

Table 1. Median values and 68% confidence interval for OGLE-TR-1049.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$0.71^{+0.47}_{-0.19}$
R_*	Radius (R_\odot)	$3.40^{+0.33}_{-0.25}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$3.44^{+0.34}_{-0.27}$
L_*	Luminosity (L_\odot)	$8.1^{+2.4}_{-1.8}$
F_{Bol}	Bolometric Flux (cgs)	$0.000000000439^{+0.0000000000069}_{-0.0000000000066}$
ρ_*	Density (cgs)	$0.0253^{+0.017}_{-0.0075}$
$\log g$	Surface gravity (cgs)	$3.22^{+0.22}_{-0.13}$
T_{eff}	Effective Temperature (K)	5290^{+280}_{-330}
$T_{eff,SED}$	Effective Temperature ¹ (K)	5260^{+310}_{-330}
[Fe/H]	Metallicity (dex)	$-2.63^{+1.2}_{-0.85}$
[Fe/H] ₀	Initial Metallicity ²	$-2.65^{+1.2}_{-0.85}$
Age	Age (Gyr)	$0.000135^{+0.00011}_{-0.000067}$
EEP	Equal Evolutionary Phase ³	92^{+25}_{-21}
A_V	V-band extinction (mag)	$1.39^{+0.23}_{-0.28}$
σ_{SED}	SED photometry error scaling	$9.2^{+1.3}_{-1.0}$
ϖ	Parallax (mas)	$0.410^{+0.033}_{-0.035}$
d	Distance (pc)	2440^{+230}_{-180}
Planetary Parameters:		
b		
P	Period (days)	$19.15773^{+0.00068}_{-0.00074}$
R_P	Radius (R_J)	$1.144^{+0.12}_{-0.083}$
M_P	Mass ⁴ (M_J)	28^{+47}_{-23}
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455384.334^{+0.059}_{-0.060}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455384.334^{+0.059}_{-0.060}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	$2456457.164^{+0.034}_{-0.030}$
a	Semi-major axis (AU)	$0.128^{+0.022}_{-0.012}$
i	Inclination (Degrees)	$88.1^{+1.3}_{-1.9}$
T_{eq}	Equilibrium temperature ⁸ (K)	1306^{+77}_{-75}
τ_{circ}	Tidal circularization timescale (Gyr)	15000^{+26000}_{-13000}
K	RV semi-amplitude ⁴ (m/s)	2500^{+4300}_{-2100}
R_P/R_*	Radius of planet in stellar radii	$0.0349^{+0.0029}_{-0.0028}$
a/R_*	Semi-major axis in stellar radii	$8.03^{+1.4}_{-0.86}$
δ	$(R_P/R_*)^2$	$0.00122^{+0.00021}_{-0.00019}$
δ_I	Transit depth in I (fraction)	$0.00135^{+0.00023}_{-0.00021}$
δ_V	Transit depth in V (fraction)	$0.00147^{+0.00025}_{-0.00023}$
τ	Ingress/egress transit duration (days)	$0.0277^{+0.0062}_{-0.0043}$
T_{14}	Total transit duration (days)	$0.737^{+0.082}_{-0.10}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.707 ^{+0.081} _{-0.096}	
b	Transit Impact parameter	0.28 ^{+0.23} _{-0.19}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	29.5 ^{+8.8} _{-6.9}	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	108 ⁺²² ₋₁₉	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	158 ⁺³⁰ ₋₂₅	
ρ_P	Density ⁴ (cgs)	25 ⁺³⁵ ₋₂₁	
$\log g_P$..	Surface gravity ⁴	4.75 ^{+0.41} _{-0.79}	
Θ	Safronov Number	8.7 ⁺¹⁶ _{-7.3}	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	0.66 ^{+0.17} _{-0.14}	
T_P	Time of Periastron (BJD _{TDB})	2455384.334 ^{+0.059} _{-0.060}	
T_S	Time of eclipse (BJD _{TDB})	2455393.913 ^{+0.059} _{-0.060}	
T_A	Time of Ascending Node (BJD _{TDB})	2455398.702 ^{+0.058} _{-0.059}	
T_D	Time of Descending Node (BJD _{TDB})	2455389.123 ^{+0.059} _{-0.060}	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	28 ⁺⁴⁷ ₋₂₃	
M_P/M_* ..	Mass ratio ⁴	0.036 ^{+0.070} _{-0.030}	
d/R_* ..	Separation at mid transit	8.03 ^{+1.4} _{-0.86}	
P_T	A priori non-grazing transit prob	0.120 ^{+0.014} _{-0.018}	
$P_{T,G}$	A priori transit prob	0.129 ^{+0.015} _{-0.019}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.227 ^{+0.077} _{-0.058}	0.383 ^{+0.093} _{-0.060}
u_2	quadratic limb-darkening coeff	0.302 ^{+0.054} _{-0.058}	0.295 ^{+0.056} _{-0.067}
Transit Parameters:		OGLE UT 2010-07-06 (I)	OGLE UT 2010-07-06 (V)
σ^2	Added Variance	0.00000653 ^{+0.00000020} _{-0.00000019}	0.0000244 ^{+0.00000034} _{-0.00000029}
F_0	Baseline flux	0.999947 ^{+0.000038} _{-0.000037}	1.00036 ^{+0.00039} _{-0.00038}

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