

INTERNATIONAL ASTRONOMICAL UNION
 COMMISSION G1 (BINARY AND MULTIPLE STAR SYSTEMS)
 DOUBLE STARS INFORMATION CIRCULAR No. 210 (JUNE 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.
00036-3106 290	TOK 686 –	14.0 ...	2013.79 ...	0.233 ...	0.131 ...	71.2 ...	11.8 ...	264.9 ...	165.1 0.092 177.9 0.116	TOK 2023.418
00135-3650 1083	HDS 32 –	15.272 0.054	2009.080 0.078	0.242 0.005	0.223 0.002	159.6 1.8	101.2 3.8	266.0 3.4	248.1 0.179 210.3 0.161	TOK 2023.418
00348-5853 2726	I 439 –	350.0 ...	2020.574 ...	0.958 ...	0.709 ...	47.8 ...	122.2 ...	141.1 ...	22.0 0.080 34.0 0.103	TOK 2023.418
00460-3043 3592	HDS 100AB –	62.65 ...	2024.605 ...	0.830 ...	0.179 ...	103.8 ...	27.9 ...	247.5 ...	216.3 0.055 205.4 0.038	TOK 2022.445
01419+8053 8519	STT 34 1411	177. 6.	1937.7 2.6	0.84 0.03	0.37 0.04	39.9 8.7	1.9 11.7	108.8 8.0	294.6 0.539 295.0 0.539	ALZ [I] 2022.17
01419+8053 8519	STT 34 1411	360. 110.	2017.7 40.	0.136 0.12	0.608 0.09	70.7 4.4	111.2 4.3	185.4 40.	295.4 0.515 295.8 0.513	ALZ [II] 2022.17
03417-5126 17255	HIP 17255 –	3.0 ...	2021.762 ...	0.196 ...	0.075 ...	51.3 ...	66.2 ...	136.9 ...	13.1 0.062 81.6 0.074	TOK 2023.006
04237+1131 20511	LSC 30 –	46.05 ...	2036.02 ...	0.0 ...	0.064 ...	50.0 ...	181.9 ...	0.0 ...	74.0 0.042 85.8 0.041	TOK 2022.683
04502-3113 22484	B 1474	100.85 3.15	2045.75 3.25	0.038 0.038	0.295 0.005	0.0 3.0	125.7 13.2	281.0 19.0	321.2 0.294 324.8 0.293	D et al. 2021.7324
04523-3619 22641	HDS 630 –	30.58 ...	2010.455 ...	0.500 ...	0.118 ...	105.5 ...	113.6 ...	226.4 ...	103.4 0.146 101.6 0.140	TOK 2022.842
05010-1112 23326	A 2629 3610	221.0 15.0	2045.14 0.60	0.733 0.017	0.321 0.005	99.7 1.5	166.8 2.5	255.7 6.0	358.9 0.170 358.2 0.170	D et al. 2023.1787

