

# Double Star Measures Using a DSLR Camera #3

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**Abstract:** This article contains measures by the author made with a DSLR camera. The images used for the measures were taken in the period between 2007.276 - 2007.284. The result is 185 positive and 7 negative measures.

## Introduction

Continuing the measures of my photos taken in 2007, the next results to come are from the measuring period between 11 Apr – 14 Apr 2007. The equipment used for photographing and the methods of photo processing and measuring are the same as those detailed in my previous article (Berko, 2008). Therefore, I would only like to note that I was working with a Canon 350D digital camera with a 35.5 cm Newtonian telescope and focal length increased to 4200 mm. The pictures were measured with Florent Losse's program (Reduc 3.85). I used approximately 1490 photos for the present publication. It contains the data of 1855 independent measures of 192 pairs.

Also, the structure of the tables, the contents of the notes section and the appendix with the images have all been created according to the previous publications.

In the case of some doubles, when the available measures show a significant deviation in the parameters, I tried to explore the reason of this difference. I downloaded the DSS images of the area (POSS 1 Blue and POSS 2 IR): in these it can be checked if the doubles under scrutiny changed in the period between the different measures. In some cases it has been proved that the proper motion of one of the components causes this change. I employed the same method when I could not identify a double in or near the position given by WDS.

I have also included images of some of the doubles I measured, Figures 1 through 6. The complete image archive of the article and table referring to the photos can be accessed at <http://csillag.bacska.hu/dcam/JDSO/2009 2/>.

## Acknowledgements

I would especially like to thank the work of Ágnes Kiricsi, who has helped a lot in this publication with the English translations and the correspondence.

## References

- Berko, E., 2008, "Double Star Measures Using a DSLR Camera", JDSO, 4, 144.
- Berkó, E. and G. Vaskúti, 2009, "The Peculiarities of the SEI 105 System", pg 177, this issue.

## Double Star Measures Using a DSLR Camera #3

RA +/- Dec	Discoverer	Mags	PA	+/-	Sep	+/-	Epoch	N	Notes
04067+6221	CTT 7	8.08 9.47	215.15	0.10	44.17	0.06	2007.284	16	1
04076+6222	Anon. 1	14.2 14.4	0.88	0.24	11.84	0.06	2007.284	2	2
04078+6220	STF 485AC	6.91 10.39	355.53	0.72	10.83	0.06	2007.284	4	3
04078+6220	STF 485AE	6.91 6.94	304.06	0.19	17.90	0.06	2007.284	14	4
04078+6220	STF 485AF	6.91 12.2	318.56	0.53	36.07	0.01	2007.284	5	4
04078+6220	STF 484AG	6.91 9.63	259.15	0.28	60.15	0.06	2007.284	9	4
04078+6220	STF 484AH	6.91 10.5	255.29		57.42		2007.284	1	4
04078+6220	STF 484AI	6.91 9.81	277.87	0.19	69.90	0.06	2007.284	15	4
04078+6220	STF 485AL	6.91 10.4	70.73	0.10	98.02	0.06	2007.284	5	4
04078+6220	HZG 2AN	6.91 9.62	205.37	0.07	116.34	0.04	2007.284	3	4
04078+6220	STF 485AO	6.91 9.40	76.90	0.08	138.97	0.05	2007.284	6	4
04078+6220	STF 485EC	6.94 11.7	86.98		14.12		2007.284	1	5
04078+6220	STF 485EF	6.94 11.9	331.53	0.27	19.51	0.07	2007.284	8	5
04078+6220	STF 485EG	6.94 9.63	244.37	0.28	49.27	0.06	2007.284	9	5
04078+6220	STF 484EH	6.94 10.5	239.12	0.27	47.70	0.10	2007.284	2	5
04078+6220	STF 484EI	6.94 9.81	269.58	0.17	54.58	0.07	2007.284	14	5
04078+6220	STF 484GH	9.63 10.5	133.00		3.95		2007.284	1	6
04078+6220	STF 484GI	9.63 9.81	333.96	0.20	23.24	0.07	2007.284	8	6
04078+6220	STF 484HI	10.5 9.81	330.82		27.26		2007.284	1	7
04078+6220	HZG 2LO	10.4 9.40	91.26	0.14	42.81	0.06	2007.284	11	8
04078+6220	HZG 2OP	9.40 12.0	227.96	0.32	17.29	0.06	2007.284	9	9
04079+6217	STI 492	10.8 11.1					2007.284		10
05062+3721	ALI 527	11.5 12.6	74.06	0.13	19.92	0.05	2007.282	17	11
05063+3728	ES 2339	10.7 10.7					2007.282		12
05063+3722	SEI 60	11.95 12.60					2007.282		13
05073+3726	SEI 64	10.8 11.0	326.38	0.71	8.49	0.08	2007.282	9	14
05100+3747	SEI 82	11.11 11.29	224.99	0.15	13.66	0.05	2007.282	18	15
05103+3718	STF 644AB	6.96 6.78					2007.279		16
05103+3718	VBS 10AC	6.96 10.48	191.72	0.22	72.50	0.08	2007.279	6	17
05104+3742	SEI 85	10.8 11.0	312.78	0.37	15.50	0.05	2007.282	12	18
05104+3741	SEI 84AB	10.35 11.02	177.22	0.15	13.73	0.04	2007.282	17	19
05104+3741	Anon. 2Ax	10.35 14.0	28.14		8.57		2007.282	1	19
05107+3707	SEI 86AB	11.2 11.7	279.86	0.18	23.65	0.06	2007.279	14	20
05107+3707	Anon. 3Ax	11.2 12.7	3.99	0.25	20.82	0.07	2007.279	12	20
05108+3707	Anon. 4AB	12.7 14.5	331.99	0.23	8.86	0.05	2007.279	7	21
05108+3707	Anon. 4AC	12.7 13.0	341.67	0.15	19.23	0.05	2007.279	17	21
05111+3718	BLL 13	8.80 9.48	241.66	0.03	135.55	0.07	2007.279	11	22
05111+3710	MLB 974AB	10.0 11.5	292.43	0.32	8.67	0.05	2007.279	13	23
05111+3710	MLB 974AC	10.0 12.5	340.68	0.28	13.37	0.07	2007.279	10	23
05111+3708	SEI 88AB	10.5 11.0	44.11	0.34	14.90	0.07	2007.279	11	24
05111+3708	Anon. 5Bx	11.0 14.5	290.65		4.13		2007.279	1	24
05111+3707	Anon. 6AB	10.9 13.5	160.80	0.27	8.02	0.05	2007.279	13	25
05111+3707	Anon. 6AC	10.9 13.4	327.68	0.25	13.71	0.04	2007.279	17	25

