nature astronomy

SUPPLEMENTARY INFORMATION

https://doi.org/10.1038/s41550-018-0420-5

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An Earth-sized exoplanet with a Mercury-like composition

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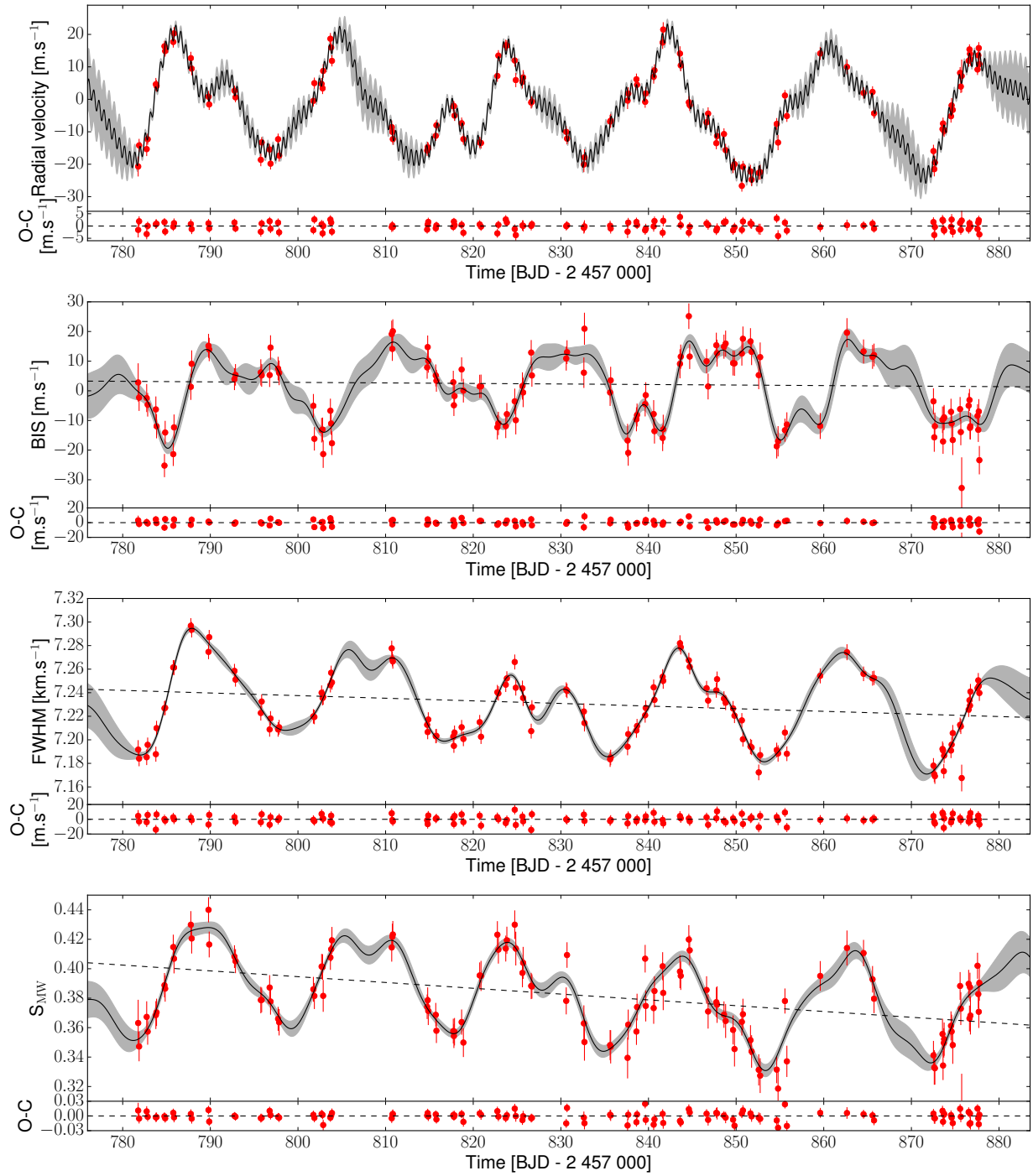

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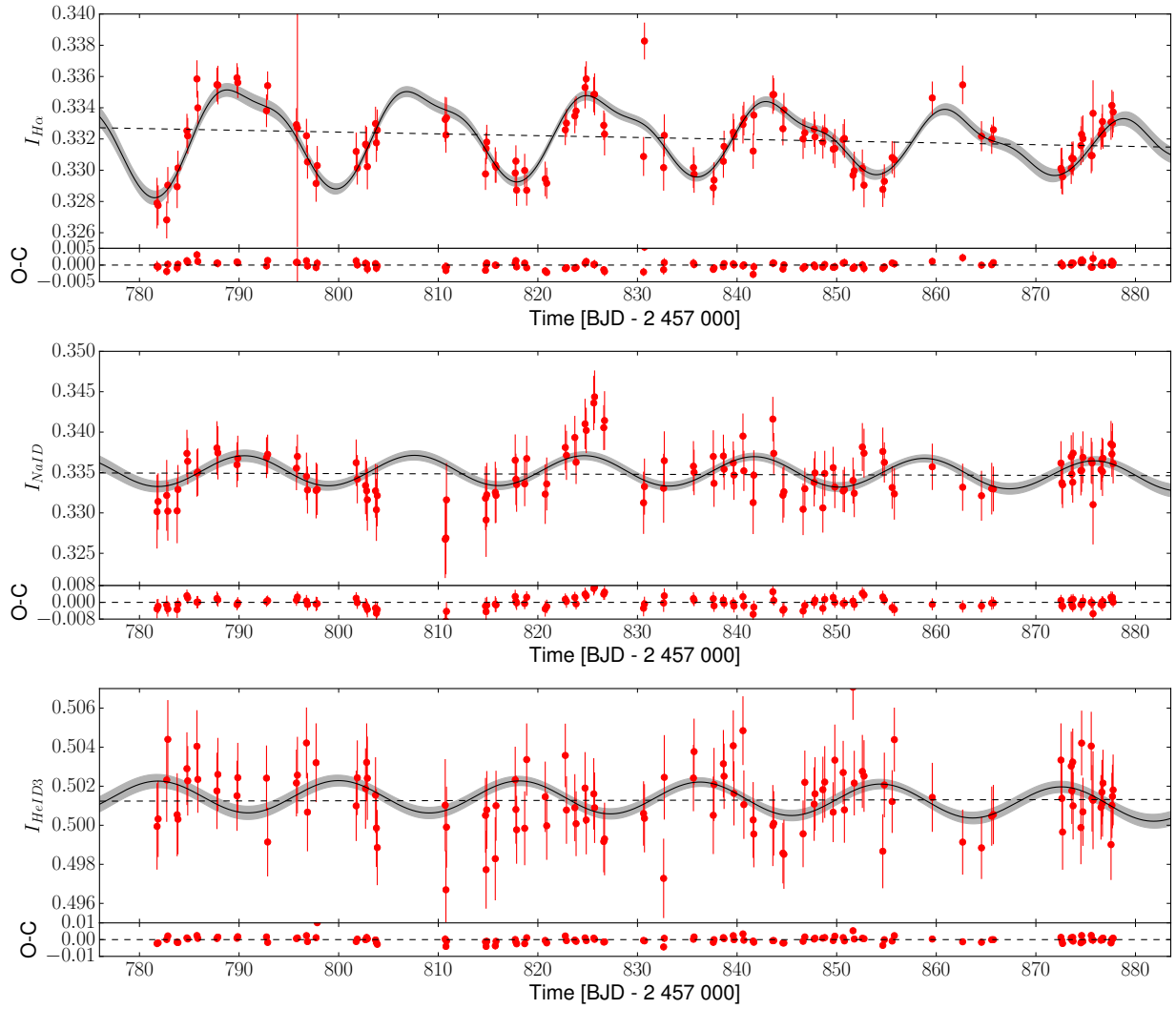
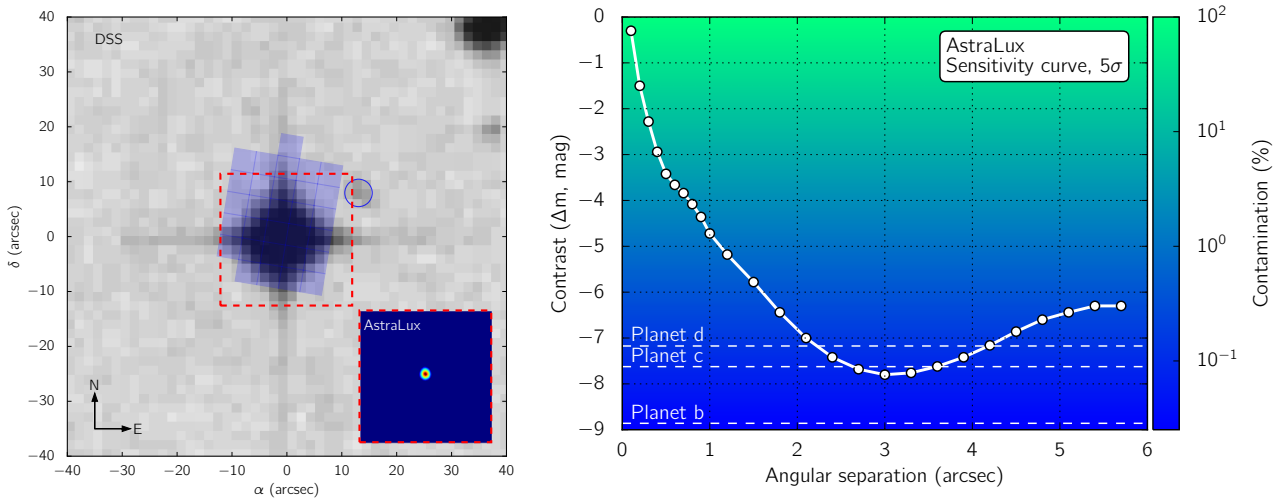
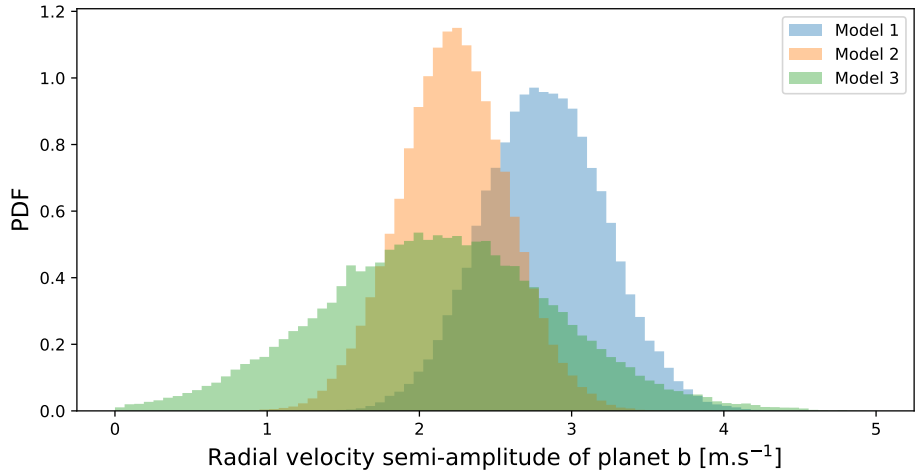


