

CATALOGUE OF OCCULTATION DOUBLE STAR OBSERVATIONS

Introduction

The catalogue is divided into three sections: bright stars with magnitudes less than or equal to 6.7: other stars having numbers in the Smithsonian Astrophysical Star Catalogue with magnitudes greater than 6.7: and other stars with no SAO numbers, usually faint and with often only fragmentary information concerning their magnitudes or spectra.

Each section has the following columns: SAO number, other name, magnitude, spectral type, run number of the observation, date in obvious coded form, grade -- grade zero indicates no duplicity, grade 1 possible duplicity, grade 2 probable duplicity, and grade 3 certain duplicity. Grades are based on statements by observers. For grades other than zero the vector separation and its computed error are given in arc milliseconds. P.A. denotes the direction in which the vector separation is measured, that is the position angle on the lunar limb as modified by the slope deduced in favorable cases from the spacing of the diffraction bands on the occultation trace. The next column gives the limb slope and its error. The final two columns give the magnitude difference between the components in the blue band pass and a longer "red" band-pass. Asterisks denote places where corrections have been applied to published figures, whether errors of star numbers or run numbers in original records or notes. Most commonly corrections have been made as far as can be deduced from the original sources, to bring the column of position angle values to those appropriate to position angles from the brighter to the fainter component. Most changes have been by 180 degrees. The last two columns give magnitude differences between components and, in certain cases, these have had to be computed from values expressed in different style in the original papers. Such cases are marked with an asterisk. In a few cases the "secondary" is fainter in the blue channel and brighter in the red. In such a case the red differential magnitude appears with a negative sign. It has proved impossible to differentiate among all the diverse phototube and filter systems used

by various observers: the division into "blue" and "red" is fairly arbitrary and if detailed use is to be made of the relative magnitudes reference back to the original publication is essential.

In the case of a triple star the run number is repeated and the data for the triple given with magnitude differences from the brightest star. Where observers have not used run numbers but have published observations from more than one telescope on the same date, this is indicated by the code designation followed by a single numeral, e.g. P1, P2 etc.

Sources

- McDonald Observations: M100-1871: *Astron. J.* 76, 1109, 1971: M1875-M1893, M2102-M22221, M2304-2711: *Astron. J.* 78, 482, 1973: M1902-M2020, M2250-2262: *Astron. J.* 80, 449, 1975: M2713-M3712: *Astron. J.* 80, 689, 1975: M3713-M4009: *Astron. J.* 81, 650, 1976: M4010-M4245, *Astron. J.* 82, 631, 1977 (but M4045, M4058, M4059, M4148, *Astron. J.* 82, 640, 1977): M36/7, M36/8, M4247-M4729: *Astron. J.* 83, 1100, 1978: M4730-M5222, *Astron. J.* 85, 478, 1980 (but M5100-M5112: *Astron. J.* 85, 490, 1980), and M5223-M5646, *Astron. J.*, submitted.
- Geneva Observations: G12-G38: *Astron. J.* 80, 445, 1975.
- Tonantzintla Observations: T001-023: *Astron. J.* 79, 1299, 1974.
- Iowa Observations: EB002, EB021: *Astron. J.* 76, 1131, 1971: EB001-EB121, *Astrophys. J. Supp. Ser.* 28, 405, 1974: EB122-EB320, : *Astrophys. J. Supp. Ser.*, 34, 493, 1977: EB321-562: *Astrophys. J. Supp. Ser.*, 40, 475, 1979: EB585-592: *Astrophys. J. Lett.* 228, L111, 1979.
- Hamburg Observations: All H numbers, *Astron. Astrophys.*, 48, 245, 1976.
- Victoria Observations: V1-V2: *Publ. Dom. Astrophys. Obs. Canada*, 14, 271, 1974: V1-V32, *J. Roy. Astron. Soc. Canada*, 72, 305, 1978.
- Illinois Observations: I7701-I7865: *Astron. J.* 85, 1053, 1980.
- Flagstaff Observations: F, *Astron. J.* 84, 872, 1979 and private communications.
- Peterson *et al.*: P: *Astron. J.* 86, 280, 1981.
- Special Stars: Beta Scorpii: *Astron. J.* 82, 414, 1977. *Astron. J.* 82, 495, 1977, *Astron. J.* 83, 438, 1978: *Astron. J.* 84, 257, 1979.
- Sigma Scorpii: *Publ. Astron. Soc. Pac.* 86, 116, 1974.
- Beta Capricorni: *Astrophys. J.* 228, 497, 1979.

