

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	INCAANDS			120m	
		17	INCAANDS			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 +.8
		31			↑	60s	
		32					

Spectrograph ECHELLE Intensified Reticon
 Grating 3002 Log Sheet

TO CAM 5/3/88

Telescope 61" Wynth

Date May 3-9 1988

Observer JRC/LAM

Disk 020 2122

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		THAr			↓	60 ^s	25187A
	G165-22	13:35:51	39 26:00			3 ^m	15 MALOFIN 8.9/15
	THAr				↑	60 ^s	
	THAr				↓	60 ^s	26562A
	V CVN	13:17:17	45:47:22			20 ^m	H-Alpha Profiles 6.5/1000
	THAr				↑	60 ^s	
	V CVN	13:17:17	45:47:22			8 ^m	H-Alpha Profiles 6.5/1000
	THAr				↑	60 ^s	
	THAr				↓	60 ^s	
	IE1247	12:47:03	-05 48 2			22 ^m	MARSCRILL WUMA (HD)
	THAr				↑	60 ^s	
	THAr				↓	60 ^s	
	IE1247	12:47:03	-05 48 2			15 ^m	WUMA?
	THAr				↑	60 ^s	
	THAr				↓	60 ^s	
	H114762	13:09:54.5	17:46:55			5 ^m	IAU STANDARD
	THAr				↓	60 ^s	
	H114762	13:09:54.5	17:46:55			5 ^m	
	THAr				↑	60 ^s	
	THAr				↓	60 ^s	
	H114762	13:09:54.5	17:46:55			5 ^m	
	THAr				↓	60 ^s	
	H114762	13:09:54.5	17:46:55			5 ^m	
	THAr				↑	60 ^s	
	THAr				↓	60 ^s	
	IE1247	12:47:03	-05 48 2			10 ^m	MARSCRILL WUMA?
	THAr				⊕	60 ^s	
	IE1247	12:47:03	-05 48 2			10 ^m	DO NOT COADD!
	THAr				⊕	60 ^s	
	IE1247	12:47:03	-05 48 2			10 ^m	
	THAr				↑	60 ^s	

BACK TO 5187 ↓

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 300 Log Sheet RAW RET
 Telescope 61" Wyeth Date MAY 3-4 1988 Observer LMM
 Disk 002 124

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↑	60s	
		2			↓	60s	
		3	179423	19 09 33.5	18 00 11	15 ^m	1 STARS
		4			↑	60s	PAICHY CLOUDS
		5			↓	60s	WATCH
		6	1E1037	193705.0	30 27 58	10 ^m	M. PESCHIK WUMA 0.7" (MOON)
		7			↑	60s	
		8			↓	60s	
		9	SKYDOME	HH E	30°	3 ^m	
		10			↑	60s	
		11			↓	60s	
		12	SKYDOME	MERIDIAN	30°	2 ^m	STOW POSITION
		13			↑	60s	
		14	INCANDS			120 ^m	INCANDS
		15	INCANDS			120 ^m	
		16	INCANDS			60 ^m	
MAY 4-5 1988		17			↓	60s	25187A LOTS OF CIRRUS
JM Z		18	SKYVIEW	MERIDIAN	+30°	2M	16 SKY
		19			↑	60s	
		20			↓	60s	
		21	SKYVIEW	4h East	+30°	2M	16 SKY
		22			↑	60s	
		23			↓	60s	cloudy
		24	H81797	9:25:08	8:26:28	2M	2.0 IAU STANDARDS
		25			↑	60s	trouble w/sky/cex motion
		26			↓	60s	
		27	H114762	13:09:55	17:46:55	7 ^m	7.3 IAU STANDARD
		28			↓	60s	
		29	H114762	"	"	7 ^m	" " "
		30			↓	60s	
		31	H114762	"	"	7 ^m	" " "
		32			↑	60s	ANOTHER OBSERVATION IN ORO 2125

