INTERNATIONAL ASTRONOMICAL UNION

COMMISSION G1 (BINARY AND MULTIPLE STAR SYSTEMS)

DOUBLE STARS INFORMATION CIRCULAR No. 209 (FEBRUARY 2023)

NEW ORBITS

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
00003-4417	I 1477	115.4	2011.58	0.717	0.435	65.6	147.5	297.3	185.3 0.212	TOK
–	–	2.9	0.86	0.020	0.014	2.6	1.5	2.2	189.0 0.212	2022.442
00026-0829	A 428	761	1995.6	0.644	0.793	108.8	197.9	210.3	271.4 0.122	TOK
–	4	...	...	...	...	...	...	...	266.6 0.127	2022.611
00098-3347	SEE 3	268.9	1979.82	0.740	0.904	37.8	102.6	246.2	127.1 0.967	D et al.
794		15.0	0.15	0.008	0.009	0.5	6.0	6.0	127.8 0.978	2022.8452
00111+0513	TOK 869	8.659	2018.336	0.211	0.112	51.2	106.2	247.1	175.1 0.088	TOK
–	–	0.145	0.167	0.025	0.003	1.8	2.5	7.8	220.1 0.084	2023.006
00125-3219	B 1023	300	1979.29	0.861	0.349	145.0	221.9	270.0	162.0 0.348	TOK
–	–	...	...	...	...	...	...	...	161.5 0.352	2023.006
00153-4230	RST 3344	136.9	2029.05	0.482	0.153	125.0	161.5	214.7	349.2 0.088	TOK
–	–	...	...	...	...	...	...	...	345.1 0.086	2022.445
00160-4816	TOK 808	7.08	2023.388	0.314	0.147	21.9	34.9	195.6	193.7 0.105	TOK
–	–	1.49	0.165	0.084	0.004	17.0	37.9	65.7	287.1 0.106	2022.774
00164-2235	HDS 36 Aa,Ab	28.83	2000.28	0.674	0.144	137.5	61.1	38.9	175.0 0.139	TOK
–	–	0.57	1.32	0.036	0.013	11.9	7.2	13.1	166.7 0.123	2022.445
00164-7024	HEI 198	53.73	2010.32	0.412	0.114	137.1	153.6	205.7	172.4 0.123	TOK
–	–	4.41	1.46	0.098	0.007	10.0	9.6	16.0	168.7 0.129	2022.611
00261-1123	YR 4	42.3	2026.17	0.617	0.255	162.1	35.2	16.1	114.1 0.160	TOK
–	–	6.0	0.82	0.112	0.005	6.2	106.0	116.0	94.6 0.133	2022.447
00271-0753	A 431 AB	53.30	2003.75	0.636	0.362	109.8	26.1	295.2	268.1 0.211	D et al.
2143	363	0.20	0.35	0.006	0.005	1.0	1.5	1.0	263.2 0.224	2022.4446

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
00329-0434	JNN 12 AC	15.0	2012.836	0.000	0.226	90.0	17.7	0.0	197.7 0.100	TOK
–	–	...	...	...	...	...	...	...	197.7 0.009	2022.445
00446-1856	HDS 99 AaAb	8.672	2020.647	0.497	0.132	174.5	1.2	302.7	274.2 0.166	D et al.
3493		0.032	0.085	0.003	0.003	3.0	5.0	7.0	254.6 0.189	2022.4446
00516+4412	YR 19 AB	26.03	2021.257	0.859	0.065	35.0	56.6	252.9	82.2 0.044	TOK
–	–	...	...	...	...	...	...	...	91.6 0.057	2018.650
01007-5235	I 49	500	2005.8	0.836	0.710	100.7	31.9	118.3	199.2 0.204	TOK
–	–	...	...	...	...	...	...	...	198.3 0.204	2022.611
01243-0655	BU 1163	16.046	2021.134	0.929	0.1996	117.0	28.9	348.6	224.4 0.191	D et al.
6564	1123	0.224	0.008	0.003	0.0010	0.5	0.5	0.5	221.3 0.251	2021.7556
01345+3440	A 1913 AB	3361.	1890.45	0.859	1.899	105.9	99.2	172.6	128.8 0.471	L et al.
7337	1227	1049.	1.64	0.028	0.348	0.8	0.2	5.5	128.5 0.476	2021.8168
02290-1959	RST 2280 Aa,Ab	31.926	2020.773	0.654	0.525	163.8	164.8	15.2	49.7 0.323	TOK
–	–	0.076	0.014	0.002	0.006	2.6	8.5	8.3	32.7 0.410	2022.611
02418-5300	SYU 4 Ba,Bb	5.121	2021.162	0.480	0.068	139.3	325.0	100.5	69.0 0.073	TOK
–	–	0.300	0.030	0.027	0.002	2.7	6.9	6.5	31.4 0.079	2022.933
02433+0314	STF 299	914.	2046.7	0.90	5.60	85.2	122.7	274.7	300.0 1.886	ALZ
–	2080	450.	10	0.05	2.0	2.0	5.0	15.0	300.2 1.849	2023.04
02514-2139	DON 43	121.5	1984.7	0.415	0.201	39.2	51.7	97.1	290.4 0.210	TOK
–	–	5.8	6.8	0.049	0.011	5.9	23.9	11.4	292.3 0.211	2022.845
02554-2513	HDS 375	65	2045.652	0.281	0.510	119.0	67.2	210.3	23.0 0.382	TOK
–	–	...	...	...	...	...	...	...	18.1 0.358	2022.611
03053-4059	HDS 391	41.654	2025.319	0.750	0.210	74.7	296.8	229.2	92.9 0.067	TOK
–	–	0.854	0.550	0.000	0.012	2.0	2.2	2.9	106.4 0.071	2022.611
03124-4425	JC 8 AB	45.018	2022.507	0.889	0.404	172.0	36.3	44.9	261.0 0.085	D et al.
14913		0.300	0.005	0.002	0.004	3.0	12.0	12.0	224.0 0.184	2022.8469
03184-2231	SEE 23	58.65	2024.213	0.835	0.295	62.0	128.8	294.1	319.5 0.087	TOK
–	–	0.70	0.117	0.013	0.007	0.8	1.7	1.5	35.7 0.024	2023.006

