

## INTERNATIONAL ASTRONOMICAL UNION COMMISSION 26

## (DOUBLE STARS)

## INFORMATION CIRCULAR No. 181 (OCTOBER 2013)

## NEW ORBITS

ADS $\alpha$ 2000 $\delta$	Name n	P a	T i	e $\omega$	$\Omega$ (2000) Last ob.	2013 2014	Author(s)
- 00126-1142	RST 3343 1°9166	187 <sup>y</sup> 8 0''277	2058.25 42°0	0.164 272°5	88°9 2008.6059	259°2 0''279 260.6 0.278	DOCOBO & LING
713 00521 -1314	HU 201 2.7929	128.9 0.542	1932.97 44.1	0.688 160.0	124.6 2008.770	118.4 0.872 119.0 0.868	SCARDIA et al. (*)
- 01129+5136	HDS 160 7.7313	46.56 0.192	2029.98 66.2	0.408 239.2	27.0 2010.0100	99.0 0.108 108.6 0.103	CVETKOVIC
1339 01417-1119	STF 147 0.5738	627. 2.50	2014.7 82.0	0.919 174.7	86.9 2012.921	254.7 0.138 262.4 0.184	RICA
6776 08231+2001	HO 525 AB 0.3850	935. 0.84	1967. 39.1	0.70 115.7	144.9 2012.230	347.2 0.422 348.0 0.426	RICA
8196 11317+1422	STF1547 0.1043	3453. 16.25	1228. 58.	0.20 100.	138. 2013.296	331.1 15.405 331.2 15.402	HARTKOPF & MASON
11560+3520	CHR 258 26.6058	13.53 0.143	2010.54 135.1	0.165 9.90	302.5 2007.01	207.1 0.097 172.9 0.117	GRIFFIN & MASON
8739 13007+5622	BU 1082 3.4623	104.0 1.214	1921.34 49.5	0.416 112.7	93.2 2011.408	109.4 0.945 113.0 0.893	DOCOBO & CAMPO
9378 14455 +4223	STT 285 AB 4.0482	88.93 0.327	2060.82 166.6	0.525 171.3	71.4 2013.462	84.7 0.496 83.3 0.497	SCARDIA et al. (*)
- 15379+5005	HDS 2203 13.6816	26.31 0.230	2013.88 80.8	0.372 297.8	117.2 2010.4730	27.1 0.003 102.5 0.078	CVETKOVIC
9763 15440+0231	A 2230AB 0.6808	528.79 5.037	1939.76 144.5	0.146 129.5	210.7 2013.49	19.5 4.590 18.8 4.593	GATEWOOD & MASON

**NEW ORBITS (continuation)**

ADS $\alpha$ 2000 $\delta$	Name n	P a	T i	e $\omega$	$\Omega$ (2000) Last ob.	2013 2014	Author(s)
— 15465+1957	COU 66 1.5277	235.7 0.87	2028.2 160.7	0.464 118.4	143.8 0.000	89.7 0.540 86.3 0.528	RICA
9836 15557 -2645	I 977 1.3115	274.5 0.754	1968.88 65.8	0.364 29.7	102.9 2010.585	256.6 0.497 257.7 0.512	SCARDIA et al. (*) (I)
9836 15557 -2645	I 977 0.4409	816.6 1.616	1967.58 69.7	0.706 20.4	107.5 2010.585	255.8 0.525 256.8 0.542	SCARDIA et al. (*) (II)
- 17031-5314	HDS2412Aa,Ab 8.7130	41.32 0.589	1999.45 133.8	0.622 94.1	73.6 2012.3540	185.2 0.630 181.1 0.639	CVETKOVIC
- 17176+1025	HDS 2445 4.6679	77.12 0.332	2004.47 100.9	0.402 93.6	82.9 2010.4784	263.5 0.264 262.3 0.276	CVETKOVIC
- 17191 -4638	BSO 13 AB 0.3778	953.0 13.341	1907.5 40.5	0.825 329.7	137.3 2010.629	257.2 10.267 257.4 10.338	SCARDIA et al. (*)
17294-3831	B 342 0.2913	1236. 1.38	2016. 73.	0.68 38.	103. 2008.54	112.9 0.384 113.7 0.375	HARTKOPF & HARSHAW
17335+5734	MLR 571 5.0594	71.15 0.128	2007.05 144.1	0.374 0.7	203.1 2009.45	143.9 0.080 134.3 0.082	GRIFFIN & MASON
10977 18015-1014	BU 47 0.8914	403.9 1.209	2013. 54.	0.478 339.8	85.3 2009.71	73.9 0.609 75.7 0.616	HARTKOPF & HARSHAW
18488-1836	KUI 88 0.3957	909.7 0.598	1865. 124.	0.341 232.	137.8 2003.64	155.9 0.503 155.6 0.506	HARTKOPF & HARSHAW
11837 18550+3053	A 258 0.2661	1353. 1.52	2007. 97.	0.67 32.	247. 2007.61	240.5 0.372 240.1 0.363	HARTKOPF & HARSHAW
19264+4928	YSC 134 788.091	0.4568 0.0270	2013.8054 139.8	0.1393 238.8	201.6 2012.574	217.1 0.027 170.5 0.028	DOCOBO et al. (**)
19027+4307	YSC 13 30.158	11.937 0.094	2014.324 44.4	0.761 267.3	41.4 2012.571	183.3 0.073 226.6 0.035	DOCOBO et al. (***)
12104 19083+5520	D 19AB 0.1260	2858. 2.95	1903. 100.	0.73 162.	190. 2009.74	343.8 0.477 343.2 0.471	HARTKOPF & HARSHAW