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Spectrograph ECHELLE Intensified Reticon TO CAM
 Log Sheet RAW/RET
 Grating 300f Observer JMZ
 Telescope 61" WYETH Date MAY 4-5 1988 Disk ORO 2125

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	25187A cloudy
	H114762	13:09:55	17:46:55			5M	7.3 IAU STANDARD
		ThAr			↕	60s	
	H114762	13:09:55	17:46:55			5M	" "
		ThAr			↑	60s	
		ThAr			↓	60s	
	G165-22	13:35:51	39:26:00			3M	8.9/15 Halo fin (315)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G66-65	15:05:22	09:04:18			6M	8.28/15 Halo fin (337)
		ThAr			↑	60s	
		ThAr			↓	60s	
	S082651	13:03:57	22:53:00			2M	5.9/100 M STARS (40)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G1s 499	13:03:49	20:59:42			12M	9.4/20 M STARS (41)
		ThAr			↑	60s	
	G1ThAr	13:17:36	48:02:28		↓	60s	
	G1s 508	13:17:36	48:02:28			17M	9.0/50 M STARS (42)
		ThAr			↑	60s	
		ThAr			↓	60s	
	141394	16:31:16	31:00:32			15M	7.89/60 F STARS (443)
		ThAr			↑	60s	increasing clouds
		ThAr			↓	60s	
	H136202	15:11:45	01:57:12			2M	5.1 IAU STANDARDS
		ThAr			↑	60s	
		ThAr			↓	60s	
	126660	14:23:20	52:04:50			2M	4.1 MOVING GROUPS
		ThAr			↑	60s	
		ThAr			↓	60s	
	G1s 572	14:59:10	45:37:21			20M	9.1/30 M STARS (54)
		ThAr			↑	60s	

Intensified Reticon TO CAM
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating _____ Observer JMZ
 Telescope 61" WYETH Date MAY 4-5 1988 Disk ORO 2126

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	25187A cloudy
		2	161797A	17:44:30	27:44:55	2m	3.4 MOVING - GROUPS
		3			↑	60s	
		4			↓	60s	
		5	154962	17:06:50	03:49:03	2m	6.4 MOVING - GROUPS
		6			↑	60s	
		7			↓	60s	
		8	142681	15:53:08	14:26:04	4m	8.1/60 FSTARS (430)
		9			↑	60s	decreasing clouds
		10			↓	60s	
		11	147428	16:18:39	40:22:34	5m	7.89/100 FSTARS (440)
		12			↑	60s	
		13			↓	60s	
		14	XCYG	20:41:27	35:29:24	5m	M.C CEPHEIDS
		15			↑	60s	
		16			↓	60s	
		17	G92-15	19:33:47	4:39:18	3m	9.20/15 Halofin (384)
		18			↑	60s	
		19			↓	60s	
		20	H182572	19:22:35	11:50:10	2m	5.2 IAU STANDARDS
		21			↑	60s	
		22			↓	60s	
		23	SKYDOWN	4h East	+30°	2.5m	16 SKY
		24			↑	60s	
		25			↓	60s	
		26	SKYDOWN	Meridian	+30°	2m	16 SKY
		27			↑	60s	
		28	INCRAND			170m	
		29	INCRANDS			120m	
		30					
		31					
		32					

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Intensified Reticon TO CAM
 Spectrograph ECHELLE
 Log Sheet RAW/RET
 Grating 300L Observer JM Z
 Telescope 61" Wyeth Date MAY 5-6 1988 Disk ORO 2127

