

Table 1. Median values and 68% confidence interval for OGLE-TR-1018.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$1.24^{+0.25}_{-0.28}$
R_*	Radius (R_\odot)	$1.57^{+0.14}_{-0.12}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$1.59^{+0.16}_{-0.14}$
L_*	Luminosity (L_\odot)	$3.7^{+2.4}_{-1.3}$
F_{Bol}	Bolometric Flux (cgs)	$0.00000000033^{+0.000000000019}_{-0.000000000011}$
ρ_*	Density (cgs)	$0.44^{+0.13}_{-0.12}$
$\log g$	Surface gravity (cgs)	$4.134^{+0.087}_{-0.12}$
T_{eff}	Effective Temperature (K)	6360^{+820}_{-630}
$T_{eff,SED}$	Effective Temperature ¹ (K)	6320^{+830}_{-630}
[Fe/H]	Metallicity (dex)	$0.04^{+0.32}_{-1.2}$
[Fe/H] ₀	Initial Metallicity ²	$0.13^{+0.26}_{-1.00}$
Age	Age (Gyr)	$3.8^{+5.6}_{-2.8}$
EEP	Equal Evolutionary Phase ³	406^{+45}_{-69}
A_V	V-band extinction (mag)	$1.74^{+0.50}_{-0.47}$
σ_{SED}	SED photometry error scaling	$11.1^{+1.9}_{-1.5}$
ϖ	Parallax (mas)	$0.529^{+0.066}_{-0.060}$
d	Distance (pc)	1890^{+240}_{-210}
Planetary Parameters:		
		b
P	Period (days)	$3.795212^{+0.000013}_{-0.000014}$
R_P	Radius (R_J)	$1.021^{+0.093}_{-0.080}$
M_P	Mass ⁴ (M_J)	45^{+27}_{-30}
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455376.7046^{+0.0052}_{-0.0054}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455376.7046^{+0.0052}_{-0.0054}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	$2456655.6910^{+0.0031}_{-0.0034}$
a	Semi-major axis (AU)	$0.0517^{+0.0031}_{-0.0041}$
i	Inclination (Degrees)	$86.2^{+1.9}_{-1.7}$
T_{eq}	Equilibrium temperature ⁸ (K)	1690^{+240}_{-160}
τ_{circ}	Tidal circularization timescale (Gyr)	49^{+51}_{-36}
K	RV semi-amplitude ⁴ (m/s)	5100^{+3000}_{-3300}
R_P/R_*	Radius of planet in stellar radii	0.0668 ± 0.0025
a/R_*	Semi-major axis in stellar radii	$7.05^{+0.62}_{-0.72}$
δ	$(R_P/R_*)^2$	$0.00446^{+0.00034}_{-0.00033}$
δ_I	Transit depth in I (fraction)	0.00486 ± 0.00036
δ_V	Transit depth in V (fraction)	$0.00520^{+0.00046}_{-0.00042}$
τ	Ingress/egress transit duration (days)	$0.0130^{+0.0035}_{-0.0021}$
T_{14}	Total transit duration (days)	$0.1650^{+0.0077}_{-0.0071}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} . . .	FWHM transit duration (days)	$0.1513^{+0.0076}_{-0.0071}$	
b	Transit Impact parameter	$0.47^{+0.15}_{-0.22}$	
$\delta_{S,2.5\mu m}$. . .	Blackbody eclipse depth at $2.5\mu m$ (ppm)	226^{+75}_{-48}	
$\delta_{S,5.0\mu m}$. . .	Blackbody eclipse depth at $5.0\mu m$ (ppm)	569^{+96}_{-70}	
$\delta_{S,7.5\mu m}$. . .	Blackbody eclipse depth at $7.5\mu m$ (ppm)	743^{+100}_{-75}	
ρ_P	Density ⁴ (cgs)	53^{+40}_{-37}	
$\log g_P$	Surface gravity ⁴	$5.04^{+0.22}_{-0.49}$	
Θ	Safronov Number	$3.8^{+2.5}_{-2.6}$	
$\langle F \rangle$	Incident Flux ($10^9 \text{ erg s}^{-1} \text{ cm}^{-2}$)	$1.86^{+1.3}_{-0.61}$	
T_P	Time of Periastron (BJD _{TDB})	$2455376.7046^{+0.0052}_{-0.0054}$	
T_S	Time of eclipse (BJD _{TDB})	$2455378.6022^{+0.0052}_{-0.0054}$	
T_A	Time of Ascending Node (BJD _{TDB})	$2455379.5510^{+0.0052}_{-0.0054}$	
T_D	Time of Descending Node (BJD _{TDB})	$2455377.6534^{+0.0052}_{-0.0054}$	
V_c/V_e	1.00	
$M_P \sin i$	Minimum mass ⁴ (M_J)	45^{+27}_{-30}	
M_P/M_*	Mass ratio ⁴	$0.036^{+0.024}_{-0.023}$	
d/R_*	Separation at mid transit	$7.05^{+0.62}_{-0.72}$	
P_T	A priori non-grazing transit prob	$0.132^{+0.015}_{-0.011}$	
$P_{T,G}$	A priori transit prob	$0.151^{+0.017}_{-0.012}$	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	$0.217^{+0.089}_{-0.071}$	$0.373^{+0.12}_{-0.079}$
u_2	quadratic limb-darkening coeff	$0.297^{+0.055}_{-0.057}$	$0.294^{+0.060}_{-0.071}$
Transit Parameters:		OGLE UT 2010-06-29 (I)	OGLE UT 2010-06-29 (V)
σ^2	Added Variance	$0.00004154^{+0.00000065}_{-0.00000064}$	$0.0000362^{+0.00000057}_{-0.00000049}$
F_0	Baseline flux	1.000331 ± 0.000065	1.00046 ± 0.00055

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