

CD Double Star Measures: Jack Jones Memorial Observatory Report #4

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Abstract: This paper submits 62 CCD measurements of 53 multiple star systems for inclusion in the WDS. With certain exceptions, observations were made during the calendar year 2006. Measurements were obtained using either an SBIG ST-7 CCD camera or an SBIG ST-8 CCD camera and an 11-inch SCT.

Introduction

Observations and measurements made during the calendar year 2006 are reported. Stars observed in years other than 2006 and were also observed in 2006 are included. Thus CHE 3AB includes observations for 2004.641 and 2006.805.

Observations were made using a Celestron 11-inch (28 cm) f/10 SCT with a Meade f/6.3 focal reducer/field flattener. This combination yields a pixel scale of approximately 0.95 arcsec/pixel. An SBIG-ST7 camera with a Kodak KAF-401E non anti-blooming (NAB) sensor was used for all observations except a single image in 2009. That image was taken with an SBIG ST-8 with a Kodak KAF-1603ME NAB sensor.

Multiple images of each target were solved using "Astrometrica". Position Angle and Separation and their associated standard deviations were then computed from the RA and Dec of the primary and secondary using a VB Script written by the author. The UCAC-2 catalog was used in most cases for image solution. Where UCAC-2 was unavailable or didn't

provide adequate reference stars, USNO-B1.0 was used. The precision of each observation was quantified by calculating the standard deviation of the image set.

Results and Discussion

Position Angle and Separation measurements are reported in columns PA and SEP respectively in Table 1. The precision of PA and SEP is reported in ERR columns associated with PA and SEP and refers to the standard deviation of PA and SEP for the image set. Column N indicates the number of nights that contributed to the measurement. NAME, RA DEC, and MAGS columns are taken from the WDS.

00204+2617 CHE 6

(Theta = 194 , Rho =12.5 , mag 13.11, 14.4) was discovered by P.S. Chevalier in 1907 and was observed a second time in 2004 by access to Digital Sky Survey images utilizing the Aladin applet. (Harshaw, 2004) The WDS Precise Coordinate is listed as 002027.11+261653.1.

It appears that this double consists of Nomad 1162-0005106 and 1162-0005104. The coordinate of

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NOMAD 1162-0005106 is 002018.137+261643.28

20352+3755 SEI 1182

(Theta = 117, Rho = 8.9, mag 9.93, 9.9) was discovered by J. Scheiner in 1895 and was observed a second time in 2008. The WDS Precise Coordinate is listed as 203519.25+375457.2.

There is a magnitude 9.8 star located at 203519.259+375457.32 (NOMAD). However there is no possible companion within 30 arcsec of that star.

There is a pair (mag 10.5, 10.8) consisting of NOMAD 1279-0529523 and 1279-0529539. The coordinate of NOMAD 1279-0529523 is 203510.852+375405.26. It appears that this is the pair being observed as SEI 1182.

Acknowledgements

This research made use of the Washington Double Star Catalog maintained at the U.S. Naval Observatory and the VizieR catalogue access tool, CDS, Strasbourg, France.

References

Harshaw, R., 2004, Webb Soc., Double Star Circ. 12, 62-94

NAME	RA DEC	MAGS	PA	ERR	SEP	ERR	DATE	N	NOTES
LDS3117	00043+2829	14.28 14.42	5.9	0.05	67.72	0.03	2006.775	1	
POU 8	00119+2531	11.31 13.0	278.1	0.06	21.95	0.02	2006.783	1	
POU 14	00159+2526	12.6 13.0	117.3	0.06	15.19	0.02	2006.823	2	
HJ 620	00194+3108	10.39 13.4	190.9	0.06	14.15	0.02	2006.917	1	
CHE 3AB	00195+2634	13.6 14.2	62.2	0.06	16.40	0.008	2004.641	1	
CHE 3AB	00195+2634	13.6 14.2	62.1	0.17	16.45	0.04	2006.805	2	
CHE 3AC	00195+2634	13.9 14.8	21.6	0.09	28.92	0.09	2006.805	2	
CHE 6	00204+2617	13.11 14.4	185.3	0.12	12.00	0.05	2006.823	1	
CHE 8	00209+2655	12.15 13.59	325.3	0.11	18.07	0.05	2006.826	1	
CHE 12	00220+2726	12.86 13.24	199.7	0.05	14.67	0.03	2006.779	2	
Che 12	00220+2726	12.86 13.24	199.4	0.11	14.66	0.02	2009.665	1	
CHE 17AB	00234+2624	12.48 12.86	221.6	0.05	12.71	0.03	2004.641	1	
CHE 17AB	00234+2624	12.48 12.86	221.8	0.10	12.71	0.01	2006.801	2	
CHE 17AC	00234+2624	12.48 14.78	220.1	0.18	20.72	0.03	2006.823	2	
STF 28	00239+2930	8.32 8.55	223.9	0.05	32.98	0.02	2006.783	1	