**NEW ORBITS (continuation)**

<b>ADS</b> $\alpha$ 2000 $\delta$	<b>Name</b> <b>n</b>	<b>P</b> <b>a</b>	<b>T</b> <b>i</b>	<b>e</b> $\omega$	$\Omega$ (2000) <b>Last ob.</b>	<b>2013</b> <b>2014</b>	<b>Author(s)</b>
- 19089+3404	COU 1462 15.5373	23.17 0.315	1993.93 83.8	0.692 273.3	38.4 2009.4306	211.3 0.240 213.3 0.240	DOCOBO & LING
13148 19556+5226	YR 2Aa,Ab 6.6567	54.08 0.141	2016.9 113.	0.484 259.9	216.7 2010.47	33.3 0.093 27.2 0.080	HARTKOPF & HARSHAW
13418 20080+4204	A 383 0.7947	453.0 0.478	2318.9 115.	0.678 94.	251. 2008.55	9.8 0.343 9.3 0.343	HARTKOPF & HARSHAW
- 20151+3742	COU 2416 6.3291	56.88 0.223	1995.77 37.8	0.477 248.7	95.7 2009.7583	127.0 0.270 130.0 0.273	DOCOBO & LING
- 20374+7536	HEI 7 11.7494	30.64 0.469	1996.75 34.4	0.629 46.9	26.4 2007.328	251.0 0.687 254.6 0.673	DOCOBO & ANDRADE
14638 21072-1355	STF2752AB 0.7091	507.7 3.876	2124.1 54.	0.450 349.9	335.5 2000.38	183.0 3.623 183.4 3.592	HARTKOPF & HARSHAW
15530 21597+4907	HU 774 4.2076	85.56 0.138	2046.06 20.8	0.528 254.2	98.8 2008.639	188.5 0.190 190.3 0.188	DOCOBO & ANDRADE
22134-3729	B 2056 4.3579	82.6 0.209	2016.4 114.	0.026 336.	155.8 2013.74	174.1 0.167 171.4 0.174	HARTKOPF & HARSHAW
22268-4537	HU 1334 0.8884	405.2 0.551	1976.0 149.	0.643 349.0	342.3 2008.54	242.5 0.354 241.1 0.360	HARTKOPF & HARSHAW

