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## Orbital elements of double stars: STF77AB, STF1338AB

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**INTERNATIONAL ASTRONOMICAL UNION**  
**COMMISSION G1 (BINARY AND MULTIPLE STAR SYSTEMS)**  
**DOUBLE STARS INFORMATION CIRCULAR No. 209 (FEBRUARY 2023)**

**NEW ORBITS**

<b>WDS</b>	<b>Name</b>	<b>P(yr)</b>	<b>T(yr)</b>	<b>e</b>	<b>a(")</b>	<b>i(°)</b>	<b>Ω(°)</b>	<b>ω(°)</b>	<b>2023</b>	<b>Author(s)</b>	
<b>HIP</b>	<b>ADS</b>	$\sigma_P$	$\sigma_T$	$\sigma_e$	$\sigma_a$	$\sigma_i$	$\sigma_\Omega$	$\sigma_\omega$	<b>2024</b>	<b>Last obs.</b>	
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)**

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

**NEW ORBITS (continuation)**

<b>WDS</b>	<b>Name</b>	<b>P(yr)</b>	<b>T(yr)</b>	<b>e</b>	<b>a(")</b>	<b>i(°)</b>	<b>Ω(°)</b>	<b>ω(°)</b>	<b>2023</b>	<b>Author(s)</b>	
<b>HIP</b>	<b>ADS</b>	$\sigma_P$	$\sigma_T$	$\sigma_e$	$\sigma_a$	$\sigma_i$	$\sigma_\Omega$	$\sigma_\omega$	<b>2024</b>	<b>Last obs.</b>	
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)**

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

**NEW ORBITS (continuation)**

<b>WDS HIP</b>	<b>Name ADS</b>	<b>P(yr)</b> $\sigma_P$	<b>T(yr)</b> $\sigma_T$	<b>e</b> $\sigma_e$	<b>a(")</b> $\sigma_a$	<b>i(°)</b> $\sigma_i$	<b><math>\Omega</math>(°)</b> $\sigma_\Omega$	<b><math>\omega</math>(°)</b> $\sigma_\omega$	<b>2023 2024</b>	<b>Author(s) Last obs.</b>
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)**

WDS HIP	Name ADS	P(yr)	T(yr)	e	a(")	i(°)	Ω(°)	ω(°)	2023	Author(s)	
		$\sigma_P$	$\sigma_T$	$\sigma_e$	$\sigma_a$	$\sigma_i$	$\sigma_\Omega$	$\sigma_\omega$	2024	Last obs.	
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)**

<b>WDS HIP</b>	<b>Name ADS</b>	<b>P(yr)</b> $\sigma_P$	<b>T(yr)</b> $\sigma_T$	<b>e</b> $\sigma_e$	<b>a(")</b> $\sigma_a$	<b>i(°)</b> $\sigma_i$	<b><math>\Omega</math>(°)</b> $\sigma_\Omega$	<b><math>\omega</math>(°)</b> $\sigma_\omega$	<b>2023 2024</b>	<b>Author(s) Last obs.</b>
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)**

<b>WDS HIP</b>	<b>Name ADS</b>	<b>P(yr)</b> $\sigma_P$	<b>T(yr)</b> $\sigma_T$	<b>e</b> $\sigma_e$	<b>a(")</b> $\sigma_a$	<b>i(°)</b> $\sigma_i$	<b><math>\Omega</math>(°)</b> $\sigma_\Omega$	<b><math>\omega</math>(°)</b> $\sigma_\omega$	<b>2023 2024</b>	<b>Author(s) Last obs.</b>	
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)**

<b>WDS HIP</b>	<b>Name ADS</b>	<b>P(yr) <math>\sigma_P</math></b>	<b>T(yr) <math>\sigma_T</math></b>	<b>e <math>\sigma_e</math></b>	<b>a(") <math>\sigma_a</math></b>	<b>i(°) <math>\sigma_i</math></b>	<b><math>\Omega</math>(°) <math>\sigma_\Omega</math></b>	<b><math>\omega</math>(°) <math>\sigma_\omega</math></b>	<b>2023 2024</b>	<b>Author(s) Last obs.</b>	
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 9552	600	2021.04	0.828	0.858	139.5	171.1	181.0	333.4	0.148	TOK
–	–	...	...	...	...	...	...	...	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)**

