

Correction to: Trio of super-Earth candidates orbiting K-dwarf HD 48948: a new habitable zone candidate

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Key words: errata, addenda – techniques: radial velocities – planets and satellites: detection – stars: activity – methods: statistical – stars: rotation – instrumentation: spectrographs.

This is an erratum to the paper titled ‘Trio of super-Earth candidates orbiting K-Dwarf HD 48948: a new habitable zone candidate’, published in MNRAS 531, 4464–4481 (2024) with <https://doi.org/10.1093/mnras/stae1367>. We have identified and corrected errors in table 3 of the original publication. The incident flux and

temperature values for the three planetary candidates were incorrectly calculated due to a mathematical error. Additionally, we discovered a typographical mistake in the eccentricity values for candidates c and d in the TWEAKS analysis. The accurate and updated values are provided in the Table 1. While these errors do not alter the overall conclusions of the paper, the corrected values provide a more accurate representation of the data and should be used for reference in future research.

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Table 1. The table displays the results of three Keplerian models, as discussed in sections 7.1, 7.2, and 7.3. The values and uncertainties of each parameter are derived from their respective posterior distributions, with the 50th percentile representing the central value and the 16th to 84th percentile range indicating 1σ uncertainty. Additionally, the derived parameters, as explained in section 7.3, are also included in this table. The maximum equilibrium temperature is calculated assuming an albedo (A_B) of 0 and isotropic re-emission and uniform equilibrium temperature.

Parameter	Symbol	Unit	HD48948 b	HD48948 c	HD48948 d
Three Keplerians-only analysis on YV2 RVs					
Orbital period	P	days	$7.33982^{+0.00082}_{-0.00085}$	$37.998^{+0.018}_{-0.019}$	$151.12^{+0.56}_{-0.49}$
RV amplitude	K	m s^{-1}	$1.35^{+0.18}_{-0.17}$	$1.71^{+0.20}_{-0.22}$	1.09 ± 0.19
Eccentricity	e		$0.06^{+0.10}_{-0.05}$	$0.06^{+0.09}_{-0.05}$	$0.10^{+0.18}_{-0.09}$
Argument of periastron	ω	rad	$0.83^{+1.27}_{-1.28}$	$-1.06^{+1.24}_{-1.00}$	$-1.02^{+1.43}_{-1.11}$
	$\sqrt{e} \cos \omega$		$0.07^{+0.19}_{-0.16}$	$0.04^{+0.15}_{-0.20}$	$0.04^{+0.17}_{-0.30}$
	$\sqrt{e} \sin \omega$		$0.09^{+0.20}_{-0.15}$	$-0.11^{+0.13}_{-0.19}$	$-0.14^{+0.18}_{-0.27}$
Time of periastron	t_p	BJD	$2456574.05^{+1.53}_{-1.49}$	$2456570.22^{+5.98}_{-7.11}$	$2456564.06^{+18.67}_{-31.89}$
Minimum mass	$m \sin(i)$	$M_{\oplus}$	3.18 ± 0.41	$6.97^{+0.82}_{-0.89}$	$6.93^{+1.21}_{-1.24}$
One-dimensional GP analysis on YVA RVs					
Orbital period	P	days	$7.34012^{+0.00052}_{-0.00046}$	$37.99^{+0.16}_{-0.22}$	150.28 ± 0.69
RV amplitude	K	m s^{-1}	$2.07^{+0.15}_{-0.17}$	1.06 ± 0.69	$1.55^{+0.35}_{-0.38}$
Eccentricity	e		$0.08^{+0.06}_{-0.05}$	$0.23^{+0.14}_{-0.19}$	$0.15^{+0.17}_{-0.10}$
Argument of periastron	ω	rad	$0.55^{+0.95}_{-0.92}$	$-0.48^{+1.81}_{-1.40}$	$-1.05^{+0.79}_{-0.96}$
	$\sqrt{e} \cos \omega$		$0.16^{+0.13}_{-0.18}$	$0.13^{+0.34}_{-0.40}$	$0.10^{+0.20}_{-0.33}$
	$\sqrt{e} \sin \omega$		$0.11^{+0.14}_{-0.18}$	$-0.11^{+0.46}_{-0.33}$	$-0.25^{+0.23}_{-0.20}$
Time of periastron	t_p	BJD	$2456573.74^{+1.05}_{-0.87}$	$2456571.71^{+10.5}_{-9.80}$	2456571.52 ± 15.3
Minimum mass	$m \sin(i)$	$M_{\oplus}$	$4.86^{+0.35}_{-0.39}$	$3.94^{+3.02}_{-2.85}$	$9.72^{+2.26}_{-2.56}$
Multidimensional GP analysis on YVA RVs					
Orbital period	P	days	$7.34013^{+0.00040}_{-0.00040}$	$37.920^{+0.026}_{-0.024}$	$150.95^{+0.45}_{-0.41}$
RV amplitude	K	m s^{-1}	2.11 ± 0.13	1.75 ± 0.25	1.72 ± 0.22
Eccentricity	e		$0.078^{+0.058}_{-0.050}$	$0.22^{+0.10}_{-0.11}$	$0.12^{+0.12}_{-0.08}$
Argument of periastron	ω	rad	$0.68^{+0.84}_{-0.77}$	$1.76^{+0.66}_{-0.54}$	$4.69^{+1.19}_{-1.21}$
	$\sqrt{e} \cos \omega$		$0.17^{+0.13}_{-0.18}$	$-0.08^{+0.23}_{-0.22}$	0.01 ± 0.24
	$\sqrt{e} \sin \omega$		$0.14^{+0.13}_{-0.17}$	$0.41^{+0.13}_{-0.21}$	$0.21^{+0.25}_{-0.19}$
Time of periastron	t_p	BJD	$2459003.44^{+1.06}_{-0.83}$	$2459019.8^{+3.5}_{-2.7}$	2459107^{+24}_{-42}
Minimum mass	$m \sin(i)$	$M_{\oplus}$	4.96 ± 0.32	6.9 ± 1.0	11.0 ± 1.5
TWEAKS analysis on TWEAKS RVs					
Orbital period	P	days	7.34013 ± 0.00040	38.06 ± 0.06	151.92 ± 0.44
RV amplitude	K	m s^{-1}	2.28 ± 0.15	1.48 ± 0.39	1.55 ± 0.34
Eccentricity	e		0.055 ± 0.043	0.11 ± 0.08	0.13 ± 0.11
Argument of periastron	ω	rad	$0.68^{+0.84}_{-0.77}$	$1.76^{+0.66}_{-0.54}$	$4.69^{+1.19}_{-1.21}$
Time of periastron	t_p	BJD	2456567.026 ± 1.72	2456557.14 ± 12.5	2456494.34 ± 20.1
Minimum mass	$m \sin(i)$	$M_{\oplus}$	5.43 ± 0.30	6.33 ± 1.6	10.05 ± 2.27
Derived parameters					
Semimajor axis	a	au	0.0652 ± 0.0005	0.1951 ± 0.0016	0.4894 ± 0.0042
Semimajor axis	a	arcsec	0.0039	0.0116	0.0291
Scaled semimajor axis	$a/R_{\star}$		20.65 ± 0.21	61.79 ± 0.62	154.97 ± 1.61
Incident flux	F_{inc}	$F_{\text{inc}, \oplus}$	43.33 ± 2.41	4.84 ± 0.27	0.77 ± 0.04
Equilibrium temperature	T_{eq}	K	715 ± 10	413 ± 6	261 ± 4

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