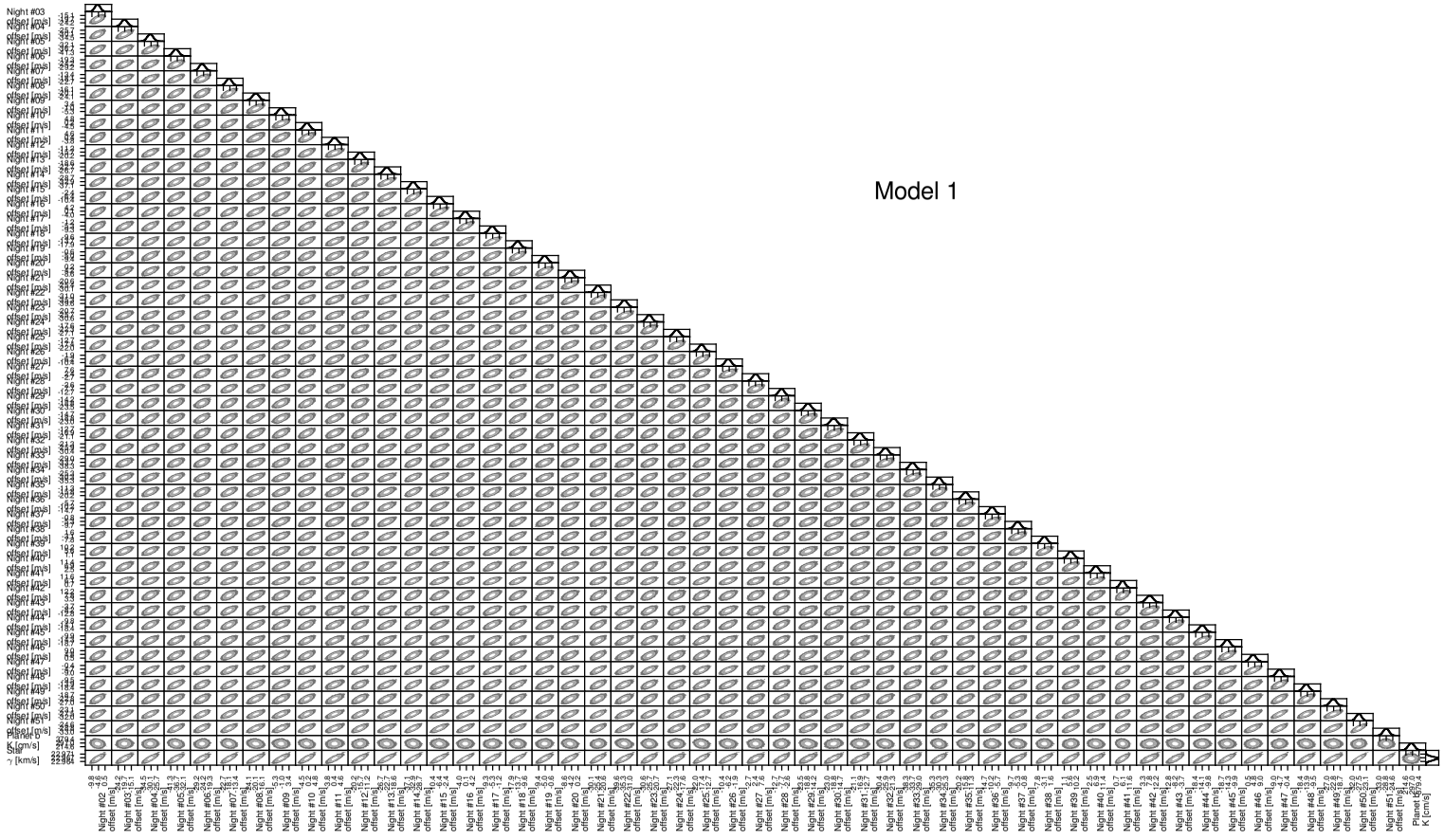
Supplementary Figure 1: **Radial velocity, spectroscopic diagnoses, and activity indices time series**. The best Gaussian-process regression (solid line) and 1-σ uncertainty (grey area) are displayed. The dashed line represents a possible long-term drift in the data. The lower-panel of each plot shows the residual from the best GP regression. From top to bottom: radial velocity, bisector, FWHM, S_{MW}, $I_{H\alpha}$, I_{NaID}, and I_{HeID3}.



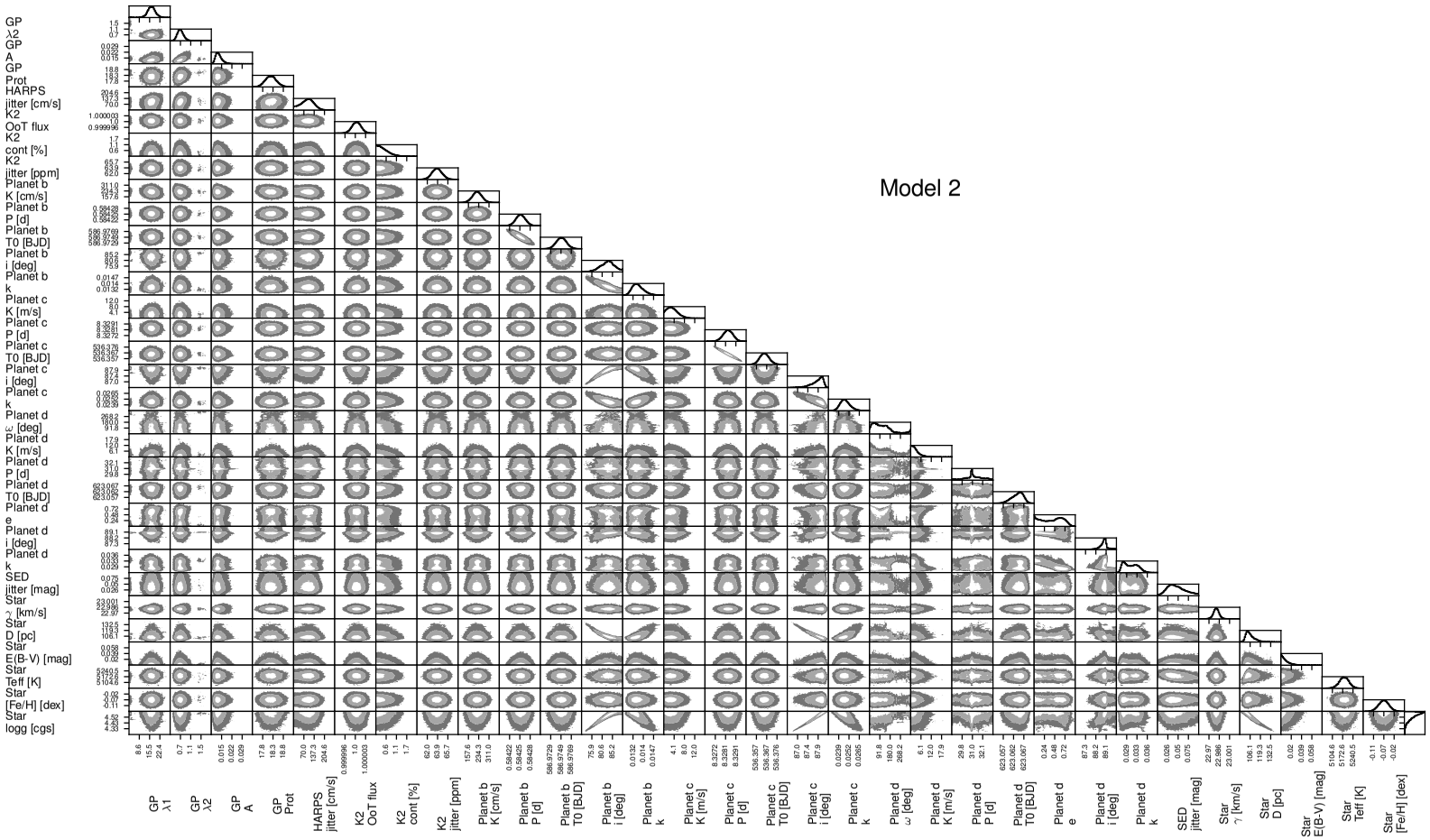
Supplementary Figure 2: **Results from the high-resolution imaging observations.** (left) 80"x80" DSS image of the target K2-229 together with the *K2* photometric mask used by the K2SFF pipeline with pixels overlaid as blue squares. The red square shows the field-of view of the high-resolution AstraLux image in the SDSS i′ band that is shown in the bottom-right of the figure (with an arbitrary offset for clarity). The circle indicates the position of a contaminating star 8 magnitudes fainter in the R band. (right) Sensitivity curve obtained with the AstraLux image. The color-code indicates the contamination that a source of a given contrast would introduce if lying within the aperture. The loss of sensitivity from 3" is due to an over illumination of the left- and right-hand columns of the detector. The horizontal dashed lines represent the maximum magnitude contrast that an eclipsing binary would need to mimic the transit signals.