(\*) SCARDIA, PRIEUR, PANSECCHI & ARGYLE

(\*\*) DOCOBO, CAMPO, ANDRADE & HORCH

(\*\*\*) DOCOBO, CAMPO & HORCH

## NEW LINEAR FITS

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

ADS $\alpha$ 2000 $\delta$	Name -	$X_0$ $Y_0$	$X_A$ $Y_A$	$\rho_0$ $\theta_0$	$T_0$ Last ob.	2013 2014
- 00038-1317	XMI 1 -	0.003000 -0.208000	-0.117550 -0.001800	0.208 0.900	1765.8940 2003.7480	271.3 29.074 271.3 29.121
82 00076+4009	STF 3064 -	-8.784000 -20.195999	0.042850 -0.018630	22.023 336.500	1717.0031 2008.7350	8.6 26.011 8.7 26.021
- 00138-7442	HJ 3353 -	-1.815000 2.621000	-0.072540 -0.050220	3.188 214.700	1657.5811 1998.6000	298.9 31.536 298.9 31.571
561 00405+5632	H 518 AD -	-5.428000 12.768000	-0.057910 -0.024620	13.874 203.000	909.7330 2011.7510	281.7 70.807 281.7 70.832
671 00491+5749	STF 60 AD -	71.589996 -141.619003	-1.112060 -0.562160	158.685 26.800	1929.7010 2011.7200	353.1 189.756 353.2 190.029
716 00522-2237	STN 3 AC -	9.759000 7.641000	0.154940 -0.197900	12.394 128.100	2029.5950 1999.5630	146.4 13.063 146.0 13.031
- 00550+2406	ENG 3 -	9.142000 10.464000	0.177000 -0.155430	13.895 138.900	2163.4519 2003.8090	207.5 38.117 207.4 38.029
- 00559+5937	STI 146 -	0.118000 -7.330000	-0.085890 -0.001390	7.331 0.900	1877.4540 2010.6260	303.1 13.774 303.0 13.803
- 00591+5824	STI 1501 -	-2.764000 -0.557000	0.003810 -0.018890	2.820 281.400	1655.3970 2010.6290	349.2 7.449 349.2 7.456
- 01035+5019	STF 83 -	1.259000 -1.589000	-0.052340 -0.041450	2.027 38.400	1579.7841 2010.0010	312.4 29.009 312.4 29.036
- 01072+5752	STI 1537 -	0.232000 0.186000	0.112630 -0.140250	0.297 128.800	1860.5200 2010.6860	39.4 27.466 39.4 27.538
- 01182+5742	STI 1556 -	-0.763000 -10.358000	-0.036840 0.002710	10.386 355.800	2050.2571 2010.6750	3.3 10.476 3.2 10.474
- 01200+5747	STI 1571 -	5.191000 -4.802000	-0.099680 -0.107760	7.071 47.200	1950.2581 2011.8480	354.7 11.635 354.5 11.682

**NEW LINEAR FITS (continuation)**

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

<b>ADS <math>\alpha</math>2000<math>\delta</math></b>	<b>Name</b>	$X_0$ $Y_0$	$X_A$ $Y_A$	$\rho_0$ $\theta_0$	$T_0$ <b>Last ob.</b>	<b>2013 2014</b>
1176 01291+2143	HO 9 AD -	-28.871000 73.253998	-0.459220 -0.180990	78.739 201.500	1955.1940 2002.6370	221.5 83.784 221.6 83.851
1202 01321+1657	STF 132 AC -	-58.965000 32.083000	-0.107460 -0.197510	67.128 241.400	1975.2950 2007.6300	248.7 67.668 248.7 67.679
- 01402+7303	HJ 2055 AB -	2.310000 -4.006000	-0.043670 -0.025180	4.624 30.000	1563.8831 2007.9900	311.5 23.118 311.5 23.137
- 02080-0951	GAL 320 -	-2.214000 -5.854000	0.051560 -0.019510	6.259 339.300	2325.8770 2010.6200	269.3 18.338 269.3 18.317
1675 02096+4251	ES 48 -	-4.802000 7.525000	-0.144100 -0.091960	8.927 212.500	1928.4200 2008.6450	270.9 17.022 271.1 17.080
- 02129+5712	STTA 24 AC -	-64.516998 79.542999	-0.270550 -0.219440	102.418 219.100	1921.6121 2003.6400	236.3 107.273 236.4 107.315
- 02136+5104	STT 555 AB -	42.573002 -84.181999	-0.343760 -0.173850	94.335 26.800	2144.5840 2004.0610	55.1 107.055 55.0 106.982
- 02188+5714	BKO 168 AC -	-1.045000 2.933000	0.111470 0.039000	3.114 199.600	2039.1980 2007.1750	244.3 4.378 243.8 4.344
2081 02442+4914	STF 296 AC -	-16.910999 61.372002	-0.335500 -0.092450	63.659 195.400	1800.2590 2002.8500	244.7 97.694 244.8 97.799
2081 02442+4914	STF 296 BC -	-11.974000 65.098999	-0.316870 -0.058280	66.191 190.400	1825.8781 2007.9980	232.8 89.575 232.8 89.662
2472 03195-2145	JC 1 AC -	36.548000 14.377000	-0.041620 0.105000	39.274 111.500	1948.3060 1999.6890	122.1 39.961 122.1 39.970
- 03435+7247	LDS 1579 -	2.298000 -3.476000	0.136340 0.090150	4.167 33.500	1975.9690 2012.0551	89.0 7.375 89.3 7.429
3029 04096+3139	HO 327 AB -	-12.316000 -9.815000	-0.068790 0.086320	15.748 308.600	1928.4500 2012.8500	277.8 18.317 277.7 18.340