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
03271+1845	CHR 10 AB	8.399	2022.767	0.584	0.055	21.9	195.3	79.2	320.0 0.024	TOK
–	–	0.033	0.113	0.040	0.003	12.8	30.2	27.0	35.7 0.053	2022.685
03311-0029	HDS 444	20.52	2025.082	0.570	0.079	37.3	228.2	159.9	279.1 0.052	TOK
–	–	1.47	0.458	0.079	0.005	8.6	10.9	15.6	318.6 0.035	2023.006
03489+1143	A 831	300	2047.17	0.139	0.501	63.2	174.1	314.4	98.0 0.205	TOK
–	–	...	...	...	...	...	...	...	101.1 0.207	2022.683
03526-0829	RST 4762 AB	154.6	1993.93	0.287	0.173	118.3	84.6	146.2	216.3 0.098	TOK
–	–	...	...	...	...	...	...	...	212.9 0.096	2022.845
03544-4021	FIN 344 AB	14.060	2008.095	0.586	0.061	33.0	67.1	50.6	201.7 0.033	TOK
–	–	0.049	0.057	0.009	0.001	2.6	4.3	4.4	237.2 0.055	2022.685
03565-0624	A 463	175.9	1992.8	0.787	0.246	155.2	93.5	228.2	76.5 0.295	TOK
–	2885	16.3	2.8	0.042	0.022	18.8	37.3	38.6	75.7 0.300	2023.006
04007+2023	TOK 363 Aa,Ab	16.728	2010.325	0.287	0.113	27.7	199.2	149.1	226.4 0.117	TOK
–	–	0.099	0.197	0.008	0.002	4.0	3.1	4.8	246.0 0.101	2022.686
04037-1545	A 2913	257.8	1990.94	0.750	0.361	107.6	167.8	13.2	357.6 0.308	TOK
–	–	73.8	0.53	0.046	0.063	2.9	1.1	2.3	357.2 0.317	2023.006
04070+3934	COU 1394	329.6	2016.89	0.176	0.419	70.0	134.5	354.1	135.9 0.345	L et al.
–	–	48.7	8.25	0.076	0.037	0.4	0.9	10.8	136.5 0.345	2022.0546
04108-4200	HDS 530	23.6	2018.945	0.583	0.222	110.8	13.2	103.6	167.6 0.155	TOK
–	–	...	...	...	...	...	...	...	158.0 0.145	2022.611
04119+2338	CHR 14 Aa,Ab	43.397	1993.282	0.925	0.423	77.5	335.9	79.0	228.8 0.167	TOK
–	–	0.255	0.403	0.014	0.046	1.6	1.1	1.5	233.4 0.159	2022.774
04159+3142	STT 77 AB	188.81	2075.36	0.440	0.565	56.5	74.3	31.1	310.4 0.433	S et al.
19883	3082	1.19	1.45	0.006	0.015	0.7	0.7	1.6	312.0 0.425	2023.0755
04287+2613	HDS 576	47.5	1994.762	0.762	0.282	78.0	111.4	275.7	249.2 0.146	TOK
–	–	...	...	...	...	...	...	...	252.8 0.154	2020.834
04312+0157	HDS 585	72.16	2013.98	0.457	0.387	76.2	259.9	166.6	145.9 0.085	TOK
–	–	3.57	0.14	0.018	0.013	0.3	0.4	0.9	169.4 0.082	2022.774

