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NUMBER	OBJECT	R.A. 1975	DEC. 1975	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
569	CD-77 973	19 ^h 27.4	-76° 57'	Oct 12 1974	00 ^h 32 ^m	00 ^h 44 ^m	14 ^m	1 ^h 57 ^m W	3/4"	325	0.6 100 μ	112A 7.00	~10.6		NeA	2 ^s	1 1/2 m in preflash box	IIaD	MWP-2 7m	Dennefeld GSDm	T: 53°F H: 38%	
570	NGC 7009	21 ^h 02.9	-11 28	Oct 12	01:29	01:44	15 ^m	-	"	"	130 μ /open	"			"	15	60 watt	"	MWP-2 5m	"	"	
571	SNR 1	00 46.4	-73 15.8	"	02:49	03:29	40 ^m	0 ^h 35 ^m E	"	"	130 μ /open	"			"	15	"	"	"	"	"	
572	"	"	"	"	3:53	5:53	2 ^h	1 ^h 50 ^m W	2"	"	"	"			"	"	"	"	"	"	"	
573	SNR X	00 45.9	-73° 21'	"	06:07	06:22	15 ^m	-	2"	"	"	"			"	"	"	"	"	"	"	
574	N 11 L	04 54.9	-66° 27'	"	07:37	09:17	1 ^h 40 ^m	-	2"	"	"	"			"	34	"	"	"	"	"	
575	NGC 7009	21 ^h 2.9	-11° 28'	Oct 13 1974	00:55	01:06	20 ^s 5 ^m	Start start 21 ^h 41 ^m	2"	322	100 μ /open	112A 8.4B			NeA	2 ^s	1 1/2 m in pre- flash box 60w	IIaD	MWP-2 5m	Dennefeld Dm	T 54° H 38%	
576	SNR 1	00 ^h 46.4	-73° 15.8	"	03:22	04:22	1 ^h	0 ^h 24 ^m W	"	322	"	"			"	15	"	"	"	"	"	
577	SNR 2	00 ^h 47.3	-73° 26.6	"	04:54	06:24	1 1/2 ^h	02 ^h 25 ^m W	"	"	"	"			"	4	"	"	"	"	"	
578	N 48 (B)	05 ^h 25.7	-66° 19.8	"	07:02	09:12	2 ^h 10 ^m	0 ^h 34 ^m W	3"	"	"	"			"	"	"	"	"	"	No good - stuck to screen T: 51°F H: 42%	
579	NGC 7009	21 ^h 02.9	-11° 28'	Oct 14 1974	00:11	00:28	1 ^m 15 ^m	0 ^h 12 ^m W	4"	322	130 μ /open	112/8.4B			NeA	2 ^s 15	1 1/2 m in pre- flash box 60watt	IIaD	MWP-2 5m	Dennefeld Dm	T: 51°F H: 42%	
580	SNR 1	00 ^h 46.4	-73° 15.8	"	01:43	05:43	4 ^h	1 ^h 45 ^m W	2-3"	"	"	"			"	"	"	"	"	"	"	
581	N 48 (B)	05 ^h 25.7	-66° 19.8	"	07:47	9:09	1 ^h 22 ^m / 1 ^h	0 ^h 31 ^m W	2"	"	"	"			"	"	"	"	"	"	"	
582	SNR 1	00 ^h 46.4	-73° 15.8	Oct 15 1974	01:37	4:37	3 ^h	0 ^h 42 ^m W	2"	322	130 μ /open	112/8.4B			NeA	2 ^s 13	1 1/2 m in pre- flash box 60w	IIaD	MWP2 5m	Dennefeld Dm	T: 47°F RH: 40% pre-tilt: 15	
583	N 48 (B)	05 ^h 26.1	-66° 17'	"	5:48	6:23	1 ^h 35 ^m	1 ^h 11 ^m E	"	"	"	"			"	"	"	"	"	"	pre-tilt: 15	
584	N 48 (B)	5 ^h 25.6	-66° 20'	"	7:39	9:09	1 1/2 ^h	0 ^h 41 ^m W	"	"	"	"			"	"	"	"	"	"	"	
585	SNR 2	00 ^h 47.3	-73° 26.6	Oct 16 1974	00:20	04:40	4 ^h 20 ^m	1 ^h 04 ^m W	3"	322	130 μ /open	112/8.4B			NeA	2 ^s 10.5	1 1/2 m in pre- flash box 60watt	IIaD	MWP2 5m	Dennefeld Dm	Neutral Filter added to NeA lamp T: 44, RH: 35%	
586	N 206	5 ^h 32.3	-71° 01.6	"	5:20	5:50	30 ^m	Start 3 ^h 17 ^m W	2"	"	"	"			"	"	"	"	"	"	"	
587	N 206	"	"	"	6:05	8:05	2 ^h	33 ^m W	"	"	"	"			"	"	"	"	"	"	"	
588	NGC 1535	4 ^h 13.1	-12° 48'	"	8:31	9:01	1 ^h 5 ^m 20 ^m	1 ^h 42 ^m E	"	"	"	"			"	"	"	"	"	"	T: 47°F RH: 40% With RG-2 filter new tilt: 15	
589	SNR X	00 ^h 45.9	-73° 21'	Oct 17 1974	00:59	01:59	1 ^h	1 ^h 27 ^m E	2"	325	130 μ /open	112/9.7			NeA	10 10.5	1 1/2 m in pre- flash box 60watt	IIaD	MWP2 5m	Dennefeld Dm	new tilt: 15	
590	SNR 1	00 ^h 46.4	-73° 15.8	"	2:13	5:13	3 ^h	1 ^h 26 ^m E	"	"	"	"			"	10.5	"	"	"	"	"	
591	N 206	5 ^h 32.3	-71° 01.6	"	5:39	8:34	2 ^h 55 ^m	2 ^m E	"	"	"	"			"	"	"	"	"	"	"	
592	NGC 1535	4 ^h 13.1	-12° 48'	"	8:50	9:08	18 ^m	1 ^h 54 ^m E	"	"	"	"			"	"	"	"	"	"	"	
593	SNR 1	00 ^h 46.4	-73° 15.8	Oct 18	0:25	4:25	4 ^h	-	3"	325	130 μ /open	112/9.07			NeA	2 ^s 10.5	"	IIaD	MWP2 5m	Dennefeld Dm	T: 47°F RH: 40	
594	N 103 B	5 ^h 09.1	-68° 45.5	"	4:30	8:31	3 ^h 0 ^m	25 ^m E	2"	"	"	"			"	"	"	"	"	"	"	
595	NGC 1535	4 ^h 13.1	-12° 48'	"	8:47	9:07	20 ^m	1 ^h 57 ^m E	"	"	"	"			"	"	"	"	"	"	"	
596	SNR 1	0 ^h 46.4	-73° 15.8	Oct 19	1 ^h 20	4:20	3 ^h 4 ^m	40 ^m E	2"	318	130 μ /open	112/7.02			NeA	2 ^s 15	"	IIaD	MWP-2 5m	Dennefeld Dm	"	
597	N 206	5 ^h 32.3	-71° 01.6	"	5:03	8:03	3 ^h	22 ^m W	"	"	"	"			"	"	"	"	"	"	"	
598	NGC 1535 16 41 B	4 ^h 13.1 5 ^h 26.3	-12° 48' -12° 42.2	"	8:19	8:57	5 ^m 15 ^m 7m	1 ^h 34 ^m W 39 ^m W	"	"	"	"			"	"	"	"	"	"	"	"

T: 54°F
RH: 38%

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
599	HR6164	16 ^h 34.6 ^m	-42°48'	Oct 21 1974	00:35	00:40	5 ^s 10 ^s 2.5 ^s	5 ^h 14W	3"	327	150/.8	1/2 2.2	5.58		NcA	2023		IIaD	3m MWP-2	Dm	T:53 H:58 Blue
600	CD-72 923	19 ^h 27.4	-76°57'		1:38	1:58	20 ^m	-	5"	"	13% .6	"			"	"	1 1/2"	4	5m MWP-2	Dm	Blue
601	SHRX	0 ^h 45.9	-73°21'		2:27	3:57	1 ^h 30	24 ^h W	"	"	13% open	"			"	"				"	Tracking poor due to "line"
602	Near SNRY	"	"		4:19	4:49	30 ^m	1 ^h 16W	"	"	"	"			"	"					made for run
603	SNR 2	0 ^h 47.3	-73°21.8'		5:07	8:07	3 ^h	4 ^h 33W	3"	"	"	"			"	"					
604	NGC 1535	4 ^h 13.1	-12°48'		8:27	8:33	6 ^m	1 ^h 35W	"	"	13% .6	"			"	"					
605	IC 418	5 ^h 26.3	-12°42.2'		8:36	8:41	5 ^m	30 ^h W	"	"	13% 1.2	"			"	"					
606	HR 6219	16 ^h 45.2	-58°17'	Oct 30 1974	1:06	1:11	5 ^s 10 ^s 20 ^s	6 ^h 51W	3"	325	150%.8	1 1/2 7.2	5.60		NcA	2023		IIaD	3m MWP-2	Dm	Scope pair Tilted out
607	HR 6462	17 ^h 23.3	-56°22'		1:26	1:31	18 ^s 4 ^s 16 ^s	5 ^h 57W	"	"	"	"	3.47		"	"					
608	HR 6776	18 ^h 00.4	-22°47'		1:46	1:51	15,39,60	5 ^h 40W	"	"	"	"	5.73		"	"					
609	HR 6262	16 ^h 52.1	-41°48'	Nov 1 1974	0:29	0:48	3,6,12 4,6,9,18 ^s	5 ^h 31W	2"	323	150%.8	1 1/2 5.0	4.36		NcA	2023		IIaD	3m MWP-2	Dm	Blue T:54 H:33
610	HR 6164	16 ^h 34.6	-42°48'		0:48	1:03	4,6,9,18 ^s	6 ^h 08W	"	"	"	"	5.58		"	"					
611	HR 6219	16 ^h 45.2	-58°17'		1:03	1:20	4,6,9,18 ^s 5,9,12,18 ^s	6 ^h 08W	"	"	"	"	5.60		"	"					
612	HR 6462	17 ^h 23.3	-56°22'		1:20	1:36	5,9,12,18 ^s 12,24,48 ^s	5 ^h 53W	"	"	"	"	3.47		"	"					
613	HR 6716	18 ^h 00.4	-22°47'		1:36	1:49	12,24,48 ^s 15,30,60 ^s	5 ^h 30W	"	"	"	"	5.73		"	"					
614	HR 6727	18 ^h 01.5	-22°43'		1:49	2:01	15,30,60 ^s 12,24,48 ^s	5 ^h 43W	"	"	"	"	6.64		"	"					
615	HR 6822	18 ^h 13.7	-20°44'		2:01	6:28	12,24,48 ^s 48,96,192 ^s	5 ^h 43W	"	"	"	"	5.45		"	"					
616	HR 2787	7 ^h 17.5	-36°41'		2:45	2:45	72,150,300 ^s	2 ^h 55E	"	"	100%.8	"	4.51		NcA	10 ^s		IIaO	"	"	W I.T.
#	HR 2790	7 ^h 17.7	-36°42'		2:45	2:45	72,150,300 ^s	2 ^h 37E	"	"	"	"	4.94		"	"					
617	α Del	20 ^h 38.5	+15°50'	Nov 2 1974	2:22	2:22	28,32,36 ^s	3 ^h 44W	2 ^h 30"	323	50%.6	1 1/2 2.0	3.71	B9 IV	NcA	12 ^s		IIaO	15m MWP-2	Dm	T:58 H:27
	α R A	22 ^h 56.3	-29°45'		2:36	2:36	14,17,21 ^s	1 ^h 37W	2"	"	"	"	1.25	A8 I							
	w 2 Aqr	23 ^h 41.4	-14°41'		2:48	2:48	44,50,55 ^s	1 ^h 07W	"	"	"	"	4.47	B9.5 I							
	18 Tau	3 ^h 43.7	+24°46'		4:12	4:12	46,189,210 125 ^s	1 ^h 34E	"	"	"	"	5.83	B8 II							
	22 Tau	3 ^h 44.6	+24°27'		4:41	4:41	255, 240 ^s	1 ^h 05E	"	"	"	"	6.91	B9 I							
618	HD 18331	2 ^h 55.6	-3°49'		5:10	5:10	45,35, 25 ^s	0 ^h 15E					5.25	A1 I							
	r Peg	0 ^h 11.9	+15°03'		5:20	5:20	8,10,11 ^s	3 ^h 08W					2.60	B2 II							
	19 Tau	3 ^h 43.7	+24°23'		5:33	5:33	20,26,33 ^s	0 ^h 12E					4.19	B6 IV							
	16 Tau	3 ^h 43.3	+24°12'		5:47	5:47	66,75,90 ^s	0 ^h 03E					5.42	B7 IV							
	o Pav	3 ^h 42.6	+32°12'		6:00	6:00	20,33,26 ^s	0 ^h 16E					3.88	B1 III							
	g ² Tau	4 ^h 27.2	+15°49'		7:07	7:07	10,12,14 ^s	0 ^h 10E					3.57	A7 III							

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					BEGIN	END									KIND	EXP.					
619	η Aur	5 ^h 04 ^m .8	+41° 12'	Nov. 2 1974	7:20	7:23	16, 24, 32 ^s	0 ^h 15W	2"	323	50 / 16	112 Å / 7.0	2.99	B3 V	NeA	12 ^s		IIa-0	15 ^m Metal Sulfite	Tnr, Dm	
	β Cui	5 ^h 06 ^m .6	-5° 07'	"		7:32	4, 6, 8 ^s	0 ^h 25W					2.93	A3 III							
	β Ori	5 ^h 13 ^m .3	-8° 14'	"		7:36	1, 2, 3 ^{tr}	0 ^h 22W					0.10	B8 Ia							
	γ Ori	5 ^h 16 ^m .4	-6° 52'	"		7:46	7, 10, 13 ^s	0 ^h 30W					3.47	B5 III							
	λ Lep	5 ^h 18 ^m .4	-13° 12'	"		7:53	12, 17, 22 ^s	0 ^h 35W					4.04	B0.5 IV							
620	γ Ori	5 ^h 23 ^m .8	+6° 20'	"	8:02	8:03	1, 2, 3 ^{tr}	0 ^h 38W	"	"	"	"	1.41	B2 III	"	"		"	"	"	
	δ Ori	5 ^h 30 ^m .7	-0° 19'	"		8:07	2, 3, 4 ^{tr}	0 ^h 36W					2.02	O9.5 II							
	ν Ori	5 ^h 30 ^m .7	-7° 20'	"		8:16	18, 23, 28 ^s	0 ^h 45W					4.36	B0 V							
	α Lep	5 ^h 31 ^m .6	-17° 51'	"		8:21	5, 7, 9 ^{tr}	0 ^h 48W					2.77	F0 Ib							
	ζ Ori	5 ^h 34 ^m .2	-4° 51'	"		8:28	18, 23, 28 ^s	0 ^h 53					4.40	B1 V							
621	ϵ Sgr	18 ^h 53 ^m .7	-26° 20'	Nov. 23 1974	0:20	0:25	5, 7, 9 ^{tr}	3 ^h 35 ^m W	2"	324	"	"	1.81	B2.5 V	"	"		"	"	"	T: 61° H 37%
	δ Aql	19 24.2	+3 04	"		0:37	31, 39, 45 ^s	3 ^h 17W					3.68	F0 IV							
	κ Aql	19 35.5	-7 05	"		0:48	24, 105, 128 ^s	3 ^h 16W					4.95	B0.5 III							
	α Del	20 38.5	+15 50	"		1:03	34, 44, 50 ^s	2 ^h 25W					3.71	B9 IV							
	α PsA	22 56.3	-29 45	"		1:10	2, 3, 4 ^{tr}	0 ^h 18W					1.25	A3 V							
	λ Psc	23 40.8	+1 39	"		1:22	61, 66, 72 ^s	0 ^h 15E					4.72	A7 V							
622	ω 2 Agr	23 ^h 41 ^m .4	-14° 41'	"	1:44	1:49	67, 47, 42 ^s	0 ^h 12E	"	"	"	"	4.47	B9.5 V	"	"		"	"	"	
	γ Psc	0 11.9	+15 03	"		1:50	6, 12, 18 ^s	0 ^h 12E					2.60	B2 IV							
	β Ari	1 53.3	+20 41	"		2:04	15, 20, 26 ^s	1 ^h 45E					2.78	A5 V							
	β Tri	2 08.1	+34 52	"		2:12	31, 48, 55 ^s	1 ^h 52E					3.14	A5 III							
	HD 18331	2 55.6	-3 49	"		2:29	129, 144, 151 ^s	2 ^h 23E					5.25	A1 V							
623	40 Per	3 ^h 40 ^m .8	+33° 53'	"	3:40	3:54	200 ^s , 170 ^s , 220 ^s	1 ^h 43E	"	"	"	"	4.95	B0.5 V	"	"		"	"	"	
	0 Per	3 42.6	+32 12	"		4:03	42, 48, 54 ^s	1 ^h 36E					3.88	B1 III							
	17 Tau	3 43.4	+24 02	"		4:10	28, 38, 44 ^s	1 ^h 28E					3.58	B6 III							
	18 Tau	3 43.7	+24 46	"		4:29	200 ^s , 230 ^s	1 ^h 11E					5.57	B8 V							
	19 Tau	3 43.7	+24 23	"		4:37	50, 60, 66 ^s	1 ^h 02E					4.19	B6 IV							
	16 Tau	3 43.3	+24 12	"		4:53	176, 198 ^s , 220 ^s	0 ^h 45E					5.42	B7 IV							
624	η Tau	3 ^h 46 ^m .0	+24° 02'	"	5:04	5:10	13, 16, 19 ^s	0 ^h 31E	"	"	"	"	2.78	B7 III	"	"		"	"	"	
	27 Tau	3 47.7	+23 59	"		5:21	26, 33, 39 ^s	0 ^h 23E					3.53	B8 III							
	θ 2 Tau	4 27.2	+15 49	"		5:29	22, 28, 34 ^s	0 ^h 54E					3.57	A7 III							

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					BEGIN	END									KIND	EXP.						
624	η Aur	5 ^h 04 ^m .8	+41° 12'	NOV. 3 1974		5:42	34,42,30 ^S	1 ^h 18 ^m E	2"	324	50/1.6	112A / 7.0	2.99	B3 V	NeA	10 ^S	-	IIa-0	15 ^m Merrill sulfite	Tnr, Dm		
	β Ori	5 06.6	-5 07	"		5:48	6,12,18 ^S	1 ^h 14 E					2.93	A3 III								
	γ Ori	5 16.4	-6 52	"		5:55	15,21,27 ^S	1 ^h 17 E						3.47	B5 III							
625	19 Aur	5 ^h 18 ^m .4	+33° 56'	"	6:09:15	6:18	210,240 ^S	0 ^h 55 ^m E	"	"	"	"	5.30	A5 II	"	12 ^S	-	"	"	"	"	
	λ Lep	5 18.4	-13 12	"	6	6:30	30,32,35 ^S	0 ^h 33 E					4.04	B0.5 IV								
	δ Ori	5 30.7	-0 19	"		6:36	8,10,12 ^{tr}	0 ^h 49 E						2.62	O9.5 II							
	ν Ori	5 30.7	-7 20	"		6:43	37,43,44 ^{tr}	0 ^h 43 E						4.36	B0 V							
	42 Ori	5 34.2	-4 51	"		6:49	37,43,44 ^{tr}	0 ^h 41 E						4.40	B1 V							
	ϵ Ori	5 34.2	-5 56	"		6:54	12,15,18 ^{tr}	0 ^h 36 E						2.52	O9 III							
626	θ Ori	5 37.5	-2 37	"	7:04	7:06	18,24,30 ^S	6.26 ^m E	"	"	"	"	3.56	O9.5 V	"	"	-	"	"	"	"	
	ζ Ori A	5 ^h 37 ^m .5	-1° 58'	"		7:11	4,6,8 ^{tr}	0 ^h 24 E					1.56	O9.7 Ib								
	κ Ori	5 46.6	-9 41	"		7:15	5,7,9 ^{tr}	0 ^h 27 E						1.87	B0.5 Ia							
	χ^2 Ori	5 02.4	+20 08	"		7:28	85,110 ^S	0 ^h 29 E						4.91	B2 Ia							
	13 Mon	6 31.6	+7 21	"		7:36	57,63,69 ^S	0 ^h 49 E						4.50	A0 Ib							
HD 48434	6 42.3	+3 58	"		7:58	170,209 ^S	0 ^h 40 E						5.89	B0 III								
627	ϵ Cma	6 ^h 57 ^m .7	-28° 56'	"	8:07	8:09	4,5,6 ^{tr}	0 ^h 44 E	"	"	"	"	1.29	B2 II	"	"	-	"	"	"	"	
	ρ^2 Cma	7 02.0	-23 48	"		8:15	15,20,25 ^{tr}	0 ^h 42 E						2.93	B3 Ia							
	ϵ Cma	6 55.1	-17 01	"		8:22	38,44,50 ^S	0 ^h 25 E						4.31	B3 II							
	δ Cma	7 02.6	-15 36	"		8:29	26,31,36 ^S	0 ^h 24 E						4.01	B5 II							
	η Cma	7 23.1	-29 15	"		8:33	8,11,14 ^m	0 ^h 45 E						2.35	B5 Ia							
	HD 71155	8 24.6	-3 50	"		8:42	30,35,40 ^S	1 ^h 38 E						3.88	A0 I							
628	δ Sgr	18 53.7	-26 20	NOV 4 1974	23:50	23:58	4,5,6 ^S	3 ^h 11 ^m W	1 1/2 - 2"	324	50/1.6	112A / 7.0	1.81	B2.5 V	NeA	12 ^S	-	IIa-0	15 ^m Merrill sulfite	Tnr, Dm	T:56 H:38	
	δ Aql	19 24.2	+3 04	"		00:13	30,36,42 ^S	3 04 W					3.68	F0 II								
	κ Aql	19 35.5	-7 05	"		00:45	99,108,117 ^S	3 25 W					4.95	B0.5 III								
	α Del	20 38.5	+15 50	"		00:55	36,45,50 ^S	2 30 W					3.71	B9 IV								
	ρ^9 Cyg	21 24.8	+36 33	"		1:35	432,442 ^S	2 25 W					5.87	B0 Ib								
	α Ps A	22 56.3	-29 45	"		1:43	3,4,5,6 ^{tr}	1 01 W					1.25	A3 V								
629	λ Peg	23 40.8	+1 39	"		2:03	91,105,119 ^S	0 35 W	"	"	"	"	4.72	A7 V	"	"	-	"	"	"	"	
	ω^2 Aqr	23 41.4	-14 41	"		2:12	40,48,56 ^S	0 45 W					4.47	B9.5 V								

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
629	γ Peg	0 ^h 11 ^m .9	+15° 03'	Nov. 5 1974	2:21	2:25	9, 11, 13 ^s	0 ^h 27 ^m W	1 1/2 - 2"	234	50/.6	112A/ 7.0	2.60	B2 IV	Ne Ar	12 ^s	—	IIa-0	15 ^m metal Sulfite	Tnr, Dm	
	β Ari	1 53.3	+20 41	"		2:36	14, 16, 18 ^s	1 ^m 02 ^m E					2.78	A5 V							
	β Tri	2 08.1	+34 52	"		2:55	21, 33, 37 ^s	0 58 E					3.14	A5 III							
	HD 18331	2 55.6	-3 49	"		3:21	102, 120, 138 ^s	1 20 E					5.25	A1 V							
630	40 Per	3 40.8	+33 53	"	4:25	4:57	236, 268, 300 ^s	0 29 E	"	"	"	"	4.95	B0.5 V	"	"	-	"	"	"	"
	0 Per	3 42.6	+32 12	"		5:08	48, 56, 64 ^s	0 20 E					3.88	B1 III							
	17 Tau	3 43.4	+24 02	"		5:19	31, 35, 38 ^s	0 09 E					3.58	B6 III							
	18 Tau	3 43.7	+24 46	"		5:35	182, 217, 252 ^s	0 16 W					5.57	B8 I							
	19 Tau	3 43.7	+24 23	"		6:01	56, 63, 70 ^s	0 32 W					4.19	B6 IV							
	η Tau	3 46.0	+24 02	"		6:08	13, 17, 21 ^s	0 37 W					2.78	B7 III							
631	27 Tau	3 47.7	+23 59	"	6:16	6:25	30, 34, 38 ^s	0 52 W	"	"	"	"	3.73	B8 III	"	"	-	"	"	"	"
	θ^2 Tau	4 27.2	+15 49	"		6:34	26, 30, 34 ^s	0 23 W					3.57	A7 III							
	β Ori	5 06.6	-5 07	"		6:41	9, 12, 15 ^s	0 11 E					2.93	A3 III							
	β Ori	5 13.3	-8 14	"		6:44	1, 2, 3 ^{tr}	0 14 E					0.10	B8 Ia							
	γ Ori	5 16.4	-6 52	"		6:51	21, 24, 28 ^s	0 11 E					3.67	B5 III							
	δ Ori	5 23.8	+6 20	"		6:56	7, 11, 15 ^{tr}	0 14 E					1.87	B2 III							
632	40 Per	3 ^h 40 ^m .8	+33° 53'	Nov. 6 1974	2:34	3:00	205, 287, 336 ^s	2 ^h 25 ^m E	1-1 1/2"	234	50/.6	112A/ 7.0	4.95	B0.5 V	Ne Ar	13 ^s	—	IIa-0	15 ^m metal Sulfite	Tnr, Dm	
	16 Tau	3 43.3	+24 12	"		3:35	100, 150, 200 ^s	1 52 E					5.42	B7 IV							
	22 Tau	3 44.6	+24 27	"		4:27	325, 380, 435 ^s	1 00 E					6.41	B9 V							
	η Tau	3 46.0	+24 02	"		4:33	10, 12, 14 ^s	0 56 E					2.78	B7 III							
	η Aur	5 04.8	+41 12	"		4:43	30, 38, 46 ^s	2 06 E					2.99	B3 V							
	β Ori	5 13.3	-8 14	"		4:54	1, 2, 3 ^{tr}	2 02 E					0.10	B8 Ia							
633	λ Lep	5 18.4	-13 12	"	5:05	5:10	30, 37, 44 ^s	1 52 E	"	"	"	"	4.04	B0.5 IV	"	"	-	"	"	"	"
	δ Ori	5 30.7	-0 19	"		5:20	4, 5, 6 ^s	1 55 E					2.02	O9.5 II							
	ν Ori	5 30.7	-7 20	"		5:29	30, 36, 42 ^s	1 46 E					4.36	B0. V							
	α Lep	5 31.6	-17 5	"		5:37	6, 8, 10 ^s	1 38 E					2.77	F0 Ib							
	42 Ori	5 34.2	-4 51	"		5:58	30, 36, 42 ^s	1 19 E					4.40	B1 V							
	ζ Ori	5 34.2	-5 56	"		6:03	6, 8, 10 ^s	1 15 E					2.52	O9 III							
634	ϵ Ori	5 ^h 34 ^m .9	-1° 13'	"	6:17	6:18	2, 3, 4 ^s	1 ^h 00 ^m E	"	"	"	"	1.51	B0 Ia	"	"	-	"	"	"	"
	δ Ori	5 37.5	-2 37	"		6:28	14, 16, 18 ^s	0 53 E					3.56	O9.5 V							

NUMBER LC	OBJECT	R.A.	DEC.	DATE UT	UT EXP.		TOTAL/CORR	H.A. END	SEE TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS.	REMARKS	
					BEGIN	END									KIND	EXP.						
659	♄ Psc	23 26.6	+06 14	25 Nov	0023	0031	30/60/120	0° 28' W	1.5/clear	3.20	8/100/8	12/70	5.4	K1	NeA	20'	NeA	II-c	M100-2	5/1	T 56° H 40% No Wind	
	70 PEG	23 27.8	+02 34	1977	0037	0042	"	0° 38' W	"				5.4	G8								
	λ AND	23 36.3	+46 18		0045	0100	1 1/2 6"	0° 57' W	2"/clear				4.9	G8								
	♄ Psc	23 40.7	+01 38		0053	0106	5.30 60"	0° 56' W	1.5				4.7	A7								
	ω Psc	23 57.8	+06 42		0110	0114	6 20 100"	0° 51' W	"				4.4	F7							red by orange H2O & C2H2 AM?	
	♄ Psc	23 11.7	+14 58		0117	0120	4.6, 12, 290	0° 43' W	"				5.2	B2								
660	♄ Psc	01 01.7	+02 45	"	0135	0140	20, 40, 80	0° 11' W	"	"	"	"	5.2	K0	"	"	"	"	"	"	"	
	♄ Psc	01 10.1	+29 55		0145	0149	40, 80, 160	0° 12' W	2"/clear				5.6	K0								
	♄ Psc	01 12.3	+24 23		0153	0203	30, 45, 1 1/2, 3	0° 20' W	"				5.6	K0								
	♄ Psc	01 17.9	+27 06		0206	0211	2, 40, 80	0° 27' W	"				4.7	A2								
	♄ Psc	01 51.6	+29 26		0214	0217	12, 24, 48	0° 0'	"				3.7	F6 II 50								
	♄ Psc	01 52.1	+19 06		0220	0225	20, 40, 80	0° 08' W	"				4.8									
	♄ Psc	"	+17 05		0228	0234	20, 40, 80	0° 17' W	"				4.8									
661	♄ Ari	01 53.0	+20 37	"	0244	0247	3, 6, 12, 25	0° 27' W	"				2.8	A5 5 40								
	♄ Ari	02 05.8	+23 17		0250	0253	5, 10, 20, 40	0° 22' W	3"/"				3.2	K III 40								
	♄ Ari	02 42.0	+27 37		0257	0300	15, 30, 60	0° 9' E	2"/"				4.4	B5 V 40								
	♄ Ari	02 46.4	+27 06		0304	0310	45, 1 1/2, 3"	0° 2' E	3"/"				5.5	K1								
	♄ Ari	02 48.6	+27 06		0315	0318	2, 40, 80, 160	0° 5' W	"				3.3	B8							multiple 2 comp not in panel d	
	Cam AB	02 57.8	+21 10		0322	0327	1/2, 1, 2"	0° 2' W	-/				5.0	A-2								
662	CD-314833	07 37.0	-32 06		0402	0408	5"	3° 55' E	2"/clear				7.0	F5							T 53° H 40% No Wind	
	CD-314817	07 30.2	-32 09		0502	0539	37"	2° 22' E	2"/"				9.2	A2								
	119 Tau	05 30.7	+18 55		0542	0557	12 > 6"	0° 2' W	/				6.7	M2 Ia 100								
	CD-314809	07 10.0	-31 13		0615	0657	34"	0° 1' E	1.5/				8.9	A0								
	CD-314834	07 31.7	-31 37		0715	0717	1"	0° 30' W	"				8.5	F5								
	CD-314802	07 34.2	-32 00		0746	0802	24"	1° 08' W	"				8.7	G0								
	CD-314804	07 38.4	-31 12		0827	0846	"	1° 1' W	"				8.3	F1								T 47° H 40% W 5 10

NUMBER LC	OBJECT	R.A. DIRECT 1975 READOUT	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP		CALIB.	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
663	JUP. SAT.	22 ^h 43.7 ^m	-09° 29'	26	0036	0042	5 ^m / 10 ^m	1 ^h 35 ^m W	1.5 / CLEAR PHOT.	2.86	50 ^m / 1.2	67 ^m / 4.45	5:	G2 V	NeA	40 ^s	NONE	II α-0	METOL-	4	NO WIND. T=55° F H=40%	
	LOTH CET	00 17.9	-09 03	NOV 1974	0053	0105	1.5, 3, 6 ^m / 5 ^m	0 ^h 25 ^m W	1.5-2 / CLEAR	"			4.8	K2 III					SULPHITE 15 MIN. 67° F		(ONLY 1 SPACE BETW EXP.)	
	θ CET	01 22.5	-08 24		0110	0121	" / 4.5 ^m	0 ^h 24 ^m E	2" / "				4.7	K0 III								
	π CET	01 42.7	-16 09		0123	0133	50, 100, 200 ^m / 3 ^m	0 ^h 32 ^m E	2" / "				4.2	G8 V								
	δ CET	02 37.9	+0 16		0136	0146	35, 70, 140 ^m / 2 ^m	1 ^h 15 ^m E	2" / "				3.85	B2 IV	NeA	40 ^s						
664	ξ ¹ CET	02 11.3	+08 43	"	0246	0324	5, 10, 20 ^m / 10 ^m	0 ^h 49 ^m W	1.5 / CLEAR	"	"	"	5.5	G8 IICW-2	"	"	"	"	"	"	"	(2 TRAILS - DRIFT.)
	μ CET	02 43.2	+09 58		0327	0341	2, 4, 8 ^m / 4 ^m	0 ^h 36 ^m W	" / "				4.6	F0 IV							T=56° H=40% W=5 mph.	
	α CET	03 00.7	+03 59		0344	0357	1.5, 3, 6 ^m / 4.5 ^m	0 ^h 34 ^m W	2" / "				4.2	M2 III								
	ο TAU	03 23.2	+08 55		0400	0421	2, 4, 8 ^m / 4 ^m	0 ^h 30 ^m W	1.5 / "				4.5	G8 III							(discovered that 1.5 blue filter was left in jar of TWA's rec.)	
665	119 TAU	05 30.2	+18 34	"	0506	0519	13 ^m / "	0 ^h 33 ^m E	1.5 / "	"	"	"	6.7	M2 Ib	"	"	"	"	"	"	"	
	CD-31° 4879	07 38.6	-31 29		0540	0608	28 ^m / "	1 ^h 53 ^m E	" / "				8.7	B5:								
	CD-31° 4906	07 39.5	-31 29		0611	0638	27 ^m / "	1 ^h 23 ^m E	1.5 / "				8.7	A0:								
	CD-31° 4884	07 38.9	-32 07		0643	0814	91 ^m / "	0 ^h 13 ^m W	1.5 / "				9.4	A0:								
	CD-31° 4910	07 39.6	-31 38		0819	0830	10 ^m / "	0 ^h 30 ^m W	" / "				7.8	G0 I							= R Pup.	
	CD-31° 4940	07 40.8	-32 02		0834	0845	10 ^m / "	0 ^h 45 ^m W	" / "				7.0	F0							T=53° H=40% W=5 mph	
	(MOON 1 ^h 52 ^m +15°)			27 NOV	→ DRIVE PROBS.																	
666	BD+15° 603	04 13.8	+15° 16'	27 NOV	0220	0232	1, 3, 6 ^m / "	2 ^h 0 ^m E	1" / PHOT.	3.20	100 ^m / .8	112 ^m / 7.0	6.7	F3 V	NeA	20 ^s	-	II. -0	MWP-2	9	W=5 mph T=55° F H=38% HYADES STDS. last + typ uncertain	
	" +16° 579	04 17.9	+16° 24'	1974	0238	0245	6 ^m / "	1 ^h 48 ^m E	" / "				7.4	F8 V								
	+14° 682	04 18.6	+14 58		0410	0417	1/2, 1, 2 ^m / "	0 ^h 20 ^m E	1" / "				5.5	A9 V								
	CD-31° 4911	07 39.6	-31 41		0505	0537	32 ^m / "	2 ^h 22 ^m E	1" / "				9.0	B?							#2 in white MS - check (u) T	
	-31° 4935	07 40.3	-31 42		0544	0700	1 ^h 15 ^m / "	0 ^h 58 ^m E	" / "				9.7	K5.							T=56° F H=34% NO WIND	
	-31° 4926	07 40.0	-31 23		0702	0725	23 ^m / "	0 ^h 32 ^m E	" / "				8.7	A3							T=50° H=37% no wind	
	-31° 4946	07 41.0	-31 44		0752	0809	17 ^m / "	0 ^h 12 ^m W	" / "				8.4	B5								
	-31° 4987	07 42.8	-31° 41'		0814	0821	7 ^m / "	0 ^h 22 ^m W	" / "				7.4	F0								
	η CMA	07 22.8	-29 19		0835	0837	1 ^m / "	0 ^h 58 ^m W	1.5 / "	2.86	50 ^m / 1.2	67 ^m / 4.45	2.4	B5 Ia	"	60 ^s	"	"	"	"	"	(changed not crating to change half of division 2 nd W=5 T=54° F H=40%
667	JUP SAT.	22 43.9	-09 24	28 NOV	0007	0042	4, 4.8, 16 ^m / "	1 ^h 45 ^m W	2-3" / PHOT.	2.86	50 ^m / 1.2	67 ^m / 4.45	5:	G2 V	"	"	"	"	METOL	9		
	ξ PEG	00 11.5	+15 01	1974	0047	0055	1/2, 1, 2 ^m / "	0 ^h 30 ^m W	2-3" / "				2.6	B2 IV								
	θ AND	00 15.2	+38 29		0101	0127	12, 3, 4 ^m / "	0 ^h 59 ^m W	2" / "				4.7	A2 V								
	δ AND	00 37.4	+30 44		0131	0203	4, 8, 16 ^m / 3 ^m	0 ^h 10 ^m W	2-3" / "				4.5	K3 III								

NUMBER LC	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
671	1 ERI	02 43.8	-18 39	29	0508	0517	8 ^m / 6 ^m	2 ^h 25 ^m W	2" / PHOT	2.86	50" / 1.2	67 / 4.45	4.9	F6	NbA	60 ^s	NONE	III-O	Metol-		T=44° H=81% W=0.5
(CONT)	TT ERI	03 45.0	-12 11	NOV	0521	0600	39 ^m / 36 ^m	2 ^h 08 ^m W	" "				6.1	M2					Sulfite		
	8 ERI	03 56.7	-13 36	1974	0603	0616	12 ^m / 10 ^m	2 ^h 10 ^m W	" "				4.6	M0							
	53 ERI	04 37.0	-14 21		0618	0637	19 ^m / 19 ^m	1 ^h 53 ^m W	2.5 / "				5.0	K2							VALLEYS FILLED
	54 ERI	04 39.3	-19 41		0641	0726	45 ^m / 40 ^m	2 ^h 40 ^m W	2" / "				5.9	M4							w/ FOG.
	L LEP	05 11.0	-11 55		0731	0737	5 ^m / 4 ^m	2 ^h 20 ^m W	" "				4.4	B8							H=90%
	μ LEP	05 11.6	-16 14		0741	0744	2 ^m / 1.8 ^m	2 ^h 28 ^m W	2.5 / "				3.2	B9							
	κ LEP	05 12.0	-12 59		0748	0754	4 ^m / 4 ^m	2 ^h 38 ^m W	2" / "				4.3	B8							
	λ LEP	05 18.2	-13 12		0758	0802	3 ^m / 3 ^m	2 ^h 39 ^m W	2" / "				4.0	B0.5							No wind.
																					T=43° H=88%
672	δ Cns	00 42.8	+48 07	30	0024	0047	23 ^m /	0 ^h 9 ^m W	3" / PHOT	"	"	"	4.5	B?	"	"	"	"	"	"	T=44° H=75% W=10mph
	ν AND	01 34.6	+41 14	NOV	0050	0112	22 ^m / 20 ^m	0 ^h 27 ^m E	2" / "				4.6	F8V							
	λ TRI	01 51.2	+29 28	1974	0115	0133	2 ^m / 8 ^m	0 ^h 20 ^m E	2" / "				3.9	F6III							
	λ ARI	02 05.3	+23 19		0137	0147	1 1/2 ^m / 3 ^m	0 ^h 20 ^m E	1.5 / "				3.1	K2III							w=10
	δ CET	02 (37.9)	+00 15		0153	0201	1.2 ^m / 3 ^m	0 ^h 40 ^m E	1.5 / "				3.8	B2IV							T=47° H=67%
673	η ERI	02 54.9	-09 01	"	0219	0233	12 ^m / 10 ^m	0 ^h 25 ^m E	2" / "	"	"	"	5.0	K1+	"	"	"	"	"	"	
	τ CET	02 42.7	-13 55		0236	0239	2 ^m /	0 ^h 7 ^m E	1.5 / "				4.1	B7							
	α SCL	00 57.6	-29 21		0244	0246	2 ^m /	1 ^h 45 ^m W	1.5 / "				4.1	B8p.							
	ν CET	01 58.5	-21 09		0250	0315	25 ^m / 15 ^m	1 ^h 14 ^m W	1.5 / "				5.6	M1							
	ν FOR	02 03.4	-29 25		0320	0323	2 ^m / 2.5 ^m	1 ^h 18 ^m W	1" / "				4.5	A0p							
	τ ³ ERI	03 01.1	-23 42		0326	0329	2 ^m / 2.5 ^m	0 ^h 25 ^m W	1" / "				4.3	A5							Note-type companion
	α FOR	03 11.0	-29 05		0331	0336	4 ^m / 3.5 ^m	0 ^h 23 ^m W	1.5-2" / "				4.4	F8							
	16 ERI	03 18.2	-21 48		0339	0359	20 ^m / 12 ^m	0 ^h 39 ^m W	1.5-3" / "				5.3	M3							4" 10 th mag. faint companion
	τ ⁵ ERI	03 32.4	-21 40		0402	0406	3 ^m /	0 ^h 30 ^m W	2" / "				4.2	B8							
	τ ⁶ ERI	03 45.5	-23 17		0408	0415	6 ^m /	0 ^h 27 ^m W	2" / "				4.7	F3							
	36 ERI	03 58.7	-24 06		0416	0420	3.5 ^m /	0 ^h 18 ^m W	1.5 / "				4.5	Ap.							
	50 ERI	04 32.4	-29 48		0424	0440	16 ^m /	0 ^h 5 ^m W	2" / "				5.5	G6							
	ε LEP	05 04.1	-22 22		0442	0459	17 ^m / 10 ^m	0 ^h 8 ^m E	2-3" / "				4.7	K5							
	-21°135	05 19.2	-21 13		0501	0507	6 ^m / 5.5 ^m	0 ^h 9 ^m E	2" / "				4.7	A0							faint Companion
674	β Lep	05 27.0	-20 44		0524	0526	2 ^m /	0 ^h 3 ^m E	2" / "				3.6	G5							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS		
					BEGIN	END									KIND	EXP.							
676	α PHE	00 ^h 24 ^m 9	-42° 27'	2 DEC	0056	0102	4 ^m / 1.5	0 ^h 45 ^m W	1.5	PHOT	2.86	50 / 1.2	67 / 4.5	3.5	KO	Nest	60 ^s	NONE	II _c -0	M/S	red	T=48° H=57' W=0	
(CONT)	μ PHE	00 39.9	-46 15	1974	0104	0115	12 ^m / ✓	0 ^h 43 ^m W	1"	"				5.6	G8							67° 15mm	
	β PHE AB	01 04.9	-46 53		0119	0126	6 ^m / 3 ^m	0 ^h 29 ^m W	2"	"				4.2	Gf								
	γ PHE	01 27.4	-43 27		0128	0139	10 ^m / ✓	0 ^h 19 ^m W	1.5	"				5.0	K5								
	δ PHE	01 30.3	-49 15		0141	0149	8 ^m / 7 ^m	0 ^h 27 ^m W	1.5	"				4.9	KO								
	η PHE	01 52.7	-46 27		0152	0213	20 ^m / ✓	0 ^h 29 ^m W	1.5	"				6.0	M4							used slow VFO may be streaky	
	-47° 59'	01 56.1	-47 33		0215	0227	12 ^m / 11 ^m	0 ^h 40 ^m W	1"	"				5.7	G5								
	κ ERI	02 26.2	-47 51		0230	0232	2 ^m / 1.5	0 ^h 15 ^m W	"	"				4.1	B5								
	ζ ERI	02 38.7	-43 01		0234	0239	4 ^m / ✓	0 ^h 8 ^m W	1"	"				4.8	A2								
	θ ERI AB	02 57.5	-40 26		0241	0242	40 ^s / ✓	0 ^h 7 ^m E	"	"				3.1	A3							The pair is lined up. Usually on slit → rotated spectro → trailed in Dec	
	θ ERI A	02 57.4	-40 22		0257	0300	1 ^m / ✓	10 ^m W	1.5"	"				3.2	A3								
677	θ ERI B	02 57.3	-40 23	2 DEC	0315	0320	3 ^m / ✓	32 ^m W	1.5"	"	"	"	"	4.4	A7	"	"	"	"	"	"	"	
	δ 2 G. ERI	03 19.0	-43 09	1974	0326	0332	6 ^m / 5.5	22 ^m W	1.5"	"				5.0	G5								
	η ERI = HR 1106	03 36.3	-40 22		0334	0351	17 ^m / 12 ^m	24 ^m W	1"	"				5.6	KO								
	α HOR	04 13.3	-42 21		0354	0402	8 ^m / 6 ^m	2 ^m E	1.5"	"				4.9	K1								
	α CAE	04 39.8	-41 54		0404	0408	3.5 / ✓	23 ^m E	"	"				4.8	F2								
	η COL	05 58.6	-42 47		0411	0420	8 ^m / 7 ^m	1 ^h 30 ^m E	"	"				5.1	KO								
	ζ 4 ERI	04 39.4	-19 43		0424	0434	10 ^m / 15 ^m	0 ^h 3 ^m W	1"	"				5.9	M4								
	μ LEP	05 11.7	-16 15		0438	0440	1 ^m / 45 ^s	0 ^h 23 ^m E	1"	"				3.2	B9p								
	ν CET	01 58.9	-21 12		0443	0452	9 ^m / 12 ^m	3 ^h 2 ^m W	2"	"				5.6	M1								
	ϵ LEP	05 04.4	-22 25		0454	0458	3 ^m / 4 ^m	0 ^h 2 ^m W	1.5"	"				4.7	K5								
	β MONC	06 27.7	-07 13		0503	0509	5 ^m / 4 ^m	1 ^h 10 ^m E	2"	"				5.5	B3e							Some contamination by B _c	
	α MON	07 39.9	-09 41		0513	0521	8 ^m / 7.5	2 ^h 10 ^m E	1.5"	"				5.0	KO								
	ζ 2 CMW	06 35.7	-19 22		0523	0531	7 ^m / ✓	0 ^h 56 ^m E	2"	"				5.0	K1								
	θ CMA	06 53.0	-12 11		0533	0553	20 ^m / ✓	0 ^h 51 ^m E	2"	"				5.5	K4							T=50° F H=50' W=5	
678	ϵ ERI	03 31.8	-9 34		0633	0653	6 ^m / 12 ^m	3 ^h 30 ^m W	1.5-2"	"				4.6	K2 V								
	δ ERI	03 42.0	-10 02		0654	0710	5 ^m / 10 ^m	3 ^h 38 ^m W	1.5"	"				4.5	KO II								
	β ORI	05 13.2	-08 26		0715	0726	3 ^m / 10 ^m	2 ^h 24 ^m W	1.5"	"				0.1	B8 Ia							(10 ^m w/ filter)	
	ζ ORI	05 16.3	-07 05		0729	0736	35 ^s / 1.2	2 ^h 30 ^m W	2"	"				3.5	B5 III								
	ν ORI	05 30.7	-07 19		0740	0749	1 1/2, 3, 6 ^m / 4 ^m	2 ^h 27 ^m W	2"	"				4.4	B0 V								

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
687	γ Pup	6 36.8	-43 07	4 DEC	0726	0727	30 ^s ✓	1 ^h 1 ^m W	1.5 PHOT	2.86	50 μ /1.2	67/4.45	3.1	B7	NeA	60 ^s	None	IIa-0	Metal		
	α Pic	6 48.5	-61 51	1974	0731	0732	1 ^m ✓	0 ^h 52 ^m W	"				3.5	A5.					Sulfite		
	δ^2 Vol	07 09.3	-70 23		0738	0743	5 ^m ✓	4 ^h 1 ^m W	"				4.8	G8					67°F		
	ζ Vol	07 42.6	-72 28		0747	0753	6 ^m ✓	17 ^m W	"				5.0	K0					15 mm		
	α CAA	08 20.2	-76 48		0756	0759	2.5 ✓	13 ^m E	"				4.5	F6							
	θ CAA	08 22.2	-77 23		0801	0813	12 ^m ✓	2 ^m E	"				5.5	K0							
	β Vol	08 25.7	-65 57		0815	0822	6 ^m ✓	2 ^m W	"				4.9	K2							
	C CAR	08 54.7	-60 29		0824	0825	1 ^m ✓	21 ^m E	"				3.7	B8							
	302 CMA	07 17.6	-24 57		0830	0832	1 ^m 30 ^s ✓	1 ^h 22 ^m W	"				4.2	O9 Ib							
	η CMA	07 22.9	-29 15		0836	0840	6.15 30 ^s ✓	1 ^h 25 ^m W	"				2.4	B5 Ia							
688	β Hyi	00 ^h 24 ^m 2	-77° 25'	5 DEC 1974	0031	0034	1.5 ^m ✓	0 ^h 20 ^m W	1.5 PHOT	2.86	50 μ /1.2	67/4.45	3.4	G1 III	NeA	60 ^s	None	IIa-0	metal Sulfite 67°F 15 mm	v. G.	T=52°F H=39% W=15-20 T=52°F H=44% W=0
	HD 207076	21 43.4	-02 23		0041	0209	1 ^h 28 ^m ✓	4 ^h 28 ^m W	1.5				7.2	M7							
	α Eri	01 36.6	-57 22		0214	0215	10 ^s 3 ^s ✓	0 ^h 50 ^m W	1.5				0.4	B5							
	ϵ Eri	02 39.0	-39 54		0219	0225	5 ^m ✓	0 ^h 2 ^m E	1.2				5.1	K0							
	HD 1014	00 12.2	-7 58		0231	0300	29 ^m 40 ^m ✓	2 ^h 59 ^m W	1"				6.7	M3 III	std						T=51°F H=40% W=5 mph
	ϵ R 875	02 55.1	-3 50		0305	0320	8 ^m 4 ^m ✓	0 ^h 38 ^m W	1"				5.2	A1 V	std						
	K Cet	03 17.8	-3 18		0324	0332	7 ^m ✓	25 ^m W	1.5				5.3	G5 II	std						
	β Ret	03 44.2	-64 47		0335	0340	4.5 ✓	7 ^m W	1.5				5.0	K0							
	α Hor	04 13.2	-42 17		0344	0350	6 ^m ✓	11 ^m E	1.5				4.9	K1							
	α Dor	04 33.6	-55 10		0353	0355	1.2 50 ^s ✓	26 ^m E	1.5				3.2	A0 p.							
	β Dor	05 33.3	-62 31		0358	0403	4 ^m 6 ^m ✓	1 ^h 19 ^m E	1.5				4.2	F8 I							
	δ Vol	07 16.9	-67 54		0405	0410	4 ^m 6 ^m ✓	2 ^h 55 ^m E	1.5-2"				4.8	F8							
	α Pic	06 47.9	-61 55		0413	0415	1.2 ✓	2 ^h 20 ^m E	1.5-2"				3.5	A5.							
689	E Vol	08 ^h 07 ^m 9	-68° 31'	"	0427	0430	2.5 ^m ✓	3 ^h 30 ^m E	2"	"	"	"	4.2	B5 III	"	"	"	"	"	"	"
	α Car	07 56.5	-52 58		0437	0439	80 ^s 70 ^s ✓	3 ^h 04 ^m E	2"				3.3	B2 IV							
	E Car	08 22.4	-51 27		0449	0450	100 ^s ✓	3 ^h 18 ^m E	2.5				3.1	K0+B							
	O Vel	08 39.5	-52 54		0458	0500	90 ^s ✓	3 ^h 28 ^m E	2"				3.4	B3 III							
	δ Car	08 40.2	-59 42		0511	0515	170 ^s ✓	3 ^h 13 ^m E	2"				4.2	B1 III							
	δ Vel	08 43.8	-54 40		0518	0519	30 ^s 15 ^s ✓	3 ^h 13 ^m E	2.5				2.0	A0 V							
	f Car	08 45.9	-56 43		0521	0525	4 ^m ✓	3 ^h 09 ^m E	1.5-2"				4.4	B2 V ne							

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.I. EXP.		TOTAL/CORR.	H A END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG	SP.	COMP		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
6889	I Pup	07 ^h 11. ^m 9	-46°40'	SD Dec 1974	0530	0542	6 ^m 4 ^m ✓	1 ^h 17 ^m E	2" PHOTO	2.86	50 ^m /1.2	67/4.75	4.8	FOV	N2A	60	N2A	IIca-0	metal sulfate 67°F 15m	RG	
	L ² Pup	07 12.3	-44 36		0545	0601	16 ^m ✓	59 ^m E	1.5				5.0V	MSE							
	σ Pup	07 28.3	-43 14		0603	0613	10 ^m ✓	12 ^m E	2"				4.8	K5							
	Q Pup	07 47.3	-47 02		0615	0626	11 ^m ✓	18 ^m E	1.5				5.8	K0							
	P Pup	07 48.4	-46 20		0630	0631	8 ^m ✓	1 ^h 1 ^m E	1.5				3.9	B0.5							
690	α Pup	07 50.8	-40 31		0642	0648	5 ^m ✓	5 ^m E	2"				4.7	G5							
	J Pup	07 52.2	-48 04		0650	0653	2.5 ^m ✓	48 ^m E	2 ^h 1 ^m E				4.1	B1							
	V Pup	07 57.3	-49 12		0655	0657	1.5 ^m ✓	48 ^m E	2.5				3.9	B2							
	HD52266	06 58.5	-5 54		0702	0723	21 ^m ✓	37 ^m W	1"				7.2	O9IV							
	HD59162	07 28.3	-23 22		0726	0732	6 ^m ✓	17 ^m W	1.5				5.1	ASIV							
	HD62008	07 39.4	-31 41		0735	0803	28 ^m ✓	35 ^m W	1.5				6.7	GOI							assume brighter in cluster.
	γ ² VEL	08 08.4	-47 18		0806	0807	10 ^m ✓	12 ^m W	1.5				1.6	WC7							single trail
	h ² Pup	08 12.8	-40 17		0810	0820	10 ^m ✓	19 ^m W	1.5				5.6	K0							
	e VEL	08 36.4	-42 55		0822	0825	2.5 ^m ✓	1 ^m W	2"				4.2	A9							
	5.3 γ VEL	08 37.6	-46 35		0827	0830	3 ^m ✓	2 ^m W	1.5				4.6	F2I							
	d VEL	08 43.2	-42 34		0832	0837	4.5 ^m ✓	6 ^m W	1.5				4.9	G5							
	α VEL	08 45.0	-45 59		0839	0841	8.1 ^m ✓	9 ^m W	" "				3.9	A0							
	γ _g VEL	08 58.8	-41 08		0843	0848	5 ^m ✓	2 ^m W	" "				5.1	F8							T=57° H=40% W=5-10.
691	R Aqr	03 42.7	-15 25	6 Dec 1974	0045	0245	2 ^h ✓	3 ^h 19 ^m W	1" PHOTO	"	50 ^m /1.6	"	8.5	Me	"	"	"	"	"	"	"
	α Eri	01 37.1	-57 23		0250	0250	4 ^m ✓	1 ^m 26 ^m W	1"		"/1.2	"	0.4	B5							
	BD+15°603	04 14.1	+15 12		0259	0320	21 ^m ✓	0 ^h 41 ^m E	1.5		"	"	6.7	F3II							W=5mph
	BD+18°624	04 18.8	+18 32		0325	0340	15 ^m ✓	0 ^h 26 ^m E	1.5		"	"	6.5	F2II							T=54° H=40%
	BD+14°702	04 26.9	+14 33		0343	0355	12 ^m ✓	0 ^h 19 ^m E	1"		"	"	6.2	FOV							
	BD+14°682	04 19.2	+14 55		0400	0406	6 ^m ✓	0 ^h 0 ^m W	1"		"	"	5.5	A9V							
	+14°687	04 20.2	+14 13		0408	0433	23 ^m ✓	26 ^m W	1.5		"	"	7.0	F4V							
	+15°656	04 35.3	+15 41		0436	0506	30 ^m ✓	0 ^h 44 ^m W	1.5		"	"	7.1	F5V							
	+16°591	04 22.8	+16 52		0512	0551	39 ^m ✓	1 ^h 52 ^m W	1.5		"	"	7.4	F6I							
	L ² Pup	07 12.6	-44 35		0559	0648	49 ^m ✓	1 ^h 1 ^m E	1.5		"	"	7.5	MSE							
	II Pup	07 16.3	-37 04		0652	0655	2 ^h ✓	7 ^m E	1.5		"	"	4.4	K5							

NUMBER	OBJECT	RA	DEC.	DATE UT.	UT EXP		TOTAL / CORR.	H. A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP	COMP		CALIB	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
694	α CMiA	19 30	19 20	29 JAN 1975	4:24	4:25	13.2, 4	0h 36 W	2" curvus	3.22	50 μ / 1.2	112 / 20	0.4	F5	NeA	60S	None	Ilao	metal Sulfate 15m 670F	McF	
695	β Gem	7 43.5	+28 06		4:50	4:53	45, 8, 2, 8, 16	1h 01 W	3" "				1.2	K0							
	E HyA BC	8 45.2	+06 32		4:59	5:01	12, 25, 50	0h 05 W	3" "					3.4	G0						
	ζ HyA	8 53.8	+06 04		5:04	5:06	12, 25, 50	0h 02 W	" "					3.1	K0						
	α HyA	9 26.1	-08 32		5:12	5:13	9, 18, 36	0h 23 E	2" "					2.0	K4						
	E Leo	9 44.1	+23 54		5:21	5:24	12, 24, 48	0h 30 E	2" "					3.0	G0						
	α Leo A	10 06.8	+12 07		5:29	5:30	25, 50	0h 47 E	" "					1.4	B7						
696	ζ Leo	10 15.1	+23 34	"	5:44	5:47	20, 40, 80	0h 38 E	" clear	"	"	"		3.5	F0	"	"	"	"	"	"
	γ Leo AB	10 18.3	+20 00		5:53	5:56	10, 20, 40	0h 23 E	" "					2.0	K0						
	ν HyA	10 48.1	-16 02		6:00	6:04	20, 40, 80	0h 59 E	" "					3.1	K3						
	τ Pup	6 49.2	-50 35		6:17	6:21	25, 50, 100	3h 21 W	" "					3.0	K0						
	π Pup	7 16.1	-37 03		6:31	6:36	30, 1, 12	3h 09 W	" "					2.8	(gk4)						
	χ Car	7 56.0	-52 54		6:44	6:46	10, 20, 40	2h 39 W	" "					3.5	(B3)						
697	δ Leo	11 12.5	+20 41	"	7:22	7:23	75, 15, 30	0h 00	" "					2.6	A4						
	θ Leo	11 12.7	+15 36		7:29	7:32	20, 40, 80	0h 10 W	" "	"	"	"		3.3	A2	"	"	"	"	"	"
	β Leo	11 47.5	+14 44		7:37	7:38	5, 10, 20	0h 20 E	" "					2.1	A3						
	E Crv	12 08.6	-22 27		7:46	7:50	35, 70, 140	0h 29 E	" "					3.0	K3						
	γ Crv	12 14.3	-17 22		7:55	7:56	8, 16, 32	0h 33 E	" "					2.6	B8						
	δ Crv A	12 28.3	-16 21		8:02	8:05	12, 24, 48	0h 39 E	" "					3.0	B9.5						
698	ϵ Tau	4 26.9	+19 07	30 JAN 1975	0:49	0:56	55, 2, 10, 20	0h 21 W	3" clear	3.22	50 μ / 1.2	112 / 20	3.5	K0	NeA	60S	None	Ilao	metal Sulfate 15m 670F	McF	61" F 2" cal
	θ Tau	4 26.9	+15 48		1:02	1:07	45, 14, 28	0h 33 W	3" "					3.4	A7						
	α Tau A	4 34.2	+16 27		1:14	1:17	75, 15, 30	0h 32 W	" "					0.9v	K5						
	π Ori	4 48.2	+06 55		1:23	1:26	20, 40, 80	0h 29 W	" "					3.2	F6						
	β Tau	5 24.4	+28 35		1:33	1:35	5, 10, 20	0h 01 W	" "					1.7	B7						
	ζ Tau	5 35.9	+21 08		1:43	1:46	15, 30, 60	0h 01 W	" "					3.1	B2						
														2.2v	09.5						
699	θ Ori A	5 30.5	-00 19		2:00	2:02	5, 10, 20	0h 23 W	" "					2.2v	09.5						
	λ Ori AB	5 33.5	+03 55											3.4	08						
	E Ori	5 34.7	-01 13		2:13	2:15	3, 6, 12	0h 31 W	" "					1.7	B0						
	δ Ori AB	5 39.2	-01 57		2:19	2:21	5, 6, 12	0h 33 W	" "					1.8	09.5						

NUMBER	OBJECT	R.A. 1970	DEC. 1970	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
699	η Gem A	6 ^h 13 ^m .1	+22° 31'	30 Jan 1975	2:27	2:31	3 ^m	0 ^h 08 ^m W	3" / Clear	3.22	50 ^m / 1.2 ^m	112 ^A / 7.0	3.3 _v	M3	NeA	60 ^s	Nov	IIaD	metol Sulfite	McF	
cont	μ Gem	6 21.1	+22 32	1975	2:36	2:40	3 ^m	0 ^h 10 ^m W	" / "				2.9 _v	M3					metol Sulfite 67°F 15 ^m		
	γ Gem	6 36.0	+16 26		2:46	2:48	5 ^m / 12 ^s	0 ^h 03 ^m W	" / "				1.9	A0							
	ϵ Gem	6 42.1	+25 10		2:53	2:56	2 ^m	0 ^h 06 ^m W	" / "				3.0	G8							
700	ξ Gem	6 43.6	+12 56		3:17	3:21	25, 50, 110 ^s	0 ^h 29 ^m W	2" / "				3.4	F5							
	α CMa A	6 43.8	-16 41		3:27	3:28	1, 3, 4 ^s	0 ^h 35 ^m W	2" / "				-1.4	A1							
	ϵ CMa A	6 57.4	-28 56		3:34	3:35	2, 3, 6 ^s	0 ^h 28 ^m W	" / "				1.5	B2							
	ξ Pup	7 48.0	-24 48		3:44	3:48	3, 15, 15 ^m	0 ^h 08 ^m E	" / "				3.3	G3							
	ζ Pup	8 02.5	-39 55		3:54	3:56	4, 7, 14 ^s	0 ^h 15 ^m E	" / "				2.2	O5f							
	ρ Pup	8 06.3	-24 13		4:02	4:04	11, 22, 44 ^s	0 ^h 11 ^m E	" / "				2.8 _v	F6							
701	χ Vel	9 06.9	-43 19		5:03	5:09	21, 42, 84 ^s	0 ^h 07 ^m E	2" / "				2.2	K5							
	2 Car	9 10.2	-58 50		5:16	5:19	22, 12, 44 ^s	0 ^h 00 ^m	" / "				3.4	B3							
	B Car	9 12.9	-		5:25	5:26	-														
	2 Car	9 16.3	-59 08		5:25	5:26	37, 14 ^s	0 ^h 01 ^m W	" / "				2.3	F0							
	K Vel	9 21.2	-54 53		5:33	5:35	5, 10, 20 ^s	0 ^h 04 ^m W	" / "				2.5	B2							
	N Vel	9 30.3	-56 54		5:42	5:49	50, 100, 150 ^s	0 ^h 11 ^m W	" / "				3.2	(g) K5							
	B Car	9 12.9	-69 36		5:57	5:59	4, 7, 14 ^s	0 ^h 38 ^m W	3" / "				1.7	A0							
702	ω Cen	10 13.0	-69 53						2" / "				3.5	B3.5							cloud
	δ Cen	12 06.8	-50 33		6:30	6:32	6, 12, 24 ^s	1 ^h 43 ^m E	2" / atmos				2.6 _v	B2							
	δ Cru	12 13.5	-58 35		6:36	6:38	7, 13, 26 ^s	1 ^h 45 ^m E	" / "				2.8 _v	B2							
	γ Cru	12 29.5	-56 57		6:48	6:51	13, 24, 48 ^s	1 ^h 47 ^m E	3" / "				1.7	M3							
	α Mus	12 35.4	-68 58		6:55	6:58	7, 24, 28 ^s	1 ^h 46 ^m E	" / "				2.7 _v	B3							
	β Mus AB	12 44.4	-67 57		7:02	7:06	10, 20, 20 ^s	1 ^h 48 ^m E	" / "				5.1	B3							
	β Cru	12 46.0	-59 32		7:11	7:13	2, 4, 8 ^s	1 ^h 40 ^m E	2" / "				1.3	B0							
703	ϵ Cen	13 38.0	-53 19		7:57	8:01	13, 24, 40 ^s	1 ^h 43 ^m E	3" / atmos				2.3	B1							
	β Cen AB	14 01.7	-60 13		8:06	8:08	4, 8, 16 ^s	2 ^h 00 ^m E	3" / "				0.6	B1							
	α Cen A	14 37.6	-60 43		8:12	8:14	4, 8, 16 ^s	2 ^h 30 ^m E	" / "				0.0	G2							
	α Cen B	"	"		8:15	8:17	6, 10, 20 ^s	2 ^h 26 ^m E	" / "				1.4	(d) K1							
	α Lup	14 40.0	-47 16		8:22	8:24	6, 10, 20 ^s	2 ^h 14 ^m E	2" / "				2.3	B1							
	η Cen	14 33.6	-42 01		8:26	8:28	6, 10, 30 ^s	2 ^h 13 ^m E	2" / "				2.4 _v	B1.5							

NUMBER	OBJECT	R.A. 1970	DEC. 1970	DATE UT.	U.T. EXP.		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
704	α Dor	04 ^h 33 ^m 3	-55 ^o 06'	31 JAN 1975	00:48	00:54	50.10.180 ^s	0 ^h 17 ^m W3 ^o	4"	3.22	50 μ 1.2mm	112 ^s 7.0	3.3	GAO	NeA	60 ^s	Nre	IIaO	Mato 1 Sulphite 67 ^o F 15 ^m	McF	T64F 1+5890 W 0.5mph
	α Ret A	4 14.0	-62 33		01:02	01:11	50.05.180 ^s	0 ^h 58W	4"				33	G6							
	α Car	6 23.3	-52 41		01:15	01:17	2.5A+	1 ^h 10 E	"				-0.7	F0							
	β Lep A	5 27.0	-20 47		01:27	01:33	26.52.110 ^s	0 ^h 01W	"				2.8	G5							
	α Lep	5 31.4	-17 51		01:37	01:40	7.15.203	0 ^h 04W	"				2.6	F0							
	α Col A	5 38.6	-34 05		01:45	01:50	19.29.40 ^s	0 ^h 07W	"				2.6	B8							
705	β Cui	5 ^h 49 ^m .9	-35 ^o 47'		02:11	02:19	45 ^s 4 ^m 3	0 ^h 25W	3"				3.1	(gk1)							
	δ C Ma	6 19.2	-30 03		02:25	02:28	11.23.44 ^s	0 ^h 05W	"				3.0	B2.5							
	ν Pup	6 36.8	-43 10		02:34	02:40	18.35.7 ^s	0 ^h 01E	"				3.2	B7							
	β C Ma	6 21.4	-17 56		02:47	02:49	50.12 ^s 9	0 ^h 24W	"				2.0	B1							
	κ Ori	5 46.3	-09 41		02:56	02:57	51.0.20 ^s 3	1 ^h 07W	"				2.1	B0.5							
	α Ori	5 53.5	+07 24		03:08	03:12	11.22.74 ^s	1 ^h 15W	"				0.4v	M2							
706	α Pic	6 ^h 48 ^m .1	-61 ^o 54'		04:00	04:05	18.36.72 ^s	1 ^h 13W	2"				3.3	AS							
	σ Pup A	7 28.3	-43 14		04:15	04:25	1.2.4 ^m	0 ^h 52W	"				3.3	(gk5)							
	γ Vel A	8 08.6	-47 16		04:28	4:31	4.8.16 ^s	0 ^h 18W	"				1.9	WC7							
	ϵ Car	8 21.9	-59 24		04:37	04:40	11.22.41 ^s	0 ^h 14W	"				2.0	(K0+B)							
	δ Vel AB	8 43.9	-54 36		04:44	04:45	4.8.16 ^s	0 ^h 02E	"				2.0	A0							
	ω Car	10 13.0	-69 53		04:51	05:00	16.30.60 ^s	1 ^h 19E	"				3.3	B8.5							
707	η Car	10 16.1	-61 11		05:20	05:33	1.2.4 ^m	0 ^h 47E	2"				3.4v	K5							
	ρ Car	10 31.0	-61 32		05:36	05:40	13.26.52 ^s	0 ^h 54E	"				3.3v	B5							
	θ Car	10 41.9	-64 14		05:42	05:48	10.29.40 ^s	0 ^h 58E	"				2.7	B0							
	μ Vel AB	10 45.5	-49 16		05:56	06:02	25.59.10 ^s	0 ^h 47E	3"				2.7	G5							
	λ Cen	11 34.4	-62 51		06:08	06:11	4.28.53 ^s	1 ^h 28E	"				3.2	B9							
	γ Cen AB	12 39.9	-48 48		06:18	06:23	8.16.52 ^s	2 ^h 20E	2"				2.2	A0							T60 H34
708	β Crv	12 ^h 32 ^m 9	-23 ^o 14'		06:57	07:02	25.54.10 ^s 6	1 ^h 34E	3"				2.7	G5							
	γ Vir AB	12 40.1	-01 17		07:10	07:13	24.44.88 ^s	1 ^h 30E	"				2.8	F0							
	ϵ Vir	13 00.7	+11 08		07:21	07:25	40.87.10 ^s	1 ^h 38E	"				2.9	G9							
	γ Hya	13 17.3	-23 01		07:36	07:40	32.34.18 ^s	1 ^h 40E	"				3.0	G8							
	α Vir	13 23.6	-11 00		07:45	07:46	2.5.10 ^s 3	1 ^h 41E	"				0.9v	B1							
	ζ Vir	13 33.2	00 27		07:53	07:58	4.4.2 ^m	1 ^h 38E	"				3.4	A3							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
709	η Boo	1970 13 ^h 53 ^m .3	1970 +18° 35'	Jan 31 1975	08:24	08:30	8.12 ^m	1 ^h 27 ^m E	3" / cirrus	3.22	50 μ / 1.2mm	112 / 2.0	2.7	G0	NOA	60 ^s	None	IIa0	Mobil Sulfite 15 ^m 67 ¹ / ₂ "	McF	
	l Cen	13 18.9	-36 33		08:36	08:39	13.24 ^m	0 ^h 44 ^m E	" / "				2.8	A2							
	v Cen	13 47.7	-41 32		08:44	08:49	15.31, 36.22 ^m	1 ^h 02 ^m E	2" / "				3.4	B2							
	μ Cen	13 47.8	-42 20		08:51	08:55	15.59, 60 ^s	0 ^h 56 ^m E	" / "				3.1v	B2							
	ϵ Cen	13 53.7	-47 09		08:58	09:00	8.16, 32 ^s	0 ^h 57 ^m E	" / "				2.6	B2							
	θ Cen	14 04.9	-36 14		09:06	09:09	15.20, 00 ^s	0 ^h 59 ^m E	" / "				2.0	K0							
		1975	1975																		
710	HDE 264862	6 ^h 49 ^m .1	+6° 36'	Feb. 8 1975	00:54	03:06	132 ^m	0 ^h 46 ^m W	1 1/2" / CLEAR	3.21	50 μ / 1.6mm	112 A / 2.0	9.86	OB ⁻	None	60 ^s	—	IIa-0	None Sulfite 15 ^m	Tnr	T: 56, H: 52% wind - 0-5 mph
	HDE 264111	6 46.6	+4 42		03:12	05:27	135 ^m	3 09 W	PHOTOMETRIC				9.74	OB							
	HD 48914	6 44.5	+2 32		05:38	05:56	18 ^m	3 41 W	1 1/2" / "				7.17	BS Ib?							
	HD 63423	7 46.6	-30 28		06:17	06:45	28 ^m	3 27 W	1 1/2" / "				8.19	OB Ia?							
711	HDE 256575	6 22.8	+10 37	Feb. 9 1975	00:30	04:31	241 ^m	2 ^h 40 ^m W	1 1/2" / photometric	"	"	"	10.34	B8 Tab?	"	"	—	"	"	Tnr	T: 55, H: 60% wind: 0 mph
	HD 46559	6 32.9	+2 25		04:34	05:34	60 ^m	3 35 W	"				8.76	B8 I?							
	HD 48914	6 44.5	+2 32		05:39	05:55	16 ^m	3 44 W	"				7.17	BS Ib							
	HDE 258671	6 29.2	+4 43	Feb. 10 1975	00:16	03:40	204 ^m	1 46 W	1 1/2" / photometric	"	"	"	10.28	OB	"	"	—	"	"	Tnr	T: 54, H: 72% wind: 0 mph, then 5-10 mph
	HDE 263630	6 45.0	+3 39		03:44	06:49	185 ^m	4 39 W	"				9.86	OB ⁻							
	HD 90772	10 26.4	-57 32		07:00	07:01	1 ^m	1 10 W	"				5.19	F0 Ia?							
	HD 90706	10 25.9	-57 30		07:14	07:27	13 ^m	1 36 W	"				7.53	B I							
712	HDE 259865	6 33.2	+4 44	Feb. 11 1975	00:15	04:21	246 ^m	2 26 W	1 1/2" / CLEAR	"	"	"	10.24	OB ⁻	"	"	—	"	"	Tnr	T: 55, H: 78% W: 5. lightning on eastern horizon must of rite
	HD 47359	6 37.1	+4 54		04:25	06:36	131 ^m	4 39 W	"				8.76	Be							
	HD 64571	7 52.4	-34 50		06:52	07:05	13 ^m	3 53 W	"				7.0	cF8							
	HD 90772	10 26.4	-57 32		07:16	07:17	1 1/4 ^m	1 31 W	"				5.17	F0 Ia?							
	CPD-57° 3277	10 25.9	-57 34		07:29	08:32	63 ^m	2 46 W	"				8.8	OB?							HD 90707
	HDE 260986	6 36.7	+9 54	Feb. 12 1975	00:15	03:56	221 ^m	2 02 W	1 1/2" / CLEAR	"	"	"	10.10	OB ⁻	"	"	—	"	"	Tnr	T: 58, H: 52% WIND: 0-10 mph e. east half
	HD 47032	6 35.5	+4 43		03:59	06:28	149 ^m	4 36 W	SOME HAZE 1 1/2" - 2"				9.28	B0 III?							
713	HDE 261021	6 36.5	+3 39	Feb. 13 1975	00:22	03:53	211 ^m	1 43 W	1 1/2" / PHOTOMETRIC	"	"	"	10.14	B2 III?	"	"	—	"	"	Tnr	T: 56, H: 63% WIND: 0 mph
	HDE 259431	6 31.7	+10 21		03:56	06:20	144 ^m	4 36 W	"				9.02	B6pe							
	HD 63423	7 46.6	-30 28		06:30	07:07	37 ^m	4 08 W	"				8.19	OB Ia							
	HDE 264895	6 49.1	+5 35	Feb. 14 1975	00:11	03:47	216 ^m	1 49 W	1 1/2" - 2" / CLEAR WITH HAZE	"	"	"	10.01	OB	"	"	—	"	"	Tnr	T: 57, H: 63% wind - 5 mph
	HD 46559	6 32.9	+2 25		03:52	05:22	90 ^m	3 40 W	> 2" / "				8.76	B8 I							

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					BEGIN	END									KIND	EXP						
714	HDE 251440	6h 31m.6	+5° 49'	FEB. 15 1975	00:11	03:51	220 ^m	2h 14m	2" CLEAR	3.21	50μ / 6mm	112R / 7.0	9.72	B ₀ p2	NeAr	60 ^s	—	IIa-0	metal Sulfite 15 ^m	Tnr	T: 56, H: 68% W: 0-5 mph	
	HDE 258982	6 30.3	+6 12		03:55	06:34	159 ^m	5h 00 ^m W	1 1/2" "				9.42	OB ⁻								
	HD 46711	6 33.6	+2 47	FEB. 16 1975	00:04	02:50	106 ^m	1h 15 ^m W	1 1/2" photometric				9.97	B3II	"	"	—	"	"	Tnr	T: 57, H: 61% W: 5 mph. B (Δm = 2 ^m sup = 4.5) clearly resolved.	
	ADS 5184 A	6 31.7	+4 57		02:58	06:23	205 ^m	4h 50 ^m W	1 1/2" "				9.75	OBh								
	HD 90706	10 25.9	-57 30		06:34	06:49	15 ^m	1h 22 ^m W	1 1/2" "				7.54	B2.5 Ib								
HD 90907	10 25.9	-57 34		06:52	07:52	60 ^m	2 25 ^m W	"				9.0	B1 III									
715	HDE 256351	6 22.0	+10 34	FEB. 18 1975	00:06	05:36	330 ^m	4h 22 ^m W	1 1/2" photometric	3.21	50μ / 6mm	112R / 7.0	10.27	OB	NeAr	60 ^s	—	IIa-0	metal Sulfite 15 ^m	Tnr	T: 57, H: 60% W: 0-5 mph	
	HDE 256196	6 21.4	+9 11	FEB. 19 1975	00:03	03:50	227 ^m	2 40 ^m W	2" photometric	"	"	"	10.09	OB	"	"	—	"	"	Tnr	T: 56, H: 67% W: 0-5 mph	
	HD 45901	6 29.0	+2 52		03:53	06:21	148 ^m	5h 04 ^m W	"				8.8	B2Ie								
716	δ Sco	15 58.9	-22 33	"	08:04	08:06	5 ^s , 7 ^s , 9 ^s	2h 31 ^m E	"	"	"	"	2.21	B ₀ S IV	"	"	—	"	"	Tnr	"	
	β ¹ Sco	16 04.0	-19 44		08:11	08:14	8 ^s , 10 ^s , 12 ^s	2 39 E					2.55	B ₀ S V								
	ω Sco	16 05.3	-20 36		08:19	08:27	25 ^s , 35 ^s , 45 ^s	2 27 E					3.91	B1 V								
	σ Sco	16 19.1	-24 06		08:34	08:48	10 ^s , 12 ^s , 15 ^s	2 19 E					5.35	AS II								
	22 Sco	16 28.7	-25 04		08:52	08:58	45 ^s , 60 ^s , 8 ^s	2 19 E					4.65	B2 V								
717	τ Sco	16 34.2	-28 10	"	09:10	09:14	10 ^s , 14 ^s , 18 ^s	2 08 E	"	"	"	"	3.08	B ₀ V	"	"	—	"	"	Tnr	"	
	σ ² Syr	18 53.7	-26 20		09:19	09:21	7 ^s , 9 ^s , 11 ^s	4 21 E					1.90	B2.5 V								
718	HDE 255530	6 20.7	+10 55	FEB. 20 1975	00:01	03:49	228 ^m	2 43 E	1 1/2" photometric	"	"	"	9.93	OB ⁻	"	"	—	"	"	Tnr	T: 55, H: 67% W: 5 mph	
	HD 46388	6 32.0	+4 40		03:53	06:07	134 ^m	4 51 E	"				9.0	B6 V?								
	HD 65232	7 55.4	-30 21		06:19	08:26	127 ^m	5 47 E	"				9.6	CF2?								
	HDE 256577	6 22.6	+8 19	FEB. 21 1975	00:05	02:19	134 ^m	1 14 E	1 1/2" photometric	"	"	"	9.61	B2 IV: p ₀	"	"	—	"	"	Tnr	T: 57, H: 57% W: 0-7 mph	
HD 46847	6 34.3	+2 44		02:34	05:48	194 ^m	4 33 W	"				9.88	B ₀ III: p?							ID correct? YES, OK!		
719	HDE 261490	6 38.2	+8 23	FEB. 22 1975	00:00	01:35	95 ^m	0 11 W	1 1/2" photometric	"	"	"	9.12	OB	"	"	—	"	"	Tnr	T: 56, H: 59% W: 0 mph	
	HDE 261307	6 37.5	+5 06		01:33	04:38	180 ^m	3 27 W	1 1/2" "				9.70	B6 II: ?								
	HD 48714	6 44.5	+2 32		04:41	05:01	20 ^m	3 40 W	"				7.17	B5 Ib?								
720	HDE 260574	6 35.3	+7 31	FEB. 23 1975	00:00	03:02	182 ^m	1 53 W	1 1/2" photometric	"	"	"	9.92	OB ⁻	"	"	—	"	"	Tnr	T: 54, H: 72% W: 0-5 mph	
	HDE 259785	6 30.2	+4 45		03:04	05:28	144 ^m	4 24 W	"				9.6	B9.5 III?								
721	HDE 254631	6 32.4	+8 03	FEB. 24 1975	00:00	02:02	122 ^m	1 00 W	1" photometric	"	"	"	9.69	OB	"	"	—	"	"	Tnr	T: 54, H: 60% W: 0 mph	
	HDE 257634	6 32.2	+5 19		02:03	05:39	216 ^m	4 37 W	"				10.00	B ₉ III?							great seeing!	
722	HDE 261307	6 37.5	+5 06	FEB. 25 1975	00:00	02:15	135 ^m	1 12 W	1" clear	"	"	"	9.70	B6 II: ?	"	"	—	"	"	Tnr	T: 54, H: 59% W: 1-10 mph	
	HDE 259631	6 32.4	+8 03		02:17	05:21	184 ^m	4 18 W	1" - 2"				9.69	B ₆ III?								

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					BEGIN	END									KIND	EXP.						
723	δ Leo	11 ^h 12.8	+20° 40'	March 16 1975		5:09	4,12,24,48^s	0 ^h 42 ^m W	1" / photo	2.86	1.2 mm / 50 μ	62A / 4.32	2.68	A4V	NeA	60 ^s	-	IIa0	Metal Sulfate	MR		
	θ Leo	11 ^h 13.0	+15 34			5:24	20,40,90^s	0 ^h 57 ^m W		?			3.3	A2V							1.5 ^m / 70 ^f	
	β Leo	11. 47.7	+14 43			5:33	8,16,32^s	0 33W					2.2	A3V								
724	δ Vir	12 40.6	-1 19	"		6:02	1^m 2,4^m	0 08W	2" / photo	2.86	"	"	4.0	F0V	NeA	60 ^s		IIa0	"	MR		
	δ Crv	12 28.5	-16 23			6:26	50,110,220^s	0 44W					2.9	B9V								
	HD142884	15 52.4	-23 26		7:35	8:09	30 ^m	59 ^m E					6.8	A _p				12 ^h wires @ 115° 435 ^s				T58° H4070
725	β Lib	15 15.6	-09 18	"		8:23	8,20,40 ^s		"	"	"	"	2.5	B8V	"	"	"	"	"	MR	Wind 10-15	
	ρ Ser	15 45.0	+15 30			8:44	1,2,4 ^m	13 ^m E					3.7	A2III								
	^{iota} ρ Ser	15 40.4	+19 46		8:58	9:10	1 ^m 2,3,6 ^m	18 ^m W					4.6	A1V								
726	δ Her	17 14.0	+24 52		9:23	9:28	30,60,120 ^s	59 ^m E		"	"	"	3.2	A3IV	"	"	"	"	"			T58° H41 ⁰
	ρ Oph	17 46.7	+02 44		9:34	9:42	1,2,4 ^m						3.8	A0V								T58° H41 ⁰
	L Lib	15 10.8	-19 43		9:49	9:57	1,2,4 ^m						4.4	A _p								T58° H41 ⁰
727	β Tau	5 24.7	+28 35	March 17 75	0:00	0:05	12,24,48 ^s		2" / photo	2.86	1.2 mm / 50 μ	62A / 4.32	1.5	A7III	NeA	60 ^s	-	IIa0	Metal Sulfate	MR	T57° H458	
	θ Tau	4 27.3	+15 49		0:17	0:27	1,2,4 ^m						3.6	A7III								W: 5-10
	134 Tau	5 48.1	+12 39			0:59	60, 2A, 8 ^m	2 ^h 00W					4.8	B9IV				10 tracks @ 4+8 ^s (with)				
728	β Eri	5 06.6	-5 07			1:14	24, 48, 96 ^s	3 ^h 01W	1 1/2" / photo	"	"	"	2.9	A3III				8 tracks @ 30 ^s , 10 @ 30 ^s				MR
	τ Ori	5 16.4	-6 53				48, 100, 3 ^m						3.5	B5III				2 @ 4, 8 @ 4+8 ^s				30 ^s
	β Ori	5 13.3	-8 14		01:35	1:38	3 ^m						0.1	A8Ia				5 ^m F1+4 @ 60 30 ^s				
	ρ CMa	7 02.7	-15 36		01:47		40, 96 ^s						4.0	B8II				4, 8 @ 4+8 ^s				
729	ζ Pup	7 42.8	-28 53		1:59	2:09	1 ^m 2, 4	1 ^h 20W	1 1/2" / photo	"	"	"	4.1	A2Iab				5 @ 4+8 ^s			MR	
	HR3314	8 24.5	-03 50		2:15	2:23	36, 76, 150 ^s	0 ^h 53W					3.9	A0V				2 @ 4+8 ^s , 10 @ 4+8 ^s , 5 @ 30 ^s				Wind 10-20mph from East.
	η Hya	8 41.9	+3 29		2:29	2:36	48, 96, 3 ^m	0 ^h 48W					4.1	B3V				4 @ 12 ^s , 8 @ 12 ^s , 6 @ 30 ^s				
730	α Leo	10 07.1	+12 06		2:50	2:51	4 ^s , 8 ^s , 16 ^s	0 ^h 22E	1 1/2" / photo	"	"	"	1.3	B7V	"	60 ^s	-	IIa0	"	MR	cloud in S-E	
	K Hya	9 39.1	-14 13		2:57	3:14	46, 3 ^m , 6 ^m	0 ^h 29W	1 1/2" / photo	"	"	"	4.9	B5V				8 @ 12 ^s , 6 @ 30 ^s , 12 @ 30 ^s				
	HR4338	11 07.6	-61 48			3:46	3 ^m , 5, 10 ^m	0 ^h 27E					5.4	B9Ia				3 @ 60 ^s , 5 @ 60, 10 @ 60 ^s				
731	HD96224	11 03.7	-49 13	1970		4:29	11 ^m 7	0 ^h 20W	"	"	"	"	6.4	A0	"			8 @ (12 ^s + 76 ^s)		MR		
	HD 105416	12 06.7	-48 31.4	1970	5:32	5:38	5.9 ^m	0 ^h 27W					8.6	A0				8 @ 4 ^s				
	HD115415	13 16.0	-47 26		6:48	7:25	30 ^m	1 ^h 05W	2"				6.7	B9				8 @ (190 ^s + 12)				Clouds

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					BEGIN	END									KIND	EXP						
743	HD 68161	08 08.2	-48° 35'	Mar 22	23:56	00:06	8 ^m		1/plate	2.86	SDM 1.2mm	674/432	5.86	B8	NeA	605 at 3	IIa0	Ilford	at 5	40-50-45		
	HD 66255	07 59.5	-48 48	1975	00:18	00:29	10 ^m				"		6.16	A0				Ilford	at 7	41-40-44		
	HD 66079	07 58.9	-47 13		00:38	01:11	31 ^m				"		7.30	B9				Ilford	at 9	5[5.4+3.0]		
	HD 871695	08 25.7	-49 24		01:15	01:50	31 ^m				"		7.30	A0				"	at 11	"		
	HD 73609	08 36.3	-49 19		01:56	02:20	20 ^m				"		7.00	A0	(contaminated by 190° 10')			6200	at 13	4[40+50]		
	HD 76186	08 51.8	-47 18		02:27	02:50	24 ^m				"		7.20	B9				6130	at 15	4[50+55]		
	HD 79039	09 08.8	-47 21		03:03	03:22	19 ^m				"		6.90	B8				6200	at 17	4[40+50]		
	HD 79072	09 09.1	-49 10		03:28	03:53	24 ^m				"		7.20	B8	(ft counts NE)			6130	at 19	4[50+100]		
744	HD 84552	09 43.5	-48 24		04:23	04:43	20 ^m				"		6.88	B8	at 21/at 9			6200	at 21	4[40+50]		
	HD 86087	09 53.7	-50 06		04:46	04:54	8 ^m				"		5.89	A0				6798	at 7	7[4x1.3+3x50]		
	HD 98022	11 14.5	-47 45		05:03	05:25	22 ^m				"		6.88	A0				6200	at 9	4[x5.0+3x45]		
	HD 98359	11 16.9	-48 37		05:30	06:03	32 ^m				"		7.30	B9				6100	at 11	3[6.0+...]		
	HD 115415	13 16.0	-47 26		06:38	06:53	15 ^m				"		6.70	B9				6250	at 13	4[x3.0+1x45]		
	HD 119970	13 45.8	-49 59		07:06	07:41	35 ^m				"		6.80?	A0	(check)	(camera)		600	at 15	1[...]		
	HD 121057	13 52.5	-48 33		07:52	08:16	21 ^m				"	0.8mm	7.40	A2				T=55° H=50%	6225	at 17	"	
	HD 161643	17 45.9	-18 06		08:36	09:11	32 ^m				"		7.54?	FO	(check)			6225	at 19	15°+22'		
745	O Sco	16 19.1	-24 06		09:36	09:57	2 ^m 4 ^m 6 ^m	1/2			1.2mm		5.35	+ASII		at 3 and 14		Ilford	at 11	5.8/12		
746	HD 50336	06 49.4	-48 51	Mar 23	23:50	00:18	25 ^m		1/plate	2.86	SDM 0.8mm	432	7.50	A2	NeA	605 at 3	IIa0	Ilford	at 5	5[4.5+5.5]		
	HD 52279	06 57.2	-49 07	1975	00:23	00:49	25 ^m				"		7.50	A0				"	at 7	"		
	HD 56907	07 15.6	-50 00		00:53	01:19	25 ^m				"		7.54	A0				"	at 4	"		
	HD 65905	07 58.0	-47 36		01:23	01:59	29 ^m				"		7.40	B8	(DBL 0.8, 0.15, 0.2)			"	at 11	7[...]		
	HD 67041	08 03.1	-47 44		02:02	02:29	25 ^m				"		7.40	B9				"	at 13	2[...]		
	HD 67704	08 06.2	-47 42		02:32	02:59	25 ^m				"		7.40	B9				"	at 15	"		
	HD 73609	08 36.3	-49 19		03:02	03:30	25 ^m				"		7.00	A0	(check at 7.2-7.3)			"	at 12	"		
	HD 7566	09 00.5	-49 27		03:35	04:01	25 ^m				"		7.40	B8				"	at 19	"		
747	HD 86439	09 56.0	-49 44		04:16	04:42	25 ^m				"		7.50	B8		at 3		"	at 5	"		
	HD 97592	11 11.9	-49 58		05:03	05:30	25 ^m				"		7.05	A2	(check at 7.3)			"	at 7	"		
	HD 102561	11 46.6	-49 49		05:34	06:02	25 ^m				"		7.50	A2				"	at 9	"		
	HD 113451	13 02.7	-47 59		06:07	06:33	25 ^m				"		7.50	B9				"	at 11	"		
	HD 122532	14 01.6	-41 16		06:46	07:03	15 ^m		1/2		1.2mm		6.44	A0				Ilford	at 13	"		

T = 53°F H = 50%, wind in ^{lat} N. GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS		
					BEGIN	END									KIND	EXP.							
747	ρ Lep D	16 24.1	-23 23	Mar 23 1975	07:59	08:20	20 ^m		1/plot	2.86	50 μ / 1.2mm	67A / 4.32	7.06	B5 V	NeA	60 ^s		IIa0	M-5 67° 15'	MIR at 15	set Res info [4x4.5 + 3x3.5]		
cont	HD 142315	15 52.5	-22 43	1975	08:28	08:49	20 ^m						6.90	B8 V						" at 17	"		
	HD 168459	18 18.2	-08 00	Mar 24 1975	09:04	09:26	20 ^m		1				7.0:	F5	field checks (Has faint companion)				6077	at 19	"		
748	δ Gem	6 36.3	+16 25	24 1975	23:50	23:56	2 ^m 1 ^m		1/plot	2.86	50 μ / 1.2mm	67A / 4.32	1.93	A0 IV	NeA	at 3		IIa0	M-5 67° 15'	MIR at 5, 7	[2x4 west drifts]		
	13 Gem	6 31.5	+67 21	1975	00:10	00:18	8 ^m						4.50	A0 F6						6240	at 10?	[3x2.4 + 2x3.0]	
	β Eri	5 06.6	-05 07		00:30	00:37	1/2 1.2 ^m						2.93	A3 III							-	at 16, 18, 20	[1, 2, 4, 6]
	η Hya	8 41.9	+03 29		00:48	00:53	2 ^m						4.10	B3 V		at 25					-	at 23	[4 drifts]
749	HD 68765	8 10.7	-49 58	1970	01:25	01:56	30 ^m		1.5/		50 μ / 0.8mm	67A / 4.32	7.34	B9		at 3		IIa0		6120	at 5	[7x3.4 + 6x3.0]	
	HD 71630	8 25.5	-48 00		01:59	02:29	30 ^m				*		7.50	A0							"	at 7	"
	HD 74496	8 41.5	-47 24		02:39	03:06	27 ^m						7.40	A2							"	at 9	[6x "]
	HD 74531	8 41.7	-48 03		03:14	03:40	26 ^m						7.50	B9	field checks (in a small cluster)						"	at 11	[6x "]
	HD 80859	9 19.5	-47 26		03:43	04:14	30 ^m						7.50	B8	T=53°		IC 2395				"	at 13	[7x "]
	HD 90034	10 21.2	-47 50		04:49	05:18	30 ^m						7.50	A0	H=60% (appears blue)						"	at 15	[7x "]
	HD 162561	11 46.6	-49 49		05:24	05:58	34 ^m						7.50	A2	also companion 40" (identical to 747)						"	at 17	[8x "]
	HD 94660	10 53.7	-42 05		06:06	06:18	12 ^m						6.30	A0 (r)		at 21	B.S 4263				6800	at 11	[4.0mm]

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. V	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
755 ^{cont}	HR 4198	10 ^h 41.7	-59° 06'	March 27	5:27	5:28			2" prism	3.26	70 / 1.2mm	112A / 7.0	5.4	B2.5 Ia	-	-		IIaD	metol 15m	F+McF	
756	HR 3001	7 ^h 42.9	-38 09	'75	5:43		1 ^m	5 ^h 39 ^m W	"	"	"	"	6.4	B7 III				"	670F	"	-1*
	3691	9 14.7	-58 17			05:50	21 ^s						6.0	B7 IV							-3*
	4147	10 32.0	-58 04		5:54	5:55	46 ^s	2 ^h 50 W					6.2	B7 Ia							+3*
	5358	14 18.5	-56 17			6:00	5 ^s						4.3	B6 Ib							+1*
	5625	15 07.0	-42 46			6:07	25 ^s						5.8	B7 V	NeA 3 ^s						-5*
757	HR 3525	8 49.4	-42 00	"	6:17	6:18	20 ^s	4 ^h 57 W	2-3" prism	"	"	"	6.1	O9 V	NeA 3 ^s		"	"	"	"	-5
	6672	17 53.4	-24 53			6:26	35 ^s	4 ^h 00 E					6.2	O8 III							-3
	6823	18 13.8	-20 24				25 ^s						6.0	O9 II							-1 49°F 65% H
	6263	16 52.5	-41 48		6:41								6.5	O9 Ib							+1
	6347	17 04.8	-35° 25'			6:46				"	"	"	6.1	O9 Ia				"	"	"	+3*
758	HR 3527	8 41.8	-46 26	"	6:57	6:58	15 ^s	5 ^h 37 W	2-4"	"	"	"	5.1	B0 III	-	-		"	"	"	+1*
	6165	16 34.3	-28 10		7:06 ^m	7:08	1 ^m 40	1 ^h 58 E					2.8	B0 V							-5 w/ filter
	5953	15 58.8	-22 33		7:13 ³⁰	7:15	1 ^m 40	1 ^h 16 E					2.3	B0.5 IV							-3
	6727	18 01.5	-22 13			7:23	40 ^s	3 ^h 11 E					6.7	B0 II							+1
	6716	18 00.3	-22 47			7:27		3 ^h 05 E					5.7	B0 Ib							+3
	6155	16 32.3	-43 60			7:35							4.9	B0 Ia							+5
759	HR 3708	9 17.9	-51 27		7:47	7:48	20 ^s	5 ^h 57 W					5.9	B6 Ia							+5 some
	5358	14 28.6	-54 30.7				5 ^s	1 ^h 07 W					4.3	B6 Ib							+3 out of
	6460	17 22.4	-44 08				11 ^s	1 ^h 49 E					5.1	B7 III							+1 holder
	6083	14 28.5	-59 38			9 16	15 ^s	0 ^h 35 E					5.5	B6 IV							-1
	5910	15 53.0	-27 16			8 21		0 ^h 05 E	3"	"	"	"	6.1	B6 V			"	"	"	"	-3
760	HR 5680	15 16.8	-60 25		8:34	8:35	14 ^s	0 ^h 45 W	3"	"	"	"	5.5	O7 I			"	"	"	"	
	6164	16 34.6	-42 48			8:41	14 ^s	0 ^h 25 E					5.6	O9 Ia							
	6155	14 46.9	-59 35			8:51	9 ^s						6.4	B0 Ia							
	6219	16 45.2	-58 17				14 ^s	0 25 F					5.6	B0.5 Ia							
	4860	12 47.1	-27 28				40 ^s	3:38 W					5.7	B1 Ia							
	6142	16 30.0	-41 46			9:05	18 ^s	0:04 W					5.3	B1 Ia +							
761	HR 4442	11 30.7	-59 23			9:16	18 ^s	5:13 W					5.7	A3 Ia							
	HR 4876	12 49.8	-60 12			9:20	24 ^s	3:58 W					5.2	A2 Ia b							

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 GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE UT. 1975 March 27	UT EXP		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	β MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
761cm	HR 5379	14 23	-68 04.5			9:27	28 ^S	2:32W	2 ⁵ / _{plm}	3.26	70 / 1.2mm	12 / 7.0	6.8	A3IG				IIaD		F7McF		
	6081	16 19	-24 06.8			9:31	14 ^S	0:40W	"	"	"	"	5.4	A5II				"		"		
	8228	22 56	-29 44.9			9:36	40 ^S	5:57E	"	"	"	"	1.3	A3V	NeA	3 ^S		"		"	cloud	
762	HR 1892	5 34.1	-04 51	MARCH 28		0:08	05 ^S	2:12W	2 ⁰ / _{plm?}	"	"	"	4.4	B1V				IIaD		F7McF	Taken at end - 5	
	3206	8 08.7	-47 16	"	00:15	00:17	180 ^S	0:17E					4.0	B1IV				"		"	5 ^m screen -3	
	3547	8 40.1	-39 40			00:21	4 ^S	0:43E					4.2	B1.5III							-1	
	3944	9 55.7	-71 16			00:25	84 ^S / ₁₄	1:55E					6.4	B1IV							+3	
	4806	12 37.4	-67 04			00:33	34 ^S	4:30E					6.3	B1Ia							r5	
	5873	15 49.1	-54 57			00:40	35 ^S	7:35E					5.8	B2II							+1	
763	HR 4658	12 10.3	-52 14	"		00:58	120 ^S	3:33E	2 ⁵ / _{plm?}	"	"	"	3.8	B3IV				IIaD		"	5 ^m screen	-5
	3442	8 34.2	-52 58			01:05	10 ^S	0:00					5.1	B4IV							-3	
	3663	9 10.7	-62 12		01:11	01:16	5 ^m	0:19E					3.8	B3III							5 ^m screen	-1
	2653	7 01.9	-23 48		01:19	01:22	150 ^S	1:55W					3.0	B3Ia							5 ^m screen	+1
	3494	8 45.7	-45 50			01:26	18 ^S	0:17W					5.7	B4Ia	NeA	3 ^S						+3.5
764	HR 2135	6 02.5	+20 08	"		01:40	80 ^S	3:14W					6.3	B2Ia				IIaD				-5
	2653	7 01.9	-23 48		01:45	01:47	140 ^S	2:23W					3.0	B3Ia							5 ^m screen	-3
	3494	8 45.7	-45 50			01:50	19 ^S	0:40W					5.7	B4Ia								-1
	2827	7 23.1	-29 15			01:55	80 ^S	2:09W					2.3	B5Ia							5 ^m screen	+1
	3456	8 41.2	-45 19			01:58	10 ^S	0:44W					5.0	B6Ia	NeA	3 ^S					5 ^m screen	+3.5
765	HR 1713	5 13.3	-08 14	"		02:17	12 ^S	4:40W					0.0	B8Ia				IIaD			5 ^m screen	-1
	3708	9 17.4	-51 27			02:21	12 ^S	0:45W					5.4	B6Ia								-5
	4147	10 32.4	-58 04			02:26	44 ^S	0:32E					6.5	B7Ia								-3
	4250	10 51.3	-57 06			02:30	14 ^S	0:45E					5.4	B9Ia								+1
	4442	11 30.9	-59 23			02:36	18 ^S	1:18E					5.6	A5Ia	NeA	3 ^S						+3
766	HR 4198	10 41.7	-54 06			02:47	18 ^S	0:18E					5.7	B2.5Ia				IIaD				-5
	2653	7 01.9	-23 48		02:53	02:55	150 ^S	3:31W					3.0	B3Ia								-3
	3494	8 45.7	-45 50			03:01	18 ^S	1:52W					5.7	B4Ia								-1
	2827	7 23.1	-29 15			03:07	20 ^S	3:21W					2.3	B5Ia								+1
	3456	8 41.2	-45 19			3:11	10 ^S	2:07W					5.0	B6Ia								+3
															NeA	3 ^S						

NUMBER	OBJECT	R.A.	DEC.	1975 DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	β MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
	HR 3560	8 53 2	-60 15	March 29/50		5:05	18 ^s		2"/ptm				5.7	B5 III						F+McF	mult -+3
	3001	7 42.9	-38 09		5:15W	5:14	40 ^s	5:15W					6.7	B7 III							-+5
778	HR 3708	9 17.9	-51 27			6:03	14 ^s	4:29W		3.26	70/0.8m	112/70	5.4	B6 Ia				IIaD		"	+5
	3825	9 33.8	-59 07			6:07	4 ^s	4:16W					4.1	B5 II							+1
	5910	15 53.0	-27 16			6:12	27 ^s	1:57E					6.0	B6 V							-5
	6083	16 20.6	-49 31			6:16	15 ^s	2:21E					5.5	B6 IV							-3
	6460	17 22.4	-44 08			6:19	10 ^s	3:19E					5.1	B7 III							-1
	5358	14 18.5	-56 17			6:25	4 ^s	0:09W					4.4	B6 IG							+3
779	HR 6823	18 13.8	-20 24			6:37	24 ^s	3:54E					6.0	O9 II				IIaD		"	-5
	6727	18 01.5	-22 43			6:41	40 ^s	3:37E					6.6	B0 II							-1
	3219	8 10.1	-37 13		6:47	6:48	1 ^m	6:22W					6.4	O9.5 II							-3
	3825	9 33.8	-59 08			6:52	5 ^s	5:01W					4.1	B5 II							+5
	5873	15 49.1	-54 59			6:57	20 ^s	1:08E					5.8	B2 II							+3
	6389	17 11.4	-32 24			7:01	24 ^s	2:26E					6.0	B1 II							+1
780	6219	16 45.2	-58 17			7:24	12 ^s	1:33E					5.5	B0.5 Ia				IIaD		"	+3
	5661	15 14.6	-60 49			7:32	12 ^s	0:01W					5.6	B0.5 V							-5
	5953	15 58.8	-22 33			7:38	80 ^s	0:38E	2"/ptm				2.2	B0.5 IV						5" screen	-3
	3878	9 44.3	-30 06				6^s						6.4	B0.5 III						PLATE DROPPED	-7
	6762	18 05.7	-21 27																		
781	HR 6245	16 49.8	-41 12			8:04	15 ^s	1:02E					5.5	O8 I FP				IIaD		"	-5
	6272	16 53.2	-41 07				24 ^s						6.0	O8 I ⁺ FP							-3
	335-3646	16 32.0	-48 44.2				1 ^m	0:20E					7.0	O6 F							-1
	335-3650	16 32.2	-48 50.3		08:29	08:34	5 ^m	0:14E					8.8	B1 IG							+1
	335-3645	16 31.8	-49 08		08:33	08:38	3 ^m	0:08E					8.3	A5 IG-II							+3
	335-3658	16 32.8	-49 21		08:43	08:45	160 ^s	0:03E					7.9	A1 IG-II							+5
782	HR 4540	10 51.3	-57 07			08:58	8 ^s	5:52W					4.2	F9 V							+3
	4706	12 21.5	-57 32		09:00	09:01	14 ^s	4:24W					5.3	B9 V							-5
	5413	14 28.7	-49 24			09:06	15 ^s	2:21W					5.4	A1 V							-1
	7001	18 36.1	+38 45			09:11	15 ^s	1:40E					0.0	A0 V							-3
	8228	22 56.2	-29 45				30 ^s						1.3	A3 V							+1

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NUMBER	OBJECT	R.A.	DEC.	DATE UT 1973	UT. EXP		TOTAL / CORR	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS		
					BEGIN	END									KIND	EXP							
783	HD 158561	17 33.8	+12 35	MARCH 28/29	09:32		80 ^s	0:16 E	2" / 1Pm	3.26	70/0.8	11 ² /70	2.2	A5 III			IIa D			F+McF	5" screen	-5	
	185758	19 29.0	17 58		09:36		12 ^s	2:18 F					5.3	Cc II								-3	
	173764	18 45.9	-04 43		09:40		12 ^s	1:22 E					5.3	A5 II								-1	
	135722	15 14.5	+33 14		09:43		6 ^s	2:14 W					4.5	C8 III								+1	
	153210	16 56.5	+09 25		09:47		5 ^s	0:36 W					4.8	K2 III								+3	
	186791	19 45.0	+10 33		09:50		5 ^s	2:10 E					4.0	K3 II								+5	
784	Bol-LS46	6 23.2	+19 43	MARCH 29/30	00:56	01:11	18/20 ^m	2:30 W	3" / camera	"	70/0.6	11 ² /70	10.2	CB			IIa D			F+McF	nearby EW with LS 47	-5	
785	Bol-LS44	"	"	MARCH 30/31	00:05	00:09	4 ^m	1:34 W	2" / 1Pm	3.26	70/0.8	"	8.6	07			IIa D			F+McF		-5	
	-LS 47	"	"	"	00:29	00:51	30 ^m	2:14 W	"	"	"	"	10.7	CB								nearby EW with LS 46	-3
	RLS-10	6 43.6	+00 20	"	00:56	01:17	40 ^m	2:21 W			70/1.2		9.9	(F&I)								-1	
	-12	"	"	"	01:23	02:05	20 ^m	3:16 W			70/0.8		11.2									+1	
	vBHC-1	9 15.0	-49 52	"	02:10	02:17	7 ^m	0:50 W			70/1.2		8.8	B2 Tape	NeA	3 ^s						+3	
786	Aron LS1366 #2	9 57.4	-54 54	"	02:32	03:09	30 ^m	1:04 W			70/0.6		11.1				IIa D				ARON-NISEN	-5	
	#1	"	"	"	03:13	03:44	30 ^m	1:40 W			70/0.8		10.7									-3	
	RCW 19 LS 1020	8 15.5	-35 40	"	03:53	04:01	8 ^m	3:33 W			70/0.8		9.5	CB								-1	
	1022	"	"	"	04:04	04:10	6 ^m	3:46 W			"		8.9	C7 F								+1	
	1029	"	"	"	04:15	04:40	25 ^m	4:12 W			"		10.5	CB ⁺								+3	
	1026	"	"	"	04:33	05:05	12 ^m	4:36 W			"		9.6	CB								+5	
787	NGC 4439-1	12 27	-59 55	"	05:22	05:52	30 ^m	1:13 W			"		10.9	CB ⁻			IIa D					-5	
	-2	"	"	"	05:57	06:17	20 ^m	1:38 W			"		10.4	CB ⁻								-3	
	-3	"	"	"	06:20	06:45	25 ^m	2:08 W			"		10.6	CB								-1	
	MW335 505	16 10.9	-51 37	"	07:03	07:41	35 ^m	0:41 E			70/0.8		11.1	A2 II								+1	
	3530	16 14.8	-51 53	"	07:51	08:22	30 ^m	0:03 E			"		10.7	CB ⁺								+3	
	3529	16 14.7	-50 32	"	08:27	08:43	15 ^m	0:17 W			"		10.1	bc: (I?)								+5	
788	PLG 21-1	15 14.5	-59 33	"	08:56	09:38	40 ^m	2:12 W			70/0.6		11.4	(G-K?)								-5	
	MW 335 565	16 23.7	-49 26	"	09:41	10:02	20 ^m	1:27 W			70/0.8		10.4	CS + r&k								-?	
789	Bol = 545 S253-553	06 28.2	+19 43	Apr 1	00:06	00:52	45 ^m	02:20 W	2.5" / 1Pm	3.26	70/0.6	11 ² /70	12.3	CB			IIa D-B ^x			F+McF		-5	
	-51	"	"	"	01:26	02:06	40 ^m	03:35 W			"		12.1	CBce								-4	
	Aron Tr 9 #1	07 54.0	-25 17	"	02:18	03:41	80 ^m	03:40 W			"		13.0									-2	
	vBHC-2	09 15.0	-44 52	"	03:52	04:27	35 ^m	03:06 W			"		12.0	CB ⁺								-1	

B = Baked 8" in N. (at 50)

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE UT, 1975	UT EXP		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG. B	SP	COMP		CALIB.	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
794	GRM NGC 419 -LS 455	7 29.0	-13 45	Apr 3	02:18	02:38	26 ^m 18 ^m	3:12W	2-3 / 1/2 2/2	3.26	70/0.6	112/70	10.3	K2 I			IIaD		F		-1	
	-LS 456	7 29.0	-13 49		02:44	03:06	22 ^m	3:40W	"	"	"	"	10.6	K2 I							+1	
	-LS 463	7 29.4	-15 49		03:11	03:43	20 ^m	4:17W	"	"	"	"	10.8	K2 I							+2	
	-LS 424	7 26.8	-15 20		03:49	04:05	15 ^m	4:40W	"	"	"	"	10.0	OB T	NA						+4	
795	NGC-5281-11	14 25.6	-59 32		04:57	05:57	15 ^m	1:06 E	"	"	"	"	10.0								4:10 C LT	-5
	MW 335-LS 322	16 13.1	-50 07		05:50	06:30	40 ^m	1:40 E	"	"	"	"	11.3									-4
	LS 565	16 19.5	-49 59		06:44	08:44	120 ^m	0:26 W	2/3 circles in NE				12.4									-2
	T 27-23	17 34.4	-33 28		08:52	09:52	60 ^m	0:22 W	"				11.5		NA	3 ^S						+1
796	NGC 5662-1	14 33.3	-56 26	Apr 4	04:23	04:28	5 ^m	1:58 E	4" / pbm?	2.26	70/0.8	112/70	8.4	B8			IIaD-B		F	Barbed clay Rd	-5	
	-5				04:42	04:50	8 ^m	1:36 E	"	"	"	"	9.3	A0								-4
	-8				04:56	05:02	6 ^m	1:24 E	"	"	"	"	9.0	K2								-2
	-9				05:11	05:21	10 ^m	1:05 E	"	"	"	"	9.5	B8								-1
	-10				05:24	05:34	8 ^m	0:54 E	"	"	"	"	9.3	B9								+1
	-11				05:37	05:43	6 ^m	0:43 E	3"	"	"	"	9.0	B8								+2
	-14				05:51	06:13	20 ^m	0:13 E	3"	"	70/0.6	"	10.7									+4
	-30				06:18	06:42	22 ^m	0:16 W	"	"	70/0.8	"	10.3	K2								+5
797	MW 335-LS 301	16 23.4	-51 58		07:18	07:34	14 ^m	0:41 E	2-3 / clear		70/0.8	"	10.1	B0:III			IIaD-B					-5
	-LS 3553	16 17.6	-49 41		07:54	08:22	30 ^m	0:02 W	2" / clear		70/0.6	112/70	11.0	O9 I								-4
	-LS 3657	16 32.8	-49 31		08:31	08:45	14 ^m	0:20 W	2-3		70/0.8	"	9.9	O8 Ia,h								-2
	-LS 3675	16 35.1	-48 58		08:56	09:10	14 ^m	0:42 W	2-3		70/0.8	"	10.2	B1 II:								-1
	-LS 3667	16 34.0	-48 41		09:14	10:04	50 ^m	1:35 W	3		70/0.6	"	11.5	F8 I T	NA	3 ^S						+1
798	RCW 20-LS FF 1040	8 18.1	-36 00	Apr 5	23:40	23:58	15 ^m	0:04 E	2" / clear	3.26	70/0.6	"	10.6	O8			IIaD-B		F	corrosion		-5
	Bo 2-2	6 47.6	00 28	Apr 6	00:07	00:42	35 ^m	2:11 W	2-4		70/0.6	"	11.4									-4
	S 289-1	6 44.7	-07 18	"	01:08	02:46	90 ^m	4:18 W	"		70/0.8	"	12.4						F	FF - 'chh'		-2
	Bo 7-LS 1148	8 43.9	-45 53			02:55	90 ^s		"		70/0.8	"	7.6									-1
	A 400-LS 166-3	9 52.4	-54 54		03:09	05:31	140 ^m 80 ^x	3:34 W	2"		70/0.6	"	7.5								FINDING CHIP PROG WRONG	+1
	NGC 5662-29	14 33.3	-56 26		05:41	05:49	8 ^m	0:27 E	"		70/0.8	"	9.6									+2
	-26				05:55	06:09	14 ^m	0:06 E	"		"	"	10.1									+4
	-4				06:12	06:26	14 ^m	0:10 W	"		"	"	10.0									+5
									"		"	"			NA	3 ^S						+6

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1975	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
799	Tr 27-43	17 34.4	-33 28	Apr 6	06:58	08:58	120 ^m	0.18 E	2-3 / CLEAR	3.26	70/0.6	112/70	12.5	OB:				IIaD-B		F	7:00C max -5
	-46	"	"		09:01	09:33	30 ^m	0:17 W			70/0.8		10.7	OB ⁺ r							-3
	GROUP SLS 3982 LS 3987	17 12.7	-39 44		09:40	10:05	30 ^m	1:10 W			70/0.6		11.2	OB ⁺ g							-1
	-1	"	"				3 ^m				"		8.7	G Ia							+1
	-1	"	"			10:15	1 ^m				"										0-V = 2.2 Blood Red Star! +3
800	S306 - 2	7 29.5	-19 03	Apr 6	23:40	23:51	10 ^m		2-3 / CIRROS	3.26	70/0.8	112/70	9.5	OB ⁺				IIaD-B		F	-5
	NGC 2414 GROUP - LS 402	7 25.0	-15 02	Apr 7	23:59	00:10	10 ^m	1:02 W			"		9.6	OB							-4
801	S289 - 1	6 44.7	-07 18	"	00:27	02:07	100 ^m	3:41 W			100/0.8 / 0.6		12.4					IIaD-B			STAR GUIDED ALONG 3/4 SLIT -5
802	Ru 44-94	7 58.1	-28 34		02:26	03:30	60 ^m	3:51 W	3-6		100/0.6		11.8	07:e							-5
	NGC 5662-2	14 33.3	-56 26		03:54	04:36	40	1:40 E	~5		70/0.8		10.9								-3
	-4				04:40	05:00	18	1:16 E	~5				10.1								-2
803	MW 245 A -LS 681	7 39.2	-33 30	Apr 7	23:40	00:00	20 ^m	0:47 W	1-2 / CLEAR	3.26	70/0.8		10.3	OBce				IIaD		F	-5
	-LS 644			Apr 8	00:22	02:00	98 ^m	2:57 W	1-2 / CLEAR		70/0.6		12.4	OB							-4
	-LS 656				02:07	02:33	26 ^m	3:20 W	2 / CLEAR		70/0.8		10.7	OB							-2
	Ru 44-33	7 58.1	-28 34		02:39	03:53	70	4:21 W	"		70/0.6		12.0	BO:							-1
	Bo 7-1148	8 43.9	-45 53			04:09	100 ^s	3:53 W	2 / "		70/0.8		7.6	OB ⁺ T							+1
	-1145	"	"		04:14	04:56	40 ^m	4:38 W			70/0.6		11.3	WN 8							+2
	MW 335 -LS 3598	16 22.9	-48 39		05:05	05:37	30 ^m	2:19 E	1-2		70/0.8		10.8	09 I:							+4
	-LS 3599	16 22.9	-49 38		05:44	07:16	90 ^m	0:40 E	1.5		70/0.6		12.3	07							+5
804	Tr 27-26	17 34.4	-33 28		07:42	09:10	80 ^m	0:03 W	2		70/0.6		12.3					IIaD-B			WIND RISING -5
	-103	"	"		09:15	10:05	55 ^m	0:58 W	2		70/0.8		11.8	OB ⁺	NaA	3 ^s					-3
805	NGC 2414 FIELD -LS 537	7 32.9	-14 41	Apr 8	23:38	23:55	16	0:50 W	2 / PM		70/0.8		10.3	OB				IIaD-B		F	-5
	S289-2	6 44.7	-07 18				120 ^m				70/0.4		13.0	OB							double two charts separate or joint -4
	Bo 2-1	6 47.6	+00 18	Apr 9	00:10	00:56	46	2:36 W	2		70/0.6		11.8								-4
	-2	"	"		00:59	01:37	34	3:16 W	2		70/0.6		11.4								-2
	MW 245 A LS 647	07 39.2	-33 30		01:45	03:21	90	4:11 W	2		70/0.6		12.4	OB-							-1
	Ru 44-186	07 58.1	-28 34		03:28	04:10	40	4:41 W	2		70/0.6		11.5	09 V							+1
	MW 335 -LS 3615	16 26.6	-49 18		04:24	06:26	120 ^m	1:32 E	2-3		70/0.6		12.7	07: r	NaA	3 ^s					+2
806	-LS 3497	16 07.9	-51 24		07:06	08:46	90 ^m	1:05 W	2-3		70/0.6		12.5	OB ⁺ h				IIaD-B			-5
	Tr 27-16	17 34.4	-33 28		08:53	10:07	70 ^m	1:02 W	1-4		70/0.8		11.9	OB	NaA	3 ^s					-3

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NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG B	SP.	COMP		CALIB	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
807	DM-34 3655	7 29.8	-34 53	Apr 9	23:50	23:58	8 ^m	1:03W	"		70/0.8		9.1					IIaD		F	Cleaning -5
	DM-34 3660	7 29.8	-34 57	10	00:03	00:09	5 ^m	1:15W	4		70/0.8		8.7								Plate faded 8" at 50C in 40" -4
	Ru 44-128	7 58.1	-28 34		00:19	01:59	90 ^m	2:36W	"		70/0.6		12.0	09 V							-2
	He 19/18-5018	7 51.4	-26 14			02:08	2 ^m	2:53W	"		70/0.8		7.6	B2 III							-1
	-5042				02:16	03:36	80/60 ^m	4:21W	1-3 ["]	CIRRUS	70/0.6		11.8	B5: k							THIN CIRRUS PASSING -1
	NGC 2669	8 44.0	-52 53		04:01	04:15	14 ^m	4:07W	"		70/0.8		9.7	K0							+2
	-2				04:19	04:21	2 ^m	4:13W	"		70/0.8		7.8	B9							+4
	-3				04:26	04:29	3 ^m	4:21W	"		70/0.8		7.9	A3							+5
808	Tr 21-1	13 30.7	-62 40		04:57	05:04	7 ^m	0:09W	"		70/0.8		9.0	B3				IIaD-B			-5
	-2				05:08	05:16	7 ^m	0:21W	"		70/0.8		9.0	B3							-4
	-3				05:17	05:41	20 ^m	0:46W	"		70/0.6		10.5								-2
	NGC 5662-2974	33.3	-56 26		05:49	06:03	12 ^m	0:08W	3 ["]	CIRRUS	70/0.8		9.6	B9							-1
	-26				06:05	06:21	14 ^m	0:25W	"		70/0.6		10.1	B9							+1
	-7				06:23	06:37	14 ^m		"		70/0.6		10.1								+2
	HD 149038	16 32.4	-43 59			06:48	10+10 ^s	1:07E	"		70/0.8		5.0	B0 Ia							+4, +5
809	Tr 27-2	17 34.4	-33 28		07:18	07:50	90 ^m	0:07E	2-3 ["]	CIRRUS	70/0.6		11.9	08 Ia				IIaD-B			-5
	SL 5 3982	17 13.7	-39 44		08:54	09:02	18 ^m	0:30W	"		70/0.8		8.7	G Ia							overspread to give H.A. -3
	" -1				09:12	09:18	6 ^m	0:43W	"		70/0.8		8.7	G Ia							-1
	-3				09:20	10:02	~40 ^m	1:26W	"		70/0.6		~11.4								+1
810	RCW 20 7040	8 18.1	-36 00	Apr 10	23:40	23:56	15 ^m	0:15W	1-3 ["]		70/0.6		10.6	08-				IIaD-B		F	limb in Mag. W Plate faded 15" at 50C (40") -5
	D.R. 25-17	06 43.6	+00 20	Apr 11	00:05	01:15	66 ^m	3:08W	1-4 ["]	SOME CIRRUS	70/0.6		12.0								-3
	SJ 01-6	07 08.8	-18 28		01:27	02:03	34 ^m	3:34W	"		70/0.6		11.3	08							-1
	MW 245A				02:10	03:32	80 ^m	4:31W	~3 ["]		70/0.6		12.2								+1
	LS 648	07 39.2	-33 30		03:40	03:46	6 ^m	2:49E	"		70/0.8		9.1	08+ Ia							+3
811	Ps 20-1	15 13.3	-58 59		04:10	05:50	100 ^m	0:47E	2-3 ["]		70/0.6		12.5								-5
	Tr 27-46	17 34.4	-33 28		05:58	06:40	40 ^m	2:16E	-2 ["]		70/0.8		10.7								dellimits over exposures -3
812	-104	"	"		06:56	07:40	40 ^m	1:20E	-2 ["]		70/0.6		11.6	0B							-2
	-43				07:46	10:06	40/120 ^m	1:13W	1-2 ["]		70/0.8		12.5	0B:	N.A. 3 ^s						about EW at 1446 +1
813	MW 245A	07 39.2	-33 30	Apr 12	00:09	01:15	100 ^m		2 ["]	THIN CIRRUS OBS	70/0.6		12.4	0B-				IIaD.B		F+Hu	-5
	LS 634				01:54	02:40	46/34 ^m	3:56W	3-4 ["]		70/0.6		11.1	0B+							-3

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
cont 813	NGC 2669 -4	8 44.1	-52 52	cont Apr 12	03:04	03:12	8 ^m	2:13W	12" CLEAR		70/0.8		9.4	K0						F+Hu	-1	
	-9				03:19	03:27	8	3:28W			70/0.8		9.4								+1	
	-29				03:33	03:47	14 ^m	3:48W			70/0.8		10.0	A0							+2	
	-24				04:01	04:09	8 ^m	4:11W			70/0.8		9.4	A0								
814	M23	16 15.3	-51 55		05:04 05:04	06:44	104 ^m /4 ^h	0:44E			2500/4.0		NEBUL → Nebula +Star	Em			IIaD-B		stopped by nebula jump. NS slit	(FALSE START) +5 GUIDED TO WIDENING NS slit widen at XY base	+2	
	"				FORGOT TO TURN ON TUBE-SPID! 07:45	10:07	3 ^h	2:32W			80/0.8			Em							+2	
815	Ru 44 - -LS 909	07 58.1	-28 34	Apr 12/13	23:44	00:08	24 ^m	0:58W	2-3 CIRRUS		70/0.8		10.4	O6:e			IIaD-B			F+Hu	-5	
	-LS 902			Apr 13	00:25	00:45	30 ^m	1:36W	1-2		70/0.6		10.9	O9 III							-3	
	-LS 897				00:51	01:33	40 ^m	2:25W			70/0.6		11.4	O9 V							-1	
	-LS 898				01:38	03:00	80 ^m	3:48W			70/0.8		11.8	O7:e							+1	
	-LS 916				03:06	03:57	50/40 ^m	4:49W	2-3		70/0.6		11.3	WNS+Oe						dir wghter *	+3	
816	MW 335 -LS 3547	16 17.0	-50 59		04:18	04:58	38 ^m	2:29E	2-3		70/0.8		11.0	O8							-5	
	-LS 3651	16 32.4	-49 44		05:04	05:07	3 ^m	2:33E			70/0.8		8.3	A1 Ia							-3	
	-LS 3653	16 32.5	-49 36		05:14	06:14	60 ^m	1:28E	3-4		70/0.6		11.6	O8							-1	
817	Tt 27-13	17 34.4	-33 28		06:39	09:39	180 ^m	0:56W	1-5		70/0.6		12.9	O8	NeA 3 ^s					WIND #12 slit almost on	-2	
818	Ru 44 - -LS 891	07 58.1	-28 34	Apr 14	23:40	00:24	44	1:20W	3 ^h /CIRRUS		70/0.6		11.2	O0:			IIaD-B			F+Hu	Tube not on	-5
	-LS 899			Apr 14	00:32	01:38	66	2:33W	2-3/CIRRUS		70/0.6		11.6	O8							-3	
	-LS 885				01:43	03:03	44	4:00W	3 ^h /CIRRUS		70/0.6		11.2	O0 V							-1	
	Tt 21-104 -LS 885	13 30.7	-62 40		03:27	04:18	50 ^m	0:18E			70/0.6		11.3								+1	
	MW 335 -LS 3509	16 11.3	-51 18		04:26	06:50	130 ^m	0:26E	3 ^h /some cloud		70/0.6		12.4	O8 ⁺ h							+3	
819	MW 335 -LS 3648	16 32.2	-49 34		07:29	08:24	50 ^m	0:47W	3 ^h		70/0.6		11.3	O8							-5	
	MW 335 -LS 3649	16 32.2	-48 54		08:40	10:02	90 ^m	0:20W	2		70/0.6		12.0	O8	NeA 3 ^s						-3	
820	Ru 44 -LS 899	07 58.1	-28 34	Apr 14/15	23:42	00:37	55 ^m	01:30W	2		70/0.6		11.6	O8			IIaD-B			Hu+McF	-5	
	Ru 44 -LS 891			Apr 15	00:41	01:16	35 ^m	02:10W	2		70/0.6		11.2	O0:							-3	
	Ru 44 -LS 890				02:11 02:11	04:19	120 ^m	05:13W	2		70/0.6		12.5	O8 ⁻						wrong star -1 +1	+1	
821	Cr 258-5	12 23.8	-60 22		05:06	05:32	25 ^m	02:00W			70/0.8		10.5							had to realign co-ords	-5	
	Cr 258-13				05:37	06:09	30 ^m	02:37W			70/0.6		11.0							have to realign after almost each exposure -mirror moving?	-3	
	MW 335 -LS 3554	16 17.9	-51 09		07:10	09:10	120 ^m	01:45W	1-2		70/0.6		12.5	O9							+1	
	MW 335 -LS 3558	16 18.5	-51 09		09:13	10:03	50 ^m	02:38W			70/0.6		11.6	B3 III	NeA 3 ^s						+1	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
829	NGC 6204 X	16 44.7	-46 59	Apr 18	03:05	03:21	35 ^m		2-3				11.0					IIaD-B		Hut+McF	(did Hogg 22-2 by mistake on -5)
	-1	"	"		03:58	04:30	32 ^m	3 14E	1-2		70/0.6		11.1	V				IIaD-B			(hooked Apr 16)
	-3	"	"		04:32	04:47	15 ^m	2 56E	1-2		70/0.8		9.9	III							fainter star close to slit
	-4	"	"		04:49	05:07	18 ^m	2 36E	1-2		70/0.8		10.1	III							
	-5	"	"		05:08	05:33	25 ^m	2 10E	1-2		70/0.8		10.6	III							
830	MW 335 -LS 3613	16 26.4	-49 35		06:07	07:57	110 ^m	0 32W	1-2		70/0.6		12.7	OB				IIaD-B			(hooked Apr 17)
	-LS 3582	16 21.1	-50 58		08:10	09:50	100 ^m	2 32W			70/0.6		12.6	07:r	MeA	3 ^s					
831	NGC 2414 -LS 480	07 30.1	-15 26	Apr 18/19	23:31	00:51	80 ^m	2 23W	1-2		70/0.6		12.1	OB ⁺				IIaD-B		Hut+McF	(hooked Apr 18)
	-LS 478	07 30.0	-15 22	Apr 19	00:55	02:00	65 ^m	3 32W	1-2		70/0.6		11.9	OB ⁺							fainter stars close to slit
	RCW 19 -1027	08 15.5	-35 57		02:05	02:45	50 ^m	3 31W	1-2		70/0.6		11.4								
832	Pis 20 -7	15 13.3	-58 59		03:08	04:18	70 ^m	1 53E	1-2		70/0.6		12.1	OB ⁺							
	-11	"	"		04:23	06:04	100 ^m	0 06E	1-2		70/0.6		12.6	WNh							
	MW 335 -LS 3548	16 17.1	-50 49		06:13	06:58	45 ^m	0 16E	1-2		70/0.6		11.6	B0							
833	-LS 3608	16 24.2	-51 44		07:13	07:23	10 ^m	0 01W	1-2		70/0.8		9.8	OBinn(B10)							
	-LS 3600	16 23.0	-51 34		07:34	08:04	30 ^m	0 44W	1-2		70/0.6		11.3	B3V							
	-LS 3652	16 32.4	-49 06		08:09	09:05	56 ^m	1 36W	1-2		70/0.6		11.9	B3V							
	-LS 3602	16 23.7	-50 57.3		09:08	09:40	32 ^m	2 20W	1-2		70/0.6		11.3	B2V							
	-LS 3630	16 29.0	-51 37		09:47	09:50	2.75 ^m	2 24W			70/0.8		8.4	A2Ib							
	-LS 3651	16 32.4	-49 44		09:53	09:56	2.5 ^m	2 27W			70/0.8		8.3	A1Ia							
834	NGC 2383 -7	07 23.9	-20 54	Apr 19/20	23:33	00:24	50 ^m	2 11W	1-2		70/0.6		11.6					IIaD-B		Hut+McF	
	-1	"	"	Apr 20	00:25	00:38	13 ^m	2 25W	1-2		70/0.8		9.9								
	-8	"	"		00:39	01:19	40 ^m	3 07W	1-2		70/0.6		11.4								
	NGC 2669 -20	08 44.1	-52 53		01:36	02:06	30 ^m	2 32W	1-2		70/0.8		10.8								
	-1	"	"		02:10	02:21	11 ^m	2 47W			70/0.8		9.7	K0							
	-27	"	"		02:24	02:44	20 ^m	3 14W			70/0.8		10.4								
835	Hogg 16 -4	13 27.9	-61 06		02:57	03:43	46 ^m	0 34E	1-2		70/0.6		11.6								
	-6	"	"		03:46	04:36	50 ^m	0 19W	1-2		70/0.6		11.7								
	NGC 5281 -4	13 45.1	-62 46		04:40	05:20	40 ^m	0 46W	1-2		70/0.6		11.3								
	-1	"	"		05:24	05:25	48 ^s	0 51W			70/0.8		6.8								
	MW 335 -LS 3585	16 21.3	-49 27		05:41	06:26	45 ^m	0 43E	1-2		70/0.6		11.7	09:re							

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NUMBER	OBJECT	R.A.	DEC	DATE U.T.	U.T. EXP		TOTAL/CORR.	HA END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
836	MW 335 -LS 3579	16 22.6	-48 45	Apr 20	06:41	06:55	14"	0 16E	1-2 clear		70/0.8		10.2	B0V				IIaD-B	HutMcF	true I.D. looks fainter??	-5
	-LS 3610	16 25.3	-49 54		07:00	07:12	12"	0 01E	1-2		70/0.8		10.0	OB						"	-3
	-LS 3677	16 35.1	-48 30		07:17	08:23	65"	1 01W	1-2		70/0.6		12.1	OB							-1
	-LS 3611	16 26.1	-49 29		08:28	09:38	70"	2 24W	1-2		70/0.6		12.2	OB							+1
	-LS 3669	16 34.3	-49 14		09:43	10:00	17"	2 38W	1-2		70/0.8		10.4	B2IVe)	NetA 3 ^s						+3
837	NGC 6242 -1	16 54.2	-39 26	Apr 23	05:40	05:45	5"	1 47E	1-2		70/0.8		8.8	B8				IIaD	HutMcF	UV photometry first half.	-5
	-13	"	"		05:55	06:21	25"	1 11E	1-2		70/0.8		10.6								-3
	-2	"	"		06:23	06:30	6 1/2"	1 02E	1		70/0.8		9.3								-1
	-3	"	"		06:33	06:48	15"	0 45E	1		70/0.8		10.1								+1
	-5	"	"		06:51	07:08	17"	0 25E	1		70/0.8		10.2								+3
	-20	"	"		07:10	07:45	35"	0 10W	1		70/0.6		11.3								+5
838	NGC 6249 -1	16 56.1	-44 44		07:59	08:14	14"	0 39W	1		70/0.8		10.0								-5
	-2	"	"		08:16	08:46	30"	1 11W	1		70/0.8		10.8								-3
	-4	"	"		08:48	09:28	40"	1 58W	1		70/0.6		11.4								-1
	-5	"	"		09:29	10:13	45"	2 37W	1		70/0.6		11.6		NetA 3 ^s						+1
839	QU Car	11 05.0	-68 26	Apr 25	23:52.5	00:12.5	20"	1 21E	2-3		100/0.4		~11.2		NetA 3 ^s			IIaD	Metol CS		+4
840	"	"	"	Apr 26	00:34.5	01:01	27	0 31E			"										+4
	"	"	"		01:06	01:28	22	0 07E			"										+3
	"	"	"		01:31	01:53	22	0 17W			"										+2
	"	"	"		01:54.5	02:16.5	22	0 41W			"										+1
	"	"	"		02:19	02:43.5	22 off.	1 08W			"										-1
	"	"	"		02:46.5	03:08.5	"	1 33W			"										-2
	"	11 04.6	-68 28		03:33.5	03:56	"	2 22W			"										-4
841	"	"	"		04:32.5	04:55.5	23	3 21W			"										-4
	"	"	"		05:10.5	05:24.5	24	3 50W			"										-3
	"	"	"		05:27.5	05:50	23	4 15W			"										-2
	"	"	"		05:52.5	06:16	23	4 41W			"										-1
842	NGC 6242 -2 MW 335 -LS 3508	16 54.2	-39 26		06:51	07:33	42"	0 10W	2-3		70/0.6		11.3					IIaD	HutMcF		-5
	-LS 3508	16 11.0	-50 58		07:40	08:16	33"	1 36W	2-3		70/0.8		10.7	B0V							-3
	-LS 3512	16 11.8	-51 01		08:19	09:09	50"	2 27W			70/0.6		11.5	OB							-1

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
cont 842	MW 335 -LS 3499	16 10.1	-50 13	Apr 26	09:12	09:50	38 ^m	3 11W	2-3		70/0.8		10.9	OB	NeA	3 ^s		IIaD		HutH&F Kullman	+1
843	QUCar	11 05.0	-68 26	Apr 26 ²⁷	00:27	00:43	15 ^m	147E	2"	324	100/0.4		~11.2	Per	"	"	✓	"	MWP2	CS.	under exposed
844	"	"	"	"	00:13	00:35	22 ^m	0 ^h 50 ^m E											8 ^m		-4
845	"	"	"	"	00:51				Plate came off on the screen at end of exposure												
846	"	"	"	"	01:28	01:54	26 ^m	0 ^h 23W							NeA	3 ^s	✓	IIa-D	with sulphite	CS.	+4
	"	"	"	"	01:56	02:25	29 ^m														AS
	"	"	"	"	02:26	02:52	26 ^m	1 22W													+3
	"	"	"	"	02:53	03:22	28 ^m	7 52W													+2
	"	"	"	"	03:38	04:06	28 ^m	2 36W													change to E side + rot. spect. tr.
	"	"	"	"	04:09	04:37	28	3 07W													-1
847	"	"	"	"	04:53	05:21	28	3 52W		324	100/0.4				NeA	3 ^s		IIa-D	with sulphite	CS	+4
	"	"	"	"	05:22	05:50	28	4 21W												MWP-2	+3
	"	"	"	"	05:54	06:20	28	4 50W													+2
	"	"	"	"	06:23	06:51	28	5 22W													+1
	"	"	"	"	06:57	07:06	9	5 37W													stationary E-W
848	MW 335 -LS 3567	16 19.8	-51 30	Apr 27	07:31	08:05	35 ^m	1 20W	2"		70/0.6		11.2	09:				IIaD		Hu	-5
	-LS 3560	16 18.7	-51 19		08:10	09:00	50 ^m	2 16W			70/0.6		11.6	B5Ve							-3
	-LS 3641	16 31.3	-50 14		09:04	09:49	45 ^m	2 53W			70/0.6		11.4	B2Ve							-1
	-LS 3559	16 18.7	-49 26		09:51	10:06	15 ^m	3 23W			70/0.8		10.3	B2Ve	NeA	3 ^s					+1
849	QUCar	11 05.0	-68° 26	27-28	23:23.5	23:38.5	15 ^m	143E			100/0.6		~11	Per	NeA	3 ^s	✓	IIa-D	MWP-2 FM	CS.	New Batteries in I.T.
✓ 850	"	"	"	"	23:54.5	00:10.5	16 ^m	1 15E			"		"	"	"	"	"	"	"	"	+4
	"	"	"	"	00:12.5	00:30.5	18 ^m	0 52E			"		"	"	"	"	"	"	"	"	+3
	"	"	"	"	00:31.5	00:49.5	18 ^m	0 37E			"		"	"	"	"	"	"	"	"	+2
	"	"	"	"	00:50.5	01:09.5	19 ^m	0 17E			"		"	"	"	"	"	"	"	"	+1
	"	"	"	"	01:10.5	01:29.5	19	0 03W			"		"	"	"	"	"	"	"	"	-1
	"	"	"	"	01:30.5	01:51	20 ^m	0 08W			"		"	"	"	"	"	"	"	"	-2
	"	"	"	"	01:52	02:10.5	18.5	0 44W			"		"	"	"	"	"	"	"	"	-3
✓ 851	QUCar	"	"	"	02:27	02:46.5	19.5	1 20W			"		"	"	"	"	"	"	"	"	+4
	"	"	"	"	02:49	03:07	18	1 41W			"		"	"	"	"	"	"	"	"	+3
	"	"	"	"	3:22	03:44.5	20.5	2 20W			"		"	"	"	"	"	"	"	"	reversed to E side