**NEW LINEAR FITS (continuation)**

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

<b>ADS</b> $\alpha$ <b>2000</b> $\delta$	<b>Name</b> -	$X_0$ $Y_0$	$X_A$ $Y_A$	$\rho_0$ $\theta_0$	$T_0$ <b>Last ob.</b>	<b>2013</b> <b>2014</b>
-	HJ 3641	-8.108000	0.004730	8.120	1883.1169	213.0 13.785
04148-6212	-	0.448000	0.085000	266.800	2003.9301	212.9 13.812
3321	STF B2 AC	48.105000	0.029780	48.887	1256.5630	31.4 135.686
04359+1631	-	8.704000	-0.164610	100.300	2011.9100	31.4 135.790
3384	DAW 81 BC	-0.159000	0.017530	0.168	1861.7581	17.4 8.333
04404-2935	-	-0.054000	-0.052150	288.600	2004.8320	17.4 8.355
-	HJ3 697	-11.904000	0.020000	12.880	2041.1379	254.3 12.968
04503-4119	-	4.918000	0.050110	247.600	1998.9900	254.2 12.966
3475	BU 883 AB,C	-2.056000	-0.086870	14.883	2008.9380	189.4 14.888
04512+1104	-	14.740000	-0.012120	187.900	2010.1400	189.5 14.889
3588	BU 314 AB,C	37.598999	0.142280	52.617	1962.8380	56.6 53.605
04590-1623	-	-36.807999	0.145340	45.600	2007.7860	56.7 53.620
-	STT 561 AB	122.907997	0.017360	123.046	1953.1390	282.9 125.006
05076+0928	-	-5.820000	-0.366680	272.700	2003.9750	282.9 125.032
-	HJ 3742	-16.146000	-0.052000	18.051	1807.1281	296.5 30.006
05135-5534	-	8.071000	-0.104040	243.400	2000.8900	296.5 30.043
3935	ES 1231 AC	-5.715000	0.033970	7.996	1673.5460	18.5 18.330
05225+4621	-	-5.593000	-0.034700	314.400	2011.2490	18.6 18.348
-	HJ 3757	-10.371000	0.095660	15.289	1938.3879	349.8 18.128
05232-3145	-	-11.234000	-0.088310	317.300	1999.0389	350.0 18.156
-	FAB 19 AC	1.014000	0.034420	1.215	1680.3000	36.7 20.864
05431-3516	-	0.668000	-0.052250	123.400	2010.5000	36.7 20.889
-	STI 579	2.475000	-0.018020	3.016	2248.7490	123.0 8.017
05446+6320	-	-1.724000	-0.025870	55.100	2012.0770	123.0 8.005
4566	STT 545 AC	-22.202999	-0.045550	26.046	1450.8621	300.5 55.488
05597+3713	-	13.617000	-0.074270	238.500	2007.1810	300.5 55.519

**NEW LINEAR FITS (continuation)**

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

ADS $\alpha$ 2000 $\delta$	Name -	$X_0$ $Y_0$	$X_A$ $Y_A$	$\rho_0$ $\theta_0$	$T_0$ Last ob.	2013 2014
-	HJ 3831 AC	-1.169000	-0.005900	1.173	1739.0210	188.2 19.536
06042-4109	-	-0.097000	0.070880	274.800	2010.5000	188.2 19.560
-	FRK 6 AB	-47.723999	-0.010160	47.772	1969.6410	279.1 48.782
06386+4020	-	2.142000	-0.226430	267.400	2002.9510	279.2 48.800
-	FRK 6 AC	62.009998	-0.009480	62.065	1933.3361	71.4 64.635
06386+4020	-	-2.604000	-0.225740	87.600	2002.9510	71.3 64.660
-	SIN 24 AC	61.924999	-0.124440	64.441	2055.6089	90.4 67.206
06565+4004	-	-17.830999	-0.432160	73.900	2004.1990	90.3 67.154
5871	STT 166 AC	13.882000	-0.015140	14.067	1987.4500	71.0 14.273
07128+2713	-	-2.275000	-0.092410	80.700	1998.7600	70.8 14.279
6126	STF 1104 AD	16.093000	0.194510	20.364	1798.9110	21.1 71.009
07294-1500	-	-12.478000	-0.250870	307.800	1999.9700	21.2 71.130
-	HJ 424 AB	1.823000	-0.014910	9.443	2903.6860	113.8 16.503
07309+2441	-	9.265000	0.002930	168.900	2006.1760	113.8 16.498
6189	DOO 42 AD	17.528000	0.056590	20.303	2079.6250	39.6 21.627
07345-1352	-	-10.246000	0.096810	59.700	1999.9980	39.7 21.611
6335	BU 580 AB	-0.493000	0.619670	7.243	1946.2111	76.2 42.234
07453+2802	-	-7.226000	-0.042290	356.100	2009.2080	76.2 42.478
6335	BU 580 AE	2.837000	0.625960	26.054	1554.2321	88.9 290.185
07453+2802	-	25.899000	-0.068580	173.800	1987.0400	88.9 290.460
6335	BU 580 AG	-10.413000	0.634860	151.270	2026.2150	352.9 151.498
07453+2802	-	-150.910995	-0.043800	356.100	2009.2080	353.0 151.484
-	ENG 33 AB	-84.748001	-0.097370	86.697	1914.6870	285.5 97.912
07549+1914	-	18.277000	-0.451480	257.800	2007.9950	285.6 97.997
-	ENG 33 AC	119.181999	-0.090780	121.528	1942.4110	63.6 125.894
07549+1914	-	-23.764000	-0.455270	78.700	2007.9950	63.5 125.943