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## Double Star Measures Using a DSLR Camera #3

RA +/- Dec	Discoverer	Mags		PA	+/-	Sep	+/-	Epoch	N	Notes
05113+3712	SEI 89	11.22	11.74	256.31	0.09	27.21	0.04	2007.279	18	26
05118+3655	Anon. 7	12.2	13.0	193.09	0.25	11.78	0.07	2007.279	12	27
05120+3717	Anon. 8	13.0	13.5	14.97	0.22	8.68	0.06	2007.279	11	28
05121+3650	SEI 94	11.0	11.0	177.39	0.24	17.13	0.06	2007.279	11	29
05123+3719	SEI 95AB	11.0	11.0	151.76	0.10	22.69	0.03	2007.279	11	30
05123+3719	Anon. 9Ax	11.0	13.5	112.70	0.19	23.89	0.04	2007.279	11	30
05126+3657	SEI 99	10.2	11.0	102.87	0.16	19.33	0.06	2007.279	15	31
05127+3727	SEI 101	11.0	12.3	156.46	0.18	14.41	0.08	2007.279	6	32
05130+3753	SEI 103AB	11.0	11.0	13.32	0.12	21.59	0.08	2007.279	14	33
05130+3753	Anon.10Bx	11.0	13.0	351.12	0.36	12.91	0.07	2007.279	13	33
05130+3748	SEI 102	10.5	11.0	84.27	0.38	9.83	0.07	2007.279	16	34
05133+3720	SEI 105AB	6.48	11.0	27.32	0.30	34.08	0.07	2007.279	8	35
05133+3720	Anon.11BC	11.0	12.0	287.95		4.40		2007.279	1	35
05134+3727	SEI 106AB	11.0	11.0	120.89	0.58	6.70	0.06	2007.279	8	36
05134+3727	Anon.12xy	12.2	12.5	2.34	0.12	40.06	0.07	2007.279	8	36
05134+3727	Anon.12xz	12.2	12.5	354.62	0.04	43.49	0.07	2007.279	9	36
05135+3725	SEI 107	10.3	11.0	4.49	0.09	38.02	0.06	2007.279	10	37
05136+3749	SEI 110	10.7	11.0	348.22	0.44	10.98	0.07	2007.279	6	38
05136+3747	Anon.13	12.8	14.0	74.38	0.35	7.67	0.05	2007.279	4	39
05136+3729	SEI 108	10.5	11.0	300.10	0.49	12.55	0.08	2007.279	8	40
05137+3755	SEI 111	9.6	11.6	105.70	0.45	19.74	0.09	2007.279	8	41
05172+3755	SEI 150	10.8	13.0	287.61	0.22	25.12	0.05	2007.279	14	42
05173+3755	Anon.14	13.0	14.5	77.54	0.24	5.97	0.07	2007.279	7	43
05174+3753	SEI 151	10.0	11.0	290.69	0.28	13.14	0.03	2007.279	14	44
05177+3801	SEI 158	10.7	11.0	147.94	0.19	23.94	0.06	2007.279	16	45
05177+3757	SEI 156AB	10.7	10.8	243.64	0.13	24.93	0.06	2007.279	18	46
05177+3757	Anon.15Bx	10.8	13.0	42.84	0.35	6.39	0.04	2007.279	5	47
05178+3805	SEI 159AB	9.7	11.0	65.95	0.20	13.10	0.06	2007.279	18	48
05178+3805	Anon.16Ax	9.7	13.3	26.46	0.34	12.47	0.06	2007.279	10	48
05178+3805	Anon.16Ay	9.7	14.6	288.84	0.21	17.21	0.06	2007.279	8	48
05178+3805	Anon.16Az	9.7	14.7	101.55	0.27	18.10	0.05	2007.279	11	48
05179+3758	SEI 161	9.7	11.0	310.24	0.17	13.38	0.05	2007.279	16	49
05182+3800	ALI 536	12.43	12.88	163.15	0.32	7.28	0.04	2007.279	16	50
05185+3800	SEI 171	11.0	11.0	169.55	0.23	7.80	0.05	2007.279	10	51
05186+3745	SEI 172	9.7	11.4	2.33	1.20	5.71	0.11	2007.282	3	52
05186+3745	SEI 173	9.7	11.0	101.44	0.25	8.84	0.07	2007.282	6	53
05195+3759	Anon.17	13.0	14.0	55.60	0.30	9.30	0.07	2007.279	4	54
05197+3755	SEI 184	11.0	11.0	109.26	0.12	25.16	0.06	2007.279	7	55
05198+3756	Anon.18AB	12.7	13.5	112.13	0.30	16.70	0.05	2007.279	5	56
05198+3756	Anon.18BC	13.5	14.0	84.19		8.92		2007.279	1	57
05198+3755	SEI 188	10.0	11.0	157.39	0.33	15.26	0.06	2007.279	12	58
05199+3928	ALI1054	11.5	13.6	341.83	0.08	10.58	0.08	2007.279	3	59
05201+3923	Anon.19	13.0	14.0	182.08	0.29	9.84	0.07	2007.279	7	60