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr)	T(yr)	e	a(")	i(°)	Ω(°)	ω(°)	2023	Author(s)	
		σ_P	σ_T	σ_e	σ_a	σ_i	σ_Ω	σ_ω	2024	Last obs.	
05352-4657 26217	RST 141	121.43 5.55	1965.66 0.94	0.727 0.006	0.362 0.005	48.1 2.0	59.3 3.0	47.3 3.0	273.0 273.7	0.531 0.529	D et al. 2022.8425
06236+1739 30400	A 2517 5002	144.0 ...	2040.082 ...	0.300 ...	0.119 ...	115.3 ...	14.1 ...	296.2 ...	172.4 169.9	0.078 0.074	TOK 2022.930
08075-1212 39753	A 2749 6606	421.4 ...	1929.436 ...	0.500 ...	0.519 ...	44.2 ...	139.3 ...	17.9 ...	298.3 298.8	0.563 0.567	TOK 2022.195
08075-1212 39753	A 2749 6606	340.9 20.0	1925.38 0.50	0.447 0.010	0.477 0.010	44.2 5.8	140.5 3.0	7.3 3.0	298.9 299.4	0.562 0.566	D et al. 2022.1948
08250-4246 41250	CHR 226Ba,Bb -	33.36 5.89	2020.33 2.50	0.158 0.098	0.050 0.002	103.2 2.7	88.4 1.6	301.0 37.2	93.1 89.8	0.041 0.044	TOK 2023.370
09180-5453 -	JNN 69Aa,Ab -	6.45 ...	2020.80 ...	0.339 ...	0.049 ...	38.1 ...	214.6 ...	76.2 ...	72.4 106.2	0.055 0.052	TOK 2023.179
09525-0806 48437	AC 5AB 7555	77.61 0.59	1956.84 0.69	0.741 0.019	0.380 0.012	143.2 3.4	198.5 5.2	306.2 6.5	30.7 28.3	0.401 0.381	TOK 2023.417
09586-2420 48906	TOK 437 -	15.0 ...	2012.429 ...	0.223 ...	0.065 ...	92.3 ...	112.6 ...	90.2 ...	114.5 113.4	0.056 0.063	TOK 2023.417
10407-0211 -	A 1351 7881	168.7 ...	1992.87 ...	0.90 ...	0.474 ...	115.2 ...	74.2 ...	250.1 ...	45.1 44.7	0.441 0.446	TOK 2022.441
11286-4508 56004	I 885AB -	1000.0 ...	2484.2 ...	0.746 ...	2.458 ...	98.0 ...	38.3 ...	84.6 ...	144.8 144.3	0.620 0.618	TOK 2021.316
12243+2606 60514	YSC 97 -	27.25 1.76	2017.797 0.104	0.868 0.021	0.170 0.012	32.3 7.3	164.0 8.2	275.1 7.1	237.0 240.8	0.197 0.214	TOK 2023.106
12325-5954 61202	JSP 539 -	600.0 ...	1828.67 ...	0.0 ...	0.409 ...	110.6 ...	331.2 ...	0.0 ...	186.2 185.5	0.224 0.227	TOK 2022.441
12455-4552 62252	HDS1789Aa,Ab -	23.41 0.45	2024.00 0.38	0.248 0.059	0.127 0.005	33.2 5.4	33.8 13.5	357.7 21.4	9.5 31.8	0.094 0.096	TOK 2023.010
12456-6211 62270	HDS 1791 -	105.29 ...	2027.17 ...	0.50 ...	0.204 ...	117.0 ...	143.6 ...	55.5 ...	139.2 134.4	0.112 0.104	TOK 2022.047