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
863	α Aps	22 41.5	-0 26	JULY 3/4 75	09:30	09:39	12/24/16 ^s 411/132	1133W	3"	340	100μ/8	112A	3.91	B	62IV	NeA	30 ^s	IIaO			BAD DEVELOPER -
	α PsA	22 56.2	-29 45		09:42	09:45	24/16 ^s	0:52W					1.25	A3IV							PLATE DISCARDED
	γ Peg	23 56.5	+25 00		09:52	10:04	5 ^m	0:11W					6.25	M3III							
	δ Peg	0 12.0	+15 03		10:10	10:12	6/12/24	0:04W					2.60	B2IV							
	χ Peg	0 13.3	+20 04		10:18	1:13	6 ^m	0:22W					6.38	M2III		30 ^s					
864	W Sco	16 51.3	-20 30	JULY 4/5 75	00:51	01:51	25/30/16 ^s	1:00E	6"	340	100μ/8	112A	3.91	B1V	NeA	30 ^s	IIaO	MWP-2 7min			Cb, Gue ✓
	S Oph	16 13.0	-3 37		01:57	01:06	30/30/16 ^s	1:00E	5-10"				4.30	M3III							✓
	22 Sco	16 28.7	-25 04		01:13	01:28	45/30/16 ^s	0:57E					4.65	B2V.							✓
	γ Sco	16 34.3	-28 10		01:31	01:36	45/30/16 ^s	0:52E					3.08	B2V							✓
	ν Oph	17 57.6	-9 47		01:42	01:51	30/30/16 ^s	2:00E					4.34	KcIII		30 ^s					✓
865	η Ser	18 20.0	-2 53		02:49	03:06	30/60/16 ^s	1:00E					4.20	KcIII-IV		30 ^s					✓
	α Lyr	18 36.1	+38 46		03:11	03:15	4/8/16 ^s	1:15E					0.04	AcIV							✓
	107 Her	18 22.6	+21 45			03:28	2 1/2 ^m	0:48E					5.00	K2.5III							w.
	IC 4756	18 34.1	+04 59		03:39	03:54	10 ^m	0:33E			1.61		6.53								seeing compromised O.
	6	18 35.2	+05 20		04:00	04:40	35 ^m	0:12W	3-7"				7.86								✓
866	δ Sps	11 37.9	+17 26		04:48	05:03	45/90/16 ^s	0:20E	3-4"				5.3	G1III		30 ^s					✓
	IC 4756	18 34.4	+05 23		05:39	07:40	115 ^m	3:13W	2-3"				9.73			30 ^s					w.
	22	18 36.2	+5 31		07:46	09:16	85 ^m	4:48W					9.34			50 ^s					sl. w
867	α PsA	22 56.2	-29 45		09:35	09:35	24/16 ^s	0:47W					1.25	A3IV							✓
	γ Peg	23 56.5	+25 00		09:41	09:53	4 ^m	0:04W					6.25	M3III							✓
	δ Peg	0 12.0	+15 03		09:58	10:01	4/8/16 ^s	0:04E					2.60	B2IV							✓
	χ Peg	0 13.3	+20 04		10:04	10:16	4 1/2 ^m	0:11W	3"				6.38	M2III							✓
	υ Cet	0 18.1	-8 58		10:21	10:24	24/45/16 ^s	0:18W					4.78	K1.5III							✓
	S And	0 38.0	+30 44		10:35	10:44	30/40/16 ^s	0:14W					4.52	K3III							✓
	α Aps	2 51.8	+23 20		10:49	10:52	8/10/30 ^s	1:06E					5.15	K2III		30 ^s					✓

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP		TOTAL CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
868	IC 4756 33	18 34.3	+05 08	JULY 15	03:49	05:30	100"	09:07W	2"	3.40	100 μ /8		9.81		NeA	30 ^s		IIa-O		cb, 6ke	
	40	18 37.7	+05 31		05:34	07:45	125"	3:19W					9.96								
	15	18 37.8	+05 28		07:47	08:55	65"	4:28W					9.09								
	2	18 39.4	+04 56		08:57	09:08	10"	4:40W					6.53								
869	ϵ Peg	21 43.0	+9 46		10:07	10:11	10/24AE	2:40W	2"				3.98	K2 Ib		30 ^s					
	η Peg	21 43.3	+17 14		10:15	10:20	2 $\frac{1}{2}$ "	2:41W					5.54	G5 Ib							
	α Aqr	22 4.5	-0 26		10:24	10:27	9/18/36 ^s	2:35W					3.91	G2 Ib							
	γ^3 Peg	01 8.5	+11 31		10:32	10:34	3"	0:18E					6.2	G0 III							
	α Trv	01 51.7	+21 28		10:44	10:48	12/24/48 ^s	0:52E					4.0	F6 IV		30 ^s					
870	IC 4756 2	18 34.6	+04 49	JULY 19	5:39	05:50	10"	01:33W	1-2"				6.53			30 ^s	IIaC			some cloud	
	21	18 36.3	+05 13	1915	06:02	07:15	70"	02:58W					7.39			30 ^s					
871	18	18 38.1	+05 29		07:31	08:55	80"	09:30W					9.12			30 ^s					
	2	18 34.6	+04 50		08:59	09:06	6"	04:50W					6.53								
	β Aqr	20 30.3	-5 42		10:08	10:12	9/12/36 ^s	04:01W					3.73	G0 Ib							
	HR 56	02 51.8	+10 23		10:20	10:26	5"	02:01E	2-3"				6.4	F5 III							
	α Cet	03 1.0	14 00		10:31	10:36	15/30/60 ^s	02:06E					7.16	M15 III		30 ^s					
872	5 Leo	10 15.3	+23 33		23:13	23:18	18/30/78 ^s	04:35W	2-3"	370	100 μ /8		3.74	F0 III		30 ^s				cb, 6ke	
	ϵ Vir	13 0.9	+11 06		23:28	23:31	7/33/66 ^s	0:51W			1.6		3.8	G8 IIIab							
	29 Her	16 19.1	-24 07		23:40	23:51	33/49/195 ^s	2:05E			1.6		5.35	A5 II							
	29 Her	16 31.4	+11		23:54	24:02	40 ^s	2:05E							K7 III						
	22 Sco	16 28.7	-25 04		23:59	00:02	90 ^s	2:05E			1.6		7.65	B2 V							
873	IC 4756 10	18 37.2	+05 29		00:31	01:53	80"	2:23E			100 μ /8		9.09			30 ^s				Tel. with ladder	
	28	FOCUS TEST			320-360					360	50 μ /8		7.60			30 ^s					
874	35	18 36.9	+05 15		03:20	05:35	130"	1:17W					9.87			30 ^s					
	31	18 37.9	+05 25		05:35	07:55	135"	3:38W					7.95								
	8	18 35.4	+05 44		07:57	09:16	75"	5:02W					9.04			30 ^s					

NUMBER	OBJECT	R.A.	DEC.	A75 DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
880 425	IC 4756 #14	18 38.2	+05 16	JULY 14	03.34	06:35	170 ^m	2 38W	2-3"	360	100 ^u / ₈		10.05		NA	30s		IIa 0	MWP-2	cb/Gre	7min
881	IC 4756 #17	18 37.6	+05 19	JULY 14/15	04 06	07 10	180 ^m	3 15W	2"	360	100 ^u / ₈		10.10		NA	30s		"	"	cb/Gre/SEC	PLATE HOLDER LOOSE - OUT OF FOCUS, PLATE DISCARDED
	COMET 1975h	20 42.4	+20 42		07 20	10:20	180 ^m	4 21W					11.9			30s					

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
882	ϵ Aqr	20 ^h 46.1	-9 36	July 21/25	06:44	06:46	9/15/27 ^s	1 ^h 09W	<2"	360	100 μ /8	2A	3.78	A1 II	NeA	30 ^s		IIa-0	MWP-2	Gve	
	δ Aqr	21 ^h 26.3	-6 01				6/12/24						2.58								Wrong Comps
	α Del	20 38.5	+15 50		07:12	07:16	15/30/68	1 ^h 52	2"				3.71	B9 IV							
	θ Psc	23 26.6	+06 14		07:27	07:31	30/60/120	2 ^h 05E					5.4	K1		30 ^s					Comps filtered
883	λ Psc	23 40.7	+01 38		07:45	07:50	21/45/90	3 ^h 40E					4.7	A7		30 ^s					
	ω Psc	23 57.8	+06 42		07:56	07:59	12/24/48	0 ^h 48E					4.4	F4							
	ϵ Psc	01 01.7	+07 45		08:06	08:11	24/48/96	1 ^h 19E					5.2	K0							
	τ Psc	01 10.1	+29 55		08:19		36/72/144						5.6	K0							
884	σ Sgr	18 54	-26 24	Sept 21 Nov 1/25	04:36	04:36	6/12/24 ^s	1 ^h 32W	~3"	360	100 μ /8		2.1	B2.5V	NeA	30 ^s		IIa 0		Gve	
	γ Aql	19 45.0	+10 29		04:50	04:53	10/21/42 ^s	0 ^h 55W					3.8	K3 II							
	β Aql	19 54.1	+6 18		05:00	05:10	45/90/180	1 ^h 24W					4.57	G8 III							
	α Del	20 38.4	+15 41		05:19	05:22	9/18/36						3.71	B9 III		30 ^s					
885	α Aqr	22 04.5	-00 33		06:40	06:43	18/36/72	0 ^h 26W					3.91	G2 Ib		30 ^s					
	α Psa	22 56.2	-29 45		06:49	06:50	3/6/72	0 ^h 19E					1.25	A3 II							
	γ Peg	0 12.0	+15 03		06:58	07:01	9/18/36	1 ^h 17E					2.60	B2 II							
	χ Peg	0 13.2	+19 53		07:08	07:15	3 ^h 2 ^m	1 ^h 10E					6.38	M2 II		30 ^s					
886	IC4756 #16	18 35.1	+05 09	Aug 19 1975	02:20	04:23	2 ^h	1 ^h 45W(?)		365			9.83			30 ^s				Gve	} wrong sexles
	#13	18 34.7	+05 04		04:27	06:45	75 ^m	3:15W(?)					9.43			30 ^s					
887	IC4756 #53	18 37.3	+05 45	Aug 20	23:50	2:50	3 ^h	1 ^h 21W		365			10.12			30 ^s				Gve	
	#52	18 36.3	+05 45		2:53	5:30	2 ^h 30	4 ^h 10W					9.91			30 ^s					
888	IC4756 #49	18 35.4	+05 36	Aug 21	23:59	02:44	2 ^h 45	1 ^h 25W		330			10.11			30 ^s					} comparison top of stars
	#11	18 34.6	+05 26		02:46	05:16	3 ^h 30	3 ^h 58W					9.95(?)			30 ^s					

NUMBER	OBJECT	R. A.	DEC.	DATE U.T.	U.T. EXP		TOTAL / CORR.	H. A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
897	PN1	06 ^h 20.2	-00 19	Aug 27 1975	08:42	09:08	26 ^m	3 ^h 30 ^E	2" / clear	340	100% / 0.6	112 / 8.26			NeA	1 ^s	II _u -D	MWP-2	Gue	PN1 = possible new 1st comp. at focus = 350	
	PN2	06 ^h 20.2	-00 19		09:10	10:16	66 ^m	2 ^h 24 ^E							NeA	1 ^s				7 ^m at 67°	
898	PN1	06 ^h 20.2	-00 19	Aug 29 1975	08:03	08:43	40 ^m	3 ^h 50 ^E	3" / clear	340	100% / 0.6	112 / 8.26			NeA	1 ^s	II _u -D	MWP-2	Gue	T = 9° N = 26%	
	PN2	06 ^h 20.2	-00 19		08:45	10:00	53 ^m	2 ^h 27 ^E							NeA	20 ^s					
899	PN1	06 ^h 20.2	-00 19	Aug 30 1975	07:43	08:35	55 ^m	3 ^h 45 ^E	3" / clear	340	100% / 0.6	112 / 8.26			NeA	1 ^s	II _u -D	MWP-2	Gue	T = 9° N = 23%	
	PN2	06 ^h 20.2	-00 19		08:40	10:10	90 ^m	2 ^h 31 ^E							NeA	20 ^s					
900	PN1	06 ^h 20.2	-00 19	Aug 31 1975	08:10	09:23	70 ^m	3 ^h E	2" / clear	340	100% / 0.6	112 / 8.26			NeA	1 ^s	II _u -D	MWP-2	Gue	T = 8° WWD CAL N = 20%	
901	SA ₁	19 24.2	+03 04	Sept 1 1975	03:10	03:12	7/15/30 ^s	0 ^h 47 ^W	2" / some haze	335	100% / 0.8	112 / 7.0	3.7	F0 IV	NeS	30 ^s	II _u -D	MWP-2	Gue	T = 12° N = 18%	
	2 A ₁	19 25.3	+00 15		03:20	03:25	2/4/4/6	2 ^h 02 ^W					5.3	F2 Ib							
	4 A ₁	19 32.8	+07 19		03:33	03:38	30/60/120	2 ^h 09 ^W					5.6	K3 III							
	12 A ₁	19 35.4	-07 09		03:43	03:47	18/36/72	2 ^h 10 ^W					4.9	B0.5 III		30 ^s					
402	γ A ₁	19 52.3	+08 21		04:01	04:08	33/60/132	2 ^h 12 ^W					5.7	K0 III		30 ^s					
	β A ₁	19 54.0	+06 20		04:11	04:16	18/36/72	1 ^h 14 ^W					4.6	G8 IV							
	α ¹ Cap	20 16.2	-12 37		04:23	04:29	30/60/90	1 ^h 10 ^W					5.3	G3 Ib							
	α ² Cap	20 16.7	-12 38		04:33	04:36	14/28/54	1 ^h 17 ^W					4.5	G9 III							
	71 A ₁	20 37.0	-01 13		04:42	04:46	27/54/108	1 ^h 08 ^W					5.3	G8 III		30 ^s					
403	θ A ₁	20 10.2	-00 54		04:57	04:58	3/6/12	2 ^h 47 ^W					3.2	B9.5 III		30 ^s					
	ρ A ₁	20 13.1	+15 04		05:05	05:10	21/42/84	2 ^h 54 ^W					5.0	A2 V							
	σ Del	20 32.2	+11 11		05:15	05:18	12/24/48	2 ^h 46 ^W					3.9	B6 III							
	κ Del	20 38.5	+15 46		05:21	05:24	12/24/48	2 ^h 45 ^W					3.8	B9 V		30 ^s					
404	PN1	06 20.2	-00 19	Sept 1 1975	07:07	08:27	80 ^m	3 ^h 53 ^E	2" / clear	340	100% / 0.6	112 / 8.26			NeA	1 ^s	II _u -D	MWP-2			
	PN2	06 20.2	-00 19		08:29	10:09	100 ^m	2 ^h 11 ^E							NeA	1 ^s					

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
405	γ Oph	17 57.6	-09 47	Sept 2 1975	02 18	02:21	12 ²⁴ 48	1 ^h 18 W 3"	Clear	335	100.4 / 0.8	112 / 7.0	4.3	G9 III	NeA	30 ^s		IIa-0	MWP-2	Gue	T=120 H=20% WIND CALM.
	71 Oph	18 05.4	08 43			02 38	110 ^s	1 ^h 26 W					5.6	G8 III-IV							
	74 Oph	18 19.5	+03 24		02 42	02 46	130 ^s	1 ^h 21 W					5.7	G8 III							
	β Sct	18 45.7	-04 48		02 54	03 01	30 ⁷⁰ 120	1 ^h 10 W					5.3	G5 II							
	α Sge	19 38.7	+17 56		03 10	03 13	70 ^s	0 ^h 29 W					5.1	G0 II							
	β Sge	19 38.7	+17 22		03 17		120 ^s						5.4	G8 II							
	η Aql	19 50.9	+00 57		03 29	03 31	70 ^s	0 ^h 36 W					5.3	G2 Ib		30 ^s					
406	γ Sct	18 22.2	-8 56		03 42	03 45	90 ^s	2 ^h 18 W					5.6	K0 III	NeA	30 ^s					
	τ Sgr	19 05.3	-27 41		03:50	03 55	18 ³⁶ 72	1 ^h 45 W				4.5	K2 III								
	λ Sgr	18 26.3	-25 24		03:58	04 01	9/18/36	2 ^h 29 W					3.8	K2 III							
	μ Aql	19 32.8	+07 22		04 07	04 10	110 ^s	1 ^h 30 W					5.6	K3 III							
	χ Sge	19 57.6	19 24		04 15	04 24	36 ⁷² 144	0 ^h 21 W					5.0	K5+ III		30 ^s					
407	Sup sat	01 31.4	+07 58		05 17	05 28	1 ^m 2 ^m 4 ^m	1 ^h 10 E 3" 4"						G2 V	NeA	30 ^s					
	ε Psc	23 38.5	+05 29		05 48	05 54	21, 42 84	0 ^h 10 W					4.6	F7 V							
	ω Psc	23 57.9	+06 43		06 00	06 05	20 40 80	0 ^h 02 W					4.5	F4 IV							
	χ Oct	09 48.3	-10 51		06 17	06 24	30 60 120	1 ^h 20 E					5.0	F2 IV		30 ^s					
408	PNZ	06 20.2	-00 19	(1975)	07 08	07 38	150 ^m	2 ^h 50 E		340	100.4 / 0.6	112 / 8.24				1 ^s		IIa-D			
409	62 Sgr	20 00.9	-27 42	SEPT 3 1975	04 03	04 11	200 ^s	2 ^h 16 W 3"		335	100.4 / 0.8	112 / 7.0	6.2	M4 III	NeA	30 ^s		IIa-0	MWP2	Gue	T=140 H=22%
	3 Aqr	20 46.3	-05 03		04 18	04 22	190 ⁹⁰	1 ^h 41 W					5.9	M3 III							
	ω Cap	20 50.2	-26 56		04 26	04 36	58/180 ^s	1 ^h 45 W					5.7	M1 III							
	3 Aqr	20 46.3	-05 03		04 40	04 50	200 ^s	2 ^h 09 W					5.9	M3 III							
	24 Cap	21 05.5	-25 02		04 55	05 05	230 ^s	2 ^h 06 W					6.1	M1 III							
	λ Gru	22 04.6	-39 32		05 19	05 28	200 ^s	2 ^h 30 W					5.8	M0 III							
	λ Aqr	22 54.1	-07 38		05 35	05 41	140 ^s	0 ^h 51 W					5.4	M2 III		30 ^s					

U. Time is un hour early

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT EXP		TOTAL / CORR.	H A END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL.	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
910	γ^2 Aqr	23 16.5	-04 14	Sept 9 1975	06 52	06 57	18, 36, 72 ^s	1 ^h 4 ^m W	3 ^h clear	335	100% 1.8	112/20	4.3	B3 V	Net	30 ^s	IIa-U	MWP-2	Give		
	ω^2 Aqr	23 41.3	-14 33		07 02	07 09	24, 48, 96 ^s	1 ^h 36 W				4.5	B4.5 V								classical because of large width of strong H α doublet lines
	ρ Cet	02 24.6	-12 27		07 18	07 28	30, 60, 120 ^s	0 ^h 50 E					4.9	B9 V		30 ^s					
911	ω Aqr	22 01.9	-02 14	Sept 7 1975	02 56	03 06	30, 60, 120	0 ^h 35 E	3 ^h clear	350	100% 0.8	112/20	4.7	B8 V	Net	30 ^s	IIa-O	MWP-2	Give		
	31 Peg	22 20.0	+12 03		03 11	03 23	40, 80, 160	0 ^h 22 E				5.0	B2 V								
	32 Peg	22 20.0	+28 11		03 27	03 35	40, 80, 160	0 ^h 39 W				4.8	B8 III								
	δ Aqr	22 29.3	-10 51		03 42	03 51	36, 72, 144	0 ^h 42 E					4.8	A0 IV		30 ^s					
912	ω Peg	22 40.4	+29 06		04 01	04 11	36, 72, 144	0 ^h 52 W					4.7	A1 V		30 ^s					
	ρ Peg	22 53.9	+08 46		04 16	04 27	40, 80, 160	0 ^h 06 E					4.9	A1 V							
	α Psa	22 56.9	-29 48		04 33	04 34	24, 48	0 ^h 01 E					1.1	A3 V							
	δ Scl	23 46.8	-28 21		04 38	04 45	24, 48, 96	0 ^h 40 E					4.6	A0 V							
	τ Peg	23 19.3	+23 23		04 50	04 58	24, 48, 96	0 ^h 01 W					4.4	A5 V							
913	Nova Cyg 75	21 09.9	+47 56	Sept 7 1975	00:15	00:22	1, 18, 36		2-3 ^h overcast	350	100% 1.2	113/20		Net	30 ^s	IIa-U	Net	Give			
914	Nova Cyg 75				03 10	03 12	20, 40, 80	0 ^h 30 W		345	100% 1.2	112/20		Net	1 ^s	IIa-U		Give			
915	δ Sgr	18 03.9	-30 26	Sept 7 1975	01 08	01 17	22, 44, 88	1 ^h 57 W	3 ^h 11 ^h clear	350	50% 1.2	112/20	4.0	K0 III	Net	30 ^s	IIa-U	M5 6.2 ^s 15mm	Give	1st focus of 340	
	η Sgr	18 15.6	-36 47		01 21	01 29	30, 60, 120	1 ^h 57 W				4.7	M3 II								
	δ Sgr	18 19.1	-29 50		01 33	01 39	25, 50, 100	2 ^h 04 W				4.1	K2 III								
	ϵ Sgr	18 22.2	-34 24		01 43	01 44	4, 8, 16	2 ^h 06 W					1.8	B9 IV		30 ^s					
916	α Psa	22 56.0	-29 47		06:10	06 11	2 ^h 46 ^s	2 ^h W	4 ^h clear				1.3	A3 V		30 ^s			Give		
	α Psa	00 24.8	-42 28		06 18	06 23	18, 36, 72						3.5	K0 III		30 ^s					Power loss

NUMBER	OBJECT	R.A. h m s	DEC. ° ' "	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
917	HD 15223	6 ^h 25 ^m 7 ^s	+47° 25'	27 Sept/75	7:30	7:37	15 ^s / 30 ^s / 55 ^s	0 ^h 46 ^m W 5" / clear		340	100μ / 0.8	112 / 6.42	6.5	F5V	1/2 A	2 ^s	1/2 A	IIa-D	D19	C Smith	blue
	"	02 26.2	+16 65		7:49	7:57	15 ^s / 30 ^s / 55 ^s	1 ^h 05 ^m W	"	"	" / 3.72	"	"	"	"	"	"	"	"	"	See red sp.
918	PKS 1925-524			29 Sept/75	00:03.5	00:15.5	~12 ^m	0 ^h 05 ^m W 1 1/2" / "		"	100μ / 1.6	"	~11	?	"	"	"	"	"	"	
919	"	19 ^h 27.7	-52° 28'		00:44	01:01	~15 ^m	0 ^h 52 ^m W 2" / "		"	"	"	"	"	"	"	"	"	"	"	
	"				01:04	01:20.5	~15 ^m	1 ^h 13 ^m W													
	"				01:22	01:40	~15 ^m	1 ^h 32 ^m W													
	"				01:42	02:00	"	1 ^h 52 ^m W													
	"				02:03	02:20	"	2 ^h 12 ^m W													
920	"				03:01	03:25	~20 ^m	3 ^h 19 ^m W													
921	"				03:59	04:30	~30 ^m	4 ^h 23 ^m W													
922	"	"	"	30 Sept / 75	00:08	00:30	~15	0 ^h 45 ^m W 4" (clear)													o.d. of beam for in white
					00:31	00:50	"	1 ^h 07 ^m W													
					00:52	01:12	"	1 ^h 30 ^m W													
					01:14	01:30	"	1 ^h 50 ^m W													
					01:32	01:52	"	2 ^h 11 ^m W													
923	HD 217131	22 ^h 57.1	-01° 33'	"	03:15	03:14	= 45 ^s	0 ^h 03 ^m W 2"					6.4	F2	"	"	"	"	"	"	
	HD 219175	23 ^h 12.8	-09° 04'		03:48	03:51	2 ^m 15 ^s	0 ^h 28 ^m W					8.3	F5							
	HD 220713	23 ^h 25.2	+08° 30'		03:58	04:01	~1 ^m	0 ^h 12 ^m W					7.1	F9							
	PKS 2332-66	23 ^h 33.7	-66° 45'		04:25	04:51	20 ^m	1 ^h 05 ^m W					~11	?							
924	Nova Cyg 75	21 09.9	+47 56		02 26	02 50	12 ^m	2 ^h 00 ^m W 1 1/2" clear		340	50μ / 1.2	112 / 6.4			Ne A	1 ^s		IIa-D MWP-2	Gue		1 st order dark 11?

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R.A. (1975)	DEC.	DATE U.T.	UT. EXP.		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG (V)	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
925	6 Eri	2 15.6	-51 38	Dec 31, 1975	02 48	02 57	30,60,120 60	01 07W	3" ph	340	50 6.2	112 20	3.8	B8	NA	2e30	IIa-0	MS	Gre		
	K Eri	2 26.1	-47 49	1975	03 05	03 14	36, 72, 144 70	01 11W					4.4	B5				15 ^m cut			
	s Eri	2 38.8	-43 00		03 17	03 26	36, 72, 144 74	01 10W					4.5	A2				6 ^F			
	L Eri	2 39.7	-39 58		03 31	03 40	33, 66, 132 144	01 24W					4.1	K6							
	β For	2 48.0	-32 31		03 43	03 53	36, 72, 144 78	01 24W					4.5	K0							
926	6 Oct	0 00.3	-77 12	Dec 4, 1975	00 58	01 04	80, 160 5 ^m	1 ^h 28W	2-3" ph	340	50 6.2	112 20	4.7	K0	NA	2e30					
	γ Tuc	0 28.8	-65 01	1975	01 09	01 14	70, 140 180	1 ^h 22W					4.3	F8							
	β Hyi	0 24.5	-77 23		01 19	01 22	15, 30, 60 60	1 ^h 27W					2.9	G0							
	β Tuc S	0 30.4	-63 06		01 33	01 40	80, 80, 160 160	1 ^h 40W					4.5	A2							
	" N	"	"		01 42	01 52	40, 80, 160 160	1 ^h 48W					3(+5)?								
927	β Phe	1 05.0	-46 51		02 06	02 12	20, 40, 80 80	1 ^h 33W					3.3	K0							
	γ Phe	1 27.3	-43 27		02 15	02 23	30, 60, 120 120	1 ^h 22W					3.4	K5							
	δ Phe	1 30.2	-49 12		02 27	02 37	35, 70, 140 140	1 ^h 33W					4.0	K0							
	ψ Phe	1 52.6	-46 25		02 46	02 54	2 ^m , 4 ^m 7 ^m	1 ^h 33W					4.4	M3							
	-47 597	1 56.2	-47 30		03 03	03 18	3 ^m , 6 ^m 6	1 ^h 48W					4.7	G5							
928	τ ³ Eri	3 01.3	-23 43		03 31	03 35	20, 40, 80 80	1 ^h 00W					4.2	A3							
	α For	3 11.0	-29 05		03 38	03 45	18, 36, 72 72	0 ^h 59W					3.9	F8							
	16 Eri	3 18.4	-21 51		03 47	03 54	40, 80, 160 160	1 ^h 08W					3.9	M3							
	τ ⁵ Eri	3 32.7	-21 43		04 03	04 08	24, 48, 96 96	1 ^h 02W					4.3	B8							
	τ ⁶ Eri	3 45.8	-23 19		04 11	04 17	30, 60, 120 120	0 ^h 54W					4.3	F8							
929	41 Eri	4 16.9	-33 52		04 37	04 41	15, 30, 60 60						3.6	B9							
	43 Eri	4 23.1	-34 04		04 50	04 56	30, 60, 120 120	1 ^h 00W					4.1	K5							
	50 Eri	4 32.5	-29 49		04 58	05 08	40, 80, 160 160	1 ^h 02W					4.6	K0							
	2 Eri	4 34.6	-30 37		05 10	05 15	28, 44, 88 88	1 ^h 07W					3.9	K0							
	8 Cae	5 03.5	-35 31		05 31	05 34	40, 80, 160 160	0 ^h 57W					4.6	K0							

} close pair

comp. 6/11/75 - 3"
" "

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
430	ε Lep	5 04.4	-22 24	Dec 9/10	05 53	05 57	15,30,60 ^s	1 ^h 19W	4" / PL	340	50μ / 1.2	112 / 7.0	3.3	K5	NeA	2e40 ^s		H _α -0	M-S	GR	
	-21° 1135	5 19.4	-21 16	1475	06 00	06 07	35,70,140	1 ^h 15W					4.7	A0							
	β Lep	5 27.2	-20 47		06 11	06 13	9,18,36	1 ^h 13W					3.0	G0							
	γ Lep	5 43.4	-22 27		06 17	06 20	20,40,80	1 ^h 04W					3.8	F8							
	δ Lep	5 50.2	-20 53		06 23	06 28	17,34,68 25,50,100	1 ^h 05W					3.9	K0							
431	γ CMa	6 19.3	-30 03		06 44	06 47	13,26,52 ^s	0 ^h 56W					3.1	B3		2e40 ^s					
	λ CMa	6 27.2	-32 34		06 50	06 54	40,80,160	0 ^h 58W					4.5	B9							
	4 CMa	6 30.8	-23 24		07 02	07 10	33,70,140	1 ^h 07W					4.3	B1							
	ξ ² CMa	6 34.0	-22 57		07 12	07 22	40,80,160	1 ^h 17W					4.5	A0							
	κ CMa	6 48.9	-32 29		07 32	07 34	24,48,96	1 ^h 18W					3.8	B2 _p							
432	ε CMa	6 57.6	-28 56		07 52	07 53	← 4,8,16 ^s	1 ^h 23W					1.6	B1							
	σ CMa	7 00.6	-27 54		07 56	08 04	← 33,66,132						3.7	K5							
	ο ² CMa	7 02.0	-23 48		08 06	08 10	← 15,30,60	1 ^h 35W					3.1	B5 _p							
	δ CMa	7 07.4	-26 21		08 12	08 14	← 6,12,24	1 ^h 34W					2.0	F8 _p							
	27 CMa	7 13.2	-26 19		08 16	08 28	← 50,100,200	1 43W					4.7	B5 _p							
433	ε Phe	0 08.1	-45 53	Dec	01 11	01 18	30,60,120	0 ^h 44W	3-4" ^{image out of focus}				3.9	K0							
	κ Phe	0 25.0	-43 49	10,11 1475	01 22	01 28	25,50,100	0 ^h 37W					3.9	A3							
	μ Phe	0 40.1	-46 13		01 31	01 41	1 ^h 2 ^h 3 ^h	0 ^h 35W					4.6	K0							
	η Phe	0 42.2	-57 36		01 45	01 59	1 ^h 2 ^h 4 ^h	0 ^h 51W					4.5	A0							
	ξ Phe	1 07.3	-55 23		02 03	02 13	36,72,144	0 ^h 40W					4.1	B8							
434	λ Scl	0 57.4	-29 30	Dec	00 47	00 53	25,50,100 ^s	0 ^h 31W	2"				4.4	B5							
	λ Eri	1 36.8	-57 22	11/12 1475	00 58	01 00	6,12,24 ^s	0 ^h 01E					0.6	B5							image out of focus
	γ Eri	1 55.0	-51 44		01 06	01 11	15,30,60 ^s	0 ^h 08E					3.7	G5							
	η ² Hyi	1 54.3	-67 46		01 16	01 29	50,100,200 ^s	0 ^h 10E					4.7	K0							
	α Hyi	1 58.0	-61 41		01 33	01 35	6,16,32 ^s	0 ^h 13W					3.0	F0							

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NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG (V)	SP	COMP.		CALIB	EMUL	DEV	OBS.	REMARKS
					BEGIN	END									KIND	EXP					
935	δ Hyi	2 21.3	-68 46	Dec 11/12	01 49	01 56	24,48,96	0 ^h 10 ^m W	2-3"	340	50 μ	112/20	4.3	A2	Ne	2e 40 ^s	IIa-0	M5	Gre		
	ϵ Eri	2 39.2	-68 22	1975	01 59	02 08	24,48,96	0 ^h 06 ^m W			0.8		4.3	B9					67° 15 ^m		
	γ Hyi	2 50.6	-75 10		02 12	02 24	1 ^m 2 ^m 3 ^m	0 ^h 09 ^m W					4.7	K2							
	β Ret	3 48.9	-64 53		02 27	02 36	30,60,120	0 ^h 32 ^m E					3.8	K0							
	χ Hyi	3 47.6	-74 19		02 42	02 49	30,60,120	0 ^h 22 ^m E 4"					3.2	M0							
936	θ Eri W	2 57.3	-40 24	"	03 06	03 17	12-24,48	0 ^h 50 ^m 2'					3.4	A2							
	ϵ Eri	3 18.4	-43 10	"	03 14	03 24	30,60,120	0 ^h 56 ^m 2"					3.0 (S)	G5							
	γ Eri	3 36.2	-40 21	"	03 38	03 47	30,60,120	0 ^h 47 ^m W					4.6	K0							
	h Eri	3 41.9	-37 23	"	03 50	03 57	40,80,160						4.6	K2							
	γ Eri	3 48.5	-36 16	"									4.2	K2							
937	α PsA	22 ^h 56.2	-29 ^o 45	Dec 12/13	00 35	00 37	2,4,8,16,32	2 ^h 21 ^m 2"	2 ^h 21 ^m 2" / clean	286	50 μ	1.2 67/4.45	1.3	A3D	NeA	60 ^s	IIa-0	M5	RG		
	ψ^2 Aqr	23 ^h 16.6	-09 19	1975	00 47	01 04	1 ^m 2 ^m 4 ^m 8 ^m	1 ^h 23 ^m W 1 1/2"					4.24	B5E					15 ^m at 67 ^o F		
	HR 875	2 ^h 55.2	-03 ^o 51	"	01 10	01 28	4 ^m 8 ^m 8 ^m	0 ^h 46 ^m E					5.25	A1V							
938	χ Peg	00 13.2	+20 ^o 01	"	01 40	02 36	50 ^m /	3 ^h 04 ^m W					6.38	M2 III	NeA	60 ^s					
	HD 1014	00 13.3	-07 54	"	02 42	03 42	60 ^m /	4 ^h 10 ^m W					6.72	M3 III							
	HD 27524	04 20.0	+20 58	"	03 50	04 45	55 ^m /	0 ^h 6 ^m W	11 ^m / 10 ^m				7.24	F5 V							
	π^3 Ori	04 48.4	+6 ^o 55'	"	04 49	04 57	1,2,4 ^m /	0 ^h 50 ^m W					3.64	F6 V							
	η Aur	05 04.8	+41 ^o 12	"	05 00	05 11	12,4 ^m /	0 ^h 43 ^m W					3.00	B3 V							
939	θ Aur	05 57.8	+37 ^o 12	"	05 21	05 23	40 ^m / 20	0 ^h 06 ^m W					2.58	B4.5 IV	NeA	60 ^s					
	θ Gem	06 50.9	+33 55	"	05 27	05 33	60 ^m / 15 ^m	0 ^h 36 ^m E					3.69	A3 III							
	μ Gem	06 21.3	+22 26	"	05 37	05 57	90 ^m / 10 ^m	0 ^h 17 ^m E					4.55 ^v	M3 III							
	ν Gem	06 27.5	+20 07	"	06 00	06 09	8 ^m / 1 ^m	0 ^h 22 ^m E					4.04	B7 IVe							
	ϵ Gem	06 42.1	+25 05	"	06 11	06 21	10 ^m / 9	0 ^h 20 ^m W					4.39	G8 Ib							
	ζ Gem	07 04.5	+30 14	"	06 24	07 04	40 ^m /	0 ^h 36 ^m W					5.66	K2 III							
	α Gem	07 33.0	+31 53	"	07 10	07 10	1 ^m / 4 ^m	0 ^h 19 ^m W					1.6	A							
	σ Gem	07 41.7	+28 49	"	07 14	07 46	30 ^m /	0 ^h 46 ^m W					5.3	K1 III							

Double, not A-197
separated. B=3.02

NUMBER	OBJECT	R.A. (1970)	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. (B)	SP.	COMP		CALIB.	EMUL.	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
939 cont	K Gem	07 42.8	+24 19	Dec 12/13	07 49	08 02	12 ^m / ✓	0 ^h 01 ^m W	12 ^s / clear	286	50 ^m / 1.2	67 / 4.45	4.50	G8 III	N2A	60 ^s	NONE	IIa-C	MS	rG	
	β Gem	07 43.5	+28 06	1975	08 04	08 07	3 ^m / ✓	0 ^h 05 ^m W	3 ["]				2.18	K0 III					15 ^m at 67°F		
	10 UMa	08 58.7	+41 54		08 10	08 21	11 ^m / 8 ["] ✓	0 ^h 05 ^m W					4.38	F5 II							
	38 Lyn	09 17.0	+36 56		08 26	08 32	6 ^m / 4 ["] ✓	0 ^h 04 ^m E	2 ["]				3.84	A2 II							A+B
	γ Cen	08 41.6	+21 35		08 38	08 49	10 ^m / 7 ["] ✓	0 ^h 48 ^m W					4.72	A1 II							
940	γ Peg	00 11.9	+15 03	Dec	00 18	00 20	15,30 / 40 ^s ✓	0 ^h 52 ^m W	1 1/2 ["] / clear	286	50 ^m / 1.2	67 / 4.45	2.60	B2 IV	N2A	60 ^s	NONE	IIa-O	M-S	rG	
	ψ ³ Psc	01 08.6	+19 31	13/14 1975	00 24	01 15	6,12,24 ^m / 24 ["] ✓	0 ^h 52 ^m W					~6	G0 III							
	α Tri	01 51.7	+24 28		01 18	01 31	13 ^m / ✓	0 ^h 27 ^m W					4.0	F6 IV							
	HR 856	02 51.8	+16 23		01 35	02 04	21 ^m / 35 ["] ✓	0 ^h 03 ^m E					6.8	F5 III							
	35 Ari	02 41.5	+27 35		02 07	02 12	3 1/2 ^m / ✓	0 ^h 15 ^m W					4.58	B3 II							
941	17 Per	02 49.7	+34 56	"	02 22	03 16	55 ^m / ✓	1 ^h 12 ^m W	2-3 ["] / clear				6.09	K7 III	N2A	60 ^s					
	o Per	03 42.4	+32 12'		03 21	03 24	2 ^m / 7 ["] ✓	0 ^h 27 ^m W					3.88	B1 III							
	e Per	03 55.8	+35 56'		03 27	03 29	1 ^m / 2 ["] ✓	0 ^h 19 ^m W					2.71	B0.5 IV							
	ζ Per	03 52.2	+31 48		03 37	03 36	1.2 ^m / 23 ["] ✓	0 ^h 30 ^m W					2.96	B1 Ib							
	ξ Per	03 57.0	+35 42'		03 39	03 43	2 ^m / 4 ["] ✓	0 ^h 32 ^m W					4.04	O7							
	λ Aur	04 55.0	+33 07		03 48	03 58	10 ^m / ✓	0 ^h 11 ^m E	3 ["] / clear				4.13	K3 II							wind increasing 20 mph T=15°C
	4 Aur	04 57.5	+37 52'		04 07	04 17	10 ^m / 15 ["] ✓	0 ^h 06 ^m W					4.95	A0 V							
	HD 34078	05 14.6	+34 22		04 21	04 32	11 ^m / 40 ["] ✓	0 ^h 04 ^m W	2 ["] / "				6.0	O9.5 IV							
	HD 34452	05 16.8	+33 43		04 36	04 47	11 ^m / 15 ["] ✓	0 ^h 16 ^m W	1 1/2 ["]				5.21	A _p							ID? OK
	19 Aur	05 17.8	+33 55		04 50	05 00	10 ^m / 15 ["] ✓	0 ^h 27 ^m W					5.03	A5 II							ID? " OK
	HD 35600	05 25.0	+30 10		05 02	05 22	20 ^m / ✓	0 ^h 43 ^m W					5.83	B9 Ib							
	X Aur	05 30.5	+32 10		05 25	05 31	6 ^m / 9 ["] ✓	0 ^h 47 ^m W					4.89	B5 Iab							
942	K Aur	06 13.5	+29 31	"	05 41	05 53	12 ^m / ✓	0 ^h 25 ^m W					5.37	G8 III	N2A	60 ^s					
	γ Gem	07 02.3	+20 37		05 55	05 59	4 ^m / ✓	0 ^h 16 ^m E					4.3	F7 Ib							
	δ Gem	07 18.3	+22 02		06 02	06 04	2 ^m / ✓	0 ^h 28 ^m E					3.86	F0 II							
	λ Gem	07 23.9	+27 52		06 06	06 15	9 ^m / ✓	0 ^h 23 ^m E					4.79	K0 III							
	ν Gem	07 34.1	+26 58		06 18	06 48	30 ^m / ✓	0 ^h 00 ^m					5.56	M0 III							

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NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL/CORR.	H A END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
942 CONT	38 Gem	06 ^h 53.0	+13° 13'	Dec 13/14 1475	06 51	06 57	6 ^m /√	1 ⁿ 00W		286	504/1.2	6 ³ /445	4.9	FOVp				IIa-O	Ms	rg	
	δ Cnc	08 ^h 43.0	+18° 16'		07 01	07 12	1 ^m /√	0 ⁿ 45E					5.1	KO III							
	α Cnc	08 ^h 56.8	+11° 58'		07 15	07 18½	3½ ^m /√	0 ⁿ 51E					4.2	A _m							
	ι Cnc	08 ^h 44.9	+28° 52'		07 21	07 31	1 ^m /√	0 ⁿ 27E					5.2	G8 II							
	κ Leo	04 22.9	+26° 19'		07 34	07 56	22 ^m /√	0 ⁿ 34E					5.7	K2 III							
	γ Leo	04 30.0	+23° 06'		07 59	08 24	25 ^m /√	0 ⁿ 20E					5.6	K5 III							
	η ² 1854	08 00.7	+02 25'		08 27	08 37	10 ^m /√	1 ⁿ 22W	1½				5.65	K2 III							
	ρ Hydra	08 46.8	+05 57'		08 40	08 42	2 ^m /√	0 ⁿ 41W					4.30	A0 II							
943	ν Oct	21 ^h 38.2	-77° 31'	Dec 14/15 1975	00 32	00 38	6 ^m /√	3 ⁿ 44W	1½ /circ	286	504/1.2	6 ³ /445	4.74	KO III	NeA	60°	NONE	IIa-O	M-S	rg	
	β Oct	22 43.1	-81° 32'		00 42	00 45	3 ⁿ / 6 ^m	3 ⁿ 55W					4.35	d A9							
	ι Gru	23 08.7	-45° 25'		00 50	00 57	4 ^m /√	2 ⁿ 38W					4.91	KO III							
	θ Gru	23 05.2	-43 41'		00 59	01 03	4 ^m /√	2 ⁿ 46W	12-15"				4.70	F6 II							
	β Gru	22 40.9	-47° 03'		01 06	01 10	4 ^m /√	3 19W	2"				3.76	M3 II							
	δ ² Gru	22 28.0	-43° 54'		01 14	01 54	40 ^m /√	4 15W					6.3	g 16							
	γ Tuc	23 15.7	-58° 24'		01 58	01 05	6 ^m /√	3 ⁿ 39W	2-2½"				4.38	F0 III							
	ε Tuc	23 58.4	-65 45'		02 09	02 15	5½ ^m /3 ^m	3 ⁿ 06W					4.39	B7 II							
	ξ Tau	03 25.5	+09 38'		02 31	02 34	2E/3 ^m	0 ⁿ 03E	~2" "				3.66	B8p							
	ι Tau	03 35.3	+00 18'		02 36	02 42	5½/3 ^m	0 ⁿ 05W	15"				4.86	F8 II							
	ν Tau	04 01.6	+05 54'		02 44	02 46	2 ^m /2½ ^m	0 ⁿ 27E	1½ /circ				3.92	A1 II							
	μ Tau	04 13.9	+08 49'		02 47	02 50	2½ ^m /√	0 ⁿ 33E					4.23	B3 II							
944	δ Ari	03 09.9	+19 37'		02 58	03 09	10½/12 ^m	0 ⁿ 47W	1 1/2 /circ				5.2	K2 III							
	ε Tau	03 29.2	+12 50'		03 11	03 21	10/1 ^m	0 ⁿ 40W					5.3	KO II-III							
	γ Tau	03 59.0	+12 24'		03 26	03 28	2 ^m /√	0 ⁿ 17W					3.6	B3 II							
	68 Tau	04 23.8	+17 52'		03 30	03 34	4 ^m /5 ^m	0 ⁿ 01W					4.35	A3 II							
	71 Tau	04 24.6	+15 33'		03 36	03 40	4 ^m /6 ^m	0 ⁿ 04W					4.73	FO II							
	ρ Tau	04 32.1	+14 47'		03 41	03 46	4½/6 ^m	0 ⁿ 02W					4.9	A8 II ₁							
	88 Tau	04 34.0	+10° 06'		03 48	03 51	3½ ^m /√	0 ⁿ 06W					4.44	A _m							
	90 Tau	04 36.5	+12° 27'		03 53	03 56	2½/4 ^m	0 ⁿ 08W					4.15	A6 V ₁							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
944	7 Ori	04 53.2	+10 06	Dec 14/15	03 58	04 02	4 ^m / ✓	0 ^h 02E	1 1/2 ^o / cirrus	286	504 / 1.2	67 / 4.45	4.73	A0p				IIa0	MS	W + Blue	
(cont)	9 Ori	04 54.7	+13 28	1975	04 04	04 12	8 ^m / 10 ^m	0 ^h 06W					5.3	K2 III							
	11 Ori	05 02.9	+15 22		04 14	04 18	4 ^m / ✓	0 ^h 04W					4.60	A0p (s)							
	37 Tau	04 02.9	+22° 00		04 20	04 33	12 1/2 ^m / ✓	1 ^h 17W					5.5	K0 III							contamination from comparison ??
945	K Tau	04 ⁿ 23.6	+22 14	"	04 43	04 47	4 ^m / 3 ^m	1 ^h 13W	1 1/2 ^o / cirrus				4.36	A7 II	NeA	60 ^s				"	
	V Tau	04 24.5	+22 45		04 49	04 53	4 ^m / ✓	1 ^h 18W					4.56	A8 II _n							
	T Tau	04 40.4	+22 54		04 55	04 57	2 ^m / ✓	1 ^h 06W					4.20	B3 V							
	L Tau	05 01.3	+21 33		04 59	05 03	4 ^m / ✓	0 ^h 51W					4.78	A7 II							
	Z Tau	05 35.9	+21 08		05 05	05 06	36 ^s / 1 ^m	0 ^h 20W					2.94	B2 III p							
	136 Tau	05 51.4	+27 36		05 08	05 12	3.5 ^m / 3 ^m	0 ^h 10 ^m W					4.50	A0 III							
	X' ORI	05 52.6	+20 16		05 15	05 23	7 ^m / 6 ^m	1 ^h 19 ^m W					5.00	G0 V							
	1 GEM	06 02.3	+23 16		05 25	05 33	8 ^m / ✓	2 ^h 20 ^m W					5.1	gG5							
	η GEM	06 13.1	+22 31		05 35	05 46	10 ^m / 6 ^m	2 ^h 22 ^m W					4.9	M3 III							
	ζ ORI	06 10.2	+14 13		05 49	05 51	2 ^m / ✓	3 ^h 30 ^m W					4.2	B3							
	30 GEM	06 42.3	+13 16		05 54	06 04	10 ^m / ✓	1 ^h 12 ^m W					5.6	K1							
	Σ GEM	06 43.6	+12 56		06 06	06 08	2 ^m / 1.5 ^m						3.81	F5							
946	HD 46202	06 30.6	+05 00		06 23	07 54	40 ^m / 12 ^m	2 ^h 13W	1 1/2 ^o / cirrus				8.36	O9 II	NeA	60 ^s				"	T = 60°F = 15°C
	ρ Gem	07 27.2	+31 51		07 57	08 02	4 1/2 ^m / 6 ^m	1 ^h 23W					4.18	F0 II							
	α Lyn	09 19.2	+34° 31		08 03	08 13	10 ^m / 40 ^m	1 ^h 16 ^m E					4.71	M0 III							
	10 LMi	09 32.4	+36 32		08 16	08 28	12 ^m / 20 ^m	0 ^h 14 E					5.46	G8 III							
	ε Leo	09 44.2	+23° 55		08 30	08 33	2.5 ^m / ✓	0 ^h 22E	1"				3.80	G0 II							
	ζ Leo	10 15.0	+23 34		08 35	08 37	2 ^m / 3 ^m	0 ^h 51E					3.76	F0 III							
	21 LMi	10 05.7	+35 24		08 39	08 43	4 ^m / 7 ^m	0 ^h 32E					4.66	A7 II							
	β LMi	10 26.2	+36 52		08 45	08 53	8 ^m / 15 ^m	0 ^h 47E					5.11	G8 III - IV							twilight ?
947	α Scl	00 57.4	-29 29	15/16	00 35	00 38	3 ^m / 1.5 ^m	0 ^h 32 ^m W	1 1/2 ^o / cirrus	286	504 / 1.2	67 / 4.45	4.4	B8p	NeA	60 ^s	None	IIa-0	M-S	W	
	δ' Gru	22 27.5	-43 39	DEC	00 48	00 55	6 ^m / ✓	3 ^h 19 ^m W					5.0	G5							15 mm 67°F
	α Gru	22 06.3	-47 06	1975	00 58	00 59	12 ^s / 10 ^s	3 ^h 45 ^m W					1.6	B5							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
949	✓ V ₁₂	11 44.3	+6° 42'	15/16	0811	0826	15 ^m ✓	2 ^h 26 ^m E	1.5 / clear	286	50 ^m / 1.2	62 / 445	5.56	M III	N2A	60 ^s	NONE	IIa-0	M-S	✓		
(cont)	β V ₁₂	11 49.1	+1 56	DEC 1975	0829	0831	2 ^m / 2.5	2 ^h 25 ^m E	"				4.16	F ⁹ V								
	γ Leo	10 05.7	+16 55		0835	0836	1.3 / 1.5	0 ^h 37 ^m E					3.46	A0 I ₆								
	α Leo	10 06.8	+12 07		0838	0839	8 ^s / 12 ^s	35 ^m E					1.25	B7 V								
950	TWILIGHT SKY at E PER				0029	0039	10 ^m ✓	3 ^h 54 ^m W														
950	E PER	21 42.7	+09 44	16/17	0040	0050	10 ^m ✓	4 ^h 3 ^m W	~4" clear	"	"	"	3.86	K2 I ₆	"	"	"	"	"	✓	wind 25 mph T=14°C H=55%	
	β Aps	21 30.0	-05 42	DEC 1975	0052	0103	10 ^m / 8 ^m	4 ^h 28 ^m W	4" ..				3.68	G0 I ₆								
	α Aps	22 04.2	-00 28		0105	0111	5 ^m ✓	4 04 W	2" ..				3.92	G2 I ₆								
	β TRI (2 nd)	2 07.8	+34 51		0115	0119	1 ^m / 1.5 ^m	0 ^h 6 ^m W	2" ..				3.13	A5 III								first exp is angle wind.
	16 PER	2 48.7	+38 12		0121	0128	6 ^m / 9 ^m	0 ^h 25 ^m E	2" ..				4.56	F2 III								
	p PER	3 03.2	+38 44		0131	0156	25 ^m ✓	11 ^m E	2" ..				5.2	M4								
	35 Ari	2 41.7	+27 35		0159	0203	4 ^h ✓	17 ^m W	1.5" ..				4.4	B3 V								
	Jupiter Sat.	0 ^h 56.7	+04 39		0210	0219	9 ^m / 15 ^m	2 ^h 20 ^m W	3" ..				5.0	G2 V								
	π ³ ORI	4 ^h 48.2	+6° 55'		0224	0227	2.5 ^m / 2 ^m	1 ^h 25 ^m E	2" +				3.62	F6 V								
	π ⁴ ORI	4 ^h 49.6	+5° 33'		0230	0232	100 ^s / 90 ^s	1 ^h 22 ^m E	2" ..				3.52	B2 III								
					0230																	
951	π ⁶ ORI	4 57.0	+1° 40'	"	0244	0302	18 ^m ✓	1 ^h E	1.5" ..	"	"	"	5.85	K2 II	"	"	"	"	"	✓		
	χ ORI	5 23.5	+6 19		0303	0303	10 ^s / 20 ^s	1 ^h 23 ^m E	" ..				1.41	B2 III								
	φ ORI	5 33.2	+9 28		0306	0309	2.5 ^m ✓	1 ^h 20 ^m E	" ..				4.24	B0 IV								
	η ORI	5 33.5	+9 55		0311	0312	1 ^m / 2 ^m	1 ^h 24 ^m E	" ..				3.22	O8 III								
	(140) φ ² ORI	5 35.3	+9 17		0315	0322	6 ^m ✓	1 ^h 17 ^m E	1.5" / clear				5.03	G8 III ₆								
	σ ORI AB	5 37.2	-2° 37'		0325	0327	1 ^m / 2 ^m	1 ^h 10 ^m E	1" ..				3.51	O9.5 V								
	σ ORI E	"	"		0330	0335	5 ^m / 15 ^m	1 ^h 5 ^m E	" ..				4.5	B2 V _p								
	δ ORI	5 30.5	-0 19		0337	0338	20 ^s ✓	56 ^m E	" ..				2.00	O9.5 II								
	ζ ORI	5 39.2	-1 57		0340	0341	15 ^s / 20 ^s	1 ^h 2 ^m E	" ..				1.57	O9.5 I ₆								
	λ ORI	5 34.0	-5 56		0343	0344	28 ^s / 40 ^s	53 ^m E	" ..				2.52	O9 III								
	ε ORI	5 34.7	-1 13		0346	0347	12 ^s / 18 ^s	52 ^m E	" ..				1.51	B0 Ia								
	κ ORI	5 46.3	-9 41		0349	0350	18 ^s / 24 ^s	1 ^h E	" ..				1.89	B0.5 Ia								
952	42 ORI	5 33.9	-4 51	"	0358	0401	3 ^m ✓	37 ^m E	" ..	"	"	"	4.40	B1 V	"	"	"	"	"	"		



NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	UT. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
954	2 ORI	04 49.0	+08 51	17/15	0346	0348	2 ^m / 3 ^m	0 ^h 0 ^m	1.5 / haze	2.86	5 ^u / 1.2	6 ^u / 4.45	4.32	A0 V	NeA	60 ^s N:NE	II _u C	M-5	69°F	15 ^u clouds	T=13°C
(cont)	π ⁵ ORI	04 52.7	+02 24	DEC 1975	0354	0356	1.5 / ✓	2 ^m W	"				3.53	B2 III							
	ρ ORI	05 11.7	+2 50		0359	0421	21 ^m / 18	9 ^m W	2" / haze + cirrus.				5.64	K3							
	25 ORI	05 23.2	+1 49		0425	0429	4 ^m / 6	6 ^m W	"				4.73	B1: e							
	γ ORI	05 25.2	+3 04		0431	0434	3 ^m / 5	8 ^m W	"				4.36	B2 IV							wind increasing
	32 ORI	05 29.2	+5 56		0437	0440	3 ^m / ✓	11 ^m W	"				4.06	B5							
	ω ORI	05 37.6	+4 06		0443	0447	4 ^m / 3	9 ^m W	"				4.44	B3 e							
955	μ ORI	06 00.7	+9 39		0503	0507	4 ^m / 3 ^m	6 ^m W					4.27	A _u							
	ε MONA	06 22.2	+4 37		0510	0514	4 ^m / ✓	5 ^m E					4.6	A5							
	" B	"	"		0516	0540	24 ^m / 48 ^m	18 ^m W					6.8	F _Y							
	18 MON	06 46.3	+2 27		0543	0544	1 ^m / 10 ^u	46 ^m W					5.6	K0							terminated by thick cloudst
956	γ For	02 09.4	-29 32	18/19	0036	0040	5.5 / 3.3	21 ^m E	1.5 / phot	"	"	"	4.7	A _p	"	"	"	"	"	"	T=13°C culm H=83%
	μ And	00 55.1	+38 20	Dec 1975	0044	0048	3 ^m / ✓	55 ^m W	"				4.00	A5							
	π And	00 35.3	+33 33		0051	0156	5 ^m / 4	1 ^h 23 ^m W	"				4.30	B5 + A6							
	σ And	00 16.8	+36 32		0159	0208	8 ^m / ✓	1 ^h 53 ^m W	"				4.58	A2							
	τ Psc	01 10.0	+29 56		0110	0129	18 ^m / ✓	1 ^h 21 ^m W	"				5.6	K0							
	φ Psc	01 12.1	+24 26		0131	0150	18 ^m / ✓	1 ^h 41 ^m W	"				5.6	K0							
	ν Psc	01 17.8	+27 06		0153	0200	7 ^m / ✓	1 ^h 45 ^m W	"				4.67	A2							
	β Ari	01 53.0	+20 40		0203	0205	1.5 / 1 ^m	1 ^h 14 ^m W	"				2.82	A5							
	ε Psc	01 01.4	+7 44		0208	0218	7 ^m / ✓	2 ^h 19 ^m W	"				5.24	K0							
	ο Psc	01 43.8	+9 00		0221	0233	12 ^m / ✓	1 ^h 53 ^m W	"				5.4	G8							
	α Psc	02 00.5	+2 37		0236	0245	8 ^m / 3 ^m	1 ^h 48 ^m W	"				5.3	A _u							β Ari ~ 2 ^h 11 ^m RA A _u ~ 0.5
	ξ ² Cet	02 26.6	+8 20		0247	0250	3 ^m / ✓	1 ^h 27 ^m W	"				4.22	B9							
957	γ Cet	02 41.7	+3 04	"	0300	0302	6.5 / ✓	1 ^h 23 ^m W	"	"	"	"	3.59	A2	"	"	"	"	"	"	
	λ Cet	02 55.1	+8 47		0305	0307	3 ^m / ✓	1 ^h 18 ^m W	"				4.57	B5							
	ν Tau	04 01.6	+5 54		0316	0319	3 ^m / 2.5	20 ^m W	"				3.92	A1							
	μ Tau	04 13.9	+8 49		0323	0327	4 ^m / 3	16 ^m W	"				4.23	B3							
	κ Tau	04 25.6	+22 14		0330	0334	5.5 / 4	12 ^m W	2"				4.36	A7							

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP		TOTAL/CORR	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
957	68 Tau	04 23.8	+17 52	18/19	0839	0849	16 ^m ✓		2" clear	2.86	50 ^m /112	6 ^m /4.45	4.35	A3	Net	6"	NONE	IIa-0	M-S	✓	VFO failed - trial too slow
(cont)	"	"	"	Dec 1978	0850	0857	6 ^m ✓	0 32 W	"	"	"	"	"	"	"	"	"	"	"	"	"
	71 Tau	04 24.6	+15 33		0400	0407	7 ^m ✓	0 45 W	"	"	"	"	4.73	F0							
	τ Tau	04 32.1	+14 47		0410	0417	6 ^m ✓	48 W	"	"	"	"	4.50	A8							
	90 Tau	04 36.5	+12 27		0420	0425	5 ^m ✓	51 W	"	"	"	"	4.15	A6							
	20 Ori	04 49.0	+8 51		0428	0432	4 ^m ✓	46 W	"	"	"	"	7.32	A0							
	9 Ori	4 54.7	+13 28		0435	0448	12 ^m ✓	56 W	"	"	"	"	5.3	K2							
958	HR2334	6 25.8	+0 20'	"	0503	0516	13 ^m ✓	7 ^m E	1.5" clear	"	"	"	5.4	K1 II	"	"	"	"	"	✓	
	"	"	"	"	0518	0525	7 ^m ✓	2 ^m W	"	"	"	"	"	"	"	"	"	"	"	"	"
	HD52266	6 58.8	-5 47		0528	0611	43 ^m ✓	15 ^m W	1" clear	"	"	"	7.22	C9V							
	σ Cma	7 00.5	-27 53		0626	0639	12 ^m ✓	42 W	1" clear	"	"	"	5.20	K7 Ib							
	HD59612	7 08.4	-22 57		0641	0648	7 ^m ✓	22 ^m W	1.5" ✓	"	"	"	5.1	A5 Ib							
	HR2974	7 39.6	-31 36		0652	0741	49 ^m ✓	14 ^m W	1" ✓	"	"	"	7.2	G0 Ia							
	K Mga	9 38.1	-14 11		0745	0750	5 ^m ✓	46 ^m E	1.5" ✓	"	"	"	4.90	B5 V							
	β Sge	10 28.6	-0 27'		0753	0758	3 ^m ✓	126 E	1.5" ✓	"	"	"	4.90	B6 V							
	HD 92204	10 36.9	-58° 32'		0804	0816	12 ^m ✓	18 ^m E	1.5" ✓	"	"	"	6.01	A2 III	2d?						
	o' Cen	11 30.5	-59 16		0820	0842	20 ^m ✓	148 ^m E	1.5" (magn 1")	"	"	"	6.2	G2 Ia	2d?						
	ξ Leo	10 15.3	+23 32		0845	0851	6 ^m ✓	20 ^m E	1.5-2" ✓	"	"	"	3.7	F0 III							
	"	"	"		0851	0854	3 ^m ✓	17 ^m E	"	"	"	"	"	"							
959	π And	00 35.3	+33 33	19/20	0038	0042	4 ^m ✓	111 ^m W	2" clear	"	"	"	7.30	B5	"	"	"	"	"	✓	T=133° H=60° inclined column
	α And	00 06.8	+28 55	Dec 1978	0045	0046	15 ^m ✓	143 W	"	"	"	"	1.98	B9 p							
	ε And	00 37.0	+29 08		0048	0058	10 ^m ✓	126 W	"	"	"	"	5.25	G8 III							
	ζ And	00 45.7	+24 06		0101	0129	28 ^m ✓	142 ^m W	1.5" ✓	"	"	"	6.4	K1 II							
	η And	00 55.6	+23 15		0131	0145	14 ^m ✓	154 ^m W	"	"	"	"	5.36	G8							
	ρ Ari	01 53.0	+20° 40'		0147	0148	90 ^s ✓	10 W	"	"	"	"	2.82	A5							
	η Psc	01 29.9	+15 12		0151	0155	4 ^m ✓	129 ^m W	"	"	"	"	4.59	G8							
	5 th Qu W	01 51.9	+19 09		0157	0201	4 ^m ✓	114 ^m W	"	"	"	"	4.8	B7							
	χ' Ari S	"	"		0201	0205	4 ^m ✓	118 ^m W	"	"	"	"	4.8	A1							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
959	δ Pra	00 47.1	+7 25	19/20	0208	0230	2 ^m ✓	24 ^m W	1.5-2"	2.86	50 ^m / 1.2	67 / 4.45	5.94	K5	Net	60 ^s	NONE	ITe-0	67 ^{of} M-5 15 ^{min}		
(cont)	α Pra	02 00.5	02 37	Dec 1975	0235	0238	3.5 3 ^m	143 ^m W	2"				4.31	Am							
	20 Tau	03 44.0	+24 17		0241	0243	2 ^m ✓	04 ^m W	2"				3.79	B7 III							
	23 Tau	03 44.5	+23 51		0246	0249	3 ^m ✓	10 ^m W	"				4.10	B6 IV _{min}							
960	17 Tau	03 43.1	+24 01	"	0303	0305	2 ^m ✓	27 ^m W	2" clean	"	"	"	3.58	B6 III	"	"	"	"	"	"	"
	19 Tau	03 43.4	+24 22		0308	0311	3 ^m ✓	33 ^m W	"				4.18	B6 IV							
	19 Tau	03 45.7	+24 01		0314	0315	40 ^s 56 ^s	34 ^m W	"				2.77	B7 III							
	27 Tau	03 47.4	+23 58		0317	0318	1.5 ✓	36 ^m W	"				3.54	B8 III							
	28 Tau	03 47.4	+24 02		0320	0326	6 ^m 9 ^m	44 ^m W	1.5 / clean				5.21	B8 p.							
	8 Tau	04 18.1	+15 33		0328	0332	4 ^m ✓	18 ^m W	1.2 / "				4.65	K0 III							
	δ Tau	04 21.2	+17 28		0334	0338	4 ^m ✓	21 ^m W	" / "				4.74	K1 III							
	ϵ Tau	04 26.9	+19 07		0340	0343	3 ^m ✓	21 ^m W	" / "				4.56	K III							
	θ^2 Tau	04 26.9	+15 48		0346	0348	1.5 ✓	26 ^m W	1.5 / "				3.59	A7 III							
	(77) θ^1 Tau	04 26.9	+15 54		0350	0356	5 ^m ✓	34 ^m W	" / "				4.81	G9 III							
	α Tau	04 34.2	+16 27		0359	0400	50 ^s ✓	31 ^m W	" / "				2.38	K5 III							
	119 Tau	05 30.5	+18 34		0403	0508	65 ^m ✓	44 ^m W	" / "				6.71	M2 Ib							
961	τ Aur	05 47.1	+39 10	"	0518	0538	20 ^m ✓	55 ^m W	1.5 / "	"	"	"	5.47	G8 III	"	"	"	"	"	"	
	ν Aur	05 49.4	+39 08		0540	0552	12 ^m 18 ^m	18 ^m W	" / "				5.09	K0							
	232 g. Pup	07 58.5	-18 19		0556	0600	3 ^m ✓	53 ^m E	1.5 / clean				4.70	A3							
	16 Pup	08 02.7	-19 09		0602	0604	2 ^m 3 ^m	58 ^m E	" / "				4.23	B5							
	19 Pup	08 09.9	-12 50		0608	0616	8 ^m 10 ^m	45 ^m E	" / "				5.46	K0							
	12 Hya	08 45.0	-13 26		0619	0626	6 ^m ✓	14 ^m E	1.5 / clean				5.21	G8							
	39 Hya	09 50.0	-14 42		0629	0634	5 ^m 6 ^m	210 ^m E	" / "				5.04	G8							
	δ Hya	08 36.1	+5° 49'		0642	0644	2.3 ✓	46 ^m E	" / "				4.14	A0							
	β Hya	08 37.2	+3 27		0647	0657	10 ^m 13 ^m	35 ^m E	" / "				5.65	K2							
	ϵ Hya	08 45.2	+6 32		0658.5	0701	2.3 ✓	38 ^m E	" / "				4.07	G0 + F							
	θ Hya	09 12.8	+2 27		0704	0705	1.5 ✓	11 ^m E	" / "				3.82	B9.5 p							
	σ Leo	09 39.6	+10 02		0709	0711	2.5 ✓	122 ^m E	" / "				4.00	A2 + F6							

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT EXP		TOTAL / CORR	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
962	32 Hya	09 30.5	-1 03	19/20	0721	726	5 ^m ✓	58°E	1.7 ["] ✓	286	5 ^m / 1.2	4.95	4.7	A3	NEAR 60°	None	II-O. M-S	✓			
	L Hya	09 38.3	-1 00	Dec 1975	0728	0738	10 ^m ✓	55°E	2 ["] ✓				5.21	K3				67°F	15mm		
	W ² Hya	10 03.7	-12 55		0740	0743	3 ^m ✓	115°E	1.5 ["] ✓				4.51	B8							
	W Hya	10 09.1	-12 12		0746	0752	5 ^m ✓	113°E	1.5 ["] ✓				4.64	K0							
	M Hya	10 24.6	-16 41		0754	0812	16 ^m ✓	112°E	2 ["] ✓				5.31	KY							
	W Hya	10 48.1	-16 02		0814	0821	6 ^m ✓	121°E	2 ["] ✓				4.37	K3							
	α Cen	10 58.3	-18 08		0823	0833	10 ^m ✓	120°E	2 ["] ✓				5.18	K0						T=11°C	
	31 Leo	10 06.3	+10 09		0835	0856	21 ^m ✓	015°E	2 ["] ✓				5.6	KY							
	α(15) Leo	10 06.4	-0 13		0857	0901	4 ^m ✓	091°W	2 ["] ✓				8.45	A0							
963	η Peg	22 41.6	+30 04	20/21	0058	0053	15 ^m ✓	319°W	3 ["] ✓				3.80	G8						problems/great. best 89.30.	
	ζ Peg	23 19.1	+23 35	Dec 1975	0055	0104	9 ^m ✓	251°W	2 ["] ✓				4.7	A5							
	α Peg	23 03.3	+15 03		0107	0109	12 ^m ✓	315°W	1.5 ["] ✓				2.47	B9.5							
	70 Peg	23 27.6	+13 36		012	0125	13 ^m ✓	314°W	1.5 ["] ✓				5.4	G8						near good line at high mag no!	
	8 Peg	23 15.6	+3 07		0127	0136	8 ^m ✓	327°W	2.5 ["] ✓				4.61	G7							
	θ Peg	23 26.4	+6 13		0138	0147	12 ^m ✓	332°W	2 ["] ✓				5.35	K1							
	η Peg	23 40.5	+1 37		0153	0158	5 ^m ✓	325°W	1.5 ["] ✓				4.71	A7							
	ω Peg	23 57.8	+6 40		0201	0205	4 ^m ✓	315°W	2 ["] ✓				4.4	F4							
	π Peg	2 56.8	+39 33		0210	0217	7 ^m ✓	27°W	2 ["] ✓				4.6	A2							
	ε ARI-V	2 57.5	+21 13		0220	0233	13 ^m ✓	1.5 ["] ✓	clear				5.6	A2							
	δ ARI	3 09.9	+19 37		0236	0248	12 ^m ✓	45°W	1.3 ["] ✓				3.2	K2							
	+28 SIK	3 18.5	+28 56		0250	0320	30 ^m ✓	18°W	1.5 ["] ✓				5.8	K4							
964	ο Per	3 42.4	+32 12	"	0327	0333	3 ^m ✓	58°W	2 ["] ✓				3.88	B1 III						single line	
	"	"	"		0333	0337	4 ^m ✓	112°W	"				"	"							
	ζ Per	3 52.2	+31 48		0340	0342	2 ^m ✓	58°W	"				1.96	B1 II							
	ε Per	3 55.8	+39 56		0345	0348	3 ^m ✓	1°W	3 ["] ✓				2.71	B0.5 IV							
	ξ Per	3 57.0	+35 42		0351	0355	4 ^m ✓	117°W	2 ["] ✓				4.04	G7							
	80 Ori	5 23.5	+6 19		0420	0421	15 ^m ✓	6°W	1.5 ["] ✓				1.41	B2 III							
	β Tau	5 24.4	+28 35		0425	0426	20 ^m ✓	9°W	"				1.52	B7 III							

NUMBER	OBJECT	RA	DEC	DATE UT	UT EXP		TOTAL/CORR	HA END	SEE/TRANS	CAM FOCUS	SLIT	GRATING/TILT	MAG	SP	COMP		EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP					
969 (cont)	γ Aps	23 14.3	-9° 15'	22/22	0213	0233	20 ^m	3'35" W	2	2.86	50"/1.2	63/4.5	5.32	K0	NeA	Co ^s	None	IIA-C	41-3 67.0 15mm		
	β Per A	22 29.8	-32 30	Dec 1975	0241	0249	8 ^m	5'34" W	2"				4.29	A0							
	α Per A	22 50.9	-33 02		0251	0259	8 ^m	5'25" W	2"				4.42	A0							
	δ Per A	22 54.3	-32 42		0301	0329	25 ^m	5'51" W	2-3				5.17	G8							
	ξ ² Cet	2 26.6	+8 20		0333	0336	3 ^m	2'22" W	2"				4.22	B9							
	10 Tau	3 35.3	+0 18		0340	0348	7.5 ^m	1'29" W	2"				4.86	F8							Low in branch
	σ Ori E	5 37.2	-2 37		0433	0457	24 ^m	36" W	1"				8.15	B2Vp							
	27 Cma	8 13.0	-26 18		0501	0505	34 ^m	52" E	1.5+				4.30	B3							
8 Cma	7 26.5	+8 59		0508	0534	25 ^m	36" E	2"				5.5	K3								
970	G Car	9 05.1	-12 29	"	0548	0558	10 ^m	1'52" E	2" (V)				5.08	F6							
	κ Vel	9 02.0	-66 17		0601	0604	3 ^m	1'42" E	2"				4.14	A5							
	i Car	9 10.6	-62 12		0602	0607	2 ^m	1'44" E	2"				3.77	B3							
	β Car	9 12.9	-69 36		0612	0613	18 ^s	1'43" E	2"				1.68	A0							
	m Car	9 38.5	-61 12		0618	0622	5.5 ^m	2" E	2"				4.44	B9							
	l Car	9 44.4	-62 22		0624	0628	4 ^m	1'59" E	2"				4.60	G2							
	v Car	9 46.4	-64 56		0634	0638	90 ^s	1'52" E	2"				7.3	A9							
	n Car	9 10.2	-58 51		0641	0643	60 ^s	1'10" E	1.5				3.26	B3							
	g Car	9 15.4	-53 25		0645	0711	26 ^m	47" E	1.5				5.97	K5							
	c Car	9 16.3	-59 09		0713	0714	24 ^s	46" E	1.5				6.4	F0							
	k Vel	9 21.2	-54 53		0717	0718	24 ^s	46" E	1.5+				2.30	B2							
	N Vel	9 30.3	-56 54		0720	0727	7 ^m	46" E	1.5				4.75	K5							
	971	h Car	9 33.6	-59 06	"	0742	0744	2 ^m	34" E	1.2				4.09	B5						
q Vel		9 55.8	-54 25		0742	0748	60 ^s	54" E	1.5				3.44	B5							
I Car		10 23.8	-73 53		0752	0755	2 ^m	1'13" E					4.34	F3							
X Cha		10 35.1	-78 27		0757	0802	23 ^m	57" E					5.68	M0							
F Cha		10 45.5	-80 23		0825	0828	140 ^s	1'1" E					4.25	B3							
β Cha		12 14.6	-79 09		0832	0835	40 ^s	2'27" E					4.12	B6							
γ Mus		12 30.7	-71 55		0838	0840	80 ^s	2'35" E					3.70	B5							
δ Mus	13 00.2	-71 23		0843	0847	5 ^m	2'53" E	2"				4.79	K2								

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R. A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H A END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP	COMP		CALIB	EMUL.	DEV.	OBS	REMARKS		
					BEGIN	END									KIND	EXP							
972	α Gem	22 06.3	-47° 06	23/24	0042	0044	12 ^s / 12 ^s	4 ^h W.	1 ^s clear	2 K6	50 μ /12	U7 / 4.45	1.62	B5	NEA	60	None	IIa - 0	M-S	✓	wind < 5 mph 12°C 65%		
	δ Gem	22 27.5	-43 39	Dec 1975	0050	0057	7 ^m / 3 ^m	5 ^h 50 ^m W	"				4.99	G5							✓	measured 5" comparison with Am = 2"	
	θ Ind AB	21 12.7	-53 35		0101	0105	4 ^m / 4 ^m	5 ^h 9 ^m W	"					4.57	A4								
	δ Ind	21 55.9	-55 08		0108	0112	4 ^m / 2 ^m	4 ^h 39 ^m W	"					4.68	F0								
	"	"	"		0112	0115	2 ^m / 4 ^m	4 ^h 39 ^m W	"					"	"								
	ϵ Ind	22 01.1	-56 55		0117	0143	25 ^m / 13 ^m	5 ^h 16 ^m W	"					5.73	K5 V								
"	"	"		0143	0157	13 ^m / 9 ^m	4 ^h 40 ^m W	"					"	"									
ϵ Gem	22 46.8	-51 29		0200	0204	9 ^m / 7 ^m	4 ^h 36 ^m W	"					3.52	A2									
ζ Gem	22 57.1	-52 55		0208	0215	7 ^m / 8 ^m	6 ^h 25 ^m W	"					5.09	G5								✓	duplex photo.
γ Pav	21 24.0	-65 30		0218	0230	12 ^m / 15 ^m	5 ^h 55 ^m W	2 ^m clear					4.70	F8									
\times Tuc	22 16.5	-60 25		0233	0248	15 ^m / 9 ^m	5 ^h 42 ^m W	2-3 ^m					4.27	K3									
β Oct	22 43.1	-81 32		0252	0302	9 ^m / 7 ^m	5 ^h 42 ^m W	"					4.35	A9									
973	45 R Gem	02 54.0	+18 12	"	0335	0505	90 ^m / 10 ^m	3 ^h 32 ^m W	1 ^s c	"	"	"	v = 5.9	M6 III	"	"	"	"	"	"	✓		
	46 Tau	04 11.8	+7 38		0507	0517	10 ^m / 28 ^m	2 ^h 26 ^m W	1.5 ^s				5.8	F3 V									
	HD13836	06 17.5	+23 21		0525	0553	31 ^m / 31 ^m	1 ^h 21 ^m W	1 ^s				7.0	B9 II									
	HR2334	06 25.5	+0° 20'		0555	0626	31 ^m / 42 ^m	1 ^h 21 ^m W	1 ^s				5.37	K1 II									
	25 Gem	06 39.7	+28 13		0629	0711	42 ^m / 86 ^m	1 ^h 53 ^m W	1 ^s				v = 6.39	G5 Ib									
	HD5813+	07 22.0	-29 41		0714	0840	86 ^m / 8 ^m	2 ^h 39 ^m W	"				8.5	G5 Ib									
	31 Mon	08 42.2	-7° 07'		0842	0850	8 ^m / 2 ^m	1 ^h 29 ^m W	1.5 ^s				5.46	G2 Ib									
	η Aya	08 41.7	+3 30		0852	0855	2 ^m / 1 ^m	1 ^h 35 ^m W	1.5 ^s				4.10	B3 V									
974	α Tuc	22 16.5	-60 25	24/25	0032	0037	7 ^m / 3 ^m	3 ^h 32 ^m W	1 ^s clear, by high valley				4.27	K3	"	"	"	"	"	✓	12°C 4-80%		
	"	"	"	Dec 1975	0039	0043	4 ^m / 1.5 ^s	3 ^h 52 ^m W	"				"	"							✓	Merry Christmas! i Fely Nanded!	
	ζ Peg	22 40.0	+10 40		0048	0050	1.5 ^s / 5 ^m	3 ^h 35 ^m W	"				3.32	B8 V									
	ξ Peg	22 45.2	+12 01		0053	0101	5 ^m / 5 ^m	3 ^h 41 ^m W	"				4.69	F7 V									
	θ Peg	22 08.7	+6 03		0109	0114	5 ^m / 10 ^m	4 ^h 31 ^m W	2 ^m				3.61	A2									
	TC Gem	22 23.7	+1 13		0116	0127	10 ^m / 12 ^m	4 ^h 30 ^m W	"				4.62	B1 e									
	α Gem	22 01.8	-2 18		0130	0142	12 ^m / 8 ^m	5 ^h 7 ^m W	"				4.70	B8 e									
	δ Gem	22 20.1	-1 32		0144	0152	8 ^m / 2 ^m	4 ^h 57 ^m W	"				3.78	B9									
ζ Gem	22 22.1	+0 40		0154									4.8	F2								forget to put dark slide! 5" sep dia = 0 2" dark	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS		
					BEGIN	END									KIND	EXP.							
982	k ² Pup	08 13.2	-40 16	JAN 17	06 16	06 24	44 ^s / 160 ^s	1 ^h 10W	1.5" clear	340	30.4 / 6.2	112 / 70	5.54	K0	NeA	60 ^s	None	II ₉ 0	M-S	Gre			
	g Pup	08 17.6	-36 35	1976	06 28	06 33	25, 50, 100 / 40	1 ^h 15W					4.66	A7 III							67 ^o F		
	c Vel	08 36.8	-42 54		06 43	06 48	43 ^s / 60 ^s	1 ^h 12W					4.23	A9 II							15mm		
	β Pyx	08 39.1	-35 13		06 54	06 59	30, 60, 120 / 170	1 ^h 19W					4.89	G4 III									
983	53 G. Vel	08 39.8	-46 34		07 09	07 14	24, 48, 96 / 80	1 ^h 34W					4.60	F2 Ia	NeA	60 ^s							
	d Vel	08 43.5	-42 33		07 20	07 26	30, 60, 120 / 170	1 ^h 42W					4.92	sg G5									
	91 G. Vel	08 59.2	-41 09		07 32	07 38	35, 70, 140 / 140	1 ^h 38W					5.09	F8 III									
984	HR# 2135	06 02.5	+20 08	JAN 17/18	02 30	02 32	28 ^s	0 ^h 28 E	1.5" cirrus	345	704 / 1.2	112 / 7.24	(6.28)	B2 Ia				II _a -D	M-S	Jn/6vd	-5		
	HR# 2653	07 01.9	-23 47	1976	02 46	02 49	160 ^s / faint	1 ^h 03 E					2.96	B3 Ia							5 screen	-3	
	HR# 3494	08 45.7	-45 50		02 59	03 00	22 ^s	2 ^h 02 E					5.71	B4 Ia							15mm	-1	
	HR# 2827	07 23.1	-19 15		03 10	03 12	100 ^s / faint	1 ^h 08 E					2.34	B5 Ia							no blue filter over-lapping order	ND	+1
	HR# 3456	08 41.2	-45 19		03 17		9 ^s	2 ^h 21 E					5.02	B6 Ia	NeA	1 ^s					get stopped on trails / t	-3	
985	HR# 2135	06 02.5	+20 08		05 12	05 13	28 ^s	2 ^h 13 W					(6.28)	B2 Ia							blue filter	-5	
	HR# 2653	07 01.9	-23 47		05 20	05 22	22 ^s	1 ^h 24 W					2.96	B3 Ia							no decker	adduct	-3
	"	"	"		05 28		20 ^s						"	"								-1	
	HR# 2653	"	"		05 33	05 38	360 ^s															ND	+1
	HR# 3494	08 45.7	-45 49			05 48	22 ^s	0 ^h 06 W					5.71	B4 Ia	NeA	4 ^s					dark slide wide close. Plate remounted	ND	+3
986	HR 3940	09 56.0	-54 28		06 59	07 16	10 ^m / ✓		2 ^h / thin cirrus				3.4	B5 Ib								ND	-5
	5358	14 18.5	-56 17		07 28		5 ^s / 12 ^s	3 ^h 48 E					4.32	B6 Ib									-3
	3688	09 15.2	-44 48		07 41	07 42	34 ^s / 45 ^s	1 ^h 30 W					6.32	A1 Ib									-1
	5374	14 23.0	-68 05		07 51	07 52	30 ^s / 45 ^s	3 ^h 27 E					6.09	A3 Ib									+1
	6081	16 19.1	-24 07		07 59		28 ^s / 35 ^s	5 ^h 16 E					5.35	A5 II	NeA	4 ^s							+3
987	5680	15 16.8	-60 24		08 20		20 ^s / 50 ^s	3 ^h 53 E	2 ^h				5.50	O7 I									-5
	6164	16 34.6	-42 48		08 26	08 27	24 ^s / 60 ^s	5 ^h 02 E					5.58	O9 Ia									-3
	6155	16 32.3	-44 00		08 36		18 ^s / 30 ^s	4 ^h 54 E					4.98	B0 Ia									-1
	6219	16 45.2	-58 17		08 43		12 ^s / 30 ^s	4 ^h 57 E					4.48	B0.5 Ia									+1
	4860	12 47.1	-27 27		08 54	08 54	60 ^s / X	0 ^h 50 E					6.62	B1 Ia	NeA	4 ^s					wing star		+3

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. (B)	SP.	COMP		CALIB.	EMUL.	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
995I cont	HD 12370	13 53.5	+18 31 18 15	JAN 22/23	09 17	09 21	425 ^s /19 ^m	110E	1.5/clear	345	70 ^u /1.2	11 ^u /7.0	3.3	G0IV				Had	MIS	Gue	twilight ND 5 mag
996	5267 #1	06 ^h 14.4	14 ^o 17	JAN 23/24	00 58	01 21	22 ^m /33 ^m	1 ^h 28E	1.5/clear				10.25								15 min at 670F
	#2	06 ^h 14.3	14 ^o 17	1976	01 25	04:30	185 ^m /360 ^m	1 ^h 40 W					12.58		NeA	4s					Gue
997	5287 #11	06 57.1	-04 ^o 42		05 00	05 17	17 ^m /19 ^m	2 ^h 00W					? 9.5								close pair northern.
	LS 561 (#1)	07 31.1	-18 45		05 27	06 09	42 ^m /✓	2 ^h 02 W					11.04								
	LS 566 (#2)	07 34.4	-18 46		06 14	07 49	95 ^m /120 ^m	3 ^h 42 W					11.88								
	LS 499	07 31.0	-19 23		07 55	08 50	55 ^m /165 ^m	4 ^h 45 W	2 ^u /clear				11.05		NeA	4s					
998	HR 2135	06 02.5	+20 08	JAN 24/25	00 48	00 44	90 ^s /45 ^s	1 ^h 49E	3-4 ^u /clear				6.3	B2Ia							
	HR 2653	07 01.9	-23 48	1976		00 56	30 ^s /18 ^s	2 ^h 35E					3.0	B3Ia							out of focus image
	HR 3494	08 45.7	-45 49			01 05	30 ^s /48 ^s	4 ^h 10E					5.7	B4Ia							
	HR 2827	07 23.1	-29 15		01 12	01 14	2 ^m /4 ^m	2 ^h 23E	2 ^u /clear				2.4	B5Ia							5 ^m screen
	HR 3456	08 41.2	-45 19			01 20	15 ^s /11 ^s						5.0	B6Ia	NeA	4s					
999	LS 489	07 30.4	-15 15		02 18	03 53	100 ^m /105 ^m	0 ^h 02 E	1.5/clear				11.88	A7I							
	LS 505	07 31.3	-15 28		04 07	06 07	120 ^m /✓	2 ^h 06 W					12.03	B0II							
1000	LS 531	07 32.4	-15 46		06 28	07 38	70 ^m /75 ^m	3 ^h 42 W					11.37		NeA	4s					
1001	5301 #1	07 08.8	-18 28	JAN 25/26	00 48	01 58	70 ^m /✓	1 ^h 37E	2 ^u /clear				11.29	O6							high background
	#3	07 08.8	-18 24	1976	02 09	03 59	110 ^m /✓	0 ^h 24 W					11.74								
1002	LS 458	07 28.9	-19 06		04 57	07 12	135 ^m /✓	3 ^h 18 W					11.94								diff. net cross-section field
	LS 1135				07 45	09:02	77 ^m /(?)								NeA	4s					mis-id
1003	LS 480	07 30.1	-15 27	JAN 26/27	00 53	03 23	150 ^m /✓	0 ^h 31 E	2 ^u /clear				12.08	B0	NeA	4s					guiding
1004	LS 427	07 27.2	-15 21	1976	04 10	06 10	120 ^m /✓	2 ^h 19 W	1.5 ^u /clear				12.03								false start
	LS 1135	08 43.3	-46 03		06 22	07 47	85 ^m /✓	2 ^h 42 W					11.28								
	ANON LS 1366 #1	09 52.6	-54 54		07 54	07 09	75 ^m /✓	2 ^h 56 W	~2 ^u				10.92	K2Ib	NeA	4s					

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R A	DEC.	DATE UT	U.T. EXP		TOTAL / CORR.	H. A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP.		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1005	LS 87	06 45.5	-07 22	JAN 27/78	01 01	02 33	75% / 85	0 ⁿ 30 E	2" clear	345	70x/1.2	112°/20	11.2	F I II			None	Fra-D	M-S	Gve	
	LS 86	06 45.4	-07 28	1976	02 37	07 09	93% ✓	1 ⁿ W					11.4	OB				BAKED	15 min at 67°F		
	LS 1137	08 43.4	-45 54		04 24	06 24	120% ✓	1 ⁿ 20 W					11.87	Net A 4 ^s				8 ⁿ at 65°C			
1006	LS 1146	08 44.3	-46 01		06 43	09 04	141% ✓	4 ⁿ 02 W					12.07	Net A 4 ^s							
1007	LS 540	08 33.2	-14 50	JAN 28/78	02 09	06 25	150% ✓	2ⁿ 39 W	2-3" clear				12.16	BO							
1007	LS 540	07 33.2	-14 50	1976	03 55	06 25	150% ✓	2 ⁿ 39 W	2-3"				12.16	BO							plate damaged! T=12° RH=83% 1 ⁿ dust - uninst. discarded
	LS 1132	08 42.5	-45 44		06 31	07 43	72% ✓	2 ⁿ 49 W					12.22	BO	Net A 4 ^s						clouds!
1008	5298 #0	07 17.4	-13° 10	JAN 29/78	01 09	02 49	100% ✓	0 ⁿ 45 E	1 1/2" clear(?)				11.69								1 ⁿ dust in box 11 used
	#2	07 17.8	-13 14	1976	02 54	04 05	71% ✓	0 ⁿ 39 W					11.04	Net A 4 ^s							
1009	LS 478	07 30.0	-15° 22		04 29	06 29	120% ✓	2 ⁿ 50 W					11.94								
	LS 1144	08 43.7	-45 48		06 38	08 41	123% ✓	3 ⁿ 40 W					11.91	BO							
	LS 3722	16 42.4	-47 22		08 51	09 05	142% ✓	3 5/8 E					9.4	OB	Net A 4 ^s						
1010	5284 #1			JAN 30/78	00 52				1 1/4" clear				11.81								type of guiding in dec. but too hard!
	5284 #15	06 43.7	+00 18	1976	01 05	03 47	162% / 155	0 ⁿ 57 W					12.21								
	#17	06 43.8	+00 18		03 49	05 57	128% / 155	3 ⁿ 18 W					12.07	Net A 4 ^s							
1011	LS 1131	08 42.8	-45 59		06 54	08 34	100% / 115	3 ⁿ 27 W					11.31	Net A 4 ^s							
1012	5298 #2 LS 1176	07 17.7	-13 11	JAN 31/78	00 48	02 12	85% ✓	1 ⁿ 09 E	1.5" clear				11.04								T=14° RH=51%
	LS 679	07 46.7	-32 34	1976	02 17	03 02	55% ✓	0 ⁿ 40 E					12.5	OB ⁺							
	LS 535	07 32.2	-33 24		03 14	04 24	70% ✓	0 ⁿ 52 W					10.7	BOV	Net A 4 ^s						
1013	HR 1713					04 43	34% / 50	3 ⁿ 27 W					0.05	B8 Ia							5" down
	HR 370v					04 51	22% / 40	0 ⁿ 27 E					5.47	B6 Ia							
	HR 4147					04 58	52% ✓	1 ⁿ 36 E					6.51	B7 Ia							
	HR 4256					05 05	20% ✓	1 ⁿ 48 E					5.40	B9 Ia							
	HR 4442					05 08	30% ✓						5.63	A3 Ia	Net A 4 ^s						
1014	LS 1177	08 44.1	-45 47		06 08	08 53	165% -	4ⁿ 12 W					12.11	Net A 4^s							out of focus
1014	5298 #0	07 17.4	-13 10	FEB 1/78	00 46	02 11	95% ✓	1 ⁿ 05 E	1 1/2" clear				11.64								H.P. 5892
	LS 568 (B0.5 A)	07 34.3	-32 30	1976	02 18	04 38	130% ✓	1 ⁿ 57 W					11.98	O							
	B0.5 #19	07 36.6	-33 13		04 34	05 44	70% ✓	2 ⁿ 10 W					11.2	OB	Net A 4 ^s						

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					BEGIN	END									KIND	EXP.					
1015	H ³ 12/19 45003	07 52.1	-26 29	Feb 11/2 1976	06 35	08 10	95"/	~4" W	1/2/clear	345	70/1.2	11 ³ /70	11.27	B5I			NONE	II _a -D	M-S	Gve	
	LS 3721	16 42.3	-47 16		08 20	09 10	50"/	3" 29E					10.4	OB ⁻	NeA	4 ^s		II _a -D	15 min	at 67°F	
1016	LS 527	07 32.4	-15 10	Feb	00 44	03 24	160"/	0' 02E	1/2/clear				12.14								
	LS 594 (Bo 15/3)	07 35.8	-34 22	2/3 1976	03 32	04 17	45"/55	0' 46W					10.5	OY.5E	NeA	4 ^s					
1017	Bo 15 #25	07 38.6	-33 13		04 44	07 04	140"/	2" 32 W	~2"				12.0	OB							working equipment because of dark light etc.
	S 584	13 31.2	-61 39		07 16	08 16	60"/	1' 09E					10.97								
	S 2554	14 ⁿ 34.5	-60 07		08 22	09 17	55"/	0' 50E					10.9		NeA	4 ^s					turn
1018	Bo 15 #11	07 37.8	-32 49	Feb	00 49	03 09	140"/180	0' 15E	2"/clear				12.0	0							
	LS 695 Bo 15/3	07 42.0	-34 16	3/4	03 28	05 41	135"/250	2" 10 W					11.9		NeA	4 ^s					
1019	LS 2973	13 ⁿ 11.2	-61° 23	1976	06 20	08 40	140"/190	0' 21E					11.96								
	S 2547	14 34.2	-60 42		09 00	09 16	16"/22"	0' 09E					9.45		NeA	4 ^s		II _a -D			
1020	LS 1116	08 39.9	-44 58	Feb	00 54	00 55	4"/	3' 05E	1/2/clear	345	70/1.2	11 ³ /70	7.8	OB ⁺			II _a -D				check on follow up to/cont. time?
	LS 1126	08 41.1	-47 35	10/11	01 13	01 19	6"/	2" 43E					9.2	OB ⁺							
	"	"	"	1976	01 24	01 36	12"/	2" 28E					"	"							"
	LS 1154	8 41.2	-45 59		01 45	01 47	37"/	2" 10E					7.3	OB ⁺							"
	"	8 43.5	-45 59		02 04	02 02	5"/	1' 57E			70/1.2		"	"	NeA	4 ^s					
1021	LS 1116	08 37.9	-44 58		03 49	03 53	3"/	0' 10"E	1-1/2" clear				7.3	OB ⁺							
	LS 1126	08 41.1	-47 35		04 22	04 34	11"/	0 33W					9.2	OB ⁺							
	LS 1154	08 41.2	-45 59		04 41	04 45	37"/	0 37W					1.2	OB ⁺							
	LS 1108	08 37.6	-44 57		05 05	05 45	40"/50	1 45W					10.7	OB ⁺ r							
	LS 1152	8 38.3	-48 07				75"/						9.6	OB⁺k							confused field
	LS 1152	8 45.7	-45 19		05 58	06 23	25"/35	2 17W	2.0 clear				9.9	OB	NeA	4 ^s					some clouds.
1022	LS 1300	9 24.4	-52 35										11.8	OB⁺h							too cloudy.
1022	LS 1310	9 26.6	-53 15		07 43	09 22	74"/110	4 3' 11"	1.0 clear				10.8	B6I	NeA	4 ^s					some clouds
1023	LS 1157	8 46.6	-46 21	FEB 76	01 10	01 14	340"/	2 50E	2" clear	365			7.8	OB ⁺							1/2" 2.5"
	LS 1117	8 40.0	-46 00		01 25	02 06	44"/	1 52E	2.0 clear				10.2	OB ⁺ h	NeA	4 ^s					
1024	LS 1117	8 40.0	-46 00		02 35	03 08				342			10.2	OB⁺k							plate fell
1024	LS 1117	8 40.0	-46 00		03 32					342			10.2	OB⁺k							plate fell
1024	LS 1117	8 40.0	-46 00		05 30	06 05	35"/40	2 10W	1-1/2" clear	342			10.2	OB ⁺ h							
	LS 1157	8 46.6	-46 21		06 19	06 25	340"/310	2.0 clear					7.2	OB ⁺							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1024	LS 1224	8 59.4	-48 55	1172	6 41	9 40	119/160		1-1/2" W424	42	70x/12	112/30	11.4	OB ⁺				Had	M-SIS	Jr	
	LS 1338	9 40.7	-48 29	1976	8 54	9 22	237/✓	W424	1 1/2" clouds	"	"	"	9.2	OB	NoA	4 ^S					min at 67°F
1025	LS 1163	8 47.8	-47 47	1976	0 30	0 45	15 ^m /14	E317	2 3/4" clouds	342	70x/12	112/30	8.6	A7Ib						Jr	
	LS 1165	8 47.9	-47 40	13	0 53	1 00	7 ^m /✓	E302	2"				8.1	OB ⁺							
	LS 1167	8 48.6	-47 23	1976	1 09	1 17	630/✓	E245	2"				8.2	OB ^h							clouds
	LS 1172	8 49.2	-44 29		1 26	3 22	50 ^m /✓	E041	1 1/2"				10.1	OB ^{tr}							8+12+5 11/15
	LS 1177	8 49.4	-45 26		3 33	3 48	15 ^m /✓	W015	1 1/2" clear				9.3	OB	NoA	4 ^S					
1026	LS 1178	8 49.1	-47 58		4 13	4 40	27 ^m /✓	W040	1 1/2"				10.2	OB ^h							
	LS 1159	8 47.0	-43 52		4 50	5 43	53 ^m /✓	W144	1" some clouds				10.7	OB							
	LS 1180	8 49.7	-45 27		5 52	6 16	24 ^m /✓	W213	1-1 1/2"				9.8	OB ^{tr} h							
	LS 1183	8 50.0	-43 44		6 25	7 12	47 ^m /✓	W310	1 1/2"				10.4	OB							
	LS 1197	8 52.5	-45 56		7 23	8 02	39 ^m /✓	W400	2"-3"				9.7	OB	NoA	4 ^S					
1027	LS 1204	8 54.3	-47 30		9 15	9 28	13 ^m /✓	W526	2"				8.6	OB ⁺	NoA	4 ^S				Jr	
1028	LS 1179	8 49.6	-46 29	Feb 14	0 54	2 28	94 ^m /✓	E130	2" lens				10.7	A1Ia ^h							cloud at edge
	LS 1160	8 47.3	-44 47	1971	2 36	3 57	81 ^m /75	W000	1 1/2"				11.0	OB ^{tr}							cloud in lens
	LS 1185	8 50.0	-46 32		7 28	8 11	43 ^m /✓	W422	1 1/2"				10.4	A0II	NoA	+					
1029	LS 1328	9 35.6	-52 42		8 31	9 04	33 ^m /✓	W422	1 1/2"				10.0	A2II							
	LS 1323	9 33.1	-53 31		9 12	9 21	9 ^m /✓	W139	1 1/2"				8.2	OB ^h	NoA	+					
1030	HR 1712	5 12.3	-2 13.2	Feb 14	00 43	00 51	24 ^m /48	0 36 W	2 ^m /pk				2.05	B2Ia							Small star
	HR 1722	9 17.9	-51 22.0	1976	01 01	01 09	23.6/172	3 14 E	1 1/2"				5.9	A1Ia	NoA	4 ^S					
1031	HR 1931	5 37.5	-2 36.5		01 32	01 37	5 ^m /✓	054E					3.5	09SV							
	HR 1931	"	"		01 41	01 43	4 ^m 3/4 ^m	100E					2.5	"							
	HR 2135	6 2.5	+20 08		01 51	02 00	48 ^m 110	056W					6.3		NoA	4 ^S					all overexposed
1032	HR 1790	05 23.8	+06 21		2 17	2 22	12 ^m /✓	150W	1-1 1/2"				1.64	B2III							
	HR 23663	9 10.7	-62 13		2 32	2 47	14 ^m /16 ^m	130E					3.8	B3III							
	HR 3560	8 53.2	-60 15		2 53	2 55	30 ^m /24 ^m	105E					57	B5III							
	HR 3001	7 42.9	-38 09		3 02	3 04	57 ^m /50 ^m	016W					6.4	B7III							
	HR 4037	10 13.2	-39 54		3 14	3 22	8 ^m /✓						3.2	R2III	NoA	4 ^S					

NUMBER	OBJECT	P.A.	DEC.	DATE UT.	UT EXP		TOTAL/CORR	H.A END	SEE/TRANS	CAM. FOCUS	SLIT	GRATING /TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
1033	HR 1271	531.2	-556	Feb 14 1976	357	422	3 ⁵ 6 ¹² / ₈	343W	1 1/2"	ph	342	70-112	11 ² / ₀	2.5	B7II							
	HR 4206	1237.4	-6704	1976	435	445	30 ⁵ / ₂₋₁₀	300E					6.3	B1Ia	NoA	4 ^s						
1034	HR 4632	1210.3	-5214		507	522	14 ¹ / _✓	151E	1-1 1/2'				3.8	B3V							5m screen	
	HR 3442	839.2	-5258		532	535	15 ¹ / _✓						5.0	B4IV								
	HR 3663	710.7	-6213		539	553	14 ¹ / _✓	137W					3.8	B3III							5m screen	
	HR 2653	71.9	-2348		600	610	10 ¹ / _✓	403W					3.0	B3Ia							"	
	HR 3494	845.7	-4550		616	617	30 ⁵ / _✓	221W					5.7	B4Ia	NoA	4 ^s						
1035	HR 316E	82.7	-3956		648	654	210 ⁵ / _✓	350W	1"				2.0	O5f								
	HR 2721	717.6	-2431		701	702	22 ¹ / _✓	439W					4.8	O7f								
	HR 6245	1649.8	-4112		722	724	42 ⁵ / ₁₅	430E					5.6	O8:5p								
	HR 6272	1653.2	-4107		732	735	56 ¹ / _✓	424E					6.0	O8:5p								
	HR 4230	1241.4	-6255		742	743	30 ¹ / _✓	000W					5.7	B2pc								
1036	HR 5953	1552.2	-2233		809	812	3 ¹ / _✓	251E	1"				2.2	O5V								
	HR 3206	88.7	-4716		827	829	10 ⁵ / _✓	515W					4.0	B1V								
	HR 5942	1552.5	-3220		835	843	8 ¹ / ₁₀	220E					3.2	B2:IV								
	HR 3016	744.2	-3750		854	857	3 ¹ / ₂	610W					6.4	B3:V								
	HR 3442	839.2	-5258		902	903	36 ¹ / ₂₀	522W					5.0	B4IV								
1037	HR 6672	1753.4	-2453		926	933	28 ¹ / ₅₀	323E					6.2	O8:III								
	HR 5358	1418.5	-5617		939	943	5 ¹ / ₁₀	018W					4.3	B6Ib	NoA	4 ^s						

NUMBER	OBJECT	R.A.	DEC.	DATE UT	UT. EXP.		TOTAL / CORR	HA END	SEE / TRANS	CAM. FOCUS	SLIT	GRATING / TILT	B MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1038	λ Ori	5 33.8	+9 55	FEB. 17 1976	00:20	00:25	5,10,15,20	0 ^h 07 ^m E	1" phot	344	50u/0.6	120/70	4.8 3.20	O8 III (H)	Ne Ar	30 ^s	—	IIa-0	15 ^m metal surface	Tnr	
	M. Col	5 45.1	-32 19		00 31	00:35	6,30,90 ^s	0 ^h 09 ^m E					4.87	O9.5 IV							
	15 Mon	6 39.6	+9 54		00 40	00 43	35,50,23 ^s	0 ^h 45 ^m E					4.40	O7 V (H)							
	γ CMa	7 19.7	-24 54		00 47	00 50	30,60,60 ^s	1 ^h 25 ^m E					4.25	O9 Ib							
1039	HR 2467	06 40.7	+06 22	"	01 06	01 17	2,4,6 ^m	0 23 ^m E	"	"	"	"	6.31	O7 V	"	"	—	"	"	11/6u	NO 45099
	HD 46150	06 30.5	+04 58		01 27	01 46	3,6,9 ^m	0 17 ^m W					6.8	O5 V (H)							
	HD 46149	06 30.5	+05 03		01 53	02 37	7,14,21 ^m	1 08 ^m W					7.7	O8.5 V							
	ξ Pup	08 02.7	-39 56		02 42	02 43	23,45 ^s	0 ^h 19 ^m W					1.99	O4 I (H)							
1040	HD 74676	08 43.0	-41 08	"	03 01	04 06	65 ^m	0 ^h 24 ^m W	"	"	"	"	7.5	B9	"	"	—	"	"	Tnr/6u	
	HD 74419	08 41.6	-40 57		04 09	05 25	76 ^m	1 ^h 44 ^m W					9.4	A							
	HD 74355	08 41.1	-40 39		05 38	06 03	25 ^m	2 24 ^m W					7.9	B8							
	HD 92504	10 38.7	-57 21		06 22	06 50	28 ^m	1 13 ^m W					8.37	O8							
	HD 90615	10 25.3	-57 12		06 54	07 24	35 ^m	2 ^h 01 ^m W					8.46	B0 II							
	CPD 613566	13 16.5	-62 18		07 34	09 34	120 ^m	1 ^h 20 ^m W					9.52	B0	"	"					
1041	HD 75081	08 45.7	-40 59	FEB 15 1976	00 12	00 18	6 ^m	3 ^h 22 ^m E	1 1/2"	"	"	"	6.8	A0	Ne Ar	80 ^s	—	"	"	"	
	HD 75224	08 46.6	-41 04		00 21	00 39	18 ^m	3 ^h 02 ^m E	"	"	"	"	7.5	A0							
	HD 74979	08 44.8	-40 15		00 44	01 06	25 ^m	2 ^h 33 ^m E	"	"	"	"	7.6	B8							
	HD 74804	08 43.0	-41 11		01 08	01 29	21 ^m	2 ^h 10 ^m E	"	"	"	"	7.7	B5							
	Cr 197-22	08 44.1	-41 07		01 32	04 33	181 ^m	0 55 ^m W			0.6		10.05	—							
	SLS 1516	10 21.3	-57 21		04 45	06 33	108 ^m	1 18 ^m W					9.5	O6 ⁻							(underexposed) in center of cluster faint companion
	SLS 1536	10 23.3	-57 56		06 36	09 40	184 ^m	4 23 ^m W					10.0	O6							
1042	HD 74867	08 44.1	-41 25	FEB 17 1976	00:13	00:48	35 ^m	2 ^h 47 ^m E	1 1/2"	344	50u/1.6	120/70	8.0	B9	Ne Ar	60 ^s	—	IIa-0	15 ^m metal surface	Tnr	
	HD 74853	08 44.2	-41 20		00:53	01:32	37 ^m	2 03 ^m E					8.3	B9							
	HD 74951	08 44.6	-41 24		01:35	02:49	74 ^m	0 47 ^m E					9.1	A0							
	HD 74634	08 42.6	-41 26		02:54	04:16	80 ^m	0 43 ^m W					9.2	A0							
	HD 74990	08 43.6	-41 37		04:19	05:02	43 ^m	1 27 ^m W					8.5	A0							
	SLS 1516	10 21.3	-57 21		05:06	08:15	189 ^m	3 04 ^m W					9.5?	O6 ⁻							in sparse cluster identification? SLS 1524
	HD 90273	10. 22.8	-57 31		08:16	09:54	98 ^m	4 41 ^m W					9.24	O7							

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	B MAG	SP.	COMP		CALIB	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1047 (cont'd)	SLS 1461	10 13.8	-58 11	FEB 26 1976	04:34	06:56	144 ^m /✓	2 20 W	1 ¹¹ / ₁₆ phat	344	504/6	120 ^o / ₂₀	9.4:	OB	NeA	60 ^s	-	IIa-0	15 ^m metal sulfate	Tnr	
	SLS 1818	10 43.0	-57 33		07:01	08:03	62 ^m /✓	2 57 W					8.6	OB (ke)							
	SLS 1858	10 43.8	-57 57		08:08	08:28	20 ^m /under	3 21 W	>2"				9.1	OB							stopped due to poor seeing
1048	HD 46223	6 30.8	+4 57	MAR 8 1976	00:00	00:12	12 ^m /under	0 01 W	2 ¹¹ / ₁₆ clear	344	504/6	120 ^o / ₂₀	7.5	04 V (F) NeA	NeA	60 ^s	-	IIa-0	15 ^m metal sulfate	Tnr	
	"	"	"		00:13	00:33	26 ^m /✓	0 22 W					"								
	"	"	"		00:35	01:05	30 ^m /✓	0 54 W					"								
	HD 93028	10 42.3	-60 04		01:17	01:49	32 ^m /✓	2 33 E	"				8.30	09 V							
	"	"	"		01:50	02:44	54 ^m /✓	1 38 E					"								
	o ² Cen	11 30.7	-59 23		02:48	03:00	2,3,2,5 ^m	2 11 E	"				5.63	A3 Ia							
1049	SLS 1601	10 27.9	-57 38	MAR 8 1976	03:24	05:54	150 ^m /✓	1 47 W	"	"	"	"	9.8	OB ⁻	"	"	-	"	"	"	Tnr
	SLS 1772	10 41.0	-57 20		05:58	09:29	211 ^m /✓	5 10 W	"				10.0	OB							
1050	CPD-33°1768	07 46.4	-33 15	MAR 10 1976	03:47	04:48	61 ^m /exp	3 31 W	1 ¹¹ / ₁₆ phat	"	"	"	11.1	OB	NeA	1 ^s	-	IIa-D	"	Tnr/Gue	} exposed by accident.
	VY Car sf	10 43.6	-57 26		04:58	05:41	43 ^m /exp	1 26 W	"				11.0	B							
1051	SLS 1759	10 40.4	-57 32	MAR 10 1976	06:05	09:37	212 ^m /sl. cov	5 26 W	"	"	"	"	9.8	OB ^T	NeA	60 ^s	-	IIa-0	"	Tnr/Gue	
	CPD-34°1785	7 52.4	-34 50	MAR 11 1976	00:09	00:23	14 ^m /✓	0 ^o 58 E	1 ¹¹ / ₁₆ clear	"	"	"	7.45	cFB							
	HD 63423	07 46.6	-30 28		00:26	00:44	18 ^m /under	0 ^o 30 E					7.89	OB							
1052 II	CPD-33°1768	07 46.4	-33 15	MAR 11 1976	01:01	01:41	41 ^m /✓	0 ^o 26 W	"				11.1	OB	-	-	-	IIa-D	"	Tnr/Gue	
1053 II	CPD-31°5034	7 44.9	-32 01	MAR 11 1976	01:51	02:53	62 ^m /✓	1 40 W	"				11.7	OB	-	-	-	"	"	Tnr/Gue	
	CD-30°5220	7 51.6	-30 39		02:59	04:21	82 ^m /✓	3 ^o 02 W	"				11.8	OB							misclassification?
	VY Car sf	10 43.6	-57 26		04:26	05:07	41 ^m /✓	0 56 W					11.0	B	NeA	1 ^s	-				
1054	SLS 1576	10 26.4	-56 57	MAR 11 1976	05:34	07:50	136 ^m /✓	3 58 W	"	"	"	"	9.9	OB ⁻	NeA	60 ^s	-	IIa-0	"	Tnr/Gue	
	SLS 1655	10 33.5	-57 13		07:54	09:45	111 ^m /✓	5 44 W					9.3	OB							
1055 II	CD-30°5220	07 52.2	-30 41	MAR 12 1976	00:13	00:19	66 ^m /✓	0 ^o 03 W	1 ¹¹ / ₁₆ clear	"	"	"	11.8	OB			-	IIa-D	"	Tnr/Gue	
	CPD-30°1894	07 38.7	-30 44		01:24	01:34	30 ^m /✓	0 41 W					10.43	OB							
	CPD-32°16895	7 40.8	-32 33		01:54	02:15	21 ^m /✓	1 11 W					10.44	OB							
	CPD-30°1946	07 42.4	-30 49		02:21	02:44	23 ^m /✓	1 38 W					10.57	OB	NeA	1 ^s					
1056	SLS 1630	10 31.4	-56 36	MAR 12 1976	03:06	05:18	132 ^m /✓	1 ^o 14 W	"	"	"	"	9.9	OB ⁻			-	IIa-0	"	Tnr/Gue	
	HD 90801	10 26.7	-55 16		05:21	07:40	139 ^m /✓	3 50 W					9.71	B2 V	NeA	30 ^s					

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP.		TOTAL / CORR.	H A END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
1063	S253 #50 B07 1132	06 ^a 23.6	+20 00	Apr 19/10 1976	23 40	0144	124/✓	353W	1 1/4" thin curved	341	70x/0.8	112/7.0	11.5				NONE	IIc-D	M-S 1590F	Jr		
1064	Ru44 #884 LS 3304	7 56.3	-28 34		324	404	40/120	477W	1" curved		10.8		11.4	07:							act. in spec. clean data - ward?	
	LS 3320	15 02.5	-60 45		518	600	42/70	030E	2" curved		11.2		10.3	08								
1065	LS 4266	15 12.4	-59 32		614	749	77/90	112W	1 1/2" clear		11.2		11.5	OB ⁺ NoA	NoA	2 ^s					dawn	
1066	S284 #1	6 44.2	+00 22	Apr 16/11	00 00	220	140/✓	412W	1 1/2" curved		70x/0.8		11.9		NoA	2 ^s				Jr		
1067	Ru44 #884 #907	7 56.3	-28 34		255	415	80/✓	456W	1-1/2"		10.8		11.4									
	LS 3307	15 04.3	-63 36		607	700	53/35	035W	1-1/2" clear		10.8		11.0	OB ⁺ (r)	NoA	2 ^s					second to night in spec	
1068	Tr 27 #14	17 35.1	-33 27		725	1007	162/190	108W	1-1/2"		11.2		12.3		NoA	2 ^c					dawn	
1069	S287 #1 S25 85	6 44.7	-07 18	Apr 11/12	2325	225	180/✓	420W	1-1/2" thin curved		70x/0.8		12.3		NoA	2 ^s				Jr	much better star 1/2" in slit	
1070	Ru44 #809 LS 3201	7 58.4	-28 51		251	340	44/40	422W	1 1/2"		11.2		10.4									
	LS 3349	14 06.3	-64 05		352	447	55/✓	214E	1 1/2-2"		11.2		10.6	OB ⁺								
	LS 3349	15 22.5	-63 33		631	720	51/30	037E	1 1/2" clear		10.8		10.9	OB ⁺ h	NoA	2 ^s						
1071	Tr 27 #102 #104	12 34.5	-33 27		746	828	44/✓	025E	1 1/2" curved		11.2		10.3									
	#104	17 35.3	-33 23		837	1012	95/✓	119W	1-1 1/2"		11.2		11.5	Bo II: NoA	NoA	2 ^s					dawn	
1072	S304 #1 Ru44 #885	7 09.0	-18 27	Apr 14/13	23 47	056	69/✓	235W	1-1/2" ^{second to night} curved		70x/0.8		11.3							Jr		
	#920	7 59.2	-28 46		218	400	102/✓	446W	1-1 1/2"		10.8		11.6		NoA	2 ^s					5 th comp: plate act. dawn.	
1073	LS 3223 3283	14 18.2	-62 42		531	629	58/✓	052W	1-1 1/2"		10.8		11.3	OB ⁺								
	LS 3223	14 46.9	-57 28		635	743	68/✓	141W	1 1/2"		10.8		11.3	OB ⁺ NoA	NoA	2 ^s						
1074	HD 50019 HD 87025	6 51.1	+34 00	Apr 3/11	2335	2336	8 ^s /✓	131W	1 1/2-2" curved		11.2		37	A3 III						Jr		
	HD 36673	5 31.3	-7 51		2353	2353	6 ^s /7 ^s	135E	"		11.2		3.7	FO II								
	HD 47731	6 39.8	28 12		0010	0015	5 ^s /✓	330W	1 1/2"		11.2		2.8	FO Ib							5 th comp. dawn	
	HD 45416	6 26.0	+00 19		0045	0050	3 ^s /✓	258W	1 1/2"		11.2		7.5	GS Ib								
	HD 45416	6 26.0	+00 19		0058	100	52 ^s /✓	320W	1 1/2"		11.2		6.4	K III	NoA	2 ^s						
1075	HD 60522 HD 86663	7 34.4	+26 57		0145	0150	14 ^s /7 ^s	300W	1 1/2"		11.2		5.6	M III								
	HD 86663	7 59.0	+8 09		0200	0204	9 ^s /6 ^s	053W	1-1 1/2"		11.2		6.3	M2 III	NoA	2 ^s						

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	UT EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1076	HD 62058	739.9	-31 37	April 13-14	255	258	2 ^m / ✓	405W	1"-1"	341	70μ/12	112/9.0	7.6	G0 Ia			None	Pa-D	M-5 15 min 67°f	Jn	
	HD 67594	2072	-2 55		303	304	24 / ✓	344W	1"				5.3	G2 Ib							
	HD 24441	9444	+23 53		311	311	6 / ✓	214W	1-12"				3.8	G0 II							
	HD 111812	1250.5	+27 40		318	320	35 ^s / 30 ^s	043E	1-12"				5.7	G0 III							
	HD 121370	1353.5	+18 31		328	339	10.5 / ✓	126E	1-12"				3.3	G0 IV							5.5 mag screen
	HD 102870	11493	+1 54		346	346	7 ^s / ✓	045W	1-12"				4.2	F8 V	NoA	2 ^s					
1077	LS 3256	14284	-60 15		451	527	36 / 32	012E	1-12"		70μ/0.8		10.8	OB							
	LS 3324	15132	-59 23		535	611	36 / 32	014E	1"				10.8	OB							
	LS 3729	1643.1	-47 29		624	703	39 / ✓	051E	1"				10.9	B2 V							
	LS 3718	1642.0	-47 25		710	725	15 / ✓	028E	1"				9.9	OB ⁺							
	LS 3722	1642.4	-47 22		730	740	10 / ✓	013E	1"				9.5	OB	NoA	2 ^s					
1078	LS 3719a	1642.3	-47 25		807	817	10 / ✓	024W	51"				9.5	OB							6 wire at contamination 5mm, 42"E.
	3719b	"	"		819	907	48 / ✓	114W	1"				11.0								
	3719c	"	"		909	934	25 / ✓	140W	51"				10.5		NoA	2 ^s					
1079	HD 164514	17564	22 54										8.2	ASTa							
1079	HD 182835	1925.3	00 17		1009	1010	12 ^s / ✓	028E	1"		1/2		5.2	F2 Ib							
	HD 204867	2130.3	-05 41		1015	1016	45 ^s / ✓	226E	1"		1/2		3.7	G0 Ib							
	HD 206778	2143.0	+9 46		1020	1021	7 ^s / ✓	232E			1/2		4.0	K2 Ib	NoA	2 ^s					
1080	HD 23249	342.0	-9° 51	April 14-15	2311	2312	15 ^s / 10 ^s	420W	1 1/2" diam		1/2		4.5	K0 IV						Jn	
	HD 102870	1149.3	+1 54		2318	2318	9 ^s / ✓	340E			1/2		4.2	F8 V							
	HD 87449	1014.4	19 36		2324	2324	23 ^s / 20 ^s	203E			1/2		5.3	F6 Ib							
	HD 30652	4482	+6 55		2331	2341	10.5 / ✓	350W			1/2		3.6	F6 V							5.5 mag screen
	HD 47105	6364	16 25		2359	0004	22 ^s / 24 ^s	220W			1/2		1.9	A0 IV	NoA	2 ^s					" "
1081	S301 H208	708.7	-18 26		0037	209	88 / 60	352W			1/08		11.7								
	LS 1174	849.3	-43 04		221	237	16 / 40	235W	clouds rain		1/08		11.6	OB ⁺							16 terminated: clouds clouds delayed start
1082	HD 431	2179	+23 17	April 15-16	108	111	2 ^m 30 ^s / 3 ^m	350W	1" broken clouds		1"		7.0	A1 II						Jn	
	HD 42543	610.7	+22 56		115	120	5 ^m / 12 ^m	406W			1/2		7.5	M4 Ia							
	HD 39801	5535	+7 24		127	138	11 ^m / ✓	439W			1/2		2.7	M2 Ia							5.5 mag screen
	HD 62058	7400	-31 36		145	150	5 ^m 7 ^s / 4 ^s	305W			1/2		7.6	G0 Ia							
	HD 87737	10057	+16 53		202	205	8 ^s / ✓	054W			1/2		3.5	A0 Ib							

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1083	LS 3218	14 16.9	-63 09	April 15-16	325	6 41	86/45	120W	1" - 4" thin clouds	341	79x/08	112/30	118	DBP	NeA	Z ^s	None	ITaD	MS 15 min 67°F	Jan	11+16+59
1084	CPD-57°3504	10 35.2	-59 03	April 16-17 1976	01 37	03 20	103 ^m /130	1°43 W	2" cirrus	341	522x/06	112/20	1002	B1E	Net	60 ^s		FlaO	"	Que	calm T=15°C H=30%
1085	< Hya	9 26.4	-8 33	30/1	00 13	00 21	1.2 ^m / 2"	47 ^m W	1.5 ^m dense cl.	341	59x/1.2	67/45	3.4	K4	NeA	60 ^s	N.WE	FlaO	MS (5 min) 62°F	"	"
1086	> Hya	10 48.1	-16 02	"	00 46	00 53	6 ^m / 4"	0 ^m E	"	"	"	"	4.4	K3	"	"	"	"	"	"	"
	46 LMi	10 51.6	+34 23	"	01 00	01 12	12 ^m / 16"	14 ^m W	1.5 ^m / 16"	"	"	"	4.9	K0	"	"	"	"	"	"	through clouds
	q Leo	11 15.1	-3 29	"	01 18	01 26	3.5 ^m / 10"	0 ^m W	1.5 ^m / 10"	"	"	"	4.7	A7	"	"	"	"	"	"	"
	v Leo	11 35.4	-0 39	"	01 25	01 33	8 ^m / 10"	10 ^m E	"	"	"	"	5.3	G7	"	"	"	"	"	"	"
	q Vir	12 18.4	-0 30	"	01 36	01 38	2 ^m / 40"	40 ^m E	"	"	"	"	3.9	A2	"	"	"	"	"	"	"
	x Vir N	12 40.1	-01 17	"	01 44	01 52	3 ^m / 60"	60 ^m E	1.5 ^m / 60"	"	"	"	3.9	FC D	"	"	"	"	"	"	"
	x Vir S	"	"	"	01 48	01 52	3 ^m / 55"	55 ^m E	"	"	"	"	"	"	"	"	"	"	"	"	"
	δ Crt	11 17.8	-14 37	"	01 57	02 03	5 ^m / 39"	39 ^m W	"	"	"	"	4.7	G8	"	"	"	"	"	"	"
	γ Crt	11 23.4	-13 31	"	02 06	02 09	3 ^m / 39"	39 ^m W	"	"	"	"	4.3	A7	"	"	"	"	"	"	"
	γ Crv	12 14.3	-17 23	"	02 12	02 13	4.5 ^m / 35"	8 ^m E	"	"	"	"	2.5	B8	"	"	"	"	"	"	"
	δ Crv	12 23.3	-16 21	"	02 16	02 18	6.0 ^m / 50"	17 ^m E	"	"	"	"	2.9	B7.5	"	"	"	"	"	"	"
	η Crv	12 30.5	-16 02	"	02 20	02 24	4 ^m / 12"	12 ^m E	"	"	"	"	4.7	F0	"	"	"	"	"	"	"
	β Crt	11 10.2	-22 40	"	02 28	02 33	4 ^m / 14"	14 ^m W	"	"	"	"	4.5	A2	"	"	"	"	"	"	"
1087	Rx Boo	14 22.8	+25 50	"	02 56	04 20	8 ^m / 9"	9 ^m E	"	"	"	2.90	8:	M8	"	"	"	"	"	"	"
	II Lup	15 03.1	-46 56	"	04 27	04 30	3 ^m / 38"	38 ^m E	"	"	"	"	4.6	B5	"	"	"	"	"	"	"
	X Lup	15 06.8	-45 10	"	04 35	04 37	1.5 ^m / 35"	35 ^m E	"	"	"	"	3.9	B3	"	"	"	"	"	"	"
	K1 LupA	15 09.8	-48 38	"	04 48	04 45	3 ^m / 30"	30 ^m E	"	"	"	"	4.1	B9	"	"	"	"	"	"	"
	" B	"	"	"	04 46	05 01	12 ^m / 14"	14 ^m E	"	"	"	"	6.0 ⁺	A0	"	"	"	"	"	"	"
	f Lup	15 10.1	-51 59	"	05 07	05 11	7 ^m / 6"	6 ^m E	"	"	"	"	4.3	K0	"	"	"	"	"	"	"
	ρ Cir	15 15.2	-38 41	"	05 22	05 24	2 ^m / 2"	2 ^m W	"	"	"	"	4.1	A3	"	"	"	"	"	"	"
	γ TauA	15 16.1	-68 34	"	05 27	05 29	1 ^m / 5"	5 ^m W	"	"	"	"	4.9	A0	"	"	"	"	"	"	"
	γ Lup	15 16.4	-47 46	"	05 36	05 38	3 ^m / 11"	11 ^m W	"	"	"	"	4.11	B8	"	"	"	"	"	"	"
	ε Lup	15 19.4	-40 32	"	05 37	05 38	1 ^m / 13"	13 ^m W	"	"	"	"	3.0	B2	"	"	"	"	"	"	"
	ε Lup	15 20.6	-44 35	"	05 42	05 43	1 ^m / 18"	18 ^m W	"	"	"	"	3.3	B2	"	"	"	"	"	"	"

NUMBER LC	OBJECT	R.A.	DEC	DATE U.T.	UT EXP		TOTAL/CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
	44 Cph	17 24.5	-24 09	1/2	06 30	06 36	5 ^m ✓	2 ^h 30 ^m E	2-3"	2.4c	50 ^μ 1-2	67 445	4.4	dH9	NcH	60'	NONC	IIcO			
	45 Cph	17 25.4	-24 51	MAY 1976	06 38	06 44	5 ^m ✓	1 ^h 33 ^m E	"				4.7	F5							
	X Sgr	17 45.7	-27 49		06 46	06 58	12 ^m ✓	1 ^h 29 ^m E	"				5.3	F8							
	W Sgr	18 03.1	-24 35		07 01	07 10	10 ^m ✓	1 ^h 15 ^m E	"				5.1	F8p							
	-28° 14174	18 06.2	-28 28		07 14	07 25	10 ^m ✓	1 ^h 22 ^m E	1.5"				5.5	Gp							HR C766
	μ Sgr	18 12.0	-21 04		07 27	07 31	4 ^m ✓	1 ^h 22 ^m E	"				4.1	B8							
	-27° 12684	18 16.2	-27 03		07 34	08 16	40 ^m ✓	0 ^h 01 ^m E	2"				6.3	JK5							HR C842
1074	J Sgr	18 19.1	-29 51	"	08 24	08 28	4 ^m ✓	0 ^h 11 ^m W	"				4.1	K2	"	"	"	"	"	"	"
	λ Sgr	18 26.1	-25 26		08 31	08 34	2.5 ^m ✓	0 ^h 06 ^m W	"				3.8	K2							
	φ Sgr	18 43.8	-27 01		08 36	08 37	1 ^m ✓	0 ^h 04 ^m W	"				3.1	B8							
	σ Sgr	18 53.4	-26 20		08 39	08 40	24 ^s ✓	0 ^h 15 ^m W	"				1.9	B2							
	ξ ² Sgr	18 55.9	-21 09		08 42	08 47	5 ^m ✓	0 ^h 10 ^m W	"				4.6	K1							
	ζ Sgr	19 00.7	-29 55		08 49	08 50	45 ^s ✓	1 ^h 52 ^m W	1.5"				2.6	A72							
	ο Sgr	19 02.9	-21 47		08 53	09 00	7 ^m ✓	4 ^m E	"				4.8	G8							
	τ Sgr	19 05.1	-27 43		09 05	09 12	5 ^m ✓	6 ^m W	2"				4.5	K1							
	π Sgr	19 08.0	-21 04		09 15	09 17	1 ^m ✓	9 ^m W	"				3.2	F2							
	σ ² Sgr	19 34.9	-24 57		09 20	09 25	4 ^m ✓	12 ^m E	"				4.5	B9							
	σ ³ Sgr	19 55.1	-27 15		09 27	10 00	33 ^m ✓	4 ^m W	1.5"				6.0	K3							
	62 Sgr	20 00.5	-27 48		10 02	10 32	30 ^m ✓	30 ^m W	"				6.1	WY							
1095	p Car	10 31.0	-61 32	2/3	22 51	22 54	2 ^m ✓	2 ^h 16 ^m E	2"				3.2	B5							10°C cell 38/11
	θ Car	10 41.9	-64 14	MAY 1976	22 56	22 57	4.5 ^m ✓	2 ^h 23 ^m E	"				2.5	B05							
	I Car	10 23.8	-73 53		23 01	23 07	6 ^m ✓	1 ^h 16 ^m E	"				4.3	F3							
	α Cen	10 32.7	+31° 57'		23 14	23 15	35 ^s ✓	1 ^h 44 ^m W	5"				2.0	A1+A _m							
	10 Lmi	9 32.4	+36 32		23 23	23 36	12 ^m ✓	5 ^m W	2"				5.5	G8							
	γ Cen	8 41.6	+21 35		23 40	23 45	5 ^m ✓	1 ^h 5 ^m W	2" ver				4.7	A1							
	ζ Leo	10 15.0	+23 34		23 50	23 52	2 ^m ✓	23 ^m E	2"				3.8	FOTL							
	δ' Leo A	"	"		23 58	00 00	2 ^m ✓	"	"				3.5	K0							
	δ' Leo B	10 18.3	+20 00		00 01	00 10	5 ^m ✓	8 ^m E	2" ver				4.7	?							Some contamination from A
	54 Leo A	10 54.0	+24 55		00 15	00 19	4 ^m ✓	"	"				4.5	A1							"
	54 Leo B	"	"		00 20	00 31	10 ^m ✓	21 ^m E	1.5"				6.3	A1							

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP.		TOTAL / CORR	H.A. END	SEE / TRANS.	CAM. FOCUS	SUT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
	h Car	10 34.7	-57 24	3/4	0016	0026	10 ^m / 15 ^m ✓	4 ^m E	1.2 ^h /	2.90	50 ^{cm}	1.2 / 67 / 4.15	6.1	gK3	NeA	60°	None	IaC	M-S 67A	HR 4159	
	l Car	10 37.6	-59 02	MAY 17 72	0027	0047	20 ^m ✓	15 ^m E	1 ^h 2 ^h /				6.1	CK5					15 ^m & May	HR 4177	
	"	"	"		0047	0057	10 ^m / 20 ^m ✓	25 ^m W	1 ^h /				"	"						"	
	x Vel	10 38.1	-55 27		0059	0107	7 ^m / 5 ^m ✓	37 ^m W	"				5.3	G2						HR 4180	
	u Car	10 52.3	-58 42		0109	0114	5 ^m / 4 ^m ✓	28 ^m W	"				4.7	KC						HR 4257	
1101	260 g Car	11 07.3	-58 49	"	0116	0122	6 ^m ✓	20 ^m W	"	"	"	"	5.2	G0	"	"	"	"	"	HR 4337	
	ii Cen	11 19.6	-54 20		0132	0134	1 ^m ✓	20 ^m W					3.7	B5							
	j Cen	12 06.8	-50 33		0137	0137	25 ^m ✓	25 ^m E					2.4	B2							
	g Cen	12 10.1	-52 12		0140	0142	80 ^m / 90 ^s ✓	23 ^m E					3.8	B4							
	j Cen	12 13.5	-58 35		0144	0145	30 ^m ✓	23 ^m E					2.6	B2							
	o Cen	12 26.4	-50 04		0146	0148	80 ^m / 90 ^s ✓	32 ^m E					3.7	B2							
	8 Cen	12 29.5	-56 57		0154	0157	80 ^m ✓	28 ^m E	1 ^h / clean				3.2	m3							
	β Cen	12 46.0	-57 32		0159	0200	6 ^s ✓	41 ^m E	"				1.0	B0							
	η ¹ Cen	12 52.8	-57 01		0206	0210	60 ^s ✓	38 ^m E	"				3.8	B3							
	η ² Cen	"	"		0214	0217	3 ^m ✓	30 ^m E	"				5.0	B2							
	e Cen	13 38.0	-53 19		0222	0223	16 ^s / 40 ^s ✓	1 ^h 9 ^m E	"				2.1	B1						T=1300 H=34% wind 10 mph	
	m Cen	13 44.7	-51 17		0227	0237	10 ^m ✓	1 ^h 2 ^m E	"				5.6	G9							
	v Cen	14 18.2	-56 15		0242	0245	3 ^m ✓	1 ^h 2 ^m E	"				4.4	B5						HR 5358	
1102	j Cen	13 20.7	-60 50	"	0255	0258	3 ^m ✓	15 ^m E	"				4.4	B5						HR 5035	
	m Cen	13 22.0	-64 23		0304	0311	6 ^m ✓	3 ^m E	"				5.4	G5						HR 5041	
	2949 Cen	13 55.5	-63 32		0319	0328	9 ^m / 18 ^m ✓	21 ^m E					5.8	K4						HR 5242	
	β Cen	14 01.7	-60 14		0338	0338	3 ^h 3 ^h / 2 ^s ✓	17 ^m E					0.4	B1							
	d ¹ Cen	14 37.5	-60 43		0346	0346	3.0 ^h / 5 ^h ✓	40 ^m E					0.7	G2						HR 5459	
	d ² Cen	"	"		0350	0350	12 ^h / 40 ^s ✓	38 ^m E					2.1	G2						HR 5460	
	d Cen	14 40.1	-64 51		0402	0403	70 ^m ✓	37 ^m E					3.4	F0						HR 5463	
	j Lup	14 30.6	-50 20		0408	0410	1.5 ^h / 2.5 ^h ✓	16 ^m E					4.2	B2							
	p Boo	14 30.5	+30 30		0422	0434	12 ^m / 6 ^m ✓	8 ^m W	"				4.9	K3							
	"	"	"		0437	0443	6 ^m ✓	19 ^m W					"	"							
	δ Boo	14 30.9	+38 26		0446	0448	1 ^m / 1.5 ^h ✓	24 ^m W					3.2	A7							
	v Boo	15 14.3	+33 26		0450	0454	4 ^m ✓	14 ^m E					4.4	G8							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
	δ Boo	15 14.3	+33 26	3/4	0455	0458	3 ^m ✓	14 ^m E	12.40	2.90	50 ^m 1.2	67 4.45	4.4	G8	Ne A	60 ^s	NONL	IIa0	M-S 6.5	✓	
1103	μ ' Boo	15 23.4	+37 29	MAY	0505	0508	2.5 ^m 5 ^m	9 ^m E	1.5"				4.6	F0					15m	5 May	
	θ C. B	15 31.7	+31 28	1976	0510	0512	2 ^m ✓	24 ^m E	"				4.1	B7							
	χ Her	15 51.6	+42 32		0514	0524	10 ^m 20 ^m	21 ^m E	"				5.1	F9							
	λ Boo	14 14.3	+19 20		0528	0528	7 ^m 12 ^s	1 ⁿ 35 ^m W					1.2	K2							
	ζ Boo	14 39.7	+13 51		0531	0534	4 ^m 2 ^m	1 ⁿ W	"				4.4	A2							
	\circ Boo	14 43.8	+17 05		0539	0550	11 ^m ✓	1 ⁿ 12 ^m W	"				5.6	K0							
	ξ Boo	14 50.0	+19 13		0552	0559	7 ^m ✓	1 ⁿ 16 ^m W	"				5.3	G8							
	L Ser	15 40.2	+17 46		0602	0605	2 ^m ✓	1 ⁿ 31 ^m W	1.2"				4.6	A1							
	β Ser	15 44.8	+15 31		0609	0610	1.5 ^m ✓	1 ⁿ 32 ^m W	"				3.7	A2							
	K Ser	15 47.4	+18 14		0612	0633	22 ^m 10 ^m	1 ⁿ 30 ^m W	"				6.1	γ m 1							
	γ Ser	15 55.1	+15 46		0635	0637	3 ^m ✓	1 ⁿ 47 ^m W	"				4.3	F6							
	δ Her	16 20.6	+19 13		0640	0642	2 ^m ✓	28 ^m E					4.0	A9							
	w Her	16 24.0	+14 06		0643	0645	2 ^m 2.5 ^m	28 ^m W					4.6	HP							
1104	L Oph	16 52.6	+10 13	"	0654	0656	2 ^m ✓	9 ^m W					4.2	B8							
1104	α Her	17 13.3	+14 25		0658	0703	6 ^m 4 ^m	3 ^m W					4.5	M5							
	α Oph	17 33.5	+12 35		0706	0706	22 ^m 30 ^s	20 ^m E					2.3	A5							
	η Her	17 58.7	+16 45		0709	0719	10 ^m 15 ^m	33 ^m E					5.6	K0							
	ζ Her	17 56.6	+29 15		0722	0726	4.5 ^m ✓	23 ^m E					4.7	G9							
	103,0 Her	18 06.4	+28 45		0729	0731	2 ^m 1.5 ^m	28 ^m E					4.0	B9							
	102 Her	18 07.5	+20 49		0734	0737	2 ^m 2.5 ^m	25 ^m E					4.0	B2							
	109 Her	18 22.4	+21 45		0738	0745	7 ^m ✓	31 ^m E					5.1	K2							
	111 Her	18 45.7	+18 07		0747	0750	3 ^m 4 ^m	49 ^m E	"				4.4	A3							
	E AQL	18 58.3	+15 02		0754	0801	7 ^m ✓	51 ^m E					5.0	K2							
	110 Her	18 44.4	+50 31		0804	0808	4 ^m ✓	24 ^m E	1.5" clean				7.7	F6							
	113 Her	18 53.5	+22 36		0812	0821	9 ^m ✓	25 ^m E					5.3	G0+A3							
1105	δ Lyn	18 43.7	+37 34		0829	0833	3 ^m 4 ^m	5 ^m E	"				4.6	A m							
	γ Lyn	18 43.7	+37 34		0835	0847	12 ^m 30 ^m	9 ^m W					6.0	F0							
	δ Lyn	18 53.5	+36 52		0850	0857	7 ^m 10 ^m	9 ^m W	"				5.3	B3							
	δ Lyn	"	"		0859	0923	3 ^m ✓	37 ^m W	2" clean				7.0	m 4							

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER LC	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP		TOTAL / CORR	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
1105 (cont)	δ^2 Zyr	18 53.5	+36 52	3/4	0923	0935	12 ^m ✓	49 ^m W	2" ✓	clean	2.9c	50 ^m / 1.2	6 ^m / 4.5	6.6	M4	NEA 60°	N=V2	111-507	✓			
	δ Zyr	19 15.3	+38 05	MAY 1976	0939	0952	13 ^m ✓	44 ^m W	2" ✓					5.4	K0							
	1 Vul	19 14.9	+28 20		0955	0959	4 ^m ✓	51 ^m W	2" ✓					7.5	B3							
	41 Cyg	20 28.2	+30 16		1003	1007	3 ^m ✓	15 ^m E	2" ✓					4.4	F5							
	ϵ Cyg	20 43.0	+33 51		1009	1011	2 ^m ✓	27 ^m E	2" ✓					3.5	K0							
	λ Cyg	20 46.2	+36 23		1015	1020	3 ^m ✓	6 ^m E	2" ✓					4.4	B5							
	γ Del	20 33.9	+14° 34'		1023	1027	3 ^m ✓	0 ^m	2" ✓					4.7	A3							
	β Del	20 36.1	+14 29		1029	1031	2 ^m ✓	2 ^m W	1.5" ✓	clean				4.0	F5							
	α Del	20 38.2	+15 48		1033	1035	2 ^m ✓	4 ^m W	2" ✓					3.7	B9 IV							
1106	ζ Pup	08 02.9	-39 56	4/5	2254	2255	15 ^s ✓	12 ^m W	1" ✓	clean	"	"	"	2.0	C5f	"	"	"	"	"	some arms missing	
	γ Car	011 11.3	-60 09	May 1976	2300	2305	5 ^m ✓	14 ^m E	1.5" ✓					5.1	F0							
	λ Car	11 34.4	-60 51		2310	2312	1 ^m ✓	30 ^s	2" ✓					3.1	B9							
	τ Mus	11 44.2	-66 34		2315	2317	2 ^m ✓	21 ^m E	2" ✓					3.8	A7							
	δ Cr. Car	11 45.1	-61 01		2320	2326	6 ^m ✓	21 ^m E	1.5" ✓					5.0	G3						HR4522	
	μ Mus	11 46.8	-66 34		2329	2349	20 ^m ✓	"	1.5" ✓					5.7	K3							
	"	"	"		2350	2353	8 ^m ✓	14 ^m E	1" ✓					"	"							
	ζ Car	11 48.2	-63 37		0001	0003	2 ^m ✓	13 ^m E	1.5" ✓					4.1	B3							
	α Car	12 01.5	-63 09		0006	0009	3 ^m ✓	14 ^m E	1.5" ✓					4.6	A4							
	η Car	12 05.3	-64 27		0012	0016	3 ^m ✓	14 ^m E	" ✓					4.5	F0							
	ϵ Mus	12 15.9	-67 48		0018	0046	28 ^m ✓	14 ^m	" ✓					6.1	A15							
	"	"	"		0046	0100	14 ^m ✓	16 ^m E	" ✓					"	"							
	ζ Car	12 16.8	-63 50		0105	0106	1.5 ^m ✓	14 ^m E	" ✓					3.9	B3							
1107	ϵ Car	12 17.7	-60 14	"	0117	0129	10 ^m ✓	41 ^m E	" ✓				5.0	K3								
	"	"	"		0130	0136	6 ^m ✓	35 ^m E	" ✓				"	"								
	λ Car	12 24.9	-62 56		0215		22 ^m ✓	15 ^s	" ✓				1.8:	B1							marked nested climb.	
	κ Car W	"	"			0221	30 ^s ✓	16 ^s	" ✓				2.0:	B?								
	ν Mus	12 35.4	-68 58		0224	0225	27 ^m ✓	35 ^s	" ✓				2.5	B3								
	λ Car	12 43.9	-60 49		0228	0244	12 ^m ✓	10 ^m W	" ✓				5.7	K1								
β Mus	12 44.4	-67 57		0247	0250	12 ^m ✓	16 ^m W	" ✓				2.9	B3								but esp. favored N 2nd esp. favored S.	

