

**APPENDIX A: JOURNAL OF OBSERVATIONS**

Table A1: Journal of Observations containing our SOPHIE data. Flags indicate whether the measurement are excluded from our fiducial analysis with the following reason: W, wrong star; B, bisector outlier; U, high uncertainty; O, other. Dates are given in BJD - 2,400,000.  $V_{\text{rad}}$  are the measured radial velocities with their uncertainties  $\sigma_{V_{\text{rad}}}$ . FWHM is the Full Width at Half Maximum of the Gaussian fitted to the cross correlation function, and *contrast* is its amplitude. Bis. span is the span of the bisector slope. Uncertainties on FWHM and bis. span are  $2 \times \sigma_{V_{\text{rad}}} \cdot H_{\alpha}$  is the equivalent width of  $H_{\alpha}$ , and its uncertainty  $\sigma_{H_{\alpha}}$ .

flag	BJD-2,400,000 [days]	$V_{\text{rad}}$ [km s <sup>-1</sup> ]	$\sigma_{V_{\text{rad}}}$ [km s <sup>-1</sup> ]	FWHM [km s <sup>-1</sup> ]	contrast	bis. span [km s <sup>-1</sup> ]	$H_{\alpha}$	$\sigma_{H_{\alpha}}$
	57578.42404	-22.7567	0.0126	10.4138	22.7274	-0.0233	0.2119	0.0022
B	57581.57256	-20.3465	0.0444	10.4924	13.0881	-0.1227	0.2184	0.0055
	57582.52743	-20.4322	0.0176	10.3201	27.2220	-0.0199	0.2046	0.0036
	57587.43166	-23.9495	0.0113	10.2935	25.8863	0.0192	0.2031	0.0021
	57591.44122	-29.2376	0.0146	10.2883	26.1452	0.0538	0.2117	0.0029
	57595.47979	-35.3428	0.0096	10.3340	29.0424	0.0125	0.2039	0.0020
	57604.43905	-46.8841	0.0145	10.4605	25.3376	-0.0054	0.2147	0.0028
	57607.38886	-47.6294	0.0145	10.4123	28.2874	0.0037	0.2135	0.0030
	57612.47728	-40.2406	0.0110	10.3402	28.9602	0.0079	0.2116	0.0023
	57623.37736	-20.3825	0.0100	10.2928	29.0664	-0.0093	0.2032	0.0020
	57626.38491	-21.8607	0.0110	10.3395	28.9280	0.0329	0.2063	0.0022
	57634.40704	-32.0631	0.0109	10.3925	28.9876	-0.067	0.2092	0.0023
	57719.26505	-36.2183	0.0095	10.3290	28.9030	0.0201	0.1966	0.0018
	57746.26923	-20.3795	0.0084	10.3404	29.0733	-0.0067	0.2122	0.0016
	57815.65363	-44.9376	0.0098	10.3132	27.1330	-0.0004	0.2095	0.0018
	57815.67731	-44.8993	0.0083	10.3249	29.1040	0.0086	0.2080	0.0016
	57850.59947	-46.6829	0.0091	10.3250	27.0881	0.0033	0.2069	0.0017
	57850.62308	-46.7070	0.0119	10.2789	28.0442	-0.0021	0.2067	0.0022
	57858.58652	-41.1658	0.0146	10.2378	23.9695	-0.0255	0.1882	0.0025
	57860.61247	-35.6563	0.0186	10.2443	23.5034	0.0100	0.1941	0.0032
	57881.49587	-33.0003	0.0175	10.2694	22.2896	-0.0211	0.2216	0.0030
	57881.51944	-33.0316	0.0158	10.2409	25.8066	0.0089	0.2109	0.0029
	57890.53416	-45.6792	0.0089	10.2779	27.3843	0.0160	0.1951	0.0016
	57890.57816	-45.7231	0.0081	10.2384	27.7725	-0.0009	0.1910	0.0015
	57914.55102	-22.4041	0.0110	10.2004	25.3872	-0.0078	0.2151	0.0020
	57914.57472	-22.4272	0.0084	10.2139	27.9878	0.0084	0.2134	0.0016