<b>WDS</b>	<b>Name</b>	<b>P(yr)</b>	<b>T(yr)</b>	<b>e</b>	<b>a(")</b>	<b>i(°)</b>	<b>Ω(°)</b>	<b>ω(°)</b>	<b>2023</b>	<b>Author(s)</b>	
<b>HIP</b>	<b>ADS</b>	$\sigma_P$	$\sigma_T$	$\sigma_e$	$\sigma_a$	$\sigma_i$	$\sigma_\Omega$	$\sigma_\omega$	<b>2024</b>	<b>Last obs.</b>	
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)**

<b>WDS</b>	<b>Name</b>	<b>P(yr)</b>	<b>T(yr)</b>	<b>e</b>	<b>a(")</b>	<b>i(°)</b>	<b><math>\Omega</math>(°)</b>	<b><math>\omega</math>(°)</b>	<b>2023</b>	<b>Author(s)</b>	
<b>HIP</b>	<b>ADS</b>	$\sigma_P$	$\sigma_T$	$\sigma_e$	$\sigma_a$	$\sigma_i$	$\sigma_\Omega$	$\sigma_\omega$	<b>2024</b>	<b>Last obs.</b>	
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)	T(yr)	e	a(")	i(°)	Ω(°)	ω(°)	2023		Author(s)
		$\sigma_P$	$\sigma_T$	$\sigma_e$	$\sigma_a$	$\sigma_i$	$\sigma_\Omega$	$\sigma_\omega$	2024	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)**

<b>WDS HIP</b>	<b>Name ADS</b>	<b>P(yr) <math>\sigma_P</math></b>	<b>T(yr) <math>\sigma_T</math></b>	<b>e <math>\sigma_e</math></b>	<b>a(") <math>\sigma_a</math></b>	<b>i(°) <math>\sigma_i</math></b>	<b><math>\Omega</math>(°) <math>\sigma_\Omega</math></b>	<b><math>\omega</math>(°) <math>\sigma_\omega</math></b>	<b>2023 2024</b>	<b>Author(s) Last obs.</b>
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	$\theta$ ( $^{\circ}$ )	$\rho$ ( $''$ )	Obs
DBR 331 A	041941.595+29152837	164858853621879552	9.27	1.7033 0.0195	-2.459 0.023	-2.012 0.021	2022.928	207.10 $\pm 0.41$	5.678 $\pm 0.030$	3V38 Z17
B	041941.395+291523.24	164858853621880576	12.61	1.8271 0.0241	-2.666 0.030	-2.219 0.020				
DBR 332 A	063740.114+292029.89	3434649513701792000	10.52	2.0097 0.0261	7.189 0.029	-10.137 0.024	2022.998	26.1	2.54	1V37
B	063740.203+292033.19	3434649513701791872	12.66	1.9785 0.0140	6.450 0.017	-9.592 0.014				
DBR 333 A	063821.417+292304.26	3434643324652286080	11.53	8.9695 0.0337	7.760 0.036	-55.104 0.029	2022.998	60.1	1.55	1V37
B	063821.273+292305.79	3434643328949108224	12.13	8.9655 0.0225	6.316 0.023	-52.755 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	$\theta$ ( $^{\circ}$ )	$\rho$ ( $''$ )	Obs
DBR 334 A	181458.412+363853.49	4606018933638349440	13.38	0.7876	-0.797	11.939	2022.686	140.1	2.02	1F65
B	181458.503+36385179	4606018933638349312	14.25	0.0098	0.010	0.012				
				0.8000	-0.829	11.718				
DBR 335 A	205903.907+442049.42	2162237414729717760	12.93	2.0552	-7.071	-8.930	2022.361	210.10	5.758	1F65 (1)
B	205903.636+442044.41	2162237414729717504	12.95	0.0132	0.015	0.015		$\pm 0.17$	$\pm 0.020$	
				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)
B	222806.656+522232.28	2001447479967044352	16.09	0.0145	0.015	0.014		$\pm 0.54$	$\pm 0.013$	
				1.8160	32.434	-3.463				
				0.0480	0.065	0.057				