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.	
12479-5127 62445	TOK 720 –	10.78 1.14	2023.77 0.18	0.292 0.084	0.051 0.004	152.2 11.1	85.7 16.1	134.1 15.1	358.7 294.0	0.034 0.035	TOK 2023.179
12528+1225 62933	TOK 401 –	9.964 0.080	2015.562 0.128	0.098 0.011	0.111 0.001	75.1 0.6	117.3 0.6	294.5 5.0	300.4 314.0	0.110 0.071	TOK 2023.106
13133+1621 –	DOC 1 –	25.44 0.17	2014.81 0.16	0.424 0.013	0.085 0.002	61.0 3.6	95.0 2.1	18.6 4.2	269.2 272.8	0.108 0.114	T+RV 2023.106
13229-7209 65289	B 1736 –	73.04 ...	1962.49 ...	0.626 ...	0.163 ...	54.2 ...	156.4 ...	324.4 ...	342.4 344.4	0.174 0.165	TOK 2023.324
13325-6914 66057	I 298 –	500.0 ...	1812.95 ...	0.20 ...	0.821 ...	113.1 ...	16.7 ...	89.6 ...	149.7 148.9	0.490 0.486	TOK 2022.447
13401-6033 –	TOK 292Ca,Cb –	40.0 ...	2019.06 ...	0.267 ...	0.199 ...	155.5 ...	131.9 ...	195.4 ...	239.0 225.4	0.149 0.155	TOK 2023.010
13513-2423 67620	WSI 77 –	10.475 0.007	2009.290 0.013	0.339 0.002	0.285 0.001	96.5 0.1	171.6 0.1	140.9 0.4	199.3 181.6	0.081 0.203	T+RV 2023.324
14147-4412 69597	HDS 2000 –	90.0 ...	2032.28 ...	0.219 ...	0.213 ...	150.0 ...	19.7 ...	144.9 ...	291.1 284.8	0.156 0.154	TOK 2022.209
14490-5807 72455	HDS 2087 –	28.82 ...	2027.68 ...	0.32 ...	0.167 ...	121.4 ...	111.7 ...	14.4 ...	184.5 160.9	0.083 0.089	TOK 2023.179
14509-1603 72603	BEU 19Ba,Bb –	16.229 0.043	2021.954 0.118	0.244 0.008	0.346 0.006	54.4 1.5	122.7 1.4	184.1 3.3	330.6 6.3	0.229 0.187	T+RV 2023.324
15006+0836 73449	YSC 8AB –	6.922 0.003	2016.878 0.007	0.376 0.002	0.116 0.001	95.9 0.3	149.4 0.3	99.7 0.4	147.4 338.0	0.090 0.042	T+RV 2023.324
16054-1948 78820	BU 947 AB 9913	220.0 fixed	2054.52 3.47	0.685 0.021	0.851 0.032	75.7 0.9	80.2 1.5	242.2 1.8	223.4 225.3	0.337 0.343	TOK 2023.180
16054-1948 78821	MCA 42CE 9913	18.953 0.064	2006.003 0.115	0.610 0.010	0.105 0.002	45.4 1.3	108.0 2.9	80.8 1.7	86.8 112.3	0.078 0.056	TOK 2023.180
16076+0002 79008	HDS 2276 –	161.76 ...	2024.28 ...	0.774 ...	0.601 ...	71.5 ...	172.0 ...	172.2 ...	336.4 347.0	0.114 0.132	TOK 2023.180

NEW ORBITS (continuation)

WDS HIP	Name ADS	P(yr)	T(yr)	e	a(")	i(°)	Ω(°)	ω(°)	2023	Author(s)	
		σ_P	σ_T	σ_e	σ_a	σ_i	σ_Ω	σ_ω	2024	Last obs.	
16245-3734	B 868AB	3.410	2021.880	0.000	0.039	78.5	105.4	0.0	264.9	0.020	TOK
80390	–	0.014	0.026	fixed	0.001	2.4	1.6	fixed	296.2	0.029	2023.180
16249-2240	KSA 129Aa,Ab	13.13	2019.45	0.290	0.058	165.2	67.5	143.0	157.1	0.063	TOK
–	–	0.34	0.37	0.048	0.009	33.5	154.9	143.6	137.1	0.069	2023.324
16278-0822	RST3949Aa,Ab	81.72	1996.28	0.485	0.772	25.7	245.4	24.4	63.7	1.045	TOK
80628	–	0.68	0.17	0.006	0.004	1.6	4.0	4.7	65.6	1.060	2022.288
16283-1613	RST 3950	26.225	2000.656	0.808	0.157	157.9	88.7	210.7	28.7	0.167	TOK
80677	–	0.172	0.347	0.018	0.005	12.8	16.1	16.6	20.7	0.138	2023.417
16385+1240	TOK 727	9.0	2022.39	0.486	0.103	92.9	171.8	312.4	170.7	0.062	TOK
81475	–	...	...	...	...	...	...	...	162.2	0.030	2023.418
16453-3848	RST1900Aa,Ab	40.81	2015.57	0.216	0.916	98.5	64.7	118.9	240.0	0.766	TOK
–	–	...	...	...	...	...	...	...	238.1	0.715	2022.195
16458-0046	A 1141	31.15	2019.220	0.877	0.114	164.0	302.1	107.0	42.5	0.116	TOK
82062	10196	0.21	0.080	0.005	0.003	8.8	21.5	20.5	38.0	0.133	2023.180
17184-0147	BAG 51	30.37	2000.506	0.20	0.464	58.2	121.5	309.8	309.2	0.476	TOK
84652	–	...	...	...	...	...	...	...	315.5	0.436	2023.180
17400-0038	BU 631	160.07	1978.00	0.803	0.211	159.4	36.7	152.6	78.2	0.320	TOK
86463	10696	5.22	0.11	0.007	0.004	3.8	10.8	10.9	77.6	0.323	2022.444
17535-0355	TOK 54	47.3	2032.61	0.242	0.093	180.0	151.1	0.0	252.2	0.092	TOK
–	–	...	...	...	...	...	...	...	244.4	0.089	2023.180
18520+1358	CHR 80	64.61	1990.18	0.662	0.161	121.4	98.5	280.2	348.0	0.146	TOK
92593	–	3.12	0.84	0.052	0.019	5.4	2.4	2.3	345.4	0.148	2023.418
19035-6845	FIN 357	14.102	2018.104	0.383	0.149	155.5	148.8	234.7	124.0	0.189	TOK
93574	–	0.042	0.018	0.004	0.001	1.4	3.5	3.8	111.1	0.195	2023.325
19040-3804	I 1391	48.75	2003.88	0.505	0.187	52.3	123.4	194.7	123.1	0.272	TOK
93625	–	0.72	0.59	0.028	0.002	2.6	3.0	6.1	124.9	0.275	2023.324
19301-4904	HDS 2772	290.0	2019.61	0.823	0.591	64.4	175.9	111.2	353.1	0.138	TOK
95891	–	...	...	...	...	...	...	...	358.1	0.155	2023.325

