

INTERNATIONAL ASTRONOMICAL UNION COMMISSION 26

(DOUBLE STARS)

INFORMATION CIRCULAR No. 183 (JUNE 2014)

NEW ORBITS

ADS α 2000 δ	Name n	P a	T i	e ω	Ω (2000) Last ob.	2014 2015	Author(s)
463 00335+4006	HO 3 5°2059	69 ^y 15 0 ^o 386	1984.29 113°0	0.313 321°0	297°5 2012.7020	144°9 0 ^o 339 142.5 0.356	MASON & HARTKOPF
1097 01213 +1132	BU 4 AB 1.2367	291.1 0.430	1942.93 141.0	0.890 242.8	149.8 2008.888	107.6 0.585 107.4 0.588	SCARDIA et al. (*)
2173 02517+4559	A 1281 2.2746	158.27 0.520	1938.15 43.8	0.354 149.6	167.5 2012.7050	141.3 0.648 142.3 0.652	HARTKOPF & MASON
4768 06105+2300	BU 1058 0.5948	605.2 0.718	2007.32 106.0	0.896 81.2	218.2 2011.0900	39.4 0.151 37.9 0.167	RICA
- 06298-5014	HDO 195 CD 3.6283	99.22 0.541	2004.94 32.8	0.247 9.8	119.8 2010.8948	178.4 0.388 184.2 0.389	DOCOBO & LING
7054 08531+5457	A 1584 5.0783	70.89 0.419	1985.01 33.2	0.712 39.5	243.1 2013.0393	90.2 0.671 91.4 0.673	MASON & HARTKOPF
12415-4858	HJ 4539 4.3332	83.08 0.840	2014.60 116.2	0.808 190.2	4.5 2013.2382	198.0 0.162 166.1 0.143	DOCOBO & CAMPO
8727 12597-0349	CHR 39 Aa,Ab 45.6911	7.879 0.081	2011.433 27.7	0.347 160.3	32.9 2009.2600	342.2 0.092 7.2 0.106	DOCOBO & CAMPO
8954 13347 -1313	BU 932 AB 2.0259	177.7 0.531	1921.87 70.4	0.925 103.6	117.7 2009.266	64.9 0.417 65.3 0.418	SCARDIA et al. (*)
9423 14525+1844	BU 31 0.1726	2085.5 3.369	1915.06 64.8	0.453 325.1	215.4 2013.3071	220.8 2.009 220.9 2.010	HARTKOPF & MASON
10480 17207-0706	A 2593 AB 4.8657	73.99 0.270	1989.46 123.4	0.026 61.9	167.6 2013.4738	345.5 0.274 342.9 0.272	MASON & HARTKOPF

NEW ORBITS (continuation)

ADS α 2000 δ	Name n	P a	T i	e ω	Ω (2000) Last ob.	2013 2014	Author(s)
11186 18146+0011	STF 2294 1.0441	344.8 0.732	1890.09 101.6	0.935 173.8	91.1 2013.675	93.4 1.319 93.4 1.323	SCARDIA et al. (*)
11619 18440+0321	A 2388 1.0909	330. 0.453	1942.4 70.3	0.850 96.0	254.7 2012.7256	131.2 0.256 131.8 0.256	RICA & ZIRM
16132 22384+2943	HO 480 0.9245	389.40 0.519	2019.87 48.3	0.764 160.5	227.4 2011.6554	340.5 0.104 350.4 0.104	RICA
16463 23024+1837	HU 398 2.3889	150.7 0.315	1957.87 8.6	0.588 68.4	57.5 2010.635	290.4 0.473 291.2 0.475	SCARDIA et al. (*)

(*) SCARDIA, PRIEUR, PANSECCHI, ARGYLE & ZANUTTA

NEW TRIPLE STAR SYSTEMS WITH A DETECTABLE INNER ORBITAL MOTION AND AN ASSUMED OUTER LINEAR MOTION

Combined linear + orbital results for WDS 01493+4754 \equiv STF 162 AB and CHR 4 Aa,Ab Authors: ZIRM & RICA								
linear solution main components (outer)				visual orbit (inner) with photocentric amplitude				
$X_0 = -1''663$				P = 36 ^y 9				
$\mu_X = -0.00241''/year$				T = 2004 ^y 8				
$Y_0 = -0''957$				e = 0.234				
$\mu_Y = 0.00418''/year$				$\alpha = 0''040$				
$t_0 = 1937.8y3$				a = 0''122				
$\theta_0 = 209^\circ 69$				i = 34 ^o 4				
$\rho_0 = 1''919$				$\omega = 348^\circ 6$				
$\mu_{XY} = 0.00482''/year$				$\Omega = 32^\circ 0$				
Ephem.	Combined motion		Linear path only		Photocentric orbit only		Visual orbit CHR 4Aa,Ab	
	θ	ρ	θ	ρ	$\Delta\delta$	$\Delta\alpha$	θ	ρ
2014	198 ^o 2	1''972	199 ^o 0	1''954	-0 ^o 027	0''022	139 ^o 2	0''107
2015	198 ^o 1	1''979	198 ^o 9	1''955	-0 ^o 032	0''019	148 ^o 7	0''114