(1) in NGC 7000 field

(2) in NGC 7296 field



## PAPERS PUBLISHED IN 2022

1. ABU-DHAIM, A. et al.: *Studying the Physical Parameters of the Stellar Binary System Hip 42455 (HD 73900)*. *AcA*, **72**, 171A (2022).
2. BANYARD, G. et al.: *The observed multiplicity properties of B-type stars in the Galactic young open cluster NGC 6231*. *A&A*, **658**, A 69B (2022).
3. BASHI, D. et al.: *Gaia spectroscopic orbits validated with LAMOST and GALAH radial velocities*. *MNRAS*, **517**, (3) 3888B (2022).
4. BROŽ, M. et al.: *Towards a consistent model of the hot quadruple system HD 93206 = QZ Carinæ. II. N-body model*. *A&A*, **666**, A 24B (2022).
5. CHRISTIAN, S. et al.: *A Possible Alignment Between the Orbits of Planetary Systems and their Visual Binary Companions*. *AJ*, **163**, (5) 207C (2022).
6. CHULKOV, D. & MALKOV, O. et al.: *Visual binary stars with known orbits in Gaia EDR3*. *MNRAS*, **517**, (2) 2925C (2022).
7. CLARK, C. A.: *A New Stellar Companion to GJ 1292*. *RNAAS*, **6**, (11) 242C (2022).
8. CLARK, C. A. et al.: *A Dearth of Close-in Stellar Companions to M-dwarf TESS Objects of Interest*. *AJ*, **163**, (5) 232C (2022).
9. CLARK, C. A. et al.: *The POKEMON Speckle Survey of Nearby M Dwarfs. I. New Discoveries*. *AJ*, **164**, (2) 33C (2022).
10. CVETKOVIĆ, Z. & PAVLOVIĆ, R.: *Recalculated Orbits Of Binaries and New Linear Solutions*. *AJ*, **164**, (3) 98C (2022).
11. DE FURIO, M. et al.: *The Small Separation A-star Companion Population: First Results with CHARA/MIRC-X*. *ApJ*, **941**, (2) 118D (2022).
12. DSILVA, K. et al.: *A spectroscopic multiplicity survey of Galactic Wolf-Rayet stars. II. The northern WNE sequence*. *A&A*, **664**, A93D (2022).
13. EISNER, N. L. et al.: *Planet Hunters TESS IV: a massive, compact hierarchical triple star system TIC 470710327*. *MNRAS*, **511**, (4) 4710E (2022).
14. EL-BADRY, K. & RIX, H-W.: *What are the spectroscopic binaries with high-mass functions near the Gaia DR3 main sequence?* *MNRAS*, **515**, (1) 1266E (2022).
15. EL-BADRY, K. et al.: *Unicorns and giraffes in the binary zoo: stripped giants with subgiant companions*. *MNRAS*, **512**, (4) 5620E (2022).
16. EL-BADRY, K. et al.: *Birth of a Be star: an APOGEE search for Be stars forming through binary mass transfer*. *MNRAS*, **516**, (3) 3602E (2022).