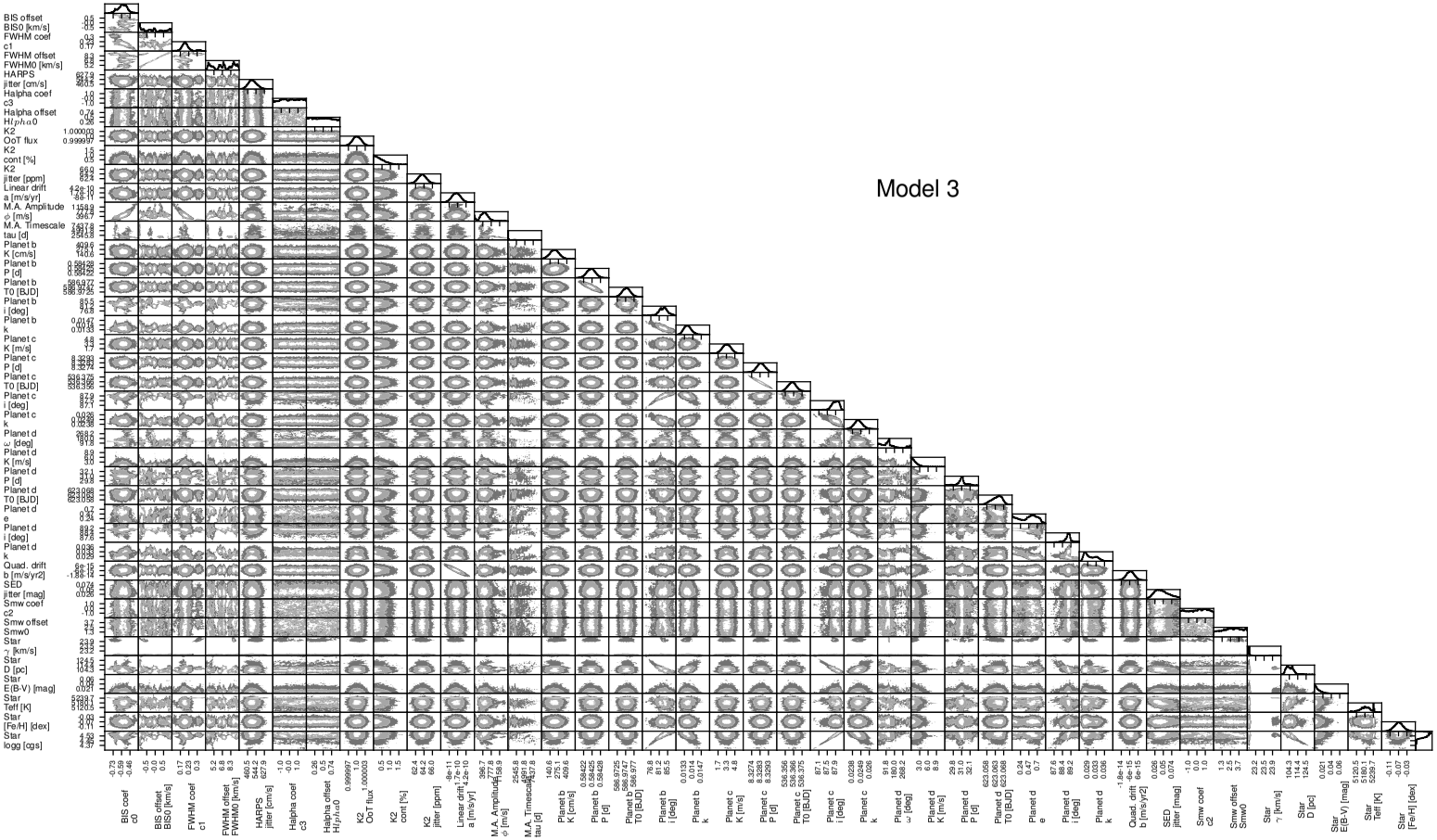
Supplementary Figure 3: **Comparison of the posterior distribution functions (PDF) for the radial velocity semi-amplitude of planet b**. The blue, orange, and green PDFs correspond to those derived with model 1, 2, and 3 (respectively).



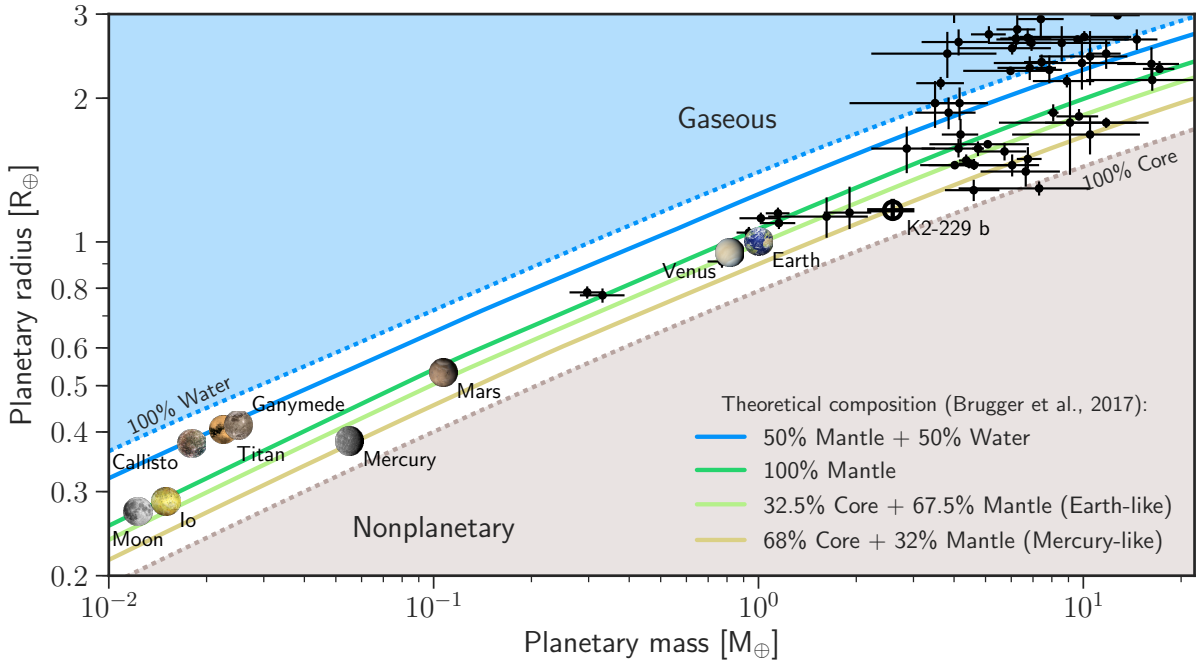
Supplementary Figure 4: **Posterior distribution** of the parameters from the Model 1.



Supplementary Figure 5: **Posterior distribution** of the parameters from the Model 2.



Supplementary Figure 6: **Posterior distribution** of the parameters from the Model 3.



Supplementary Figure 7: **Mass – Radius diagram of known rocky planets.** As in Fig. 2 of the main paper, only planets that have a mass measured with a precision better than 50% are shown here (source: NASA exoplanet archive). The different lines represent possible theoretical compositions for terrestrial worlds (Brugger et al., 2017). Objects denser than 100% core are considered as non-planetary objects and those less dense than 100% water are considered to be gaseous. The rocky planets and major moons in the Solar system are displayed here for comparison.

Supplementary Table 1: **Observed magnitudes of the host star used in the spectral energy distribution**

Bandpass	Magnitude	Source
Johnson B	11.899 ± 0.060	APASS
Johnson V	11.026 ± 0.076	APASS
Sloan r′	10.789 ± 0.070	APASS
2-MASS J	9.518 ± 0.022	2-MASS
2-MASS H	9.126 ± 0.022	2-MASS
2-MASS Ks	9.050 ± 0.023	2-MASS
WISE W1	8.969 ± 0.024	AllWISE
WISE W2	9.036 ± 0.021	AllWISE
WISE W3	8.989 ± 0.032	AllWISE

Supplementary Table 2: **Chemical abundances of the host star, relative to the Sun.**

Element [X/H]	Abundance [dex]	Lines number
C I	0.10 ± 0.09	2
Na I	-0.01 ± 0.04	2
Mg I	-0.04 ± 0.02	3
Al I	0.01 ± 0.02	2
Si I	0.02 ± 0.04	11
Ca I	0.07 ± 0.05	9
Sc I	-0.04 ± 0.05	3
Sc II	-0.03 ± 0.03	6
Ti I	0.05 ± 0.03	18
Ti II	-0.03 ± 0.04	5
Cr I	0.05 ± 0.04	17
Cr II	0.03 ± 0.07	3
Co I	0.00 ± 0.05	7
Ni I	-0.04 ± 0.04	40
Cu I	-0.10 ± 0.03	3
Zn I	-0.03 ± 0.06	3
Sr I	-0.18 ± 0.07	1
Y II	0.00 ± 0.03	6
Zr II	0.01 ± 0.08	1
Ba II	-0.01 ± 0.04	3
Ce II	0.06 ± 0.01	2
Nd II	-0.02 ± 0.07	2
A(Li I)*	< -0.1	1

*A(Li) = log[N(Li)/N(H)] + 12

Supplementary Table 3: **Radial velocity data.** Signal-to-noise ratio (S/N) is given per CCD pixel at 550nm.

