

**Table 1.** Median values and 68% confidence interval for OGLE-TR-1024.

Parameter	Units	Values
Stellar Parameters:		
$M_*$ . . . . .	Mass ( $M_\odot$ ) . . . . .	$1.44^{+0.27}_{-1.0}$
$R_*$ . . . . .	Radius ( $R_\odot$ ) . . . . .	$2.03^{+0.17}_{-0.15}$
$R_{*,SED}$ . . . . .	Radius <sup>1</sup> ( $R_\odot$ ) . . . . .	$2.05^{+0.19}_{-0.17}$
$L_*$ . . . . .	Luminosity ( $L_\odot$ ) . . . . .	$2.71^{+1.1}_{-0.87}$
$F_{Bol}$ . . . . .	Bolometric Flux (cgs) . . . . .	$0.0000000000326^{+0.00000000000064}_{-0.00000000000060}$
$\rho_*$ . . . . .	Density (cgs) . . . . .	$0.214^{+0.084}_{-0.14}$
$\log g$ . . . . .	Surface gravity (cgs) . . . . .	$3.96^{+0.10}_{-0.48}$
$T_{eff}$ . . . . .	Effective Temperature (K) . . . . .	$5190 \pm 430$
$T_{eff,SED}$ . . . . .	Effective Temperature <sup>1</sup> (K) . . . . .	$5170^{+450}_{-460}$
[Fe/H] . . . . .	Metallicity (dex) . . . . .	$-0.09^{+0.42}_{-3.2}$
[Fe/H] <sub>0</sub> . . . . .	Initial Metallicity <sup>2</sup> . . . . .	$-0.13^{+0.39}_{-3.2}$
Age . . . . .	Age (Gyr) . . . . .	$0.0024^{+0.0053}_{-0.0021}$
EEP . . . . .	Equal Evolutionary Phase <sup>3</sup> . . . . .	$158^{+25}_{-66}$
$A_V$ . . . . .	V-band extinction (mag) . . . . .	$1.84^{+0.31}_{-0.41}$
$\sigma_{SED}$ . . . . .	SED photometry error scaling . . . . .	$10.8^{+1.7}_{-1.3}$
$\varpi$ . . . . .	Parallax (mas) . . . . .	$0.615^{+0.068}_{-0.061}$
$d$ . . . . .	Distance (pc) . . . . .	$1630^{+180}_{-160}$
Planetary Parameters:		
		b
$P$ . . . . .	Period (days) . . . . .	$1.4272776^{+0.0000052}_{-0.0000074}$
$R_p$ . . . . .	Radius ( $R_J$ ) . . . . .	$1.029^{+0.086}_{-0.081}$
$M_p$ . . . . .	Mass <sup>4</sup> ( $M_J$ ) . . . . .	$44^{+28}_{-29}$
$T_C$ . . . . .	Time of conjunction <sup>5</sup> (BJD <sub>TDB</sub> ) . . . . .	$2455377.3506^{+0.0080}_{-0.0059}$
$T_T$ . . . . .	Time of minimum projected separation <sup>6</sup> (BJD <sub>TDB</sub> ) . . . . .	$2455377.3506^{+0.0080}_{-0.0059}$
$T_0$ . . . . .	Optimal conjunction Time <sup>7</sup> (BJD <sub>TDB</sub> ) . . . . .	$2456731.8370^{+0.0041}_{-0.0039}$
$a$ . . . . .	Semi-major axis (AU) . . . . .	$0.0283^{+0.0016}_{-0.0089}$
$i$ . . . . .	Inclination (Degrees) . . . . .	$77.0^{+4.6}_{-11}$
$T_{eq}$ . . . . .	Equilibrium temperature <sup>8</sup> (K) . . . . .	$2230^{+210}_{-160}$
$\tau_{circ}$ . . . . .	Tidal circularization timescale (Gyr) . . . . .	$0.61^{+0.84}_{-0.47}$
$K$ . . . . .	RV semi-amplitude <sup>4</sup> (m/s) . . . . .	$6900^{+5400}_{-4500}$
$R_p/R_*$ . . . . .	Radius of planet in stellar radii . . . . .	$0.0519^{+0.0036}_{-0.0033}$
$a/R_*$ . . . . .	Semi-major axis in stellar radii . . . . .	$2.87^{+0.34}_{-0.80}$
$\delta$ . . . . .	$(R_p/R_*)^2$ . . . . .	$0.00269^{+0.00038}_{-0.00033}$
$\delta_I$ . . . . .	Transit depth in I (fraction) . . . . .	$0.00286 \pm 0.00035$
$\delta_V$ . . . . .	Transit depth in V (fraction) . . . . .	$0.00298^{+0.00049}_{-0.00050}$
$\tau$ . . . . .	Ingress/egress transit duration (days) . . . . .	$0.0113^{+0.016}_{-0.0028}$
$T_{14}$ . . . . .	Total transit duration (days) . . . . .	$0.1400^{+0.013}_{-0.0088}$