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## Double Star Measures Using a DSLR Camera #3

RA +/- Dec	Discoverer	Mags	PA	+/-	Sep	+/-	Epoch	N	Notes
05201+3921	HJ 3272AB	7.44 11.4	343.69	0.42	17.57	0.05	2007.279	9	61
05201+3921	HJ 3272AC	7.44 11.1	294.69	0.28	28.32	0.08	2007.279	13	61
05201+3921	HJ 3272AD	7.44 10.4	46.94	0.08	32.50	0.05	2007.279	9	61
05201+3921	BUP 77AE	7.44 9.16	319.22	0.04	188.91	0.06	2007.279	14	61
05201+3921	ABH 28AF	7.44 12.56	234.98	0.11	50.75	0.10	2007.279	9	61
05201+3921	ABH 28AG	7.44 11.72	216.78	0.10	48.65	0.08	2007.279	9	61
05201+3921	ABH 28AH	7.44 13.08	199.91	0.19	43.87	0.05	2007.279	9	61
05201+3921	ABH 28AI	7.44 15.4	147.48	0.65	26.78	0.06	2007.279	7	61
05201+3921	ABH 28AJ	7.44 12.05	156.19	0.15	86.69	0.06	2007.279	11	61
05201+3921	ABH 28AK	7.44 14.01	179.84	0.37	89.80	0.07	2007.279	3	61
05201+3921	ABH 28AL	7.44 12.29	291.34	0.11	62.24	0.08	2007.279	8	61
05201+3921	ABH 28AM	7.44 14.9	286.87	0.10	80.97	0.08	2007.279	7	61
05201+3921	ABH 28AN	7.44 14.1	276.65	0.07	86.97	0.06	2007.279	7	61
05201+3921	ABH 28AO	7.44 12.88	253.81	0.10	84.12	0.08	2007.279	8	61
05201+3921	ABH 28AP	7.44 12.74	242.94	0.02	121.02	0.09	2007.279	6	61
05201+3921	ABH 28AQ	7.44 13.82	227.42	0.03	135.27	0.06	2007.279	7	61
05201+3919	Anon. 20	13.0 13.5	173.61	0.41	5.13	0.10	2007.279	6	62
05201+3918	Anon. 21AB	12.8 13.5	345.79		8.71		2007.279	1	63
05201+3918	Anon. 21BC	13.5 13.6	88.82		2.90		2007.279	1	63
05202+3924	Anon. 22	13.5 13.5	100.06	0.29	7.51	0.09	2007.279	6	64
05202+3918	Anon. 23	13.5 13.6	272.90	0.29	7.70	0.09	2007.279	9	65
05216+3752	SEI 206	10.20 11.38	86.81	0.15	19.49	0.04	2007.279	16	66
05227+3758	Anon. 24	12.7 14.0	77.73	0.20	16.58	0.06	2007.279	12	67
05227+3755	SEI 219	11.0 11.0	123.06	0.21	11.08	0.04	2007.279	16	68
05228+3754	Anon. 25	13.8 14.0	163.96	0.21	8.17	0.05	2007.279	13	69
05231+3802	SEI 225	10.0 10.5	87.42	0.10	26.31	0.07	2007.279	16	70
05234+3802	Anon. 26	14.3 14.6	295.53	0.31	9.91	0.07	2007.279	9	71
05234+3758	Anon. 27	12.8 13.8	82.01	0.19	15.73	0.08	2007.279	13	72
05236+3803	Anon. 28AB	13.4 13.5	323.56	0.24	11.01	0.06	2007.279	10	73
05236+3803	Anon. 28AC	13.4 14.5	178.47	0.24	14.51	0.06	2007.279	10	73
05256+3803	STF 699AB	7.90 8.61	344.60	0.27	8.57	0.08	2007.282	11	74
05256+3803	WAL 39AC	7.90 13.11	336.98		50.89		2007.282	1	75
05256+3803	WAL 39BC	8.61 13.11	335.70		43.41		2007.282	1	76
05262+3808	SEI 250	11.6 12.1	127.43	0.08	10.51	0.00	2007.282	2	77
05264+3804	SEI 255	10.3 12.4	89.98	0.32	14.74	0.06	2007.282	7	78
05403+3757	SEI 367	11.5 11.7	348.04	0.24	11.93	0.03	2007.276	16	79
05404+3752	Anon. 29	13.5 13.5	311.02	0.05	5.59	0.00	2007.276	2	80
05406+3703	Anon. 30	14.0 14.5	201.09	0.29	7.19	0.02	2007.276	6	81
05412+3658	TOB 36AB	12.33 13.8	124.17	0.17	29.92	0.05	2007.276	17	82
05412+3658	Anon. 31Ax	12.33 14.5	90.73	0.42	16.89	0.07	2007.276	8	82
05413+3659	SEI 371AB	11.0 11.0	127.20	0.18	23.84	0.05	2007.276	11	83
05413+3659	Anon. 32Bx	11.0 12.5	250.96		2.57		2007.276	1	83
05422+3710	SEI 375	10.4 12.4	180.76	0.16	29.87	0.06	2007.276	13	84

