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Preliminary report

NEW ORBITAL ELEMENTS OF FIVE VISUAL BINARIES

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SUMMARY: This paper presents the orbital elements of five binary stars (2 new, 3 revised): WDS 00182N7256=ADS 243=A 803, WDS 01570N3101=ADS 1548=A 819, WDS 06159N0110=RST 5225, WDS 07011N1146=ADS 5689=STT 163 and WDS 15307N3810 = ADS 9682= Hu 1163. For each pair are given in addition to the orbital elements,the dynamical parallax, the mass, the absolute magnitudes, the measures, the residuals (O-C) and the ephemerides for the next ten years.

The orbital elements of the binary stars have been computed by using the method of Van den Bos (l926) and Popović-Pavlović (1995). The dynamical parallaxes were computed by the method of Baize and Romani (l946). The orbital elements with the dynamical parallaxes, the total masses, the absolute magnitudes and the major axes are given in Table 1, the ephemerides in Table 2. The measures and the comparison with measures are given in Table 3. The orbits 0f WDS 00182N7256 and WDS 07011N1146 are determined for the first time. The orbits by Zulevic (1981), Heintz (1975) and Couteau (1990) do not fit well the recent interferometric observations as evident from data next exposed:

	t	$(O-C)_\theta$	$(O-C)_\rho$	n	Obs.
Zulevic(1981),WDS 01570N3101:	1990.835	$+9\overset{\circ}{.}0$	$-0\overset{''}{.}16$	2	Prieto
Heintz(1975),WDS 06159N0110:	1989.9442	−25.9	−0.02	1	Hartkopf
Couteau(1990),WDS 15307N3810:	1992.544	+13.3	+0.02	1	COU

Table 1. Orbital elements

ADS	243	1548	–	5689	9682
Name	A 803	A 619	RST 5225	STT 163	HU 1163
WDS	00182N7256	01570N3101	06159N0111	07011N1146	15307N3810
mag.	8.1−8.4	8.2−8.7	7.1−7.1	7.1−8.4	8.5−8.8
Sp.	A3	F5	F5	A2	G5
P	296.69	183.52	29.82	629.32	234.31
n	1°.2134	1°.9617	12°.0772	0°.5720	1°.5364
T	1962.41	2050.52	1965.65	1980.75	1989.23
e	0.007	0.295	0.270	0.143	0.663
a	0″.36	0″.48	0″.175	0″.586	0″.286
i	60°.0	59°.1	37°.1	76°.4	11°.1
Ω	171°.0	149°.3	31°.1	142°.0	79°.9
ω	70°.0	217°.2	317°.8	269°.4	1°.5
πdyn	0″.0053	0″.0110	0″.125	0″.0047	0″.005
a(A.J.)	68.4	43.6	14.2	125.3	57.7
$\mathcal{M}$AB	3.67$\odot$	2.48$\odot$	3.10$\odot$	4.96$\odot$	3.50$\odot$
MA	1,70	3.41	2.58	0.45	1.97
MB	2.00	3.91	2.58	0.75	2.24
T_Ω	1905.29	2110.80	1966.20	2112.16	1989.00
T_υ	2052.44	2040.36	1952.45	1854.65	2102.84
A	−0″.1480	+0″.4064	+0″.1637	+0″.0983	+0″.0904
B	−0.1480	−0.0677	+0.0271	+0.0983	+0.2713
F	+0.3246	−0.1495	−0.0471	−0.4590	−0.2663
G	−0.1136	+0.3180	+0.1497	+0.3639	+0.0885
C	±0.2930	±0.2497	±0.0170	±0.5692	±0.0014
H	±0.1061	±0.3295	±0.0791	±0.0164	±0.0505

Table 2. Ephemerides

WDS	00182N7256		01570N3101		06159N0111		07011N1146		15307N3810	
t	θ	ρ	θ	ρ	θ	ρ	θ	ρ	θ	ρ
1996.00	298°.9	0″.21	224°.2	0″.29	30°.7	0″.13	89°.0	0″.15	130°.2	0″.12
1997.00	300.7	0.21	226.9	0.29	50.1	0.13	91.1	0.15	136.5	0.12
1998.00	302.4	0.22	229.6	0.28	68.6	0.13	93.1	0.15	142.3	0.13
1999.00	304.0	0.22	232.4	0.28	86.3	0.14	94.9	0.16	147.5	0.14
2000.00	305.5	0.23	235.2	0.28	102.7	0.14	96.7	0.16	152.3	0.14
2001.00	307.1	0.23	238.1	0.28	117.5	0.15	98.4	0.17	156.6	0.15
2002.00	308.5	0.23	241.1	0.27	130.6	0.16	100.0	0.17	160.7	0.16
2003.00	310.0	0.24	244.1	0.27	142.3	0.17	101.5	0.18	164.3	0.16
2004.00	311.3	0.24	247.1	0.27	152.5	0.18	102.9	0.18	167.7	0.17
2005.00	312.7	0.24	250.2	0.27	161.7	0.19	104.4	0.19	170.9	0.17