BRIGHT STARS (m ≤ 6.7)

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR	
075671	A2253 AB	6.7	A3	M1214	201269	0*		45	-2/5			
				H	061071	0						
				H	200272	3	352/24	288*	0.0/.1			
				EB239	140173	3	193/2	8	.2/.1	0.0/.1		
075673	A2257 AB EPSARI	5.25 5.55	A2V A2V	H	061071	0						
				M2656AB	201172	3	458/1	280	.6/.2			
				M2695AB	140173	3	45/1*	286				
				EB238AB	140173	3	1043/12	259*	.4/.1	.5/.1		
075945	A2552A 66ARI	6.00	G6	M2682	181272	3	10/2	120	0*	1.4/.4		
076131	17TAU	3.69	B6III	M1218	201269	0		101				
				EB51	041171	0		261				
				H	291271	0						
				H	190372	1	10/1	52			3.4/.3	
				T005	110273	0		5				
076140	19TAU	4.29	B6V	M1008	060869	0		348	3/1			
				M1219	201269	0		32	6/1			
				M2006	100971	0		213	-6/1			
				H	300969	1	10/	267		3.4/		
				H	131170	0		271				
076183		6.7	B9	M2013	100971	1	299/2	173	3.0/1.4			
076192		6.3	A0V	T015	110273	3	1.9/	209	3/1	1.11/		
				H	291271	0						
				EB65	181271	0		110				
				G26	190372	0		103				
076199	ETATAU	2.86	B7III	M2254	041171	2	31/1	207	9/2	1.6/.3		
				EB67	281271	0		116				
				H	291271	3	1.7/0.2	114		1.6/.3		
				H	190372	3	1.0/0.4	73		1.2/1.0		
				G27	190372	0		106				
T016	110273	0		30			6/0					

SAO No	Name	Mag	SP	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
076225		6.3	F0	T018	110273	2	9.3/	275	-1/7	2.9/	
076228	A2786A 27TAU	3.62B	B8III	M0102 H G35	311268 291271 190372	3 3 3	6.2/ 2.2/0.5 7.4 2.5/ 0.4	236* 129 124		1.9 1.4/.3 1.6 1.2/.3 1.5/.1	
076425	A2965AB 36TAU	5.56	G0III A4V	M2699AB EB246AB	150173 150173	3 3	32.2/0.5 25/2	156 101	-1/0 -1/1	.04/.06 0.0/.1	1.7/.4
076682	A3353AB	6.44	dF2 dF3	M0301 H	240369 130370	0 3	2117/45	131 258*		.4/.1	
076955		6.6	B5	M2413 H	301271 220272	3 0	76/2	327	-5/4	1.4/.4	
077819		6.59	K1III	EB002 EB002	060271 060271	3 3	40 38	333* 153		.7/.2 1.0/.2	
078349		6.0	A0	M2773	090373	3	67/1	124		*	
078417		6.42	F5	H	220970	2	3/1	269		.9/.7	
079403	A6089A 63GEM	5.18	F5IV-V	EB224AB	241172	3	47/6	304		2.1/.1	2.1/.1
092801		6.5	A3	M2693	130173	3	30/2	287	-15/4	2.4/.4	
093022	31ARI	5.64	F7V	M4467 M4628	300977 211277	3 0	21.3/0.6	266 42		.1/.1	.3/.1
093062	A2062A MUARI	5.66	A0IV-V	H H H H H EB142AB EB142AB	191269 191269 110370 110370 180970 060772 060772	2 1 3 3 1 3 2	12.0/0.4 4.6/1.7 45.7/0.4 8.1/0.6 15.1/1.0 16/5 119/9	9 189* 119 299* 354* 37* 37*		.3/.1 2.4/.8 .6/.1 1.9/.2 .1/.1	.4/.4
				H EB142AB	130173 130173	3 3	38.4/0.3	276* 276*		.6/.1 2.2/.3	
				H EB261AB	130173 100273	3 3	47.7/6.9 13/2	276* 333*		.6/.2 .6/.2	