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
04330-1633	CRI 7 Aa,Ab	5.708	2017.370	0.197	0.088	99.1	171.1	76.9	148.3 0.027	TOK
–	–	0.186	0.230	0.054	0.003	1.9	1.2	7.3	355.0 0.076	2022.774
04400-3105	HDS 602	28.017	2021.799	0.698	0.310	118.1	174.8	81.8	0.9 0.147	TOK
–	–	0.232	0.016	0.007	0.006	1.0	1.5	1.1	348.0 0.211	2022.683
04507-8202	HDS 625	300	2017.152	0.838	0.500	99.0	117.8	256.7	119.8 0.147	TOK
–	–	...	...	...	...	...	...	...	118.8 0.166	2022.774
04553-1625	HDS 635	150	1997.182	0.829	0.483	126.0	136.2	84.7	271.5 0.432	TOK
–	–	...	...	...	...	...	...	...	270.5 0.438	2021.730
04590-1623	BU 314 AB	55.38	2034.26	0.921	0.467	119.3	131.6	339.2	315.2 0.673	TOK
–	3588	0.58	0.37	0.015	0.004	2.2	2.8	4.0	314.6 0.643	2022.129
05033-2315	BEU 7	15.34	2022.16	0.093	0.324	136.5	93.4	254.1	172.5 0.217	TOK
–	–	0.21	0.91	0.020	0.003	3.3	1.7	25.4	139.0 0.251	2022.842
05162-1121	CHR 225	11.00	1985.84	0.973	0.044	66.2	205.2	53.6	51.5 0.059	TOK
–	–	...	...	...	...	...	...	...	53.2 0.060	2022.195
05174-3522	TSN 1	0.713	2022.373	0.219	0.059	108.7	164.0	141.1	110.3 0.020	TOK
–	–	0.001	0.035	0.042	0.003	3.6	2.7	16.8	267.5 0.021	2022.845
05508-3945	I 1494 AB	277.66	2026.03	0.292	0.511	104.6	88.8	217.9	260.4 0.316	TOK
–	–	...	...	...	...	...	...	...	259.5 0.308	2010.068
06115-7214	JNN 48	100	2006.56	0.441	0.323	130.7	169.0	188.5	218.2 0.232	TOK
–	–	...	...	...	...	...	...	...	214.3 0.245	2022.290
06312-7031	HDS 889	34.07	2001.61	0.650	0.105	135.4	58.5	71.8	155.4 0.118	TOK
–	–	...	...	...	...	...	...	...	150.7 0.115	2023.009
06319-0938	A 670	281.1	1988.319	0.753	0.557	72.9	3.8	30.6	180.2 0.528	TOK
–	5172	29.9	0.555	0.026	0.030	1.2	0.6	1.9	180.5 0.539	2023.007
06337-2853	B 700	190.6	2008.26	0.810	0.218	113.6	147.1	134.7	245.4 0.066	TOK
–	–	19.5	1.00	0.021	0.014	2.5	2.4	3.4	240.7 0.068	2022.843
06354-0403	JNN 271	10.40	2022.024	0.217	0.186	88.2	171.5	341.2	172.6 0.132	TOK
–	–	...	...	...	...	...	...	...	177.9 0.048	2022.774

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
06390-5850	B 1962	300	1970.96	0.108	0.520	105.1	15.0	230.0	36.1 0.300	TOK
–	–	...	...	...	...	...	...	...	35.2 0.308	2022.933
06493-0216	FIN 322	61.41	1969.57	0.263	0.152	111.1	240.5	72.3	241.1 0.132	TOK
–	–	0.92	0.53	0.021	0.002	0.9	0.6	1.3	238.3 0.127	2023.007
06508-1423	RST 4323	190	2022.327	0.935	0.473	105.6	24.7	317.4	14.6 0.041	TOK
–	–	...	...	...	...	...	...	...	350.9 0.040	2022.843
06510+0551	HDS 950	29.13	2017.086	0.444	0.127	98.9	165.3	278.1	157.5 0.102	TOK
–	–	...	...	...	...	...	...	...	154.6 0.094	2022.774
06586-0016	RST 5252	600	1907.424	0.595	0.750	108.7	23.3	162.5	53.9 0.469	TOK
–	–	...	...	...	...	...	...	...	53.5 0.475	2023.007
07091-5905	RST 4340	132.25	2013.28	0.112	0.284	56.9	91.2	149.4	272.5 0.256	TOK
–	–	...	...	...	...	...	...	...	274.3 0.256	2022.933
07166+0920	A 2854	300	1979.21	0.660	0.360	96.0	27.4	119.3	190.8 0.124	TOK
–	5946	...	...	...	...	...	...	...	190.0 0.120	2022.774
07508+0317	A 2880	109.75	1991.893	0.601	0.182	47.7	91.9	292.6	175.5 0.169	TOK
–	6405	2.77	0.101	0.009	0.003	0.7	1.4	1.5	177.5 0.171	2022.774
07513-0924	BU 1195	500	2012.39	0.970	0.319	65.6	74.4	196.9	69.3 0.120	TOK
–	6412	...	...	...	...	...	...	...	69.7 0.128	2022.774
08021-1710	HDS 1140 AB	34.875	2001.248	0.299	0.372	119.3	92.3	156.6	91.1 0.463	TOK
–	–	...	...	...	...	...	...	...	87.9 0.449	2023.007
08230-7102	HDS 1196 AB	20.99	2023.603	0.292	0.078	115.5	10.8	167.4	205.9 0.049	TOK
–	–	0.99	0.343	0.050	0.002	2.2	2.3	10.7	190.7 0.055	2023.009
08277-0425	A 550	21.049	2002.362	0.887	0.107	141.4	63.7	76.1	92.3 0.031	TOK
–	6825	0.051	0.122	0.021	0.010	7.2	8.5	7.6	229.3 0.042	2022.846
08331-2436	BU 205 AB	143.83	1955.09	0.295	0.532	142.6	172.5	86.7	273.8 0.550	TOK
–	6871	0.84	0.49	0.007	0.005	0.9	1.5	1.4	272.0 0.550	2023.007
08369-7857	KOH 79 AB	47.9	1989.35	0.268	0.172	110.0	4.1	70.5	37.1 0.108	TOK
–	–	11.4	2.08	0.204	0.016	1.6	5.0	16.2	31.4 0.118	2022.129

NEW ORBITS (continuation)