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.	
19377-4128 96545	VOU 34 –	61.29 1.95	2001.24 2.78	0.065 0.043	0.165 0.003	97.6 0.6	133.9 0.4	70.6 17.1	310.5 309.6	0.157 0.151	TOK 2023.325
20205-2749 –	RST 3255 –	54.64 ...	2027.24 ...	0.929 ...	0.101 ...	0.0 ...	266.9 ...	0.0 ...	112.4 116.4	0.085 0.072	TOK 2022.441
20217-3637 100417	HDS 2908 –	12.699 0.056	2007.368 0.110	0.536 0.007	0.111 0.002	81.8 0.6	107.9 0.4	336.2 3.2	271.0 278.1	0.059 0.099	TOK 2023.325
20306+1349 101181	HDS 2932 –	48.64 0.93	1984.84 0.90	0.280 fixed	0.171 0.002	79.9 0.4	147.4 0.6	272.0 3.1	324.2 325.5	0.166 0.165	TOK 2022.682
20311-1503 101221	FIN 336 –	51.72 0.46	2000.26 0.71	0.751 0.025	0.189 0.011	73.7 1.4	105.4 1.3	83.0 1.2	339.0 342.8	0.112 0.109	TOK 2022.441
20408+1956 –	RAO 23Ca,Cb –	8.76 0.12	2020.579 0.039	0.900 fixed	0.207 0.006	38.1 3.8	25.2 3.1	56.5 2.5	244.2 250.1	0.306 0.334	TOK 2022.442
20452-3120 102141	LDS 720BC –	145.4 4.7	2033.20 0.42	0.574 0.022	2.529 0.024	166.1 8.0	100.0 18.8	65.0 16.3	119.0 113.9	1.605 1.531	TOK 2022.441
20507-3116 102892	B 997 –	63.63 0.88	2015.03 0.33	0.208 0.008	0.199 0.002	40.3 1.7	95.9 2.1	138.5 3.4	294.5 300.4	0.169 0.169	TOK 2022.441
20527-0859 103045	MCA 64Aa,Ab –	2.404 0.002	2018.973 0.068	0.150 0.024	0.057 0.001	85.7 1.2	136.6 0.7	308.0 9.8	316.4 136.0	0.061 0.049	TOK 2023.418
21199-5327 105319	HJ 5258 AB –	3000 ...	1686.5 ...	0.6 ...	10.313 ...	113.6 ...	73.2 ...	35.0 ...	268.5 268.3	7.370 7.384	Z & T 2016.0
21199-5327 –	HJ 5258 Ba,Bb –	26.8 ...	2000.52 ...	0.63 ...	0.346 ...	36.6 ...	18.7 ...	310.6 ...	197.6 206.7	0.361 0.306	Z & T 2023.325
21223+5734 105522	A 764 AB 14926	470.0 ...	1901.8 ...	0.552 ...	1.033 ...	10.0 ...	110.8 ...	125.2 ...	21.6 22.0	1.300 1.305	TOK 2015.500
21278-5922 105976	TOK 731 –	12.77 0.72	2022.555 0.043	0.613 0.017	0.059 0.002	27.2 4.6	194.3 12.5	133.3 14.9	24.2 79.7	0.028 0.045	TOK 2023.325
21310-3633 106224	B 1008AB –	75.05 1.92	2019.74 0.12	0.636 0.007	0.222 0.002	102.9 0.4	32.3 0.3	163.3 1.5	194.0 182.1	0.066 0.052	TOK 2023.418