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR		
093925	FIN342AB 70TAU	6.46	F5V	EB585AB	220978	3	50/4	251		.4/.3	.2/.4		
				I7839	220978	3	25.3/1.1	240	-1/3			.7/.3	
				M5103AB	050379	3	80.9/0.4	344*	1/0			.32/.07	
				P	270180	3	93.1/1.3	95				.31/.02	
093950	75TAU	5.10	K2III	V26	150378	0							
				I7841	220978	0		296					
				I7856	131278	0		110					
				M5104	050379	1	24/2	238		2.5/.3			
				M5444	270180	0		39		12/1			
				F	220978	3	79/1	213		3.8/.4		3.1/0.2	
093955	TH1TAU 77TAU	3.85	K0III	EB586	220978	3	82/2	212		3.6/.2	4.0/.3		
				I7840	220978	3	88.0/2.6	197	4/0		3.9/.3		
				M5445	270180	3	112.4/0.7	134	7/2		3.1/.1	3.8/.2	
				P1	270180	3	40.9/0.3	100		3.19/.06		3.68/.06	
				P2	270180	3	57.9/0.6	115		3.15/.1		3.6/.2	
				M5313	120979	3	11.6/0.5	78		.6/.1		1.0/.2	
093957	TH2TAU	3.41	A7III	P	120979	0		253					
				Osborn	270180	3	8.3/	335	-10		.7/.1		
093961	A3248	6.59	F8V	EB587AB	220978	3	284	253		.7/.4	.3/.4		
				F	220978	3	263/5	254		.6/.2	.4/.1		
				I7842	220978	3	273.1/3.3	241			.5/.2		
				M5105	050379	3	272.5/1.1	286					
				P	050379	3	281/3	287*				1.1/.2	
				P	120979	3	211.8/0.6	145*			.9/.1	.5/.1	
				P1	270180	3	332/7	259*				.7/.2	
				P2	270180	3	330.6/0.6	259*			.8/.1	.6/.1*	
				F	220978	0		240					
				I7844	220978	0		226					
093975	A7V	4.78	A7V	M5107	050379	0		102					
				P	050379	0		104					
				M5315	120979	0		303					
				P	120979	3	10.3/1.1	284		2.7/.2			
				M5447	270178	0		114					
				P1	270180	3	5.3/1.5	86		3.9/.5		3.0/.4	
				P2	270180	3	4.5/0.7	85		3.0/.3		1.8/.4	
				P3	270180	0		100					

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
094306	A3672 AB	6.41	A7III	EB488AB	140176	3	851/4	336*		.3/.5	-.2/-.4
094554	A4038A 115TAU	5.3	B5V	M4653 M5457	170278 280180	3	98/7/0.2 32.1/0.2	98 147	-14/1	1.13/.06 1.00/.04	.90/.06 .8/.1
094586	A4073A	6.6	A2	M5458	280180	3	15.7/0.4	232		.1/.1	.3/.2
095166	640RI	5.15	B8V	M3980 M4029	150176 100376	3	40.8/0.7 54.1/0.2	123 50		1.1/.2 1.15/.04	.7/.8 1.0/.3
095419	KUI24 AB	5.71	Am	I7848 M5110	240978 070379	3	445.1/.6 455.8/.6	129 295	5/1	0.0/.06	.01/.06
097472	3CNC	5.55	K3III	EB327 M5414	050374 071279	0	2.9/0.8	124 241	5/1	1.6/.5	
098161	A7039AB	6.72	G5	M1886 EB21AB	020571 020571	3	86.3/0.4 223	119 264*	0*	.08/.07 .6/.2	.6/.2
098400		6.42	F0	EB334 F	060374 75	1		112		*	
098627	XILEO	5.1	G5	M2763	160373	3	6.6/0.4	254	-0/1	1.9/-.1	
098767		6.45	F0	EB28AB	270671	3	31/5	111		.2/.3	.2/.4
109262	A0449 51PSC	5.60	A0	M3910 M3910	151175 151175	3	196/1 226/1	233 233		3.0/.1 3.7/.3	2.0/.2 2.7/.6
118355	RHOLEO	3.85	B1Ib	H M5422	291269 101279	3	2.9/0.1	277 316	-21/1 -6/0	.04/.09	
118443	A7896AB	6.6	F5	M4314 F	290477 290477	3	118.2/0.8	110		1.6/.2	1.5/.2
146067	A15902AB 51AQR	5.85	A0	M3596AB	261074	3	97.5/0.1	221	0*	.20/.03	
146239		6.4	G0	M3025 EB309 M3585	091073 031273 290974	2	129/2	234 52 254	-8/6	2.7/.3 1.1/.1	1.0/.3