Table 3. Observations and residuals

WDS 00182N7256=ADS 243= A 803

t	θ	ρ	n	Obs.	$(O-C)_\theta$	$(O-C)_\rho$
1904.62	$175\overset{\circ}{.}2$	$0\overset{''}{.}33$	3	A	$+4\overset{\circ}{.}8$	$-0\overset{''}{.}03$
1916.70	176.6	0.31	2	A	−1.3	−0.04
1943.94	193.4	0.28	2	VBs	−6.0	0.00
1944.08	197.9	0.29	2	VBs	−1.6	+0.01
1945.97	195.6	0.31	3	VBs	−5.9	+0.04
1954.82	−	0.24	2	Mull	(212.7)	+0.01
1958.30	217.6	0.14	2	VBs	−.3	−0.08
1960.80	239	0.2	3	HEI	+16.9	−0.01
1962.725	232.0	0.12	3	B	+6.5	−0.09
1981.83	273.5	0.14	3	HEI	+4.7	−0.04
1983.0688	273.2	0.181	1	McAli	+1.5	0.00
1983.7104	276.8	0.191	1	McAli	+3.5	+0.01
1984.0547	275.8	0.178	1	McAli	+1.7	0.00
1984.7015	278.3	0.195	1	McAli	+2.7	+0.01
1985.8402	279.4	0.196	1	McAli	+1.2	+0.01
1985.8456	278.8	0.198	1	McAli	+0.6	+0.01
1986.8859	280.6	0.201	1	McAli	−0.1	+0.01
1987.7596	283.0	0.204	1	McAli	+0.4	+0.02

WDS 01570N3101= ADS 1548= A 819

t	θ	ρ	n	Obs.	$(O-C)_\theta$	$(O-C)_\rho$
1904.83	$131\overset{\circ}{.}8$	$0\overset{''}{.}53$	2	A	$2\overset{\circ}{.}3$	$0\overset{''}{.}11$
1910.7	136.1	0.42	3	GrO	0.2	−0.06
1917.26	143.o	0.50	2	A	1.3	−0.03
1924.78	144.1	0.61	1	Bail	−3.2	0.04
1938.28	158.1	0.64	4	VBs	1.8	0.05
1942.62	158.1	0.62	3	VOU	−1.0	0.03
1954.80	170.0	0.55	3	VBs	2.6	0.00
1956.02	163.8	0.63	3	B	−4.5	0.08
1956.98	168.1	0.64	3	COU	−0.9	0.10
1958.657	170.3	0.55	3	B	0.0	0.02
1962.961	170.6	0.46	4	WOR	−3.3	−0.05
1969.00	188.2	0.52	3	Heintz	8.8	0.05
1970.945	181.2	0.60	3	WOR	−0.2	0.14
1975.89	188.2	0.43	3	Heintz	1.1	0.00
1979.68	194.2	0.51	2	ZUL	2.1	0.11
1983.0662	194.6	0.365	1	McAli	−2.6	−0.01
1983.7131	198.0	0.367	1	McAli	−0.3	0.00
1984.7045	199.6	0.362	1	McAli	−0.3	0.00
1985.8375	201.4	0.342	1	McAli	−0.5	−0.01
1986.8888	203.5	0.331	1	McAli	−0.3	−0.01
1987.7572	205.7	0.319	1	McALI	0.2	−0.02
1990.835	211.7	0.32	2	PRIETO	−1.0	−0.01

