

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet

TO CAM 4/2/88

Grating 300L

RAW RET

Telescope 61" WYETH

Date 3/31 - 4/1 1988

Observer JM2

Disk ORO 2076

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	25187A thick cirrus
		2	32-2402F	13:51:31	31:54:38	3M	8.7 ANG P (1025)
		3			↑	60s	
		4			↓	60s	
		5	G62-S2	13:33:29	11:27:42	15M	10.89/30? Halofin (314)
		6			↑	60s	↑ >10% sky
		7			↓	60s	STOPPED - heavy clouds
		8	X CYG	20:41:27	35:24:26	5M	6.4/- CEPHEIDS (8)
		9			↑	60s	
		10			↓	60s	
		11	H182572	19:22:35	11:50:09	2M	5.2 IAU STANDARDS
		12			↑	60s	
		13			↓	60s	
		14	SKYDWN	4h EAST	+30°	2.5M	16 SKY
		15			↑	60s	
		16			↓	60s	
		17	SKYDWNM	φ hrs	+30°	2M	16 sky
		18			↑	60s	
		19	INCANS			2h	
		20	INCANS			2h	
		21	INCANS			2h	
April 1-2 1988		22	thAr		↓	60s	complete overcast/rain 25187A
		23	SKYEVEM	Meridian	-15°	2M	16 SKY 48°F
		24	thAr		↑	60s	
April 2-3 1988		25	thAr		↓	60s	25187A
		26	SKYEVEM	Meridian	+20°	2M	16 SKY 50°F
		27	thAr		↑	60s	
		28	thAr		↓	60s	
		29	SKYEVEM	4hrs West	+20°	2M	16 SKY
		30	thAr		↑	60s	
		31					
		32					

Spectrograph ECHELLE Intensified Reticon TO CAM 4/2/88  
 Grating 3002 Log Sheet RAW/RET  
 Telescope 61" Wyeth Date April 2-3 1988 Observer JRC  
 Disk 020 2077

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	
		2	H26162	4:06:14	19:28:43	2 <sup>m</sup>	17 IAY STD 5.5
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	
		5	H65607	7:56:50	-7:22:06	15 <sup>m</sup>	FSTARS Very thick haze 8.0 & some clods
		6			↑	60 <sup>s</sup>	
		7			↓	60 <sup>s</sup>	
		8	71252	8:23:40	-8:20:59	20 <sup>m</sup>	FSTARS 6.88/700
		9			↕	60 <sup>s</sup>	
		10	71252	"	"	20 <sup>m</sup>	FSTARS INTERAL BY CLDS 6.85/700
		11			↑	60 <sup>s</sup>	
		12			↓	60 <sup>s</sup>	
		13	G165-22	13:35:51	39:26:00	2 <sup>m</sup>	HALOFIN 8.9/15
		14			↑	60 <sup>s</sup>	(Trouble w/ SKY/CGX switch)
		15			↓	60 <sup>s</sup>	
		16	G58-23	10:47:12	20:46:30	10 <sup>m</sup>	HALOFIN 9.96/15
		17			↑	60 <sup>s</sup>	
		18			↓	60 <sup>s</sup>	
		19	G9-42	8:57:54	21:39:12	4 <sup>m</sup>	HALOFIN 8.8/15
		20			↑	60 <sup>s</sup>	
		21			↓	60 <sup>s</sup>	
		22	t222411	11:48:59	22:23:36	13 <sup>m</sup>	HALOS 9.3/30
		23			↑	60 <sup>s</sup>	
		24			↓	60 <sup>s</sup>	
		25	G57-27	11:47:34	19:02:12	2 <sup>m</sup>	HALOFIN 8.42/15
		26			↑	60 <sup>s</sup>	
		27			↓	60 <sup>s</sup>	
		28	G59-5	12:10:56	23:32:36	4 <sup>m</sup>	HALOS 9.42/15
		29			↑	60 <sup>s</sup>	
		30			↓	60 <sup>s</sup>	
		31	t102495	12:56:49	9:30:42	9 <sup>m</sup>	HALOS 9.72/30
		32			↑	60 <sup>s</sup>	



417

Intensified Reticon TO CAMI  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 3002 Observer JZ  
 Telescope 61" Wyeth Date 4/4/87 Disk ORO 2079

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	4
		2				3h	IAU standard 1A4
		3			↑	60s	-rain-
		4			↓	60s	2 5187A DTLY cloudy
4/5-6/88		5	φ hrs	+30°		2m	16 sky
JMZ		6				60s	
		7				60s	
		8	4hW	+30°		2m	16 sky
		9				60s	
		10				60s	
		11	Alp Ori 5:52:28	7:23:58		8m	0.8/1000 H-Alpha 6562A
		12				60s	clouded out
		13				120m	
		14				120m	
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					
		26					
		27					
		28					
		29					
		30					
		31					
		32					

Spectrograph off Telescope  
for Fiber Testing

417

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW/RET

Grating 300f

Observer RPS & JME

Telescope 61" WYETH

Date 4/6-7/88

Disk 020 208P

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
					↓	60s	-overcast
		H114762	13:09:55	17:46:55		12M	7.7 IAU standard (in heavy cloud)
		ThAr			↑	60s	
		ThAr			↓	60s	BALANCED COUNTS
		H136202	15:16:45	01:57:12		3M	5.1 IAU STANDARD
		ThAr			↑	60s	
		ThAr			↓	60s	
		H114762	13:09:55	17:46:55		20M	7.7 IAU STANDARD
		ThAr			↑	60s	very heavy clouds
		ThAr			↓	60s	BALANCED COUNTS
		SKYDWN	4hE	+30°		3m	16 sky
		ThAr			↑	60s	
		ThAr			↓	60s	
		SKYDWN	meridian	+30°		2M	16 sky
		ThAr			↑	60s	
		INCANDS				120M	
		INCANDS				120M	Rotation Terrible!
		ThAr			↓	60s	cloudy/thin 2.5187A
		SKYDAY	0h	-10°		4M	16 SKY 2.0ND FIL spect. Temp 20.6°C
		ThAr			↑	60s	
		ThAr			↓	60s	
		SKYDAY	0h	0°		4M	16 SKY 2.0 Filter
		ThAr			↑	60s	rebalanced ≈ 1000 sr
		ThAr			↓	60s	
		SKYDAY	0h	+10°		4M	16 SKY 2.0 Filter 1041
		ThAr			↑	60s	
		ThAr			↓	60s	
		SKYDAY	0h	+20°		"	16 SKY 2.0 Filter 1040
		ThAr			↑	60s	
		ThAr			↓	60s	
		SKYDAY	0h	+30°		4M	16 SKY 2.0 Filter 1150
		ThAr			↑	60s	

