

Table 1. Median values and 68% confidence interval for OGLE-TR-1015.

Parameter	Units	Values
Stellar Parameters:		
M_*	Mass (M_\odot)	$0.916^{+0.16}_{-0.094}$
R_*	Radius (R_\odot)	$2.26^{+0.28}_{-0.21}$
$R_{*,SED}$	Radius ¹ (R_\odot)	$2.29^{+0.30}_{-0.24}$
L_*	Luminosity (L_\odot)	$4.5^{+1.9}_{-1.2}$
F_{Bol}	Bolometric Flux (cgs)	$0.000000000196^{+0.0000000000053}_{-0.0000000000038}$
ρ_*	Density (cgs)	$0.113^{+0.040}_{-0.033}$
$\log g$	Surface gravity (cgs)	$3.696^{+0.094}_{-0.10}$
T_{eff}	Effective Temperature (K)	5530^{+520}_{-370}
$T_{eff,SED}$	Effective Temperature ¹ (K)	5500^{+510}_{-380}
[Fe/H]	Metallicity (dex)	$-0.69^{+0.38}_{-0.87}$
[Fe/H] ₀	Initial Metallicity ²	$-0.66^{+0.36}_{-0.79}$
Age	Age (Gyr)	$9.3^{+3.1}_{-3.5}$
EEP	Equal Evolutionary Phase ³	$469.8^{+4.8}_{-6.4}$
A_V	V-band extinction (mag)	$0.95^{+0.33}_{-0.30}$
σ_{SED}	SED photometry error scaling	$11.1^{+1.8}_{-1.4}$
ϖ	Parallax (mas)	$0.371^{+0.042}_{-0.043}$
d	Distance (pc)	2690^{+350}_{-270}
Planetary Parameters:		
		b
P	Period (days)	$16.47033^{+0.00032}_{-0.00037}$
R_p	Radius (R_J)	$1.071^{+0.098}_{-0.076}$
M_p	Mass ⁴ (M_J)	40^{+34}_{-29}
T_C	Time of conjunction ⁵ (BJD _{TDB})	$2455377.320^{+0.026}_{-0.029}$
T_T	Time of minimum projected separation ⁶ (BJD _{TDB})	$2455377.320^{+0.026}_{-0.029}$
T_0	Optimal conjunction Time ⁷ (BJD _{TDB})	$2456382.009^{+0.017}_{-0.020}$
a	Semi-major axis (AU)	$0.1250^{+0.0067}_{-0.0044}$
i	Inclination (Degrees)	$88.5^{+1.0}_{-1.2}$
T_{eq}	Equilibrium temperature ⁸ (K)	1143^{+100}_{-81}
τ_{circ}	Tidal circularization timescale (Gyr)	16000^{+20000}_{-12000}
K	RV semi-amplitude ⁴ (m/s)	3300^{+2700}_{-2300}
R_p/R_*	Radius of planet in stellar radii	$0.0490^{+0.0038}_{-0.0039}$
a/R_*	Semi-major axis in stellar radii	11.9 ± 1.3
δ	$(R_p/R_*)^2$	$0.00241^{+0.00039}_{-0.00037}$
δ_I	Transit depth in I (fraction)	$0.00272^{+0.00042}_{-0.00041}$
δ_V	Transit depth in V (fraction)	$0.00296^{+0.00048}_{-0.00046}$
τ	Ingress/egress transit duration (days)	$0.0227^{+0.0046}_{-0.0024}$
T_{14}	Total transit duration (days)	$0.433^{+0.044}_{-0.041}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
T_{FWHM} ..	FWHM transit duration (days)	0.408 ^{+0.043} _{-0.040}	
b	Transit Impact parameter	0.32 ^{+0.22} _{-0.21}	
$\delta_{S,2.5\mu m}$..	Blackbody eclipse depth at 2.5 μm (ppm)	28.0 ⁺¹¹ _{-7.2}	
$\delta_{S,5.0\mu m}$..	Blackbody eclipse depth at 5.0 μm (ppm)	140 ⁺²⁸ ₋₂₂	
$\delta_{S,7.5\mu m}$..	Blackbody eclipse depth at 7.5 μm (ppm)	224 ⁺³⁷ ₋₃₀	
ρ_P	Density ⁴ (cgs)	39 ⁺³⁷ ₋₂₉	
$\log g_P$	Surface gravity ⁴	4.95 ^{+0.25} _{-0.58}	
Θ	Safronov Number	10.2 ^{+9.3} _{-7.5}	
$\langle F \rangle$	Incident Flux (10 ⁹ erg s ⁻¹ cm ⁻²)	0.387 ^{+0.16} _{-0.099}	
T_P	Time of Periastron (BJD _{TDB})	2455377.320 ^{+0.026} _{-0.029}	
T_S	Time of eclipse (BJD _{TDB})	2455369.085 ^{+0.026} _{-0.029}	
T_A	Time of Ascending Node (BJD _{TDB})	2455389.673 ^{+0.026} _{-0.029}	
T_D	Time of Descending Node (BJD _{TDB})	2455381.438 ^{+0.026} _{-0.029}	
V_c/V_e	1.00	
$M_P \sin i$..	Minimum mass ⁴ (M_J)	40 ⁺³⁴ ₋₂₉	
M_P/M_*	Mass ratio ⁴	0.041 ^{+0.036} _{-0.029}	
d/R_*	Separation at mid transit	11.9 \pm 1.3	
P_T	A priori non-grazing transit prob	0.0799 ^{+0.010} _{-0.0079}	
$P_{T,G}$	A priori transit prob	0.0881 ^{+0.011} _{-0.0084}	
Wavelength Parameters:		I	V
u_1	linear limb-darkening coeff	0.268 ^{+0.088} _{-0.074}	0.430 ^{+0.12} _{-0.086}
u_2	quadratic limb-darkening coeff	0.275 ^{+0.055} _{-0.057}	0.266 ^{+0.063} _{-0.076}
Transit Parameters:		OGLE UT 2010-06-29 (I)	OGLE UT 2010-06-29 (V)
σ^2	Added Variance	0.00003077 ^{+0.00000050} _{-0.00000048}	0.0000167 ^{+0.00000030} _{-0.00000026}
F_0	Baseline flux	0.999987 ^{+0.000055} _{-0.000054}	0.99977 ^{+0.00038} _{-0.00037}

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