

Table 1. Median values and 68% confidence interval for OGLE-TR-1071.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$1.36^{+0.74}_{-0.49}$
R_*	Radius (R_\odot)	$7.7^{+1.9}_{-1.8}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$7.8^{+2.0}_{-1.9}$
L_*	Luminosity (L_\odot)	$18.6^{+12}_{-8.3}$
F_{Bol}	Bolometric Flux (cgs)	$0.000000000201^{+0.0000000000016}_{-0.0000000000023}$
ρ_*	Density (cgs)	$0.0042^{+0.0036}_{-0.0016}$
$\log g$	Surface gravity (cgs)	2.81 ± 0.17
T_{eff}	Effective Temperature (K)	4330 ± 170
$T_{eff,SED}$	Effective Temperature ¹ (K)	4300^{+120}_{-140}
[Fe/H]	Metallicity (dex)	$0.42^{+0.13}_{-0.24}$
[Fe/H] ₀	Initial Metallicity ²	$0.34^{+0.12}_{-0.22}$
Age	Age (Gyr)	$0.000083^{+0.000070}_{-0.000050}$
EEP	Equal Evolutionary Phase ³	80^{+20}_{-27}
A_V	V-band extinction (mag)	$1.42^{+0.16}_{-0.28}$
σ_{SED}	SED photometry error scaling	$17.8^{+2.5}_{-2.0}$
ϖ	Parallax (mas)	$0.183^{+0.059}_{-0.040}$
d	Distance (pc)	5500^{+1500}_{-1300}
Planetary Parameters:		
		b
P	Period (days)	4.26703 ± 0.00011
R_p	Radius (R_J)	$5.5^{+3.3}_{-2.0}$
M_p	Mass ⁴ (M_J)	580^{+410}_{-230}
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455383.137^{+0.048}_{-0.044}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455383.137^{+0.048}_{-0.044}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	$2456987.542^{+0.018}_{-0.019}$
a	Semi-major axis (AU)	$0.0644^{+0.0097}_{-0.0079}$
i	Inclination (Degrees)	$57.8^{+7.6}_{-6.1}$
T_{eq}	Equilibrium temperature ⁸ (K)	2270^{+180}_{-200}
τ_{circ}	Tidal circularization timescale (Gyr)	$0.51^{+1.6}_{-0.39}$
K	RV semi-amplitude ⁴ (m/s)	38000^{+18000}_{-10000}
R_p/R_*	Radius of planet in stellar radii	$0.070^{+0.033}_{-0.014}$
a/R_*	Semi-major axis in stellar radii	$1.80^{+0.33}_{-0.23}$
δ	$(R_p/R_*)^2$	$0.0049^{+0.0058}_{-0.0018}$
δ_I	Transit depth in I (fraction)	$0.00245^{+0.00052}_{-0.00050}$
δ_V	Transit depth in V (fraction)	$0.0002^{+0.0017}_{-0.0012}$
τ	Ingress/egress transit duration (days)	$0.202^{+0.056}_{-0.11}$
T_{14}	Total transit duration (days)	$0.458^{+0.079}_{-0.062}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.263 ^{+0.10} _{-0.055}	
b	Transit Impact parameter	0.950 ^{+0.055} _{-0.071}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	1250 ⁺¹⁵⁰⁰ ₋₅₉₀	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	1890 ⁺²²⁰⁰ ₋₈₁₀	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	2130 ⁺²⁵⁰⁰ ₋₈₉₀	
ρ_P	Density ⁴ (cgs)	4.3 ^{+5.8} _{-2.5}	
$\log g_P$..	Surface gravity ⁴	4.68 ^{+0.17} _{-0.18}	
Θ	Safronov Number	9.9 ^{+3.9} _{-2.7}	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	6.0 ^{+2.2} _{-1.8}	
T_P	Time of Periastron (BJD _{TDB})	2455383.137 ^{+0.048} _{-0.044}	
T_S	Time of eclipse (BJD _{TDB})	2455381.004 ^{+0.048} _{-0.044}	
T_A	Time of Ascending Node (BJD _{TDB})	2455386.338 ^{+0.048} _{-0.044}	
T_D	Time of Descending Node (BJD _{TDB})	2455384.204 ^{+0.048} _{-0.044}	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	480 ⁺³⁰⁰ ₋₁₈₀	
M_P/M_* ..	Mass ratio ⁴	0.39 ^{+0.34} _{-0.16}	
d/R_* ..	Separation at mid transit	1.80 ^{+0.33} _{-0.23}	
P_T	A priori non-grazing transit prob	0.507 ^{+0.077} _{-0.072}	
$P_{T,G}$	A priori transit prob	0.601 ^{+0.086} _{-0.10}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.501 ^{+0.053} _{-0.054}	0.851 ^{+0.065} _{-0.064}
u_2	quadratic limb-darkening coeff	0.170 ^{+0.052} _{-0.051}	-0.023 ^{+0.061} _{-0.060}
Transit Parameters:		OGLE UT 2010-07-05 (I)	OGLE UT 2010-07-05 (V)
σ^2	Added Variance	0.00004288 ^{+0.0000011} _{-0.0000099}	0.000084 ^{+0.000019} _{-0.000015}
F_0	Baseline flux	0.99996 \pm 0.00011	1.0004 \pm 0.0011

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