Apr 7-8  
1988  
SKY Test









418

Spectrograph ECHELLE

Intensified Reticon

TO CAM

Grating 300L

Log Sheet

RAW/RET

Telescope 61" Cassegrain

Date 7-8 April 88

Observer RJS

Disk ORO 2084

Change....	File	ID	1950.0 RA	Dec	L/R +/+	Exposure	Comments
------------	------	----	--------------	-----	------------	----------	----------

Fiber Test

1		<u>Th-Ar</u>					<u>Sm</u>
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							

418

Spectrograph ECHELLE Intensified Reticon

TO CAM

Grating 300l

Log Sheet

RAW/RET

Telescope 61" Wyeth

Date 7-8 April 88

Observer RPS

Disk ORO 2085

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
------------	------	----	--------------	-----	------------	----------	----------

Fiber Testing

1		<u>Th-Ar</u>				<u>5m</u>	
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							

418

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW/RET

Grating 3002

Observer RPS

Telescope 61" Wyeth

Date 7-8 April 88

Disk ORO 2086

Change....	File	ID	1950.0 RA	Dec	L/R +/+	Exposure	Comments
------------	------	----	--------------	-----	------------	----------	----------

File Testing

1		Th-Ar				Sm	
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							End Th-Ar Test Run -
32							Conditions the same as at start T=440F arb.

4/8

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300L Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 8-9 April 88 Observer RPS  
 Disk ORO 2087

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1				120m	} For } Following SKY'S
		2				120m	
		3			↓	60s	
		4		+10°		4m	SKY grid ND=2.0
		5			↑	60s	↓
		6			↓	60s	
		7		+10°		4m	
		8			↑	60s	
		9			↓	60s	
		10		+10°		4m	
		11			↑	60s	
		12			↓	60s	
		13		+10°		4m	Balance OK until this Observation R>L
		14			↑	60s	
		15			↓	60s	
		16		+20°		2m	ND=1.0
		17			↑	60s	
		18			↓	60s	
		19		120°		3/4 m	
		20			↑	60s	
		21			↓	60s	
		22		+20°		4m	back in balance ND=1.0
		23			↑	60s	
		24			↓	60s	
		25		+20°		2m	ND=1.0
		26			↑	60s	
		27			↓	60s	
		28		+10°		2m	
		29			↑	60s	
		30					
		31					
		32					

4/9

Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 3002 Observer JRC  
 Telescope 61" Wyeth Date April 9-10 1988 Disk ORO2088

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	FIBER TESTS	
		1			↓	60s	balance <sup>21700</sup> RM 57°F / spect 209	518 7P	
		2	SK4+20M	Meridian	+20°	3m	16 SK4	103	
		3			↑	60s			
TWR		4	<del>SK4+20M</del>	<del>Meridian</del>	↓	60s			
		5	SK4+20W	this West	+20°	3m	16 SK4	1080	
		6			↑	60s			
		7			↓	60s			
		8	H89449	10:17:01	19:43:31		3m	17 IAU STD	4.8
		9	Th-Ar			↑	60s		
		10	<del>H89449</del>			↓	60s		
		11	H89449	"	"		3m	17 IAU Std.	
		12	Th-Ar			↓	60s		
		13	H89449				3m	" " "	
		14	Th-Ar			↑	60s		
		15	Th-Ar			↓	60s	rebalanced 21800	
		16	H81797	9:25:07	-8:26:28		3m	17 IAU STD	2.0 / 500
		17	Th-Ar			↑	60s		
		18	Th-Ar			↓	60s		
		19	(4)	7:56:36	25:49:07		10m	17 ASTEROID	8.0 / 17cls
		20	Th-Ar			↑	60s		
		21	(4)	"	"		10m	17 ASTEROID	8.0 / 17cls
		22	Th-Ar			↑	60s		
		23	Th-Ar			↓	60s		
		24	H81797	9:25:07	-8:26:28		4m	IAU Standard	2.0
		25	Th-Ar			↑	60s		
		26	H81797	"	"		2m	"	2.0
		27	Th-Ar			↑	60s		
		28	Th-Ar			↓	60s		
		29	H92588	10:38:52	-01:28:41		10m	IAU Standard	6.3/50
		30	Th-Ar			↑	60s		
		31	H92588	"	"		5m	" (clouds)	
		32	Th-Ar			↑	60s		

4110

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 3002 Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 9-10 April 1988 Observer RPS  
 Disk OR02089

Change....	File	ID	1950.0 RA	Dec	L/R +/-	Exposure	Comments
		Th-Ar			↓	60s	
	H92588	10:38:52	-01:28:41			10m	#17 IAU standard 6.3/75
		Th-Ar			↑	60s	
	IN CAN 13					120	- overcast -
		"				"	
		"				"	
		"				"	
		"				"	
	IN CAN 13					95	
10-11 April 88		Th-Ar			↓	60s	Day SKY Tests
	SKY+30	φ hrs.	+30°			2.5m	Tamb=53°F Spot=20.8°C ND=2.0
		Th-Ar			↑	60s	- balanced -
		Th-Ar			↓	60s	
	SKY+31W	1 hr. W	+30°			2.5m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+32W	2 hrs. W	+30°			3m	- balanced R > L -
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+33W	3 hr. W	+30°			3m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+34W	4 hr. W	+30°			3.5m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+35W	5 hrs. W	+30°			3.5m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+45W	5 hrs. W	+40°			4m	
		Th-Ar			↑	60s	

Wrong date  
& time  
4/10/88

Spectrograph ECHELLE Intensified Reticon TO CAM 4/10/88  
 Grating 300L Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 10-11 April 88 Observer RPS  
 Disk ORO 2090

Change....	File	ID	1950.0 RA	Dec	L/R +/+	Exposure	Comments	Fiber Testing
		1	Th-Ar		↓	60s		
	SKY+55W	2	5hrs W	+50°		4m	58°F 21.0°C	
		3	Th-Ar		↑	60s		
		4	Th-Ar		↓	60s		
	SKY+54W	5	4hrs W	+50°		4m		wrong date 4. me
		6	Th-Ar		↑	60s		
		7	Th-Ar		↓	60s		
	SKY+53W	8	3hrs W	+50°		4m		Time: Date ok.
		9	Th-Ar		↑	60s		
		10	Th-Ar		↓	60s		
	SKY+52W	11	2hrs W	+50°		4m		
		12	Th-Ar		↑	60s		
		13	Th-Ar		↓	60s		
	SKY+51W	14	1hr W	+50°		4m		
		15	Th-Ar		↑	60s		
		16	Th-Ar		↓	60s		Re-balanced
	SKY+5φ	17	φhrs.	+50°		2m		
		18	Th-Ar		↑	60s		
		19	Th-Ar		↓	60s		
	SKY+51E	20	1hr E	+50°		2m		
		21	Th-Ar		↑	60s		
		22	Th-Ar		↓	60s		
	SKY+52E	23	2hrs E	+50°		2m		Sp Temp 21.1°C
		24	Th-Ar		↑	60s		
		25	Th-Ar		↓	60s		
	SKY+53E	26	3hrs E	+50°		2m		
		27	Th-Ar		↑	60s		
		28	Th-Ar		↓	60s		
	SKY+54E	29	4hrs E	+50°		2m		
		30	Th-Ar		↑	60s		
		31						
		32						