17. FEKEL, F. C. et al.: *An Analysis of the Eclipsing Binaries HD 71636, V1022 Cassiopeiae, and OT Andromedae*. AJ, **164**, (5) 224F (2022).
18. FOWLER, C., PLUFF, J. & THOMAS, J.: *Updated Orbit and Observations of Spectroscopic Binary HD 2019*. RNAAS, **6**, 211F (2022).
19. FROST, A. J. et al.: *HR 6819 is a binary system with no black hole. Revisiting the source with infrared interferometry and optical integral field spectroscopy*. A&A, **659**, L 3F (2022).
20. GARDNER, T. et al.: *ARMADA. II. Further Detections of Inner Companions to Intermediate-mass Binaries with Microarcsecond Astrometry at CHARA and VLTI*. AJ, **164**, (5) 184G (2022).
21. GILI, R. et al.: *Measurements of visual double stars with PISCO2 at the Nice 76-cm refractor in 2013-2014*. AN, **343**, (8) e20224008 (2022).
22. GOMEZ, J. et al.: *20 Orbits of binaries based on soar speckle observations*. MNRAS, **509**, (3) 4229G (2022).
23. GUO, Y. et al.: *The Binarity of Early-type Stars from LAMOST medium-resolution Spectroscopic Survey*. RAA, **22**, (2), B 5009G (2022).
24. HEINTZ, T. M. et al.: *Testing White Dwarf Age Estimates Using Wide Double White Dwarf Binaries from Gaia EDR3*. ApJ, **934**, (2) 148H (2022).
25. HUSSEIN, A. M. et al.: *Atmospheric and Fundamental Parameters of Eight Nearby Multiple Stars*. AJ, **163**, (4) 182H (2022).
26. HWANG, H-C. et al.: *Wide binaries from the H3 survey: the thick disc and halo have similar wide binary fractions*. MNRAS, **513**, (1) 754H (2022).
27. HWANG, H-C. et al.: *Wide Twin Binaries are Extremely Eccentric: Evidence of Twin Binary Formation in Circumbinary Disks*. ApJ, **933**, (2), L 32H (2022).
28. JACK, D. et al.: *Yet another star in the Albireo system. The discovery of Albireo Ad*. A&A, **661**, A 49J (2022).
29. JACK, D. et al.: *Bright spectroscopic binaries: II. A study of five systems with orbital periods of  $P \leq 500$  days*. AN, **343**, (3), 10015J (2022).
30. JANSSENS, S. et al.: *Uncovering astrometric black hole binaries with massive main-sequence companions with Gaia*. A&A, **658**, A 129J (2022).
31. KERVELLA, P. et al.: *The binary system of the spinning-top Be star Achernar*. A&A, **667**, 111K (2022).
32. KLEMENT, R. et al.: *Interferometric Detections of sdO Companions Orbiting Three Classical Be Stars*. ApJ, **926**, 21) 231K (2022).
33. KLEMENT, R. et al.: *Dynamical Masses of the Primary Be Star and Secondary sdB Star in the Single-lined Binary  $\kappa$  Dra (B6 IIIe)*. ApJ, **940**, (1) 86K (2022).

34. LESTER, K.V. et al.: *Visual Orbits of Spectroscopic Binaries with the CHARA Array. IV. HD 61859, HD 89822, HD 109510, and HD 191692.* AJ, **164**, (6) 228L (2022).
35. LENNON, D. J. et al.: *The VLT-FLAMES survey of massive stars. NGC 2004#115: A triple system hosting a possible short period B+BH binary.* A&A, **665**, A 180L (2022).
36. LI, J. et al.: *Mass-ratio Distribution of Binaries from the LAMOST-MRS Survey.* ApJ, **933**, (2) 119L (2022).
37. LING, J. F. et al.: *Speckle Observations with PISCO in Calern (France): Orbit and Mass Determinations for 22 Visual Binaries.* AcA, **72**, 113L (2022).
38. MAHY, L. et al.: *Identifying quiescent compact objects in massive Galactic single-lined spectroscopic binaries.* A&A, **664**, 159M (2022).
39. MALKOV, O. & KNIAZEV, A.: *Wide binary stars with non-coeval components.* OAst, **31**, (1) 327M (2022).
40. MAYER, P. et al.: *Towards a consistent model of the hot quadruple system HD 93206 = QZ Carinæ. I. Observations and their initial analyses.* A&A, **666**, A 23M (2022).
41. MAZEH, T. et al.: *Probable dormant neutron star in a short-period binary system.* MNRAS, **517**, (3) 4005M (2022).
42. MOLINA, F. et al.: *Orbital and atmospheric parameters of two wide O-type subdwarf binaries: BD-11 °162 and Feige 80.* A&A, **658**, A 122M (2022).
43. MORALES, L. M. et al.: *The Interferometric Binary  $\epsilon$  Cnc in Praesepe: Precise Masses and Age.* AJ, **164**, (2) 34M (2022).
44. PAVLOVSKI, K. et al.: *Dynamical parallax, physical parameters, and evolutionary status of the components of the bright eclipsing binary  $\alpha$  Draconis.* A&A, **658**, 92P (2022).
45. PREECE, H.P. et al.: *Forming hot subluminous stars from hierarchical triples - I. The role of an outer tertiary on formation channels.* MNRAS, **517**, (2) 2111P (2022).
46. PILECKI, B. et al.: *Discovery of a Binary-origin Classical Cepheid in a Binary System with a 59 day Orbital Period.* ApJ, **940**, (2) L48P (2022).
47. POWELL, B. P. et al.: *TIC 114936199: A Quadruple Star System with a 12 Day Outer-orbit Eclipse.* ApJ, **938**, (2) 133P (2022).
48. PUTKURI, C. et al.: *The double-lined spectroscopic binary orbit of the massive supergiant HD 152147: A new target for interferometry.* MNRAS, **517**, (2) 3101P (2022).