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RA +/- Dec	Discoverer	Mags	PA	+/-	Sep	+/-	Epoch	N	Notes
05425+3717	SEI 377	9.9 11.9	172.83	0.07	29.52	0.07	2007.276	15	85
05427+3756	SEI 378	10.99 12.01	110.40	0.17	14.94	0.03	2007.276	19	86
05446+2901	STF 783	8.05 9.70	0.07	0.40	8.44	0.07	2007.276	16	87
05474+2858	HJ 709	11.0 12.2	114.49	0.52	9.09	0.04	2007.276	11	88
05494+3742	SEI 387	11.0 11.0	95.73	0.07	44.10	0.08	2007.276	10	89
05496+3701	SEI 388AB	10.6 11.6	166.49	0.43	5.70	0.06	2007.276	7	90
05496+3701	SEI 389AC	10.6 11.6	135.72	0.17	28.52	0.06	2007.276	9	90
05499+3701	Anon.33	11.0 13.0	332.18	0.11	5.90	0.07	2007.276	2	91
05506+3648	SEI 393	10.5 11.0	24.44	0.13	27.23	0.06	2007.276	14	92
05514+3535	HJ 710	10.0 10.0	300.49		6.67		2007.276	1	93
05514+3506	SEI 394	10.15 10.78	325.99	0.20	14.32	0.03	2007.276	16	94
05523+3442	GYL 87	10.3 10.7	326.94	0.22	10.38	0.04	2007.276	16	95
05524+3618	AG 101	9.6 11.1	353.67	0.12	22.96	0.05	2007.276	11	96
05530+3624	HJ 5540	10.65 11.59	285.69	0.38	13.52	0.08	2007.276	9	97
05533+3624	SEI 429	11.0 11.0	157.67	0.28	15.32	0.07	2007.276	14	98
05533+3619	Anon.34	13.0 14.0	288.70	0.40	9.78	0.05	2007.276	4	99
05545+3109	SEI 433AD	10.16 12.5	22.28	0.14	24.80	0.06	2007.284	8	100
05545+3109	SEI 433AE	10.16 10.03	82.51	0.08	26.30	0.05	2007.284	16	100
05554+3647	SEI 437	9.1 11.6	75.25	0.07	26.51	0.05	2007.276	11	101
05557+3127	SEI 440	9.3 10.7	332.95	0.27	13.95	0.06	2007.284	14	102
05579+3603	SEI 449	11.04 14.04	329.98	0.16	19.51	0.04	2007.276	14	103
05589+3143	SEI 450	10.2 10.2	178.06	0.24	28.88	0.06	2007.284	10	104
06012+3132	SEI 453	8.07 9.1	213.52	0.31	19.54	0.05	2007.284	9	105
07081+2016	SLE 401	11.0 11.9	204.14	0.16	12.68	0.07	2007.276	18	106
07091+2023	Anon.35	11.7 12.4	14.74	0.31	16.04	0.07	2007.276	13	107
07093+2027	Anon.36	11.8 12.8	182.56	0.18	13.61	0.06	2007.276	16	108
08113+0117	STF1198	8.72 8.77	337.88	0.14	33.28	0.07	2007.282	19	109
08155+0202	DOB 9	8.11 9.66	126.71	0.34	12.72	0.05	2007.282	13	110
08158+0248	STF1210AB	7.25 9.45	113.23	0.34	15.55	0.08	2007.282	4	111
08158+0248	WAL 54AC	7.25 13.10	73.62	0.01	67.71	0.04	2007.282	2	111
08258+3104	HJ 446AB	8.88 11.50	343.46	0.05	39.37	0.05	2007.284	15	112
08258+3104	OPI 14AC	8.88 9.26	260.29	0.02	239.58	0.06	2007.284	17	112
08258+3104	OPI 14AD	8.88 9.32	41.37	0.02	362.67	0.08	2007.284	15	112
08291+3245	SEI 501	11.0 11.0	35.53	0.59	6.20	0.07	2007.284	7	113
08299+3123	STF1231	9.50 9.93	211.17	0.13	25.07	0.04	2007.284	14	114
08314+3156	STF1236	8.92 9.34	110.26	0.12	38.31	0.06	2007.284	19	115
08319+3309	STF1238	9.13 10.85	320.70	0.10	29.50	0.04	2007.284	14	116
08325+3729	STF1239	9.64 11.03	289.60	0.30	12.86	0.05	2007.284	14	117
08332+3326	STF1240AB	7.7 10.7	79.69	0.30	28.88	0.06	2007.284	14	118
08332+3326	STF1240AC	7.7 10.5	243.24	0.17	52.65	0.06	2007.284	13	118
08334+3348	MLB 838	10.0 10.2	18.57	0.40	4.65	0.06	2007.284	12	119
08335+3346	MLB 839	12.05 10.0	282.31	0.23	11.19	0.06	2007.284	19	120
08356+3116	SEI 505	9.7 11.0					2007.284		121