	57924.49590	-35.9753	0.0099	10.2853	27.2617	0.0267	0.1996	0.0018
	57924.52118	-36.0181	0.0103	10.2534	28.8795	0.0171	0.2012	0.0020
	57936.48767	-47.4623	0.0106	10.2734	26.9318	0.0141	0.1932	0.0020
	57936.51133	-47.4660	0.0113	10.3536	28.5829	-0.0057	0.1917	0.0021
	57954.37721	-21.3857	0.0134	10.2930	25.3470	0.0145	0.2031	0.0024
	57955.36873	-22.1650	0.0129	10.2899	25.3384	-0.0119	0.2043	0.0022
	57970.44413	-43.0893	0.0085	10.2438	28.2732	0.0268	0.1914	0.0016
	57970.46806	-43.1358	0.0082	10.2520	28.9462	0.0077	0.1877	0.0015
	57989.42736	-22.4627	0.0097	10.2269	27.1918	0.0127	0.1965	0.0017
	57989.45189	-22.4383	0.0091	10.2555	29.0876	-0.0119	0.1930	0.0017
	57999.37737	-25.3762	0.0160	10.2317	23.9715	-0.0013	0.1971	0.0027
W	58003.32008	-3.1611	0.0199	7.5424	24.2589	0.0161	0.2016	0.0045
	58003.42095	-31.0632	0.0141	10.1974	23.2722	-0.0428	0.1954	0.0023
	58007.42352	-37.1754	0.0142	10.3020	28.2437	0.0059	0.1924	0.0027
	58026.32236	-31.5767	0.0100	10.2828	26.6464	0.0082	0.2004	0.0018
	58029.34747	-24.2823	0.0086	10.2444	31.1481	-0.0078	0.1962	0.0018
B	58034.33565	-20.4064	0.0114	10.2145	31.4902	-0.0954	0.1925	0.0024
	58038.28757	-22.8921	0.0085	10.2171	29.0859	-0.0010	0.1947	0.0016
	58043.30107	-29.2555	0.0088	10.1869	27.6237	0.0084	0.1888	0.0016
	58049.33656	-38.4188	0.0190	10.3105	23.6222	-0.0004	0.2151	0.0033
O	58057.38946	-47.4170	0.0127	10.3516	27.6078	0.0028	0.1924	0.0022

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flag	BJD	$V_{\text{rad}}$	$\sigma_{V_{\text{rad}}}$	FWHM	contrast	bis. span	$H_{\alpha}$	$\sigma_{H_{\alpha}}$
	58066.32858	-34.6758	0.0173	10.2573	23.9592	0.0012	0.2000	0.0029
	58076.24290	-20.6229	0.0109	10.2381	26.3816	0.0227	0.1993	0.0020
	58084.24172	-29.0736	0.0402	10.3369	17.3316	0.0183	0.2143	0.0061
	58227.56803	-42.8215	0.0095	10.3294	29.2382	0.0159	0.1975	0.0018
	58231.59284	-31.9304	0.0115	10.3272	28.2728	-0.0126	0.1911	0.0022
	58255.55341	-39.6783	0.0111	10.2862	26.8276	-0.0023	0.1972	0.0020
U	58271.53928	-35.2297	0.0775	10.4414	14.1731	0.0514	0.2170	0.0113
	58289.48662	-28.8597	0.0086	10.2324	27.6608	0.0124	0.1940	0.0016
	58294.41403	-36.2932	0.0238	10.1405	19.6541	-0.0463	0.1980	0.0038
	58301.52589	-45.8824	0.0094	10.2594	27.0071	-0.0092	0.1856	0.0017
	58319.49236	-21.0086	0.0095	10.232	27.3731	-0.0159	0.1864	0.0017
	58329.35035	-27.1417	0.0123	10.1726	26.8217	0.0135	0.1895	0.0024
	58364.49871	-20.9710	0.0095	10.2804	29.4757	0.0077	0.1917	0.0018
	58373.38714	-31.4460	0.0085	10.2349	28.9319	-0.0064	0.1959	0.0017
	58389.28389	-46.7948	0.0085	10.2759	28.4801	-0.0032	0.1936	0.0017
W	58398.33382	2.0217	0.0162	7.6074	33.8799	-0.0066	9999.99	9999.99
	58410.34703	-25.6250	0.0107	10.2377	30.7540	0.0084	0.1970	0.0023