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER LC	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP		TOTAL / CORR.	HA END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
1110	γ Cgh	17 46.4	+02 43	4/5	0841	0843	1.5	1 ^h 2 ^m W	1.5	2.9C	50 ^m / 1.2	6 ^t / 4.5	3.8	A0Z	Net	60'	None	IIu-O	M-3	Net		
(cont)	δ Cgh	17 59.1	+02 56	MAY	0846	0849	2.5	2 ^m W	"				4.0	B2J6								
	27 H. Cgh	17 29.0	-5 ^o 04'	1976	0857	0905	7 ^m 9	1 ^h 51 ^m W	1.5				4.5	F3					15 min		at mag. correct. K6 493 2 mag correct	
	ϵ Cgh	17 36.2	-8 ^o 06'		0908	0922	14 ^m 7	1 ^h 57 ^m W	"				4.7	B3							2 1/2 mag correct	
	ζ CnA	19 07.4	-37 57		0928	0931	3 ^m ✓	3 ^m W	1.2				7.1	A2							2 1/2 mag correct	
	β CnA	19 08.0	-39 23		0935	0951	16 ^m 25	1 ^h 25 ^m W	1.5				5.3	G3							not sampled by band correct	
	"	"	"		0952	1003	10 ^m ✓						"	"							through cloud correct	
	"	"	"		1004	1010	5 ^m 15	1 ^h 13 ^m W					"	"								
	δ ' Cen	19 57.8	-35 22		1013	1017	3 ^m 2						4.2	B3							corrected. problem.	
	γ Cep	20 44.3	-25 23		1020	1025	4 ^m ✓	4 ^m E	1.5				4.6	F5.								
1111	g Vel	10 13.5	-41 58	5/6	2325	2328.5	3 ^m 5	32 ^m E	1"	2.90	50 ^m / 1.2	6 ^t / 4.5	3.9	A2	"	"	"	"	"	"	cloud 15-20 T=13°C H=30% during correct 2.5 mag	
	"	"	"	MAY	2344	2351	7 ^m 10	10 ^m E	1.5				"	"								
	p Vel	10 36.0	-48 04	1976	2355	2402	3 ^m 2	21 ^m E	"				4.1	F2+A3								
	n Vel	10 45.5	-49 16		0007	0011	4 ^m 6	20 ^m E	"				3.6	G5								
	237 g Vel	10 58.8	-42 04		0120	0142	12 ^m 3	56 ^m W	"				4.5	A2							H R + 293	
	B Cen	11 49.6	-45 00		0146	0201 0305	30 ^m 10 +60	1 ^h 28 ^m W	1"				5.7	K5							stopped by clouds T=8°C H=40%	
1112	α Cen	12 36.1	-48 23	6/7	0352	0355	2 ^m ✓	1 ^h 37 ^m W	2"				3.9	A2							5/6 70% 2nd half 6/7 → clouds 1st half Net	
	γ Cen	12 39.9	-48 48	May	0358	0400	2 ^m ✓	1 ^h 37 ^m W	"				2.2	A0							close pair WSJ1" equal m, not separated.	
	ω Cen*	12 40.9	-48 39	1976	0404	0430	16 ^m 10	2 ^h 8 ^m W	"				5.8	K1								
	ϵ Cen*	12 51.4	-48 47		0433	0501	16 ^m 10	2 ^h 27 ^m W	2.3"				5.7	K2								
	m Cen	12 51.8	-40 01		0504	0509	5 ^m ✓	2 ^h 37 ^m W	"				4.5	A7								
	ξ^2 Cen	13 05.1	-49 45		0514	0517	3 ^m (twice) ✓	2 ^h 3 ^m W	3"				4.1	B2								
	ξ^1 Cen	13 02	-49 22		0519	0527	3 ^m ✓	2 ^h 45 ^m W	"				5.0	A0							T=7°C wind increasing	
	ν Cen	13 47.7	-41 32		0529	0531	2 ^m ✓	2 ^h 1 ^m W	"				3.2	B2								
	μ Cen	13 47.8	-42 20		0533	0535	1.5 ✓	2 ^h 5 ^m W	"				3.0	B2								
	ζ Cen	13 53.7	-47 00		0538	0540	4.5 ✓	2 ^h 5 ^m W	"				2.3	B2								
	ϕ Cen	13 56.4	-41 57		0543	0546	2.5 ✓	2 ^h 7 ^m W	"				3.6	B2								

NUMBER LC	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1113	ν^1 Cen	13 56.8	-44 39	6/7	0611	0614	3 ^m ✓	2 ^h 36 ^m W	3" / clean	2.90	50 μ /1.2	6 ^h /4.45	3.7	B2	N2A	60 ^s	NOV 2	11-5			
	ν^2 Cen	13 59.8	-45 28	1 MAY	0617	0624	7 ^m ✓	2 ^h 42 ^m W					5.0	F7				15 ^m			
	χ Cen	14 04.2	-41 02	1976	0627	0631	4 ^m ✓	2 ^h 44 ^m W					4.15	B3				6 + 4 ^m			
	L Lup	14 17.5	-45 55		0634	0636	2 ^m ✓	2 ^h 36 ^m W					3.4	B3							
	τ^1 Lup	14 24.2	-45 05		0638	0644	6 ^m ✓	2 ^h 31 ^m W	"				4.4	B3							
	τ^2 Lup	14 24.2	-45 15		0646	0653	7 ^m ✓	2 ^h 47 ^m W					4.8	F7							
	η Cen	14 33.6	-42 02		0657	0658	30 ^s / 40 ^s	2 ^h 42 ^m W	2" / "				2.2	B1.5							
	δ Lup	14 35.4	-49 18		0700	0703	2 ^m / 4 ^m	2 ^h 44 ^m W	2" / "				3.9	B5							
	ζ Lup	14 39.9	-47 16		0705	0706	30 ^s ✓	2 ^h 43 ^m W					2.1	B1							
	θ Lup	14 49.7	-43 27		0709	0712	2 ^m ✓	2 ^h 40 ^m W	2-3" / clean				4.2	B6							
	β Cen	14 56.6	-43 00		0715	0716	50 ^s ✓	2 ^h 37 ^m W					2.5	B2							
	κ Cen	14 57.2	-41 59		0718	0719	1 ^m ✓	2 ^h 40 ^m W	"				2.9	B2							
					0																
1114	ν Nor	16 01.4	-49 09	"	0731	0746	15 ^m ✓	2 ^h 3 ^m W	2" / "	1	"	"	5.6	G5	"	"	"	"	"	"	"
	ζ^2 Sco*	16 52.5	-42 19		0749	0816	18 ^m ✓	1 ^h 42 ^m W	3" / clean				5.0	K5							
	η Sco	17 10.0	-43 12		0819	0822	2 ^m ✓	1 ^h 29 ^m W	"				3.7	F2							
	α Ara	17 29.5	-49 51		0825	0827	1 ^m / 40 ^s	1 ^h 16 ^m W	"				2.8	B2.5							
	σ Ara	17 33.4	-46 29		0830	0838	7 ^m / 5 ^m	1 ^h 22 ^m W	"				4.6	A0							
	ϵ Sco	17 35.2	-42 59		0842	0844	1 ^m / 50 ^s	1 ^h 27 ^m W	"				2.2	F0							
	ι Sco	17 45.5	-40 07		0848	0852	3 ^m / 2 ^m	1 ^h 24 ^m W	"				3.5	F2							
	ν Ara	19 06.3	-40 33		0902	0924	21 ^m ✓	3 ^h 5 ^m W	"				5.7	K1							
	β^1 Sgr	19 20.5	-44 31		0926	0929	3 ^m ✓	2 ^h 7 ^m W	"				3.8	B8							
	β^2 Sgr	19 21.1	-44 51		0932	0937	5 ^m ✓	3 ^h 5 ^m W	"				4.6	F1							
	χ Sgr	19 21.8	-40 40		0940	0943	3 ^m ✓	4 ^h 0 ^m W	"				3.9	B9							
	ω Sgr	19 33.2	-41 57'		0945	0958	13 ^m ✓	2 ^h 4 ^m W	"				5.2	K0							
1115	ζ Ara	21 43.2	-33 10'		1011	1017	5 ^m ✓	1 ^h 7 ^m E	"				7.3	A0							
	δ Cyg	21 52.1	-37 30		1019	1021	1.5 ^m / 1 ^m	1 ^h 13 ^m E	"				2.9	B8							
	γ Cyg	22 04.3	-39 41		1024	1040	86 ✓	1 ^h 7 ^m E	"				5.8	K2							

NUMBER Lc	OBJECT	R.A.	DEC.	DATE UT.	UT EXP		TOTAL/CORR.	HA END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG B	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
1116	R Cen	9 31.5	-62 39	8/9	2308	2340	3 ^m 22 ^h	3 ^m W	1.5 clear	290	5/1.2	6 ⁺ / 45	6:	M5-	NEA	60°	None	IIa E	M-3	W	10°C wind -10-20 H=30%	
"	"	"	"	Many	2341	2350	1 ^m 22 ^h	5 ^m W	1.5-2 ^h				"	"							15mm 67°F	
	p Cen	10 31.0	-61 32	1976	2359	0000	5 ^m 60 ^h	5 ^m W	1.5				3.2	B5								
	x Cen	11 34.4	-62 51		0003	0005	1 ^m ✓	1 ^h 4 ^m W					3.1	B9								
	x' Cen	12 24.9	-62 56		0012	0013	1 ^m 12 ^h	1 ^h 4 ^m W	2 ^h clear				1.1	B1								
	3 Cen	12 44.4	-61 57		0017	0019	1 ^m 13 ^h	1 ^h 3 ^m W					2.9	B3								
	"	"	"		0021	0023	4 ^m 60 ^h	1 ^h 5 ^m W	2 ^h clear				"	"								
	E Cen	13 38.0	-63 19		0036	0037	3 ^m ✓	2 ^h 3 ^m W					2.1	B1								
	294 G. Cen	13 55.5	-63 32		0046	0011	2 ^m 22 ^h	2 ^h 20 ^m W	1.5				5.8	K4							H25241	
	x Cen B	14 37.5	-60 43		0120	0124	1 ^m 40 ^h	1 ^h 4 ^m W	1.5				2.1	K3								
	" A	"	"			0124	10 ^h ✓	2 ^h 4 ^m W					0.7	G2								
	B Hya	11 51.4	-33° 44'		0134	0138	3 ^m 4 ^h	0 ^h 1 ^h E	1 ^h clear				4.2	A0								
1117	B Hya	"	"	"	0144	0146	2 ^m ✓	20 ^m W		"	"	"	"	"	"	"	"	"	"	"	"	W + Fgi
	L Cen	13 18.9	-36 33		0158	0201	3 ^m ✓	0 ^h 5 ^m E	1.5 clear				2.8	A2 II								
	A Cen	13 29.8	-37 15		0208	020815	6 ^m ✓	50 ^m E					5.6	G8								
	L Cen	13 44.0	-32 54		0222	0225	3 ^m ✓	5 ^m E	1.2 clear				4.6	F2								
	2 Cen	13 47.7	-34 18		0231	02301	3 ^m ✓	2 ^h E	1.5 clear				6.4	G M6								
	3 Cen A	13 52.1	-32 57		0255	0257	3 ^m ✓	16 ^m E	1.5 clear				4.6	B5 IIIp								
	"	"	"		0312	0312	2 ^m ✓	1 ^h E	1.5 clear				"	"								
	3 Cen B	"	"		0313	03 35	12 ^m ✓	1 ^m W	1.2 clear				6.1	B8 IV								
	5 Cen	14 04.9	-36 13		0322	03 35	5 ^m ✓	1 ^m W	1.5 clear				3.07	K0 III-IV								
	"	"	"		0340	03 44	4 ^m ✓	4 ^m W	1.5 clear				"	"								
	Y Cen	14 18.7	-37 45		0347	03 49	2 ^m ✓	4 ^m E	1.5 clear				4.00	A0 III								
	a Cen	14 21.2	-39 23		0352	03 55	3 ^m ✓	0	"				4.21	B5 II-III IV								
	b Cen	14 40.1	-37 40		0358	14 00	2 ^m ✓	14 ^m E	1.5 clear				3.82	B3 V								
1118	371 Cen	14 41.8	-35 03	"	0405	04 20	15 ^m ✓	7 ^m E	1.5 ⁺ clear	"	"	"	5.31	K5 III	"	"	"	"	"	"	29 + Fgi NR5485	
	2 Lnp	15 16.0	-30 02		0423	04 34	11 ^m ✓	1 ^h E	1.2 clear				5.44	G K0								
	4 Lnp	15 19.9	-36 09		0436	04 47	11 ^m ✓	3 ^m E	1.5 clear				5.08	K5 III								
	"	"	"		0447	04 54	7 ^m ✓	1 ^h W	1.5 clear				"	"								
	d Lnp	15 21.2	-36 45		0501	05 04	3 ^m 45 ^h	9 ^m W	2				4.37	B5 IV								

NUMBER	OBJECT	R.A.	DEC	DATE U.T.	UT EXP		TOTAL/CORR.	H.A. END	SEE/TRANS	CAM. FOCUS	SLIT	GRATING /TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1118	K Lwp	15 23.4	-38 38	8/4	05 06	05 10	4m ✓			2.90	50m/1.2	67/445	4.60	ACTV	NeA	60 ^s	NONE	IFC	M-3	207 F. 2	
	V Lwp	15 37.9	-34 19	MAY	05 12	05 24	12m ✓	12m W	1.5				5.65	g → 8					10 mm		
	X Lwp	15 49.0	-33 32	1976	05 26	05 28	2m ✓	5m W	1.5				3.87	Ap					+ F		
	η Lwp	15 58.1	-38 19		05 31	05 33	2m ✓	1m W	1.5				3.22	B2.5 IV							
	θ Lwp	16 04.6	-36 43		05 35	05 37	2m ✓	1m W	2				4.02	B2 IV							
	θ Sco	16 29.4	-34 38		05 40	05 42	2m ✓	21m W					4.05	B2 IV							
	H Sco*	16 31.4	-35 12		05 44	06 20	2+12m ✓	12m W					5.72	g kb							
1119	C Sco	16 48.2	-34 14	"	06 27	06 30	2m ✓	2m W	"	"	"	"	3.4	K2	"	"	"	"	"	"	"
	μ Sco	16 49.8	-35 00	"	06 33	06 35	36 ✓	11m W	1.5				2.8	B1.5							
	μ ² Sco	16 50.3	-37 58		06 38	06 42	50 ✓	18m W	1.5				3.2	B2							
	ν Sco	17 28.7	-37 16		06 45	06 46	24 ✓	16m E	"				2.5	B2							
	λ Sco	17 31.6	-37 05		06 48	06 49	10 ✓	17m E	"				1.4	B1							
	ρ Sco	17 34.5	-38 37		06 52	07 03	10 ✓	5m E	"				5.4	K0							
	σ Sco	17 40.4	-39 01		07 06	07 07	25 ✓	2m E					2.2	B2							
	τ Sco	17 47.8	-37 22		07 09	07 13	3m ✓	8m W					4.4	K1.5							
	υ Sco	18 23.9	-32 26		07 16	07 18	2m ✓	18m W					5.77	K0 IV							
	φ Sco	18 15.6	-36 46		07 20	07 29	9m ✓	6m W					4.72	M3 II							
	"	"	"		07 29	07 34	5m ✓	15m W					"	"							
	ε Sco	18 22.2	-31 24		07 36	07 57	15 ✓	12m W					1.8	B1 II							
	ζ CLAN	19 04.4	-37 06		07 41	07 57	10 ✓	8m W					6.3	F8 V							
1120	χ CLAN	"	"	"	08 26	08 42	8m ✓	5m W	2.9				6.2	F8							1000 11
	ω Sco	18 03.1	-29 35		08 45	08 52	7m ✓	14.5m W	1.5				5.1	F8							
	κ Pav	18 53.9	-67 16		09 04	09 07	3m ✓	6m					4.5	F5 p							
	ι Val	19 27.5	+24 36		09 21	09 43	32m ✓	75m W	1.5				6.0	M6							
	"	"	"		09 43	09 54	11m ✓	57m W					"	"							
	β ¹ Cyg	19 29.5	+27 54		09 57	10 00	3m ✓	4m	2				4.2	K3+15							
	β ² Cyg	"	"		10 01	10 07	6m ✓	10m	"				5.0	B8							
	β ³ Cyg	"	"		10 07	10 13	6m ✓	4m	"				4.2	K3+15							
	13 Val	19 52.2	+24 00		10 16	10 20	3m ✓	58m W					4.4	F0							
	15 Val	19 59.9	+27 40		10 24	10 23	3m ✓	5m					4.7	A0							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1127	η Ara	16 47.2	-58 59	MAY	06 40	06 47	8 ^m	38 ^m E	1 ^s clear	2.90	50 ^u / 1.20	6 ^u / 4.45	5.3	K5 III	NeA	60 ^s	NONE	II-n D	M-S	rb + Fgi	
(cont)	ζ Ara*	16 56.1	-55 57	10/11	06 49	07 02	8 ^m 4 ^m	43 ^m E	"				4.8	K5 III					67 ^o F		
	ϵ Ara	18 04.3	-50 06	1976	07 06	07 08	90 ^s	20 ^m W	"				3.6	B2 Ib					15 min		
1128	ϵ Ara*	16 57.2	-53 07		07 14	07 38	15 ^m 8 ^m	1 ⁿ 19 ^m E	"				5.5	K3 III							
	δ Aps*	17 18.8	-67 45		07 40	07 55	15 ^m	1 ⁿ 13 ^m E	"				6.0	gK1							
	β Ara*	17 22.8	-55 30		07 58	08 13	8 ^m 4 ^m	1 ⁿ 27 ^m E	2-3"				4.4	K3 Ib							
	γ Ara	17 22.9	-56 21		08 15	08 19	1 ^m	1 ⁿ 34 ^m E	2"				3.2	B1 V							
	δ Ara	17 28.4	-60 40		08 21	08 23	90 ^s	1 ⁿ 32 ^m E	2"				3.5	B8 V							
	η Pav	17 42.8	-64 43		08 26	08 31	5 ^m	1 ⁿ 29 ^m E	2"				4.8	K1 III							
	κ Pav	18 53.9	-67 16		08 36	08 41	4 ^m	25 ^m E	"				4.5	F5 p							
	ϵ Pav	19 57.2	-73 00		08 44	08 48	2 ^m	31 ^m W	"				3.9	AC V							
	γ CrA	19 04.4	-37 06		08 52	08 59	8 ^m	34 ^m W	"				5.6	F8 V							
	δ CrA (S)	"	"		08 59	09 11	12 ^m	44 ^m W	"				"	"							
	μ Oph	17 36.2	-8 06		09 13	09 17	3 ^h 2 ^m	2 ^h 18 ^m W	"				4.7	B8							
1129	ν Oph	17 57.4	-9 46	"	09 25	09 28	3 ^m	2 ^h 07 ^m W	"	"	"	"	4.3	G9 III	"	"	"	"	"	"	KO III, CN-1
	ζ Ser	17 58.9	-3 41		09 32	09 36	5 ^m	2 ^h 16 ^m W	"				5.0	F3 V							
	ω Cap	20 50.0	-27 02		09 40	09 58	18 ^m	15 ^m E	"				5.7	K5 III							
	24 A Cap	21 05.4	-25 08		10 00	10 24	25 ^m	3 ^m E	1 ^h 5				6.1	M1 III							
	δ Gircu	21 52.1	-37 30		10 29	10 30	30 ^s	44 ^m E	"				2.9	B8 III							
1130	"MCDN"	21 32.9	-16 20	MAY	23 51	01 51	2hr	1 ⁿ 0 ^m E	clear	3.40	100 ^u / 1.6	11 ^u / 7.0	—	—	NeA	20 ^s	NONE	II-n D	M-S	Fgi	background test
	SAC #40*	17 01.3	-37 40	11/12	02 11	02 28	8 ^m 8 ^m	3 ^h 51 ^m E	2"				7.4	AC					67 ^o F	H=37%	
	SAC #99	17 04.5	-38 34	1976	02 41	02 53	12 ^m	3 ^h 29 ^m E	2"				7.9	F2					15 min	T=15 ^o C	
1131	#84	17 01.7	-38 06	"	04 48	05 13	25 ^m	1 ⁿ 05 ^m E	"	"	"	"	8.9	Aps Si	"	"	"	"	"	"	2 n / 10-20
	#85	"	"	"	05 34	06 34	40 ^m	5 ^m E	"	"	"	"	9.4	A							
	#94	"	"	"	06 25	07 00	35 ^m	40 ^m W	"	"	"	"	9.2	A							wrong *?
	#92	"	"	"	07 06	07 46	40 ^m	1 ⁿ 26 ^m W	"	"	"	"	9.4	A							
	#96	"	"	"	07 53	08 24	50 ^m	2 ^h 04 ^m W	"	"	"	"	9.1	A							
	#14	"	"	"	08 37	09 34	55 ^m	3 ^h 15 ^m W	"	"	"	"	9.7	A							
1132	HD 45725	6 27.5	-7 01	MAY	23 26	23 27	24 ^s	3 ^h 44 ^m E	1.5" clear	3.40	100 ^u / 1.6	11 ^u / 7.0	4.5	B3 Ie	NeA	20 ^s	None	II-n C	M-S	Fgi	H=37%
	AX Mm	6 29.1	+5 53	12/13 1976	23 45	23 50	5 ^m	4 ^h 05 ^m E	"	"	"	"	7.1	B2 e					67 ^o F	T=14 ^o C	15 min

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT EXP.		TOTAL / COR.	H.A. END	SEE / TRANS.	CAM FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
1132 cont.	HD 50138	6 50.2	-6 44	1213	00 05	00 08	3 ^m	4 ^h 02 ^m E	1 ^h 5 ^m clear	3.40	100% / 6	112 / 7.0	6.6	B9	NeA	20 ^s	None	II-a0	M-s	Fgi	wind 2-6	
	HD 54858	7 08.9	-7 18	MAY	00 25	00 41	15 ^m	3 ^h 12 ^m E	" "				8.4	Ac					67°F			
	HD 58978	7 26.8	-23 02	1976	00 48	00 50	1 ^m	3 ^h 09 ^m E	" "				5.5	B1e					15 min			
	48 Lib	15 56.5	-14 11		01 10	01 12	24 ^s	4 ^h 05 ^m W	" "					4.5	Bpe							
	# 85	17 01.7	-38 06		03 14	04 01	45 ^m	3 ^h 10 ^m W	" "					9.4	A							
	# 11	"	"	"	04 14	04 43	27 ^m	2 ^h 36 ^m W	" "					9.0	A							
1133	# 14	"	"		05 06	06 28	1 ^h 23 ^m	5 ^h 2 ^m E	" "				9.7	A							wrong * (#10)	
	# 10	"	"	"	07 24	07 41	15 ^m	2 ^h 2 ^m W	" "	"	"	"	8.4	A	"	"	"	"	"	"	"	
	# 14	"	"	"	07 55	08 52	60 ^m	1 ^h 33 ^m W	" "				9.7	A								
	# 84	"	"	"	09 01	09 30	3 ^m	2 ^h 12 ^m W	" "				8.9	Ap								
	# 16	"	"	"	09 39	10 50	20 ^m	3 ^h 32 ^m W	" "				9.9	A								
1134	γ CMa	07 23.1	-29 16	MAY 13/74	00 52	01 01	9 ^m		2 ^h / clear	"	"	"	2.33	B5 IV	"	"	"	"	"	Fgi / Grc	5 ^m screen	
	α Leo	10 06.9	+12 04	14/76	04 12	04 14	27 ^s	0 ^h 52 ^m W					1.25	B7E							Galax screen	
	β Sex	10 28.9	-00 30		01 26	01 28	36 ^s	0 ^h 44 ^m W					4.90	B6 V								
	κ Ilya	09 39.2	-14 14		01 31	01 33	36 ^s	1 ^h 41 ^m W					4.90	B5 V								
	HR 3314	08 24.4	-03 50		01 40	01 41	26 ^s	2 ^h 59 ^m W					3.88	A0 V								
	ι Ser	15 39.9	+19 44		01 48	01 49	40 ^s	4 ^h 05 ^m E					4.56	A1 V								
	1135	Nov 0281 84	17 01.9	-37 43		02 37	03 37	30 ^m	3 ^h 37 ^m E					8.9	Ap							Galax screen
	94	17 02.5	-37 51		03 41	04 12	31 ^m	3 ^h 00 ^m E					9.1	A							wrong * ? T=15°C H=37%	
	# 18	17 02.7	-37 55		05 12	05 58	46 ^m	1 ^h 19 ^m E					9.5									
	# 19	17 03.0	-37 53		06 03	07 09	66 ^m	0 ^h 7 ^m E					9.9									
	# 91	17 02.2	-37 51		07 23	08 46	121 ^m	1 ^h 35 ^m E					10.1								UT CLACK CFF	
	# 12	17 02.6	-37 53		08 50	09 11	21 ^m	1 ^h 50 ^m E					8.7									
	# 82	17 01.8	-38 02		09 23	11 12	78 ^m	4 ^h 0 ^m E					10.4									
1136	# 84	17 01.9	-37 43	17/18	07 16	07 41	23 ^m	1 ^h 40 ^m W	1/2 clear	3.40	100% / 6	112 / 7.0	8.9	Ap	NeA	20 ^s	None	II-a0	M-s	Fgi + Grc		
	# 19	17 03.0	-37 53	MAY	07 52	09 02	30 ^m	in W	" "				9.9							67°F		
	# 82	17 02.9	-38 03	1976	09 06	10 37	20 ^m	1 ^h 37 ^m W	" "				10.4							15 min	photo taken	
1137	# 84	17 02.6	-37 39	18/19	01 15	01 40	25 ^m	4 ^h 18 ^m E	clear	3.40	100% / 6	112 / 7.0	8.9	Ap	NeA	20 ^s	None	II-a0	M-s	Fgi + Grc		
	# 82	17 02.5	-37 59	1976	01 43	03 36	112 ^m	2 ^h 22 ^m E	" "				10.4							67°F 15 min		

UNIVERSITY OF TORONTO
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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / ITILT	MAG	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
11391	NGC 6250 #16	16 55.1	-45 45	JUNE 26/127 1967	03 12	05 45		2 ⁿ 30 W	4 ⁿ /circus	340	700/0.6	11 ² /70	11.6	A2	NeA	2 ^s	-	IIa-D	M5 15min	Gvc	
1140	HD 188114				08 11	08 14	85 ^o /	02 ⁿ 04 W		290		6 ⁷ /	4.2					IIc C			
	HD 197051				08 22	08 24	50 ^o /100 ^o	1 ⁿ 23 W					3.6								
	HD 190248				08 29	08 31	50 ^o /100 ^o	2 ⁿ 08 W					3.6								
	HD 202671				08 40	08 46	4 ^m /	1 ⁿ 14 W					5.4								
1141	E Indi				09 50	10 00	10 ^m /	23											D-19	KK	
	α Phe				10:21	10:31	3 1/2 2 1/2														
1142	525 1916	14 46.6	-57 53	JUNE 27/128 1967	23.22	00 23	-60		3 ⁿ /circus	340	500/0.6	11 ² /70	10.33		NeA	4 ^s		IIc-D	M-5	Gvc	VEO Sculture!
1143	146836	16 18.0	-30 51	1970	01 03	01 19		1 ⁿ 00 E		290	500/0.6	6 ⁷ /	5.4	F5	NeA	60 ^s X 2		IIc C	MWP-2	KK	repaired
	ε Nor				01 23	01 27		1 ⁿ 10 E					4.8	B5	"	"					
	150136				01 40	01 46							5.6	O:5	"	"					
	170465	18 30.0	-45 55	"	03 00	03 05	3 1/2	1 ⁿ 41 E					5.0	B8	"	"					
	170523	18 24.7	-45 49		03 10	03 15	5 ⁿ /						5.33	B5IV	"	30 X 2					
	170270	18 59.6	-37 08		03 21	03 36	15 ⁿ /	1 ⁿ 29 E					6.6	B9	"	"					
	170269	18 59.5	-37 08		03 40	04 00	20 ⁿ /	1 ⁿ 13 E					6.8	B9n	"	"					
1144	178628	17 01.4	-39 05		05 00	05 07	7 ^m /	15 W					6.2	B5n	"	"					
	177950	17 19.1	-25 23		05 12	05 15	2 ⁿ /	15 W					4.9	F5	"	45 X 2					
	199532	19 03.1	-77 05		05 28	05 31	3 ⁿ /	1 ⁿ 47 E					5.2	F4	"	"					
	179950	19 17.0	-25 18		05 40	05 44	3 1/2 ⁿ /	0 ⁿ 14 W					5.48	F5	"	"					
	"	"	"		05 46	05 50	4 ^m /	0 ⁿ 20 W					"	"							
	HD 197051	20 42.7	-66 16		05 58	06 00	90 ^o /	1 ⁿ 00 E					3.6	A5IV							
1145	+1° 40 50	19 36.6	+01 29		07 10	07 16	3 ⁿ /weak	1 ⁿ 56 W					7.4	OB	NeA	60 ^s		M-5	Gvc		
	+1° 31 50	19 24.9	+01 50		07 23	07 41	18 ^m /	2 ⁿ 02 W	1-1 1/2 ⁿ /windy	342	500/0.6	11 ² /70	5.1	OB							sun/day?
	+3° 39 02	19 07.1	03 26		07 44	08 00	22 ⁿ /	2 ⁿ 43 W					8.2	B3IV							
	+3° 40 05	19 33.6	03 46		08 08	08 14	6 ^m /	2 ⁿ 25 W					6.9	B0.5IV							
	+3° 37 27	18 30.1	04 04		08 16	08 21	5 ^m /	3 ⁿ 36 W					6.6	OB							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1146	Anon H II	14 31.5	-60 43	June 30/	01 00	02 00	60 ^m	1 ^h 26 ^m W	2" circ	345	300 μ	112/9	~13		NeA	1 ^s		IIaD	MWPZ	KIK	untrailed ^{5h} N-3
1147	+1°35'78	18 04.6	01 55	July 14 ⁷⁶	03 58	04 00	2 ^m /3	0 ^h 08 ^m E	1 1/2" / sc	342	50.4/0.6	112/7.0	5.9	OB	NeA	50 ^s		IIaO	M-S	Gve	
	+16°35'47	18 00.8	06 16		04 21	04 25	3 1/2 ^m /X	0 ^h 19 ^m W					6.4	OB ⁻						15 min	double exp? No gal
	+18°37'27	18 30.1	04 04		04 32	04 37	5 ^m /6						6.6	OB ⁻							
	-0°35'13	18 35.0	+00 02		04 58	05 20	22 ^m /24	0 ^h 37 ^m W					8.5	OB ⁻							
	-1°35'49	18 43.3	-01 39		05 24	05 44	20 ^m /✓	0 ^h 52 ^m W					8.4	OB ⁻							
	-1°35'53	18 44.2	-01 33		05 47	06 08	21 ^m /✓	1 ^h 17 ^m W					8.4	OB							
	+0°41'59	19 17.2	+01 00		06 12	06 38	26 ^m /✓	1 ^h 14 ^m W					8.5	OB							
1148	+0 39 96	19 24.9	+01 50		07 23	07 48	25 ^m /27	2 ^h 18 ^m W					8.1	OB							
	+0 40 53	18 55.8	+00 16		07 51	08 06	15 ^m /✓	3 ^h 05 ^m W					7.3	B3V							
	+4 41 95	19 42.6	04 57		08 21	08 52	31 ^m /29	3 ^h 04 ^m W	2" cirrus				8.0	OB							
1149	SLS 1916	10 46.6	-57 48	July 31/4	23 51	00 50	100 ^m						10.33					IIaD	M-S	Gve/Max	
(17)	NGC 6250 #16	16 56.0	-45 50	1976	01 10	02 38	80 ^m	0 ^h 20 ^m W					11.6	AZ	NeA	2 ^s				15 min	
1150	RS 1	16 46.1	-62 27		03 00	06 00	180 ^m	3 ^h 22 ^m W					~13.3		2NeA	4 ^s					
1151	α Sco	16 34	-28 10	July			28 ^m /6		1 1/2" clear	342	50.4/1.2	112/7.0	3.6	B0V				IIaD	"	Gve/Max	5 ^m screen -5
	β Sco	16 03.8	-19 44	6/7 1976	01 12	01 25	20 ^m /4	1 ^h 13 ^m E					2.55	B0.5V							"
	ω Sco	16 05.1	-20 36		01 36	01 43	7 ^m /14	0 ^h 05 ^m E					3.91	B1V							"
	22 Sco	16 28.6	-25 02		01 52	—	10 ^s /25	0 ^h 19 ^m E					4.65	B2V	NeA	5 ^s					"
1152	α Sco	16 34.0	-28 10		03 03	03 09	8 ^m /✓	~40 ^m W					3.06	B0V				IIaD			
	β Sco	16 03.8	-19 44		03 18	03 22	5 1/2 ^m /5 1/4	1 ^h 35 ^m W					2.55	B0.5V							
	ω Sco	16 05.1	-20 34		03 26	03 39	12 ^m /✓	1 ^h 51 ^m W					3.91	B1V							
	22 Sco	16 28.6	-25 02		03 43	—	20 ^s /✓	1 ^h 33 ^m W					4.65	B2V							
	9 Sgr	18 00.8	-24 20		03 50	03 52	48 ^s /✓	0 ^h 08 ^m W					6.00	O5V	NeA	5 ^s					
1153	μ Sgr	18 12.3	-21 03		04 14	04 21	7 ^m /14	0 ^h 30 ^m W					4.06	B8IaP							
	15 Sgr	18 13.8	-20 43		04 32	04 32	14 ^s	0 ^h 31 ^m W					5.45	B0Ia							
	16 Sgr	18 13.8	-20 23		04 38	04 38	18 ^s	0 ^h 43 ^m W					6.02	O9 III							
	η Sgr	18 16.0	-36 46		04 48	04 51	3 ^m /1 ^m	0 ^h 40 ^m W					4.68	M3 II							
	ζ Sgr	18 19.4	-24 50		04 57	04 57	12 ^s /18 ^s	0 ^h 50 ^m W					4.08	K2 III							

} guiding!

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS.	REMARKS			
					BEGIN	END									KIND	EXP.								
1211	β Ori	5 13.4	-8 13		08 36	08 37	72 ^s /70 ^s	3 22 E	4"				-0.5	B3 Ia							-5 mag. next. obs.			
					08 38	08 39	36 ^s /43 ^s	3 24 E																
					08 40	08 42	18 ^s /✓	3 26 E											Netly	4 ^s				
	γ Ori	5 16.5	-6 47		08 50	08 51	16 ^s /	3 20 E	4"				3.47	B5 III										
					08 51	08 52	8 ^s /	3 19 E																
					08 52	08 53	4 ^s /	3 18 E											Netly	4 ^s				
	η Ori	5 23.9	+6 20		09 05	09 09	3 ^m 18 ^s /3 ^m 08 ^s	3 09 E	4"				1.41	B2 III							next obs.			
					09 10	09 12	3 ^m 39 ^s /3 ^m 24 ^s	3 07 E																
					09 13	09 14	6 ^m 05 ^s /H5	3 05 E																too much humid
1212	LS-37	18 42.2	-3 39	18 Aug 76	23 40	01 47	2 ^h 5 ^m /✓	0 13 W	4"		70 μ. 8	112/7°	11.6	O B(r)	Netly	4 ^s								
	LS-471	18 38.3	-4 37		02 20	04 26	2 ^h 5 ^m /✓	2 58 W	4"				11.6	OBR	Netly	4 ^s								
1213	P/d'Arrest	22 25.4	-22 13		06 46	06 58	12 ^m /✓	1 42 W	4"				~8.5	?	Netly	4 ^s								
					06 58	07 04	6 ^m /✓	1 48 W																
					07 05	07 08	3 ^m 7 ^s /✓	1 52 W																
					07 09	07 10	1 ^m 5 ^s /✓	0 7 54 W											Netly	4 ^s				
1214	27 Tau	3 47.8	+23 59		08 04	08 05	24 ^s /32	2 34 E					3.54	B8 III							Clouds			
					08 07	08 08	12 ^s /16	2 31 E																
					08 09	08 10	6 ^s /8	2 29 E	5"									Netly	4 ^s					
	42 Ori	5 34.2	-4 51		08 23	08 24	60 ^s /✓	4 02 E					4.40	B1 V										
					08 25	08 26	30 ^s /45 ^s	4 00 E																
					08 27	08 28	15 ^s /✓	3 58 E											Netly	4 ^s				
	i Ori	5 34.3	-5 56		08 36	08 37	10 ^s /42 ^s	3 48 E					2.52	O9 III										
					08 37	08 38	5 ^s /✓	3 47 E																
					08 38	08 39	2 ^s /✓	3 46 E																
1215	e Ori	5 35.0	-1 13		09 07	09 15	8 ^m /✓	3 12 E					1.51	B0 Ia							next obs.			
					09 16	09 20	4 ^m /✓	3 07 E																
					09 21	09 23	2 ^m 2 ^s /10	3 04 E											Netly	4 ^s				
					09 38	09 39	42 ^s /	3 40 E								4.29	B4 V							
	χ^2 Ori	6 27.3	+32 34		09 41	09 42	21 ^s /	3 36																
					09 43	09 44	10 ^s /	3 34 E										Netly	4 ^s					

NUMBER	OBJECT	R.A.	DEC	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
	ρ Aur	5 20.2	+41 47		9 30		30 ^s / ✓						4.91	B5 V	NeA	4 ^s						
							10 ^s / ✓															
						9 31	5 ^s / ✓	0 32 E														
	HR 6773																					
1246	γ Agr	22 ^h 20.4	-1° 30' 5	Sept. 21	2:45	2:50	20 ^s / 12 ^s / 9 ^s	—		3242	100 μ / 0.6	8 ⁴²	4.0	A0	NeA	2 ^s / 4 ^s	Noir	IIaD	Mr 12 ^h 21 LTF	BB/Max	Cloudy	the exposure time test
1247	HR 6773	13 ^h 7.4	-25° 28' 2		23:26		10 ^m / 10^m	0 47 W	2-3"	3242	100 μ / 0.6	8 ⁴⁸	6.3V		NeA			IIaD		BB/Max	Partly cloudy	
	"	"	"		23:36		5 ^m	0 56 W	"	"	"	"	"		NeA	2 ^s		"		"	"	
	HD 155555	17 ^h 15 ^m 0	-66° 55' 3		23:53		10 ^m	2 10 W	"	"	"	"	"	K1 V	"	"		"		"	"	
1248	70 Ori (A)	18 ^h 4.2	+2° 30' 2	Sept. 22	0:41		25 ^s	2 00 W	"	"	"	"	4.02	K0 V	"	"		"		"	clear	
	HD 196818	20 ^h 46.0	-80° 13'		1:46		37 ^m	1 12 W	"	"	"	"	8.9	K0 IIIp	—	—		"		"	"	
	HD 212220	22 ^h 23.0	-66° 58'		3:13		45 ^m	0 52 W	4"	3242	"	8 ³⁶	9.4	G0 2 II	NeA	2 ^s		"		"	"	
1249	HD 5303	0 ^h 52.2	-74° 47'		5:25		15 ^m	0 11 W	4-5"	"	"	"	7.9	G2 (5 V + F)	NeA (1 ^s)	2 ^s		"		"	"	
	HD 8435	1 ^h 21.4	-56° 51'		6:03		45 ^m	0 52 W	"	"	"	"	9.9	G6 8 III/IV	—	—		"		"	"	
	HD 14643	2 ^h 17.7	-71° 35'		7: 17		30 ^m	0 53 W	"	"	"	"	8.8	G1 IVp	NeA	2 ^s		"		"	"	
1250	η Eri	2 ^h 55.2	-8° 59'		8:26		20 ^s	0 54 W	"	"	"	"	3.9	K1 III	NeA (1 ^s)	2 ^s		"		"	"	
	HD 18599	2 ^h 56.4	-56° 17' 8		8:47		50 ^m	2 05 W	"	"	"	"	9.6	K3 V	NeA	2 ^s		"		"	"	
1251	λ Pav	18 ^h 50.0	-62° 13'	Sept. 22	23 43		25 ^s	0 19 W	3"	342	100 μ / 0.6	8 ³⁶	4.2	B1 Ve	(1 ^s) NeA	2 ^s		IIaD		"	High wind 50% cloud	
	HR 6773	13 ^h 7.4	-25° 28'		23:53		5 ^m	1 17 W	"	"	"	"	6.3		—	—		"		"	"	
	HD 173397	18 ^h 47.0	-62° 24'	Sept. 23	0:14		45 ^m	1 37 W	4"	"	"	"	9.3	K0 I p	—	—		"		"	slight clearing	
	HD 219025	23 ^h 12.3	-68° 25'		2:03		45 ^m	1 00 E	"	"	"	"	9.3	K2 IIIp	NeA	2 ^s		"		"	"	
1252	57 Psc	23 ^h 12.2	+2° 33'		4:05		15 ^m	0 38 W	"	"	"	"	8.0V	K1 + F8	NeA (1 ^s)	2 ^s		"		"	"	
	HD 18134	2 ^h 51.3	-61° 43'		4:42		50 ^m	1 52 E	"	"	"	"	9.7	K1 V(p)	NeA	—	—		"		"	"
	HD 32918	4 ^h 59.0	-75° 18'		6:08		50 ^m	2 34 E	"	"	"	"	9.5	K1 IIIp	—	—		"		"	"	
	HD 34802	5 ^h 11.5	-77° 14'		7:26		23 ^m	1 56 E	"	"	"	"	8.6	K1 IIIp	NeA	2 ^s		"		"	"	
1253	HD 36705	5 ^h 28.7	-64° 28'		8:23		7 ^m	1 32 E	"	"	"	"	7.3	K1 IIIp	NeA (1 ^s)	2 ^s		"		"	"	
	HD 39937	5 ^h 51.9	-57° 10'		8:42		5 ^m	1 38 E	"	"	"	"	7.3V	F7 IV	—	—		"		"	"	
	HR 1628	5 ^h 1.7	-26° 19'		9:06		1 ^m	0 28 E	"	"	"	"	5.02	g K0	—	—		"		"	Studs	
	HR 1743	5 ^h 16.6	-34° 55'		9:11		45 ^s	0 39 E	"	"	"	"	4.82	K0 III	NeA	2 ^s		"		"	"	

NUMBER LC	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP.		TOTAL / CORR	H A END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1254	o Aqr	22 ^h 01.8	-02 ^m 18'	23 Oct 1976	0142	0151	5 ^m 2 ^m / 4 ^m	1 ^h 15 ^m W	1.5 / phot	2.87	50 ^m / 1.2	67 / 445	4.7	B ⁹	NEA 60 ^s	NONE	II - 0	Metal Sulfate 60 ^m / 15 ^m			
	Δ Del	20 ^h 38.2	+15 ^m 48'		0156	0202	3 ^m 2 ^m / 2 ^m	2 ^h 48 ^m W					3.7	B ⁹ V							
	v Cyg	21 ^h 16.7	+34 ^m 46'		0207	0218	4 ^m 2 ^m / 6 ^m	2 ^h 26 ^m W					4.3	B ²							
	Δ Aql	19 ^h 4.7	-4 ^m 56'		0223	0228	2 ^m 1 ^m / 2 ^m	4 ^h 46 ^m W					3.4	B ⁹							
	o Aql	20 ^h 09.8	-0 ^m 55'		0231	0233	1.5 ^m 2 ^m / 1.5	3 ^h 47 ^m W					3.2	B ⁹							
	η Aqr	22 ^h 33.8	-0 ^m 16'		0236	0238	1.5 ^m 2 ^m / 2 ^m	1 ^h 28 ^m W					3.9	B ⁸							
1255	α And	0 ^h 06.8	+28 ^m 55'	"	0348	0350	30 ^s 40 ^s / 4 ^m	1 ^h 6 ^m W	"	"	"	"	2.0	B ⁹	"	"	"	"	"	"	left side open while setting up 15 ^m 40% H
	β Peg	23 ^h 02.3	+27 ^m 55'		0355	0400	4 ^m 8 ^m / 8 ^m	2 ^h 21 ^m W					4.2	M ²							
	ξ And	0 ^h 45.7	+24 ^m 06'		0404	0423	19 ^m 12 ^m / 12 ^m	1 ^h 0 ^m W					6.4	K ¹							
	β Ori	1 ^h 53.0	+20 ^m 40'		0436	0438	1.5 ^m 1 ^m / 1 ^m	9 ^m W					2.8	A ⁵							
	β Tau	2 ^h 07.8	+34 ^m 51'		0442	0448	1 ^m 2 ^m / 2 ^m	4 ^m W					3.1	A ⁵							
	16 Per	2 ^h 48.7	+38 ^m 12'		0452	0457	4 ^m 6 ^m / 6 ^m	2 ^h 9 ^m E					4.6	F ²							
	π Per	2 ^h 56.8	+39 ^m 33'		0459	0506	6 ^m 8 ^m / 8 ^m	2 ^h 7 ^m E					4.6	A ²							
	ε ARIN	2 ^h 57.5	+21 ^m 13'		0512	0523	10 ^m 9 ^m / 9 ^m	10 ^m E					5.6	A ²							
	η Tau	3 ^h 45.7	+24 ^m 01'		0530	0533	45 ^s 60 ^s / 60 ^s	4 ^h 8 ^m E					2.8	B ⁷ III							
	ρ Per	3 ^h 06.2	+40 ^m 50'		0538	0540	30 ^s 40 ^s / 40 ^s	3 ^m E					2.0	B ⁸							
	ε Per	3 ^h 55.8	+39 ^m 56'		0545	0549	45 ^s 45 ^s / 45 ^s	4 ^h 2 ^m E					2.7	B ^{0.5} IV							
1256	ε Per	"	"	"	0640	0647	30 ^s 50 ^s / 40 ^s	15 ^m W	"	"	"	"	"	"	"	"	"	"	"	"	
	ξ Per	3 ^h 52.6	+31 ^m 49'		0652	0703	18 ^m 27 ^m / 27 ^m	3 ^h 6 ^m W					"	B ¹ J ⁶							
	HR 1279	4 ^h 06.3	+15 ^m 06'		0711	0739	4 ^m 8 ^m / 30 ^m	5 ^h 7 ^m W					6.4	F ³ V							
	HD 27383	4 ^h 18.6	+16 ^m 29'		0744	0804	20 ^m 50 ^s / 50 ^s	1 ^h 10 ^m W					7.4	F ⁷ E							
1257	η Aur	5 ^h 04.7	+41 ^m 12'		0815	0824	15 ^m 30 ^m / 30 ^m	4 ^h 4 ^m W					3.0	B ³ V							
	ρ Aur	5 ^h 20.0	+41 ^m 47'		0826	0842	24 ^m 20 ^m / 12 ^m	4 ^h 7 ^m W					4.9	B ⁵ V							
	ξ Ori	6 ^h 02.4	+20 ^m 08'		0847	0905	24 ^m 20 ^m / 7 ^m	4 ^h 9 ^m W					4.9	B ² I ⁰							
1258	π ² Cyg	21 ^h 45.7	+49 ^m 10'	23/24 Oct.	0844	0901	2.5 ^m 40 ^s / 40 ^s	1 ^h 6 ^m E	2-4 phot.	2.87	50 ^m / 1.2	67 / 445	4.1	B ³	NEA 60 ^s	NONE	II - 0	Metal			
	α Del	20 ^h 38.5	+15 ^m 50'	1976	0907	0913	40 ^m 40 ^s / 40 ^s	1 ^h 2 ^m W	2 ^m / "				3.7	B ⁹ IV				Sulfate 60 ^m / 15 ^m			
	α Cyg	20 ^h 40.6	+45 ^m 11'		0918	0921	4.6 ^m 22 ^m / 6 ^m	4 ^h 8 ^m W					1.2	A ² I ⁰							
	σ Cyg	18 ^h 53.7	+26 ^m 20'		0930	0938	15 ^m 30 ^m / 30 ^m	3 ^h 11 ^m W					1.9	B ^{2.5} I ²							
1259	10 Lac	22 ^h 38.2	+38 ^m 55'		0954	0111	2.4 ^m 2 ^m / 2 ^m	1 ^h 0 ^m W					4.7	O ⁷ V							
	α Psc	22 ^h 56.2	-29 ^m 45'		0118	0120	6.1 ^m 24 ^m / 10 ^m	9 ^m E					1.25	A ³ V							

Wind calm
T = 12°C
H = 40%

NUMBER LC	OBJECT	R.A.	DEC	DATE UT.	UT EXP		TOTAL/CORR	H.A. END	SEE / TRANS	CAM FOCUS	SLIT	GRATING TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1263	♂ Ayr	22 27.3	-0° 10'	24/25	0254	0258	4 ^m ✓		1.5/clean	2.87	50°/1.2	67/4.75	4.8	F2	NeA 60°	None, II, -0			Muted Suff. C 6" x 6" 15m	2-7	N. favored, but not pure S favored. one trail possibly? retraced again
	♀ Ayr	"	"	1976	0258	0302	4 ^m ✓	2 ^h 9 ^m W					4.8	F2							
	♀ And	01 01.8	+43° 05'		0326	0336	10 ^m ✓	0	2"					7.2	B7						
	♂ And	01 35.0	+41 15		0338	0348	10 ^m ✓	15 ^m E						4.6	F8						
	♂ And	01 36.1	+48 29		0351	0412	21 ^m ✓	8 ^m W						4.8	K3						
	♂ Per	01 39.9	+5 20		0415	0437	22 ^m ✓	28 ^m W						5.8	K3						
	♂ And	02 02.1	+42 11		0441	0445	4 ^m ✓	15 ^m W						3.3	K3						
	♂ And	02 02.1	+42 11		0446	0457	11 ^m ✓	26 ^m W						5.1	A0						
	♂ Per	02 42.1	+49 06		0500	0508	11 ^m ✓	2 ^m E	"					4.6	F7						
	♂ Per	03 06.9	+49 30		0512	0523	11 ^m ✓	12 ^m E	"					4.6	G0						
	♂ Per	03 07.5	+44 45		0526	0546	20 ^m ✓	10 ^m W						4.8	K0						
	♂ Per	03 22.2	+49 45		0549	0551	2 ^m ✓	2 ^m W						2.3	F5 I6						
1264	♂ Per	04 06.5	+47 38	"	0643	0651	8 ^m ✓	16 ^m W	23"	"	"	"		4.00	B3e						
	♂ Per	04 12.7	+48 20		0654	0718	24 ^m ✓	37 ^m W						5.1	G0 I6						
	♂ Per	04 16.0	+50 13		0721	0743	20 ^m ✓	14 ^m W						4.6	A2						
	♂ Per	04 34.6	+41 12		0751	0826	25 ^m ✓	12 ^m W						5.4	G8						
	♂ Cma	07 02.0	-23 48		0845	0855	40 ^m ✓	35 ^m E						2.9	B3 Ie						Wind T=10°C Calm. 11:40 city T=11°C H=45%
	♂ Ori	05 23.8	+6° 20'		0858	0901	24 ^m ✓	11 ^m W						1.4	B2 III						
	♂ Ayr	22 04.7	-0 25	25/26	2355	2358	25 ^m ✓	32 ^m E	1.5/clean	2.87				3.9	G2 I6						
	♂ Egr	21 14.3	+5 07	028	0000	0007	4 ^m ✓	26 ^m W						4.5	F8 + A3						
1265	♂ Egr	20 45.0	+33 51	1976	0009	0013	25 ^m ✓	14 ^m W	2"				3.5	K0							
	♂ Egr	21 11.7	+30 06		0015	0019	4 ^m ✓	42 ^m W					4.2	G8							
	♂ Egr	21 13.6	+37° 55'		0022	0027	5 ^m ✓	48 ^m W					4.1	F0							
	♂ Per	21 20.2	+19 41		0029	0042	12 ^m ✓	56 ^m W					5.2	K1							
	♂ Per	21 43.1	+17 13		0047	0104	17 ^m ✓	57 ^m W					5.5	G5							
	♂ Egr	21 13.0	+9 53		0106	0116	10 ^m ✓	138 ^m W					5.0	F7							
	♂ Per	21 43.3	+25 30		0120	0132	12 ^m ✓	123 ^m W					4.5	F5							
	♂ And	23 00.5	+42 10		0135	0140	5 ^m ✓	15 ^m W	3"				3.5	B6p							
	♂ And	23 11.2	+49 15		0143	0204	24 ^m ✓	29 ^m W					4.8	F0							
	♂ And	23 26.1	+46 18		0206	0219	22 ^m ✓	28 ^m W					4.9	G8							
	♂ And	23 26.9	+43 04		0231	0242	10 ^m ✓	40 ^m W					4.2	B8							

T=9.5°C wind 10 T
H=55%

NUMBER LC	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1266	γ Peg	23 56.2	+24 58	25/26	0310	0340	30 ^m ✓	1 ^h 19 ^m W	1.5 ^h clean	2.87	50 ^μ /1.2	47/4.45	6.3	M3 III	Net	60 ^s	None	IIa-0	Metol	✓	
	δ Cap	21 45.4	-16 16	Oct.	0343	0346	2.5 ✓	3 ^h 36 ^m W	2.1 ^h "				3.2	A6m					Sulfite		
	ε Per A	21 43.2	-33 10	1976	0350	0353	3 ^m ✓	3 ^h 46 ^m W					4.3	A0					6.7 H ₂ O		
	ο Car	02 18.4	-3 11		0406	0626	2 ^h 20 ^m ✓	1 ^h 46 ^m W	2.3 cloudy				~9:	M8e+B							clouds coming in
	β Ori	05 13.3	-8 14		0634	0636	2, 4, 8 ^m ✓	1 ^h 1 ^m E	2.3 cloudy				0.1	B8 Ia							three clouds
	ν Ori	5 30.7	-7 20		0653	0725	4, 8, 16 ^m ✓	30 ^m E	2 cloudy				4.4	B0 V							assume 4.9 three clouds
1267	α Leo	5 31.6	-17 51		0810	0821	1.5, 3, 6 ^m ✓	26 ^m W	2.3 clouds				3.2	F0 Ib							9°C 50% 20 mph. clouds at end
1268	α Peg	0 13.3	+20 04	26/27	0335	0500	1 ^h 2 ^m ✓	1 ^h 27 ^m W	1.5 ^h few clouds	"	"	"	6.4	M2 III	std.	"	"	"	"	"	clouds until midnight
	γ RZ Ari	2 54.4	+18 14	Oct	0503	0607	1 ^h 4 ^m ✓	54 ^m W	1.1 ^h clean				~7.5	M6 III							
	Jupiter IV	3 47.2	+18 43	1976	0616	0702	46 ^m ✓	56 ^m W	"				6.1	G2 V							
	R Dor	4 36.5	-62 07		0706	0804	58 ^m ✓	1 ^h 9 ^m W	1.5 ^h clean				7:	M8e							
	HR 1016	3 20.3	-23 43		0810	0839	27 ^m ✓	3 ^h W	"				6.4	G7 Ib							
	56 Ori	5 51.1	+01 51		0842	0902	20 ^m ✓	52 ^m W	1 ^h clean				6.2	K2.5 Ib							
	ε Cma	7 17.4	-24 54		0904	1014	6, 3, 1.5 ^m ✓	22 ^m E	1.5 ^h "				4.3	G9 Ib							
1269	α Oph	17 33.5	+12 35	27/28	2345	2348	3 ^m ✓	4 ^h W	3 ^h few cirrus	"	"	"	2.2	A5 III	"	"	"	"	"	"	✓
	γ Aql	19 04.0	+13 49	Oct	2354	2357	3 ^m ✓	2 ^h 38 ^m W	"				3.0	A0:							
	α Sge	19 38.8	+17 57	1976	0003	0016	13 ^m ✓	2 ^h 20 ^m W	2 ^h "				5.1	G0:							
	γ Aql	19 44.8	+10 32		0038	0050	12 ^m ✓	2 ^h 50 ^m W	"				4.1	K3							
	δ Sge	19 46.0	+18 28		0053	0124	31 ^m ✓	3 ^h 22 ^m W	"				5.5	M2+B							
	γ Sge	19 57.4	+19 25		0126	0159	33 ^m ✓	3 ^h 45 ^m W	"				4.8	K5 III							10°C 40% H 20 wind.
	δ Del AB	20 42.1	+14 58		0202	0212	10^m ✓	3^h 11^m W	"				4.6	A							double in RA
	γ ² Del AB	20 45.3	+16 01		0202	0212	10 ^m ✓	3 ^h 11 ^m W	1.5 ^h clean				5.3	K1							double in RA 4x?
	δ Del	20 42.1	+14 58		0216	0226	10 ^m ✓	3 ^h 29 ^m W	"				4.6	A _m							
	α And	00 06.8	+28 55		0229	0231	45 ^m ✓	8 ^h W	"				2.0	B9							
	γ And	0 45.7	+24 06		0233	0248	15 ^m ✓	14 ^h E	1.5 ^h cirrus				6.4	K1 II							last few min cloudy.
	β Ari	01 53.0	+20 40		0250	0252	1.5 ^m ✓	"	" cirrus				2.8	A5 V							
	β Tri	02 07.8	+34 51		0256	0259	2 ^m ✓	1 ^h 24 ^m E	"				3.1	A5 III							
1270	"	"	"	"	0403	0405	2 ^m ✓	18 ^m E	2 ^h cirrus	"	"	"	"	"	"	"	"	"	"	"	"
	β Ari	01 53.0	+20 40		0408	0409	1 ^m ✓	0	"				2.8	A5 V							
	17 Per	01 49.7	+34 56		0413	0445	32 ^m ✓						6.1	K7 III							

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NUMBER LC	OBJECT	R.A.	DEC.	DATE UT.	UT. EXP		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
1270	⊙ Per	02 42.1	+49 06	27/28	0449	0510	21 ^m ✓	13 ^m W	1.5	clear	2.57	50 ^μ / 1.2	67 / 445	4.6	F7	NeA	60°	None	ITa-0	Meted	✓	
(cont)	16 Per	02 48.7	+38 12	27/28	0526	0536	9 ^m ✓	32 ^m W	"	circus				4.6	F2						Selfie	
	11 Per	02 56.8	+39 33	1976	0539	0550	10 ^m ✓	36 ^m W	"	"				4.6	A2						670F 15 min	
	β Per	03 06.2	+40 50		0553	0555	1 ^{min} ✓	53 ^m W	"	"				2.0	B8							
	34 Per	03 27.2	+49 24		0557	0622	25 ^m ✓	39 ^m W	"	circus				4.6	B5						thin clouds	
	ν ² Eri	4 34.4	-30 37		0628	0640	12 ^m ✓	10 ^m E	"	"				4.8	K0							
	"	"	"		0641	0650	9 ^m ✓	0	"	"				"	"							
	β Dor	5 33.4	-62 31		0655	0701	6 ^m ✓	46 ^m E	"	"				4.20	F8							
	α Col	5 38.6	-34 05		0704	0706	1.2 ✓	49 ^m E	"	"				2.5	B8							
1271	2 Mon	5 57.9	-09 34	"	0723	0733	10 ^m ✓	"	"	"	"	"	"	5.2	F2 IV	"	"	"	"	"	"	~ 1 mag. cirrus
	1 Mon	5 57.9	-09 22		0734	0800	26 ^m ✓	12 ^m E	1.5	circus				6.7	F2 IV							
	HR1909	5 34.4	-33 06		803	0833	30 ^m ✓	44 ^m W	1.5	"				6.9	K2 III _{ev}							
	HR2764	7 15.6	-23 16		0838	0906	28 ^m ✓	26 ^m E	1.5	"				6.6	K3 I6							
1272	α Oph	17 33.5	+12 35	28/29	0350	2355	1.5 ✓	4 ^h 10 ^m W	3 ^h	circus	"	"	"	2.25	A5 III	"	"	"	"	"	few cirrus high wind	
	σ Oph	17 25.0	+4 10	1976	0000	0029	29 ^m ✓	4 ^h 52 ^m W	2 ^h	clear				5.8	K2 II						11840% 20 mph	
	68 Oph	18 00.2	+1 18		0031	0045	14 ^m ✓	4 ^h 33 ^m W	"	"				4.5	A1							
	70 Oph	18 03.9	+2 30		0046	0066	20 ^m ✓	4 ^h 50 ^m W	"	"				4.9	K0							
	σ Ser	18 54.7	+4 10		0119	0129	16 ^m ✓	4 ^h 24 ^m W	"	"				4.7	A5							
	σ ² Ser	18 54.8	+4 10		0130	0150	20 ^m ✓	4 ^h 14 ^m W	"	"				5.2	A5							
	σ Aql	19 24.0	+3 03		0152	0155	3 ^m ✓	4 ^h 19 ^m W	"	"				3.7	F0							
	ν Aql	19 25.0	+0 16		0156	0201	15 ^m ✓	4 ^h 35 ^m W	"	"				5.2	F2 I6							
	α Aql	19 49.3	+8 42		0214	0216	20 ^m ✓	4 ^h 15 ^m W	"	"				1.0	A7							
	η Aql	19 50.9	+0 56		0219	0228	9 ^m ✓	4 ^h 25 ^m W	"	"				4.3	F6							
	ρ Aql	19 53.8	+6 20'		0230	0241	11 ^m ✓	4 ^h 36 ^m W	"	"				4.6	G8							
1273	σ Del	20 31.8	+11 12'	"	0248	0253	4.5 ✓	4 ^h 10 ^m W	"	"	"	"	"	3.8	B6	"	"	"	"	"	"	
	5 Apr	22 27.3	-0 10		0259		5 ^m ✓		"	"	"	"	"	4.8	F2							
	5 Apr	"	"			0309	5 ^m ✓	2 ^h 31 ^m W	2 ^h	clear				4.7	"							
	α And	00 06.8	+28 55		0313	0314	1 ^m ✓	56 ^m W	"	"				2.0	B9							
	σ Per	03 28.5	+47 54		0515	0557	48 ^m ✓	15 ^m W	3 ^h	clear				5.7	K3							
	ν Per	03 34.3	+48 06		0559	0611	12 ^m ✓	26 ^m W	"	"				4.1	B5							

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER LC	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
1276	52 Sgr	19 34.9	-24 57	30/31	0253	0302	9" / 8	5 ^h 21 ^m W	2" / clean	2.57	50" / 1.2	47 / 445	4.5	B9	NeA	60°	None	IIa-0	Melid	✓	8°C 50% 50% smph	
(cont)	59 Sgr	19 55.1	-27 15	028	0304	0324	20" / 30	5 ^h 23 ^m W					6.0	K3							Sulfide 67°F 15 min	
	62 Sgr	20 00.8	-27 48	1976	0326	0352	26" / 33	5 ^h 46 ^m W					6.1	M4								
1277	0' Sgr	19 57.8	-35° 22'		0401	0408	7" / 8	6 ^h 3 ^m W	3" / clean				"	4.2	B3	"	"	"	"	"	"	
	α Per	20 23.3	-56 50		0411	0415	21" / 45	5 ^h 46 ^m W					1.75	B3								
	α And	20 35.5	-47 24		0417	0423	6" / 4	5 ^h 42 ^m W					4.1	K0								
	β Per	03 06.2	+40 50		0510	0512	50" / 5	0					2.0	B8								
	β4 Per	03 27.2	+49 24		0518	0540	32" / 3	8 ^m W					4.6	B5								
	β Per	04 16.0	+50 13		0542	0612	50" / 9	9 ^m E					4.6	A2								
	α Col	05 38.6	-34 05		0616	0617	50" / 12	12 ^m E					2.5	B8								
	HD 27836	04 22.8	+14 +3		0623	0853	150" / 3	2 ^h 23 ^m W	11" / clean				8.2	G1V	std.						w/5m filter	
	α Cma	06 43.8	-16 40		0856	0905	36" / 3	16 ^m W	"				-1.4	A1V								
	0 Pup	07 46.8	-25 52		0908								4.4	B0								
1278	39 Cyg	20 22.7	+32 06	31 Oct	2340	0006	26" / 1	1 ^h 42 ^m W 1.5					5.8	K3 III							11°C 40% smph	
	μ C. 39 A	21 42.8	+28 36	Nov. 1976	0009	0016	7" / 1	31 ^m W					5.0	F6								
	0 Sco	16 19.1	-24 06		06020	0630	18" / 1	6 ^h 9 ^m W					5.4	A5 VII							terminated by bird screen	
	22 Sco	16 28.7	-25 04		0633	0643	10" / 1	6 ^h 12 ^m W					4.7	B2 V							"	
	1' Lac	22 39.2	+44 07		0046	0116	30" / 1	35 ^m W					5.8	K3								
	α Ser	78 33.6	-8 16		0120	0144	24" / 1	5 ^h 8 ^m W					5.2	K3								
	δ Ser	18 40.6	-9 05		0146	0200	14" / 1	5 ^h 18 ^m W					5.1	F3								
	12 Cep	19 00.1	-5 47		0201	0224	23" / 1	5 ^h 22 ^m W					5.1	K1								
	K Per	18 53.9	-62 16		0227	0233	6" / 1	5 ^h 38 ^m W					4.5	F5								
1279	HR 683	02 17.9	-26 04	"	0453	0518	34" / 16	5 ^h 9 ^m W	1" / clean	3.42	100" / 8	112 / 30	7.1	G5	NeA	60°	None	IIa-0	MWP-2	✓		
	HR K For	02 21.4	-23 55		0520	0529	11.5" / 23	1 ^h 7 ^m W	"				5.8	G1							7 min 67°F	
	77 For	02 33.5	-7° 59'		0531	0543	15.5" / 23	1 ^h 9 ^m W					6.15	K4								
	γ² For	02 35.9	-34 40		0546	0602	23" / 46	1 ^h 27 ^m W					6.5	G1								
	ε For	03 41.3	-32 00		0604	0608	26" / 40	1 ^h 29 ^m W					4.8	B5								
280	HD 27808	04 22.7	+21 41	"	0636	0807	14" / 31	1 ^h 44 ^m W	3/4" / clean	2.87	50" / 1.2	66 / 445	7.7	F8 V	std.	"	"	"	"	"	metal sulfide 67°F 15 min	seeing perfect! 22°C 40% smph
	HD 46150	06 30.6	+04 57		0811	0901	24" / 20	30 ^m W	"				6.7	O5 V								
	"	"	"		0908	0914	6" / 4	4 ^h 5 ^m W	"	3.42	100" / 8	112 / 30	"	"								

NUMBER LC	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1289	90 Tau	4 36.9	+12 28	5/6	0738	0741	10, 20, 40 ^s		1" clear	3.42	100μ / 1.8	112 / 7.0	4.4	A3	None	10 ^s	None	IIa - 0	MWP-2		
(Cont)	HD 46407	06 31.6	-11 09	Nov	0744	0814	4, 8, 16 ^m	1 ^m W					7.4	K0							7 min 67°F
	HR 2591	06 53.7	-42 20	1976	0818	0908	40 ^m / +80	35 ^m W	"				8.1	C5, 2.5							
1250	R Scap 2	18 45.9	-5 44	6/7	2357	0008	3, 7 ^m / 3	3 ^h 46 ^m W	2" clear	"	"	"	6.1	G0 Ia	"	"	"	"	"	"	"
6	HR 7164 ⁽⁵⁾	18 58.0	-18 36	Nov	0014	0037	30, 5, 10 ^m	4 ^h 2 ^m W	"				7.0	G3 II							
9	HD 16578 ⁽¹⁾	18 07.0	-18 33	1976	0043	0110	27 ^m / 3 ^h	5 ^h 26 ^m W	"				7.4	G8 Ia							
"	23 Vul ⁽³⁾	20 14.8	+27 44		0113	0137	12, 6, 3 ^m	3 ^h 45 ^m W	"				6.1	K5							
14	λ Cep ⁽⁵⁾	19 05.0	+55		0140	0142	18, 36, 72 ^s	5 ^m W	"				3.3	B9							
17	μ Cep ⁽¹³⁾	19 33.0	+7 20		0145	0156	4, 2, 5 ^m	4 ^h 46 ^m W	"				4.6	K0							
20	θ Cep ⁽³⁾	20 10.1	-0 53		0159	0201	18, 7, 36 ^m / 18	4 ^h 13 ^m W	"				3.2	A0							
23	λ And	23 37.0	+43 08		0205	0210	40, 80, 160 ^m / 40	5 ^h 7 ^m W	"				4.2	B8							
24	κ And	23 39.3	+44 12		0213	0219	" / 40	1 ^h 3 ^m W	"				4.1	A0							
	HD 221170	23 28.4	+30 18		0222	0322	60, 20 / 20	2 ^h 18 ^m W					8.8	K0: CN-4 Fe-3							full moon
1291	γ Cas	21 45.8	-16 14	"	0329	0331	4, 5, 16 ^s / 16	4 ^h 8 ^m W	"	"	"	"	2.6	A5	"	"	"	"	"	"	"
	δ Gru	22 06.8	-47 04		0334	0335	1, 2, 4, 8 ^m / 2	3 ^h 51 ^m W					1.6	B5							
	55 Peg	23 05.8	+09 17		0339	0411	2, 8, 4, 16 ^m / 3 ^m	2 ^h 28 ^m W					6.1	M0							
	HR 7913	20 42.9	-66 17		0414	0416	6, 12, 24 ^m / 24 ^m	5 ^h 56 ^m W					3.3	A5							β Pav.
18	ν Peg	23 24.2	+23 17		0421	0427	1, 2, 4 ^m / 4 ^m	3 ^h 27 ^m W					5.0	G0							
21	η Peg	23 56.6	+25 00		0431	0500	4, 8, 16 ^m / 6 ^m	3 ^h 26 ^m W					6.3	M0							full moon
24	HD 217987	23 4.2	-36 02		0508	0550	4 ^m / 4 ^m	5 ^h 10 ^m W					8.8	M2 V							CD-36° 15693
26	HD 19445	03 7.0	+26 17		0556	0647	39, 16 ^m / 39	2 ^h 06 ^m W	2"				8.5	Gp?							full moon
	119 Tau	05 30.7	+18 34		0653	0708	35, 17 ^m / 35	2 ^m W					6.1	M2 I							
1292	7 Ori	04 53.6	+10 07		0713	0716	18, 36, 72 ^s / 72	4 ^h 5 ^m W	2"				4.7	A0							
	9 Ori	04 55.1	+13 29		0719	0725	1, 2, 4 ^m / 1 ^m	5 ^h 4 ^m W	"				5.3	K0							
	110 Ori	05 03.2	+15 22		0728	0730	18, 36, 72 ^s / 72	5 ^h 1 ^m W					4.6	B9							
	γ Aur	05 04.9	+41 12		0733	0736	9, 18, 36 ^m / 36 ^m	5 ^h 4 ^m W	"				3.0	B3							
	τ Ori ⁽⁵⁾	05 16.5	-6 52		0739	0740	6, 12, 24 ^m / 12 ^m	4 ^h 7 ^m W	"				3.5	B5							
21	25 Ori	05 23.5	+1 50		0743	0746	18, 36, 72 ^s / 72	4 ^h 8 ^m W					4.7	B3							
24	ν Aur	5 49.9	+39 09		0750	0757	1, 2, 4 ^m / 4 ^m	3 ^h 2 ^m W					5.2	K0							
27	π Aur	5 58.12	+45 56		0801	0824	3, 6, 12 ^m / 12 ^m	5 ^h 0 ^m W	"				6.0	M3							

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LAS CAMPANAS OBSERVATORY (24-INCH)

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GARRISON CLASSIFICATION SPECTROGRAPH

NOV/DEC

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
1303	HR 856	02 51	+16° 23	30/1	01:35	01:45	10 ^{mm}	01 ^E 16	3" CLEAR		50/12		6.9	F5III								
	B DOE	05 33	-62° 30		02:01	02:03	90 ^S	03 ^E 42						4.5V	CEPHED							
	"				02:05	02:07	2 ^{mm}	03 ^E 36														
	"				02:10	02:13	3 ^{mm}	03 ^E 31														
1304	A LEP	05 32	-17° 51		03:20	03:21	25 ^{sec}	02 ^E 20					2.8	FOIb								
	"				03:22	03:23	50 ^S	02 ^E 18														
	T MOH	06 24	+07° 06		03:28	04:00	32 ^m	02 ^E 35						7.4	CEPH							
	HR 2107	05 54	-09° 22		04:07	04:20	13 ^m	01 ^E 48						7.0	F2IV							
	RS POP	08 12	-34° 30		04:27	05:16	50 ^m	03 ^E 06						8.5	CEPH							
	L CAR	09 44	-62° 24		05:21	05:22	30 ^S	04 ^E 33						5.0	CEPH							
	"				05:23	05:25	90 ^S	04 ^E 30														
	"				05:27	05:29	2 ^m	04 ^E 25														
	U CAR	10 56	-59° 36		05:35	05:45	10 ^m	05 ^E 22						6.5	CEPH							
	HR 2831				05:55	06:05	10 ^m	01 ^E 25							A2Ib							
	HR 4110				06:13	06:18	5 ^m	04 ^E 20						6.1	FOIa							id? cluster
1305	HR 4180C				06:36	06:43	6 ^m	04 ^E 04						6.6	G2II							
	HR 4180				06:46	06:48	2 ^m	04 ^E 00						4.9	d							
	HR 4228				06:52	06:58	6 ^m	04 ^E 00						6.3	AOIa							
	HR 4492				07:04	07:10	6 ^m	04 ^E 38	3" CIRRUS					6.0	G0+AO							
	HR 4511				07:14	07:19	5 ^m	04 ^E 33						5.8	G0Ia							
	"				07:20	07:27	7 ^m	04 ^E 25														
	R MUS	12 40	-69° 16		07:38	07:55	17 ^m	04 ^E 55						7.2	CEPH							
	S MUS	12 11	-70° 00		07:58	08:12	14 ^m	04 ^E 08						7.0	CEPH							CIRCUIT AT DAY BREAK

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1306	HR 8369	21 57.2	-59° 06	DEC	00:47	01:05	18 ^m	03 ^W 00					7.0	F5						MADORE	
	HR 8611A	22 37.7	-52° 49	1976	01:12	01:31	19 ^m	02 ^W 46					7.0	F0							
	β DOR	05 34.1	-62° 27	1/2	01:39	01:45	6 ^m	03 ^E 55					4.3	F8							
	HR 24	00 08.2	-28° 07		02:37	02:46	9 ^m	02 ^W 31					5.8	F2							
	HR 35	00 10.6	-35° 16		02:51	02:59	8 ^m	02 ^W 43					5.7	F4							HEAVY CIRRUS
	HR 66	00 16.3	-19° 09		03:05	03:20	15 ^m	02 ^W 58					7.0	F0							
	HR 115	00 28.7	-14° 55		03:24	03:35	10 ^m	03 ^W 00					6.5	F2							WIND!
	HR 210	00 45.0	-22° 35		03:39	03:49	10 ^m	02 ^W 58					6.5	sg 66							
	HR 255	00 53.1	-08° 50		03:54	04:10	16 ^m	03 ^W 11					7.1	sg 43							
	HR 1025	03 16.9	-77° 21		04:16	04:26	10 ^m	01 ^W 02					6.0	F2							
1307	UCAR	09 45.1	-62° 12		05:27	05:29	2 ^m	04 ^E 21					4.0	CEPH							
	HR 4511	11 48.8	-62° 09		05:37	05:45	7 ^m	06 ^E 03					5.8	G0							
	UCAR	10 57.3	-59° 26		05:55	06:10	15 ^m	04 ^E 50					6.6	CEPH							
				DEC																	
B08	α SCL	00 57.5	-29° 29	2/3	00:21	00:23	90 ^{sec}	00 ^E 36					4.4	B5							
	α AOR	22 04.4	-00° 24		00:30	00:31	60 ^{sec}	02 ^W 26					3.9	G1							
	β AOR	21 30.3	-05° 40		00:35	00:36	45 ^{sec}	02 ^W 59					3.7	G0							
	ξ CAP	21 25.3	-22° 27		00:39	00:41	90 ^{sec}	02 ^W 44					4.7	G4							
	G PEG	21 43.0	+09° 48		00:44	00:46	90 ^{sec}	03 ^W 00					4.0	K3							
	α PSA	22 56.2	-29° 45		00:53	00:53	1 ^{sec}	02 ^W 55					1.0	A3							
	HR 339	01 08.4	+19° 27		00:58	01:08	10 ^m	00 ^E 01					6.3	G0							
	18 TAU	03 43.4	+24° 43		01:15	01:20	5 ^m	02 ^E 25					5.6	B8							
	27 TAU	03 47.5	+23° 56		01:23	01:24	40 ^{sec}	02 ^E 25					3.6	B8							
	η TAU	03 45.8	+23° 59		01:27	01:28	20 ^{sec}	02 ^E 21					2.8	B7							
	β ORI	05 13.4	-08° 14		01:32	01:32	1 ^{sec}	03 ^E 42					0.0	B8							
	γ ORI	05 24.0	+06° 20		01:36	01:36	4 ^{sec}	03 ^E 48					1.4	B2							
	K ORI	05 46.5	-09° 42		01:41	01:41	6 ^{sec}	03 ^E 44					1.8	B0.5							
	σ ORI	05 37.5	-02° 39		01:46	01:46	20 ^{sec}	03 ^E 53					3.5	G9.5							
	G ORI	05 34.9	-01° 13		01:49	01:49	5 ^{sec}	03 ^E 47					1.5	B0 Ia							
	δ ORI	05 31.0	-07° 21		01:54	01:56	90 ^{sec}	03 ^E 40					4.4	B0 V							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1310	TMOM	0623.9	+07°06	DEC 3/976	03:34	04:10	36 ^m	01 ^E 50	CLEAR	342	50μ/1.2 112Å/7		7.4	CEPH	NEAR	60 ^s	✓	IIa-0	m.s/15 ^m	MAD, MBE	
	HR2580	0653.3	-24°10		04:16	04:22	06 ^m	02 ^E 30					5.6	K3							67°c
	HR2693	0707.5	-26°23		04:25	04:26	25 ^s	02 ^E 35					2.5	F8							
	HR2786	0718.1	-26°33		04:30	04:42	12 ^m	02 ^E 31					6.2	G0							
	HR2833	0724.7	-05°47		04:48	05:10	22 ^m	02 ^E 08					7.0	G3							
	RSPUP	0812.4	-34°31		05:17	06:30	73 ^m	01 ^E 36					8.5	CEPH							
1311	LCAR	0945.0	-62°22		06:45	06:49	4 ^m	02 ^E 51	2" CLEAR				4.1	CEPH	"	"	✓	"	"		WIND ~ 50 km/hr
	"				06:50	06:52	2 ^m	02 ^E 47						"							T = 9°c
	HR4511	1142.8	-62°19		07:00	07:06	6 ^m	04 ^E 29					5.8	CEPH							
	"				07:08	07:12	4 ^m	04 ^E 24						"							
	SMUS	1212.0	-69°58		07:16	07:37	20 ^m	04 ^E 29					7.0	CEPH							
	RMUS	1241.6	-69°13		07:40	08:10	30 ^m	04 ^E 23	2" CLEAR				7.2	CEPH							
1312	β DOR	0534.2	-62°22	DEC 4/5 1976	00:28	00:33	5 ^m	04 ^E 42	3" CIRRUS		50μ/1.2		4.5	CEPH	"	"	✓	"	"	MADURE	HEAVY CIRRUS AT SUNSET
	"				00:35	00:42	7 ^m	04 ^E 34						"							AT SUNSET CUT SHORT BY CLOUDS.
	HU953	0525.8	-67°31		00:50	02:18	88 ^m	02 ^E 50			50μ/0.2		12.0	CEPH							
1313	β DOR	0534.2	-62°23	DEC 5/6 1976	00:24	00:30	6 ^m	04 ^E 42	3" CLEAR				4.5	CEPH	"	"	✓	"	"	MADURE	SOME CIRRUS AT SUNSET.
	HR2389	0629.6	-56°46		00:36	00:50	14 ^m	05 ^E 19					6.3	G9							
	HR506	0141.9	-53°51		00:56	01:10	14 ^m	00 ^E 11					6.4	G0							T = 12°c
	γ PHE	0107.7	-55°21		01:22	01:24	2 ^m	00 ^W 39					4.1	B8							
	δ PHE	0127.7	-43°22		01:28	01:30	40 ^s	00 ^W 31					3.4	K5							
	"				01:31	01:34	3 ^m	00 ^W 28													
	ε PHE	0130.6	-49°09		01:37	01:39	2 ^m	00 ^W 30					4.0	K0							
	"				01:40	01:44	4 ^m	00 ^W 35													
	ζ PHE	0153.1	-46°21		01:48	01:50	2 ^m	00 ^W 22					4.4	M3							
	"				01:50	01:55	5 ^m	00 ^W 27													
	η ² HYD	0154.8	-67°39		02:00	02:03	3	00 ^W 28					4.7	K0							
	"				02:04	02:10	6	00 ^W 35													
	XERI	0155.3	-51°42		02:14	02:15	1	00 ^W 43					3.7	G5							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. DEC	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1315	β Dor	05 33.9	-62° 26	6/7	00:30	00:35	5 ^m	04 ^E 33	24 CLEAR				4.5	CEPH						MADORE	FULL MOON
	"	"	"	'76	00:35	00:42	7 ^m	04 ^E 26													
	Z SCT	00 38.9	-34° 05		01:15	01:35	20 ^m	01 ^W 21					7.0	FO							
	β Dor	05 33.9	-62° 25		01:39	01:44	5 ^m	03 ^E 25					4.5	CEPH							
	"	"	"		01:44	01:51	7 ^m	03 ^E 18													
	"	"	"		02:38	02:44	6 ^m	02 ^E 24													
	HR 2072	05 52.2	-57° 08		02:48	03:00	12 ^m	02 ^E 27					6.6	FS							
	HR 3207	08 09.3	-47° 12		03:09	03:10	20 ^S /20 ^S /20 ^S	04 ^E 33					1.5	WC							
	C	"	"		03:11	03:21	10 ^m	04 ^E 22						Comp H							
	LCAR	09 45.2	-62° 18		03:26	03:33	1 ^W /2/3	05 ^E 47					5.0	CEPH							
	UCAR	10 57.1	-59° 32		05:00	05:40	40 ^m	04 ^E 52					6.6	CEPH							
	HR 4511	11 42.6	-62° 15		05:42	05:46	4 ^m	04 ^E 30					5.5	G0							
	"				05:46	05:52	6 ^m	04 ^E 24													
	R MUS	12 41.0	-69° 10		05:56	06:26	30 ^m	05 ^E 50					7.2	CEPH							
	S MUS	12 12.0	-69° 55		06:29	06:59	30 ^m	04 ^E 50					7.0	CEPH							
				DEC																	
1316	Z SCT	00 38.9	-34° 09	7/8	00:40	00:50	30 ^m	01 ^P 00	1 ^W 5 CLEAR				7.0	FO							VERY CALM T=14°C
	HR 235	00 49.0	-10° 50		01:23	01:31	8 ^m	01 ^W 11					5.7	F8							
	β Dor	05 34.2	-62° 30		01:35	01:40	5 ^m	03 ^E 22					4.5	CEPH							
	"	"	"		01:40	01:48	8 ^m	03 ^E 17													
	γ Dor	05 39.6	-69° 06		02:05	02:50	45 ^m	02 ^E 20					8.?	OB							
	Z SPUP	08 12.5	-34° 31		02:56	04:26	90 ^m	03 ^E 12					8.5	CEPH	1:30						
	η CAR	10 44.8	-59° 32		04:34	04:39	80 ^S /70 ^S /20 ^S	05:34						PEC							
	nebula only (S)	"	"		04:41	04:51	10 ^m	05 ^E 22						CEPH							DEAD STILL
	LCAR	09 45.2	-62° 20		04:56	05:02	1/2/3 ^m	04 ^E 14					5.0	CEPH							
	UCAR	10 57.4	-59° 35		05:05	05:00	55 ^m	04 ^E 26					6.6	CEPH							
	HR 4511	11 43.2	-62° 18		06:04	06:17	5 ^W /5	04 ^E 56					5.5	G0							
	R MUS	12 41.2	-69° 13		06:21	07:01	40 ^m	05 ^E 10					7.2	CEPH							
	S MUS	12 12.6	-69° 58		07:03	07:33	30 ^m	04 ^E 07					7.0	CEPH							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1338	S Scl	00 14.2	-32 28	Jan 31	06 37	07 37	1^m	6 ^h W	1"	7.0	100 ^m 0.6	112 4.42		M ?	N.H.	2 ^s		IIcD	M-S G ^o F 15 ^m	Max	
	V Eri	03 56.7	-13 31	Feb 1	07 54	07 56	30 ^s 15 ^s						3.2	M1 III							
	119 Tau	05 30.7	+18 30		08 09	08 14	60 ^s 30 ^s	14 26 W					4.7	M2 Ib							
1339	R Oct	05 22.1	-88 20		08 53	09 30	30 ^m	3 ^h W													
	G Gem	06 08.8	+22 53		09 45	09 40	2 ^m 1 ^m	2 ^h 20 W	2"				6.1	M1 Ia							WRONG - STAR
	V Com	07 32.4	+27 00		09 54	09 57	40 ^s 20 ^s	1 ^h 5 W													
1340	II Leo	09 58.7	+08 11		10 10	10 19	60 ^s 40 ^s 20 ^s	1 ^h E					4.7	M2 III							
	S Vol	07 30.4	-72 50		10 27	10 55	30 ^m	2 ^h W													
1341	R Oct	05 22.1	-88 20	Feb 12	06 58	07 15	15 ^m	45 ^m W	3"-6"												
	45 Hri	02 54.6	+18 14		07 26	07 37	3 ^m 1 ^m	3 ^h 25 W	3"-4"												CIRRUS
	L Cet	03 01.1	+04 05		07 37	07 42	20 ^s 15 ^s	3 ^h 25 W	3"-6"												95% of HUMIDITY
1342	119 Tau	05 30.7	+18 30	Feb 23	06 29	06 39	4 ^m 2 ^m 1 ^m	15 ^m E	2"-3"												
	R Vol	07 05.4	-72 50.4		06 55	07 13	15 ^m	1 ^h 25 E	3"												
	Y Vel	09 28.2	-56 53.4		08 09	08 24	20 ^m	2 ^h 30 E	3"-4"												~100% of HUMIDITY
1343	R Vol	07 05.4	-72 50.4	Feb 3/4	07 09	07 55	45 ^m	1 ^h E	2"												
	S Vol	07 30.4	-72 50		08 01	09 03	1 ^h	40 ^m E	2"-4"												
	Y Vel	09 28.2	-56 53.4		09 11	09 55	45 ^m	1 ^h 20 E	2"-3"												
	II Leo	09 57.4	+08 02		10 09	10 13	2 ^m 1 ^m	48 ^m E	2"												
				FEB 6/7																	FT ML Trouble with VFO & slow gave up.

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1357	NGC 6383-1A	17.33	-32 37	Feb 9/10	13:01:20	13:16	14				100 μ /0.6	112/2.0	10.3	~B5							+3
	-44				13:22	13:30	8 ^m				180 μ /0.8		9.1								+5
1358	-97				13:40	13:52	12 ^m	3:42 E					9.7	B3							-5
	-1				13:55		20 ^S /10 ^S				170 μ /0.8		5.72	07V+01V							-3
	-1	1			13:57	13:58	48 ^S				100 μ /1.2		"	"							-1
	-1				13:59:45	14:00:39	54 ^S				100 μ /1.2		"	"							+1
	-1				14:01:26	14:01:51	25 ^S	3:32 E			100 μ /1.2		"	"							+3
															Ne-A						+5
1358	S267-1	6 14.4	+14 17	Feb 10/11									10.4								-5
	M62-2287-100	6 45.2	-20 45		7:01	7:04	3 ^m /3 ³⁰	0:20 W	2"		100 μ /0.8		8.18								-5
	-120	6 45.1	"		7:11	7:25	14 ^m	0:41 W			"		9.87								-3
	-112	.2			7:31	7:39	8 ^m	0:55 W					9.28								-1
	-104				7:46	7:51	5 ²⁰ 5 ⁵⁰	1:07 W					8.15							double	+1
	-125				8:19:	8:36	17 ^m	1:53 W					10.07								+3
															Ne-A	3 ^S					+5
1360	-116				9:02:10	9:19:10	17 ^m	2:35 W					10.13								-5
	-108				9:27:35	9:35:10	5:50/7:35	3:52 W					8.82								-3
	-118				9:38:30	9:44:33	5:50/6:03	3:00 W					8.82								-1
	-115				9:49:50	10:02:57	12 ^m /13:07	3:19 W					9.46								+4
	-111				10:09:00	10:16:30	230	3:52 W					9.18		Ne-A	3 ^S					+3
1361	NGC 5749-6	14 47.4	-54 25		10:40:30	10:54:40	14		1-2				9.84								-5
	-44				11:00:20	11:30:30	30	3:17 E	1-2		0.6		11.1								-3
	-13				11:35	12:05	30	2:43 E					11.1								-1
	-16				12:12	12:32	20						10.5								Plate dropped +1
1362	-8				13:04	13:18	14	1:24 E			0.8		8.84								-5
	-6				13:28:14	13:58	30	0:49 E			0.6		11.1								-3
										0.8					Ne-A	3 ^S					-1

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1383	HD 85622	9 ^h 50.7	-46° 25.7	APR 22/23	02 24	02 30	45 ^s , 60 ^s , 1.5 ^m	02 ^h 00W	2"	7.0	100μ/1.2	112/4.42	V=4.6	G5+G6	NeA	60 ^s		II _a 0	M-567F 15-min	Fji	15°C H=40%
cont	HD 101379	11 ^h 38.3	-65° 15.4		02 39	02 45	2 ^m , 2.5 ^m	00 ^h 27W					5.7v	G5/B IIIp							windy star
	HD 119243	13 ^h 41.9	-60° 19.1		03 12	04 42	1 ^h 30 ^m	00 ^h 18W					9.4	G8 III							windy star.
1384	HD 127535	14 ^h 32.5	-60° 18.3		05 50	07 49	2 ^h	02 ^h 38W		7.0	100μ/1.2	112/4.42	9.7	K1 IV/IIe	NeA	60 ^s		II _a 0	M-567F 15-min	Fji	T=15°C H=38%
	HD 154903	17 ^h 11.4	-67° 09.4		08 08	08 32	6 ^m , 7 ^m , 8 ^m	00 ^h 43W					V=5.9	K0							
	70 Qh(A)	18 ^h 04.2	+02° 30.2		08 44	08 44	36 ^s	00 ^h 02W					4.02	K0 V							
1385	HD 69830	08 ^h 17.3	-12° 31.8	APR 23/24	23 44	23 54	3 ^m , 5 ^m , 5 ^m	01 ^h 00W	2"	7.0	100μ/1.2	112/4.42	V=6.0	G8 V	NeA	60 ^s		II _a 0	M-567F 15-min	Fji	T=14°C H=40%
	HD 70136	08 ^h 18.8	-12° 45.8		23 58	00 21	9 ^m , 12 ^m	01 ^h 17W					V=6.9	K2							light clouds
	HD 70673	08 ^h 21.7	-12° 57.8		00 26	00 41	5 ^m , 7 ^m	01 ^h 45W					V=6.3	K0							clouds.
	HD 118717	13 ^h 38.5	-60° 26.1		02 59	04 32	1 ^h 30 ^m	00 ^h 20W					8.9	G0 V							T=14°C H=38%
	HD 128227	14 ^h 36.2	-60° 02.8		04 44	06 02	75 ^m	00 ^h 50W					9.1	K0 III							T=12°C, H=42% windy
	HD 134692	15 ^h 12.9	-66° 48.3		06 14	07 37	80 ^m	01 ^h 50W					9.2	K1 IV(p)							T=11°C, H=46% windy
	HD 137164	15 ^h 25.8	-62° 56.3		08 01	08 31	60 ^m	halted due to clouds + wind					8.8	K1/2 IVp							T=11°C, H=48%
1386	HD 70136	08 ^h 18.8	-12° 45.8	APR 25/26	23 58 23 59	00 07	15 ^m , 20 ^m	01 ^h 20W	2"-2 1/2"	7.0	100μ/1.2	112/4.42	V=6.9	K0	NeA	60 ^s		II _a 0	M-567F 15-min	Fji	T=12°C, H=58%
	GK 114A	08 ^h 29.5	+02° 22		00 26	01 55	1 ^h 30 ^m	03 ^h 00W					V=9.4								T=11°C, H=61%
	HD 77137	08 ^h 58.7	-27° 44		02 04	02 43	9 ^m , 12 ^m , 15 ^m	05 ^h 20W					V=6.9								T=11°C, H=58%
	HD 101379	11 ^h 38.3	-65° 15.4		02 58	03 02	1 ^m , 2 ^m	00 ^h 55W					5.7v	G5/B IIIp							
	HD 119243	13 ^h 41.9	-60° 19.1		03 44	05 17	1 ^h 30 ^m	01 ^h 10W					9.4	G8 III							
	HD 127535	14 ^h 32.5	-60° 18.3		05 31	07 35	2 ^h	02 ^h 35W					9.7	K1 IV/IIe							T=11°C, H=57%
1387	HD 78643	09 ^h 07.7	-25° 44'	APR 24/24	23 53	00 41	9 ^m , 15 ^m , 20 ^m	01 ^h 10W	1 1/2"-2"	7.0	100μ/1.2	112/4.42	6.8	G1	NeA	60 ^s		II _a 0	M-567F 15-min	Fji	T=11°C, H=59%
	HR 3585	08 ^h 58.8	-28° 42.7		00 48	01 03	5 ^m , 7 ^m	01 ^h 35W					6.4	G5							
	HD 82281	09 ^h 27.6	-64° 15'		01 26	02 51	1 ^h 40 ^m	03 ^h 00W					9.5	G0 V(p)							T=12°C, H=59%
	HD 128618	14 ^h 38.4	-59° 38.8		04 06	05 52	1 ^h 40	00 ^h 50W					9.5	K2/3 III							T=13°C, H=51%
	RV Lib	14 ^h 34.4	-17° 55.8		06 11	07 21	70 ^m	02 ^h 25W	1 wedge				9.0								T=12°C, H=52%
1388	HD 78643	09 ^h 07.7	-25° 44'	APR 27/28	23 31	23 54	9 ^m , 12 ^m	00 ^h 27W	2"	7.0	100μ/1.2	112/4.42	6.8	G1	NeA	60 ^s		II _a 0	M-567F 15-min	Fji	T=14°C, H=54%
	HD 81700	09 ^h 23.7	-63° 36.8		00 05	01 11	1 ^h	01 ^h 30W					8.9	G2 V							
	HD 82902	09 ^h 31.3	-63° 52.8		01 30	02 50	1 ^h 30 ^m	03 ^h 00W					9.2	F2 IV							T=13°C
	HD 101379	11 ^h 38.3	-65° 15.4		03 02	03 04	1 ^m , 2 ^m	01 ^h 05W					5.7v	G5/B IIIp							
	HD 119243	13 ^h 41.9	-60° 19.1		03 20	05 07	1 ^h 45 ^m	01 ^h 07W					9.4	G8 III							
	HD 136061	15 ^h 20.0	-66° 31.5		06 10	07 05	50 ^m	01 ^h 26W					8.7	K2 III							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP		TOTAL/ CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1388	HD 136508	15 ^h 23.2	-68° 37.5		07 21	08 38	75 ^m	02 ^h 57W	2"	7.0	100 ^m /1.2	11 ^h /4.2	9.1	K2 III	NeA	60 ^s	IIaO	M=2.67 ^F 15 MIN	Fgi	T=11°C, H=52%	
1388	HD 82281	09 ^h 27.6	-64° 15	APR 28/29	00 ^h 13	02 13	2 ^m	02 ^h 30W	1/2-2"	7.0	100 ^m /1.2	11 ^h /4.2	9.5	G0 IIIp	NeA	60 ^s	IIaO	M=2.67 ^F 15 MIN	Fgi	T=12°C, H=39%	
	HD 121379	11 ^h 38.3	-65° 15.4		02 20	02 22	2 ^m	00 ^h 30W					5.7V	G5/8 IIIp							
	HD 127538	14 ^h 32.5	-60° 18.3		02 41	05 12	2 ^h 30 ^m	00 ^h 25W					9.7	K1 IIIVe		wrong star					T=13°C, H=41%
	HD 137164	15 ^h 25.8	-62° 52.3		05 21	06 17	55 ^m	00 ^h 35W					8.8	K1/2 IIIp							
	HD 141747	15 ^h 52.6	-65° 49.5		06 23	07 19	55 ^m	01 ^h 10W					8.8	G2 V							
	HD 145324	16 ^h 01.7	-64° 23.5		07 28	08 23	55 ^m	02 ^h 07W					8.8	G8 III							
1390	RV Lib	14 ^h 34.4	-17° 55.8	APR 30/1	02 15	03 26	70 ^m	01 ^h 15E	2"	7.0	100 ^m /1.2	11 ^h /4.2	9.0		NeA	60 ^s	IIaO	M=5.67 ^F 15 MIN	Fgi	T=10°C, H=45%	
	"C1"	14 ^h 34.7	-18° 00		03 32	04 42	70 ^m	00 ^h 00													
	"C2"	14 ^h 34.5	-18° 04		04 46	06 07	80 ^m	01 ^h 25W													
1391	HD 63082	07 ^h 44.3	-37° 57.2	MAY 7/8	23 14	23 24	25 ^m 1.5 ^m	2 ^h W		7.0	100 ^m /1.2	11 ^h /4.2	6.5	K5	NeA	60 ^s	IIaO	M=5.67 ^F 15 MIN	Fgi		
	"	"	"		23 25	23 42	7 ^m 9 ^m	2 ^h 20W					6.5	K5							
1392	NGC 2808	09 ^h 11.2	-64° 48'	June	23 46	00 43	15 ^m 30 ^m	4 ^h 30W	2" → 6"	8.36	100 ^m /1.2	11 ^h /3.42	Red		NeA	2 ^s	IIaD	M=5.67 ^F 15 MIN	JEFFERS MAX	CIRRUS	
1393	H1-36	17 ^h 48 ^m	-37° 01	2/17	02 04	03 13	20 ^m 45 ^m	1 ^h 8E	2"			0.6									
1394	"	"	"		03 45		1 ^m	2"				0.6									
1395	H1-36	"	"		05 35	06 22	45 ^m	1 ^h 42W	2"		220 ^m	0.6									
1396	"	"	"		07 48	08 15	30 ^m	3 ^h 45W	CIRRUS		220 ^m	0.6									
	HM Sgc	19 ^h 41.1	16° 41.5		08 47	09 27	40 ^m	3 ^h 10W	CLOUDS		225 ^m	0.6									
1397	B Cen	14 ^h 02.7	-60° 16'	July 5/6	00 29	00 32	5 ^m 10 ^m 15 ^m	0 ^h 42W	3"	7.0	100 ^m /1.2	11 ^h /3.42	0.9	B1	NeA	60 ^s	IIaO	M=5.67 ^F 15 MIN	CRAWLE MAX	CLEAR	
	X Cen	14 ^h 04.6	-41 04		00 42	01 01	2 ^m 5 ^m 10 ^m	1 ^h 9 ^m W	"		"	0.8		4.5	B2	"	"	"	"	SOME CIRRUS LATER	
	W Lup	15 ^h 36.5	-42 29		01 12	01 25	3 ^m 4 ^m	0 ^h 1 ^m W	"		"	0.6		4.3	K5	"	"	"	"	T=4°C, H=55%	
	E Lib	15 ^h 37.2	-24 42		01 32	01 45	3 ^m 1 ^m	0 ^h 5 ^m W	"		"	1.2		3.8	B3	"	"	"	"		
1398	λ Sco	17 ^h 33.6	-37 06	JULY 12-13	03 26	02 13	10, 20, 30 ^m	0 ^h 45W	2"	7.0	100/0.8	11 ^h /3	1.6	B1.5 IV	NeA	2 ^s	IIaD	017.60 4 ^m	CRAWLE FITZGERALD	LOW W 50.2, 1.0 T=0°C, H=55%	
1399	NGC 6393-158	17 ^h 31.0	-32 38	JULY 13-14	23:54	00:08	14 ^m 14 ^m	2 ^h 39E	2.3"	7.0	100/0.8	11 ^h /3.52	9.9	F	NeA	3 ^s	IIaD	019.60 4 ^m	CRAWLE FITZGERALD	T=8°C, H=48%	
1400	-161	17 32.3	-32 38	"	00 42	01 12	30/	1:38 E	"				10.7	g.K.	NeA	3 ^s	1				
	SLS 4283	17 35.7	-35 02		01 22	01 44	22/	1:04 E					10.4	FSII			3				
	SLS 4289	"	"		01 47	02 11	24/		2"			10.8	10.6	OB							
	SLS 4286	17 35.8	-35 20		02 17	02 23	6/	0 30 E	2"			1.2	8.7	OB cal							
	SLS 4300	36.3	22		02 27	02 47	20/	0:06 E				10.8	10.4	OB r							
-11															NeA	3 ^s					

NUMBER	OBJECT	R.A. 1977	DEC. 1977	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	B MAG	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1401-1	SLS 4299	17 36.3	-35 18	JULY 13-14	03 03	04 03	60 ^m / wrk	01:10W	2"	3.52	100/0.8	112/7.0	11.3	OB ⁺ r	NeA	3 ^S		IIaD	D-19 65°-5 min	CROWE P. FITZGERALD	airmass ft.
-3	SLS 4162	17 25.3	-32 33		04 09	04 16	8 / v	01:36W			11.2		8.9	A1:U							
-5	FL 370	17 24.0	-32 14		04 21	04 37	16 / v	01:57W			10.8		10.2	B3:							
-7	FL 371	"	"		04:48	05:02	14 / v	02:24W			10.8		10.0	A2:II:							
-9	SLS 4142	17 22.9	-34 11		05:16	06:36	80 / ^{read} / wrk	04:08W			10.6		11.9	OB ⁺ r							
-11	FL 562	17 28.2	-33 39		06:43	06:54	10 / v				10.8		9.4	OB ⁻							
1402-1	HD 204867 FL 562 (B1)	21 30.8	-05 40		08:28	08:34	6 ^m / 1/2 / wrk	01:51.5W	2"	3.52	100/11.2		3.7	G0:IIb							5 ^m filter used
-3	HD 221148	23 28.6	-04 39		08:45	08:47	1 ^m 45 ^s / v	00:4.5W			10.8		7.3	K2-5 III-IV							
-5	HD 221148				08:49	08:50.5	1 ^m 30 ^s / wrk				11.2										
-7	HD 209750	22 04.6	-00 25.4		08:56.5	09:04	7 1/2 / ^{read} / wrk	01:45W			11.2		3.9	G2:IIb							5 ^m filter used
-9	HD 219615	23 15.9	+03 09		09:13	09:25	12 / ^{read} / wrk	00:55W			11.2		4.6	K0:IIIb							5 ^m filter used
-11	HD 223617	23 50	+02 07				3 /				11.2		8.0	G9:III							wrong star - NO SPECTRUM TAKEN
-11	HD 216956	22 56	+29 44		09:38	09:38.5	30 ^s / ^{read} / wrk	01:27.5W			11.2		6.2	A3:V							5 ^m filter used
1403-1	HR 7790	20 24.4	-56 47		10:14	10:15	50 ^s / wrk	> 4 ^h W			11.2		1.9	B2.5:V							5 ^m filter used
-3	HR 8408	22 03.3	-26 56		10:32.5	10:37	3 ^m 45 ^s / ^{read} / wrk	03:20W			11.2		5.7	B4:IV ^m	NeA	3 ^S					
1404	SLS 4187	17 28.5	-33 41	JULY 14-15	5:39	5:40	1 ^m / v	03:00 ^W	2"-3"	3.52	100/11.2	112/7.0	6.7	B4:IV:	NeA	3 ^S		IIaD	D-19 68°-4 ^m	FITZGERALD CROWE	T=10°C, H=38%
-3	FL 561	17 28.5	-33 41		5:46	6:16	30 ^m / v	> 3:35W			10.8		10.7	B3							
1405-1	FL 569	17 29.9	-34 01		6:37	6:57	20 / ^{read} / wrk	~ 4 ^h W	2"-3"		10.8		10.1	B8							
-3	SLS 4203	17 30.8	-33 19		7:05	7:15	10 / ^{read} / wrk	> 4 W			10.8		9.5	OB							
-5	FL 453	17 30.2	-33 30		7:19	7:32	13 / "	"			10.8		9.6	A2:II:							
-7	SLS 4218	17 32.7	-33 37		7:35	7:50	15 / "	"			10.8		9.8	OB ⁻ h							
-9	FL 555	17 32.4	-33 40		7:52	8:08	16 / "	5 25W	2"-3"		10.8		9.9	B5							
-11	SLS 4201	17 30.6	-31 31		8:12	8:20	8 / v	5 40W	2"-4"		10.8		8.6	OB							
1406-1	HD 220657	23 ^h 24 ^m 2	+23° 17'		8:48	8:48	20 ^s / ^{read} / wrk	00:14.5W			11.2		4.5	F8:III							CIRRUS
-3	HD 219615	23 15.9	+03 09		8:55	8:55	20 ^s / v	00:29W			11.2		4.6	K0:IIIb							"
-5	HD 216956	22 56	+29 44		9:02	9:03.5	1 1/2 ^m / ^{read} / wrk	00:57W			11.2		1.2	A3:V							" 5 ^m filter used
-7	HD 218356	23 06	25 21		9:13	9:13	26 ^s / ^{read} / wrk	00 55W			11.2		6.1	G8:IIb							"
-9	HD 204075	21 25	-22 32		9:40	9:40	26 ^s / ^{read} / wrk	03:05W			11.2		4.7	G4:IIb							"
-11	HR 8408	22 03	-26 56		9:52	9:52	20 ^s / v wrk	02:39W			11.2		5.7	B4:IV ^m							"

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NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP		TOTAL / CORR	HA END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS			
					BEGIN	END									KIND	EXP.								
1407-1	FL 345 ^m NGC 6383-849	17 ^h 32 ^m .8	-32° 09'	JULY 15-16	23:48 00:03	24:00 00:04	12 ^m / ✓	2 ^h 42 ^m E	2"-3"	3.52	100 / 0.9	112 Å 7.0	9.2	OB:	NeA	3 ^s	IIaD	D-19 68"-4"	FITZGERALD CROWE	T = 12°C H = 39%	CIRRUS			
-3	FL 344 SLS 4225	17 ^h 33.2	-32° 34'		00:07	00:08	38 ^m / 20 ^s	2 ^h 34 ^m E	2"-4"				5.7	OB +07V										
1408-1	FL 347	17 33.2	-32 15		00:28.5	00:58	30 ^m / ✓	1 ^h 35 E	2"-4"				10.3	BS:										
-3	FL 340 NGC 6393-98	17 32.6	-32 25		01:03	01 48	44 ^m / ✓	0 54 E	2"-3"				10.9	BS								T=12 H=38	CLDAR	
-5	FL 341	17 32.9	-32 30		01:51	01:58	7 ^m / ✓	0.44 E	"				8.9v	81:								T=13		
-7	SLS 4246	17 34.0	-34 37		02:04.5	02:30	45 ^m / ✓	0:08W			10.6		>11.0	OB									(also 50 mm camera)	
-9	SLS 4242	17 34.1	-34 03		02:55	03:45	50 ^m / ✓	1:04W			10.8		11.2	OB ⁺										
-11	FL 651	17 36.8	-34 25		03:49	04:01	12 ^m / ✓	1:20W					9.4	BS:									(also wide angle cam)	
1409-1	SLS 4239	17 34.0	-33 55		04:35	05:25	50 ^m / ✓	2:44W					11.2	OB ⁺ r										
-3	SLS 4254	17 34.6	-33 57		05:27	05:48	18 ^m / ✓	3:07W					10.1	OB ⁺										
-5	SLS 4252	17 34.6	-33 33		05:50	06:50	60 ^m / ✓	4:09W			10.6		11.8	OB									T=14 H=35	
-7	FL 1545	17 34.3	-33 54		06:53	06:59	5 ^m / ✓	4:18W			10.8		8.6	BS:										
-9	FL 1543	17			07:02	07:14	8 ^m / ✓	4:33W					9.2	OB ⁺										
-11	SLS 4231	17			07:17	07:46	25 ^m / ✓	5:06W					10.3	OB ⁺ (r)										
1410-1	SLS 4314	17 37.9	-33 38		08:03	08 15	12 ^m / ✓	5:31W					9.2	OB ⁺ (r)										
-3	FL 536	17 37.9	-33 35		08:17	08:25	7 ^m / ✓	5:40W					8.6		NeA	3 ^s								
1411-1	HD 219615	23 ^h 15.9 ^m	+03° 09'		08:49	08:50	65 ^m / ✓	00:28W			11.2		4.6	K0 III										
-3	HD 220657	23 ^h 24.2 ^m	23° 17'		08:58	08:59	60 ^m / ✓	00:285W			11.2		4.5	F8 III										
-5	HD 206778	21 ^h 43.1 ^m	09° 46'		09:05	09:06	75 ^m / ✓	02:17W			11.2		4.0	K2 Ib										
-7	HD 1013	00 ^h 13.4 ^m	20° 05'		09:12.5	09:14	110 ^m / ✓	00:06W			11.2		6.4	M2 III										
-9	HD 215648	22 ^h 45.6 ^m	12° 05'		09:22	09:23	70 ^m / ✓	01:32W			11.2		4.7	F8 III-IV										
-11	HD 223617	23 ^h 50.0 ^m	02° 07'		09:30.5	09:37.5	7 ^m / ✓	00:41W			11.2		8.0	G9 III-IV										
1412-1	HR 8403	22 03.3	-26 56		09:54	09:55	75 ^m / ✓	02:46W			11.2		5.7	B4 IV n										
-3	HR 338	01 ^h 08.4 ^m	-55° 15'		10:01.5	10:02	70 ^m / ✓	00:12 E			11.2		3.8	B7 E										
-5	HR 472	01 ^h 36.9 ^m	-57° 22'		10:08.5	10:11	150 ^m / ✓	00:33 E			11.2		0.3	B3 IV p									5 m filter used	
-9	HR 1258	04 ^h 02.4 ^m	-20° 12'		10:20	10:22	130 ^m / ✓	02:48 E			11.2		6.3	B2.5 E										
-11	HR 1443	04 ^h 30.1 ^m	-45° 00'		10:28.5	10:29.5	60 ^m / ✓	03:08 E			11.2		4.9	B2 IV-V										
1413-1	SLS 4231	17 33.5	-33 40.0	JULY 16-17	23:11.5	23:41.5	30 ^m / ✓	02:58 E	2"-4"	3.52	100/1.2	112/7.0	10.3	OB ⁺ (r)									5.0 GRAND MAX	BRIGHT T=14 SPY H=30
-3	4237	17 33.9	-33 43.4		23 46	23 56	10 ^m / ✓		2"-4"				9.2	OB ⁺	NeA	3 ^s								

plate stuck to the
photophor - ruined
double exposure to right

NUMBER	OBJECT	R.A. 1977	DEC. 1977	1977 DATE U.T.	U.T. EXP.		TOTAL/CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	B MAG	SP.	COMP		CALIB.	EMUL	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1444-1	SLS 4254	17 34.6	-33 52.9	JULY 17	00:11	00:21	10 ^m /wh	2 18 E	3"-4"	3.52	100/0.8	112/7.0	10.1	OB ⁺				IIaD	D-19 68F-4 ^m	FitzGerald MAX-CALIB	exp. too short
-3	SLS 4311	17 37.5	-35 30		00:28	00:52	24/wh	1:49 E					10.2	OB							poor transparency!
-5	SLS 4267	17 34.9	-34 03		00:59	01:39	40 ^m /wh	1:02 E					10.9	OBh							
1415-1	SLS 4314	17 37.9	-33 38		01:59	02:11	12 ^m /wh	0:32 E					9.2	OB ⁺ & Tr							
-3	FL 536	17 37.8	-33 35		02:14	02:23	8 ^m /wh	0:19 E					8.6	OB?							
-5	SLS 4332	17 40.4	-33 30.2		02:28	02:30.5	130 ^s /wh	0:15 E					7.0	F8I							
-7	SLS 4304	17 36.6	-33 41.7		02:38	03:38	80 ^s /wh	0:57 W					11.0	OB ⁺	Neft	3 ^s					
1416-1	SLS 4335	17 40.7 38.7	-34 08		04:09	04:29	20 ^m /wh	1:45 W					9.6	OB ⁺							
-3	FL 633	17 40.8	-34 20		04:32	04:38	5 ^m /wh	1:55 W						BS:							DBL EXP
-3	SLS 4356	17 43.7	-35 25.0		04:50	05:18	35 ^m /wh	2:31 W	4"				10.0	OB ⁻							SKY v. poor thin UNSTABLE CLOUD.
-5	SLS 4358	17 43.4	-35 25		05:18	06:10	40 ^m /wh	3:24 W	4"-6"				10.0	OB ⁻							" "
-7	SLS 4346	17 42.1	-35 32		06:13	06:31	16 ^m /wh	3:42 W	"				8.8	OB ⁻							" "
-9	FL 633	17 40.8	-34 20		06:33	06:44	10 ^m /wh	3:55 W					~8.5	BS:							T=16 H=23 (sl. out) focus
1417-1	SLS 4182	17 27.7	-31 30	JULY 18	02:30:5	02:33.5	3 ^m /wh	0:10 W	3"-4"	3.52	100/0.8	111/7.0	7.3	OBce (60X)							T=15.5 H=27.6
-3	SLS 4185	17 28.0	-31 44		02:38	03:09	30 ^m /wh	0:41 W	2"				10.2	OB							
1417-5	SLS 4209	17 31.4	-33 02		03:12	03:13	80 ^s /wh						6.9	OB							
-7	"	"	"		03:15	03:18	180 ^s /wh	0:46 W	2"				6.9	OB	Noft	3 ^s					
1418-1	FL 457	17 31.5	-33 02		03:31	03:45	14 ^m /wh	1:13 W					9.4	B7							
-3	SLS 4207	17 31.6	-33 23		03:48	04:48	60 ^m /wh	2:17 W					10.9	OB ⁺							CIRRUS??
-5	FL 451	17 30.2	-32 53		04:52	05:06	12 ^m /wh	2:35 W					9.0	OB?	Noft	3 ^r					
1419-7	SLS 4380	17 45.2	-32 38		05:23	06:26	60 ^m /wh	3:47 W					10.8	OB ⁺ h							CIRRUS?
-3	SLS 4408	17 47.1	-34 04		06:33	06:47	12 ^m /wh	4:02 W					8.6	OB ⁻							
	SLS 4181	17 27.5	-32 58		06:54	07:08	14 ^m /wh	4:23 W					8.9	OB ⁻							CLEAN
1420-1	SLS 4254	17 34.6	-33 52.9	JULY 19	00:26	00:56	26 ^m /wh	1:36 E	3"	3.52	100/0.8	112/7.0	10.1	OB ⁺	Noft	3 ^s		IIaD	D-19 68F-4 ^m	FitzGerald MAX-CALIB	T=13°, H=22.76
-35	SLS 4332	17 40.4	-33 30.2		01:00	01:02	130 ^s /wh						7.0	F8I	Noft	3 ^s					
-5	"	"	"		01:03	01:04	90 ^s /wh	1:24 E					"	"	Noft	6 ^s					
1421-1	SLS 4314	17 37.9	-33 38		01:26	01:46	18 ^m /wh	0:50 E	3"-4"				7.2	OB ⁺ & Tr							
-3	FL 0532	17 36.1	-33 41		01:50	02:04	30 ^m /wh	0:25 E	"				9.8	A2II:							
S-9	SLS 4314				02:45	02:56	10, 10, 5														replaced wind batteries 2200h into tunnel!!!
					02:56	03:01									Noft	3, 6 ^s					

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1977	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
1432	LS-4°15	18 ^h 39 ^m .9	-4° 24'	27 AUG	4:23	5:56	93 ^m /√	4 ^h 54 ^m W	1"/clear	3.25	50μ/0.6	120/7.0	11.4	OB+r	NeA	3 ^s	-	IIa-D	metal sulfate 15 ^m	Tnr		
1433	HD 148688	16 30.1	-41 46	27/28 AUG	23:17	23:26	12 ^m , 3 ^m , 4 ^m	0 37 W	1"/clear	3.36	50μ/0.6	120/7.0	5.64	B1 Ia	NeA	30 ^s	-	IIa-0	metal sulfate 15 ^m	Tnr		
	ξ Sco	16 52.4	-42 20	"	23:30	23:36	1 ^m , 2 ^m , 3 ^m	0 24 W	"	"	"	"	5.24	B1.5 Ia r	"	"	-	"	"	"	"	
	ν Aql	19 25.7	+0 17	"	23:43	23:49	1 ^m , 2 ^m , 3 ^m	1 56 E	"	"	"	"	5.23	F2 Ib	"	"	-	"	"	"	"	
1434	HD 173438	18 44.2	-4 38	"	0:04	1:12	68 ^m /√	0 08 W	1"/clear	"	"	"	9.03	B0.5 Ia	NeA	30 ^s	-	IIa-0	"	Tnr	=LS -4° 21	
	LS-4°13	18 39.7	-4 07	"	1:15	3:45	150 ^m /√	2 46 W	"	"	"	"	9.8	A0 Ib	"	"	-	"	"	"	T=13, H=49, W=5	
1435	89 Her	17 54.5	+26 03	29/30 AUG	23:50	0:08	3 ^m , 5 ^m , 7 ^m	0 02 W	1 1/2"/clear	3.36	50μ/0.6	120/7.0	5.82	F2 Ia	NeA	30 ^s	-	IIa-0	metal sulfate 15 ^m	Tnr	wrong star!	
	δ Aql	19 24.3	+3 04	"	0:20	0:23	11 ^s , 22 ^s , 33 ^s	1 13 E	"	"	"	"	3.68	F0 IV	"	"	-	"	"	"	"	
	41 Cyg	20 28.5	+30 17	"	0:41	0:46	39 ^s , 65 ^s , 91 ^s	1 54 E	"	"	"	"	4.43	F5 II	"	"	-	"	"	"	"	
1436	LS+3°19	19 32.5	+3 43	29/30 AUG	1:32	1:44	11 ^m /√	0 00 W	1"/clear	3.36	50μ/0.6	120/7.0	7.13	OB	NeA	30 ^s	-	IIa-0	metal sulfate 15 ^m	Tnr		
	LS+4°12	19 41.4	+4 54	"	3:51	4:17	26 ^m /√	2 25 W	"	"	"	"	7.73	OB	"	"	-	"	"	"		
1437	LS-4°19	18 44.0	-4 49	31 AUG 1 SEPT	0:01	0:31	30 ^m /√	0 16 W	1"/clear	3.30	50μ/0.6	120/7.0	10.8	OB	NeA	3 ^s	-	IIa-D	metal sulfate 15 ^m	Tnr/crw		
	LS-4°12	18 38.8	-4 37	"	0:38	2:38	120 ^m /√	1 56 W	"	"	"	"	12.3	OB	"	"	-	"	"	"	Tnr/crw	
	LS-4°22	18 45.1	-4 53	"	2:43	5:28	165 ^m /√	4 40 W	"	"	"	"	12.4	OB	"	"	-	"	"	"		
1438	LS-4°17	18 40.1	-4 04	1/2 SEPT	23:54	2:24	150 ^m /√	1 46 W	1"/clear	3.30	50μ/0.6	120/7.0	12.6	OB	NeA	3 ^s	-	IIa-D	metal sulfate 15 ^m	Tnr/crw	T=17, H=21	
	LS+0°21	20 30.1	+1 01	"	2:34	4:24	110 ^m /√	1 56 W	"	"	"	"	12.1	OB	"	"	-	"	"	"	T=17, H=18	
	LS-4°35	20 25.4	-4 06	"	4:31	7:01	150 ^m /√	4 37 W	"	"	"	"	12.2	OB	"	"	-	"	"	"	T=17, H=17	
1439	RY Mic	20 56.9	-40 22	3/4 SEPT	5:58	7:58	120 ^m /√	3 30 W	2"/clear	3-30	100μ/0.6	120/7.0	~12	MIRA VARIABLE	NeA	3 ^s	-	IIa-D	metal sulfate 15 ^m	Crw	T=15°, H=27%	
	R For	02 28.2	-26 12	"	9:23	10:23	60 ^m /WEAK	2 05 W	"	"	"	"	~11	MIRA Ne	"	"	-	"	"	"	T=14°, H=27%	
1440	RS Sco	16 54.0	-45 04	5/6 SEPT	01:43	01:54	1 ^m , 2 ^m , 4 ^m	3 16 W	2"/clear	3-30	100μ/0.6	120/7.0	7.5	MIRA MSE-82	NeA	3 ^s	-	IIa-D	metal sulfate 15 ^m	Crw McA	T=16°, H=31%	
	RR Sco	16 55.0	-30 31	"	02:15	02:28	1 ^m , 3 ^m , 6 ^m	3 50 W	"	"	"	"	8.0	MIRA MSE-82	"	"	-	"	"	"	"	
1441	T Gru	22 24.4	-37 41	"	06:34	07:07	30 ^m /WEAK	3 00 W	"	"	"	"	11.0	MIRA MOE	"	"	-	"	"	"	T=15°, H=30%	
	T Col	05 18.5	-33 44	"	07:34	08:19	45 ^m /√	2 42 E	"	"	"	"	11.5	MIRA M42-M6	"	"	-	"	"	"	"	
1442	RP Sco	16 55.0	-30 31	10/11 OCT	01:21	01:35	2 ^m , 3 ^m , 5 ^m	5 ^h 15 ^m W	1"/clear	3-30	100μ/0.6	120/7.0	6.5	MIRA MSE-82	NeA	2 ^s	-	IIa-D	METAL SULFATE 15 ^m	Crw	T=12°, H=46%	
	RS Sco	16 54.0	-45 04	"	01:50	02:01	1 ^m , 2 ^m , 4 ^m	5 ^h 42 ^m W	"	"	"	"	7.0	MIRA MSE-82	"	"	-	"	"	"	"	
1443	T Gru	22 24.4	-37 41	"	03:36	04:43	60 ^m /√	2 ^h 55 ^m W	"	"	"	"	9.5	MIRA MOE	"	"	-	"	"	"	T=13°, H=42%	
	RY Mic	20 56.9	-40 22	"	05:19	06:32	70 ^m /WEAK	6 ^h 11 ^m W	"	"	"	"	~12	MIRA VARIABLE	"	"	-	"	"	"	CLOUD ON EAST	
	T Col	05 18.5	-33 44	"	07:40	08:40	60 ^m /WEAK	0 ^h 02 ^m E	"	"	"	"	~11.5	MIRA M42-M6	"	"	-	"	"	"	"	

NUMBER	OBJECT	R. A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H. A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS.	REMARKS
					BEGIN	END									KIND	EXP					
1444	R For	02 ^h 28 ^m 2	-26° 12'	1977 OCT 11-12	04:00	05:30	90 ^{m/1700} / ^{weak}	0 19 E	1"/hazy	3-30	100/0.6	112/70	11.5	MIRA NR	NeA	2 ^s	—	III-D	METAL 15 SILVER m	Crw	T=12°, H=40%
1445	R For	"	"	"	07:05	09:15	180 ^{m/1700} / ^{weak}	3 28 W	1"/clear	"	"	"	"	"	"	"	—	"	"	"	" (CIRRUS)
1446	RX Mic	20 ^h 52 ^m 9	-27° 47'	OCT 12-13	00:52	04:52	240 ^{m/1700} / ^{weak}	4 42 W 1	1"/clear	3-30	100/0.6	112/70	13	MIRA	NeA	3 ^s	—	III-D	METAL 15 SILVER m	Crw	T=13°, H=37%
	RS The	1 ^h 13 ^m 0	-56° 55'	"	05:44	06:54	70 ^{m/1700} / ^{weak}	2 25 W	"	"	"	"	11.5	MIRA M2E	"	—	"	"	"	"	T=12°, H=32%
	S Hor	2 ^h 24 ^m 8	-59° 48'	"	07:30	09:15	105 ^{m/1700} / ^{weak}	3 35 W	"	"	"	"	12	MIRA M2E	"	—	"	"	"	"	T=11°, H=34%
1447	RR Sec	16 ^h 55 ^m 0	-30° 32'	OCT 13-14	00:22	00:24	2 ^{m/1700} / ^{weak}	4 16 W 2	1"/clear	3-30	100/0.6	112/70	6.5	MIRA M5E-M8E	NeA	3 ^s	—	III-D	METAL 15 SILVER m	Crw	T=10°, H=42% WIND=0-20
	RS Sec	16 ^h 54 ^m 0	-45° 06'	"	00:34	00:38	4 ^{m/1700} / ^{weak}	4 30 W	"	"	"	"	7.0	MIRA M5E-8E	"	—	"	"	"	"	"
	RY Mic	20 ^h 57 ^m 0	-40° 24'	"	01:07	03:22	120 ^{m/1700} / ^{weak}	3 13 W	"	"	"	"	12	MIRA	"	—	"	"	"	"	TRACING MEANS INTERCEPTED ECLIPSE
	T Gun	22 ^h 24 ^m 4	-37° 45'	"	03:47	04:34	45 ^{m/1700} / ^{weak}	2 55 W 3	1"/clear	"	"	"	9.5	MIRA M0E	"	—	"	"	"	"	T=8°, H=44%
	S Hor	2 ^h 24 ^m 4	-59° 42'	"	06:10	08:45	150 ^{m/1700} / ^{weak}	3 09 W	"	"	"	"	<12	MIRA M2E	"	—	"	"	"	"	T=5°, H=53%
1448	RX Mic	20 ^h 53 ^m 1	-27° 49'	OCT 14-15	00:38	05:41	300 ^{m/1700} / ^{weak}	5 39 W 3	1"/clear	3-30	100/0.6	112/70	13	MIRA	NeA	3 ^s	—	III-D	METAL 15 SILVER m	Crw	T=7°, H=75%
	RS The	1 ^h 13 ^m 0	-56° 55'	"	06:00	07:10	70 ^{m/1700} / ^{weak}	2 50 W	"	"	"	"	11.5	MIRA M2E	"	—	"	"	"	"	T=12°, H=45%
	T Col	5 ^h 18 ^m 6	-33° 44'	"	07:32	08:47	75 ^{m/1700} / ^{weak}	0 20 W	"	"	"	"	11.5	MIRA M4E-M6	"	—	"	"	"	"	T=8°, H=38%
1449	RR Sec	16 ^h 55 ^m 0	-30° 32'	OCT 15-16	00:55	01:07	2 ^{m/1700} / ^{weak}	5 07 W 2	1"/light	3-50	100/0.6	112/836	6.5	MIRA M5E-8E	NeA	2 ^s	—	III-D	METAL 15 SILVER m	Crw	T=11°, H=45%
	RS Sec	16 ^h 54 ^m 0	-45° 06'	"	01:13	01:24	1 ^{m/1700} / ^{weak}	5 25 W	"	"	"	"	7.0	MIRA M5E-8E	"	—	"	"	"	"	"
1450	RY Mic	20 ^h 57 ^m 0	-40° 24'	"	02:39	05:46	180 ^{m/1700} / ^{weak}	5 45 W 1	1"/clear	"	"	"	12	MIRA	"	—	"	"	"	"	T=9°, H=47%
	T Gun	22 ^h 24 ^m 4	-37° 45'	"	05:54	06:54	60 ^{m/1700} / ^{weak}	5 25 W	"	"	"	"	9.5	MIRA M0E	"	—	"	"	"	"	T=10°, H=48%
	RS The	1 ^h 13 ^m 0	-56° 55'	"	07:05	08:39	90 ^{m/1700} / ^{weak}	4 22 W	"	"	"	"	11.5	MIRA M2E	"	—	"	"	"	"	T=9°, H=40%
1451	RR Sec	16 ^h 55 ^m 0	-30° 32'	OCT 16-17	00:33	00:38	5 ^{m/1700} / ^{weak}	4 42 W 1/2	1"/clear	3-50	100/0.6	112/836	6.5	MIRA M5E-8E	NeA	2 ^s	—	III-D	METAL 15 SILVER m	Crw	T=12°, H=45%
	RS Sec	16 ^h 54 ^m 0	-45° 06'	"	00:44	00:54	10 ^{m/1700} / ^{weak}	4 58 W	"	"	"	"	7.0	MIRA M5E-8E	"	—	"	"	"	"	"
	T Gun	22 ^h 24 ^m 4	-37° 45'	"	01:05	02:46	100 ^{m/1700} / ^{weak}	1 20 W	"	"	"	"	9.5	MIRA M0E	"	—	"	"	"	"	T=13°, H=42%
	RS The	1 ^h 13 ^m 0	-56° 55'	"	03:02	05:08	125 ^{m/1700} / ^{weak}	4 30 W	<1"/clear	"	"	"	11.5	MIRA M2E	"	—	"	"	"	"	"
	T Col	5 ^h 18 ^m 6	-33° 44'	"	05:38	08:08	150 ^{m/1700} / ^{weak}	0 12 E	"	"	"	"	11.5	MIRA M4E-M6	"	—	"	"	"	"	T=13°, H=36%
1452	RR Sec	16 ^h 55 ^m 0	-30° 32'	OCT 17-18	01:05	01:10	5 ^{m/1700} / ^{weak}	5 19 W	<1"/clear	3-50	100/0.6	112/836	6.5	MIRA M5E-8E	NeA	2 ^s	—	III-D	METAL 15 SILVER m	Crw	T=10°, H=37%
	RS Sec	16 ^h 54 ^m 0	-45° 06'	"	01:16	01:26	10 ^{m/1700} / ^{weak}	5 35 W	"	"	"	"	7.0	MIRA M5E-8E	"	—	"	"	"	"	"
	T Gun	22 ^h 24 ^m 4	-37° 45'	"	01:41	03:22	100 ^{m/1700} / ^{weak}	2 01 W	"	"	"	"	9.5	MIRA M0E	"	—	"	"	"	"	T=15°, H=30%
	RS The	1 ^h 13 ^m 0	-56° 55'	"	03:30	06:06	150 ^{m/1700} / ^{weak}	1 56 W	1"/clear	"	"	"	11.5	MIRA M2E	"	—	"	"	"	"	"
	T Col	5 ^h 18 ^m 6	-33° 44'	"	06:25	09:00	150 ^{m/1700} / ^{weak}	0 45 W	"	"	"	"	11.5	MIRA M4E-M6	"	—	"	"	"	"	"

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1977	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. V	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1453	2 Sco	16 ^h 28 ^m .0	-26°23'	18-19	00:20	00:20	2 SET TRAILS / sl	4 ^h 59 ^m W	1" / clear	3-30	100 / 0.6	112 / 7.0	1.08	M1.5 IIIa	NeA	3 ^s	—	IIaD	METOL 15 SULFITE m	Crw	T=18°, H=26%
	3 Apr	20 ^h 46 ^m .5	-5°07'	"	00:37	00:37	15 SET TRAILS / sl	0 ^h 58 ^m W	"	"	"	"	4.42	M3 III	"	"	—	"	"	"	"
	1 st Apr	22 ^h 51 ^m .4	-7°41'	"	00:44	00:44	15 SET TRAILS / V	1 ^h 00 ^m E	"	"	"	"	3.76	M2.5 IIIa	"	"	—	"	"	"	"
	2 Apr	23 ^h 13 ^m .2	-6°09'	"	00:50	00:50	15 SET TRAILS / V	1 ^h 17 ^m E	"	"	"	"	4.22	M1.5 III	"	"	—	"	"	"	"
	30 Dec	00 ^h 00 ^m .8	-6°07'	"	00:56	00:56	15 SET TRAILS / V	1 ^h 55 ^m E	"	"	"	"	4.41	M3 III	"	"	—	"	"	"	"
	BS 46	00 ^h 13 ^m .3	-7°54'	"	01:05	01:05	2 GUIDE TRAILS / V	2 ^h 00 ^m E	"	"	"	"	5.36	M3 III	"	"	—	"	"	"	"
	EU Del	20 ^h 36 ^m .7	18°11'	"	01:16	01:17	60 ^s / V	1 ^h 48 ^m E	"	"	"	"	6.3V	M6 III	"	"	—	"	"	"	"
	2 Peg	21 ^h 28 ^m .9	23°32'	"	01:23	01:24	15 SET TRAILS / sl	1 ^h 01 ^m E	"	"	"	"	4.54	M1 III	"	"	—	"	"	"	"
1454	EU Del	20 ^h 36 ^m .7	18°11'	"	02:45	02:46	60 ^s / V	3 ^h 06 ^m W	"	"	"	"	6.3V	M6 III	"	2 ^s	—	"	"	"	T=18°, H=30%
	3 Apr	20 ^h 46 ^m .5	-5°07'	"	02:54	02:54	15 ^s / V	2 ^h 56 ^m W	"	"	"	"	4.42	M3 III	"	"	—	"	"	"	"
	2 Peg	21 ^h 28 ^m .9	23°32'	"	03:04	03:04	15 ^s / V	2 ^h 42 ^m W	"	"	"	"	4.54	M1 III	"	"	—	"	"	"	"
	1 st Apr	22 ^h 51 ^m .4	-7°41'	"	03:09	03:10	15 SET TRAILS / V	1 ^h 25 ^m W	"	"	"	"	3.76	M2.5 IIIa	"	"	—	"	"	"	"
	2 Apr	23 ^h 13 ^m .2	-6°09'	"	03:15	03:16	30 ^s / strong	1 ^h 10 ^m W	"	"	"	"	4.22	M1.5 III	"	"	—	"	"	"	"
	30 Dec	00 ^h 00 ^m .8	-6°07'	"	03:20	03:21	15 ^s / V	0 ^h 26 ^m W	"	"	"	"	4.41	M3 III	"	"	—	"	"	"	"
	BS 46	00 ^h 13 ^m .3	-7°54'	"	03:26	03:26	30 ^s / V	0 ^h 20 ^m W	"	"	"	"	5.36	M3 III	"	"	—	"	"	"	"
	55 Peg	23 ^h 05 ^m .9	9°17'	"	03:35	03:35	15 ^s / STREAK	1 ^h 35 ^m W	"	"	"	"	4.51	M1 IIIab	"	"	—	"	"	"	"
1455	2 Apr	23 ^h 13 ^m .2	-6°09'	"	04:50	04:51	15 ^s / V	2 ^h 45 ^m W	"	"	"	"	4.22	M1.5 III	"	"	—	"	"	"	T=19°, H=27%
	X Peg	00 ^h 13 ^m .4	20°04'	"	04:57	04:58	30 ^s / V	1 ^h 52 ^m W	"	"	"	"	4.80	M2 ⁺ III	"	"	—	"	"	"	"
	55 Peg	23 ^h 05 ^m .9	9°17'	"	05:03	05:03	15 ^s / V	3 ^h 05 ^m W	"	"	"	"	4.51	M2 IIIab	"	"	—	"	"	"	"
	B And	01 ^h 08 ^m .4	35°30'	"	05:10	05:11	7 SET TRAILS / STREAK	1 ^h 10 ^m W	"	"	"	"	2.05	M0 IIIa	"	"	—	"	"	"	"
	45 RZ Ari	02 ^h 54 ^m .5	18°15'	"	05:18	05:19	45 ^s / V	0 ^h 30 ^m E	"	"	"	"	5.9V	M6 III	"	"	—	"	"	"	"
	L Cet	03 ^h 01 ^m .1	3°57'	"	05:27	05:27	7 SET TRAILS / V	0 ^h 25 ^m E	"	"	"	"	2.53	M1.5 III	"	"	—	"	"	"	"
	γ Eri	03 ^h 57 ^m .0	-13°36'	"	05:34	05:35	10 SET TRAILS / V	1 ^h 15 ^m E	"	"	"	"	3.19	M1 III	"	"	—	"	"	"	"
	γ Peg	23 ^h 30 ^m .6	24°59'	"	05:42	05:43	30 ^s / V	2 ^h 54 ^m W	"	"	"	"	4.66	M3 III	"	"	—	"	"	"	"
	119 Tau	5 ^h 30 ^m .7	18°34'	"	05:52	05:53	30 ^s / V	2 ^h 30 ^m E	"	"	"	"	4.73	M2 IIIab-Te	"	"	—	"	"	"	"
1456	R Dor	4 ^h 36 ^m .9	-62°10'	"	07:09	07:10	45 ^s / V	0 ^h 20 ^m E	"	"	"	"	5.5	M8e	"	"	—	"	"	"	T=18°, H=28%
	η ² Dor	6 ^h 12 ^m .0	-65°33'	"	07:16	07:17	30 ^s / V	1 ^h 48 ^m E	"	"	"	"	5.0	M2.5 III	"	"	—	"	"	"	"
	u Gem	6 ^h 21 ^m .5	22°36'	"	07:28	07:28	8 SET TRAILS / sl	1 ^h 45 ^m E	"	"	"	"	2.97	M3 IIIab	"	"	—	"	"	"	"
	v Gem	7 ^h 34 ^m .7	26°59'	"	07:35	07:36	15 ^s / V	2 ^h 52 ^m E	"	"	"	"	4.06	M0 III	"	"	—	"	"	"	"
	6 Gem	6 ^h 10 ^m .7	22°58'	"	07:42	07:44	60 ^s / V	1 ^h 20 ^m E	"	"	"	"	6.11	M2 Ia	"	"	—	"	"	"	T=18°, H=28%