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
146954	FIN359AB 24PSC	6.09	gG9	M5300 M5369	070979 011179	3 3	89/2 95.0/0.3	223 248*		.3/.3 .1/.1	.2/.1 .1/.1
157584		6.0	A0	M3551	040574	3	100/3	2		0.0/.6	
158147		6.1	A0	M3554 M3554	050574 050574	3 2	39/2 61/2	149 329		1.7/.5 1.9/.4	1.2/.6 1.4/.5
159090	A9532A IOTLIB	4.53	A0	EB442AB	240575	3	107/8	105		1.3/.9	1.4/.8
159682	A9913AB BETSCOA	2.68	B0.5V	NZ NZ Erickson Elliot Sandmann M M	110975 110975 080776 080776 080776 080776 080776	3 3 3 3 3 3 3	439/ 457/ 458/ 467/ 451/ 394/ 0.6/	135 102 116 120 121 149 332		3.1/ 3.0/ 3.4/ 3.6/ -16/ 1.5/1.2	3.1/ 3.0/ 3.7/ 3.3/ 3.2/.1
159683	A9913C BETSCOC	5.07	B2V	M	080776	3	91/	320		2.1/.1	
161153	A11127AB	6.3	A4V	M4149/50 M4150	300976 300976	3 3	1188/ 24/1	144* 321		.1/* 1.3/.2	.2/* .9/.5
161848	KUI88AB	6.46	K0 A1	M4326 M4949	070577 091078	3 3	12/2 205.1/0.4	78 99		.1/.3 .4/.1	1.7/.4 1.9/.1
162229		5.4	B3	M5209 M5249	120679 060879	0 3	72/2	210 314		5/0 2/0	3.6/.2
162413	43SGR	5.03	G8II	M5256 M5332	060879 300979	0 3	140.1/0.7	144 114		4/0 20/2	4.8/.4

SAO Stars (m > 6.7)

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
075881		8.9	A0	M2526	210272	2	50/4	253		3.3/.6	
075987		8.3	A3	M2683 M2683	181272 181272	2 1	114/1 69/2	239 239		1.7/.3 2.2/.4	
076032		8.6	A2	M2513	240172	3	46/1	200		1.3/.3	
076103		8.1	A5	T001 EB267	110273 110273	3 0	23.1/	296 21		0.95	
076152		8.2	B9	G18 EB035AB	190372 100971	2 3	155/5 255/5	49 4*		2.3/.8 1.8/.4	1.6/±.0
076184	A2760AB	8.4	A2	M1651 M2020	111270 100971	0 3	326/1	121 249			.8/.2
076214	A2776AB	8.4	K0	M3435	050174	3	512/2	270		.3/.4	
076254		8.0	F5	M3437	050174	1	51/2	220		.7/.3	
076475/6	A3019AB	7.6	A3	EB303/4	151073	3	712/7	107*		.1/.1	.3/.2
077038		8.9	A3	EB249AB		1	190/40	250*		.9/.8	
077111		8.9	A2	M3718	200375	1	116/4	304		2.2/.5	
077221		8.5	F5	M2531	230272	3	63/1	66		.6/.2	
077313	A4200AB	7.2	F8	EB355AB	071074	3	2140/4	326		.3/.3	.2/.3
077423	A4277AB	8.8	A0	EB361AB M3696AB	071074 210275	3 3	60/4 15.9/0.6	202 36		.7/.9 .8/.1	.7/
077588		8.1	B8	M1835	050371	3	17/1	337		1.0/.4	
077606		8.7	A2	M3508	300374	1	27/1	59		1.2/.4	
077776		7.8	B8	M2725	130273	3	175/2	145		.9/.4	