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08375-3906	B 1618	180	2020.46	0.395	0.167	52.7	75.0	231.7	306.7 0.071	TOK
–	–	...	...	...	...	...	...	...	313.1 0.068	2022.845
08423+2002	COU 382	1447.2	1959.64	0.856	1.032	130.5	80.6	327.4	346.3 0.357	L et al.
–	–	423.4	0.66	0.025	0.183	1.3	2.5	2.9	345.6 0.361	2020.1116
08507+1800	A 2473	234.8	2050.42	0.139	0.305	33.1	37.3	126.9	106.9 0.236	TOK
–	6412	...	...	...	...	...	...	...	109.1 0.235	2022.197
08563-3707	RST 2593	132.38	1915.70	0.361	0.842	156.8	20.5	181.6	310.6 0.776	TOK
–	–	6.93	4.40	0.060	0.033	8.2	13.0	15.6	307.8 0.760	2023.007
08589+0829	DEL 2	5.532	2006.441	0.771	0.391	123.7	280.1	19.8	285.1 0.094	TOK
–	–	0.002	0.007	0.002	0.001	0.4	0.3	0.6	106.2 0.464	2022.846
08594-2412	RST 2597	400	1970.38	0.707	0.282	145.9	54.1	103.7	182.1 0.242	TOK
–	–	...	...	...	...	...	...	...	181.4 0.245	2023.007
09017-5211	HJ 4165	900	2293.62	0.163	1.416	67.5	77.7	210.5	156.8 0.592	TOK
–	–	...	...	...	...	...	...	...	157.7 0.590	2022.857
09082-2829	B 177 AB	400	2035.805	0.700	0.180	85.2	197.0	142.9	210.6 0.025	TOK
–	–	...	...	...	...	...	...	...	214.0 0.020	2022.441
09125-4032	B 1115	136.36	2005.756	0.442	0.330	142.1	103.4	270.4	98.4 0.278	TOK
–	–	5.18	0.271	0.016	0.006	1.5	2.2	3.5	95.9 0.284	2022.441
09210+3811	STF 1338 AB	381.5	2001.4	0.202	1.480	29.8	164.4	120.4	318.9 1.174	S et al.
45858	7307	23.8	8.1	0.019	0.015	1.4	6.2	17.3	320.1 1.180	2023.0760
09455-2824	B 188	293.2	1983.85	0.838	0.387	46.3	22.3	175.4	356.8 0.383	TOK
–	–	45.6	0.81	0.018	0.040	5.6	3.6	4.5	357.3 0.390	2023.009
10056-8405	TOK 396 Aa,Ab	34.75	2022.012	0.252	0.210	80.7	5.7	147.6	183.2 0.154	TOK
–	–	...	...	...	...	...	...	...	186.0 0.163	2022.047
10087-2538	B 193	450	1952.52	0.500	0.542	107.6	70.2	26.2	263.7 0.417	TOK
–	7659	...	...	...	...	...	...	...	263.4 0.424	2023.009
10089-2945	HDS 1462	120	2023.863	0.850	0.291	89.6	67.9	202.0	247.7 0.046	TOK
–	–	...	...	...	...	...	...	...	248.2 0.037	2022.933

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
10112-3245	HDS 1469	34.6	2018.330	0.623	0.174	114.7	71.9	166.3	120.7 0.085	TOK
–	–	...	...	...	...	...	...	...	109.6 0.110	2022.933
10142-7636	KOH 88	49.72	1995.073	0.500	0.197	119.9	276.1	182.0	270.8 0.288	TOK
–	–	...	...	...	...	...	...	...	269.3 0.283	2022.283
10214-2616	HDS 1491	22.11	2024.12	0.198	0.119	149.6	72.1	183.1	273.4 0.095	TOK
–	–	0.76	0.31	0.016	0.001	2.7	5.3	11.6	252.0 0.095	2022.933
10255-6504	HDS 1499	13.39	2022.271	0.700	0.073	47.0	101.6	178.2	18.8 0.028	TOK
–	–	...	...	...	...	...	...	...	62.6 0.058	2023.010
10275+0334	STT 218	300	2038.91	0.645	0.725	50.4	41.6	221.8	191.5 0.339	TOK
–	7779	...	...	...	...	...	...	...	194.2 0.335	2021.318
10283-2416	TOK 537 Aa,Ab	29.18	2021.841	0.680	0.320	54.7	158.0	370.7	245.0 0.087	TOK
–	–	4.15	0.032	0.030	0.029	0.8	1.6	0.9	289.6 0.147	2022.933
10375-0932	RST 3708	153.51	1968.18	0.449	0.412	44.4	194.3	9.6	4.7 0.555	TOK
–	–	8.08	2.08	0.030	0.005	3.8	4.7	9.2	5.6 0.559	2023.009
10476-1538	TOK 71 4Aa,Ab	6.146	2015.102	0.505	0.049	116.2	103.0	308.8	359.1 0.028	TOK
–	–	0.092	0.151	0.024	0.002	2.7	2.2	5.0	318.6 0.047	2023.009
10595-4130	RST 2720	156.05	2029.46	0.000	0.214	55.4	51.6	0.0	43.0 0.209	TOK
–	–	...	...	...	...	...	...	...	44.4 0.210	2022.441
11005-5022	B 1695	160	1920.89	0.700	0.344	60.9	44.8	120.6	17.6 0.427	TOK
–	–	...	...	...	...	...	...	...	18.1 0.427	2023.010
11049-3548	HDS 1582	20.94	2021.318	0.850	0.067	99.8	52.1	349.5	243.7 0.035	TOK
–	–	5.50	0.369	0.055	0.006	2.3	2.8	17.0	240.2 0.055	2022.933
11122-4616	HDS 1596	50.08	2018.829	0.400	0.213	53.1	80.8	141.5	278.7 0.143	TOK
–	–	...	...	...	...	...	...	...	287.5 0.142	2022.441
11128-7402	B 2009	143.4	1971.48	0.239	0.278	140.0	113.5	118.5	209.6 0.251	TOK
–	–	...	...	...	...	...	...	...	207.3 0.252	2022.443
11192-1950	TOK 383 Aa,Ab	12.99	2020.254	0.370	0.041	141.3	10.7	166.2	82.6 0.034	TOK
–	–	0.82	0.258	0.043	0.002	7.9	12.1	16.5	59.0 0.042	2023.009