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NUMBER LC	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP.		TOTAL / CORR.	HA END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV.	OBS	Wind Speed SW REMARKS T=57°F H=55%
					BEGIN	END									KIND	EXP					
1457	α SCL	00 57.4	-29° 28'	15/16 DEC 1977	01 00	01 16	1/2, 1/2, 4/8 4"	1° 18' W	2-3" Haze	2.83	50μ/12	67/4.45	4.14	B8p.	No A	60"	None	Il-a-O	Metal Jucifate 67°F 1.5mm		
	γ PEG	00 11.7	+15 03		01 24	01 31	2 1/2, 1/2, 4/4 2"	2° 16' W	"				2.60	B2IV							
	γ ³ PSC	01 08.5	+19 13		01 36	02 06	30" 40"	2° 55' W	"				6.2	G0 III							
1458	HR 856	02 51.8	+16 23	"	03 08	03 58	50" 60"	2° 4' W	"	"	"	"	6.8	F5 III	"	"	"	"	"	"	
	μ LEP	05 11.6	-16 14		05 37	05 39	1" 2"	1° 24' W	2 1/2" hazy				3.20	B7p							
	22 ORI	05 20.2	-0 25		05 44	05 48	2 1/2" 3"	1° 28' W	"				4.6	B2e							
	25 ORI	05 23.2	+1 49		05 50	05 54	3 1/2" 4"	1° 27' W	"				4.7	B1e							
	W ORI	05 37.6	+4 06		05 57	06 00	3" 4"	1° 19' W	"				4.4	B3e							
	γ LEP	05 43.2	-22 27		06 04	06 06	2" 3"	1° 14' W	"				4.1	F6V							
	δ LEP	05 50.0	-20 33		06 09	06 14	5" 6"	1 20' W	"				4.8	G8							
	η LEP	05 55.0	-14 10		06 17	06 19	2" 3"	1 21' W	"				4.0	F0							
	θ LEP	06 04.8	-14 56		06 21	06 24	4" 5"	1 17' W	"				4.7	A1							
	ε SIMON	06 13.4	-6 16		06 28	06 39	10" 12"	1 21' W	"				5.3	K3							
	ε MON B	06 22.2	+04 30		06 41	07 12	30" 40"	1 46' W	1 1/2"				6.8	F4							
	β MON C	06 29.4	-07 01		07 14	07 24	7" 8"	1 55' W	1 1/2" clouds				5.5	B3e							T=53°F clouds H=53°F wind NE=10 mph
IT ACTUALLY RAINED TODAY - IN DECEMBER! (BUT ONLY A LITTLE - INVERNO BOLIVIANO)																					
1459	ε PHE	00 07.9	-45° 55'	16/17 DEC 1977	01 28	01 38	10" 12"	2° 31' W	2 1/2" some clouds	2.85	50μ/12	67/4.40	4.9	K0	"	"	"	"	"	"	Clouds clearing
	θ CET	01 22.5	-08 20		01 41	01 49	6 1/2" 8"	1° 16' W	2" clouds				4.7	K0	SLIDING CLOSED	AFTER EXP - SOME CUMULUS	MINUTATION FROM CET				
	ξ CET	02 11.4	+08 42		01 52	02 10	18" 20"	59' W	2-3" "				5.5	G8							T=14°C H=50% WIND 20 mph NE barokinesis
	ο CET	02 17.8	-03 07		02 13	02 39	26" 15"	1° 21' W	3" "				5.4	M0e							MIRA
	δ HYI	02 21.2	-08 48		02 44	02 48	4" 5"	1° 27' W	2-3" "				4.1	A2							
	μ CET	02 48.3	+9 59		02 52	03 00	7" 8"	1 17' W	5 1/2" "				4.6	F0							
	α CET	03 00.7	+3 58		03 02	03 12	10" 12"	1° 1' W	3" "				4.2	M2 III							Clouds in with thin clouds
	ο TAU	03 23.2	+8 55		03 18	03 26	8" 10"	1° 3' W	3" some clouds				4.5	G8 III							BEHIND CLOUDS stopped by clouds
	γ HYI	03 47.7	+4 20		03 30	---	1" 6"	---	3" clouds				4.9	M2 G1 III							
1460	β HYI	00 24.2	-77 25	17/18 DEC 1977	23 54	---	10" 5"	---	3" clouds	2.85	"	67/4.4	3.4	M5e	"	"	"	"	"	"	T=12°C H=60% wind 30 mph NE STIL CIRUS
	(2) ο CET	02 17.8	-03 07		02 29	02 52	10" 5"	1° 38' W	3" some clouds				3:	M5e							
	γ HYI	03 47.7	-74 20		02 57	03 15	18" 20"	0 31' W	"				4.9	M2							
	ο ERI	04 10.4	-06 55		03 18	03 25	6" 8"	0 19' W	1" clouds				4.4	F2							
	40 ERI	04 15.7	-07 42		03 27	03 38	10" 12"	2 9' W	2" "				5.2	K1							

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NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
1460 (CONT)	ε RET	4 ^h 16 ^m .0	-59° 22'	17/18	0341	0355	12 ^m ✓	0 ^h 43 ^m W	2" / clear	2.85	50 ^m / 1.2	6 ^m / 4.7	5.5	K1	NeA	60'	None	IIa-D	M-S	✓		
	43 ERI	4 22.9	-37 05	DEC 1977	0358	0419	20 ^m ✓	1 ^h 0 ^m W	"				5.5	M1							67°F 15mm	
	71 TAU	4 24.6	+15 33		0422	0429	7 ^m ✓	1 ^h 7 ^m W	"				4.7	F0								
	α DOR	4 33.3	-55 06		0432	0434	2 ^m / 1.5	1 ^h 6 ^m W	"				3.2	A0p								
	54 ERI	4 39.1	-19 44		0438	0509	30 ^m ✓	1 ^h 35 ^m W	"				5.9	M4								
1461	2 ORI	04 49.0	+8 51	"	0532	0537	4.5 ^m ✓	1 52 W	"	"	"	"	4.3	A0								
	β DOR	05 33.4	-62 31		0540	0546	4.5 ^m ✓	1 17 W	"				4.2	F8								
	κ COL	06 15.5	-35 03		0549	0603	12 ^m /	57 ^m W	"				5.4	G8								
	δ VOL	07 16.9	-67 57		0607	0617	10 ^m /	4 ^m W	3" /				4.8	F8								
	γ Pup	06 30.8	-43 10		0621	0623	1.5 ^m / 1.2	50 ^m W	3" /				3.1	B7								
	ω CMa	07 13.6	-26 43		0626	0629	2.5 ^m / 2 ^m	20 ^m W	2" /				3.7	B3e								
	σ Pup	07 28.3	-43 14		0633	0648	15 ^m / 12 ^m	25 ^m W	3" /				4.8	K5								
	φ Pup	07 36.3	-34 54		0650	0654	4 ^m / 5 ^m	23 ^m W	3" /				4.4	B8								
	χ CMi	07 37.7	+5 18		0658	0659	12 ^m / 16 ^m	26 ^m W	" /				0.8	F5								
	ζ Pup	07 44.2	-37 54		0703	0724	21 ^m / ✓	44 ^m W	3-2" /				5.3	K5								
	π Pup	07 48.3	-46 18		0726	0728	2.5 ^m /	45 ^m W	3-2" /				3.9	B0.5								
	HR3314	08 27.2	-3 48'		0732	0734	2 ^m / ✓	16 ^m W	2" /				3.9	A0								
1462	α PYX	08 42.4	-33 05	"	0746	0749	2.5 ^m / 2 ^m	11 ^m W	2-3" /				3.5	B2								
	δ Vel	08 43.3	-42 32		0751	0802	10 ^m / ✓	23 ^m W	" /				4.9	G5								
	α CAR	09 10.2	-58 51		0805	0808	2.5 ^m / 2 ^m	2 ^m W	3" /				3.2	B3								
	h CAR	9 33.6	-59 06		0810	0815	5 ^m / ✓	14 ^m E	" /				4.1	B5								
	^{HR3570} w CAR	9 46.4	-64 56		0817	0820	2 ^m / ✓	22 ^m E					3.3	A9								
	γ ζ Eo	10 05.7	+16 55		0825	0828	2.5 ^m / ✓	33 ^m E	3" /				3.5	A0								
	15 α Sex	10 06.4	-0 13		0831	0835	4 ^m / ✓	27 ^m E	2" /				4.5	A0								
	9 Vel	10 13.5	-41 58		0838	0842	3.5 ^m / 3 ^m	27 ^m E	2" /				3.9	A2								
	σ CAR	10 26.8	-58 35		0845	0848	3 ^m / 4 ^m	35 ^m E	2" /				4.1	F0								
	θ CAR	10 41.9	-64 14		0850	0852	1.3 ^m / 1 ^m	46 ^m E	3" /				2.5	O9.5								
	μ Vel	10 45.5	-49 16		0854	0858	3 ^m / ✓	44 ^m E	3" /				3.6	G5								
1463	κ FOR	02 21.4	-23 55'	18/19	0049	0109	20 ^m /	4 ^m E	2" /				5.8	G1 sol								
	HD27383	04 18.6	+16 29	DEC 1977	0318	0436	1 ^h 25 ^m W	2" /	clearing				7.4	F9								15 MIN LOST TO CLOUDS

T = 9°C! H=57%
T=13°C Wind 20 M/2
H=53%
15 MIN LOST TO CLOUDS

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NUMBER	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP		TOTAL/CORR	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1463 (cont)	E ORI	5 34.9	-01 13	18/19 DEC	0440	0441	12 ^s / 18 ^s	15 ^m W	2 ["] clear	2.85	59/112	67/444	1.5	B0	NEA	60'	NONE	Ilad	M-S		
	4D20301	3 13.9	-35 38	1977	0448	0524	35 ^m / 60 ^m	3 ^h 19 ^m W	1.5 ["]				7.0	G0	3000				6.7 ["]	15mm	
	H219659	3 07.9	-35 31		0526	0605	39 ^m / 60 ^m	4 ^h 5 ^m W	1.5 ["] clear				7.1	G0	"						
	λ ERI	5 08.1	-08 47		0618	0621	2.5 ["] ✓	2 21 ^m W	1.5 ["] clear w/ some cirrus				4.1	B							
	HD33224	5 07.3	-08 41		0623	0638	14 ^m ✓	240 W	"				5.8	B9							
	HD33069	5 06.3	-8 41		0640	0720	48 ^m ✓	322 W	2 ["] "				6.9	B9:							
	HD32468A	5 02.0	-8 41		0723	0800	37 ^m ✓	407 W	1.5 ["] ✓				6.8	A0							SOME CONTAM FROM B
	< CM2	7 37.7	+5 18		0803	0804	18 ^m ✓	2 ["]					0.8	F5 IV-V							
	HR3517	8 29.2	-3 +8		0807	0810	3 ^m ✓	0 ^h 54 ^m W	2 ["]				3.9	A0							
	ε CAR	10 41.9	-64 14		0814	0817	13.7 ^m ✓	1 17 E	2 ["]				2.5	A0							
1464	α CAR	16 52.3	-58 42		0827	0832	5 ^m ✓	1 ^h 12 ^m E	2 ["]				4.7	K0							
	μ Mus	11 46.8	-66 39		0840	0859	19 ^m / 1430 ^m	140 E	2 ["]				5.7	K3							
1465	κ FOR	2 21.4	-23 55	19/20 DEC	0059	0112	12 ^m ✓	2 ^h W	1.5-2 ["] some cirrus				5.8	G1							T=13°C WIND 10NE H=47%
	HD27383	4 18.6	+14 29	1977	0116	0217	60 ^m / 80 ^m	51 ^m E	1-2 ["] few cirrus				7.4	F9 V							T=15°C WIND SNE H=60%
	γ FOR	2 35.4	-34 40		0229	0253	23 ^m ✓	1 ^h 29 W	1.5 ["] clear here				6.5	G1							INTERLUPTED BY PUFFY CIRRUS
	HR683	2 17.9	-26 04		0257	0332	35 ^m ✓	2 26 W	1-1.5 ["] "				7.1	G5							
	η3 GY	4 13.1	+23 29		0342	0608	131 ^m / 3 ^m	5 ^h 8 ^m W	1-1.5 ["] clear w/ few cloudy periods				8.8	G3 V							15mm cut for cloudy 17mm for clear HYADES #15
	Jup III	6 06.2	+23 08		0614	0619	5 ^m / 10 ^m	1 26 W	2 ["] clear				4.6	G2 V							
	Jup	"	"		0620	0621	3 ^s ✓	1 28 W	"				?	"							
	E ORI	5 34.9	-01 13		0625	0626	18 ^s / 24 ^s	1 ^h 30 ^m W	"				1.5	B0							
	HR2281	6 18.2	-50 21		0631	0747	76 ^m / 200 ^m	2 42 W	1 ["] clear				7.7	G2 I6							
	μ Mus	11 46.8	-66 39		0753	0828	35 ^m ✓	2 ^h 7 ^m W	1.5 ["]				5.7	K3							
	BCEN	11 49.6	-45 00		0831	0859	28 ^m ✓	"	"				5.7	K4							H=47°C wind T=14°C 10 NE T=17°C wind H=55% 55 NE
1466	SKV	1 26	-39 00	29/21 DEC	2353	2354	1 ^m ✓	0 ^h	"				?	G2 V							
	β HY	0 24.2	-77 25	1977	0026	0028	80 ^m ✓	1 ^h 20 ^m W	2 ["] cirrus				3.4	G1							
	γ Tau	0 18.5	-65 03		0035	0040	5 ^m ✓	1 36 W	1.5 ["]				4.8	G2							
	λ ERI	1 54.8	-51 45		0044	0048	4 ^m ✓	9 ^m W	"				4.5	G5							
	HR574	1 56.0	-47 32		0051	0101	10 ^m ✓	"	"				5.7	G5							
	HR1008	3 18.7	-43 11		0104	0111	6 ^m ✓	53 ^m E	"				5.0	G5							
	HD20301	3 13.9	-35 38		0116	0221	60 ^m / 80 ^m	24 ^m W	1-1.5 ["] cirrus				7.5	Greeny							

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER LC	OBJECT	R.A.	DEC.	DATE UT.	UT. EXP		TOTAL / CORR	HA END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1470	Q AQR	23 12.8	-06 13	22/23	0038	0108	10.20m OK!		1.5" clean	3.42	100μ/8	120/	5.8	M2 III	N/A	10 ³	None	In O	MWP-2	✓	MORN 4.45m +17" → 2d from full REMARKS T=18°C WIND calm H=442m Wind calm on Sea Wind 67km/hr on table!
"	"	"	"	DEC	0112	0123	15.36m	5 ^h 33 ^m W	"	"	"	"	"	"	"	"	"	"	"	"	From 66°F
	45 ARI	2 54.4	+18 14	1777	0126	0209	12.27m 12.27m	38 ^m W	"	"	"	"	7.5	M6 III	"	"	"	"	"	"	"
	Y Dor	4 15.2	-5 34		0212	0216	20.40m 20.40m	37 ^m E	"	"	"	"	4.6	F5:	"	"	"	"	"	"	"
	53 ERI	4 36.8	-14 22		0220	0224	1/2 1.92 1.92m	44 ^m E	"	"	"	"	5.0	K2	"	"	"	"	"	"	"
	TR ERI	5 08.1	-08 47		0228	0232	10.20m 10.20m	112 ^m E	"	"	"	"	4.06	B9:	"	"	"	"	"	"	"
1471	HD3322A	5 07.3	-08 41	"	0245	0252	45.90m 45.90m	51 ^m E	1" clean	"	"	"	5.77	B9:	"	"	"	"	"	"	"
"	" B	"	"	"	0257	0345	3.612m 3.612m	1 ^m W	"	"	"	"	10? 10"	B6.8 III:	"	"	"	"	"	"	"
	HD33069	5 06.3	-08 41		0346	0401	24.8m 24.8m	18 ^m W	1.5" clean	"	"	"	6.9:	A0?	"	"	"	"	"	"	"
	HD32468A	5 02.0	-08 41		0413	0433	15.36m 15.36m	"	"	"	"	"	6.8:	A0: +?	"	"	"	"	"	"	"
"	" A	"	"	"	0433	0446	"	"	"	"	"	"	6.9	A0	"	"	"	"	"	"	Tracked in RA
"	" B	"	"	"	0457	0437	100m 100m	3 ^h W	<1" clean	"	"	"	10:	? A2:	"	"	"	"	"	"	Tracked in Dec
	E CMA	06 57.4	-28 56		0720	0721	12.4m 12.4m	1 ^h 43 ^m W	"	"	"	"	1.3	B2 II	"	"	"	"	"	"	Belmont off alt.
1472	32 HYA (Barn)	09 30.5	-01 03	"	0730	0733	11.13m 11.13m	"	"	"	"	"	4.7	A3	"	"	"	"	"	"	"
	W CAR	10 13.0	-69 53		0738	0740	4.8.16m 4.8.16m	1 ^h 9 ^m E	"	"	"	"	3.2	B9	"	"	"	"	"	"	"
	HR 7386	7 17.8	-26 32		0744	0758	15.3.8m 15.3.8m	2 ^h 3 ^m W	"	"	"	"	6.2	G1 I	"	"	"	"	"	"	"
	HR 3026	7 46.5	-15 55		0802	0856	30.15.8m 30.15.8m	2 ^h 33 ^m W	1.5" clean	"	"	"	8.1	K1 I	"	"	"	"	"	"	T=12°C H=442m WIND SNE T=17°C H=442m WIND SSW
1473	7 Agr	22 51.0	-7 44	25/24	0038	0046	2.24m 2.24m	3 ^h 23 ^m W	1.5" clean	"	"	"	5.4	M2.5 III	a L-1	"	"	"	"	"	"
	X Peg	00 13.3	+20 04	DEC	0051	0114	2.612m 2.612m	2 ^h 27 ^m W	"	"	"	"	6.4	M2. III	"	"	"	"	"	"	"
	19 Tau	03 43.8	+24 23	1977	0123	0125	5.30.60m 5.30.60m	5 ^h 2 ^m E	1.5" clean	"	"	"	4.2	B6 IV	"	"	"	"	"	"	"
	17 Tau	03 43.1	+24 01		0128	0130	8.16.35m 8.16.35m	4 ^h 6 ^m E	"	"	"	"	3.6	B6 III	"	"	"	"	"	"	"
	20 Tau	03 44.0	+24 17		0133	0135	10.20.40m 10.20.40m	4 ^h 1 ^m E	"	"	"	"	3.8	B7 III	"	"	"	"	"	"	"
	23 Tau	03 44.5	+23 51		0138	0141	15.30.60m 15.30.60m	3 ^h 7 ^m E	"	"	"	"	4.1	B6 IV nn	"	"	"	"	"	"	"
	γ Tau	03 46.0	+24 02'		0143	0144	4.8.16m 4.8.16m	3 ^h 4 ^m E	"	"	"	"	2.8	B7 III	"	"	"	"	"	"	"
1474	28 Tau	03 47.6	+24 07		0154	0158	30.60.160m 30.60.160m	2 ^h 2 ^m E	"	"	"	"	5.0:	B8 shell.	"	"	"	"	"	"	"
	+28° 516 HPH	03 18.5	+28 56		0202	0216	15.36m 15.36m	2 ^h 5 ^m E	"	"	"	"	5.8	K4	"	"	"	"	"	"	"
	5 Tau	03 29.2	+12 50		0219	0224	4.16.35m 4.16.35m	2 ^h 1 ^m E	"	"	"	"	5.3	K0	"	"	"	"	"	"	"
	7 Tau	03 59.0	+12 24		0226	0228	8.16.35m 8.16.35m	5 ^h m E	"	"	"	"	3.6	B3	"	"	"	"	"	"	"
	E PER	03 56.1	+39 56		0232	0233	6.16.35m 6.16.35m	5 ^h m W	"	"	"	"	2.7	B0.5	"	"	"	"	"	"	"
	8 Tau	04 27.2	+15 49		0238	0240	8.16.35m 8.16.35m	20 ^m E	"	"	"	"	3.6	A7 III	"	"	"	"	"	"	"

NUMBER LC	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL	DEV	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1474	37 Tau	04 02.9	+22° 00'	23/24 DEC	0248	0258	12 ^m ✓		1.5" clear	3.42	100% .8	120 / 7.0	5.5	KOTT	Net	10 ⁵	NONE	IIa-0	MWP-2	✓	1 st moon from full at 5 ^h +17'
(cont) 1475	HD33224 B	05 07.3	-08 41	1977	0208	0429	82 ^m ✓	50 ^m W	<1" clear				10:	G8:							7 min 66°F
	32468 B	05 02.0	-08 41		0434	0552	25, 50 ✓	2 ^h 17 ^m W	"				9:	A2:							traced in Dec
	HD36046	05 27.5	-0° 34'		0636	0648	12 ^m ✓	2 ^h 49 ^m W	"				8	B9							
	HD36139	05 28.2	+0° 01'		0652	0655	3 ^m ✓						6.4	A0							
	HD36117	05 28.0	+0 01		0656	0709	13 ^m ✓		"				8.0	A0							
	36312	29.4	+0 05		0711	0727	16 ^m ✓						8.1	B8							
	36313	29.4	+0 19		0729	0747	17 ^m ✓						8.2	B9.							
	36176	28.5	-1 36		0749	0818	29 ^m ✓	4 ^h 18 ^m W	2" clear				8.7	A0.							
	HD58134	07 22.0	-29 43		0822	0900	38 ^m ✓	3 ^h 6 ^m W	2" clear				9:	G5T							T=16°C H=42% wind SNE
1476	HD36219	05 29.1	-01 43	24/25 DEC	0106	0118	11 ^m ✓		1.5" clear				7.7	B9							full moon out 5 ^h 50 ^m +18'
	36118	05 28.3	-01 58	1977	0121	0156	35 ^m ✓	2 ^h 42	"				8.9	A0							observed not well - stomach probe T=17°C H=60% wind SNE
	36341	05 29.9	-02 20		0158	0218	20 ^m ✓						8.4	B9							very inefficient (more than usual that is)
	36485	05 31.0	-00 18		0221	0225	4 ^m ✓						6.9	B3							Don B
	36502	05 31.1	-01 28		0305	0344	39 ^m ✓	16 ^m E	1" clear				9.2	B9							MERRY CHRISTMAS FELICES NAVIDADE
	36605	05 32.0	-00 43		0347	0400	12 ^m ✓						8.0	B9							
	36590	05 32.0	-01 00		0502	0546	44 ^m ✓	1 ^h 46 ^m W					9.4	B9							
	36444	05 30.8	-01 06		0548	0619	30 ^m ✓						8.98	B9							
	36628	05 32.1	-01 14		0621	0633	12 ^m ✓	2 ^h 33 ^m W					8.0	B8							
	36591	05 31.8	-01 35		0636	0637	1 ^m ✓						5.4	B1							
	36526	05 31.4	-01 35		0639	0700	20 ^m ✓	3 ^h W					8.3	B8							
	36646A	05 32.2	-01 43		0703	0706	3 ^m ✓						6.5	B3							B=2" in Dec
	36393	05 30.6	-01 58		0711	0735	24 ^m ✓						8.5	B8							
	36898A	05 34.0	-00 08		0737	0744	6 ^m ✓						7.0	B5							B=10", Am=2-3
	36935	05 34.3	-00 16		0746	0758	12 ^m ✓	3 ^h 58 ^m W	1.5" clear				7.5	B8							
	HD75022	08 45.6	-29 39		0807	0857	50 ^m ✓	1 ^h 45 ^m W	1.5" clear				9:	K2+II							T=15°C wind 20 NE H=45%
1477	HD36592	05 31.5	-02 02	25/26 DEC	0049	0139	50 ^m ✓	2 ^h 15 ^m E	3" clear				9.0	B9							circum forming (7 ^h but 2 clouds)
	36394S	05 30.3	-02 06	1977	0140	0227	40 ^m 50	1 ^h 29 ^m E	2" circum				9.2	A0:							close double Am=0 2+4"
	" NE "	"	"		0228	0300	32 ^m 41		1.5"				9.2:	A0:							observed still not very well!
	36617	05 3.7	-02 13		0333	0353	20 ^m ✓		2" clear				8.5	B9							

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NUMBER LC	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1477 (Cont)	^{HD} 36709	05 32.6	-00 04	25/26 DEC 1977	0355	0415	20 ^m ✓		2" clear	3.42	100 ^m / 0.8	10 / 7.0	8.3	A0	N.A.	10 ^s	NONE	IIa 0	MWP-2 7 min 66°F	23 min lost to clouds	
	36726	05 32.7	-00 06		0416	0505	15+11 ^m ✓		2" Curvature gain				8.8	A0							
	36778	05 32.9	-00 14		0506	0546	40 ^m ✓	1 ^h 50 ^m W	" Curvature				9.3	A0							
	36694	05 32.5	-00 13		0548	0620	32 ^m ✓		" Curvature left				9.1	A0							
	36841	05 33.5	-00 21		0622	0652	30 ^m ✓		3" v. d. Curvature				8.6	B9							
	36760	05 33.0	-00 25		0709	0721	11 ^m ✓		" clear				7.5	B8							
	36669	05 32.3	-00 44		0722	0800	38 ^m ✓	4.5 ^m W	"				8.9	A0							
	HD 73884	08 38.0	-07 42		0804	0904	60 ^m 90 ^m ✓	2 ^h 2 ^m W	1.5" clear				~9.5	K2 I6 (old)						T=14°C W=10NE H=46% T=17°C W=15NE H=50% wind calm.	
1478	CD 3715492	00 04.2	-37 31	26/27 DEC 1977	0051	0258	127 ^m ✓	4 ^h 34 ^m W	2" clear				10	M4 I6 (old)							
	HD 363945W	05 30.3	-02 03		0304	0331	27 ^m ✓	19 ^m E	1.5" clear				9.0	A0:							
	36825	05 33.4	+00 44		0335	0355	20 ^m ✓		"				8.7	B8							
	36915	05 34.0	-00 47		0357	0407	10 ^m ✓		"				8.0	B9							
	36954	05 34.1	-00 42		0408	0413	4 ^m 3 ^m ✓		"				6.9	B3							
	36779	05 33.0	-01 00		0414	0417	2 ^m ✓		"				6.2	B3							
	36684	05 32.3	-01 01		0419	0439	20 ^m ✓		"				8.6	B9							
	36695	05 32.5	-01 07		0440	0441	1 ^m 1 ^m ✓		"				5.4	B1							
	36781	05 33.0	-01 42		0444	0505	20 ^m ✓		"				8.5	B9							
	36863	05 33.6	-01 43		0506	0526	20 ^m ✓		"				8.5	A0							
	36811	05 33.1	-01 51		0527	0534	6 ^m ✓		"				7.2	B9							
	36826	05 33.2	-02 21		0537	0553	16 ^m ✓		"				8.2	B9							
	37037	05 34.5	+00 08		0556	0618	22 ^m ✓	2 ^h 24 ^m W	"				8.5	B9							
	37256	05 36.3	-00 09		0620	0648	28 ^m 35 ^m ✓		"				8.8	A0							
	37140	05 35.4	-00 16		0650	0717	27 ^m 35 ^m ✓		"				8.6	B9							
	37111	05 35.1	-00 17		0720	0752	32 ^m 40 ^m ✓	3 ^h 58 ^m W	1.5" slight curves beginning				8.8	A0							
	HD 91629	10 32.6	-59 17		0756	0835	38 ^m 50 ^m ✓	17 ^m E	1.5" slight curves				~9.	G0 I6 (old)						T=15°C W=10NE H=46%	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
1486	NGC 2187-117	6 46.1	-20 43	29 JAN	02:01	02:07	2 ^h 8 ^m	0.48 E	2" haze high	342	0.8	112/2.0	9.61					ILAD	METAL SULPHIDE	F	10-10000 H=61 T=16	-5 -3 -1 +1 +5
	-129				02:14	02:41	27 ^h 24 ^m	0.16 E	2"		0.8		10.71									
	-126				02:44	03:03	18 ^h		<2"		0.8		10.40									
	-111				03:05	03:15	10 ^h	0.17 W	2"		1.2		9.18									
	-103				03:18	03:24	6 ^h		2"		1.2		8.82									+5
1487	NGC 2187-115				03:45	03:55	10 ^h	0.15 W	2"		0.8		9.46									-5
	-118				03:57	04:12	14 ^h	0.15 W	2"		0.8		9.94									-3
	-116				04:15	04:31	15 ^h	0.15 W	2"		0.8		10.13									-1
	-113				04:45	04:53	6 ^h	1.15 W			0.8		9.40									+1
	-109				04:57	05:04	6 ^h	2.07 W	3 ^h 2 ^m		0.8		9.03									+3
	-110				05:06	05:14	8 ^h	2.18 W	2"		0.8		11.15									+6
1488	NGC 254-4	8 18.1	-29 40		05:43	06:01	18 ^h	1.32 W	2"		0.8		10.31									-5
	-5				06:08	06:29	20 ^h	2.00 W			0.6		10.71									-3
	NGC 269-8	14 47.2	-54 26		07:06	07:18	12 ^h	3.42 E	2"		0.8		9.89									-1
	-16				07:21	07:45	25 ^h	3.18 E	2-3		0.8		10.49									+1
	NGC 603-1	16 01.7	-60 26		08:02		12 ^h				1.2		7.65									+1
	-2						2 ^h				1.2		8.15									+6
1489					08:27	08:33	5 ^h				1.2		8.46									-5
	-4				08:34	08:45	10 ^h	02:42 E			0.8		9.81									-3
	-7						3 ^h	05:29			1.2		8.08									-1
1490	NGC 2169-3	6 07.2	+13 57	30 JAN	01:16	01:27	10 ^h	00:48 E	1"		0.8		9.5									-1
	7				01:29	02:00	30 ^h	00:10 E	2-3		0.6		11.08									-1
	-11				02:02	02:22	20 ^h	00:03 W	2-3		0.6		10.82									-7
	-16				02:24	02:54	30 ^h	00:40 W	2		0.6											+1
	-2				02:56	03:10	4 ^h	00:46 W	2"		1.2		8.12									+2
	-4				03:02	03:09	6 ^h		2"		1.2		8.25									+5
	-1				03:10	03:12	2 ^h	00:58 W	2-3		1.2		6.85									+6
1491	NGC 140-74	7 24.9	-37 41		04:29	04:30	2 ^h 40 ^m	00:57 W	2"		1.2		6.12									-1
	-26					04:28	2 ^h 2 ^m	01:06 W					7.50									-1
	-22					04:44	2 ^h 1.6	01:14 W					7.1									-1

H=162
T=15

plate cloud
to phot. phr.
ilt test

plate drop
cloud out
H=62 T=17
H=55 cloud out
T=18

PASS IN CORR

NUMBER	OBJECT	R.A.	DEC.	1978 DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS.	REMARKS	
					BEGIN	END									KIND	EXP.						
1502	NGC 5316-3	13 52.3	-61 45	1 Feb	07:59	08:38	40 ⁺	01:15E	2"		0.6		11.63 11.67					IIaD	METYL SULPHITE	F	-5	
	6025-5	16 01.7	-60 26		08:49	09:01	12	03:05E			0.6		10.31								-3	
	-6				09:04		46				0.8		9.0								T=12 H=50	-1
	-7					09:16	3 1/2				1.2		8.08									+1
	-11				09:19	09:22	3 4				1.2		8.38								align	+3
	sky				09:22	09:26	4 ^m				1.2				NoA	2 ^S						+5.6
1503	NGC 2343-4	7 07.3	-10 35	2 Feb	01:12	01:27	del 14	1:36E	2-1		0.8		10.03							F	T=18 H=61	-5
	-10				01:29	01:49	del 20	1:14E	2		0.6		10.79		NoA	2 ^S						-3, 1
1504	NGC 2343-18	7 07.3	-10 35		02:31	03:22	✓44	0:18W			0.6		11.69									-5
	-11				03:23	03:45	✓22	0:42W	1-3		0.6		10.88								T=17 H=60	-3
	-7				03:47	04:03	✓16	1:02W	2		0.6		10.50									-1
	-8				04:04	04:22	✓16	1:19W	2-3		0.6		10.47									+1
	-12				04:24	04:40	✓24	1:38W	2-3		0.6		10.89									+3
	-9				04:41	04:59	✓18	1:58W			0.6		10.64									+5
	4				05:01	05:11	✓10	2:09W			0.6		10.03									+6
1505	NGC 2571-4	8 18.1	-29 41		05:28	05:43	✓14	1:30W			0.6		10.31									-5
	-5				05:44	05:59	✓14	1:46W			0.6		10.58									-3
	-7				06:01	06:24	✓20	2:12W			0.6		10.82 10.87									-1
	-3				06:27	06:51	✓20	2:40W			0.6		10.77									+1
	NGC 3324-1	10 36.5	-58 30		07:05		40 ^S ✓0.5	0:53W			1.2		5.96									+3
	Probably #4				07:13	07:17	del 4 ^m	09:46W			1.2		8.34								prob 4	+5
	-4				07:23	07:30	✓6 ^m	00:59W			0.8		9.20									+6
1506	NGC 3324-9				07:47	08:13	✓26	1:44W			0.8		11.04								Cirrus all around horizon	-5
	-10				08:17	08:49	✓32	2:13W			0.8		11.18									-5
	-6				08:51	09:01	✓10	2:31W			1.2		9.40									-1
	-3				09:02	09:09	✓7	2:41W			1.2		8.92									1
	2+5				09:10	09:15	✓4	2:45W			1.2		8.33		NoA	2 ^S					DAWN SKY HAS MUCH CIRRUS CIRRUS BELOW QUADRANT	3, 6 -5
1507	NGC 2287-115	06 46.1	-20 43	3 Feb	00:50	01:06	16 = 1.6x10	1:32E	2"	POOR? DM=8	1.2		9.46							F		-5
	-119				01:08	01:24	16 = 1.6x10	1:13E			0.8		9.82								T=18 H=52	-3
	-121				01:25	01:29	20 1.4x4		2"	IMPROVE	0.8		10.11		NoA	2 ^S						-1

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	1978 DATE UT	UT EXP		TOTAL / CORR	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS.	REMARKS	
					BEGIN	END									KIND	EXP						
1508	MRC 2287-127	06 46.1	-20 43	5 Feb	01:58	02:17	18 ^{ink}	00 21 E	2" / OK				10.31							F	plate partly dropped	-5
1509	1508 MRC 2342-11	07 07.3	-10 35		02:32	03:04	30 ^v	00 28 W					11.22									-5
	-17				03:08	03:32	22 ^v	00 34 W					10.88									-3
	B64+S	07 30.8	-16 57		03:33	04:14	40 ^v	01 16 W	2.5"				11.00									-1
	-1				04:22	04:25	3 ^v	1:03 W			1.2		8.06									+1
	-2				04:27	04:39	12 ^v	1:12 W			0.8		9.83									+3
	-3				04:43	05:14	20 ^{ink}	1:43 W			0.8		10.44									+5
	-9				05:06	05:20	14 ^v	1:54 W			0.8		9.99									+6
1510	MRC 3522	11 10.1	-60 10		05:50	06:08	16 ^{ink}	05:46 E	3" wms				9.77									-3
	-4				06:07	06:26	24 ^{ink}	1:26 E	3" pur				10.30									-1
	-9				06:38	07:03	20 ^{ink}	0:02 E	partly cloud				8.21									-1
	[IC 2944] SLS 2427	11 20.6	-63 34		07:07		2 ^{ink}	0:19 E				1.2	8.8									1
	SLS 2427				07:13		2 ^v					1.2	6.8									3
	SLS 2427				07:14		1 ^v					1.2	6.8									5
	SLS 2427				02:18	02:23	4 ^v	0:52 E				1.2	7.7									6
1511	SLS 2438				07:35	07:43	10 ^v					1.2	8.6									-5
	SLS 2433				07:46	07:56	10 ^v					0.8	9.0									-1
	SLS 2430				07:58	08:19	26 ^{ink}	0:45 W				0.8	9.9									-1
	SLS 2431				08:16	08:21	6 ^v	0:53 W				1.2	8.16	06								+1
	1511								clouded				9.9			Not 25						+1.5
1512	MRC 2355-1	07 13.5	-10 14	4 Feb		00:42	50 ^s	2:20 E	2.3 partly cloud			1.2	5.86							F		-5
	"101"				00:47	00:59	10	2:02 E	2			0.8	~4.3									-3
	102				00:59	01:10	10	1:51 E	2.3			0.8	9.3									-1
	108				01:11	01:57	26 ^{ink}	1:24 E	2			0.8	10.6									1
	116				01:40	02:22	40 ^{ink}	0:41 E	2	Good in 26mm		0.6	11.8 ^s									3
	104				02:23	02:33	10	0:29 E	2			0.8	9.7									5
	3				02:36	02:56	20	0:15 E				0.8	10.43									6
1513	C-140	07 21.9	-31 58		03:40	04:24	44 ^{ink}	1:15 W	2.2"			0.6	11.71									-5
	-6				04:25	05:01	36 ^{ink}	1:52 W	2.2"				11.49									
	-13				05:06	05:26	20 ^v						10.19									

1:18
H=68
forget
dark
slide
clean!

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NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT EXP.		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	B MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
(cont) 1532	B011-4	10 46.1	-60 00	11 Feb	05 52	06:29	36	00:18W	2		0.6		11.41					IIIaD	M-5	F	+1
	NGC 3572-6	11 09.5	-60 08		06:42	07:08	24	00:35W			0.6		10.97								+3
	-7				07:09	07:29	20	00:55W			0.8		10.35								+5
1533	SC14-8	11 42.8	-62 27		07:44	08:02	18	01:57W			0.8		10.41								-5
	-9				08:03	08:23	18	01:17W			0.8		10.45								-3
	-11				08:25	08:47	22	01:41W			0.6		10.89								-1
	NGC 401-1				09:03	09:11	8	01:42W	L		0.8		9.54								1
	-12				09:12	09:20	8				0.8		9.40								-2
	-10				09:21	09:27	6	01:59W			0.8		9.48	Not	2 ^s						+5.6
1534	NGC 2353-1	07 13.5	-10 16	11 Feb		00:42	15 ^s		2-3		1.2		5.86					IIIaD-8		F	-5
	-101				00:45	00:51	6 ^m	00:48E	2-3		0.8		~9.8								-3
	-102				00:52	00:57	5 ^m	00:37E	2		0.8		9.3								-1
	-108				00:59	01:11	10 ^m		2-3		0.8		10.6								1
	-2				01:13	01:20	6 ^m	00:15E	2-3		0.8		9.17								3
	-3				01:21	01:27	4 ^m	00:12W	2		0.6		10.43								5
	-4				01:39	01:50	10 ^m		2-3		0.8		9.77								6
1535	SC5 40	7 27.4	-15 08		02:11	03:11	60 35	00:23W	2-6"		0.6		11.85								-5
	470	7 29.8	-15 07		03:22	04:14	52 30	01:34W	2-6"		0.6		11.71								-3
	489	7 30.4	-15 16		04:21	05:11	36				0.6		11.87								-1
	IC 2375-18	8 40.5	-48 07		05:21	05:36	34	01:55W	2		0.6		11.60								+1
	-15				05:56	06:09	12	02:19W	2		0.6		10.04								+3
	-9				06:11	06:16	42		2		1.2		8.83								+5
	-14				06:17	06:35	14	02:34W	2		0.8		10.37								+6
1536	NGC 3572	11 09.5	-60 08		06:53	07:44	45	01:14W	2		0.6		12.08								-5
	-11				07:45	08:27	30	01:48W	2-3.6		0.6		11.49								-3
	-108						76				0.8		10.52	Not	2 ^s						-1
1537	NGC 4496-545 531	7 32.6	-15 46	13 Feb	00:25	01:07	40	01:38E	2		0.6		11.37					IIIaD		F	-5
	527				01:16	02:36	80	0 08E	2		0.6		12.03								-2
	508	7 21.3	-15 13		02:53	03:34	40	00:50W	2		0.6		11.36								-1
	505	7 11.	-15 24		03:45	05:05	80	02:22W	2		0.6		12.08								+1

T=15 W=14
M=88
TEST PLATE
FOR 6" PLATE
reduced from
[GARRISON ~ 1.5 X
11.5 exp]

File
#73

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H A END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
1543	NGC 3572-10 IC 2974+18	11 ^h 04 ^m .5 11 ^h 36 ^m .7	-60° 08' -63° 17'	Feb 15	07:35	07:55	-18 ^m	1 ^h 43 ^m W	1"-2" clear	3.72	100μ / 10.8	120 / 17.0	10.35	NeA	2 ^s		IIAD	15m, 75°F M-S	CrW	2 NINE TUBES NOO! BDRING! +1 T=16 H=4009 T=18.87T H=602025 -5-3 T=8 1st trails -1, +1		
1544	HR 1791 HR 1739A HR 1895 HR 3314	5 ^h 24 ^m .9 5 ^h 13 ^m .3 5 ^h 34 ^m .1 8 ^h 24 ^m .5	+28° 35' -08° 14' -05° 24' -03° 51'	Feb 16	01:23	01:25	27 ^s 47 ^s	1 ^h 20 ^m W	1"-2" clear	3.42	100μ / 11.2	120 / 17.0	1.52	B8 III	NeA	2 ^s	—	IIAD	15m M-S	F4 CrW		
	HR 1739A	5 ^h 13 ^m .3	-08° 14'		01:31	01:32	16 ^s 20 ^s	1 ^h 20 ^m W					0.05	B8 Ia								
	HR 1895	5 ^h 34 ^m .1	-05° 24'											5.22	O6							NO FINDINGS CHART
	HR 3314	8 ^h 24 ^m .5	-03° 51'		01:42	01:47	3 ^m 37 ^s	1 ^h 40 ^m E						3.88	A0 I							+4, +6
1545	HR 2628 HR 3011 HR 3244 HR 3078	6 ^h 59 ^m .2 7 ^h 43 ^m .7 8 ^h 13 ^m .1 7 ^h 50 ^m .9	-22° 05' -37° 53' -36° 16' -42° 49'		02:01	02:03	28 ^s 50 ^s	0 ^h 03 ^m W						6.34	B2 II-V							16 1st trails -1, +1 +3
	HR 3011	7 ^h 43 ^m .7	-37° 53'		02:10	02:13	25 ^s 40 ^s	0 ^h 30 ^m E						5.74	B7 II							
	HR 3244	8 ^h 13 ^m .1	-36° 16'											5.91	B2 II-V							DOUBLE +5, +6
	HR 3078	7 ^h 50 ^m .9	-42° 49'		02:23	02:25	20 ^s 40 ^s	0 ^h 27 ^m E						5.85	B2 III							+5, +6
1546	HR 3090 HR 3219 HR 3293	7 ^h 52 ^m .6 8 ^h 10 ^m .2 8 ^h 20 ^m .8	-47° 57' -37° 14' -57° 54'		02:35	02:37	20 ^s 35 ^s	0 ^h 17 ^m E						4.08	B0.5 Ib							6 1st trails 12 1st trails -5, -3
	HR 3219	8 ^h 10 ^m .2	-37° 14'		02:42	02:44	30 ^s 55 ^s	0 ^h 28 ^m E						6.42	O9.5 II							-1, -1
	HR 3293	8 ^h 20 ^m .8	-57° 54'		02:53	02:55	20 ^s 40 ^s	0 ^h 27 ^m E						6.07	B1.5 III							+4, +6
1547	HR 3250 HR 3776 HR 3527	8 ^h 14 ^m .0 8 ^h 43 ^m .3 8 ^h 50 ^m .2	-45° 46' -49° 46' -46° 27'		03:13	03:15	28 ^s 60 ^s	0 ^h 00 ^m						6.00	B2 III-V							-5, -3
	HR 3776	8 ^h 43 ^m .3	-49° 46'		03:18	03:19	13 ^s 24 ^s	0 ^h 25 ^m E						4.87	B0 III m							5 5/8 trails 5 10 1/2 trails -1, +1 5 5 1/2 trails +4, +6 5 10 1/2 trails +4, +6
	HR 3527	8 ^h 50 ^m .2	-46° 27'		03:22	03:23	10 ^s 22 ^s	0 ^h 28 ^m E						4.93	B0 III							7 1st trails -5, -3 5 6 1/2 trails 5 12 1/2 trails -1, -1
1548	HR 3560 HR 3654 HR 3944	8 ^h 53 ^m .2 9 ^h 10 ^m .1 9 ^h 55 ^m .7	-60° 15' -44° 47' -71° 17'		03:43	03:45	30 ^s 40 ^s	0 ^h 09 ^m E						5.68	B5 III							5 6 1/2 trails 5 12 1/2 trails -1, -1
	HR 3654	9 ^h 10 ^m .1	-44° 47'		03:50	03:51	14 ^s 28 ^s	0 ^h 20 ^m E						4.78	B5 Ia							5 6 1/2 trails 5 12 1/2 trails -1, -1
	HR 3944	9 ^h 55 ^m .7	-71° 17'		03:55	03:57	60 ^s 45 ^s	0 ^h 59 ^m E						6.26	B2 Ib							15 1/2 trails +4, +6
1549	HD 90586 HD 96746	10 ^h 25 ^m .4 11 ^h 07 ^m .2	-53° 47' -31° 58'		04:11	05:14	10 ^s 18 ^s 30 ^s	0 ^h 12 ^m E			100μ / 0.8			9.9	M2 Ia b							5 2 1/2 trails 5 2 1/2 trails 5 11 1/2 trails +4, +3 T=20 W=20 M=54 6 trails for F
	HD 96746	11 ^h 07 ^m .2	-31° 58'		05:29	06:32	20 ^s 40 ^s	0 ^h 25 ^m W						10.5	G2 Ia b							
1550	HR 984 986 1258 1772 HD 27578	03 14.8 03 18.2 04 02.4 05 20.4 04 19.7	-08 54 +03 17 -20 12 -34 21 -16 53	Feb 17	00:16	00:20	12 ^s 20 ^s	2 2 06 W 2 22 W 2 0 17 W 2 01 57 W			1.2 1.2 1.2 1.2 0.8		5.03 5.50 6.29 5.90 10.4	K2 V G0 V B2.5 V B5 III n p M4 III								
1551	HR 1843 1875 2614 2640	04 48.3 05 34.1 06 57.2 07 03.1	+06 55 -05 24 -27 08 -25 10		01:33	01:38	21 25	1 14 ^s 25 30 ^s 25 22 ^s	1 02 W		1.2 1.2 1.2		1.64 5.22 6.1 5.7	F6 V O6 B2.5 III B2 V								2 1/2 trails may be in bin 10 by 2x1.4 +1 +3

NUMBER	OBJECT	R.A. 1978	DEC. 1978	1978 DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	B MAG	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
(cm) 1551	HR 1996	05 45.1	-32 19	Feb 17		01:49	20 ^s light 10 ^s	1:07 W			1.2		4.88	O7.5 IV						F+(GW)	1 +5
	2425	06 40.5	-40 20			01:56	26 28 ^s	0:19 E			1.2		5.76	B4 V							+6
1552	HR 2907	07 32.4	-40 00			02:11	27 ^s 32 ^s	0:28 E			1.2		6.12	B8							-5
	2675	07 07.8	-24 01			02:16	43 42 ^s	0:12 E			1.2		6.4	B2 V							-3
	2733	07 12.8	-22 52			02:20	42 32 ^s	0:12 E			1.2		6.11	B2 IV							-1
	2734	07 12.5	-27 19			02:24	25 22	0:14 E			1.2		5.85	B0.5 V							+1
	2986	07 41.1	-38 29			02:28	30 36	0:09 E			1.2		6.24	B7 V							+3
	2885	07 30.6	-36 06			02:32	54 50 ^s	0:06 W			1.2		6.56	B4 V							+5
1553	2968	07 37.2	-37 22			02:44	28 28 ^s	0:09 W			1.2		5.95	B6 IV							-5
	3001	07 42.9	-38 09			02:49	44 ^{pair} 31 42 ^s	0:08 W			1.2		6.4	B7 III							-3
	3016	07 44.3	-37 50			02:53	45 ^{pair} 28 44 ^s	0:12 W			1.2		6.43	B3 IV							-1
	3241 3241	08 13.1	-36 16			03:02	26 ^s 28 ^s	0:08 E			1.2		5.91	B2 IV-5						10 problem	+
	3314	08 24.5	-03 51			03:07	38 ^{FAST} TRAILS 4 ^s	0:14 E			1.2		3.88	A0 V							+3
	3525	08 49.5	-41 59			03:13	30 26 ^s	0:33 E			1.2		5.9	O9 V							+6
1554	3688	09 15.2	-44 48			03:28	44 ^{FAST} 30 38 ^s	0:44 E			1.2		6.32	A1 IG							-5
	3691	09 14.7	-58 17			03:34	42 27 ^s	0:37 E			1.2		5.90	B7 IV							-3
	3878	09 44.3	-30 06			03:38	25 ^s 38 ^s	0:03 E			1.2		6.32	B0.5 III							+1
	4147	10 12.5	-58 02			03:50	42 ^s 46 ^s	0:40 E			1.2		6.51	B7 III							+3
	4198	10 41.8	-59 06			03:54	10 ^{FAST} TRAILS 24 ^s	0:45 E			1.2		5.71	B2.5 Ia							+5
1555	HD 96746	11 07.2	-31 58		04:07	04:35	26 ^m	0:30 E	2"		1.2		10.5	G2 Ia6							-5
	HR 4438					04:41	45 ^s 42 ^s	0:47 E			1.2		6.36	A3 Ia							-3
	4442					04:47	10 ^{FAST} TRAIL 20 ^s				1.2		5.63	A3 Ia						may be subnormal	-1
	4541					04:54	10 ^{FAST} TRAIL 43 ^s 30	0:53 E			1.2		5.94	A3 Ia6							+1
	4534					05:00	10 ^{FAST} TRAIL 1 ^s	0:46 E			1.2		2.23	A3 V							+3
	4511					05:06	10 ^{FAST} TRAIL 42 ^s 24 ^s	0:33 E			1.2		5.81	F90 Ia							+5
1556	4551					05:23	40 20				1.2		5.63	B4 III							0
	4510					05:32	5 ^s TRAILS 5 ^s	0:15 E			1.2		4.16	F8 V							-5
	4608					05:52	24 20 ^s	0:09 E			1.2		5.6	G8 IIIa							-3
	4825					05:57	5 ^s TRAILS 4 ^s	0:34 E	2"		1.2		3.65	F0 V							+2
	4883					06:04	30 20	0:43 E	4"		1.2		5.65	G0 III							+4
	4932					06:08	4 ^s TRAIL 4 ^s	0:50 E	3"		1.2		3.81	G8 III G							+6

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NUMBER	OBJECT	RA	DEC	1978 DATE UT.	U.T. EXP.		TOTAL / CORR.	H. A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1633	G240-34W	11 8.5	-60 24	14 June	02:20	02:08	40		2 ³ clear				0.8	11.0						F	T1
	-30	11 8.6	-60 26		02:10	02:27	16							9.94							T2
	-11	11 10.5	-60 19		02:27	02:35	5							8.47							T4 File was #32
	-4	11 10.5	-60 19		02:35	02:38	2 ³	5:13W	3 ¹ clear 3 ¹ Cirrus-N					7.87	No A	2 ³					T5
1634	MCC6025-15	16 01.5	-60 26		04:35	04:57	18		3 ¹ Cirrus				0.8	10.03							-5
	-21				05:00	05:22	30		"					10.60							-4
	-22				05:24	05:44	8	2:38W						9.18							-2
	-23				05:44	06:06	36	3:22W	3 ¹ Cirrus 3 ¹ Cirrus 3 ¹ clear					10.75							-1
1635	G240-1	11 11.7	-60 12	14 June		23:06	10 ⁵							5.12	F0 Ia						-5
	-10	11 11.7	-60 14		23:10	00:06	50 ^m	1.44W	"					10.47							-4
	-29			15 June	00:13	00:32	16	2.12W						9.90							-2
	-31	11 10.2	-60 21		00:36	01:02	22	2.42W						10.19							-1
	-32	9.8	21		01:03	01:33	22							10.13							T1
	-41	9.4	21		02:14	02:18	38							10.87							T2
	-60	10.8	22		02:22	02:54	30	14.30W	DUST CIRRUS					10.49	NoA	2 ⁵					+4
1636	SS 433	19 ^h 10 ^m 6	+4° 56'	11 July	03:45	08:15	270/240	3 ^h 36 ^m N	circus	3.5Z	100/10.4	180/18.0	13.5	RADIO STAR	NoA	2 ⁵	IIa0	M-5 15 ^m	CrW	H=35° T=12°	-3
1637	α Ser	15 ^h 43 ^m 1	+6° 30'	28 July	23:40	23:40	15 ^s	0 ^h 12 ^m	3 ¹ clear	2:90	50/1.2	67/4.47	2.64	K2 II a 0.5	NoA	1 ^m	-	IIa0	M-S 15 ^m 67 ^s	Cy/Star	
	α Ser	15 ^h 43.1	+6° 30 ^s		00:03	00:04	50 ^s														
1638	B20 13 A	17 ^h 17.4	-46° 37'		00:38	00:51	13 ^m	0 ^h 40 ^m	3 ¹ clear	2:90				5.6	NoA	1 ^m	-	II-0			no contamination
	B				01:06	02:53	107				50/0.6			8.6							
1639	R ₁₀₂ A (comp)	20 ^h 42.9	-62° 30'		04:18	4:33	20/15	0 ^h 33 ^m	2 ¹	2:85	50/1.2			6.6			-	II-0			15.2 Carbonide
	B (cont)				04:38	4:53	30/15	0 ^h 13 ^m	E 3					6.6							17% Cn
	h 5319 (cont)	22 ^h 10.8	-38° 25'		05:15	06:22	100/167	3 ^h 5 ^m	clear					7.6							30% Cn
	... B (cont)				06:26	07:31	165	1 ^h 05 ^m	3 ⁵ /clear					7.6							30% ..
	β Aqr	2 ^h 30.3	-05° 41'		07:39	07:40	✓16 ^s	1 ^h 53 ^m						3.73	F0 I 6						
	λ Aqr	2 ^h 51.3	-02° 43'		07:46	07:51	✓14 ^m 2 ^s							5.38	M2.5 III 6						
	α Ps A	22 ^h 56.2	-29° 45'		07:56	07:56	5 ^s							1.25	A3 I						
	...				07:57	07:57	10 ^s /5 ^s							..							
	ADS 1397A	1 ^h 44.7	-25° 09'		08:17	08:23	9 ^m /6 ⁿ		3 ¹ clear					5.4							No Cn Temperature 12°C
	B				08:26	09:26	120/60 ⁿ		circled ring		50/0.8			8.7							Refined by last time

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1978	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1640	B 1197 A	14 01.8	-31° 35'	July 29	2337	0002	25 / 36		2" / clear	2.85	50 / 1.2	67 / 4.4	6.7		Ne A	60 ^s	none	IIaO	m-s, 15 ^m 67 ^o	Cy / max	no cuts
	B				0006	0148	102 / 46	3 ^h 38 ^m W	2 ^h /		1.2		7.9						calm wind		5% cuts
	ε Sco	16 ^h 34.3	-28° 10'		0156	0156	20 ^s , 20 ^s ✓, ?		2" / clear				2.56	B0 V							T=13 H=40
	μ Her	17 ^h 45.5	+27° 45'		0205	0206	90 ^s 180 ^s		2"				3.41	G5 IV							
	HR 6577	17 ^h 37.9	+13° 21'		0211	0225	14 ^m 28 ^m	0 ^h 41 ^m W	2"				6.2	F6 III							
	K Oph	16 ^h 56.5	+09° 25'		0229	0230	70 ^s 120 ^s		2"				3.20	K2 III							T=13 H=42
	Str 62 ^(mult) A	18 ^h 33.1	-34° 51'		0244	0336	52 / 85	0 ^h 51 ^m W	clear?				7.6								cuts
	B				0342	0447	65 / 90	2 ^h 02 ^m W	clear?				7.8								no cuts
1641	16270 ^(mult) A	22 ^h 46.8	-4° 20'		0519	0613	54 / 120	0 ^h 43 ^m E	2" / clear		50 / 1.2	67 / 4.4	7.3	Ne A	60 ^s						5% cuts
	B				0622	0726	64 / 140	0 ^h 28 ^m W	2" / clear?				7.8								5% cuts
	h 3527 A	02 ^h 42.6	-40° 37'		0753	0808	15 / 40		clear?				6.4								
	B				0809	0828	19 / 30	2 ^h 27 ^m E	patches				6.4								
	2402 A	03 ^h 11.1	-29° 05'		0834	0836	2 ^m / 7 ^m		3-4" /				3.9								No cuts
	B				0838	0858	20 / 80	2 ^h 23 ^m E	3-4" / clear				6.1								5% cuts
	HR 1279	04 ^h 06.3	+15° 06'		0912	0924	12 / 36	2 ^h 55 ^m E	5"				6.4	F3 V							
	X Peg	00 ^h 13.3	+20° 04'		0931	0944	13 / 20	1 ^h 18 ^m W	3"-4"				6.38	M2 ⁺ III							
	β And	01 ^h 08.3	+35° 29'		0951	0952	70 ^s / 5 ^m	0 ^h 32 ^m W	4"				3.66	M0 IIIa							
1642	I 236 A	14 ^h 51.1	-73° 07'	July 30	2336	2354	18 ^m / ✓	1 ^h 04 ^m W	3" / clear	2.85	50 / 1.2	67 / 4.4	5.8								Cy / max
	B				2359	0144	2 ^h / 3 ^h 30 ^m W	0 ^h 44 ^m W	3"				7.8								5% cuts (forming)
	1860 A	20 ^h 26.1	-18° 17'		0153	0157	3 1/2 ^m , 3 1/2 ^m ✓		2" / clear				5.2								No cuts
	B				0217	0342	5 ^m , 70 ^m 110 ^m	0 ^h 52 ^m W	2"-3" / clear				8.7								No cuts
	22 Sco	16 ^h 28.7	-25° 04'		0353	0356	3 ^m , 4 1/2 ^m ✓	3 ^h 16 ^m W	2"-3"		1.2		4.65	B2 V							
	o Sco	16 ^h 19.1	-24° 06'		0406	0412	6 ^m / 8 ^m sl. use		3"				5.35	A5 II							wind 10 mph
1643	HR 7164	18 ^h 58.0	-18° 36'		0433	0503	30 ^m / 50 ^m	1 ^h 57 ^m W	2"-3"				6.3	G3 II							
	μ Aql	19 ^h 32.9	+07° 20'		0509	0515	10 ^m / 10 ^m ✓	1 ^h 34 ^m W	3"-5"				5.60	K3 IIIc							
	16642 ^(mult) A	23 ^h 15.5	-01° 43'		0552	0756	124 ^m / 140 ^m ✓	0 ^h 32 ^m W	3"-5" / clear				8.3								wind 15 mph.
	B				0801	0948	107 ^m / 140 ^m	2 ^h 30 ^m W	2"-4" / clear				8.5								wind 10 mph.
	φ Aqr	23 ^h 13.0	-06° 11'		0957	1004	7 ^m / 10 ^m	2 ^h 44 ^m W	3" / clear		1.2		5.78	M1.5 III							T=12 H=40
1644	R 227 A	13 ^h 55.0	-54° 01'	July 31	2338	0012	41 ^m / ✓	2 ^h 13 ^m W	2" / clear	2.85	54 / 1.2		6.7		Ne A	60 ^s					Cy / max
	B				0117	0207	1 ^h , 50 ^m steady, ✓	4 ^h 08 ^m W	2" / clear				7.1								1st Run - VFO 2nd Run -

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LAS CAMPANAS OBSERVATORY (24-INCH)

GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	RA	DEC.	DATE UT 1978	U.T. EXP		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
h 5084 A	19 ^h 05.0	-37° 05'	0221	0229	8 ^m ✓		3 ^m / 10 ^m ✓	0 ^h 57 E	3 ^m / 8 ^m ✓	285	50 ^m / 1.2	67 / 47	5.3					Fin 0	Ars, 15 ^m 20 ^m	50% Carbon	level
(cont'd) B			0231	0241	10 ^m ✓		10 ^m / 6 ^m ✓		3 ^m / 3 ^m ✓				5.5							50% Carbon	level
α Lyr	18 ^h 36.1	+3° 45'	0255	0255	10 ^m ✓		10 ^m / 10 ^m ✓	0 ^h 09 E	3 ^m / 3 ^m ✓				0.0	A05							
θ Lyr	19 ^h 15.8	+38° 05'	0301	0311	10 ^m ✓		10 ^m / 25 ^m ✓	0 ^h 09 E	3 ^m / 3 ^m ✓				5.4	K0 II							
δ Lyr	18 ^h 53.6	+36° 52'	0315	0332	17 ^m ✓		17 ^m / 40 ^m ✓	0 ^h 34 E	3 ^m / 3 ^m ✓				6.0	M4 II							
1645	ADS 14852	21 ^h 18.8	-27° 24'	SPECTRUM NOT TAKEN							50 ^m / 0.6	67	8.8		No H	60 ^s		Fin 0		No spectrum	Too faint to guide
1645	Ans 14360 ^A	20 ^h 50.3	-05° 42'	0417	0443	26 ^m ✓	50 ^m ✓	0 ^h 09 E	3 ^m / 3 ^m ✓		1.2		6.5								
(cont'd) A			0502	0533	31 ^m ✓		31 ^m / 10 ^m ✓	0 ^h 39 W	2 ^m / 2 ^m ✓				6.9								
B			0537	0624	45 ^m ✓		45 ^m / 10 ^m ✓		2 ^m / 2 ^m ✓				7.4								
Ans 1087 A	1 ^h 18.9	-15° 55'	0637	0808	91 ^m ✓		91 ^m / 180 ^m ✓	1 ^h 14 E	2 ^m / 2 ^m ✓				8.1								
(cont'd) B			0813	0943	90 ^m ✓		90 ^m / 210 ^m ✓	0 ^h 21 W	2 ^m / 2 ^m ✓				8.5								
α Tri	1 ^h 51.7	+29° 28'	0950	0953	2 1/2 ^m ✓		2 1/2 ^m / 0 ^h 02 E	0 ^h 02 E	2 ^m / 2 ^m ✓				3.92	F6 IV							
27 Tau	3 ^h 47.7	+23° 59'	0957	1000	120 ^m ✓		120 ^m / 2 ^h 00 E	2 ^h 00 E	2 ^m / 2 ^m ✓				3.5	B8 III							
(cont'd) Tau	4 ^h 27.2	+15° 49'	1004	1006	120 ^m ✓		120 ^m / 2 ^h 24 E	2 ^h 24 E	3 ^m / 3 ^m ✓				3.64	A7 III							
(cont'd) Lep	5 ^h 31.6	-17° 51'	1010	1012	70 ^m ✓		70 ^m / 3 ^h 23 E	3 ^h 23 E	2 ^m / 2 ^m ✓				3.21	F0 II							
1646	ADS 9909 A	16 ^h 03.2	-11° 19'	Aug 1 st	0005	0013	8 ^m ✓	8 ^m / 10 W	2 ^m / 3 ^m ✓		1.2		5.3		No H	60 ^s					
(cont'd) B			0039	0029	8 ^m ✓		8 ^m / 10 W	2 ^m / 3 ^m ✓	2 ^m / 3 ^m ✓												
ADS 11789 A	19 ^h 03.1	-21° 34'	0108	0224	76 ^m ✓		76 ^m / 4 ^h 40 E	4 ^h 40 E	2 ^m / 2 ^m ✓			0.6									
(cont'd) B			0231	0401	90 ^m ✓		90 ^m / 0 ^h 31 W	0 ^h 31 W	2 ^m / 2 ^m ✓		1.0		8.5								
R 321 A	20 ^h 25.5	-37° 27'	0416	0528	72 ^m ✓		72 ^m / 1 ^h 05 W	1 ^h 05 W	2 ^m / 2 ^m ✓		1.2		7.6								
B			0537	0727	120 ^m ✓		120 ^m / 3 ^h 02 W	3 ^h 02 W	2 ^m / 2 ^m ✓		1.0		8.8								
10 Lac	22 ^h 38.2	+38° 55'	0736	0754	18 ^m ✓		18 ^m / 1 ^h 16 W	1 ^h 16 W	5 ^m / 5 ^m ✓		1.2		7.68	O9 IV							
1647	Δ 5 (cont'd)	1 ^h 38.7	-56° 18'	0815	0830	15 ^m ✓		15 ^m / 1 ^h 09 E	2 ^m / 3 ^m ✓		1.2		6.1		No H	60 ^s					
(cont'd) B			0838	0853	15 ^m ✓		15 ^m / 0 ^h 45 E	0 ^h 45 E	3 ^m / 3 ^m ✓				6.1								
α Aqr	22 ^h 04.5	-00° 26'	0902	0904	2 1/2 ^m ✓		2 1/2 ^m / 3 ^m ✓		3 ^m / 3 ^m ✓				3.91	G2 I6							
θ Oct	1 ^h 22.8	-08° 19'	0911	0915	1 1/2 ^m ✓		1 1/2 ^m / 0 ^h 07 E	0 ^h 07 E	2 ^m / 2 ^m ✓				4.67	K0 III E							
γ Psc	1 ^h 08.5	+19° 31'	0919	0932	13 ^m ✓		13 ^m / 20 ^m ✓	0 ^h 24 W	2 ^m / 2 ^m ✓				6.2	F0 III							
HR 1279	4 ^h 06.3	+15° 06'	0939	0955	16 ^m ✓		16 ^m / 2 ^h 11 E	2 ^h 11 E	3 ^m / 3 ^m ✓				6.41	F3 II							
π ³ Del	4 ^h 48.4	+06° 54'	0957	0959	115 ^m ✓		115 ^m / 2 ^h 48 E	2 ^h 48 E	3 ^m / 3 ^m ✓				3.65	F6 II							
1648	ADS 9387 A	14 ^h 47.4	-17° 15'	Aug 2 nd	2340	0032	52 ^m ✓	52 ^m / 100 ^m ✓	2 ^m / 2 ^m ✓		0.6		8.0		No H	60 ^s					

No spectrum
 Too faint to guide
 polychromator
 on red image
 25% Carbon
 25%
 polychromator
 change
 no carbon
 T = 140°
 H = 20%
 level 10-15
 C₂ Max
 10% carbon
 H = 20%
 W = 10%
 30% carbon, 20% Carbon
 10% carbon
 10% carbon
 no carbon
 10-20% C.F.
 no carbon
 no carbon
 T = 140°
 H = 20%
 W = 10%
 Possible star fragments
 C₂ Max
 no carbon
 T = 120°
 H = 0%
 W = 10%

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1978	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
	ADS 9387B	14 ^h 47.4	-17° 15		0039	0239	120 / 360	3 ^h 54 W	2-5" / <i>clear</i>	2.85	50% / 0.6	67 / 447	8.8					IIa 0	m-S	Cy / Tan	10-20% Contin
	ADS 14380 A	20 ^h 51.8	-23° 51		0257	0338	41 / ✓		3-5" / <i>clear</i>		/ 1.2		7.0								no contin, compare with
	ADS 14852 ^{AB}	21 ^h 18.8	-27 24		0352	0552	120 / 360	0 ^h 58 W	3-5" / <i>clear</i>				8.0								Composite: RA trailing
	ADS 111 A	00 ^h 08.3	-28° 07		0615	0630	15 / 30	1 ^h 30 E	4" / <i>clear</i>				5.8								25% Contin (?)
	(west) B				0634	0649	15 / 30	1 ^h 15 E	3-4" / <i>clear</i>				5.8								20% Contin (?)
	ε Peg	21 ^h 43.0	+09° 46		0659	0702	2.6 ^m / ✓	1 ^h 24 W	" / "				3.98	K2 II							
	μ Peg	22 ^h 48.8	+24° 28		0714	0717	3.5 / 7	0 ^h 33 W	" / "				4.41	G8 III ⁺							T=10° H=40%
	ψ ³ Psc	1 ^h 08.5	+19° 31		0722	0742	20 / 30	1 ^h 23 E	" / "				6.2	G0 III							W=15-20 mph
1649	ADS 9387 A	14 ^h 47.4	-17° 15	3/Aug	2339	0041	82 / 160	1 ^h 58 W	2-3" / <i>clear</i>		/ 0.6		8.0		N2A	60°	-				T=10° H=40%
	(west) B				0045	0337	172 / <i>un?</i>	4 ^h 57 W	3-4" / "		/ 0.6		8.8								no contin 5-10% contin w=15 mph
1650	ADS 14847 ^{AB}	21 ^h 18.6	-26° 26	6 Aug	0405	0545	100 / ✓	0 ^h 46 W	3-5" / <i>clear</i>		/ 1.2		7.3		N2A	60°	-				Composite T=6° H=50% W=20 mph
	η 3430 A	1 ^h 19.6	-57° 27		0609	0750	101 / 120	1 ^h 11 E	3-4 1/2" / <i>clear</i>				7.5								T=5° W=10 mph
	ι ^{ns} 2406 A	2 ^h 40.1	-06° 47		0802	0845	43 / ✓	1 ^h 36 E	" / "				6.2								no contin
	γ Peg	0 ^h 11.9	+15° 03		0851	0853	0.8, 2.0 / <i>un?</i>	1 ^h 00 W	3-3 1/2" / "				2.6	B2 II							
	65 3' Cat	2 ^h 11.7	+08° 44		0858	0910	12 / 15	0 ^h 42 E	" / <i>clear?</i>				5.3	G8 II CN-2							
	α Aqr	22 ^h 07.5	-06° 26'		0915	0920	5.0 / 8	3 ^h 35 W	" / "				3.9	G2 II							
	ρ Pav	3 ^h 03.6	+38° 44'		0928	1008	40 / ✓	0 ^h 35 E	" / "				3.5	M4 II-III							T=2° W=7 mph
1651	β 1197 B	14 ^h 01.8	-31° 35	7 Aug	2349	0219	150 / ✓	4 ^h 27 W	2-5" / <i>clear!</i>		/ 1.2		7.2		N2A	60°	-				5% Contin T=2° H=60% W=5 mph
	Ruk 26 E	20 ^h 47.9	-62° 30		0230	0317	45 / ✓	1 ^h 09 E	3 / "				6.6								0-5% no contin
	" E	"	"		0319	0349	30 / 45	0 ^h 37 E	3-6" / <i>un?</i>				"								Dec Trailing
	" W	"	"		0353	0427	39 / 70	0 ^h 00	3-6" / <i>un?</i>				6.6								5% contin?
	h 5319 S	22 ^h 10.8	-38° 25		0445	0618	93 / 180	0 ^h 31 W	3-6" / "				8.0								10% contin
	N	"	"		0622	0753	91 / 110	2 ^h 11 W	3-6" / "				8.0								Very variable seeing & much scintillation all night.
	h 3527 S	2 ^h 42.6	-40° 37		0807	0839	30 / 60	1 ^h 40 E	" / "				6.9								wind changed ~0800 UT. & seeing improved
	N	"	"		0842	0923	41 / ✓	0 ^h 52 E	2-3" / "				6.9								20% seeing + small image
	HR 1279	4 ^h 02.0	+15° 06		0931	1001	30 / 60	1 ^h 40 E	2-3" / "				6.4	F3 I							20% Contin W=10 mph T=7° H=25%
1652	Sta 62 N	18 ^h 33.1	-34° 51	8 Aug	2353	0112	79 / ✓	0 ^h 54 E	2" / <i>clear</i>				7.9		N2A	60°	-				T=12° H=25% W=5 mph
	S				0116	0253	97 / 150	0 ^h 47 W	2-3" / "				8.2								scintillation - less than 7 ^h Aug & some variable seeing → "come image"
	ADS 14360 A	20 ^h 50.3	-5° 42		0305	0337	32 / ✓	0 ^h 46 E	2" / "				6.9								5% no contin wind rising
	ADS 16270 A	22 ^h 46.8	-4° 20		0351	0542	111 / 180	0 ^h 36 W	3-2" / "				7.9								Dec Trailing 10% contin - seeing variable

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NUMBER	OBJECT	R.A.	DEC.	DATE UT, 1978	U.T. EXP.		TOTAL / CORR	H A END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
AD2	16270 B	22 ^h 46.8	-4° 20		0546	0706	80 / 160	0 ^h 48 W	25 / clear	2.85	50 / 0.6	67 / 47	8.3		Dec Trail	—	TiO	m, 67, 15"	Cy / Max	10% Caen T=15° H=20° W=5mph	
AD3	1087 A	1 ^h 18.9	-15° 55		0729	0901	92 / ✓	0 ^h 10 W	1.5 / —		1.2		8.1							re cent.	
	(near) B				0903	1003	60 / ✓	1 ^h 12 W	1.0 / clear		0.6		8.5							no cent.	
1653	3 Her	16 ^h 40.3	+31° 39	9 ^h Aug	0001	0004	27 / ✓	0 ^h 06 E	2 / clear		1.2		3.5	G1 IV	h2A	60°	—			1" slit H=20° W=5mph	
	29 Her	16 ^h 31.4	+11° 32		0009	0034	25 / ✓	0 ^h 31 W	— / —		—		6.2	K7 III							
	2 Ser	15 ^h 45.2	+07° 26		0038	0046	75 / ✓	1 ^h 30 W	— / —		—		5.0	G0 V							
	μ Her	17 ^h 45.5	+27° 45'		0050	0055	5 / ✓	0 ^h 20 E	— / —		—		4.2	G5 II							
	I 117 A	19 ^h 40.7	-59° 03		0112	0302	110 / ✓	0 ^h 08 E	25-3 / —		0.6		8.4							re cent. - 100 ft. 20"	
	H10 284 AB	18 ^h 10.0	-73° 40		0310	0354	49 / ✓	2 ^h 20 W	— / —		1.2		6.5								
	E 136 AB	22 ^h 2	-75° 06		0425	0625	120 / ✓	0 ^h 31 W	3 / —		0.6		8.6								
	Δ 5 (near)	1 ^h 38.9	-56° 18		0637	0708	31 / ✓	1 ^h 59 E	— / —		1.2		6.1							re cent. - 11" slit	
	(south)				0712	0743	31 / ✓	0 ^h 14 W	— / —		—		6.1							re cent.	
1654	AD5 2402 A	3 ^h 11.1	-29° 05		0801	0808	7 / ✓	2 ^h 30 E	— / —		—		4.4		NA	60°	—			Dec Trail	
	B				0813	0936	83 / 100	1 ^h 03 E	2-3 / —		—		7.0(?)								
	3 Per	3 ^h 52.6	+31° 49		0942	0944	18 / ✓	1 ^h 38 E	25 / —		—		2.0	B1 II							
	α Tau	4 ^h 34.5	+16° 27		0946	0948	12 / ✓	2 ^h 15 E	— / —		—		2.4	K5 III						T=12° H=20° W=10-14"	
	o Per	3 ^h 42.8	+32° 12'		0951	0957	55 / ✓	1 ^h 14 E	2 / —		—		3.9	B1 III						W=5mph T=13° H=20°	
1655	HR 6368	18 ^h 19.3	+2157	Aug 10 th	2341	0041	60 / ✓	1 ^h 03 E	2 / clear		—		4.9	F1 III	h2A	60°					
	HR 6577	17 ^h 32.9	+13° 21		0047	0130	43 / smoky ✓	0 ^h 27 W	— / —		—		6.7	F6 II							
	RuR 26 W	20 ^h 44.7	-62° 30		0141	0242	61 / ✓	1 ^h 33 E	2 / —		—		6.7				Dec Trail			re cent.	
	h 5319 B(S)	22 ^h 10.8	-30° 25		0258	0458	120 / smoky ✓	0 ^h 47 E	2 / —		—		8.0							5-10% cent.	
	β Aql	19 ^h 54.1	+06° 20		0505	0511	57 / ✓	1 ^h 52 W	2 / —		—		4.57	G8 IV							
	α Del	20 ^h 38.5	+15° 50		0515	0517	24 / ✓	1 ^h 14 W	— / —		—		3.71	B9 II							
	61 Cyg A	2 ^h 05.8	+38° 37		0523	0624	61 / ✓	1 ^h 16 W	— / —		—		6.37	K5 I							
1656	ADS 111 E	0 ^h 08.3	-28° 07		0644	0704	20 / ✓	0 ^h 28 E	2 / —		—		5.8				Dec Trail			20% cent. especially in 20% cent.	
	3 (W)				0707	0727	20 / 30	0 ^h 05 E	— / —		—		5.2								
	h 3527 (S)	2 ^h 42.6	+40° 37		0747	0827	40 / smoky ✓	1 ^h 40 E	— / —		—		6.6							5% cent.	
	h 3683 AB	4 ^h 39.9	-58° 59		0842	0943	61 / ✓	2 ^h 22 E	25 / —		—		6.4							com. in 5-10% W=5mph T=10° H=25"	
	57 Tau	4 ^h 18.5	+13 58		0946	1012	26 / ✓	1 ^h 30 E	— / —		—		5.87	F0 II							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP.		CALIB.	EMUL	DEV	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1662	HR 5801	15 36.2	-26°13	Aug 22/23 1978	0009 2320	0029 2680	20m 35	2 13w	2" clear	3.00	50μ i.2	67 4.9	6.2	B7	Net	60s	-	IIa-D	M-S	Kci	
	HR 5906	15 52.6	-24°30		0034	0044	10m 18	2 13w	2"				5.4	B6							
	HR 5910	15 53.2	-27°18		0049	0119	22m 50	2 39w	2"				6.1	B6							
	HD 168403	18 19.2	-39°03		0124	0214	50m 100	1 16w	3" cirrus				6.8	B9							T = 11° RH = 37% WIND = 15-30
	HD 170642	18 30.3	-39°43		0240	0252	12m ✓	1 42w	2" clear				5.5	A2							
	HD 172992	18 42.9	-39°44		0257	0327	30m x2	2 08w	2"				6.2	A2+F8							Moonrise
	HD 178628	19 09.0	-39°04		0335	0405	30m x1.8	2 15w	2"				6.5	B8							
	HD 187474	19 49.8	-39°57		0407	0422	15m ✓	1 52w	2" 3"				5.4	A0p							
	HD 203006	21 18.9	-40°56		0428	0436	8m ✓	37w	2"				5.0	A0p							
	HD 212385	22 22.3	-39°17		0443	0510	8m ✓		3"				6.9	A2p	Aborted - i Nubes!						T = 13° RH = 33%
1663	HD 166453	18 10.4	-39°21	Aug 23/24 1978	0022	0142	80m ✓	1 00w	2"				7.1	B8							RH = 37% T = 13° WIND SPEED = 0-15
	HD 168403	18 19.2	-39°03		0151	0301	70m ✓	2 04w	2"				6.8	B9							
1664	HD 167853	18 26.3	-39°01		0336	0416	40m ✓	3 16w	1"-2"				6.2	A2							
	HD 172992	18 42.9	-39°44		0420	0510	50m 70m	3 53w	2"				6.2	A2+F8							
	HD 197630	20 44.4	-39°19		0512	0542	30m ✓	2 22w	1"-2"				6.0	B8							
	HD 212385	22 22.3	-39°17		0627	0809	102m 2h	3 12w	2" cirrus				6.9	A2p							Break due to clouds. thru moonlit clouds.
	HD 214150	22 35.3	-40°44		0814	0854	40m ✓	3 45w	2" cirrus				6.7	A2							" " cleared off.
	HD 229868	23 38.7	-40°26		0904	1014	70m 80m	0 00	2" clear				6.7	A2							
	HD 22986	N "	"		1014	1021	7m no X 556 85	07w	"				6.8	?G							T = 11° RH = 36%
1665	HR 5906	15 52.6	-24°30	25/26 Aug 78	23:55	00:09	14m 22	1 49w	3" clear				5.4	B6							
	"	"	"		00:10	00:38	25 ✓	2 14w	3"				"	"							
1666	HD 172579	18 40.7	-39°19	Aug 26/27 1978	0150		90m		2"-3"				7.1	B8							F = 30 RH = 34% WIND = 0-2
	3 Sco	15 53.4	-25°12		2352	0005	13m .2		2"				5.8	B8							H = 37% T = 10.5
	3 Sco	"	"		0005	0031	26m ✓	2 15w	2"				5.8	B8							

NUMBER	OBJECT	R. A.	DEC.	DATE UT.	U. T. EXP		TOTAL / CORR.	H. A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1667	HD 172579	18 40.7	-39°19	Avg 24/27 1978	0051	0231	100" ✓	1 25W	2" clean	3.00	50μ 1.2	67/447	7.1	B8	Nett	60°	-	IIaO	M5	Kai	T = 10° RH = 35% wind = 5-10 mph
	HD 172992	18 42.9	-39°34		0234	0329	55" ✓	2 22W	2" ✓				6.2	A2 + F8							
	HD 178628	19 09.0	-39°04		0340	0440	60" ✓	5 12W	2" ✓				6.5	B8							
	HD 212385	22 22.8	-39°17		0449	0624	90" ✓	1 37W	2" ✓				6.9	A2P							
	HD 214085	22 34.8	-40°44		0627	0747	80" ✓	2 41W	2" ✓				6.8	A2							Momia @ 710 ~
	HD 17098 AB	2 42.2	-40°40		0808	0900	80" ✓	6 E	2" ✓		100μ 1.2		6.6	A0							South Component Both Components
	HD 22986 A	3 38.7	-40°26		0907	1017	64" ✓	8 W	2" ✓		50μ 1.2		6.7	A2							T = 11° RH = 21% wind 5-10 (S) Bright Blue Exp.
Focus Aug 27	Steps of 0.05	from 2.85	up to 3.20		2.95 is best!																
1668	HD 175855	18 57.0	-39°35	Avg 24/30 1978	0000	0135	95" ✓	25W	2" clean	2.75	50μ 1.2	67/447	7.1	A0	Nett	60°	-	IIaO	M5	Kai	H = 32% T = 35%
	HD 185257	19 37.9	-39°31		0150	0420	150" ✓	2 30W	2" ✓				7.2	A2							
	HD 219860	23 12.8	-39°19		0428	0548	80" ✓	19W	2" ✓				7.0	A2							
	HD 17098	2 42.2	-40°40		0616	0646	30" ✓	2 08E	2" ✓		100μ 1.2		6.6	A0							Seeing very variable the whole night.
	HD 22986 A	3 38.7	-40°26		0655	0825	40" ✓	1 44E	2" ✓		50μ 1.2		6.7	A2							7.0, 1.5 2.2 4K Comp. M5 wind = 5-25 mph.
	HD 24966	3 55.4	-39°03		0831	0916	45" ✓	51E	1" 2" ✓		" "		6.6	B9							
	Orion A	2 57.2	-40°25		0930	0938	1.5" ✓	30W	2" ✓				5.5	A0							} streaked in sec 4x 6x 8x
	Orion B	"	"		0942	0954	2.5" ✓	45W	1" 2" ✓				4.5	A0							
1669	HD 170642	18 30.3	-39°43	30/31 Avg 1978	2350	0010	20" ✓	30E	2" clean				5.5	A2							H = 41% T = 11°
	HD 175855	18 57.0	-39°35		0017	0137	80" ✓	31W	2" ✓				7.1	A0							
	HD 185257	19 37.9	-39°31		0141	0321	100" ✓	1 25W	2" ✓				7.2	A2							
	HD 187474	19 49.8	-39°57		0335	0353	18" ✓	1 54W	2" ✓				5.4	A0P							
	HD 203006	21 18.9	-40°56		0407	0421	14" ✓	54W	2" ✓				5.0	A0P							
	HD 219860	23 12.8	-39°19		0436	0556	80" ✓	32W	2" ✓				7.0	A2							
	HD 6354	1 02.6	-40°48		0623	0808	105" ✓	1 05W	2" ✓				7.3	A2							
	HD 22986 A	3 38.7	-40°26		0821	0941	80" ✓	5E	2" ✓				6.7	A2							wind = 0-5 T = 4° H = 32%

light leak

Seeing very
variable the
whole night.

} streaked in sec
4x
6x
8x

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1670	HD 175855	18 57.0	-39° 35'	31/1 Aug/Sept 1978	0019	0139	70 ^m ✓	27 ^w	1-2" clean	2.95	50 ^μ / 1.2	67 / 4.47	7.1	A0	NaA	60 ^s	-	IIa0	M-5	Kai	T = 12° RH = 44% WIND = 0-5
	HD 173660	18 46.2	-39° 39'		0135	0305	90 ^m ✓	215 ^w	2"-1"				7.4	A0							
	HD 3085	0 32.5	-40° 06'		0348	0528	100 ^m ✓	109 ^e	2"				7.4	B8							
	HD 19904	3 09.6	-39° 10'		0600	0740	100 ^m ✓	134 ^e	2"				7.3	A2							T = 38° RH = 11° WIND = 0-5
	HD 24966	3 55.4	-39° 03'										6.6	B9	i/Nubos!						
1671	22 Sco	16 28.7	-25° 04'	1/2 Sept 1978	2340	2353	2,4,8 ^m / 7 ^m	1 ^h 24 ^m E	1.5"	2.95	50 ^μ / 1.2	67 / 4.47	4.65	B2	NaA	60 ^s	-	IIa-0	M-5	Kai	
	o Sco	16 19.1	-24° 06'		2358	0029	4,8,16 ^m / 14 ^m	2 ^h 19 ^m W	1"-2"				5.35	A5							67°F 15min
	K Oph	16 ^h 56.5	+09° 19'		00:33	0052	1,2,4,11 ^m / 8 ^m	1 ^h 55 ^m W	2-3"				V=3.2	K2 III							
	σ Oph	17 ^h 25.3	+04° 03'		00:50	01:06	10 ^m / 20 ^m		2"				V=4.3	K2 II							
1672	HD 172992	18 42.9	-39° 44'	"	0118	0213	55 ^m / 45	1 29 ^w	1.5"				6.2	A2+P8						Kai	T = 13° RH = 45%
	HD 178628	19 09.0	-39° 04'		0221	0246	35 ^m / 30	1 37 ^w	1 1/2"				6.5	B8							
	HR 6842	18 16.5	-27° 04'		0259	0339	40 ^m / 35 ^v	3 26 ^w	1 1/2"				6.32	K3 II							
	HR 7164	18 58.0	-18° 36'		0343	0439	56 ^m / 70 ^m	3 ^h 40 ^w	1.5"				V=6.3	G3 II	(B = ~7.3)						
	μ Peg	22 48.8	+24° 28'		0443	0451	8 ^m / 7 ^m	0 ^h 3 ^m W	2"				4.4	G8 III							
	β Peg	23 02.6	+27° 57'		0455	0458	13 ^m / 7 ^m	0 ^h 5 ^m W	2"				4.2	M2.5							
	γ Peg	23 56.5	+24° 56'		0512	0635	83 ^m / 60	0 ^h 40 ^m W	2"				6.3	M3							
	HD 3085	00 ^h 32.5	-40° 06'		0645	0738	53 ^m / 106	1 ^h 6 ^m W	1"				7.4	B8							ident uncertain brightest in field
	HD 19904	03 09.6	-39° 10'		0742	0824	42 ^m / 60	45 ^m E	1"				7.3	A2							
	HD 24966	03 55.8	-39° 03'		0827	0853	26 ^m / 50 ^m	1 ^h 2 ^m E	1"				6.6	B9							
	HD 34645	05 16.2	-39° 18'		0858	0940	42 ^m / 60	1 ^h 35 ^m E	1.5"				7.0	A2							40% light wind 12°C possible Twilight
	ζ ¹ Ret	3 16.2	-62° 40'		0947	1009	20 ^m ✓	52 ^m W	1.5"				6.2	G2							
	ζ ² Ret	3 17.7	-62° 36'		1009	1026	16 ^m ✓	1 ^h 8 ^m W	1.5"				5.8	G0							
1673	Vesta	16 56.7	-22° 33'	2/3 Sept 1978	2337	0040	63 ^m / 90	1 ^h 47 ^m W	<1"				7.3	G2-Seen							14° Smp NE 45%
	"	"	"		0040	0113	33 ^m / "	2 ^h 20 ^m W	"				"	"							
	Ceres	18 46.4	-31° 12'		0036	0506	3 ^h / 6 ^h	4 ^h 26 ^m W	1-1.5"				8.2	G2-Seen							30min forwrtors
1674	ζ ¹ Tau	00 ^h 18.5	-65° 03'	"	0546	0551	5 ^m ✓	26 ^m E	1.5"				4.8	G2							
	HR 72	00 17.6	-8° 10'		0600	0645	45 ^m ✓	32 ^m W	<1"				7.1	G0							
	HD 6269	01 01.9	-29° 40'		0649	0735	45 ^m ✓	37 ^m W	<1"				7.0	G5							

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

300-580
200-05

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP.		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING/TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1674 (Cont)	HD10700 ^{2 cap}	01 43.3	-16 05	2/3 SEPT 1978	0739	0742	3 ^m ✓	4 ^m W	1 ["] clear	2.55	50 ^x /1.2	6 ^x 4.7 ^x	4.4	G8	NeA	60 ^s	10min	IIa-0	M5		
	HD1937 ^{2 cap}	1 55.1	-51 45	1978	0750	0755	4 ^m ✓	4 ^m W	1.5 ["]			4.4	G8			10min		67F	15min		
	HD11977 ^{1 cap}	1 54.3	-67 47		0800	0814	13 ^m ✓	23 ^m W	1.5 ["]			5.5	G5								
	HD13043 ^{2 cap}	02 06.3	-00 43		0819	0830	7 ^m ✓	1 ^h 29 ^m W	1 ["]			7.6	G2								
	HD13043 ^{2 cap}	03 17.7	-62 36		0934	0950	16 ^m ✓		2 ["]			5.8	G0								
1675	J Sco	15 58.8	-22 33	3/4 SEPT 1978	2313	2317	20 40 30 30	1 ^h 25 ^m W	1.5 ["] clear	"	"	"	2.2	B0.3IV	"	"	9min	"	"	"	"
	2 Ser	15 47.6	+18 13'		2323	2346	23 ^m ✓					~5.8	M IIIab			9min					clouds on S & W margin
	Ceres	18 46.1	-31 13		2352	0404	4 ^h 12 ^m ✓	3 25 ^m W	1.5 ["]			8.2	G2 - spec								11% 40% residual
	42 Cap	21 40.4	-14 08		0408	0428	4 ^h 12 ^m ✓	56 ^m W	1 ["] clear			6.0	G2								clouds rising
	51 Peg	22 56.0	+20 40		0436	0511	35 ^m ✓	24 ^m W	2 ["]			6.2	G2								
	HR 6 = HD 142	0 05.1	-49 13		0545	0611	25 ^m ✓	16 ^m W	1 ["]			6.5	G1								
	HR 17 = HD 3823	0 39.0	-59 36		0614	0646	32 ^m ✓		1-2 ["]			6.5	G1								clouds at +55° SW N
	HR 159 = HD 3443	0 36.0	-24 54		0649	0705	15 ^m ✓		1.5 ["] obs. by			6.5	G5								stopped by clouds all over
	"	"	"		720	753	30 ^m ✓		1.5 ["] obs. by			6.5	G5								these clouds in between
	K Cr	3 18.0	+3 17		0851	0920	18 10 10 ^m ✓	12 ^m W	1.5 ["] obs. by			5.5	G5								
1676	Vesta	10 59.2	-22 41	4/5 SEPT 1978	2342	0006	3 6 15 10 ^m ✓	1 18 ^m W	1 ["] some cirrus	100 ^x /0.8	120 ^x 20	7.3	G2 - spec	NeA	10 ^s		IIa 0	MWP-2			11.5% Comp 40%
	Pallas	16 51.8	+13 50'		0025	0125	50 ^m ✓	2 45 ^m W	2 ["] stopped by clouds			10.1	"								
	Ceres	18 46.3	-31 13		0240	0400	30 ^m ✓	3 26 ^m W	2 ["] 1 ["] clouds			8.2	G2								20 min lost to thick clouds
	"	"	"		0400	0415	13 ^m ✓	3 38 ^m W	2 ["] 1-2 ["] clouds			"	"								stopped by thick clouds
	HD 105	0 04.7	-41 54		0513	0533	20 ^m ✓	19 ^m E	1 ["] clear			8.5	G0								
	HD 142 = HR 6	0 5.1	-49 13		0535	0539	3 1/2 ^m ✓	14 ^m E	1.5 ["]			6.5	G1								
	HD 469	6 8.0	-54 09		0541	0549	7 ^m ✓	7 ^m E	1.5 ["]			7.0	G4								
	HD 1273	0 15.4	-52 48		0551	0601	10 ^m ✓	3 ^m E	1.5 ["]			7.5	G2								
	HD 2070	0 23.4	-51 11		0603	0613	9 ^m ✓	1 ^m W	1 ["]			7.5	G4								
	HD 3443	0 36.0	-24 54		0615	0619	3 ^m ✓	4 ^m E	1 ["]			6.3	G5								
	HD 3460	0 30.0	-37 26		0621	0633	10 ^m ✓	10 ^m W	1 ["] increasing clouds			7.7	G5								
	HD 3823	0 39.0	-59 36		0655	0700	4 ^m ✓	33 ^m W	2 ["] decreasing "			6.5	G1								
	HD 6269	0 1 01.9	-29 40		0705	0713	7 ^m ✓	24 ^m W	2 ["] clear			7.0	G5								
	HD 6434	01 03.6	-39 36		0725	0756	30 ^m ✓	1 5 ^m W	3 ["] some cirrus			8.5	G3								wind increasing 11% 20% 30%

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1686	β Ser	18 45.9	-04°46'	10/11	0019	0028	$\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$	19 ^m W	$\frac{1.5}{\text{circus}}$	3.42	$\frac{100}{1.8}$	$\frac{120}{7.0}$	5.3	G4 I CN1	10A	10 ^s	Shin pos. 1	IIa-0	110VP 2	1	8:45 AM moon 13°C 20p NE 40% thick cirrus
	HR7495	19 40.1	+45 28	Sept 1978	0041	0124	$\frac{1.5, 3, 6}{2}$	20 ^m W	$\frac{2}{\text{''}}$				5.5	F5 II std.							between clouds.
	γ Sge	19 57.7	+19°25'		0128	0146	$\frac{1, 2, 4, 8}{1.2}$	25 ^m W	$\frac{1}{\text{''}}$				5.0	K5-MO III	std						" "
	181475	19 19.5	-04 33		0156	0345	$\frac{40 \text{ moff}}{80}$	3 ^h W	$\frac{1}{\text{circus}}$				9.1	MO II	std.						stopped for 5 min several times
	HD6269	01 01.9	-29 40		0505	0513	$\frac{7}{\text{''}}$	14 ^m E	$\frac{1}{\text{clear}}$				7	G5							
	HD6434	01 03.6	-39 36		0514	0536	$\frac{22}{\text{''}}$	50 ^m E	$\frac{1}{\text{''}}$				8.5	G3							
	HD6594	01 05.1	-34 56		0538	0608	$\frac{30}{\text{''}}$	21 ^m E	$\frac{1}{\text{''}}$				8.5	G3							
	HD7983	01 17.9	-9 03		0611	0738	$\frac{87}{\text{''}}$	56 ^m W	$\frac{2}{\text{clear}}$				9.7	G2							
	HD11112	01 47.3	-41 37		0742	0754	$\frac{12}{\text{''}}$	44 ^m W	$\frac{1.5}{\text{clear}}$				7.8	G4							
	HD12783	02 04.1	+00 12		0758	0824	$\frac{25}{35}$	56 ^m W	$\frac{1.5}{\text{''}}$				8.7	G5							
	HD13043	02 06.3	-00 43		0826	0836	$\frac{10}{\text{''}}$	1°06'W	$\frac{1}{\text{''}}$				7.5	G2							
1687	HD14412	02 17.9	-26 03	"	0847	0853	$\frac{6}{\text{''}}$	1°12'W	$\frac{1}{\text{''}}$	"	"	"	7.0	G5	"	"	"	"	"	"	"
	HD14802	02 21.4	-23 55		0854	0856	$\frac{2}{1.5}$	1°12'W	$\frac{1}{\text{''}}$				6.0	G1							
	HD15590	2 28.3	-42 10		0859	0924	$\frac{25}{\text{''}}$	1°32'W	$\frac{1}{\text{clear}}$				8.7	G5							
	HD28068	4 24.9	+16 48		0933	1002	$\frac{29}{\text{''}}$	14 ^m W	$\frac{1}{\text{clear}}$				8.7	G5							
1688	HR6577	17 37.9	+13 19	11/12	2342	0004	$\frac{3, 6, 12}{5}$	1°5'W	$\frac{1.5}{\text{circus clearing}}$				6.7	F6 III std.	"	"	"	"	"	"	13°C 10p NE 45% clouds, then clear
	HR6868	18 19.3	+21 57	Sept 1978	0006	0025	$\frac{12, 6}{5}$	45 ^m W	$\frac{2-3}{\text{clear - few cirrus}}$				6.5	M1 III std.							
	γ Lib	15 34.1	-14 42		0027	0032	$\frac{1.5, 3}{1.1}$	3°38'W	$\frac{1}{\text{clear}}$				5	G8 III CN-1 std.							
	29 Her	16 31.4	+11 32		0036	0052	$\frac{15, 6}{5}$	3 ^h W	$\frac{3}{\text{first org clear, stopped by thick cirrus}}$				6.5	K7 II std.							
	Moon (9 ^d)	18 58.5	-17 30		0110	—	$\frac{4, 2, 1, 2}{1.5}$	52 ^m W	$\frac{1}{\text{sharp clouds}}$?	G2 V - Sun.							11°C 20p NE 40%
	3 Aps	20 46.4	-05 07		0217	0226	$\frac{3, 6}{\text{''}}$	19 ^m W	$\frac{2}{\text{clear}}$				6.05	M3 III std.							
	2 Peg	21 28.8	+23 32		0230	0244	$\frac{4, 8}{\text{''}}$	5 ^m E	$\frac{1}{\text{few cirrus}}$				6.2	M1 II std.							
	181475	19 19.5	-04 33		0247	0308	$\frac{21}{60}$		$\frac{1}{\text{stopped by clouds}}$				9	MO II std.							this star never before! 3rd time!
1689	δ Lib	15 52.7	-16 33	13/14	2321	2330	$\frac{1, 2, 4}{1}$	2°25'W	$\frac{2-3}{\text{clear}}$				5.3	K0							
	48 Lib			Sept 1978	2337	2341	$\frac{4, 2, 1, 2}{1.2}$		$\frac{2}{\text{''}}$				4.7	B3 p							
	Vesta	17 11.4	-23 21		2346	0008	$\frac{22}{\text{''}}$	1°45'W	$\frac{2}{\text{clear}}$				8.0	G2 V sun							
	ζ Sco	16 53	-42 19		0012	0021	$\frac{1, 3, 4}{1.5}$	2°15'N	$\frac{2}{\text{''}}$				5	K5							
	ν Sco	16 10.6	-19 25		0029	0030	$\frac{15, 30, 1}{1}$	3°10'W	$\frac{2}{\text{''}}$				4.1	B2							
	moon	21 05	-13 02		0035	—	$\frac{1, 2, 1, 1}{1.2}$	1°40'W	$\frac{1}{\text{clear}}$?	G2 V sun							

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LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R. A.	DEC.	DATE U.T.	U.T. EXP		TOTAL / CORR.	H A END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / ITLT	MAG	SP.	COMP.		CALIB.	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1690	V Oph	16 26.2	-08 18	13/14	0105	0108	20 ⁴⁰ 8 ⁵ 160	3 50 W	2" clean	3.42	100% / 8	120 / 10	4.8	Am	NetA	10°	yes	II-0	14W 2	rd	
	V Ser	17 19.5	-12 49	Sept 1978	0112	0115	4 ¹² 1 ¹² 112	2 46 W	"				4.4	A1							
	27 H. Oph	17 25.3	-05 02		0121	0125	4 ¹² 1 ¹² 112	2 49 W	"				4.9	F3							
	μ Ser	18 12.4	-21 04		0130	0133	12 ²⁴ 4 ⁵⁰ 150	2 49 W	"				4.0	BP							
	R Ser	18 46.1	-05 42		0139	0202	3 ⁶ 1 ¹² 112	2 3 W	2" clean				6.1	G0I							
	ρ Ser	19 20.4	-17 54		0250	0252	10 ⁵⁰ 20 ⁴⁰ 140	2 20 W	2" clean				3.9	A5							
	σ Ser	19 22.6	-40 40		0256	0259	15 ³⁰ 4 ⁵⁰ 150	2 25 W	"				4.1	B8							
	τ Oph	19 35.5	-01 19		0303	0308	20 ⁴⁰ 8 ⁵ 160	2 20 W	"				4.3	B5							
1691	θ Oph	20 10.0	-00 52	"	0316	0318	8 ¹⁶ 2 ¹⁶ 16	1 57 W	3" "				3.4	A0							
	15 Ser	18 14.1	-20 45		0340	0340	6 ³⁷ 7 ¹² 112	4 21 W	"				5.5	B0 Ia	std						
	16 Ser	18 14.1	-20 24		0350	0405	2 ³⁷ 7 ¹² 112	4 40 W	"				6.0	O9 II	std						
	V Psc	23 24.3	+23 18		0410	0418	4 ³⁴ 7 ¹² 112	17 E	2" "				4.9	F8							
	54 Psc	0 38.2	+21 10		0530	0600	4 ³⁷ 16 ⁴⁰ 160	12 W	2" clean				6.7	K0 V	std						
	γ Psc	01 30.7	-49 09		0605	0611	20 ⁴⁰ 8 ⁵ 160	30 E	"				4.9	K0							
1692	Hr 483	01 40.3	+42 32		0625	0644	1 ²⁷ 8 ⁵ 160	8 E	3" clean				5.5	G2 V	std						
	o Cet	02 18.3	-03 01		0647	0819	9 ² 1 ¹² 112	50 W	2" clean				?	Me							
	HD 27691	04 21.4	+15 03		0828	0845	17 ¹² 12 ¹² 112	39 E	2" clean				7.6	G0 V							Close mas, double?
	HD 27656	04 13.2	+14 36		0900	1000	60 ¹² 12 ¹² 112	35 W	4" clean				9.2	G5 V							
1693	Sky	—	—	14/5	2150		1 ²⁴ 4 ⁵ 112	0	— clean	"	"	"	?	G2 V - Sun	"	"	"	"	"	"	10° 45% SphNe
	Vesta	17 13.1	-23 26	Sept 1978	2342	0014	20 ¹² 12 ¹² 112	1 52 W	2" clean				8.0	G2 V - Sun							
	HD 160702	17 40.8	-21 45		0016	0118	6 ² 1 ¹² 112	2 30 W	1.5" clean				10.0	A0 O?							listed as A3 in HD for 160702
	Bm Sco	17 39.5	-32 13		0122	0153	20 ¹⁰ 1 ¹² 112	3 6 W	1.5" clean				8.2	K2.5 III	std						
	181475	19 19.3	-04 32		0213	0313	6 ¹² 1 ¹² 112	2 46 W	1.5" clean				M0 II	9.0x							
	Moon	29 03	-9 20		0346	0646	4 ¹² 1 ¹² 112	0h	—				6.2 V	?							
	Sky	22 03	-29 58		0346	0646	3 ¹² 1 ¹² 112	3 37 W	— clean				?	G2 V							
	45 RZ Ari	02 54.2	+18 14		0656	0738	12 ²⁶ 2 ¹² 112	23 E	2" clean				7.5	M6 III	std						
	HD 27836	04 22.5	+14 43		0805	0835	30 ¹² 1 ¹² 112	54 E	2" 3"				8.2	G1 V							
	HD 1834	04 27.2	+17 15		0838	0917	39 ¹² 1 ¹² 112	17 E	2" clean				8.5	G1 V							
	HD 27406	04 18.6	+15 12		0920	0940	20 ¹² 1 ¹² 112	15 W	2" clean				8.0	G0 V							

✓ GOOD
✓ EXCELLENT

NUMBER	OBJECT	R.A. 1978	DEC. 1978	DATE U.T. 1978	U.T. EXP.		TOTAL / CORR. MIN.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP		CALIB.	EMUL.	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1694	T Gru	22 ^h 24. ^m 4	-37° 45'	NOV. 10-11	02:55	03:40	45/✓	3 ^h 52 ^m W 1" CLEAR		3.32	100/0.8	120/7.0	10.5	MIRA MOe			-5	IIaD	M-5 15 ^m	CRW	H=50% T=17°C
	R For	02 ^h 28. ^m 2	-26° 12'		04:55	05:40	45/OUT OF FOCUS	1 ^h 45 ^m W					9.5	MIRA Ne	NeA	2 ^s	-3				NO LINES IN B!
1695	T Col	05 ^h 18. ^m 5	-33° 45'		07:06	07:51	45/✓	1 ^h 09 ^m W					10.0	MIRA M4e-M6	NeA	2 ^s	-5				H=42% T=16°C
1696	RY Mic	20 ^h 57. ^m 0	-40° 24'	NOV. 11-12	00:45	04:00	195/SL. WEAK	5 ^h 44 ^m W 1" CLEAR		3.32	100/0.6	120/7.0	<12	MIRA			-5	IIaD	M-5 15 ^m	CRW	H=50% T=17°C
	T Gru	22 ^h 24. ^m 4	-37° 45'		04:15	05:15	60/✓	5 ^h 30 ^m W					10.5	MIRA MOe	NeA	2 ^s	-3				
	R For	02 ^h 28. ^m 2	-26° 12'		05:22	06:07	45/OUT OF FOCUS	2 ^h 19 ^m W		3.92			9.5	MIRA Ne	NeA	2 ^s	-1				NO LINES IN B! NOT IN FOCUS IN R!
1697	T Col	05 ^h 18. ^m 5	-33° 45'		06:48	07:23	35/✓	0 ^h 46 ^m W		3.32			10.0	MIRA M4e-M6			-5				
	RV Pup	06 ^h 42. ^m 0	-42° 21'		07:45	08:25	40/TOO STRONG	0 ^h 25 ^m W					9.7?	MIRA M4Te	NeA	2 ^s	-3				H=32% T=16°C
1698	T Gru	22 ^h 24. ^m 4	-37° 45'	NOV. 12-13	01:10	02:26	75/✓	1 ^h 45 ^m W 1" CLEAR		3.32	100/0.6	120/7.0	10.5	MIRA MOe	NeA	2 ^s	-5	IIaD	M-5 15 ^m	CRW	H=50% T=17°C
	R For	02 ^h 28. ^m 2	-26° 12'		02:42	03:43	60/GOOD (WEAK)	0 ^h 01 ^m E		3.02			9.5	MIRA MOe	NeA	2 ^s	-3				IN FOCUS IN R!
1699	RV Pup	06 ^h 42. ^m 0	-42° 21'		05:13	05:38	25/STRONG	2 ^h 20 ^m E		3.32			9.0?	MIRA M4Te			-5				
	CH Pup	06 ^h 44. ^m 6	-36° 32'		06:00	07:11	70/✓	0 ^h 50 ^m E					10.2	MIRA			-3				
	AS Pup	08 ^h 09. ^m 0	-38° 08'		07:30	08:35	65/✓	0 ^h 50 ^m E					10.5	MIRA M7e	NeA	2 ^s	-1				H=45% T=14°C
1700	RY Mic	20 ^h 57. ^m 0	-40° 24'	NOV. 13-14	00:40	04:25	225/✓	6 ^h 15 ^m W 1" CLEAR		3.32	100/0.6	120/7.0	<12	MIRA	NeA	2 ^s	-5	IIaD	M-5 15 ^m	CRW	H=48% T=16°C
1701	R For	02 ^h 28. ^m 2	-26° 12'		05:00	06:32	90/SL. WEAK	2 ^h 48 ^m W CIRCUS!		3.02			9.5	MIRA MOe	NeA	2 ^s	-5				MORE EXPOSURE TO GET LINES IN R! CIRCUS ALL OVER THE SKY!
	RV Pup	06 ^h 42. ^m 0	-42° 21'		06:40	06:55	15/✓	0 ^h 59 ^m E 1"-1/2"		3.32			9.0	MIRA M4Te			-3				
	CH Pup	06 ^h 44. ^m 6	-36° 35'		07:18	08:48	90/✓	0 ^h 52 ^m W					10.2	MIRA	NeA	2 ^s	-1				
1702	R For	02 ^h 28. ^m 2	-26° 12'	NOV. 14-15	00:48	01:49	60/PROB. IN!	1 ^h 49 ^m E 1" CLEAR		3.50	100/0.6	120/8.36	9.5	MIRA MOe	NeA	2 ^s	-5	IIaD	M-5 15 ^m	CRW	H=32% T=14°C
1703	R For	02 ^h 28. ^m 2	-26° 12'		03:10	04:21	70/TOO STRONG	0 ^h 45 ^m W					9.5	MIRA MOe			-5				OVERCOMPENSATED!
	RV Pup	06 ^h 42. ^m 0	-42° 21'		04:32	04:48	15/✓	2 ^h 00 ^m E					9.0	MIRA M4Te	NeA	2 ^s	-3				
1704	CH Pup	06 ^h 44. ^m 6	-36° 35'		05:57	07:03	65/✓	0 ^h 50 ^m E CIRCUS!					10.2	MIRA	NeA	2 ^s	-5				MORE CIRCUS!
	S Car	10 ^h 09. ^m 3	-61° 27'		07:50	08:00	10/✓	3 ^h 18 ^m E		3.32	100/0.6	120/7.0	8.7?	MIRA K7e-M4e			+1				
	T Cen	13 ^h 40. ^m 1	-33° 26'		08:36	08:42	6/WEAK	6 ^h 04 ^m E					8.5?	MIRA Koe-M4Te	NeA	2 ^s	+3				H=22% T=13°C

✓ GOOD
 W/ EXCELLENT

UNIVERSITY OF TORONTO
 LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
		1979	1979	1979			MIN.														
1705	T Col	5 ^h 18 ^m .6	-33°42'	MAR 6-7	1:20	2:05	45 ^{min} / ₅₀	2 ^h 58 ^m W	1" / clear	3:32	100/0.6	120/7.0	10.0	MIRA M4E-M6	NONE	-5	IIaD	M-5 → 15 ^m	CrW	H=40% T=16°C	
	RV Pup	6 ^h 42 ^m .0	-42°23'		2:42	3:42	60 ^{min} / ₅₀	3 ^h 45 ^m W					~11	MIRA M4E-M6	NONE	-3					
	CH Pup	6 ^h 44 ^m .7	-36°31'		4:00	5:11	70 ^{min} / ₅₀	4 ^h 40 ^m W					~12	MIRA	NONE	-1					FORGET COMPARISON!
1706	AS Pup	8 ^h 09 ^m .0	-38°07'		5:44	5:55	2,3,4 ^{min} / ₁₀	4 ^h 00 ^m W					8.0	MIRA M7E	NeA 2 ^s	-5,3,-1					
	R Can	9 ^h 32 ^m .4	-62°42'		6:15	6:34	10,5 ^{min} / ₁₀	3 ^h 16 ^m W					~8.7	MIRA M4E-M6	NeA 2 ^s	+1,+3					
	AS Pup	8 ^h 09 ^m .0	-38°07'		6:42	6:54	>10 ^{min} / ₁₀₀	5 ^h 02 ^m W					8.0	MIRA M7E	NeA 2 ^s	+5					
1707	XZ Can	12 ^h 23 ^m .3	-35°31'		7:44	7:58	>15 ^{min} / ₁₀₀	1 ^h 49 ^m W					9.0	MIRA M5	NeA 2 ^s	-5					
	T Cen	13 ^h 40 ^m .6	-33°27'		8:14	8:27	2,3,5 ^{min} / ₅	1 ^h 00 ^m W					~8.0	MIRA K8E-M3	NeA 2 ^s	-3,-2,-1					SET TRAILS!
	R Can	14 ^h 15 ^m .5	-59°48'		9:00	9:08	1,2 ^{min} / ₃	1 ^h 06 ^m W					~7.2	MIRA M4E-M6	NeA 2 ^s	+1,2					SET TRAILS! H=40, T=16
	S Can	10 ^h 09 ^m .1	-61°25'		9:24	9:30	1,2 ^{min} / ₂	5 ^h 35 ^m W					~7.2	MIRA K7E-M4E	NeA 2 ^s	+4,5					H=52% T=17°
1708	T Col	5 ^h 18 ^m .6	-33°42'	MAR 7-8	0:45	1:17	30 ^{min} / ₅₀	2 ^h 16 ^m W	1" / clear	3:32	100/0.6	120/7.0	10	MIRA M4E-M6		-5	IIaD	M-5 → 15 ^m	CrW		
	RV Pup	6 ^h 42 ^m .0	-42°23'		1:25	2:59	94 ^{min} / ₁₀₀	2 ^h 35 ^m W					~11	MIRA M4E-M6	NeA 2 ^s	-3					
	AS Pup	8 ^h 09 ^m .0	-38°07'		3:10	3:15	5 ^{min} / ₁₀	1 ^h 24 ^m W					~8	MIRA M7E	NeA 2 ^s	-1					
	R Can	9 ^h 32 ^m .4	-62°42'		3:22	3:32	10 ^{min} / ₁₀	0 ^h 47 ^m W					8.7	MIRA M4E-M6	NeA 2 ^s	+2					
	S Can	10 ^h 09 ^m .1	-61°25'		3:37	3:43	2 ^{min} / ₁₀	0 ^h 09 ^m E					~7.0	MIRA K7E-M4E	NeA 2 ^s	+3,5					
1709	CH Pup	6 ^h 44 ^m .7	-36°31'	MAR 8-9	0:57	1:59	>100 ^{min} / ₁₀₀	3 ^h 35 ^m W	1" / clear	3:32	100/0.6	120/7.0	12	MIRA	NeA 2 ^s	-5	IIaD	M-5 → 15 ^m	CrW	H=46% T=15°C	
1710	CH Pup	6 ^h 44 ^m .7	-36°31'	MAR 16-17	1:35	ABANDONED DUE TO VFO PROBLEMS			1" / clear	3:32	100/0.6	120/7.0	12	MIRA	NeA 2 ^s	-5	IIaD	M-5 → 15 ^m	CrW	H=48% T=19°C	
	X Ant	10 ^h 05 ^m .7	-29°57'		3:50	7:54	>240 ^{min} / ₁₀₀	4 ^h 44 ^m W					<12?	MIRA M2		-4					
1711	R For	2 ^h 28 ^m .1	-26°12'	MAR 17-18	1:12	2:27	15 ^{min} / ₁₀₀	5 ^h 55 ^m W					~9	MIRA No		-5					VERY LITTLE IN BLUE!
	T Col	5 ^h 18 ^m .6	-33°42'		1:39	1:57	>15 ^{min} / ₁₀₀	3 ^h 35 ^m W	1" / clear	3:32	100/0.6	120/7.0	9.5	MIRA M4E-M6	NeA 2 ^s	-3	IIaD	M-5 → 15 ^m	CrW	H=44% T=20°C	
	CH Pup	6 ^h 44 ^m .7	-36°31'		2:05	6:05	240 ^{min} / ₁₀₀	3 ^h 17 ^m W					<12	MIRA	NeA 2 ^s	-1					AT MIN!
	R Can	9 ^h 32 ^m .4	-62°42'		6:24	6:34	10 ^{min} / ₁₀₀	3 ^h 59 ^m W					~8.7	MIRA M4E-M6	NeA 2 ^s	+1					
	S Can	10 ^h 09 ^m .1	-61°25'		6:43	6:44	1 ^{min} / ₁₀₀	3 ^h 33 ^m W					~7	MIRA K7E-M4E	NeA 2 ^s	+3					
	XZ Can	12 ^h 22 ^m .9	-35°31'		6:54	7:09	15 ^{min} / ₁₀₀	1 ^h 45 ^m W					9.0	MIRA M5		+5					
1712	T Cen	13 ^h 40 ^m .3	-33°28'		7:48	7:56	2,5 ^{min} / ₁₀	1 ^h 13 ^m W					>8.0	MIRA K8E-M3		-5,+4					BRIGHTER THAN BEFORE!
	R Can	14 ^h 15 ^m .5	-59°48'		8:05	8:13	2,4 ^{min} / ₁₀₀	0 ^h 55 ^m W					~7.2	MIRA M4E-M6	NeA 2 ^s	-2,1					
	RR Sco	16 ^h 55 ^m .4	-30°31'		8:48	9:10	<30 ^{min} / ₁₀₀	0 ^h 48 ^m E					≥10	MIRA M5E-M8E	NeA 2 ^s	+1					H=44% T=18°, W=5-10

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

CRd = Cameron Reed
Waterloo

GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A. 1976	DEC. 1976	DATE UT.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	B MAG	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1713	Cr140-43	07 ^h 20 ^m .1	-31° 59'	17 APR	00:06	00:16	10 / 10 ^m	01 ^h 50 ^m W	2" OK	332	100/0.8	120/7	8.70	A+G	NeA	2 ^s		IIaD	M-5 ^m 15 ^m	F+ CRd	-5
1714	-140	"	"		01:15	01:54	(34) / 30	03:29	" "				10.60	F+K							-5
	-152	07 19.9	-32 14		02:01	02:24	23 / 20						10.34	G3:r?							-3
	-146	07 19.6	-32 06		02:26	02:35	1/8						9.80	A3 I	NeA	2 ^s		"	"	"	-1
1715	HD 93205	10 43.7	-59 37		02:55	02:57	2	01:07W										"	"	"	-5
	Tr 15- 2	10 43.7	-59 16		03:28 ^{1/2}	03:37	3 ^{1/2}	01:40W					8.5								-3
	-2	"	"		03:31	03:41	10	01:55W	3"				4.7								-1
	-1	"	"		03:43	03:47	4	01:58W					8.5								+1
	-3	"	"		03:48	04:24	35	02:35W					10.9							might be ill. contaminated by S. +3	
	-16	"	"		04:26	05:16	50	03:25W	3" THIN CIRREUS				10.6	red x							+5
	-15	10 43.3	-59 18		05:14	05:39	20	03:52W					10.2								+6
1716	NGC 5281	-1 13 ^h 45 ^m .0	-62° 51'		05:54	05:55	50 ^s	01:07W					6.79					"	"	"	-5
	-6	13 ^h 44.8	-62° 51'		05:58	06:37	39 / 36 ^m	02:22 ⁰ ?													-3
	-2	13 44.9	"		06:39	06:45	6 / 6 ^m	01:56W					8.88								+1
	-3	"	"		06: ⁴⁷ 43	06:51	4 / 3 ^m	02:01	PASSING CIRREUS				8.11							IMAGE B-COMING	+1
	-11	"	"		06:52	07:23	31 / 30	02:34	3" "				10.06	red star							+3
	-14	"	"		07:25	07:49	24 / 24	03:02	3" "				10.26								+5
1717	HR ⁶¹³¹ 6135	16 37.5	-46° 13'		08:16	08:16	24 ^s	00:44					5.92	SS gap SS gap	NeA	2 ^s					+5
1718	Tr 7-6	07 24.5	24 15		could not find								9.19								-8
	Tr 15-23	10 43.7	-59 17		23:53	00:47	50 ^m	00:49E	<2"				11.4								-5
	Tr 7-6	07 26.4	-23 55	18 APR	00:55	01:02 01:02	6 ^m	02:34W					9.2								-3
	Tr 7-7	07 26.4	-23 55		01:08	02:20	70	03:52W					11.67								+1
	-1	07 26.4	-23 54		02:25	02:35	10	04:08W					9.59	NeA	NeA	2 ^s					+3
1719	Tr 15-10	10 44.4	-59 17		02:56	04:20	80						11.82								-5
	-13	10 44.3	-59 17		04:23	04:59	36	03:15W					10.93							LAMP AREN BY 14?	-3
	-14	10 44.4	-59 17		05:00	05:32	32 ^m / 29	03:48W					10.57								-1
	NGC 5281-74	13 45.8	-62 53		05:40	06:32	50 ^m	01:46W					11.36								+1
	-10	13 45.5	-62 53		06:35	07:10	35 / 30	02:25W					10.67								+3
	-8	"	"		07:11	07:29	18	02:44												(8+9) BS 10 12 BS 11 02	+6

NUMBER LC	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	B MAG	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
1731	NGC 5749-13	14:48.3	-54°25'	29 APR '44	06:01	06:48	47/40 ^m	01:43 W	2-3"		100/0.8	120/7	11.1					IIaD	M-S 15m	C Rd	T=70° H=55% W<10 SOME HAZE -5	
	-6	"	"	"	06:51	07:34	43/40 ^m	02:30 W	"	"	"	"	11.1					"	"	"	SOME HAZE, SKY BRIGHT HAZE, CLOUDS -3	
	NGC 6322-75	17 18.3	-42 58	"	07:44	09:32	108 ^m /90 ^m	01:58 W			"	"	11.8		NeA	2 ^s		"	"	"	-1	
1732	Ru 55-4	08:11.9	-32 31	29/30 APR	23:36	00:26	50/50 ^m	02:02 W	~3"		100/0.8	120/7	11.15					IIaD	M-S 15m	C Rd	T=10 H=54 SOME CIRRUS -5	
	Tr 15-18	10 45.0	-59 17	30 APR	00:35	03:35	3 ^h	02:38 W	"		"	"	12.36					"	"	"	-3	
	Cr 265-2	13 18.2	-66 55	"	04:06	05:50	104 ^m /100 ^m	02:14 W	"		"	"	12.04					"	"	"	DIFFICULT TO ID! -1	
	NGC 6383-247	17 33.7	-32 18	"	06:10	09:14	184 ^m /3 ^h	01:24 W			"	"	12.52		NeA	2 ^s		"	"	"	TELESCOPE SHIFTED IN AZ WHEN PLATEHOLDER ACTIVATED +3	
1733	Tr 16-104	10 43.9	-59 38	4 MAY	00:28	00:34	6 ^m	00:08 E	~2"		100/0.8	120/7	8.91					IIaD		C Rd	-5	
	-100	10 43.9	-59 41	"	00:36	00:40	3 ^m /5 ^m				"	"	8.82					"	"	"	NOT PROPERLY ON SLIT -3	
	"	"	"	"	00:40	00:46	6 ^m /5 ^m	00:04 W			"	"	11					"	"	"	-1	
	Tr 15-33	10 44.0	-59 17	"	00:54	03:54	3 ^h	03:13 W			"	"	12.50					"	"	"	T=12 H=30 +1	
	NGC 5316-4	13 52.5	-61 46	"	04:02	05:26	84/80 ^m	01:37 W			"	"	11.74					"	"	"	+3	
	NGC 6383-40	17 32.5	-32 32	"	05:35	09:35	4 ^h	02:05 W			"	"	12.9					"	"	"	W=35! +5	
1734	α Hya	09 26.1	-08 35	4/5	23 50	23 53	15 ^m /30 ^m 15 ^m /15 ^m	30 ^m E	2"/clear	2.35	100/0.8	120/7	3.4	K4 III	NeA	10 ^s		IIaC	M45P-2	W	No wind T=14°C H=45% -5	
	HR 3314	08 24.7	-03 50	MAY	00 02	00 07	2 ^m /15 ^m 2 ^m /15 ^m	1 ^h 48 ^m W	"/clear	"	"	"	3.9	A0 V	"	"		"	M45P-2	"	"	
	HR 3849	09 39.2	-14 18	1979	00 11	00 19	2 ^m /15 ^m 2 ^m /15 ^m	0 ^h 45 ^m W	"				4.9	B5 V				"	7 ^m CRT	"		
	HR 4119	10 24.3	-00 33		00 45	00 49	2 ^m /15 ^m 2 ^m /15 ^m	25 ^m W	"				4.9	B6 V				"	"	"	intermingled by clouds.	
	γ VIR (A)	12 42.7	-01 20		01 10		1 ^m 30 ^m /15 ^m 1 ^m 30 ^m /15 ^m		1.5"/clear?				4.5	F0 V				"	"	"		
	δ VIR (A)	"	"			01 18	1 ^m 30 ^m /15 ^m 1 ^m 30 ^m /15 ^m	76 ^m E	1.5"/clear?				4.5	F0 V				"	"	"	cloudy 12°C 45% no wind	
								very cloudy														
1735	SAC 227377	16 52.8	-41 50	"	04 43	04 45	1 ^m ✓	1 ^h 2 ^m E	1"/clear	"	"	"	5.6	B0	"	"		"	"	"		
	" 227379	16 52.9	-41 49		04 53	04 51	38 ^m ✓ 60 ^m		0.75"/clear				9.7	B				"	"	"	fainter of pair	
	" 227380	16 52.9	-41 49		05 32	05 36	4 ^m ✓	1 ^h 11 ^m E	"				6.7	B5 O6				"	"	"	brighter of pair	
	" 227364	16 52.7	-41 52		05 39	06 01	22 ^m ✓ 30 ^m	45 ^m E	"				8.6	O9				"	"	"		
	" " 370	16 52.8	-41 54		06 03	06 14	11 ^m ✓ 15 ^m	33 ^m E	<1"/clear				7.9	O9				"	"	"		
	" " 382	16 53.8	-41 50		06 15	06 17	2 ^m ✓ 3 ^m	28 ^m E	"				6.3	O8				"	"	"		
	383	16 52.9	-41 53		06 18	06 22	3.5 ^m ✓ 4 ^m	23 E					6.7	O9				"	"	"		
	385	16 53.0	-41 53		06 03	06 43	25 ^m ✓ 25 ^m	4 ^m E	"				8.5	O9				"	"	"		
	390	16 53.2	-41 50		06 44	06 50	6 ^m ✓	3 ^m W					7.0	WR				"	"	"		

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NUMBER LC	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP		TOTAL/CORR	H A END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1735	SAO 227 393	16 58.2	-41 52	4/5	0652	0703	11 ^m ✓	16 ^m W	<1" clouds	35	100% Pm	120/10	8:	B	N.A.	10 ^s	Opes 1	IIa-C	11W P2	21	
cont	" 227 394	16 58.1	-41 52	MAY 1979	0713	0717	2 ^m ✓	2 ³² W	<1" clouds				10:	B	"	5 ^m			7 ^m C20		very perfect
	" 227 400	16 58.2	-41 49		0920	0931	11 ^m ✓	2 ⁴⁵ W	"				8.1	B.5							
	" 227 374	16 52.7	-42 01		0937	0942	5 ^m ✓	2 ⁵⁶ W	"				6.9	B.5							wind 20 mph.
	" 227 415	16 54.0	-41 58		0945	1029	44 ^m ✓	3 ⁴² W	<1" cirrus				9.5	B.8							
1736	HR 2762	07 11.1	-48 15	6/7	2320	2325	15.30 60 ^s ✓	2 ²⁵ W	2" faint cirrus	"	"	"	4.6	B.8	"	"		IIa-C	"	21	me. wind 120-75% C 11
	HR 2766	07 11.2	-48 50	MAY	2332	2348	24.15 60 ^s ✓	2 ⁴⁵ W					6.2	M.3							
	HR 2881	07 30.0	-30 55	MAY	2350	2357	44.15 60 ^s ✓	2 ⁴⁰ W					5.5	B.1							
	HR 1 Pomp	07 42.6	-28 20		0007	0024	24.15 60 ^s ✓	2 ⁵⁰ W					6.2	K.5							
	HR 3081	07 52.6	-49 33		0027	0030	15.30 60 ^s ✓	2 ⁵¹ W					7.4	B.2							
	HR 3206	08 08.4	-47 18		0114	0143	8.15 15 30 ^s ✓	2 ⁴⁸ W					7.0	B.3							
1737	HR 3220	08 10.0	-47 18	"	0122	0157	15.30 60 ^s ✓	3 ¹ W					5.2	F.7							
	HR 3226	08 10.5	-42 58		0100	0103	15.30 60 ^s ✓	3 ¹⁶ W					4.9	A.3							
	HR 3574	08 50.8	-52 38		0109	0113	15.30 60 ^s ✓	2 ³² W					7.5	B.5							
	HR 3642	09 06.6	-70 27		0116	0120	15.30 60 ^s ✓	2 ²⁷ W	clouds?				4.5	B.2e							
	K P. X	09 00.2	-25 47		0126	0146	12.45 60 ^s ✓	2 ⁵² W	2" clouds				6.2	M.0							through clouds
	P. P. X	09 20.6	-25 53		0149	0206	24.15 60 ^s ✓	3 ¹ W					6.4	M.1							
1738	SAO 227 515	16 50.7	-41 7		0222	0228	30.15 60 ^s ✓	4 ⁴ W					5.3	B.8							
	227 515	16 50.4	-41 47		0234	0300	32 ^m 40 ^m ✓	3 ⁴ 31 ^m E					9.0	B.0							
	327	16 51.2	-41 37		0300	---	---	---	cloudy				9.0	B.2							terminated by clouds
1739	SAO 227 402	16 58.2	-42 21	3/8	0800	0806	14.15 60 ^s ✓	1 ³² W	2" clouds				5.0	K.5							21
	375	16 52.7	-42 0	MAY	0809	0814	" ✓	1 ⁴⁰ W					5.3	B.1.5							
	372	16 53.2	-42 28	MAY	0816	0820	16.15 60 ^s ✓	1 ⁵⁵ W	2" clouds				6.5	F.3							12 mag. wind 9°C. 30% C 11
	410	16 53.3	-42 28		0836	0826	50 ^m 40 ^m ✓	2 ⁵¹ W	2" clouds				7.4	B.9							
	356	16 52.1	-42 08		0931	0945	14 ^m ✓	3 ¹⁶ W					7.7	B.0							
	430	16 53.2	-42 05		0946	0952	5 ^m ✓	3 ¹⁷ W					7.0	B.0							
	437	16 54.1	-42 23		0954	1030	32 ^m ✓	3 ⁵⁴ W	2" clouds				8.8	B.5							

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT. EXP.		TOTAL/CORR.	H A END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1150 cont	NGC 621	12 53.8	-59 02	13/11 1971	0227	0230	3" ✓	18" W	1.5" / clear	2.50	50μ/12	6+ / 4.40	4.5	B5	NA	CC	II-c		M-S		
	HR 4946	13 05.3	-48 22		0234	0237	3" ✓	15" W	"				4.6	B5					6.7 F 15		
751	3 Dor	5 05.0	-57 29	14/15 14 Aug 1971	2311	2319	8" ✓	5" W	1.5" / clear				5.2	F8							
	HR 2762	7 14.3	-48 14		2324	2336	8" ✓	3" W	"				4.7	B8							
	HR 2766	7 15.7	-27 49		2339	0010	3" ✓	3" 40" W	"				6.2	M3							
	HR 2881	7 30.0	-30 54		0013	0024	10" ✓	3" 55" W	"				5.5	G1							
	# 1 Pup	7 42.3	-28 20		0026	0057	3" ✓	4" W	"				6.2	K5							15% 24.90 W
	HR 3289	7 52.6	-29 33		0100	0104	3" ✓	3" 56" W	"				4.4	B2							
	HR 3206	8 09.0	-47 18		0107	0109	2" ✓	3" 45" W	"				4.0	B3							
	HR 3220	8 09.1	-61 15		0113	0121	8" ✓	3" 58" W	"				5.2	F7							
	HR 3226	8 10.6	-42 58		0124	0131	2" ✓	4" 05" W	"				4.9	A3							
	HR 3374	8 56.1	-52 37		0133	0138	5" ✓	3" 27" W	"				4.6	B5							
	HR 4138	10 30.4	-71 54		0143	0150	7" ✓	2" 06" W	"				4.8	A2							
1752	NGC 27332	16 51.2	-40 44	"	0211	0233	22" ✓	3" 33" E	1.5" / clear				6.2	B9p							
	424	16 53.8	-40 32		0238	0332	54" ✓	2" 35" E	1.5" / clear				7.3	B0							
	443	16 54.4	-40 59		0355	0454	52" ✓	1" 15" E	"				7.4	A5m							
	464	16 55.2	-40 40		0457	0534	37" ✓	35" E	" / clear				6.9	C8							
	473	16 55.5	-40 49		0600	0625	25" ✓	15" W	"				6.5	B0							
	477	16 55.6	-41 09		0629	0721	6" ✓	80" 1" 20" W	"				7.7	M5							
	479	16 55.7	-40 30		0733	0817	44" ✓	2" 8" W	"				7.2	O7							close companion
	481	16 55.6	-42 57		0823	0901	98" ✓	2" 52" W	2" / clear				7.8	B4							11% 28.78 bright
	118	16 42.4	-41 00		0904	0955	29" ✓	4" 38" W	2" / clear				6.7	A4							
1753	HR 3538	08 53.2	-05 19	13/16 1971	0101	0140	40" ✓	3" 35" W	2" / clear				6.7	C3							15% 25% mixed
	HR 3720	09 26.7	-05 56		0142	0202	25" ✓	3" 28" W	"				6.0	B2							
	HR 4657	12 14.1	-10 11		0211	0241	30" ✓	1" 15" W	"				6.6	F8							
	NGC 27123	16 42.9	-41 06		0249	0304	25" ✓	2" 39" E	2" / clear - under				6.7	B6							
	146	16 43.2	-40 50		0704	0712	1" ✓	1" 19" W	1" / clear - under				5.6	B3							
	190	16 45.4	-41 36		0717	0810	50" ✓	2" 14" W	1" / clear -				7.3	C9							
	272	16 48.5	-42 00		0812	0813	50" ✓	3" 5" W	1" / clear - under				7.3	O7							mixed by clouds

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	UT. EXP.		TOTAL/CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1754	5 Dor	05 05.4	-57 27	17/18	2320	2351	16 ⁹ / ₅	5 ^h 42 ^m W	1.5	3.35	10 ^u /08	20/70	5.2	F8	N/A	10 ^s		111422		used wrong slit -baffle! 11°C 30% magh.	
	HR 3018	07 44.9	-34 08	MAY 1979	2356	0106	12 ³ / ₅		"				6.7	F8				7 ^m C3F			
	HR 3538	08 53.1	-5 ^o 20'		0112	0125	12 ³ / ₅	2 23 ^m W	"				6.7	G3							
	HR 3750	09 26.5	-5 57		0142	0050	12 ⁴ / ₅	2 20 ^m W					6.0	G2							
	HD 11631	12 49.6	-02 38		0054	0235	10 ¹ / ₁₀	4 ^h 42 ^m W	1.5				10.0	M0.5V							
	SAO 227587	17 02.3	-40 04		0240	0248	7 ^m	3 ^h 18 ^m E	1.5				7.4	A5							
	552	17 00.0	-42 02		0250	0258	7 ^m	3 ^h 5 ^m E					7.45	B8							
	481	16 56.0	-42 55		0301	0316	15 ^m	2 ^h 43 ^m E					8.0	B4							
	479	16 55.6	-40 29		0319	0326	6 ^m	2 32 ^m E	"				7.2	G6							
	477	16 55.5	-41 08		0338	0349	10 ^m	2 01 ^m E					7.7	B1							
	473	16 55.4	-40 48		0352	0357	4 ^m	2 ^h 1 ^m E					8.5	B0							
1755	464	16 55.2	-40 38	"	0407	0421	8 ⁴ / ₅	1 ^h 37 ^m E	"				6.8	C8							
	443	16 54.4	-40 57		0424	0431	6 ^m	1 ^h 26 ^m E					7.4	A6							
	425	16 53.8	-41 07		0434	0439	3 ² / ₅	1 18 ^m E					6.0	C8+							
	424	16 53.8	-40 30		0442	0450	7 ^m	1 ^h 7 ^m E					7.3	B0							
	481	16 52.8	-41 03		0453	0451	8 ^m	55 ^m E					7.5	C9							
	384	16 52.9	-41 36		0505	0510	7 ^m	46 ^m E	"				7.4	C7							
	327	16 51.0	-41 35		0515	0545	30 ^m	9 ^m E					9	B2							
	341	16 51.8	-41 32		0548	0608	20 ^m	14 ^m W					8.3	B0							
	365	16 52.5	-41 31		0657	0722	25 ^m	1 ^h 28 ^m W					8.9	B0							
	367	16 52.6	-41 16		0726	0746	20 ^m	1 ^h 52 ^m W					8.5	B0							
	369	16 52.7	-41 13		0747	0810	23 ^m	2 ^h 15 ^m W					8.6	B0							
	378	16 52.7	-40 50		0813	0835	23 ^m	2 ^h 40 ^m W					8.5	B0							
	338	16 52.9	-40 57		0838	0858	25 ^m	3 ^h 4 ^m W					8.3	B0							
	341	16 53.1	-41 00		0859	0920	21 ^m	3 25 ^m W					8.7	B1							
	389	16 53.0	-41 30		0923	0945	20 ^m	3 50 ^m W					8.2	G7							
	463	16 53.2	-41 22		0947	1006	19 ^m	4 11 ^m W					8.3	B0							
	460	16 54.4	-40 18		1010	1032	19 ^m	4 35 ^m W					8.6	C7							

