

Table 1. Median values and 68% confidence interval for OGLE-TR-1098.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$1.08^{+0.15}_{-0.18}$
R_*	Radius (R_\odot)	$1.270^{+0.079}_{-0.085}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$1.322^{+0.098}_{-0.097}$
L_*	Luminosity (L_\odot)	$1.86^{+0.64}_{-0.40}$
F_{Bol}	Bolometric Flux (cgs)	$0.000000000137^{+0.00000000000036}_{-0.00000000000020}$
ρ_*	Density (cgs)	$0.73^{+0.16}_{-0.13}$
$\log g$	Surface gravity (cgs)	$4.260^{+0.066}_{-0.072}$
T_{eff}	Effective Temperature (K)	5960^{+480}_{-290}
$T_{eff,SED}$	Effective Temperature ¹ (K)	5860^{+440}_{-300}
[Fe/H]	Metallicity (dex)	$0.15^{+0.25}_{-1.1}$
[Fe/H] ₀	Initial Metallicity ²	$0.18^{+0.21}_{-0.86}$
Age	Age (Gyr)	$6.4^{+5.0}_{-4.2}$
EEP	Equal Evolutionary Phase ³	414^{+20}_{-68}
A_V	V-band extinction (mag)	$0.73^{+0.31}_{-0.22}$
σ_{SED}	SED photometry error scaling	$9.4^{+1.6}_{-1.2}$
ϖ	Parallax (mas)	$0.483^{+0.039}_{-0.035}$
d	Distance (pc)	2070^{+160}_{-150}
Planetary Parameters:		
		b
P	Period (days)	5.880842 ± 0.000011
R_P	Radius (R_J)	$1.76^{+0.13}_{-0.14}$
M_P	Mass ⁴ (M_J)	$0.400^{+0.011}_{-0.023}$
T_C	Time of conjunction ⁵ (BJD _{TDB})	2455379.1189 ± 0.0033
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	2455379.1189 ± 0.0033
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	2456961.0652 ± 0.0015
a	Semi-major axis (AU)	$0.0654^{+0.0030}_{-0.0038}$
i	Inclination (Degrees)	86.05 ± 0.46
T_{eq}	Equilibrium temperature ⁸ (K)	1265^{+110}_{-65}
τ_{circ}	Tidal circularization timescale (Gyr)	$0.158^{+0.077}_{-0.046}$
K	RV semi-amplitude ⁴ (m/s)	$42.4^{+6.3}_{-4.1}$
R_P/R_*	Radius of planet in stellar radii	$0.1424^{+0.0041}_{-0.0039}$
a/R_*	Semi-major axis in stellar radii	$11.02^{+0.76}_{-0.69}$
δ	$(R_P/R_*)^2$	$0.0203^{+0.0012}_{-0.0011}$
δ_I	Transit depth in I (fraction)	$0.02030^{+0.00081}_{-0.00079}$
δ_V	Transit depth in V (fraction)	$0.02027^{+0.00079}_{-0.00078}$
τ	Ingress/egress transit duration (days)	$0.0388^{+0.0077}_{-0.0061}$
T_{14}	Total transit duration (days)	$0.1455^{+0.0053}_{-0.0052}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.1064 ^{+0.0049} _{-0.0057}	
b	Transit Impact parameter	0.759 ^{+0.038} _{-0.046}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	356 ⁺¹¹⁰ ₋₇₁	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	1450 ⁺²³⁰ ₋₁₈₀	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	2180 ⁺²⁷⁰ ₋₂₂₀	
ρ_P	Density ⁴ (cgs)	0.089 ^{+0.024} _{-0.017}	
$\log g_P$..	Surface gravity ⁴	2.498 ^{+0.070} _{-0.062}	
Θ	Safronov Number	0.0272 ^{+0.0053} _{-0.0033}	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	0.58 ^{+0.24} _{-0.11}	
T_P	Time of Periastron (BJD _{TDB})	2455379.1189 ± 0.0033	
T_S	Time of eclipse (BJD _{TDB})	2455382.0593 ± 0.0033	
T_A	Time of Ascending Node (BJD _{TDB})	2455383.5295 ± 0.0033	
T_D	Time of Descending Node (BJD _{TDB})	2455380.5891 ± 0.0033	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	0.399 ^{+0.011} _{-0.023}	
M_P/M_* ..	Mass ratio ⁴	0.000351 ^{+0.000083} _{-0.000047}	
d/R_* ..	Separation at mid transit	11.02 ^{+0.76} _{-0.69}	
P_T	A priori non-grazing transit prob	0.0778 ^{+0.0050} _{-0.0048}	
$P_{T,G}$	A priori transit prob	0.1036 ^{+0.0071} _{-0.0068}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.269 ^{+0.069} _{-0.072}	0.438 ^{+0.084} _{-0.091}
u_2	quadratic limb-darkening coeff	0.291 ^{+0.053} _{-0.052}	0.275 ^{+0.059} _{-0.062}
Transit Parameters:		OGLE UT 2010-07-01 (I)	OGLE UT 2010-07-01 (V)
σ^2	Added Variance	0.00006251 ^{+0.00000089} _{-0.00000087}	0.0000322 ^{+0.00000049} _{-0.00000043}
F_0	Baseline flux	1.000354 ± 0.000074	1.00005 ± 0.00047

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