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
077926		8.3	F0	M3658	250175	2	39/1	272		1.3/.3	.8/.4
078378		8.7	A2	M2709	170173	2	68/1	338		.5/.2	
078440		6.9	A2	M0402	260369	3	23/1	128	10/3	0.0/.1	
078484		8.7	A0	M2542	240272	2	125/1	283		1.5/.2	
078507		8.0	A3	M3471	040274	1	19/2	242		.6/.4	
078733		8.2	F5	EB218	271072	1	34/7	127*		.1/.3	.8/.8
078778		7.2	K2	H	290471	3	250/10	69	-4/3	1.2/.1	
079040		8.8	A2	EB203AB	300972	3	137/11	144*		2.3/.5	.6/.5
079797		9.2	A2	M1880	010571	1	15/2	100		1.6/.4	
079804		7.5	G0	H	130470	3	74/5	330*	5/3	.9/.1	
092106		8.8	K0	M3426	020174	3	131/3	222		.9/.5	
092120		8.8	xx	M3427	020174	1	78/3	25		.9/.6	
092369		8.1	F5	M3641	200175	3	23.6/0.5	252		.5/.1	.5/.3
092420		9.1	G5	M2672	161272	0		136			
				EB228	161272	0		100			
				M3447	300174	1	36/2	23	0*	1.0/.1	
092486		8.3	xx	M2676	161272	0		63			
				EB233AB	161272	3	486/12	5		1.3/.3	
092919		9.0	xx	M3452	310174	2	37/2	101		1.1/.5	
092922		7.3	K0	M5061	070179	1	31/2	230			2.8/.3
092996		8.6	F2	EB518AB	060376	2	41/6	217*		0.0/.7	.4/.8
093046		9.0	Fx	EB259	100273	1	133/16	288*		1.6/.8	

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
093051		9.0	xx	EB260	100273	2	270/30	118		2.1/.5	2.2/.4
093070		9.2	F5	M4475	300977	1	6/2	328		.6/.8	
093085	A2101AB	7.6	F5	M4251	240277	3	379/3	56		3.1/.5	2.3/.6
093484		7.0	F5	M4253	250277	1	35/3	13	-3/1	3.5/.6	
093778		7.9	A2	M3961	130176	1	10/3	31		2.7/.8	
093803		7.8	A0	M4998 M5069	191078 090179	2 3	37/1 78/2	80 74		2.7/.2 3.0/.5	2.2/.2 2.6/.7
093835		8.9	xx	M4018 EB521	080376 080376	2 0	18/2	154 98		1.2/.5	
093870	A3135AB	6.88	F0V	M4680 M5049	150378 131278	3 3	395.5/0.3 156/1	102 15		1.6/.1 0.7/.1	1.2/.1 .3/.3
094031		7.8	A2	M3994	100276	3	78.9/5	290		0.0/.1	.3/.3
094060		8.8	A5	M5456	270180	3	81/6	301		1.5/.8	
094422		8.7	F8	M4256	270277	1	36/7	281		.9/1.1	
094431	A3854AB	7.5	B3	M4257/8	270277	3	3070/	160		.6/	.7/
094865		8.9	xx	V28	150478	0-1	15/				
094961		8.1	F5	M5128	030479	2	20/1	219	-6/1	1.0/.3	
095229	A4681AB	8.4	B9	M4261 M5477	280277 250280	3 3	38/2 202/2	274 140		.9/.4 2.6/.4	.3/1.0 .7/.3
095252		7.9	F0	M5401 M5479	051279 250280	2 2	20/4 30.5/1.2	87 79		1.7/.2	.2/.8 1.8/.4
095258		7.7	F8	M5402 M5480	051279 250280	0 2	6/2	292 51		2.3/.3	
095265		8.9	A0	M4263 M5481	280277 250280	1 0	16/6	236 108			.1/.2