4/10

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet

TO CAM

Grating 300L

RAW/RET

Telescope 61" Wyoth

Date Apr 10-11 1988

Observer JRC

Disk ORO 2092

Change....	File	ID	1950.0 RA	Dec	L/R +/+	Exposure	Comments	Fiber Testis
		Th-Ar			↓	60 <sup>s</sup>		λ 5187 Å
	SKY+21W	1 hr West	+20°			2 <sup>M</sup>		
	ThAr				↑	60 <sup>s</sup>		
	ThAr				↓	60 <sup>s</sup>		
	SKY+22W	2 hrs West	+20°			2 <sup>M</sup>		
	ThAr				↑	60 <sup>s</sup>		
	ThAr				↓	60 <sup>s</sup>		
	SKY+21E	1 hr East	+20°			2 <sup>M</sup>		
	ThAr				↑	60 <sup>s</sup>		
	ThAr				↓	60 <sup>s</sup>		
	SKY+11E	1 hr East	+10°			2 <sup>M</sup>	21.0°C	
	ThAr				↑	60 <sup>s</sup>		
	ThAr				↓	60 <sup>s</sup>		
	SKY+12E	2 hrs East	+10°			2 <sup>M</sup>		
	ThAr				↑	60 <sup>s</sup>		
	ThAr				↓	60 <sup>s</sup>		
	SKY+13E	3 hrs East	+10°			3 <sup>M</sup>	changed to 3 <sup>M</sup> integrations to get 1000 cts.	
	ThAr				↑	60 <sup>s</sup>		
	ThAr				↓	60 <sup>s</sup>		
	SKY+03E	3 hrs East	+0°			3 <sup>M</sup>		
	ThAr				↑	60 <sup>s</sup>		
	ThAr				↓	60 <sup>s</sup>		
	SKY+02E	2 hrs East	+0°			3 <sup>M</sup>		
	ThAr				↑	60 <sup>s</sup>		
	ThAr				↓	60 <sup>s</sup>		
	SKY+01E	1 hr East	+0°			3 <sup>M</sup>		
	ThAr				↑	60 <sup>s</sup>	rebalance x 2100	
	Th-Ar				↓	60 <sup>s</sup>		
	SKY+01W	1 hr. W	0°			4 <sup>M</sup>		
	Th-Ar				↑	60 <sup>s</sup>		
	/							
	/							

4/10

Intensified Reticon TO CAMI  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating ----- Observer RDS  
 Telescope 61" Wyeth Date 10-11 April 1988 Disk ORO 2093

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	Fiber Testig
		1	Th-Ar		↓	60s		52°F 20.9°C
		2	SKY+φ2W	2 hrs. W	φ°	4m		Rebalanced
		3	Th-Ar		↑	60s		
		4	Th-Ar		↓	60s		
		5	SKY+φ3W	3 hrs. W	φ°	2m		
		6	Th-Ar		↑	60s		
		7	Th-Ar		↓	60s		
		8	SKY+φ4W	4 hrs. W	φ°	2m		
		9	Th-Ar		↑	60s		(Boring ↑!!!)
		10	Th-Ar		↓	60s		
		11	H81797	09:25:08	-08:26:28	2m	2.0	IAU standard
		12	Th-Ar		↕	60s		
		13	H81797	"	"	2m	"	"
		14	Th-Ar		↕	60s		"
		15	H81797	"	"	2m	"	"
		16	Th-Ar		↑	60s		
		17	Th-Ar		↓	60s		
		18	T Mon	06:22:31	07:06:53	5m	6.6	#38 Cepheid/Hudna
		19	Th-Ar		↑	60s		
		20	Th-Ar		↓	60s		
		21	H66141	07:59:39	02:28:24	2m	4.4	IAU standard
		22	Th-Ar		↕	60s		
		23	H66141	"	"	2m	"	"
		24	Th-Ar		↕	60s		
		25	H66141	"	"	2m	"	"
		26	Th-Ar		↑	60s		
		27	Th-Ar		↓	60s		
		28	(4)	07:57:27	25:46:50	10m	8.4	Asteroid? (we need a bigger
		29	Th-Ar		↕	60s		field!!!!)
		30	(4)	"	"	10m	"	"
		31	Th-Ar		↑	60s		
		32						

Spectrograph ECHELLE

Intensified Reticon

TO CAM

4/10

Grating 300L

Log Sheet

RAW/RETTelescope 61" WyeffeDate 10-11 April 1988Observer RPSDisk OR02094

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	Fiber Tray
		Th-Ar			↓	60s		
	(4)		07:57:27	25:46:50		10m	8.4 Asteroid	
		Th-Ar			↑	60s		
		Th-Ar			↓	60s		
	H114762		13:09:55	17:46:55		8m	7.3 IAU standard	
		Th-Ar			↑↓	60s		
	H114762		"	"		10m	"	
		Th-Ar			↑↓	60s		
	H114762		"	"		10m	"	
		Th-Ar			↑	60s		
		Th-Ar			↓	60s		
	H92588		10:38:52	-01:28:41		4.5m	6.4 IAU standard	
		Th-Ar			↑↓	60s		
	H92588		"	"		4.0m	"	
		Th-Ar			↑↓	60s		
	H92588		"	"		4.5m	"	
		Th-Ar			↑	60s		
		Th-Ar			↓	60s		
	H89449		10:17:01	19:43:31		3m	4.8 IAU standard	
		Th-Ar			↑↓	60s		
	H89449		"	"		2m	"	
		Th-Ar			↑↓	60s		
	H89449		"	"		2m	"	
		Th-Ar			↑	60s		
		Th-Ar			↓	60s		
	H81797		9:25:07	-8:26:28		2m	2.0 IAU STANDARD	
		Th-Ar			↑↓	60s		
	H81797		"	"		2m	"	
		Th-Ar			↑	60s		
		/				/		



1112

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 3002 Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 12 April 1988 Observer RPS  
 Disk ORO 2096