Table 1 continued on next page

Table 1 (continued)

Parameter	Units	Values	
$T_{FWHM}$ ..	FWHM transit duration (days) .....	0.1261 <sup>+0.0084</sup> <sub>-0.011</sub>	
$b$ .....	Transit Impact parameter .....	0.65 <sup>+0.21</sup> <sub>-0.19</sub>	
$\delta_{S,2.5\mu m}$ ..	Blackbody eclipse depth at 2.5 $\mu m$ (ppm) .....	419 <sup>+230</sup> <sub>-77</sub>	
$\delta_{S,5.0\mu m}$ ..	Blackbody eclipse depth at 5.0 $\mu m$ (ppm) .....	720 <sup>+280</sup> <sub>-110</sub>	
$\delta_{S,7.5\mu m}$ ..	Blackbody eclipse depth at 7.5 $\mu m$ (ppm) .....	850 <sup>+290</sup> <sub>-130</sub>	
$\rho_P$ .....	Density <sup>4</sup> (cgs) .....	51 <sup>+40</sup> <sub>-36</sub>	
$\log g_P$ ..	Surface gravity <sup>4</sup> .....	5.02 <sup>+0.23</sup> <sub>-0.51</sub>	
$\Theta$ .....	Safronov Number .....	2.0 <sup>+1.9</sup> <sub>-1.3</sub>	
$\langle F \rangle$ .....	Incident Flux (10 <sup>9</sup> erg s <sup>-1</sup> cm <sup>-2</sup> ) .....	5.6 <sup>+2.4</sup> <sub>-1.5</sub>	
$T_P$ .....	Time of Periastron (BJD <sub>TDB</sub> ) .....	2455377.3506 <sup>+0.0080</sup> <sub>-0.0059</sub>	
$T_S$ .....	Time of eclipse (BJD <sub>TDB</sub> ) .....	2455378.0642 <sup>+0.0080</sup> <sub>-0.0059</sub>	
$T_A$ .....	Time of Ascending Node (BJD <sub>TDB</sub> ) .....	2455378.4210 <sup>+0.0080</sup> <sub>-0.0059</sub>	
$T_D$ .....	Time of Descending Node (BJD <sub>TDB</sub> ) .....	2455377.7074 <sup>+0.0080</sup> <sub>-0.0059</sub>	
$V_c/V_e$ ..	.....	1.00	
$M_P \sin i$ ..	Minimum mass <sup>4</sup> ( $M_J$ ) .....	42 <sup>+27</sup> <sub>-28</sub>	
$M_P/M_*$ ..	Mass ratio <sup>4</sup> .....	0.035 <sup>+0.053</sup> <sub>-0.023</sub>	
$d/R_*$ ..	Separation at mid transit .....	2.87 <sup>+0.34</sup> <sub>-0.80</sub>	
$P_T$ .....	A priori non-grazing transit prob .....	0.331 <sup>+0.13</sup> <sub>-0.035</sub>	
$P_{T,G}$ .....	A priori transit prob .....	0.366 <sup>+0.14</sup> <sub>-0.038</sub>	
Wavelength Parameters:		I	V
$u_1$ .....	linear limb-darkening coeff .....	0.315 <sup>+0.100</sup> <sub>-0.13</sub>	0.52 <sup>+0.13</sup> <sub>-0.18</sub>
$u_2$ .....	quadratic limb-darkening coeff .....	0.267 <sup>+0.077</sup> <sub>-0.073</sub>	0.23 $\pm$ 0.11
Transit Parameters:		OGLE UT 2010-06-29 (I)	OGLE UT 2010-06-29 (V)
$\sigma^2$ .....	Added Variance .....	0.0000696 $\pm$ 0.0000011	0.0000733 <sup>+0.0000100</sup> <sub>-0.0000090</sub>
$F_0$ .....	Baseline flux .....	1.000348 <sup>+0.000094</sup> <sub>-0.000091</sub>	0.99982 <sup>+0.00066</sup> <sub>-0.00068</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