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	AR
095456		6.9	K0	M4268	280277	3	14/2	64		1.3/.5	
095728		8.9	G0	M4238 M5029 M5080	010277 181178 080279	0 3 3	41/2 49/1	115 138 46		.5/.4 .2/.3	0.0/.4 0.0/.5
095748AB	A5121A	7.6	A0	M4532	011177	0		322		.5/.9	
	A5121B			M5031	181178	1	52.0/3.0	43		2.3/	
	A5121AB			M5032	181178	3	597	43			
	A5121A			M5082	080279	0		138			
095794/5	A5166AB	7.2 7.8	F8 F8	M4538/9 M5084/5	011177 080279	3 3	8510 10500	278 152		.4/ .2/	.7/
095866		8.3	G0	M4241 M4636 M5087	010277 220178 080279	0 1 0	19/4	113 61 47			1.8/.8
095988		8.9	A2	M3702	220275	1	21/2	163		.9/.5	
096515		9.0	xx	M4274 M4660	010377 190278	1 0	57/5	262 132			.6/.8
096561		8.7	G5	EB411 M3670 M5645	021274 260175 040980	0 1 3	78/6 24/	305 317 237		2.4/.9	2.5/
096634	A5885AB	9.0	xx	M4432 M4666	080977 190278	1 2	308/2 238/6	119 108		1.2/.3 1.9/.9	1.3/.4
096646		9.0	xx	M3678	260175	1	71/4	262		1.9/.5	
096687		8.3	A3	M3681	260175	3	45.0/1.2	84		.6/.3	
096810		8.6	K0	M4063 EB555 M4244 M4742	050576 121176 020277 150478	0 0 0 2		94 309 144 276			1.4/.5 2.2/.5
096977/8	A6146AB	9.0 9.0	G0	M4286/7	290377	3	8240	75		.1/	-.2/

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
096991		8.9	F2	M4288	290377	2	6/1	85		1.2/1.0	
097609		8.7	F5	M4312	260477	2	39/6	87		1.0/1.2	0.6/1.1
097687		9.2	xx	M3556	260574	1	245/3	136		.6/.5	.6/.8
097813		9.1	xx	M2598	180572	3	288/2	333		.6/.3	
097919		8.3	G5	M2755	150373	3	57/7	39	-11/2	.1/-.2	
097953		8.4	A0	M3705	240275	3	46/1	319	-7/5	1.3/.2	1.4/1.1
098007		7.8	K2	M2758	150373	2	132/7	243		1.1/-.2	
098083	A6963AB	8.4	A2	M5523	260380	0		39			
098132		9.3	F2	M5498	280280	3	672/2	115		.1/+.3	.2/.5
				M1883	020571	3	317/1	256		.1/-.2	
098519		8.3	MB	M5166	070479	2	232/8	280		.9/1.1	
098696		6.9	F5	M1891	030571	0		70	-11/1		
				V1	030571	3	6/				
099012		8.1	G5	M5524	280380	2	80	94			1.0/
109244		9.0	F2	M4595	211177	1	34/2	16			.2/.5
109269		8.7	G0	M2670	151272	1	13/2	282		1.1/-.4	
109325	A0532AB	9.0	F8	M4984*	151078	2	22/5	235		.4/-.9	
109596	A0835AB	8.2	F0	M3944	131275	3	43/2	22		0.0/.3	.1/.8
109719		8.7	F8	M4249	220277	1	26/7	286		.7/-.8	.7/.7
109790		8.8	G5	M4602	221177	1	60/1	273		.6/.3	.6/.4
109923		8.6	F8	M4173	051176	1	34/5	202			1.0/1.5
110295		7.7	G5	M5021	131178	3	28/1	228		1.0/.2	2.0/.3
117767	A7429AB	8.5	A3	M4344	250577	3	41/8	89			2.4/1.1