Change.... File ID RA 1950.0 Dec L/R Exposure Comments  
 ↑/↑ ↑/↓ Fiber Tuning

Change....	File	ID	RA	1950.0	Dec	L/R	Exposure	Comments
		1				↓	60s	
		2	SKY+62E	2 hrs. E	+60°		4m	
		3	Th-Ar			↑	60s	
		4	Th-Ar			↓	60s	
		5	SKY+61E	1 hr. E	+60°		4m	
		6	Th-Ar			↑	60s	
		7	Th-Ar			↓	60s	
		8	SKY+60φ	φ hrs.	+60°		2m	
		9	Th-Ar			↑	60s	
		10	Th-Ar			↓	60s	
		11	SKY+61W	1 hr. W	+60°		3m	
		12	Th-Ar			↑	60s	
		13	Th-Ar			↓	60s	
		14	SKY+62W	2 hrs. W	+60°		2m	
		15	Th-Ar			↑	60s	
		16	Th-Ar			↓	60s	
		17	SKY+63W	3 hrs. W	+60°		2m	
		18	Th-Ar			↑	60s	
		19	Th-Ar			↓	60s	
		20	SKY+64W	4 hrs W	+60°		3m	
		21	Th-Ar			<del>↑</del>	60s	
		22	Th-Ar			↓	60s	
		23	SKY+65W	5 hrs. W	+60°		2m	
		24	Th-Ar			↑	60s	
		25	Th-Ar			↓	60s	
		26	SKY+75W	5 hrs. W	+70°		4m	
		27	Th-Ar			↑	60s	
		28	Th-Ar			↓	60s	
		29	SKY+74W	4 hrs. W	+70°		4m	
		30	Th-Ar			↑	60s	
		31						
		32						

ND=1.0

ND=2.0

412

Spectrograph ECHELLE Intensified Reticon

TO CAM

Grating 300L

Log Sheet

RAW/RET

Telescope 61" Wyeth

Date 12 April 1988

Observer RPS

Disk ORO 2097

Change....	File	ID	1950.0 RA	Dec	L/R +/+	Exposure	Comments
		Th-Ar			↓	60s	
	SKY+73W	3 hrs. W		+70°		4m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+72W	2 hrs. W		+70°		4m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+71W	1 hr. W		+70°		3m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+70	φ hrs		+70°		3m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+71E	1 hr. E		+70°		3m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	Rebalanced.
	SKY+72E	2 hrs. E		+70°		3m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+73E	3 hrs. E		+70°		3m	(Fiber limit @ 70°)
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY+75	φ hrs.		+75°		3m	175° is max dec.; TV clears,
		Th-Ar			↑	60s	but fiber & electrical cables
		Th-Ar			↓	60s	to Newtonian along the side
	SKY+30	φ hrs.		+30°		3m	of the telescope will hit
		Th-Ar			↑	60s	forks. Moving fiber to the
	INCAUS					120m	North will give another 5°
	INCAUS					105m	One fork bolt should be cut-
							off to increase TV clearance.

End of Echelle Run

4/20

Spectrograph ECHELLE Intensified Reticon TO CAMI  
 Grating 300L Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 20-21 April 1988 Observer RPS  
 Disk ORO 2098

Change.... File ID RA 1950.0 Dec L/R Exposure Comments  
 +/+ Start Echelle Run  
 Fibre Testing

Change....	File	ID	RA 1950.0	Dec	L/R	Exposure	Comments
Fibre ③		Th-Ar			↓	60s	-cloudy-
	SKY+20E	2 hrs E	+20°			3m	9. Set Balance
	Th-Ar				↕	60s	& Rotation
	SKY+21E	1 hr. E	+20°			2.5m	Room Temp 45°
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	Rebalanced
	SKY+21E	1 hr. E	+20°			3m	
	Th-Ar				↑	60s	
	Th-Ar					20m	shifts: <L-R> ≈ 0.42 ± 0.65
	Th-Ar				↓	60s	
	SKY-20	φ hrs	-20°			3m	
	Th-Ar				↕	60s	
	SKY-20	φ hrs	-20°			3m	
	Th-Ar				↑	60s	oven/cooler power
	Th-Ar				↓	60s	off for electrical
	SKY-10	φ hrs	-10°			4m	REPAIRS (~40m)
	Th-Ar				↕	60s	
	SKY-10	φ hrs	-10°			2m	
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	SKYEVEW	Meridian	+20°			2m	16 SKY 740
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	(rebalance)
	SKYEVEW	4hrs West	+20°			2m	16 SKY
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	H66141	7:59:39	2:28:28			3.5m	Ion STD
	Th-Ar				↕	60s	(rebalance)
	Th-Ar				↓	60s	
	H66141	"	"			2m	Ion STD
	Th-Ar				↑	60s	

at 4:55







4/21

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300L Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 21-22 April 1988 Observer TRPS  
 Disk ORO 2141

Change.... File ID RA 1950.0 Dec L/R Exposure Comments Fiber Testing

Change....	File	ID	RA	1950.0	Dec	L/R	Exposure	Comments	Fiber Testing
		Th-Ar				↓	60S		LXR Balanced
	SKY+20	φ hrs		+20°			2m	2.UND	LXR 300 out of 2000
	Th-Ar					↑	60S		
	Th-Ar					↓	60S		LXR
	SKY+20	φ hrs		+20°			2m		LXR 200 out of 5000
	Th-Ar					↑↓	60S		LXR
	SKY+20	φ hrs		+20°			2m		LXR 500 out of 4000
	Th-Ar					↑	60S		LXR 100 out of 1600
	ROT TEST						10m	Balanced	Rotation = 580
	ROT TEST						10m	"	" 560 ← all
	Th-Ar					↓	60S		observation
	SKY+21W	1 hr. W		+20°			2m	2.UND	done here
	Th-Ar					↑↓	60S		
	SKY+21W	"		"			3m		
	Th-Ar					↑↓	60S		
	SKY+21W	"		"			2m	1.UND	
	Th-Ar					↑	60S		
	Th-Ar					↓	60S		
	SKY+41W	1 hr. W		+40°			2m	2.UND	
	Th-Ar					↑↓	60S		
	SKY+41W	"		"			2m		
	Th-Ar					↑↓	60S		
	SKY+41W	"		"			2m		
	Th-Ar					↑	60S		
	Th-Ar					↓	60S		
	SKY+40	φ hrs		+40°			2m		
	Th-Ar					↑↓	60S		
	SKY+40	"		"			2m		
	Th-Ar					↑	60S		
	Th-Ar					↓	60S		
	SKY+32W	2 hrs. W		+30°			2m		
	Th-Ar					↑	60S		





4/21

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Log Sheet RAW/RET  
 Grating 300 Observer JM2  
 Telescope 61" WYETH Date 4/21-22/88 Disk 0202104