## NEW LINEAR FITS

Authors: W. I. HARTKOPF & B. D. MASON

ADS $\alpha$ 2000 $\delta$	Name -	$X_0$ $Y_0$	$X_A$ $Y_A$	$\rho_0$ $\theta_0$	$T_0$ Last ob.	2013 2014
— 00073+2058	HDS 12 -	0.446977 -0.051678	-0.026746 -0.231335	0.450 83.40	2004.630 2012.7050	6.4 2.000 5.1 2.228
— 01377+4825	HDS 215 -	-0.083000 0.520979	-0.014014 -0.002233	0.528 189.05	1985.557 2012.7050	225.5 0.656 226.5 0.664
2156 02493-1033	STF 315 -	-0.272759 0.147130	-0.004511 -0.008362	0.310 241.66	2154.334 2013.6251	164.7 1.378 164.7 1.369
— 04245+5051	COU 2459 AB -	-0.018088 0.639477	0.023812 0.000674	0.640 181.62	1982.550 2012.7626	133.0 0.967 132.1 0.985
7552 09522+0807	A 2762 -	-0.221836 0.287877	0.009876 0.007611	0.363 217.62	2034.526 2013.0609	254.1 0.452 252.8 0.444
8981 13381+3910	STF 1769 AB -	1.034896 0.053408	-0.000457 0.008862	1.036 92.95	2146.707 2013.3043	44.1 1.575 44.3 1.569
12215 19145+3434	HO 648 AD -	11.406055 7.260119	-0.045549 0.071560	13.521 122.48	2107.759 2013.6302	91.7 15.730 92.0 15.686
14529 20599+4016	HDS 2989 Da,Db -	0.027848 -0.012502	-0.003106 -0.006918	0.031 65.82	2036.407 2012.7567	146.1 0.180 145.6 0.173
15896 22237+2051	STF 2900 AB -	0.030955 -0.000419	-0.000263 -0.019461	0.031 89.22	1978.441 2013.5703	1.9 0.673 1.8 0.693
— 23266+4520	YR 17Aa,Ab -	-0.121978 0.402442	-0.013966 -0.004233	0.421 196.86	2001.257 2012.6772	219.0 0.454 220.7 0.460



## ALEXEI A. KISELEV (1922-2013)

The Pulkovo Observatory regrets to announce that on September 30, 2013, the famous specialist in astrometry and stellar astronomy and member of IAU Commission 26, Professor Alexei Kiselev died at age of 91.

Alexei A. Kiselev was born February 28, 1922 in Petrograd. He headed the study of double and multiple stars as well as stars with invisible companions at the Pulkovo Observatory. Thanks to his efforts the 26-inch refractor of Pulkovo Observatory had been converted into the leading tool among telescopes of the same class around the world. He was the undisputed leader in the number and duration of the regular series of observations of the Solar System bodies and binary stars. His monograph “Theoretical Foundations of Photographic Astrometry” had become required reading for students and researchers specializing in the field of astrometry. Also he is the author of two Pulkovo catalogs of double star positions. In addition to the binaries, Prof. Kiselev paid great attention to the study of the Solar System. He was actively involved in the observations of the satellites of Mars and Halley’s Comet at the Pulkovo South Ordubad station. For his great contribution to the observation of the minor planets, No. 4592 was named in his honor Alkissia.

Natalia Shakht



Dr. Kiselev

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The deadline for contributions to Information Circular No. 182 is:

February 15th 2014

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