Time [BJD]	RV [km.s^{-1}]	σRV [m.s^{-1}]	FWHM [km.s^{-1}]	σFWHM [m.s^{-1}]	BIS [m.s^{-1}]	σBIS [m.s^{-1}]	Texp [s]	S/N
57781.76495	22.96262	3.04	7.1917	6.1	2.8	6.1	1800	33.9
57781.87130	22.96912	1.97	7.1841	3.9	-2.3	3.9	1800	50.5
57782.73630	22.96798	2.10	7.1852	4.2	-2.4	4.2	1800	47.3
57782.84805	22.97103	1.67	7.1958	3.3	-4.7	3.3	1800	60.4
57783.78366	22.98796	1.89	7.1878	3.8	-6.3	3.8	1800	52.1
57783.86073	22.98747	1.72	7.2099	3.4	-12.0	3.4	1800	59.1
57784.76590	22.99968	1.62	7.2268	3.2	-25.2	3.2	1800	62.4
57784.84541	22.99819	1.64	7.2272	3.3	-14.1	3.3	1800	62.5
57785.76998	23.00099	1.67	7.2615	3.3	-21.4	3.3	1800	54.0
57785.85815	23.00364	1.88	7.2614	3.8	-12.3	3.8	1800	59.7
57787.77787	22.99600	1.91	7.2969	3.8	1.3	3.8	1800	50.9
57787.87108	22.99278	1.99	7.2935	4.0	9.1	4.0	1800	52.1
57789.79293	22.98413	1.71	7.2747	3.4	15.2	3.4	1800	58.2
57789.87067	22.98175	1.64	7.2871	3.3	13.9	3.3	1800	62.3
57792.75641	22.98598	1.49	7.2585	3.0	3.9	3.0	1800	67.3
57792.86926	22.98393	1.45	7.2511	2.9	5.4	2.9	1800	72.3
57795.76119	22.96468	1.92	7.2228	3.8	6.2	3.8	1800	64.6
57795.85749	22.97004	1.58	7.2325	3.2	5.2	3.2	1800	50.4
57796.76768	22.96787	1.69	7.2088	3.4	5.3	3.4	1800	57.7
57796.87009	22.96349	1.75	7.2181	3.5	14.6	3.5	1800	56.9
57797.73489	22.97104	1.67	7.2088	3.3	7.5	3.3	1800	58.3
57797.84788	22.96597	1.77	7.2107	3.5	6.1	3.5	1800	56.2
57801.76002	22.98284	1.67	7.2199	3.3	-5.1	3.3	1800	59.1
57801.87033	22.98831	1.65	7.2194	3.3	-16.2	3.3	1800	61.7
57802.69979	22.98807	1.76	7.2400	3.5	-13.3	3.5	1800	58.4
57802.81121	22.98670	1.70	7.2355	3.4	-13.1	3.4	1800	55.2
57802.87940	22.99206	2.06	7.2364	4.1	-21.3	4.1	1800	48.7
57803.70032	23.00199	1.71	7.2464	3.4	-6.7	3.4	1800	65.2
57803.78655	22.99929	1.56	7.2569	3.1	-11.0	3.1	1800	62.2
57803.87436	22.99517	1.65	7.2488	3.3	-17.7	3.3	1800	57.3
57810.69880	22.97475	1.99	7.2777	4.0	19.1	4.0	1800	49.7
57810.76684	22.97328	1.70	7.2685	3.4	14.1	3.4	1800	60.4
57810.82339	22.97106	1.69	7.2665	3.4	20.1	3.4	1800	59.2
57814.74239	22.96754	1.57	7.2127	3.1	7.9	3.1	1800	62.7
57814.80162	22.96855	1.62	7.2066	3.2	14.7	3.2	1800	62.4
57814.87005	22.96820	1.66	7.2172	3.3	10.1	3.3	1800	64.5
57815.72466	22.97207	1.50	7.2030	3.0	5.2	3.0	1800	67.7

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Supplementary Table 3 – continued from previous page

Time	RV	σRV	FWHM	σFWHM	BIS	σBIS	Texp	S/N
57815.79867	22.97533	1.49	7.2033	3.0	3.4	3.0	1800	69.4
57817.72541	22.98117	1.59	7.2028	3.2	2.9	3.2	1800	74.6
57817.79480	22.98127	1.44	7.1948	2.9	-4.9	2.9	1800	72.7
57817.86392	22.97831	1.57	7.2061	3.1	-1.8	3.1	1800	63.5
57818.67656	22.97594	1.72	7.2107	3.4	7.2	3.4	1800	66.9
57818.87779	22.97105	1.67	7.2008	3.3	0.1	3.3	1800	57.3
57820.73861	22.97005	1.63	7.2150	3.3	1.5	3.3	1800	62.5
57820.88832	22.96987	1.65	7.2026	3.3	1.5	3.3	1800	62.5
57822.75416	22.99052	1.74	7.2404	3.5	-12.3	3.5	1800	64.2
57822.86984	22.99679	1.63	7.2394	3.3	-11.0	3.3	1800	58.5
57823.71192	22.99996	1.69	7.2468	3.4	-11.9	3.4	1800	64.6
57823.83799	22.99990	1.54	7.2522	3.1	-7.9	3.1	1800	60.3
57824.73826	22.99528	1.84	7.2661	3.7	-3.5	3.7	1800	69.6
57824.85688	22.98925	2.13	7.2442	4.3	-9.9	4.3	1800	49.5
57825.61285	22.98874	2.02	7.2437	4.0	1.6	4.0	1800	56.4
57825.69561	22.99004	2.22	7.2355	4.4	-0.6	4.4	1800	50.5
57826.61499	22.98234	1.81	7.2074	3.6	12.9	3.6	1800	46.4
57826.69513	22.98262	1.55	7.2276	3.1	5.2	3.1	1800	68.8
57830.61237	22.97329	1.72	7.2426	3.4	10.9	3.4	1800	58.2
57830.70218	22.97121	1.68	7.2416	3.4	13.0	3.4	1800	59.5
57832.62603	22.96325	2.33	7.2240	4.7	6.1	4.7	1800	60.3
57832.69245	22.96544	2.47	7.2143	4.9	20.9	4.9	1800	43.4
57835.61973	22.97648	1.99	7.1835	4.0	-0.6	4.0	1800	41.0
57835.68334	22.97675	2.02	7.1851	4.0	3.5	4.0	1800	49.9
57837.61343	22.98294	2.58	7.1942	5.2	-16.8	5.2	1800	50.2
57837.68514	22.98510	1.88	7.2049	3.8	-20.9	3.8	1800	39.8
57838.62623	22.98949	1.71	7.2080	3.4	-9.6	3.4	1800	54.0
57838.69385	22.98780	1.59	7.2117	3.2	-8.2	3.2	1800	59.6
57839.61873	22.98254	1.77	7.2208	3.5	-4.5	3.5	1800	65.6
57839.68564	22.98513	1.89	7.2271	3.8	-1.5	3.8	1800	54.3
57840.59140	22.99028	2.08	7.2446	4.2	-7.8	4.2	1800	57.9
57840.68190	22.99225	1.79	7.2339	3.6	-13.6	3.6	1800	48.3
57841.61517	23.00082	1.92	7.2535	3.8	-15.9	3.8	1800	57.3
57841.68068	23.00483	2.21	7.2501	4.4	-13.0	4.4	1800	51.8
57843.59261	22.99742	2.20	7.2820	4.4	9.1	4.4	1800	45.8
57843.68040	22.99376	1.72	7.2787	3.4	11.5	3.4	1800	46.0
57844.60389	22.98239	1.86	7.2675	3.7	25.2	3.7	1800	60.0
57844.70188	22.98156	1.79	7.2620	3.6	11.5	3.6	1800	54.7
57846.62813	22.97623	1.74	7.2438	3.5	9.9	3.5	1800	57.7
57846.80297	22.97892	1.89	7.2333	3.8	1.5	3.8	1800	55.3

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Supplementary Table 3 – continued from previous page