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	25187A CLEAR -
	GL388		10:16:54	20:07:18		8m	9.43/- NEARBY (15)
		ThAr			↑	60s	
		ThAr			↓	60s	
	GL411		11:00:37	36:18:18		3m	7.50/- SPACE & NEARBY (17)
		ThAr			↑	60s	
		ThAr			↓	60s	
→	GL447		11:45:09	1:06:00		20m	11.10 SPACE & NEARBY (18)
→		ThAr			↕	60s	
	GL447		"	"		10m	" "
		ThAr			↑	60s	
		ThAr			↓	60s	
	GL526		13:43:12	15:09:42		3m	8.50 NEARBY (23)
		ThAr			↑	60s	
		ThAr			↓	60s	
	H114762		13:09:55	17:46:58		3m	7.3 IAU STANDARD
		ThAr			↑	60s	
		ThAr			↓	60s	
	H100018		11:28:07	41:33:50		3m	7.0 M STARS (37)
		ThAr			↑	60s	
		ThAr			↓	60s	
	99660		11:25:39	44:08:21		8m	8.17/250 F STARS (312)
		ThAr			↑	60s	
		ThAr			↓	60s	
	41218		11:36:18	40:31:44		2m	7.7 ANGP (73)
		ThAr			↑	60s	
		ThAr			↓	60s	
	18-2521		11:40:33	17:56:36		20m	10.0 ANGP (93)
		ThAr			↑	60s	
		ThAr			↓	60s	
	21-2351		11:42:39	21:21:10		6m	9.9 ANGP (107)
		ThAr			↑	60s	

4/21

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300f Log Sheet RAW RET  
 Telescope 61" WYETH Date 4/21-22/88 Observer JMZ  
 Disk 020 2105

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	25187A CLEAR -
	22-2407		11:47:09	22:22:02		5M	9.2 ANGP (132)
		ThAr			↑	60s	
		ThAr			↓	60s	
	22-2409		11:47:44	21:43:32		8M	9.6 ANGP (137)
		ThAr			↑	60s	
		ThAr			↓	60s	
	23394		11:48:17	23:12:50		9M	9.8 ANGP (138)
		ThAr			↑	60s	
		ThAr			↓	60s	
	GLS 499		13:03:49	+20:59:42		6.5M	9.4/20 M STARS (41)
		ThAr			↑	60s	
		ThAr			↓	60s	
	SO82651		13:03:57	22:53:00		2M	5.9/100 M STARS (40)
		ThAr			↑	60s	
		ThAr			↓	60s	
	GLS 430		11:28:22	63:26:00		20m	9.0/40 M STARS (36)
		ThAr			↑	60s	
		ThAr			↓	60s	
	GLS 508		13:17:36	+48:42:24		20M	9.0/50 M STARS (42)
		ThAr			↑	60s	
		ThAr			↓	60s	
	GLS 572		14:59:10	45:37:21		10M	9.1/30 M STARS (54)
		ThAr			↑	60s	
		ThAr			↓	60s	
	LAM-VIR		14:16:24	13:08:31		5M	4.6/700 M STARS (47)
		ThAr			↑	60s	
		ThAr			↓	60s	
	GL 628		16:22:31	12:32:18		20M	10.12 SPACE & NEARBY (24)
		ThAr			↑	60s	
	/					/	
	/					/	

Spectrograph ECHELLE Intensified Reticon  
 Grating 300f Log Sheet  
 Telescope 61" WYETH Date 4/21-22/88

TO CAM 4/22

Observer JMZ  
 Disk ORO 2106

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	25187A CLEAR -
		2	GL699	17:55:23	4:33:18	10M	9.54 NEARBY (26)
		3			↑	60s	↑ BARNARD'S STAR
		4			↓	60s	
		5	SVVUL	19:49:28	27:19:53	2.5M	7.8 CEPHEID (7)
		6			↑	60s	
		7			↓	60s	
		8	GI820a	21:04:40	38:30:00	2M	5.22 M STARS NEARBY (29)
		9			↓	60s	
		10	GI820b	"	"	2M	6.03 M STARS NEARBY (30)
		11			↑	60s	* trouble with
		12			↓	60s	sky/ced mechanism...
19505		13	SKYDOME	4h East	+30°	2M	16 SKY DAWN
		14			↑	60s	
		15			↓	60s	
		16	SKYDOME	MERIDIAN	+30°	2M	16 SKY
		17			↑	60s	
		18	INCANDS			120m	
		19	INCANDS			120m	
APRIL 22-23 1968		20			↓	60s	Clear 46°F 25187A
		21	SKYEVEM	Meridian	+20°	2M	16 SKY
		22			↑	60s	
		23			↓	60s	(rebalance)
		24	SKYEVEM	4hrs West	+20°	2M	16 SKY
		25			↑	60s	
		26			↓	60s	
		27	H81797	9:25:07	8:26:28	2M	17 FAN STDS (10 Filter) 20
		28			↑	60s	(DOWN ONE TO Guiding
		29			↓	60s	problems) 8pm-9:30pm
		30	644-30	10:37:43	11:27:24	18M	15 HALOFIN * 11.3/15
		31			↑	60s	
		32					

\*W/amp 1.0 filter in  
 comment field; not  
 11/1

Intensified Reticon TO CAM 4/22  
 Spectrograph ECHELLE  
 Grating 300L Log Sheet RAW/RET  
 Telescope 61" Wmgeth Date Apr 22/23 1988 Observer JILC  
 Disk ORO 2107

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		thvr			↓	60 <sup>s</sup>	USING C2 NO GUIDER 251878
	G53-30	10:09:56	-0:23:12			10 <sup>m</sup>	15 HILOS ↓ 10.25/15
	thvr				↑	60 <sup>s</sup>	
	thvr				↓	60 <sup>s</sup>	
	G164-56	13:13:52	36:09:06			3 <sup>m</sup>	15 HILOS 8.28/20
	thvr				↑	60 <sup>s</sup>	
	thvr				↓	60 <sup>s</sup>	
	G63-96	13:37:32	12:50:42			5 <sup>m</sup>	15 HILOS 9.39/20
	thvr				↑	60 <sup>s</sup>	
	thvr				↓	60 <sup>s</sup>	
	H114762	13:09:54	17:46:55			3 <sup>m</sup>	17 ICH STPS 9.3
	thvr				↑	60 <sup>s</sup>	
	thvr				↓	60 <sup>s</sup>	
	G40-5	8:01:46	15:30:36			3 <sup>m</sup>	15 HALOFIN 8.48/15
	thvr				↑	60 <sup>s</sup>	
	thvr				↓	60 <sup>s</sup>	
	G9-42	8:57:54	21:39:12			4 <sup>m</sup>	15 HALOFIN 8.8/15
	thvr				↑	60 <sup>s</sup>	
	thvr				↓	60 <sup>s</sup>	
	G41-34	9:20:06	11:29:06			6 <sup>m</sup>	15 HILOS 9.65/15
	thvr				↑	60 <sup>s</sup>	
	thvr				↓	60 <sup>s</sup>	
	G58-23	10:47:12	20:45:30			8 <sup>m</sup>	15 HALOFIN 9.96/15
	thvr				↑	60 <sup>s</sup>	
	thvr				↓	60 <sup>s</sup>	
	G57-27	11:49:34	19:02:12			3 <sup>m</sup>	15 HALOFIN 8.42/15
	thvr				↑	60 <sup>s</sup>	
	thvr				↓	60 <sup>s</sup>	
	G61-24	12:55:04				3 <sup>m</sup>	15 HILOS 8.9/15
	thvr				↑	60 <sup>s</sup>	