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
117837		8.7	A2	M3712	250275	1	29/3	249		1.2/.6	
117979		7.1	G5	H M2785	120473 100573	2 0	2.0/.4	116 117	-15/2	0.0/.5	0.0/.5
117991	A7579AB	9.2 9.4	F2	M2786/7 M4557/8	100573 051177	3 3	1740/50 1830/	43 48*	* *	.2/.1 .3/	-.7/
118103		8.5	F5	EB130AB EB130AB	200572 200572	3 2	63/9 270/13	299* 299*		.1/.2 1.1/.4	.7/.3 1.4/.5
118126	A7652AB	8.8	F8	H M4808	220472 120678	3 3	891/26 792/6	107 98		.4/.1 .2/1.0	.5/.9
118224		8.7	F0	M2765 M4345	170373 260577	0 2	195/3	157 57		2.4/.8	.2/.8
118253		8.7	F2	M2585 M4782	230472 160578	0 3	13/1	129 175		.7/.5	.4/1.1
118289		8.4	K2	M2767 M2767 M4349	170373 170373 260577	3 2 1	415/2 62/4 470/3	285 285 76		1.2/.4 1.8 3.2/1.0	
118425		8.4	K0	M2565	270372	3	206/1	264		.2/.2	
118571		7.6	K0	M5175	090479	3	34/1	105		.8/.2	2.2/.6
118577		6.9	K0	M3560	290574	3	12/2	135		1.3/.6	
118786		8.5	F8	M2566 M2566	280372 280372	3 3	22/1 186/1	310 310		.2/.1 1.3/.3*	
118981	A8261AB	6.8	A3	M4809	140678	3	492/3	77		3.3/.5	2.5/.4
128212		9.2	F8	M3029	101073	3	322/6	64		.1/.6	
128368		8.9	F0	M2209 M4187	311071 301176	2 0	337/5	230* 56		1.8/1.0	

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
128467		8.2	K0	M2214	311071	2	10/3	115		.6/.6	
128487	A17111A	6.9	F0	M3601	281074	1	36/2	35		.9/.4	
138462		8.8	G5	M2591	250472	3	365/4	106		.1/.3	
138692		9.0	G5	M3788	210575	3	318/2	124		.6/.3	
138777		8.0	F5	M0901	270569	3	21/1	321*		.6/.2	
138788	A8552AB	8.0	G5	M4767	210478	3	74/6	296		1.1/.9	.8/.8
138911		8.0	MA	M3749 M3831	240475 150775	0 1	25/2	65 278		2.1/.3	
138925		9.0	K0	M3832	150775	1	55/3	108		1.8/.8	
145635		7.1	K0	M4155 M4197	041076 251276	0 1	62/8	65 260		2.5/.8	
145973	A15777AB	8.2	G5	M3900	121175	3	228/1	354		1.1/.2	
146043		7.9	MB	H I7711	181072 250977	0 1	10	139			1.2
146289		8.4	F0	M4976	131078	3	16.9/0.8	259		.5/.2	.9/.3
146307		7.5	F5	EB351 M3928	290974 101275	0 1	9/3	84 72			2.0/1.1
146419		8.7	K5	M1521	121070	1	40/2	69		.2/.4	
157548		8.7	F0	M2603	200672	1	554/2	290		1.4/.4	
157613		7.4	K5	M3552	040574	3	118/3	339		1.2/.3	2.5/.4
158804		8.4	F2	M4843	1507778	2	8/2	80	35/10	.3/.6	
159085		6.8	K0	M4391	250777	1	54.1/0.8	339	-2/1	2.6/.1	2.6/.1
159188		7.5	K0	M4823	180678	1	246/4	311		1.1/.8	