NEW TRIPLE STAR SYSTEMS WITH A DETECTABLE INNER ORBITAL MOTION AND AN ASSUMED OUTER LINEAR MOTION (continuation)

Combined linear + orbital results for WDS 03401+3407 \equiv STF 425

Authors: RICA & ZIRM

linear solution main components (outer)				photocentric orbit (inner)		
$X_0 = 1''141$ $\mu_X = 0.00933''/year$ $Y_0 = 1''287$ $\mu_Y = -0.00827''/year$ $t_0 = 2045^y3$ $\theta_0 = 48^\circ4$ $\rho_0 = 1''719$ $\mu_{XY} = 0.01247''/year$				$P = 106^y5$ $T = 1980^y19$ $e = 0.612$ $\alpha = 0''179$ $i = 106^\circ8$ $\omega = 77^\circ8$ $\Omega = 65^\circ5$		
Ephem.	Combined motion		Linear path only		Photocentric orbit only	
	θ	ρ	θ	ρ	$\Delta\delta$	$\Delta\alpha$
2014	59°2	1''913	61°2	1''763	0''117	0''106
2015	59°3	1''907	60°8	1''760	0''117	0''102

Combined linear + orbital results for WDS 15432+1340 \equiv BU 619

Authors: ZIRM & RICA

linear solution main components (outer)				visual orbit (inner) with photocentric amplitude		
$X_0 = 0''0018$ $\mu_X = 0.00202''/year$ $Y_0 = 0''0816$ $\mu_Y = -0.00005''/year$ $t_0 = 1658^y$ $\theta_0 = 88^\circ7$ $\rho_0 = 0''082$ $\mu_{XY} = 0.00202''/year$				$P = 75^y2$ $T = 1993^y46$ $e = 0.938$ $\alpha = 0''132$ $i = 76^\circ5$ $\omega = 258^\circ3$ $\Omega = 29^\circ7$		
Ephem.	Combined motion		Linear path only		Photocentric orbit only	
	θ	ρ	θ	ρ	$\Delta\delta$	$\Delta\alpha$
2014	358°8	0''681	5°2	0''725	-0''041	-0''079
2015	358°8	0''684	5°2	0''727	-0''040	-0''080

NEW LINEAR FITS

Authors: J. L. HUROWITZ, W. I. HARTKOPF & B. D. MASON

ADS α 2000 δ	Name -	X_0 Y_0	X_A Y_A	ρ_0 θ_0	T_0 Last ob.	2014 2015
- 16046-3752	HDO 253 -	20.497999 34.148998	0.105870 -0.063550	39.829 149.000	1885.9919 1999.3700	127°4 42"851 127.2 42.896
- 16198-5009	HJ 4841 -	-8.976000 -39.576000	0.144000 -0.032800	40.582 347.200	1834.3450 1999.5601	20.5 48.544 20.6 48.625
10054 16254+1402	BU 625 AC -	15.414000 -12.915000	-0.056430 -0.067350	20.110 50.000	2189.8799 2010.6200	87.6 25.363 87.4 25.309
- 16382+2244	POU 3235 -	-4.873000 1.830000	0.009760 0.025990	5.205 249.400	1958.8770 2011.6740	233.1 5.426 232.8 5.434
- 16450+0605	STT 585 AC -	-54.651001 -44.709999	0.211620 -0.258670	70.610 309.300	2335.2251 2012.3831	252.6 128.497 252.7 128.217
10213 16465+4759	ES 1089 AB -	0.488000 -0.249000	0.044790 0.087810	0.548 63.000	1895.7510 2010.4130	150.3 11.669 150.3 11.768
- 16599-5920	HJ 4900 -	12.488000 -4.129000	-0.023820 -0.072040	13.153 71.700	1615.4070 1999.5800	5.2 32.982 5.2 33.051
- 17097-5224	R 290 -	8.864000 3.425000	0.024160 -0.062540	9.503 111.100	2019.2590 2010.5000	113.2 9.510 112.8 9.507
- 17317+3019	STF 2181 AB -	-24.138000 -7.960000	0.035940 -0.108980	25.417 288.300	1828.7130 2007.3970	328.1 33.138 328.3 33.211
- 17317+3019	STF 2181 AC -	-21.691000 -1.199000	0.007220 -0.130570	21.724 273.200	2249.2671 2002.3300	218.4 37.664 218.5 37.557
10759 17419+7209	STF 2241 AC -	67.436996 -13.787000	-0.050500 -0.247020	68.832 78.500	2151.9319 2004.3199	105.3 77.120 105.1 77.005
10742 17434+3357	HO 560 AB -	-0.030000 -0.136000	-0.006840 0.001490	0.139 347.700	1820.5420 2010.5439	263.5 1.361 263.5 1.368
11003 18025+2619	HO 564 AC -	63.220001 -50.537998	-0.434820 -0.543930	80.937 51.400	1934.0690 2000.0000	16.8 98.236 16.5 98.625