Spectrograph ECHELLE Intensified Reticon TO CAM 4hr  
 Grating 500x Log Sheet RAW/RET  
 Telescope 61" Wyeath Date FEB. 22/23 1988 Observer JRC  
 Disk ORO 2108

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	den 42°F 25187A
		2	G62-52	17:33:29	01:27:42	↓	15 <sup>M</sup> HALOFIN 10.89/15
		3			↑	60s	
		4			↓	60s	
		5	G15-22	13:35:51	39:26:00	↓	2 <sup>M</sup> 15 HALOFIN (MUCH BR. IN SPEC) 8.9/15
		6			↑	60s	
		7			↓	60s	
		8	G65-43	15:15:47	12:58:30	↓	12 <sup>M</sup> 15 HALOFIN • [CHART] 10.57/15
		9			↑	60s	
		10			↓	60s	
		11	G135-16	14:01:42	22:46:00	↓	7 <sup>M</sup> 15 HALOFIN 10.16/15
		12			↑	60s	
		13			↓	60s	
		14	G66-65	15:05:22	9:04:18	↓	2 <sup>M</sup> 15 HALOFIN 8.28/15
		15			↑	60s	
		16			↓	60s	
		17	G15-6	15:02:30	4:16:48	↓	6 <sup>M</sup> 15 HALOFIN 9.87/15
		18			↑	60s	
		19			↓	60s	
		20	S101380	15:05:06	17:38:30	↓	17 <sup>M</sup> 15 HALOS 9.2/50
		21			↑	60s	
		22			↓	60s	
		23	+103070	15:20:08	01:26:30	↓	16 <sup>M</sup> 15 HALOS 9.15/40
		24			↑	60s	
		25			↓	60s	
		26	H114762	13:09:54	17:46:55	↓	4 <sup>M</sup> 17 JAN STDS 7.3/100
		27			↑	60s	
		28			↓	60s	
		29	G17-22	16:30:22	3:21:12	↓	3 <sup>M</sup> 15 HALOFIN 8.84/15
		30			↑	60s	
		31					
		32					

Spectrograph ECHELLE Intensified Reticon TO CAM 4/22  
 Grating 300L Log Sheet RAW RET  
 Telescope 61" Wynth Date Apr 22/23 1988 Observer JRC  
 Disk 020 2109

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	25/187A
	G16-31	16:06:24	01:59:18			9 <sup>m</sup>	15 HALO FIN 10.16/15
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	
	G17-19	16:26:06	3:22:06			3 <sup>m</sup>	15 HALO FIN 8.82/15
		6			↑	60 <sup>s</sup>	
		7			↓	60 <sup>s</sup>	
	G19-13	16:27:49	30:49:06			7.5 <sup>m</sup>	15 HALOS 10.24/15
		9			↑	60 <sup>s</sup>	
		10			↓	60 <sup>s</sup>	
	S122332	17:20:30	0:53:12			2 <sup>m</sup>	15 HALOS 7.75/20
		12			↑	60 <sup>s</sup>	
		13			↓	60 <sup>s</sup>	(TROUBLE WITH SKY/EX MIRROR)
	G183-11	17:52:35	20:16:54			15 <sup>m</sup>	15 HALOS 9.76/50
		15			↑	60 <sup>s</sup>	
		16			↓	60 <sup>s</sup>	
	H146051	16:11:43	-3:39:01			2 <sup>m</sup>	17 JAN SID (1.0ND F.LIN) 2.7
		18			↑	60 <sup>s</sup>	
		19			↓	60 <sup>s</sup>	
	G92-15	19:33:47	4:39:18			4 <sup>m</sup>	15 HALO FIN 9.2/15
		21			↑	60 <sup>s</sup>	
		22			↓	60 <sup>s</sup>	
	G92-16	19:35:19	4:11:54			8 <sup>m</sup>	15 HALO FIN 10.18/15
		24			↑	60 <sup>s</sup>	
		25			↓	60 <sup>s</sup>	
	G170-47	17:30:38	23:46:18			13 <sup>m</sup>	15 HALOS 8.95/100
		27			↑	60 <sup>s</sup>	
		28			↓	60 <sup>s</sup>	
	G19-27	17:28:49	-2:30:06			2 <sup>m</sup>	15 HALOS 8.14/20
		30			↑	60 <sup>s</sup>	
		31					
		32					


Spectrograph ECHELLE Intensified Reticon TO CAM 4/24/88  
 Grating \_\_\_\_\_ Log Sheet RAW/RET  
 Telescope 61" Wyeth Date Apr 22/23 1988 Observer JRC  
 Disk 020 2110

Change....	File	ID	RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	251878
		2	SKYDUNE	4hrs East	+20°	3 <sup>m</sup>	16 SKY
		3	ThAr		↑	60 <sup>s</sup>	
		4	ThAr		↓	60 <sup>s</sup>	
		5	SKYDOWNM	Meridian	+20°	3 <sup>m</sup>	16 SKY
		6	ThAr		↑	60 <sup>s</sup>	
		7	INCAI			120	
		8	"			120	
		9	INCAI			22	
23-24 April 1988		10	Th-Ar		↓	60 <sup>s</sup>	-RAIN-
		11	SKYEVE	φ hrs	-15°	2.5m	
		12	Th-Ar		↑↓	60 <sup>s</sup>	
		13	SKYEVE	"	"	2.0m	
		14	Th-Ar		↑	60 <sup>s</sup>	
Apr 24/25 1988		15	Th-Ar		↓	60 <sup>s</sup>	-CLOUDY-
		16	SKYEVE M	Meridian	+20°	2 <sup>m</sup>	16 SKY
		17	ThAr		↑	60 <sup>s</sup>	
		18	ThAr		↓	60 <sup>s</sup>	
		19	SKYEVE W	4hrs West	+20°	"	16 SKY
		20	ThAr		↑	60 <sup>s</sup>	
		21	ThAr		↓	60 <sup>s</sup>	
		22	H114762	13:09:54	17:46:55	5 <sup>m</sup>	17 JON STD (INTERL ON CLDS) 7.3
		23	ThAr		↑	60 <sup>s</sup>	
		24	ThAr		↓	60 <sup>s</sup>	
		25	127245	14:27:18	30:53:58	12 <sup>m</sup>	FSTARS 40 7.65/300
		26	ThAr		↑	60 <sup>s</sup>	
		27	ThAr		↓	60 <sup>s</sup>	
		28	129538	14:40:27	8:17:16	11 <sup>m</sup>	" " 7.59/300
		29	ThAr		↑	60 <sup>s</sup>	
		30	ThAr		↓	60 <sup>s</sup>	
		31	131634	14:52:20	-3:25:43	12.5 <sup>m</sup>	" " 7.69/300
		32	ThAr		↑	60 <sup>s</sup>	