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
11255-2114	I 881	450	1997.224	0.343	0.589	78.2	148.5	100.4	319.8 0.336	TOK
–	8156	...	...	...	...	...	...	...	320.2 0.344	2022.441
11336-4035	I 78	600	2064.253	0.112	1.063	84.5	93.7	93.6	104.2 0.447	TOK
–	–	...	...	...	...	...	...	...	104.6 0.436	2022.446
11415-7703	TOK 845	30.0	2023.344	0.395	0.127	111.7	46.8	140.6	250.3 0.054	TOK
–	–	...	...	...	...	...	...	...	234.3 0.074	2023.010
11436-1401	YSC 210	17.73	2008.88	0.177	0.163	117.9	27.4	314.1	185.7 0.131	TOK
–	–	0.85	0.50	0.045	0.003	1.0	1.8	5.8	165.3 0.092	2023.009
11486+1417	BU 603 AB	133.12	1938.51	0.788	0.685	147.4	255.1	96.3	326.3 0.996	TOK
–	8311	2.06	0.94	0.020	0.035	6.0	9.1	6.8	325.6 0.991	2022.130
12096-6727	HDS 1716	61.50	2018.80	0.508	0.149	47.5	56.1	348.4	106.4 0.073	TOK
–	–	5.84	0.38	0.026	0.005	2.5	3.9	3.0	120.3 0.075	2022.047
12111-5302	HU 1604	215.2	2055.34	0.300	0.355	56.0	103.7	15.6	43.8 0.197	TOK
–	–	...	...	...	...	...	...	...	46.7 0.198	2021.160
12117-5222	RIZ 2	3.615	2019.034	0.736	0.058	130.0	282.9	99.2	69.3 0.040	TOK
–	–	0.110	0.106	0.026	0.001	0.0	6.7	3.8	15.0 0.062	2022.441
12228-0405	BWL 29AB	10.02	2024.21	0.591	0.183	108.4	21.6	68.5	39.5 0.115	TOK
–	–	0.44	0.37	0.115	0.024	3.6	3.2	3.4	9.4 0.068	2023.010
12268-0536	A 78	110.03	1998.612	0.773	0.294	57.1	257.5	38.0	85.3 0.395	TOK
–	8551	1.63	0.224	0.005	0.003	0.9	0.9	1.6	85.9 0.402	2023.010
12570-5435	HDS 1815	100	2041.025	0.160	0.310	71.2	17.4	34.6	357.7 0.210	TOK
–	–	...	...	...	...	...	...	...	0.1 0.220	2021.245
13117-2633	FIN 305	20.093	2022.917	0.938	0.119	130.0	230.4	129.7	163.8 0.011	TOK
–	–	0.098	0.100	0.020	0.012	10.8	11.9	3.3	115.9 0.077	2022.441
13123-5955	SEE 170 AB	27.51	2022.175	0.661	0.166	61.9	101.6	197.4	346.8 0.036	TOK
–	–	0.50	0.036	0.006	0.001	0.8	0.8	1.9	56.7 0.062	2022.441
13138-6756	HDS 1853	93.7	2021.58	0.444	0.198	110.0	87.9	270.0	138.6 0.047	TOK
–	–	...	...	...	...	...	...	...	122.6 0.061	2022.441

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
13217-3919	HDS 1875	41.40	2019.508	0.528	0.203	118.8	196.5	231.8	219.7	0.115 TOK
–	–	1.80	0.137	0.014	0.006	2.6	2.7	4.2	211.1	0.146 2023.010
13344-5931	TOK 403	17.109	2021.073	0.462	0.143	117.0	72.6	269.9	71.7	0.114 TOK
–	–	0.468	0.032	0.011	0.002	0.5	0.8	2.0	60.3	0.130 2023.010
13437-4204	FIN 353 AB	46.56	2020.55	0.890	0.066	83.0	45.8	198.4	42.8	0.038 TOK
–	–	2.94	0.63	0.017	0.006	2.1	2.2	15.9	43.8	0.050 2023.010
14001+0416	HDS 1965	150	2083.24	0.244	0.226	96.9	159.1	52.9	314.3	0.076 TOK
–	–	...	...	...	...	...	...	...	311.6	0.069 2022.441
14106+0528	YSC 52 Aa,Ab	27.06	2026.88	0.600	0.103	142.5	101.2	80.9	137.4	0.090 TOK
–	–	...	...	...	...	...	...	...	124.8	0.079 2022.130
14190-0636	HDS 2016 AB	18.891	2003.708	0.300	0.348	107.9	285.6	72.1	205.6	0.076 TOK
–	–	0.043	0.051	0.005	0.001	0.2	0.2	0.4	132.5	0.154 2022.444
15042-1530	RST 3906	52.25	2020.54	0.672	0.178	89.8	154.9	18.4	333.9	0.019 TOK
–	–	1.89	0.27	0.011	0.006	0.5	0.8	5.6	334.5	0.052 2022.682
15092-7614	RST 1816	300	2024.12	0.866	0.212	155.3	70.0	7.9	95.0	0.031 TOK
–	–	...	...	...	...	...	...	...	66.4	0.028 2022.441
15157-2736	BU 350	600	2021.04	0.828	0.858	139.5	171.1	181.0	333.4	0.148 TOK
–	9552	...	...	...	...	...	...	...	324.8	0.148 2022.444
15251-2340	RST 2957	55.6	2027.56	0.568	0.213	85.4	92.8	342.4	285.7	0.050 TOK
–	–	3.0	0.77	0.050	0.009	0.5	0.3	5.6	307.6	0.018 2021.078
15433-0515	TOK 594 Aa,Ab	3.783	2019.081	0.858	0.058	53.3	155.4	126.0	29.0	0.018 TOK
–	–	0.052	0.047	0.041	0.005	5.0	9.8	10.5	102.7	0.065 2022.307
15462-2804	KOH 49 Ca,Cb	19.02	2038.69	0.322	0.118	136.3	99.0	212.5	136.9	0.097 TOK
–	–	0.57	0.53	0.022	0.007	3.6	3.9	8.4	121.1	0.117 2022.444
15537-0429	TOK 725	12.97	2020.778	0.617	0.094	150.0	269.5	44.5	91.4	0.101 TOK
–	–	0.53	0.032	0.014	0.002	0.0	5.9	5.2	78.0	0.122 2022.130
16016-7843	HDS 2259	64.0	2004.496	0.824	0.365	88.4	156.6	45.5	337.6	0.498 TOK
–	–	...	...	...	...	...	...	...	337.6	0.501 2022.441