NEW LINEAR FITS (continuation)

Authors: J. L. HUROWITZ, W. I. HARTKOPF & B. D. MASON

ADS α 2000 δ	Name -	X_0 Y_0	X_A Y_A	ρ_0 θ_0	T_0 Last ob.	2014 2015
11031 18039+2639	HO 426 -	-6.475000 9.569000	-0.050630 -0.034260	11.554 214.100	1963.1100 2000.2100	229.1 11.966 229.4 11.981
11046 18055+0230	STF 2272 AR -	102.882004 -25.885000	-0.275440 -1.094750	106.088 75.900	1900.5000 2009.5620	25.5 166.352 25.3 167.217
11046 18055+0230	STF 2272 AT -	106.157997 -26.148001	-0.269640 -1.094720	109.331 76.200	1953.3690 2009.5620	44.1 128.956 43.7 129.543
11046 18055+0230	STF 2272 AU -	-38.484001 9.965000	-0.283900 -1.096400	39.753 255.500	1786.5100 2009.5620	336.7 260.695 336.7 261.814
11046 18055+0230	STF 2272 AV -	134.126007 30.134001	-0.242640 -1.079990	137.469 257.300	1971.4340 2010.5179	276.3 145.335 276.7 145.682
11046 18055+0230	STF 2272 BR -	99.070000 -21.086000	-0.221070 -1.038660	101.289 77.985	1891.1620 2000.6400	25.8 165.157 25.6 165.992
- 18157-6303	HJ 5024 -	-17.815001 -26.631001	0.045620 -0.030520	32.040 326.200	1421.0520 2000.4200	11.7 45.672 11.7 45.711
11496 18367+0640	J 99 AB -	-20.004999 -4.344000	0.027990 -0.128910	20.471 282.300	1780.7650 2002.4821	338.6 36.955 338.7 37.065
11510 18369+3846	STF B9 AE -	2.242000 1.704000	-0.205310 0.270110	2.817 127.200	2271.1750 2012.6010	39.1 87.299 39.1 86.960
- 18374-4704	HJ 5049 -	-18.049999 7.018000	0.021000 0.056320	19.367 248.800	1995.2780 2001.3130	245.4 19.400 245.2 19.403
11658 18457+2033	HJ 2839 AC -	61.094002 1.277000	0.006620 -0.316480	61.108 91.200	1879.7040 2001.6331	56.4 74.442 56.2 74.621
11871 18570+3254	BU 648 AB,C -	-15.359000 17.476000	-0.171740 -0.150940	23.266 221.300	1701.5010 1992.6340	293.3 75.143 293.3 75.360
11957 19020+1907	HJ 2851 AB -	5.925000 12.748000	-0.082910 0.038530	14.058 155.100	1988.3910 2012.7040	164.5 14.253 164.9 14.267

NEW LINEAR FITS (continuation)

