}$
Age	Age (Gyr)	$0.00222^{+0.0011}_{-0.00064}$
EEP	Equal Evolutionary Phase ³	155 ± 13
A_V	V-band extinction (mag)	$1.17^{+0.20}_{-0.24}$
σ_{SED}	SED photometry error scaling	$6.28^{+0.98}_{-0.78}$
ϖ	Parallax (mas)	$0.583^{+0.051}_{-0.046}$
d	Distance (pc)	1720^{+150}_{-140}
Planetary Parameters:		
		b
P	Period (days)	10.295061 ± 0.000018
R_p	Radius (R_J)	$1.520^{+0.10}_{-0.099}$
M_p	Mass ⁴ (M_J)	$0.407^{+0.66}_{-0.034}$
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455378.3787^{+0.0033}_{-0.0031}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455378.3787^{+0.0033}_{-0.0031}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	2456953.5231 ± 0.0016
a	Semi-major axis (AU)	$0.0896^{+0.0039}_{-0.0065}$
i	Inclination (Degrees)	$89.17^{+0.58}_{-0.82}$
T_{eq}	Equilibrium temperature ⁸ (K)	1037^{+53}_{-51}
τ_{circ}	Tidal circularization timescale (Gyr)	$3.5^{+7.5}_{-1.0}$
K	RV semi-amplitude ⁴ (m/s)	$41.2^{+7.6}_{-5.8}$
R_p/R_*	Radius of planet in stellar radii	0.1161 ± 0.0021
a/R_*	Semi-major axis in stellar radii	$14.32^{+0.42}_{-0.81}$
δ	$(R_p/R_*)^2$	$0.01348^{+0.00050}_{-0.00048}$
δ_I	Transit depth in I (fraction)	$0.01486^{+0.00058}_{-0.00054}$
δ_V	Transit depth in V (fraction)	$0.01586^{+0.00079}_{-0.00069}$
τ	Ingress/egress transit duration (days)	$0.0271^{+0.0038}_{-0.0013}$
T_{14}	Total transit duration (days)	$0.2507^{+0.0052}_{-0.0045}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.2228 ^{+0.0039} _{-0.0038}	
b	Transit Impact parameter	0.21 ^{+0.18} _{-0.14}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	96 ⁺²⁴ ₋₁₉	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	611 ⁺⁷³ ₋₆₁	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	1040 ⁺⁹¹ ₋₇₄	
ρ_P	Density ⁴ (cgs)	0.142 ^{+0.30} _{-0.030}	
$\log g_P$..	Surface gravity ⁴	2.631 ^{+0.48} _{-0.076}	
Θ	Safronov Number	0.0532 ^{+0.11} _{-0.0095}	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	0.263 ^{+0.058} _{-0.048}	
T_P	Time of Periastron (BJD _{TDB})	2455378.3787 ^{+0.0033} _{-0.0031}	
T_S	Time of eclipse (BJD _{TDB})	2455383.5262 ^{+0.0033} _{-0.0031}	
T_A	Time of Ascending Node (BJD _{TDB})	2455386.1000 ^{+0.0033} _{-0.0031}	
T_D	Time of Descending Node (BJD _{TDB})	2455380.9525 ^{+0.0033} _{-0.0031}	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	0.407 ^{+0.66} _{-0.034}	
M_P/M_* ..	Mass ratio ⁴	0.000444 ^{+0.00085} _{-0.000084}	
d/R_* ..	Separation at mid transit	14.32 ^{+0.42} _{-0.81}	
P_T	A priori non-grazing transit prob	0.0617 ^{+0.0036} _{-0.0018}	
$P_{T,G}$	A priori transit prob	0.0779 ^{+0.0048} _{-0.0022}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.196 ^{+0.058} _{-0.052}	0.320 ^{+0.061} _{-0.053}
u_2	quadratic limb-darkening coeff	0.318 ^{+0.053} _{-0.056}	0.332 ^{+0.053} _{-0.058}
Transit Parameters:		OGLE UT 2010-06-30 (I)	OGLE UT 2010-06-30 (V)
σ^2	Added Variance	0.00002637 ^{+0.00000051} _{-0.00000050}	0.0000302 ^{+0.0000047} _{-0.0000041}
F_0	Baseline flux	1.000025 \pm 0.000060	1.00088 \pm 0.00047

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