Time	RV	σRV	FWHM	σFWHM	BIS	σBIS	Texp	S/N
57847.74031	22.96981	1.81	7.2420	3.6	15.4	3.6	1800	58.4
57847.82407	22.97199	1.99	7.2515	4.0	12.7	4.0	1800	52.2
57848.61285	22.97262	1.71	7.2350	3.4	14.9	3.4	1800	56.6
57848.80183	22.96767	1.89	7.2316	3.8	15.9	3.8	1800	55.0
57849.64778	22.96242	1.78	7.2267	3.6	9.3	3.6	1800	59.3
57849.81563	22.96336	1.79	7.2205	3.6	9.3	3.6	1800	58.8
57850.65302	22.95665	1.72	7.2165	3.4	12.6	3.4	1800	57.5
57850.77649	22.96254	1.76	7.2004	3.5	17.5	3.5	1800	58.5
57851.64011	22.96112	1.95	7.1943	3.9	16.7	3.9	1800	59.1
57851.76545	22.95857	1.95	7.1935	3.9	13.1	3.9	1800	51.6
57852.57973	22.96065	2.11	7.1723	4.2	5.3	4.2	1800	52.6
57852.74425	22.96087	2.22	7.1870	4.4	11.4	4.4	1800	47.0
57854.63054	22.97574	1.75	7.1913	3.5	-18.7	3.5	1800	45.9
57854.78599	22.97001	2.31	7.1884	4.6	-17.0	4.6	1800	45.4
57855.57138	22.98450	1.62	7.2062	3.2	-13.3	3.2	1800	58.7
57855.79070	22.97817	1.75	7.1882	3.5	-11.4	3.5	1800	62.4
57859.59924	22.99746	1.90	7.2543	3.8	-11.9	3.8	1800	59.7
57862.64930	22.99331	2.20	7.2744	4.4	19.6	4.4	1800	53.3
57864.54050	22.98528	1.71	7.2560	3.4	13.3	3.4	1800	46.3
57865.56618	22.98559	1.70	7.2522	3.4	11.4	3.4	1800	59.3
57865.73339	22.97901	1.58	7.2526	3.2	12.1	3.2	1800	60.6
57872.51969	22.96738	1.89	7.1781	3.8	-3.6	3.8	1800	68.1
57872.61136	22.96180	2.18	7.1708	4.4	-15.7	4.4	1800	46.0
57872.68106	22.96385	2.02	7.1691	4.0	-11.9	4.0	1800	52.6
57873.55099	22.97416	1.95	7.1922	3.9	-9.8	3.9	1800	50.1
57873.61263	22.97586	1.77	7.1910	3.5	-17.1	3.5	1800	60.9
57873.70036	22.97391	1.68	7.1734	3.4	-9.3	3.4	1800	58.5
57873.73531	22.97357	1.77	7.1865	3.5	-8.9	3.5	1800	57.1
57874.52041	22.97811	1.92	7.1909	3.8	-7.1	3.8	1800	51.1
57874.59351	22.98144	2.21	7.1959	4.4	-11.0	4.4	1800	45.4
57874.72207	22.98007	2.27	7.2057	4.5	-16.6	4.5	1800	52.2
57875.55937	22.99146	1.72	7.2127	3.4	-6.2	3.4	1800	45.1
57875.63925	22.98725	1.94	7.2114	3.9	-13.9	3.9	1800	52.7
57875.73924	22.99051	5.05	7.1676	10.1	-32.8	10.1	1800	59.7
57876.53621	22.99520	1.81	7.2257	3.6	-5.0	3.6	1800	23.9
57876.63080	22.99870	1.50	7.2336	3.0	-3.1	3.0	1800	67.1
57876.68624	22.99734	1.59	7.2291	3.2	-12.5	3.2	1800	56.1
57876.74076	22.99568	1.96	7.2409	3.9	-11.9	3.9	1800	53.3
57877.54661	22.99251	1.63	7.2438	3.3	-8.4	3.3	1800	70.9
57877.63432	22.99688	1.72	7.2505	3.4	-13.2	3.4	1800	48.1

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Supplementary Table 3 – continued from previous page

Time	RV	σRV	FWHM	σFWHM	BIS	σBIS	Texp	S/N
57877.69036	22.99911	1.78	7.2457	3.6	-7.0	3.6	1800	63.2
57877.75585	22.99419	2.13	7.2397	4.3	-23.4	4.3	1800	60.4

Supplementary Table 4: **Spectroscopic indices.**

Time [BJD]	S_{MW}	σS_{MW}	$I_{H\alpha}$	$\sigma I_{H\alpha}$	I_{NaD}	σI_{NaD}	I_{HeID3}	σI_{HeID3}
57781.76495	0.3631	0.0144	0.3279	0.0016	0.3302	0.0046	0.4999	0.0020
57781.87130	0.3472	0.0077	0.3277	0.0013	0.3314	0.0035	0.5003	0.0018
57782.73630	0.3673	0.0084	0.3268	0.0012	0.3322	0.0044	0.5023	0.0020
57782.84805	0.3573	0.0062	0.3290	0.0012	0.3302	0.0036	0.5044	0.0018
57783.78366	0.3685	0.0070	0.3289	0.0014	0.3303	0.0040	0.5005	0.0019
57783.86073	0.3704	0.0067	0.3301	0.0011	0.3329	0.0030	0.5003	0.0016
57784.76590	0.3888	0.0052	0.3325	0.0011	0.3374	0.0029	0.5029	0.0017
57784.84541	0.3865	0.0061	0.3322	0.0011	0.3364	0.0029	0.5023	0.0016
57785.76998	0.4147	0.0054	0.3358	0.0012	0.3349	0.0029	0.5040	0.0016
57785.85815	0.4068	0.0076	0.3340	0.0011	0.3351	0.0029	0.5023	0.0015
57787.77787	0.4299	0.0066	0.3355	0.0011	0.3380	0.0033	0.5018	0.0018
57787.87108	0.4206	0.0079	0.3355	0.0012	0.3374	0.0033	0.5026	0.0017
57789.79293	0.4400	0.0057	0.3359	0.0009	0.3360	0.0028	0.5015	0.0016
57789.87067	0.4165	0.0060	0.3356	0.0010	0.3368	0.0028	0.5024	0.0016
57792.75641	0.4082	0.0043	0.3338	0.0010	0.3368	0.0025	0.5024	0.0014
57792.86926	0.4052	0.0050	0.3354	0.0009	0.3372	0.0024	0.4991	0.0015
57795.76119	0.3787	0.0063	0.3329	0.0011	0.3355	0.0027	0.5022	0.0015
57795.85749	0.3788	0.0054	0.3327	0.0076	0.3370	0.0027	0.5026	0.0018
57796.76768	0.3872	0.0054	0.3322	0.0011	0.3345	0.0029	0.5042	0.0016
57796.87009	0.3777	0.0062	0.3305	0.0011	0.3328	0.0029	0.5007	0.0018
57797.73489	0.3660	0.0050	0.3292	0.0012	0.3328	0.0035	0.5032	0.0018
57797.84788	0.3637	0.0063	0.3303	0.0013	0.3329	0.0032	0.5122	0.0018
57801.76002	0.3860	0.0055	0.3312	0.0012	0.3362	0.0029	0.5010	0.0016
57801.87033	0.3815	0.0061	0.3301	0.0011	0.3342	0.0030	0.5024	0.0017
57802.69979	0.4015	0.0057	0.3317	0.0012	0.3334	0.0035	0.5019	0.0019
57802.81121	0.4012	0.0059	0.3316	0.0012	0.3327	0.0037	0.5032	0.0018
57802.87940	0.3816	0.0087	0.3302	0.0014	0.3316	0.0038	0.5024	0.0020
57803.70032	0.4077	0.0055	0.3330	0.0011	0.3327	0.0033	0.5015	0.0017
57803.78655	0.4133	0.0051	0.3318	0.0012	0.3304	0.0039	0.4999	0.0018
57803.87436	0.4193	0.0064	0.3326	0.0013	0.3321	0.0038	0.4989	0.0017
57810.69880	0.4145	0.0072	0.3333	0.0014	0.3267	0.0048	0.5010	0.0022
57810.76684	0.4217	0.0061	0.3323	0.0011	0.3269	0.0045	0.4967	0.0018
57810.82339	0.4233	0.0065	0.3334	0.0013	0.3316	0.0046	0.4999	0.0019

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Supplementary Table 4 – continued from previous page

Time	S_{MW}	σS_{MW}	$I_{H\alpha}$	$\sigma I_{H\alpha}$	I_{NaD}	σI_{NaD}	I_{HeID3}	σI_{HeID3}
57814.74239	0.3742	0.0053	0.3298	0.0010	0.3318	0.0040	0.5005	0.0017
57814.80162	0.3786	0.0059	0.3314	0.0010	0.3291	0.0046	0.4977	0.0018
57814.87005	0.3713	0.0071	0.3318	0.0011	0.3322	0.0040	0.5008	0.0018
57815.72466	0.3687	0.0049	0.3303	0.0011	0.3325	0.0038	0.4983	0.0019
57815.79867	0.3579	0.0053	0.3302	0.0010	0.3322	0.0034	0.5010	0.0016
57817.72541	0.3576	0.0055	0.3298	0.0010	0.3365	0.0032	0.5023	0.0015
57817.79480	0.3543	0.0050	0.3306	0.0010	0.3342	0.0032	0.5008	0.0015
57817.86392	0.3572	0.0068	0.3287	0.0010	0.3335	0.0034	0.4998	0.0015
57818.67656	0.3638	0.0057	0.3300	0.0011	0.3336	0.0028	0.4998	0.0017
57818.87779	0.3499	0.0074	0.3287	0.0010	0.3367	0.0028	0.5034	0.0016
57820.73861	0.3954	0.0061	0.3294	0.0011	0.3323	0.0037	0.5015	0.0016
57820.88832	0.3951	0.0080	0.3292	0.0010	0.3336	0.0033	0.5000	0.0015
57822.75416	0.4231	0.0066	0.3326	0.0010	0.3381	0.0028	0.5036	0.0014
57822.86984	0.4130	0.0070	0.3330	0.0009	0.3371	0.0030	0.5008	0.0015
57823.71192	0.4137	0.0060	0.3335	0.0011	0.3393	0.0027	0.5009	0.0015
57823.83799	0.4193	0.0066	0.3338	0.0009	0.3363	0.0027	0.5001	0.0014
57824.73826	0.4299	0.0073	0.3353	0.0013	0.3410	0.0031	0.5019	0.0016
57824.85688	0.4137	0.0095	0.3358	0.0011	0.3402	0.0028	0.5003	0.0015
57825.61285	0.3972	0.0073	0.3348	0.0011	0.3436	0.0034	0.5016	0.0016
57825.69561	0.4040	0.0088	0.3349	0.0013	0.3444	0.0033	0.5009	0.0016
57826.61499	0.3883	0.0062	0.3329	0.0009	0.3406	0.0028	0.4992	0.0013
57826.69513	0.3880	0.0053	0.3323	0.0014	0.3414	0.0036	0.4993	0.0016
57830.61237	0.3782	0.0065	0.3309	0.0012	0.3313	0.0038	0.5006	0.0014
57830.70218	0.4093	0.0058	0.3383	0.0012	0.3333	0.0035	0.5004	0.0015
57832.62603	0.3629	0.0105	0.3302	0.0015	0.3330	0.0043	0.4973	0.0018
57832.69245	0.3502	0.0109	0.3322	0.0014	0.3365	0.0036	0.5025	0.0020
57835.61973	0.3481	0.0080	0.3302	0.0013	0.3358	0.0031	0.5024	0.0015
57835.68334	0.3470	0.0093	0.3297	0.0012	0.3350	0.0028	0.5038	0.0015
57837.61343	0.3395	0.0124	0.3289	0.0011	0.3370	0.0032	0.5005	0.0018
57837.68514	0.3620	0.0080	0.3294	0.0011	0.3337	0.0029	0.5021	0.0017
57838.62623	0.3573	0.0064	0.3306	0.0011	0.3370	0.0026	0.5031	0.0015
57838.69385	0.3740	0.0064	0.3315	0.0010	0.3354	0.0025	0.5025	0.0014
57839.61873	0.4068	0.0068	0.3324	0.0012	0.3362	0.0027	0.5041	0.0016
57839.68564	0.3747	0.0083	0.3322	0.0010	0.3347	0.0031	0.5016	0.0014
57840.59140	0.3733	0.0085	0.3329	0.0012	0.3395	0.0028	0.5048	0.0015
57840.68190	0.3849	0.0076	0.3333	0.0011	0.3352	0.0025	0.5011	0.0015
57841.61517	0.4017	0.0070	0.3312	0.0011	0.3313	0.0039	0.5003	0.0017
57841.68068	0.3836	0.0098	0.3335	0.0013	0.3347	0.0031	0.4996	0.0015
57843.59261	0.3981	0.0092	0.3348	0.0012	0.3416	0.0028	0.5000	0.0019
57843.68040	0.3952	0.0071	0.3348	0.0010	0.3374	0.0025	0.5001	0.0014