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
16038+1406	HDS 2265	50.43	2021.182	0.841	0.335	59.3	177.7	344.1	285.5 0.081	TOK
–	–	1.00	0.021	0.003	0.003	0.7	0.6	1.3	307.3 0.127	2022.283
16402-2800	VOU 44 AB	108.9	1956.5	0.272	0.219	48.5	217.9	-64.3	8.8 0.236	TOK
–	–	7.5	10.0	0.069	0.015	10.1	8.4	25.0	10.6 0.238	2022.684
16430-0857	YSC 155	10.793	2021.643	0.742	0.066	116.2	149.2	13.9	343.4 0.057	TOK
–	–	0.175	0.082	0.018	0.002	2.3	2.4	6.0	334.9 0.086	2022.684
16567+1539	HDS 2395	26.22	2020.522	0.854	0.130	133.2	157.5	2.3	1.6 0.106	TOK
–	–	...	...	...	...	...	...	...	355.9 0.135	2022.389
17191-4638	BSO 13 Ba,Bb	0.241	2015.901	0.773	0.042	59.4	244.5	165.2	236.5 0.073	TOK
–	–	...	0.016	...	0.006	9.3	18.4	41.8	242.6 0.070	2022.684
17191-4638	BSO 13 AB	954.2	1908.206	0.816	12.751	35.2	320.1	150.3	259.9 10.883	TOK
–	–	...	...	...	...	...	...	...	260.2 10.949	2016.000
17304-0104	STF 2173 AB	46.520	1962.294	0.173	0.972	99.2	151.6	326.3	42.0 0.179	TOK
–	10598	0.099	0.158	0.004	0.004	0.1	0.1	1.2	14.9 0.247	2022.217
17362-1752	YSC 158 Aa,Ab	20.70	2016.26	0.277	0.078	69.7	99.4	228.2	102.6 0.090	TOK
–	–	6.96	0.94	0.163	0.010	5.8	2.8	22.3	106.9 0.090	2022.195
17387-2155	HDS 2492	21.454	2006.710	0.399	0.103	27.9	34.6	203.1	106.3 0.103	TOK
–	–	0.527	1.963	0.059	0.012	22.8	28.2	48.7	121.3 0.092	2022.195
17556+0204	HDS 2527	66.28	2036.91	0.500	0.114	129.6	58.5	73.0	104.1 0.096	TOK
–	–	...	...	...	...	...	...	...	99.9 0.096	2022.390
18003+2154	WSI 106 Aa,Ab	12.40	2017.316	0.256	0.061	124.2	146.4	111.3	215.6 0.045	TOK
–	–	0.44	0.116	0.021	0.002	1.8	2.5	4.9	190.8 0.053	2022.444
18136-3158	B 1353	130	1994.773	0.696	0.111	58.7	113.7	218.2	117.8 0.141	TOK
–	–	...	...	...	...	...	...	...	118.4 0.144	2022.444
18281-2645	HDS 2615 AB	43.48	1985.42	0.500	0.383	100.0	173.5	80.1	178.7 0.301	TOK
–	–	...	...	...	...	...	...	...	176.6 0.294	2022.444
18282-5230	B 1362	153.32	2004.31	0.556	0.235	79.7	56.4	333.2	112.4 0.043	TOK
–	–	12.33	0.99	0.046	0.014	1.2	1.2	9.6	123.8 0.040	2022.441