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RA +/- Dec	Discoverer	Mags	PA	+/-	Sep	+/-	Epoch	N	Notes
08364+3703	SEI 506	11.0 11.0					2007.284		121
08408+3115	SEI 507	10.16 11.98	118.27	0.18	15.33	0.03	2007.284	19	122
08419+3546	SEI 508	11.0 11.0					2007.284		121
08423+3631	ALI 353	8.2 11.9	190.27	0.50	6.77	0.06	2007.284	5	123
08483+3436	STF1272	8.07 10.19	343.51	0.13	20.46	0.04	2007.284	15	124
08498+3113	SEI 509	9.54 9.59	195.28	0.08	35.15	0.05	2007.284	12	125
08498+3045	SEI 510AB	11.12 11.18	322.10	0.06	21.64	0.04	2007.284	15	126
08498+3045	Anon. 37Bx	11.18 14.5	306.19		6.89		2007.284	1	126
08571+3241	Anon. 38	10.16 12.6	13.20	0.22	14.05	0.07	2007.284	6	127
08573+3236	SEI 513	11.23 11.64	197.14	0.09	27.26	0.03	2007.284	17	128
09175+1419	ROE 35	10.6 11.6	271.89	0.18	11.10	0.06	2007.282	15	129
09289+1235	ARY 49	7.89 9.94	270.57	0.09	52.52	0.08	2007.282	8	130
09290+0938	CHE 138AB	9.98 10.16	6.16	0.17	28.29	0.05	2007.282	10	131
09290+0938	LAD 1AC	10.0 13.0	203.83	1.22	8.73	0.16	2007.282	4	132
09323+1046	ARY 50	7.92 10.50	252.24	0.02	120.43	0.07	2007.282	12	133
09369+0927	DAL 17	10.32 11.84	279.16	0.15	29.13	0.04	2007.282	15	134
09388+1047	STT 204AB	6.70 11.6	99.23	0.34	7.61	0.04	2007.282	3	135
09388+1047	WAL 56AC	6.70 10.65	81.22	0.03	85.46	0.06	2007.282	11	135
09446+0845	Anon. 39	11.19 13.2	347.75	0.29	17.32	0.07	2007.282	17	136
09453+0853	STF1379	7.16 10.75	176.06	0.32	9.75	0.04	2007.282	17	137

## Table Notes

1. A=GSC 4068 1436.
2. B=GSC 4068 1466.
3. A=GSC 4068 1652. True for the entire system, but measuring the members accurately is difficult due to the great DM.
4. A=GSC 4068 1652.
5. E=GSC 4068 1651.
6. G=GSC 4068 1192.
7. H does not appear in GSC.
8. LM=GSC 4068 1339 non star.
9. O=GSC 4068 1127.
10. I did not find such a double at the specified location, but its earlier measures are similar to STF 484GH, so the two doubles are the same, in my opinion.
11. A=GSC 2401 179.
12. It is not at the specified location, but on the basis of the DSS images, it could be the same as BRT 2587 located 10' from here, but I did not photograph that one.
13. Possibly it is the same as ALI 527, the pa-