4/25

Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 300 L Observer JRC  
 Telescope 61" Wyeth Date Apr 24/25 1988 Disk 020 2112

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		TAR			↓	60s	25187A
	G170-56		17:36:05	18:35:15		8 <sup>m</sup>	15 HALOS 9.78/30
		TAR			↑	60s	
		TAR			↓	60s	
	S160955		17:55:50	-13:05:02		8 <sup>m</sup>	15 HALOS  9.63/15
		TAR			↑	60s	
		TAR			↓	60s	
	G207-5		18:49:42	38:34:00		9 <sup>m</sup>	15 HALOS 7.15/200
		TAR			↑	60s	
		TAR			↓	60s	
	SKYDWN E	4 <sup>hrs</sup> East	+20°			3 <sup>m</sup>	16 SKY
		TAR			↑	60s	
		TAR			↓	60s	
	SKYDWN M	Meridian	+20°			3 <sup>m</sup>	16 SKY
		TAR			↑	60s	
		INCANDS				120m	
		INCANDS				120m	
4/25-26/88		TAR			↓	60s	25187A CLEAR
JMZ		SKYEVEN	Meridian	+30°		2m	16 SKY
		TAR			↑	60s	
		TAR			↓	60s	
	SKYEVEN	4 <sup>h</sup> West	+30°			2m	16 SKY
		TAR			↑	60s	
		TAR			↓	60s	
	H166141		7:59:46	2:28:24		3m	4.4 TAU STANDARDS
		TAR			↑	60s	
		TAR			↓	60s	
	O67767		8:07:27	25:39:38		2M	5.7 moving groups
		TAR			↑	60s	
		TAR			↓	60s	
	C75767		8:49:35	8:15:18			6.6 moving groups
		TAR				60s	

4/25

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Log Sheet RAW/RET  
 Grating 300 Observer JMZ  
 Telescope 61" WYETH Date 4/25-26/88 Disk OR0 2113

Change....	File	ID	RA	Dec	L/R ↑/↓	Exposure	Comments
		74Ar			↓	60s	251678 CLEAR
	071148		8:24:08	45:49:24		2M	6.3 moving group (2)
		74Ar			↑	60s	
		74Ar			↓	60s	
	688-5		7:03:12	18:42:54		5M	10.21/20 HALOS (313)
		74Ar			↑	60s	
		74Ar			↓	60s	
	54901		7:08:25	15:24:53		2.5m	7.26/120 FSTARS (185)
		74Ar			↑	60s	
		74Ar			↓	60s	
	76333		8:53:17	24:38:27		2m	6.72/80 FSTARS (275)
		74Ar			↑	60s	
		74Ar			↓	60s	
	H055217		9:47:54	4:34:42		2M	6.7/200 M STARS (28)
		74Ar			↑	60s	
		74Ar			↓	60s	
	87998A		10:05:59	19:20:19		2M	7.3/- moving group (5)
		74Ar			↑	60s	
		74Ar			↓	60s	
	095364		10:58:17	24:20:12		2.5m	8.6 moving groups (9)
		74Ar			↑	60s	
		74Ar			↓	60s	
	098562		11:17:58	23:53:25		2.5m	8.8 MOVING GROUP (10)
		74Ar			↑	60s	
		74Ar			↓	60s	
	+ 222411		11:48:59	22:23:36		5M	9.30/30 HALOS (485)
		74Ar			↑	60s	
		74Ar			↓	60s	
	14-2448		11:51:59	14:25:50			7.8 ANGP (153)
		74Ar			↑	60s	
	/					/	
	/					/	



4/25

Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 300d Observer JMZ  
 Telescope 61" WYETH Date 4/25-26/88 Disk 0120 2115

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	25187 Å CLEAR -
	G165-28	2	13:35:51	39:26:00		2M	8.9/15 HALOFIN (315) <sup>ok?</sup>
	ThAr	3			↑	60s	- trouble w/sky/CEX
	ThAr	4			↓	60s	mechanism
	122693	5	14:00:34	24:48:12		2.5M	8.1 MOVING GROUP
	ThAr	6			↑	60s	
	ThAr	7			↓	60s	
	129357	8	14:39:13	29:16:27		2M	7.8 MOVING GROUP
	ThAr	9			↑	60s	- adjusted CEX/SKY minn
	ThAr	10			↓	60s	- new GEAR
	H114762	11	13:09:55	17:46:55		3M	7.3 IAU STANDARD
	ThAr	12			↑	60s	down 2.1h
	ThAr	13			↓	60s	
	G16-13	14	15:48:34	8:34:30		6.5M	6.2/15 HALOFIN (348)
	ThAr	15			↑	60s	
	ThAr	16			↓	60s	2 6562 Å
	V CV n	17	13:17:17	45:47:22		1.5M	7-9/1000 SALLY
	ThAr	18			↑	60s	
	ThAr	19			↓	60s	25187 Å
	G66-60	20	15:02:25	10:25:54		11M	10.78/15 HALOFIN (334)
	ThAr	21			↑	60s	
	ThAr	22			↓	60s	
	G66-55	23	15:00:35	8:53:06		20M	11.39/15 HALOFIN (332)
	ThAr	24			↑	60s	
	ThAr	25			↓	60s	
	G66-30	26	14:47:35	01:02:54		18M	11.05/15 HALOFIN (326)
	ThAr	27			↑	60s	
	ThAr	28			↓	60s	
	G23-1	29	19:25:55	13:53:54		5M	8.9/15 HALOS (810)
	ThAr	30			↑	60s	
	/	31					
	/	32					



4/26

Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 300J Observer JM2  
 Telescope 61" WVIETH Date 4/25-26-27/88 Disk ORO 2116