	58414.31942	-31.2461	0.0135	10.2164	26.4540	-0.0110	0.2059	0.0026
	58438.23468	-28.5063	0.0086	10.2149	28.7501	-0.0001	0.2048	0.0017
	58440.32791	-23.9560	0.0141	10.4258	30.7245	0.0284	0.2063	0.0030
	58447.28753	-21.3746	0.0085	10.2282	30.6147	-0.0060	0.1972	0.0018
	58536.69186	-29.9300	0.0131	10.2127	26.6076	-0.0381	0.1960	0.0026
	58539.69622	-34.4673	0.0101	10.3190	28.0285	-0.0214	0.1959	0.002
	58542.70128	-39.0813	0.0096	10.2536	28.4771	-0.0302	0.2042	0.0019
	58557.68116	-39.1923	0.0161	10.2757	27.2871	0.0405	0.2019	0.0033
	58569.61968	-20.8305	0.0122	10.2296	27.7821	-0.0081	0.2002	0.0024
	58617.59111	-28.1421	0.0091	10.2460	28.7484	-0.0038	0.2015	0.0018
	58626.46789	-41.4286	0.0107	10.2794	25.8409	0.0075	0.2010	0.0020
	58634.53897	-47.5651	0.0093	10.2481	26.5013	-0.0039	0.2018	0.0018
	58638.43325	-42.6407	0.0126	10.2794	28.4741	-0.0223	0.2039	0.0026
	58650.53936	-20.4374	0.0152	10.1724	26.3894	0.0132	0.2030	0.0031
	58654.49571	-22.9659	0.0097	10.2282	28.3680	-0.0006	0.1971	0.0019
	58660.56745	-30.9076	0.0102	10.2163	28.9174	-0.0113	0.1984	0.0022
	58665.57318	-38.5290	0.0140	10.2965	27.5442	0.0455	0.1981	0.0028
	58675.57952	-47.5981	0.0109	10.3365	27.6547	0.0017	0.1965	0.0022
	58687.61864	-22.6485	0.0225	10.3376	23.7336	0.0388	0.2054	0.0043
	58703.54677	-33.7950	0.0175	10.3134	26.0287	0.0192	0.2010	0.0036
	58706.50803	-38.3266	0.0100	10.2295	28.0761	-0.0120	0.1982	0.0020
	58708.50232	-41.2314	0.0301	10.2930	16.0707	-0.0426	0.1994	0.0047
B	58732.43751	-20.3947	0.0302	10.2203	25.1441	-0.1346	0.2322	0.0062
	58734.44238	-21.1078	0.0155	10.2528	27.1499	-0.0207	0.2124	0.0031
	58738.38163	-24.8845	0.0105	10.1784	27.7775	-0.0244	0.2003	0.0021
	58753.33846	-45.8380	0.0075	10.2737	28.6564	-0.0095	0.202	0.0016
	58757.43639	-47.6475	0.0099	10.3475	28.4233	0.0141	0.2001	0.0020
	58760.37181	-45.0829	0.0118	10.2839	28.1836	0.0119	0.1973	0.0024
	58765.41646	-32.4426	0.0094	10.2947	28.2387	0.0005	0.2029	0.0019
	58794.31837	-45.7701	0.0157	10.3120	26.8288	-0.0071	0.2012	0.0031
	58804.24157	-38.9032	0.0122	10.3048	27.9886	0.0424	0.2025	0.0024
	58820.22529	-24.4962	0.0149	10.3393	26.6102	-0.0071	0.2153	0.0030
	58824.24004	-29.9520	0.0094	10.2552	28.2000	0.0245	0.2090	0.0019
	58828.27635	-36.0832	0.0198	10.4292	23.1762	-0.0434	0.2019	0.0034
B	58919.69124	-47.3685	0.0208	10.3504	24.6286	-0.1229	0.2077	0.0041
	58998.56140	-44.5035	0.0109	10.3115	28.8681	0.0086	0.1939	0.0022
	59009.49993	-39.2485	0.0122	10.2756	27.7224	-0.0107	0.2039	0.0025
	59023.55894	-22.3117	0.0099	10.2759	28.5419	-0.0080	0.1996	0.0019
	59030.43413	-31.1164	0.0095	10.2358	28.4005	0.0120	0.1979	0.0019
	59042.42642	-47.0737	0.0101	10.2934	28.2747	0.0043	0.2012	0.0020
	59046.54366	-46.7980	0.0123	10.2777	28.0726	-0.0441	0.1967	0.0026