NUMBER	OBJECT	R.A.	DEC.	DATE UT	U.T. EXP		TOTAL/CORR.	H.A. END	SEE/TRANS	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1756	RV Pup	6 ^h 41 ^m .9	-42°20'	1979 MAY 19-20	1:06	1:26	20/V	5 ^h 45 ^m W	2"/CIRRUS	3-32	100/0.6	120/12.0	~9	MIRA M4-Te	NeA	2 ^s	-5	ITAD	M-5 →15m	CrW	H=15% T=17°C
	AS Pup	8 ^h 09 ^m .0	-38°06'		1:36	2:27	50/V	5 ^h 22 ^m W	1/CLEAR				~10	MIRA M7E	NeA	2 ^s	-3				
	R Cen	9 ^h 32 ^m .0	-62°42'		2:45	3:00	15/V	5 ^h 32 ^m W					~9	MIRA M4-Te	NeA	2 ^s	-1				
	S Cen	10 ^h 09 ^m .0	-61°25'		3:16	3:24	1,2,3/V	4 ^h 20 ^m W					~7.5	MIRA K8E-M10 ²	NeA	2 ^s	+1,3,5				
1757	X2 Cen	12 ^h 23 ^m .2	-35°30'		5:07	6:37	90/V	5 ^h 19 ^m W					~11	MIRA M5	NeA	2 ^s	-5				
	T Cen	13 ^h 40 ^m .6	-33°28'		6:55	7:10	48/V	4 ^h 34 ^m W					~8.5	MIRA K8E-M3	NeA	2 ^s	-3,2				
1758	R Cen	14 ^h 15 ^m .5	-59°48'		7:17	7:27	3/6/W	6 ^h 51 ^m W	17m				~8	MIRA M4-Se	NeA	2 ^s	+1,3				H=15% T=15°C
	T Col	5 ^h 18 ^m .5	-33°42'	MAY 20-21	23:50	00:05	15/V	5 ^h 55 ^m W	1/CLEAR	3-32	100/0.6	120/12.0	~9	MIRA M10-M16	NeA	2 ^s	-5	ITAD	M-5 →15m	CrW	H=17% T=16°C
	RV Pup	6 ^h 41 ^m .9	-42°20'		00:11	00:26	15/V	4 ^h 52 ^m W					8.7	MIRA M7E	NeA	2 ^s	-3				
1759	R Cen	9 ^h 32 ^m .0	-62°42'		00:46	01:08	20/V	2 ^h 45 ^m W					9	MIRA M4-Te	NeA	2 ^s	-1				
	S Cen	10 ^h 09 ^m .0	-61°25'		01:14	01:20	5/V	2 ^h 20 ^m W					7.7	MIRA K8E-M10	NeA	2 ^s	+1				
	X Ant	10 ^h 05 ^m .6	-29°57'		01:31	04:49	180/W	5 ^h 57 ^m W					~12	MIRA M2			+3				CIRRUS!
1760	T Cen	13 ^h 40 ^m .6	-33°28'		06:01	06:12	10/W	3 ^h 40 ^m W					8.5	MIRA K8E-M3	NeA	2 ^s	-5				
	R Cen	14 ^h 15 ^m .5	-59°48'		06:22	06:38	16/W	3 ^h 32 ^m W					8.5	MIRA M4-Se			-3				CIRRUS!
	RS Sco	16 ^h 54 ^m .0	-45°05'		07:00	07:09	1,2,3/V	1 ^h 25 ^m W					~7.5	MIRA M5-8E	NeA	2 ^s	-2,1,+1				H=17% T=14°C
	RR Sco	16 ^h 55 ^m .4	-30°31'		07:18	07:25	1,1/2,2/2/V	1 ^h 40 ^m W					>7.0	MIRA M5E-8E	NeA	2 ^s	+2,+3,+5				CIRRUS! PERSISTENT!
	T Col	5 ^h 18 ^m .5	-33°42'	MAY 21-22	23:45	00:00	15/V	5 ^h 50 ^m W	12"/CLEAR	3-32	100/0.6	120/12.0	9	MIRA M4-M16	NeA	2 ^s	-5	ITAD	M-5 →15m	CrW	H=22% T=14°C
1761	X Ant	10 ^h 05 ^m .6	-29°57'		00:10	04:25	25/V	5 ^h 31 ^m W					~12	MIRA M2	NeA	2 ^s	-3				IT CLARE!
	T Cen	13 ^h 40 ^m .6	-33°28'		04:35	04:47	10/V	2 ^h 19 ^m W					~8.5	MIRA K8E-M3			-1				
	R Cen	14 ^h 15 ^m .5	-59°48'		04:54	05:05	10/V	2 ^h 02 ^m W					~8.5	MIRA M4-Se	NeA	2 ^s	+1				
	RS Sco	16 ^h 54 ^m .0	-45°05'		05:22	05:25	3/V	0 ^h 16 ^m E					~7.5	MIRA M5-8E	NeA	2 ^s	+3				
	RR Sco	16 ^h 55 ^m .4	-30°31'		05:31	05:33	2/V	0 ^h 09 ^m E					~7.0	MIRA M5E-8E			+5				H=22% T=15°C CUT SHORT BY CLOUD!
1762	R Cen	14 ^h 15 ^m .5	-59°48'		06:39	07:02	20/V	3 ^h 58 ^m W					8.5	MIRA M4-Se	NeA	2 ^s	-5				
	T Cen	13 ^h 40 ^m .6	-33°28'		07:12	07:22	20/W	4 ^h 54 ^m W					8.5	MIRA K8E-M3			-3				
1762	T Cen	22 ^h 24 ^m .4	-37°41'		09:15	09:45	30/W	1 ^h 26 ^m E					<9.5?	MIRA M0E	NeA	2 ^s	-5				

NUMBER	OBJECT	R.A.	DEC.	1979 DATE U.T. June	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG 	SP.	COMP		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1763	S Cru	12 53 05	-52 19.0	5-6	01 39 20	03 12 10	100 ^m /s.	2:32W	2"/good	2.80	50μ/1.2	67/4.42	7.7	cephheids F-G sg	NeA	60 ^s		IIa-0	M-S 67° 15 ^m	Glu	1/2 moon
	W Sgr	12 03 41	-29 35.3	"	03 47 00	04 04 10	7 ^m /week	1:45E	"	"	"	"	5.9	"				"	"	"	"
	X Sgr	17 46 15	-27 49.7	"	04 14 30	04 37 50	4 ^m 6 ^m / 10 ^m	0:50E	"	"	"	"	5.7	"				"	"	"	windy
	Y Sgr	12 20 09	-12 52.5	"	04 56 00	05 36 03	40 ^m /good	0:30E	"	"	"	"	7.0	"				"	"	"	2.25
1764	λ Car	09 44 41	-62 24.6	6-7	23 45 30	00 19 00	5 ^m 8 ^m 12 ^m / 15 ^m	2:50W	2"/good	2.20	50μ/1.2	67/4.42	5.4	cephheids F-G sg	NeA	60 ^s		IIa-0	M-S 67° 15 ^m	Glu	some cloud
	S Mus	12 11 36	-70 02.1	"	00 32 00	01 19 10	47 ^m /week	1:23W	1 1/2"	"	"	"	7.6	"				"	"	"	in north
	R Mus	12 40 43	-69 17.5	"	01 34 00	02 19 30	45 ^m /week	1:56W	1"	"	"	"	7.5	"				"	"	"	
	S TrA	15 59 15	-63 43.5	"	02 39 00	03 45 00	66 ^m /week	0:01W	"	"	"	"	7.6	"				"	"	"	clear
	S Nor	16 17 05	-57 51.4	"	04 42 30	06 20 20	32 ^m /week	2:18W	"	"	"	"	7.7	"				"	"	"	
	AP Sgr	12 11 45	-23 07.7	"	06 34 00	08 34 00	120 ^m /strong	2:40W	"	"	"	"	8.2	"				"	"	"	
	η Aql	19 51 25	+00 56.8	"	08 42 30	08 47 30	5 ^m /week	1:11W	"	"	"	"	5.0	"				"	"	"	
1765	T Cru	12 20 09	-62 09.9	7-8	23 43 00	01 36 30	113 ^m /week	1:36W	1 1/2"/good	2.80	50μ/1.2	67/4.42	7.8	cephheids F-G sg	NeA	60 ^s		IIa-0	M-S 67° 15 ^m	Glu	moon wax gib
	V Cen	14 31 23	-56 47.9	"	01 52 30	03 52 30	120 ^m /week	1:43W	"	"	"	"	8.1	"				"	"	"	clear
	U Sgr	12 30 38	-19 08.7	"	05 07 00	07 09 15	122 ^m /week	0:20W	"	"	"	"	8.2	"				"	"	"	gusty
	FF Aql	12 57 19	+17 19.8	"	07 22 30	07 54 10	30 ^m /week	0:34W	"	"	"	"	6.2	"				"	"	"	30-32
	U Aql	19 28 14	-07 05.9	"	08 05 30	09 05 30	60 ^m /week	2:18W	"	"	"	"	7.5	"				"	"	"	
1766	Y Cen	14 31 23	-56 47.9	8-9	05 22 00	07 22 00	120 ^m /week	5:10W	2"-10"/good	2.80	50μ/1.2	67/4.42	7.7	cephheids F-G sg	NeA	60 ^s		IIa-0	M-S 67° 15 ^m	Glu	high winds ~ 10 (clear) closed most of night
1767	T Cru	12 20 09	-62 09.9	9-10	23 36 00	01 36 30	120 ^m /fine	1:33W	2 1/3"/good	2.80	50μ/1.2	67/4.42	7.6	cephheids F-G sg	NeA	60 ^s		IIa-0	M-S 67° 15 ^m	Glu	windy (35-40) clear clouds
	R Cru	12 22 25	-61 30.8	"	01 33 00	04 03 30	150 ^m /week	4:10W	2"/good	"	"	"	7.7	"				"	"	"	
	η Aql	19 51 25	+00 56.8	"	08 55 00	09 12 00	23 ^m /fine	1:50W	2"/good	"	"	"	5.0	"				"	"	"	
1768	S Mus	12 11 36	-70 02.1	10-11	23 30 00	01 03 30	13 ^m /fine	1:20W	2"/good	2.20	50μ/1.2	67/4.42	7.5	cephheids F-G sg	NeA	60 ^s		IIa-0	M-S 67° 15 ^m	Glu	full moon
	R TrA	15 17 42	-66 25.6	"	01 11 30	02 40 50	30 ^m /week	0:03W	1 1/2"	"	"	"	7.5	"				"	"	"	clear
	S TrA	15 59 15	-63 43.5	"	02 47 00	04 02 00	75 ^m /fine	0:34W	"	"	"	"	7.2	"				"	"	"	
	FF Aql	12 57 19	+17 19.8	"	05 30 00	06 30 00	6 ^m /strong	0:04W	2"	"	"	"	6.1	"				"	"	"	
	η Aql	19 51 25	+00 56.8	"	08 44 00	07 44 00	2 ^m 17 ^m / strong	0:16E	"	"	"	"	5.0	"				"	"	"	

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE UT	UT EXP		TOTAL/CORR	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
1776	λ Cas	09 44 41	-62 24.6	20-21	23 35 30	23 52 00	195 ^{min} / 46 ^{sec} weak	3:15W	2" clear	2.80	50μ / 1.8	67 / 4.8	4.9	cephoids F-G sg	spot sens	30 ^{min} 14V	NeA 60 ^s	IIa-0	M-S 67-15 ^{min}	Gu		
	υ Cas	10 56 56	-59 37.1	"	00 00 00	00 46 00	20 ^{min} / 160 ^{min} fine	3:00W	"	"	"	"	7.2	"	"	"	"	"	"	"	"	
	S Cru	12 53 05	-52 19.0	"	00 55 00	02 15 00	160 ^{min} / 50 ^{min} fine	2:32W	1/2" clear	"	"	"	"	7.7	"	"	"	"	"	"	scattered cirrus	
	V Cen	14 31 23	-56 47.9	"	02 22 00	04 02 00	160 ^{min} / 50 ^{min} fine	2:42W	1" spot clear	"	"	"	"	8.1	"	"	"	"	"	"	"	
	S TrA	15 59 15	-63 43.5	"	04 19 00	05 09 00	134 ^{min} / 27 ^{min} weak	2:21W	"	"	"	"	"	7.0	"	"	"	"	"	"	"	
	AP Sgr	18 11 45	-23 07.7	"	05 26 00	07 40 00	134 ^{min} / 27 ^{min} weak	2:40W	"	"	"	"	"	7.8	"	"	"	"	"	"	"	with cloud - B.5
FF Aql	18 57 19	+17 19.8	"	08 05 00	08 32 00	134 ^{min} / 27 ^{min} fine	2:46W	"	"	"	"	"	6.1	"	"	"	"	"	"	"	"	
1777	υ Cas	10 56 56	-59 37.1	21-22	23 37 00	00 49 00	70 ^{min} / 58 ^{min} weak	3:05W	photo tic clear	2.80	50μ / 1.8	67 / 4.8	7.6	cephoids F-G sg	spot sens	30 ^{min} 14V	NeA 60 ^s	IIa-0	M-S 67-15 ^{min}	Gu	seeing 1.3" sudden termination from 7.5 to 10.1	
	R Cru	12 22 25	-61 30.8	"	01 01 30	01 59 00	58 ^{min} / 70 ^{min} weak	2:50W	2" 3" clear	"	"	"	"	7.6	"	"	"	"	"	"	"	
1778	S Mus	13 11 36	-70 02.1	22-23	23 33 30	00 13 00	40 ^{min} / 70 ^{min} fine	1:20W	1/2" clear	2.80	50μ / 1.8	67 / 4.8	7.2	cephoids F-G sg	spot sens	30 ^{min} 14V	NeA 60 ^s	IIa-0	M-S 67-15 ^{min}	Gu		
	T Cru	12 20 07	-62 07.9	"	00 20 30	01 30 00	70 ^{min} / 47 ^{min} fine	2:45W	2" clear	"	"	"	"	7.6	"	"	"	"	"	"	seeing generally bad	
	S TrA	15 59 15	-63 43.5	"	01 43 00	02 40 00	47 ^{min} / 70 ^{min} fine	2:01W	"	"	"	"	"	7.2	"	"	"	"	"	"	"	
	R TrA	15 17 48	-66 25.6	"	02 47 00	0 25 30	70 ^{min} / 45 ^{min} fine	2:06W	"	"	"	"	"	7.7	"	"	"	"	"	"	"	
	HD 10652	18 37.5	-23 12.0	"	04 30 00	05 15 00	45 ^{min} / 70 ^{min} fine	0:02E	1/6" clear	"	"	"	"	7.1	F5 Ib	"	"	"	"	"	"	
	X Sgr	17 46 15	-27 47.7	"	05 24 30	05 40 00	70 ^{min} / 50 ^{min} fine	1:12W	"	"	"	"	"	5.6	cephoid F-G sg	"	"	"	"	"	"	"
	υ Aql	19 25.6	+00 20	"	05 53 30	06 00 00	50 ^{min} / 90 ^{min} fine	0:01E	"	"	"	"	"	5.3	F2 Ib	"	"	"	"	"	"	"
	υ Aql	19 28 14	-07 06	"	06 16 30	07 46 00	90 ^{min} / 10 ^{min} fine	1:37W	"	"	"	"	"	7.8	cephoid F-G sg	"	"	"	"	"	"	"
	γ Aql	19 51 25	+00 57	"	07 56 00	08 03 00	30 ^{min} / 10 ^{min} fine	1:30W	"	"	"	"	"	5.0	"	"	"	"	"	"	"	"
	β Aql	21 30 24	-05 36	"	08 12 30	08 16 00	10 ^{min} / 30 ^{min} fine	0:04W	"	"	"	"	"	3.7	G0 Ib	"	"	"	"	"	"	"
S Sgr	17 55 05	-16 34.5	"	08 28 00	09 01 00	30 ^{min} / 10 ^{min} fine	2:20W	"	"	"	"	"	6.5	cephoid F-G sg	"	"	"	"	"	"	"	
1779	ER Cas	11 08 56	-58 43.4	23-24	23 37 00	01 17 00	100 ^{min} / 100 ^{min} fine	3:20W	1/2" clear	2.80	50μ / 1.8	67 / 4.8	8.1	cephoids F-G sg	spot sens	30 ^{min} 14V	NeA 60 ^s	IIa-0	M-S 67-15 ^{min}	Gu	seeing very inconsistent (1"=0")	
	R Cru	12 22 25	-61 30.8	"	01 32 30	03 12 00	100 ^{min} / 05 ^{min} weak	4:15W	exposed	"	"	"	8.0	"	"	"	"	"	"	"	"	
	R TrA	15 17 48	-66 25.6	"	03 23 00	04 28 00	100 ^{min} / 14 ^{min} fine	2:30W	3" clear	"	"	"	"	7.6	"	"	"	"	"	"	"	
	X Sgr	17 46 15	-27 47.7	"	04 48 00	04 52 00	14 ^{min} / 14 ^{min} fine	0:35W	"	"	"	"	"	5.5	"	"	"	"	"	"	"	"
	W Sgr	18 03 41	-27 35.3	"	05 02 00	05 21 00	14 ^{min} / 90 ^{min} fine	0:40W	"	"	"	"	"	5.8	"	"	"	"	"	"	"	"
	υ Sgr	18 30 38	-19 07	"	05 33 00	07 03 00	90 ^{min} / 10 ^{min} fine	1:55W	2" clear	"	"	"	"	8.1	"	"	"	"	"	"	"	"
γ Peg	21 43 24	+17 21	"	07 15 00	07 25 00	10 ^{min} / 10 ^{min} fine	2:50E	"	"	"	"	"	5.5	G5 Ib	"	"	"	"	"	"	"	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
1779	x Hgr	22 04 05	-00 20	23-24	07 33 00	07 35 00	2 ^m / fine	0:06 E	2 1/2" / clear	2.80	50μ / 1.8	67 / 4.48	3.7	G2 Ib	spot	30 ^m	NeA	M-S ← → IIa-0				
cont	S Sgr	19 55 05	+16 34.5	"	07 50 30	08 25 00	35 ^m / fine	1:53 W	"	"	"	"	26.5	Cepheid F-G sg	sens	14V	60 ^s	67F-15 ^m	Glu →	"		
1780	R Mus	12 40 43	-69 17.5	24-25	23 33 00	00 30 00	57 ^m / fine	1:16 W	2" / clear	2.80	50μ / 1.8	67 / 4.48	7.3	Cepheid F-G sg	spot	30 ^m	NeA	IIa-0	M-S	Glu		
	T Cru	12 20 09	-62 10	"	00 36 00	01 41 00	65 ^m / fine	2:42 W	1 1/2" / clear	"	"	"	7.6	"	"	"	"	"	"	"	"	
	S TrA	15 59 15	-63 43.5	"	01 51 00	02 48 00	57 ^m / fine	0:15 W	"	"	"	"	7.4	"	"	"	"	"	"	"	"	
	W Sgr	18 03 41	-29 35.3	"	04 01 00	04 13 00	12 ^m / strong	0:23 E	"	"	"	"	5.4	"	"	"	"	"	"	"	"	
	y Sgr	18 20 07	-18 52.5	"	04 22 00	05 05 00	43 ^m / strong	0:12 W	"	"	"	"	7.0	"	"	"	"	"	"	"	"	
	u Sgr	18 30 38	-19 09	"	05 10 30	06 10 00	90 ^m / fine	1:40 W	"	"	"	"	8.0	"	"	"	"	"	"	"	"	
	FF Hgr	18 57 19	+17 19.8	"	06 51 00	07 13 00	23 ^m / fine	1:45 W	"	"	"	"	6.1	"	"	"	"	"	"	"	"	
	S Sgr	19 55 05	+16 34.5	"	07 22 30	07 55 00	33 ^m / fine	1:27 W	"	"	"	"	6.5	"	"	"	"	"	"	"	"	
1781	l Car	07 44 41	-62 24.6	25-26	00 03 00	00 10 00	7 ^m / fine	3:54 W	2" / clear	2.80	50μ / 1.8	67 / 4.48	7.9	Cepheid F-G sg	spot	30 ^m	NeA	IIa-0	M-S	Glu	delayed by clouds	
	ER Car	11 08 56	-58 43.4	"	00 16 00	02 00 00	10 ^m / fine	4:20 W	1/8" / clear	"	"	"	8.0	"	"	"	"	"	"	"	"	cloud interrupt 1/2 hr here
	S Cru	12 53 05	-58 19.0	"	02 11 30	04 09 00	75 ^m / fine	4:50 W	1/8" / clear	"	"	"	7.7	"	"	"	"	"	"	"	"	
	S TrA	15 59 15	-63 43.5	"	04 17 00	05 20 00	63 ^m / fine	2:51 W	"	"	"	"	7.5	"	"	"	"	"	"	"	"	terminated by clouds
	HP Sgr	18 11 45	-23 08	"	05 33 00				"	"	"	"	7.7	"	"	"	"	"	"	"	"	
1782	l Car	07 44 41	-62 24.6	27-28	23 31 30	23 32 30	7 ^m / fine	3:30 W	1 1/2" / clear	2.80	50μ / 1.8	67 / 4.48	5.0	Cepheid F-G sg	spot	30 ^m	NeA	IIa-0	M-S	Glu		
	u Car	10 56 56	-59 37.1	"	23 47 30	04 51 30	64 ^m / weak	3:34 W	"	"	"	"	7.6	"	"	"	"	"	"	"	"	occasionally exploded during
	S Mus	12 11 36	-70 02.1	"	00 58 30	01 51 30	53 ^m / fine	3:12 W	"	"	"	"	7.4	"	"	"	"	"	"	"	"	
	S Cru	12 53 05	-58 19.0	"	01 52 30	03 04 00	66 ^m / fine	3:49 W	"	"	"	"	7.5	"	"	"	"	"	"	"	"	
	S Nor	16 17 05	-57 51.4	"	03 11 00	04 17 00	66 ^m / weak	1:35 W	"	"	"	"	7.6	"	"	"	"	"	"	"	"	
	W Sgr	18 03 41	-29 35.3	"	04 23 00	04 34 00	11 ^m / strong	0:12 W	"	"	"	"	5.6	"	"	"	"	"	"	"	"	
	y Sgr	18 20 07	-18 52.5	"	05 32 00	06 12 00	10 ^m / strong	1:30 W	"	"	"	"	6.5	"	"	"	"	"	"	"	"	
	η Hgr	19 51 25	+00 57	"	06 20 30	06 37 30	7 ^m / strong	0:15 W	"	"	"	"	5.0	"	"	"	"	"	"	"	"	very windy 30-40 - closed
	S Sgr	19 55 05	+16 34.5	"	06 39 00	07 20 00	41 ^m / strong	1:03 W	"	"	"	"	6.5	"	"	"	"	"	"	"	"	
1783				28/29						2.80	50μ / 1.8	67 / 4.48			spot	30 ^m	NeA	IIa-0	M-S	Glu	closed due to wind 40-45	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	UT EXP		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		EMUL	DEV	OBS	REMARKS		
					BEGIN	END									KIND	EXP						
1786	—	—	—	JULY 11-12	—	—	—	—	—	3.55	100 / 0.8	120 / 3.0	—	—	NeA	10 ⁵	6	IIaO	7 min	AL	T = 15° RH = 15% W = 25- (50 MINUTE SECT- ALONG SW SW)	
	HD 116994	13 ^h 27.0	-51° 10.5		00 17	00 47	30m / 1h 50m W	3" CLEAR					7.8	?								
	"	"	"		00 50	01 50	60m / 3h 11m W	3" HAZY														
	109 VIR	14 45.2	+159.0		02 07	02 08	115 / 1 55W	3" HAZY					3.7	ACT								
	γ OPH	17 46.8	+243.3		02 16	02 17	20 / 1 00 C	"					3.8	ACT								
	γ VIR	12 40.5	-120.0		02 27	02 28	5 / 4 20 W	4" HAZE					2.9	FCII								
	γ BOC	14 31.3	+3824.0		02 39	02 41	20 / 2 45 W	5" HAZE					3.2	A7III								
	5 BOC	14 33.7	+24 50.1		02 45	02 50	40 / 2 50 W	4" HAZE					4.5	FCII								
1787	γ OPH	17 46.8	+2 43.3		04 33	04 33	25 / 1 35 W	4" HAZE					5.8	ACT	NeA	10 ⁵	5	IIaO	7 min		(50 minutes in ytd. spectra)	
	α OPH	17 33.9	+12 34.5		04 34	04 36	10 / 1 48 W	3" HAZE					2.1	A5III								* 15 min. in 11/27/12
	"	"	"		04 40	04 50	60 / 2 05 W	"					7.1	A5III								
1788	RS Sco	16 ^h 54.0	-45° 04'	JULY 22-23	02:00	02:12	2 ^m / 3 ^m / 5 ^m / 5 ^m / 1 36 W	1 1/2" CLEAR		3.42	100 / 0.6	120 / 7.0	7.5	MIRA M4-80	NeA	2 ⁵	-5	IIaD	15m	Crw	T = 12° H = 16% W = NONE CIRRUS!	
	T Cen	13 ^h 40.3	-33° 28'		02:35	02:48	1 ^m / 2 ^m / 1 ^m / 4 25 W						7.0	MIRA K82-M3	NeA	2 ⁵	+1, +5, +5					
1789	R Cen	14 ^h 15.5	-59° 48'		03:30	04:38	2 60 W	5 40 W					10.2	MIRA M4-80			-5					
	RR Sco	16 ^h 55.0	-30° 31'		04:55	05:40	45m / 30 4 03 W						9.5	MIRA M82-80	NeA	2 ⁵	-3					T = 13° H = 15% W = 22 SCATTERED CLOUD, THEN OVERCAST
1790	R Cen	14 ^h 15.5	-59° 48'	JULY 27-28	00:40	00:57	2 ^m / 4 ^m / 12 ^m / 7 00 W	2" CIRRUS		3.42	100 / 0.6	120 / 7.0	6.0	MIRA M4-80	NeA	2 ⁵	-5	IIaD	15m	Crw	T = 14°C H = 16% W = 25	
	S Cen	10 ^h 09.1	-61° 25'		01:05	01:22	2 4 6 / 4 4 49 W						6.0	MIRA K82-M3	NeA	2 ⁵	+3, +3					
1791	T Cen	13 ^h 40.3	-33° 28'		02:34	02:39	5 ^m / 1 36 W						7.0	MIRA K82-M3			-5					
	R Cen	14 ^h 15.5	-59° 48'		02:57	04:27	90 ^m / 5 50 W						10.2	MIRA M4-80	NeA	2 ⁵	-3					T = 14° H = 15% W = 28 THICK CIRRUS! OUT SHIRT DUE TO CLOUD! OVERCAST AT 2!
	RR Sco	16 ^h 55.0	-30° 31'		04:47	05:37	50 ^m / 4 19 W						9.5	MIRA M82-80	NeA	2 ⁵	-1					
1792	R Cen	14 ^h 15.5	-59° 48'	JULY 28-29	02:40	04:20	100 ^m / 5 45 W	1" CLEAR		3.42	100 / 0.6	120 / 7.0	10.5	MIRA M4-80	NeA	2 ⁵	-5	IIaD	15m	Crw	T = 13° H = 15% W = 20 CLOUD UNTIL 9 PM	
	RS Sco	16 ^h 54.0	-45° 04'		04:40	04:56	6 ^m / 9 ^m / 6 4 43 W						7.5	MIRA M4-80	NeA	2 ⁵	-3, -1					
	RR Sco	16 ^h 55.0	-30° 31'		05:05	05:37	30 ^m / 4 23 W						9.5	MIRA M82-80	NeA	2 ⁵	+1					
	K2P 5468	2 ^h 45.2	-2° 16'		06:02	06:18	2 ^m / 1 8 W	0 15 W					7.2	MIII	NeA	2 ⁵	+3, +4, +5					
1793	T Cen	22 ^h 24.4	-37° 41'		07:28	10:00	150 ^m / 3 47 W						11.5	Moe	NeA	2 ⁵	-5					T = 13° H = 14% W = 22

✓ 6000
✓ EXHAUST

NUMBER	OBJECT	R.A. 1980	DEC. 1980	DATE U.T.	U.T. EXP.		TOTAL/CORR	HA END	SEE/TRANS	CAM FOCUS	SLIT	GRATING /TILT	MAG	SP.	COMP		EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP				
1794	RX Boo	14 ^h 23 ^m .2	+25° 49'	July 27-30	00:25	00:55	4 ^m 5 ^m 10 ^m 2.16 W	11:00 PDS		3.42	100/0.6	120/7.0	7.0	M8 III	NeA 2 ^s	2-3	IIaD	M-5 15m	CW	T=13° H=32.6 W=22
	RR Sco	16 ^h 55 ^m .0	-30° 31'		01:10	01:50	2.35 W	04:40 W	2 ^m 1 ^m 1 ^m				9.5	M10 M12-80	NeA 2 ^s	-1				
	ε ² Oph	16 ^h 26 ^m .4	-7° 34'		02:25	02:26	1 ^m V	14:45 W					5.2	M12 III	NeA 2 ^s	+1				
	δ Oph	16 ^h 12 ^m .8	-3° 38'		02:35	02:36	10 ^m 1 ^m 1 ^m	12:08 W					2.75	M10 III		+2				
	κ Oph	16 ^h 58 ^m .5	+14° 10'		02:46	02:47	4.5 W	1:30 W					4.98	M13 III		+3				
	L Her	17 ^h 13 ^m .6	+14° 27'		02:53	02:55	2 ^m 1 ^m 1 ^m	15:41 W					~3.5	M15 II		+4				
	106 Her	18 ^h 46 ^m .1	+21° 55'		03:02	03:03	4.5 W	1:29 W					4.98	M15 II	NeA 2 ^s	+5				
1795	H1-36	17 ^h 48 ^m .4	-37° 03'		03:30	04:20	4.5 W	1:15 W		3.42	220/0.6	120/7.0	-	-	NeA 2 ^s	-5				T=12° H=30.6 W=20
	FOCUS			Sept 17-20			60s		10 4.11 270-22.90		2/1.2	67/4.78		(2.80)	NeA 60s		IIaD	M-5 15m	AL	15"/17"
1796	BS 106	23 ^h 32 ^m .5	+1° 11'	Sept 19-20	05:54				clear 2"	2.80	50/1.2	67/4.78			NeA 60s	5	IIaD	M-5 15m	AL	13"/17" 6. trail 16" 5. normal 16"
	BS 3931	23 ^h 30 ^m .5	+4° 11'		06:02	06:52	10.32 6	2 ^m 3.4 W	1 ^m				6.12	d 60		7.9				
	BS 106	2 ^h 25 ^m .8	-40° 52'		06:59	07:38	12.24 50	2 ^m 2 ^m	1 ^m				6.20	60		12, 14				
					07:40										NeA 60s	17				
	FOCUS 1			Sept 25/23	21:00		10s		11exp 3.25-3.40	100/0.8	120/7.0	(3.7)		NeA 10s			IIaD	M-5 15m	Cy	15" in diam
	FOCUS 2			"	00:00				11exp 3.2-3.50			(3.44)		NeA 10s			"	1/11	Cy	15"
1797				Sept 25/24	04:15					3.44	100/0.8	120/9.0		NeA 10s	60m		IIaD	M-5 15m	Cy	10"/50" 6
	HD 24615	23 ^h 16 ^m .1	+15° 10'		04:55	04:54	30-100 90s	4.5 W	circus 3-4"				4.61	G7 III						
	HD 24611	23 ^h 16 ^m .0	+15° 55'										8.85	F8 IV						
	HD 3445	0 ^h 32 ^m .2	-24° 52'		05:15	05:31	4.5 W	2-5	circus 3"				4.27	G5 II						strong
	HD 10100	1 ^h 43 ^m .5	-16° 05'		06:01	06:10	10 W						4.22	G8 V						
1798	HD 160691	17 ^h 42 ^m .6	-51° 49'	Sept 24/25	00:42	01:10	13 ^m 7 ^m 10 ^m 70s	2.45 W	2 ^m 1 ^m 1 ^m	2.06	50/1.2	67/4.78	5.22	G5 II	NeA 60s		Dashed IIaD	M-5 15m	Cy	11"/25" 20 high
	HD 170886 AB	12 ^h 31 ^m .3	-18° 54'		1:18	1:59	41 80	3 ^m 60 W	15 ^m 1 ^m				8.33	G3 II			10-65 Fornigay			Dashed 20-40 high etc. in 20-40 diam.
	HD 181567	20 ^h 03 ^m .4	-67° 22'		2:09	2:30	21 90	2 ^m 06 W	1 ^m 1 ^m				1:70	G2 II						
	HD 211392	22 ^h 22 ^m .6	-72° 20'		2:53	3:00	7 110	0 ^m 26 E	1 ^m 1 ^m				5:53	G6 II						
	HD 219615	23 ^h 16 ^m .1	+3° 10'		3 ^m 18	3:31	1.3 4	0 ^m 15 E	1 ^m				4:41	G7 III						

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1979	U.T. EXP		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1806 1806	217014	22 ^h 56.4	+20° 39'	3/4 cut	3 ^h 36	3 ^h 48	12 ✓	1 ^h 04W	2 ^h clear	2.82	50μ / 1.2	67 / 447	6.20	G+IV	M.A.	30 ^s		IIIc	m-s,	Cy	T-Cams. scan view.
	3576	0 ^h 37.5	+29° 12'		3 ^h 58	4 ^h 05	7 ✓	0 ^h 12W	2 ^h clear				5.24	G-III ⁺				222 90°	67° 15'		
	9326	1 ^h 35.6	+41° 18'		4 ^h 21	4 ^h 27	6 ✓	1 ^h 00E	2 ^h clear				4.62	F8V				65°			
1807 1807	17072	2 ^h 40.3	-69° 19'		5 ^h 00	5 ^h 30	30 / 40	1 ^h 04E	2 ^h clear				7.1	G2WFS			30μ / 1.4				
	18003	2 ^h 50.8	-55° 09'		5 ^h 39	7 ^h 27	108 / 140	0 ^h 42W	2 ^h clear				8.8	G8IW							
	26169	4 ^h 12	-75° 40'		7 ^h 35'	7 ^h 17	102 / 150	1 ^h 21W	2 ^h clear				9.1	G8WPa							
1808 1808	HR 7618	19 ^h 57.6	-26° 11'	4/5 cut 79	3 ^h 07	3 ^h 16	9 ✓	3 ^h 29W	2 ^h clear	2.90	50μ / 1.2		4.83	G6IIa.02						Cy	T-C, H=300, W=240.
	7845	20 ^h 31.1	-09° 55'		3 ^h 22	3 ^h 36	14 ✓	3 ^h 16W	2 ^h clear				5.65	G25II							11524
	8115	21 ^h 11.7	+30° 02'		3 ^h 44	3 ^h 58	4.6 / 5 ✓	2 ^h 40W	2 ^h clear				4.20	G8IcNI							21980
	8631	22 ^h 40.9	+14° 25'		4 ^h 06	4 ^h 18	16 / 20 ✓	1 ^h 46W	2 ^h clear				5.72	G3II							21611
	8684	22 ^h 48.8	+24° 31'		4 ^h 25	4 ^h 33	25 / 35 ✓	1 ^h 53W	2 ^h clear				4.44	G8III ⁺							21209
	8729	22 ^h 56.4	+20° 41'		4 ^h 40	4 ^h 50	7.6 / 12 ✓	2 ^h 02W	2 ^h clear				5.44	G25IVa							
	402	1 ^h 22.8	-08° 18'		5 ^h 04	5 ^h 10	2.3 / 3 ✓	0 ^h 04E	2 ^h clear				4.67	K0IIIc							
	423	1 ^h 40.3	+92° 30'		5 ^h 18	5 ^h 32	14 ✓	0 ^h 02W	2 ^h clear				4.95	G+15V							
1809 1809	544	1 ^h 51.7	+24° 28'		6 ^h 13	6 ^h 18	13.3 / 3 ✓	0 ^h 36W	2 ^h clear				3.92	F6II			a1088				
	339	1 ^h 08.5	+19° 31'		6 ^h 25	6 ^h 35	4.5 / 11 ✓	1 ^h 36W	2 ^h clear				~6.2	G0III							
	856	2 ^h 51.8	+16° 23'		6 ^h 44	6 ^h 57	13 ✓	0 ^h 15W	2 ^h clear				~6.3	F5III							
	649	2 ^h 11.7	-08° 44'		7 ^h 07	7 ^h 11	3.4 / 4 ✓	1 ^h 10W	2 ^h clear				5.25	G8IIc.2							
	660	2 ^h 15.7	+34° 05'		7 ^h 20	7 ^h 29	8.5 / 1 ✓	1 ^h 22W	2 ^h clear				4.86	G0I							
	1084	3 ^h 31.9	-09° 34'		7 ^h 40	7 ^h 45	13.2 / 2 ✓	1 ^h 23W	2 ^h clear				3.72	K2II							
	G1102.1	4 ^h 57.1	+14 19'		8 ^h 02	8 ^h 30	2.8 / 3.2 ✓	0 ^h 18E	2 ^h clear				6.7	G2II ⁺							no 3166 (wind 50 mph)
	HR 1724	5 ^h 22.7	-07° 51'		8 ^h 37	8 ^h 47	3.5 / 4 ✓	0 ^h 26E	2 ^h clear				4.14	G8IIIc.05							scanning multiple 1.5" - 3"
1810 1810	1787	5 ^h 23.3	-00° 54'		8 ^h 55	9 ^h 05	10 ✓	0 ^h 07E	2 ^h clear				5.06	G9IIIc.1							1.8", H=300, W=200, 10μm 275
	6060	16 ^h 14.5	-08° 18'	3/4 cut 1179	0 ^h 21	0 ^h 42	21 ✓	4 ^h 40W	2 ^h clear				5.50	G2Ia			30μ / 1.4			Cy	1.6μm MOON
	6577	17 ^h 37.9	+13° 21'		0 ^h 49	1 ^h 21	22 ✓	3 ^h 58W	2 ^h clear				6.2	F6II							
	7063	18 ^h 45.9	-04° 46'		1 ^h 27	1 ^h 33	6 ✓	3 ^h 01W	2 ^h clear				5.32	G4Ic.05							
	7164	18 ^h 58.0	-18° 36'		1 ^h 39	2 ^h 02	23 / 38 ✓	2 ^h 17W	2 ^h clear				6.3	G3II							
	7479	19 ^h 31.0	+17° 58'		2 ^h 08	2 ^h 15	7 ✓	2 ^h 50W	2 ^h clear				4.57	G1II							
	7488	19 ^h 39.9	+17° 26'		2 ^h 20	2 ^h 31	11.5 ✓	3 ^h 05W	2 ^h clear				4.37	G9IIIc.02							
	7602	19 ^h 54.1	+04° 20'		2 ^h 36	2 ^h 45	3.5 / 5 ✓	3 ^h 06W	2 ^h clear				4.57	G2IV							

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R.A.	DEC	1929 DATE UT.	U.T. EXP		TOTAL / CORR	H A END	SEE / TRANS	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
1814 <i>contd</i>	1294	4 ^h 07.1	-64° 17'	4 th contd	7 ^h 47	8 ^h 14	27 ^m ✓	0 ^h 24 W	2 ^h clear	2.90	59 ^m / 1.2	61 / 499	7.01	G0	NoA	30 ^s		In O Band	m-g, e, f, 15 ^m	Cy		
	1662	5 ^h 06.6	+9° 27'		8 ^h 18	8 ^h 40	22 ^m ✓	0 ^h 08 E	"				6.8	G2							W = 30	
	2667	7 ^h 03.4	-43° 35'		8 ^h 44	8 ^h 59	16 ^m ✓	1 ^h 46 E	"					6.4	G3 I							
1815 HD 156411	17 ^h 18.4	-48° 31'	7/8 th Oct	0 ^h 06	0 ^h 25	19 ^m ✓	3 ^h 28 W	1 ^h 5 ^m clear	-	-	-	-	7.1	G1 II (W)		30 ^m / 1.4				Cy	T = 15 ^m , H = 10 ^m , W = 20	
	187579	19 ^h 55.8	-41° 58'		5 ^h 38	2 ^h 58	140 ^m ✓	3 ^h 30 W	2 ^h -		0.6		9.8	G0 W F 5								
	221054	23 ^h 28.1	-57° 07'		5 ^h 03	4 ^h 33	90 ^m ✓	0 ^h 27 W	2 ^h -		1.2		8.8	F7/E2 W							W = 10 m-l.	
1816	219617	23 ^h 16.2	-13° 55'		4 ^h 44	6 ^h 29	100 ^m ✓	3 ^h 36 W	2 ^h -				8.63	F8 II		0.1815					Curves cut 30 ^m - from 15 ^m from moon.	
	30652	4 ^h 48.7	+6° 55'		6 ^h 58	7 ^h 02	70 ^m / 100 ^m ✓	1 ^h 25 E	2 ^h -				3.63	F6 II								
	32923	5 ^h 06.2	+18° 36'		7 ^h 09	7 ^h 18	9 ^m ✓	0 ^h 27 E	"				5.55	G4 II								
	33256	5 ^h 07.8	-04° 28'		7 ^h 24	7 ^h 33	9 ^m ✓	4 ^h 18 E	"				5.55	F5 II								
	37160	5 ^h 35.8	+09° 18'		7 ^h 42	7 ^h 47	5 ^m ✓	0 ^h 27 E	"				5.04	G2 II - II								4 th Oct
	33256	5 ^h 07.8	-04° 28'		7 ^h 56	8 ^h 01	5 ^m ✓	0 ^h 45	2 ^h clear				5.55	F5 II								apert - no clouds
	61902	7 ^h 38.4	-51° 02'		8 ^h 09	9 ^h 22	69 ^m / 140 ^m ✓	1 ^h 54 E	1 ^h 10 ^m -					8.2	F5/L4 F2							Incomplete 5 th try cloud cloud in 10 th try light T 17 ^m , H 12 ^m , W 16 m-l
1817	213009	22 ^h 28.1	-43° 35'	4 th 10 th Oct	5 ^h 04	5 ^h 26	47 ^m / 7 ^m ✓	3 ^h 28 W	1 ^h 5 ^m clear				4.99	G5		3 ^m / 1.4				Cy	stopped by clouds, W 20 m-l	
	1461	0 ^h 17.6	-08° 09'		5 ^h 40	5 ^h 51	11 ^m ✓	2 ^h 00 W	"				7.13	G5 II F								
1818	188985	19 ^h 58.5	-49° 02'	10 th 11 th Oct	0 ^h 10	2 ^h 11	121 ^m ✓	2 ^h 45 W	2 ^h 10 ^m -		0.6		9.6	F6 G3 II W D							T = 18 ^m , H = 18 ^m , W = 16 m-l 2 nd try 2 m-l 1 st try 1 m-l cloud + cirrus	
	217808	23 ^h 02.8	-44° 42'		2 ^h 18	4 ^h 46	149 ^m ✓	2 ^h 16 W	1 ^h 5 ^m -				9.9	G5 W F								
1819	01461	0 ^h 17.6	-08° 09'		5 ^h 15	5 ^h 40	25 ^m ✓	1 ^h 57 W	1 ^h 5 ^m -		1.2		7.13	G5 II F		0.1818						
	10307	1 ^h 40.5	+42° 31'		5 ^h 50	6 ^h 09	19 ^m ✓	1 ^h 02 W	2 ^h -				5.56	G2 I								
	13924	2 ^h 15.6	+34° 08'		6 ^h 16	6 ^h 26	10 ^m ✓	1 ^h 43 W	1 ^h 5 ^m -				5.48	G0 I								
	16417	2 ^h 36.1	-34° 39'		6 ^h 42	6 ^h 58	16 ^m / 20 ^m ✓	0 ^h 58 W	clouds				6.44	G5 II								Plenty of clouds cirrus, alto cirrus, cumulus stopped by clouds 1 st try moon, 2 nd cloud + cirrus
	22879	3 ^h 39.3	-03° 16'		7 ^h 11	7 ^h 34	23 ^m / 30 ^m ✓	0 ^h 30 W	"				7.12	F9 I								
1820	191046	20 ^h 05.8	+36° 10'	11 th 13 th Oct	0 ^h 12	2 ^h 07	115 ^m ✓	2 ^h 43 W	3 ^h clear		0.8		8.12	G4 II		30 ^m / 1.4					T = 13 ^m , H = 40 ^m , W = 28 m-l	
	208906	21 ^h 57.9	+28° 43'		2 ^h 15	3 ^h 05	50 ^m ✓	1 ^h 58 W	1 ^h 5 ^m -		1.2		7.46	F8 I							W = 12	
	203608	21 ^h 24.9	-65° 28'		3 ^h 14	3 ^h 23	4 ^h 5 ^m / 5 ^m ✓	2 ^h 37 W	2 ^h -				4.70	F6 I								
	217014	22 ^h 56.4	+20° 39'		5 ^h 30	5 ^h 40	10 ^m ✓	1 ^h 26 W	1 ^h 5 ^m -				6.20	G4 I								
	26	0 ^h 4.3	+08° 40'		5 ^h 49	5 ^h 59	110 ^m ✓	2 ^h 18 W	"		0.8		9.00	G4 I P								
	3546	0 ^h 37.5	+25° 12'		5 ^h 44	5 ^h 53	8 ^m ✓	1 ^h 57 W	2 ^h -		1.2		5.24	G5 III								
	22879	3 ^h 39.3	-03° 16'		5 ^h 58	6 ^h 16	18 ^m ✓	0 ^h 41 E	1 ^h 5 ^m -				7.12	F9 I								

NUMBER	OBJECT	R.A.	DEC.	1979 DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1821	17072	2 ^h 40.3	-69° 19'	12/5 th	6 ^h 40	7 ^h 05	25 / ✓	1 ^h 06W	2" / clear	2.90	50μ / 1.2	67 / 4.49	7.1	G2WFS	NeA	30 ^s	as 1820	IIaO	m-s, 67, 15 ^m	Cy	T=11°, W=14 W=14 (T=7.6%)
	18003	2 ^h 50.8	-55° 09'	ext (Cont'd)	7 ^h 11	8 ^h 46	95 / 110 ✓	2 ^h 38W	1.5-2" / "				8.8	G2I W				Incl 90 ^m 265 ^o Forming Gas			
	HR 2290 HD 44594	6 ^h 19.6	-48° 43'		8 ^h 50	9 ^h 09	19 / ✓	0 ^h 30E	1.5" / "				7.26	G0							
1822	HR 6623	17 ^h 45.5	+27° 45'	13/14 th	0 ^h 18	0 ^h 26	7 1/2 / ✓	3 ^h 25W	3" / clear	-	-	-	3.41	G5II	-	-	30 ^m 214V	-	-	-	T=12°, H=3.2%, W=6μpl
	7569	19 ^h 51.2	+11° 35'		0 ^h 33	0 ^h 47	14 / 20	1 ^h 41W	1.5+ / "				6.7	G2II							with dottle
	6939	18 ^h 31.7	-58° 44'		0 ^h 57	1 ^h 20	23 / ✓	3 ^h 34W	" / "				7.11	G0							
	7296	19 ^h 15.3	-33° 34'		1 ^h 26	1 ^h 38	12 / 25	3 ^h 08W	" / "				~6.8	Fp							
	8041	20 ^h 59.5	-04° 48'		1 ^h 45	2 ^h 00	15 / ✓	1 ^h 45W	" / "				6.9	G1II							
	8531 A	22 ^h 23.6	-57° 54'		2 ^h 07	2 ^h 15	8 / ✓	0 ^h 37W	" / "				5.97	G3II							
	8668	22 ^h 44.9	-49° 05'		2 ^h 22	2 ^h 46	24 / ✓	0 ^h 46W	" / "				7.4	G0							
	9107	0 ^h 03.7	+34° 32'		2 ^h 56	3 ^h 35	39 / ✓	0 ^h 16W	2" / "				6.74	G2II							
	339	1 ^h 08.5	+19° 31'		3 ^h 42	3 ^h 56	14 / ✓	0 ^h 29E	" / "				~6.2	G0III							
	510	1 ^h 44.1	+09° 02'		4 ^h 03	4 ^h 15	4, 7 1/2 / 7 ✓	0 ^h 44W	" / "				5.22	G8III							
1823	HD 10307	1 ^h 40.5	+42° 31'		4 ^h 34'	4 ^h 59	25 / ✓	0 ^h 04W	3-5" / "	-	-	-	5.56	G2II	-	-	as 1822	-	-	-	
	17233	2 ^h 43.3	-54° 52'		5 ^h 09	7 ^h 29	140 / 180	1 ^h 30W	2 1/2-3" / "		0.6		9.6	G8W G0II/IV							T=13°, W=6 μpl
	27524	4 ^h 20.0	+20° 59'		7 ^h 36	8 ^h 06	30 / ✓	0 ^h 31W	1.5" / "		1.2		7.23	F5II							
	HR 1016	3 ^h 20.3	-23° 43'		8 ^h 12	8 ^h 20	8 / 10 ✓	1 ^h 45W	" / "				6.40	G7II							
	2668	7 ^h 03.4	-43° 35'		8 ^h 26	8 ^h 50	24 / 28 ✓	1 ^h 28E	" / "				6.9	G0							
1824	7296	19 ^h 15.3	-33° 34'	14/15 th	0 ^h 15	0 ^h 49	34 / ✓	0 ^h 23W	2" / clear	-	-	-	~6.1	Fp	-	-	30 ^m 214V	-	-	-	T=13°, H=30%, W=8 μpl
	HD 200654	21 ^h 05.2	-50° 03'	ext	0 ^h 56	3 ^h 08	132 / ✓	2 ^h 52W	2 1/2" / "		0.6		9.5	(G)W							
	Vesta	3 ^h 02.2	+06° 10'		3 ^h 29	3 ^h 59	30 / 40	2 ^h 15E	2.2" / "		1.2		7.2	G2II - Sun							
1825	26169	4 ^h 01.8	-75° 39'		4 ^h 39	6 ^h 44	124 / ✓	0 ^h 30E	2" / "		0.8		9.1	G8W Pac	-	-	as 1824	-	-	-	RA. 2 sec as obs'd - NE. X of pair. W ~ 0 μpl!
	34328	5 ^h 12.6	-59° 40'		6 ^h 48	9 ^h 00	132 / ✓	0 ^h 36W	2-1.5" / "				9.6	G1WABII							
	Moon	9 ^h 04.7	+14° 33'		9 ^h 10	9 ^h 11	1, 2, 4, 8 / 6 ✓	3 ^h 00E	~		1.2		?	G2II - Sun							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	I T CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
				1920 0																		
Foetus 1	-	-	-	1979 30/01 CC T05	00:15	00:25	2 ^s east	3.24, 3.26, 3.28, 3.30, 3.32	3.30, 3.32, 3.34	3.30	3.30	3.30	3.30	3.32, 3.34, 3.36	3.38, 3.40, 3.42	3.44	3.46	(1 sec)	1000	1000	LEVATO BOYCE	T = 12° RH = 31%
Foetus 2	-	-	-	"	01:00	01:15	2 ^s "	3.38, 3.40, 3.42, 3.44, 3.46	3.48, 3.50, 3.52	3.50	3.50	3.50	3.52, 3.54, 3.56	3.58, 3.60, 3.62	3.64	3.66				"	"	T = 11° RH = 31%
Foetus 3	-	-	-	"	01:30	02:00	2 ^s "	3.38, 3.40, 3.42, 3.44, 3.46, 3.48	3.50, 3.52, 3.54	3.50	3.50	3.50	3.52, 3.54, 3.56	3.58, 3.60, 3.62	3.64	3.66				"	"	T = 10.5° RH = 31%
1826a	ALLEN ASA	02 11 32	-71 02 36	"	05:59	06:04	2 ^m / 3 ^m	1.40W	2" chor	3.40	100 / 0.3	1270	8.0	-	NoA	2 ^s	-	"	"	LEVATO	Numbers from	
b	ADS 2016 A	02 37 59	-28 15 25	"	06:26	06:41	10 ^m / 15 ^m	2:00W	"	"	"	"	~2.5	-	-	-	-	"	"	"	Allen, Bevela	
c	" B	"	"	"	06:44	07:32	30 ^m / 40 ^m	2:46W	"	"	"	"	10.8	-	-	-	-	"	"	"	Catalogue of	
d	ALLEN 137A	05 28 08	-35 21 57	"	07:43	07:50	2 ^m / 5 ^m	0:15W	"	"	"	"	7.9	-	-	-	-	"	"	"	Multiple System	
e	" B	"	"	"	07:54	07:57	3 ^m / 5 ^m	0:22W	"	"	"	"	~8.3	-	-	-	-	"	"	"	"	
f	Comparison	-	-	"	-	-	-	-	-	"	"	"	-	-	NoA	3 ^s	-	"	"	"	"	
1827a	ADS 4251A	05 33 55	-17 51 29	"	08 41	08 43	2 ^m / 0.2 ^m	1.00W	"	"	"	"	6.2	-	-	-	-	"	"	"	"	Both stars on slit
b	ADS 4260A	05 38 55	-20 26 33	"	08 54	08 54	1 ^m / 0.1 ^m	1.10W	"	"	"	"	7.0	-	-	-	-	"	"	"	"	
c	ADS 4260 B	"	"	"	08 58	09 00	2 ^m / 3 ^m	1:15W	"	"	"	"	8.0	-	-	-	-	"	"	"	"	
d	Comparison	-	-	"	-	-	-	-	-	-	-	-	-	-	NoA	3 ^s	-	"	"	"	"	
1828a	ADS 1639A	22 56 02	-03 21 57	31/1 Dec 1920	01:11	01:12	1 ^m	0:10W	1 ^{1/2} clean	3.37	"	"	6.6	-	-	-	-	"	"	"	"	T = 13° RH = 23%
b	ALLEN 737A	22 58 46	-56 46 52	"	01:22	01:35	12 ^m	0:30W	"	"	"	"	9.7	-	-	-	-	"	"	"	"	
c	ALLEN 948A	23 22 10	-63 58 42	"	01:52	02:04	10 ^m	0:43W	"	"	"	"	9.6	-	-	-	-	"	"	"	"	
d	ALLEN 11A	00 39 55	-53 12 44	"	02:20.7	02:57	23 ^m / 30 ^m	0:10W	"	"	"	"	~10.6	-	-	-	-	"	"	"	"	40 220 222
e	" 61A	02 33 14	-75 59 04	"	03:24	03:25	4 ^s	1:15E	"	"	"	"	6.8	-	-	-	-	"	"	"	"	
f	Comparison	-	-	"	-	-	-	-	-	"	"	"	-	-	NoA	3 ^s	-	"	"	"	"	
1829a	ALLEN 64A	02 34 36	-80 50 10	"	03:58	04:04	6 ^m	0:40E	"	"	"	"	~9.0	-	-	-	-	"	"	"	"	
b	" 64B	"	"	"	04:24	05:57	30 ^m	1:20W	"	"	"	"	~11.5	-	-	-	-	"	"	"	"	
c	ADS 2433A	03 59 57	-10 30 40	"	06:05	06:13	8 ^m	0:10W	"	"	"	"	~4.3	-	-	-	-	"	"	"	"	
d	" B	"	"	"	06:18	06:34	15 ^m	0:30W	"	"	"	"	~10	-	-	-	-	"	"	"	"	
e	" C	"	"	"	06:40	07:12	30 ^m	1:10W	"	"	"	"	~10.8	-	-	-	-	"	"	"	"	
f	Comparison	"	"	"	-	-	-	-	-	"	"	"	-	-	NoA	3 ^s	#	"	"	"	"	
1830a	ALLEN 157C	05 21 08	-35 21 57	"	07:57	08:24	24 ^m	0:55W	"	"	"	"	~10.6	-	-	-	-	"	"	"	"	guided in DEC.
b	ADS 4126 C	05 34 19	-05 24 01	"	08 39	08 40	8 ^s	2:59W	"	"	"	"	5.4	-	-	-	-	"	"	"	"	
c	" D	"	"	"	08 44	08 45	40 ^s	1:05W	"	"	"	"	6.8	-	-	-	-	"	"	"	"	
d	" A	"	"	"	08 49	08 50	4 ^s	1:10W	"	"	"	"	6.8	-	-	-	-	"	"	"	"	
e	" B	"	"	"	08 52	08 54	2 ^m	1:15W	"	"	"	"	7.9	-	-	-	-	"	"	"	"	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1979	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	I.T. CAM. FOCUS	SLIT	GRATING / TILT	MAG. 3	SP.	COMP		CALIB	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1830 f	Comparison	-	-	NOV 3/11	-	-	-	-	-	3.42	100/c.8	120/70	-	-	NeAr	35	-	IIa-D	M-S 15M-GFF	L ₂ E ₁ V ₁ A ₁ D ₂	
1831a	ALLEN 924 A	22 43 52	-79 58 22	NOV 1/2	01:39	01:58	12 ^m / 19 ^m	01:15W	2 ¹ clear	"	"	"	~9.6	-	-	-	-	"	"	"	
b	" 11 A	00 39 55	-52 12 44	"	02:11	02:27	15 ^m / 16 ^m	0:10E	"	"	"	"	~10	-	-	-	-	"	"	"	
c	" 11 B	"	"	"	02:32	03:06	30 ^m / 34 ^m	0:25W	"	"	"	"	~10.8	-	-	-	-	"	"	"	
d	" 64 A	02 34 36	-80 50 10	"	03:22	03:36	6 ^m / 14 ^m	1:00E	"	"	"	"	~9	-	-	-	-	"	"	"	
e	ADS 2681 A	03 39 24	+05 03 24	"	03:49	03:50	1 ^m / -	1:45W	"	"	"	"	~7	-	-	-	-	"	"	"	
f	Comparison	-	-	"	-	-	-	-	-	"	"	"	-	-	NeAr	35	-	"	"	"	
1832a	ADS 2681 B	03 39 24	+05 03 21	"	04:16	04:26	10 ^m / -	1:15E	"	"	"	"	~9.8	-	-	-	-	"	"	"	Some contamination from C. - POS O
b	ADS 2681 C	"	"	"	04:32	04:53	20 ^m / 21 ^m	0:45E	"	"	"	"	~10.5	-	-	-	-	"	"	"	POS (-2)
c	ADS 3579 A	04 57 49	+14 30 08	"	05:11	05:12	20 ^s / 40 ^s	1:45E	"	"	"	"	~6.0	-	-	-	-	"	"	"	POS (-4)
d	" B	"	"	"	05:20	05:23	2 ^{1/2} / -	1:42E	"	"	"	"	~8.0	-	-	-	-	"	"	"	POS (+2)
e	" 4186 B	05 34 19	-05 24 01	"	05:26	05:27	1 ^m / -	-	"	"	"	"	~7.9	-	-	-	-	"	"	"	POS (+4)
1833a	" 4241 E	05 37 42	-02 36 24	"	06:21	06:22	1 ^m / 50 ^s	1 NE	"	"	"	"	~6.5	-	-	-	-	"	"	"	
b	" C	"	"	"	06:37	06:59	20 ^m / 22 ^m	0:40E	1.5 / -	"	"	"	~10.3	-	-	-	-	"	"	"	GUIDE in DEC very difficult
c	" AB	"	"	"	07:04	07:05	5 ^s / -	0:34E	"	"	"	"	~1.5	-	-	-	-	"	"	"	
d	" D	"	"	"	07:09	07:11	2 ^m / 1.5	0:25E	"	"	"	"	~7.5	-	-	-	-	"	"	"	
e	ALLEN 198 A	06 26 56	-04 45 07	"	07:57	07:52	10 ^s / -	0:30E	"	"	"	"	~5	-	-	-	-	"	"	"	
f	" B	"	"	"	08:00	08:08	7 ^m / 8 ^m	0:17E	"	"	"	"	~9.2	-	-	-	-	"	"	"	
1834a	ALLEN FLO A	20 12 48	-64 29 36	NOV 2/3	00:37	00:38	1 ^m / -	2:30W	2 ¹ / -	"	"	"	~7.0	-	-	-	-	"	"	"	T = 15° & R.H. 22%
b	" B	"	"	"	00:50	01:10	20 ^m / -	3:00W	"	"	"	"	~10.0	-	-	-	-	"	"	"	
c	" C	"	"	"	01:16	01:33	20 ^m / 17 ^m	3:20W	1.5 / -	"	"	"	~10.0	-	-	-	-	"	"	"	
d	" 792 B	20 30 25	-40 58 06	"	01:48	01:52	4 ^m / -	3 20W	"	"	"	"	~8.4	-	-	-	-	"	"	"	
e	" A	"	"	"	01:55	01:59	3.5 ^m / 4 ^m	3 40W	"	"	"	"	~8.4	-	-	-	-	"	"	"	
f	" 902 A	22 21 57	-72 54 17	"	02:14	02:18	4 ^m / -	2:00W	"	"	"	"	~8.4	-	-	-	-	"	"	"	
1835a	" B	"	"	"	02:40	02:45	4 ^m / -	2:30W	"	"	"	"	~8.5	-	-	-	-	"	"	"	
b	ALLEN 924 C	22 43 52	-79 58 22	"	02:56	03:23	25 ^m / 27 ^m	2 4W	"	"	"	"	~10.7	-	-	-	-	"	"	"	
c	" B	"	"	"	03:32	03:37	50 ^m / 5 ^m	3 00W	"	"	"	"	~10.5	-	-	-	-	"	"	"	interrupted due to H.A. limit -
d	ADS 2681 B	03 39 24	+05 03 21	"	04:09	04:20	10 ^m / -	1:15E	"	"	"	"	~9.8	-	-	-	-	"	"	"	
e	ALLEN 105 A	04 28 01	-25 14 35	"	04:42	04:47	5 ^m / -	1:35E	"	"	"	"	~9	-	-	-	-	"	"	"	
f	" C	"	"	"	04:49	04:59	10 ^m / -	1:25E	"	"	"	"	~9.5	-	-	-	-	"	"	"	

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R. A.	DEC.	DATE U.T. 1979	U.T. EXP.		TOTAL / CORR.	H A END	SEE. / TRANS.	I.T CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1830a	ADS 4244B	05 38 25	-17 51 29	2-3 NOV	05:53	05:54	30" $\frac{1}{2}$	01:40E	1.5	clear	3.42	100% 1.2	120 2.0	v6.2	-	-	-	-	10-D	M.S. 14" OFF	LEVA TO
b	ADS 4260A	05 38 55	-20 26 33	"	06:09	06:11	80s	01:20E	"	"	"	"	v6.9	-	-	-	-	"	"	"	"
c	ALLEN 152A	05 49 36	-36 12 47	"	06:21	06:30	9m	01:14E	"	"	"	0.58	v9.5	-	-	-	-	"	"	"	"
d	" B	"	"	"	06:34	06:47	10m	00:59E	"	"	"	"	v9.6	-	-	-	-	"	"	"	"
e	" 163A	05 54 50	+13 55 36	"	07:09	07:10	10s 1m	00:40E	"	"	"	"	v6.8	-	-	-	-	"	"	"	"
f	" D	"	"	"	07:13	07:19	3ms 6m	00:31E	"	"	"	"	v8.5	-	-	-	-	"	"	"	"
1830a	HR 1702	05 11 56	-16 13	"	07:50	07:51	3s	00:40W	"	"	"	1.2	3.2	-	-	-	-	"	"	"	"
b	1713	05 13 43	-08 14	"	07:57	07:57	5s	00:50W	"	"	"	"	0.05	-	-	-	-	"	"	"	diffuse
c	1735	05 16 44	-06 52	"	08:01	08:01	3s	00:50W	"	"	"	"	3.5	-	-	-	-	"	"	"	"
d	1851	05 30 53	-00 18	"	08:06	08:07	60s	00:40W	"	"	"	"	6.9	-	-	-	-	"	"	"	"
e	1865	05 31 37	-17 51	"	08:09	08:09	5s	00:42W	"	"	"	"	2.0	-	-	-	-	"	"	"	debris
f	HD 46150	06 30 40	+04 57	"	08:27	08:28	1m	00:01W	"	"	"	"	6.8	-	-	-	-	"	"	"	"
1830a	ADS 13632A	20 16 30	-12 34 36	3/4 NOV	00:54	00:54	12s	02:40W	2"	clear?	"	"	5.1	-	-	-	-	"	"	"	T = 14.5°C RH 26%
b	" B	"	"	"	01:10	01:13	12m 13m	03:05W	1.5"	1.5m clear?	"	"	v9.6	-	-	-	-	"	"	"	"
c	ALLEN 779A	20 20 39	+16 19 21	"	01:22	01:40	18s	03:25W	"	"	"	"	v10	-	-	-	-	"	"	"	"
d	ALLEN 829A	21 58 19	-29 09 32	"	02:02	02:06	3.5m 4m	02:15W	1.5"	"	"	"	v8.5	-	-	-	-	"	"	"	"
e	ALLEN 880A	22 00 54	+04 39 37	"	02:22	02:27	5m	02:35W	"	"	"	"	v8.5	-	-	-	-	"	"	"	"
f	" B	"	"	"	02:34	02:57	20m 23	03:05W	1.5"	1.5m clear?	"	"	v10	-	-	-	-	"	"	"	"
1830a	ALLEN 948B	23 22 10	-03 18 42	"	03:38	04:39	60m	03:20W	5"	1.5m clear?	"	"	v11.5	-	-	-	-	"	"	"	"
b	" 16A	01 03 32	-05 24 21	"	04:49	04:57	7m	02:00W	"	"	"	"	v9.2	-	-	-	-	"	"	"	"
c	ADS 1354A	01 44 43	-25 09 04	"	05:03	05:04	1m	01:30W	"	"	"	1.2	v6.4	-	-	-	-	"	"	"	"
d	ALLEN 100A	04 18 04	-26 47 32	"	05:22	05:30	8m	00:40E	"	"	"	0.8	v9.2	-	-	-	-	"	"	"	"
e	" C	"	"	"	05:38	06:18	40m	00:10W	"	"	"	"	v11.2	-	-	-	-	"	"	"	"
f	" 129A	05 18 21	-11 19 51	"	06:34	06:39	4m	00:35W	"	"	"	"	v8.6	-	-	-	-	"	"	"	"
1840a	" B	"	"	"	07:03	07:10	6m	00:05W	"	"	"	"	v9.1	-	-	-	-	"	"	"	"
b	ADS 4254C	05 38 25	-17 51 29	"	07:23	07:28	3.5m 4m	00:04W	"	"	"	"	v8.5	-	-	-	-	"	"	"	"
c	" D	"	"	"	07:30	07:40	7m	00:10E	"	"	"	"	v9.5	-	-	-	-	"	"	"	"
d	" E	"	"	"	07:43	07:47	3.5 4m	00:15W	"	"	"	"	v8.4	-	-	-	-	"	"	"	"
e	" F	"	"	"	07:51	07:54	2.5 3m	00:25W	"	"	"	"	v8.1	-	-	-	-	"	"	"	"
f	" G	"	"	"	07:57	08:08	10m 11x	00:40W	"	"	"	"	v9.5	-	-	-	-	"	"	"	"

NUMBER	OBJECT	R.A.	DEC.	DATE UT	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	I.T CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP		CALIB.	EMUL	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1841a	ADS 13632A	20 16 30	-12 34 36	1980 4/5 NOV	01 07	01:08	20s	03:00W	2.15 clear	3.42	100μ 1.2	120 7.0	~6.0	-	-	-	-	IIa-D	M-S 15m 6T ^c	LEVATO	T=14°C R.H. 23%
	e ALLEN 781A	20 23 18	-34 48 45	"	01:26	01:37	10m 11m	02:50W	"	"	1.2	"	~10	-	-	-	-	"	"	"	
	d ADS 17121B	23 56 18	-16 20 20	"	02:08	02:23	15m	00:40W	"	"	"	"	~10	-	-	-	-	"	"	"	
	e ALLEN 11C	00 39 55	-52 12 44	"	02:33	03:35	60m 62	01:10W	"	"	"	"	~11.5	-	-	-	-	"	"	"	
	f ADS 1394B	01 44 43	-25 09 04	"	03 40	03:43	2.5m 3	00:10W	"	"	"	"	~8.1	-	-	-	-	"	"	"	
1842a	ADS 2016C	02 37 59	-28 15 25	"	04:24	05:15	50m	00:50W	"	"	"	"	~11.5	-	-	-	-	"	"	"	
	b ALLEN 108 C	04 36 32	-62 06 30	"	05:34	06:22	40m	00:00	"	"	1/6	"	~11	-	-	-	-	"	"	"	
	c " A	"	"	"	06:31	06:32	10s	00:10W	"	"	1.2	"	~6.5	-	-	-	-	"	"	"	
	d " 112A	06 48 04	-52 39 46	"	07 02	07:14	12m	00:42W	"	"	1.8	"	~9.8	-	-	-	-	"	"	"	check I.D.
	e 217A	06 39 05	-62 46 31	"	07:35	07:48	10m	00:40E	"	"	"	"	~9.6	-	-	-	-	"	"	"	
	f Comparison	"	"	"	-	-	2m	-	"	"	"	"	~10.0	-	NEA	3s	-	"	"	"	
1843a	ALLEN 798	20 20.39	+16 19 21	5/6 NOV	00:56	01:11	8m 12m	03 05W	3.4-4.1 clear	"	3.00 1.8	"	~9.1	-	-	-	-	"	"	"	T=12°C R.H. 18%
	b " 781C	20 23 18	-34 48 45	"	01:18	01:42	20m 24m	03 31W	3" clouds	"	"	"	~10:2	-	-	-	-	"	"	"	windy 32mph
	c HR 8732	22 57 00	-35 37	"	00:32	00:34	8s	01:38W	"	"	1.2	"	~6.7	F8III-IV	-	-	-	"	"	"	
	d " "	"	"	"	00:35	00:36	40s	01 40W	"	"	"	"	~6.7	-	-	-	-	"	"	"	
	e HR 39	00 12 04	+15 04	"	00:46	00:47	4s	00:34W	"	"	"	"	~2.6	B2IV	-	-	-	"	"	"	diffuse
	f " "	00 12 04	+15 04	"	00:48	00:49	2s	00:38W	"	"	"	"	~2.6	B2IV	-	-	-	"	"	"	de focus.
1844a	ADS 17121A	23 56 18	-16 12 20	"	03 42	03:50	8m	-	"	"	1.8	"	~9.2	-	-	-	-	"	"	"	
	b ALLEN 16B	01 03 32	-05 24 21	"	04:00	04:35	35m	01:45W	" clear	"	1.6	"	~11	-	-	-	-	"	"	"	
	c " C	"	"	"	04:41	05:31	50m	02:45W	"	"	"	"	~11.3	-	-	-	-	"	"	"	
	d " 61B	02 33 14	-75 59 04	"	05:41	06:09	26m	01 57W	"	"	"	"	~10.7	-	-	-	-	"	"	"	some extinction from A-
	e " 108A	04 36 32	-62 06 30	"	06:18	06:19	45s	00:01W	"	"	1.2	"	~6.5	-	-	-	-	"	"	"	
	f ADS 4254G	05 38 25	-17 51 29	"	06:32	06:50	15m 18m	00:30E	"	"	1.8	"	~9.5	-	-	-	-	"	"	"	
1845a	" D	"	"	"	07:13	07:29	13m	00:07W	"	"	"	"	~9.2	-	-	-	-	"	"	"	
	b ALLEN 198C	06 17 52	-4 45 07	"	07:36	07:45	7m 9m	00:25E	"	"	"	"	~9.2	-	-	-	-	"	"	"	
	c ADS 5107A	06 27 50	-7 01 14	"	08:00	08:00	18s 15s	00:10E	"	"	1.2	"	~4.7	-	-	-	-	"	"	"	
	d " B	"	"	"	08:01	08:02	50s	00:08E	"	"	"	"	~5.2	-	-	-	-	"	"	"	
	e " C	"	"	"	08:03	08:05	65s	00:05E	"	"	"	"	~6.1	-	-	-	-	"	"	"	
	f ADS 5322A	06 39 54	+9 54 22	"	08:10	08:11	10s	00:00	"	"	"	"	~5.0	-	-	-	-	"	"	"	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP		TOTAL/ CORR.	H.A. END	SEE/TRANS.	I.T. CAM. FOCUS	SLIT	GRATING /TILT	MAG B	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1846a	ALLEN 179C	20 20 39	+16 19 21	1973 6 NOV	00:37	01:19	35 ^m 4 ^m	03.15W	2 nd obs	3.42	100	120 7.0	11.3	-	-	-	-	IIa-D	M-S 15 ^m -67°	LEVA TO	T:18°C R.H.19%
b	BAS 1477AAS	21 13 31	-00 55 31	"	01:36	01:38	80 ^s	02.47W	"	"	"	8	11.5	-	-	-	"	"	"	"	"
c	ADS15902AB	22 22 57	-04 57 14	"	01:50	01:51	50 ^s	01.45W	"	"	"	1.2	11.6	-	-	-	"	"	"	"	"
d	" E	"	"	"	01:55	01:59	3.5 ^m	01.55W	relaxed	"	"	8	11.5	-	-	-	"	"	"	"	"
e	HR 8905	23 24 22	+23 16	"	02:43	02:44	12 ^s	01:39W	2 nd obs	"	"	12	5.0	-	-	-	"	"	"	"	"
f	"	"	"	"	02:44	02:45	6 ^s	01:40W	"	"	"	"	5.0	-	-	-	"	"	"	"	"
1847a	HR 513	01 45.0	-05 50	"	03:07	03:09	6 ^{hr}	00:15E	"	"	"	"	106.9	-	-	-	"	"	"	"	"
b	"	"	"	"	03:10	03:11	30 ^s	00:13E	"	"	"	"	6.9	-	-	-	"	"	"	"	"
1848a	ALLEN 701620	23 18	-34 48 45	7 th NOV	00:31	01:25	50 ^m	03.30W	1 st obs	"	100	7.0	11.4	-	-	-	"	"	"	"	T:12°C R.H.34%
b	BAS 1477C	21 13 31	-00 55 31	"	01:38	01:57	15 ^m	03.07W	"	"	"	8	11.0	-	-	-	"	"	"	"	"
c	ALLEN 879C	21 58 19	-29 09 32	"	02:06	02:36	30 ^m	03.00W	"	"	"	1/2	110.9	-	-	-	"	"	"	"	"
d	" B	"	"	"	02:40	03:02	20 ^m	03.28W	"	"	"	"	110.6	-	-	-	"	"	"	"	"
e	ADS15902E	22 22 57	-04 57 14	"	03:13	03:19	5 ^m	03:20W	"	"	"	8	11.5	-	-	-	"	"	"	"	"
f	ADS16392B	22 56 02	-03 21 57	"	03:35	04:00	25 ^m	03.30W	"	"	"	6	110.6	-	-	-	"	"	"	"	"
1849a	ALLEN 45B	02 11 32	-71 02 36	"	04:43	05:49	60 ^m	02.02W	"	"	"	"	111.5	-	-	-	"	"	"	"	"
b	BAS 4241 C	05 37 42	-02 36 24	"	06:08	06:22	15 ^m	00.45E	obs	"	"	"	110.3	-	-	-	"	"	"	"	"
1850a	HR 7635	19 58 00	+19 26	8 th NOV	00:34	00:35	15 ^s 25 ^s	03.00W	4 th obs	"	"	1.2	11.5	-	-	-	"	"	"	"	T:11° R.H.49%
b	"	"	"	"	00:34.5	00:36	15 ^s 12 ^s	03.01W	"	"	"	"	"	-	-	-	"	"	"	"	"
c	HR 757H	19 51 53	+18 37	"	00:40	00:42	25 ^s 10 ^s	03.18	"	"	"	"	6.2	-	-	-	"	"	"	"	"
d	"	"	"	"	00:43	00:44	25 ^s 40 ^s	03.20W	"	"	"	"	"	-	-	-	"	"	"	"	"
e	HR 7429	19 33 06	+07 20	"	00:50	00:51	13 ^s 40 ^s	03.00W	"	"	"	"	5.5	-	-	-	"	"	"	"	"
f	"	"	"	"	00:52	00:53	13 ^s 20 ^s	02.59W	"	"	"	"	"	-	-	-	"	"	"	"	"
1851a	HR 7602	19 54 18	+06 21	"	01:05	01:06	15 ^s 18 ^s	03.30W	"	"	"	"	4.5	-	-	-	"	"	"	"	"
b	"	"	"	"	01:06	01:07	15 ^s 9 ^s	03.40W	"	"	"	"	"	-	-	-	"	"	"	"	"
c	HR 7575	19 52 02	-03 09	"	01:11	01:12	15 ^s 40 ^s	03.49W	"	"	"	"	5.6	-	-	-	"	"	"	"	"
d	"	"	"	"	01:12	01:13	15 ^s 20 ^s	03.50W	"	"	"	"	"	-	-	-	"	"	"	"	"
e	HR 8033	20 57.9	-19° 06'	"	01:18	01:19	25 ^s 45 ^s	02.47W	3 rd obs	"	"	"	"	-	-	-	"	"	"	"	"
f	"	"	"	"	01:20	01:21	25 ^s 2 ^s	02.50W	"	"	"	"	"	-	-	-	"	"	"	"	"
1852a	HR 2232	21 30 17	-5° 40'	"	01:35	01:36	35 ^s 5 ^s	02.34W	"	"	"	"	3.7	-	-	-	"	"	"	"	"
b	"	"	"	"	01:37	01:37	35 ^s 25 ^s	02.34	"	"	"	"	"	-	-	-	"	"	"	"	"

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1979	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	I.T. CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP.		CALIB	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1852c	HR 8414	22 04.7	-0 25	NOV 8/79	01:40	01:41	5 ^s	01:58W	2 ^{1/2} clear	3.42	100 / 1.2	120 / 7.0	3.9	-	-	-	-	Ilc-D	M-S 15W-67°	LEVA TO	
d	"	"	"	"	01:42	01:43	2 ^s	02:00W	"	"	"	"	-	-	-	-	"	"	"	"	
e	HR 8684	22 49.0	+24 29	"	01:46	01:47	5 ^s / 12 ^s	01:23W	"	"	"	"	4.5	-	-	-	-	"	"	"	
f	"	"	"	"	01:48	01:49	5 ^s / 6 ^s	01:25W	"	"	"	"	-	-	-	-	-	"	"	"	
1853a	HR 8905	23 24 22	+23 16	"	02:19	02:20	10 ^s / 10 ^s	01:24W	"	"	"	"	5.0	-	-	-	-	"	"	"	
b	"	"	"	"	02:21	02:21	5 ^s / 5 ^s	01:25W	"	"	"	"	-	-	-	-	-	"	"	"	
c	HR 39	00 12 04	+15 04	"	02:26	02:27	5 ^s	00:44W	"	"	"	"	2.6	-	-	-	-	"	"	"	
d	"	"	"	"	02:27	02:28	2 ^s	00:45W	"	"	"	"	-	-	-	-	-	"	"	"	
e	HR 157	00 36.3	+35 17	"	02:34	02:35	1 ^m	00:29W	"	"	"	"	6.2	-	-	-	-	"	"	"	
f	"	"	"	"	02:35	02:36	30 ^s	00:30W	"	"	"	"	"	-	-	-	-	"	"	"	
1854a	HR 280	00 57.8	-29 28	"	02:52	02:53	6 ^s	00:24W	"	"	"	"	4.2	-	-	-	-	"	"	"	
b	"	"	"	"	02:53	02:54	3 ^s	00:25W	"	"	"	"	"	-	-	-	-	"	"	"	
c	HR 513	01 45.0	-5 50	"	02:59	03:00	35 ^s	00:20E	2 ^{1/2} clear	"	"	"	6.9	-	-	-	-	"	"	"	
d	HR 753	02 35.0	+06 48	"	03:05	03:07	6 ^s	00:58E	"	"	"	"	6.8	-	-	-	-	"	"	"	
e	"	"	"	"	03:08	03:09	32 ^s	01:00E	"	"	"	"	-	-	-	-	-	"	"	"	
f	HR 1084	03 31.9	-9 32	"	03:18	03:19	10 ^s	01:45E	"	"	"	"	4.6	-	-	-	-	"	"	"	
1855a	HD 22879	03 39 16	-03 17 33	"	03:50	03:52	2 ^m	01:22E	"	"	"	"	7.2	-	-	-	-	"	"	"	
b	"	"	"	"	03:53	03:54	1 ^m	01:20E	"	"	"	"	-	-	-	-	-	"	"	"	
c	Pleiades #916	03 48 21	24 17 04	"	04:26	04:28	2 ^m	00:52E	"	"	"	"	7.4	-	-	-	-	"	"	"	
d	"	"	"	"	04:29	04:30	1 ^m	00:50E	"	"	"	"	7.4	-	-	-	-	"	"	"	
e	" #910	03 47 51	+24 19 06	"	04:33	04:34	1 ^m	00:47E	"	"	"	"	6.6	-	-	-	-	18	200-4	"	
f	"	"	"	"	04:35	04:36	40 ^s	00:45E	"	"	"	"	6.6	-	-	-	-	"	"	"	
1856a	HR 1457	04 34.7	+16 27	"	05:10	05:11	30 ^s	00:57E	"	"	"	"	2.5	-	-	-	-	"	"	"	de focus.
b	"	"	"	"	05:12	05:13	2 ^s	00:55E	"	"	"	"	"	-	-	-	-	"	"	"	
c	HR 1845	05 31.0	+18 34	"	05:17	05:19	1.5 ^m	01:47E	4 ^{1/2} clear	"	"	"	6.7	-	-	-	-	"	"	"	
d	"	"	"	"	05:20	05:21	4 ^s	01:45E	"	"	"	"	"	-	-	-	-	"	"	"	
e	HR 1907	05 35.8	+9 14	"	05:25	05:26	20 ^s	-	"	"	"	"	5.1	-	-	-	-	"	"	"	
f	"	"	"	"	05:28	05:29	10 ^s	-	"	"	"	"	"	-	-	-	-	"	"	"	

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					BEGIN	END									KIND	EXP					
1857	< Pic A	22 56.4	-29 44	10 Nov 1979	0140	0144	29.4, 8.6	01h 18m W	3" clear	2.80	50"/1.2mm	6/4th	1.25	A3V	NeA	60 ^s		III-O	M-S	N.J.	
	< PHE	00 25.4	-42 27		0150	0201	15.3, 3.6	0h 8m W	"	"	"	"	3.47	Kc III	"	"			67°F	"	
	A PHE	01 05.3	-46 51		0206	0223	9.4, 5.2	10m E	"				4.2	G8							
1858	HR493	01 41.4	+20 10	"	03 26	0337	10m 20m	29m W	1.5" clear	1	"	"	6.06	KIV	"	"					
1858	T' PHE	00 30.6	-48 55		0346	0350	4m	1h 53m W	2" clear				4.8	A0							
	K Tuc	01 15.2	-69 00		0356	0400	2.8 5m	1h 17m W	"				4.8	F6							
	HR789	02 39.1	-43 01		0403	0406	3m	0h 6m E					4.8	A2							
	K RET	03 29.5	-63 04		0410	0414	3.5	43m E	"				5.1	F5							
	HR1190	03 48.0	-37 44		0419	0423	3.5 3m	53m E					4.8	A0							
	HR1189	03 48.0	-37 44		0424	0429	5m	46m E					5.4	A0							
	R Dor	04 37.0	-62 09		0518	0618	60m	14m W	"				7-8	Me							
	91. CET	03 18.3	+03 17		0623	0630	6m	1h 4m W	1.5-2				5.5	G5V							
	HR1861	05 31.6	-01 37		0633	0638	7m	22m E	"				5.1	BIV							
	134 TAN	05 48.3	+12 35		0641	0645	3m	29m E					4.8	B9IV							
1859	HR2222	06 13.8	+13 47	"	0704	0711	7m	29m E	"	"	"	"	5.7	BIV	"	"	"	"	"	"	"
	HD63077	07 45.0	-34 10		0716	0730	12m	1h 4m E					6.0	G0p							Correctly prep.
	HR2281	06 18.6	-50 20		0734	0746	4.2 9m	1h 3m W					7.9	G2I6							
1860	ζ CR A	19 01.7	-42 10	10/11	0010	0014	5.5	3h 5m W	1.5" clear	"	"	"	4.7	A0	"	"					N.J.
	ω Sgr	19 54.5	-26 22	NOV	0022	0030	8m	3h 11m W					5.5	G5							
	φ' PAV	20 34.0	-60 42	11/79	0033	0039	6m	2h 4m W	2"				5.0	F0							
	δ Tuc	22 25.9	-65 08		0045	0050	4.5 4	1h W	2"				4.4	B8							companion near slit
	ε Mic	21 16.1	-32 18		0053	0057	4m	2h 16m W					4.8	A2p							
	86 AQR	23 05.5	-23 53		0101	0111	10m	42m W	1.5" clear				5.4	G9							
	89 AQR	23 08.5	-22 37		0114	0120	6m	49m W					5.4	G2+A2							
	λ PHE	23 34.0	-42 48		0126	0130	3.5	32m W					4.8	Ap							
	HR8959	23 36.5	-45 39		0133	0137	4m	32m W					4.8	A2							
	η' PHE	00 30.5	-48 56		0140	0144	4m						4.8	A2							
	κ Tuc	01 14.7	-69 02		0147	0151	4m 5	47m E					4.8	F6							
	HR789	02 39.1	-43 03		0156	0200	4m	2h 3m E					4.8	A2							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS		
					BEGIN	END									KIND	EXP							
1861	89 PEG	00 ^m 13.4	+20 03	10/11	0241	0312	30 ^m ✓	1 ^h 35 ^m W	2" clean	2.80	50"/1.2	67/4.49	6.4	M2 III	60 ^s	NeA		IIa 0	m-s	✓	R.H. 41% T15°C, No wind		
	HR483	01 40.5	+42 23	Nov 1979	0316	0339	22 ^m ✓ 30 ^m (30 UV)	35 ^m W	"				5.6	G2V								67°F 15 min	
	14 ARI	02 08.1	+25 42		0343	0349	5 ^m ✓	17 ^m W	"				5.5	F2 III									
	HR677	02 18.3	+39 45		0353	0423	30 ^m ✓	41 ^m W					6.4	B5V									
	16 PER	02 48.5	+38 44		0425	0431	5.5 ^m ✓	18 ^m W	"				4.5	F2 III									
	HR753 A	02 34.8	+06 48		0510	0611	55 ^m ✓	2 ^h 14 ^m W	1" clean				6.8	K4									
	HR875	02 55.8	-03 44		0615	0621	6 ^m ✓	2 ^h 1 ^m W	1.5" clean				5.25	A1D									
	K96 CET	03 18.3	+03 19		0623	0633	10 ^m ✓	1 ^h 50 ^m W	1.5" clean				5.5	G5V									
	46 Tau	04 12.2	+07 39		0639	0646	6 ^m ✓	1 ^h 10 ^m W	1.5" clean				5.3	F3V									
	HD35600	05 25.8	+30 10		0656	0711	15 ^m ✓		"				5.8	B9IV									
	56 ORI	05 51.3	+01 52		0718	0740	21 ^m ✓	26 ^m W	"				6.2	K2 II									
	HR2392	06 31.8	-11 10		0746	0846	60 ^m ✓	52 ^m W	"				7.4	K0 III 3.3									36% H 12°C T Wind 18 NE
1862	HR7446	19 35.8	-07 05	11/12	0007	0013	5 ^m ✓	3 ^h 17 ^m W	1.5" clean	"	"	"	4.95	B8.5 III	"	"	"	"	"	✓			38% H 13°C 10 mph 31 deg NAE
	HD217987	23 04.6	-36 01	Nov 1979	0021	0445	4 ^h 20 ^m ✓ 6 ^m (6 UV)	4 ^h 21 ^m W	1.5-2" clean				8.8	M2V									35% H. 14°C 20 mph
	HD19445	3 07.2	+26 13		0451	0649	1 ^h 58 ^m ✓ 3 ^h (3 UV)	2 23 W	2" clean				8.3	F2									30% H 11°C 10 mph
	HR2591	06 54.1	-42 21		0654	0847	1 ^h 53 ^m ✓ 3 ^h (3 UV)	34 ^m W	2" clean				8.1	C5, 2.5									35% H 10°C 20 mph
1863	HD219617	23 16.1	-14 00	12/13	0030	0032	2 ^h 2 ^m ✓ 3 ^h (3 UV)	2 ^h 00 ^m W	2" clean	"	"	"	8.8	F8	"	"	18 Volt	"	"	✓			10°C 40% no wind
	54 Psc	00 38.3	+21 09	Nov 1979	0237	0259	22 ^m ✓	1 ^h 5 ^m W	1" clean				6.5	K0V			30 min Spots						
	HR483	01 40.6	+42 30		0305	0335	33 ^m ✓ 25 ^m	38 ^m W	2" clean				5.57	G2V									
	107 Psc	01 41.5	+20 11		0415	0432	17 ^m ✓	1 ^h 35 ^m W	1.5" clean				6.06	K1V									
	HR1099A	03 35.9	+00 32		0443	0515	32 ^m ✓		1"				6.8	G0V									Good granulation Disc
	28 Tau	03 47.9	+24 05		0530	0530	6 ^m ✓	33 ^m W	1.5" clean				6.12	BSp									
	27 Tau	03 47.7	+24 00		0539	0541	80 ^s ✓	37 ^m W	"				3.5	B8 III									
	1 ² Del	06 11.9	-65 36		0556	0646	50 ^m ✓	40 ^m E	2" clean				6.5	M2.5 III									
	HR2281	06 18.5	-50 20		0654	0846	1 ^h 52 ^m ✓	1 ^h 12 ^m W	2" clean				7.9	G2 IV									
1864	ζ CRA	19 01.7	-42 06	13/14	0011	0017	30, 1, 2 ^m ✓ 30 ^s	4 ^h 7 ^m W	1.5" clean	3.52	100"/0.8m	120/7.0	4.7	A0	NeA	10 ^s	-	IIa 0	m-s	✓			
	ω Sgr	19 54.7	-26 17	Nov 1979	0020	0028	1, 2, 4 ^m ✓ 11 ^s	3 ^h 21 ^m W	"				5.5	G5									(15 min) 67°F overexposed
	φ' Pnu	20 34.1	-60 39		0031	0036	40, 80, 160 ^m ✓ 50 ^s						5.0	F0									
	δ Tuc	22 25.7	-65 05		0039	0047	2, 4, 8 ^m ✓ 30 ^s	1 ^h 10 ^m W	"				4.5	B8									fairly common near slit An=3
	ε Mic	21 16.5	-32 15		0050	0056	30, 2, 4 ^m ✓ 30 ^s						4.8	A2p.									12°C, 30% H, no wind

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					BEGIN	END									KIND	EXP					
1864 (Cont)	8E AGR	23 05.6	-23 49	13/14	0109	0117	1.24	59° W	115 clean	3.32	100/1.8mm	120 70	5.4	G5	None	10 ³	-	IIa-O	M-S 1929	27	
	8E AGR	23 08.9	-22 33	Nov 1929	0120	0128	1.24	16° W	"				5.4	G2+A2					(15m)	1929	
1865	L PHE	23 34.1	-42 44		0138	0142	5.30 30	56° W	"				4.8	Ap			30mm 14V 3902		67F	"	
	HR8959	23 36.9	-45 36		0145	0150	"	17° W	"				4.8	A2					"		
	N PHE	00 30.8	-48 54		0153	0159	"	16° W	"				4.8	A0							
	K Tuc	01 18.5	-68 58		0202	0215	30 15	12° E	"				4.8	F6							
	Vesta	02 34.9	+04 27		0236	0314	5.15 20 10	32° E	"				7.2	G2							
	Ceres(?)	00 41.3	-09 21		0337	0407	1.24 30	215° W	21/clean				7.9	G2							
1866	HR789	02 39.1	-43 03	13/14	0458	0505	30 1.24 30						4.8	A2					"		
	K REF	03 29.6	-65 05	Nov 1929	0507	0512	"	32° W	"				5.1	F5							
	HR190	03 48.1	-37 46		0515	0520	"						4.8	A0							
	1189	03 48.1	-37 46		0526	0530	30 1.24 30	37° W					3.4	A0							
	R Dor	04 37.0	-62 14		0540	0557	2.48 48	6° W					7.	Me							
	S Dor	05 05.6	-57 33		0559	0604	1.05 1.24	12° E					5.2	F8							
	HD36395	05 30.5	-03 43		0617	0744	1.24 30	13° W	15/clean				9.5	M1V							
	HD23884	08 38.4	-47 45		0755	0851	56 1.24 30	58° E	"				7.	K2IV							
1867	39 Aql	19 35.8	-07 05	14/15	0005	0007	15.30 30						4.75	B05III					MWP2 67F 2	N2	5m 1929
	HR7845	20 51.0	-09 56	Nov 1929	0011	0020	1.24 2	240° W					6.34	G25IV							HD20174
	HD224618	23 58.2	-17 06		0026	0157	91 1.24	51° W					9.8	K0V							
	HD219617	23 16.1	-14 00		0201	0233	31 1.24	216° W					8.4	F8							
	89 PEG	00 13.4	+20 05		0236	0256	2.5 510	134° W					6.4	M2III							
	54 Psc	00 58.2	+21 07		0259	0317	2.5 510	131° W					6.7	K0V							
	HR483	01 40.2	+42 29		0320	0332	4.5 36	44° W					5.6	G2IV							
	107 Aps	01 41.3	+20 10		0336	0348	1.5 36						6.1	K1V							
1868	HR875	02 55.2	-03 47		0430	0515	45 1.24	323° W					7.9	G2V							
	K Cr (46)	03 18.2	+03 17		0520	0527	4.5 1.24	17° W					5.5	G5V							
	HR875	02 55.2	-03 47		0530	0536	30 1.24	134° W					5.25	A1V							
	28 Tau	03 47.8	+24 04		0540	0545	"	50° W					5.2	B8F							
	27 Tau	03 42.9	+23 59		0540	0549	5.19 20	53° W					3.6	B8III							
	46 Tau	04 12.5	+67 37		0552	0559	4.5 1.24						5.8	F3V							

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP					
1873 (cont)	HR 753 A	02 34.9	+06 45	18/19	0427	0438	2.1 ^m	2 ^h 12 ^m W	1.5" / clear	332	100 ^u / 8 ^{mm}	120° / 30	6.8	K4	N4A	10 ^s	✓	Ilco	MMP2	2	
	K CET	03 18.5	+ 3 17	Nov 1977	0441	0445	3.5 ^m	35 ^m W	"				5.5	G5V			30 ^m		7-C7F		
	HR 789	02 39.3	-43 00		0452	0453	15.30 ^m	1 ^h 22 ^m W	2" / clear				4.8	A2			15V				
	K RET	03 29.4	-63 01		0458	0502	2.1 ^m	41 ^m W	"				5.1	F5							
	S ¹ RET	03 17.6	-62 41		0508	0517	1.2 ^m	1 ^h 8 ^m W					6.17	G2							
	S ² RET	03 18.0	-62 38		0520	0525	30.11 ^m	1 ^h 5 ^m W					5.8	G1							
	HR 1190	03 48.0	-37 44		0532	0535	15.30 ^m						4.8	A0							
	HR 1189	03 48.0	-37 44		0536	0543	29.1 ^m	1 ^h 4 ^m W					5.4	A0							
1874	R Dor	04 36.9	-62 10	"	0651	0662	3.5 ^m	49 ^m W					7:	Me							
	Z Dor	05 05.5	-57 31		0640	0623	1.2 ^m	26 ^m W					5.2	F8							
	HR 1487	04 38.5	-14 26		0626	0633	34.15 ^m	1 ^h 3 ^m W	2" / clear				6.5	K1V							
	HR 1685	05 09.9	-62 16		0637	0651	2.4 ^m	49 ^m W					7.3	K1IV							
	HR 2007	05 47.6	-64 05		0654	0708	2.4 ^m	29 ^m W	"				6.6	G4							
	HR 2067	05 54.9	-13 53		0711	0731	4.5 ^m	45 ^m W	"				7.25	G0							
	HR 2290	06 19.8	-48 42		0734	0820	4.6 ^m	48 ^m W					7.26	G4							
	HR 3259	08 17.5	-12 36		0804	0813	1.2 ^m	56 ^m E					6.8:	G2.5II							
	HR 3538	08 59.3	-05 22		0816	0831	2.4 ^m	1 ^h 13 ^m E	3" / clear				6.7	G3II							
1875	HR 9313	21 43.5	+16 53	27/28	01:25	01:30	20.40 ^m	3 ^h 15 ^m W	2" Camms	332	100 ^u / 8 ^{mm}	120° / 30	4.3	G5Ib	Net 20 ^s		Ilco MS	Gee			
	HR 8414	22 04.6	-00 24	Nov 1977	01:35	01:37	6.2 ^m	2 ^h 20 ^m W					2.9	G2Ib							
	HR 649	02:11.6	+08 40		01:40	01:47	20.40 ^m	0 ^h 41 ^m E	clouds coming!				4.4	G8II							
	HR 1016	03:20.6	-23 44		01:55	02 05	50.100 ^m						5.5	G7II							
1876	B Dor	05 34.1	-62 34		03 00	03.10	1.2 ^m	2 ^h 41 ^m E					~4.5	G-1 ^r							
	SOI 873	06 00.7	-71 13		03.30	05.00	10 ^m / 120	1 ^h 15 ^m E	clear				8.31	K7							
	ROCA: #2	07 49.3	+01 55		05:33	06.50	10 ^m / 85	1 ^h 17 ^m E			1/6		8.6	K0							
	#7	07 52	01 59		06 54	07 34	30 ^m / 50	0 ^h 35 ^m E					8.5	G-5							
	SX Vel	08:45.2	46 15		07 49	08:20	30 ^m / 4	0 ^h 41 ^m E					8.2	G0							
1877	HR 8313	21 43.5	+17 15	Nov 30	00.48	00.56	2.4 ^m / 28	3 ^h 07 ^m W	clear				5.5	G5Ib	Net 20 ^s	30 ^m	Ilco				
	8414	22 04.7	-00 25	Dec 1 1977	01:05	01:09	35.60 ^m / 60	3 ^h 00 ^m W	2-2 1/2"				3.91	G2Ib		16V					
	8684	22 48.7	+24 29		01:30	01:36	4 ^m / 100	1 ^h :43 ^m W					4.41	G8III ^r							
	1016	203 20.6	-23 44		01:50	02.00	1.3 ^m / 3	1 ^h 26 ^m E					6.4	G7Ib							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1878	SZ Tau	04:36.0	+18 28	Nov 30 Dec 1	02:58	03:15	15"/✓	1 ^h 25E	2 1/2" / haze				~7.2		NeA	20 ^s	30 ^m	IIa-0	MWP II	Gue	10-40-2
	β Dor	05:34.2	-62 34	1979	03:29	03:35	31 1/2"/45	2 ^h 00E					~5.0				16V				
	✓ Car Cur	08:28.0	-60 03		04:08	04:49	36"/✓	3 ^h 50E	clouds				~9.0								
	SX Vel	08:44.6	-46 15		05:39	06:39	60"/70	2 ^h 09E	coming! clearer				~9.2								
	AD CN: #8	07:51.1	+01:37		06:54	07:44	50"/75	0 ^h 10E	more cirrus!				9.8								
	#3	07:49.6	01 49		07:53	08:18	23"/30	0 ^h 24W					~8.5	AO							
1879	β Dor	05:33	-62 35	Dec	02:45	02:51	30 ^m , 2 ^m /1 ^m	2 ^h 30E	4"/sc. clouds		08		~4.5	SC	NeA	20 ^s	"	IIa-0			
	VX Pup	07:31	-21 56	4/5	03:05	04:05	60"/75	3 ^h 15E	2 1/2"/				~9.2	SC							
	SX Vel	08:44	-46 15	1979	04:20	04:40	20"/35	3 ^h 53E	/clouds!				~8.2	SC							
	again				05:30	05:55	23"/30	2 ^h 40E					"	"							
	V Car	8:28	-60 07		05:59	06:20	20"/✓	1 ^h 57E					~8.0	SC							
	Y Car	10:32.4	-58 36		06:26	06:54	28"/x	3 ^h 28E	cloudy again!				~8.0								
	R Pup	7:40.1	-31 39		06:59	07:15	15"/18	0 ^h 13E					7.6	G20-Ia	NeA	20 ^s	30 ^m	IIc-0			
1880	β Agr	21:30.5	-05 40	Dec	00:38	00:42	22 ^m , 14 ^m , 35 ^m /44	2 ^h 26W	3"/cirrus				3.73	G0 Fh			16V				
	ε Peg	21:43.2	+09 47	5/6	00:48	00:54	40 ^m , 14 ^m , 145 ^m /80	3 ^h 25W					3.98	K2 Fb							
	α Agr	22:04.8	-00 25	1979	01:00	01:05	36 ^m , 72 ^m , 144 ^m /72	3 ^h 15W					3.91	G2 Ib							
	μ Peg	22:49.1	+24 30		01:11	01:19	1 ^m , 2 ^m , 4 ^m , 13 ^m /4	2 ^h 45W					4.41	G-III							
	HR 157	00:36.3	+35 17		01:26	01:34	6"/✓	1 ^h 12W	2"				6.4	G3 IIIa							
	ψ ³ Psc	01:08.7	+19 33		01:39	01:45	5"/✓	0 ^h 57W					6.2	G-III							
1881	SZ Tau	04:36.2	+18 30		02:05	02:15	9 1/2"/✓	2 ^h 06E					~7.2	SC	NeA	20 ^s	30 ^m	IIa-0			
	LS 651	07:39.8	-31 39		02:36	04:40	2"/2 1/2	2 ^h 47E			.6		10.5	OB ⁻			16V				
	β Dor	05:33.8	-62 34		05:26	05:33	36 ^m , 72 ^m , 144 ^m /36	0 ^h 15W			.8		~4.5	SC							
	SZ Tau	04:36	+18 30		05:40	05:49	9"/✓	1 ^h 28W					7.1	SC							
	VX Pup	07:31.7	-21 53		05:59	06:39	40"/✓	0 ^h 37E	2"-4"				~8.9	SC							
	SX Vel	08:44.5	-46 15		06:57	07:22	30"/✓	1 ^h 07E					8.8	SC							
	✓ Car	08:28.6	-60 06		07:30	07:50	20"/✓	0 ^h 25E					8.4	SC							
1882	SZ Tau	04:36	+18 30	Dec	00:51	01:18	27"/✓	2 ^h 51E	2"/clear				7.7	SC	Ne	20					
	β Dor	05:33.8	-62 24	8/9	04:31	04:37	40 ^m , 80 ^m , 160 ^m /36	3 ^h 30E					~5.0								
	LS 664			1979	02:18	04:06	115"/✓	3 ^h 08E	v windy!				10.2	OB							
	SZ Tau	04:36	+18:30		05:02	05:15	13"/✓	1 ^h 10W	cirrus but calmer!				7.3	SC							

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					BEGIN	END									KIND	EXP.					
1889	ALLEN 246C	07 05.6	-42 17	12-13 FEB	02:44	03:02	20 ^m	00:50W	2" clear	STCAM 3.34	100μ / 1.2	120 / 7	M0.0	-	-	-	-	IIa-O	M-S 68 ^F 15min	LEVATC	(-1)
	" 246AB	07 26.9	-11 31	"	03:30	03:30.5	30 ^{sec}	00:50W	"	"	"	"	~6.1	-	-	-	-	"	"	"	(1)
	" " C	"	"	"	03:33	03:40	6 ^m	01:00W	"	"	"	"	~8.5	-	-	-	-	"	"	"	(3) T = 59 ^F RH 50% W = C.
	" " D	"	"	"	03:45	04:01	14 ^m	01:20W	"	"	"	"	~9.5	-	-	-	-	"	"	"	(5)
1890	" 271A	07 34.5	-22 19	"	04:28	04:28	10 ^{sec}	01:40W	"	"	"	"	4.6	-	-	-	-	"	"	"	(-5)
	" " B	"	"	"	04:33	04:43	10 ^m	01:55W	"	"	"	"	~9.3	-	-	-	-	"	"	"	(-3)
	" " C	"	"	"	04:47	05:09	20 ^m	02:22W	"	"	"	"	M10	-	-	-	-	"	"	"	(-1)
	ALLEN 381B	10 38.4	-55 30	"	06:25	06:26	15 ^{sec}	00:35W	"	"	"	"	~5.0	-	-	-	-	"	"	"	(+1)
	" " A	"	"	"	06:28	06:28	6 ^{sec}	00:37W	"	"	"	"	~4.4	-	-	-	-	"	"	"	(+3)
	ALLEN 390A	10 43.7	-70 45	"	06:45	06:46	50 ^{sec}	00:48W	"	"	"	"	~6.5	-	-	-	-	"	"	"	(+5)
1891	ALLEN 390B	"	"	"	06:59	07:00	50 ^{sec}	01:03W	"	"	"	"	~6.5	-	-	-	-	"	"	"	(-5)
	" " C	"	"	"	07:05	07:47	30 ^m	01:50W	"	"	"	"		-	-	-	-	"	"	"	(-3)
1892	ALLEN 251A	07 17.8	-24 56	13-14 FEB	01:05	01:05	8 ^{sec}	01:25E	2" clear	"	"	"	4.4	-	-	-	-	"	"	"	RH 59% T = 14 ^F C W = 2 km/h (-5)
	" " B	"	"	"	01:22	01:45	22 ^m	00:45W	1.4"	"	40.8	"	~10.5	-	-	-	-	"	"	"	GUIDED IN J (-3)
	" " D	"	"	"	01:53	02:02	7 ^m	00:25W	"	"	1.2	"	~8.8	-	-	-	-	"	"	"	(-1)
	ALLEN 253A	07 18.7	-23 59	"	02:19	02:30	9 ^m	00:00	"	"	"	"	~9.1	-	-	-	-	"	"	"	59% RH W = 18 km/h (+8) 16°C
	" " B	"	"	"	02:35	02:49	12 ^m	00:20W	"	"	"	"	9.4	-	-	-	-	"	"	"	
	" " C	"	"	"	02:52	03:34	30 ^m	01:06W	"	"	"	"	~10.3	-	-	-	-	"	"	"	
1886	HD 66194	07 58.0	-60 49	"	04:10	04:20	10 ^m	01:10W	"	2.80	50μ / 1.2	67 / 48	~5.7	-	-	-	-	"	"	"	Pos 12
1893	ALLEN 411A	11 27.8	-58 52	"	05:53	05:56	2 ^m	00:45E	"	3.34	100μ / 1.2	120 / 7	~7.6	-	-	-	-	"	"	"	(-1)
	" " C	"	"	"	06:32	07:06	30 ^m	00:28W	"	"	"	"		-	-	-	-	"	"	"	(-3)
	ALLEN 426A	12 03.7	-61 49	"	07:14	07:18	3 ^m	00:05W	"	"	"	"	~8.1	-	-	-	-	"	"	"	(-1)
	" " B	"	"	"	07:25	07:30	4 ^m	00:16W	"	"	"	"		-	-	-	-	"	"	"	RH 51% T = 15°C W = 18 km/h (+1)
	" " C	"	"	"	07:39	08:09	30 ^m	00:55W	"	"	"	"		-	-	-	-	"	"	"	(+3)
	HR 4369	11 15.9	-7 00	"	08:14	08:15	30 ^{sec}	01:50W	"	"	"	"	6.1	-	-	-	-	"	"	"	(+5)
1894	HD 22879	3 39.3	-03 17	14-15 FEB	00:56	00:58	2 ^m	02:02W	2"	"	"	"	7.2	-	-	-	-	"	"	"	RH 69% T = 59 ^F 28 km/h = 14°C (-5)
	Pleiads #242	3 44.3	+24 21	"	01:24	01:24	15 ^{sec}	02:40W	"	"	"	"	3.8	-	-	-	-	"	"	"	(-3)
	"	"	"	"	01:25	01:25	5 ^{sec}	02:41W	"	"	"	"	"	-	-	-	-	"	"	"	(-1)
	HR #1279	4 06 20	+15 06	"	01:34	01:35	20 ^{sec}	02:25W	"	"	"	"	6.4	-	-	-	-	"	"	"	(+1)
	HR 1319	4 14 06	+15 20	"	01:38	01:39	1 ^m	02:20W	"	"	"	"	6.3	-	-	-	-	"	"	"	(+3)

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					BEGIN	END									KIND	EXP						
1894	HR 1351	04 18.32	+13 58	14-15 FEB	01:49	01:40	30sec	02:20W	2" clear	I.T. 3.34	100μ 1.2	120° 7	-	-	-	-	-	IIC-O	H-S 670 15 min	LEV. 400	(+)	
1895	ALLEN 267A	07 31.2	-43 15	"	02:24	02:29	4m	00:10E	145° 7" clear	"	"	"	8.2	-	-	-	-	"	"	"	(-)	
	" C	"	"	"	02:35	02:51	15m	00:15W	"	"	"	"	"	-	-	-	-	"	"	"	(-)	
	ALLEN 267A	07 32.3	-49 17	"	03:02	03:04	2m	00:25W	"	"	1.2	"	7.4	-	-	-	-	"	"	"	(-)	
	" B	"	"	"	03:08	03:22	13m	00:45W	"	"	"	"	81.5	-	-	-	-	"	"	"	(+)	
	" C	"	"	"	03:36	04:14	35m	01:30W	"	"	"	"	~11.0	-	-	-	-	"	"	"	(+)	
	ALLEN 261A	08 20.5	-71 28	"	04:20	04:21	20s	00:50W	"	"	"	"	5.4	-	-	-	-	"	"	"	(+)	
1826	HD 66194	07 58.0	-60 50	"	05:04	05:14	10m	02:10W	"	2.80	50μ 1.2	67° 44'	~5.7	-	-	-	-	"	"	"	10x (14)	
1896	ALLEN 261B	08 20.5	-71 28	"	05:32	05:33	20s	02:07W	"	3.34	100μ 1.2	120° 7	~5.4	-	-	-	-	"	"	"	(-)	
	" C	"	"	"	05:38	05:39	1m	02:10W	"	"	"	"	"	-	-	-	-	"	"	"	(-)	
	ALLEN 356A	09 47.1	-60 57	"	05:49	06:01	6m	01:10W	"	"	"	"	8.7	-	-	-	-	"	"	"	(1)	
	" B	"	"	"	06:10	06:41	25m	01:50W	"	"	"	"	"	-	-	-	-	"	"	"	(+)	
	ALLEN 375A	10 30.2	-42 08	"	07:03	07:05	2m	01:30W	"	"	"	"	7.5	-	-	-	-	"	"	"	(+)	
	" B	"	"	"	07:09	07:14	5m	01:40W	"	"	"	"	"	-	-	-	-	"	"	"	(+)	
1897	ALLEN 430C	12 08.4	-11 54	"	07:56	07:58	100μ	00:45W	"	"	"	"	"	-	-	-	-	"	"	"	"	
	" A	"	"	"	08:02	08:03	1m	00:45W	"	"	"	"	"	6.8	-	-	-	-	"	"	"	"
	HR 5193	13 47.6	-42 22	"	08:20	08:20	30sec	00:30E	"	"	"	"	3.5	-	-	-	-	"	"	"	"	
	HR 5235	13 53.9	+18 31	"	08:27	08:27	30sec	00:30E	"	"	"	"	3.3	-	-	-	-	"	"	"	W=32 T=15°C R.H. 53%	
	HR 5985	16 03.7	-19 44	"	08:34	08:35	10sec	02:30E	"	"	"	"	4.9	-	-	-	-	"	"	"	"	
	HR 5993	16 05.21	-20 36	"	08:38	08:40	5sec	02:30E	"	"	"	"	3.9	-	-	-	-	"	"	"	"	
1898	HD 22879	03 39.16	-03 17	15-16 FEB	00:50	00:51	1m	02:10W	2" clear	"	"	"	7.2	-	-	-	-	"	"	"	T=15.5 W=10% RH=60%	
	Planch #242	03 44 0	+24 17	"	01:00	01:00	2sec	02:15W	"	"	"	"	3.8	-	-	-	-	"	"	"	"	
	" #996	03 48.5	+24 17	"	01:13	01:16	2.5m	02:20W	"	"	"	"	7.4	-	-	-	-	"	"	"	"	
	"	"	"	"	01:17	01:19	1.5m	02:20W	3" /	"	"	"	7.4	-	-	-	-	"	"	"	"	
	#520	03 45.9	+23 51	"	01:24	01:26	100sec	02:30W	"	"	"	"	6.9	-	-	-	-	"	"	"	Superimposed -	
	#520	"	"	"	01:27	01:28	50sec	02:40W	"	"	"	"	6.9	-	-	-	-	"	"	"	"	
1899	ALLEN 272A	07 35.2	-23 46	"	02:02	02:06	3.0m	00:30E	2" clear	"	"	"	8.2	-	-	-	-	"	"	"	"	
	" B	"	"	"	02:13	02:33	20m	00:05E	"	"	"	"	~10	-	-	-	-	"	"	"	"	
	" C	"	"	"	02:36	03:01	25m	00:24W	"	"	"	"	~10.2	-	-	-	-	"	"	"	R=52% T=16% W=27	
	" 278A	07 37.8	-26 47	"	03:19	03:19	7sec	00:40W	"	"	"	"	4.4	-	-	-	-	"	"	"	(+)	

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					BEGIN	END									KIND	EXP.					
1899	ALLEN 278B	07 37.8	-26 47	15-16 FEB	03:27	03:27	10 ^{sec}	00:56W	2" / cleo	3.34	100 ^μ / 1.2	120 / 7	4.7	-	-	-	-	IIa-D	M-S 67° 15m	LEVATO	(+3)
	ALLEN 280A	07 38.6	-49 00	"	03:30	03:31	1 ^m	00:59W	"	"	"	"	6.7	-	-	-	-	"	"	"	(+v)
1886	HD 66194	07 58.0	-60 49	"	03:52	04:02	10 ^m	01:10W	"	2.80	50 ^μ / 1.2	67 / 4.48	5.7	-	-	-	-	IIa-O	"	"	Pos 16-
1900	ALLEN 369A	10 15.2	-44 09	"	05:32	05:38	6 ^{mm}	00:21W	"	3.34	100 ^μ / 1.2	120 / 7	8.7	-	-	-	-	IIa-D	"	"	EVIDED in D-
	" B	"	"	"	05:48	06:04	15 ^m	00:48W	"	"	"	"	"	-	-	-	-	"	"	"	T=16.5° W=28° RH 49%
	ALLEN 396A	10 52.6	-58 44	"	06:45	06:45	45	00:50W	"	"	"	"	3.9	-	-	-	-	"	"	"	
	" B	"	"	"	06:57	06:57	30 ^{sec}	01:05W	"	"	"	"	"	-	-	-	-	"	"	"	cluded component
	" C	"	"	"	07:02	07:18	15 ^m	01:25W	"	"	"	"	"	-	-	-	-	"	"	"	
	ALLEN 397A	10 54.0	-63 51	"	07:26	07:37	8 ^m	01:42W	3" / "	"	"	"	9.0	-	-	-	-	"	"	"	
1901	ALLEN 251D	07 18.0	-24 54	16-17 FEB	00:51	00:54	3.5 ^m	01:25E	2" / cleo	"	"	"	"	-	-	-	-	"	"	"	R.H. 70% T=15.5° W=26μ/h GOLED in 5-1 spectrum Amplu. etc. on slit contain 1 noted. Very porous R.H. 80%
	" B	"	"	"	01:07	01:27	20 ^m	00:50E	3.26" / 11	"	"	"	"	-	-	-	-	"	"	"	
	ALLEN 260D	07 26.5	-11 41	"	03:04	03:26	20 ^m	01:00W	4" / cleo	"	"	"	"	-	-	-	-	"	"	"	
	ALLEN 280B	07 38.3	-49 00	"	03:52	04:24	30 ^m	01:48W	5" / "	"	"	"	10	-	-	-	-	"	"	"	
	ALLEN 294A	08 07.1	-02 57	"	04:31	04:31	8 ^{sec}	01:26W	"	"	"	"	4.4	-	-	-	-	"	"	"	
	" C	"	"	"	04:35	04:39	3.5 ^m	01:33W	"	"	"	"	7.9	-	-	-	-	"	"	"	
1902	HD 22879	03 39.16	-03 17	17-18 FEB	00:45	00:46	4 ^{sec}	02:12W	2" / cleo	"	"	"	7.2	-	-	-	-	"	"	"	
	Pleides #242	03 43.9	+24 17	"	00:55	00:55	8 ^{sec}	02:15W	4" / "	"	"	"	3.8	-	-	-	-	"	"	"	
	"	"	"	"	00:56	00:56	3 ^{sec}	02:16W	4" / "	"	"	"	3.8	-	-	-	-	"	"	"	
	" #096	03 48.5	+24 17	"	01:02	01:06	3.5 ^m	02:23W	4" / "	"	"	"	7.5	-	-	-	-	"	"	"	
	"	"	"	"	01:07	01:09	2 ^m	02:25W	4" / "	"	"	"	"	-	-	-	-	"	"	"	
	HR 1279	04 06.20	+15 06	"	01:16	01:17	30 ^{sec}	02:17W	2" / "	"	"	"	6.4	-	-	-	-	"	"	"	W=0 R.H. 67% T=15.5°C
1903	HR 1319	04 14.1	+15 20	"	01:42	01:43	1 ^m	02:33W	"	"	"	"	6.3	-	-	-	-	"	"	"	
	"	"	"	"	01:44	01:45	30 ^{sec}	02:35W	"	"	"	"	"	-	-	-	-	"	"	"	
	HR 1351	04 18.32	+13 58	"	01:49	01:50	30 ^{sec}	02:37W	"	"	"	"	5.9	-	-	-	-	"	"	"	
	HD 27534	04 20.1	+18 22	"	01:58	02:00	1.5 ^m	02:44W	3" / "	"	"	"	6.7	-	-	-	-	"	"	"	
	"	"	"	"	02:00	02:01	45 ^{sec}	02:45W	"	"	"	"	"	-	-	-	-	"	"	"	
	HR 2534	06 49.9	-8 01	"	02:08	02:09	40 ^{sec}	00:25W	2" / "	"	"	"	6.3	-	-	-	-	"	"	"	
1904	HD 66194	07 58.0	-60 49	"	03:00	03:11	10 ^m	00:15W	cleo	2.80	50 ^μ / 1.2	67 / 4.48	5.7	-	-	-	-	"	"	"	Pos 6-
1905	ALLEN 275AB	07 37.6	-01 24	"	03:46	03:52	6 ^m	01:20W	2" / "	3.35	100 ^μ / 1.2	120 / 7	8.7	-	-	-	-	"	"	"	
	" D	"	"	"	03:56	04:07	10 ^m	01:35W	"	"	"	"	9.3	-	-	-	-	"	"	"	

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING/TILT	MAG	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1905	ALLEN 275 C	07 37.6	-01 24	17/12 FEB	04:19	04:28	10 ^m	01:57W	2" clear	3.3f	100 ^u /1.2	120/1.2	59.3	-	-	-	-	IIa-1	M-5 07° 15 min	LEVA TO	
	ALLEN 280 C	07 38.9	-48 49	"	04:44	05:21	3 ^m	02:49W	4" 3" clear	"	"	"	110.4	-	-	-	-	"	"	"	
	" 287 A	07 53.2	-50 49	"	05:29	05:37	7 ^m	02:50W	3" "	"	"	"	8.7	-	-	-	-	"	"	"	RH 68% T=14° W=20 km/h
	" 294 A	08 07.2	-02 53	"	05:42	05:43	13 ^{sec}	02:41W	"	"	"	"	4.4	-	-	-	-	"	"	"	
1906	ALLEN 348 A	09 24.7	-48 07	"	06:43	06:53	8 ^{5m}	02:37W	3" 4" clear	"	"	"	8.9	-	-	-	-	"	"	"	
	NGC 3238 #1	10 35.0	-57 58	"	07:35	07:39	4 ^m	02:10W	"	"	"	"	8.2	-	-	-	-	"	"	"	
	" #26	"	"	"	07:46	07:51	4.5 ^m	02:20W	"	"	"	"	8.3	-	-	-	-	"	"	"	
	" #52	"	"	"	08:02	08:11	9 ^m	02:46W	"	"	"	"	9.0	-	-	-	-	"	"	"	
1907	PREIADE #1	03 48.5	+24 17	18-19 FEB	00:56	00:58	2 ^m	02:19W	2" clear	"	"	"	7.4	-	-	-	-	"	"	"	
	" #520	03 46.0	+23 51	"	01:03	01:05	8 ^{sec}	02:28W	"	"	"	"	6.9	-	-	-	-	"	"	"	
	"	"	"	"	01:06	01:07	4 ^{sec}	02:30W	"	"	"	"	4	-	-	-	-	"	"	"	
	" 910	03 47.5	+24 19.6	"	01:13	01:15	7 ^{sec}	02:38W	"	"	"	"	6.6	-	-	-	-	"	"	"	RH 80% W=0 T=14°C
	"	"	"	"	01:16	01:17	3 ^{sec}	02:40W	"	"	"	"	4	-	-	-	-	"	"	"	
	" 924	03 48.0	+24 11	"	01:23	01:27	4 ^m	02:50W	"	"	"	"	7.9	-	-	-	-	"	"	"	
1908	HR 1319	04 14.2	+15 20	"	02:00	02:01	6 ^{sec}	02:13W	"	"	"	"	6.3	-	-	-	-	"	"	"	
	"	"	"	"	02:02	02:03	3 ^{sec}	02:17W	"	"	"	"	4	-	-	-	-	"	"	"	
	HR 1552	04 49.9	+5 33	"	02:10	02:10	3 ^{sec}	02:30W	"	"	"	"	3.5	-	-	-	-	"	"	"	T=13°C RH=78%
	4D 36936	05 34.0	-4 22	"	02:21	02:26	4 ^{5m}	02:00W	"	"	"	"	8.6	-	-	-	-	"	"	"	
	HR 1890	05 34.24	-4 31	"	02:34	02:35	4 ^{sec}	02:10W	"	"	"	"	6.4	-	-	-	-	"	"	"	
	HR 1891	05 34.24	-4 31	"	02:39	02:40	3 ^{sec}	02:15W	"	"	"	"	6.1	-	-	-	-	"	"	"	
1909	HR 1899	05 34.4	-5 56	"	03:26	03:26	6 ^{sec}	03:00W	"	"	"	"	2.5	-	-	-	-	"	"	"	star on slit out of focus
	HR 1903	05 35.0	-1 13	"	03:29	03:29	6 ^{sec}	03:04W	1/4" "	"	"	"	1.5	-	-	-	-	"	"	"	" " " " "
	HR 2294	06 22.3	-17 56	"	03:34	03:34	"	03:20W	"	"	"	"	1.7	-	-	-	-	"	"	"	" " " "
	4D 46150	06 30.7	+4 57	"	03:47	03:48	5 ^{sec}	02:27W	"	"	"	"	6.6	-	-	-	-	"	"	"	
	4D 46223	06 31.0	+4 50	"	03:48	03:50	5 ^{sec}	02:27W	"	"	"	"	6.9	-	-	-	-	"	"	"	
	4D 46149	06 30.8	+05 03	"	03:53	03:56	2 ^{3m}	02:30W	"	"	"	"	7.5	-	-	-	-	"	"	"	
1910	HR 2653	07 01.9	-23 48	"	04:15	04:15	2 ^{sec}	02:24W	"	"	"	"	3.0	-	-	-	-	"	"	"	
	HR 2693	07 08.19	-26 21	"	04:18	04:18	8 ^{sec}	02:20W	"	"	"	"	2.5	-	-	-	-	"	"	"	out of focus on slit
	HR 2706	07 10.22	+24 10	"	04:24	04:25	3 ^{sec}	02:25W	1/4" "	"	"	"	5.7	-	-	-	-	"	"	"	
	HR 2827	07 23.08	-29 15	"	04:31	04:31	5 ^{sec}	02:18W	"	"	"	"	2.3	-	-	-	-	"	"	"	out of focus on slit

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1980	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1910	HR 3165	08 03.4	-39 55	18-19 FEB	04:53	04:53	9sec	02:00W	1.5	3.35	100μ / 12	120 / 7	2.0	-	-	-	-	IIa-D	M-S 07° 15min	LEVATE	out of focus on slit
	HR 3975	10 05.9	+16 52	"	05:01	05:01	3sec	00:05W	"	"	"	"	3.5	-	-	-	-	"	"	"	
1911	ALLEN 369B	10 15.2	-44 08	"	06:02	06:10	8m	01:05W	"	"	"	"		-	-	-	-	"	"	"	
	ALLEN 396A	10 52.0	-58 45	"	06:24	06:24	15sec	00:42W	"	"	"	"		-	-	-	-	"	"	"	
	" B?	"	"	"	06:27	06:29	2m	00:45W	"	"	"	"		-	-	-	-	"	"	"	I.D. bien-chiebe
	ALLEN 421B	11 55.8	-32 11	"	07:01	07:33	30m	00:45W	"	"	0.6	"		-	-	-	-	"	"	"	
	4422D	11 58.3	-62 41	"	07:39	07:56	15m	01:07W	"	"	1.2	"		-	-	-	-	"	"	"	
	" A	"	"	"	07:59	08:12	12m	01:25W	"	"	"	"		-	-	-	-	"	"	"	
1912	ALLEN 457	03 45.8	+24 04	19-20 FEB	01:06	01:14	2.5m	02:42W	elec	"	"	"	8.8	-	-	-	-	"	"	"	
	HD 27808	04 22.6	+21 40	"	01:27	01:31	3.5m	02:21W	2.1	"	"	"	8.0	-	-	-	-	"	"	"	
	HR 1412	04 27.3	+15 49	"	01:36	01:36	4sec	02:22W	"	"	"	"	3.6	-	-	-	-	"	"	"	
	HD 36936	05 34.0	-04 22	"	01:43	01:49	5.5m	01:30W	"	"	"	"	8.6	-	-	-	-	"	"	"	
	HR 1899	05 34.0	-5 56	"	01:58	01:58	2sec	01:37W	"	"	"	"	2.5	-	-	-	-	"	"	"	
	HR 1903	05 34.9	-1 13	"	02:02	02:02	2sec	01:40W	"	"	"	"	1.5	-	-	-	-	"	"	"	out of focus on slit
1913	HR 2294	06 22.3	-17 56	"	02:18	02:18	2sec	01:10W	"	"	"	"	1.7	-	-	-	-	"	"	"	
	HD 46150	06 30.7	+4 57	"	02:25	02:26	50sec	01:08W	"	"	"	"	6.6	-	-	-	-	"	"	"	
	HD 46202	06 30.9	+04 59	"	02:30	02:33	2.5m	01:15W	"	"	"	"	8.0	-	-	-	-	"	"	"	
	HD 46223	06 31.0	+4 50	"	02:38	02:40	70sec	01:25W	"	"	"	"	6.9	-	-	-	-	"	"	"	T=13°C RH=60% W=15 km/h.
	HD 46149	06 30 46	+05 03	"	02:44	02:46	2m	01:29W	"	"	"	"	7.5	-	-	-	-	"	"	"	
	HR 2456	06 39.6	+09 55	"	02:52	02:52	6sec	01:25W	"	"	"	"	4.4	-	-	-	-	"	"	"	
1914	HR 2653	07 01.9	-23 48	"	03:28	03:28	2sec	01:40W	"	"	"	"	3.0	-	-	-	-	"	"	"	
	HR 2827	07 23.1	-29 15	"	03:33	03:33	2sec	01:25W	"	"	"	"	2.3	-	-	-	-	"	"	"	out of focus on slit
	HR 3165	08 03.4	-39 55	"	03:40	03:40	4sec	00:50W	"	"	"	"	2.0	-	-	-	-	"	"	"	" " " " "
	HR 3975	10 05.9	+16 52	"	03:48	03:48	3sec	01:05E	"	"	"	"	3.5	-	-	-	-	"	"	"	
	HR 2615	06 54.5	+16 13	"	03:56	03:57	1m	02:10W	1.5	"	"	"	5.7	-	-	-	-	"	"	"	
	HR 2646	07 00.9	-27 54	"	04:04	04:04	12sec	02:17W	"	"	"	"	3.5	-	-	-	-	"	"	"	
1915	HR 3026	07 43.1	-15 44	"	04:31	04:33	100 sec	02:00W	"	"	"	"	6.3	-	-	-	-	"	"	"	
	HR 3547	08 54.2	+06 02	"	04:41	04:41	5sec	01:00W	"	"	"	"	4.4	-	-	-	-	"	"	"	
	HR 3950	09 58.9	+08 09	"	04:46	04:47	40sec	00:00	"	"	"	"	4.7	-	-	-	-	"	"	"	
	HR 4031	10 15.4	+23 33	"	05:00	05:00	3.5sec	00:03E	"	"	"	"	3.7	-	-	-	-	"	"	"	T=13°C W=30 km/h RH=56%

NUMBER	OBJECT	R A	DEC.	DATE UT	U.T. EXP		TOTAL / CORR.	H A END	SEE / TRANS	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1916	ALLEN 408A	11 17.5	-76° 45'	1920 17-20 FEB	06:35	06:50	10m	CC 47W	19" clear	3.34	100% / 1.2	12c / 7	~3.2	—	—	—	—	LI(1)	M-5 67E 15mm	LEVATO	
	" B	"	"	"	06:52	07:08	14m	CC 105W	"	"	"	"	~3.6	—	—	—	—	0	"	"	
	ALLEN 415A	11 37.3	-63 05	"	07:16	07:18	2m	CC 55W	"	"	"	"	7.6	—	—	—	—	"	"	"	T = 12°C RH 62% W = 36 km/h.
	" 439A	12 35.2	-52 06	"	07:32	07:53	20m	CC 30W	"	"	"	"	10.0	—	—	—	—	"	"	"	
	" C	"	"	"	07:56	08:20	20m	CC 37W	"	"	"	"	~10.0	—	—	—	—	"	"	"	
1917	HR 1899	05 34.4	-5 56	20-21 FEB	00:49	00:49	2sec	CC 32W	"	"	"	"	2.5	—	—	—	—	"	"	"	
	HR 1903	05 34.9	-1 13	"	00:53	00:53	2sec	CC 35W	"	"	"	"	4.5	—	—	—	—	"	"	"	
	HR 2294	06 22.3	-17 56	"	01:01	01:01	2sec	CC 05E	"	"	"	"	1.7	—	—	—	—	"	"	"	
	HR 2456	06 39.6	+09 55	"	01:13	01:13	7sec	CC 10E	"	"	"	"	4.4	—	—	—	—	"	"	"	
	HR 2653	07 01.9	-23 48	"	01:19	01:19	3sec	CC 25E	"	"	"	"	3.0	—	—	—	—	"	"	"	T = 12°C RH 10% W = 18 km/h.
	HR 2827	07 23.1	-29 15	"	01:26	01:26	2sec	CC 14CE	"	"	"	"	2.3	—	—	—	—	"	"	"	
1918	HR 3165	08 03.4	-39 55	"	02:03	02:03	3sec	CC 43E	"	"	"	"	2.0	—	—	—	—	"	"	"	
	3547	08 54.3	+06 02	"	02:09	02:09	5sec	01:29E	"	"	"	"	4.1	—	—	—	—	"	"	"	
	ALLEN 260 D	07 27.0	-11 35	"	02:22	02:53	30m	CC 44W	"	"	"	"	~9.5	—	—	—	—	"	"	"	
	ALLEN 275A	07 37.6	-01 24	"	03:01	03:06	4m	CC 45W	"	"	"	"		—	—	—	—	"	"	"	
	" 277 A	07 53.2	-50 51	"	03:16	03:21	5min	CC 43W	"	"	"	"		—	—	—	—	"	"	"	
	" B	"	"	"	03:26	03:58	3min	01:22W	"	"	"	"	~10.5	—	—	—	—	"	"	"	RH 80%
1919	ALLEN 294A	08 07.8	-02 57	"	04:17	04:57	4sec	01:12W	"	"	"	"	~4.4	—	—	—	—	"	"	"	
	" 293A	08 05.0	-33 29	"	05:05	05:06	30sec	01:19W	"	"	"	"	~6.0	—	—	—	—	"	"	"	
	" 297A	08 08.1	-61 02	"	05:14	05:15	50sec	02:25W	"	"	"	"	~6.6	—	—	—	—	"	"	"	
	" 322A	08 07.8	-46 41	"	05:24	05:28	4m	02:05W	2" u	"	"	"	~8.6	—	—	—	—	"	"	"	
	" 325A	08 43.9	-41 13	"	05:37	05:40	2 1/2m	02:12W	"	"	"	"	~7.7	—	—	—	—	"	"	"	
	" 328A	08 52.0	-38 10	"	05:48	06:03	14m	02:30W	"	"	"	"	~9.6	—	—	—	—	"	"	"	W = 36 km/h T = 11.5°C RH 90%
1920	ALLEN 341A	09 24.6	-48 11	21/22 FEB	05:37	05:44	5m	01:41W	2 1/2" u	"	"	"		—	—	—	—	"	"	"	
	" B	"	"	"	05:47	06:14	24m	02:10W	"	"	"	"		—	—	—	—	"	"	"	T = 11.5° 85% RH W = 50 km/h.
	4356 A	09 47.2	-60 55	"	06:19	06:31	10m	02:05W	"	"	"	"		—	—	—	—	"	"	"	
	430 A	12 08.3	-11 48	"	06:39	06:43	3m	00:05E	3" u	"	"	"		—	—	—	—	"	"	"	
	η Cen	10 45.0	-59 29	"	07:03	07:04	1m	01:50W	"	"	"	"		—	—	—	—	"	"	"	
	M 10 W	12 32.8	-11 34	"	07:14	07:24	10m	00:07W	"	"	"	"		—	—	—	—	"	"	"	
1921	ALLEN 269C	07 32.8	-49 17	23/25 FEB	01:00	01:14	60m	01:00E	2 1/2" clear		0.8	"	~11	stopped after 14 minutes due to high humidity						T = 12°C W = 15 km/h RH 95%	

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL/CORR	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1921	ALLEN 271C	07 37.6	-01 24	22/23 FEB	03.04	03.26	20 ^m	01.15W	3"	5.34	110 μ	120						Ua-D	H-5 67° 15m	LEVA ₇₀	W = 36 km/h T = 11.5° R = 90%
	" D	"	"	"	03.28	03.50	20 ^m	01.38W	"	"	"	"							"	"	"
	ALLEN 293B	08 01.0	-33 34	"	04.08	04.13	4.5 ^m	01.32W	"	"	"	8.4							"	"	"
	ALLEN 294B	08 07.5	-02 59	"	04.21	04.42	20 ^m	02.00W	"	"	"	"							"	"	"
	" C	"	"	"	04.46	04.59	10 ^m	02.17W	"	"	"	"							"	"	"
1922	ALLEN 297C	08 08.1	-61 02	23/24 FEB	00.34	01.08	30 ^m	01.33E	2 1/2"	4	0.8	1 1/2	11.08						"	"	W = 60 km/h T = 12° R = 90%
	" B	"	"	"	01.14	01.23	8 ^m	01.15E	"	"	"	"	29.4						"	"	"
	" 287C	07 53.4	-50 52	"	01.31	02.07	35 ^m	01.30E	"	"	0.6	"	11.3						"	"	W = 63 km/h T = 13° R = 24%
	" 310B	08 00.3	-71 27	"	03.38	03.39	1 ^m	00.47W	"	"	1.2	"							"	"	"
1923	ALLEN 306C	09 47.4	-60 57	"	04.15	04.46	30 ^m	00.27W	"	"	0.6	"							"	"	"
	" 375C	10 30.5	-42 08	"	04.51	05.18	25 ^m	00.17W	"	"	"	"							"	"	"
	" 348C	09 24.2	-48 11	"	05.23	06.04	40 ^m	02.10W	"	"	"	"	11.4						"	"	"
	" 397C	10 54.0	-63 52	"	06.16	06.33	15 ^m	01.08W	"	"	"	"							"	"	"

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS.	REMARKS	
					BEGIN	END									KIND	EXP.						
(cont) 1961	HR8700	22 52.6	-48 42	27/28	1011	1015	4 ^m / 3.5	55° E	1" clear	3.25	100 / .8	120 / 70	6.6	G3	NeA	10 ^s	160V	II-0	McW-P-2	27		
	HR8701	22 53.6	-70 06	May 1980	1019	1023	4 ^m / ✓	49° E	"				6.7	G1					7 ^m C+1F	27		
1962	SS 2024	08 14.5	-49 11	28/29	2326	0035	30+30 ^m / 4 ^m ✓	4:5 W	2" clear	2.85	50 / 1.2	67 / 5.65	9.5	B	NeA	60 ^s	300V	IIg-0	m-5	27	WCT11 H24 partly unexposed WCT14 H22	
	R Car	09 31.8	-62 45	May 1980	0049	0400	2 ^m 15 ^m / ✓	6:15 W	1" clear				9	Me			160V		6.7 ^m 15 ^m			
	HR6058	16 15.6	-50 02		0408	0413	5 ^m / 10	18 E	1.5 ^m cirrus				4.9	F8Jab								
	U CAR	10 56.6	-59 38		0505	0546	40 ^m / 60	6:35 W	1.5 ^m clear				7.5	G capl								
	S Mus	12 11.6	-70 01		0552	0654	62 ^m / ✓	6:28 W	"				7.6	G capl								
	R Mus	12 40.8	-69 17		0657	0733	36 ^m / 60	6:57 W	" thick cirrus at end				7.5	G capl								
	S NOR	16 17.2	-57 56		0750	0820	30 ^m / 40		" some cirrus				7.1	"								
	"	"	"		0821	0859	38 ^m / 50	4:27 W	" few cirrus				"	"								
	HD172052	18 37.6	-23 12		0904	0934	30 ^m / 40	2 41 W	"				7.1	F5TL6								
	R TRA	15 18.0	-66 26		0938	1040	62 ^m / 90	7 11 W	2" "				7.7	G capl.							WCT13 H22	
1963	Σ Pup	7 48.4	-24 51	29/30	2312	2327	24 ^m / 4	3 27 W	1.5 ^m few cirrus				4.6	G3	"	"	"	"	"	"	"	
	SS 1024	8 14.8	-49 12	May 1980	2333	0158	2 ^m 25 ^m / ✓	5 33 W	" "		0.9+0.3 micron		9.5	B								WCT14 H24
	S Mus	12 12.3	-70 03		0208	0257	49 ^m / ✓	2 34 W	1.5 ^m few cirrus		1.2		7.4	G capl.								
	uagl	stopped by cirrus after 1 trial.																				
	R TRA	15 18.7	-66 27		0333	0436	63 ^m / ✓	1 07 W	1.5 ^m few cirrus				7.4	G capl.								
		very thick cirrus rest of night with full moon.																				
1964	R Mus	12 41.0	-67 18	30/31	2333	0033	60 ^m / 90	16° E	1.5 ^m cirrus				7.4	G capl.	"	"	"	"	"	"	"	WCT12 H25
	R TRA	15 18.1	-66 26	May 1980	0057	0136	59 ^m / 90	1 58° E	1.5 ^m cirrus ~ 1 mag + bright moon				7	G capl.								WCT12 H25 stopped by full moon and again between possibly a slip change → double time.
	Sky	- cirrus + moon																				
	HR4940	12 52.9	-59 09		0137	0254	1 ^m 12 ^m / -	30° E	-				-	G2V								NO SP.
	HR4940	12 52.9	-59 09		0300	0323	1 ^m 2 ^m / 2	2 22 W	2" cirrus thickening - stopped				4.5	B5								
	HR4940	12 52.9	-59 09		0344	0348	4 ^m / 3.5	2 48 W	" cirrus				"	"								
	HR4940	13 04.2	-48 23		0352	0357	4 ^m / ✓	2 45 W	clearing				4.6	B5 TL								
	HR4975	13 10.2	-59 53		0359	0403	4 ^m / ✓	2 46 W					4.5	B8								
	4 Cen	13 51.9	-31 50		0406	0410	4 ^m / ✓	2 10 W					4.6	B5								
	HR5297	14 08.6	-53 25		0426	0442	16 ^m / ✓	2 26 W					5.7	G6								
	R APS HR 5540	14 56.2	-76 37		0530	0547	17 ^m / 40	2 44 W	1" clear few cirrus				6	M0								stopped by fog.
	5 th Apr	16 18.6	-78 43		0550	0630	40 ^m / 30	2 4 W					6.4	M4								
	5 th Apr	16 18.6	-78 42		0631	0716	45 ^m / ✓	2 50 W					6.7	K5								stopped by fog.