WDS 06159N0110 = RST 5225

t	θ	ρ	n	Obs.	$(O-C)_\theta$	$(O-C)_\rho$
1946.19	$159\overset{\circ}{.}9$	$0\overset{''}{.}21$	3	RST	$-8\overset{\circ}{.}4$	$0\overset{''}{.}01$
1950.25	201.9	0.18	3	RST	5.1	−0.04
1958.00	266.3	0.18	3	VBs	13.4	0.00
1959.15	253.7	0.15	3	VBs	−11.5	−0.02
1959.21	265.8	0.14	4	B	−0.1	−0.02
1959.21	266.5	0.13	3	FIN	0.6	−0.03
1960.07	284.9	0.17	3	B	8.2	0.02
1960.198	269.5	0.20	1	VBs	−10.6	0.05
1960.22	279.1	0.13	5	FIN	0.4	−0.02
1961.88	298.5	0.13	4	B	−6.4	0.00
1962.19	300.9	0.135	5,4	FIN	−9.6	0.00
1964.19	343.9	0.122	3	FIN	−6.3	0.00
1964.27	315.3	0.17	2	Hol	−36.5	0.05
1965.20	11.5	0.121	3	FIN	0.6	0.00
1966.19	43.4	0.115	4	FIN	12.7	−0.01
1976.8603	182.5	0.220	1	McAli	7.5	0.01
1977.1799	187.8	0.224	1	McAli	10.4	0.02
1980.1588	201.6	0.236	1	McAli	1.1	0.01
1980.7828	203.0	0.230	1	Budinov	1.2	0.01
1980.8876	207.0	0.240	1	McAli	1.8	0.02
1980.910	203.7	0.219	1	Tokovin	1.4	0.00
1983.0667	220.2	0.208	1	McAli	4.0	−0.01
1984.0579	223.3	0.222	1	McAli	0.5	0.01
1985.745	211.8	0.159	1	Tokovin	−23.3	−0.04
1985.8544	237.3	0.203	1	McAli	1.3	0.00
1986.8921	244.7	0.193	1	McAli	0.2	0.00
1987.2744	248.7	0.186	1	McAli	0.7	0.00
1989.9442	274.6	0.155	1	Hartkopf	−3.0	0.00

WDS 07011N1146 = ADS 5689 = STT 163

t	θ	ρ	n	Obs.	$(O-C)_\theta$	$(O-C)_\rho$
1848.57	$320\overset{\circ}{.}7$	$0\overset{''}{.}57$	3	STT	$0\overset{\circ}{.}4$	$-0\overset{''}{.}01$
1898.18	327.4	0.52	1	SBn	−1.1	0.04
1934.123	325.4	0.4	3	Bz	−13.9	0.08
1949.93	347.6	0.25	3	VBs	−0.7	0.01
1950.19	340.0	0.22	3	MULL	−8.7	−0.02
1952.65	351.6	0.20	4	VBs	1.0	−0.03
1956.19	355.0	0.22	1	MULL	0.8	0.01
1958.925	354.6	0.15	1	B	−2.5	−0.05
1958.59	3.6	0.18	2	VBs	7.0	−0.02
1984.058	56.6	0.116	1	McAli	0.9	0.00
1984.9998	55.0	0.116	1	McALi	−3.7	0.00
1985.8408	62.3	0.121	1	McAli	0.9	0.00
1986.8866	64.9	0.120	1	McAli	0.2	0.00

WDS 15307N3810=ADS 9682=HU 1163

t	θ	ρ	mag.	n	Obs.	$(O-C)_\theta$	$(O-C)_\rho$
1905.38	$265\overset{\circ}{.}9$	$0\overset{''}{.}41$	8.2−8.5	2	HU	$+0\overset{\circ}{.}2$	$-0\overset{''}{.}04$
1911.4	268.2	0.45		6	Gro	−0.4	+0.01
1921.56	274.6	0.41		6	Chan 3,VBS 3	+0.8	−0.00
1940.11	288.9	0.34		4	Bz	+3.4	−0.01
1944.28	287.9	0.36	8.5−8.8	3	VBS	−0.8	+0.03
1948.63	289.5	0.35		2	VBS	−3.0	+0.03
1958.454	299.0	0.29	8.6−8.8	1	BOS	−4.3	+0.02
1958.555	308.1	0.24	8.5−8.8	3	BOS	+4.7	−0.03
1958.59	308.3	0.27	8.5−8.8	3	VBS	+4.8	0.00
1958.75	309.2	0.25		3	COU	+5.5	−0.02
1961.63	303.8	0.32		4	B	−3.9	+0.07
1962.31	308.2	0.23		3	COU	−0.5	−0.02
1966.41	318.9	0.23		3	MULL	+3.2	+0.01
1984.3782	27.4	0.118		1	McAli	+0.5	+0.01
1985.4814	38.4	0.113		1	McAli	+2.4	+0.01
1987.2644	50.6	0.l09		1	McAli	−1.6	+0.01
1992.544	102.4	0.156		1	LING	−0.9	+0.05
1992.544	102.2	0.129		1	DOC	−1.1	+0.03
1992.544	104.9	0.130		1	COU	+1.6	+0.03

Epoch 2000

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НОВИ ПУТАЊСКИ ЕЛЕМЕНАТИ ЗА ПЕТ СИСТЕМА ВИЗУЕЛНО ДВОЈНИХ ЗВЕЗДА

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Претходно саопштење

За системе ADS 243 и ADS 5689 одређени су по први пут путањски елементи. Користећи нова интерферометријска мерења за системе: ADS 1548, RST 5225 и ADS 9682, одређени су нови путањски елементи, паралакса, маса као и друге астрофизичке величине.