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Supplementary Table 4 – continued from previous page

Time	S_{MW}	σS_{MW}	$I_{H\alpha}$	$\sigma I_{H\alpha}$	I_{NaD}	σI_{NaD}	I_{HeID3}	σI_{HeID3}
57844.60389	0.4199	0.0073	0.3327	0.0011	0.3322	0.0034	0.4986	0.0013
57844.70188	0.4125	0.0077	0.3339	0.0011	0.3326	0.0032	0.4985	0.0015
57846.62813	0.3856	0.0067	0.3320	0.0013	0.3305	0.0032	0.4996	0.0015
57846.80297	0.3710	0.0097	0.3324	0.0010	0.3330	0.0026	0.5022	0.0014
57847.74031	0.3773	0.0077	0.3326	0.0011	0.3338	0.0030	0.5011	0.0017
57847.82407	0.3756	0.0106	0.3321	0.0011	0.3349	0.0027	0.5016	0.0017
57848.61285	0.3688	0.0063	0.3318	0.0011	0.3306	0.0031	0.5018	0.0015
57848.80183	0.3645	0.0096	0.3325	0.0011	0.3349	0.0028	0.5022	0.0016
57849.64778	0.3584	0.0075	0.3313	0.0009	0.3356	0.0026	0.5007	0.0013
57849.81563	0.3455	0.0100	0.3314	0.0012	0.3332	0.0026	0.5033	0.0016
57850.65302	0.3639	0.0067	0.3320	0.0010	0.3327	0.0026	0.5027	0.0014
57850.77649	0.3691	0.0083	0.3320	0.0012	0.3329	0.0028	0.5008	0.0014
57851.64011	0.3515	0.0079	0.3297	0.0010	0.3340	0.0029	0.5071	0.0014
57851.76545	0.3438	0.0090	0.3300	0.0012	0.3324	0.0029	0.5022	0.0014
57852.57973	0.3313	0.0084	0.3301	0.0012	0.3381	0.0030	0.5028	0.0017
57852.74425	0.3274	0.0099	0.3290	0.0014	0.3374	0.0030	0.5025	0.0016
57854.63054	0.3315	0.0066	0.3288	0.0011	0.3376	0.0030	0.4987	0.0017
57854.78599	0.3186	0.0110	0.3293	0.0011	0.3362	0.0025	0.5021	0.0014
57855.57138	0.3781	0.0056	0.3308	0.0011	0.3331	0.0026	0.5012	0.0014
57855.79070	0.3371	0.0084	0.3307	0.0012	0.3324	0.0032	0.5044	0.0014
57859.59924	0.3951	0.0078	0.3346	0.0010	0.3357	0.0029	0.5014	0.0015
57862.64930	0.4141	0.0100	0.3355	0.0012	0.3332	0.0029	0.4991	0.0014
57864.54050	0.4106	0.0063	0.3322	0.0010	0.3321	0.0031	0.4988	0.0013
57865.56618	0.3928	0.0064	0.3320	0.0009	0.3330	0.0032	0.5005	0.0012
57865.73339	0.3796	0.0074	0.3326	0.0008	0.3330	0.0028	0.5005	0.0013
57872.51969	0.3412	0.0074	0.3301	0.0013	0.3362	0.0027	0.5033	0.0017
57872.61136	0.3329	0.0098	0.3300	0.0015	0.3337	0.0026	0.5014	0.0016
57872.68106	0.3324	0.0091	0.3296	0.0011	0.3335	0.0029	0.4997	0.0017
57873.55099	0.3557	0.0082	0.3301	0.0010	0.3370	0.0027	0.5030	0.0015
57873.61263	0.3343	0.0075	0.3308	0.0010	0.3348	0.0026	0.5018	0.0015
57873.70036	0.3496	0.0076	0.3307	0.0010	0.3338	0.0025	0.5032	0.0015
57873.73531	0.3522	0.0093	0.3307	0.0011	0.3374	0.0026	0.5010	0.0015
57874.52041	0.3612	0.0074	0.3316	0.0012	0.3352	0.0031	0.4999	0.0017
57874.59351	0.3573	0.0095	0.3323	0.0011	0.3353	0.0027	0.5042	0.0014
57874.72207	0.3482	0.0110	0.3320	0.0015	0.3369	0.0032	0.5007	0.0015
57875.55937	0.3883	0.0069	0.3309	0.0011	0.3365	0.0028	0.5041	0.0015
57875.63925	0.3729	0.0091	0.3309	0.0010	0.3362	0.0026	0.5014	0.0015
57875.73924	0.2882	0.0399	0.3336	0.0021	0.3310	0.0049	0.5013	0.0024
57876.53621	0.3898	0.0070	0.3323	0.0010	0.3353	0.0025	0.5009	0.0014
57876.63080	0.3662	0.0060	0.3326	0.0011	0.3366	0.0027	0.5017	0.0014

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Supplementary Table 4 – continued from previous page

Time	S_{MW}	σS_{MW}	$I_{H\alpha}$	$\sigma I_{H\alpha}$	I_{NaD}	σI_{NaD}	I_{HeID3}	σI_{HeID3}
57876.68624	0.3875	0.0074	0.3331	0.0011	0.3351	0.0030	0.5011	0.0015
57876.74076	0.3682	0.0111	0.3323	0.0009	0.3368	0.0024	0.5022	0.0015
57877.54661	0.4020	0.0061	0.3331	0.0011	0.3385	0.0028	0.4990	0.0016
57877.63432	0.3828	0.0074	0.3341	0.0010	0.3373	0.0028	0.5010	0.0014
57877.69036	0.3707	0.0089	0.3330	0.0009	0.3384	0.0027	0.5015	0.0014
57877.75585	0.3903	0.0103	0.3337	0.0013	0.3361	0.0025	0.5018	0.0016

Supplementary Table 5: **List of parameters used in the analysis using the nightly-offset correction model (model 1) for stellar activity.** The respective priors and posteriors are provided.

Parameter	Prior	Posterior
Planet b Orbital Parameters		
Orbital period P_b [d]	(fixed)	0.58425
Transit epoch $T_{0,b}$ [BJD - 2457000]	(fixed)	586.9746
Radial velocity semi-amplitude K_b [m.s^{-1}]	$\mathcal{U}(0, 10^2)$	2.82 ± 0.40
Orbital eccentricity e_b	(fixed)	0
Systemic radial velocity γ [km.s^{-1}]	$\mathcal{U}(-50, 50)$	22.9667 ± 0.0017
Nightly offsets		
Night #1 offset $\Delta\gamma_1$ [m.s^{-1}]	(fixed)	0
Night #2 offset $\Delta\gamma_2$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-5.3 ± 2.2
Night #3 offset $\Delta\gamma_3$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-19.9 ± 2.2
Night #4 offset $\Delta\gamma_4$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-30.6 ± 2.0
Night #5 offset $\Delta\gamma_5$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-37.7 ± 2.1
Night #6 offset $\Delta\gamma_6$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-25.3 ± 2.2
Night #7 offset $\Delta\gamma_7$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-18.7 ± 2.1
Night #8 offset $\Delta\gamma_8$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-20.3 ± 2.0
Night #9 offset $\Delta\gamma_9$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-1.8 ± 2.1
Night #10 offset $\Delta\gamma_{10}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-1.1 ± 2.1
Night #11 offset $\Delta\gamma_{11}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	0.1 ± 2.1
Night #12 offset $\Delta\gamma_{12}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-16.6 ± 2.1
Night #13 offset $\Delta\gamma_{13}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-23.2 ± 2.0
Night #14 offset $\Delta\gamma_{14}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-33.3 ± 1.9
Night #15 offset $\Delta\gamma_{15}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-6.9 ± 2.0
Night #16 offset $\Delta\gamma_{16}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-0.6 ± 2.0
Night #17 offset $\Delta\gamma_{17}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-5.6 ± 2.0
Night #18 offset $\Delta\gamma_{18}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-14.6 ± 1.9
Night #19 offset $\Delta\gamma_{19}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-5.4 ± 2.1
Night #20 offset $\Delta\gamma_{20}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-5.2 ± 2.1
Night #21 offset $\Delta\gamma_{21}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-25.2 ± 2.1
Night #22 offset $\Delta\gamma_{22}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-35.2 ± 2.1
Night #23 offset $\Delta\gamma_{23}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-26.5 ± 2.2
Night #24 offset $\Delta\gamma_{24}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-22.4 ± 2.3
Night #25 offset $\Delta\gamma_{25}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-18.3 ± 2.1
Night #26 offset $\Delta\gamma_{26}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-6.8 ± 2.1
Night #27 offset $\Delta\gamma_{27}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	2.5 ± 2.4
Night #28 offset $\Delta\gamma_{28}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-7.9 ± 2.3
Night #29 offset $\Delta\gamma_{29}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-18.8 ± 2.3
Night #30 offset $\Delta\gamma_{30}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-19.3 ± 2.1
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Supplementary Table 5 – continued from previous page