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
18305-1052	HDS 2623 Aa,Ab	55.0	2024.105	0.650	0.183	81.7	19.6	175.8	191.1 0.050	TOK
–	–	...	...	...	...	...	...	...	198.4 0.063	2022.682
19093+1138	HDS 2716	150	2019.56	0.940	0.190	68.8	97.6	104.9	312.3 0.041	TOK
–	–	...	...	...	...	...	...	...	318.3 0.044	2022.289
19105-5813	B 2468	670	2013.44	0.955	1.594	138.1	186.3	18.6	26.0 0.428	TOK
–	–	...	...	...	...	...	...	...	24.5 0.462	2022.444
19200-1435	RST 4037	311.8	2025.525	0.256	0.277	58.8	57.6	192.1	241.2 0.205	TOK
–	–	...	...	...	...	...	...	...	242.3 0.204	2022.444
19264-1433	HDS 2760	80.0	1971.614	0.270	0.274	118.8	260.8	121.0	274.7 0.302	TOK
–	–	...	...	...	...	...	...	...	273.0 0.304	2022.444
19301-4904	HDS 2772	80.0	2020.248	0.700	0.301	66.8	168.4	153.6	12.8 0.094	TOK
–	–	...	...	...	...	...	...	...	26.8 0.087	2019.375
19326+1203	HEI 574	400	1967.845	0.800	0.472	85.9	150.8	200.0	149.8 0.492	TOK
–	–	...	...	...	...	...	...	...	149.8 0.498	2018.485
19466+0703	TOK 368	13.76	2023.356	0.537	0.101	0.0	63.5	0.0	28.5 0.050	TOK
–	–	0.43	0.151	0.025	0.002	0.0	1.7	0.0	121.8 0.056	2022.682
19561-3208	BWL 53 Ba,Bb	40.0	2022.412	0.194	0.199	54.2	58.7	274.2	349.0 0.098	TOK
–	–	...	...	...	...	...	...	...	8.1 0.111	2022.441
19581-4808	HDS 2842	41.89	2015.885	0.742	0.256	70.4	71.5	236.3	79.2 0.278	TOK
–	–	2.17	0.043	0.013	0.006	0.7	0.6	1.1	80.8 0.292	2022.441
20012+0120	A 2275	400	2039.863	0.200	0.492	47.2	126.6	58.6	152.6 0.361	TOK
–	13248	...	...	...	...	...	...	...	153.7 0.358	2022.390
20050+2313	CHR 92	5.111	2022.842	0.405	0.043	150.9	85.7	177.5	243.0 0.026	TOK
–	–	0.010	0.033	0.013	0.001	4.6	8.8	10.0	138.4 0.044	2022.682
20073-5127	RST 1059	166.0	2013.0	0.276	0.172	18.3	102.5	106.8	249.0 0.128	TOK
–	–	25.3	5.2	0.064	0.010	9.8	55.8	73.6	252.5 0.130	2022.441
20158+2749	MCA 60 AB	45.40	2012.40	0.595	0.177	85.2	142.3	182.1	139.1 0.185	TOK
–	–	0.47	0.75	0.016	0.003	0.7	0.4	6.4	139.6 0.202	2022.682

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
20521+0205	A 2286 AB	252.9	2014.484	0.667	0.217	58.9	111.7	203.1	21.4	0.049 TOK
–	14372	...	...	...	...	...	...	...	31.4	0.052 2022.289
20598-2028	TOK 370	22.50	2015.924	0.389	0.141	95.5	184.7	81.2	358.9	0.121 TOK
–	–	1.56	0.243	0.082	0.006	0.8	0.7	3.5	356.7	0.104 2022.390
21116+2620	LSC 95	50.0	2013.766	0.326	0.103	122.9	118.9	223.8	137.6	0.090 TOK
–	–	...	...	...	...	...	...	...	133.1	0.098 2022.682
21214+1020	A 617	6.058	1991.838	0.800	0.099	126.9	278.2	9.9	112.5	0.103 TOK
–	14893	0.003	0.022	0.005	0.001	1.1	1.6	2.7	100.5	0.159 2022.842
21344-0745	YSC 72	12.12	2013.03	0.828	0.110	129.5	134.2	150.5	137.2	0.139 TOK
–	–	0.17	0.43	0.029	0.011	12.2	7.8	16.8	127.8	0.095 2022.444
22225-0727	A 2694	94.88	2000.456	0.950	0.435	53.0	52.9	287.6	157.2	0.424 TOK
–	15877	...	...	...	...	...	...	...	157.9	0.433 2022.611
22255-1536	HDS 3179	200	2000.98	0.882	0.523	58.8	40.7	344.0	194.0	0.422 TOK
–	–	...	...	...	...	...	...	...	194.7	0.437 2021.330
22299-3101	HDS 3187	120	2030.293	0.400	0.375	103.3	187.5	41.7	189.8	0.249 TOK
–	–	...	...	...	...	...	...	...	188.3	0.246 2022.845
22313-0633	CHR 111	1.7317	2019.147	0.375	0.068	66.5	262.3	172.1	221.6	0.041 TOK
–	–	0.0004	0.008	0.010	0.001	1.6	0.9	1.8	294.6	0.044 2021.732
22397-7806	HDS 3218	95.0	2039.204	0.183	0.265	140.8	147.1	22.2	199.8	0.209 TOK
–	–	...	...	...	...	...	...	...	195.2	0.211 2022.611
22508-6543	HDS 3246	20.18	2016.35	0.414	0.210	93.9	272.7	146.2	280.5	0.123 TOK
–	–	0.35	0.11	0.013	0.002	0.4	0.3	2.2	278.1	0.167 2022.390
22532-3750	HDS 3250 Aa,Ab	13.03	2012.14	0.084	0.125	41.0	220.2	150.1	299.0	0.092 TOK
–	–	0.35	0.33	0.024	0.002	2.0	4.5	14.2	338.6	0.093 2022.685
23029-1320	HD S3283 AB	76.27	2035.29	0.692	0.139	120.8	42.3	255.0	268.6	0.096 TOK
–	–	...	...	...	...	...	...	...	264.9	0.095 2021.566
23133-4937	I 1467	250	2029.1	0.791	0.304	122.5	159.7	310.3	310.5	0.084 TOK
–	–	...	...	...	...	...	...	...	303.1	0.070 2022.442