Authors: J. L. HUROWITZ, W. I. HARTKOPF & B. D. MASON

ADS α2000δ	Name -	X_0 Y_0	X_A Y_A	ρ_0 θ_0	T_0 Last ob.	2014 2015
- 19079+3043	HLM 16 AB -	-6.015000 -5.282000	-0.026270 0.029910	8.005 311.300	2005.0470 2012.6200	308.8 8.014 308.5 8.015
12166 19127+2435	MAD 7 AC -	-0.730000 -1.770000	-0.062790 0.025890	1.914 337.600	1975.0601 1971.3450	283.5 3.266 282.8 3.320
12337 19217-1715	HO 272 AB -	-1.296000 -3.144000	0.079970 -0.032960	3.401 337.600	1823.3760 2000.7400	55.9 16.834 56.0 16.919
12695 19364+5013	STT 591 AC -	-4.560000 0.323000	0.018000 0.262960	4.571 265.900	1740.3840 1923.7080	179.6 72.276 179.6 72.539
- 19423+1937	HJ 2891 -	8.748000 -3.461000	0.019000 0.049540	9.408 68.400	1860.1300 2012.5790	109.5 12.479 109.7 12.514
12811 19429+0115	HJ 895 AC -	1.433000 -27.931000	0.042950 0.002000	27.968 2.900	1750.6520 2012.5750	25.0 30.174 25.1 30.190
12889 19464+3344	STF 2580 BC -	58.557999 -4.539000	-0.034500 -0.445110	58.734 85.600	2179.7791 2012.5900	137.2 94.486 137.0 94.135
12889 19464+3344	STF 2576 FI -	-14.386000 0.629000	-0.018540 -0.423660	14.400 267.500	1925.7080 2013.2990	336.8 40.322 337.0 40.720
13012 19510+1025	J 124 AB -	-6.696000 12.841000	-0.245620 -0.128090	14.482 207.500	1963.3190 2008.5800	251.6 20.174 252.2 20.364
- 20041+5428	STI 2497 -	7.563000 -0.962000	-0.021390 -0.168130	7.624 82.800	1955.9540 2010.7000	30.6 12.448 30.1 12.581
- 20041+1704	STT 592 AB -	107.918999 -103.617996	0.384520 -0.400480	149.610 313.800	2130.7451 2012.5680	290.4 163.051 290.6 162.828
- 20041+1704	STT 592 AC -	144.585007 -142.266006	0.420450 -0.427300	202.841 314.500	1888.2960 2012.5680	334.5 216.389 335.1 216.596
- 20319-4054	I 1627 AC -	3.871000 -2.120000	-0.064750 -0.118240	4.414 61.300	1889.2159 2008.7460	346.0 17.392 345.9 17.522

NEW LINEAR FITS (continuation)

Authors: J. L. HUROWITZ, W. I. HARTKOPF & B. D. MASON

ADS α 2000 δ	Name -	X_0 Y_0	X_A Y_A	ρ_0 θ_0	T_0 Last ob.	2014 2015
13998	HJ 1535 AC	11.905000	-0.148290	17.742	1883.9070	193.6 31.492
20333+3323	-	13.155000	0.134000	137.800	2012.4340	193.8 31.657
14073	HJ 5545 AB,C	-1.193000	-0.115740	8.180	2105.9241	135.6 13.512
20375+1436	-	8.092000	-0.017060	188.400	2011.6790	135.9 13.418
14276	BU 1493	44.361000	-0.086330	44.612	1989.2950	120.3 48.975
20453+6150	-	4.722000	0.811060	96.100	1957.7300	121.2 49.293
-	ENG 76 AB	35.263000	0.063390	36.315	2127.0161	143.3 47.093
20454+5735	-	8.678000	-0.257600	103.800	2004.5439	143.1 46.923
-	STT 595 AB	7.068000	-0.119640	8.990	2296.0730	47.5 55.343
20501+4404	-	5.556000	0.152000	128.200	2012.6000	47.5 55.152
-	BUP 219 AB	-84.126999	0.029570	84.185	1928.9900	310.9 107.955
20533+6209	-	-3.132000	-0.794290	272.100	2003.6680	311.2 108.447
-	BUP 224	-24.875000	0.081610	30.565	2039.1130	298.9 30.769
21054+0557	-	-17.760000	-0.114310	305.500	2012.5890	299.2 30.752
14702	BU 71 AC	20.794001	-0.058390	22.708	1636.8940	358.8 59.328
21103+1008	-	-9.123000	-0.133100	66.300	2011.6110	358.8 59.462
14787	AGC 13 AC	-12.946000	-0.162880	13.808	1860.0560	211.2 73.419
21148+3803	-	-4.801000	0.439180	290.400	2012.6670	211.1 73.879
-	HJ 1647 AC	15.471000	-0.040880	36.104	2352.6360	131.6 39.220
21290+2211	-	32.620998	0.019390	154.600	2001.6340	131.7 39.202
15176	BU 1212 AB,C	3.087000	-0.222500	36.506	2003.7950	178.7 36.580
21395-0003	-	36.375000	0.018880	175.200	2000.6379	179.1 36.592
-	HJ 3049	-7.398000	0.086270	25.719	1739.9510	27.1 35.649
21418+0145	-	-24.632000	-0.025910	343.300	2011.9180	27.2 35.711
-	HJ 1683 AC	-21.469999	0.003350	21.673	1335.2080	315.4 27.329
21429+2152	-	-2.960000	-0.024300	277.900	2012.6530	315.4 27.344