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NAME	RA DEC	MAGS	PA	ERR	SEP	ERR	DATE	N	NOTES
CHE 21	00243+2731	13.12 13.51	158.9	0.07	18.79	0.10	2006.772	1	
CHE 25	00250+2653	11.89 13.43	80.7	0.02	23.94	0.01	2006.784	3	
CHE 26	00252+2743	11.93 12.17	231.9	0.03	18.66	0.02	2006.793	3	
SEI 7AB	00409+3301	10.69 11.17	170.9	0.03	15.03	0.006	2006.917	1	
SEI 7AC	00409+3301	10.69 13.0	291.1	0.03	26.41	0.02	2006.917	1	
POU 322	03561+2404	12.14 13.36	309.0	0.11	14.76	0.03	2006.786	1	
POU 334	03581+2340	9.81 13.6	341.2	0.18	16.37	0.08	2006.788	1	
POU 335	03582+2428	13.1 13.8	138.8	0.15	6.72	0.02	2006.788	1	
POU 337	03584+2341	11.14 14.3	49.2	0.25	11.53	0.08	2006.788	1	
POU 339	03588+2402	12.30 12.96	186.8	0.04	14.89	0.05	2006.786	1	
POU 357	04029+2406	11.91 13.07	101.7	0.06	12.31	0.008	2006.763	1	
SMA 69	07020+2910	11.81 13.3	268.9	0.10	16.32	0.02	2006.122	1	
SMA 70	07024+2856	11.61 12.18	283.5	0.09	11.92	0.007	2006.122	1	
SEI 472	07096+3134	10.32 11.48	185.3	0.03	18.20	0.03	2006.122	1	
SEI 473AB	07120+3112	9.8 10.5	60.2	0.14	13.10	0.01	2006.122	1	
BKO 109AC	07120+3112	9.8 13.2	261.7	0.09	11.39	0.03	2006.122	1	
SEI 474	07127+3051	10.27 11.6	325.1	0.08	14.67	0.03	2006.122	1	
HO 31	07139+2957	10.70 11.2	10.5	0.03	11.16	0.02	2006.122	1	
SEI 475	07154+3209	11.91 12.34	287.0	0.07	16.71	0.02	2006.122	1	
SEI 476	07159+3132	11.0 11.0	47.8	0.04	16.37	0.07	2006.122	1	
SEI 479	07269+3054	10.61 10.76	41.3	0.08	15.06	0.02	2006.122	1	
HJ 2483	09119+3608	10.34 11.64	194.6	0.02	15.51	0.006	2006.122	1	
POU3089	10474+2355	13.5 14.1	193.8	na	11.99	na	2006.339	1	1
POU3094	11018+2235	13.1 13.9	280.3	0.09	12.39	0.03	2006.333	2	
ELS 1	11034+2145	9.86 10.1	358.5	0.09	12.64	0.03	2006.333	1	
KZA 3	11082+3522	10.48 12.0	115.0	0.07	17.61	0.02	2006.311	1	
KZA 6	11096+3545	12.5 13.0	101.5	0.08	26.23	0.03	2006.311	1	
HJ 494	11131+4011	10.70 10.85	140.8	0.07	30.99	0.05	2006.311	1	
POU3097	11141+2258	11.94 13.6	319.7	0.10	11.53	0.01	2006.316	1	
SEI 525	11285+3113	10.96 12.01	144.6	0.05	15.00	0.01	2006.142	1	

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NAME	RA DEC	MAGS	PA	ERR	SEP	ERR	DATE	N	NOTES
HJ 2583	11437+1331	9.71 9.92	61.3	0.02	33.12	0.03	2006.142	1	
HJ 2681	13469+3307	12.55 12.92	263.0	0.05	13.64	0.02	2006.142	1	
HJ 2800	15573+3005	9.83 12.73	279.6	0.07	14.30	0.01	2006.358	1	
HJ 579	16002+3746	9.54 12.0	102.1	0.02	30.70	0.10	2006.358	1	
HLM 19	19132+3908	11.87 12.9	330.1	0.06	12.36	0.01	2005.538	5	
SEI 997	20121+3938	11.2 11.5	146.4	0.10	10.32	0.01	2006.775	1	
HJ 1533	20317+4540	12.01 12.0	187.4	0.04	10.92	0.01	2006.775	1	
SEI1179	20351+3725	10.0 10.5	69.2	0.06	26.96	0.03	2006.616	1	
SEI1182	20352+3755	9.93 9.9	115.9	0.19	8.84	0.03	2006.616	1	
SEI1188AB	20362+3737	10.64 11.29	77.4	0.05	15.45	0.02	2006.616	1	
SEI1187BC	20362+3737	9.0 11.0	272.8	0.007	22.70	0.05	2006.616	1	
TOB 191BD	20362+3737	11.9 12.7	134.3	0.02	37.52	0.02	2006.616	1	
HJ 1555	20376+4504	10.32 11.69	354.3	0.02	13.81	0.005	2006.775	1	
HJ 1487	20090+4045	10.6 13.6	297.5	0.06	14.29	0.05	2006.772	1	
ES 2702	20500+4521	8.9 13.9	347.8	0.17	8.54	0.008	2006.796	1	
WOR 12AC	22571+2800	10.01 13.1	15.8	0.08	14.29	0.02	2006.823	1	
KU 138	23205+3229	9.73 11.48	50.4	0.01	36.35	0.01	2006.823	1	

Table Note:

1. Based on 2 images