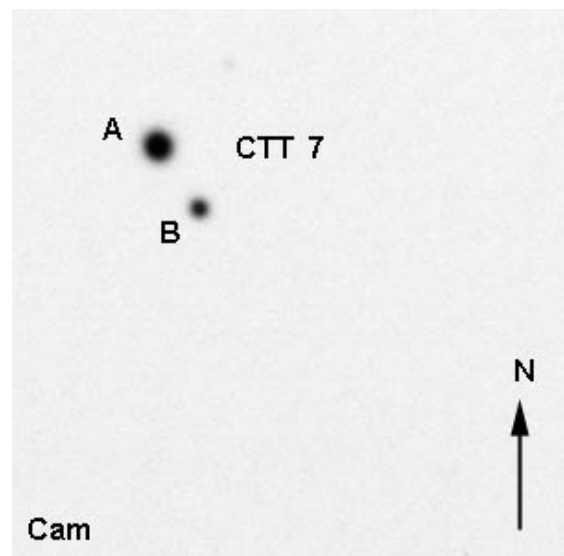


Figure 1: CTT 7 (WDS 04067+6221). See note 1.

rameters change due to the proper motion.

14. AB=GSC 2401 427 non star.
15. A=GSC 2896 918.

### Double Star Measures Using a DSLR Camera #3

16. A=GSC 2401 31 1. Cannot be measured.
17. A=GSC 2401 31 1.
18. A=GSC 2896 958.
19. A=GSC 2896 528.
20. A=GSC 2401 517 (05107+3706!).
21. A=GSC 2401 633.
22. A=GSC 2401 523.
23. A=GSC 2401 763 non star (05111+3709!).
24. A, B do appear in USNO (05110+3705!). Far from the specified location (3.5').
25. AB=GSC 2401 55 non star.
26. A=GSC 2401 795 (05113+3711!).
27. A=GSC 2401 557.
28. A, B do appear in USNO (051203+371644).
29. A=GSC 2401 1077 (05121+3651!).
30. A=GSC 2401 449.
31. A=GSC 2401 1071 (05125+3657!).
32. A=GSC 2401 713.
33. A=GSC 2896 1098.
34. A=GSC 2896 990 non star.

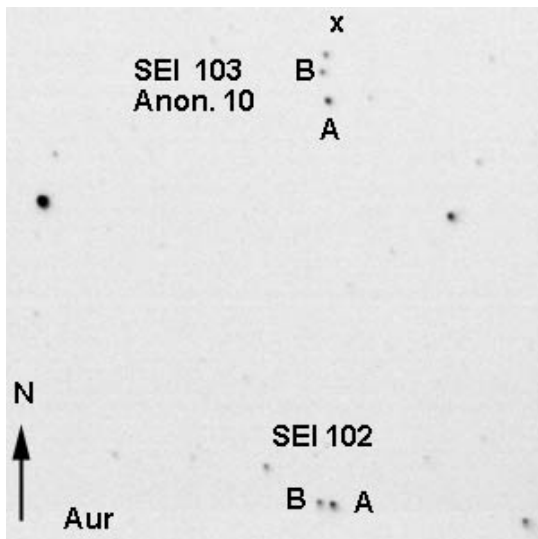


Figure 2: SEI 102 (WDS 05130+3748), SEI 103 (WDS 05130+3753), and Anon. 10. See notes 33 and 34.

35. A=GSC 2401 203. A separate article has been written on this system (Berko, 2009).
36. SEI 106AB=GSC 2401 113 non star. x=GSC 2401 437 if this is the primary of SEI 107 (the measures of 1982). So y= SEI 106 B, and z= SEI 106 A.
37. B=GSC 2401 117. Very different parameters.

The images available do not show significant proper motion of the nearby stars. There is a nearer star, too, marked as "b" in the picture, PA=340; s=35,7", but it differs significantly from the original parameters of SEI 107. The 1982 measures could be based on GSC stars. In this case the primary is GSC 2401 437, and its pair is GSC 2401 113, non star object. This latter object includes the two components of SEI 106.

38. A=GSC 2896 556 (05137+3749!).
39. A=GSC 2896 752.
40. A=GSC 2401 163.
41. A=GSC 2896 1062.
42. A=GSC 2896 1076.
43. A does appear in USNO.
44. A=GSC 2896 550 (05174+3752!).
45. A does appear in USNO (05178+3800!). B=GSC 2896 2050.
46. A does appear in USNO (05177+3756!).
47. Bx=GSC 2896 564 non star (05177+3756!).
48. A=GSC 2896 1892.
49. A=GSC 2896 434.
50. AB=GSC 2896 1909 non star (05183+3804!). Far from the specified location (4.5').
51. A=GSC 2896 2081 non star.
52. A=GSC 2896 636. Difficult to measure.
53. AB=GSC 2896 678 non star.
54. A=GSC 2896 2093.
55. A=GSC 2896 688 (05196+3754!).
56. A=GSC 2896 1272. This could be SEI 184, but with much fainter members. In this case the double measured by me as SEI 184 is Anon.
57. A=GSC 2896 1272.
58. A=GSC 2896 1282.
59. A=GSC 2900 1956.
60. A does appear in USNO (052005+392308).
61. A=GSC 2909 547.
62. AB=GSC 2909 469 non star.
63. ABC=GSC 2909 507 non star.
64. A=GSC 2913 2170 non star.
65. A=GSC 2909 513 non star.
66. A=GSC 2909 1370.
67. A=GSC 2909 1079.
68. A=GSC 2909 1072. The difference is significant.
69. A, B do appear in USNO.