49. REGGIANI, M. et al.: *Probing the low-mass end of the companion mass function for O-type stars.* A&A, **660**, A 122R (2022).
50. SALAMA, M. et al.: *An Adaptive Optics Census of Companions to Northern Stars Within 25 pc with Robo-AO.* AJ, **163**, (5) 200S (2022).
51. SANCHEZ-BERMUDEZ, J. et al.: *The outer orbit of the high-mass stellar triple system Herschel 36 determined with the VLTI.* MNRAS, **514**, (1) 1162S (2022).
52. SHAKHT, N. A., IZMAILOV, I. S. & GORSHANOV, D. L.: *Checking the possibility of determining the relative orbits of stars rotating around the center body of the Galaxy.* OAst, **31**, (1) 136s (2022).
53. SHARA, M. M. et al.: *A speckle-imaging search for close and very faint companions to the nearest and brightest Wolf-Rayet stars.* MNRAS, **509**, (2) 2897S (2022).
54. SHENAR, T. et al.: *The Tarantula Massive Binary Monitoring. VI. Characterisation of hidden companions in 51 single-lined O-type binaries: A flat mass-ratio distribution and black-hole binary candidates.* A&A, **665**, 148S (2022).
55. SUCHOMSKA, K. et al.: *Evolved eclipsing binary systems in the Galactic bulge: Precise physical and orbital parameters of OGLE-BLG-ECL-305487 and OGLE-BLG-ECL-116218.* A&A, **6658**, 30S (2022).
56. TOKOVININ, A.: *The Family of V1311 Ori: a Young Sextuple System or a Mini-cluster?.* AJ, **163**, (3) 127T (2022).
57. TOKOVININ, A.: *Spectroscopic Orbits of Subsystems in Multiple Stars. VIII.* AJ, **163**, (4) 161T (2022).
58. TOKOVININ, A.: *Resolved Gaia Triples..* ApJ, **926**, (1) 1T (2022).
59. TOKOVININ, A. et al.: *Speckle Interferometry at SOAR in 2021.* AJ, **164**, (2) 58T (2022).
60. TORRES, G.: *Orbital solution and dynamical masses for the nearby binary system GJ67 AB.* MNRAS, **514**, (4) 5183T (2022).
61. TORRES, G. et al.: *The Orbits and Dynamical Masses of the Castor System.* ApJ, **941**, (1) 8T (2022).
62. TORRES, G. & SAKANO, K.:  *$\eta$  Geminorum: an eclipsing semiregular variable star orbited by a companion surrounded by an extended disc.* MNRAS, **516**, (2) 2514T (2022).
63. UZUNDAG, M. et al.: *Volume-limited sample of low-mass red giant stars, the progenitors of hot subdwarf stars. I. Sample selection and binary classification method.* A&A, **668**, A 89U (2022).
64. VRIJMOET, E .H. et al.: *The Solar Neighborhood. XLIX. New Discoveries and Orbits of M-dwarf Multiples with Speckle Interferometry at SOAR.* AJ, **163**, (4) 178T (2022).

65. VYNATHEYA, P. et al.: *Algebraic and machine learning approach to hierarchical triple-star stability*. MNRAS, **516**, (3) 4146V (2022).
66. ZARRILLI, S. et al.: *Characterising the orbit and circumstellar environment of the high-mass binary MWC 166 A*. A&A, **665**, 146Z (2022).
67. ZHENG, L-L. et al.: *A White Dwarf-Main-sequence Binary Unveiled by Time-domain Observations from LAMOST and TESS*. ApJ, **936**, (1) 33Z (2022).

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

June 15th 2023

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