

Table 1. Median values and 68% confidence interval for OGLE-TR-1082.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$1.034^{+0.074}_{-0.051}$
R_*	Radius (R_\odot)	3.15 ± 0.13
$R_{*,SED}$	Radius ¹ (R_\odot)	$3.31^{+0.20}_{-0.19}$
L_*	Luminosity (L_\odot)	$3.86^{+0.56}_{-0.44}$
F_{Bol}	Bolometric Flux (cgs)	$0.0000000000190^{+0.00000000000012}_{-0.00000000000017}$
ρ_*	Density (cgs)	$0.0470^{+0.0050}_{-0.0045}$
$\log g$	Surface gravity (cgs)	$3.459^{+0.032}_{-0.031}$
T_{eff}	Effective Temperature (K)	4550^{+140}_{-110}
$T_{eff,SED}$	Effective Temperature ¹ (K)	4434^{+120}_{-95}
[Fe/H]	Metallicity (dex)	$0.38^{+0.16}_{-0.30}$
[Fe/H] ₀	Initial Metallicity ²	$0.31^{+0.14}_{-0.28}$
Age	Age (Gyr)	$11.9^{+1.4}_{-2.6}$
EEP	Equal Evolutionary Phase ³	$488.5^{+6.5}_{-5.0}$
A_V	V-band extinction (mag)	$1.454^{+0.088}_{-0.16}$
σ_{SED}	SED photometry error scaling	$7.0^{+5.5}_{-2.1}$
ϖ	Parallax (mas)	$0.391^{+0.027}_{-0.030}$
d	Distance (pc)	2560^{+210}_{-160}
Planetary Parameters:		
		b
P	Period (days)	$3.403645^{+0.000020}_{-0.000016}$
R_p	Radius (R_J)	$1.877^{+0.081}_{-0.077}$
M_p	Mass ⁴ (M_J)	$0.4018^{+0.0091}_{-0.018}$
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455379.0038^{+0.0096}_{-0.012}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455379.0038^{+0.0096}_{-0.012}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	$2457067.2117^{+0.0055}_{-0.0056}$
a	Semi-major axis (AU)	$0.04479^{+0.0010}_{-0.00076}$
i	Inclination (Degrees)	$88.0^{+1.4}_{-2.1}$
T_{eq}	Equilibrium temperature ⁸ (K)	1838^{+63}_{-53}
τ_{circ}	Tidal circularization timescale (Gyr)	$0.0107^{+0.0023}_{-0.0019}$
K	RV semi-amplitude ⁴ (m/s)	$52.5^{+2.5}_{-3.2}$
R_p/R_*	Radius of planet in stellar radii	0.0614 ± 0.0017
a/R_*	Semi-major axis in stellar radii	3.07 ± 0.10
δ	$(R_p/R_*)^2$	$0.00377^{+0.00022}_{-0.00021}$
δ_I	Transit depth in I (fraction)	$0.00493^{+0.00030}_{-0.00029}$
δ_V	Transit depth in V (fraction)	0.00614 ± 0.00048
τ	Ingress/egress transit duration (days)	$0.02313^{+0.0011}_{-0.00096}$
T_{14}	Total transit duration (days)	0.379 ± 0.012

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Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.356 ± 0.012	
b	Transit Impact parameter	0.109 ^{+0.11} _{-0.077}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	436 ⁺³⁸ ₋₃₃	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	876 ⁺⁵⁷ ₋₅₂	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	1072 ⁺⁶⁴ ₋₆₀	
ρ_P	Density ⁴ (cgs)	0.0744 ^{+0.010} _{-0.0089}	
$\log g_P$	Surface gravity ⁴	2.446 ± 0.038	
Θ	Safronov Number	0.0183 ± 0.0014	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	2.59 ^{+0.37} _{-0.28}	
T_P	Time of Periastron (BJD _{TDB})	2455379.0038 ^{+0.0096} _{-0.012}	
T_S	Time of eclipse (BJD _{TDB})	2455380.7056 ^{+0.0096} _{-0.012}	
T_A	Time of Ascending Node (BJD _{TDB})	2455381.5565 ^{+0.0096} _{-0.012}	
T_D	Time of Descending Node (BJD _{TDB})	2455379.8547 ^{+0.0096} _{-0.012}	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	0.4012 ^{+0.0090} _{-0.018}	
M_P/M_*	Mass ratio ⁴	0.000367 ^{+0.000023} _{-0.000029}	
d/R_*	Separation at mid transit	3.07 ± 0.10	
P_T	A priori non-grazing transit prob	0.306 ^{+0.011} _{-0.010}	
$P_{T,G}$	A priori transit prob	0.346 ^{+0.012} _{-0.011}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.484 ^{+0.054} _{-0.059}	0.791 ^{+0.060} _{-0.073}
u_2	quadratic limb-darkening coeff	0.189 ^{+0.054} _{-0.052}	0.023 ^{+0.066} _{-0.059}
Transit Parameters:		OGLE UT 2010-07-01 (I)	OGLE UT 2010-07-01 (V)
σ^2	Added Variance	0.00004879 ^{+0.00000073} _{-0.00000071}	0.000068 ^{+0.000013} _{-0.000011}
F_0	Baseline flux	1.000279 ± 0.000069	1.00024 ^{+0.00075} _{-0.00074}

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