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.	
21543+1943 108119	COU 432BC –	33.87 0.59	2024.47 0.23	0.750 fixed	0.122 0.006	129.5 4.7	32.1 2.8	213.7 2.8	265.0 220.8	0.043 0.035	TOK 2022.682
22006-1345 108547	HU 282 15534	500.0 ...	2029.823 ...	0.90 ...	0.485 ...	25.1 ...	102.4 ...	93.1 ...	92.1 97.4	0.118 0.106	TOK 2023.418
22056-5858 109060	B 548 –	36.91 0.87	2025.25 0.34	0.628 0.046	0.148 0.004	56.0 3.5	36.0 1.9	336.9 3.7	272.3 319.9	0.055 0.039	TOK 2023.418
22343+0345 111413	HDS 3201 –	27.77 ...	2000.16 ...	0.451 ...	0.122 ...	52.0 ...	36.8 ...	98.0 ...	25.1 33.3	0.118 0.108	TOK 2023.418
22504-1744 –	DON 1038 –	163.0 5.6	1992.09 0.61	0.432 0.017	0.393 0.007	137.7 1.6	0.0 fixed	0.0 fixed	255.9 257.7	0.402 0.409	TOK 2023.418
23025-4605 –	I 1462 –	155.0 ...	2035.714 ...	0.619 ...	0.194 ...	160.0 ...	105.0 ...	282.4 ...	283.1 279.4	0.135 0.129	TOK 2023.418
23126+0241 114576	A 2298AB 16591	29.161 0.054	2012.529 0.092	0.401 0.005	0.199 0.001	102.7 0.3	287.0 0.3	312.9 1.1	140.6 132.6	0.099 0.124	T+RV 2023.418
23179-0302 115037	YSC 167 –	15.57 ...	2015.61 ...	0.75 ...	0.107 ...	95.7 ...	32.2 ...	115.7 ...	44.9 42.4	0.077 0.091	TOK 2023.418
23401+1258 116787	HU 1325 16194	303.7 ...	1957.37 ...	0.402 ...	0.960 ...	29.3 ...	148.1 ...	133.8 ...	43.0 44.0	0.906 0.911	S et al. 2020.675
23561+2520 118005	A 426 17105	212.1 ...	1889.20 ...	0.198 ...	0.327 ...	141.5 ...	99.1 ...	327.4 ...	278.7 277.8	0.377 0.376	S et al. 2021.729

TOK = TOKOVININ

ALZ = ALZNER

T+RV = Tokovinin, uses radial velocities

Z & T = ZIRM & TOKOVININ

D et al. = DOCOBO, CAMPO, MÉNDEZ & COSTA

S et al. = SCARDIA, PRIEUR, LING, PANSECCHI, ARGYLE, ARISTIDI, ZANUTTA, ABE, BENDJOYA, RIVET, VERNET & MACCARINI

NEW DOUBLE STARS

Discovered by: Marco Scardia using the speckle camera PISCO attached to the Epsilon telescope of the Calern Observatory