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL/CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
1965	HR 5781	15 34.3	-44 58	30/31 1980	0730	0734	4 ^m 3.5	3 53W	2" clean	2.85	59"/1.2	G3/5.05	4.35	B5	NeA 60	16V 30m	IIa-0	M-5			close center -3"
	KZ6	15 40.7	-19 39		0738	0826	48 ^m ✓	4 39W	2" "				6.3	K5							
	γ ² Lep	15 41.4	-34 44		0830	0834	4 ^m ✓	4 46W					4.6	B6							
	ε Nor	16 01.9	-57 47		0837	0843	6 ^m ✓	4 31W					4.9	A5							
	δ Nor	16 04.9	-45 10		0844	0854	7 ^m ✓	4 42W					4.9	A7							
	o Sco	16 19.3	-24 09		0856	0811	15 ^m ✓	4 45W					5.4	A5 II							
	ε Nor	16 25.7	-47 34		0913	0917	4 ^m ✓	4 46W					4.4	B3							
	ν Pav	18 29.6	-62 21		0920	0924	4 ^m ✓	2 48W					4.3	B8							
	HD 172052	18 37.6	-23 14		0927	1026	59 ^m ✓	3 42W					7.1	F5 Ib							NOT 12 H 25 more carbon?
	HR 3232	21 30.3	-05 54		1032	1040	45 ^m ✓	80 1h W					3.9	G0 Ib							
1966	HR 2667	07 03.0	-43 36	31 May 1980	2326	0005	35 ^m 25	4:58W	2" clean but few thin curves				6.4	G3 B							WO T13 H 34
	HR 2852	07 29.7	-37 22	1 ^h 1980	0009	0102	53 ^m ✓	5 28W	"				7.3	G5							
	JUP IV	10 18.3	+11 43		0107	0139	32 ^m 60	3 18W	"				6.3	G2							
	JUP III	10 18.2	+11 42		0140	0158	18 ^m 25	3 36W	"				5.3	G2							
	HR 3138	7 57.3	-60 15		0208	0238	30 ^m ✓	6 39W	"				6.2	G2							
	HR 5183	13 45.7	+06 20		0245	0334	41 ^m ✓	1 44W	" cirrus thickening				6.9	G0							
	HR 4523	11 45.4	-40 23		0337	0351	14 ^m 12	4 1W	1.5 & cirrus				5.6	G5							
	HR 5540	14 56.6	-76 36		0356	0442	46 ^m 60	1 43W					7:	M0							
	R Mus	12 41.0	-69 17		0524	0633	64 ^m 120	5 55W	1.5 cirrus thickening ~ 0.5-1"				7.5	G0 ph	terminated by cirrus > 2"						
1967	JUP IV	10 18.6	+11 35	1/2 1980	2325	0027	62 ^m ✓	2 01W	3" cirrus				6.3	G2 V							105 T13 H 30
	HR 3750	4 26.9	-06 08	7 ^h 1980	0033	0105	32 ^m 20	5 38W	3" cirrus				6.0	G2							
	HR 5072	13 27.3	+13 50		0110	0146	36 ^m 20	12 W	3" cirrus				5.7	G5 ✓							
	γ Gru	12 53.6	-59 04		0145	0149	4 ^m ✓	55 W	"				4.5	B5							
	R Aps	14 57.3	-76 35		0155	0325	90 ^m ✓	29 W	"				7:	M0							WO T15 H 28
	ε RAN ULS	15 21.8	-18 12		0330	0430	60 ^m 50	1 12W	"				6.3:	G2 II + planetary disk							
	R Mus	12 41.2	-69 17		0515	0635	80 ^m 50	5 55W	2" cirrus				7.3	G0 ph							
	K Zel	15 40.8	-19 39		0640	0709	29 ^m ✓	3 21W	2" cirrus				6.3	K5							
	HR 7200	19 07.8	+16 46		0716	0756	40 ^m ✓	49 W	"				6.8	G5							
	HR 5781	15 37.6	-44 53		0802	0806	35 ^m ✓	4 31W					4.4	B5							
	K Del	20 38.1	+10 00		0810	0826	15 ^m ✓	10 W					5.7	G5							
1968	T Nor	15 42.1	-54 53		0848	1021	14 ^m 30	6 42W	2-3"				8	M0							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL	DEV.	OBS	REMARKS		
					BEGIN	END									KIND	EXP.							
1969	T Nor	15 ^h 42 ^m .5	-54° 56'	16/17 June/80	05 32		24" / 36" / 48" ✓	2 ^h 50 ^m / CLR	2 1/2"	3.23	100μ / 0.6	120 / 7.0	~6.2	m3e	Ne Ar	2s					m-s	F+d	4 trails (youd)
	RR Cap	21 ^h 01 ^m .5	-27° 10'	"	06 17	06 34	17 ^m / 20 ^s / 40 ^s / 60 ^s ✓	2 ^h 40 ^m / CLR	2 1/2"	"	"	"	~10.0	m5c	"	2s					m-s	F+d	poorly tracked
1970	X Sgr	17 ^h 46 ^m 18 ^s	-27° 49'.8	23/24 June	05 10		40 ^s / 60 ^s ✓	1 ^h 45 ^m / haze	3"	3.23	100μ / 0.8	120 / 7.0	~5.3	F8	Ne Ar	2 ^s							
	S Tr A	15 ^h 59 ^m 20 ^s	-63° 43'.7	"	06 18	06 30 / 02-30	30 ^s / 60 ^s / 120 ^s ✓	5 ^h 40 ^m / haze	3"	3.23	100μ / 0.8	120 / 7.0	~7.2	G-O	Ne Ar	2 ^s					m-s	F+d	
1971	S Tr A	15 ^h 59 ^m 20 ^s	-63° 43'.7	25/26 June	07 17		40 ^s / 80 ^s / 120 ^s ✓	4" / haze	3.23	100μ /	120 / 7.0			Ne Ar	2 ^s								
	X Sgr	17 ^h 46 ^m 18 ^s	-27° 49'.8	"	07 08	07 25	20 ^s / 40 ^s / 60 ^s ✓	5 ^h 0 ^m															
	RT Cen	13 ^h 47 ^m .2	-36° 46'	24/27 June	01 32	01 52	20 ^m / 25 ^m / 2 ^m / 5 ^m / 10 ^m ✓	1 ^h 45 ^m / haze & clouds	3"	3.23	100μ / 0.6	120 / 7.0	~9.5	M6	Ne Ar	2 ^s							
	T Nor	15 ^h 42 ^m .5	-54° 56'	"	02 11	02 30	10 ^m / 10 ^m / 40 ^s / 20 ^s / 60 ^s ✓	0 ^h 30 ^m / 0 ^h 15 ^m					~8.0	m63									
	RS Sco	16 ^h 54 ^m .2	-45° 05'	"	02 50	03 00	10 ^m / 40 ^s / 20 ^s / 60 ^s ✓	0 ^h 15 ^m					~9.5	M6									
1973	X Sgr	17 ^h 46 ^m 18 ^s	-27° 49'.8	"	03 50	03 55	100 ^s / 150 ^s / 200 ^s ✓	0 ^h 10 ^m	"		100μ / 0.8	120 / 7.0											
	S Tr A	15 ^h 59 ^m 20 ^s	-63° 43'.7	"	04 03	04 11	200 ^s / 25 ^s / 50 ^s / 50 ^s / 100 ^s ✓	2 ^h 05 ^m	2 1/2" / haze & clouds	3.23	100μ / 0.8	120 / 7.0			Ne Ar	2 ^s							
1974	X Sgr	17 ^h 46 ^m 18 ^s	-27° 49'.8	27/28 June	05 28	05 30	50 ^s / 50 ^s / 100 ^s ✓	1 ^h 30 ^m															
	S Tr A	15 ^h 59 ^m 20 ^s	-63° 43'.7	"	05 38		50 ^s / 100 ^s ✓																

05 44 150^s 4^h 0^m

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP./LST		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		POSN. CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
1978	AU MIC	20 43 55	-31 24 35	05/02/80	03 46 00 14 42 33	07 14 00	477/150		2"/clr	320	100μ/10.8	126 T	8 MAGS 10.3	Flare M	NeA	10 ⁵	2	IlcC	MWP-2	CRW/INZ	T=2°C, H=75%
	"	"	"	"	04 23 07 20 35 41		TOO WEAK		"	"	"	"	"	"	"	"	14	"	"	"	SPOT SENSITOMETER CALIBRATION 14V, 30 min
	"	"	"	"	04 53 00 21 05 47	05 45 30	WEAK 5 1/2		"	"	"	"	"	"	"	"	16	"	"	"	
	"	"	"	"	05 58 00 22 11 00	07 48	GOOD 110	ST 00 04 16 HA 03 17 00	"	"	"	"	"	"	"	"	18	"	"	"	
	HD 147339	20 42 50	-32 00 05 -30 46 24	"	05 02 00 00 15 18	03 44 30	SL. STRONG 42 1/2 / 37	150 26	"	"	"	"	8.69	K2	"	"	20	"	"	"	
	HD 148142	20 48 04	-30 11 01	"	05 51 00 01 04 26	09:37	46/40 106/120	ST 20 54 12 HA 5 17 14	"	"	"	"	8.78	K5	NeA	10 ⁵	22	"	"	"	T=4°C, H=45%
1979	XZ CEN	12 23.2	-35 31'	06/08/80	00 23 00 16 38 50	01 14 00	WEAK 51/50	need 5 oz W H+K	2"/clr	"	"	"	V MAGS ~9	M5	NeA	10 ⁵	6	"	"	"	T=6°C, H=47%
	R CEN	14 15.2	-59 49	"	02 13 00 18 29 05	02 17 27	WEAK 1,2/26	need H+K	"	"	100μ/0.6	"	~5.8	M4e-M7IIc	"	"	8,9	"	"	"	
	"	"	"	"	02 18 30 18 34 36	02 26 30	WEAK 3,4/26	"	"	"	"	"	"	"	NeA	10 ⁵	10,11	"	"	"	
	RU SCO	17 41.0	-43 45	"	03 02 00 19 18 14	03 57 00	EXCELLENT 55/50	✓	"	"	"	"	~9	M7II-IIIe	"	"	14	"	"	"	SPOT SENSITOMETER
	RR SGR	19 54.8	-29 15	"	04 35 00 20 51 24	04 54 30	EXCELLENT 6,12/8	✓	"	"	100μ/0.8	"	~7	M5e-M6e	"	"	16,17	"	"	"	FOR EXPOSURES, ASSUME THAT B-V ≈ 1.2
	"	"	"	"	04 55 30 21 12 00	05 04 05	GOOD 8 1/2 / 8	"	"	"	"	"	"	"	NeA	10 ⁵	18	"	"	"	
	S MIC	21 25.6	-29 56	"	05 46 00 22 02 40	06 47 16	WEAK 61/60	need H+K	"	"	"	"	~9.2	M3Fe	"	"	20	"	"	"	
	T TUC	22 39.3	-61 39	"	07 04 00 23 20 54	07 41 00	WEAK 37/32	"	"	"	"	"	~8.5	M3IIe-M6IIe	NeA	10 ⁵	23	"	"	"	
1980	V PHE	23 31.4	-46 05	"	08 31 00 00 48 03	09 36 00	SL WEAK 65/60	"	"	"	"	"	~9.2	M4e	NeA	10 ⁵	6	"	"	"	T=8°C, H=41%
	ST PEC	00 45.5	+15 22	"	09 43 00 02 00 29	09 46 40	WEAK 1,2/11.8	"	"	"	"	"	5.38	M4IIIa	"	"	10,11	"	"	"	
	"	"	"	"	09 47 00 02 04 20	09 50 00	NEED H+K 3 / 11.8	"	"	"	"	"	"	"	NeA	10 ⁵	12	"	"	"	SPOT SENSITOMETER
	45 RR ARI	02 54.7	+18 16	"	09 54 30 02 11 51	10 00 00	WEAK 2,3/2.9	"	"	"	"	"	5.9	M6II	"	"	15,16	"	"	"	
	"	"	"	"	10 00 30 02 17 52	10 05 00	GOOD 8 1/2 / 2.9	"	"	"	"	"	"	"	NeA	10 ⁵	17	"	"	"	T=8°C, H=40%
1981	HR 5171A	13 45.8	-62 29'	AUG 7/80	23 58 16 18	00:30 16:50	6,9,12/		3"/CLEAR	3.20	100μ/0.8	120/7.0	6.8	G8 Ia-O	NeA	10 ⁵	8-10	Ilc-O	MWP-2	CRW	T=6°C, H=37%
	BM SCO	17 39.7	-32 13'	"	00 45 17 05	1:00 17:20	2,4,6/	0h 20m E	"	"	"	"	6.24	K2-5 Ib	NeA	10 ⁵	12-14	"	"	"	
	AX Sgr	18 07.3	-18 33'	"	1 09 17 29	1:49 18:09	8,12,16/	0h 02m W	"	"	"	"	7.44	G8 Ia	NeA	10 ⁵	17-19	"	"	"	
1982	AU Mic	20 43.9	-31 25'	"	2:20 18:40	4:05 20:25	105/	0h 18m E 2"/CLEAR	"	"	"	"	10.3	FLARE M(10)	NeA	10 ⁵	9	"	"	"	SPOT SENSITOMETER
	AU Mic	"	"	"	04:11 20:30	05:56 22:17	105/	"	"	"	"	"	"	"	NeA	10 ⁵	10	"	"	"	
	HD 197339	20 42.8	-32 00'	"	06:07 22:27	06:42 23:03	35/	2h 20m W	"	"	"	"	8.69	K2	"	"	14	"	"	"	
	HD 19842	20 48.1	-30 16'	"	06:49 23:10	07:30 23:51	40/	3h 03m W 1"/CLEAR	"	"	"	"	8.78	K5	"	"	16	"	"	"	
	AU MIC	20 43.9	-31 25'	"	7:37:00 23:58:05	08:52 01:13	75/	"	"	"	"	"	10.3	FLARE M0	"	"	18	"	"	"	
	HD 197237	20 42.7	-31 38'	"	09 07 00 01 28 10	09 57 02 18	50/	"	"	"	"	"	9.8	K0	NeA	10 ⁵	21	"	"	"	T=7°C, H=30%

NUMBER	OBJECT	R.A. 1980	DEC. 1980	DATE UT. 1980	U.T. EXP / S.T.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG V.MAGS	SP.	COMP		EALIB Pos.	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1983	R CAR	9 31.7	-62 42	Aug. 7-8	23 41 00 16 01 34 23 50 00 16 13 35	23 48 20 23 58 00	63 1/2 ✓		1" / Clr	3-20	100m / 0.8	120mm 7.0	~5	M4e-M8e	NeA	10 ⁵	7,8	IIaO	MWP-2 67, 7m	Crw/Wiz T=8°C, H=30%	
	"	"	"	"	01 00 00 17 23 47 01 17 00 17 40 44	01 15 30 01 29 00 17 53	6,8 / 12 / ✓		"	"	"	"	~5-8	M4e-M12e	NeA	10 ⁵	9	"	"	"	
	R CEN	14 15.2	-59 49	08/08/80	18 07 03 45 15 20 10 00 05 10 00	19 44 + 11 45	90/94 ✓		"	"	"	"	~5-8	M4e-M12e	NeA	10 ⁵	11, 12	"	"	"	
	RD SCO	17h 41.0m	-43°45'		18 07 03 45 15 20 10 00 05 10 00	19 44 + 11 45	90/94 ✓		"	"	"	"	8.5	M7III-III	NeA	10 ⁵	15	"	"	"	
	RR SGR	19 54.8	-29 15		05 10 00 21 34 28 08 14 00 00 38 58	22:40 09:35 01:20	26 1/2 ✓		"	"	"	"	~7	M5e-M6e	NeA	10 ⁵	17	"	"	"	
	Γ TUC	22 39.3	-61 39		09 48 2 13	9:54 2:19	80 / ✓		"	"	"	"	~8.1	M5Ie-M6Ie	NeA	10 ⁵	19	"	"	"	
1984	R RET	4 33.3	-63 04		08 14 00 00 38 58	09:35 01:20	80 / ✓		"	"	"	"	~8.5	M4e	NeA	10 ⁵	19	"	"	"	
	57 Psc	04 45.5	+15°22'		9 48 2 13	9:54 2:19	80 / ✓		"	"	"	"	~5.4	M4IIIa	NeA	10 ⁵	11	"	"	"	
	45 R2 ARI	2h 54.7	+18°16'		10 16 2 44	10:11 2:36	8 1/2 / ✓		"	"	"	"	~5.9 V	M6III	NeA	10 ⁵	13	"	"	"	
	P Cen	3h 05.9	+38°46'		10 16 2 44	10:11 2:36	12 1/2 / ✓		"	"	"	"	~3.2-4.1	M4II	NeA	10 ⁵	15, 16, 17	"	"	T=8°C, H=26%	
1985	Q AFS	14 07.5	-76 42	08-09 08/80	08 14 00 00 07 00 00 07 00 16 35 35 00 46 00 17 30 40 01 52 00 18 19 52 01 55 00 18 22 52 02 03 10 18 31 04 02 42 30 19 10 30 02 55 00 19 23 02 03 30 00 20 18 11 24 51 00	00 03 00 10 37 00 16 35 35 01:48 18:14 01:54 30 01:57 15 02 28 02 49 03 15 30 03 15 30 03 15 30 04 47 00	18 1/2 ✓		1" / Clr	3-20	100 / 0.8	120 / 7.0	~5.8-6.7	M6.5 III	NeA	10 ⁵	10	IIaO	MWP-2 67, 7m	Crw/Wiz T=8°C, H=30%	
	EV VIR	14 12.0	-13 46	09/09/80	00 46 00 17 30 40 01 52 00 18 19 52 01 55 00 18 22 52 02 03 10 18 31 04 02 42 30 19 10 30 02 55 00 19 23 02 03 30 00 20 18 11 24 51 00	01:48 18:14 01:54 30 01:57 15 02 28 02 49 03 15 30 03 15 30 03 15 30 04 47 00	30 / ✓		"	"	"	7.2	M4-4.5 II-III	NeA	10 ⁵	12	"	"	"		
	RX B00	23.3 14 42.5	+23.47 +26.36		00 46 00 17 30 40 01 52 00 18 19 52 01 55 00 18 22 52 02 03 10 18 31 04 02 42 30 19 10 30 02 55 00 19 23 02 03 30 00 20 18 11 24 51 00	01:48 18:14 01:54 30 01:57 15 02 28 02 49 03 15 30 03 15 30 03 15 30 04 47 00	60 / ✓		"	"	"	7.0-9.1	M7.5-8	NeA	10 ⁵	14	"	"	"		
	α' HER	17 13.8	+14 24		18 19 52 01 55 00 18 22 52 02 03 10 18 31 04 02 42 30 19 10 30 02 55 00 19 23 02 03 30 00 20 18 11 24 51 00	01:57 15 02 28 02 49 03 15 30 03 15 30 03 15 30 04 47 00	40 / ✓		"	"	"	100/0.6 100/0.8	3.1-3.9	M5Ib-II	NeA	10 ⁵	16, 17	"	"	"	
	"	"	"		18 22 52 02 03 10 18 31 04 02 42 30 19 10 30 02 55 00 19 23 02 03 30 00 20 18 11 24 51 00	02 28 02 49 03 15 30 03 15 30 03 15 30 04 47 00	24 / ✓		"	"	"	"	"	"	NeA	10 ⁵	18	"	"	"	
	X4 LYR	18 37.5	+39 39		02 03 10 18 31 04 02 42 30 19 10 30 02 55 00 19 23 02 03 30 00 20 18 11 24 51 00	02 28 02 49 03 15 30 03 15 30 03 15 30 04 47 00	82 / ✓		"	"	"	"	5.8-6.8	M4-M5II	NeA	10 ⁵	20, 21	"	"	"	
	S ² LYR	18 53.7	+36 52		02 42 30 19 10 30 02 55 00 19 23 02 03 30 00 20 18 11 24 51 00	02 49 15 03 15 30 03 15 30 04 47 00	24 / ✓		"	"	"	"	4.30	M4II	NeA	10 ⁵	23, 24	"	"	"	
	V450 AQL	19 32.8	+5 25		02 55 00 19 23 02 03 30 00 20 18 11 24 51 00	03 15 30 04 47 00	20 1/2 ✓		"	"	"	"	6.3-6.9	M5.5-5 III	NeA	10 ⁵	25	"	"	"	
1986	H0179315	19 11.0	+4 19		03 30 00 20 18 11 24 51 00	04 47 00	57 / ✓		"	"	"	"	7.7-7.9	K2	NeA	10 ⁵	7	"	"	"	
	179152	19 10.3	+4 09		24 51 00 21 19 20 05 23 00 21 51 27 05 29 00 21 57 28 05 35 00 22 03 24 05 46 30 22 15 00 05 53 10 22 21 31 07 10 22 39	05 14 21:44 05 25 00 05 31 00 05 31 00 05 38 00 05 38 00 05 38 00 06 00 00	23 / ✓		"	"	"	7.5	G5	NeA	10 ⁵	9	"	"	"		
	β AQR	21 30.5	-5 40		05 23 00 21 51 27 05 29 00 21 57 28 05 35 00 22 03 24 05 46 30 22 15 00 05 53 10 22 21 31 07 10 22 39	05 31 00 05 31 00 05 31 00 05 38 00 05 38 00 05 38 00 06 00 00	10, 20 / ✓		"	"	"	"	2.58	G0 Ib	NeA	10 ⁵	11, 12, 13	"	"	"	
	ε PEG	21 43.3	+9 47		05 23 00 21 57 28 05 35 00 22 03 24 05 46 30 22 15 00 05 53 10 22 21 31 07 10 22 39	05 31 00 05 31 00 05 38 00 05 38 00 05 38 00 06 00 00	7, 14 / ✓		"	"	"	"	2.46	K2 Ib	NeA	10 ⁵	13, 16, 17	"	"	"	
	α AQR	22 04.7	-0 24		05 35 00 22 03 24 05 46 30 22 15 00 05 53 10 22 21 31 07 10 22 39	05 38 00 05 38 00 05 38 00 06 00 00	12, 20 / ✓		"	"	"	"	2.93	G2 Ib	NeA	10 ⁵	19, 20, 21	"	"	"	
	9 PEG	21 44.5	+22 39		05 53 10 22 21 31 07 10 22 39	06 00 00	1m 2 / ✓		"	"	"	"	4.32	G5 Ib	NeA	10 ⁵	23, 24	"	"	"	
	12 PEG	21 45.3	+22 51		07 10 22 39 08 00 00 29 08 24 00 53 09 17 01 46	06 00 00	24 / ✓		"	"	"	"	9.29	K0 Ib	NeA	10 ⁵	25, 26	"	"	"	
1987	EP Aqr	21 45.6	-2°18'		07 10 22 39 08 00 00 29 08 24 00 53 09 17 01 46	07:33 22:39 08:51 00:46 08:52 01:25 10:01 02:30	15, 25 / ✓		"	"	"	"	6.4-6.8	M7III	NeA	10 ⁵	9, 10	"	"	"	
	(copied) 57 Psc	0h 45.5	+15°22'		08 00 00 29 08 24 00 53 09 17 01 46	00 46 00 46 00 46 01:25 01:25 02:30	14 1/2 ✓		"	"	"	"	5.4	M4IIIa	NeA	10 ⁵	12	"	"	"	
	Do Eri	4h 19.8	-16°52'		08 24 00 53 09 17 01 46	08 52 01:25 10 01 02 30	30 / ✓		"	"	"	"	7.0	M4III	NeA	10 ⁵	14	"	"	"	
	T Col	5h 18.6	-33°44'		09 17 01 46	10 01 02 30	40 / ✓		"	"	"	"	7.5	M6e-M6	NeA	10 ⁵	16	"	"	T=9°C, H=22%	

✓ GOOD
✓ EXCELLENT

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	UT. EXP. / LST		TOTAL / CORR.	HA-END QUALITY	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG V	SP.	COMP		EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.				
1988	R CEN	14 15.2	-59 49	09/08/80	23 17 00 15 48 23	3 47 30	30 2 / ✓	HAK exposed	3" / cir	320	100μ / 06	120 / 7.0	~5.8	M4e-M7IIe	NeA	10 ⁵	9	IIaD	MWF-2	Crw/Wiz T=10°C, H=26%
	RX BOO	14 23.3	+29 47		23 56 00 16 27 30	1:08 17:40	72 / ✓		1" / cir				70-9.1	M7.5-8	NeA	10 ⁵	11			
1989	RX CEN	13 50.3	-36 51	10/08/80	02 07 30 18 32 22	02:03 03:00	51 1/2 / ✓		2" / cir	3.23	100 / 06	120 / 7.0	~9.9	M5e			-5	IIaD	M-S	} No FILTER !!
	RU SCO	17 41.0	-43 45		03 12 00 19 44 01	03 32 00	20 / ✓	OVERLAPPED ORDERS					~9.5	M7II-IIIe			-3			
	RR SGR	19 54.8	-29 15		04 05 00 20 32 10	04 12 00	2,4 / ✓	(NOT USABLE)					~7.0	M5e-M6e			+1,2			
	"	"	"		04 13 00 20 45 11	04 19 00	6 / ✓						"	"			+3			
	RR CAP	21 01.2	-27 10		04 38 00 21 10 15	06 35 00 23 10 35	120 / ✓						~10.8	M5e-M6e			-1			
	S MIC	21 25.6	-29 56		06 46 00 23 18 38	07 16 00	30 / ✓						~9.5	M3e			+5			
1990	T TUC	22 39.3	-61 39		08 05 09 00 37 56	08 17 00	12 / ✓	HAK sl weak					~8.3?	M3IIIe-M6IIe			-5			
	V PHE	23 31.4	-46 05		08 21 10 00 54 03	08:52:30 01:25:30	31 / ✓	1 ^h 53 ^m W					~9.2?	M4e			-4			
	S SCL	0 ^h 14.4 ^m	-32° 09'		09:00 01:33	09:31 02:04	31 / ✓						~9.5	M3e-M8e	NeA	2 ⁵	-2			
	W ERI	4 ^h 10.7 ^m	-25° 11'		09:44 02:17	10:03 2:36	19 / ✓						~9?	M7e			-1			
	R RET	4 ^h 33.3 ^m	-63° 04'		10:10 2:43	10:22 2:55	12 / ✓	HAK weak					~8.5	M4e			+1			
	T COL	5 ^h 18.5 ^m	-33° 44'		10:25 2:58	10:31 3:04	6 / ?						~7.5	M4e-M6e	NeA	2 ⁵	+3		T=10°, H=20%	
1991	R CAR	9 ^h 31.7 ^m	-62° 42'	AUG 10-11	23:34 16:09	22 44 20	40 / 2/36	2 ^m TOO STRONG 1 ^m GOOD	1" / CLEAR	3.23	100μ / 0.6	120 / 7.0	~5	M4e-M8e			-5	IIa-D	M-S	Crw/Wiz T=10, H=23%
	S CAR	10 ^h 08.7 ^m	-61° 27'		23 50 00 16 25 25	00 09 20	15 / 13	SL-STRONG GOOD (HAK)					~8.3	K7e-M4e	NeA	2 ⁵	-1			
	RZ CAR	10 35.1	-70 37		00 43 10 16 49 44	1:15 17:51	62 / 55	SL-STRONG BUT GOOD IN HAK ✓					~10	M4e-M8e			+1			
	RX CEN	13 50.3	-36 51		01 26 10 18 01 50	2 23 10 18 59 00	57 / 50						~9.9	M5e			+2			
	R CEN	14 15.2	-59 49		02 31 40 19 07 00	02 35 15	1,2 / 60	2 sl wks in HAK					~5.8	M4e-M7IIe	NeA	2 ⁵	+4,5			
	"	"	"		02:37 19:13	02:41 19:17	4 / 60	4 STRONG GOOD IN HAK					"	"			+6			
1992	T NOR	15 ^h 42.6 ^m	-51° 56'		03:07 30 19:43:30	04 43 30	96 / 90	SL-STRONG GOOD IN HAK ✓					~10.5	M3e-M6e	NeA	2 ⁵	-5			
	RU SCO	17 41.0	-43 45		04:57 21 33 15	05 13 00	16 / 12	SL-STRONG GOOD IN HAK					~8.5	M7II-IIIe			-3			
	RR SGR	19 54.8	-29 15		05 22 11 21 59 30	05 31 20	2,4 / 2.6	2 sl wks in HAK					~7.0	M5e-M6e	NeA	2 ⁵	+1,2			
	"	"	"		05 35 00 22 11 20	05 41 00	6 / 1	4 GOOD in HAK					"	"			+3			
	S MIC	21 25.6	-29 56		05 47 00 22 23 24	6 14 00 22:51	27 / 23	SL-STRONG					~9.2	M3e			-1			
	RR CAP	21 ^h 01.2 ^m	-27° 10'		6:43 23 19	8:50 1:27	127 / 120	SL-STRONG GOOD IN HAK ✓					~10.8	M5e-M6e	NeA	2 ⁵	+5			
1993	T PHE	0 ^h 29.5 ^m	-46° 31'		9:25 2:02	10 00 2:37	35 / 15	SL-STRONG GOOD IN HAK					~9.5	M5e	NeA	2 ⁵	-5			T=13°C, H=20%

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT EXP / LST		TOTAL / CORR	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP					
1994	R CAR	9 ^h 31.7 ^m	-62°42'	1980 AUG 11-12	23:40 16:20	23:41 16:21	60/34	(Streaky) GOOD	1" CLEAR	3.23	100/0.6	120/17.0	5.0	MTe-MSe	NEA	15	-5	TG-D	M-S	CRW	T=12°C, H=22.0
	S CAR	10 ^h 08.7 ^m	-61°27'		23:50 16:30	00:00 16:40	10/11	strong (SL STRONG)					8.3	KTe-MTe			-4				
	XZ CEN	12 ^h 23.2 ^m	-35°31'		00:10 0:27	16:49 17:07	17/17	GOOD					9.0	M5			-2				
	W CEN	11 ^h 54.1 ^m	-59°09'		00:41 17:20	1:23 18:03	42/40	SL Wk in H.A.K. ✓					9.7	M2-M3			-1				
	R CEN	14 ^h 15.2 ^m	-59°49'		1:34 18:13	1:39 18:18	2/66	2" SL STRONG					6.0	MTe-M3Te			+1, +2				21" ⇒ SET TRAILS (ATT 5 CURRENTS)
	RS SCO	16 ^h 54.2 ^m	-45°04'		1:49 18:29	3:32 20:12	103/100	GOOD ✓					11.0	MSe-MSe	NEA	15	+4				
1995	RU SCO	17 ^h 41.0 ^m	-43°45'		4:06 20:46	4:16 20:56	10/10	GOOD ✓					8.5	M3Te-M3Te			-5				
	W PAV	17 ^h 48.6 ^m	-62°24'		4:30 21:10	6:43 23:24	133/110	SL Wk ✓					11.2	MTe-MTe			-4				
	RR SGR	19 ^h 54.8 ^m	-29°15'		7:03 23:43	7:06 23:46	100/2	45 (Strong) GOOD					7.0	MSe-MSe			-2				
	T SCL	0 ^h 28.3 ^m	-38°01'		7:20 00:01	7:50 00:31	30/35	SL Wk in H.A.K. ✓					9.9	M3			-1				
	T TUC	22 ^h 39.3 ^m	-61°39'		8:00 00:40	8:09 00:49	9/8	GOOD (SHARP BLUE FRINGE)					8.3	M3Te-M3Te			+1				
	T GRUS	22 ^h 24.6 ^m	-37°40'		8:19 1:00	9:25 2:06	65/65	SL Wk ✓					10.5	M3Te-M3Te			+2				
	S COL	5 ^h 46.2 ^m	-31°42'		9:37 2:18	10:05 2:46	28/50	VERY GOOD ✓					10.7	MSe			+3				
	T COL	5 ^h 18.6 ^m	-33°44'		10:11 2:52	10:17 2:58	6/6	VERY GOOD ✓					8.0	MTe-M6			+4				
	W PUP	7 ^h 30.1 ^m	-42°09'					TOO LIGHT FOR EXPOSURE					8.5	M3e	NEA	15	+5				T=12°C, H=20.0
1996	R CAR	9 ^h 31.7 ^m	-62°42'	AUG 12-13	23:40 16:23	23:41 16:25	60/35	VERY GOOD	2" CLEAR	3.23	100/0.6	120/17.0	5.0	MTe-MSe	NEA	15	-5	TG-D	M-S	CRW	T=12°C, H=22.0
	S CAR	10 ^h 08.7 ^m	-61°27'		23:50 16:33	23:59 16:42	8/2/10	GOOD					8.3	KTe-MTe			-4				
	RS CEN	11 ^h 19.1 ^m	-61°46'		0:10 16:53	1:57 18:38	104/100	VERY GOOD (SL STRONG)					10.5	M3Te-MTe			-2				
	R CEN	14 ^h 15.2 ^m	-59°49'		2:03 18:47	2:05 18:49	16/72	SL Wk ✓					6.0	MTe-M3Te			-1				
	RR SGR	19 ^h 54.8 ^m	-29°15'		2:18 19:03	2:21 19:05	120/160	GOOD (SL Wk)	1" CLEAR				7.0	MSe-MSe			+1				
	RX MIC	22 ^h 53.3 ^m	-27°52'		2:35 19:18	4:13 20:57	98/65	GOOD ✓					10.5	M?			+2				
	S MIC	21 ^h 25.6 ^m	-29°56'		4:20 21:04	4:35 21:19	15/19	Wk ✓					9.2	M3e	NEA	15	+3				
1997	T TUC	22 ^h 39.3 ^m	-61°39'		5:28 22:12	5:33 22:22	10/6.8	GOOD ✓					8.1	M3Te-M3Te	NEA	15	-5				THOUGHT PLATE DROPPED!
1998	T SCL	0 ^h 28.3 ^m	-38°01'		6:08 22:53	7:00 22:45	5/35	Wk (STRONG)					9.9	M3			-5				
	T PHE	0 ^h 29.5 ^m	-46°31'		7:06 23:50	7:30 00:14	24/50	VERY GOOD	OUT OF FOCUS?				9.7	M5e			-3				
	RS PHE	1 ^h 13.6 ^m	-56°50'		7:38 00:22	9:03 1:52	85/85	VERY GOOD					10.8	M2e			-1				DROPPING! ADDED 29" TO RS PHE (9.17.9.46 U.T.)
	W PUP	7 ^h 30.1 ^m	-42°09'		9:58 2:43	10:15 3:00	16/16	SL STRONG ✓					8.5	M3e			+2				T=10°C, H=20.0

NUMBER	OBJECT	R.A. 1980	DEC. 1980	DATE U.T. 1980	U.T. EXP. / LST		TOTAL / CORR.	HA END QUALITY	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG (V)	SP.	COMP		GALB, PDSN	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
1999	Y VEL	9 ^h 28 ^m .4	-52°06'	AUG 13-14	23:30	23:50	20 ^m /26 ^m	FAR TOO WEAK	1" CLEAR	3.23	100w/0.6	120/7.0	-9.0	M8e	NeA	1 ^s	-5	IIa-D	M-S	CRW	T=13°, H=24%
	R CAR	9 ^h 31 ^m .7	-62°42'		23:57	23:59	60 ^s /35 ^s	VERY GOOD					5.0	M7e-M8e			-4				SET TRAILS HT 5 BTM!
	S CAR	10 ^h 08 ^m .9	-61°27'		00:05	00:14	8 ^m /10 ^m	GOOD					8.3	K7e-M7e			-3				
	XZ CEN	12 ^h 23 ^m .2	-35°31'		00:20	00:40	20 ^m /20 ^m	GOOD					9.0	M5			-2				CIRRUS LOW IN WEST
	RU HYA	14 ^h 10 ^m .4	-28°48'		1:02	1:32	30 ^m /27 ^m	(SL WK - HAK) GOOD					9.5	M6e			-1				
	R CEN	14 ^h 15 ^m .2	-59°49'		1:42	1:45	2 ^m /12 ^s	(WK IN HAK) GOOD					~6.0	M7e-M7.5e			+1				SET TRAILS
	SW SGR	19 ^h 18 ^m .6	-31°45'		2:06	2:38	32 ^m /40 ^m	TOO STRONG					~10.0	M5e			+2				
	T NOR	15 ^h 42 ^m .6	-54°56'		2:49	4:08	79 ^m /75 ^m	VERY GOOD					~10.5	M3e-M6			+3				
	S MIC	21 ^h 25 ^m .6	-29°56'		4:25	4:55	30 ^m /23 ^m	STRONG					~9.4	M3e	NeA	1 ^s	+4				
	T PHE	0 ^h 29 ^m .5	-46°31'		5:24	5:50	26 ^m /25 ^m	VERY GOOD					~9.7	M5e			-5				
	T SCL	0 ^h 28 ^m .3	-38°01'		6:08	6:54	46 ^m /35 ^m	(WK IN HAK) GOOD					~9.9	M3			-4				
	U SCL	1 ^h 10 ^m .6	-30°13'		7:00	8:13	73 ^m /75 ^m	EXCELLENT					10.5 [?]	M5e			-3				
	R HOR	2 ^h 53 ^m .2	-49°58'		8:35	9:40	65 ^m /65 ^m	(SL WK) GOOD					10.5 [?]	M5e-M7.5e	NeA	1 ^s	-2				
	R RET	4 ^h 33 ^m .3	-63°04'		9:45	10:01	16 ^m /15 ^m	(GOOD IN HAK) SL STRONG					8.5 [?]	M4e			+1				
	W POP	7 ^h 45 ^m .3	-42°09'		10:05	10:14	9 ^m /8 ^m	STRONG					8.0 [?]	M3e			+2				
	T COL	5 ^h 18 ^m .6	-33°44'		10:17	10:22	5 ^m /6 ^m	(SL STRONG) GOOD					8.0	M7e-M8e	NeA	1 ^s	+3				T=15°C, H=20%
2001	EV VIR	14 ^h 12 ^m .0	-13°46'	AUG 14-15	00:34	00:43	20 ^s /19 ^s	(SL STRONG) GOOD	1" / SOME CIRRUS	3.23	100/0.6	120/7.0	7.2	M4-M4.5	NeA	1 ^s	-5	IIa-D	M-S	CRW	T=14°C, H=22%
	α' HER	17 ^h 13 ^m .8	+14°24'		00:52	00:56	46 ^m /42 ^m	GOOD					3.1-3.9	M5.5-6-II			-4, -3, -2				
	RX BOO	14 ^h 23 ^m .3	+25°47'		1:07	1:34	8, 16/8, 16 ^m	GOOD					7.0-9.1	M7.5-8			+1, +2				
	V 842 Aql	19 ^h 12 ^m .9	+2°35'		1:43	2:07	24 ^m /20 ^m	VERY GOOD					9.2	M6.5	NeA	1 ^s	-1				
	SW SGR	19 ^h 18 ^m .6	-31°45'		2:17/26	2:42	9 ^m /20 ^m	MUCH TOO STRONG					~9.3 [?]	M5e			+3, +4				
	S MIC	21 ^h 25 ^m .6	-29°56'		3:02	3:24	22 ^m /23 ^m	(SL WK) GOOD					9.2	M3e			+5				
	KZP 5468	21 ^h 45 ^m .6	-2°18'		3:32	3:35	150 ^s /2 ^m	SLIGHTLY STRONG					6.9-6.8	M7.5			+6				T=15°, H=22%

!! { 2000

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP / LST		TOTAL / CORR.	H+K END QUALITY	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG V	SP.	COMP		CALIB. POSN	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2007	T COL	5 ^h 18 ^m .6	-33°44'	1980 4-5	9:35 3:49	9:46 4:00	10 ^m /6 ^m	GOOD (H+K SLID)	1" CLEAR	3.18	100/0.6	120/7.0	8.0	M4e-M6			+1	Tra-D	M-5	Crw		
	W POP	7 ^h 45 ^m .3	-42°09'	1980 4-5	9:52 4:06	9:56 4:10	4 ^m /4 ^m	GOOD (WR IN BLUE END)					7.5	M3e NeA	1 ^s		+2					T=14°, H=22%
2008	S CAR	10 ^h 08 ^m .7	-61°27'	SEPT 5-6	23:38 17:52	23:43 17:59	2 ^m +/4 ^m	2 ^m TOO STRONG	1" CLEAR	3.18	100/0.6	120/7.0	7.0	K7e-M4e			-4 -5	Tra-D	M-5	Crw	T=15°C, H=26%	
	XZ CEN	12 ^h 23 ^m .2	-35°31'	1980 5-6	23:54 18:11	00:39 18:56	45 ^m /40 ^m	EXCELLENT	✓				9.5	M5			-3					
	R CEN	14 ^h 15 ^m .5	-59°49'	1980 5-6	00:56 19:13	1:03 19:20	130 ^s /130 ^s	5 135 ^s ✓					6.5	M4e-M7te			-2, -1					
	RU SGR	19 ^h 57 ^m .3	-41°54'	1980 5-6	1:53 20:10	3:33 21:50	100 ^m /100 ^m	GOOD (H+K) SL STRONG	✓				11	M3e-M6e NeA	1 ^s		+1					
	RT SGR	20 ^h 16 ^m .5	-39°10'	1980 5-6	3:41 21:58	4:46 22:03	65 ^m /65 ^m	VERY GOOD	✓				10.5	M5e-M7e			+2					
	R MIC	20 ^h 38 ^m .9	-28°52'	1980 5-6	5:07 23:25	6:24 23:42	77 ^m /75 ^m	WRONG STAR					10.7	M4e			+3					
2009	T PHE	0 ^h 29 ^m .5	-46°31'	1980 5-6	6:55:30 1:13:30	8:34 2:52	99 ^m /100 ^m	EXCELLENT	✓				~11	M5e			-5					
	R RET	4 ^h 33 ^m .3	-63°04'	1980 5-6	8:40 2:58	8:51 3:09	11 ^m /10 ^m	EXCELLENT	✓				8.5	M4e			-4					
	W ERI	8 ^h 10 ^m .7	-25°11'	1980 5-6	8:55 3:13	9:25 3:43	30 ^m /30 ^m	VERY GOOD	✓				9.7	M7e			-3					
	T PIC	5 ^h 14 ^m .6	-46°56'	1980 5-6	9:29 3:47	9:46 4:04	17 ^m /16 ^m	EXCELLENT	✓				9.0	M6te			-2					
	T COL	5 ^h 18 ^m .6	-33°44'	1980 5-6	9:49 4:07	9:59 4:17	10 ^m /10 ^m	VERY GOOD	✓				8.0	M4e-M6 NeA	1 ^s		-1					T=15°C, H=25%
2010	S CAR	10 ^h 08 ^m .7	-61°27'	SEPT 6-7	23:42 18:02	23:45 18:05	90 ^s /30 ^s	1 ^m SL STRONG	1" CLEAR	3.18	100/0.6	120/7.0	6.5	K7e-M4e			-4 -5	Tra-D	M-5	Crw	T=15°C, H=26%	
	RS CEN	11 ^h 19 ^m .6	-61°46'	1980 6-7	00:00 18:20	00:50 19:11	50 ^m /90 ^m	TOO WEAK					10.5	M1te-M4e			-3					} IMAGES DEFOCUSSED!
	RT CEN	13 ^h 46 ^m .9	-36°46'	1980 6-7	1:09 19:29	2:19 20:40	70 ^m /70 ^m	FAR TOO WEAK				10.2	M6te			-2						
	R CEN	14 ^h 15 ^m .2	-59°49'	1980 6-7	2:30 20:51	2:32 20:53	120 ^s /130 ^s	GOOD BUT FZZZY					6.5	M4e-M7te NeA	1 ^s		-1					
	S MIC	21 ^h 25 ^m .6	-29°56'	1980 6-7	3:35 21:56	5:07 23:28	93 ^m /90 ^m	GOOD	✓				10.9	M3e			+1					
	T GRO	22 ^h 24 ^m .6	-37°41'	1980 6-7	5:17 23:38	7:02 1:24	105 ^m /100 ^m	SL STRONG				SHOULD BE 10.5	11	M4te-M7te			+2					
2011	R HOR	2 ^h 53 ^m .2	-49°58'	1980 6-7	7:57 2:19	9:27 3:50	90 ^m /100 ^m	VERY GOOD	✓				11	M5e-M7e			-5					
	R RET	4 ^h 33 ^m .3	-63°04'	1980 6-7	9:31 3:53	9:42 4:04	11 ^m /10 ^m	GOOD (H+K)	✓				8.5	M7te			-4					
	T COL	5 ^h 18 ^m .6	-33°44'	1980 6-7	9:45 4:07	9:55 4:17	10 ^m /10 ^m	VERY GOOD	✓				8.0	M4e-M6			-3					
	W POP	7 ^h 45 ^m .3	-42°09'	1980 6-7	9:57 4:19	10:02 4:25	5 ^m /5 ^m	GOOD (BLUE END)	✓				~7.5	M3e NeA	2 ^s		-2					T=13°C, H=23%
2012	S CAR	10 ^h 08 ^m .7	-61°27'	SEPT 7-8	23:39 18:03	23:42 18:05	75 ^s /75 ^s	VERY GOOD	1/2" CLEAR	3.18	100/0.6	120/7.0	6.0	K7e-M4e			-5	Tra-D	M-5	Crw	T=10°C, H=35%	
	U CEN	12 ^h 32 ^m .4	-54°33'	1980 7-8	23:51 18:15	00:57 19:22	66 ^m /60 ^m	VERY SLICK GOOD H+K	✓				10.1	M3te-M7te			-4					
	R CEN	14 ^h 15 ^m .2	-59°49'	1980 7-8	1:05 19:30	1:07 19:32	125 ^s /130 ^s	GOOD					6.5	M4e-M7te			-3					
	RS SCO	16 ^h 54 ^m .2	-45°04'	1980 7-8	1:17 19:42	3:57 22:22	160 ^m /150 ^m	GOOD SL WR	✓				11.4	M5e-M8e NeA	1 ^s		-1					
	RR SGR	19 ^h 54 ^m .8	-29°15'	1980 7-8	4:04 22:29	4:08 22:33	4 ^m /220 ^s	EXCELLENT	✓				7.5	M5e-M6e			+1					
	T GRO	22 ^h 24 ^m .4	-37°40'	1980 7-8	4:15 22:40	5:21 23:46	66 ^m /60 ^m	GOOD	2"-4" CLEAR				10.5	M1te-M2te			+2					} AT MINIMUM HUMIDITY CLIMBING! T=5°C H=50%
	S SCL	0 ^h 14 ^m .4	-32°09'	1980 7-8	5:29 23:54	5:50 0:16	21 ^m /18 ^m	EXCELLENT	3" CLEAR				8.8	M3e-M8e NeA	1 ^s		+4					

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP		TOTAL / CORR.	HA-END QUALITY	SEE / TRANS	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP					
2013	RS PHE	1 ^h 15 ^m 16	-56°50'	1980 SEPT 7-8	6:30 8:55	8:30 2:55	120 ^m /160 ^m	EXCELLENT	1" CLEAR	3.18	100/0.6	120/70	11.5 ^s	M2e						H=35% T=7°C	
	S COL	5 ^h 46 ^m 2	-31°42'		8:53 3:19	9:27 3:52	34 ^m /40 ^m	VERY GOOD (sl. strong)					10	M6e							
	R RET	4 ^h 33 ^m 3	-63°04'		9:51 4:17	9:59 4:25	8 ^m /8 ^m	EXCELLENT					8.5	M4e							
	W PUP	7 ^h 45 ^m 3	-42°09'		10:01 4:27	10:05 4:31	4 ^m /4 ^m	GOOD SLIGHTLY ON BLUE						7.5	M3e	NeA	15				H=32% T=7°C
2014	S CAR	10 ^h 08 ^m 7	-61°27'	SEPT 8-9	23:40 18:08	23:42 18:10	4 CUTE TRAILS / 75	W/OK STRONG	1" CLEAR	3.18	100/0.6	120/70	6:0	K7e-M7e							H=32% T=10°, H=33%
	RT CEN	13 ^h 46 ^m 9	-36°46'	SEPT 8-9	23:57 18:25	1:38 20:07	108 ^m /120 ^m	SL WEAK					10.8	M67IIe							
	R CEN	14 ^h 15 ^m 2	-59°49'		1:50 20:19	1:53 20:22	150 ^s /125 ^s	VERY GOOD					6.5	M7e-M77e							
	T APS	13 ^h 54 ^m 0	-77°42'		2:14 20:43	2:39 21:08	25 ^m /25 ^m	SL STRONG					9.1	M3e							
	RR SO	16 ^h 51 ^m 0	-30°33'		2:48 21:17	4:32 21:01	104 ^m /150 ^m	EXCELLENT						11.3	M67IIe-M77IIe						
	T TOC	22 ^h 39 ^m 3	-61°39'		4:42 23:11	5:07 23:36	25 ^m /25 ^m	SL W/OK ON BLUE						9.5	M37e-M67e						
2015	V PHE	23 ^h 31 ^m 4	-46°05'		5:16 23:45	6:16 00:45	60 ^m /52 ^m	EXCELLENT					10.3	M7e							
	T HOR	3 ^h 44 ^m 3	-50°43'		6:50 1:20	7:55 2:25	65 ^m /60 ^m	VERY GOOD / H/K					10.5	M57IIe							
	T PIC	5 ^h 14 ^m 6	-46°56'		8:12 2:42	8:29 2:59	17 ^m /16 ^m	VERY GOOD / H/K					9.0	M67IIe							
	T COL	5 ^h 18 ^m 6	-33°44'		8:54 3:04	8:44 3:14	10 ^m /10 ^m	SL W/OK ON H/K					8.0	M4e-M6	NeA	15					
	AS PUP	8 ^h 09 ^m 0	-38°07'		8:50 3:20	9:31 4:01	41 ^m /45 ^m	VERY GOOD					10.0	M7e							
	R CAR	9 ^h 31 ^m 7	-62°42'		9:54 4:42	10:02 4:32	23 ^m /14 ^m 80 ^s	2.3 V/ 5.3 V / H/K					6.0	M7e-M8e	NeA	15	+3, +4, +5, +6				T=12°, H=18%
2016	RX CEN	13 ^h 50 ^m 3	-36°51'		23:50 18:22	1:28 20:01	98 ^m /150 ^m	VERY GOOD	1" CLEAR	3.18	100/0.6	120/70	11.2	M5e							T=14°C, H=20%
	RU HYA	14 ^h 10 ^m 4	-28°45'		1:31 20:04	2:11 20:44	40 ^m /40 ^m	TOO WEAK					9.5	M6e							
	R CEN	14 ^h 15 ^m 2	-59°44'		2:19 20:52	2:21 20:51	150 ^s /125 ^s	VERY GOOD					6.5	M7e-M77e							
	T APS	13 ^h 54 ^m 0	-77°42'		2:33 21:06	2:53 21:16	20 ^m /17 ^m	GOOD SL STRONG					8.7	M6e	NeA	15	+1				
	8 ² LYR	18 ^h 55 ^m 7	+36°52'		3:20 21:53	3:22 21:55	5 ^s /5 ^s 20 ^m /20 ^m	40 ^s W/OK ON H/K					4.3	M47II			+2, +3				SET TRAILS
	V450 AGL	19 ^h 32 ^m 8	+5°25'		3:33 22:06	3:38 22:11	75 ^s 150 ^s /175 ^s	150 ^s VERY GOOD					6.3-6.9	M5-ESSII	NeA	15	+4, +5				GUIDE TRAILS
2017	EP AQR	21 ^h 45 ^m 6	-2°18'		4:05 22:42	4:09 22:46	75 ^s 120 ^s /80 ^s	120 ^s EXCELLENT					6.4-6.8	M77II			-5, +4				"
	L VOL	19 ^h 28 ^m 0	+24°38'		4:22 22:55	4:24 22:57	20 ^s 30 ^s /20 ^s	30 ^s W/OK					4.95	M47II			-3, +2				SET TRAILS
	3 AQR	20 ^h 46 ^m 7	-5°06'		4:35 23:08	4:36 23:09	20 ^s /15 ^s	W/OK ON H/K					4.42	M37II			-1				SET TRAILS
	X AQR	22 ^h 51 ^m 6	-7°41'		4:40 23:13	4:42 23:15	3.4 TRAILS / 8 ^s	4 TRAILS SL W/OK					3.76	M2.57II	NeA	15	+1, +2				"
	30 PSC	0 ^h 00 ^m 9	-6°07'		4:46 23:14	4:47 23:20	20 ^s /15 ^s	GOOD SL W/OK H/K					4.41	M37II			+3				"
	57 PSC	0 ^h 45 ^m 5	+15°22'		4:56 23:24	4:58 23:32	3.2 TRAILS / 36 ^s	3 TRAILS GOOD					5.38	M77IIa			+4, +5				GUIDE TRAILS
	45 RR ARI	2 ^h 54 ^m 7	+18°16'		5:05 23:37	5:06 23:39	75 ^s /75 ^s	GOOD					5.9	M67II			+6				4 GUIDE TRAILS

NUMBER	OBJECT	R.A. 1980	DEC. 1980	DATE U.T. 1980	U.T. EXP.		TOTAL / CORR.	HEAD- END QUALITY	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		GALIB. POS'N	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2018	B AQR	21 ^h 30.5 ^m	-5°40'	SEPT 9-10	5:40 00:13	5:42 00:15	3,2 TRAILS/35	2 TRAILS GOOD ✓	1" / CLEAR	3.18	100/0.8	120/7.0	2.58	G01b			-5,-4	IIa-D	M-S	CRW	SET TRAILS
	E PEG	21 ^h 43.3 ^m	+9°47'		5:49 00:22	5:50 00:23	3,2 TRAILS/25	2 TRAILS GOOD ✓					2.40	K21b			-3,-2				"
	9 PEG	21 ^h 43.6 ^m	+17°15'		5:56 00:29	5:57 00:31	15 ^s /14 ^s	SL WR					4.32	G51b			-1				"
	12 PEG	21 ^h 45.3 ^m	+22°51'		6:02 00:35	6:04 00:37	3,3 TRAILS/36 ^s	3 TRAILS GOOD ✓					5.29	K01b NeA	2 ^s	+1,+2					36 ^s , 60 ^s . GUIDE TRAILS
	α AQR	22 ^h 04.7 ^m	-0°24'		6:10 00:43	6:11 00:44	2,3 TRAILS/31 ^s	3 TRAILS VERY GOOD ✓					2.93	G21b			+3,+4				SET TRAILS
	65 ζ' CET	2 ^h 12.0 ^m	8°46'		6:18 00:51	6:20 00:53	15 ^s /14 ^s	15 ^s VERY GOOD ✓					4.36	G81b CN-2			+5,+6				arent 60 ^s rather than SET TRAILS 30 ^s
2019	p PER	3 ^h 03.9 ^m	+38°46'		6:43 1:17	6:44 1:18	4,8 TRAILS/7,15	WR in BLUE 15 ^s ✓			100/0.6		3.2-4.1	M411			-5,-4				SET TRAILS
	δ ERI	4 ^h 19.8 ^m	-16°52'		6:51 1:25	6:59 1:33	150 ^s 240 ^s /150 ^s	150 ^s ✓ 200 ^s ✓ for H/K					~7.0	M4111			-3,-2				GUIDE TRAILS
	δ LEP	6 ^h 04.4 ^m	-24°11'		7:09 1:42	7:15 1:49	100 ^s 200 ^s /100 ^s	100 ^s ✓ 200 ^s ✓ sl string					6.5-7.2	M6111 NeA	1 ^s	+1,+2					"
	119 TAU	5 ^h 31.1 ^m	+18°35'		7:24 1:57	7:28 2:01	25 ^s 50 ^s /25,50 ^s	WR in BLUE sl string					4.73	M21ab-II			+3,+4				"
	6 β GEM	6 ^h 11.1 ^m	+22°55'		7:35 2:08	7:39 2:13	4 ^m /4 ^m	WR in BLUE sl string					6.1-7.5	M1-M21ab			+5,				"
	α GEM	6 ^h 21.8 ^m	+22°32'		7:47 2:21	7:48 2:22	5 SET TRAILS/6 ^s	TOO WEAK					2.97	M3111ab			-1				SET TRAILS
2020	V HOR	3 ^h 03.0 ^m	-59°00'		8:18 2:52	8:25 2:59	7 ^m /7 ^m	TOO STRONG					8.0?	M5111			-5				VARIES FROM 8.7-9.8
	R DOR	4 ^h 35.6 ^m	-62°07'		8:32 3:06	8:34 3:08	1,2 TRAILS/25,60 ^s	25 ^s ✓ 60 ^s ✓ for H/K					5.0-6.0	M8111			-4,-3				GUIDE TRAILS
	0 CET	2 ^h 18.3 ^m	-3°05'		8:41 3:15	8:42 3:16	2,4 TRAILS/3,2	2 TRAILS ✓ 4 for H/K ✓					~3.0	M50-M9B			-2,-1				SET TRAILS
	T COL	5 ^h 18.6 ^m	-33°44'		8:41 3:23	9:03 3:37	14 ^m /10 ^m	VERY GOOD ✓					8.0	M4e-M6			+1				
	RZ CAR	10 ^h 35.1 ^m	-70°37'		9:15 3:49	9:45 4:19	30 ^m /30 ^m	sl string GOOD H/K					9.2	M4e-M8e			+2				
	S CAR	10 ^h 08.7 ^m	-61°27'		9:51 4:25	9:55 4:29	100 ^s 75 ^s /75 ^s	100 ^s ✓ 75 ^s ✓ for H/K					6.0	K7e-M4e			+3,+4				
	R CAR	9 ^h 31.7 ^m	-62°42'		9:58 4:32	10:02 4:36	3,7 TRAILS/80 ^s	✓ EXCELLENT					6.0	M4e-M8e			+5,+6				T=12°C, H=20%
2021	V593 CrA	18 24 37	-37 07 47	SEPT 11-12	00:14 19:54:25	09:15 23:56	301/300 ^m	VERY GOOD ✓	1" / CLEAR	3.18	100/0.6	120/7.0	~13	?	NeA	1 ^s	-4	IIa-D	M-S	WIZ	T=15°C, H=20%
2022	EP AQR	21 45 6	-2 18		00:06 00:47	00:28 01:10	22/22 ^m	EXCELLENT ✓	2" / CIV		100/0.8		6.8	M 7111 NeA	10 ^s	8	IIa-C	MWD2		T=14°C 20%	
	N' AQR	22 51.6	-7 41		00:36 01:17	00:40 01:21	68 ^s , 118 ^s	68 ^s WR in BLUE 118 ^s ✓ for H/K					3.76	M2 5111a			9,10				
	30 PSC	00 00 9	-6 07		00:46 01:27 1/2	00:52 01:33 1/2	130, 190 ^s	130 ^s ✓ 190 ^s ✓ for H/K					4.41	M3111			12,13				
	T PIC	05 14.6	-46 56		07:17 01:58 1/2	8:45 3:27	88 ^m /100 ^m	SL-WK SPLIT EMISSION LINES!			100/0.6		4.05	M6111e			15			WIZ/CRW	split emission lines
	W PUP	7 ^h 45.3 ^m	-42°09'		8:50 3:32	9:23:30 4:05:30	33 1/2 / 37 ^m	TOO WEAK ✓			100/0.8		7.45	M3e			17			CRW	
	R CAR	9 ^h 31.7 ^m	-62°42'		9:31 4:13	9:46 4:28	15 ^m /15 ^m	EXCELLENT ✓					6.05	M4e-M8e			19				
	S CAR	10 ^h 08.7 ^m	-61°27'		9:48 1/2 4:30 1/2	10:03 4:41 1/2	14 ^m /15 ^m	SL STRONG ✓ VERY GOOD H/K					6.0	K7e-M4e			21				
	0 CET	2 ^h 18.3 ^m	-3°05'		10:07 4:50	10:12 4:55	15 ^s 30 ^s /16 ^s	30 ^s ✓ 45 ^s ✓ for H/K					3.0	M50-M10 NeA	10 ^s	23,24,25,26					T=14°C, H=20%

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	App dia. / MAG	Concn. / SP.	COMP.		EMUL.	DEV.	OBS.	REMARKS		
					BEGIN	END									KIND	EXP.						
2023	NGC 6440	17 47.8	-20 19	Sept 13-13	00 17 00 01 40 10 01 43 01	01 40 20 01 40 20 01 44 58	Traced ~30" 90" ~5 m		1" / clear	3-18	150p/12	120/70	1.7 12.05	Conc. 2 G 5			-5	IIa D	MWP2	Cy/W12	T=15°C H=30% PERUVIAN STATE VISIT (CHAGASSAPPA)	
	NGC 7078	21 28.8	+12 03		03 32 1/2 22 17 1/2 04 06	03 22 03 22 04 06	20" ✓ 5 1/2 -15"	1 10 W	1" 2" / mostly clear				12.3 7.33 12.4 3.96	IV dFO A			-1	"	"	"	Cloud patches necessary Traced	
2024	NGC 6841	18 06.5	-43 41	13/14 Sept 30	00 02 1/2 02 02	00 02 1/2 02 02	2 1/2 60"	2 45 W	2" / clear				23.2 2.9 4.6 9.5	III FG-G-F4 I 80			-5	"	-	Cy	T=11°C H=30% Traced bright end of [unclear] [unclear]	
	NGC 6864	20 04.7	-21 56		02 11	03 21	1" 10" 1" AF	2:05 W					11.7 8.0	III G 0			-3	"	-	"	Traced	
	NGC 362	1 03.4	-70 57		04 24	04 44	20" ✓	1 130 E					10.46	II F3	NeA	1 1/2	+1	"	-	"	Diff to track H=9% H=50%	
	NGC 2298	6 48.2	-36 00		05 53	09 30	3 3/4 7 1/2	2:25 E					10 10.46	IV G 0			+6	"	-	"	T=9°C H=28% Traced / faint end 35"	
2025	NGC 6517	13 00.7	-8 58	14/15 Sept 20	23 54	01 56	2 1/2 6" 6" 1/2	2:49 W	2" / clear				4.8 2.08	IV F5	NeA	1 1/2	+4	"	-	Cy	Traced / faint end 35"	
	NGC 6809	19 38.9	-31 00		02 04	04 34	2 1/2 5 1/2	3:50 W					12.1 10.46	II F3			-1	"	-	"	Diff to track H=9% H=50%	
	NGC 2298	6 48.2	-36 00		05 57	08 00	3 3/4 7 1/2	3:55 E		336			12.4 8.16	II A			-3	"	-	"	Diff to track H=9% H=50%	
	NGC 288	00 56.8	-26 41		08 09	09 39	4 1/2 1 1/2	3:43 W					12.4 8.16	II A			-3	"	-	"	Diff to track H=9% H=50%	
2026	NGC 6362	17 29.0	-67 02	15/16 Sept 20	00 12	04 26	2 1/2 3 1/2	5:56 W	3" / clear	3-18		120 70	1.7 1.53	II A			+6	"	-	Cy	only part of 20" at 4" (←-)	
	NGC 1261	03 12.0	-55 17		05 10	07 40	2 1/2 3 1/2	0 135 E	2" / clear				18.8 7.8	II F2			+3	"	-	"	only part of 20" at 4" (←-)	
	NGC 2808	09 12.0	-64 45		07 49	09 29	1 40 1 1/2	4:45 E	1" / clear				18.8 7.8	I F7	NeA	1 1/2	+1	"	-	"	only part of 20" at 4" (←-)	
2027	NGC 79-28	01 04.9	-27 50	18/19 Sept 21	04 47	05 09	22" 120	0 147 E	2" / clear	1T 3-31	105p 0.8	130 70	1.7 1.53	II G 0			+5	IIa D	MWP-2	Cy	T=9°C H=77 W 25 H=23% H=23% H=23% H=23%	
2028	I 236 B	14 51.1	-73 07	20/21 Sept 180	00 11	01 24	70" 150"	5:50 W	1 1/2 2 1/2	2.84	50p 1.2	67 50	1.7 1.53	G 5	NeA	60	30"	IIa D	MWP-2	Cy	Dec Traced H=82 Dec Traced H=82 Dec Traced H=82 Dec Traced H=82	
	I 236 A	"	"		01 27	01 45	18" 60"	6:12 W	2 1/2 2 1/2				6.6 6.5	G 5			-6	"	-	"	Dec Traced H=82 Dec Traced H=82 Dec Traced H=82 Dec Traced H=82	
	Ab 13506 B	19 28.7	-27 01		02 07	04 12	2 05 5 1/2	3:45 W	2" /				9.5	?			?	"	-	"	Dec Traced H=82 Dec Traced H=82 Dec Traced H=82 Dec Traced H=82	
	" " A	"	"		04 15	04 30	15" 25"	4:06					6.57	K3 III							"	
2029	-35 170 A	6 32.7	-35 05		05 14	05 29	15" 30"	0:12 W					7.4	G 0							"	
	" " B	"	"		05 30	07 28	118" 4"	2:13 W	1 1/2 1 1/2				9.2								"	
	" " A	"	"		05 30	07 28	30" ✓	2:45 W	2" /				7.4	G 0							"secondary wing" but no column - slight	
	Ab 3107 A	4 42.6	-08 47		08 12	08 46	34" 60"	0:37 E	3" /				7.2	F5							5" at pair	
	" " B	"	"		08 46	09 24	36" ✓	0:00					7.3	F5							N * at pair	
2030	Hos 12594 A	19 32.4	+20 22	21/22 Sept 20	00 04	00 57	53" ✓	0 045 W	2 1/2 1 1/2				7.4	A3		30"	30" 16"				Cy	T=5 H=45 W=15 H=8 H=40 W=25
	" " B	"	"		00 59	03 02	123" 150"	0 250 W	2 1/2 3 1/2				8.4	?							"	
	HD 202730 A	21 18.7	-53 32		03 25	03 43	5 1/2 4 1/2	01:45 W					4.5	A5							Dec Traced	
	" " B	"	"		03 54	04 54	60" ✓	02:59 W					7.2	?							"	
2031	Ab 1106 A	1 24.6	-19 10		05 34	06 05	31" ✓	00:06 E					6.5	F5			30" 16"				Dec Traced	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1980	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2031 (cont)	ADS 1106 B	1 ^h 21.6	-19° 10		0608	0738	90 ^m / 140 ^m	1:38 W	2-3" clear	2.84	50 ^m / 0.6	67/ 5.05	8.5		NeA	40 ^s	30 ^m @ 16V	Ilad Super 90 @ 65°C	M-S, 15 ^m , 67 ^m	Cy	Dec Trail.	
	-53° 760 A	4 ^h 50.5	-53° 29		0757	0812	15 ^m / 12	1:19 E	2 1/2"		1.2		5.6	FO							sw component. } NW } HR 1563/4	
	-53° 760 B	-	-		0814	0844	30/ 1	0:45 W	sl. cirrus				6.4	FO								
	ADS 4179 A	5 ^h 34.0	+09° 55		0853	0903	1.2 ^m / 1.2	1:10 E	-				3.7	O5								
	- - B	-	-		0906	09:37	11 ^m , 17 ^m / 11	0:36 E	-				5.6	O5								T 10 H 25 W-30
2032	ADS 14279 A	20 ^h 45.7	+16° 03	22/23 Sept 80	0025	0046	10 ^m , 7 ^m / 10	0:37 E	1.5 ⁺ cirrus patches				5.31	K1 IV			30 ^m @ 14V					Dec Trail H 25 W 20
	- - B	-	-		0052	0101	9 ^m / 1	0:16 E	-				5.63	F2 V								
	-43° 14539 A	21 ^h 25.8	-42° 38		0115	0123	8 ^m / 1	0:40 E	clear				5.7	A3								
	- - B	-	-		0130	0220	50 ^m / 60	0:18 W	1" clear				8.0	-								
	-47° 14651 A	23 ^h 38.4	-46° 45		0232	0248	16 ^m / 1	1 ^h 27 E	-				6.6	A3								Dec Trail W 25-30 seeing variable.
	- - B	-	-		0254	0320	26 ^m / 32	0:54 E	1-3"				7.2	-								
	-35° 170 A	0 ^h 32.7	-35° 05		0334	0409	35 ^m / 1	1 ^h 00 E	1.5"				6.8	B0								
	- - B	-	-		0412	0552	100 ^m / 1	0 ^h 45 W	"		0.8		8.6	-								1 st moon 2:30 off
2033	I 27 C	1 ^h 13.3	-68° 57	"	0638	0758	80 ^m / 100	2 ^h 13 W	1"		1.2		7.8	G5								N & apper H 25 W 25
	" D	-	-		0800	0930	90 ^m / 1	3 ^h 45 W	15"		0.8		8.4	-								S " " -10% contain.
2034	ADS 14430 A	20 ^h 54.7	+04° 27	23/24 Sept 1980	0009	0046	37 ^m / 45	0:40 E	2" clear		1.2		6.2	~G0:11	NeA	30 ^s						Dec Trail H 40 W 20
	- B	-	-		0055	0229	94 ^m / 85	1 ^h 02 W	"		0.8		7.7	-								410% contain
	ADS 14592 A	21 ^h 03.0	-05° 54		0251	0317	26 ^m / 1	1 ^h 42 W	"		1.2		5.9	G5+								
	- B	-	-		0320	0407	47 ^m / 55	2:32 W	1.5"				7.3	A3								
	HR 8631	22 ^h 39.8	+14° 26		0413	0440	27 ^m / 1	1 ^h 29 W	"				5.72	G3 E								std.
2035	-60° 162 A	1 ^h 54.7	-60° 24		0525	0611	46 ^m / 1	0 ^h 16 E	-				7.1	FO								W apper Dec Trail E & apper
	- B	-	-		0618	0711	53 ^m / 1	0 ^h 45 W	"				7.3	~FO								
	ADS 3079 A	4 ^h 13.4	-10° 17		0730	0748	18 ^m / 1	0 ^h 56 E	2"				6.0	K3 III								T=8 H 33 W 25
	- B	-	-		0750	0932	102 ^m / 130	0:48 W	"		0.8		8.2	-								
2036	ADS 13403 A	20 ^h 06.7	+09° 20	25/26 Sept 80	0005	0035	30 ^m / 1	0:03 W	1.2 clear		1.2		6.5	F5								T 8 H 32 W 22
	- B	-	-		0040	0120	40 ^m / 120	0:50 W	" transients		0.8		8.6	-								stopped by cloud - alto-cu.
	HR 7121	18 ^h 54.0	-26° 20		0140	0147	12.9/ 6	2:30 W	2.3" put striae		1.2		8.9	B2.5 B								clouded out.
2037	ADS 13403 B	20 ^h 06.9	+09° 20	26/27 Sept 80	23: 58	0157	119/ 180	1:30 W	1.5" clear		0.8		8.6	~G5:				Ilad Brand 120 ^m 65°C				T 6 H 60 W 8
	-33° 16270 A	22 ^h 51.5	-32° 58		2:58	3:08	14.5, 5/ 4	0:05 E	"		1.2		4.6	A0								Dec Trail. contain streaks? -to, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

NUMBER	OBJECT	R.A.	DEC.	1980 DATE U.T.	U.T. EXP.		TOTAL / CORR.	H A END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2048	NGC 6656	18 ^h 35.1	-23° 55'	4/5 Oct	0021	0301	2 ^h 40 ^m ✓	4:58W	2" clear	IT 3.33	150μ / 1.2	120 / 7.0	17.0 / 6.98	VII F6	1 ^s	Net	-	IIaD	MW2-2, 7 ^m , 67F	Cy	some angle error W8 T9 H28
2049	HD 221170	23 ^h 28.5	+30° 19'	1980	0330	0352	2 ^h 57.0 ^m ✓	0:35W	"	"	"	"	8.76	K01 II:	-	-	-	-	-	-	3. out of focus - slit
	HD 26	00 ^h 04.3	+8° 40'		0358	0421	7 ^h 14 ^m ✓	0:28W	"	"	"	"	9.30	G5:	-	-	-	-	-	-	-
2050	HD 41845	6 ^h 04.9	-40° 38'		0518	0628	68 ^m ✓	3:27E	2" clear	Direct	100μ / 0.8	-	9.7	F2V	6 ^s	-	30 ^m 214V	IIaO	-	-	Balred 3 ^h 267C
	HD 54505	7 ^h 06.0	-48° 13'		0634	0725	51 ^m ✓	3:30E	"	"	"	"	9.3	F7V	-	-	-	-	-	-	w18
	HD 55147	7 ^h 08.5	-52° 20'		0732	0813	41 ^m ✓	2:45E	2 ^h "	"	"	"	9.3	G0 III	-	-	-	-	-	-	-
	HD 56380	7 ^h 13.5	-51° 26'		0818	0915	57 ^m ✓	1:47E	2 ^h "	"	"	"	9.7	G8V	-	-	-	-	-	-	T13 H18 w12
2051	NGC 6397	17 ^h 38.2	-53° 40'	5/6 Oct	0008	0213	2 ^h 08 ^m ✓	4:52W	2 ^h clear	IT	150μ / 1.2	-	19' / 7.3	IX F5	Net	4s	-	IIaD	-	-	g. bright nucleus T12 H41 w7
	NGC 6752	19 ^h 08.6	-60° 02'		0221	0331	1 ^h 10 ^m / 7 ^m ✓	4 ^h 40W	"	"	"	"	41.7 / 7.2	VI F7	-	-	-	-	-	-	-
	NGC 104	00 ^h 24.0	-72° 09'		0341	0352	11 ^m / 15 ✓	0 ^h 14W	"	"	"	"	44 / 4.8	III G3	-	-	-	-	-	-	-
2052	HD 41651	6 ^h 03.7	-44° 08'		0458	0608	70 ^m ✓	3 ^h 40E	2" "	Direct	100μ / 0.8	-	9.6	F0V	Net	5 ^s	30 ^m 214V	IIaO	-	-	Balred 3 ^h 269C
	HD 49515	6 ^h 45.7	-48 19		0615	0803	108 ^m ✓	2 ^h 28E	"	"	"	"	10.3	F8V	-	-	-	-	-	-	-
	HD 50943	6 ^h 52.7	-44° 54'		0807	0849	42 ^m ✓	1 ^h 47E	"	"	"	"	9.4	G6 III	-	-	-	-	-	-	-
	HD 58656	7 ^h 23.9	-43° 25'		0854	0915	21 ^m ✓	1 ^h 53E	"	"	"	"	8.7	F7/B III	-	-	-	-	-	-	T9 H40 w20
2053	HD 191046	20 ^h 05.8	+36° 10'	6/10 Oct	0209	0220	11 ^m ✓	2 ^h 35W	2 ^h clear	IT	150μ / 1.2	-	8.2	K0 III w-1	-	1 ^s	-	IIaD	-	-	T6 H47 w22
	HR 8826 } HD 214714 }	22 ^h 38.6	+37° 29'		0237	0238	30 ^m , 60 ^s / 3 ^m ✓	0 ^h 16W	"	"	"	"	-6.7	G3: I0:	-	-	-	-	-	-	-
	HR 8852	23 ^h 16.1	+3° 10'		0253	0254	6 ^s , 13 ^s / 13 ^m ✓	0 ^h 05E	"	"	"	"	4.6	K0 III w-15 F-1	-	-	-	-	-	-	-
2054	HR 165	00 ^h 38.2	+30° 45'		0337	0338	6 ^s , 4 ^s / 6 ^s ✓	0 ^h 43E	clearing	-	-	-	4.5	K3 III	-	-	-	-	-	-	Bad focus
	HR 570	1 ^h 44.4	+09° 03'		0347	0349	5 ^s , 10 ^s , 20 ^s / 10 ^s ✓	1 ^h 38E	"	"	"	"	5.2	G8 III	-	-	-	-	-	-	Hilder not fitted prob.
2055	HD 42189	6 ^h 06.8	-40° 49'		0459	0645	106 ^m ✓	3 ^h 03E	2 ^h clear	Direct	100μ / 0.8	-	10.0	F6V	-	5 ^s	30 ^m 214V	IIaO	-	-	Balred 3 ^h 269C
	HD 43787	6 ^h 15.5	-41° 38'		0651	0735	44 ^m ✓	2 ^h 21E	3 ^h "	"	"	"	9.2	G3V	-	-	-	-	-	-	-
	HD 57302	7 ^h 17.9	-43° 53'		0741	0830	49 ^m / 55 ✓	2 ^h 28E	2 ^h "	"	"	"	9.6	G2V-F0	-	-	-	-	-	-	-
	HD 65726	7 ^h 57.6	-43° 15'		0735	0903	26 ^m ✓	2 ^h 35E	"	"	"	"	8.9	G4/6 II	-	-	-	-	-	-	-
	HD 27808	4 ^h 23.0	+21° 42'		0907	0920	13 ^m ✓	1 ^h 17W	"	"	"	"	7.7	F8V (M)	-	-	-	-	-	-	T4 H45 w20
2056	NGC 6528	18 ^h 03.4	-30° 05'	7/8 Oct	0012	0238	2 ^h 26 ^m / 5 ^m ✓	4 ^h 58W	2 ^h clear	IT	150μ / 1.2	-	11.2 / 11.04	V G5	-	1 ^s	-	IIaD	-	-	compact, w/ faint, 2.699
	NGC 7099	21 ^h 39.2	-23° 15'		0244	0329	45 ^m / 60 ^m ✓	2 ^h 14W	"	"	"	"	8.9 / 9.68	V A7	-	-	-	-	-	-	T9 H45
2057	HR 165	00 ^h 38.2	+30° 45'		0400	0401	3 ^s , 6 ^s , 10 ^s / 6 ^s ✓	0 ^h 15E	"	"	"	"	4.5	K3 III	-	-	-	-	-	-	-
	HR 570	1 ^h 44.4	+09° 03'		0412	0413	5 ^s , 10 ^s , 20 ^s / 10 ^s ✓	1 ^h 07E	"	"	"	"	5.2	G8 III	-	-	-	-	-	-	-
2058	HD 42148	6 ^h 06.5	-41° 33'		0515	0659	104 ^m ✓	2 ^h 45E	2 ^h clear	Direct	100μ / 0.8	-	10.2	F3V	-	5 ^s	30 ^m 214V	IIaO	-	-	Balred 3 ^h 269C
	HD 47330	6 ^h 34.9	-48° 27'		0705	0746	41 ^m ✓	2 ^h 26E	"	"	"	"	9.4	G1V	-	-	-	-	-	-	-

NUMBER	OBJECT	R.A.	DEC.	1980 DATE U.T.	U.T. EXP.		TOTAL / CORR	H A END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
2058 cont.	HD 50785	6 ^h 52.0	-42° 29	7/8 Oct (cont)	0751	0757	6 ^m ✓	2 ^h 32E	2 ^h clear	Dist 3:33	100% / 0.8	120 / 7.0	7.3	F5 III	NA	5 ^s	30" 14"	IIcD	1028-2	Cy		
	HD 51393	6 ^h 54.1	-42° 40		0803	0900	57 ^m ✓	4 ^h 30E	15 ^h "				9.9	F03 III					T ^h 617 ^h			
	QE 182-1	4 ^h 57.3	+14° 21		0907	0914	2 ^m ✓	0 ^h 39.0	"				6.7	G2 II-V							T ^h 10 H 59 W 25	
2059	NGC 6638	18 ^h 29.6	-25° 31	8/9 Oct 1980	0015	0233	5 ^m ✓	4 ^h 31.0	2 ^h clear	IT	150% / 1.2		5.5	G2 II		1 ^s		IIcD			dist. no 6520 dist. no 6520 dist. no 6520	
	HR 8313	21 ^h 43.5	+17° 13		0254	0258	1 ^h 2 ^h ✓	1 ^h 42.0	"				5.5	G5 II							H 40 W 12	
2060	HR 660	2 ^h 15.07	+34° 08		0402	0412	1 ^h 2 ^h ✓	1 ^h 37E	2 ^h "	Dist	100% / 0.8		5.48	G0 II		5 ^s	30" 014"	IIcD				
	HD 44936	6 ^h 21.6	-46° 25		0423	0520	57 ^m ✓	4 ^h 33E	2 ^h "				9.2	A5 II							W16	
	HD 48632	6 ^h 41.3	-42° 22		0525	0601	36 ^m ✓	4 ^h 11E	"				8.8	F3 II								
	HD 51119	6 ^h 53.4	-41° 54		0607	0706	59 ^m ✓	3 ^h 18E	"				9.5	G2 II								
	HD 44591	6 ^h 19.6	-47° 12		0712	0751	38 ^m ✓	2 ^h 00E	"				9.3	G0 II								
	HD 57367	7 ^h 26.9	-44° 46		0756	0842	46 ^m ✓	02 ^h 15E	2 ^h "				9.3	G8 II								
HD 57001	7 ^h 16.6	-46° 40		0854	0907	18 ^m ✓	1 ^h 42E	2 ^h "				8.1	G8 II								T ^h 7 H 40 W 20	
2061	NGC 6362	17 ^h 29.3	-67° 03	10/11 Oct	0018	0420	8 ^m ✓	7.30.0	3 ^h clear	IT	150% / 1.2		8.5	Z-A		1 ^s		IIcD			dist. no 6520 dist. no 6520 dist. no 6520	
2062	HD 47922	6 ^h 38.3	-41° 30		0738	0829	51 ^m ✓	1:33E	2 ^h clear	Dist	100% / 0.8		9.5	A3 II		5 ^s	30" 014"	IIcD			dist. no 6520 dist. no 6520 dist. no 6520	
	HD 42626	6 ^h 08.8	-46° 17		0836	0820	44 ^m ✓	0:13E	2 ^h "				9.3	G5 II							T ^h 7 H 36	
2063	NGC 6981	20 ^h 52.3	-12° 36	11/12 Oct	0020	0410	3 ^h 50 ^m ✓	3:59.0	3 ^h clear	IT	150% / 1.2		5.1	G2		1 ^s		IIcD			dist. no 6520 dist. no 6520 dist. no 6520	
2064	SDPH-173	1 ^h 03.7	-27° 47		0454	0755	3 ^h 0 ^m ✓	3:32.0	2 ^h "		100% / 0.8		10.93	F8 II		1 ^s ✓					W18	
	SDPH-103	1 ^h 02.2	-27° 50		0800	0856	52 ^m ✓	4:35.0	3 ^h "				11.13	G5 Z							T ^h 11 H 33 W 13	
	QE 182-1	4 ^h 57.3	+14° 21		0907	0915	1 ^h 2 ^h ✓	0:55.0	2 ^h "				6.7	G2 II-II								
2065	NGC 6652	18 ^h 34.4	-33° 01	12/13 Oct	0005	0120	75 ^m ✓	3:31.0	2 ^h clear	IT	150% / 1.2		2.3	G2		1 ^s		IIcD			comput. no 6520 dist. no 6520 dist. no 6520	
	NGC 6541	18 ^h 06.7	-43° 40		00125	0125	50 ^m ✓	4:53.0	"				2.9	G-C							T ^h 14 H 29 W 12	
	HR 8626	22 ^h 58.6	+37° 29		0228	0240	1 ^h 5 ^h ✓	0:46.0	"				6.7	G3 III							comput. no 6520 dist. no 6520 dist. no 6520	
2066	SDPH-104	1 ^h 02.4	-27° 50		0312	0712	4 ^h 8 ^m ✓	2:55.0	"		100% / 0.6		13.5	G2 II-F02								
	SDPH-41	1 ^h 07.8	-27° 48		0745	0843	53 ^m ✓	4:23.0	"		0.8		11.4									
2067	HR 1784	5 ^h 23.0	-7° 49		0904	0908	3 ^h 1 ^h ✓	0:30.0	"				5.1	G8 III-0.5								
	HR 1543	4 ^h 48.5	+06° 55		0912	0914	1 ^h 2 ^h ✓	1:10.0	"				3.65	F6 I							T ^h 12 H 28 W 14	
2068	SDPH-287	1 ^h 01.9	-27° 45	13/14 Oct	0004	0145	10 ^m ✓	2:30E	1 ^h 5 ^h clear				12.2	F4 I							T ^h 9 H 26 W 8	
	" -287	0 ^h 55.9	-27° 47		0153	0353	120 ^m ✓	0:15E	"				12.4	G5 I								
	HR 660	2 ^h 15.7	+34° 08		0403	0410	3 ^h 1 ^h ✓	1:20E	"				5.5	G0 II								
	HR 1279	4 ^h 06.3	+14° 06		0420	0425	10 ^m ✓	3:55E	"				6.4	F3 I								

NUMBER	OBJECT	R.A.	DEC.	1980 DATE UT.	UT. EXP.		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
2076	ADS 15971 A	22 ^h 27.8	-00° 07'	14/17 Oct	02:12	02:15	3 ^m ✓	01:40	1 ^{1/2} "	2-85	50 ^m / 1.2	67/ 500	4.4	F II	No A	25 ^s	30 th 14 th	IIaO	m=6.7 ^E 15 ^m	Cy	PHS. heavy noise N+P fields - 1/2 N+P fields - 1/2 S 2 P fields - 1/2 S 2 P fields - 1/2 AP 50 close to 45° to 42° but in alt fully	
	" " A	"	"		02:21	02:24	3 ^m ✓	01:58	1"	"	"	"	"	"	"	"	"	"	"	"	"	
	" " B	"	"		02:27	02:31	3 ^m ✓	1:03.10	1"	"	"	4.6	F3 II	"	"	"	"	"	"	"	"	
	ADS 15988 AB	22 ^h 29.0	+04° 19'		02:43	02:53	10 ^m ✓	1:24.10	"	"	"	-5.8	F5 III	"	"	"	"	"	"	"	"	
	ADS 1615 A	2 ^h 01.0	+02° 40'		03:24	03:27	23 ^m ✓	1:35E	"	"	"	4.3	A P	"	"	"	"	"	"	"	"	
	" " B	"	"		03:34	03:41	61 ^m ✓	1:21E	"	"	"	5.2	A _m	"	"	"	"	"	"	"	"	
2077	ADS 1697 A	2 ^h 11.2	+30° 12'		4:34	4:56	22 ^m ✓	0:15.0	"	"	"	5.2	G0	"	"	"	"	"	"	"	"	
	" " B	"	"		05:06	5:47	41 ^m ✓	0:36.0	1 ^{1/2} "	"	"	6.6	-	"	"	"	"	"	"	"	"	
	ADS 2122 A	2 ^h 46.3	+19° 17'		06:02	07:26	84 ^m ✓	1:40.0	1"	"	"	7.4	G0	"	"	"	"	"	"	"	"	
	" " B	"	"		07:27	08:52	85 ^m ✓	3:07.0	"	"	"	8.3	-	"	"	"	"	"	"	"	"	
	HR 1346	4 ^h 18.4	+15° 34'		08:55	09:13	21 ^m ✓	1:15.10	2"	"	1.2	4.7	K0 IIIa	"	"	"	"	"	"	"	"	
2078	HO 217096	22 57.5	-35 37	17/18 Oct	00:41	00:57	20.4060 ^s 69 ^m ✓	0:55 E	2"/Clr	333	100/0.8	120/ 170	0 6.70	F8 III-IV	No A	1 ^s	-	IIaO	+5, 147 th 11.5, 11.6 F GR/L/W/Z	"	"	"
	215523	22 48.7	-80 13		01:10	01:15	69 ^m ✓	00:32E	"	"	0.6	5.8	BG IV	"	"	"	"	"	"	"	"	"
2079	HD 21987	23 03.9	-35 54.8		02:07	02:14	7 ^m ✓	00:13W	"	"	0.6	8.82	H2 V	"	"	"	"	"	"	"	"	"
	HD 221148	23 28.0	-04 38		02:32	02:34	100 ^s / 135 ^s ✓	00:10W	"	"	0.4	7.35	K3 III	"	"	"	"	"	"	"	"	"
	HD 10824	01 45.0	-05 50		03:10	03:11	7 ^m ✓	01:30E	"	"	"	5.34	K9 III	"	"	"	"	"	"	"	"	"
	HD 1013	00 13.6	+20 06		03:31	03:32	65 ^m ✓	00:25W	"	"	"	4.80	H2 III	No A	1 ^s	"	"	"	"	"	"	"
2080	HO 224964 22544	00 00.9	-30 47		04:30.5	04:37	64 ^m ✓	01:45W	"	"	"	4.10	A3 V	"	"	"	"	"	"	"	"	"
	HD 235	00 06.1	-30 41		04:50	04:54.5	42 ^m ✓	1:55W	"	"	"	8.77	A1 IV	"	"	"	"	"	"	"	"	"
	HD 225282	00 03.9	-30 22		05:05.5	05:09	3 ^m ✓	2:10W	"	"	"	8.36	-	"	"	"	"	"	"	"	"	"
	HD 22564	0 0 03.8	-27 45		05:16	05:19	3 ^m ✓	2:20W	"	"	"	8.30	A0 V	"	"	"	"	"	"	"	"	"
	HD 225206	00 03.5	-27 30		05:25	05:27	2^m ✓	02:25W				7.71	B9 IV	No A	1 ^s							
2081	HD 16160	02 35.1	+06 49		05:58	05:59	4 ^m / 66 ^s ✓	00:20W	"	"	"	6.79	K3 V	"	"	"	"	"	"	"	"	"
	HD 20630	03 18.4	+03 18		06:11	06:11	15 ^m ✓	00:05E	"	"	"	5.90	G5 V	"	"	"	"	"	"	"	"	"
	HD 20965A	04 15.5	-07 39		06:27	06:27	15 ^s ✓	00:45E	"	"	"	5.25	K1 V	"	"	"	"	"	"	"	"	"
	HD 26911	04 14.7	+15 21		06:46	06:47	55 ^m / 65 ^s ✓	00:25E	"	"	"	6.72	F3 V	"	"	"	"	"	"	"	"	"
	HD 27347	04 17.9	+14 00		06:57	06:57.4	24 ^s ✓	00:15E	"	"	"	5.87	F0 IV	No A	1 ^s	"	"	"	"	"	"	"
2082	NGC 1662-3	04 47.7	+10 54.6		07:45	07:54	9 ^m ✓	00:10W	"	"	"	4.34	-	"	"	"	"	"	"	"	"	"
	NGC 1662-2	"	"		08:00	08:23	23 ^m ✓	00:40W	"	"	"	10.03	-	No A	1 ^s	"	"	"	"	"	"	"

NUMBER	OBJECT	R.A.	DEC.	1980 DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG.	SP.	COMP.		CALIB.	EMUL	DEV. Posn	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2083	HD 182040	19 22.2	-10 44	19/19 Oct	01 03	01 10.5	7 ^m 35 ^s / OK	2 55 W	3"/circus	3.33	100 ^m /0.8	120 ^m /7.0	B 8-10	C1,2			-	Ilad, H-S	+5	CRA/WIZ	T=12°C, H=328, W=20 mph Comes moving in
	224113	23 54.3	-32 02		01 27	01 30.5	30 ^m 31 ^m / OK	1 15 E	"				6.01	B6 II					+3+2		
	224112	"	"		01 35.5	01 40	1 ^m 21 ^m 05 ^s / OK	1 05 E	"				6.73	B8 II					-1,-2		
	HD 219615	23 16.2	+03 11		01 58	01 58.10	10 ^s / sl. wk	00 15 E	"				4.61	K0 III b	NeA	1^s			-4		WEAK. T=11°C, H=328 W=20 mph
2084	HD 224990	00 01.3	-29 49		02:22	02:22.10	10 ^s / sl. wk	00:30 E					4.89	B5 V					+5		circus clearing
	HD 225119	00 02.6	-28 32		02:37	02:40	3 ^m /	00:15 E					8.14	-					+3		more cirrus. didn't show up!
	HD 225200	00 03.4	-29 23		03:04	03:05	50 ^s 45 ^s / OK	00:10 W					6.40	A0 V					+1		
	HD 225206	00 03.5	-29 30		03:10	03:12	2 ^m / OK	00 15 W					7.71	B9 Vn					-1		
	HD 141	00 05.2	-29 16		03 20 1/2	03 23	2 1/2 ^m /	00:25 W					7.87	A0 Vn					-3		T=10°C
	HD 224818 224818	00 06.0	-20 32		03:53	04:13	20 ^m / OK	01:20 W					10.07	A0	NeA	1 ^s			+3-5		H=358. didn't show!!
2085	HD 22049	03 21.7	-09 32		04:44	04:44	12 ^s / OK	01:46 E					4.62	K2 V					+5		WIND = 25 mph
	HD 219615 219615	23 16.2	+03 11		04:58	04:58	15 ^s / sl. ctr	02:50 W					4.61	K0 III b	NeA	1 ^s			+3		slightly overexposed
2086	NGC 1662-7	04 47.4	+10 56		07:28	07:45	17 ^m / OK	00 05 W					9.67	-					+5		
	NGC 1662-6	"	"		07:50	08:06	16 ^m / OK	00:27 W	1-2" / cl.				9.63	-					+3		W=20 30 mph!
	NGC 1662-10	"	"		08:17.5	08:38	35 ^m / OK	01:00 W					10.49	-	NeA	1 ^s			+1		EXPOSURE HADN'T DONE TECHNICAL PROBLEMS
2087	NGC 1662-11	"	"		06:08	07:28	80 ^m /	02:05 E	3" / circ.				11.01						+5		T=11°C, H=27, W=25
	NGC 1662-13	"	"		07:33	08:53	50 ^m /	01:20 W					11.09						+3		T=10-11-45°C, W=25 mph
2087	HD 178322	19 08.7	-41 54	20/21 OCT	00:11	00:11 1/2	20 ^s / OK	02:15 W	2" / cl.	3.33	100 ^m /0.8	120 ^m /7.0	5.78	B5 V					+5		T=10, H=45°C, W=20 mph
	HD 182180	19 23.3	-27 54		00:22	00:22 1/2	24 ^s /	02:15 W	"	"	"	"	5.94	B2 Vn					+3		NOT ON SLIT
	"	"	"		00:24	00:24 1/2	"	02:18 W	"	"	"	"	"	"					+1		MOVED IN DEC!!
	"	"	"		00:26	00:26 1/2	1 ^m / OK	02:20 W	"	"	"	"	"	"					-1		FINALLY! OK
	HD 188001	19 51.5	+18 37		00 37 1/2	00:38 1/2	1 ^m / strong	02:02 W	"	"	"	"	6.23	B8 I F					-3		overexp
	HD 189319	19 57.9	+19 26		00:43	00:43	6 ^s / wk.	02:00 W	"	"	"	"	3.50	M0 III					-5		underexp
2088	HD 191408A	20 10.0	-36 08		01:06	01:07	26 ^s / OK	02:10 W					6.19	K2 V					+2		slightly overexp DEC SLIPPAGE AT +5 +3. DEC GUIDE FINED
	HD 199174	20 48.2	-25 51		01:20	01:20 1/2	21 ^s / OK	01:47 W					5.71	B7 III D					-2		oil NOT PROBLEM DANN! DEC SLIP AT -2
	HD 199728	20 58.5	-19 06		01:31 1/2	01:32	20 ^s / OK	01:50 W					6.23	A0 III	NeA	1 ^s			-4		OK
2089	HD 205522	21:20.9	-82 46		01:57 1/2	01:58 1/2	1 ^m / OK	00:40 W					6.50	B3 IV					+4		T=9, H=45°C. +5 OK slipped
	HD 204522	22 03.5	-26 55		02:17	02:17	21 ^s / sl. wk	01:30 W					5.74	B4 III					+11		+2 slipped OK
	HD 220657	23 24.4	+23 18		02:27	02:27	10 ^s / sl. wk	00:17 W					4.51	F9 III					-1		OK
	HD 231170	23 28.6	+30 20		02:35	02:50	15 ^m / strong	00:40 W					5.81	K0 II p	NeA	1 ^s			-3		5-min 3' overexp.

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R A	DEC.	DATE UT.	U.T. EXP.		TOTAL/CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS.	REMARKS
					BEGIN	END									KIND	EXP					
2090	HD 343	00 07.1	-30 09	20/21 OCT	03 27	03 45	18m / OK	00 55 W	2 1/2 ch.	3 33	100% / 0.8	120 / 7.0	B 10 22	-			IIaD	M-S	CRd	+5 F=8 ¹⁰ , OK H=40 ¹⁰	
	HD 225149	00 02.6	-28 32		03 57	04 00	3m / OK	01 15 W	"	"	"	"	B 14	-						+3 WRD 106 *	
	HD 225119	00 02.6	-28 32		04 09	04 10	3m / OK	01 25 W	"	"	"	"	B 14	-						+1 OK	
	HD 225077	00 02.3	-31 20		04 19	04 25	6m / string	01 40 W	"	"	"	"	B 98	A2V						-1 overexp	
	HD 2037	60 236	-27 02		04 36	04 39 1/2	3 1/2 m / OK	01 30 W	"	"	"	"	B 36	A7 III	NoA	1 ^s				+3 OK	
2091	N6C 1662-15	04 47.4	+10 55		05 23	06 48	85m / OK	00 45 E	"	"	"	"	11 38	-			IIaD	M-S		+5 F=8 ¹⁰ H=40 ¹⁰	
	N6C 1662-18	"	"		06 57	09 42	105m / OK	01 10 W	"	"	"	"	11 85	-	NoA	1 ^s				+3 F=6 ¹⁰ H=55 ¹⁰ OK	
2092	HD 191408A	20 10.0	-36 08	21/22 OCT	23 36 1/2	23 57	30s / sl str	01 05 W	"	3 33	100% / 0.8	120 / 7.0	6 19	K2V			IIaD	M-S	CRd	F=10 ¹⁰ , H=40 ¹⁰ , W=20 ¹⁰ mean 7/4 full. (5)	
	HD 189319	19 57.9	+19 26		00 07	00 08	6 3/4" / OK	01 30 W	"	"	"	"	3 56	A0 III						+3, +1	
	HD 188001	19 51.3	+18 37		00 15	00 14	5 1/2" / OK	01 45 W	"	"	"	"	6 23	G8 III						-1, -3	
	HD 194317	20 23.1	+32 07		00 25	00 36	50s / overexp	01 30 W	"	"	"	"	5 71	K3 III	-	-				-5	
2093	HD 188512	19 54.4	+06 27		00 49	00 49 10	9s / OK	02 15 W	"	3 33	100% / 0.8	120 / 7.0	4 57	G8 IV			IIaD	M-S	CRd	+5 F=10 ¹⁰ NO WIND	
	HD 19269 EAST	20 47.8	+17 46		01 11 1/2	01 31 1/2	20m / sl over	02 05 W	"	"	"	"	4 96	C1, I						+3 CLOD LOC IN ME	
	HD 19269 WEST	"	"		01 35	01 55	20m / sl over	02 27 W	"	"	"	"	" ?	" ?						+1	
	HD 217897	23 03.9	-35 55		02 17 1/2	02 24	6 1/2 m / OK	00 40 W	"	"	"	"	8 80	M2 V						F=8 -2 DEC SLIP AT -1	
	HD 215573	22 48.7	-80 13		02 37	02 37	15s / OK	01 05 W	"	"	"	"	5 18	B6 IV	REX	PP				-4	
2094	HD 562	00 09.0	-25 59		03 05	03 07	2m / OK	00 10 W	2 1/2 CIPAS NE	3 33	100% / 0.8	120 / 7.0	7 78	A5 Vn			IIaD	M-S	CRd	+5 CIPAS IN ME ME MISSING FROM	
	HD 8130	01 19.4	-36 19		03 17 1/2	03 19	1 1/2 m / OK	00 46 E	"	"	"	"	7 53	A1 V						NEAR +3.	
	HD 6688	01 06.3	-24 02		03 24	03 24 1/2	7s / OK	00 18 E	"	"	"	"	6 53	A7 V						FULL MOON +1	
	HD 672A	01 06.7	-24 23		03 40	03 51	1 1/4 m / OK	00 05 W	"	"	"	"	9 79	F0 V						-1	
	HD 5524	00 55.7	-25 25		04 06	04 07	1 1/4 m / OK	00 30 W	"	"	"	"	7 33	A5 V	NoA	1 ^s				-3	
2095	HD 22044	03 31.7	-09 32		04 37	04 37	9s / OK	01 35 E	"	"	"	"	4 62	K2 V			IIaD	M-S	CRd	+5 F=10 ¹⁰ , W=20 ¹⁰ H=40 ¹⁰	
	HD 23585	03 46.0	+23 56		05 11	05 18	7m / OK	01 10 E	"	"	"	"	8 67	F0 V						+3	
	HD 23886	03 48.3	+24 12		05 26 1/2	05 31	4 1/2 m / OK	00 56 E	"	"	"	"	8 15	A5 V						+1	
	HD 23948	03 48.8	+24 18		05 39 1/2	05 41	2 1/2 m / OK	00 45 E	"	"	"	"	7 62	A2 V						-1	
	HD 23873	03 48.2	+24 20		05 51	05 52	1m / over exp.	00 35 E	"	"	"	"	6 56	B9.5 V	NoA	1 ^s				-3 NORTHW CORN OF DDL	
2096	N6C 1662-5	04 47.4	+10 55		06 25	06 36	1 1/4 m / OK	00 40 E	"	"	"	"	9 46	-			IIaD	M-S	CRd	+5	
	N6C 1662-11	"	"		06 42 1/2	07 27 1/2	45m / OK	00 01 W	"	"	"	"	11 01	-						+3	
	N6C 1662-14	"	"		07 35 1/2	08 26 1/2	5m / OK	01 00 W	"	"	"	"	11 14	-						+1	
	N6C 1662-7	"	"		08 24	08 42	13m / OK	01 16 W	"	"	"	"	4 67	-	NoA	1 ^s				-1 F=10 ¹⁰ W=20 ¹⁰ H=40 ¹⁰	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
2097	SAD 246985 FIELD # 2	21 20 1	-51 50	22/23 OCT/80	00:19	00:20	1 1/4" / OK	00:22 W	2 1/2" / hr	3-33	100μ / 0.8	120 / 7.0	~6.9	A0?				IIaD	M-S	CRd	T=12°C, H=40' W=20 mph +5
	SAD 246985 FIELD # 3	"	"		00:28	00:30	1 1/2" / OK	00:30 W	"	"	"	"	~7.2	A3							+3 ACQUA TIME 1m 50s
	SAD 246985 FIELD # 1	"	"		00:34	00:35	1 1/4" / OK	00:38 W					6.9	A0							+1 HAZE IN SW
	SAD 246985 FIELD # 10	21 24.8	-52.42		00:53	01:05	12" / OK	01:05 W					~9.6	F8							-1
	SAD 246985 FIELD # 12	21 24.0	-52 14		01:11	01:19	8" / sl wk	01:20 W					~9.0	-	NeA	1 ^s					-3
2098	HD 22487	21 50.6	-05 40		02:23	02:24	2.6 ^s / 9 ^s	02:20 W					3.73	G2Ib							WIND INCREASING 25 MPH DIFFICULT TO FIND +5, +7, +1
	SK 9	00 57.8	-29 28		02:50	03:00	10" /	0:35 E						(G.V)							+1 20° FROM MERID
	HD 22252	03 32.5	-66 54		03 19	03:20	3/4" /	02:55 E					5.76	B8 V	NeA	1 ^s					-3 poorly trailed
2099	HD 22879	03 57.3	-03 18		03:58	04:00	2" / wave	02:35 E	2" clear full moon	"	"	"	7.23	wk in F				IIaD	"	CRd	+5 W=24 mph.
	HD 25631	04 02.5	-20 11		04:19	04:20	36 ^s / OK	02:20 E					6.29	B2.5 V						NEAR MOON!	+3
	HD 27534	04 20.4	+18 23		04:41	04:43 1/2	2 1/2" / sl over	02:15 E					7.24	F5 V							+1
	HD 27744	04 22.3	+16 44		04:55	04:55 1/2	36 ^s / OK	02 03 E					5.94	F8 III							-1
	HD 30652	04 49.7	+06 55		05:05	05:05	3 ^s / poorly trailed	2:20 E					3.64	F6 V	NeA	1 ^s					-3
2100	HD 36485	05 31 0	-00 19		06:31	06:32	1" / OK	1:35 E					6.87	B2 Vh				IIaD	M-S	CRd	T=12, H=35, W=20 mph +1 DIFFICULT TO FIND
	HD 36395	05 30.5	-03 40		06:46	07:01	15" / wk	01:05 E					9.44	H7 Vp							+1 DIFFICULT TO FIND
	HD 37016	05 34.1	-04 26		07:13 1/2	07:14	24 ^s / OK	00:55 E					5.95	B2.5 V							-1
	HD 37017	05 34.4	-04 31		07:17	07:17 1/2	30 ^s / OK	00:52 E					6.28	B2 Vh	NeA	1 ^s					-3
2101	NCC 1662-4	04 47.4	+10 55		08:00	08:12	12" / OK	00:50 W					9.44	-				IIaD	M-S	CRd	+5
	-9	"	"		08:14 1/2	08:35 1/2	21" / OK	01:10 W					10.07	-							+3 T=10, H=40, W=20 CLOUDS SLOW
2102	SAD 246985 FIELD # 1	21 21.4	-51 42	25/26 OCT/80	00:40	00:42	2" / OK	0:55 W	2-3" some CLOUDS	3-33	100μ / 0.8	120 / 7.0	7.4	-				IIaD	M-S	CRd	+3 T=15°C, H=70' W=20-25 mph.
	FIELD # 2	"	"		00:46	00:47 3/4	10 ^s / OK	1:00 W	~4"	"	"	"	7.3	-							+1
	FIELD # 3	"	"		00:55	01:00	5" / sl wk	1:15 W					~8.5	-							-1
	FIELD # 5	"	"		01:04 3/4	01:20	15" / OK	1:35 W					~9.5	-	NeA	1 ^s					-3
2103	SAD 246985 FIELD # 6	"	"		01:40 1/2	02:10 1/2	30" / OK	2:25 W	CLOUDS OBSERVING RIPPLES STILL SOME CLOUDS	"	"	"	~10.2	-				IIaD	M-S	CRd	+5 SEEING ABOVE!!
	HD 9673	01 34.6	-27 19		04:52 1/2	04:56 1/2	4" / OK	1:00 W	"	"	"	"	8.15	A5?						SEEING CLOSE.	+3 LOST 2h DUE CLOUDS.
	HD 5737	00 58.9	-29 20		05:05	05:05	6 ^s / sl wk	1:45 W					4.15	B8 III?							+1
	HD 4065	00 41.8	-38 32		05:15	05:15 1/2	36 ^s / sl wk	2:10 W					6.02	A0 V							-1 NOT DOL AS SHOWN SAD CHRT.
	HD 6178	01 01.4	-31 39		05:23 1/2	05:24	24 ^s / sl wk	2:00 W					5.60	A2 V	NeA	1 ^s					-3 cloud, again

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC	DATE UT.	UT. EXP		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG #	SP.	COMP		EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP					
2104	SAC 246985 FIELD #4	21 19.9	-51 32	26/27 OCT 80	23:54 1/2	00:11 1/2	12m / OK	0:30W	4" / 1/2" / 1/2"	3.27	100% / 0.8	120 / 170	9.0	K0			IIaD	M-S	CRd	+5 T=15°C, 1P:30W L=11.5M (S) BUITE CLOUDY	
	FIELD #7	21 20.6	-51 54		00:22	00:57	35m / OK	1:17W	"	"	"	"	10.1	G5						+3	
	FIELD #21	21 21.8	-51 16		01:10	01:15	5m / -	1:35W	7" / 1/2"	"	"	"	8.0	F5						+1	WRONG STAR
	FIELD #21	21 22.0	-51 05		01:20	01:25	5m / OK	1:45W	"	"	"	"	8.0	F5						-1	
	FIELD #14	21 20.9	-52 27		01:37 1/2	01:58 1/2	20m / OK	2:15W	"	"	"	"	9.4	K0	NeA	1 ^s				-3	
2105	HD 1999	00 24.4	-37 29		02:31	02:36	5m / OK	0:10E	"	"	"	"	8.19	B9			IIaD	M-S	CRd	+5 cloud rising.	
	HD 71	00 04.3	-21 23		03:48	02:54	6m / OK	0:30W	"	"	"	"	8.33	B9V						+3	MOONRISE HEAVY CLOUD!!
	HD 5618	00 56.8	-39 36		03 04 1/2	03 15	11 1/2" / OK	00.03E	"	"	"	"	9.03	ASV	NeA	1 ^s				+1	T=11:30, WIND CLOUD!!
2106	SAC 246985 FIELD #15	21 19.1	-52 47	27/30 OCT 80	00:08	00:25	17m / OK	0:55W	2" / 1/2"	3.33	100% / 0.8	120 / 170	10.0	-			IIaD	M-S	CRd.	+5 T=10°C, 1P:30W L=10.5M	
	#13	21 20.8	"		00:28	00:39	11" / OK	1:10W	"	"	"	"	9.5	-						+2	
	#19	21 14.4	-51 04		00:47 3/4	00:54 3/4	7" / OK	1:31W	"	"	"	"	9.0	-						-1	
	#16	21 19.6	-52 41		01:01	01:11	10" / OK	1:45W	"	"	"	"	9.4	-	NeA	1 ^s				-3	
2107	SAC 246985 FIELD #8	21 24.9	-51 49		01:30 1/4	01:43 1/2	13" / OK	2:10W	"	"	"	"	9.6	-			IIoD	M-S	CRd	+5	
	#23	21 24.7	-51 10		01 49 1/4	02 04 1/4	15" / OK	2:30W	"	"	"	"	9.6 9.48	-						+3	T=10°C
	HD 225047	00 01.9	-30 16		02:26 1/2	02:30	3 1/2" / OK	0:20W	"	"	"	"	8.48	A0V						1	1D DIFFICULT
	HD 225100	00 02.3	-36 02		02:56 1/2	03 05 1/2	9" / OK	0:55W	3" / 1/2"	"	"	"	9.43	-						-1	
	HD 3999	00 41.2	-31 58		03:14	03:24	10m / OK	0:35W	"	"	"	"	9.51	-	NeA	1 ^s				-3	
2108	HD 8499	01 22.6	-35 24		03:51	04:09	18m / OK	0:38W	"	"	"	"	10.23	-			IIaD	M-S	CRd	+5	
	HD 9027	01 27.5	-32 05		04:16	04:25	9" / OK	0:50W	"	"	"	"	9.48	-						+3	
	HD 7652	01 15.2	-24 00		04:32	04 50	18m / over	1:25W	"	"	"	"	10.18	-						+1	SEEM DARKER THAN 12:10
	HD 27879	05 57.0	-03 15		05 04 1/2	05 14	14m / -	0:50E	"	"	"	"	7.83	F						+1	SEEM DARKER THAN 12:11
	HD 27808	04 22.7	+21 45		05:26	05:29	3m / OK	0:20E	"	"	"	"	7.66	F8V						-3	
2109	NGC 1662-10	04 46.7	+10 58		05:50	06:20	20m / -	0:35E	"	"	"	"	10.44	-			IIaD	M-S	CRd	+5	
	NGC 1662-101	04 48.1	+10 40		06:34	07:34	60m / -	0:40W	"	"	"	"	11.26	-	NeA	1 ^s				+3	T=10°C, 1P:30W NE WIND
2110	SAC 149208	01 46.0	-13 59	04/05 NOV 80	04:00	04:13	40", 140", 4" / -	0:45W	2 1/2" / Curvus	3.33	100% / 1.0	120 / 170	6.8	B9			IIaD	M-S	RG/W/2	+5	T=15°C, H=36" Faint, some stars all over the board on all sides
	SAC 148408	02 27.9	-11 26		04:33	04:48	55, 120, 5" / -	0:35W	"	"	"	"	7.0	F2						+2	1-1-2 Polarization held properly Use 1/2"
2111	SAC 145810	03 09.9	-11 12		05:05	05:20	105, 215, 7" / -	0:25W	"	"	"	"	7.2	G5						+5	2" 3" B
	NGC 1976	05 32.4	-5 25		06:15	06:26	40, 80, 100 / -	0:55E	"	"	"	"	4.4	G5	NeA	1 ^s				-1	NGC 1976
	SAC 132368	05 34.2	-5 28		06:46	07:05	19" / -	0:15E	"	"	"	"	4.4	F	NeA	1 ^s				-1	
	"	"	"	"	07:08	07:19	11" / -	0:00W	"	"	"	"	"	"	"	NeA	1 ^s				-3
"	"	"	"	07:23	07:39	10m / -	0:20W	"	"	"	"	"	"	"	NeA	1 ^s				-5	T=12°C, 1P:30W

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		C.A.H.B. POSN	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2112	AO 18 6618	18 16.9	-24 36	05/06 NOV 80	00 44	00 56	12 ^m /	5:00W	3" / CIV	IT 3-33	100 ^m / 0.8	120 / 7.0	8.9	K7			+5	II K3aD	M-S	WIZ	T=11°C, H=40%
	?	18 16.4	-24 41		01 05	01 27	22 ^m	5:30W			0.6				NeA	1 ^s	+3				In IT eyepiece E. ESN
2113	NGC 7009	21 03.0	-11 28		02 25	02 39	30 ^s 60 / 140 5 ^s	2:40W	2-3"		0.8		12, -5'	PI			+5, 3 2			PGL/WIZ	return nebula
	NGC 1535	04 13.3	-12 48		03 17	03 56	2-78, 1, 16	2:00E					12, -5'	PI			-1, 2, 3 -4				
2114	NGC 1899	05 35.5	-06 45		04 46	05 25	10, 20 ^s , 5	1:50E					1'	PrS	NeA	1 ^s	+5, 4, 3 1				
2115	1982 UT	18 18.4	-24 44	06/07 NOV 80	00 21	00 31	10 ^m / Good slightly strong	4 36W	3"	3-33	100 / 0.8	120 / 7.0	~9	NOVA			+5	II K3aD	M-S	WIZ	T=10°C H=37% low cloud in SW
	"	"	"		00 33	00 53	20 ^m /	4 58W					"	"	NeA	1 ^s	+3				
2116	1982 UT	"	"	09/10 NOV 80	00 28 ¹	01 12 ¹	47 ^m / weak	5 29W	3-4"	DIRECT 3-33	100 / 0.8	120 / 7.0	~9	"	NeA	10 ^s	+10	II K3aD	MWP-2	WIZ	T=9°C H=74% CALBN 30" at 14V TS H50
2117	"	"	"	10/11 NOV 80	00 23	00 32	9 ^m / Good	4 52W	3"	IT 3-33	0.8						+5	IIaD	M-S	WIZ	Moon quite close
2118	"	"	"		00 34	00 48 ¹	14 ¹ / Good	5 09W			1.2				NeA	1 ^s	+3				
2118	"	"	"	11/12 NOV 80	00 30 ¹	00 40 ¹	10 ^m / Good	5 05W	3"								+5			WIZ	T11 H40
	"	"	"		00 42	00 47	5 ^m / slightly weak	5 12W							NeA	1 ^s	+3				
2119	NGC 7059	21 32.4	-00 55		01 20 ¹	01 30 ¹	10 ^m	2 41W						GCL			+5			PGL	
	"	"	"		01 33	01 43	10 ^m	2 54W									+4				
	NGC 253	00 46.6	-25 24		02 31	03 31	60 ^m	1 01W						GAL			+2				Vixen
	NGC 1722	04 52.1	-66 53		05 15 ¹	05 32 ¹	17 ^m	0 36E						PI			-1				
	NGC 1722	"	"		05 37	06 08 ¹		0 00						Capitol	NeA	1 ^s	-2				T12 H39
2120	η Aql	19 51.3	01 02	14/15 NOV 80	00 47	01 07	4 ^m / 60 ^m fine	4 10W	2"	2-85	50 ^m / 0.8	67 / 5.05	8.04	Cepheid	NeA	57 ^s	8, 9, 10	IIaD	M-S	Gu	T15 H35
	S Scu	0 14.4	-32 09	taken with filter	01 38	02 58	8 ^m / blank weak	1 42W	1.5"	"	"	"	8.5	Mira			12			Gu	some cirrus calb ^m spot sens 30 min @ 14V
	V Car	08 28 18	-60 04	with filter	04 04	07 04	12 ^m / weak	2 10E	2"	"	"	"	9.5	Ceph					Gu	blue filter	
	T Cru	12 20.09	-62 10	in	07 30	08 30	60 ^m / weak	4 50E	"	"	"	"	7.5	"					Gu		
3121	1982 UT	18 18.4	-24 44	15/16 NOV 80	00 29.5	00 42.6	13 ^m / 20 ^m weak	5 20W	1.5"	IT 3-33	50 ^m / 0.8	120 / 7	~9	NOVA	NeA	1 ^s	+5	IIaD	M-S	Gu/WIZ	T13 H45 1st HALE MOON spot calb ^m 30 min @ 14V
2122	S Scu	0 14.4	-32 09		01 58	02 23	25 ^m / fine	2 10 W	"	DIRECT 3-33	"	"	8.5	Mira	NeA	10 ^s	7	IIaD	MWP-2 HS	Gu	spot calb ^m 30 min @ 14V
	R Hor	02 53.4	-49 54		03 24	04 54	90 ^m / v. weak	2 00W	2"	"	100 ^m / 0.8	"	10.0	"			9			Gu	Cru program "Mira"
	R Cor	09 31.7	-62 42		06 00	07 30	90 ^m / v. weak	2 06E	"	"	"	"	10.0	"			11			Gu	
	X Cen	11 48.2	-41 39		07 43	08 30	48 ^m / fine	3 10E	"	"	"	"	9.2	"			12			Gu	
2123	HR 506	01 42.5	-53 45	17/18 NOV 80	01 36	01 46	10 ^m / 8 ^m s. streak	00 03W	2"	2-85	50 ^m / 0.8	67 / 5.05	6.3	sg G0	NeA	460 ^s	8, 9	IIaD	M-S	Gu	spot calb ^m 15V for 30 min. T: 9°C RH=59%
	HR 2167	05 59.0	-09 22																		
	HR 1016	03 21.4	-23 38		02 01	02 11	10 ^m / fine	01 10E	"	"	"	"	6.4	G5 II			10			Gu	Wind: 15 mph sky w/ cirrus for 1st hour
	HR 1336	04 14.5	-62 28		02 30	02 37	2 ^m / 3 ^m fine	01 30E	"	"	"	"	4.2	G6 II			11, 12			Gu	

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT EXP		TOTAL CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG	SP.	COMP		EMUL.	DEV.	OBS.	REMARKS		
					BEGIN	END									KIND	EXP						
2123 cont	HR 1776	05 19.2	+02 36	17/18 Nov 20	02 54	03 04	10m/weak	02 10 E	2"	2.85	50μ/1.6	67/5.05	5.8	F5 II	NeA	260 ^s	13	Ilao	M-S	Gu		
	HR 1122	05 33.6	-62 29		03 15	03 21	2m/3m/4m	02 10 E	"	"	"	"	4.2	F8 Ia		14.15	"	"	"	Gu		
	HR 2107	05 59.0	-09 22		03 45	04 00	15m/10m/stack	02 00 E	"	"	"	"	6.7	F2 II		16	"	"	"	Gu		
	HR 2513	06 45.4	-52 12		04 58	05 20	23m/week	01 20 E	"	"	"	"	7.2	G6 Ia b		17	"	"	"	Gu		
	HR 2693	07 02.3	-26 24		set marks		10 marks weak 15 marks	01 35 E	"	"	"	"	2.5	F8 Ia		18.11	"	"	"	Gu		
	HR 3026	07 47.6	-15 59		05 42	06 15	33m/weak	01 30 E	"	"	"	"	7.5	G2 Ia b		20	"	"	"	Gu		
	HR 3045	07 49.3	-24 52		06 22	06 28	2m/3m/line	01 25 E	"	"	"	"	4.6	G3 Ib		21.22	"	"	"	Gu		
	HR 3102	07 56.8	-22 53		06 36	06 42	2m/6m/line	01 10 E	"	"	"	"	4.9	F8 II		23.24	"	"	"	Gu		
	HR 4441	11 31.7	-59 26		06 59	07 14	15m/line stack	04 10 E	"	"	"	"	6.2	sg G0		25	"	"	"	Gu	T=9°C RH=46%	
	T Cru	12 20.1	-62 10		07 23	08 33	7m/line	04 50 E	"	"	"	"	7.6	ceph	NeA	60 ^s	26.27	"	"	"	Gu	Winds 15 mph spec. 30 min @ 16V
2124	HR 215	00 47.30	+24 16	18/19 Nov 20	01 27	01 45	10m/stack	00 00 W	2"	2.65	50μ/1.8	67/5.05	6.4	K1 II	NeA	35 ^s	8	Ilao	M-S	Gu	1st hour spec exposures T=10°C RH=54% wind 10 mph	
	HR 1933	05 33.37	-62 29		02 10	02 22	2m/37m/line	4 00 E	1.5"	"	"	"	4.2	F8 Ia		7,10,11	"	"	"	"	circus!	
	HR 2513	06 45.27	-52 12		02 46	03 38	5.2m/line stack	4 00 E	2"	"	"	"	7.5	G6 Ia b		12	"	"	"	"	interrupt	
	AP Pup	07 57.1	-40 04		05 23	08 23	16m/weak	00 27 E	3-3x marks	"	"	"	8.1	ceph		13	"	"	"	"	interrupt	
2125	η Aql	19 51.25	+00 57	11/20 Nov 20	00 07	00 23	17m/line	04 35 W	2-3"	2.85	50μ/1.8	67/5.05	4.95	ceph	NeA	35 ^s	6.4	Ilao	M-S	Gu	T=10°C w incl. E RH=50% spec. 13 min @ 16V	
	HR 2232	21 31.34	-05 35		00 37	00 45	10m/3m/line	03 10 W	"	"	"	"	3.73	G6 Ib		29,10	"	"	"	"		
	HR 2414	22 05.47	-00 19		00 56	01 07	2m/33m/line	03 00 W	"	"	"	"	3.91	G2 Ib		12,13,14	"	"	"	"	circus in NE E	
	HR 2281	07 30.42	-30 58		02 37	03 17	10m/12m/line	04 00 E	"	"	"	"	5.56	G1 Ib		16,17,18	"	"	"	"	2 quite faint stars	
	HR 2693	07 02.24	-26 24		1 mark		30m/33m/line	03 15 E	"	"	"	"	2.52	F8 Ia		20,21	"	"	"	"	ST unsharp. put	
	HR 2453	06 41.21	+28 11		04 21	05 41	80m/line	01 00 E	"	"	"	"	7.64	G5 Ib		22	"	"	"	"	"	
	R Cru	12 22.25	-61 31		06 34	07 44	70m/stack	04 40 E	"	"	"	"	7.6	ceph	NeA	35 ^s	23	"	"	"	"	
2126	Ru Sgr	19 57.4	-41 54	20/21 Nov 20	01 17	02 40	33m/22m/stack	06 00 W	2"	3.33	100μ/1.6	120/7	9.1	MIRA	NeA	10 ^s	7	Ilao	MWP-2	Gu/NeA	T=10°C wind H=7.65 10 mph spec. 30 min @ 16V circus in N, E, W	
	S Car	10 09	-61 27		05 00	05 25	15m/weak	05 25 E	3"	"	"	"	8.0	"		10	"	"	"	"		
2127	U Car	10 56.9	-59 37		06 09	07 24	5m/weak	04 00 E	2-3-5"	2.85	50μ/1.8	67/5.05	7.3	ceph	NeA	20 ^s	7	Ilao	M-S	Gu	circus!	
	R Mus	12 40.7	-69 17		07 35	08 25	5m/line	05 00 E	4-5"	"	"	"	6.9	ceph		7	"	"	"	"		
2128	W Sgr	18 03.41	-29 35	21/22 Nov 20	00 29.5	00 43.5	16m/line	06 00 W	-3"	2.85	50μ/1.8	67/5.05	5.74	wpl	NeA	20 ^s	6	Ilao	M-S	Gu	T=10°C H=50% wind 10 mph.	
	η Aql	19 51.25	+00 57		00 50	00 58	6m/line	04 30 W	"	"	"	"	5.0	ceph	NeA	30 min @ 16V	7	"	"	"	"	
	S Car	05 33.37	-62 29		01 22	01 36	4m/5m/line	04 30 E	"	"	"	"	4.2	F8 Ia		8,8	"	"	"	"	interrupted exposure	
	HR 210	00 45.12	-22 33		02 07	02 32	28m/weak	00 50 W	2"	"	"	"	6.92	sg G6		10	"	"	"	"	"	
	HR 255	00 53.18	-08 47		03 22	03 48	25m/week	02 20 W	"	"	"	"	7.09	sg G3		11	"	"	"	"	"	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		EMUL	DEV.	OBS.	REMARKS	
					BEGIN	END									KIND	EXP.					
2128	HR 506	01 41.29	-53 45	21/22 Nov 80	03 58	04 11	13m / fine	01 50 W	2"	2.85	50μ / .8	67 / 5.05	6.41	scy Gp			12	IIa0	M-S	Gu	
unit	γ Gem	07 02.8	+20 36		04 27	04 31	4m / fine	03 10 E	"	"	"	"	4.3	ceph			13	"	"	"	
	HR 2473	06 42 56	+25 04		04 40	05 00	5m / fine 5.450k 60m	02 30 E	"	"	"	"	4.5	G8 Ib			14,15,16	"	"	"	
	S Mus	12 11 36	-70 02		06 13	07 13	60m / fine	05 30 E	"	"	"	"	7.16	ceph			17	"	"	"	
	R Mus	12 40 43	-69 17		07 25	07 58	38m / strong	05 20 E	"	"	"	"	6.7	ceph			18	"	"	"	
2129	1982 UT	18 18.4	-24 44	23/23 Nov 80	00 30	00 45	15m / fine	05 50 W	1.2"	3.33	100μ / .6	120 / 7.0	~9	NOVA	NeA	~1 ^s	+5	IIaD	M-S	Gu	wrong star image tube
2130	S Psc A	22 03	-28 09		01 48.5	02 18	30m / strong	03 45 W	"	"	100μ / .8	"	10.2	MIRA			+5	IIaD	M-S	Gu	Crw pgm.
	R Phe	23 55	-50 54		03 17	03 42	25m / strong	03 15 W	"	"	"	"	10.1	"			+4	"	"	"	T=13°C H=40%
	R Hox	02 53	-49 58		04 07	04 42	35m / weak	01 10 W	"	"	"	"	10.5	"			+3	"	"	"	winds ~10 mph
	W Pup	07 45	-42 09		05 07	05 40	33m / fine	02 35 E	"	"	"	"	10.3	"	NeA	~1 ^s	+2	"	"	"	
2131	l Car	09 45	-62 25		07 16.5	07 32	6m / fine	02 45 E	2"	2.85	50μ / .8	67 / 5.05	5.3	ceph	NeA	20 ^s	7.9	IIa0	M-S	Gu	
	U Car	10 57	-59 37		07 46	08 34	48m / weak	03 00 E	"	"	"	"	7.4	"	spect. 30 min @ 16V		11	"	"	"	
2132	nAgl	19 51	+00 57	23/24 Nov 80	00 38	00 58	4m / fine	04 35 W	2"	2.85	50μ / .8	67 / 5.05	4.5	eph	NeA	20 ^s	7.8,9	IIa0	M-S	Gu	T=13 H=37%
	HR 215	00 47	+24 16		01 14	01 28	14m / fine	00 10 W	"	"	"	"	6.2	K1 II			10	"	"	"	wind ~10 mph
	B Dor	05 33	-62 29		02 47	02 50	3m / fine	03 10 E	"	"	"	"	4.2	ceph			11	"	"	"	spot 30 min @ 16V
	HR 2693	07 08	-26 24		1 guide	t Revil	a bit weak	03 40 E	"	"	"	"	2.5	F8 Ia			12	"	"	"	
	HR 3291	08 23	-26 21		04 11	04 26	15m / fine	04 30 E	"	"	"	"	6.3	F2 Ib			13	"	"	"	
	HR 3445	08 40	-46 37		04 34	04 43	3m / fine	04 30 E	"	"	"	"	4.6	F2 Ia			14,15	"	"	"	
	HR 3496	08 47	-46 09		04 53	05 06	13m / fine	04 00 E	"	"	"	"	6.3	F2 Iab			16,7	"	"	"	
	HR 3334	09 08	-43 26		05 18	05 21	3m / fine	04 15 E	"	"	"	"	4.0	K5 Ib			18	"	"	"	
2133	Ru Sgr	19 57	-41 54	24/25 Nov 80	00 26	00 36	70m / fine	04 15 W	2"	3.33	100μ / .8	120 / 7	9.2	MIRA	NeA	10 ^s	7	IIa0	MWP-2	Gu	T=13° H=35%
	S Inel	20 55	-54 24		01 47	03 17	90m / fine	06 00 W	"	"	"	"	9.4	"	"	"	9	"	"	"	wind ~20 mph
2134a)	l Car	09 44	-62 25		04 51	05 05	14m / fine	05 00 E	~4"	2.85	50μ / .8	67 / 5.05	5.9	ceph	NeA	20 ^s	7	IIa0	M-S	Gu	wind ~30 mph to 35 mph spot 30 min @ 16V
2134b)	U Car	10 57	-59 37		06 16	07 46	90m / fine	03 30 E	2"	"	"	"	~8	"	"	"		"	"	"	
	S Cru	12 53	-58 19		07 57	08 35	38m / fine	04 40 E	"	"	"	"	~7.2	"			9	"	"	"	
2135	RT Sgr	20 16	-39 10	25/26 Nov 80	00 39	01 39	60m / fine	04 00 W	~1"	3.33	100μ / .8	120 / 7	9.0	MIRA	NeA	10 ^s	8	IIa0	MWP-2	Gu	T=14 H=35%
2136	ER Car	11 09	-58 43		06 22	07 17	55m / fine	04 00 E	"	2.85	50μ / .8	67 / 5.05	7.6	ceph	NeA	20 ^s	7	IIa0	M-S	Gu	wind: 0.1 mph spot 30 min @ 16V
	HR 4511	11 43	-62 29		07 22	07 32	10m / fine	04 30 E	"	"	"	"	5.81	G8 Ia			9	"	"	"	
	R Cru	12 22	-61 31		07 37	08 12	35m / fine	04 30 E	"	"	"	"	7.2	ceph			10	"	"	"	
	S Mus	12 11	-70 02		08 17	08 40	23m / fine	03 50 E	"	"	"	"	6.9	ceph	NeA	20 ^s	12	"	"	"	

✓ GOOD
✓ EXCELLENT

✓
CORRECT

NUMBER	OBJECT	R.A. 1980	DEC. 1980	DATE U.T. 1980	U.T. EXP/ST		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG ✓	SP.	COMP		GMB Pos'n	EMUL	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
2141	S SCL	0 ^h 14 ^m .4	-32°09'	DEC 30	1:48 3:40	2:24 4:16	83 ^m /36 ^m	WRONG STAR	1" CLEAR	3.33	100/0.8	120/7.0	8.0	M3e-M8e			7	IIa-O	MWP-2	Crw	H=60%, T=12°C WIND=10
✓	"	"	"	"	2:29 4:21	3:59 5:57	132 ^m /90 ^m	5 h 37 m W	"	"	"	"	<8.5	"			8	"	"	"	"
SL STRONG	✓ R CAE	4 ^h 39 ^m .8	-38°16'	"	4:14 6:06	5:45 7:37	91 ^m /91 ^m	2 ^h 57 ^m W					✓8.0	M6e			10				H=47%
✓	S PIC	5 ^h 10 ^m .5	-48°32'	"	6:00 7:53	6:32 8:24	30 ^m /32 ^m	3 ^h 14 ^m W					✓7.0?	M7e-M8e			12				
✓	W POP	7 ^h 45 ^m .3	-42°09'	"	6:45 8:37	7:58 9:51	78 ^m /78 ^m	2 ^h 06 ^m W					✓8.4	M3e	NeA 10 ⁵	14					H=50%, T=12°C SPOT CALIBRATION
2142	R PHE	23 ^h 55 ^m .5	-49°54'	DEC 31	1:54 3:49	3:30 5:25	115 ^m /96 ^m	QUALITY sl wr	2" CLEAR	3.33	100/0.8	120/7.0	8.4	M3e	NeA 10 ⁵	9	IIa-O	MWP-2	Crw	H=60%, T=13°C	
	S CAR	10 ^h 08 ^m .7	-61°27'	"	3:50 5:45	5:28 7:23	29 ^m /48 ^m	sl wr					✓8.5	K7e-M7e	NeA 10 ⁵	11				CRS/BC ILL H=48%, T=13°C	
2143	O CET	2 ^h 18 ^m .3	-3°04'	JAN 1/81	1:24 3:22	1:54 3:52	27 ^m /30 ^m	sl STRONG	1/2" CLEAR	3.33	100/0.8	120/7.0	7.0	M5e-M9e	NeA 10 ⁵	9	IIa-O	MWP-2	Crw	H=54%, T=13°C	
	V HOR	3 ^h 03 ^m .0	-59°00'	"	2:06 4:03	2:42 4:40	33 ^m /36 ^m	WEAK					>7.2	M5III			11				
	119 TAU	5 ^h 31 ^m .1	+18°35'	"	2:56 4:55	3:11 5:10	48 ^m /59 ^m	WEAK IN BWE, TOO STRONG AT 4:00					✓4.7	M2Iab-III			13,14				
	δ LEP	6 ^h 04 ^m .4	-24°11'	"	3:19 5:18	3:51 5:50	29 ^m /32 ^m	VERY GOOD					✓7.2	M6III			16				
	W VEL	10 ^h 14 ^m .5	-54°23'	"	4:05 6:04	5:57 7:56	144 ^m /112 ^m	EXCELLENT					<8.9?	M8III	NeA 10 ⁵	20					
	RS CEN	11 ^h 19 ^m .6	-61°46'	"	6:07 8:06	7:42 9:41	147 ^m /95 ^m	TOO WEAK, ESPECIALLY IN BWE					>8.8?	M1be-M7e			22				
	W CEN	11 ^h 54 ^m .1	-59°09'	"	7:46 9:46	8:49 10:49	127 ^m /63 ^m	TOO WEAK					✓8.6	M3e-M8IIIe			24				H=58%, T=12°C WIND=6-15
2144	O CET	2 ^h 18 ^m .3	-3°04'	JAN 2/81	1:04 3:06	1:29 3:31	30 ^m /25 ^m	VERY GOOD	1" CLEAR	3.33	100/0.8	120/7.0	6.5?	M5e-M9e	NeA 10 ⁵	9	IIa-O	MWP-2	Crw	H=48%, T=14°C WIND=4 mph	
	V HOR	3 ^h 03 ^m .0	-59°00'	"	2:06 4:09	3:10 5:13	60 ^m /64 ^m	WEAK (SPECTROGRAPH MOVED)					>7.8	M5III			11				
	DG ERI	4 ^h 19 ^m .8	-16°52'	"	3:33 5:36	4:10 6:13	23 ^m /27 ^m (?)	GOOD WR IN H+K					✓7.0	M4III			13				10-min break due to stomach attack
	X CEN	11 ^h 48 ^m .2	-41°39'	"	4:21 6:24	6:02 8:05	134 ^m /101 ^m	VERY GOOD			100/0.6	120/7.0	✓8.8	M5e-M6e	NeA 10 ⁵	17					
	R HYA	13 ^h 28 ^m .6	-23°11'	"	6:24 8:27	7:54 9:57	126 ^m /90 ^m	VERY GOOD					✓8.6	M6e-M8e(S)			19				
	R NOR	15 ^h 34 ^m .6	-49°27'	"	8:01 10:04	8:59 11:02	108 ^m /58 ^m	SL WEAK					✓8.3?	M3e-M6III	NeA 10 ⁵	21					H=50%, T=12°C
2145	30 PSC	0 ^h 00 ^m .9	-6°07'	JAN 3/81	1:10 3:16	1:23 3:29	3 ^m /2,3,6 ^m	3 W 6 V for H+K	1" CLEAR	3.33	100/0.8	120/7.0	✓4.4	M3III	NeA 10 ⁵	9-11	IIa-O	MWP-2	Crw	H=50%, T=14°C	
	BS 46	0 ^h 13 ^m .4	-7°53'	"	1:30 3:36	3:40 5:46	8 ^m /10,2 ^m	SL STRONG GOOD for H+K					✓5.4	M3III			13				
	O CET	2 ^h 18 ^m .3	-3°04'	"	1:45 3:52	2:01 4:09	15 ^m /16 ^m	EXCELLENT					✓6.2?	M5e-M9e			15				* BETWEEN 6.2+6.5
	57 PSC	0 ^h 45 ^m .5	+15°22'	"	2:07 4:13	2:18 4:24	12 ^m /11 ^m	GOOD					✓5.4	M4III			17				
	45 RZ ARI	2 ^h 54 ^m .7	+18°16'	"	2:23 4:29	2:40 4:46	16 ^m /17 ^m	EXCELLENT					✓5.9	M6III			19				
	Z POP	7 ^h 31 ^m .6	-20°37'	"	2:56 5:03	4:27 6:34	143 ^m /91 ^m	TOO WEAK			100/0.6	120/7.0	>9.0?	M7e-M9e			21				
	RS CEN	11 ^h 19 ^m .6	-61°46'	"	4:44 6:51	6:14 8:21	150 ^m /90 ^m	SL WEAK					✓8.7?	M1be-M7e			23				
	W CEN	11 ^h 54 ^m .1	-59°09'	"	6:22 8:30	7:49 9:57	86 ^m /87 ^m	GOOD					✓8.4	M3e-M8IIIe			24				
	T NOR	15 ^h 42 ^m .6	-54°56'	"	7:58 10:05	8:58 11:05	132 ^m /60 ^m	TOO WEAK					✓8.5?	M3e-M6	NeA 10 ⁵	26					H=45%, T=13°C WIND=1-10

