

**Table 1.** Median values and 68% confidence interval for OGLE-TR-1021.

Parameter	Units	Values
Stellar Parameters:		
$M_*$	Mass ( $M_\odot$ )	$1.504^{+0.10}_{-0.085}$
$R_*$	Radius ( $R_\odot$ )	$1.459^{+0.062}_{-0.059}$
$R_{*,SED}$	Radius <sup>1</sup> ( $R_\odot$ )	$1.631^{+0.080}_{-0.075}$
$L_*$	Luminosity ( $L_\odot$ )	$4.59^{+1.2}_{-0.76}$
$F_{Bol}$	Bolometric Flux (cgs)	$0.000000000584^{+0.000000000011}_{-0.0000000000070}$
$\rho_*$	Density (cgs)	$0.684^{+0.072}_{-0.066}$
$\log g$	Surface gravity (cgs)	$4.288 \pm 0.029$
$T_{eff}$	Effective Temperature (K)	$6990^{+360}_{-250}$
$T_{eff,SED}$	Effective Temperature <sup>1</sup> (K)	$6640^{+340}_{-250}$
[Fe/H]	Metallicity (dex)	$0.17^{+0.18}_{-0.14}$
[Fe/H] <sub>0</sub>	Initial Metallicity <sup>2</sup>	$0.22^{+0.14}_{-0.11}$
Age	Age (Gyr)	$0.19^{+0.42}_{-0.13}$
EEP	Equal Evolutionary Phase <sup>3</sup>	$282^{+33}_{-37}$
$A_V$	V-band extinction (mag)	$1.84^{+0.18}_{-0.14}$
$\sigma_{SED}$	SED photometry error scaling	$10.2^{+1.6}_{-1.3}$
$\varpi$	Parallax (mas)	$0.630 \pm 0.032$
$d$	Distance (pc)	$1586^{+85}_{-77}$
Planetary Parameters:		
		b
$P$	Period (days)	$50.24001^{+0.00017}_{-0.00016}$
$R_P$	Radius ( $R_J$ )	$2.20^{+0.11}_{-0.10}$
$M_P$	Mass <sup>4</sup> ( $M_J$ )	$0.4066^{+0.0055}_{-0.011}$
$T_C$	Time of conjunction <sup>5</sup> (BJD <sub>TDB</sub> )	$2455394.4031 \pm 0.0056$
$T_T$	Time of minimum projected separation <sup>6</sup> (BJD <sub>TDB</sub> )	$2455394.4031 \pm 0.0056$
$T_0$	Optimal conjunction Time <sup>7</sup> (BJD <sub>TDB</sub> )	$2456801.1234 \pm 0.0032$
$a$	Semi-major axis (AU)	$0.3053^{+0.0067}_{-0.0058}$
$i$	Inclination (Degrees)	$89.199^{+0.074}_{-0.072}$
$T_{eq}$	Equilibrium temperature <sup>8</sup> (K)	$737^{+36}_{-28}$
$\tau_{circ}$	Tidal circularization timescale (Gyr)	$740^{+180}_{-140}$
$K$	RV semi-amplitude <sup>4</sup> (m/s)	$16.95^{+0.75}_{-0.82}$
$R_P/R_*$	Radius of planet in stellar radii	$0.1546 \pm 0.0027$
$a/R_*$	Semi-major axis in stellar radii	$45.0 \pm 1.5$
$\delta$	$(R_P/R_*)^2$	$0.02392^{+0.00086}_{-0.00084}$
$\delta_I$	Transit depth in I (fraction)	$0.02480 \pm 0.00082$
$\delta_V$	Transit depth in V (fraction)	$0.02574^{+0.00089}_{-0.00086}$
$\tau$	Ingress/egress transit duration (days)	$0.0717^{+0.0063}_{-0.0057}$
$T_{14}$	Total transit duration (days)	$0.3439^{+0.0077}_{-0.0074}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
$T_{FWHM}$ ..	FWHM transit duration (days) .....	0.2721 <sup>+0.0084</sup> <sub>-0.0086</sub>	
$b$ .....	Transit Impact parameter .....	0.629 <sup>+0.038</sup> <sub>-0.043</sub>	
$\delta_{S,2.5\mu m}$ ..	Blackbody eclipse depth at 2.5 $\mu m$ (ppm) .....	12.6 <sup>+4.4</sup> <sub>-2.9</sub>	
$\delta_{S,5.0\mu m}$ ..	Blackbody eclipse depth at 5.0 $\mu m$ (ppm) .....	252 <sup>+37</sup> <sub>-30</sub>	