NEW LINEAR FITS (continuation)

Authors: J. L. HUROWITZ, W. I. HARTKOPF & B. D. MASON

ADS α 2000 δ	Name -	X_0 Y_0	X_A Y_A	ρ_0 θ_0	T_0 Last ob.	2014 2015
- 21431+1338	HJ 1682 -	-0.069000 -4.309000	0.041370 -0.000660	4.310 359.100	1508.4301 2007.7300	77.5 21.359 77.5 21.399
15432 21546-0318	STF 2838 AB -	1.198000 0.152000	0.004000 -0.033030	1.207 97.300	2486.5229 2003.7841	182.9 15.780 182.9 15.747
15561 22016+4921	ES 831 AE -	5.546000 5.051000	-0.056220 0.061730	7.502 132.300	2179.3999 2010.5370	70.9 15.716 71.0 15.643
- 22187-4954	I 303 AB -	12.095000 -22.856001	-0.191010 -0.101080	25.860 27.900	1911.8800 1999.8300	347.4 33.998 347.1 34.137
15864 22217-0123	HJ 3106 -	2.232000 30.362000	-0.130980 0.009630	30.444 175.800	2123.5330 2008.8220	150.5 33.673 150.7 33.616
15972 22280+5742	KR 60 AF -	-9.458000 -18.933001	0.802710 -0.401010	21.164 333.400	1938.9600 2012.6830	46.0 70.584 46.2 71.438
- 22310-4926	HDO 299 AB -	-11.056000 -12.032000	0.196270 -0.180350	16.341 317.400	1945.6820 1999.6500	5.5 24.470 5.9 24.666
16021 22313+5017	BU 703 -	-1.886000 -17.549999	-0.133060 0.014000	17.651 353.900	1691.9091 2010.7700	286.2 46.578 286.1 46.702
16111 22361+7253	HJ 3133 AB,C -	-5.057000 -9.367000	-0.091640 0.049470	10.644 331.600	1627.8390 2000.0000	256.4 41.598 256.4 41.699
16483 23038+2805	HJ 1842 AB -	26.263000 40.136002	-0.195180 0.127710	47.965 146.800	1508.4410 2012.7190	214.7 127.303 214.7 127.519
16633 23159-0905	BU 1220 AD -	0.054000 -4.313000	-0.352090 -0.004390	4.314 0.700	1697.0690 2008.8330	272.9 111.680 272.9 112.032
16665 23189+0524	BU 80 AE -	9.308000 -46.044998	-0.446730 -0.090300	46.977 11.400	1478.5560 2004.6580	292.3 248.517 292.3 248.965
- 23266+4520	GIC1 92 AB -	-13.507000 -51.456001	-0.432760 0.113590	53.199 345.300	1973.7330 2008.9080	326.6 56.173 326.2 56.312

NEW LINEAR FITS (continuation)

Authors: J. L. HUROWITZ, W. I. HARTKOPF & B. D. MASON

ADS α 2000 δ	Name	X_0 Y_0	X_A Y_A	ρ_0 θ_0	T_0 Last ob.	2014 2015
-	HJ 1905 AB	7.249000	0.041490	19.218	1925.4530	146.2 19.624
23412+7409	-	17.799000	-0.016900	157.800	2011.8470	146.1 19.633

ANNOUNCEMENTS

Are Your Data in the Double Star Catalogs?

Most entries in the WDS and other USNO double star catalogs are extracted from papers discovered through our literature searches. Although we include data from over 8,300 references at present, we are undoubtedly missing many others! If you wish to check whether your papers (or those of your colleagues) have been entered, you may check the WDS reference file at <http://ad.usno.navy.mil/wds/Webtextfiles/wdsnewref.txt> (or send a note to wds@usno.navy.mil and we'll hunt for you). If you know of missing papers or errors, please tell us (or better yet, send the data files).

If you want to be sure that your latest astrometry, photometry, or orbital/linear elements are added more quickly, you may send us text versions of your tables (after your paper is in press or published, of course).

Finally, if you have spectroscopic elements not yet in SB9, we're sure Dimitri Pourbaix would love to hear from you!

William I. Hartkopf & Brian D. Mason
U.S. Naval Observatory

The deadline for contributions to Information Circular No. 184 is:

October 15th 2014

J. A. Docobo (joseangel.docobo@usc.es)

J. F. Ling (josefinaf.ling@usc.es)

Tel: +34 881 815 016

Fax: +34 881 813 197

Observatorio Astronómico R. M. Aller

P. O. Box 197

<http://www.usc.es/astro>

Universidade de Santiago de Compostela

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