NUMBER	OBJECT	R.A. 1980	DEC. 1980	DATE U.T. 1981	U.T. EXP. / ST		TOTAL / CORR.	HA END QUALITY	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		GAMB. POS'N	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2151	R PsA	22 ^h 16 ^m .9	-29°42'	JAN 6	1:06 3:24	1:38 3:56	26 ^m /32 ^m	O.K. STRONG	1" CLEAR	3.37	100/0.8	120/7.0	9.0	M4II-M5III			-5	TTA-D	M-5	CRW	T=13°C H=57% 1 ^m SPOT CALIBRATION	
	R IND	22 ^h 34 ^m .7	-67°24'		1:45 4:03	2:37 4:55	43 ^m /52 ^m	✓ wk in HAK					9.5	M2e-M4III			-4	(SPOT CALIBRATED)				
	45 RZ ARI	2 ^h 54 ^m .7	+18°16'		3:02 5:20	3:04 5:22	80 ^s /85 ^s	✓					5.9	M6III			-3				USING CHART FOR EXPOSURE TIMES	
	O CET	2 ^h 18 ^m .3	-3°04'		3:09 5:27	3:11 5:29	96 ^s /100 ^s	✓✓					6.2	M5e-M7e			-2					
	δ LEP	6 ^h 04 ^m .4	-24°11'		3:16 5:35	3:20 5:39	125 ^s /185 ^s	✓					6.6	M6III			-1					
	R HOR	2 ^h 53 ^m .2	-49°58'		3:33 5:52	4:28 6:47	40 ^m /55 ^m	VERY GOOD SL STRONG					<9.5?	M5-M7e	NeA 15		+1					
	R CAE	4 ^h 39 ^m .8	-38°16'		4:35 6:53	4:50 7:08	15 ^m /15 ^m	✓✓					8.3	M6e			+2					
	S PIC	5 ^h 10 ^m .5	-48°32'		5:00 7:19	5:17 7:36	41 ^m /5 ^m , 10 ^m	✓ HAK ✓ 10 ^m					>7.0?	M7e-M8III-II			+3				USING COMPUTER PROGRAM (REVISED) FOR EXPOSURE TIMES	
	W POP	7 ^h 45 ^m .3	-42°09'		5:26 7:45	5:41 8:00	15 ^m /15 ^m	SL ✓ STRONG					8.4	M3e	NeA 15		+5					
2152	W VEL	10 ^h 14 ^m .5	-54°23'		6:10 8:29	6:40 8:59	29 ^m /30 ^m	✓ SL STRONG					8.9	M8IIIe			-5					
	X CEN	11 ^h 48 ^m .2	-41°39'		6:45 9:04	7:07 9:26	20 ^m /22 ^m	✓✓					8.8	M5e-M6e			-3					
	W CEN	11 ^h 54 ^m .1	-59°09'		7:12 9:31	7:26 9:45	14 ^m /14 ^m	✓ SL STRONG					>8.4	M3e-M5III	NeA 15		-1					
	R HYA	13 ^h 28 ^m .6	-23°11'		7:31 9:50	7:45 10:04	12 ^m /14 ^m	✓ SL STRONG					8.0	M6e-M8e(S)			+1					
	RT CEN	13 ^h 46 ^m .9	-36°46'		7:51 10:10	8:57 11:16	69 ^m /66 ^m	✓✓					10.1	M6IIIe	NeA 15		+3				T=13°C H=57% 1 ^m SPOT CALIBRATION	
2153	T GRU	22 ^h 24 ^m .4	-37°41'	JAN 7	1:18 3:40	2:43 5:05	87 ^m /85 ^m	TOO WEAK	1" CLEAR	3.37	100/0.8	120/7.0	10.6	M1Ie-M2IIe			-5	TTA-D	M-5	CRW	T=16°C H=50% 1 ^m SPOT CALIBRATION SOME CLOUD!	
	S SCL	0 ^h 14 ^m .4	-32°09'		2:52 5:14	3:13 5:35	18 ^m /21 ^m	✓ SL WK HAK					8.5	M3e-M8e			-4	(SPOT CALIBRATED)				
	45 RZ ARI	2 ^h 54 ^m .7	+18°16'		3:24 5:46	3:26 5:48	96 ^s /110 ^s	✓					5.9	M6III			-3					
	O CET	2 ^h 18 ^m .3	-3°04'		3:31 5:53	3:33 5:55	120 ^s /140 ^s	✓✓					6.2	M5e-M7e			-2					
	δ LEP	6 ^h 04 ^m .4	-24°11'		3:39 6:01	3:42 6:04	150 ^s /185 ^s	✓					6.6	M6III			-1					
	V HOR	3 ^h 03 ^m .0	-59°00'		3:52 6:14	4:08 6:30	13 ^m /16 ^m	✓ SL STRONG					8.3	M5III	NeA 15		+1					
	S CAP	10 ^h 08 ^m .7	-61°27'		4:55 7:18	5:15 7:38	19 ^m /20 ^m	✓ SL STRONG					8.5	K7e-M4e			+2				SEARCHING FOR GROUP OF STARS	
	56 VY LEO	10 ^h 55 ^m .0	+6°17'		5:34 7:56	5:36 7:58	100 ^s /120 ^s	VERY GOOD					6.0	M5.5III			+3					
	BK VIR	12 ^h 29 ^m .3	+4°31'		5:47 8:08	6:05 8:28	18 ^m /18 ^m	VERY GOOD					8.5	M7III			+5				FIRST ATTEMPT ABORTED	
2154	XZ CEN	12 ^h 23 ^m .2	-35°31'		6:37 9:00	7:59 10:22	87 ^m /82 ^m	✓ >M5!					>10.5?	M5*			-5				*definitely later	
	SU VIR	13 ^h 13 ^m .0	-2°43'		8:04 10:27	8:14 10:37	8 ^m /10 ^{1/2} ^m	VERY GOOD					7.5?	M7III			-3					
	EV VIR	14 ^h 12 ^m .0	-13°46'		8:18 10:41	8:23 10:46	5 ^m /5 ^{1/2} ^m	SL WK					7.2	M4-4.5II-III			-1					
	RX BOO	14 ^h 23 ^m .3	+25°47'		8:27 10:50	8:42 11:05	15 ^m /14 ^{1/2} ^m	wk					>8.0?	M7.5-8	NeA 15		+1					
	RR SCO	16 ^h 55 ^m .4	-30°33'		8:46 11:09	9:01 11:24	14 ^{1/2} ^m /15 ^m	VERY GOOD SL STRONG					8.0?	M6II-III-M8IIIe	NeA 15		+3					T=14°C H=52% 1 ^m SPOT CALIBRATION

NUMBER	OBJECT	R.A. 1980	DEC. 1980	DATE UT 1981	ST/ U.T. EXP		TOTAL/CORR.	HAND QUALITY	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG	SP.	COMP		EMUL	DEV	OBS	REMARKS					
					BEGIN	END									KIND	EXP.									
2155	U Tuc	0 ^h 50 ^m .6	-7°06'	APR 8	3:22	3:38							100/0.8	170/17.0	4.5 [?]	M3e-M5e	-5	III-D	M-S	CW	T=15°C H=617% 5.5 [?] (SPOT CALIBRATION) STRIPPED DUE TO VFO FAILURE				
	R PHE	23 ^h 55 ^m .5	-49°54'		3:44	4:03	40 ^m /16 ^m	ABRATED DUE TO DUST	1 ¹ / ₂ CLEAR	3-33				100/0.8	170/17.0	8.7 [?]	M3e	-4	(SPOT CALIBRATED)						
	R Psa	22 ^h 16 ^m .9	-29°42'		4:22	4:32	16 ^m /19 ^m	WR HUK						100/0.8	170/17.0	9.0 [?]	M4e-M5e	-3							
	S SCL	0 ^h 14 ^m .4	-32°09'		4:58	5:24	37 ^m /10 ^m	APPROX DUE TO VFO FAILURE?							100/0.8	170/17.0	8.5	M3e-M3a	-2				1/2" LOST DUE TO VFO		
	R HAR	2 ^h 58 ^m .2	-49°58'		5:29	6:07	18 ^m /26 ^m								100/0.8	170/17.0	9.2	M5-M7III-III	-1						
	45 RZ ARI	2 ^h 54 ^m .7	+18°16'		3:02	3:40	35 ^m /38 ^m	SL-STRONG							100/0.8	170/17.0	5.9	M6III	NeA 15	+1				CLOUD!	
	O CET	2 ^h 18 ^m .3	-3°04'		6:23	6:27	100 ^m /150 ^m								100/0.8	170/17.0	6.2	M5e-M9e	+2					CLOUD LOW IN W	
	S LEP	6 ^h 04 ^m .4	-24°11'		6:33	6:37	110 ^m /240 ^m								100/0.8	170/17.0	6.6	M6III	+3					SEEING ~2"	
	DG ERI	4 ^h 19 ^m .8	-16°52'		6:43	6:46	160 ^m /210 ^m		2 ¹ / ₂ CLEAR							100/0.8	170/17.0	7.0	M8III	+4					
	TI LEO	9 ^h 59 ^m .1	+8°08'		7:12	7:13	4 ^m /6 ^m	WR HUK							100/0.8	170/17.0	4.7	M2IIIe-NeA 15	+5					3 GUIDE TRAILS	
2156	RV PUP	6 ^h 41 ^m .9	-42°21'	APR 8	7:35	7:52	15 ^m /17 ^m	WR HUK						100/0.8	170/17.0	8.5	M1e	-5							
	W PUP	7 ^h 45 ^m .3	-42°09'		7:58	8:16	16 ^m /18 ^m	WR HUK							100/0.8	170/17.0	8.6 [?]	M3e	-4					CLOUD!	
	Z PUP	7 ^h 31 ^m .6	-20°27'		8:23	8:59	38 ^m /35 ^m	SL-STRONG							100/0.8	170/17.0	9.5	M4e-M9e	-3						
	W VEL	10 ^h 14 ^m .5	-5°23'		9:04	9:29	26 ^m /25 ^m								100/0.8	170/17.0	9.0	M8IIIe	-2						
	RS CEN	11 ^h 14 ^m .6	-61°46'		9:34	10:01	23 ^m /27 ^m								100/0.8	170/17.0	8.7	M1e-M4e	-1						
	W CEN	11 ^h 54 ^m .1	-59°08'		10:05	10:25	10 ^m /20 ^m								100/0.8	170/17.0	8.5	M3e-M4IIIe	NeA 15	+1					
	A VIR	12 ^h 53 ^m .4	-9°26'		10:38	10:39	23 ^m /30 ^m	WR HUK							100/0.8	170/17.0	4.8	M3III	+2					2 GUIDE TRAILS	
	RX BOO	14 ^h 23 ^m .3	+25°47'		8:19	8:42	21 ^m /24 ^m								100/0.8	170/17.0	8.5 [?]	M7-5-8	+3						
	T NOR	15 ^h 42 ^m .6	-59°56'		11:16	9:12	19 ^m /24 ^m								100/0.8	170/17.0	8.7	M3e-M4e	NeA 15	+4					T=12°C H=73%
	45 RZ ARI	2 ^h 54 ^m .7	+18°16'		3:35	3:50	12 ^m /12 ^m								100/0.8	170/17.0	5.9	M6III	NeA 10 ⁵	15.9	III-O	MWP-2	CW	T=13°C H=55% NOTE: IN SCANTIMETER 5.5 SCALA WITH PG PIS!	
2157	O CET	2 ^h 18 ^m .3	-3°04'	APR 9	1:07	1:19	15 ^m /15 ^m							100/0.8	170/17.0	6.2	M5e-M9e	11				(SPOT CALIBRATED)			
	57 PSC	0 ^h 45 ^m .5	+15°22'		4:17	4:17	9 ^m /11 ^m	MALCO							100/0.8	170/17.0	5.4	M4IIIe	13				RESTARTED AT 1:58 FINISHED AT 2:09		
	30 PSC	0 ^h 00 ^m .9	-6°07'		4:45	4:45	4 ^m /4 ^m	SL-STRONG							100/0.8	170/17.0	4.4	M3III	17				FINISHED AT 2:17 FINISHED AT 2:21		
	X ERI	3 ^h 57 ^m .1	-13°34'		5:27	5:00	42 ^m /50 ^m								100/0.8	170/17.0	3.2	M4III	19						
	RV PUP	6 ^h 41 ^m .9	-42°21'		5:27	6:42	9 ^m /9 ^m	WR HUK							100/0.8	170/17.0	8.5 [?]	M1e	21						
2158	AS PUP	8 ^h 09 ^m .0	-38°07'	APR 9	6:47	8:27	94 ^m /100 ^m							100/0.8	170/17.0	8.1 [?]	M7e	NeA 10 ⁵	23				TELD START 2 ^m CALIBRATION 3 ^m 5 ^m (2)		
	V ANT	10 ^h 20 ^m .3	-34°42'		8:54	10:29	100 ^m /90 ^m								100/0.8	170/17.0	8.0 [?]	M7IIIe	NeA 10 ⁵	8				@ 10 VOLTS.	
	56 VY LEO	10 ^h 55 ^m .0	+6°17'		6:23	7:53	100 ^m /90 ^m								100/0.8	170/17.0	6.0	M15.5III	12						
2158	SW VIR	13 ^h 13 ^m .0	-2°43'	APR 9	10:58	11:10	51 ^m /50 ^m							100/0.8	170/17.0	7.5	M7III	NeA 10 ⁵	14				CLOUDS AT DAL N! T=12°C H=55%		
					8:18	4:08									100/0.8	170/17.0									

NUMBER	OBJECT	R.A. 1981	DEC. 1981	DATE U.T.	U.T. EXP.		√-OK TOTAL / CORR. 0-0000 U-UNCOR	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG. B	SP.	COMP.		GALB. POS	EMUL	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
2159	NGC 1647 #28	04 ^h 44 ^m 8	+19° 01'	14 JAN 1981	02:21 1/2	02:36 1/2	15 ^m / ✓	00:42 W	1-2"	3.33	100/0.8	120/7.0	9.8	-			-5	IIaD	M-S	CRd +PB	T=14, H=60 W=0
	LS 647 LS 656	07 38.2	-33° 26'	"	03:03	05:48	165 ^m / ✓	01:00 W	"	"	"	"	12.6	OB			-3				
	LS 787	07 47.1	-30° 23'	"	06:02	07:47	105 ^m / ✓	2:52 W	"	"	"	"	12.1	OB-			-1				
	LS 783	07 51	-28° 19'	"	07:52	07:54 3/4	2 ^m 45 ^s / ✓	07:00 W	"	"	"	"	8.1	OB			+1				NOT
2160	NGC 1647 #30	04 ^h 44 ^m 6	+19° 01'	15/1/81	01:01	01:22	21 ^m / ✓	0:28 E	~2"	3.33	100/0.8	120/7.0	10.3	-			-5	IIaD	M-S	CRd +PB	T=13, H=62, W=0
	LS 682	07 ^h 41.0	-34° 44.7	"	01:55	02:42	46 1/2 ^m / 0	02:04 E	"	3.33	100/0.8	120/7.0	11.2	OB			-3	IIaD	M-S	CR +PB	
	LS 690	7 ^h 40 ^m 5	-34° 39'	"	2:49	03:49	60 ^m / 0	0:52 E	"	"	"	"	11.5	OB+			-1	"	"	"	
	LS 903	7 58.4	-28° 35'	"	3:57	7:57	4 ^m / ✓	2:45 W	"	"	"	"	13.0	OB			+1	"	"	"	Dry 1/2 moon.
	LS 736	7 ^h 44.4 ^m	-30° 40'	"	8:02	8:09	7 ^m / ✓	3:19 W	"	3.33	"	"	9.1	OB			+3	"	"	"	no moon
	LS 784	7 ^h 47.1	-30° 05'	"	8:13	8:19	6 ^m / ✓	3:27 W	"	3.33	"	"	8.9	OB			+5	"	"	"	"
2161	LS 648	7 ^h 38.4	-33 39	16 JAN 1981	2:10	4:58	168 ^m / ✓	0:19 W	2-3"	3.33	100/0.8	120/7.0	12.6	OB			-5	IIaD	M-S	CRd +PB	H=60, T=12°C ERRATIC SCENING
	LS 656	7 ^h 39 ^m 8	-33 28	"	5:04 1/2	5:28.5	24 ^m / ✓	1:09 W	"	"	"	"	10.6	OB			-3	"	"	"	
	LS 832	7 ^h 51.9	-26 27	"	5:43	8:13	150 ^m / ✓	3:28 W	"	"	"	"	12.6	OB			-1	"	"	"	
	LS 742	7 ^h 45.0	-26 26.4	"	8:19	8:25.5	6 1/2 ^m / ✓	3:40 W	"	"	"	"	9.1	OB			+1	"	"	"	NET 1 ^s
2162	LS 695	7 ^h 47.2	-34° 16'	17 JAN 1981	1:31	2:41	70 ^m / ✓	2:19 E	~2"	3.33	100/0.8	120/7.0	11.7	OB+			-5	IIaD	M-S	CRd +PB	H=55 T=13 3/4 ☾
	LS 568	7 ^h 34.2	-32° 31'	"	2:51.9	4:07	75 ^m / ✓	0:25 E	"	"	"	"	11.8	OB			-3	"	"	"	"
	LS 745	7 ^h 45 ^m 0	-29° 06'	"	4:13	7:13	3 ^m / ✓	2:31 W	"	"	"	"	12.7	OB-			-1	"	"	"	"
	LS 870	7 ^h 55.1	-28° 34'	"	7:20.5	7:44.5	24 ^m / ✓	2:57 W	"	"	"	"	10.6	OB+			+1	"	"	"	MOON SETTING
	LS 944	8 ^h 02.9	-26° 59'	"	7:55	8:10	15 ^m / ✓	3:10 W	"	"	"	"	10.1	OB-			+3	"	"	"	"
2163	LS 532	7 ^h 32.3	-32° 31'	18 JAN 1981	1:12	1:35	23 ^m / ✓	2:58 E	2-3"	3.33	100/0.8	120/7.0	10.6	OB+			-5	IIaD	M-S	CRd +PB	H=48% T=13°C MOON!
	LS 535	7 32.4	-33° 25'	"	1:44	2:15	31 ^m / ✓	2:11 E	"	"	"	"	10.9	OB-			-3	"	"	"	very faint companion to west of 535
	LS 681	7 40.4	-33° 47'	"	3 10 1/2	3:27 1/2	17 ^m / ✓	1:07 E	"	"	"	"	10.3	OB			-1	"	"	"	MOON!
	LS 619	7 40.9	-32° 35'	"	3:30	3:50	20 ^m / ✓	0:43 E	"	"	"	"	10.4	OB-			+1	"	"	"	"
	LS 675	7 40.5	-32° 26'	"	4:10.5	4:12.3	110 ^s / ✓	0:18 E	"	"	"	"	7.7	OB+			+3	"	"	"	"
2164	LS 628	7 38.6	-32° 29'	18 JAN 1981	4 30 5	4:53 5	23 ^m / ✓	0:12 W	2-3"	3.33	100/0.8	120/7.0	10.6	OB-			-5	IIaD	M-S	CRd +PB	MOON!
	LS 891	7 57.2	-28° 32'	"	5:01	5:56	55 ^m / ✓	1:05 W	"	"	"	"	11.5	OB			-3	"	"	"	"
	LS 888	7 56.6	-29° 07'	"	6:00	6:37	37 ^m / ✓	1:48 W	"	"	"	"	11.1	OB			-1	"	"	"	"
	LS 823	7 59.0	-28 19'	"	6:44	7:09	25 ^m / ✓	2:25 W	"	"	"	"	10.6	OB			+1	"	"	"	"
	LS 909	7 58.6	-28° 46'	"	7:16 1/2	7:41 1/2	25 ^m / ✓	2:49 W	"	"	"	"	10.6	OB+			+3	"	"	"	"
	LS 872	7 55.2	-28 29	"	7:45	8:02	17 ^m / ✓	3:07 W	"	"	"	"	10.3	OB-			+5	"	"	"	"

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R.A. 1951	DEC. 1951	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG R	SP.	COMP		EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP				
2165	SAO 198248	7 ^h 38 ^m 6	-34° 47'	19 JAN 1981	1:29:05	1:41:48	2 ^m 45 ^s /	2:56 E	2-3"	3-33	100% B	120 / 70	8.2	88	-5	IIaD	M-5	CR1 + PB	M-486 T-13C W610 MOON!	
	SAO 198084	7 ^h 30 ^m 7	-35° 33'	"	1:44:15	1:50:45	6 ^m /	2:30 E	"	"	"	"	9.2	B9	-3	"	"	"	"	
	SAO 197414	7 ^h 25 ^m 5	-35° 33'	"	1:56:41	2:03:00	6 ^m /	2:12 E	"	"	"	"	9.2	A0	-1	"	"	"	"	
	SAO 197488	7 ^h 25 ^m 2	-35° 33'	"	2:05:20	2:14:20	9 ^m /	2:02 E	"	"	"	"	9.6	A3	+1	"	"	"	"	
	LS 701	7 ^h 42 ^m 7	-29° 16'	"	2:19:00	2:42:00	23 ^m /	1:50 E	"	"	"	"	10.6	OB	+3	"	"	"	"	
	LS 469	7 ^h 24 ^m 4	-32° 18'	"	2:52:20	2:58:50	6 ^m /	1:18 E	"	"	"	"	9.2	OB-	+5	"	"	"	"	
2166	LS 594	7 ^h 36 ^m 0	-34° 24'	19 JAN 1981	03:19:20	3:39	20 ^m /	0.47 E	2-3"	3-33	100% B	120 / 70	10.4	OB-	-5	IIaD	M-5	CR1 + PB	MOON	
	SAO 190221	7 ^h 37 ^m 6	-34° 57'	"	3:44:15	3:45:29	34 ^s /	0.42 E	"	"	"	"	7.6	A0	-3	"	"	"	"	
	LS 640	7 ^h 31 ^m 1	-32° 30'	"	3:49:00	3:50:20	11 ^m /	0.38 E	"	"	"	"	7.7	OB+	-1	"	"	"	double exp.	
	LS 710	7 ^h 43 ^m 5	-28° 41'	"	3:59:00	4:33	34 ^m /	0.00 W	"	"	"	"	11.0	OB-	-3	"	"	"	"	
	LS 716	7 ^h 43 ^m 8	-26° 54'	"	4:35:30	4:42:30	7 ^m /	0:09 W	"	"	"	"	9.3	OB+	+3	"	"	"	"	
	LS 827	7 ^h 51 ^m 6	-26° 22'	"	4:45:10	4:53:40	8 ^m /	0:12 W	"	"	"	"	9.5	OB	+5	"	"	"	"	
2167	LS 809	7 ^h 48 ^m 7	-26° 17'	19 JAN 1981	5:12	5:24	12 ^m /	0.47 W	2-3"	3-33	100% B	120 / 70	9.9	OB-	-5	IIaD	M-5	CR1 + PB	SAO 179610 MOON!	
	LS 846	7 ^h 50 ^m 9	-26° 11'	"	5:29	5:40	11 ^m /	0.58 W	"	"	"	"	9.8	OB+	-3	"	"	"	"	
	LS 778	7 ^h 46 ^m 3	-27° 51'	"	5:54	6:09	15 ^m /	1:33 W	"	"	"	"	10.1	B2 Ib6	-1	"	"	"	"	
	LS 821	7 ^h 50 ^m 5	-26° 08'	"	6:12:30	6:32	20 ^m /	1:53 W	"	"	"	"	10.4	OB	+3	"	"	"	NOTE POSITION " 41m Comp " N W	
	LS 840	7 ^h 52 ^m 2	-27° 04'	"	6:35:30	6:50:30	15 ^m /	2:08 W	"	"	"	"	10.1	OB-	+1	"	"	"	"	
	LS 876	7 ^h 55 ^m 7	-29° 22'	"	6:54:45	7:14:45	20 ^m /	2:30 W	"	"	"	"	10.4	OB+	+5	"	"	"	"	
2168	LS 914	7 ^h 59 ^m 0	-28° 11'	19 JAN 1981	7:27	7:48	21 ^m /	3:00 W	"	"	"	"	10.5	OB-	-5	"	"	"	"	
	LS 884	7 ^h 57 ^m 2	-27° 47'	"	7:50	7:54:45	4 ^m 45 ^s /	3:08 W	"	"	"	"	8.9	A0 II	-3	"	"	"	"	
	SMO 174656	7 ^h 50 ^m 1	-26° 06'	"	7:57:00	8:00:30	3 ^m 30 ^s /	3:21 W	"	"	"	"	8.6	B9	-1	"	"	"	Print Comparison neering	
	SMO 174594	7 ^h 48 ^m 1	-26° 34'	"	8:03:30	8:08:00	4 ^m 30 ^s /	3:30 W	"	"	"	"	8.8	A0	+1	"	"	"	"	
	174635	7 ^h 49 ^m 1	-26° 31'	"	8:10:00	8:13:40	3 ^m 30 ^s /	3:35 W	"	"	"	"	8.6	B8	+3	"	"	"	"	
2169	NOC 2287 #204	6 46 6	-20° 58'	20 JAN 1981	1:16	1:23:20	7 ^m /	2:10 E	2"	3-33	100% B	120 / 70	9.01	-	= HD 49334	-5	IIaD	M-5	CR1 + PB	T-13 H-55, 10.0 MY FULL MOON!
	#115	"	"	"	01:35:15	1:55:00	19 ^m /	1:36 E	"	"	"	"	10.41	-	-3	"	"	"	"	
	#25	"	"	"	1:59	2:11:30	12 ^m 5 ^s /	1:20 E	"	"	"	"	9.94	-	-1	"	"	"	" double exp. (1 shot)	
	#30	"	"	"	2:18:10	2:25	8 ^m /	1:06 E	"	"	"	"	9.24	-	= HD 49185	+1	"	"	"	
	#44	"	"	"	2:28 1/2	2:31	2 1/2 ^m /	1:00 E	"	"	"	"	8.34	-	= HD 49151	+3	"	"	"	MOON!
	#120	"	"	"	2:33:30	2:46:30	13 ^m /	0:45 1:00 E	"	"	"	"	9.93	-	+5	"	"	"	"	
2170	#107	"	"	"	"	"	6 ^m /	0:56 E	"	"	"	"	8.81	-	"	"	"	"	"	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL/CORR.	H.A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. β	SP.	COMP.		CALIB. POS	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2170	NGC 2287 #107	6 ^h 46.6	-20° 58'	20 JAN 1981	3:17:10	3:23:10	6 ^m / over	0:09 E	2"	3:33	100/0.8	120/70	8.87	-	=HD 49212	-5	IIaD	M-S	CRd + PB	FULL MOON	
	#21	"	"	"	3:27:30	3:32:30	5 ^m / over	0:01 W	"	"	"	"	8.40	-		-3	"	"	"	"	
	#2	"	"	"	3:38	3:43	5 ^m / ✓	0:12 W	"	"	"	"	8.87	-	=HD 49106	-1	"	"	"	"	
	#5	"	"	"	3:45:30	3:54	8 1/2 / ✓	0:23 W	"	"	"	"	9.51	-		+1	"	"	"	"	
	#14	"	"	"	3:56:45	4:16 45	20 ^m / ✓	0:46 W	"	"	"	"	10.72	-		+3	"	"	"	"	
	#51	"	"	"	4:20:15	4:27:15	7 ^m / ✓	0:57 W	"	"	"	"	9:32	-		+5	"	"	"	"	
2171	NGC 2287 #92	6 ^h 46 ^m .9	-20° 58'	20 JAN 1981	4:39	4:45	6 ^m / ✓	1:10 W	2"	3:33	100/0.8	120/70	8.88	-		-5	IIaD	M-S	"	FULL MOON, FT. COMP TO S.	
	#109	"	"	"	4:50	4:56:30	6 1/2 ^m / ✓	1:25 W	"	"	"	"	9.16	-		-3	"	"	"	FULL MOON!	
	#97	"	"	"	5:09:15	5:12:15	7 ^m / ✓	1:42 W	"	"	"	"	8.94	-		-1	"	"	"	"	
	#70	"	"	"	5:14:45	5:20:45	6 ^m / ✓	1:50 W	"	"	"	"	9.06	-		+1	"	"	"	"	
	#103	"	"	"	5:23:50	5:25:38	2 ^m 48" / ✓	1:55 W	"	"	"	"	8:34	-	=HD 49023	+3	"	"	"	"	
	#61	"	"	"	5:31	5:35 1/2	4 1/2 ^m / ✓	2:05 W	"	"	"	"	8.91	-		+5	"	"	"	"	
2172	LS 919	7 ^h 59 ^m .2	-26° 01'	20 JAN 1981	05:56:45	6:11:45	15 ^m / ✓	1:27 W	2"	3:33	100/0.8	120/70	10.1	OB-		-5	IIaD	M-S	CRd + PB	FULL MOON	
	LS 938	8 ^h 02 ^m .4	-30° 57'	"	6:23:45	6:38:45	18 ^m / ✓	2:14 W	2"	3:33	100/0.8	120/70	10.3	OB-		-3	IIaD	M-S	CRd + PB	FULL MOON!	
	LS 938	8 02.1	-30° 57'	"	6:43	7:01	18 ^m / ✓	2:14 W	2"	3:33	100/0.8	120/70	10.3	OB-		-3	IIaD	M-S	CRd + PB	FULL MOON!	
	LS 919	7 59.2	-26° 01'	"	7:07:15	7:25:15	18 ^m / ✓	2:34 W	"	"	"	"	10.1	OB-		-1	"	"	"	"	
	LS 942	8 02.7	-28° 36'	"	7:33:40	7:51:40	18 ^m / ✓	2:57 W	"	"	"	"	10.3	OB-		+1	"	"	"	"	
	LS 948	8 ^h 03.4	-27° 26'	"	7:58:30	8:10:30	12 ^m / ✓	3:22 W	"	"	"	"	9.9	OB		+3	"	"	"	"	
2173	NGC 2289 #117	6 ^h 47.4	-20° 44'	20/21 Jan 81	1:12:30	1:24	11 1/2 ^m / ✓	2:07 E	<2"	3:33	100/0.8	120/70	9.86	-		-5	IIaD	M-S	CRd + PB	T=60°, H=49% FULL MOON DEC GUIDED	
	#117	"	"	"	1:50:45	1:58:45	8 ^m / ✓	1:31 E	"	"	"	"	8.44	-		-3	"	"	"	"	
	#116	"	"	"	2:03:00	2:04:45	100 ^s / ✓	1:23 E	"	"	"	"	7.74	-		-1	"	"	"	Dec Guided.	
	#6	"	"	"	2:14:45	2:28:15	13 1/2 ^m / ✓	1:01 E	"	"	"	"	10.0	-		+1	"	"	"	FULL MOON	
	#102	"	"	"	2:32:45	2:34:45	2 ^m / ✓	0:55 E	"	"	"	"	7.86	-		+3	"	"	"	"	
	#121	"	"	"	2:38:00	2:39:00	18 ^m / ✓	0:32 E	"	"	"	"	10.31	-		+5	"	"	"	"	
2174	#106	"	"	"	3:11:00	3:17:30	6.5 ^m / ✓	0:12 E	"	"	"	"	9.2	-		-5	"	"	"	"	
	#93	"	"	"	3:20:40	3:26:30	6 1/2 ^m / ✓	0:02 E	"	"	"	"	9.67	-		-3	"	"	"	"	
	#96	"	"	"	3:31:00	3:56:00	25 ^m / ✓	0:28 W	"	"	"	"	10.55	-		-1	"	"	"	"	
	#94	"	"	"	3:58:30	4:23:30	25 ^m / ✓	1:02 W	"	"	"	"	10.53	-		+1	"	"	"	"	
	#201	"	"	"	4:26:15	4:44:15	18 ^m / ✓	1:15 W	"	"	"	"	10.31	-		+3	"	"	"	"	
	#75	"	"	"	4:50:30	4:55	4 1/2 ^m / ✓	1:26 W	"	"	"	"	8.69	-		+5	"	"	"	"	

NUMBER	OBJECT	R.A. 1961	DEC. 1961	DATE UT.	U.T. EXP.		TOTAL/CORR	H A END	SEE/TRANS	CAM. FOCUS	SLIT	GRATING /TILT	MAG B	SP.	COMP		EMUL	DEV	OBS.	REMARKS
					BEGIN	END									KIND	EXP.				
2175	NGC 2287 #54	6 47.4	-20° 44'	Jan 21	5:09:30	5:12:15	2"45"/	2.145	3"33	2"	100% B	120°/20	8.27	-	-5	IIaD	M-S	CR & PB	Full Moon	
	#85	"	"	"	5:19:40	5:36:40	17" /	2.08W	"	"	"	"	10.25	-	-3	"	"	"	"	
	#108	"	"	"	5:40:25	5:44:55	4 1/2" /	2:17W	"	"	"	"	8.76	-	-1	"	"	"	"	
	#101	"	"	"	5:47:40	5:50:25	3"45" /	2:22W	"	"	"	"	8.27	-	+1	"	"	"	"	
LS 948	8° 03.4	-27° 26'	"	6:35:41	6:47:41	12" /	2.09W	"	"	"	"	9.9	OB	+3	"	"	"	"	"	
	-S 780	7 46.8	-26 38	"	6:54:30	7:07:30	13" /	2.40W	"	"	"	10.0	OB	+5	"	"	"	"	"	
2176	LC 701	7 42.7	-29° 17'	"	7:26:15	7:51:15	25" /	3:28 W	< 2"	3-33	100% B	120°/20	10.6	OB	-5	IIaD	M-S	CR & PB	FULL MOON	
	HD 75149	8 45.9	-45 51	"	8 24	8 24:15	155" /	2:54 W	"	"	"	5.71	B4Ia	-3	"	"	"	"	" 51 out of focus.	
2177	NGC 2287 #105	6 44.8	-20° 46'	22 Jan 1961	1:20:20	1:26:20	6" /	1:56E	2-3"	3-33	100% B	120°/20	9.06	-	-5	IIaD	M-S	CR & PB	MOONRISE	
	#39	"	"	"	1:34:00	1 54 00	90" /	1:31 E	"	"	"	"	10.38	-	-3	"	"	"	"	
	#49	"	"	"	1:53:30	2:20:30	21" /	1:03E	"	"	"	"	10.47	-	-1	"	"	"	H=75% T=120°C W/O	
	#20	"	"	"	2:23:30	2:31:15	7"45" /	0:52E	"	"	"	"	9.39	-	+1	"	"	"	"	
	#63	"	"	"	2:34:40	2:43:10	8 1/2" /	0:37E	"	"	"	"	9.52	-	+3	"	"	"	H=74% STAR TO E JUST WITHIN SLIT	
	#87	"	"	"	2:47:17	2:55:47	8 1/2" /	0:27E	"	"	"	"	9.25	-	+5	"	"	"	"	
2178	#50	"	"	"	3:16:30	3:31:00	150" /	0:07E	~3"	3-33	100% B	120°/20	10.12	-	-5	IIaD	M-S	CR & PB	"	
	#3	"	"	"	3:40:33		18 1/2" /	0:20W	"	"	"	"	10.37	-	-3	"	"	"	H=76% T=120°C W/O	
	#3	6 44.8	-20° 46'	"	3:58	4:16:30	18 1/2" /	0:54W	~3"	3-33	100% B	120°/20	10.33	-	-3	IIaD	M-S	CR & PB	MOON	
LS 688	7 41.7	-30° 20'	"	4:23:20	4:46:20	23" /	0:28W	"	"	"	"	10.6	OB-	-1	"	"	"	"		
LS 874	7 55.4	-28° 25'	"	5:05:20	5:28:20	31" /	1:08W	"	"	"	"	10.9	OB	+1	"	"	"	H=76%		
LS 872	7 55.2	-28 49	"	5:43:00	6:01:00	18" /	1:30W	"	"	"	"	10.3	OB-	+3	"	"	"	H=74% T=10°C		
2179	LS 918	7 59.0	-30 28	23 Jan 1961	1:08:33	2:08:33	60" /	2:25E	"	"	"	"	11.5	OB+	-5	MIS-ID!!	"	"	Family companion to South West H=75% H=74% T=12	
	LS 925	8 00.2	-29 02	"	2:15:00	3:08:00	54" /	1:25E	"	"	"	"	11.5	OB	-3	"	"	"	"	
LS 896	7 57.6	-26 31	"	3:26:00	4:16:00	50" /	0:15E	"	"	"	"	11.4	OB	-1	"	"	"	3/4 C		
LS 825	7 51.3	-27 37	"	4:22:05	5:07:00	40" /	0 46W	"	"	"	"	11.3	OB-	+1	"	"	"	H=80% B		
LS 864	7 54.8	-27 54	"	5:14 40	5 59.40	45" /	1:30W	"	"	"	"	11.3	OB-	+3	"	"	"	H=52% T=120°C		
LS 920	8 00.4	-28 47 04	"	6:07:45	8:03:45	105" /	1:30W	"	"	"	"	12.2	OB	+5	"	"	"	"		
2180	NGC 2287 #78	6 46.1	-20 45	23 Jan 1961	1:12:30	1:44:30	22" /	1:30E	~3"	3-33	100% B	120°/20	10.90	-	-5	IIaD	M-S	CR & PB	H=64, T=13, cloud over 10 E	
	LS 890	7 57.2	-29 03	"	1:56:15	5:36:30	220" /	1:10W	"	"	"	"	13.0	OB	-3	"	"	"	some nearby clouds	
	LS 859	7 54.5	-27 41	"	6:01:30	6:46:00	24" /	2:11W	"	"	"	"	11.0	OB-	-1	"	"	"	"	

NUMBER	OBJECT	R.A. 1981	DEC. 1981	DATE U.T.	U.T. EXP. / ST		TOTAL / CORR.	HA. END QUALITY	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. δ	SP.	COMP.		CALIB. Pos	EMUL.	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2180	LS 919	7 52.2	-26 01	JAN 24	6:51:30	7:11:30	20"/	2:53 W	3"/clouds	3.33	100/0.80	120/7.0	10.1	OB			+1	IIaD	M-S	PR + CRd	Heavy cloud.	
2181	LS 871	7 55.1	-28 33	24/25 JAN 81	01:00:00	6:00:00	300"/	1:40 W	~3"	3.33	100/0.8	120/7.0	13.2	OB			-5	IIaD	M-S	PR + CRd	clear 152 11:20	
	LS 799	7 47.9	-30 41	"	06:08:50	8:28:00	170"/	4:17 W	<3"	"	"	"	12.3	OB ⁺			-3	"	"	"	Clear with moon	
2182	LS 749	7 45.2	-29 30	25/26 JAN 81	01:10:00	4:40:00	180"/	0.03 W	~3"	3.33	100/0.8	120/7.0	12.7	OB ^T			-5	IIaD	M-S	"		
	LS 858	7 54.4 4:28:40	-28 12	"	4:28:40	7:18:40	170"/	3 05 W	" some HAZE	"	"	"	12.7	OB ^T			-3	"	"	"		
	LS 847	7 52.8	-28 41	"	7:26	8:11	45"/	3 57 W	"	"	"	"	11.2	OB	NeA	1 ^s	-1	"	"	"	1/2 d	
2183	45 RZARI	2 ^h 54. ^m 7	+18°16'	JAN 27	1:26 5:07	1:40 5:22	13 ^m /14 ^m	✓✓	1"/CLEAR	3.33	100/0.8	120/7.0	5.9	M6 III	NeA	10 ⁵	9	IIa-0	MWP-2	CRW	H=63% T=14°C	
2183	DG ERI	4 ^h 19. ^m 8	-16°52'	JAN 27	1:50 5:31	2:23 6:05	30 ^m /33 ^m	WEAK					WRANG B-V=1.8	7.0	M4 III			11				
	R HOR	2 ^h 53. ^m 2	-49°58'		2:45 6:26	4:24 8:00	93 ^m /99 ^m	EXCELLENT						<7.6	M5-M7e(II-III)			13				
	S PIC	5 ^h 10. ^m 5	-48°32'		4:36 8:18	5:37 9:19	58 ^m /61 ^m	✓✓						✓7.2?	M7e-M8e(III-II)			15				
	S CAR	10 ^h 08. ^m 7	-61°27'		5:53 9:35	6:12 9:54	20 ^m /19 ^m	SL WEAK					WRANG B-V?	>6.7?	K7e-M7e			17				
	V ANT	10 ^h 20. ^m 3	-39°42'		6:23 10:05	7:43 11:20	75 ^m /80 ^m	GOOD			100/0.6			✓8.3?	M7 IIIe			19				
	R HYA	13 ^h 28. ^m 3	-23°11'		7:54 11:36	8:54 12:37	56 ^m /60 ^m	EXCELLENT			100/0.8			✓7.4	M6e-M8e(S)			21				
	Sx VY LEO	10 ^h 55. ^m 0	+6°17'		9:02 12:45	9:17 13:02	13 ^m /15 ^m	✓✓						✓6.0	M5.5 III NeA	10 ⁵	23					H=56% T=12°C
2184	O CET	2 ^h 18. ^m 3	-3°04'	JAN 28	1:11 4:56	1:56 5:41	41 ^m /45 ^m	✓✓	1"/CLEAR	3-36	100/0.8	120/7.0	7.2?	M5e-M7e	NeA	10 ⁵	9	IIa-0	MWP-2	CRW	H=55% T=15°C	
	DG ERI	4 ^h 19. ^m 8	-16°52'		2:01 5:46	3:02 6:48	54 ^m /61 ^m	✓ GOOD					B-V =1.8	7.2	M4 III			11				
	T ERI	3 ^h 54. ^m 4	-24°05'		3:09 6:55	4:51 8:37	180 ^m /102 ^m	VERY GOOD			100/0.6			✓8.5?	M3e-M5e			13				
	S CAR	10 ^h 08. ^m 7	-61°27'		5:15 9:01	5:58 9:42	40 ^m /41 ^m	✓✓ HAZ perfect			100/0.8		B-V =1.7	7.0	K7e-M7e			15				SPOT CALIBRATION
	UL OCT	13 ^h 22. ^m 0	-84°07'		6:48 10:35	8:11 11:57	83 ^m /83 ^m	SL WEAK			100/0.6		B-V =1.3	8.5?	M7e-M8e(III-II)			19				
	T NOR	15 ^h 42. ^m 6	-54°56'		8:17 12:03	9:21 13:07	62 ^m /64 ^m	GOOD						✓8.0	M3e-M6 NeA	10 ⁵	24					H=61% T=13°C
2185	R CAE	4 ^h 39. ^m 8	-38°16'	JAN 29	0:57 4:46	2:49 6:38	111 ^m /112 ^m	✓✓	1"/CLEAR	3-36	100/0.8	120/7.0	8.3?	M6e	NeA	10 ⁵	9	IIa-0	MWP-2	CRW	H=61% T=14°C	
	T COL	5 ^h 18. ^m 6	-33°44'		2:55 6:44	4:25 8:15	88 ^m /90 ^m	GOOD						✓8.5	M7e-M6			11				
	TI LEO	9 ^h 59. ^m 1	+8°08'		4:40 8:29	4:45 8:34	5 ^m /5 ^m	✓ SL W/ HAZ			100/0.8		B-V =1.7	4.7	M2 IIIab			13				
	BK VIR	12 ^h 29. ^m 3	+4°31'		4:58 8:47	—	67 ^m /	CANCELLED			100/0.6			7.9?	M7 III			15				Too INACCESSIBLE!
	† VIR	12 ^h 53. ^m 2	-9°26'		5:09 8:59	5:15 9:05	6 ^m /6 ^m	GOOD SL W/ HAZ			100/0.8		B-V =1.7	4.8	M3 III			15				
	W VIR	11 ^h 37. ^m 5	+8°14'		5:23 9:13	5:32 9:22	8 ^m /8 ^m	✓ SL W/ HAZ					B-V =1.6	5.5	M4-4.5 III			17				
	SW VIR	13 ^h 13. ^m 0	-2°43'		5:49 9:39	6:59 10:49	68 ^m /70 ^m	VERY GOOD LATE STRONG			100/0.6			✓7.9?	M7 III			19				
	R NOR	15 ^h 34. ^m 6	-49°27'		7:06 10:57	8:26 12:17	118 ^m /80 ^m	TOO WEAK						>8.3?	M3e-M4e			21				
	RS SCO	16 ^h 54. ^m 2	-45°04'		8:30 12:21	9:23 13:14	59 ^m /53 ^m	SL WEAK						>8.0	M5e-M8e NeA	10 ⁵	23					T=14°C H=68% WIND =17-2 mph

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	U.T. EXP. / ST		TOTAL / CORR.	H-EMD QUALITY	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		EMUL	DEV.	OBS	REMARKS		
					BEGIN	END									KIND	EXP						
2186	45 RZ ARI	2 ^h 57 ^m .7	+18°16'	1981 JAN 30	1:00	1:02	84 ^m /90 ^s	✓	1" / CLEAR	F 3.36	100 / 0.8	120 / 7.0	5.9	M III	NeA	1 ^s	-5	III-D	M-S	CRW	T=15°C H=64.90 2.1m @ 14 V 3.5m @ 10 V SPOT CALIBRATED	
	O CET	2 ^h 18 ^m .3	-3°04'		1:09	1:14	46 ^m /54 ^s	✓					7.2	M5e-M9e			-4				(SPOT CALIBRATED)	
	DG ERI	4 ^h 19 ^m .8	-16°52'		1:22	1:27	5 1/2 ^m /54 ^s	✓					7.2	M4 III			-3					
	V HOR	3 ^h 03 ^m .0	-59°00'		1:35	1:44	8 1/2 ^m /18 1/2 ^s	✓					>8.0 ^s	M5 III			-2					
	S LEP	6 ^h 04 ^m .4	-24°11'		1:53	1:55	125 ^m /125 ^s	WEAK *					>6.5 ^s	M6 III	NeA	1 ^s	-1					
	R HOR	2 ^h 53 ^m .2	-49°58'		2:14	2:20	6 ^m /16 ^m	sl string *					<7.2	M5-M7e(II-III)			+1					
	T ERI	3 ^h 54 ^m .4	-24°05'		2:28	2:44	13 ^m /14 ^m	✓					✓8.5	M2e-M5e			+2					
	R CAE	4 ^h 39 ^m .8	-38°16'		2:48	3:04	15 ^m /16 ^m	✓					✓8.3	M6e			+3					
	S PIC	5 ^h 10 ^m .5	-48°32'		3:12	3:11	5 1/2 ^m /5 1/2 ^m	✓					✓7.2	M7e-M8e(III-II)			+4					
	T COL	5 ^h 18 ^m .6	-33°44'		3:25	3:44	15 ^m /16 ^m	✓					✓8.6	M7e-M6	NeA	1 ^s	+5					
2187	Z PUP	7 ^h 31 ^m .6	-20°37'		4:16	5:02	43 ^m /46 ^m	sl string *					✓9.8	M7e-M8e			-5					
	R CAR	9 ^h 31 ^m .7	-62°42'		5:22	5:45	21 1/2 ^m /23 ^m	✓				✓9.0	M7e-M8e			-3						
	S CAR	10 ^h 08 ^m .7	-61°27'		5:49	5:53	4 ^m /14 ^m	sl string *				<7.0	K2-M7e			-1						
	W VEL	10 ^h 14 ^m .5	-54°23'		5:56	6:21	33 ^m /33 ^m	✓				✓9.3	M5 III			+1						
	X CEN	11 ^h 48 ^m .2	-41°39'		6:41	7:01	21 ^m /20 ^m	sl wire				>9.0	M5e-M6e			+3						
	W CEN	11 ^h 54 ^m .1	-59°09'		7:05	7:29	23 ^m /24 ^m	sl wire				>9.0	M2e-M7 III	NeA	1 ^s	+5						
	2188	45 RZ ARI	2 ^h 57 ^m .7	+18°16'	1981 FEB 1	0:52	0:54	84 ^m /110 ^s	5/6 TRANS string	1" / CLEAR	F 3.36	100 / 0.8	120 / 7.0	7.4	M6 III			-5	III-D	M-S	CRW	T=14°C H=64.82 T=14°C H=61.90 2.1m @ 14 V 3.5m @ 10 V - SPOT CALIBRATED
		O CET	2 ^h 18 ^m .3	-3°04'		1:01	1:06	46 ^m /54 ^s	✓				7.2	M5e-M9e			-4					(SPOT CALIBRATED)
		DG ERI	4 ^h 19 ^m .8	-16°52'		1:18	1:24	5 1/2 ^m /16 2/3 ^s	sl string				7.2	M4 III			-3					
		V HOR	3 ^h 03 ^m .0	-59°00'		1:34	1:45	8 1/2 ^m /11 1/4 ^s	sl wire				>8.0	M5 III			-2					
S LEP		6 ^h 04 ^m .4	-24°11'		1:53	2:00	5 1/4 ^m /4 2/3 ^s	TRANS ✓				>7.0	M6 III	NeA	1 ^s	-1					THIS PIPE IS SLIGHTLY OUT OF FOCUS!	
R HOR		2 ^h 53 ^m .2	-49°58'		2:11	2:16	5 ^m /15 ^m	✓ sl string				<7.0	M5-M7e(II-III)			+1						
Z PUP		7 ^h 31 ^m .6	-20°37'		2:24	3:17	52 ^m /53 ^m	SPECTRUM DISPLACEMENT *				✓10.0	M7e-M9e			+2						
RV PUP		6 ^h 41 ^m .9	-42°21'		3:24	4:17	46 ^m /53 ^m	WEAK at H&K				>9.5 ^s	M1e			+3						
AS PUP		8 ^h 09 ^m .0	-38°07'		4:25	4:59	3 1/2 ^m /34 ^m	sl string				<9.3	M7e			+4						
S CAR		10 ^h 08 ^m .7	-61°27'		5:06	5:09	3 ^m /13 1/4 ^m	✓				✓6.8	K2-M7e	NeA	1 ^s	+5						
2189	V ANT	10 ^h 20 ^m .3	-31°42'		5:38	5:55	16 ^m /17 ^m	✓				✓8.5 ^s	M7 III			-5						
	RS CEN	11 ^h 19 ^m .6	-61°46'		6:05	7:06	59 ^m /61 ^m	sl wire H&K				>9.7	M11e-M9e			-3						
	U OCT	13 ^h 22 ^m .0	-84°07'		7:18	7:36	16 ^m /18 ^m	sl wire H&K				>8.5	M7e-M6(III-III)	NeA	1 ^s	-1						Changed incl: V=9.7, B-V=1.8?
R HYA	13 ^h 23 ^m .6	-28°11'		7:48	7:53	5 1/4 ^m /5 1/4 ^m	sl string				<7.2	M6e-M8e(S)			+1							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP. / ST		TOTAL / CORR.	SLIT END QUALITY	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		GATH. Pas W	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2189	RT CEN	13h 46m.9	-36° 46'	FEB 1	8:02 12:04	8:44 12:46	40m/42m	sl weak	1" CLEAR	3-36	100/0.8	120/7.0	9.5	M6 III			+2	TTA-D	M-5	CRW	T=13°C H=68%
	T NOR	15h 42m.6	-57° 56'		8:49 12:51	8:58 12:59	9m/9m	✓					8.0	M3e-M6			+3				
	RS SCO	16h 54m.2	-45° 04'		9:03 13:05	9:16 13:18	11m/13m	sl strong					8.2	M5e-M8e	NeA 15		+4				T=13°C H=64%
2190	45 RZ ARI	2h 57m.7	+18° 16'	FEB 2	1:08 5:13	1:10 5:15	84 ⁵ /90 ⁵	5 STRAINS	2" CLEAR	3-36	100/0.8	120/7.0	5.9	M6 III			-5	TTA-D	M-5	CRW	T=15°C H=60% 4" @ 10V
	O CET	2h 18m.3	-3° 04'		1:17 5:22	1:22 5:27	4 1/2 / 5 1/4	18 STRAINS					7.2	M5e-M9e			-4	(SPOT CALIBRATED)			
	DG ERI	4h 19m.8	-16° 52'		1:31 5:36	1:38 5:43	4m/7m	ADD 0.6m still sl weak					7.2	M4 III			-3		DG ERI		V=7.2 B-V=1.7 +0.4m V=7.6 B-V=1.7
	V HOR	3h 03m.0	-59° 00'		1:46 5:51	2:01 6:06	10 1/2 / 15 1/2	ADD 0.8m still strong					8.2	M5 III			-2		V HOR		V=8.1 B-V=1.5 +0.4m V=8.5 B-V=1.5
	δ LEP	6h 04m.4	-24° 11'		2:10 6:15	2:15 6:20	3 1/2 / 5 1/4	ADD 0.3m still					7.0	M6 III	NeA 15		-1		δ LEP		V=7.1 B-V=1.5 +0.4m V=7.5 B-V=1.5 V=6.3 B-V=1.9
	R HOR	2h 53m.2	-49° 58'		2:24 6:29	2:35 6:40	3 1/2 / 5 3/4	5" STRAINS * 4" sl strong					6.6	M5-M7e (II-III)			+1				
	ζ PUP	7h 31m.6	-20° 37'		2:44 6:49	3:38 7:43	52m/54m	✓					10.0	M4e-M9e			+3				
	RV PUP	6h 41m.9	-42° 21'		3:46 7:51	4:56 9:01	40m/70m	ADD 0.6m still sl weak					9.7	M1e			+4		RV PUP		V=9.7 B-V=1.7 +0.4m V=10.0 B-V=1.7
	AS PUP	8h 09m.0	-38° 07'		5:01 9:07	5:22 9:28	21m/21m	✓					9.0	M7e	NeA 15		+5				
2191	RS CEN	11h 19m.6	-61° 46'		5:47 9:53	7:13 11:19	60m/87m	ADD 0.4m still sl weak	1" CLEAR				9.7	M1e-M4e			-5		RS CEN		V=9.7 B-V=1.9 +0.4m V=10.0 B-V=2.0
	U OCT	13h 22m.0	-84° 07'		7:27 11:32	7:52 11:57	25m/25m	bit streaky					9.0	M4e-M6 (II-III)			-3				
	R HYA	13h 22m.0	-23° 11'		8:00 12:06	8:03 12:09	3m/2 3/4 m	sl strong *					6.6	M6e-M8e (5)	NeA 15		-1				V=6.3 B-V=1.7
	R NOR	15h 34m.6	-49° 27'		8:09 12:15	8:57 12:43	27m/28m	sl weak					9.0	M3e-M6 III			+1				
	RR SCO	16h 55m.4	-30° 33'		8:43 12:50	9:03 13:10	18m/20m	sl * strong					8.5	M6 II-III -M8 IIIe			+3				V=8.2 B-V=1.5
	RS SCO	16h 54m.2	-45° 04'		9:12 13:18	9:21 13:27	9m/9m	✓					8.0	M5e-M8e	NeA 15		+5				T=15°C H=38%
2192	S SCL	0h 14m.4	-32° 09'	FEB 3	0:57 5:03	1:59 6:08	52m/65m	sl weak *	1" CLEAR	3-36	100/0.8	120/7.0	9.7	M3e-M8e			-5	TTA-D	M-5	CRW	T=15°C H=61%
	O CET	2h 18m.3	-3° 04'		2:16 6:25	2:21 6:30	5 1/4 / 5 1/2	sl weak					7.2	M5e-M9e			-4	(SPOT CALIBRATED)			
	45 RZ ARI	2h 57m.7	+18° 16'		2:31 6:40	2:33 6:42	2m/2m	sl weak					5.9	M6 III			-3				4" @ 10V WEAK DUE TO INVERSION HAZE
	DG ERI	4h 19m.8	-16° 52'		2:40 6:49	2:47 6:56	7m/7m	ADD 0.7m sl weak					7.2	M4 III			-2				
	δ LEP	6h 04m.4	-24° 11'		2:56 7:05	3:01 7:10	5m/5m	ADD 0.4m still					9.1	M6 III	NeA 15		-1				
	U TOC	0h 56m.6	-75° 06'		3:11 7:20	3:54 8:03	35m/43 1/2 m	ADD 0.7m still					8.7	M3e-M5e			+1				
	R HOR	2h 53m.2	-49° 58'		4:01 8:13	4:07 8:16	3m/3m	✓					6.3	M5-M7e (II-III)			+2				
	R CHA	8h 22m.3	-76° 18'		4:27 8:37	5:01 9:11	30m/34m	WEAK *					9.3	M6e-M7e			+3		R CHA		V=9.8 B-V=1.5
	X CEN	11h 48m.2	-4° 39'		5:14 9:24	5:41 9:51	28m/27m	✓					9.3	M5e-M6e			+4				
	W CEN	11h 54m.1	-59° 09'		5:46 9:56	6:16 10:26	28m/30m	sl weak					9.1	M3e-M8 (IIIe)	NeA 15		+5				
2193	XZ CEN	12h 23m.2	-35° 31'		6:42 10:52	8:23 12:33	99m/101m	sl weak					10.7	M5			-5			XZ CEN	V=11.1 B-V=1.5
	S LIB	15h 20m.2	-20° 19'		8:35 12:45	9:29 13:34	68m/47m	sl strong *					9.5	M2e	NeA 15		-3		S LIB	V=9.0 B-V=2.0 +0.4m T=15°C H=61%	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP / ST		TOTAL / CORR	MAG. END. QUALITY	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.				
2189	RT CEN	13 ^h 40 ^m .9	-36°46'	1981	8:02	8:44	40 ^m /42 ^m	sl weak 1" / CLEAR	3-36	100/0.8	120	71.0	9.5	M6IIe	+2	Tra-D	M-5	Crow	T=13°C H=68%	
	T NOR	15 ^h 42 ^m .6	-57°56'	FEB 1	8:49	8:58	9 ^m /9 ^m	✓					8.0	M3e-M6	+3					
	RS SCO	16 ^h 54 ^m .2	-45°04'	FEB 1	9:03	9:16	11 ^m /13 ^m	sl strong					8.2	M5e-M8e	+4				T=13°C H=64%	
2190	45 RZ ARI	2 ^h 54 ^m .7	+18°16'	FEB 2	1:08	1:10	8 ^h 5/90 ^s	STRONG	2" / CLEAR	3-36	100/0.8	120	71.0	5.9	M6III	-5	Tra-D	M-5	Crow	T=15°C H=60%
	O CET	2 ^h 18 ^m .3	-3°04'	FEB 2	5:13	5:15	4 ^h 2/51 ^h	STRONG					7.2	M5e-M8e	-4	(SPOT CALIBRATED)			T=15°C H=60%	
	DG ERI	4 ^h 19 ^m .8	-16°52'	FEB 2	1:17	1:22	4 ^h 2/51 ^h	STRONG					7.2	M4III	-3				T=15°C H=60%	
	V HOR	3 ^h 03 ^m .0	-59°00'		1:31	1:38	4 ^h 2/51 ^h	STRONG					8.2	M5III	-2				T=15°C H=60%	
	S LEP	6 ^h 04 ^m .4	-24°11'		5:36	5:43	4 ^h 2/51 ^h	STRONG					7.0	M6III	-1				T=15°C H=60%	
	R HOR	2 ^h 53 ^m .2	-49°58'		2:10	2:15	3 ^h 5/51 ^h	STRONG					6.6	M5-M7e(II-III)	+1				T=15°C H=60%	
	Z PUP	7 ^h 31 ^m .6	-20°57'		2:24	2:35	3 ^h 5/51 ^h	STRONG					7.0	M7e	+3				T=15°C H=60%	
	RV PUP	6 ^h 41 ^m .9	-42°21'		6:49	7:43	5 ^h 2/51 ^h	STRONG					9.0	M7e	+4				T=15°C H=60%	
	AS PUP	8 ^h 07 ^m .0	-38°07'		3:46	4:56	4 ^h 0/70 ^m	STRONG					9.7	M7e	+4				T=15°C H=60%	
2191	RS CEN	11 ^h 19 ^m .6	-61°46'		5:07	5:20	2 ^h 21 ^m	STRONG					9.0	M7e	+5				T=15°C H=60%	
	UL OCT	13 ^h 22 ^m .0	-84°07'		5:47	7:15	6 ^h 0/87 ^m	STRONG					9.7	M7e-M7e	-5				T=15°C H=60%	
	R HYA	13 ^h 22 ^m .0	-23°11'		7:27	7:52	25 ^m /25 ^m	STRONG					9.0	M4e-M6(II-III)	-3				T=15°C H=60%	
	R NOR	15 ^h 34 ^m .6	-49°27'		8:00	8:03	3 ^m /29 ^m	STRONG					6.6	M5e-M8e(5)	-1				T=15°C H=60%	
	RR SCO	16 ^h 55 ^m .4	-30°55'		12:06	12:43	27 ^m /28 ^m	STRONG					9.0	M3e-M6III	+1				T=15°C H=60%	
	RS SCO	16 ^h 54 ^m .2	-45°04'		8:43	9:05	18 ^m /20 ^m	STRONG					8.5	M6II-III	+3				T=15°C H=60%	
2192	S SCL	0 ^h 14 ^m .4	-32°09'	FEB 3	12:50	13:10	9 ^m /9 ^m	STRONG					8.0	M5e-M8e	+5				T=15°C H=60%	
	O CET	2 ^h 18 ^m .3	-3°04'	FEB 3	9:12	9:21	9 ^m /9 ^m	STRONG					8.0	M5e-M8e	+5				T=15°C H=60%	
	45 RZ ARI	2 ^h 54 ^m .7	+18°16'	FEB 3	0:57	1:59	5 ^h 2/65 ^m	STRONG	1" / CLEAR	3-36	100/0.8	120	71.0	9.7	M5e-M8e	-5	Tra-D	M-5	Crow	T=15°C H=60%
	DG ERI	4 ^h 19 ^m .8	-16°52'	FEB 3	5:03	6:08	5 ^h 2/65 ^m	STRONG					7.2	M5e-M8e	-4	(SPOT CALIBRATED)			T=15°C H=60%	
	S LEP	6 ^h 04 ^m .4	-24°11'	FEB 3	2:16	2:21	5 ^h 4/51 ^h	STRONG					7.2	M5e-M8e	-4				T=15°C H=60%	
	UL TOC	0 ^h 56 ^m .6	-75°06'	FEB 3	6:25	6:30	5 ^h 4/51 ^h	STRONG					5.9	M6III	-3				T=15°C H=60%	
	R HOR	2 ^h 53 ^m .2	-49°58'	FEB 3	2:31	2:33	2 ^m /2 ^m	STRONG					7.2	M4III	-2				T=15°C H=60%	
	R CHA	8 ^h 22 ^m .3	-76°18'	FEB 3	6:40	6:42	2 ^m /2 ^m	STRONG					7.1	M6III	-1				T=15°C H=60%	
	X CEN	11 ^h 48 ^m .2	-41°39'	FEB 3	2:56	3:01	5 ^m /5 ^m	STRONG					9.7	M3e-M5e	+1				T=15°C H=60%	
2193	W CEN	11 ^h 54 ^m .1	-59°09'	FEB 3	7:05	7:10	5 ^m /5 ^m	STRONG					9.7	M3e-M5e	+1				T=15°C H=60%	
	S LIB	15 ^h 20 ^m .2	-20°19'	FEB 3	3:11	3:54	35 ^m /43 ^m	STRONG					6.3	M5-M7e(II-III)	+2				T=15°C H=60%	
	XZ CEN	12 ^h 23 ^m .2	-35°31'	FEB 3	4:27	5:01	30 ^m /34 ^m	STRONG					9.3	M6e-M7e	+3				T=15°C H=60%	

$V=7.2$
 $B-V=1.7$
 $V=8.1$
 $B-V=1.5$
 $V=7.5$
 $B-V=1.5$
 $V=6.3$
 $B-V=1.7$

$V=9.7$
 $B-V=1.7$
 $B-V=1.7$

$V=9.7$
 $B-V=1.9$
 $B-V=2.0$

$V=6.3$
 $B-V=1.7$

$V=9.2$
 $B-V=1.5$

$T=15°C$
 $H=58%$

WEAK DUE TO INVERSION HERE

$V=9.8$
 $B-V=1.5$

$V=11.1$
 $B-V=1.5$

$V=9.0$
 $B-V=2.0$
 $H=61%$

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1981	U.T. EXP. / ST		TOTAL / CORR.	H.A. END QUALITY	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.				
2197 (CONT)	56 VY LEO	10 ^h 55 ^m .0	+6°17'	FEB 5	5:07 7:26	5:11 9:28	84 ^s /85 ^s	5 strong TRAILS	1" CLEAR	3-36	100/0.8	20/7.0	6.0	M5-5III			Tla-D	M-S	CW	T=15° H=56% V=7.8 B-V=1.5
	BK VIR	12 ^h 29 ^m .3	+4°31'		5:18 9:35	5:30 9:48	12 ^m /12 ^m	sl strong					8.2	M7III						
	W VIR	11 ^h 37 ^m .5	+8°14'		5:36 9:53	5:37 9:54	54 ^s /50 ^s	3 TRAILS					5.5	M4-4.5III						
	SW VIR	13 ^h 13 ^m .0	-2°43'		5:43 10:00	5:53 10:10	9 ^m /10 ^m	sl strong					7.9	M7III	NeA	1 ^s				V=7.5 B-V=1.5
	R HYA	13 ^h 28 ^m .6	-23°11'		5:58 10:15	6:00 10:17	24 ^m /13 ^m	6 TRAILS					6.3	M6e-M8a(S)						
	T CEN	13 ^h 40 ^m .6	-33°30'		6:07 10:25	6:14 10:32	6 ^m /7 ^m	sl weak					7.4	K0e-M10e(S)						
	W HYA	13 ^h 47 ^m .9	-28°16'		6:19 10:37	6:32 10:50	12 ^m /13 ^m	✓✓					8.0	M8e-M9e(S)						
	EV VIR	14 ^h 12 ^m .0	-13°46'		6:42 10:59	6:46 11:03	4 ^m /4 ^m	sl weak					7.2	M4-4.5III						
	Q AFS	14 ^h 03 ^m .5	-76°42'		6:55 11:12	6:57 11:14	110 ^s /150 ^s	2 TRAILS					6.2	M6.5III	NeA	1 ^s				V=5.8 B-V=1.5
2198	RT CEN	13 ^h 46 ^m .9	-36°46'		7:18 11:36	8:23 12:41	60 ^m /65 ^m	0.1mg					9.5	M6III						SPOT CALIBRATED
	RX BOO	14 ^h 23 ^m .3	+25°47'		8:31 12:48	8:46 13:03	13 ^m /15 ^m	✓✓					8.0	M7.5-8						4 ^m @ 10 VOLTS
	RR SCO	16 ^h 55 ^m .4	-30°33'		8:50 13:08	9:03 13:21	11 ^m /13 ^m	✓✓					8.2	M6e-III -M8III						
	T NOR	15 ^h 42 ^m .6	-51°56'		9:10 13:28	9:24 13:42	12 ^m /14 ^m	0.1mg					8.0	M3e-M6	NeA	1 ^s				T=14°C H=57%
2199	R IND	22 ^h 34 ^m .7	-67°24'	FEB 6	0:47 5:08	1:48 6:09	42 ^m /6 ^m	0.4mg	1" CLEAR	3-36	100/0.8	20/7.0	9.1	M2e-M4e			Tla-D	M-S	CW	T=15°C H=51%
	45 PZARI	2 ^h 57 ^m .7	+18°16'		2:02 6:28	2:04 6:30	100 ^s /110 ^s	6 TRAILS					5.9	M6III						SPOT CALIBRATED 1 ^m @ 14 VOLTS
	O CET	2 ^h 18 ^m .3	-3°04'		2:09 6:30	2:19 6:40	9 ^m /10 ^m	✓✓					7.8	M5e-M9e						
	V HOR	3 ^h 03 ^m .0	-59°00'		2:27 6:48	2:43 7:04	14 ^m /16 ^m	0.1mg					8.1	M5III						FOCUSING PROBLEMS
	R HOR	2 ^h 53 ^m .2	-49°58'		2:49 7:10	2:51 7:12	24 ^m /24 ^m	✓✓					6.0	M5-M7e-III	NeA	1 ^s				PLATE SCRATCH
	26 ERI	4 ^h 19 ^m .8	-16°52'		2:58 7:19	3:06 7:27	7 ^m /8 ^m	sl weak					7.6	M4III						
	R DOR	4 ^h 36 ^m .5	-62°07'		3:13 7:34	3:14 7:35	40 ^s /32 ^s	1 TRAIL WEAK					5.2	M8eIII						also DUE TO HAZE?
	56 VY LEO	10 ^h 55 ^m .0	+6°17'		3:21 7:42	3:22 7:43	60 ^s /55 ^s	3 TRAILS					5.5	M5.5III						
	BK VIR	12 ^h 29 ^m .3	+4°31'		3:30 7:51	3:45 8:06	13 ^m /15 ^m	sl weak					7.8	M7III						DUE TO LOW HAZE?
	SW VIR	13 ^h 13 ^m .0	-2°43'		3:52 8:12	4:04 8:24	10 ^m /11 ^m	1 ^m sl weak					7.5	M7III	NeA	1 ^s				LOST STAR FOR ~1 ^m
2200	R DOR	4 ^h 36 ^m .5	-62°07'		5:13 9:34	5:20 9:41	7 ^m /7 ^m	✓✓		3-36	100/0.8	20/7.0	5.2	M8eIII	NeA	10 ^s	9	Tla-O	MWP-2	
	S PIC	5 ^h 10 ^m .5	-48°32'		5:27 9:49	6:27 10:49	56 ^m /60 ^m	✓✓					7.0	M7e-M8e-III						
	R HYA	13 ^h 28 ^m .6	-23°11'		6:42 11:03	7:03 11:24	21 ^m /21 ^m	✓✓					6.3	M6e-M8e(S)						
	W HYA	13 ^h 47 ^m .9	-28°16'		7:06 11:28	8:27 12:49	86 ^m /81 ^m	✓✓			100/0.6		8.0	M8e-M9e(S)						T=12°C H=55%
	EV VIR	14 ^h 12 ^m .0	-13°46'		8:32 12:54	8:57 13:19	26 ^m /25 ^m	sl weak					7.2	M4-4.5III						
	Q AFS	14 ^h 03 ^m .5	-76°42'		9:02 13:24	9:15 13:37	10 ^m /13 ^m	✓✓			100/0.8		5.8	M6.5III						
	2 CEN	13 ^h 48 ^m .3	-34°21'		9:18 13:40	9:28 13:50	9 ^m /10 ^m	TOO STRONG					5.4	M2III-III	NeA	10 ^s	21			

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
2206	LS 685	7 41 37	-25 51 1	FEB 15/16	0:39:30	3:14:30	160	40" W	1-	3.36	100/0.9mm	120/7.0	12.6				-5	IIaD	H-S	PB	T=15 H=60
	LS 884	7 56 38	-25 33 50	"	03:45:00	05:15:00	80	2:30 W	1-2"	"	"	"	11.9				-3	"	"	PB	more uniform in R.A.
	LS 885	7 56 35	-28 37 42	"	05:30	06:50	80	3:56	"	"	"	"	11.9				-1	"	"	PB	
	LS 710	7 43 27	-26 40 57	"	06:53	07:33	34/47	4:57	"	"	"	"	11.0				+1	"	"	PB	
2207	K 62	11 05.5	-58 33		08:06	08:14	2 1/2, 5"	2:10 W	2-3"				8.2	A			-5, -4			WIZ	open cluster NGC 3532
	K 82				08:22	8:32	3 1/2, 6"	2:30	3"				8.5	AO			-2, -1				
	K 85				08:36	8:55	19 Very weak	2:50	4-5"				9.7	-			+1				
	K 101				09:02 1/2	9:13	10 1/2	3:10	"				9.0	-			+3				T=11 H=65
2208	LS 777	7 46 09	-30 30 14	FEB 16/17	07:47		105 107		1"		"	"	12.2				-5			PDB	T=14 H=50 cloudy
	K 108				07:57 1/2	8:07 1/2	10"										-4			WIZ	
2208	LS 777	7 46 09	-30 30 14	FEB 17/18	00:33:00	02:18:00	105"	0:19:00 E	1"	3.36	100/0.8mm	120/7.0	12.2				-5			PDB	clear (T=14, H=50) bright moon
	LS 554	7 33 34	-34 01 30	"	04:00:00	05:30:00	90"	3:05:00 W	<1"	"	"	"	11.8				-3			PDB	clear bright moon
	LS 548	7 33 09	-36 17 47	"	05:50:00	05:50:20	20"	3:25 W	1"	"	"	"	6.0				-1			PDB	"
2209	K 108	11 05.5	-58 33		06:48	07:01 1/2	4 1/2, 8	1:05 W	2"				8.8				+5, 4			WIZ	some low cirrus plateau not down on the ground
	K 127				07:05 1/2	07:21 1/2	3 1/2, 6	1:25					8.6				2, 1				
	K 117				07:25	07:32 1/2	7 1/2	1:37					9.3		NeA	1 ^S	-1	E			*
	K 126				07:36 1/2	07:52	15 1/2	1:55					10.1				-3				
	K 116				07:57 1/3	08:07 1/3	10	2:12					9.6				-5				
2210	K 67				08:42	8:55 1/2	13 1/2	3:00					9.9				5				
	K 80				8:58 1/2	9:05 3/4	7 1/4	3:10					9.2				3				
	K 75				9:09	9:19	10	3:25 W					9.6		NeA	1 ^S	1				T=13 H=48
2211	K 7	11 05.5	-58 33	FEB 18/19	0:4*	0:51	7	5:00 E	1-2"	3.36	100/0.8	120/7.0	9.1				-5	IIaD	H-S	WIZ	T=17 H=46 Full Moon
	K 107				0:59 1/2	1:13 1/2	14	4:40 E					9.9				-3				
	K 114				1:18	1:25	7	4:30 E					9.2		NeA	1 ^S	-1				
	K 152				1:30	1:35 1/2	5"	4:18 E					9.0				+1				
	K 190				1:39 1/2	1:47	7 1/2	4:05					9.2				-3				
	K 146				1:55 1/2	2:10	14 1/2	3:33					10.0				+5				
2212	K 188				2:32 1/2	2:38	5 1/2	3:15					9.0				-5				
	K 202				2:44	2:52	8	3:05					9.4				-3				
	K 211				2:56	3:05 1/2	9 1/2	2:50					9.6		NeA	1 ^S	-1				

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NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1981 FEB 18/19	U.T. EXP		TOTAL / CORR.	H.A. END	SEE / TRANS	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP					
2212 (cont)	K235	11 05.5	-58 33	18/19	3:11	3:21½	10½	2:40E	1-2"/C11	336	100A/C-8	120/7-0	9.7				+1	J210	M-5	W12	NCC 3532
	K249	↓	↓		3:27	3:40	23	2:12					10.6				+3				
	K255				3:56	4:07	11	1:50					9.8				+5				
2213	K243				4:26	4:31½	5½	1:25E					9.2				-5				
	K217				4:35½	4:47	11½	1:13					9.8				-3				
	K220				4:50	4:56½	6½	1:00					8-2				-1				
	K231				5:02½	5:07	23	0:50					8-2				+1, +2				
	K215				5:12½	5:25½	13	0:30					10.0		NeA	15		+4			
	K222				5:29	5:38	9	0:16E					9.6				+6				
2214	K76				5:58½	6:04	5½	0:12W					9.0				-5				
	K123				6:11½	6:23½	12	0:30W					9.9				-3				
	K125				6:26	6:52	26	1:00W					10.7		NeA	15		-1			
	K164				6:57	7:05½	8½	1:13					9.5				+1				
	K185				7:10½	7:22	11½	1:28					9.8				+3				
	K175				7:27½	7:38½	11	1:45					9.8				+5				
2215	K154				7:56½	8:02½	6	2:10					9.2				-5				
	K148				8:08½	8:20	11½	2:28					9.8				-3				
	K163				8:23½	8:27	13, 2	2:35					7.8				-1, 0				
	K189				8:34	8:37	3	2:45					8.4		NeA	15		-2, 3			
	K184				8:40½	8:51½	11	3:00					8.8				+4				
	K150				8:56½	9:04	7½	3:12					8.4				+6				T=15 H=56
2216	K206			FEB 19/20	0:43½	0:58	14½	4:50E					9.9				-5				T=17 H=57
	K169				1:04½	1:34	29½	4:15E					10.7				-3				
	K159				1:37½	1:59	21½	4:50E					10.4		NeA	15		-1			
	K160				2:00½	2:31½	#31	4:50E					10.8				+1				
	K132				2:35	2:38½	3½	3:12E					8.6				+3				
	K119				2:42½	3:03½	21	2:45					10.5				+5				
							3½	3:12E													
2217	K163				3:22	3:34½	12½	2:15E					9.9				-5				
	K85				3:39	3:47½	11	2:00					9.7				-3				
	K8E				3:54	4:03	9	1:45					9.6		NeA	15		-1			

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1981	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		GALIB. POSN	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2217 (cont)	K88	11 05.5	-58 33	FEB 19/20	4:06½	4:37½	31 ^m	1:10E	1.2"/clr	3.36	100/0.8	120/20	10.9				+1	Ilad	M-S	WIZ	NGC 3532
	K81	↓	↓		4:38½	5:03	24½	0:45E					10.7				+3				
	K54				5:05	5:33½	28½	0:15E					10.8 ⁸				+5				
2218	K113				5:53	6:11	18	0:25W					10.4				-5				Images on this plate are out of focus ↓
	K93				6:15	6:43½	28½	0:50W					10.8				-3				
	K78				6:45½	7:16½	31	1:35W					10.9		N/A	15	-1				
	K26				7:21	7:41	20	1:55					10.4				+1				
	K10				7:43	8:14	31	2:30					10.9				+3				
	K21				8:18	9:04	48	3:18					11.3 10.2				+5				
	K13				9:08	9:11	3	3:25W					8.4				+6				T=15 H=60
2219	K22	11 05.5	-58 33	FEB 20/21	0:25	0:44½	19	5:00E					10.2				-5			WIZ	T=15 H=60.64
	K40				0:47½	1:13½	26	4:30E					10.6				-3				
	K47				1:15½	1:35½	17½	4:10					10.2		N/A	15	-1				
	K89				1:36	1:58	22	3:47					10.4				+1				
	K251				2:05	2:34½	29½	3:10					10.8				+3				
	K226				2:41½	3:04	22½	2:45					10.5				+6				
2220	K223				3:22	3:40	18	2:10					10.3				-5				
	K239				3:43½	4:10	26½	1:35					10.7				-3				
	K242				4:11½	4:25½	14	1:20					10.1		N/A	15	-1				
	K234				4:27½	4:41	23½	1:05					10.0				+1				
	K255				4:45	5:11	26	0:35					10.7				+3				
	K219				5:14½	5:36½	22	0:10 ^E					10.5				+5				
2221	K158				5:54	6:10	16	0:25 ^W					10.2				-5				
	K136				6:11½	6:32	20½	0:50W					10.5				-3				
	K110				6:35	6:50½	15½	1:10					10.2		N/A	15	-1				
	K91				6:55	7:38	43	1:55					11.3				+1				
	K55				7:40½	8:25½	45	2:45					11.3				+3				
	K725C				8:28	9:01	33	3:20					10.9				+5				
	K34				9:03½	9:20	16½	3:40					10.2				+6				T=15 H=62

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R. A.	DEC.	DATE U.T. 1981 FEB 21/22	U.T. EXP		TOTAL / CORR.	H. A. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING TILT	MAG	SP.	COMP		CALIB POSN	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2222	K72	11 05.5	-58 33	21/22	00:25	00:54	34"	4:45E	2" / cln	3.36	100 / 10.8	120 / 7.0	10.8				-5	Pa.D	M-S	W12	T=15 H=70 NGC 3533
	K102				01:01 $\frac{1}{2}$	02:24 $\frac{1}{2}$	90"	23:10					11.9				-3				
	K121				2:36	3:21	45	2:20					11.3				-1				
	K115				2:22 $\frac{1}{2}$	2:28 $\frac{3}{4}$	6 $\frac{1}{2}$	2:13					9.1				+1				
	K97				3:34	4:04	71	0:55E					11.8				+3				
	K94				4:47	5:09	22	0:32E					10.6				+5				
2223	K42				5:27 $\frac{1}{2}$	5:50 $\frac{1}{2}$	23	0:10W	3"				10.3				-5				
	K28				5:56	6:26 $\frac{1}{2}$	31	0:45	2.3				10.8				-3				
	K 32 ¹³⁸				6:30 $\frac{1}{2}$	6:56 $\frac{1}{2}$	26	1:15					10.7				-1				
	K139				6:58	7:20	22	1:40					10.5				+1				
	K155				7:23 $\frac{1}{2}$	7:50 $\frac{1}{2}$	27	2:10	2"				10.7				+3				
	K140				7:54	8:47	54	3:10					11.5				+5				
	K182				8:52	9:18	26	3:14W					10.7				+6				T=15 H=70
2224	K174			FEB 22/23	0:35	0:40	1 $\frac{1}{2}$	4:57E	1.3" / clouds				7.4				-5.4			W12	T=16 H=64 scattered clouds
	K193				0:50	1:17	16	4:20E					9.7				-2-1				
	K157				1:26	1:32 $\frac{1}{2}$	6 $\frac{1}{2}$	4:05					8.7				+1				
	K207				1:40	1:57	17	3:40					10.0				+3				clouds
	K214				2:55	3:25	30	2:15E	1.2" / cln				10.8		NA 15		+5				
2225	K212				3:38 $\frac{1}{2}$	4:26 $\frac{1}{2}$	47	1:10E	1.2" / cln				11.3				-5				
	K201				4:29 $\frac{1}{2}$	5:06 $\frac{1}{2}$	37	0:30E					11.1				-3				
	K192				5:09	5:30	21	0:05E					10.5				-1				
	K131				5:33 $\frac{1}{2}$	6:18 $\frac{1}{2}$	45	0:42W	4"				11.3				+1				
	K122				6:22	6:28	6	0:50					9.1				+3				
	K124				6:32 $\frac{1}{2}$	6:39 $\frac{3}{4}$	7 $\frac{1}{2}$	1:03W	2.3"				8.7				+5				
2226	K83				7:01	8:03	62	2:50	3"				11.6				-5				
	K61				8:13 $\frac{1}{2}$	8:23 $\frac{1}{2}$	10	2:48	2.4"				9.6				-3				
	K44				8:22 $\frac{1}{2}$	8:39 $\frac{1}{2}$	12	3:05	2"				9.8				-1				
	K43				8:42 $\frac{1}{2}$	8:46 $\frac{1}{2}$	4	3:12					8.6				+1				
	K24				8:52 $\frac{1}{2}$	9:06 $\frac{1}{2}$	14	3:32					10.0				+3				
	K23				9:07 $\frac{1}{2}$	9:17 $\frac{1}{2}$	10	4:43W					9.6				+5				T=15 H=59

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
2227	J LEP	6 05.0	-24 12	24 FEB 1981	0023	0202	99 ^m / 120	1 ^h 30 ^m W	2" clear	2.85	50 ^m /0.8	67/5.05	8.5	M6 III	NeA	60 ^s	30 ^m	IIa-0	M-S	✓	H7270 T14°C W.S. CROWE PROGRAM
	R HOR	0253.4	-49 58		0207	0217	70 ^m / 40	5 ^h 54 ^m W	2" "				7.8	M5E			30v		67" 15min		
	S CAR	10 09.3	-61 29		0321	0413	52 ^m / 1490K	0 ^h 24 ^m E	2" "				7.4	K7e			(OK!)				
	V CEN	14 31.6	-56 51		0422	0452	30 ^m / ✓	4 ^h 7 ^m E	" "				7.4	G0 IV							Gu program
	R HYA	13 28.6	-23 11		05:03	0548	45 ^m / ✓	2 ^h 8 ^m E	1.5 ["] / "				7.7	M6 II							CROWE PROG.
	V Y LEO	10 55.1	+06 18		0552	0622	30 ^m / ✓	1 ^h W	1.5 ["] / "				7.5	MS.5 III sed.							"
	HR3750	09 27.1	-06 00		0639	0649	63 ^m / 9	2 ^h 36 ^m W	" "				6.0	G2V							Solar prog
	HR 4328	11 07.3	-30 05		0656	0709	13 ^m / 16	1 ^h 34 ^m W	" "				7.1	G2V							"
	HR 4523	11 45.9	-40 23		0711	0715	3 ^m / 4.5	1 ^h W	" "				5.6	G5V							"
	HR 4903	12 54.3	-44 01		0717	0725	8 ^m / 12	5 ^m W	" "				6.5	G2V							"
	EV VIR	14 12.8	-13 48		0737	0907	90 ^m / ✓	30 ^m W	" "				8.7	M4.5 III							Crowe prog.
2228	R HOR	02 53.5	-49 59	25 FEB 1981	0023	0103	40 ^m / ✓	3 ^h 45 ^m W	2" sky	"	"	"	7.2	M5E	"	"	30 ^m	"	"	✓	T15°C W S H70%
	"	"	"		0104	0122	18 ^m / ✓	4 ^h 5 ^m W	1.5 ["] / "				"	"			14v				"
	J LEP	06 05.1	-24 14		0127	0340	2 ^h 12 ^m / ✓	3 ^h 12 ^m W	1 ["] / "				8.7	M6 III sed.							"
	R Cen	12 23.1	-61 33		0354	0435	40 ^m / 80	2 ^h 12 ^m E	1.5 ["] / "				8.0	G I v							Gu prog
	S CAR	10 09.2	-61 29		0438	0611	93 ^m / ✓	1 38W	" "				7.4	K7e							Crowe prog.
	FR CAR	11 09.4	-58 47		0614	0637	23 ^m / 40	1 ^h 4 ^m W	2 ["] / "				7.6	G I v							Gu prog.
	HR3750	9 26.9	-6 00		0639	0654	10.5 ^m / 10	3 ^h 3 ^m W	2 ["] / "				6.0	G2V							Solar prog.
	HR4523	11 45.7	-40 24		0656	0702	5 ^m / 7	54 ^m W	2 ["] / "				5.6	G5V							
	HR4328	11 07.1	-30 07		0706	0725	18 ^m / 40	1 ^h 55 ^m W	" "				7.1	G2							
	HR4903	12 54.1	-44 03		0728	0737	9 ^m / 12	20 ^m W	1 ["] / "				6.5	G2							
	HR5384	14 22.2	+01 19		0739	0752	12 ^m / ✓	55 ^m E	" "				6.9	G3							
	HR5699	15 20.8	-48 15		0755	0803	8 ^m / 10	1 ^h 41 ^m E	" "				6.3	G2							
	RS Sco	16 54.6	-45 05		0806	0951	1 ^h 45 ^m / ✓	1 ^h 28 ^m E	1 ["] / "				7.8	M5E							
2229	HR1157A	03 43.8	-40 41	25/26 FEB 1981	0035	0052	5 ^m / ✓	2 50 ^m W	2" cloudy				7.6	M0	"	30 ^s	30 ^m	IIa0		✓	clouded out.
	HR2497A	06 44.8	-30 34		0102	0127	14 ^m / ✓	24 ^m W	2" clearing	"	50 ^m /1.2	"	6.45	B8			18v	Baked 650 3 ^h vac. + Forming gas storage			15°C 68% No Wind.
	HR2501A	06 45.1	-30 56		0134	0137	3 ^m / ✓	"	"				5.72	B3							
	" B	"	"		0139	0233	56 ^m / 80	1 ^h 28 ^m W	2.5 ["] / Circus				8.24	B							
	HR2736	07 09.5	-70 25		0239		2 ^m / 3	"	"				7.82	G8							
	HR2735					0250	6 ^m / 8	1 ^h 25 ^m W	" "				6.09	F4							

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NUMBER	OBJECT	R A	DEC.	DATE UT.	UT. EXP.		TOTAL/CORR.	H A END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG B	SP.	COMP		CALIB	EMUL	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
2230	ER Car	11 09.1	-58 44	1981 FEB 25/26	03:19	03:48	29 ^m ✓	1 ^h 41 ^m E	2 ^h circus	2.85	50 ^m / 0.8	67 ^m / 5.05	7.2	G Icep	NA	60°	30 ^m 18V.	IIa-0	M-5 6 ^m 15 ^m		
	VY LEO	10 54.8	+06 19		03:58	04:48	50 ^m ✓	0 22 E	1.5 ^h circus				7.5	M5 red							
	R CRU	12 23.1	-61 31		04:59	06:19	80 ^m ✓	22 E	"				7.8	G Icep							
	HR 4328	11 07.0	-30 04		06:28	07:37	60 ^m ✓	2 11 ^m W	"			1.2	7.1	G 2							
	HR 4523	11 45.8	-40 22		07:39	07:50	10 ^m ✓	1 45 W	1.5 ^h /		1.2		5.6	G 5							
	HR 4903	12 54.0	-44 02		07:53	08:14	20 ^m / 25	1 ^h W	"				6.5	G 2							
	HR 5659	15 20.6	-48 14		08:16	08:31	15 ^m / 30	1 ^h 8 ^m E	"				6.3	G 2							
	HR 5911	15 52.1	+13 14		08:34	09:03	29 ^m / 40	1 8 ^m E	"				6.7	G 2							
	HR 6060	16 14.3	-08 20		09:06	09:23	17 ^m ✓	1 10 E	"				6.15	G 1							
2231	CAMISTO	12 35.5	-02 02	26/27 FEB 1981	03:33	06:15	42 ^m ✓	35 ^m E	1.5 ^h circus	"	50 ^m / 1.2	"	6.3	G 2	"	"	30 ^m 15V	"	"	"	"
2232	V CEN	14 31.2	-56 48	27/28 FEB	06:27	09:53	12 ^m / 30 clouds	1 49 W	1.5 ^h circus	"	" / 0.8	"	8.2	G I	"	"	30 ^m 6V	"	"		17°, 63%, Overd
2233	HR 1157A	03 43.4	-40 41	28/19	00:09	00:35	25 ^m ✓	2 43 ^m W	1.5 ^h circus	"	" / 1.2	"	7.61	K 0	"	"					18°, 58%, No wind
	HR 1168A	03 44.4	-54 20		00:38	00:48	10 ^m / 20	25 ^m W	"				6.52	K 0							bed of 34.65° vacuum stood in front of
	HR 1190	03 48.1	-37 41		00:53		1.5 ^m ✓						4.7	B 8							
	1189	"	"		01:01		8 ^m / 10 ^m	3 4 ^m W	"				5.4	A 0							
	1359A	04 18.5	-33 58		01:04	01:13	8 ^m ✓	2 47 W	"				6.59	A 2							
	1372A	04 17.7	-63 16		01:18	01:23	4 ^m / 6 ^m	2 58 W	"				5.97	B 9							
	1405A?	04 24.2	-57 07		01:26	01:51	24 ^m ✓						7.47	G 0							eastern of pair 1
	1405B?	04 24.1	-57 07		01:52	02:28	36 ^m ✓	3 56 W	1.5 ^h circus				7.97	G 5?							
	1506A?	04 42.6	-08 51		02:40	03:21	40 ^m ✓	4 30 ^m W	"				7.61	G 8 III							
(2)	1563A	04 50.6	-53 30		03:24	03:33	5 ^m / 4 ^m	4 36 ^m W	"				6.1	F 0							
2234	(2) V CEN	14 31.6	-56 48	"	03:45	04:50	25 ^m / 40 ^m	3 49 E	2 ^h circus	"	0.8	"	7.7	G I cep	"	"		IIa-0	"		
	HD 91824	10 34.5	-58 04		04:04	05:57	60 ^m / 80 ^m	1 14 ^m W	"		1.2		8.17	07							
	91943	10 35.4	-58 06		05:58	06:17	18 ^m ✓	1 34 ^m W	"				6.8	B 0 I							
	91969	10 35.5	-58 06		06:19	06:35	15 ^m ✓	1 55 ^m W	"				6.5	B 0 I							
	92007	10 35.6	-58 07		06:37	07:37	60 ^m / 70 ^m	2 55 ^m W	"				8.3	B 0 III							
	91983	10 35.7	-58 08		07:40	09:05	145 ^m / 40 ^m	4 25 ^m W	"				8.6	B I III							
	-57°35'00" A	10 35.5	-58 08		09:05	09:45	40 ^m / 50 ^m	5 2 ^m W	"				7.6	B I II							17° 54' 9" No wind

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2235	HR 1168A	03 44.3	-54 21	1/2 MAR 1981	0033	0101	28 ^m / 40	3 12W	2" clean	2.85	50 ^m / 1.2	27 / 5.05	7.4	K0	NEA	30 ^s	30 ^m / 14V	Baked IIa-0 3" 65°C + Ne plate	M-S	17° 62' 15" wind	
	HR 1372B	04 12.5	-63 18		0103	0140	37 ^m / ✓	3 17W					7.9	A							
	HR 1652A	05 03.8	-35 30		0143	0152	8 ^m / ✓	2 44W	"				5.8	K3							
	HR 2158A	06 04.1	-45 05		0157	0204	6 ^m / 8	1 ^h 56W	"				6.45	F5							
	HR 2157(c)	06 04.1	-45 00		0205	0215	10 ^m / 12	2 06W					6.86	F8							
	HR 2412A	06 32.2	-58 44		0223	0228	34 ^m / 6	1 52W					5.66	B9							
	HR 2462A	06 38.3	-48 11		0231	0239	8 ^m / ✓	1 58W					6.	G8							
	HR " B	06 38.3	-48 11		0239	0322	43 ^m / ✓	2 40W					8.3	A0:							
	HR 2501B	06 44.9	-30 56		0325	0422	57 ^m / 70	3 33W					8.2	B							
2236	S CRU	12 53.7	-58 20	"	0432	0515	43 ^m / 60	1 ^h 43 E	"	"	50 ^m / 1.8	"	7.7	G I	NEA	60 ^s	30 ^m / 15V	IIa-0	M-S		
	#D 92044	10 36.0	-58 12		0523	0656	93 ^m / 120	2 17W	"	"	50 / 1.2	"	8.4	B0.51							20° 42' 5" poph
	-57° 35' 23	10 35.8	-58 08		0658	0802	64 ^m / 90	3 24W					8.04	B III							NGC 3293 - #20
	-57° 35' 21	10 35.7	-58 08		0804	0934	90 ^m / 120	4 54W					8.21	B III							" #25
2237	HR 1168 A	03 44.2	-54 19	2/3 MAR 1981	0005	0049	44 / ✓	3 07W	2" clean	"	"	"	7.4	K0	"	30 ^s		Baked IIa-0	M-S		
	HR 1504 E?	04 40.3	-58° 55'		0104	0135	30 ^m / 45						7.9	G5				(when rotated 90°, the top one is in eq. 0)			traced in Den
	HR 1504 W?	"	"		0135	0215	40 ^m / 60	3 36W	2" clean				8.05	G5:				" " " " bottom			" " "
	HR 2162 E	06 04.5	-48 24		0232	0312	40 ^m / 60		"				8.38	G5							(B?) eastern
	" W E	"	"		0312	0404	42 ^m / 60	4 ^h W	"				7.92	G5							
	S CRU	12 53.6	-58 19		0409	0422	12 ^m / 18		1.5" clean		50 ^m / 1.8		7.4	G I cap.							
2238	"	"	"	"	0431	0522	29 ^m / 29	1 ^h 34W	1" clean	"	"	"	"	"	"	60 ^s	"	IIa-0	M-S		
	T CRU	12 20.7	-62 08		0525	0606	40 ^m / ✓	1 5 ^m E	1" clean				7.8	G I cap							18° 48' No Wind
	R CAR	09 32.3	-62 39		0623	0753	90 ^m / 45	4 21 W	1.5" clean	3.36	100 ^m / 1.8	120 / 7.0	8.96	Me	"	10 ^s	"	IIa-0	"		jostled (petchiller slide)
	S CAR	10 09.1	-61 25		0755	0829	21 ^m / 12	4 21 W	"				7.4	me							
	R HYA	13 28.7	-23 08		0833	0850	16 ^m / 12	1 ^h 22W	"				7.4	me							
	RS Sco	16 54.5	-45 01		0857	0924	27 ^m / 20	1 ^h 30 E	"				7.9	me							
	RX Boo	14 23.8	+25 50		0928	0959	31 ^m / 45	1 ^h 37 ^m W					8.5:	me							
2239	R HOR	02 53.2	-49 57	3/4 MAR 1981	0020	0040	12 ^m / 3	3 50W	1" clean	"	"	"	6.7:	me	"	"	"	"	MWP2		18° 41' 0" wind
	S Pic	05 10.5	-48 31		0044	0144	60 ^m / ✓	2 37W	"	"	"	"	9.2	me					7 ^m 67°F		
	T COL	05 18.6	-33 44		0147	0247	60 ^m / 30						9	me							

sp. eyepiece
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NUMBER LC	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP		TOTAL/CORR.	H.A. END	SEE / TRANS	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
2240	S CRU ^(b)	12 53.6	-58 19	3/4	0301	0338	24.12 216	5 ^h 11 ^m E	1.5 ^h clear	2.85	50"/0.8	67/5.05	7.1	GI cap	Net	60 ^s	30 ^m 15V	IIa-0	M-5	W		
	R CRU	12 23.0	-61 31	M ⁴⁰ 1980	0340	0458	48.26 48	1 ^h 20 ^m E	1.5 ^h clear				7.8	GI cap								
2241	R CAR	09 32.2	-62 40	"	0548	0630	42	Wrong time!		2.85	100"/.8	120/7.0	9.5	Me	Net	10 ^r	"	"	MWP-2	W		
	"	"	"	"	0635	0722	47	40 3 56W	2 ^h clear	3.36	"	"	"	"								
	S CAR	10 08.7	-61 27		0724	0746	15.2 15.1	3 43 W	3 ^h clear				7.4	Me (Co)								
	R HYA	13 28.5	-23 10		0750 0750	0800	10 ^m 7 ^m	37 ^m W	2 ^h clear				7.7	Me								
	W HYA	13 47.8	-28 15		0802	0858	56 ^m 56	1 ^h 15 W	"				10.3	Me								
	T NOR	15 42.9	-54 56		0901	1000	59 ^m 1.5	21 ^m W	"				10.5	Me								
2242	O CET	02 18.2	-03 03	1/5 Mar	0005	0110	60 ^m 90	5 ^h W	2 ^h clear	"	"	"	9.0	Me	"	"	"	"	"	"	"	
	R NOR	02 53.6	-49 57	1981	0114	0118	4 ^m 3 ^m	4 30W	"				6:	Me								
	T COL	05 18.5	-33 44		0122	0153	30 ^m 25	2 42W	"				9:	Me								
	HD 45346	06 24.2	-43 21		0158	0232	34 ^m 40	2 15W	"				9.2	G5 Cy								
2243	FR CAR	11 09.3	-58 44	"	0246	0416 246	60 ^m 30 ^m 50	43 ^m E	"	2.85	50"/.8	67/5.05	7.6	GI cap	"	60 ^s	"	"	M-5	W	19.03% Single N	
2244	R HYA	13 28.6	-23 09	"	0430	0441	7.4 ^m 4	2 40E	"	3.36	100"/.8	120/9.0	7.2	Me	"	10 ^s	"	"	MWP-2	"		
	W HYA	13 47.9	-28 16		0444	0644	2 ^h	56 ^m E	"				10.5	Me								
	T NOR	15 42.9	-54 56		0648	0821	93 ^m	1 ^h 13 E	"				10:	Me								
	Rx Boo	14 23.2	-25 49		0825	0911	46	56 ^m W	"				9.5	Me								
	RS Sco	16 54.5	-45 01		0915	0945	18.12 18	1 ^h E	"				7.5	Me								
2245	O CET	2 18.3	-3 04	5/6 Mar	0029	00 31	7 ^m	4 20W	1.5-2 ^h clear	3.36	100"/.8	120/7.0	9.0			total +5		IIa-0	M-5	W/E	total H=37 Crv. Hra. program see addendum used instead of H mag. Ang!	
	R HCR	2 53.2	-49 58		0040	0042	2.85 4.9	4 05W	"				4.7		Net	15	+3.2					
	R CAE	4 39.8	-38 16		0057	0108	11 ^m	2 40W	"				9.8			-1						
	S PIC	5 10.5	-48 32		0116	01 25	90,100,150 ^m	2 25W	"				7.4			-3.5, -6						
2246	T COL	5 18.6	-33 44		0145	1 53	15, 23, 33 ^m	2 45W	"				8.2			+5.3						
	RV PUP	6 41.9	-42 21		0206	2 45	15, 20 ^m	2 15W	"				10?			+1.1						
	AS PUP	8 09.0	-38 07		0253	3 11	24, 30 ^m	1 15W	"				-9			-3.7, -4						
2247	R CAR	9 31.7	-62 42		3 35 ^{1/2}	3 44	8 ^m	0 23W	"				8			+9						
	S PIC	5 10.5	-48 32		3 58	4 03	8 ^m	5 00W	"				7.4			+3						
	T CCL	5 18.6	-33 44		4 08	4 21	15 ^m	4 10W	"				8.2			+1						
	AS PUP	8 09.0	-38 07		4 27	4 49	22 ^m	2 52W	"				-7			-1						
	W VEL 3 CAR	10 14.5	-54 23		5 06	6 07	61 ^m	2 05W	"				4.9			-3						

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB. POSN	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2247	S CAR	10 08.7	-61 27	1981 MAR 05/06	6 25	6 28	1,2 ^m /	2:30W	2" / clr	3.36	100/0.8	120/7.0	5.7				-5, -6	IIaD	M-S	WIZ	C:W MIRAS'
(cont) 2248	V ANT	10 20.3	-34 42		6 52 ¹ / ₂	7 28	25,10 ^m /	3:20W					~9				+5, 4				
	XZ CEN	12 23.2	-35 31		7 42	8 38	56 ^m /	2:27W					~10				+3				
	T NOR	15 42.6	-54 56		8 53	9 07	14 ^m /	0:25E					8.5		NeA	15	+1				
	RS SCO	16 54.2	-45 04		9 16	9 23	1,2,4 ^m /	1:20E					6.4				-1, 2, 3				
	W PAV	17 48.6	-62 24		9 34	9 52	18 ^m /	1:45E					9.2				-5				T=15 ² H=40 ⁹ / ₁₀
2249	K173	11 05.5	-58 33	MAR 06/07	4 48	5 58	70 ^m	1:05W	1.2" / clr	3.36	100/0.8	120/7.0	11.8				+5	IIaD	M-S	WIZ	T=17 H=36 NGC 3532
	K197	↓	↓		6 04	7 20	76 ^m	2:30W					11.9		NeA	15	+3				
	K204				7 30	8 30	60 ^m	3:40W					11.6				-6				
	K145				8 38 ¹ / ₂	9 30	52 ^m	4:40W					11.4				-4, 2				T=15 H=54
2250	K20	11 05.5	-58 33	MAR 07/08	0 21 ¹ / ₂	1 41 ¹ / ₂	80 ^m	3:05 ^E	1.2" / clr	3.36	100/0.8	120/7.0	11.9				+5	IIaD	M-S	WIZ	T=16 H=38
	K39	↓	↓		1 45 ¹ / ₂	2 54 ¹ / ₂	69 ^m	1:50E					11.8				+3				
	K77				2 57 ¹ / ₂	3 56 ¹ / ₂	59 ^m	0:50E					11.6		NeA	15	+1				
	K95				3 59 ¹ / ₂	4 08	8 ¹ / ₂ ^m	0:38E					9.6				-1				
	K112				4 10 ¹ / ₂	5 07 ¹ / ₂	57 ^m	0:26W					11.6				-3				
	K1183				5 10¹/₂ 5 10 ¹ / ₂	5 28 ¹ / ₂	18 ^m	0:42W					10.4				-5				
2251	K118				5 44	6 34	50 ^m	1:50W					10.4				+5				
	K151				6 39	7 52	73 ^m	3:05W					11.8				+3				
	K171				7 57	8 18	81 ^m	4:33W					11.9		NeA	15	+1				OUT OF FOCUS
	K172				9 20 ¹ / ₂	9 25	4 ¹ / ₂ ^m	4:40					8.7				-1				
	K141				9 28 ¹ / ₂	9 32 ¹ / ₂	4 ^m	4:47					8.5				-3				
	K98				9 35	9 41	6 ^m	4:55W					8.9				-5				T=16 H=26
2252	K252			MAR 08/09	0 18	1 08	50 ^m	3:35E	2" / clr				11.3				+5			WIZ	T=17 H=38
	K221				1 11 ¹ / ₂	1 16 ¹ / ₂	5 ^m	3:25E					8.9				+3				
	K237				1 20	2 20	60 ^m	2:25E					11.6		NeA	15	+1				
	K238				2 23	2 38	15	2:10E					10.1				-1				
	K172				2 42	2 46	4	2:00E					8.7				-3				
	K171				2 48 ¹ / ₂	4 04 ¹ / ₂	76	0:40E					11.9				-5				
2253	K167				4 23 ¹ / ₂	5 16 ¹ / ₂	53	0:35W					11.5				+5				
	K151				5 20	6 35	15	1:55W					11.8				+3				

NUMBER	OBJECT	R.A.	DEC.	DATE UT. M83 MAY 06/07	UT. EXP.		TOTAL / CORR	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		LATH POSN	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2253 2253	K113	11 055	-58 33		6 37	7 11	44" 70"	2 30W	2" / Clr	3.36	100 / 0.8	120 / 70	11.0		NA	17	+1	IIaD	MS	W12	
	K93	↓	↓		7 12½	7 42½	23	3 00W					10.58				-1				
	K78				7 43½	8 06½	21	3:28 W					10.9				-3				
					8 08	8 29	32	3:50W					10.4				-5				
2254	NOVA 158247? K26	18 18 7	-24 44		9 14	9 46	32"	2:10 E			0.6		-				+5				T=15 H=38" IS NOT NOVA T=15 H=42
2255	K13	11 055	-58 33	MAR 09/10	0 15	0 18½	34"	4:00 E	1.2" / Clr	3.36	100 / 0.8	120 / 70	8.4				+5	IIaD	MS	W12	
	K10	↓	↓		0 21½	0 55½	47	3:45 E					10.9				+3				
	K21				0 1 1	1 48	6½	2:50 E					11.3				+1				
	K9				1 51	1 57½	3	2:40 E					9.2				-1				
	K65				2 00½	2 03½	8	2:35 E					8.3				-3				
	K66				2 04½	2 12½	8	2:25 E					9.4				-5				
2256	K79				2 15	2 39	24	2:00 E					10.6				-6				
2256	K98				2 55	3 00	5	1:40 E					8.9				+5				
	K141				3 06	3 09½	3½	1:35					8.5				+3				
	K135				3 12½	3 15½	3	1:30					8.7		NA	15	+1				
	K194				3 17½	3 20	2½	1:20 E					8.3				-1				
	HD 38134	7 223	-79 43		3 36½	3 41½	5"	2:45 W					8.9				-3				
2257	K14	11 055	-58 33		4 38	4 48½	10½	0:42 W	1.2" / Clr	3.36	100 / 0.8	120 / 70	8.0				6	IIaD	MS	W12	
	K29	↓	↓		4 49½	5 02½	13	0:25 W					8.2				8.7				
	K41				5 11½	5 35½	23½	0:55 W					8.7				11				
	K52				5 36½	5 49½	13½	1:15 W					8.3				13				
	K63				5 53	6 07	14	1:30 W					8.3				15				
	K62				6 09	6 21½	12½	1:45					8.2				17				
	K82				6 24½	6 43½	17	2:05					8.5				19				
	K101				6 46	7 13	27	2:35					9.0				21				
	K108				7 15½	7 37½	22	3:00					8.8		NA	10 ⁵	23				
2258	K127				7 48½	8 11½	23	3:35					8.6		NA	10 ⁵	8				
	K154				8 15	8 48	33	4:10					9.2				10				
	K163				8 49	8 58½	9½	4:20					7.8				12				
	K189				9 01	9 17½	16½	4:40					8.4				14				T=15 H=41
	K231				9 22½	9 38½	16½	4:50					8.2		NA	10 ⁵	10				

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1931	U.T. EXP		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2259	K14	11 05 4	-58 33	MAR 10/11	0 16	0 54	38 ^m	3 40E	1.2"/clr	2.85	50/0.8	67/5.05	8.0		NeA	60 ^s	30 ^m at 14V.	IIcO	MS	WIZ	T=15 ^c H=44 ^o NCC 3532
	K29	↓			0 56	1 41	45	2 55E					8.2								
	K41				1 43	3 03	80	1 30E					8.7								
	K52				3 04	3 49	45	0 45E					8.3								
	K63				3 51 ¹ / ₂	4 36 ¹ / ₂	45	0 05W					8.3								
	K62				4 37 ¹ / ₂	5 19 ¹ / ₂	42	0 45W					8.2								
	K82				5 21	6 13	52	1 40W	1"				8.5								
	K127				6 14	7 24	70	2 50W					8.6								
	K163				7 25 ¹ / ₂	7 55 ¹ / ₂	30	3 25W					7.8								
	K189				7 56 ¹ / ₂	8 46 ¹ / ₂	50	4 15W					8.4								
	K231				8 48 ¹ / ₂	9 36 ¹ / ₂	48	5 05W					8.2		NeA	60 ^s					T=15 H=37
2260	K188			MAR 11/12	0 13 ¹ / ₂	0 42 ¹ / ₂	29	3 45E	1.2"/clr	3.36	100/0.8	120/7.0	9.0		NeA	10 ^s		IIcO	MWP2	WIZ	T=15 H=42
	K2002				0 44 ¹ / ₂	1 25 ¹ / ₂	41	3 05					9.4		NeA	10 ^s					
	K211				1 26 ¹ / ₂	2 14 ¹ / ₂	48	2 15					9.6								
	K190				2 15 ¹ / ₂	2 48 ¹ / ₂	33	1 40					9.2								
	K152				2 49 ¹ / ₂	3 14 ¹ / ₂	25	1 15					9.0								
	K114				3 16	3 47	31	0 40					9.2								
	K132				3 48 ¹ / ₂	4 06 ¹ / ₂	18	0 25E					8.6								
	K150				4 08	4 44	36	0 15W					9.4								
	K116				4 46	5 32	46	1 05W					9.6								
	K117				5 33 ¹ / ₂	6 08 ¹ / ₂	35	1 40					9.3		NeA	60 ^s x					
2261	K86				6 26	7 11	45	2 40					9.6		NeA	60 ^s x					
	K70				7 14	8 02	48	3 30					9.6								
	K69				8 02 ¹ / ₂	8 41 ¹ / ₂	39	4 10					9.3								
	K8				8 45	9 30	45	5 00W					9.4		NeA	10 ^s					T=14 H=37
2262	K7			MAR 12/13	5 33	6 01	29	1 35W	1.2"/clr				9.1		NeA	10 ^s				WIZ	T=12 H=45
	K80				6 06	6 39	33	2 15W					9.2								
	K75				6 40 ¹ / ₂	7 26 ¹ / ₂	46	3 00					9.6								
	K76				7 28	7 59	29	3 35					9.0								clouds move in at dawn.
	K119 K233				8 05	8 36	31	4 10					9.8								T=11 H=50
	K233				8 37	9 40	63	5 45W 2.3"					9.8		NeA	10 ^s					

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					BEGIN	END									KIND	EXP.				
2263	NGC 4532 K25	11 05.5	-58 33	APR 08/09	01 31	01 53 01 47	10.47	C 4SE C 5SE	? clouds Aerosols	3.36	100 / 6.8	120 / 7.0	8.5				ICAD	M-S M-S	W/E	T=15E H=30W W=10 Crown + clouds
	K56				01 58	02 10	11"	C 3CE					9.6	NEA	15	+2				
	K165				02 21	03 01	40"	C 2CW					9.8			-1				
	K Hyd	9 38.4	-14 15		03 16	03 22	13.15.30	21CW					9.9	AS II		-3.5				
2264	η Leo	10 06.3	+16 51		03 45	03 50	3.48.47	20CW					3.5	ACT II	NEA	15	+3.1			reddish, especially very at the bottom
	ζ Leo	10 15.7	+23 31		03 56	04 01	7.8.32	21CW					3.7	FC III		-1.8				
2265	K51	11 05.5	-58 33		04 28	04 44	9.6"	20.5W	3.5" / CLR				8.7			+5.4				some blue strands
	K60				04 49	05 03	23.46"	22.5W					7.4	NEA	15	+2.1				
	K120				05 10	05 28	33.5.37	25CW					8.3			-3.4				
2266	K111				05 45	06 05	8.12.3	32.5W	3.4"				9.1			+5.4				
	K109				06 14	06 32	10.7"	3.55W					8.9	NEA	15	+2.1				
	K142				06 38	06 51	3.4.07	41CW					8.1			-1.2				
	K143				06 58	07 16	10.6.5	4.35W					8.9			-5.6				
2267	K170				07 42	07 57	9.5.1	5.17W					8.7	NEA	15	+5.4				
	K209				8 03	8 14	6.3.4	5.35W					8.4	NEA	15	+2.1				
	K229				8 23	8 40	10.6.2	6.00W					8.8			-1.2				
	22.5co A Her	16 29.1	-25 05		8 53	8 56	12.6.4	6.50W					4.7	62 II 65 III		-4.5				
2268	β Her	16 29.4	+21 31		9 16	9 17	4.2.3	1.15W					3.8	65 III	NEA	15	+5.4			
	β Cph	17 42.5	+4 34		9 27	9 28	2.4.6.5	0.10W					3.9	K2 III		-3.3				T=15 H=27 W=10
2269	K25	11 05.5	-58 33	APR 09/10	4 37	4 51	3.4.6.7	2.15W	3" / ^{Sony} Canon				8.5			+5.4			W/E	T=12 H=30
	K56				4 55	5 07	12"	2.30W					9.6			+1				
	K165				5 14	5 29	15"	2.55W					9.8			-1				
	K230				5 36	5 44	5.3.5	3.10W	2" / CLR				8.5			-3.4				
2270	K248				6 03	6 11	2.2.5	3.35W					8.0			+5.4				
	K254				6 17	6 27	4.4.6.7	3.50W					8.7			+1.1				
	K11				6 35	6 47	14"	4.15W					10.0			-3				
	K186				6 54	7 07	2.1"	4.35W	23°				10.2			-5				
	K181				7 16	7 27	2.1"	5.00W					10.2			-6				
2271	K227				7 54	8 12	1.8"	5.35W					10.0			+5				
	A Her				8 28	8 31	2.2.4.3	0.30W					3.8	68 III		+3.1				

NUMBER	OBJECT	R.A.	DEC.	DATE UT. 1981	UT. EXP.		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
2278	HR 1652 A	5 ^h 03.6	-35° 29	14/15	23 53	23 57	4" ✓	3 45W	1.5 clear	3.86	50"/1.2	120/7.0	5.8	gk3	NeA	15 ^s	20"	Il20	m.s.	Cy	T=13° H=52% w=0.5 Dec trail - contain by diff. only
	B				00 02	00 46	44" ✓	4" 32.0	1.5-2.2		0.8		9.1			50/14"	Bald 36 3.65				
	2813(A)	7 ^h 20.7	-52° 16		01 12	01 17	5" ✓	2" 40.5	1.5		1.2		6.4								
	2814(B)				01 20	01 30	10" ✓	3" 00.0					7.1								
	2813(A)				01 32	01 37	5" ✓	3" 06.0					6.4								
	3251 A	8 15.1	-30 52		01 47	02 00	15" ✓	2" 30.0					7.3	G5							
	B				02 13	02 50	37" ✓	3 25.0					8.6								
	3455 A	8 40.2	-57 28		02 59	03 05	6" ✓	3 15.0					6.7	A2							
	B				03 17	04 01	44" ✓	4 00.0			0.8		9.1								±10% cal. - RA track fact.
2279	4469 A	11 35.6	-33 28		04 26	04 37	11" ✓	1 50W			1.2		6.9	K0							
2279	B				04 39	05 26	17" ✓	2 41W					8.8								pos center, pos rot.
	4652 A	12 ^h 13.1	-45° 33		05 44	06 01	12" ✓	2" 37.0					7.14	g10							Dec Trail
	B				06 10	06 43	43" ✓	3" 20.0					8.02								
	4652 5362 A	14 ^h 19.3	-42° 55		06 54	07 02	8" ✓	1" 33					6.65	G5							
	B				07 06	07 37	31" ✓	2" 08					8.47								
	5371 A	14 ^h 21.5	-53° 22		07 45	07 49	34" ✓	2" 17					5.77	g54							
	B				07 52	08 05	13" ✓	2" 35					7.47								
2280	a Cen	14 ^h 22.1	-39° 24		08 32	08 41	23.4" ✓	3" 10"		2.85	50"/1.2	67/5.05	4.21		60°		Il20	MS			
	CVASH Nova Yantar	18 ^h 40.8	-32° 33		09 04	09 38	34" ✓	0" 12.5		3.35	50"/0.8	120/7.0	2.4		80°						T=13° H=49% w=0.5
2281	2452 A	06 41.6	-38 23	APR 15/16	09 24	01 34	10" ✓	2 50W	1.5" / 1.0	3.31	50"/1.2	120/7.0	6.08	A3	NeA	60 ^s	Il20	MS	Cy	T=13° H=42 w<0.5	
	B				01 40.5	01 18	35" ✓	3" 30.0					8.3				Il20 Bald 36 at 15.5°C				Dec
	3079 A	7 ^h 51.5	-34 40		01 29	01 32	3" ✓	2" 34.0					5.49	FSI							
	B				01 38	02 53	75" ✓	3" 57.0			0.8		9.30								Dec Line labeled - H=100 H=100
	3715 A	9 ^h 19.9	-31° 42		03 03	03 18	15" ✓	2" 53.0			1.2		7.28	A0							Dec
	B				03 26	03 51	25" ✓	3" 25.0					7.95								
	3817 A	9 ^h 33.1	-48° 53		04 02	04 08	24" ✓	3" 30.0	1.5-2.0		0.8		5.45								Dec Line labeled - H=100 H=100
	B				04 09	04 13	4" ✓	2" 35.0			0.8		6.13								Dec Line labeled - H=100 H=100
	B				04 14	04 18	44" ✓	3" 40.0			1.2		6.13								
	A				04 19	04 22	24" ✓	3" 45.0					5.45								Dec Line labeled - H=100 H=100

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1981	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2282	HR 4118 A	10 ^h 28.8	-30° 31'	15/16 Apr	0436	0438	2 ^h ✓	3 ^h 04 ^w	1.5 clear	3036	50 ^μ / 1.2	120°/ 7.0	5.53	B9	N ₂ A	15 ^s	30 ^m D14V	IIa0	ms	Cy 1/23		
	B			(cont'd)	0444	0644	2 ^h ✓	5 ^h 10 ^w			10.6		10.28					Baked 3 ^{hr} D65°				
	4952 A	13 ^h 06.8	-65° 12'		0704	0707	3 ^m / 4 ^m ✓	2 ^h 52 ^w			1.2		5.66	B5I uc								Tel. record.
	B				0712	0727	15 ^m / 20 ^m ✓	3 ^h 15 ^w					7.64	W5B B0I								
	5851	15 ^h 46.1	-65° 23'		0748	0753	5 ^m ✓	1 ^h 00 ^w	≤ 1.0				6.40	A5								N of pair
	5852				0756	0802	6 ^m ✓	1 ^h 10 ^w	≤ 1.0				6.63									S of pair
	5900 A	15 ^h 53.9	-60° 07'		0820	0825	5 ^m / 8 ^m ✓	1 ^h 25 ^w					6.20	A _n								
	B				0828	0908	40 ^m / 55 ^m ✓	2 ^h 10 ^w			0.8		9.08									Dec Trail
2283	a Cen	14 ^h 22.0	-39° 25'		0939	0950	1,2,3,4 ^m / 3 ^m ✓	4 ^h 22 ^w	"	2.85	50 ^μ / 1.2	67°/ 5.05	4.21		N ₂ A	60 ^s	"	IIa0				T=10°C, H=43% W<5
2284	HR 2843 A	7 ^h 24.4	-37° 13'	16/17 Apr	2347	0002	15 ^m ✓	1 ^h 35 ^w	1.5 cine	3.36	50 ^μ / 1.2	120°/ 7.0	7.11	A3	-	15 ^s		IIa0		Cy		T=12°C, H=15% W=18% S of pair
	2843 B				0003	0018	15 ^m ✓	1 ^h 57 ^w	"				7.19					Baked 3 ^{hr} D65°C				N of pair
	2870	7 ^h 28.1	-31° 49'		0025	0031	6 ^m / 8 ^m ✓	2 ^h 00 ^w	"				6.24	B3								
	2871				0035	0044	9 ^m ✓	2 ^h 14 ^w	clear cine				6.98									
	3205 A	8 ^h 09.2	-42° 31'		0058	0103	5 ^m ✓	1 ^h 52 ^w	1.5 clear				6.57	A0								Dec Trail
	B				0108	0132	24 ^m ✓	2 ^h 20 ^w	"				7.74									
	3267 A	8 ^h 17.7	-37° 18'		0142	0158	16 ^m ✓	2 ^h 37 ^w					7.58	A0								
	B	8 ^h 25.9			0201	0220	19 ^m ✓	3 ^h 00 ^w					7.84									
	3327 (A)	8 ^h 25.9	-38° 58'		0227	0232	5 ^m ✓	3 ^h 04 ^w					6.44	A0								
	3328 (B)				0235	0247	12 ^m ✓	3 ^h 19 ^w					7.33									
	3358 A	8 ^h 28.6	-47° 48'		0300	0302	2 ^m ✓	3 ^h 30 ^w					5.38	B5n								Dec Trail
	B				0305	0327	22 ^m ✓	3 ^h 57 ^w					7.22									
2285	HD 85100 A	9 ^h 48.2	-34° 55'		0346	0415	29 ^m ✓	3 ^h 25 ^w					8.30	A3								
	B				0417	0450	33 ^m ✓	4 ^h 00 ^w					8.37									
	HR 4370 A	11 ^h 15.8	-45° 42'		0500	0512	12 ^m ✓	2 ^h 55 ^w					7.30	F2								Dec trail seeing variable, prob no contamination
	B				0516	0537	21 ^m ✓	3 ^h 20 ^w					7.66									focus change in 1st trail
	4628 A	12 ^h 09.3	-34° 36'		0609	0622	5 ^m / 6 ^m ✓	3 ^h 03 ^w					6.35	A0								
	B				0625	0655	30 ^m ✓	3 ^h 46 ^w	1.0-1.5 clear				8.36									
	5428 A	14 ^h 32.3	-30° 37'		0707	0719	12 ^m ✓	1 ^h 45 ^w	1.5 clear				7.16	K0								
	B				0721	0927	10 ^m / 16 ^m ✓	3 ^h 55 ^w			0.6		10.51									Very faint - hard to keep on slit, → caution? prob not same star.
2286	a Cen	14 ^h 22.2	-39° 23'		0948	0958	2,3,4 ^m / 3 ^m ✓	4 ^h 35 ^w	2 ^m	2.85	50 ^μ / 1.2	67°/ 5.05	4.21		N ₂ A	60 ^s	30 ^m D14V	IIa0	ms			T=9°C, H=46% W=22

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

NUMBER	OBJECT	R.A.	DEC.	DATE UT 1981	U.T. EXP.		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2296 (faded)	HR 4730 4731	12 ^h 26.0	-62° 59'	19/10 Apr (Cont'd)	0848	0850	10 ^m 10 ^s 15 ^s	5 ^h 34 ^m W	2 ^h clear	3.86	50 ^m 1.2	120 7.0	1.08	B.IV	NA A	15 ^s	30 ^m 0.14	IIaO	MS	Cy	} Dec Trail.	
	4729 C	12 ^h 25.9	-63° 01'		0900	0904	4 ^m 14 ^s 2 ^h	5 ^h 48 ^m W					5.1	B5								
2297	α Cen	14 ^h 21.8	-39° 25'		0934	0949	3 ^m 47 ^s 4 ^h	4 ^h 36 ^m W		2.85	50 ^m 1.2	67 5.05	4.21			60 ^s	30 ^m 0.15	IIaO				T 9°C, H+43%, W 16
2298	HR 2412 A 3079 A B 3205 A B 3439 B 4804 A	6 ^h 31.7 7 ^h 57.4 8 ^h 08.8 8 ^h 39.5 12 ^h 36.5	-58° 48' -34° 39' -42° 35' -40° 12' -75° 14'	20/21 Apr	2335 2357 0007 0138 0151 0230 0500	2339 0001 0122 0145 0218 0340 0515	4 ^m 5 ^s 3 ^m 5 ^s 7 ^m 5 ^s 7 ^m 9 ^s 27 ^m 1 ^s 70 ^m 1 ^s 15 ^m 1 ^s	2 ^h 21 ^m W 1 ^h 23 ^m W 2 ^h 44 ^m W 2 ^h 50 ^m W 3 ^h 21 ^m W 4 ^h 15 ^m W 1 ^h 55 ^m W	2 ^h mostly clear 2 ^h clear 1.5-2 ^h 2 ^h 2 ^h -3 ^h 3 ^h	3.36		120 7.00	5.66 5.47 9.30 6.51 7.74 9.48 6.64	B9 F5 I A0 A0 B9		30 ^s 0.14 ^s	IIaO Redd 3L Obsc				} Dec Trail. } Dec Trail. } Dec Trail. } Dec Trail. ~10% from } Dec Trail: seen to per for B.	
2299	β Vir γ UMa ε Sco τ Her	11 ^h 49.5 18 ^h 46.8 16 ^h 19.4 16 ^h 18.9	+01° 53' +49° 24' -24° 07' +46° 18'		0555 0615 0640 0703	0559 0627 0650 0734	1 ^m 24 ^s 1 ^m 37 ^s 0 ^m 15 ^s 0 ^m 15 ^s	3 ^h 20 ^m W 1 ^h 50 ^m W 0 ^h 16 ^m E 0 ^h 28 ^m W					4.16 1.66 5.35 3.74	F9E B3E A+II B5-IV								
2300	α Cen	14 ^h 22.0	-39° 27'		0759	0813	2 ^m 47 ^s 4 ^h	3 ^h 05 ^m W	15 ^m clear	2.85	50 ^m 1.2	67 5.05	4.21			60 ^s 0.15 ^s	IIaO				T 9°C, H+44%, W 12 m Interlocking cloud.	
2301	HR 3259 α Cen	8 ^h 12.6 14 ^h 22.1	-12° 37' -39° 27'	21/22 Apr	0316 0345	0334 0424	18 ^m 40 ^s 5 ^m 10 ^s 14 ^m 43 ^s	4 ^h 34 ^m W 0 ^h 42 ^m E	2 ^h clear cumulatus	3.86 2.85		120 7.0 67 5.0	6.75 4.21	G7.5 V A0	NA A 60 ^s						T 10°C, H+42%, W 18 Alto cum cloud, some passing cumulus cloud.	
2302	α Cen	14 ^h 22.2	-39° 28'	23/24 Apr	0438	0509	1 ^m 31 ^s 4 ^h	0 ^h 11 ^m W	2 ^h cumulus				4.21								T 9, H+51%, W 12 Hole in cir cloud + Rain!	
2303	HR 3569 2107 15 Mar γ Pup	8 ^h 57.5 5 ^h 57.9 6 ^h 32.8 8 ^h 03.2	+48° 05' -9° 25' +09° 53' -39° 59'	11/15 Apr	2331 2344 0018 0033	2338 0007 0025 0035	1 ^m 31 ^s 3 ^m 61 ^s 50 ^m 10 ^s 6 ^m 12 ^s	0 ^h 08 ^m W 3 ^h 57 ^m W 3 ^h 13 ^m W 2 ^h 02 ^m W	1 ^h clear	3.76	50 ^m 1.2	120 7.0	5.32 6.6 4.42 1.99	A7 III F2 II O7 O8F	NA A 15 ^s	30 ^m 0.14 ^s	IIaO Redd	MS	Cy			
2304	α CMa κ Cen HR 3538 31 Cen	7 ^h 00.8 7 ^h 43.2 8 ^h 53.3 12 ^h 50.6	-27° 55' +24° 25' -5° 28' +27° 34'		0058 0036 0149 0242	0115 0036 0232 0305	2 ^m 48 ^s 2 ^m 48 ^s 6 ^m 40 ^s 3 ^m 6 ^s	3 ^h 42 ^m W 5 ^h 22 ^m W 3 ^h 08 ^m W 0 ^h 17 ^m E	2 ^h 2 ^h 1 ^h 2 ^h some clear				5.20 4.5 6.6 5.63	K7 Ib A7 IIIa G3 I G0 III		30 ^s		not bared				H 85
2305	HR 4577 A B 4636 A	11 ^h 57.5 12 ^h 10.0	-40° 55' -45° 18'		0323 0400 0546	0358 0541 0615	3 ^m 6 ^s 10 ^m 1 ^s 29 ^m 1 ^s	1 ^h 30 ^m W 5 ^h 13 ^m W 5 ^h 25 ^m W	1 ^h 15-2 ^h 2 ^h				7.87 10.24 7.72	K0 K0 K0	15 ^s		Redd				10-15% cirrus for 6:00-7:00 AM 2nd	

NUMBER	OBJECT	R.A.	DEC.	DATE U.T. 1981	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS		
					BEGIN	END									KIND	EXP.							
2305	HR 4819 γ Cen A	12 ^h 40.4	-48° 57'	(24/25 Apr)	0626	0628	15 ^m 30 ^s ✓	3 ^h 16 ^m W	1.5 ⁺ clear	3.36	50 ^m / 1.2	120 / 7.05	2.84	A0 III	NaA	15 ^s	30 ^m B4 ^v	IIa0	ms.	Cy	Not seen } no center 5 " "		
	B				0632	0634	15 ^m 30 ^s ✓	3 ^h 22 ^m W					2.97										
	5189 A	13 ^h 47.6	-35° 38'		0640	0652	12 ^m / 15	2 ^h 34 ^m W					7.13	G3 IV-V									
	5559 A	14 ^h 54.9	-47° 48'		0707	0711	4 ^m ✓	1 ^h 45 ^m W					6.04	B9 V									
	B				0715	0724	9 ^m ✓	2 ^h 00 ^m W					6.79									} Dec Trail + "judder" no center.	
2306	λ Ser	15 ^h 45.3	+7° 25'		0747	0755	1 ^m 2 ^m 4 ^m ✓	1 ^h 38 ^m W					5.03	G0 V									
	K Cen	15 ^h 50.2	+35° 40'		0803	0824	3 ^m 6 ^m 12 ^m / 8 ✓	2 ^h 03 ^m W					-5.6	K1 IVa									
	ε Cen	15 ^h 56.5	+26° 56'		0833	0848	2 ^m 4 ^m 8 ^m ✓	2 ^h 20 ^m W					5.38	K2 IIIab									
	μ Her	17 ^h 45.3	+27° 45'		0857	0907	50 ^m 120 ^m 235 ^m 275 ^m ✓	0 ^h 50 ^m W					4.14	G5 IV									
2307	α Cen	14 ^h 21.8	-39° 26'		0932	0945	2 ^m 3 ^m 7 ^m / 4 ✓	4 ^h 52 ^m W	2 ⁺	2.85		67 / 5.05	4.21			60 ^s						T6, H69, W22	
2308	HR 2513	6 ^h 45.0	-52° 10'	25/26 Apr	2352	0025	50 ^m 12 ^m / 4 ✓	3 ^h 12 ^m W	2 ⁺ clouds	3.35		120 / 7.0	7.1	G6 IaB		15 ^s						T8, H74, W10 No-cen.	
	HD 64616	7 ^h 53.0	-26° 14'		0041	0142	6 ^m 12 ^m / 120 ^m ✓	3 ^h 22 ^m W					-7.9	K0 III									
	γ Leo	10 ^h 15.5	+23° 31'		0200	0212	2 ^m 4 ^m 10 ^m / 4 ✓	1 ^h 30 ^m W					3.74	F0 III									
	N Vel	9 ^h 31.1	-56° 58'		0230	0239	14 ^m 24 ^m 5 ^m / 5 ✓	2 ^h 30 ^m W	same axis.				4.68	K5 III									
	Jupiter II	12 ^h 09.4	+00° 39'		0254	0325	5 ^m 9 ^m 16 ^m / 32 ^m ✓	0 ^h 50 ^m W	more in				-6.5	G2 V									
2309	ε Cen	14 ^h 21.8	-39° 25'		0411	0431	2 ^m 3 ^m 4 ^m 6 ^m 3 ^m / 3 ✓	0 ^h 20 ^m E	2 ⁺ clearing	2.85		67 / 5.05	4.21			60							
2310	HR 4262A	10 ^h 52.4	-70° 38'		0520	0526	5 ^m 14 ^m / 14 ^m ✓	4 ^h 05 ^m W		3.35		120 / 7.0	6.42	B8		15 ^s						10-15% center p.t. } Dec Trail <10% center.	
	B				0532	0546	14 ^m / 50 ^m ✓	4 ^h 27 ^m W					7.14										
	4804A	12 ^h 36.8	-75° 15'		0601	0613	12 ^m / 30 ^m ✓	3 ^h 11 ^m W	2 ⁺ clouds				6.64	B9									Dec Trail - no center
	γ Boo	14 ^h 50.4	+19° 10'		0633	0644	3 ^m 6 ^m / 14 ^m ✓	1 ^h 27 ^m W					5.30	G8 V									stopped by clouds. [unclear]
2311	Nova Herda	18 ^h 40.6	-37° 33'		0803	0834	4 ^m 10 ^m 15 ^m / 15 ^m ✓	0 ^h 32 ^m E	2 ⁺ clear + times		100 ^m / 0.8	120 II / 7.0	~8.7			1 ^s						T6, H83, W10.	
2312	21 LMi HR 3569	8 ^h 57.5	+48° 07'	26/27 Apr	2328 ¹	2339 G2 III	1 ^m 1 ^m 3 ^m / 3 ^m ✓	0 ^h 20 ^m W	3 ⁺ cir	3.33	50 / 8.1.2	120 / 7.0	3.32	A7 III		15						T7, H79	
	HR 2513	6 ^h 45.3	-52° 11'		2350	0015	16 ^m 18 ^m / 16 ^m ✓	3 ^h 07 ^m W	2 ⁺ -12 ⁺				7.1	G6 IaB								F7H	
	Jupiter IV	12 ^h 09.2	+00° 38'		0024	0056	4 ^m 8 ^m 16 ^m 3 ^m / 16 ^m ✓	0 ^h 36 ^m E					-6.5	G2 V									
	HR 3259	8 ^h 17.5	-12° 40'		0105	0138	5 ^m 7 ^m 18 ^m / 18 ^m ✓	2 ^h 57 ^m W					6.75	G7.5 V									
2313	HR 3831 A	9 ^h 35.8	-48° 40'		0155	0201	6 ^m / 16 ^m ✓	2 ^h 03 ^m W	1 ⁺				6.50	A9									
	B				0204	0257	53 ^m / 16 ^m ✓	2 ^h 58 ^m W	1 ⁺ -1 ⁺				9.73										
	4718 A	12 ^h 23.6	-41° 17'		0302	0321	19 ^m / 16 ^m ✓	0 ^h 34 ^m W					7.57	K0									
	B				0324	0420	56 ^m / 16 ^m ✓	1 ^h 33 ^m W					9.55										
	4262A	10 ^h 52.0	-70° 36'		0436	0444	8 ^m / 16 ^m ✓	3 ^h 30 ^m W	1 ⁺ -2 ⁺				6.42	B8									
	B				0450	0510	16 ^m / 24 ^m ✓	3 ^h 50 ^m W					7.14										no center } Dec Trail 10-20%

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CAT. P.C.S.N.	EMUL.	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2326	HR 3974	10 06.3	35 21	22/23 MAY	00 01	00 02	4,7,10 ^s	1 15W	2" / SCHE KLEINS	3.36	100/0.8	120/10	4.66	A7V			-5,4,3	IIaD	MS	WIZ		
	4357	11 13.1	20 37		00 13	00 14	1,2,2 ^s	0 20W					2.68	A4V	NeA	15	-1,1,2					
	4359	11 13.3	19 32		00 22	00 23	1,2,1 ^s	0 30W					3.30	A2V			4,5,6					
2327	4534	11 48.1	14 40		00 44	00 46	4x-1 ^s	0 15W					2.23	A3V	NeA	15	-5,4,2,1					
	4825/G	12 40.7	-1 21		00 52	00 53	1,2,3,4 ^s	0 30E					3.98	F0V			2,3,5,6					
2228	NGC 3532 K179	11 05.5	-58 33		01 24 ^{1/2}	01 40	16 ^{1/2} "	1 55W					10.22				-5					
	K200				01 45	02 05 ^{1/2}	20 ^{1/2} "	2 20W					10.44				-3					
	K213				02 11 ^{1/2}	02 32	20 ^{1/2} "	2 45W					10.43		NeA	15	-1					
	K3				02 34	02 53 ^{1/2}	19"	3 05W					10.32				+1					
	K17				02 56	03 16	20"	3 30W					10.38				+3					
	K32				03 19	03 41	22"	3 55W					10.46				+5					
2329	HR 5447	14 33.9	29 50		04 00	04 01	4,6,8,10 ^s	0 45W					4.81	F2V			-5,4,2,1					
	5634	15 06.5	25 57		04 11	04 12	6,9,12,16 ^s	0 25W					5.36	F5V			+2,3,5,6					
2330	NOVA CrA81	18 40.6	-37 33		05 03	05 23	20"	2 00E									-5					
2331	HR 6752	18 04.5	+2 30		07 34	07 35	3,5,7,9 ^s	0 50W					4.90	K0V			-5,4,2,1					
	7447	19 35.7	-1 21		07 40	07 41	2,3,4,5 ^s	0 35E					4.28	B5III			2,3,4,6					
2332	7741	20 14.7	23 26		08 33	08 35	15,30,45 ^s	0 20E					-6.2	C2Ib			-5,4,3					
	7906	20 38.8	15 51		08 43	08 44	1,2,3 ^s	0 35E					3.71	B9IV			-1,1,2					
	8321	21 45.2 35.6	22 52		08 51	08 53	30,45,60 ^s	1 30E					6.72	K0Ih			4,5,6					
2333	8232	21 30.6	-5 40		09 13	09 14	1,2,3,15 ^s	0 55E					3.73	G0Ih			-5,4,2,1					
	8413	22 04.7	4 57		09 22	09 23	4,7,13,10 ^s	1 20 E					5.28	F8IV			2,3,5,6					T=13°C H=28%
2334	NGC 3532 K45	11 05.5	-58 33	05/06 MAY	23 44	00 44	60" / ✓	1 55W	2-3" / CLR	3.36	100/0.8	120/10	4.83		NeA	10 ^s	SPOT CAL 2" at 14	IIaO	MWP2	WIZ		T=6 H=77
	K85				00 47	01 45	58" / ✓	2 55W	2-2 1/2"				9.71									
	K148				01 46 ^{1/2}	02 48 ^{1/2}	62" / ✓	3 55W	2-2 1/2" / SOME CLOUD				9.84									clouds moved in during last 10". T=6 H=39
	K141 K184				02 55	03 15 ^{1/2}	20 ^{1/2} " / ✓	4 25W					8.52									clouds have part over from south. careful with K103 & E.
	K98				03 17	03 46	29" / ✓	4 55W	CLR				8.93									
	K172				03 49	04 14	25" / ✓	5 25W	SOME CLOUD				8.67									
	K157				04 17	04 51	34" / ✓	6 00W	2-3" / CLR				8.92		NeA	10 ^s						T=6 H=37