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
159786		8.3	K0	M4398	260777	3	103/1	238			2.5/.2
159887		9.0	K0	M4890	130878	2	13/3	33			2.0/.8
159933		9.0	F5	M4893	130878	2	190/10	266			1.4/1.6
160399		8.9	A0	M4404	270777	3	30/3	302		1.3/.5	.9/.9
160947		8.7	K2	M4866	180778	1	483/8	133			1.2/1.2
161202		9.3	F5	M5248	050879	3	203/8	260		1.2/.8	
161245		8.7	B8	I7823	270478	1	620	281		1.5	
161255		7.5	B2	I7824	270478	1	80	280		1.7	
161399		8.9	A0	M4488	181077	3	90/1	66		1.4/.2	.4/.3
161463		8.8	B8	M4497	181077	2	77/4	61		2.7/.8	.4/.6
161935	A11776A	6.9	K0	I7828 M4869	250578 190778	1 0	150	99 84			1.3
163563		9.1	G5	M3849 M4510	160975 201077	2 0	88/2	191 113		.7/.5	
163666	A13961AB	7.1	F0	M3013BA	090973	3	60.6/0.5	194	-7/4	.1/.1	
163760*		8.2	K5	M2637	131172	2	133/1	200		.4/.3	
164213		8.5	Gx	EB343 M3851	270974 190975	0 1		45 302			.5/.7
164222	V0U24AB	8.7	G0	M3852 M4181	170975 271176	1 3	45/4 318/1	251 303		1.2/.8 1.1/.2	.8/.3
164231		8.9	K0	M3925	081275	1	16/1	228		1.2/.3	
164259		9.0	F5	M5343	021079	2	241/2	7		1.3/.3	
164482		9.1	K0	M5008	081178	2	42/3	236			1.6/.5

SAO No	Name	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
164935		7.1	G5	H	071170	1	4/1	75		.6/.3	
164971		8.8	K0	M1637	051270	3	13/2	27		.7/.4	
183333		7.2	A2	M2611	230672	3	15/2	164		.4/.3	
183445	A9621AB	8.1	F0	M2805	130673	3	349/1	329		.8/.2	
183565	A9689BC	7.5	A3	M2602	270572	3	159/1	275		.0/.2	
184141		7.9	G5	M3799 M3807 S&T 50.77	250575 250575 250575	3 0 3	52.9/.3 36	104 281 89		1.0/.1 1.0/	1.4/.3
185137	A10388AB	6.9	G5	EB148AB	190872	3	1372/14	107		2.8/.2	3.2/.2
186152		6.9	B3	M3007	060973	3	174/3	203	-13/3	2.2/.4	
186372	A11100AB	9.0	A0	EB156BA	200872	3	189/14	264*		.1/.5	
186917		8.6	F8	M2614	240772	1	115/1	243		.3/.2	
187103/6	A11539AB	8.0 9.2	A0 A2	EB170AB	170972	3	812/6	136		.2/.4	-1.6/.4
188452		8.6	A0	M2108	290971	3	202/2	222	-17/5	2.3/1.3	
189609		8.8	F8	M1604	061170	3	117/1	76		.6/.3	
189663		8.9	F8	M1607	061170	3	22/2	284*		.4/.4	

Faint Stars (No SAO numbers)

DM No	Mag	Sp	Run No	Date	Grade	Sep	PA	Slope	ΔB	ΔR
-20.5127	9.1	xx	M3860	111075	1	17/3	34		.6/.7	
-19.4924	9.0	B9	17819	270478	1	50/	296		1.0/	
-18.4305	9.3	xx	M4449	190777	1	20/10	257		.8/1.1	.5/1.4
-12.4008	9.1	xx	M4389	240777	3	22/3	135		.6/.6	.9/1.1
+16.0663	8.8	G0	M5508	220380	3	65.2/0.7	147		.3/.2	.6/.3
+16.1667	7.8	G0	M5096	100279	3	918/3	289		.9/.4	2.2/.7
+17.1416	9.5	xx	M4718	180378	3	61/2	276		.5/.5	
+17.1619	9.6	A2	M5143	050479	3	271/2	63		.3/.4	.1/1.6
+17.1640	9.3	xx	M3771	160575	1	218/4	238		1.7/.4	
+18.0901	8.8	F8	M5027 M5074	171178 070279	0 2	774/7	285 217		1.8/.8	
+18.0922	10.0	xx	M4733	130478	2	101/3	218		1.8/.5	1.7/1.4
+18.0929	9.5	A2	M4525 M4738	311077 130478	0 1	25/3	242		2.4/.6	