$\delta_{S,7.5\mu m}$ ..	Blackbody eclipse depth at 7.5 $\mu m$ (ppm) .....	607 <sup>+56</sup> <sub>-51</sub>	
$\rho_P$ .....	Density <sup>4</sup> (cgs) .....	0.0473 <sup>+0.0071</sup> <sub>-0.0062</sub>	
$\log g_P$ .....	Surface gravity <sup>4</sup> .....	2.317 $\pm$ 0.041	
$\Theta$ .....	Safronov Number .....	0.0745 <sup>+0.0060</sup> <sub>-0.0056</sub>	
$\langle F \rangle$ .....	Incident Flux (10 <sup>9</sup> erg s <sup>-1</sup> cm <sup>-2</sup> ) .....	0.0672 <sup>+0.014</sup> <sub>-0.0096</sub>	
$T_P$ .....	Time of Periastron (BJD <sub>TDB</sub> ) .....	2455394.4031 $\pm$ 0.0056	
$T_S$ .....	Time of eclipse (BJD <sub>TDB</sub> ) .....	2455419.5231 $\pm$ 0.0056	
$T_A$ .....	Time of Ascending Node (BJD <sub>TDB</sub> ) .....	2455432.0831 $\pm$ 0.0055	
$T_D$ .....	Time of Descending Node (BJD <sub>TDB</sub> ) .....	2455406.9631 <sup>+0.0056</sup> <sub>-0.0055</sub>	
$V_c/V_e$ .....	.....	1.00	
$M_P \sin i$ ..	Minimum mass <sup>4</sup> ( $M_J$ ) .....	0.4066 <sup>+0.0055</sup> <sub>-0.011</sub>	
$M_P/M_*$ .....	Mass ratio <sup>4</sup> .....	0.000256 <sup>+0.000016</sup> <sub>-0.000017</sub>	
$d/R_*$ .....	Separation at mid transit .....	45.0 $\pm$ 1.5	
$P_T$ .....	A priori non-grazing transit prob .....	0.01877 <sup>+0.00064</sup> <sub>-0.00061</sub>	
$P_{T,G}$ .....	A priori transit prob .....	0.02564 <sup>+0.00089</sup> <sub>-0.00085</sub>	
Wavelength Parameters:		I	V
$u_1$ .....	linear limb-darkening coeff .....	0.161 <sup>+0.053</sup> <sub>-0.054</sub>	0.312 <sup>+0.055</sup> <sub>-0.056</sub>
$u_2$ .....	quadratic limb-darkening coeff .....	0.334 $\pm$ 0.051	0.338 $\pm$ 0.051
Transit Parameters:		OGLE UT 2010-07-16 (I)	OGLE UT 2010-07-16 (V)
$\sigma^2$ .....	Added Variance .....	0.00002275 <sup>+0.00000043</sup> <sub>-0.00000042</sub>	0.0000215 <sup>+0.00000031</sup> <sub>-0.00000027</sub>
$F_0$ .....	Baseline flux .....	0.999921 $\pm$ 0.000054	0.99998 <sup>+0.00038</sup> <sub>-0.00037</sub>

See Table 3 in Eastman, J. et al., 2019, arXiv:1907.09480 for a detailed description of all parameters

<sup>1</sup>This value ignores the systematic error and is for reference only

<sup>2</sup>The metallicity of the star at birth

<sup>3</sup>Corresponds to static points in a star's evolutionary history. See §2 in Dotter, A., 2016, ApJS, 222, 8

<sup>4</sup>Uses measured radius and estimated mass from Chen, J., & Kipping, D. 2017, ApJ, 834, 17

<sup>5</sup>Time of conjunction is commonly reported as the "transit time"

<sup>6</sup>Time of minimum projected separation is a more correct "transit time"

<sup>7</sup>Optimal time of conjunction minimizes the covariance between  $T_C$  and Period

<sup>8</sup>Assumes no albedo and perfect redistribution