

Table 1. Median values and 68% confidence interval for OGLE-TR-1088.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$0.867^{+0.058}_{-0.067}$
R_*	Radius (R_\odot)	$0.975^{+0.028}_{-0.029}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$0.960^{+0.044}_{-0.042}$
L_*	Luminosity (L_\odot)	$0.88^{+0.25}_{-0.13}$
F_{Bol}	Bolometric Flux (cgs)	$0.000000000307^{+0.0000000000087}_{-0.0000000000044}$
ρ_*	Density (cgs)	$1.331^{+0.063}_{-0.087}$
$\log g$	Surface gravity (cgs)	$4.399^{+0.019}_{-0.022}$
T_{eff}	Effective Temperature (K)	5640^{+390}_{-210}
$T_{eff,SED}$	Effective Temperature ¹ (K)	5700^{+380}_{-260}
[Fe/H]	Metallicity (dex)	$-0.15^{+0.16}_{-0.64}$
[Fe/H] ₀	Initial Metallicity ²	$-0.09^{+0.15}_{-0.56}$
Age	Age (Gyr)	$10.8^{+2.2}_{-3.3}$
EEP	Equal Evolutionary Phase ³	400^{+11}_{-20}
A_V	V-band extinction (mag)	$0.50^{+0.24}_{-0.19}$
σ_{SED}	SED photometry error scaling	$8.9^{+3.7}_{-2.3}$
ϖ	Parallax (mas)	1.048 ± 0.033
d	Distance (pc)	954^{+31}_{-29}
Planetary Parameters:		
		b
P	Period (days)	5.0748841 ± 0.0000029
R_P	Radius (R_J)	$1.191^{+0.037}_{-0.034}$
M_P	Mass ⁴ (M_J)	$10.4^{+23}_{-7.8}$
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455378.05550^{+0.00092}_{-0.00093}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455378.05550^{+0.00092}_{-0.00093}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	$2456758.42396^{+0.00049}_{-0.00048}$
a	Semi-major axis (AU)	$0.0555^{+0.0012}_{-0.0014}$
i	Inclination (Degrees)	$89.38^{+0.42}_{-0.57}$
T_{eq}	Equilibrium temperature ⁸ (K)	1140^{+81}_{-42}
τ_{circ}	Tidal circularization timescale (Gyr)	14^{+35}_{-11}
K	RV semi-amplitude ⁴ (m/s)	1400^{+3000}_{-1000}
R_P/R_*	Radius of planet in stellar radii	0.1258 ± 0.0013
a/R_*	Semi-major axis in stellar radii	$12.28^{+0.17}_{-0.27}$
δ	$(R_P/R_*)^2$	$0.01582^{+0.00033}_{-0.00032}$
δ_I	Transit depth in I (fraction)	0.01859 ± 0.00049
δ_V	Transit depth in V (fraction)	0.0203 ± 0.0011
τ	Ingress/egress transit duration (days)	$0.01671^{+0.00088}_{-0.00034}$
T_{14}	Total transit duration (days)	$0.1470^{+0.0015}_{-0.0014}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.1301 ± 0.0013	
b	Transit Impact parameter	0.134 ^{+0.12} _{-0.090}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	181 ⁺⁵⁰ ₋₂₅	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	916 ⁺¹¹⁰ ₋₆₁	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	1460 ⁺¹¹⁰ ₋₆₇	
ρ_P	Density ⁴ (cgs)	7.7 ⁺¹⁸ _{-5.8}	
$\log g_P$..	Surface gravity ⁴	4.26 ^{+0.51} _{-0.60}	
Θ	Safronov Number	1.12 ^{+2.6} _{-0.85}	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	0.384 ^{+0.12} _{-0.054}	
T_P	Time of Periastron (BJD _{TDB})	2455378.05550 ^{+0.00092} _{-0.00093}	
T_S	Time of eclipse (BJD _{TDB})	2455380.59294 ^{+0.00092} _{-0.00093}	
T_A	Time of Ascending Node (BJD _{TDB})	2455381.86166 ^{+0.00091} _{-0.00093}	
T_D	Time of Descending Node (BJD _{TDB})	2455379.32422 ^{+0.00092} _{-0.00093}	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	10.4 ⁺²³ _{-7.8}	
M_P/M_* ..	Mass ratio ⁴	0.0115 ^{+0.026} _{-0.0087}	
d/R_* ..	Separation at mid transit	12.28 ^{+0.17} _{-0.27}	
P_T	A priori non-grazing transit prob	0.0712 ^{+0.0016} _{-0.0010}	
$P_{T,G}$	A priori transit prob	0.0917 ^{+0.0021} _{-0.0012}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.308 ^{+0.055} _{-0.059}	0.458 ^{+0.082} _{-0.10}
u_2	quadratic limb-darkening coeff	0.277 ^{+0.052} _{-0.053}	0.253 ± 0.065
Transit Parameters:		OGLE UT 2010-06-30 (I)	OGLE UT 2010-06-30 (V)
σ^2	Added Variance	0.00000871 ± 0.00000019	0.0000056 ^{+0.0000014} _{-0.0000012}
F_0	Baseline flux	0.999836 ± 0.000034	1.00000 ± 0.00025

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