Parameter	Prior	Posterior
Night #31 offset $\Delta\gamma_{31}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-17.4 ± 2.2
Night #32 offset $\Delta\gamma_{32}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-27.0 ± 2.2
Night #33 offset $\Delta\gamma_{33}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-34.2 ± 2.2
Night #34 offset $\Delta\gamma_{34}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-30.7 ± 2.2
Night #35 offset $\Delta\gamma_{35}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-15.9 ± 2.1
Night #36 offset $\Delta\gamma_{36}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-10.2 ± 2.1
Night #37 offset $\Delta\gamma_{37}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-5.7 ± 2.1
Night #38 offset $\Delta\gamma_{38}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-3.2 ± 2.1
Night #39 offset $\Delta\gamma_{39}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	5.5 ± 2.1
Night #40 offset $\Delta\gamma_{40}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	6.0 ± 2.1
Night #41 offset $\Delta\gamma_{41}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	5.5 ± 2.2
Night #42 offset $\Delta\gamma_{42}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	7.7 ± 2.4
Night #43 offset $\Delta\gamma_{43}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-8.8 ± 2.2
Night #44 offset $\Delta\gamma_{44}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-14.2 ± 2.1
Night #45 offset $\Delta\gamma_{45}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-15.3 ± 2.1
Night #46 offset $\Delta\gamma_{46}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	3.6 ± 2.0
Night #47 offset $\Delta\gamma_{47}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-5.8 ± 2.0
Night #48 offset $\Delta\gamma_{48}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-14.8 ± 2.1
Night #49 offset $\Delta\gamma_{49}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-23.1 ± 2.1
Night #50 offset $\Delta\gamma_{50}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-28.3 ± 1.9
Night #51 offset $\Delta\gamma_{51}$ [m.s^{-1}]	$\mathcal{U}(-50000, 50000)$	-28.8 ± 1.9

Notes:

• $\mathcal{U}(a, b)$: uniform distribution between a and b

Supplementary Table 6: **List of parameters used in the analysis using the GP-correction model (model 2) for stellar activity.** The respective priors are provided together with the posteriors for both the Dartmouth and PARSEC stellar evolution tracks. The posterior values represent the median and 68.3% credible interval. Fixed and derived values that might be useful for follow-up work are also reported.

Parameter	Prior	Posterior	
		Dartmouth (adopted)	PARSEC
Stellar Parameters			
Effective temperature $T_{\rm eff}$ [K]	$\mathcal{N}(5120, 39)$	5185 ± 32	5185 ± 31
Surface gravity log g [cgs]	$\mathcal{N}(4.51, 0.12)$	$4.567^{+0.031}_{-0.046}$	$4.582^{+0.027}_{-0.041}$
Iron abundance [Fe/H] [dex]	$\mathcal{N}(-0.063, 0.022)$	-0.065 ± 0.022	-0.064 ± 0.022
Distance to Earth D [pc]	$\mathcal{P}(2, 10, 1000)$	104 ± 4	100 ± 3
Interstellar extinction $E(B-V)$ [mag]	$\mathcal{U}(0, 1)$	$0.0064^{+0.0093}_{-0.0047}$	$0.0063^{+0.0095}_{-0.045}$
Systemic radial velocity γ [km.s^{-1}]	$\mathcal{U}(15, 30)$	22.981 ± 0.004	22.981 ± 0.004
Linear limb-darkening coefficient u_a	(derived)	0.5168 ± 0.0082	0.5169 ± 0.0079
Quadratic limb-darkening coefficient u_b	(derived)	0.1898 ± 0.0059	0.1897 ± 0.0056
Stellar density $\rho_\star/\rho_\odot$	(derived)	$1.68^{+0.17}_{-0.23}$	$1.83^{+0.16}_{-0.21}$
Stellar mass $M_\star$ [$M_\odot$]	(derived)	$0.837^{+0.019}_{-0.025}$	0.807 ± 0.023
Stellar radius $R_\star$ [$R_\odot$]	(derived)	$0.793^{+0.032}_{-0.020}$	$0.762^{+0.025}_{-0.016}$
Stellar age τ [Gyr]	(derived)	$5.4^{+5.2}_{-3.7}$	$5.7^{+5.2}_{-3.9}$
Planet b Parameters			
Orbital Period P_b [d]	$\mathcal{N}(0.58425, 0.01)$	$0.584249 \pm 1.4 \times 10^{-5}$	$0.584250 \pm 1.5 \times 10^{-5}$
Transit epoch $T_{0,b}$ [BJD - 2457000]	$\mathcal{N}(586.9746, 0.1)$	$586.9750 \pm 1.0 \times 10^{-3}$	$586.9750 \pm 1.0 \times 10^{-3}$
Radial velocity semi-amplitude K_b [m.s^{-1}]	$\mathcal{U}(0, 10^2)$	2.23 ± 0.35	2.23 ± 0.36
Orbital inclination i_b [°]	$\mathcal{S}(70, 90)$	$84.0^{+2.8}_{-2.2}$	85.7 ± 2.7
Planet-to-star radius ratio k_b	$\mathcal{U}(0, 1)$	0.01345 ± 0.00033	0.01336 ± 0.00029
Orbital eccentricity e_b	(fixed)	0	0
System scale $a_b/R_\star$	(derived)	$3.50^{+0.11}_{-0.17}$	$3.60^{+0.10}_{-0.17}$
Impact parameter b_b	(derived)	$0.37^{+0.11}_{-0.16}$	$0.27^{+0.14}_{-0.17}$
Transit duration $T_{14,b}$ [h]	(derived)	$1.21^{+0.03}_{-0.04}$	1.21 ± 0.03

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Supplementary Table 6 – continued from previous page

Parameter	Prior	Posterior	
		Dartmouth	PARSEC
Planet mass M_b [$M_\oplus$]	(derived)	2.59 ± 0.43	2.54 ± 0.41
Planet radius R_b [$R_\oplus$]	(derived)	$1.165^{+0.066}_{-0.048}$	$1.109^{+0.055}_{-0.033}$
Planet bulk density ρ_b [g.cm^{-3}]	(derived)	8.9 ± 2.1	10.0 ± 2.1
Planet c Parameters			
Orbital Period P_c [d]	$\mathcal{N}(8.3274, 0.01)$	$8.32835 \pm 4.5 \times 10^{-4}$	$8.32835 \pm 4.5 \times 10^{-4}$
Transit epoch $T_{0,c}$ [BJD - 2457000]	$\mathcal{N}(536.3766, 0.1)$	$536.3647 \pm 4.3 \times 10^{-3}$	$536.3647 \pm 4.2 \times 10^{-3}$
Radial velocity semi-amplitude K_c [m.s^{-1}]	$\mathcal{U}(0, 100)$	$3.2^{+2.3}_{-1.9}$	$3.2^{+2.2}_{-1.9}$
Orbital inclination i_c [°]	$\mathcal{S}(70, 90)$	$87.94^{+0.13}_{-0.18}$	$88.05^{+0.12}_{-0.16}$
Planet-to-star radius ratio k_c	$\mathcal{U}(0, 1)$	0.02452 ± 0.00051	0.02432 ± 0.00051
Orbital eccentricity e_c	(fixed)	0	0
System scale $a_c/R_\star$	(derived)	$20.56^{+0.67}_{-0.97}$	$21.14^{+0.59}_{-0.86}$
Impact parameter b_c	(derived)	0.74 ± 0.03	0.72 ± 0.03
Transit duration $T_{14,c}$ [h]	(derived)	2.20 ± 0.06	2.20 ± 0.06
Planet mass M_c [$M_\oplus$]	(derived)	$8.88^{+6.6}_{-5.2}$	$8.88^{+6.1}_{-5.1}$
Planet radius R_c [$R_\oplus$]	(derived)	$2.12^{+0.11}_{-0.08}$	$2.02^{+0.09}_{-0.07}$
Planet bulk density ρ_c [g.cm^{-3}]	(derived)	$4.9^{+4.1}_{-2.9}$	$5.7^{+4.3}_{-3.3}$
Planet d Parameters			
Orbital Period P_d [d]	$\mathcal{U}(20, 40)$	31.0 ± 1.1	31.0 ± 1.0
Transit epoch $T_{0,d}$ [BJD - 2457000]	$\mathcal{U}(623.00, 623.13)$	$623.0641^{+0.0025}_{-0.0034}$	$623.0641^{+0.0024}_{-0.0035}$
Radial velocity semi-amplitude K_d [m.s^{-1}]	$\mathcal{U}(0, 1000)$	$2.3^{+2.5}_{-1.6}$	$2.1^{+2.1}_{-1.4}$
Orbital inclination i_d [°]	$\mathcal{S}(70, 90)$	$88.93^{+0.18}_{-0.24}$	$88.99^{+0.13}_{-0.18}$
Planet-to-star radius ratio k_d	$\mathcal{U}(0, 1)$	0.0305 ± 0.0026	$0.0312^{+0.0022}_{-0.0029}$
Orbital eccentricity e_d	$\beta(0.867, 3.03)$	$0.39^{+0.25}_{-0.30}$	$0.30^{+0.29}_{-0.23}$
Argument of periastron ω_d [°]	$\mathcal{U}(0, 360)$	102^{+92}_{-68}	120^{+130}_{-80}
System scale $a_d/R_\star$	(derived)	49.3 ± 2.3	$50.7^{+1.8}_{-2.0}$
Impact parameter b_d	(derived)	$0.74^{+0.12}_{-0.40}$	$0.79^{+0.08}_{-0.36}$
Transit duration $T_{14,d}$ [h]	(derived)	$2.65^{+0.15}_{-0.20}$	$2.67^{+0.15}_{-0.21}$
Planet mass M_d [$M_\oplus$]	(derived)	$9.2^{+8.8}_{-6.4}$	$8.1^{+7.9}_{-5.5}$

