

Table 1. Median values and 68% confidence interval for OGLE-TR-1068.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$1.67^{+0.14}_{-0.15}$
R_*	Radius (R_\odot)	$2.27^{+0.27}_{-0.43}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$2.19^{+0.27}_{-0.33}$
L_*	Luminosity (L_\odot)	$9.6^{+2.8}_{-2.3}$
F_{Bol}	Bolometric Flux (cgs)	$0.00000000151^{+0.000000000020}_{-0.000000000017}$
ρ_*	Density (cgs)	$0.199^{+0.15}_{-0.054}$
$\log g$	Surface gravity (cgs)	$3.944^{+0.16}_{-0.089}$
T_{eff}	Effective Temperature (K)	6820^{+360}_{-310}
$T_{eff,SED}$	Effective Temperature ¹ (K)	6900^{+280}_{-270}
[Fe/H]	Metallicity (dex)	$0.09^{+0.19}_{-0.14}$
[Fe/H] ₀	Initial Metallicity ²	$0.19^{+0.17}_{-0.15}$
Age	Age (Gyr)	$1.39^{+0.66}_{-0.49}$
EEP	Equal Evolutionary Phase ³	372^{+26}_{-28}
A_V	V-band extinction (mag)	0.35 ± 0.14
σ_{SED}	SED photometry error scaling	$10.9^{+1.8}_{-1.4}$
ϖ	Parallax (mas)	$0.698^{+0.11}_{-0.076}$
d	Distance (pc)	1430^{+180}_{-200}
Planetary Parameters:		
		b
P	Period (days)	$0.68587341^{+0.00000087}_{-0.00000090}$
R_P	Radius (R_J)	$1.74^{+0.86}_{-0.44}$
M_P	Mass ⁴ (M_J)	157^{+91}_{-150}
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455376.9436^{+0.0025}_{-0.0024}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455376.9436^{+0.0025}_{-0.0024}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	$2457091.6271^{+0.0010}_{-0.0011}$
a	Semi-major axis (AU)	$0.01856^{+0.00069}_{-0.00074}$
i	Inclination (Degrees)	$58.6^{+7.2}_{-6.1}$
T_{eq}	Equilibrium temperature ⁸ (K)	3600^{+180}_{-190}
τ_{circ}	Tidal circularization timescale (Gyr)	$0.0050^{+0.0069}_{-0.0046}$
K	RV semi-amplitude ⁴ (m/s)	20700^{+8800}_{-20000}
R_P/R_*	Radius of planet in stellar radii	$0.0787^{+0.027}_{-0.0059}$
a/R_*	Semi-major axis in stellar radii	$1.75^{+0.32}_{-0.14}$
δ	$(R_P/R_*)^2$	$0.00619^{+0.0051}_{-0.00090}$
δ_I	Transit depth in I (fraction)	$0.00558^{+0.00056}_{-0.00051}$
δ_V	Transit depth in V (fraction)	$0.00495^{+0.00038}_{-0.00033}$
τ	Ingress/egress transit duration (days)	$0.034^{+0.012}_{-0.017}$
T_{14}	Total transit duration (days)	$0.0858^{+0.0063}_{-0.0082}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} . . .	FWHM transit duration (days)	0.0523 ^{+0.0085} _{-0.0078}	
b	Transit Impact parameter	0.912 ^{+0.065} _{-0.064}	
$\delta_{S,2.5\mu m}$. . .	Blackbody eclipse depth at 2.5 μm (ppm)	2110 ⁺²⁰⁰⁰ ₋₅₅₀	
$\delta_{S,5.0\mu m}$. . .	Blackbody eclipse depth at 5.0 μm (ppm)	2680 ⁺²⁵⁰⁰ ₋₆₃₀	
$\delta_{S,7.5\mu m}$. . .	Blackbody eclipse depth at 7.5 μm (ppm)	2880 ⁺²⁶⁰⁰ ₋₆₅₀	
ρ_P	Density ⁴ (cgs)	24 ⁺¹⁶ ₋₂₂	
$\log g_P$	Surface gravity ⁴	5.01 ^{+0.11} _{-1.2}	
Θ	Safronov Number	1.97 ^{+0.21} _{-1.9}	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	38.2 ^{+8.4} _{-7.4}	
T_P	Time of Periastron (BJD _{TDB})	2455376.9436 ^{+0.0025} _{-0.0024}	
T_S	Time of eclipse (BJD _{TDB})	2455377.2866 ^{+0.0025} _{-0.0024}	
T_A	Time of Ascending Node (BJD _{TDB})	2455377.4580 ^{+0.0025} _{-0.0024}	
T_D	Time of Descending Node (BJD _{TDB})	2455377.1151 ^{+0.0025} _{-0.0024}	
V_c/V_e	1.00	
$M_P \sin i$	Minimum mass ⁴ (M_J)	134 ⁺⁶³ ₋₁₃₀	
M_P/M_*	Mass ratio ⁴	0.089 ^{+0.053} _{-0.087}	
d/R_*	Separation at mid transit	1.75 ^{+0.32} _{-0.14}	
P_T	A priori non-grazing transit prob	0.519 ^{+0.035} _{-0.073}	
$P_{T,G}$	A priori transit prob	0.616 ^{+0.074} _{-0.098}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.171 ± 0.053	0.326 ^{+0.058} _{-0.056}
u_2	quadratic limb-darkening coeff	0.330 ^{+0.050} _{-0.051}	0.327 ^{+0.053} _{-0.051}
Transit Parameters:		OGLE UT 2010-06-29 (I)	OGLE UT 2010-06-29 (V)
σ^2	Added Variance	0.00002866 ± 0.00000044	0.000159 ^{+0.000017} _{-0.000015}
F_0	Baseline flux	1.001100 ^{+0.000054} _{-0.000055}	0.99935 ^{+0.00087} _{-0.00088}

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