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70. A=GSC 2909 1144.  
 71. A, B do appear in USNO (052322+380142).  
 72. A, B do appear in USNO (052322+375804).  
 73. B=GSC 2909 1673.

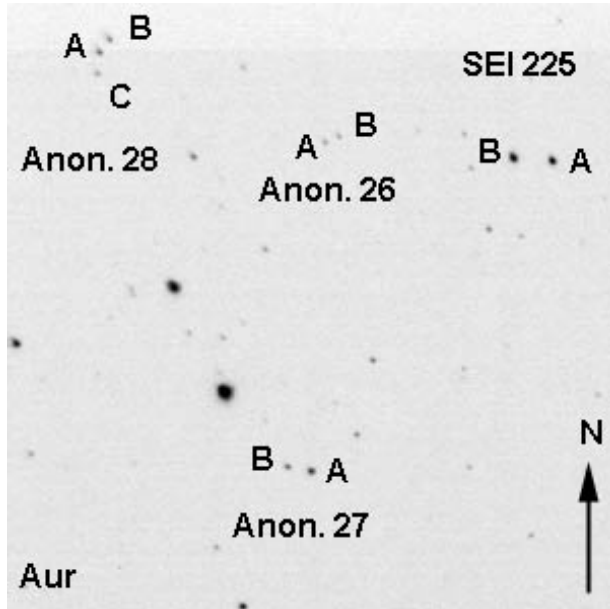


Figure 3: SEI 225 (WDS 05231+3802) and several previously unreported doubles. See notes 70 - 73.

74. A=GSC 2909 953 1.  
 75. C=GSC 2909 1312. The position of AC seems stable on the basis of the GSS images, GSC and my own photos. I do not understand the significant difference.  
 76. C=GSC 2909 1312. The reason why I measured this relation is because - regarding distance - it is closer to the parameter of WAL 39.  
 77. AB=GSC 2909 1211 non star.  
 78. A=GSC 2909 1110.  
 79. A=GSC 2911 1139 non star.  
 80. AB=GSC 2911 1287 non star.  
 81. It cannot be found in GSC and USNO, visible in DSS images.  
 82. A=GSC 2416 1051.  
 83. Bx=GSC 2416 1172 non star.  
 84. A=GSC 2417 40.  
 85. A=GSC 2417 498.  
 86. A=GSC 2911 1531.  
 87. A=GSC 1874 1623 1.  
 88. It cannot be found in GSC, (05474+2859!).  
 89. A=GSC 2911 1341 (05483+3746!). It is not sure that this is the original double. I found only this in the vicinity, 13,5' from the specified location. They are stars of similar brightness and position, though they form a looser pair.
90. A=GSC 2417 381 (05495+3701!).  
 91. AB=GSC 2417 1062 non star.  
 92. A=GSC 2417 492.  
 93. A=GSC 2418 1337 (05514+3540!). Far from the specified location (5.3'). The proper motion in PA140 direction of component B accounts for the changes of the measured parameters.

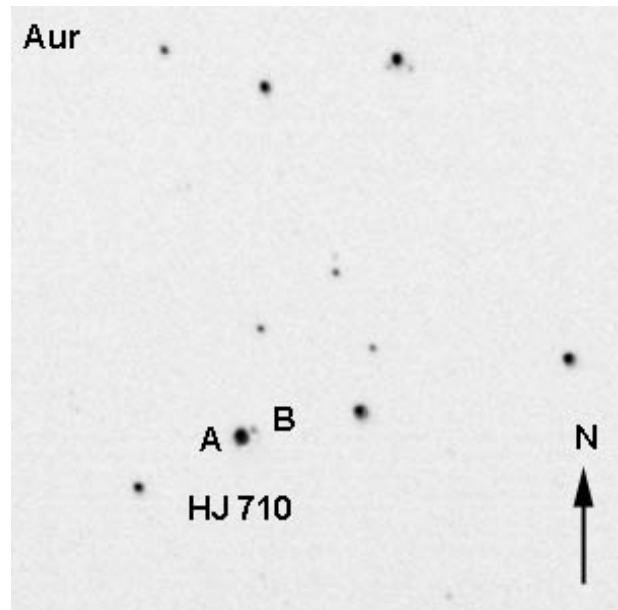


Figure 4: HJ 710 (WDS 05514+3535). See note 93.