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Supplementary Table 6 – continued from previous page

Parameter	Prior	Posterior	
		Dartmouth	PARSEC
Planet radius R_d [$R_\oplus$]	(derived)	2.65 ± 0.24	$2.59^{+0.21}_{-0.24}$
Planet bulk density ρ_d [g.cm^{-3}]	(derived)	$2.6^{+3.1}_{-1.8}$	$2.6^{+2.9}_{-1.8}$
Gaussian Process Hyperparameters			
A [m.s^{-1}]	$\mathcal{U}(0, 100)$	$12.3^{+2.5}_{-1.8}$	$12.2^{+2.5}_{-1.8}$
λ_1 [d]	$\mathcal{U}(0, 1000)$	16.7 ± 2.5	16.7 ± 2.4
λ_2	$\mathcal{U}(0, 1000)$	0.71 ± 0.12	0.70 ± 0.12
P_{rot} [d]	$\mathcal{N}(18.1, 0.3)$	18.2 ± 0.3	18.2 ± 0.3
Instrument-related Parameters			
HARPS jitter [m.s^{-1}]	$\mathcal{U}(0, 10^2)$	$0.93^{+0.41}_{-0.49}$	$0.91^{+0.40}_{-0.49}$
K2 contamination [%]	$\mathcal{N}_\mathcal{U}(0, 0.5, 0, 100)$	$0.35^{+0.37}_{-0.24}$	$0.34^{+0.37}_{-0.24}$
K2 jitter [ppm]	$\mathcal{U}(0, 10^5)$	64 ± 1	64 ± 1
K2 out-of-transit flux	$\mathcal{U}(0.99, 1.01)$	$0.9999999 \pm 1.3 \times 10^{-6}$	$0.9999999 \pm 1.4 \times 10^{-6}$
SED jitter [mag]	$\mathcal{U}(0, 0.1)$	$0.043^{+0.026}_{-0.018}$	$0.044^{+0.025}_{-0.019}$

Notes:

- $\mathcal{N}(\mu, \sigma^2)$: normal distribution with mean μ and width σ^2
- $\mathcal{U}(a, b)$: uniform distribution between a and b
- $\mathcal{N}_\mathcal{U}(\mu, \sigma^2, a, b)$: normal distribution with mean μ and width σ^2 multiplied with a uniform distribution between a and b
- $\mathcal{S}(a, b)$: sine distribution between a and b
- $\beta(a, b)$: Beta distribution with parameters a and b
- $\mathcal{P}(n, a, b)$: power-law distribution of exponent n between a and b

Supplementary Table 7: **List of parameters used in the analysis using the diagnoses-decorrelation correction model (model 3) for stellar activity.** The respective priors and posteriors are provided. Here, only the Dartmouth stellar evolution tracks were used.

Parameter	Prior	Posterior
Stellar Parameters		
Effective temperature $T_{\rm eff}$ [K]	$\mathcal{N}(5120, 39)$	5184 ± 44
Surface gravity log g [cgs]	$\mathcal{N}(4.51, 0.12)$	$4.548^{+0.038}_{-0.047}$
Iron abundance [Fe/H] [dex]	$\mathcal{N}(-0.063, 0.022)$	-0.066 ± 0.022
Distance to Earth D [pc]	$\mathcal{P}(2, 10, 1000)$	104 ± 5
Interstellar extinction $E(B-V)$ [mag]	$\mathcal{U}(0, 1)$	$0.007^{+0.010}_{-0.005}$
Systemic radial velocity γ [km.s^{-1}]	$\mathcal{U}(15, 30)$	$22.969^{+0.022}_{-0.020}$
Planet b Parameters		
Orbital Period P_b [d]	$\mathcal{N}(0.58425, 0.01)$	$0.584250 \pm 1.6 \times 10^{-5}$
Transit epoch $T_{0,b}$ [BJD - 2457000]	$\mathcal{N}(586.9746, 0.1)$	$586.9749 \pm 1.1 \times 10^{-3}$
Radial velocity semi-amplitude K_b [m.s^{-1}]	$\mathcal{U}(0, 10^2)$	2.12 ± 0.75
Orbital inclination i_b [°]	$\mathcal{S}(70, 90)$	83.4 ± 2.3
Planet-to-star radius ratio k_b	$\mathcal{U}(0, 1)$	$0.01353^{+0.00034}_{-0.0030}$
Orbital eccentricity e_b	(fixed)	0
Planet c Parameters		
Orbital Period P_c [d]	$\mathcal{N}(8.3274, 0.01)$	$8.32842 \pm 4.8 \times 10^{-4}$
Transit epoch $T_{0,c}$ [BJD - 2457000]	$\mathcal{N}(536.3766, 0.1)$	$536.3640 \pm 4.8 \times 10^{-3}$
Radial velocity semi-amplitude K_c [cm.s^{-1}]	$\mathcal{U}(0, 10^4)$	331 ± 80
Orbital inclination i_c [°]	$\mathcal{S}(70, 90)$	$87.89^{+0.16}_{-0.19}$
Planet-to-star radius ratio k_c	$\mathcal{U}(0, 1)$	0.02459 ± 0.00056
Orbital eccentricity e_c	(fixed)	0
Planet d Parameters		
Orbital Period P_d [d]	$\mathcal{U}(20, 40)$	30.95 ± 0.67
Transit epoch $T_{0,d}$ [BJD - 2457000]	$\mathcal{U}(623.00, 623.13)$	$623.0641^{+0.0026}_{-0.0035}$
Radial velocity semi-amplitude K_d [cm.s^{-1}]	$\mathcal{U}(0, 1000)$	108^{+140}_{-77}
Orbital inclination i_d [°]	$\mathcal{S}(70, 90)$	$88.92^{+0.26}_{-0.31}$
Planet-to-star radius ratio k_d	$\mathcal{U}(0, 1)$	$0.0297^{+0.0033}_{-0.0019}$
Orbital eccentricity e_d	$\beta(0.867, 3.03)$	$0.48^{+0.21}_{-0.36}$
Argument of periastron ω_d [°]	$\mathcal{U}(0, 360)$	108^{+69}_{-77}
Method parameters		
Linear drift a [m.s^{-1}.yr^{-1}]	$\mathcal{U}(-365, 365)$	181 ± 17
Quadratic drift b [m.s^{-1}.yr^{-2}]	$\mathcal{U}(-133225, 133225)$	-89 ± 97
BIS offset BIS_0 [km.s^{-1}]	$\mathcal{U}(-1, 1)$	$-0.27^{+0.96}_{-0.63}$
BIS coefficient c_0	$\mathcal{U}(-2, 2)$	$-0.576^{+0.073}_{-0.089}$
FWHM offset $FWHM_0$ [km.s^{-1}]	$\mathcal{U}(3, 12)$	$7.0^{+2.1}_{-2.5}$
FWHM coefficient c_1	$\mathcal{U}(-2, 2)$	$0.204^{+0.034}_{-0.026}$
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Supplementary Table 7 – continued from previous page

Parameter	Prior	Posterior
$S_{\rm MW}$ offset $S_{\rm MW,0}$	$\mathcal{U}(0, 5)$	2.7 ± 1.7
$S_{\rm MW}$ coefficient c_2 [km^{-1}.s]	$\mathcal{U}(-2, 2)$	$0.1^{+1.2}_{-1.5}$
H_α offset $I_{H\alpha,0}$	$\mathcal{U}(0, 1)$	0.48 ± 0.34
H_α coefficient c_3 [km^{-1}.s]	$\mathcal{U}(-2, 2)$	0.1 ± 1.3
Moving average amplitude ϕ [km^{-1}.s]	$\mathcal{U}(0, 100)$	0.46 ± 0.20
Moving average timescale τ [d]	$\mathcal{J}(0.001, 10000)$	44^{+1900}_{-39}
Instrument-related Parameters		
HARPS radial velocity jitter [m.s^{-1}]	$\mathcal{U}(0, 1000)$	$5.1^{+0.5}_{-0.4}$
K2 contamination [%]	$\mathcal{N}_{\mathcal{U}}(0, 0.5, 0, 100)$	$0.33^{+0.38}_{-0.24}$
K2 jitter [ppm]	$\mathcal{U}(0, 10^5)$	64 ± 1
K2 out-of-transit flux	$\mathcal{U}(0.99, 1.01)$	$0.9999999 \pm 1.4 \times 10^{-6}$
SED jitter [mag]	$\mathcal{U}(0, 0.1)$	$0.044^{+0.026}_{-0.019}$

Notes:
• $\mathcal{N}(\mu, \sigma^2)$: normal distribution with mean μ and width σ^2
• $\mathcal{U}(a, b)$: uniform distribution between a and b
• $\mathcal{J}(a, b)$: Jeffreys distribution between a and b
• $\mathcal{N}_{\mathcal{U}}(\mu, \sigma^2, a, b)$: normal distribution with mean μ and width σ^2 multiplied with a uniform distribution between a and b
• $\mathcal{S}(a, b)$: sine distribution between a and b
• $\beta(a, b)$: Beta distribution with parameters a and b
• $\mathcal{P}(n, a, b)$: power-law distribution of exponent n between a and b