STAR	Coord. FK5 J2000	Mag.	Epoch (Julian)	θ ($^{\circ}$)	ρ ($''$)	Notes
SCA 208 AB,C	11 29 44.44 +33 02 15.6	9.7 - 13.0	2023.347	236.7	4.94	AB is COU 782

The new pair Theta Indi Ba,Bb

The apparent motion of the wide visual pair Theta Indi (WDS J21199-5327, HJ 5258 AB, where A is HR 8140 or HD 202730) was found in 2011 to show a wave indicative of an unresolved subsystem with a period of 26 yr. The Gaia data for star B have increased astrometric noise. The pair Ba,Bb was resolved by the speckle camera at the SOAR 4.1 m telescope on April 29, 2023 (2023.3248) at 0''3445 separation and 200°07 angle, near the predicted position. The magnitude difference is 3.7 mag in the filter I and 5.4 mag in the filter y. A tentative orbit of A,B with a period of 3 kyr and the 26-yr orbit of Ba,Bb are given here in the new orbits table. The estimated masses of Ba and Bb are 1.08 and 0.53 solar, respectively. Considering that the previously reported resolution of Aa,Ab is not confirmed, Theta Indi appears to be a triple system.

H. Zirm

A. Tokovinin

ANNOUNCEMENT

Dear colleagues,

We are preparing to make all measures currently summarized in the Washington Double Star (WDS) Catalog available on our websites. The data format will be virtually identical to our internal catalog and will be very familiar to those who have made data requests in the past.

We will still perform data requests for those preferring to have all data on individual systems from our various catalogs collected, but for those wishing to peruse the entire collection that will now be possible.

It is possible that we could entertain presenting data in formats other than the flat ascii format in which it is presently delivered.

If you have any comments, questions or suggestions, please do not hesitate to let us know. We do not anticipate this change being implemented before early in the second quarter of 2024.

Main WDS website: <https://crf.usno.navy.mil/wds/>

Alternate website: <http://www.astro.gsu.edu/wds/>

Sincerely,

Brian D. Mason & Rachel A. Matson
U.S. Naval Observatory

EDITOR'S NOTES

Dear colleagues,

After 30 years as co-editor of the IAUDS Information Circular, alongside Prof. Docobo, I am informing you that this will be my final issue in this position. On August 31, 2023, I will be retiring and stepping down as a staff member of Santiago de Compostela University.

It has been an immense honor and an absolute pleasure for me to serve the dedicated individuals who share a passion for double and multiple stars through this role. This opportunity has been greatly rewarding.

I would like to express my heartfelt gratitude to all the members of this community who have contributed their exceptional work. It is your valuable contributions that have truly elevated the quality of this publication over the years. I am also grateful to the readers who have engaged with our content and made this publication a respected source in the field.

Please accept my warmest regards,

Josefina F. Ling

The Information Circular was initiated by Paul Muller in 1954. Thirty years later, and after editing 90 issues, Muller passed the responsibility of the edition to Paul Couteau, who dealt with it during ten years (from number 91 to 120, 1983-1993). When Couteau reached the retirement age, he suggested me to be his successor and stated so in the Circular No 120. In that moment, my first thoughts were to try to improve the Circular using the English language and to request an ISSN number as well. Also, and not less important, I proposed J. F. Ling to be a co-editor, because “four eyes see more than two”. Ling had recently prepared her PhD Thesis with us in the Santiago de Compostela University (USC). I wish to express my warmest thanks to Dr. Ling for her co-editorship during all of this time, in which she shared with me the responsibility and served to our Commission.

Currently, I am an “active” Emeritus Professor at USC. In this sense, I will be able to edit the Circular a few years more, at least if the good health continues. However, it is clear that young people should be incorporated in the short term if we want the Circular continues to be our information vehicle. Many thanks to all of you for sending the orbits, notes, and a lot of other valuable information to the Circular during these decades.

José Ángel Docobo

The deadline for contributions to Information Circular No. 211 is:

October 15th 2023

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