	59067.42681	-25.4159	0.0097	10.2439	28.0315	0.0085	0.1974	0.0019

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flag	BJD	$V_{\text{rad}}$	$\sigma_{V_{\text{rad}}}$	FWHM	contrast	bis. span	$H_{\alpha}$	$\sigma_{H_{\alpha}}$
	59073.55426	-34.2494	0.0093	10.3336	28.3985	0.0340	0.2080	0.0019
	59077.48604	-40.2255	0.0157	10.2866	27.4415	0.0209	0.2072	0.0034
	59089.39809	-44.3841	0.0099	10.3046	28.1461	0.0012	0.2066	0.0020
	59093.41074	-34.3069	0.0151	10.2234	26.0449	-0.0083	0.2102	0.0031
	59095.45922	-28.5598	0.0098	10.1601	27.3818	0.0041	0.1988	0.0020
	59101.49898	-20.3988	0.0089	10.2738	28.4152	-0.006	0.2009	0.0017
	59102.51980	-20.4328	0.0122	10.5231	27.0339	0.0343	0.1998	0.0022
	59121.39686	-44.0417	0.0142	10.2192	24.6636	-0.0090	0.2162	0.0028
	59123.35979	-46.1410	0.0093	10.2626	27.3614	0.0051	0.2093	0.0018
	59131.39916	-42.5350	0.0104	10.2861	28.3114	0.0065	0.2073	0.0021
	59137.28463	-26.7021	0.0091	10.2698	28.7466	0.0254	0.2025	0.0018
	59154.32126	-32.1154	0.0102	10.3170	26.7867	-0.0023	0.2072	0.0019
	59157.36523	-36.7752	0.0177	10.2287	25.1757	0.0102	0.2177	0.0035
	59162.32683	-43.8233	0.0349	10.6452	24.2053	-0.0007	0.2148	0.0072
	59165.27801	-46.8031	0.0093	10.3282	28.3817	0.0336	0.2066	0.0019
	59172.32740	-42.8424	0.0082	10.4652	28.6099	-0.0162	0.2052	0.0016
B	59181.27395	-21.7546	0.0168	10.3768	31.0919	-0.1028	0.1955	0.0039
	59266.69524	-20.3963	0.0109	10.3016	28.3442	0.0245	0.2087	0.0022
	59269.69460	-22.0169	0.0109	10.3060	28.0074	0.0154	0.2067	0.0022
	59270.67941	-22.9506	0.0118	10.2768	26.9761	0.0561	0.2142	0.0024
	59275.70395	-29.3537	0.0133	10.2461	26.0009	-0.0098	0.2156	0.0027
	59280.69715	-36.9685	0.0146	10.2385	27.3492	0.0137	0.2127	0.0030
	59297.61346	-37.7124	0.0090	10.3029	28.4720	0.0267	0.1983	0.0018
	59299.64512	-31.8527	0.0094	10.3205	28.1204	-0.0358	0.202	0.0019
	59303.60959	-22.8602	0.0096	10.2401	27.2753	0.0383	0.1987	0.0019
	59305.61783	-20.8265	0.0088	10.2858	28.0542	0.0050	0.2126	0.0018
	59349.50200	-20.5659	0.0262	10.4567	25.5230	0.0576	0.2089	0.0054
	59354.55499	-24.8984	0.0143	10.2426	28.2716	0.0149	0.2148	0.0031
	59363.59631	-38.0943	0.0097	10.2586	27.9776	0.0149	0.2057	0.0020
	59366.52159	-42.3251	0.0116	10.2845	28.0478	0.0281	0.2116	0.0024
	59369.57437	-45.8980	0.0086	10.3087	28.8846	-0.0363	0.2094	0.0018
	59371.53106	-47.3490	0.0106	10.3614	28.6411	-0.0433	0.2137	0.0022
	59375.55836	-46.3745	0.0088	10.2746	28.9782	0.0130	0.2074	0.0018
	59378.56443	-40.9102	0.0100	10.3196	28.9479	-0.0039	0.2053	0.0021
	59382.54493	-29.7562	0.0129	10.2722	28.2695	0.0240	0.2016	0.0027
	59387.49783	-21.0110	0.0123	10.2471	26.8552	0.0086	0.2108	0.0024
	59388.44241	-20.4912	0.0133	10.2164	26.7626	0.0178	0.2056	0.0027