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. β	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
2339	M6C 3532: K188	11 05.5	-58 33	10/11 JUNE	23 12	00 26	74 ^m	1 55 W	2" / CLR	2.85	50 ^m / 0.8mm	67 / 505	9.01		NeA	60 ^s	spot 30" at 14V	IIaO Baked 3mm at ~65°C	MS	WIZ	T=9°C H=327.
	K13				00 29 ^{1/2}	01 12	43 ^m	2 40 W					8.41								
	K43				01 14	02 24	70 ^m	3 53 W	2-2 1/2" light cirrus?				8.63								circus over much of sky.
	K65				02 25	03 08	43 ^m	4 45 W	2" CLR				8.33								
	K135				03 09 1/2	03 55	45 1/2 ^m	5 25 W					8.38								
	K141				03 56	05 04	68 ^m	6 33 W	2-2 1/2" cirrus				8.52		NeA	60 ^s		II			T=10 H=29
2340	NOVA GR A1981	18 40.6	-37 33		06 05	06 30	25 1/2 ^m Very faint	0 23 W	2" Cirrus	3.36	100 / 0.8	129 / 70			NeA	1 ^s		IIaD	MS	WIZ	
2341	K174	11 05.5	-58 33	11/12 JUNE	23 13	23 30	17 ^m	1 00 W	2" CLR	2.85	50 / 0.8	67 / 505	7.37		NeA	60 ^s	spot 30" at 14V	IIaO Baked	MS	WIZ	T=8 H=28 Cirrus on horizon
	K157 K172				23 32	00 42	70 ^m	2 15 W					8.92 8.67								
	K172				00 45 1/2	01 43	58 ^m	3 15 W	some cirrus				8.67								T=11
	K98				01 44	03 13	89 ^m	4 45 W	2" Cirrus				8.93								
	K221				03 14	04 49	95 ^m	6 22 W	2-3" CLR P				8.91		NeA	60 ^s					T=9 H=25
2342	NOVA GR A1981	18 40.6	-37 33		05 41	06 06	25 ^m Faint	0 04 W	2" CLR	3.36	100 / 0.8	120 / 7.0			NeA	1 ^s		IIaD	MS	WIZ	T=9 H=25
2343	"	"	"		06 59	08 59	2 ^m	2 59 W							NeA	1 ^s					T=9 H=25
2344	K95	11 05.5	-58 33	12/13 JUNE	23 12 1/2	23 34	21 1/2 ^m	1 10 W	2" CLR	3.36	100 / 0.8	120 / 7.0	9.55		NeA	5 ^s	spot 30" at 14V	IIaO Baked	MWP2	WIZ	T=12 H=23
	K61				23 36	23 58	22 ^m	1 35 W					9.57								
	K44				23 58 1/2	00 26 1/2	28 ^m	2 00 W					9.82								
	K24				00 29 1/2	01 02 1/2	33 ^m	2 40 W					10.00								
	K23				01 03 1/2	01 27 1/2	24 ^m	3 05 W					9.63								
	K79				01 29 1/2	02 59 1/2	90 ^m	4 35 W	2-2 1/2" some cirrus				10.62								
	K66				03 00 1/2	03 24	23 1/2 ^m	5 00 W	CLR				9.42								
	K193				03 25 1/2	03 56 1/2	31 ^m	5 35 W					9.68								
	K207				03 58	04 47	49 ^m	6 25 W	CLR				10.04		NeA	5 ^s					T=9 H=22
2345	K25			13/14 JUNE	23 15 1/2	23 24	8 1/2 ^m	1 05 W	2" CLR				8.49		NeA	5 ^s	spot 30" at 14V	IIaD Baked	MWP2	WIZ	T=10 H=22
	K56				23 25	00 07	42 ^m	1 45 W					9.56								
	K129				00 08	00 20 1/2	12 1/2 ^m	2 00 W					8.59								
	K165				00 21 1/2	01 15	53 1/2 ^m	2 55 W					9.83								
	K238				01 16 1/2	01 53 1/2	37 ^m	3 35 W					10.08								
	K226				01 54 1/2	02 53	58 1/2 ^m	4 35 W					10.52								
	K138				02 55	04 07	72 ^m	5 48 W					10.65								
	K234				04 08 1/2	04 58 1/2	50 ^m	6 40 W					10.02		NeA	5 ^s					T=11 H=22

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE UT. 1981	UT. EXP.		TOTAL/CORR.	HA. END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG B	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2346	NGC 3532 K26	11 05.5	-58 33	14/15 JUNE	23 10	23 59	49m ✓	1 45W	2" / CLR	3.36	100% / 0.8mm	120A / 7.0	10.42		NeA	5 ^s	30" x 114"	IIaO	MWP2	WIZ	T=10.5 H=22 Moon not full. But far away.	
	K54				00 00	01 12	72m ✓	2 55W					10.83									
	K111				01 13½	01 33½	20m ✓	3 20W					9.13									
	K242				01 35½	02 11	35½m ✓	3 55W					10.05									
	K223				02 12	03 00	48m ✓	4 45W					10.28									
	K22				03 02½	03 50	47½m ✓	5 35W					10.16									
	K47				03 51	04 46	55m ✓	6 30W					10.18									T=10½ H=21
2347	SKY				04 47½	05 02½	15m ✓ very faint	6 45W														
2347	K37	11 05.5	-58 33	23/04 JUNE	00 32	01 10½	30½m ✓	3 50W		3.36	100% / 0.8	120 / 7.0	10.84		NeA	1 ^s	-5	IIaD	MS	WIZ	T=8 H=33	
	K53				01 12½	01 42½	30m ✓	4 25W					10.64				-3					
	K58																					
2348	NGC 6302	17 ^h 13.5	-37° 04		02 27	02 47	20m ✓	0 41E	2" / CLR	3.36	100% / 0.8	120 / 7.0			NeA	1 ^s		IIaD	MS	FAUNDEZ Y CO.		
	NGC 6302	17 13.5	-37 04		02 51	03 11	20m ✓	0 13E														
2348	H1-36 a	17 49.9	-37 02		04 16	04 36	20m ✓	0 32E														
	b	"	"		04 40	05 21	10m ✓	1 11W														
2350	" c	"	"		05 36	05 41	5m ✓	1 39W														
	c				05 42	05 52	10m ✓	1 49W														
	e				05 56	06 16	20m ✓	2 00W														
	Ex				06 32	07 12	45m ✓	2 00W														T=7, H=44
2351	NGC 6302	17 ^h 13.5	-37° 40	29/30 30NE	23 44	04 46	60m ✓ 20m	2 08E	2" / CLR	3.36	100% / 0.8	120 / 7.0			NeA	1 ^s		IIaD	MS			
					01 23	02 24	45m ✓ 15m	0 56E														
	H1-36 a	17 49.9	-37 02		02 28	02 48	20m ✓	1 13E														
2352	H1-36 a	"	"		03 01	03 21	20m ✓	0 48E														
	c	"	"		03 26	04 04	38m ✓	0 04W														
2353	V225 Sgr NGC 3532	18 10.7	-36 05		04 30	05 00	5½ hrs ✓ back	5 40W	"	"	100% / 0.6	"			NeA	1 ^s		IIaD	MS	WIZ	T=6 H=45	
2354	K48	11 05.5	-58 33	9/10 JULY	23 24½	00 05	30m ✓	3 30W	2½" / CLR	3.36	100% / 0.8	120 / 7.0	10.76				-5	IIaD	MS	WIZ	T=5 H=60 31 Quarter Moon	
	K58				00 40	01 10	28m ✓	4 35W					10.63				-1					detected
	K59				01 20½	01 49	28m ✓	5 10W	2.3"				10.57		NeA	1 ^s	-2					T=7 H=45
	K133				01 57	02 43	46m ✓	6 05W	2½-3"				10.90				+4					
	SKY	12 01	-58 30		02 44	02 54	10m ✓	5 20W									+6					

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					BEGIN	END									KIND	EXP.					
2355	JGC 3532 K100	11 05.5	-58 33	JULY 10/11	23 28	23 56	28 ^m ✓	3 25W	2" / CLR	3.36	100 ^m / 0.8 ^m	120 / 7.0	10.76				-5	IIaD	MS	WIZ	T=9 H=35
	K177				23 58	00 34 ^{1/2}	36 ^{1/2} ✓	4 00W					11.00				-3		Developed on extra 23 ^m		
	K176				00 35 ^{1/2}	01 08 ^{1/2}	33 ^m ✓	4 35W					10.85	NeA	1 ^s		-1				
	K191				01 10	01 46	36 ^m ✓	5 15W					10.90				+2				
	K205				01 47	02 32	45 ^m ✓	6 00W					11.04				+4				T=9 H=30
2356	K31			JULY 20/21	23 30	00 44	74 ^m ✓	4 50W	2" / CLR	"	"	"	11.74				-5	IIaD	MS	WIZ	T=8 1/2 H=27
	K241				00 48	01 59	71 ^m ✓	6 05W					11.56	NeA	1 ^s		-3				T=7 H=26
2357	K38			JULY 21/22	23 21	00 48	87 ^m ✓	5 00W	2 1/2" / CLR	"	"	"	11.91					IIaD	MS	WIZ	T=4 H=36
	K161				00 50	01 52	62 ^m ✓	6 00W					11.40								
2358	RR Sco	16 59.4	-30 33	JULY	03 14	03 39	25 ^m ✓	2 00W					10.7	NeA	1 ^s			IIaD	MS	IKS/WIZ	T=2 H=38 MIRA PROGRAM
2359	K90	11 05.5	-58 33	JULY 22/23	23 20	00 41	81 ^m ✓	4 55W	2" / CLR	"	"	"	11.84	NeA	1 ^s			IIaD	MS	WIZ	T=4 H=39
	K228				00 47	01 36	49 ^m ✓	5 50W	2-3"				11.06								Contamination on E edge by K233.
2360	γ NOR	16 15.6	-50 01		03 10	03 15	50 ^m ✓	2 20W	2-2 1/2"	3.36	100 / 0.8	120 / 7.0	5.76	NeA	10 ^s			IIaD	MWP2	IKS/WIZ	
	ζ TRA	16 26.4	-70 03		03 26	03 32	30, 60, 90 ^s ✓	2 25W					5.45								
	BS 6070	16 17.1	-28 34		03 39	03 41 1/2	123, 95, 51 ^s ✓	2 45W	2 1/2"				4.30								
	σ SER	16 21.1	+01 05		03 51	03 57	50, 45, 75, 105 ^s ✓	2 55W	3"				5.15								T=4 H=34
2361	K147	11 05.5	-58 33	JULY 23/24	23 46	00 54	68 ^m ✓	5 10W	2" / CLR	"	"	"	11.61					IIaD	MS	WIZ	T=6 H=28 Contamination by K233 & K235
	K129				00 56	01 00 1/2	4 1/2 ^m ✓	5 20W					8.59	NeA	1 ^s						
2362	ν 725 Sgr	18 10.7	-36 05		01 21 1/2	04 21 1/2	3 ^m ✓	1 35W	2"					NeA	1 ^s			IIaD	MS		T=8 H=27
2363	BS 6866	18 19.9	+3 22		05 15	05 21 1/2	60, 120, 180 ^s ✓	2 25W	2" / CLR	"	"	"	5.76	G8III	NeA	10 ^s		IIaD	MWP2	IKS	
	BS 6877	18 20.3	+28 51		05 41	05 45 1/2	38, 72, 108 ^s ✓	2 43W	2"				5.00?	A4							
	BS 6868	18 19.5	+21 57		05 58	06 15	160, 320, 480 ^s ✓	3 20W	2 1/2" → 2"				6.27?	gMO							
	BS 6896	18 24.3	-20 33		06 27	06 39	103, 219, 315 ^s ✓	3 39W	2 1/2" → 3"				6.12	K2II							
	BS 6918	18 26.3	+00 11		06 58	07 05	45, 90, 135 ^s ✓	4 03W	2 1/2"				5.4?	G0(+A0)	NeA	10 ^s					T=0, H=27
2364	ν 725 Sgr	18 10.7	-36 05	JULY 24/25	00 18	05 18	5 ^m ✓	2 35W	2"					NeA	1 ^s			IIaD	MS	WIZ	T=12 H=24
2365	HR 8321	21 45.2	22 52		06 29	06 31	15, 30, 45 ^s ✓	0 15W	2"				6.72	K0Ib							
	553	1 54.7	20 43		06 48	06 49	12, 1 1/2 ^s ✓	3 35E					2.78	A5V	NeA	1 ^s					Ni-Cd batteries dead.
	623	2 08.4	29 51		07 00	07 01	8, 15, 20 ^s ✓	3 35E					5.41	F3III							
2366	996	3 18.4	3 18		07 29	07 31	6, 10, 15, 25 ^s ✓	4 20E					5.50	G5IV							
	856	2 52.1	16 24		07 43	07 45	30, 45, 60, 90 ^s ✓	3 40E					6.74	F5III	NeA	1 ^s					T=12 H=22

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					BEGIN	END									KIND	EXP							
2365	Q Leo A Vir	11 133 11 49.8	15 32 1 52	JULY 27/23	23 23	23 24	1,2,3,2 ⁺ 2,3,4,5 ⁺	3 50W	2" / CLR	336	100% / 0.8m	N0 20	3.30	A2V	NeA	1 ^s	3-4-3-1	IIaD	MS	WIZ	T=11 H=20		
2366	M Her	17 45.7	27 44		02 23	02 25	2,3,4,5 ⁺ 2,3,5,7 ⁺	0 20W					4.14	G5IV			8-1-2-4						
	67 Oph	17 59.7	2 56		02 34	02 35	2,3,5,7 ⁺	0 15W					3.99	B5 Ib			23.56					scopped by camera	
2367	NOVA CrA 1981	18 40.6	-37 33		03 17	04 17	1W Faint 5,10,20,15 ⁺	1 15W	1" / CLR + 2" CCD				5.23	F2 Ib	NeA	1 ^s							
2368	v Agl	19 25.6	0 18		04 37	04 38	5,7,10,15 ⁺	0 50W					4.89	K0 III								r=10 H=20	
	η Cyg	19 55.7	35 02		04 46	04 47	5,7,10,15 ⁺	0 30W														T=9 H=32	
2369	12 Peg	21 45.2	22 52	JULY 27/30	06 35	06 37	12,46,25,18 ⁺ 6,2,4,1,15 ⁺	0 40W	"	"	"	"	6.72	K0 Ib	NeA	1 ^s	3-4-2	IIaD	MS	WIZ		T=4 H=31	
	β Ari	1 53.6	20 43		07 46	07 47	12,46,25,18 ⁺ 6,2,4,1,15 ⁺	2 20E					2.78	A8 IZ								T=9 H=33	
2370	NOVA CrA 1981	18 40.6	-37 33	JULY 20/31	00 21	04 03	12,46,25,18 ⁺ 6,2,4,1,15 ⁺	1 10W	1-2" / 3" ME CCD						NeA	1 ^s		IIaD	MS	WIZ			
2371	14 Ari	2 08.4	25 51		08 19	08 20	6,9,15,22 ⁺	1 55E	2-3" / CLR				5.41	F2 II									
	HR 856	2 52.1	16 24		08 30	08 32	15,30,45,60 ⁺	2 30E					6.74	F5 III	NeA	1 ^s							
2372	K CrA 18 Tau	3 18.4	3 18		08 51	08 52	5,9,14,21 ⁺ 8,13,23,19 ⁺	2 35E					5.50	G5 IV									
	18 Tau	3 44.0	24 47		09 00	09 02	8,13,23,19 ⁺	2 50E					5.56	B7 IV	NeA	1 ^s							
2373	27 Tau	3 48.0	24 00		09 16	09 17	1,2,3,4 ⁺	2 40E					3.54	B5 III									
	78 Tau	4 27.6	15 50		09 24	09 25	1,2,3,4 ⁺	3 10E					3.59	A7 III	NeA	1 ^s							
2374	τ Ori	4 50.2	5 18.34		09 42	09 43	1,2,3,2E ⁺	3 15E					3.52	B2 III									
	β Eri	5 06.9	-5 06		09 49	09 50	1,2,1E,1 ⁺	3 25E					2.93	A3 III	PRISH CUT								r=11 H=26
2375	HR 1279	4 06.6	15 07		10 11	10 14	10,20,30,45 ⁺	2 00E	2" / CLR				6.41	F3 IV	NeA	1 ^s						T=19 H=24	
2376	NOVA Sgr 1980	18 13.4	-24 44	5/24 21/AUG	00 09	05 09	5W ⁺	2 45W	2" / CLR		100% 0.4				NeA	1 ^s		IIaD	MS	WIZ		T=19 H=24	

NUMBER	OBJECT	R.A. 1981	DEC. 1981	DATE U.T. 1981	U.T. EXP. / LST		TOTAL / CORR.	HA-END QUALITY	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP		EMUL.	DEV.	OBS	REMARKS		
					BEGIN	END									KIND	EXP.						
2377	S CAR	10 ^h 08.7 ^m	-61°27'	AUG 4	00:03	00:39	35 ^m /35 ^m	STRONG	3" / CLEAR	3-36	100/0.8	120/7.0	7.7	K7e-M7e	NeA	10 ⁵	10	Tia-D	MWP-2	CRW	T=8°C H=37% } WIND =22	
	R CEN	14 ^h 15.5 ^m	-59°49'		00:55	1:30	35 ^m /32 ^m	GOOD	4" / LOW CLOUD				8.0	M7e-M7II			12					
	RR SCO	16 ^h 55.4 ^m	-30°33'		01:41	2:18	36 ^m /36 ^m	GOOD	3" / LOW CLOUD				8.2	M6II-M5II			14					} WIND =30
	RU SCO	17 ^h 41.0 ^m	-43°45'		02:41	05:01	140 ^m /240 ^m	with 0.8	WEAK		100/0.6		10.3	M7II-TIIe	NeA	10 ⁵	16	FILTER IN!				
2378	RR SCR	19 ^h 54.8 ^m	-29°15'		5:28	7:07	99 ^m /93 ^m	WEAK					9.8	M5e-M6e	NeA	10 ⁵	9					} WIND =15
	RU SCR	19 ^h 57.4 ^m	-41°54'		7:28	8:44	76 ^m /73 ^m	WEAK	2" / LOW CLOUD				9.7	M3e-M6e			11					
	O CET	2 ^h 18.3 ^m	-3°04'		9:00	9:06	35 ^m /45 ^m , 1 1/2 ^m , 65 ^m /105 ^m				100/0.8		5.3	M5e-M9e	NeA	10 ⁵	13,15,17					T=6°C H=37% } WIND =10
2379	W CEN	11 ^h 54.1 ^m	-59°09'	AUG 8	00:39	00:59	20 ^m /20 ^m	✓ FINE	2" / CLEAR	3-36	100/0.8	120/7.0	10.1	M3e-M8e	NeA	2 ⁵	-5	Tia-D	M-S	CRW	T=2°C H=75% } WIND =10	
	R HYA	15 ^h 28.6 ^m	-23°11'		1:13	1:23	4 ^m /4 ^m , 4 1/2 ^m	STRONG					<8.6	M6e-M8e			-3,-2					
	RU HYA	14 ^h 10.4 ^m	-28°48'		1:34	1:54	20 ^m /20 ^m	✓ HAK					✓ 10.3	M6e			-1					slat of focus
	R CEN	14 ^h 15.2 ^m	-59°49'		2:12	2:23	3 ^m /3 1/2 ^m	6 ^m ✓					>8.4	M7e-M7IIe			+1,+2					
	R NOR	15 ^h 34.6 ^m	-49°27'		2:37	3:10	33 ^m /30 ^m	✓ HAK					>10.8	M3e-M6IIe			+3					
	RU SCO	17 ^h 41.0 ^m	-43°45'		3:15	3:37	22 ^m /21 ^m	✓ ✓					✓ 10.5	M7II-TIIe	NeA	2 ⁵	+5					
2380	V450 AQL	19 ^h 32.8 ^m	+5°05'		4:10	4:14	3 1/2 ^m /3 1/2 ^m	v. sl. ✓					<8.4	M5-M5.5II	NeA	2 ⁵	-5					
	HD 207076	21 ^h 45.6 ^m	-2°18'		4:24	4:27	3 ^m /3 ^m	v. sl. ✓					<8.3	M7III			-3					
	RR SCR	19 ^h 54.8 ^m	-29°15'		4:37	4:47	10 ^m /10 ^m	✓ ✓					✓ 9.7	M5e-M6e			-1					
	RT SCR	20 ^h 16.5 ^m	-39°10'		4:56	5:09	13 ^m /13 ^m	✓ ✓					✓ 10.0	M5e-M7e			+1					
	RU SCR	19 ^h 57.4 ^m	-41°54'		5:25	5:39	14 ^m /13 1/2 ^m	✓ ✓					✓ 10.0	M3e-M6e			+2					
	T OCT	21 ^h 10.9 ^m	-82°11'		5:49	6:36	47 ^m /46 ^m	wk					>11.2	M2e-M7IIe			+3					
	T GRU	22 ^h 24.6 ^m	-37°40'		6:41	7:06	25 ^m /21 ^m	✓ v. imp					✓ 10.5	M1TIIe-M7IIe	NeA	2 ⁵	+5					
2381	S PSA	22 ^h 02.7 ^m	-28°09'		7:34	8:14	40 ^m /44 ^m	sl. ✓					<11.3	M3e-M5IIe	NeA	2 ⁵	-5					
	R PHE	23 ^h 55.5 ^m	-49°54'		8:23	8:41	18 ^m /18 ^m	✓ HAK					✓ 10.3	M3e			-3					
	T SCL	0 ^h 28.3 ^m	-38°01'		8:50	9:09	19 ^m /17 ^m	✓ HAK					>10.3	M3			-1					
	R HOR	2 ^h 53.2 ^m	-49°58'		9:20	10:20	60 ^m /60 ^m	✓ ✓					✓ 11.6	M5-M7IIe-TII			+1					
	30 PSC	0 ^h 00.9 ^m	-6°07'		10:27	10:30	17 ⁵ /25 ⁵	✓ 35 ⁵					✓ 6.1	M3III	NeA	2 ⁵	+3,+4					T=3°C H=56%
2382	R CAR	9 ^h 31.7 ^m	-62°42'	AUG 9	23:57	00:02	5 1/2 ^m /5 ^m	✓ HAK	2" / CLEAR	3-36	100/0.8	120/7.0	8.4	M7e-M8e	NeA	2 ⁵	-5	Tia-D	M-S	CRW	T=7°C H=50%	
	S CAR	10 ^h 08.7 ^m	-61°27'		00:10	00:20	1 1/2 ^m /2 ^m	✓ 3 ^m					<7.5	K7e-M7e			-3,-2,-1					slat of focus
	XZ CEN	12 ^h 23.2 ^m	-35°31'		00:40	01:50	70 ^m /107 ^m	wk					>10.5	M5			+1					
	R HYA	13 ^h 28.6 ^m	-23°11'		2:00	2:09	1 ^m /1 1/2 ^m /2 ^m	1 1/2, 3 ✓					>7.6	M6e-M8e	← NeA	2 ⁵	+3,+4,+5					

NUMBER	OBJECT	R.A.	DEC	DATE UT.	UT EXP / LST		TOTAL / CORR.	H.A. END- QUALITY	SEE / TRANS	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP		EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.				
2383	W HYA	1981 13 ^h 47. ^m 9	1981 -28°16'	1981 AUG 9	2:29 18:56	2:45 14:12	16 ^m /13 ^m	✓	2" CLEAR	3-36	100/0.8	12/20	9.5	M2-M3e	NA 2 ^s	-5	III-D	M-5	CRW	T=8° H=33% } W=25
	R CEN	14 ^h 15. ^m 2	-59°49'		2:52 19:18	3:00 19:26	8 ^m /16 ^m	✓					>8.4	M1e-M10e		-3				
	S UB	15 ^h 20. ^m	-20°19'		3:07 19:33	3:22 19:58	25 ^m /24 ^m	✓ H&K sl. wk.					>10.5	M2e		-1				
	R NoR	15 ^h 34. ^m 6	-49°27'		3:42 20:08	4:21 20:47	39 ^m /33 ^m	✓					>10.8	M3e-M4e	NA 2 ^s	+1				
	V 450 AGL	19 ^h 32. ^m 8	+5°05'		4:31 20:58	4:57 21:04	19 ^m /22 ^m	✓ 1/2 ⁱⁿ wk.					>8.1	M5-M5.5III		+2,+3				
	HD 207076	21 ^h 45. ^m 6	-2°18'		4:44 21:00	4:48 21:04	16 ^m /22 ^m	✓ 1/2 ⁱⁿ W					<8.1	M7III		+1,+5				
2384	T OCT	21 ^h 10. ^m 9	-82°11'		5:17 21:43	6:45 23:07	26 ^m /23 ^m	✓ H&K sl. wk.					>11.7	M2e-M4e		-5				
	S P3A	22 ^h 02. ^m 7	-28°09'		6:46 22:13	7:20 22:47	34 ^m /32 ^m	✓					<11.0	M2e-M5e		-3				
	R IND	22 ^h 34. ^m 7	-67°24'		7:27 23:54	7:52 00:20	25 ^m /24 ^m	sl. wk.					>10.6	M2-M4e		-1				sl out of focus
	S SCL	0 ^h 46. ^m 4	-32°09'		8:02 00:29	9:04 1:31	62 ^m /56 ^m	✓					>11.6	M3e-M8e		+1				
	W ERI	4 ^h 10. ^m 7	-25°11'		9:19 1:47	9:59 2:07	20 ^m /16 ^m	sl strong					<10.2	M7e		+2				
	T COL	5 ^h 18. ^m 6	-33°44'		9:44 2:11	10:25 2:53	41 ^m /55 ^m	sl. wk.					>11.5	M4e-M6e		+3				T=8° H=34% } W=11
2385	R CAR	9 ^h 31. ^m	-62°42'	AUG 10	23:53 16:23	00:00 16:30	62 ^m /5 ^m	✓	2" CLEAR	3-36	100/0.8	12/20	8.4	M4e-M5e		-5	III-D	M-5	CRW	T=8° H=34% } W=11
	S CAR	10 ^h 08. ^m	-61°27'		00:07 16:37	00:09 16:39	1/2"/1/2"	✓ H&K sl. wk.					>7.2	K7e-M4e		-4				
	W CEN	11 ^h 54. ^m 1	-59°09'		00:18 16:48	00:38 17:08	20 ^m /17 ^m	✓ H&K sl. wk.					>10.1	M3e-M5e	NA 1 ^s	-3				
	R CEN	13 ^h 46. ^m 9	-36°46'		00:46 17:16	2:55 19:23	10 ^m /150 ^m	WRONG STAR					>12.5	M10e		-1				sl out of focus
	R HYA	13 ^h 02. ^m 6	-23°11'		2:59 19:29	3:05 19:35	6 ^m /6 ^m	wk range					>8.0	M6e-M8e		+1				
	RU HYA	14 ^h 10. ^m 4	-28°48'		3:12 19:42	3:40 20:17	34 ^m /32 ^m	wk H&A					>10.3	M6e		+2				
	R CEN	14 ^h 15. ^m 2	-59°49'		3:52 20:22	4:00 20:30	7 ^m /7 ^m	✓					>9.0	M1e-M10e	NA 1 ^s	+3				T=10° H=32% } W=10
2386	T NoR	15 ^h 42. ^m 6	-51°56'		4:27 20:58	6:02 22:33	95 ^m /160 ^m	wk					>10.5	M3e-M6e	NA 2 ^s	-5				W=25-30
	RR SCO	16 ^h 55. ^m 4	-30°33'		6:10 22:41	6:19 22:50	2 ^m /3 ^m	4 ✓					>10.5	M1e-M10e		-3,-2				not sl out of focus?
	T GRU	22 ^h 24. ^m 4	-37°41'		6:28 22:50	6:47 23:18	21 ^m /21 ^m	✓ H&K sl. wk.					>10.5	M10e-M10e		-1				
	V 450 AGL	19 ^h 32. ^m 8	+5°05'		6:54 23:25	6:58 23:29	3 ^m /3 ^m	✓ sl. wk.					>8.1	M5-M5.5III		+1				
	HD 207076	21 ^h 45. ^m 6	-2°18'		7:07 23:38	7:09 23:40	2 ^m /1 ^m	✓					>7.6	M7III		+2				
	R IND	22 ^h 34. ^m 7	-67°24'		7:17 23:49	7:59 00:30	42 ^m /42 ^m	✓ H&K sl. wk.					>11.2	M2e-M4e	NA 2 ^s	+4				
2387	T SCL	0 ^h 28. ^m 3	-38°01'		8:21 00:52	8:51 1:22	30 ^m /30 ^m	✓ H&K sl. wk.					>10.9	M3	NA 1 ^s	-5				
	W ERI	4 ^h 10. ^m 7	-25°11'		8:57 1:28	9:10 1:41	13 ^m /13 ^m	✓					>9.9	M7e		-3				sl out of focus
	RV POP	6 ^h 41. ^m 9	-42°21'		9:18 1:50	9:44 2:16	26 ^m /12 ^m	wk					>9.7	M6e		-1				
	30 PSC	0 ^h 20. ^m 9	-6°07'		9:55 2:20	9:58 2:29	17 ^s /25 ^s	✓ 68 ^s					>6.1	M3III	NA 1 ^s	+1,+2,+3				T=11° H=32% } W=25

NUMBER	OBJECT	R.A.	DEC.	DATE UT. LST	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
2441	HR 8631	22 ^h 39.6	+14° 26'	30/31 1981	05:01	05:52	7 ^m 18 ^m / 22 ^m	0 ^h 57.0	5 ^h "mounting"	3.34	59 ^m / 1.2	120 / 2.0	6.8	G-3 II	NA A	12 ^s	30 ^m	IC-0 dub 36 2.65°C	m-5	Cy	T3 487 W 22	
	β Peg	23 ^h 02.7	+28° 02'	Aug	05:58	06:07	1 ^m 24 ^m / 5 ^m	0 ^h 58.0					4.22	M35 II-III								
	θ Cas	1 ^h 22.8	-8° 17'		06:16	06:24	1 ^m 24 ^m / 5 ^m	1 ^h 05.0					4.67	40 III-IV								
	γ Peg	0 ^h 11.8	+15° 05'		06:33	06:35	81 ^m 42 ^m / 28 ^m	0 ^h 16.0					2.60	B2 IV								
2442	19 Tau	5 ^h 43.5	+24° 46'		07:00	07:08	1 ^m 29 ^m / 5 ^m	2 ^h 45.0	4 ^h				4.18	B6 IV			"					
	γ Tau	3 ^h 45.7	+24° 05'		07:18	07:20	10 ^m 20 ^m / 4 ^m	2 ^h 30.0					2.77	B7 III								
	HD 22836	4 ^h 22.7	+14° 42'		07:45	08:53	45 ^m 23 ^m / 16 ^m	1 ^h 35.0	3 ^h clear				8.22	G1 E								
2443	HR 2576 A	6 ^h 49.4	-45° 22'		09:06	10:02	5 ^m 6 ^m / 1 ^m	2 ^h 53.0	2-5 ^h				8:09	K0			43 2441				*T2 H07 W16	
					UT/LST			QUALITY					B				ABJW					
2444	R Cen	14 ^h 15.2 ^m	-59° 49'	30 Aug 1 Sept	1:05 19:03	2:08 20:06	61 ^m /52 ^m	✓	2"/clear	3-34	100/0.8	120/7.0	✓9.0	M4e-M7e	NA A	10 ^s	10	IIa-0	MWP-2	Cru	T=6°C H=59%	
	RR Sco	16 ^h 55.4	-30° 33'		2:25 20:23	3:06 20:42	20 ^m /17 ^m	✓	2" strong				<7.8	M6II-M8III			12					
	RT Sgr	20 ^h 16.5	-39° 10'		2:52 20:49	3:24 21:22	30 ^m /29 ^m	✓					✓8.5	M5e-M7e			14					
	R Ind	22 ^h 34.7	-67° 24'		3:43 21:42	6:31 00:30	168 ^m /161 ^m	✓			100/0.6		>10.5	M2-M4e			16					
	S Scl	0 ^h 14.4	-8° 09'		6:40 0:38	8:56 2:56	186 ^m /134 ^m	✓					✓10.5	M3e-M5e			18					
	T Col	5 ^h 18.6	-33° 44'		9:04 3:03	10:03 4:02	57 ^m /105 ^m	✓					<10.2	M7e-M6			20				T=7°C H=40%	
2445	R Hya	13 ^h 28.6 ^m	-23° 11'	Sept 1-2	23:53 17:55	0:57 18:59	64 ^m /64 ^m	✓	2"/clear	3-34	100/0.8	120/7.0	✓8.8 ³	M4e-M5e	NA A	10 ^s	10	IIa-0	MWP-2	Cru	T=8°C H=40%	
	W Hya	13 ^h 47.9	-28° 16'		1:04 19:06	1:35 19:37	30 ^m /46 ^m	✓					>8.5 ³	M3e-M4e			12					
	T Nor	15 ^h 42.6	-54° 56'		1:51 19:53	3:58 22:00	127 ^m /100 ^m	✓			100/0.6		✓10.0	M3e-M6			14					
	RR Sco	16 ^h 55.4	-30° 33'		4:08 22:10	4:25 22:27	17 ^m /15 ^m	✓			100/0.8		✓7.5	M5e-M7e			16					
	RR Sgr	19 ^h 54.8	-29° 15'		4:53 22:57	7:44 1:43	160 ^m /156 ^m	✓			100/0.6		>10.5	M5e-M6e			18					
	R Phe	23 ^h 55.5	-49° 54'		7:52 1:55	8:57 2:57	62 ^m /62 ^m	✓					✓9.5	M3e			20					
	W Pup	7 ^h 45.3	-42° 09'		9:20 3:23	10:04 4:07	44 ^m /88 ^m	✓	RIGHT STAR?				>9.9 ³	M3e			22				T=5°C H=50%	
2446	R Hya	13 ^h 28.6 ^m	-23° 11'	Sept 2-3	0:16 18:22	0:22 18:28	6 ^m /16 ^m	✓	sl. sta	2"/clear	3-34	100/0.8	120/7.0	<8.8	M4e-M5e(s)	NA A	1 ^s	-5	III-D	M-5	Cru	T=10°C H=75%
	W Hya	13 ^h 47.9	-28° 16'		0:38 18:33	0:37 18:34	11 ^m /11 ^m	✓	sl. sta				<9.5	M3e-M4e(s)			-4					
	Ru Hya	14 ^h 10.4	-28° 48'		0:55 18:50	0:55 19:40	50 ^m /49 ^m	✓					✓11.1	M4e			-3					
	R Cen	14 ^h 15.2 ^m	-59° 49'		1:51 19:56	1:58 20:03	7 ^m /7 ^m	✓	sl. sta				>9.0	M4e-M7e			-2					
	T Nor	15 ^h 42.6	-54° 56'		2:05 20:10	2:30 20:35	20 ^m /15 ^m	✓					✓10.0	M3e-M6			-1				DOING!	
	Ru Sco	17 ^h 44.0	-43° 45'		2:44 20:49	3:52 21:58	63 ^m /53 ^m	✓					✓11.4	M3e-M5e			+1					
	RR Sgr	19 ^h 54.8	-29° 15'		3:56 22:02	4:30 22:36	34 ^m /34 ^m	✓					>10.5	M5e-M6e	NA A	1 ^s	+3					
	RT Sgr	20 ^h 16.5	-39° 10'		4:38 22:44	4:45 22:51	2 ^m /1 ^m	✓	sl. sta NA K				✓8.5	M5e-M7e			+4, +5					

NUMBER	OBJECT	R.A. 1981	DEC. 1981	DATE U.T. 1981	U.T. EXP./LST		TOTAL / CORR.	HA-END QUALITY	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG. B	SP.	COMP		CALIB. POS'N	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2447	S MIC	21 ^h 25 ^m .6	-29°56'	SEPT 2-3	5:11 23:17	5:52 23:58	4 ^m /40 ^m	✓	2" CLEAR	3-37	100/0.8	120/7.0	11.2	M3e			-5	PIA-D	M-5	Crw		
	HD 207076	21 ^h 45 ^m .6	-2°18'		6:02 0:07	6:17 0:23	2 1/2 1 1/2	2 1/2 ✓					8.0	M7III			-3, -2, -1					
	S PSA	22 ^h 02 ^m .7	-28°09'		6:22 0:28	6:57 1:03	6 ^m /34 ^m	✓					11.0	M3e-M5III			+1				POOR FOCUS	
	R AHE	23 ^h 55 ^m .5	-49°54'		7:06 1:13	7:15 1:22	9 ^m /8 1/2 ^m	✓ slat HAK					9.5	M3e			+2					
	S SCL	0 ^h 14 ^m .4	-32°09'		7:19 1:26	7:44 1:51	25 ^m /21 ^m	✓					10.5	M3e-M8e			+3					
	T SCL	0 ^h 28 ^m .3	-38°01'		7:49 1:56	8:18 2:25	29 ^m /25 ^m	✓ slat HAK					10.7	M3 NeA	1 ^s		+4					
2448	W ERI	4 ^h 10 ^m .7	-25°11'		8:46 2:53	9:09 3:10	23 ^m /21 ^m	✓					10.5	M7e			-5					
	45 RZ ARI	5 ^h 54 ^m .7	+18°16'		9:17 3:24	9:23 3:30	1 1/2 ^m 3 ^m	1 1/2 ^m ✓					7.5	M6III			-4, -3					
	DG ERI	4 ^h 19 ^m .8	-16°52'		9:30 3:37	9:35 3:42	5 ^m /4 ^m	✓ slat					8.7	M4III NeA	1 ^s		-1					
	T COL	5 ^h 18 ^m .6	-33°44'		9:41 3:48	10:04 4:11	23 ^m /21 ^m	✓ slat					10.5	M7e-M6			+1				T=10°C H=31.7%	
2449	W CEN	11 ^h 54 ^m .1	-59°09'	SEPT 3-4	23:45 17:54	0:50 19:05	60 ^m /60 ^m	✓ BREAK TAKEN	1" CLEAR	3-34	100/0.8	120/7.0	11.3	M3e-M5III			-5	PIA-D	M-5	Crw	T=13°C H=32.7%	
	R CEN	14 ^h 15 ^m .2	-59°49'		1:04 19:14	1:15 19:25	11 ^m /8 1/2 ^m	✓ slat					9.3	M7e-M7III			-4					
	S LIB	15 ^h 20 ^m .2	-20°19'		1:18 19:28	1:58 20:08	35 ^m /32 ^m	✓ slat HAK RING					10.8	M2e			-3					
	RR SCO	16 ^h 55 ^m .4	-30°33'		2:06 20:15	2:10 20:19	75 ^s 135 ^s /75 ^s	✓ 75 ^s					7.5	M6II-M7III			-2, -1					
	RV SGR	19 ^h 57 ^m .4	-41°54'		2:28 20:38	4:00 22:10	92 ^m /82 ^m	✓ RING					12.0	M3e-M6e			+1					
	T BRU	22 ^h 29 ^m .4	-37°41'		4:05 22:15	4:58 23:08	53 ^m /52 ^m	✓ slat HAK					11.5	M1Ib-M2Ib			+3					POOR FOCUS
	R IND	22 ^h 34 ^m .7	-67°24'		5:12 23:22	5:58 0:09	46 ^m /46 ^m	✓ slat HAK					11.3	M2e-M4III NeA	1 ^s		+5					
2450	HD 207076	21 ^h 45 ^m .6	-2°18'		6:33 0:42	6:37 0:46	2 1/2 ^m /2 1/2 ^m	✓ slat					8.0	M7III			-5					
	O CET	2 ^h 18 ^m .3	-3°04'		6:46 0:56	6:49 0:59	2 SET 4 TR	6 TRAILS WR					5.5	M5e-M9e			-4, -3, -2					
	T ERI	3 ^h 54 ^m .4	-24°05'		6:56 1:07	8:27 2:38	91 ^m /88 ^m	✓ slat					12.0	M3e-M5e			-1					
	RV POP	6 ^h 41 ^m .9	-42°21'		8:33 2:44	9:23 3:34	50 ^m /49 ^m	✓ wr					11.3	M1e			+1					
	AS POP	8 ^h 09 ^m .0	-38°07'		9:28 3:39	9:50 4:01	22 ^m /30 ^m	✓					10.5	M7e			+2					
	45 RZ ARI	2 ^h 54 ^m .7	+18°16'		9:59 4:09	10:03 4:13	1 1/2 ^m 1 1/2 ^m	✓ slat					7.5	M6III NeA	1 ^s		+4, +5					T=12°C H=30.7%
2451	R HYA	13 ^h 28 ^m .6	-23°11'	SEPT 4-5	0:09 18:22	0:13 18:26	4 ^m /4 1/2 ^m	✓	1" CLEAR	3-34	100/0.8	120/7.0	8.4	M6e-M8e			-5	PIA-D	M-5	Crw		
	T CEN	13 ^h 40 ^m .6	-33°30'		0:19 18:32	0:24 18:37	5 ^m /5 ^m	✓					8.6	K0Ib-M1Ib (se)			-4					
	W HYA	13 ^h 47 ^m .9	-28°16'		0:30 18:43	0:37 18:51	7 ^m /7 ^m	✓ slat					9.0	M8e-M9e (se)			-3					
	R CEN	14 ^h 15 ^m .2	-59°49'		0:43 18:57	0:51 19:05	8 1/2 ^m /8 1/2 ^m	✓					9.3	M7e-M7III			-2					
	RR SCO	16 ^h 55 ^m .4	-30°33'		0:58 19:10	0:59 19:11	75 ^s /75 ^s	✓					7.5	M6II-M7III			-1					
	R NOR	15 ^h 34 ^m .6	-49°27'		1:08 19:22	3:17 21:32	114 ^m /111 ^m	✓ BREAK TAKEN					12.2	M3e-M6III			+1					
	T OCT	21 ^h 10 ^m .9	-82°11'		3:25 21:39	5:54 0:08	149 ^m /152 ^m	✓ wr					12.5	M7e-M10e NeA	1 ^s		+3					

NUMBER	OBJECT	R.A.	DEC.	DATE UT	U.T. EXP / LST		TOTAL / CORR.	MAG	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CAM. Pos'n	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
2452	HD 207076	21h45.6 ^m	-2°18'	1981 SEPT 4-5	6:24 0:38	6:26 0:40	2 ^m /12 ^m	✓	1" CLEAR	3-34	100/0.8	120/1.0	7.8	M7III			-5	ITa-D	M-5	CRW		
	O GET	21h18.3 ^m	-3°04'		6:32 0:46	6:34 0:48	15 ^s / 12 ^s	15 ^s SET					5.5	M5e-M9e			-4, -3					
	45 RR ARI	21h57.7 ^m	+18°16'		6:40 0:54	6:42 0:56	75 ^m / 11/2 ^m	WVY SL STA					4.3	M6III			-1					
	T ERI	3h57.4 ^m	-24°05'		6:55 1:10	6:57 1:12	71 ^m / 65 ^m	✓					11.7	M2-M5e			+1					
	RV PUP	6h41.9 ^m	-42°21'		8:10 2:25	9:30 3:45	80 ^m / 70 ^m	WVY					11.7	M1e NeA	15		+3					
	W PUP	7h45.3 ^m	-42°09'		9:32 3:46	10:02 4:16	30 ^m / 31 ^m	✓ SL STA					10.8	M3e			+5				T=13°C H=30°C	
2453	W CEN	11h57.1 ^m	-59°01'	SEPT 5-6	23:52 18:10	0:42 19:00	50/60 ^m	✓ SL STA	1" CLEAR	3-34	100/0.8	120/1.0	11.3	M2-M8e			-5	ITa-D	M-5	CRW	H=14°C H=30°C	
	S LIB	15h20.2 ^m	-20°19'		0:46 14:04	1:45 20:03	59 ^m / 42 ^m	✓ SL STA					11.1	M2e			-3					
	RX MIC	21h53.3 ^m	-27°49'		2:13 8:31	5:49 8:51	20 ^m / 185 ^m	WVY			100/0.6		13.2	M?			-1					
	R PHE	23h55.5 ^m	-49°54'		5:50 0:08	6:11 0:23	8 ^m / 11 ^m	✓ BENT			100/0.6 100/0.8		9.8	M3e			+1, +2					
	HD 207076	21h45.6 ^m	-2°18'		6:18 0:36	6:20 0:38	2 ^m / 12 ^m	✓			100/0.8		7.8	M7III NeA	15		+4					
	O GET	21h18.3 ^m	-3°04'		6:26 0:44	6:27 0:45	25 SET / 12 ^s	SL STA					5.5	M5e-M9e			+5					
2454	T SOL	0h28.3 ^m	-38°01'		6:52 1:10	7:32 1:50	40 ^m / 33 ^m	✓ SL STA					11.0	M3e			-5					
	RS PHE	1h13.6 ^m	-56°50'		7:42 2:00	9:44 3:34	119 ^m / 132 ^m	✓ BENT			100/0.6		12.8	M2e			-3					
	T COL	5h18.6 ^m	-33°44'		9:45 4:04	10:02 4:19	17 ^m / 16 ^m	✓ SL STA			100/0.8		10.2	M4e-M6 NeA	15		-1				T=13°C H=32°C	
2455	RT CEN	13h46.9 ^m	-36°46'	SEPT 6-7	23:35 17:39	1:50 17:51	115 ^m / 112 ^m	✓	1" CLEAR	3-34	100/0.8	120/1.0	12.2	M6III			-5	ITa-D	M-5	CRW	T=12°C H=34°C	
	RS SCO	16h59.2 ^m	-45°04'		1:37 2:01	4:59 35:01	20 ^m / 99 ^m	out of focus?			100/0.6		13.2	M5e-M8e			-3					
	R AA	22h16.9 ^m	-29°42'		5:11 23:33	6:04 1:03	90 ^m / 83 ^m	✓			100/0.8		12.0	M4e-M8e			-1					
	HD 207076	21h45.6 ^m	-2°18'		6:51 1:13	6:53 1:15	2 ^m / 12 ^m	✓					7.8	M7III			+1				FOCUS GOOD	
	45 RR ARI	2h57.7 ^m	+18°16'		7:07 1:31	7:11 1:35	1 ^m / 1 ^m	✓ STRAY					7.1	M6III			+2				NOT SEVERE LIGHT LEAK	
	R HOR	2h53.2 ^m	-49°58'		7:20 1:42	9:42 4:45	12 ^m / 157 ^m	✓			100/0.6		13.0	M5-M7III			+3					
	R BAR	9h31.7 ^m	-62°42'		9:46 4:24	10:02 4:28	16 ^m / 16 ^m	✓			100/0.8		9.9	M4e-M8e NeA	15		+4				T=11°C H=32°C	
2456	RS SCO	16h59.2 ^m	-45°04'	SEPT 7-8	0:37 23:53	4:59 4:28	262 ^m / 260 ^m	✓	2-3 CLEAR	3-34	100/0.6	120/1.0	13.5	M2-M8e			-5	ITa-D	M-5	CRW	T=8°C H=18°C W=35!	
2457	RT SCR	20h16.5 ^m	-39°10'		5:32 23:57	5:36 0:04	44 ^m / 31/2 ^m	✓			100/0.8		8.5	M5e-M7e			-5					
	HD 207076	21h45.6 ^m	-2°18'		5:43 0:29	5:45 0:11	2 ^m / 12 ^m	✓					7.8	M7III			-3				FOCUS STILL A PROBLEM!	
	U SOL	1h10.6 ^m	-30°13'		6:55 0:35	3:32 4:05	156 ^m / 140 ^m	✓			100/0.6		12.9	M5e			-1					
	T SOL	0h28.3 ^m	-38°01'		9:12 3:37	9:47 4:14	35 ^m / 35 ^m	✓ STRAY			100/0.8		10.9	M3e NeA	15		+1					
	T COL	5h18.6 ^m	-33°44'		9:51 4:13	10:03 4:30	12 ^m / 13 ^m	✓					10.0	M4e-M6			+3					T=6°C H=40°C

NUMBER	OBJECT	R.A. 1981	DEC. 1981	DATE U.T.	U.T. EXP / LST		TOTAL / CORR.	QUALITY	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP		EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP				
2458	Ru HYA	14 ^h 10. ^m 4	-28°48'	SEPT 8-9	0:25 13:54	0:45 14:14	20 ^m / 178 ^m	(RECORDED)	2 ^h CLEAR	3-44	100/0.6	120/7.0	4.96	M6e	10	IIa-0	MWP-2	Crow	T=7°c H=42% W=25	
	W HYA	13 ^h 47. ^m 9	-28°16'		0:46 14:16	1:53 20:03	47 ^m / 141 ^m	✓✓					9.3	M2-M2 (SP)	12	IIa-0				
	Ru SCO	17 ^h 41. ^m 0	-43°45'		1:36 20:05	5:55 23:25	199 ^m / 194 ^m	✓✓					11.4	M III - III e	14					
	HD 20726	21 ^h 45. ^m 6	-2°18'		5:12 23:22	5:22 23:32	10 ^m / 19 ^m	✓✓			100/0.8		7.8	M III	16					
	57 PSC	0 ^h 45. ^m 5	+15°22'		5:21 0:20	5:37 0:07	6 ^m / 16 ^m	✓✓					7.1	M III NeA	5-5				SPOT SENSITOMETER 17 ^m @ 14 VOLT	
2459	S B3A	20 ^h 02. ^m 7	-28°09'		6:01 0:31	8:09 2:39	128 ^m / 127 ^m	✓✓			100/0.6		11.0	M2-M2e	10					
	45 R2 ARI	20 ^h 57. ^m 7	+18°16'		8:27 2:57	1:52 3:29	52 ^m / 15 ^m	✓✓			100/0.8		7.1	M III	12					
	O CET	2 ^h 18. ^m 3	-3°07'		8:40 3:11	8:45 3:16	1 ^m / 114 ^m	✓✓			100/0.8		5.6	M2-M2e	14					
	W ERI	4 ^h 10. ^m 7	-25°11'		8:50 3:20	10:05 4:30	75 ^m / 75 ^m	✓✓			100/0.6		10.5	M7e	20				T=6°c H=32% W=20	
2460	Ru HYA	14 ^h 10. ^m 4	-28°48'	SEPT 9-10	23:50 18:23	0:50 20:23	120 ^m / 150 ^m	✓✓	2 ^h CLEAR	3-44	100/0.6	120/7.0	4.96	M6e	10	IIa-0	MWP-2	Crow	T=6°c H=32% W=20	
	S MIC	21 ^h 25. ^m 6	-29°56'		1:55 20:28	7:56 23:30	181 ^m / 146 ^m	✓✓	2 ^h CLEAR				11.1	M3e	12	IIa-0			THIN CLOUD!	
	V460 ARL	19 ^h 32. ^m 8	+5°25'		5:07 23:43	5:32 0:06	23 ^m / 21 ^m	✓✓			100/0.8		8.4	M5-M5-III NeA	5-5					
2461	T SOL	0 ^h 28. ^m 3	-38°01'		5:53 0:30	8:55 2:30	132 ^m / 121 ^m	✓✓	1 CLOUD FULL OVER		100/0.6		10.9	M3e	10				SPOT SENSITOMETER 17 ^m @ 14 VOLT	
	R CAR	9 ^h 21. ^m 7	-62°42'		9:46 3:40	10:05 4:39	59 ^m / 58 ^m	✓✓	✓✓		100/0.6		9.9	M4e-M2e NeA	5-5				T=10° H=30%	
2462	R Cen	14 ^h 15. ^m 2	-59°49'	SEPT 10-11	0:00:05 18:32	1:06 19:43	61 ^m / 20 ^m	✓✓	2 ^h CLEAR	3-44	100/0.8	120/7.0	9.5	M4e-M2e	10	IIa-0	MWP-2	Crow	T=11°c H=36%	
	RR SCO	16 ^h 55. ^m 4	-30°33'		1:16 19:53	1:28 20:05	12 ^m / 8 ^m	✓✓	✓✓				7.8	M2e-M2e	12	IIa-0				
	RT SOL	20 ^h 16. ^m 5	-39°10'		1:57 20:14	1:59 20:36	22 ^m / 15 ^m	✓✓			100/0.8		8.5	M2e-M2e	14					
	RR SOL	19 ^h 54. ^m 8	-29°15'		2:07 20:45	3:31 22:17	92 ^m / 88 ^m	✓✓			100/0.6		10.8	M2e-M2e	16					
	T GRU	22 ^h 24. ^m 4	-37°41'		2:35 23:21	6:23 0:21	180 ^m / 201 ^m	✓✓					11.5	M IIIe - M IIIe	5-5				T=11°c H=37%	
2463	BS 8869	23 ^h 18 ^m 02 ^s	-9°41'55"	OCT 22	3:01:30	3:07:00	15/30/46/62		2"	3-34	100 ^m / .8mm	120/7.0	4.96	dF5	7,8,9,11	IIa-0	MWP-2	IKS.		
	BS 8968	23 ^h 38 ^m 51 ^s	-14°20'		5:10:00	5:17:30	15/31/46/62 177 sounds		2"				5.24	A5	13,14,15,16,17					
	BS 8982	23 ^h 40 ^m 8 ^s	-17°55'		3:22	3:27	16/31/47/63 149s		2.5"				5.62	GO Ib	19,20,21,22,23					
	BS 9062	23 ^h 56 ^m 7 ^s	-64°24'		3:33	3:38	35/63/104s		3"				5.04	A2	NeA 10 ^s				25,26,27 5.7	
2464	BS 9084	0 ^h 00 ^m 7 ^s	-77°10'		4:19	4:27	62/134s		2.5"				6.04	K2 III						
	BS 33	0 ^h 10 ^m 3 ^s	-15°34'		4:43	4:52	161/31/62s		2.5"				5.37	FG V						
	BS 377A	1 ^h 15 ^m 2 ^s	-68°58'		5:00	5:06	41/82s		2.5"				5.33	FG V						
	BS 377B	1 ^h 15 ^m 2 ^s	-68°58'		5:07	5:08:30	164s		3"				8.5?	?						
	BS 434	1 ^h 29 ^m 3 ^s	+06°03'		5:16	5:18	13/30/60s		2.5"				6.23	K4 III						
	BS 493?	1 ^h 41 ^m 9 ^s	+20°11'		5:23	5:25	16/32/64s		3"				6.08	K1 V	NeA 10 ^s				T=13°c RH=37%	

NUMBER	OBJECT	R.A. 1982-0	DEC. 1982-0	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP.		CALIB.	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2465	BS 8060			OCT 22/23			15 ³ / ₈ /		2 1/2" / CLEAR	3-34	100 μ m / .8mm	120 μ m / 7.0	4.98		NeA	10 ^s	2 ^m @22V E BLUE	IIa-0	MWP-2	IKS	T=15°C, H=35%	
							31 ³ / ₈ /															
							31³/₈ /															
							5 [*] /															
							10 [*] /															
							15 [*] /															
							20 [*] /															
							25 [*] /															
	BS 8573		-10° 46'				15 ³ / ₈ /						4.76		NeA	10 ^s	2 ^m @22V E BLUE	IIa-0	MWP-2	IKS	T=13°C, H=33%	
							30 ³ / ₈ /															
							61 ³ / ₈ /															
							10 [*] /															
							20 [*] /															
							30 [*] /															
							40 [*] /															
							50 [*] /															
2466	BS 0033				2 ^h 35	2 ^h 40	2 ^{**} /								NeA	10 ^s	2 ^m @22V E BLUE	IIa-0	MWP-2	IKS		
							4 ^{**} /															
							8 ^{**} /															
	BS 0045				2 ^h 50		10 ^{**} /															
							20 ^{**} /															
						3 ^h 11	40 ^{**} /															
	BS 0105				3 ^h 20		10 ^{**} /															
							20 ^{**} /															
						3 ^h 45	40 ^{**} /															
	BS 0125				3 ^h 52		1 ^{**} /															
							2 ^{**} /															
	BS					3 ^h 55	3 ^{**} /															

* = PASSES WITH SET MOTION

** = PASSES WITH GUIDE PADDLE

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER LC	OBJECT	R.A. 1982-0	DEC. 1982-0	DATE U.T.	U.T. EXP.		TOTAL/CORR	H.A. END	SEE/TRANS	CAM. FOCUS	SLIT	GRATING /TILT	MAG	SP.	COMP		CALIB	EMUL	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2466 <small>6515</small>	BS0194			OCT 22/3	4 ^h 01		4 ^h /		2 1/2" / CLEAR	3-34	100 μm / 25mm	100% / 7-0			NeA	10 ^s	2" 1622V 2" BLUE	IIa-O	MWP-2	IKS	T=13° C, RH=32%	
							8 ^h /															
							4 ^h 10															
2467	BS0708	2 ^h 25-1	-12°22'	OCT 22/3	5 ^h 18		1 ^h /		2 1/2" / CLEAR	3-34	100 / .8	120 / 7-0	4.85		NeA	10 ^s	2" 1622V 2" BLUE	IIa-O	MWP-2	IKS	T=12° C, RH=33%	
							2 ^h /															
	BS0719 ✓	2 ^h 22-8 ✓	-73°44' ✓		5 ^h 20		4 ^h /															
					5 ^h 28		1 ^h /						6-09									
							3 ^h /															
							5 ^h 40															
	BS0740	2 ^h 31-2	-15°20'		5 ^h 48		1 ^h /						5-19									
							5 ^h 51 ✓															
							6 ^h /															
	BS0749	2 ^h 33-1	-28°19'		5 ^h 59		1 ^h /						4-84									
							2 ^h /															
							6 ^h 01															
	BS0753	2 ^h 35-1	+06°49'		6 ^h 09		10 ^h /						6-79									
							20 ^h /															
							6 ^h 28															
2468	BS1483	4 ^h 38.1	-12°09'		7 ^h 21		1 ^h /		2 1/2" / CLEAR	3-34	100 / .8	120 / 7-0	5-07		NeA	10 ^s	2" 1622V 2" BLUE	IIa-O	MWP-2	IKS	T=12° C, RH=36%	
							3 ^h /															
							7 ^h 24															
	BS1556	4 ^h 51.5	+14°13'		7 ^h 31		3 ^h /						6-43									
							5 ^h /															
							7 ^h 38															
	BS1611	4 ^h 59.1	-12°34'		7 ^h 45		1 ^h /						5-05									
							3 ^h /															
							7 ^h 48															
	BS1617	5 ^h 00-6	-07°12'		7 ^h 52		1 ^h /						4-60									
							2 ^h /															
							7 ^h 54															

* = PASSES WITH GUIDE PADDLE

NUMBER	OBJECT	R.A. 1920.	DEC.	DATE U.T. 1921	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG. B	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2480	Allen 937C	23 58 46	-56 46 52	NOV 13/14	02:59 ^m	04:13 ^m	50 ^m / 74 ^m	4 00W	2" clear	3.34	100 / 0.6	20 / 7.0	11.8?	-	-	-	-	IIo-D	M-S 15M 68F	LEVATO CLARIA	
	" 146D	" 37 42	-02 36 24	"	05:15 ^m	05:16 ^m	30 ^s / 30 ^s	1.28E	"	"	"	"	~7.2	-	-	-	-	"	"	"	yo. ado dec
	" " D	"	"	"	05:17 ^m	05:18 ^m	1 ^m / 1 ^m	1.29E	"	"	"	"	"	-	-	-	-	"	"	"	"
	" " C	"	"	"	05:28 ^m	05:41.5 ^m	13 ^m / 13 ^s	1:05E	"	"	"	"	~10.3	-	-	-	-	"	"	"	contaminado con AB g. ado dec
	" 148C	05 38 55	-20 26 33	"	06:08 ^m	06:45 ^m	32 ^m / 37 ^m	0:04E	"	"	"	"	~11.3	-	-	-	-	"	"	"	guido en d
	" 198C	06 26 56	-4 45 07	"	07:10 ^m	07:24 ^m	14 ^m / 14 ^m	0:15E	"	"	"	"	~10.0	-	-	-	-	"	"	"	-
	" 217C	06 39 05	-62 46 31	"	07:41:20 ^m	08:00 ^s	14 ^m / 19 ^m	0:10E	"	"	"	"	~10.6	-	-	-	-	"	"	"	-
	" 217B	06 39 05	"	"	08:06 ^m	08:52 ^m	46 ^m / 46 ^m	1:05W	"	"	"	"	~11.7	-	-	-	-	"	"	"	-
2481	SW Indi	20 53 30	-45 48 00	NOV 14/5	01:04 ^m	01:18 ^m	14 ^m / 14 ^m	3.15W	"	"	"	"	~10.0	-	-	-	-	"	"	"	-
	Allen 781A	20 23 13	-34 48 45	"	01:29 ^m	01:48 ^m	19 ^m / 19 ^m	4:10W	"	"	"	"	~10.0	-	-	-	-	"	"	"	-
	" 835D	21 33 10	-00 55 31	"	01:58 ^m	02:14.5 ^m	11.6 ^m / 16 ^m	4:00W	3" clear	"	"	"	~9.7	-	-	-	-	"	"	"	-
	" 879B	21 58 19	-29 09 32	"	02:21.5 ^m	03:12.0 ^m	50 ^m / 50.5 ^m	4:10W	"	"	"	"	~11.4	-	-	-	-	"	"	"	-
	" 906E	22 22 57	-04 57 14	"	03:22 ^m	03:29.7 ^m	4.3 ^m / 6.7 ^m	4:00W	"	"	"	"	~8.6	-	-	-	-	"	"	"	-
	" 61A	02 33 14	-75 59 04	"	03:43:00 ^m	03:44:00 ^m	1 ^m / 1 ^m	0:05W	"	"	"	"	~7.2	-	-	-	-	"	"	"	-
	" 61A	02 33 14	-75 59 04	"	03:45:00 ^m	03:46:30 ^m	1 ^m / 1.5 ^m	0:06W	"	"	"	"	~7.2	-	-	-	-	"	"	"	-
	" 62B	02 37 59	-28 15 25	"	03:51:00 ^m	04:32 ^m	35 ^m / 4 ^m	0:42N	"	"	"	"	~11.1	-	-	-	-	"	"	"	-
	CT Eri	04 28 35	-33 37	"	04:39:00 ^m	05:00.5 ^m	17 ^m / 27.5 ^m	0:40W	"	"	"	"	~10.3	-	-	-	-	"	"	"	-
	Alkm (47D)	05 38 25	-17 51 30	"	05:27:00 ^m	05:36.5 ^m	8 ^m / 9.7 ^m	0:40W	"	"	"	"	~9.5	-	-	-	-	"	"	"	-
2482	" 147G	"	"	"	05:55:00 ^m	06:15 ^m	13 ^m / 20 ^m	0:35E	"	"	"	"	~10.0	-	-	-	-	"	"	"	-
	" 198C	06 26 56	-04 47 07	"	06:29:00 ^m	06:47 ^m	9 ^m / 18 ^m	1:05E	"	"	"	"	~11.0	-	-	-	-	"	"	"	-
	" 217C	06 39 05	-62 46 31	"	06:54 ^m	07:29 ^m	36 ^m / 35 ^m	0:15E	"	"	"	"	~11.1	-	-	-	-	"	"	"	-
	" 260D	07 26 57	-11 30 52	"	07:38 ^m	07:56 ^m	13 ^m / 18 ^m	0:00E	"	"	"	"	~10.0	-	-	-	-	"	"	"	-
	" 275D	07 37 34	-01 24 46	"	08:06 ^m	08:22 ^m	10 ^m / 16 ^m	0:35E	"	"	"	"	~9.7	-	-	-	-	"	"	"	-
	" 280B	07 33 41	-48 59 53	"	08:28 ^m	08:50 ^m	20 ^m / 22 ^m	0:15E	"	"	"	"	~10.5	-	-	-	-	"	"	"	-
2483	" 879C	21 58 19	-29 09 32	NOV 15/16	01:57.5 ^m	02:45 ^m	42 ^m / 47.5 ^m	3.43E	"	"	"	"	~11.5	-	-	-	-	"	"	"	-
	" 937B	22 58 46	-56 46 52	"	03:04:00 ^m	04:25 ^m	115 ^m / 121 ^m	4:25W	"	"	"	"	~12.1	-	-	-	-	"	"	"	-
	" 25B	02 11 32	-71 06 36	"	04:57 ^m	06:30 ^m	42 ^m / 43 ^m	3:02	"	"	"	"	~12.2	-	-	-	-	"	"	"	-
	" 46C	05 37 42	-02 36 24	"	06:50 ^m	07:08 ^m	13 ^m / 13 ^m	0:25	"	"	"	"	~10.3	-	-	-	-	"	"	"	Contaminado?
	" 146D	"	"	"	07:10:30 ^m	07:41:50 ^m	1 ^m / 130 ^m	0:10	"	"	"	"	~7.5	-	-	-	-	"	"	"	-
	" 147G	05 38 25	-17 51 29	"	07:33.5 ^m	07:46.5 ^m	9 ^m / 13 ^m	0:20	"	"	"	"	~9.9	-	-	-	-	"	"	"	-

over
over
under 25

UNIVERSITY OF TORONTO
LAS CAMPANAS OBSERVATORY (24-INCH)

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL/CORR.	HA END	SEE/TRANS	CAM FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2483	Allen 147D	05 38 25	-17 51 29	Nov 15/16	07:52	07:59	16 ^m 7 ^m	1 ^h 00N	2" clear	3-34	100	0.6	120	7.0	~10.5	-	-	-	IIa-D	MS Shelton 15" 14" CLariz	power failure
	" 147G	"	"	"	08:06													"	"	"	power failure
	" 147D	"	"	"	8:08	8:28	16 ^m 20 ^m	1 ^h 45N	"	"	"	"	"	~10.5	-	-	-	"	"	"	
V 2484	Allen 9240	22 43.9	-79° 58'	NOV 16/17	1 ^h 02 ^m 5	2 ^h 08	53 ^m 25 ^m	2 ^h 25W	2" clear	3-34	100	0.6	120	7.0	~11.4	-	-	-	IIa-D	MS Levato CLariz	guided in decl.
	" 906C	22 22.9	-4° 57'	"	2 25.5	2 56.5	26 ^m 31 ^m	3 ^h 35W	"	"	"	"	"	~10.6	-	-	-	"	"	"	guided in R.A. possibly contaminated
	" 948B	23 22.2	-63° 59'	"	3 05.0	4:30	12 ^m 25 ^m	4 ^h 00W	"	"	"	"	"	~11.9	-	-	-	"	"	"	"
	" 115C	04 57.8	+14° 30'	"	4 44.0	5:15	19 ^m 31 ^m	0 ^h 20E	"	"	"	"	"	~10.3	-	-	-	"	"	"	wind guided in S
	" 141D	05 34.6	-5° 24'	"	5 34.0	5 34.5	30 ^s 30 ^s	1 ^h 00E	"	"	"	"	"	~6.8	-	-	-	"	"	"	wind guided in S
	" 141D	"	"	"	5 38.0	5 39.0	20 ^s 1 ^m	0 ^h 55E	"	"	"	"	"	~6.8	-	-	-	"	"	"	"
	" 141D	"	"	"	5 42.0	5 42.7	10 ^s 1 ^s	0 ^h 50E	2" #3"	"	"	"	"	~5.4	-	-	-	"	"	"	"
	" 141A	"	"	"	5 45.50	5 46.30	30 ^s 4 ^s	0 ^h 45E	"	"	"	"	"	~6.8	-	-	-	"	"	"	"
	" 141B	"	"	"	5 53.50	5 55.50	2 ^m 2 ^m	0 ^h 40E	"	"	"	"	"	~7.1	-	-	-	"	"	"	guided in R.A.
	" 147D	05 38.4	-17° 51'	"	6 03.5	6:31.0	25 ^m 27 ^m	0 ^h 10E	"	"	"	"	"	~9.1	-	-	-	"	"	"	"
V 2485	" 147G	"	"	"	6 51.5	7:21	26 ^m 29 ^m	0 ^h 40W	"	"	"	"	"	~10.0	-	-	-	"	"	"	"
	" 146C	05 37 42	-2° 36'	"	7 43.0	8:04	18 ^m 21 ^m	1 ^h 25W	"	"	"	"	"	~10.3	-	-	-	"	"	"	tracking rate 3" min guided in decl.
	" 163B	05 54 50	+13° 56'	"	8 17:0	8:26	7 ^m 9 ^m	1 ^h 30W	"	"	"	"	"	~9.2	-	-	-	"	"	"	"
V	" 215C	07 37 34	-1° 25'	"	8 35:0	8:46.3	9 ^m 11 ^m	0:05W	"	"	"	"	"	~9.8	-	-	-	"	"	"	wind
2486	G424	05 ^h 40 21	-69° 41'	NOV 28/29	2 ^h 16	2:55	37 ^m	3 ^h 00E	3" clear	"	"	"	"	11.71	A5I	5	mm-5	"	"	C+n	guided in RA
	SK 69-247	05 ^h 39 06	-69° 31'	"	3 ^h 12	3:42	30 ^m	2 ^h 09E	"	"	"	"	"	10.59	B3I	mm-3	"	"	"	"	"
	SK 69-260	05 ^h 40 30	-69° 41'	"	3:52	4:30	38 ^m	1 ^h 11E	"	"	"	"	"	10.80	G0I	mm-1	"	"	"	"	"
	SK 69-254	05 ^h 39 54	-69° 45'	"	4:44	7:10	2 ^h 26 ^m	1 ^h 20W	"	"	"	"	"	12.31	O5I	NeA < 10 ⁵ mm-11	"	"	"	"	"
2487	SK 69-7	04 ^h 50 15	-69° 29'	NOV 21/30	3:58	4:22	24 ^m	2 ^h E	3" clear	"	"	"	"	10.63	O9I	5	"	"	"	"	"
	SK 69-8	05 ^h 44 23	-69° 28'	"	4:31	5:30	55 ^m	4 ^h 0W	"	"	"	"	"	11.61	B5I ₂	3	"	"	"	"	"
	SK 69-294	05 ^h 43 34	-69° 15'	"	5:44	6:29	25 ^m	4 ^h 5W	"	"	"	"	"	11.33	G0I ₂	1	"	"	"	"	"
	SK 69-270	05 ^h 41 29	-69° 05'	"	6:38	7:28	50 ^m	1 ^h 55W	"	"	"	"	"	11.41	B3I	-1	"	"	"	"	"
	SK 69-279	05 ^h 38 16	-69° 07'	"	7:34	7:58	24 ^m	2 ^h 20W	"	"	"	"	"	10.59	A0I	-3	"	"	"	"	"
	R 136	05 ^h 38 42	-69° 07'	"	8:01	8:11	10 ^m	2 ^h 33W	"	"	"	"	"	9.56	WNT0	NeA < 10 ⁵ -5	"	"	"	"	"
2488	SK 69-280	05 ^h 41 54	-69° 19'	DEC 8/9	2:59	4:53	1 ^h 57 ^m	1 ^h E	5" clear	"	"	"	"	12.66	B1	4	"	"	"	"	thrust closed

NUMBER LC	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2489	β FOR	02484	-3230	8/9 JAN 1982	0117	0128	1.2, 2.4, 5	1 ^h 11 ^m W	1 1/2" / clean	3.36	50% / 1.2	120 / 20	5.45	G8	NeA	10 ^s		Subed IIa-0	M-S		observer sick ∴ low efficiency, all under reverse!
	HR1372A	0417.8	-6317	1982	0202	0205	2.5	20 ^m W	1" / clean	"	"	"	6.0	B9				(3h, 65° first 1/2 hr. HF)	15 ^m 67°F		
	" B	"	"		0206	0222	16 ^m	34 ^m W	"	"	"	"	7.9	A							
2490	β TRI	0208.4	+3455	9/10 JAN 1982	0035	0043	20, 40, 80 ^s 20	70 ^m W	1.5" / clean	3.34	50% / 1.2	"	3.14	A5 III	NeA	10 ^s		"	"		still sick, but better 15°C 5mph 50% H ₂ O
	HR753	0234.9	+0651	1982	0058	0132	4.8, 16 ^m 8	1 ^h 32 ^m W	1 1/2" / clean	"	"	"	6.8	K3 V							
	α CET	0301.2	+0405		0140	0147	30 ^s , 1 1/2 ^m 30 ^s						4.17	M1.5 III							
	57 TAU	0418.9	+1359		0156	0206	1.2, 4 ^m 2.5	20 ^m W	1" /	"	"	"	5.87	F0 IV							
2491	HR1405A ^(?)	0424.2	-5707	"	0231	0247	15 ^m 12 ^m	1 ^h W	1" /				7.47	G0							M-S 22 ^m ! by mistake 67°F
	B ^(?)	"	"		0249	0316	26 ^m 18 ^m	1 ^h 10 ^m W	<1" /				7.98	"							
	HR1506(A)	0442.6	-0849		0348	0402	14 ^m /	1 ^h 55 ^m W	1" /				7.61	G8							easternmost SE
	1505(B)	"	"		0402	0410	8 ^m /	2 ^h 3 ^m W	<1" /				7.21	F4							NW westernmost
	HR2412A	0631.9	-5844		0423	0425	2 ^m 1 ^m		1" /				5.66	B9							
	" B	"	"		0425	0520	55 ^m 30 ^m	1 ^h 22 ^m W	1" /		50% / .8		9.59	F?							20%? Some contain.
	HR2736(A)	0709.4	-7024		0547		40, 40 ^s 30				.8		4.82	G8							
	2736(A)	"	41"				2 ^m <1 ^m				1.2		"	"							
	2736(B)	"	"			0554	3 ^m /	1 ^h 22 ^m W	1" /		1.2		6.09	F4							
	HR2497(A)	0644.2	-3034		0610	0614	4 ^m 3 ^m				"		6.48	B8							
	" B	"	"		0615	0830	120 ^m 100 ^m	4 ^h 22 ^m W	1" /		.8		10.58	F?							full moon +1 day 13°C 48% 5mph. Moon contain?
2492	β Tri	0208.4	+3454	10/11 JAN 1982	0043	0045	20, 40 ^s 40 ^s	1 ^h 15 ^m W	3" / clean	3.34	50% / 1.2	120 / 20	3.14	A5 III	NeA	10 ^s	14V	baked IIa-0	M-S		v. poor seeing,
	α Cet	0301.2	+0404	1982	0049	0050	20, 40 ^s 40 ^s	28 ^m W	2" / clean				4.17	M1.5 III			30m Blue filter	15 ^m 67°F			
	K Cet	0318.2	+0321		0056	0107	1.2, 4 ^m 4	28 ^m W	1.5" / clean				5.5	G5 V							
	HR1279A	0406.5	+1506		0125	0140	2.4, 8 ^m 8 ^m						6.4	F3 V							
	" B	"	"		0140	0253	7.3 ^m /	1 ^h 25 ^m W	1 1/2" / clean				9.2	G8?							
	HR1771A	0521.1	-2444		0320	0325	4 ^m 6		" /				6.23	G0							
	HR1771B	"	"			0335	6 ^m 10	54 ^m W	" /				6.81	A2							
2493	HR2162A	0604.5	-4823	"	0554	0619	24 ^m 30						7.92	G5							
	" B	"	"		0620	0700	40 ^m /	3 ^h 35 ^m W	1.5" / clean				8.38	G5.							Dev. w #2492
	HR3661A	0912.0	-4329		0720	0726	2.5 ^m /						5.85	B8							
	B	"	"		0728	0739	6 ^m /	1 ^h 7 ^m W	1" / clean				6.72	B9?							

9.575E
9.735E
15.175E

NUMBER LC	OBJECT	RA TEL	DEC.	DATE UT.	U.T. EXP		TOTAL / CORR.	H. A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
2493 cont	56 LEO	10 55.1	+06 19	9/10 JAN 1982	0820	0843	23" 20	30m W	1" / clean	3.34	50μ / 1.2	120 / 2.0	7.5	M5 III	NeA	10"		boxed Ia-0	M-5	4J		
	70vz	13 28.0	+13 54	JAN 1982	0847	0856	12.4" 3		"				5.69	G5					15m 67F			
2494	HR 2482	00 08.4	-28 02	11/12 JAN 1982	0052	0104	4" 4m	4m	1" / clean	3.34	50μ / 1.2	120 / 2.0	6.56	F4			14V 30m				Westernmost Easternmost	
	"	"	"	JAN 1982	0104		4m	3.41m					6.61	F4								
	HR 2482A	06 41.8	-38 20		0140	0153	5.5" 7	2.5"E	1.2 / clean				6.87	A3								
	" B	"	"		0155	0223	27" 30	1.35"E	1.2				8.33	F?								
	HR 2158A	06 04.3	-45 01		0236	0241	5m 6	39"E					6.45	F5								
	" B	"	"		0242	0347	6.5" 7.5	26"W	1" / clean				10.27	K								
	HR 2501A	06 45.0	-30 56		0350	0358	4.5" 4						5.72	B3								
	" B	"	"		0358	0422	24" 27						8.24	B3?								
	HR 2462A	06 38.1	-61 29		0432	0441	6m 8	46"W	1" / clean				6.89	G0								
	" B	"	"		0446	0551	6m 5.5	1.52"W					9.65	B6							(fainter than 8.66!)	
2495	HD 2764A	08 21.4	-40 53	"	0605	0622	16" 20						8.0	F5							of same star 1.6 same center.	
	" B	"	"		0638	0701	22" 25	1.23W					8.13	F?							easternmost	
	HR 3399 A	08 33.8	-37 31		0711	0741	30m						8.03	K5								
	" B	"	"		0742	0752	6m	3"W	1-1.5				9.71	K?								
2496	14 Ari	02 08.2	+25 56	12/13 JAN 1982	0038	0049	1.536" 2	1.27W	1.5-2 / clean	"	50μ / 1.2	"	5.3	F2 III	"	"	*	"	"	"	"	(lost records)
	HD 27524	04 20.2	+21 02	JAN 1982	0104	0137	5.10" 6.0	3"W	1" / clean				7.2	F5 V								
	θ ² Tau	04 27.2	+15 50		0140	0143	10.10" 12	3.3m W					3.6	A7 III								
	β Eri	05 07.0	-05 04		0147	0149	3.5, 12" 12	30"E					2.9	A3 ELL								
2497	γ Lep (α)	05 12.0	-16 10	"	0211	0213	2.5, 12, 10, 8" 12	12"E					3.2	B9 III								
	ε Ori	05 16.6	-06 51		0216	0219	6.12, 2.24" 24	11"E					3.5	B5 III								
	β Ori	05 13.8	-08 11		0223	0225	1.2, 4, 2.0, 1.0" 20	2"E					0.09	B4 Ia								
	19 Tau	05 31.1	+18 36		0232	0308	5.10, 2.0, 1.0" 10	24"W	1.5				6.4	M2 Eab, Ib								
2498	X Aur	05 36.4	+32 13	"	0320	0324	4.2, 2.5, 3" 3	39m W					5.1	B5 Ia _b								
	134 Tau	05 48.4	+12 40		0327	0330	6.4, 2.2, 2" 2	29m W					4.8	B9 Ib								
	HR 2190	06 10.7	+21 53		0333	0419	46m	54"W	1" / clean				9.5	M0-MV Ia _b								
	HD 36395	05 30.5	-03 37		0423	0520	5.7" 7	2.3, 2.2"W	1.5				9.5	M1 V								
	HR 2630	07 01.3	+24 17		0524	0538	2.4, 2.0, 1.5" 8	1.23"W	1.5				6.12	G5 Ib-II							(8m sample time)	
	γ Gem	06 36.7	+16 25		0540	0541	1.2, 4, 8, 5" 8	1.49"W					1.9	A0 IV								

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB	EMUL.	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2505	HR2318	6 24.2	-28 45	15/16	0452	0501	9 ^m / 12	1 ^h 36 ^m W	2 ^h / clean, windy	3.34	50 ^m / 1.2	120 / 7.0	6.9	G0	N/A	10 ^s	14V	boxed IIa-0	M-5 15 ^m 67F		
(cont)	HR3210	8 11.1	+17 44	JAN 1982	0526	0538	12 ^m / ✓	26 ^m W	1.5-2				6.6	G2			30 ^m	65°C 3hrs N.H. first 1/2 hr			2 ^h 20 ^m - (gk) Dec. Tralced
	HR3510	8 50.1	+15 26		0544	0556	11 ^m / 15	5 ^m W	1.5-2				6.8	G2							
	ε HYA	8 45.7	+06 33		0559	0601	1.5 / ✓	14 ^m W					4.1	G0+F7							Companion in RA same content
2506	HR3750	9 27.0	-05 58	"	0618	0622	4 ^m / ✓	6 ^m E	1.5	"	"	"	6.0	G2	"	"	Dev 4/2505	"	"	"	"
	HR3574(B)	8 56.0	-52 38		0627	0641	14 ^m / 10	44 ^m W	"				8.1	A							
	HR3951	10 00.0	+32 04		0646	0655	9 ^m / 11	6 ^m E					6.1	G4V							20 L Mi.
	HR4523 ⁽²⁾	11 46.0	-40 20		0659	0709	5 ^m / 4	1 43E	"				5.6	G5							
	HD105563A	12 09.1	-63 38		0715	0757	42 ^m / ✓	1 13E	2-4"				8.86	M.							seeing poor over phot. rock!
	PALLAS	13 11.4	-06 58		0807	0912	65 ^m / 90		2"				9:	G2							
	MOON						24 ^m / 25							G2							
2507	HD26736	04 13.4	+23 34	16/17	0058	0201	63 ^m / ✓	50 ^m W	2 ^h / clean	3.34	50 ^m / 1.2	120 / 7.0	8.8	G3	"	"	14V	"	"		(hot dark slide) HYADES 15
	HD27406	04 19.1	+19 12	JAN 1982	0204	0234	30 ^m / ✓	1 ^h 17 ^m W	1.5				8.0	G0			30 ^m				HYADES 31
	HD27836	04 23.3	+14 44		0237	0308	31 ^m / 40	1 48W	"				8.2	G1							" 50
	HR1487	04 38.4	-14 21		0311	0323	12 ^m / ✓	1 48W	"				6.5	K1 IIIa							std
	HR1685	05 10.1	-02 13		0325	0345	20 ^m / ✓	1 37W	1.2				7.3	K1 IVa							"
	HD33793	05 11.1	-44 54		0352	0537	105 ^m / ✓	3 ^h 29 ^m W	1.5				10.3	VIII p VI G					wrong star		SEE KATTEYUS STAR
	HR2318	06 24.1	-28 46		0540	0552	11 ^m / ✓	2 ^h 30 ^m W	1.5				6.9	G0							Solar prog.
	HR2497A	06 44.4	-30 33		0555	0600	4 ^m / 6						6.46	B8							Corbally prog.
	B	0 "	"		0601	0731	90 ^m / ✓	3 49 W	1" / clear				10.5	A?							"
	HR3574B	08 56.1	-52 38		0734	0744	40 ^m / ✓	1 51W	1" / clear				8.1	A?							"
	HR3739	09 23.7	-51 39		0750	0804	24 ^m / 8	1 ^h 44 W	"				6.67	A7 Iab							std
2508	PALLAS	13 12.3	-06 51		0817	0918	60 ^m / 80	50 ^m E	<1" / clear				9	G2 V							std.
2509	HD27836	04 23.1	+14 44	17/18	0100	0155	55 ^m / ✓	36 ^m W	3" - 1.5 / clear				8.2	G1 V							poor seeing not done twirling sub outside
	HD26756	04 13.3	+14 36	JAN 1982	0157	0342	105 ^m / 120	2 36W	1.5				9.2	G5 V							VB50 VB17.
	HD27383	04 18.9	+16 30		0345	0416	30 ^m / 40	3 ^h 3 ^m W	1.5				7.4	F9 V							VB29
	HD27808	04 23.2	+21 44		0418	0458	40 ^m / 60	3 42 W	1.5-2"				7.7	F8 V							VB48
	HR2412B	06 32.1	-58 43		0503	0620	77 ^m / ✓	2 55 W	1"				9.6	A? or F?							Corbally prog.
	HR2497A	06 44.5	-30 34		0623	0636	12 (=60 ^m) / ✓	2 59 W	2.5-1.5				6.5	B8							"
	KHYA	09 39.3	-14 13		0638	0646	124 ^m / 2 ^m	13 ^m W	1.5				4.9	B5 V							std

NUMBER	OBJECT	R.A.	DEC.	DATE UT.	UT EXP		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP					
2509	HR3510	08 50.0	+15 26	1/18	0649	0702	12" 15	1 1/4" W	2" clear	3 34	50"/12	120/20	6.8	62	NET	10 ^s	14V	Behold IIc-O	M-S	2	
(CONT)	HR3259	08 17.4	-12 32	JAN 18/2	0705	0719	13" ✓	2 1/4" W	1 1/2" clear				7	68			3cm	3" 65 E. first 1/2 hr. N, H ₂	15mm 67°F		
	HR5183	13 45.9	+06 31		0725	0738	12" ✓	3 1/4" E	2" clear				6.9	60							
2510	Celli	14 24.7	-13 01	"	0757	0817	20" ✓	3" E	2" clear				6.3	62V							
	HR5384	14 22.0	+01 24		0819	0832	12" ✓	2 4/8 E	1 1/2" clear				6.9	63#							
	φ VIR	14 27.0	-02 06		0833	0838	4 1/2" ✓	2 4/2 E	1" clear				5.5	62							comparison at 9.5 am = 2", 29.5"
	Change to	IT camera -																			
2511	TPHE	00 29.7	-46 24	18/19	0100	0230	90" X	5 1/2" W	1" clear	3 34	100%/1.8	120/20	11.5 ⁺	Me	NET	1 ^s		IIcD	M-S	2	out of focus!
	THOR	03 00.6	-50 40	JAN 18/2	0236	0300	2 1/4" X	3 1/4" W	"				10.5	Me					15mm 67°F		"
	PREP	04 33.9	-62 58		0312	0444	9 1/2" ✓	3 1/2" W	"				12	Me							shy.
	RCAE	04 40.1	-38 12		0452	0517	25" ✓	3 1/4" W	2" clear, wind ↑				10.5	Me							
2512	WPUP	07 45.6	-42 04	"	0555	0657	6 1/4" ✓	2 25W	1 1/2" clear				11.5	Me	"	"	"	"	"	"	"
	ASPUP	08 09.2	-38 04		0705	0727	22" ✓	1 1/2" W	"				10.5	Me							
	SCAR	10 09.3	-61 24		0735	0740	5" ✓	4 1/2" W	1" clear				8.5	Me							
	WVEL	10 14.9	-54 22		0747	0812	25" ✓	1 1/2" W	"				10.5	Me							
	WCEN	11 54.7	-59 06		0819	0907	48" ✓	1 3/4" W	"				11.5	Me							
2513	VPHE	23 31.9	-45 59	19/20	0105	0105	19" ✓	4 1/4" W	3" clear	"	"	"	11.0	Me	"	"	"	"	"	"	2
	TPHE	00 29.8	-46 24	JAN 18/2	0110	0210	60" ✓	4 5/8 W	1 1/2" clear				11.5	Me							
	THOR	03 00.7	-50 39		0213	0231	18" ✓	2 4/5 W	"				10.5	Me							
	OCET	02 18.5	-02 59		0235	0240	5" ✓	3 3/8 W	"				9.5	Me							
	PREP	04 33.0	-62 59		0247								12.5	Me							
	RCAE	04 40.1	-38 13		0251	0311	20" ✓	1 1/4" W	2" clear				10.5	Me							
2514	HR3639S	05 30.6	-03 36	"	0417	0424	5" ✓	"	1" clear	"	"	"	10	M/S	"	"	"	"	"	"	2
	33793W	05 11.0	-44 57		0432	0453	20" ✓	2 1/2" 56 W	1 1/2" clear				(10.3	M/S	(?)	"	"	"	"	"	northern pair
	" S	05 11.1	-44 59		0457	0517	20" ✓	3 21 W	"				?	?							southern pair
	WPUP	07 45.7	-42 07		0523	0613	50" ✓	1 4/3 W	"				10.5	Me							
	ASPUP	08 09.2	-38 08		0617	0632	15" ✓	1 4/8 W	1 1/2" clear				10.5	me							
2515	SCAR	10 09.4	-61 27	"	0654	0657	2" ✓	3" W	"				8.0	Me							
	WVEL	10 14.9	-54 24		0702	0717	15" ✓	18" W	"				10.5	me							
	WCEN	11 54.4	-59 10		0724	0800	3 1/2" ✓	39" ME	"				11.5	Me							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2515	UCEN	12 32.6	-54 35	19/20	0805	0820	15 ^m ✓	58 ^m E	1.5" clean	3.3f	100 ^m / 18	120 ^m / 70	10.5	Me	NeA	1 ^s		IIa-D	M-S 15 ^m 67°F			
	U OCT	13 25.3	-84 06	JAN 1982	0829	0850	21 ^m ✓	1 ^h 19 ^m E	"				11	Me								
2516	T OCT.	21 13.7	-82 11	20/21	0105	0127	22 ^m / 430	7 ^h 32 ^m W	1.5" clean	"	"	"	10.5	Me	"	"	"	"	"			
	T ULC	22 39.8	-61 39	JAN 1982	0137	0207	30 ^m / 45	6 ^h 45 ^m W	"				11	Me								
	VPHE	23 31.7	-46 03		0210	0241	31 ^m / 40	6 27 ^m W	2"				11	Me								
	O CET	02 18.4	-03 04		0244	0254	10 ^m ✓	3 53 ^m W	2"				10	Me								
	R CAE	04 40.1	-38 17		0257	0312	15 ^m ✓	1 51 ^m W	1" clean				10.5	Me								
2517	RTCEN	13 47.5	-36 48	"	0550	0746	116 ^m / 180	2 42 ^m E	"				12.5	Me								
	S LIB	15 20.4	-20 19		0754	0827	33 ^m / 50	3 34 ^m E	"				11	Me								
	W PAV	17 49.1	-62 25		0836	0908	32 ^m / 50	5 22 ^m E	1.5"				11.5	Me								
	R S Sco	16 54.4	-45 04		0915	0918	3 ^m / 2	4 17 ^m E	1.5"				8	Me								
	R CEN	14 15.8	-59 50		0921	0924	2 ^m ✓	1 ^h 32 ^m E					7.5	Me								
2518	O CET	02 18.4	-03 02	21/22	0046	0246	2 ^h ✓	3 ^h 51 ^m W	<1" - 2" hazy	"	50 ^m / 1.2	120 ^m / 70	10	Me	NeA	10 ^s	14V	backed IIa-0	M-S 15 ^m 67°F		Crowe *	
	HR 1318A	04 13.5	-10 19	JAN	0250	0300	10 ^m ✓	2 ^h 7 ^m W	1"				6.1	K3			30 ^m	65° 30 ^m	15 ^m 67°F		Campbell *	
	B	"	"	1982	0301	0440	100 ^m ✓	3 49 ^m W	"				9	G2				1st half hr. in N ₂ H ₂				
	μ LEP	05 12.3	-16 11		0448	0446	20, 40, 80 ^m ✓	2 57 ^m W	1.5"				3.2	B9 III							Corbally std.	
	HD 35600	05 26.1	+30 14		0455	0459	4 ^m ✓	2 56 ^m W	"				5.8	B9 Ib							"	
	S CAR	10 08.7	-61 27		0502	0541	39 ^m ✓	1 ^h 5 ^m E	1" clean				8	Me							Crowe prog.	
	"	"	"		0602	0612	10 ^m ✓	3 4 ^m E	"				"	"								
	HD 105563 B	12 09.0	-63 40		0619	0702	42 ^m ✓	1 ^h 44 ^m E	1" clean		0.6		9.68	A?							difficult pair.	
	HD 78558	09 07.7	-15 03		0717	0733	16 ^m ✓	1 47 ^m W	"		1.2		8.0	G2							Solar prog.	
	HD 81809	09 27.0	-06 00		0737	0740	3 ^m ✓	1 37 ^m W	"				6.0	G2							"	
2519	R CEN	14 15.8	-59 49		0757	0820	22 ^m ✓	2 33 ^m E	1.5"				7	Me							Crowe prog.	
	R S Sco	16 54.6	-45 01		0830	0900	30 ^m ✓	3 30 ^m E	2"				7.5	Me								

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F = MP File & Grade

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GARRISON CLASSIFICATION SPECTROGRAPH

NUMBER	OBJECT	R.A. 1982	DEC. 1982	DATE UT 1982	UT. EXP.		TOTAL / CORR.	HA END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS			
					BEGIN	END									KIND	EXP.								
2520	HD 65813	7 58.7	-28 23	02:23	02:32	02:35	3 / 3 ^m		2" / clear	3-34	100 / 1.2	120 / 7.0	8.0	sd F8				IIaD	15 ^m 6 ^o M/S	F	1			
"	"	"	"	"	02:39	02:49	10 ^m / 6															3 dbl exp		
"	"	"	"	"	02:51	02:52.5	1 1/2 / 1 1/2															5 1/2 exp		
					02:55										NaA	1 ^s						7		
					03:00	03:04	4 / 3								NaA	1 ^s						9 comp deliberately misaligned		
2521	LS 816A	7 49 35	-27 12 03		03:30	03:48	18 / 45 ^m				0.8		11.23									-5	wrong class	
-2					03:48	04:42	54 / 85																-3	
-3	LS 841	7 52 27	-26 11 03		04:50	06:38	08 / 90						11.94										-1	Plate stuck to glass plate
-4	ICLSB-25	10 27 06	-57 34		06:48	06:22	04 / 130						12.49										+1	
-5	SGCSS16-103	03 53 30	-61 44		06:30	09:56	26 / 30						10.62										+3	over
2522	JM73	6 30 41	5 02 25	02:24	00:42	00:48	6 4 1/2	0 12 E	2" clear		100 / 1.2	120 / 7.0	8.07					IIaD	15 ^m 6 ^o M/S	F		-5	NaA blue filter	
-2	JM74	6 30 55	5 02 49		00:51:30	00:54:30	3 3 ^m	0 06 E					7.75	08 V									-3	↓
-3	JM75	6 30 58	4 57 24				80 ^s						6.87	05 V									-1	
-4	JM76	6 31 12	4 58 51		01:01:30	00:06:30	5 ^m						8.36	09 V									+1	
-5	JM77	6 31 11	4 50 14		01:07	01:11	2 ^m						7.48	04 V									+3	
-6	JM78	6 31 18	4 52		01:14:45	01:15:30	1 ^m						6.85										+5	
-7	JM79	6 30 12	4 51		01:18	01:23	5 ^m		2"-4"				8.35										+6	
2523	NGC 2149-1A	6 08 00	13 47 48		01:52	01:58	6 ^m																-5	
-2	1B	"	"		02:02	02:05	3 ^m																-3	↑
-3	NGC 2143-15	7 07 12	-10 35		02:18	02:58	40 ^m / 3 ^h		1-2		0.8		12.44										-1	blue filter not in
-4	-22	7 06 48	-10 32		01:05	04:35	80 / 70		1-2				11.91										+1	
-5	Stack 13	11 12 54	-58 47		04:56	06:58	120 ^m		1-2				12.17										+3	
2524	"	11 14 18	-58 46		07:12	07:20	8 / 8 ^m	1 58 W	2		1.2		8.9										-5	
-2	-101	11 14 00	-58 45		07:22	08:26	60	2 42 W	2		0.8		11.5										-3	
-3	-105	"	"		08:28	08:32	4 60		2				13.4										-1	
-4	-106	"	"		08:32	09:36	64 60		2				12.4										+3	
-5	-5	"	"		09:38	09:56	18 25		2-3				10.72										+5	Sky unpaired DAGM Gen

NUMBER	OBJECT	R.A.	DEC.	1982 DATE U.T. JULY	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	B MAG	SP.	COMP		CALIB.	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP.						
2536-1	α Sco			5-7	1:41:08	1:42:00		-37 ^m	OVERCAST				2.58									
-2	o Sco				1:55:30	2:00:50		-10 ^m					5.35									
-3	γ Oph				2:30:00	2:52:45							4.34									
-4	HR 6342				2:38:18	3:02:28		+1 ^h 05 ^m					6.32									-5 from nearby full moon Cirrus cloud Overcast
-5	η Sco				3:36:15	3:39:15		+32 ^m					4.2									
-6	δ Sco				3:54:30	3:55		-2 ^h 05 ^m					2.21									
-7	δ Oph				4:09:20	4:11:35		+2 ^h 10 ^m														
-8	α Sco				4:35:30	4:32:35		+2 ^h 14 ^m					4.65									
-9	ω Sco				4:37:45	4:39:45		+2 ^h 45 ^m					3.91									
-10	β Aqr				5:16:00	5:18:30		-2 ^h					3.73									
2537-1	AR PAV			8-7	3:30	4:31			CIRRUS			120/10	9.8									Misidentified?
2538-1	R AQL				4:55	5:36						67/50	7.3									
-2	R AQL				5:36:20	6:00																
-3	R AQL				6:02:40	6:20																
-4	SKY				6:21	6:51																FAILED TO OPEN DARK SLIDE OR OVERLAPPED WITH 2538-37 (FIRST AC-PEG EXPOSURE WAS A MISTAKE. (APPROX. 20 minutes))
2537-2	AC-PEG				8:36	9:32																
2539-1	RW HYA			9-7	0:33:10	1:01			CLEAR													IT
-2	BD-213573				1:33	3:30																
-3	AS 221				4:13	6:14																MISIDENTIFIED
-4	R AQR				7:10:50	7:49:30																
-5	RR TEL				8:28								12.5									
2540-1	RW HYA			10-7	1:06:48	1:30			CIRRUS													
-2	HD 330036				1:47	3:00																
-3	KS OPH				3:17	4:29																
-4	RR TEL				4:47	7:00																
-5	CD-4314304				8:08	9:48							12.8									Stopped early. Circled over.

NUMBER	OBJECT	R. A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H. A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
	COR 240 -38	11 ^h 12 ^m	-60° 04'	10-11 Feb.	8:46	9:20	30 min	2 ^h 49 ^m					ⓑ 10.76							LHWB	This plate perfectly exposed.
2547	NGC 1662-6	4 ^h 48 ^m	+10° 55'	11-12 Feb. 1953	1:05	2:12	1 ^h 7 ^m	2 ^h 11 ^m					11.55								
	NGC 2287-56	6 ^h 46.3 ^m	-20° 44'		2:25	2:46	21 min	0 ^h 43 ^m					10.12								
	(F+)-1				2:59	3:06	7 min	+1 ^h 04 ^m													S component } ~5"
	-1				3:08	3:16:30	8 ^m 30 ^m	+1 ^h 14 ^m													U component } double
	-23				3:49	4:04	15 min	2 ^h 02 ^m													SE component } ~8"
	-23				4:05	4:27	22 min	2 ^h 25 ^m													NW component } double
	-54				4:38	5:18	40 min	+3 ^h 16 ^m					10.69								interruptions; Time exp ~ 2.5 min
	NGC 2546 -18	8 ^h 11.7 ^m	-37° 35.1'		5:32	7:19	1 ^h 47 ^m	+3 ^h 51 ^m					12.17								
2548	NGC 5316 -4	13 ^h 52.3 ^m	-61° 45'		8:09	9:26	1 ^h 17 ^m	+0 ^h 19 ^m					11.78								Sunrise
2549	NGC 1662 -110	4 ^h 47.4 ^m	+10° 54.6'	11/12 Feb	1:22	1:38	16 ^m / 15 ^m	1 ^h 38 ^m					10.08								Rotated slit 5° (interference)
	-107	"	"	12/13	1:54	2:24	30 min / 40 min	2 ^h 24 ^m					~10.5								
	NGC 2169 -10	6 ^h 08.0 ^m	+13° 47.8'		2:34	2:48	~15 min / 15 min	1 ^h 27 ^m					10.10								interruption
	-12	"	"		3:06	3:37	31 min / 33 min	2 ^h 17 ^m													5 ^h 8 ^m Durnal rotation DID NOT DO
	NGC 2343 -15	7 ^h 07 ^m	-10° 34'										12.44								
	Bo -4 #7	7 ^h 31 ^m	-17° 13'		3:58	6:22	2 ^h 24 ^m / 2 ^h 20 ^m	3 ^h 39 ^m					12.36								
	TR 18 #7	11 ^h 11 ^m	-60° 33'		6:50	8:13	83 min / 88 min	1 ^h 50 ^m					11.96								
	Collinder 240 #38	11 ^h 10 ^m	-60° 25'		8:24	9:06	42 min / 29 min	2 ^h 45 ^m					10.76								interruptions → ~ 30 min
	-21	"	"		9:13:20	9:20:20	7 min / 8 min	2 ^h 59 ^m					9.42								
	-3	"	"		9:28	9:30	90 ^s / 90 ^s	3 ^h 06 ^m					7.56								Sun rise
2550	NGC 2546 -20	8 ^h 11.7 ^m	-37° 35'	20/21 Feb			23 min / 23 min	-1 ^h 24 ^m					10.47								accidental Double take
	-20						52 min	-0 ^h 10 ^m					10.47								
	-13						29 35 min / 29 min	+0 ^h 37 ^m					10.81								
	-355						12 min / 12 min	+0 ^h 57 ^m					9.90								
	-353						7 min / 7 min	+1 ^h 09 ^m					8.99								
	-354						20 min / 11 min	+1 ^h 30 ^m					9.75								
	-105						14 min / 11 min	1 ^h 58 ^m					9.78								Rotate slit 12° (INTERFERENCE)
	-698						6 min / 6 min	2 ^h 12 ^m					9.07								
	-6						81 min / 78 min	3 ^h 54 ^m					11.81								
	NGC 4463 #8	12 ^h 20 ^m	-64° 40'				134 min / 110 min	+2 ^h 32 ^m					12.27								MAY BE SOME DUAL INTERFERENCE

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NUMBER	OBJECT	R.A. 1983.0	DEC. 1983.0	DATE U.T.	U.T. EXP.		TOTAL/CORR.	LST END	SEE./TRANS.	CAM. FOCUS	SLIT	GRATING /TILT	MAG V	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
2556	HR 1214	03 ^h 53.0	-34° 47'	FEB. 26/7/83	00:13	00:46	6 ^h 28	33 ^m ⊕	1 1/2" / DIFF. CIRRUS	3-22	RV declin @ 40µm	120° / 8-30	5-11	B6V 65	Ne-A	2 ^{sec}	30" B6V @ VR25	1030-E @ GG 14 (3mm)	M-S(15")	IKB	Ha for BARKER
	HR 2282	06 ^h 19.7	-30° 03'		00:51:30	00:56	4 1/2 ^m ⊕	6 ^h 38	"				3-02	B2-5V 45							
	HR 3343	08 ^h 27.3	-35° 03'		01:05	02:03	58 ^m ⊕	7 ^h 45	1 1/2" / CLEAR				5-75	B3V 165							
	HR 3672	09 ^h 13.5	-44° 05'		02:10	03:12	62 ^m ⊕	8 ^h 55	1 1/2" / CLEAR				5-85	B6IV 260							
	HR 4732	12 ^h 25.6	-51° 21'		03:17	03:43	26 ^m ⊕	9 ^h 26	1 1/2" / CLEAR				4-82	B3V ⁿ 245							
	HR 4848	12 ^h 45.4	-56° 24'		03:51	04:13	22 ^m ⊕	9 ^h 56	" / ~ "				4-69	B3V 75							
	HR 5395	14 ^h 25.0	-45° 09'		04:17	04:48	31 ^m ⊕	10 ^h 31	" / 50% CIRRUS				4-56	B2IV 20							
	HR 5695	15 ^h 20.2	-40° 35'		04:55	05:02	7 ^m ⊕	10 ^h 45	" / ~ CLEAR				3-22	B1-5V 235							} plates not advanced?
	HR 5764	15 ^h 31.9	-16° 48'		05:08	05:24	16 ^m ⊕	11 ^h 07	"				5-50	B2V ⁿ 270							
	HR 5902	15 ^h 52.3	-20° 07'										5-03	B2-5V 200							
	HR 5695				05:27	05:33	6 ^m ⊕	11 ^h 16	"												
	HR 5764				05:36	05:56	56 ^m ⊕	13 ^h 39	1 1/2" / MUCH CLOUD												HALTED DUE TO CLOUDS.
	HR 5902	15 ^h 52.3	-20° 07'										5-03	B2-5V 200							
	HR 5953	15 ^h 59.3	-22° 34'		07:59 1/2	08:02	2 1/2 ^m ⊕	13 ^h 46	1 1/2" / ~ CLEAR				2-32	B0-5V 180							
	HR 6165	16 ^h 34.8	-28° 11'		08:07	08:11	4 ^m ⊕	13 ^h 54	1 1/2" / DIFF. CLOUD				2-82	B0V 20							
	HR 6247	16 ^h 50.7	-38° 01'		08:19	08:24	5 ^m ⊕	14 ^h 07	1 1/2" / ~ CLEAR				3-08	B1-5V ⁿ 235							The one that's SW. and ~ brighter !!
	HR 6875	18 ^h 23.0	-44° 07'		08:32	09:12	40 ^m ⊕	14 ^h 56	1 1/2" / DIFF. CLOUD				5-25	B2-5V ⁿ 330							
	HR 6527	17 ^h 32.4	-37° 06'		09:14 1/2	09:16	1 1/2 ^m ⊕	15 ^h 00	1 1/2" / ~ CLEAR				1-63	B2 IV ⁿ 145							
	COMP.						3 ^s														
2557	HR 2149	06 ^h 03.7	-32° 10'	FEB. 27/8/83	02:41	03:35	54 ^m ✓	05 ^h 22	1 1/2" / CLEAR	3-22	RV declin @ 40µm	120° / 8-30	5-65	B2-5V 115	Ne-A	4 ^{sec}	30" B6V @ VR25	1030-E @ GG 14 (3mm)	M-S(15")	IKS	
	HR 3084	07 ^h 52.0	-38° 49'		03:39	03:57	18 ^m ✓	05 ^h 44	1 1/2" / "				4-49	B2-5V 180							
	HR 3462	08 ^h 41.7	-48° 02'		04:01	04:48	47 ^m ✓	10 ^h 35	" / "				5-51	B1-5V ⁿ 370							
	HR 4205	10 ^h 43.5	-63° 52'		04:53	05:18	25 ^m ✓	11 ^h 05	" / "				4-82	B4 IV ⁿ 295							
	HR 4757	12 ^h 29.0	-16° 25'		05:27	05:31	4 ^m ✓	11 ^h 18	" / "				2-95	B9V ⁿ 160							
	HR 5354	14 ^h 18.3	-45° 59'		05:35	03:43	8 ^m ✓	11 ^h 30	" / "				3-55	B2-5V 235							
	HR 5516	14 ^h 58.0	-42° 02'		05:47	05:53	6 ^m ✓	11 ^h 40	1 1/2" / "				3-13	B2 IV 25							
	HR 5712	15 ^h 22.1	-36° 48'		05:58	06:19	21 ^m ✓	12 ^h 06	" / "				4-54	B4 V 200							
	HR 5885	15 ^h 49.9	-25° 42'		06:23	06:46	23 ^m ✓	12 ^h 33	1 1/2" / "				4-64	B1-5V ⁿ 310							
	HR 5902	15 ^h 52.3	-20° 07'		06:50	07:21	31 ^m ✓	13 ^h 08	1 1/2" / "				5-03	B2-5V 200							
	HR 5987	16 ^h 05.5	-36° 45'										4-23	B2-5V 300							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG	SP.	COMP.		CALIB.	EMUL.	DEV.	OBS	REMARKS		
					BEGIN	END									KIND	EXP.							
2558	NGC 3572 -17 -4	11 ^{hr} 09 ^m	-60° 08'	3/4 MAR/83	5:44	8:20	156 ^m 130 ^m +	+3 ^{hr} 14 ^m	POOR		40 μ		(B)								LHWB	V. BAD SEEING L-RONOS SLIT	
2559	NGC 2343 -15 NGC 3572 -17 NGC 4463 -15	7 ^{hr} 07 ^m 11 ^{hr} 09 ^m 12 ^{hr} 28 ^m	-10° 34' -60° 08' -64° 40'	4/5 MAR	1:37	4:22	2 ^{hr} 45 ^m 2 ^{hr} 40 ^m + 3 ^{hr} 22 ^m	+4 ^{hr} 24 ^m	GOOD		40 μ 100 μ												
2560	NGC 2287 -59 -62 -76 NGC 2546 -38b NGC 3572 -20 NGC 5316 -8 -75 -103	6 ^{hr} 47 ^m 8 ^{hr} 11.7 ^m 11 ^{hr} 09 ^m 13 ^{hr} 53 ^m	-20° 44' -37° 35' -60° 08' -61° 45'	5/6 MAR	0:40	1:25	45 ^m 34 ^m 45 ^m 70 ^m 62 110 ^m 95 ^m 58 ^m 30 ^m 62 ^m 50 ^m 17 ^m 27 ^m	0 ^{hr} 47 ^m 1 ^{hr} 44 ^m 2 ^{hr} 44 ^m 2 ^{hr} 02 ^m 0 ^{hr} 27 ^m 1 ^{hr} 48 ^m 2 ^{hr} 13 ^m															
2561	NGC 2343 -19 Tr 18-2 NGC 4463 -2 -4 NGC 5281 -18 -17	7 ^{hr} 07 ^m 11 ^{hr} 11 ^m 12 ^{hr} 28 ^m 13 ^{hr} 45.4 ^m	-10° 34' -60° 34' -64° 40' -62° 48'	6/7 MAR	0 ^{hr} 50 ^m	3:33	164 ^m 160 ^m 96 ^m 75 ^m 105 ^m 94 ^m 64 ^m 60 ^m 42 ^m 40 ^m 35 ^m 39 ^m	2 ^{hr} 41 ^m 0 ^{hr} 25 ^m 1 ^{hr} 02 ^m 2 ^{hr} 11 ^m 1 ^{hr} 46 ^m 2 ^{hr} 24 ^m															
2562	B04-25 -24 IC 2581 -168 NGC 5316 -3 NGC 6193 -23 -27 -26	7 ^{hr} 30.8 ^m 10 ^{hr} 27 ^m 13 ^{hr} 53 ^m 16 ^{hr} 41 ^m	-17° 13' -57° 32' -61° 45' -48° 43'	8/9 MAR	0:50	2:21	91 ^m 82 ^m 114 ^m 110 ^m 51 ^m 50 ^m 105 ^m 110 ^m 32 ^m 27 ^m 45 ^m 33 ^m 23 ^m 19 ^m	1 ^{hr} 12 ^m 3 ^{hr} 08 ^m 1 ^{hr} 14 ^m -0 ^{hr} 10 ^m -2 ^{hr} 04 ^m -1 ^{hr} 05 ^m -0 ^{hr} 38 ^m															
2563	NGC 1662 -101 B04-28 IC 2581-25 Tr 18-17	4 ^{hr} 47.4 ^m 7 ^{hr} 30.8 ^m 10 ^{hr} 26.6 ^m 11 ^{hr} 10.3 ^m	+10° 54.6' -17° 13' -57° 32' -60° 35'	9/10 MAR	0:10	1:04	54 ^m 43 ^m 2 ^{hr} 21 ^m 2 ^{hr} 20 ^m 2 ^{hr} 19 ^m 2 ^{hr} 20 ^m 45 ^m 45 ^m	2 ^{hr} 43 ^m 2 ^{hr} 36 ^m 2 ^{hr} 14 ^m 2 ^{hr} 32 ^m															

10-15% interference
from #30
interrupted

DAWN

SOME LIGHT
CIRRUS

DAWN
THIS
PLATE FOGGED:

INSUFFICIENT
TIME DELAY
AFTER (~20^m)

TURNING ON
INTENSIFIER
(DISC DEAD
BATTERIES)

NOT YET DAWN

LOW

NUMBER	OBJECT	R A	DEC	DATE U.T.	U.T. EXP		TOTAL / CORR	H A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG (B)	SP.	COMP.		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
2563	NGC 6193 -20	16 ^{hr} 41.0	-48° 50'		7:26	8:14	48 ^m 52 ^m	-2 ^{hr} 00 ^m			100 ^μ		11.43								L.H.W.B.	CONTINUED FROM PREVIOUS PAGE
	-15				8:19	9:11	52 ^m 45 ^m	-1 ^{hr} 03 ^m					11.31									
	-18				9:14	9:46	32 ^m 30 ^m	-0 ^{hr} 28 ^m					10.87									
2564	Bot -10	7 ^{hr} 30.8	-17° 13'	10/11 Mar/83	0:36	2:30	14 ^m 40 ^m	+1 ^{hr} 29 ^m	2.2				12.24									
	NGC 2546 -32	8 ^{hr} 11.7	-37° 35.1		2:45	4:25	100 ^m 140 ^m	+2 ^{hr} 43 ^m					12.13									NGC 2546
	NGC 3572 -25	11 ^{hr} 09.5	-60° 08'		5:06	7:13	127 ^m 120 ^m	+2 ^{hr} 34 ^m					12.32									Slit rotated to avoid #1 some cirrus set in
	NGC 6193 -22	16 ^{hr} 41.0	-48° 50'		7:29	8:29	60 ^m 45 ^m	+1 ^{hr} 41 ^m					11.28									
	-21				8:33	9:38	65 ^m 58 ^m	-0 ^{hr} 52 ^m					11.66									
2565	Bot -29	7 ^{hr} 30.8	-17° 13'	11/12 Mar	0:48	2:36	108 ^m 120 ^m	+1 ^{hr} 39 ^m					12.19									
	IC 2581 -16	10 ^{hr} 26.6	-57° 32'		2:56	5:02	126 ^m 120 ^m	+1 ^{hr} 09 ^m					12.05									
	-20				5:09	6:39	90 ^m 80 ^m	+2 ^{hr} 47 ^m					11.90									CLOUDS ROLLED IN
2566	NGC 2546 -27	8 ^{hr} 11.7	-37° 35.1	12/13 Mar	0:26	3:16	170 ^m 160 ^m	+1 ^{hr} 42 ^m					12.65									
	IC 2581 -55	10 ^{hr} 26.6	-57° 32'		3:27	5:06	99 ^m 90 ^m	+1 ^{hr} 20 ^m					12.04									possible interference from #56 (not likely) 6 min interference #1
	-52				5:28	7:35	110 ^m 110 ^m	+3 ^{hr} 47 ^m					12.21									POOR TRACKING
	NGC 6193 -16	16 ^{hr} 41.0	-48° 50'		7:49	9:15	86 ^m 43 ^m	-0 ^{hr} 47 ^m					11.25									
	-17				9:18	9:48	30 ^m 25 ^m	-0 ^{hr} 14 ^m					10.68									
2567	NGC 2546 -45	8 ^{hr} 11.7	-37° 35.1	13/14 Mar	1:17	2:02	45 ^m 58 ^m	+0 ^{hr} 32 ^m					11.10									
	-74				2:15	3:38	83 ^m 60 ^m	+2 ^{hr} 08 ^m					11.59									FAIR TRACKING
	IC 2581 -24	10 ^{hr} 26.6	-57° 32'		3:53	6:11	138 ^m 120 ^m	+2 ^{hr} 26 ^m					12.32									
	Tr 18 -5	11 ^{hr} 10.3	-60° 35'		6:29	8:00	95 ^m 88 ^m	+3 ^{hr} 32 ^m					11.95									
	NGC 5749 -9	14 ^{hr} 47.2	-54° 26'		8:13	9:51	98 ^m 86 ^m	+1 ^{hr} 47 ^m					11.48									B-V = 1.26
2568	NGC 2352 -22	7 ^{hr} 17.9	-24° 53'	14/15 Mar	1:00	2:30	90 ^m 82 ^m	+1 ^{hr} 58 ^m					11.94									
	NGC 2546 -127	8 ^{hr} 11.7	-37° 35.1		2:41	(3:03)	22 ^m 22 ^m	+1 ^{hr} 36 ^m					10.50									
	-116				3:12	4:17	65 ^m 60 ^m	+2 ^{hr} 57 ^m					11.59									
	Tr 18 -20	11 ^{hr} 10.3	-60° 35'		4:29	(5:54)	85 ^m 80 ^m	+1 ^{hr} 30 ^m					11.91									
	NGC 5749 -8	14 ^{hr} 47.2	-54° 26'		6:08	7:17	67 ^m 52 ^m	-0 ^{hr} 46 ^m					11.43									Fair guiding
	-3					8:22	38 ^m 58 ^m	+0 ^{hr} 20 ^m					11.53									
	-19				8:34	9:12	38 ^m 32 ^m	+1 ^{hr} 09 ^m					10.70									B-V = 1.03
	-4				9:14	9:48	34 ^m 27 ^m	+1 ^{hr} 46 ^m					11.09									DAWN
2569	NGC 3572 -21	11 ^{hr} 09.5	-60° 08'	14/16 Mar	3:06	5:00	144 ^m 100 ^m	+0 ^{hr} 40 ^m					12.07									CLOUDS TO ~2:50 UT

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG.	SP.	COMP		CALIB.	EMUL.	DEV.	OBS.	REMARKS
					BEGIN	END									KIND	EXP.					
	NGC 4463 -16	12 ^{hr} 28.4 ^m	-64° 40'	15/16 Mar/83	5:09	9:52	283 ^m 280 ^m	+4 ^{hr} 14 ^m	~2"		100μ		(B) 13.25								L+WB
2570	NGC 5606 -6	14 ^{hr} 26 ^m	-59° 32'	16/17 Mar	8:03	9:55	112 ^m 110 ^m	+2 ^{hr} 24 ^m					12.26								
2571	NGC 2546 -174	8 ^{hr} 12 ^m	-37° 35'	17/18 Mar	0:19	0:52	33 ^m 31 ^m	-0 ^{hr} 23 ^m					10.90								
	-175				0:58	2:16	78 ^m 74 ^m	+1 ^{hr} 01 ^m					11.81								
	-82				2:25	3:28	63 ^m 60 ^m	+2 ^{hr} 14 ^m					11.60								
	NGC 3572 -19	11 ^{hr} 09.5 ^m	-60° 08'		3:51	6:22	161 ^m 150 ^m	+2 ^{hr} 10 ^m					12.57								
	NGC 5606 -5	14 ^{hr} 26.2 ^m	-59° 32'		6:30	7:18	48 ^m 43 ^m	-0 ^{hr} 10 ^m					11.22								MV #
	NGC 5617 -81	14 ^{hr} 28 ^m	-60° 37'		7:32	8:32	60 ^m 52 ^m	+1 ^{hr} 03 ^m					11.31								Possible v. slight contamination #22
	-125				8:46	7:57	71 ^m 70 ^m	+2 ^{hr} 28 ^m					11.43								B-V = 1.25
	FOCUS + EXP TEST	K HYA 9 39.3	-14° 15'	15/16 Mar	1:38	1:47	1/2, 3.6	2.80 1.90	1"	2.85	50μ	5.05	4.9	B5	NA 30°	-	Ha-D MS	16°C			Rai
	HD 79241	9 10.5	-39° 08'		1:58 ³⁰	2:42	6, 12, 24		1"	"	"	"	6.5	B9			(Babod)				
LC 2572	Focus + Tilt test	16 APRIL	2.65 - 2.95		by .05's		Tilt 4.40 - 5.14	by .04's								60°	-	Ha-D UNBROD	M-S	19°C	
LC 2572	w CMa	7 13.6	-26° 43'	17/18 Apr	23 57	00 01	1/2, 3		~1/4"	2.70	50μ / 1.2	6.7 / 5.05	3.7	B3	NA 30°	-	Ha-D ^{Babod}	M-S	Rai	clouds	
	HD 81809	9 26.5	-5° 58'		00 08	00 48	40 ^m 70						6.0	G2							
	BS 2874	7 29.0	-22° 59'		00 53	00 56	3 ^m 5	2 27 W					4.5	A5							
	HD 67905	8 07.5	-39° 24'		01 12	02 22	70 55	3 12 W	1"				7.8	A0							clean
	HD 86992	9 59.9	-39° 18'		02 25	03 45	80 ^m 08	2 46 W	1"				8.0	B9							
	HD 139094	15 35.8	-26° 26'		03 53	04 43	50 ^m 08	1 52 E					7.45	B7							OVERLAPPED
	BS 5801	15 36.2	-26° 13'		04 46	05 01	15 ^m ✓	1 36 E					6.2	B7							
	HD 139486	15 37.8	-19° 40'		05 36	06 36	60 ^m ✓	1 E					7.7	B9							
	HD 141180	15 47.4	-27° 32'		06 39	08 09	90 ^m ✓	1 22 W					8.2	B8							
	HD 141774	15 50.3	-20° 31'		08 15	09 25	70 ^m ✓	2 36 W					7.8	B9							
LC 2573	w CMa	7 13.6	-26° 43'	17/18	23 49	23 52	1/2 ^m ✓	1 42 W					3.7	B3							
	K Pup A	7 37.6	-26° 44'		23 57	→	2 1/2 ^m ✓						4.3	B8							
	B	"	"		→	00 02	2 1/2 ^m ✓	1 27 W					4.4	B5n							
	HD 81809	9 26.5	-5° 58'		00 08	00 25	16 ^m ✓	0 2 W					6.0	G2							

NUMBER	OBJECT	R.A.	DEC.	DATE U.T.	U.T. EXP		TOTAL / CORR	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS	
					BEGIN	END									KIND	EXP						
2573	HD 72573	8 3.1	-39° 51'	18/19 APRIL	0034	0129	55 ^m ✓	201 W	1" platen	2.70	50 ^m / 1.2	6 / 5.05	7.6	A0	Net	30 ^s	-	Ilia (b)	M-S	Kai	13°C 40% RH	
	HP 101215	11 37.1	-39° 04'		0139	0319	100 ^m ✓	~1 ^h 2					8.2	A0								
	HD 139094	15 35.8	-26° 26'		0333	0418	45 ^m ✓	215 E					7.4	B7							See pgn.	
	BS 5910	15 53.2	-27° 18'		0421	0434	13 ^m ✓	216 E					6.1	B6								
	HD 142315	15 53.4	-22° 44'		0440	0508	28 ^m ✓	142 E	WRONG ★				6.9	B8							too faint?	
	HD 142805	15 56.0	-21° 25'		0529	0609	40 ^m ✓	43 E					7.3	A0								
HD 142884	15 56.6	-23° 28'		0611	0637	26 ^m ✓	15 E					6.8	B9									
2574	BS 5942	15 57.4	-24° 46'		0646	0653	7 ✓	00				5.3	B5								Baking Procedure = 1/2 hour in Nitrogen then 2 1/2 hrs in Vacuum at 65°C then flood with Nitrogen for Storage.	
	HD 143567	16 00.6	-21° 56'		0657	0737	40 ✓	46 W				7.3	B9									
	HD 143600	16 01.0	-22° 38'		0740	0825	45 ^m ✓	1 28 W				7.4	B9									
	BS 5988	16 04.9	-23° 34'		0827	0837	10 ^m ✓	137 W				5.8	B8									
	BS 6003	16 07.5	-23° 38'		0838	0849	11 ^m ✓	146 W				5.9	B9									
	BS 5948	16 06.6	-24° 24'		0851	0907	16 ^m ✓	205 W				6.3	B7									
	HD 145102	16 08.9	-26° 52'		0909	0932	23 ^m ✓	228 W				6.6	B9									
	HD 145353	16 10.2	-27° 06'		0934	1007	35 ^m ✓	301 W				7.0	B9									
	12 Sco A	16 11.0	-28° 22'		1009	1019	10 ^m / 20 ✓	313 W				5.7	B7+2									12°C 41% RH
2575	K Hya	9 39.3	-14° 15'	19/20 APRIL 1983	2327	2333	6 ^m ✓	59 E	1" platen			5.1	B5								4-28 safe on plate holder	
	B Sex	10 29.3	-0° 32'		2336	2341	5 ^m ✓	141 E				4.9	B6									
	BS 2874	7 29.0	-22° 59'		2346	2352	6 ^m ✓	130 W				5.1	A5									
	HD 83916	9 39.2	-39° 55'		2357	0127	90 ^m / 140 ✓	54 W				8.1	A0									13°C 40% RH
	HD 105095	12 04.5	-39° 02'		0132	0312	100 ^m ✓	14 W				8.2	A2									
	HD 142315	15 53.4	-22° 44'		0315	0400	45 ^m ✓	247 E	1"			6.9	B8									See pgn.
	V Sco C	16 10.8	-19° 35'		0404	0444	40 ^m ✓	220 E				7.0	B									
	D	"	"		0510	0610	60 ^m ✓	54 E				7.7	B									
	HD 145354	16 11.1	-19° 32'		0610	0710	60 ^m ✓	6 W	2"			7.8	B9									" see pgn.
HD 145631	16 11.5	-19° 27'		0711	0736	25 ^m / 50 ✓	32 W				6.7	B9								tit ok? NO		
HD 145519	16 10.9	-19° 01'		0740	0920	100 ^m ✓	~2 ^h W				8.2	B9										
BS 6066	16 15.7	-21° 15'		0922	0946	24 ✓	238 W				6.6	B5								13°C 42% RH		

NUMBER	OBJECT	R.A.	DEC.	1983 DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
Cont'd 2583	HD 89627	10 18.8	-39° 33	26/27 APRIL	0134	0139	2.3 / 3	N 50 W	1"	3.25	100μ .8	120 / 70	7.3	B9	Nett	30 ^s	-	IIa-Ob	MWP2	Kari	FULL MOON
	91460	10 31.6	-39° 46		0142	0049	2 1/2 / 5	50 W					9.5	B9							
	91503	10 31.9	-39° 58		0150	0155	5 ^m / 5	56 W					8.1	A0							1 drift
	91756	10 33.7	-39 25		0156	0203	7 ^m / 9	102 W					8.4	A0							
	92774	10 40.7	-39° 14		0204	0212	8 ^m / 10	105 W					8.5	A0							
	96337	11 04.5	-39° 23		0214	0227	13 / 15	55 W					8.9	A0		20 ^s					vs. loc?
2584	HD 145718	16 12.3	-22° 25		0313	0330	17 ^m / 3	10 E					8.9	A2		20 ^s					B1
	145856	16 13.1	-22° 22		0331	0353	22 ^m / 5	247 E					9.2	A2							B7
	146029	16 13.7	-22 21		0354	0404	4 1/2 / 5	237 E					7.4	B9							B12
	145719	16 12.3	-27° 20		0406	0418	12 ^m / 2	221 E					8.6	A2							B2
	145778	16 12.6	-27° 43		0420	0439	19" / 24	200 E					9.2	F2							B3
	145837	16 13.0	-27° 44		0440	0520	40 ^m / 50	120 E					9.8	A2							B6
	146236	16 15.0	-28° 06		0522	0541	19 ^m / 45	102 E					9.2	A0							B17
	146606	16 17.0	-27° 59		0544	0548	4 ^m / 3 1/2	54 E					7.7	A0							B31
	146397	16 16.0	-27° 27		0551	0626	35 ^m / 40	16 E					9.8	A2							B25
BS	6042	16 12.4	-24° 23		0628	0630	1 1/2 ^m / 1	8 E					6.5	B5							B4
HD	145810	16 12.8	-24° 11		0631	0637	6 ^m / 7	1 E					8.0	A0							B5
	145857	16 13.1	-24° 05		0638	0650	12 ^m / 14	11 W					8.7	A2							B8
BS	6054	16 13.6	-25° 26		0651	0652	1 ^m / 1	13 W					6.1	B7							B11
2585	HD 146531	16 15.7	-25° 48		0659	0707	8 ^m / 1	25 W					8.3	A0		20 ^s					B23
	146530	16 15.7	-25° 10		0709	0724	15 ^m / 1	44 W					9.0	A2							B22
	146266	16 15.3	-25° 00		0725	0735	10 ^m / 1	55 W					8.6	A0							B18
	146285	16 15.2	-24° 57		0736	0743	7 ^m / 1	102 W					8.2	B8							B21
	146284	16 15.1	-24° 15		0745	0747	2 ^m / 1	106 W					6.9	B8							B20
	146437	16 16.2	-24° 10		0748	0801	13 ^m / 14	120 W					8.8	A0							B26
	146069	16 14.2	-23° 41		0803	0820	17 ^m / 1	136 W					9.0	F0							B14 wrong? YES
	146494	16 16.5	-23° 17		0823	0840	17 ^m / 18	159 W					9.0	A2							B28
	146367	16 15.9	-23° 03		0843	0853	10 ^m / 12	212 W					8.4	F0							B24

HD 145836

(16 13.1)

NUMBER LC	OBJECT	R.A.	DEC.	1983 DATE U.T.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE. / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP.		CALIB.	EMUL	DEV.	OBS	REMARKS
					BEGIN	END									KIND	EXP.					
2588	HD 63967	748.8	-39°40	28/29 APRIL	2333	2343	10 ^m ✓	126W	1" clear	3.25	100μ .8	120 70	8.6:	A2	Net	20 ^s	-	IIa-Ob	MUSE-2	Kai	T = 11°C RH = 50% W = 10 mph.
	64011	749.0	-39°42		2344	2354	10 ✓	137W					8.6:	A2							
	64138	749.7	-39°40		2355	0010	15 ✓	202W					9.0:	B8							
	64804	753.0	-39°14		0013	0030	19 ✓	216W	clouds				8.9	A2							moon/clouds custom?
	91786	1033.7	-39°25		0040	0115	35 ✓	22W	"				9.0:	Ap.							
	93334	1044.6	-39°39		0306	0322	46		too cloudy.				9.0:	A0							
	"	"	"		0307	0323	46 ✓	230W	clear				"	"							
	146590	1616.9	-22°58		0327	0412	45 ✓	220E					9.7	F0							B30 MOON VERY CLOSE BY 50 or so.
	148153	1626.0	-27°09		0420	0430	10 ✓	215E	clouds				8.2	F2							B38
	149883	1637.3	-26°57		0520	0531	11 ✓	125E	clear				8.6	B9							B56
	149367	1633.9	-26°26		0536	0548	12 ✓	105E					8.7	B9							B46
	149893	1637.5	-24°05		0553	0605	12 ✓	51E					8.6	F0							B57
	149866	1636.4	-22°52		0607	0612	5 ✓	42E	clouds				7.8	F2							B54
	146686	1617.0	-27°59		0618	0623	4 1/2 5 1/2	12E	↓ break				7.7	A0							B51 hit tilt
2589	145810	1612.8	-24°11		0745	0752	7 ✓	122W	1" moon 16% clouds				8.0	A0							B5
	145857	1613.1	-24°05		0753	0808	15 ✓	137W					9.0:	A2							B8
	146069	1619.2	-23°41		0810	0828	18 20	157W					9.0	F0							B14
	146457	1616.3	-22°57		0831	0843	12 ✓	210W					8.7	A3							B27
	147137	1619.9	-22°30		0847	0910	23 21	234W					9.3:	F0							B32 moon custom?
	149597	1635.7	-27°03		0914	0939	25 ✓	245W					9.2	A0							B50
	149847	1637.2	-23°15		0941	1016	25		shorted clouded out.				9.1	A0							B53 T = 10°C RH = 45% W = 10
2590	62227	740.2	-39°10	1/2 MAY	2316	2320	4 ^m ✓	strabing	2"				7.7	B9							T = 10°C RH = 50% W = 15-25 mph
	62503	741.5	-39°08		2346	2349	5 ^m ✓	200W					7.2	B9							
	627525	742.8	-39°49		2353	2357	5 ^m ✓						7.2	B9							
	"	"	"		2357	0001	3 20	212W					"?	?							
	63198	744.9	-39°22		0004	0015	11 13	224W					8.5	A2							
	65848	758.1	-39°20		0018	0021	3 ✓	215W					7.2	A0							
	65946	758.6	-39°05		0023	0041	18 ^m 15	235W					8.9	A0							

all Moon contaminated
bumped plate holder.

LC NUMBER	OBJECT	R.A.	DEC.	1983 DATE UT.	U.T. EXP.		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
2590	HD 91460	10 31.6	-39° 46'	1/2 MAY	0058	0102	4 ^m ✓	23W	2" diam	3.25	100° / 18	120° / 20	7.5	B9	NA	20 ^s	-	IIa-06	mwe2	Kai	
	91503	10 31.9	-39° 58'		0105	0105	8 ^m ✓	34W					8.1	A0							
	91782	10 33.7	-39° 25'		0116	0134	18 ✓	53W					9.0	A0+G							
	92774	10 40.7	-39° 14'		0136	0148	12 ✓	100W					8.5	A0							
	93837	10 48.0	-39° 01'		0150	0154	4 ✓	100W					7.5	A0							-38' 25" long of E. i.
	96844	11 07.3	-39° 19'		0158	0207	3 1/2 ✓	52W					7.4	A0							
2591	105095	12 04.5	-39° 02'		0222	0230	8 ✓	~150W					8.2	A2							confine finder.
	107202	12 18.1	-39° 12'		0234	0245	10 ✓	21W					8.5	A2							
	107714	12 21.2	-39° 04'		0244	0303	14 ✓	35W					8.8	A0	B0?						
	145778	16 12.6	-27° 43'		0323	0358	30 ^m ✓	207E					9.5	F2							Sci Pgn B3
	146606	16 17.0	-27° 59'		0355	0400	4 1/2 ✓	220E					7.5	A0							B31
	145810	16 12.8	-24° 11'		0404	0412	8 ✓	207E					8.0	A0							B5
	145859	16 13.1	-24° 05'		0415	0431	18 ✓	148E					9.0	A2							B8
	146331	16 15.7	-25° 48'		0434	0444	10 ✓	137E					8.4	A0							B23
	146069	16 14.2	-23° 41'		0447	0509	20 ✓	141E					9.1	F0							B14
	146457	16 16.3	-21° 57'		0509	0521	12 ✓	110E					8.7	A3							B27
	147137	16 19.9	-22° 30'		0523	0540	19 ✓	93E					9.1	F0							B32
	147593	16 22.7	-27° 19'		0550	0521	31 ✓	7E					9.5	A0							B35
	148153	16 26.0	-27° 09'		0625	0634	9 ✓	3W					8.2	F2							B38
	149517	16 35.7	-27° 03'		0646	0710	24 ✓	29W					9.4	A0							B50
2592	144893	16 37.5	-24° 05'		0716	0728	12 ✓	46W					8.7	F0							B57
	150034	16 38.3	-23° 47'		0731	0800	29 ✓	116W					(1.7) 9.4	A2							B59
	149847	16 37.2	-23° 15'		0803	0824	21 ✓	142W					(9.0) 9.1	A0							B53
	149866	16 36.4	-22° 52'		0827	0833	6 ✓	152W					7.8	F2							B54
	146590	16 16.9	-22° 50'		0835	0925	58 ✓	303W					9.7	F0							B30
	147358	16 21.4	-22° 36'		0929	10 19	50 ✓	353W	3"				9.6	A0							B33 T = 8° RA = 52.2° W = 25

LC NUMBER	OBJECT	R.A.	DEC.	1983 DATE U.T.	U.T. EXP.		TOTAL/CORR.	H.A. END	SEE/TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
2593	HD 63080	744.3	-39°17	2/3 MAY	2316	2319	5 ^m ✓	30W	1" clean	3.25	100A .8	120 7.0	7.2	A0	Next 20"	-	Il-06	MWP-2	Kai	uniform field ✓ many spiders/dust? 10° 51% 20 MPH	
	63198	744.9	-39°22		2320	2332	12 ✓	142W					8.5	A2							
	63577	746.9	-39°48				7						8.1	B9							with filter needed.
	65184	754.9	-39°02		2342	2358	16 ✓	203W					8.9	B8							
	65283	757.2	-39°31		0003	0010	7 ✓	211W					8.0	A0							
	65946	758.6	-39°05		0014	0029	15 ✓	228W					8.9	A0							
	93334	1044.6	-39°39		0032	0048	16 ✓	cc	2"				9.0	A0							
	102714	1221.2	-39°04		0053	0108	14 ✓	17E					8.8	Bc?							
	111373	1242.5	-39°33		0111	0117	6 ✓	128E					7.9	B9							
	115987	1319.6	-39°50		0120	0124	8 ✓	159E					7.5	B9							
	97865	1113.6	-39°10		0143	0203	20 ✓	~45W				(1.3)	9.0	A0							
	107107	1217.5	-39°59		0207	0223	16 ✓	02W					8.9	A2							
R Hya	1328.1	-23°08		0227	0230	1.2 ✓	101E					5.5	M7								
2594	146606	1617.0	-27°59		0247	0257	4.5 5/4 ✓	325E					7.4	A0							B31
	145857	1613.1	-27°05		0300	0322	22 30 ✓	254E					9.0	A2							B8
	146069	1614.2	-23°41		0325	0358	33 40 ✓	218E					9.1	F0							B14
	146570	1616.9	-27°50										9.7	F0							B20
	147356	1621.4	-27°36		0401	0441	40 ✓	138E					9.6	A0							B33
	148289	1626.9	-27°08		0449	0524	35 50 ✓	105E					9.6	B9 F2							B34 B41
	14759	1627.6	-27°11		0535	0614	59 ✓	12E					9.5	A0							B35 B35
149597	1635.7	-27°03		0615	0642	27 ✓	11W	clean				9.5	A0							B30 7° 62% 15 MPH	
2595	62227	740.2	-39°10	2/4 MAY	2311	2324	4.5 ✓	41W	1.2 clean				7.7	B9							T 90 EM 66% W 10 MPH
	63577	746.9	-39°48		2324	2331	7 ✓	145W					8.1	B9							
	64804	753.0	-39°14		2337	2352	15 ✓	200W					8.9	A2							
	65654	754.1	-39°40		2354	0003	9 ✓	210W					8.3	B8							
	67360	804.9	-39°04		0011	0020	9 ✓	216W					8.3	A0							
	67405	807.5	-39°24		0023	0029	6 5 ✓	222W					7.8	A0							
	73243	834.8	-39°33		0031	0046	15 15 ✓	212W					8.8	B9							

seeing degenerating
moon contam?

NUMBER	OBJECT	R.A.	DEC.	1983 DATE U.T.	U.T. EXP		TOTAL / CORR.	H.A. END	SEE / TRANS.	CAM. FOCUS	SLIT	GRATING / TILT	MAG B	SP.	COMP		CALIB	EMUL	DEV	OBS	REMARKS
					BEGIN	END									KIND	EXP					
LC confid 2595	HD 73500	836.2	-39°36	4/4 1/147	0047	0103	16 110	228 W	2" diam	3.25	100μ .8	120 7.0	8.8	B8	Net	20"	-	Ha-06	mwp2	Ken	
	73698	832.1	-39°46		0106	0123	17	248 W				8.8	B8								confirm find
	73699	837.1	-39°59		0124	0130	6	254 W				7.7	B5								
	73901	838.2	-39°41		0131	0141	9.5	309 W				7.4	A2								
	96337	1164.5	-39°23		0145	0201	16	57 W				8.9	A0								
2596	R Hya	1328.1	-23°08		0250	0257	3.4	30 E				5.5	M7e								
	HD 145810	1612.9	-24°11		0306	0329	8.8 12	259 E				8.0	A0								B5
	145837	1613.1	-24°05		0323	0353	30.24	54 E				9.0	A2								B8
	146606	1617.0	-27°59		0420	0428	3.4	48 E				7.35	A0								031 confirm find
	cl Sco	1615.5	-28°54		0502	0503	1.2	112 E				4.8	A0								Std.
	HD 146459	1616.3	-22°57		0510	0522	12	53 E				8.7	A3								0327
	149827	1637.1	-24°42		0524	0604	9.0	31 E				9.9	B9								032 confirm find YES OK
	149893	1637.5	-24°05		0606	0632	15.11	02 W				8.7	F0								B37 hot, cooling during print
	150034	1638.3	-23°47		0634	0724	50	53 W				9.4	A2								B39
	145837	1613.0	-27°44		0736	0826	50	218 W				10.2	A2								B6
2597	164514	1759.7	-22°54		0837	0901	6.8, 10	102 W				8.2	A5								Std.
	167838	1816.6	-15°26		0904	0919	2.3, 4	100 W				7.2	B5								"
	166838	1810.4	-39°35		0923	0936	7					8.0	B8 A0								
	169180	1823.2	-39°40		0935	0945	4.5 6	73 W				7.6	B8								
	169792	1826.1	-39°47		0947	0957	10	33 W				8.5	A0								
	175814	1836.9	-39°37		1002	1017	15	122 W				8.8	A0								
	178869	1909.9	-39°20		1018	1027	4.5	114 W				7.6	B8								6" 56% 15 MPH
2598	73699	837.1	-39°59	4.5 MAY	2324	0005	41"	33 W	1-2" diam	2.75	50μ 12	67 3.11	7.7	B5	30"						M-S
	73901	838.2	-39°41		0005	0031	28	57 W	"			7.4	A2								10" 50% 10 MPH
	91756	1033.7	-39°25		0039	0304	150 130	236 W				9.0	A0								
	147955	1624.5	-26°33		0320	0432	72	143 E				8.3	B9								A20
	157346	1646.5	-23°57		0519	0622	63	19 E				8.3	B7								overlapped overlapped by K7009

