

Table 1. Median values and 68% confidence interval for OGLE-TR-1077.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$1.36^{+0.18}_{-0.32}$
R_*	Radius (R_\odot)	$1.67^{+0.15}_{-0.13}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$1.69^{+0.15}_{-0.13}$
L_*	Luminosity (L_\odot)	$4.1^{+1.3}_{-1.0}$
F_{Bol}	Bolometric Flux (cgs)	$0.000000000377^{+0.0000000000087}_{-0.0000000000067}$
ρ_*	Density (cgs)	$0.40^{+0.13}_{-0.12}$
$\log g$	Surface gravity (cgs)	$4.116^{+0.092}_{-0.14}$
T_{eff}	Effective Temperature (K)	6370^{+430}_{-420}
$T_{eff,SED}$	Effective Temperature ¹ (K)	6360^{+420}_{-430}
[Fe/H]	Metallicity (dex)	$0.04^{+0.24}_{-0.21}$
[Fe/H] ₀	Initial Metallicity ²	$0.15^{+0.21}_{-0.26}$
Age	Age (Gyr)	$2.6^{+5.0}_{-1.8}$
EEP	Equal Evolutionary Phase ³	376^{+77}_{-46}
A_V	V-band extinction (mag)	$0.95^{+0.24}_{-0.27}$
σ_{SED}	SED photometry error scaling	$8.2^{+1.3}_{-1.0}$
ϖ	Parallax (mas)	$0.536^{+0.044}_{-0.042}$
d	Distance (pc)	1860^{+160}_{-140}
Planetary Parameters:		
		b
P	Period (days)	$14.40827^{+0.00018}_{-0.00024}$
R_p	Radius (R_J)	$1.027^{+0.078}_{-0.072}$
M_p	Mass ⁴ (M_J)	45^{+27}_{-29}
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455381.544^{+0.020}_{-0.024}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455381.544^{+0.020}_{-0.024}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	2456534.203 ± 0.013
a	Semi-major axis (AU)	$0.1296^{+0.0054}_{-0.011}$
i	Inclination (Degrees)	$88.13^{+0.90}_{-0.72}$
T_{eq}	Equilibrium temperature ⁸ (K)	1105^{+74}_{-57}
τ_{circ}	Tidal circularization timescale (Gyr)	16000^{+16000}_{-12000}
K	RV semi-amplitude ⁴ (m/s)	3100^{+1800}_{-2000}
R_p/R_*	Radius of planet in stellar radii	$0.0630^{+0.0049}_{-0.0050}$
a/R_*	Semi-major axis in stellar radii	$16.5^{+1.6}_{-1.9}$
δ	$(R_p/R_*)^2$	$0.00397^{+0.00065}_{-0.00060}$
δ_I	Transit depth in I (fraction)	$0.00426^{+0.00067}_{-0.00064}$
δ_V	Transit depth in V (fraction)	$0.00451^{+0.00072}_{-0.00070}$
τ	Ingress/egress transit duration (days)	$0.0209^{+0.0058}_{-0.0036}$
T_{14}	Total transit duration (days)	$0.255^{+0.029}_{-0.027}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.233 ^{+0.030} _{-0.029}	
b	Transit Impact parameter	0.54 ^{+0.15} _{-0.25}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	32.2 ^{+9.5} _{-6.4}	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	182 ⁺³² ₋₂₅	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	300 ⁺⁴⁷ ₋₄₀	
ρ_P	Density ⁴ (cgs)	52 ⁺³⁷ ₋₃₆	
$\log g_P$	Surface gravity ⁴	5.04 ^{+0.22} _{-0.47}	
Θ	Safronov Number	8.8 ^{+5.6} _{-5.7}	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	0.339 ^{+0.10} _{-0.065}	
T_P	Time of Periastron (BJD _{TDB})	2455381.544 ^{+0.020} _{-0.024}	
T_S	Time of eclipse (BJD _{TDB})	2455374.340 ^{+0.020} _{-0.024}	
T_A	Time of Ascending Node (BJD _{TDB})	2455392.351 ^{+0.020} _{-0.023}	
T_D	Time of Descending Node (BJD _{TDB})	2455385.146 ^{+0.020} _{-0.024}	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	45 ⁺²⁷ ₋₂₉	
M_P/M_*	Mass ratio ⁴	0.033 ^{+0.020} _{-0.021}	
d/R_*	Separation at mid transit	16.5 ^{+1.6} _{-1.9}	
P_T	A priori non-grazing transit prob	0.0567 ^{+0.0075} _{-0.0052}	
$P_{T,G}$	A priori transit prob	0.0643 ^{+0.0083} _{-0.0056}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.213 ^{+0.066} _{-0.062}	0.369 ^{+0.074} _{-0.066}
u_2	quadratic limb-darkening coeff	0.308 ^{+0.053} _{-0.054}	0.303 ^{+0.055} _{-0.057}
Transit Parameters:		OGLE UT 2010-07-04 (I)	OGLE UT 2010-07-04 (V)
σ^2	Added Variance	0.00003221 ^{+0.00000071} _{-0.00000070}	0.0000084 ^{+0.0000031} _{-0.0000025}
F_0	Baseline flux	1.000003 \pm 0.000080	1.00006 \pm 0.00048

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