94. A=GSC 2414 1223.  
 95. AB=GSC 2414 1299 non star (05522+3441!).  
 96. A=GSC 2418 771.  
 97. A=GSC 2418 1443.  
 98. A=GSC 2418 1183.  
 99. A=GSC 2418 882.  
 100. A=GSC 2406 1301 (05545+3110!). The faint Aitken members cannot be measured.  
 101. A=GSC 2418 1128.  
 102. A=GSC 2406 412.  
 103. A=GSC 2418 780.  
 104. A=GSC 2406 694.  
 105. A=GSC 2419 96.  
 106. A=GSC 1353 764 (07081+2026!). Far from the specified location (10').  
 107. A=GSC 1353 494. Stars forming a pair similar to SLE 401.

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108. A=GSC 1353 119. Stars forming a pair similar to SLE 401.

109. A=GSC 195 2724 (08113+0116!).

110. A=GSC 200 925.

111. A=GSC 200 2526.

112. A=GSC 2483 822.

113. AB=GSC 2486 1312 blended object.

114. A=GSC 2483 580.

115. A=GSC 2483 1345.

116. A=GSC 2486 920.

117. A=GSC 2489 1033.

118. A=GSC 2486 2268.

119. AB=GSC 2486 2262 non star (08334+3350!).

120. A=GSC 2486 2142 (08335+3349!).

121. I did not find it in the vicinity, neither in DSS images, nor in GSC. By looking through the DSS images, the stars of the area do not seem to have a significant proper motion.

122. A=GSC 2484 981 (08407+3114!).

123. A=GSC 2490 1584. Difficult to measure. The proper motion in PA300 direction of component B accounts for the changes of the measured parameters.

124. A=GSC 2488 949.

125. A=GSC 2485 1126. In the location of the previous measures (1894, 1991), GSC indicates a star (GSC 2485 9990), but this star cannot be seen in my own photos or in the DSS images. What I measured as the pair is GSC 2485 110,

and this can be found in every photo. I cannot see any sign of proper motion in the images, either.

126. A=GSC 2485 1216.

127. A=GSC 2488 1021.

128. A=GSC 2488 1151.

129. A=GSC 825 498 non star (09176+1418!).

130. A=GSC 826 1078. The proper motion in PA230 direction of component B accounts for the changes of the measured parameters.

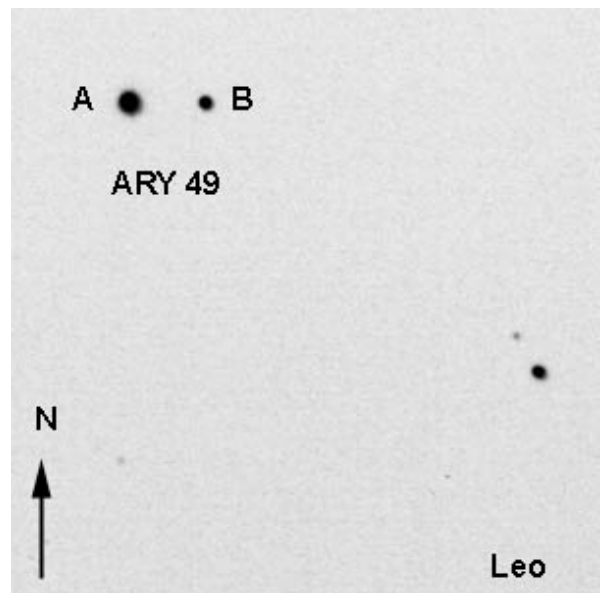


Figure 6: ARY 49 (WDS 09289+1235). See note 130.

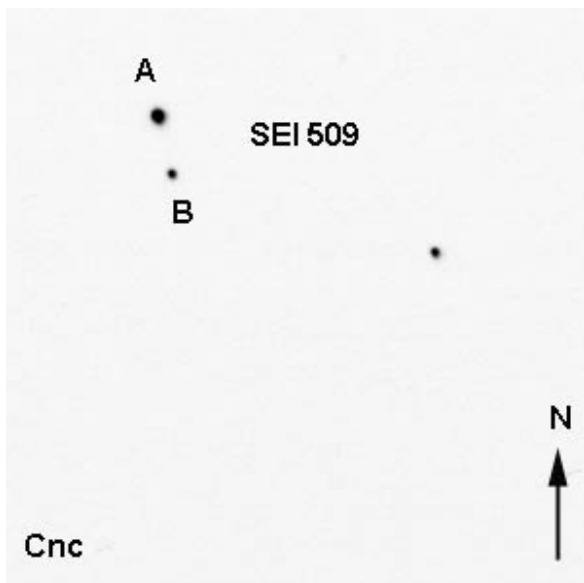


Figure 5: SEI 509 (WDS 08498+3113). See note 125.

131. A=GSC 820 211 non star (09289+0938!).

132. A=GSC 820 211 non star (09289+0938!). Difficult to measure.

133. A=GSC 824 803.

134. A=GSC 821 889.

135. A=GSC 824 1224. Component A has proper motion, but component C has proper motion, too, in PA220 direction, which is larger than that of component A. The measured parameters contradict this.

136. A=GSC 828 1149. First I measured it as CHE 142, but what I find more possible is that CHE 142 is the same as STF 1379 located 10' from here.

137. A=GSC 828 904 1.