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr) σ_P	T(yr) σ_T	e σ_e	a(″) σ_a	i(°) σ_i	Ω(°) σ_Ω	ω(°) σ_ω	2023 2024	Author(s) Last obs.
23167-1534	HU 399	600	2012.05	0.846	0.504	70.3	141.4	326.2	169.4 0.089	TOK
–	–	...	...	...	...	...	...	...	173.0 0.087	2022.447
23209+1643	HEI 88	33.83	2002.882	0.629	0.171	26.5	113.3	273.8	218.8 0.244	TOK
–	16643	0.19	0.167	0.008	0.003	2.3	7.9	6.6	222.5 0.240	2022.682
23216-2018	HU 292	300	1991.892	0.606	0.516	126.4	101.7	227.0	116.2 0.387	TOK
–	–	...	...	...	...	...	...	...	115.3 0.397	2022.444
23218-1217	HU 95	161.73	1943.30	0.371	0.400	155.6	19.3	290.7	268.1 0.505	TOK
–	–	6.00	1.33	0.021	0.016	7.0	12.0	9.2	267.0 0.505	2022.445
23286-3821	HDS 3342	47.81	2014.875	0.363	0.118	128.5	125.9	156.4	232.0 0.071	TOK
–	–	2.03	0.435	0.033	0.005	2.5	3.2	4.4	220.3 0.073	2022.442
23296-4001	HDS 3346 AB	48.5	2020.44	0.577	0.121	80.8	8.3	241.8	358.5 0.047	TOK
–	–	21.6	0.61	0.097	0.035	4.7	3.1	13.4	2.9 0.068	2022.685
23328-1645	VOU 28BC	44.265	2024.979	0.239	0.846	89.5	176.6	237.9	356.9 0.562	TOK
–	–	0.207	0.338	0.022	0.007	0.3	0.1	4.3	357.1 0.461	2021.566
23455-1610	MTG 5	21.10	2024.274	0.498	0.410	99.1	9.5	353.9	33.6 0.093	TOK
–	–	0.71	0.235	0.044	0.013	0.7	0.4	2.9	13.2 0.194	2022.845
23456-4841	HDS 3376	41.26	1990.33	0.750	0.365	67.2	68.9	99.3	41.5 0.322	TOK
–	–	...	...	...	...	...	...	...	44.4 0.318	2022.444
23587-0333	BU 730	500	2151.27	0.230	1.249	60.0	83.8	18.3	335.8 0.687	TOK
–	15075	...	...	...	...	...	...	...	337.0 0.682	2022.447

TOK = TOKOVININ
D et al. = DOCOBO, CAMPO, MÉNDEZ & COSTA
L et al. = LING, SCARDIA, PRIEUR, PANSECCHI, ARGYLE, ARISTIDI, ZANUTTA, ABE, BENDJOYA, RIVET, VERNET & MACCARINI
ALZ = ALZNER
S et al. = SCARDIA, PRIEUR, LING, PANSECCHI, ARGYLE, ARISTIDI, ZANUTTA, ABE, BENDJOYA, RIVET, VERNET & MACCARINI

NEW DOUBLE STARS

Discovered by André Debackère using LCO global telescope network.

- F65 : T 2m Faulkes Telescope North FTN, Haleakala, Hawaii
- V37 : T 1m Mc Donald Observatory, Fort Davis, Texas, USA
- V38 : T 0.40m Mc Donald Observatory, Fort Davis, Texas, USA
- Z17 : T 0.4m Teide Observatory, Tenerife, Canary Islands, Spain

STAR	Precise Coord	GAIA-EDR3 Id.	G Mag.	Plx e-plx	pmRA e-pmRA	pmDE e-pmDE	Epoch	θ (°)	ρ (″)	Obs
DBR 331 A	041941.595+29152837	164858853621879552	9.27	1.7033	-2.459	-2.012	2022.928	207.10	5.678	3V38
				0.0195	0.023	0.021		±0.41	±0.030	Z17
B	041941.395+291523.24	164858853621880576	12.61	1.8271	-2.666	-2.219				
				0.0241	0.030	0.020				
DBR 332 A	063740.114+292029.89	3434649513701792000	10.52	2.0097	7.189	-10.137	2022.998	26.1	2.54	1V37
				0.0261	0.029	0.024				
B	063740.203+292033.19	3434649513701791872	12.66	1.9785	6.450	-9.592				
				0.0140	0.017	0.014				
DBR 333 A	063821.417+292304.26	3434643324652286080	11.53	8.9695	7.760	-55.104	2022.998	60.1	1.55	1V37
				0.0337	0.036	0.029				
B	063821.273+292305.79	3434643328949108224	12.13	8.9655	6.316	-52.755				
				0.0225	0.023	0.019				

NEW DOUBLE STARS

Discovered by André Debackère using LCO global telescope network.
(continuation)

STAR	Precise Coord	GAIA-EDR3 Id.	G Mag.	Plx e-plx	pmRA e-pmRA	pmDE e-pmDE	Epoch	θ (°)	ρ (″)	Obs
DBR 334 A	181458.412+363853.49	4606018933638349440	13.38	0.7876	-0.797	11.939	2022.686	140.1	2.02	1F65
				0.0098	0.010	0.012				
B	181458.503+36385179	4606018933638349312	14.25	0.8000	-0.829	11.718				
				0.0166	0.018	0.021				
DBR 335 A	205903.907+442049.42	2162237414729717760	12.93	2.0552	-7.071	-8.930	2022.361	210.10	5.758	1F65 (1)
				0.0132	0.015	0.015		±0.17	±0.020	
B	205903.636+442044.41	2162237414729717504	12.95	2.0396	-7.145	-8.496				
				0.0128	0.014	0.014				
DBR 336 A	222806.778+522233.35	2001447479981110784	13.47	1.8767	32.441	-3.680	2022.424	226.56	1.533	1F65 (2)
				0.0145	0.015	0.014		±0.54	±0.013	
B	222806.656+522232.28	2001447479967044352	16.09	1.8160	32.434	-3.463				
				0.0480	0.065	0.057				

(1) in NGC 7000 field
(2) in NGC 7296 field

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The deadline for contributions to Information Circular No. 210 is:

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