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	25187Å clear
	H184499	19:31:35	33:05:21			2M	6.6/30 HALOS (818)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G23-G	19:32:33	11:18:48			2M	7.91/20 HALOS (819)
		ThAr			↑	60s	
		ThAr			↓	60s	
	H182572	19:27:35	11:50:09			2M	5.2 IM - STANDARD
		ThAr			↑	60s	
		ThAr			↓	60s	
	SKYDOME	4h East	+30°			3M	16 SKY
		ThAr			↑	60s	
		ThAr			↓	60s	
	SKYDOME	Meridian	+30°				16 SKY
		ThAr			↑	60s	
	INCANDS					120M	
	INCANDS					120M	
4/26-27/88		ThAr			↓	60s	25187Å clear -
JM2	SKYEVEN	Meridian	+30°			2M	16 SKY
		ThAr			↑	60s	
		ThAr			↓	60s	
	SKYEVEN	4h West	+30°			2M	16 SKY
		ThAr			↑	60s	
		ThAr			↓	60s	
	H66141	7:59:40	2:28:24			2M	4.4 IAL STANDARDS
		ThAr			↑	60s	
		ThAr			↓	60s	26562Å
	Alp Ori	5:52:28	7:23:58			9M	0.8/1000 SALLY - H & prof.
		ThAr			↑	60s	↑ 4h WEST H.A.
		ThAr			↓	60s	26562Å
	V CUN	13:17:17	45:47:24			13.3M	7-9/1000 SALLY H &
		ThAr			↑	60s	↑ SAYS 2.0ND FILTER NOT SO

4/26

Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 300L Observer JMZ  
 Telescope 61" WYETH Date 4/26-27/88 Disk 020 2117

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	2518.7A High cirrus
→		2	H65607	7:56:50	7:22:00	↓	20M 8.0/250-300 FSTARS (687)
		3			↑	60s	GETTING cloudy
→		4	H65607	"	"	20M	" "
		5			↑	60s	
		6			↓	60s	
		7	G111-33	7:45:13	46:44:11	↓	15m 10.0/15 HALO FIM (200)
		8			↑	60s	
		9			↓	60s	
		10	G165-22	13:35:51	39:26:00	↓	8M 8.9/15 Halo Fim (315)
		11			↑	60s	
		12			↓	60s	
		13	H114762	13:09:55	17:46:54	↓	5M 7.3 IAU STANDARDS
		14			↑	60s	↑ through clouds
		15			↓	60s	
		16	H114762	13:09:55	17:46:54	↓	3m 7.3 IAU STANDARDS
		17			↑	60s	STOPPED BY clouds 16:30 EST
		18			↓	60s	PARTLY CLEAR 2:00 EST
		19	139007	15:32:40	25:09:59	↓	6m 8.3 moving groups
		20			↑	60s	↑ through clouds
		21			↓	60s	
		22	154183	17:00:53	25:42:37	↓	5m 8.7 moving groups
		23			↑	60s	
		24			↓	60s	
		25	156563	17:15:18	25:04:37	↓	5m 9.0 moving group
		26			↑	60s	
		27			↓	60s	
		28	161797A	17:44:30	27:44:55	↓	2m 3.4 moving group
		29			↑	60s	
		30			↓	60s	
		31	169245	18:20:41	26:11:55	↓	13m 8.7 moving group
		32			↑	60s	↑ through clouds

- clouded out AGAIN

4/27

Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 300A Observer JMZ  
 Telescope 61" WYETH Date 4/26-27-28/88 Disk ORC 2118

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	16 SKY
		2	SKYDOME	4 <sup>h</sup> East	+30°	3M	
		3			↑	60s	
		4			↓	60s	
		5	SKYDOME	Meridian	+30°	2M	16 SKY
		6			↑	60s	
		7				120M	
		8				120M	
1/27-28/88		9			↓	60s	
JMZ		10	SKYEVIEW	Meridian	+30°	2M	16 SKY
		11			↑	60s	
		12			↓	60s	
		13	SKYEVIEW	4 <sup>h</sup> West	+30°	2M	16 SKY
		14			↑	60s	
		15			↓	60s	
		16	H189449	10:17:01	19:43:31	2.5M	4.8 IAU STANDARDS
		17			↑	60s	
		18			↓	60s	
		19	G165-??	13:35:51	39:26:00	3M	9.9/15 HALOFIN (315)
		20			↑	60s	
		21			↓	60s	
		22	H114762	13:09:55	17:46:55	3M	7.3 IAU STANDARD
		23			↑	60s	
		24	H114762	13:09:55	17:46:55	3M	7.3 IAU STANDARDS
		25			↑	60s	
		26			↓	60s	
		27	G88-11	7:07:39	20:31:31	5M	9.09/15 HALOFIN (185)
		28			↑	60s	
		29			↓	60s	
		30	G111-38	7:46:05	41:35:54	10M	9.5/15 HALOFIN (201)
		31			↑	60s	↑ High clouds
		32					





Spectrograph ECHELLE Intensified Reticon TO CAM 5/3/88  
 Grating 3002 Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 30 April - 1 May 1988 Observer RDS  
 Disk ORO 2121

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	5187Å -cloudy-
		2	16:24:45	18:20:41	26:11:55	7.5m	8.7 Moving-Group working in holes;
		3			↑	60s	offsetting from
		4			↓	60s	bright #.
		5	14:08:70	16:14:33	53:21:36	17m	7.0/800 Fstars.
		6			↑	60s	
		7			↓	60s	
		8	14:18:2572	19:21:35	11:50:09	3m	5.2 IAU standard + SKY?
		9			↑	60s	
		10			↓	60s	
		11	SKY-DWN	3.5 hrs E	+10°	2m	L:R Balanced on Th-Ar;
		12			↑	60s	SKY unbalanced
		13			↓	60s	L≅2700; R≅2400
		14	SKY-DWN	φ hrs.	+10°	2.5m	10%!!
		15			↑	60s	
		16	INXANDS			120m	
		17	INXANDS			100m	
2-3 May 1988		18			↓	60s	5187Å -rain-
		19	SKY-EVE	φ hrs.	-10°	2m	
		20			↑↓	60s	
		21	SKY-EVE	φ hrs.	-10°	2m	
		22			↑	60s	SKY TOO POOR TO CONT
May 3-4 1988		23			↓	60s	λ 5187Å
		24	SKYEVEN	0 hrs	+20°	2m	16 SKY
		25			↑	60s	
		26			↓	60s	
		27	SKYEVEN	φ hrs West	+20°	2m	16 SKY
		28			↑	60s	
		29			↓	60s	
		30	H89449	10:17:01	19:43:31	m	17 IDY STD 4.8
		31			↑	60s	
		32					