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	ThAr		↓	60s	25187A cloudy
		2	SKYEVEN	Meridian	+30°	2M	16 sky
		3	ThAr		↑	60s	
		4	ThAr		↓	60s	
		5	SKYEVEN	4 ^h West	+30°	2M	16 sky
		6	ThAr		↑	60s	clouded out
		7	INCANDS			120M	MORNING SKIES NOT DONE
		8	INCANDS			120M	- RAINING -
MAY 7-8 1988		9	ThAr		↓	60s	CLEAR 25187A
		10	SKYEVEN	0 ^h	+20°	2 ^M	16 sky
		11	ThAr		↑	60s	
		12	ThAr		↓	60s	
		13	SKYEVEN	4hrs West	+20°	2 ^M	16 sky
		14	ThAr		↑	60s	
		15	ThAr		↓	60s	
		16	H81797	9:25:07	-8 26 38	2 ^M	17 IAM SID (WHD) 2.0
		17	ThAr		↑	60s	(y=boost)
		18	ThAr		↓	60s	
		19	28991	11 18 22	28 20 33	9M	43 ANGEP 10/1
		20	ThAr		↑	60s	
		21	ThAr		↓	60s	
		22	G41-34	19 20 06	11 29 06	7 ^M	15 HALOS 9.65/15
		23	ThAr		↑	60s	
		24	ThAr		↓	60s	
		25	1222411	11 48 59	22 23 36	20 ^M	15 HALOS (y=boost) 9.3/30
		26	ThAr		↑	60s	
		27	Th-Ar		↓	60s	
		28	G61-24	12:55:04	18:57:48	13m	55/100 HALOS (Northern *)
		29	Th-Ar		↑	60s	
		30	Th-Ar		↓	60s	
		31	(14)	11:34:54	16:47:41	8.5	10.6 Asteroid ?? ID?? OK
		32	Th-Ar		↑	60s	

Intensified Reticon
TO CAM1

Spectrograph ECHELLE Log Sheet RAW RET

Grating 3002 Observer RPS

Telescope 61" Wyeth Date 8-9 May 1988 Disk ORO 2132

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

RA Dec +/-

1	Th-Ar				↓	60s	
2	H92588	10:38:52	-01:28:42			4m	6.3 IAU standard
3	Th-Ar				↑↓	60s	
4	H92588	"	"			5m	
5	Th-Ar				↑↓	60s	
6	H92588	"	"			5m	
7	Th-Ar				↑↓	60s	
8	H92588	"	"			6m	
9	Th-Ar				↑	60s	
10	Th-Ar				↓	60s	
11	H114762	13:09:55	17:46:55			8m	7.3 IAU standard
12	Th-Ar				↓↑	60s	
13	H114762	"	"			10m	
14	Th-Ar				↑↓	60s	
15	Th-Ar				↓	60c	
16	H114762	"	"			10m	
17	Th-Ar				↑↓	60s	
18	H114762	"	"			6.5m	
19	Th-Ar				↑	60s	
20	Th-Ar				↓	60s	
21	H115521	13:15:04	05:43:58			3m	4.8 IAU standard
22	Th-Ar				↑↓	60s	
23	H115521	"	"			3m	
24	Th-Ar				↑↓	60s	
25	H115521	"	"			3m	
26	Th-Ar				↑↓	60s	
27	H115521	"	"			3m	
28	Th-Ar				↑	60s	
29	Th-Ar				↓	60s	
30	H114762	13:09:55	17:46:55			10m	7.3 IAU standard
31	Th-Ar				↑	60s	
32	/						

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Intensified Reticon

TO CAM

Spectrograph ECHELLE Log Sheet

Grating 3000 Observer RPS

Telescope 61" Wyeth Date 8-9 May 1988 Disk OR02134

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		Th-Ar			↓	60s	5187Å
	H156014		7:12:22	14:26:46		6m	3.1 IAU standard
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	G226-36		6:54:15	62:10:42		4m	7.1/20 HALOS
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	G227-37		8:34:48	63:39:18		9.5m	8.1/20 HALOS
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	H182572		9:22:35	1:50:09		3m	5.2 IAU Standard
		Th-Ar			↑↓	60s	
	H182572		"	"		3.5m	
		Th-Ar			↑↓	60s	
	H182572		"	"		3.5m	
		Th-Ar			↑↓	60s	
	H182572		"	"		3.5m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	CH Cyg		19:23:14	50:08:31		20m	7.0 Kenyon/Symbiotics
		Th-Ar			↑	60s	(marginal!)
		Th-Ar			↓	60s	
	SKY-DWN		Φhrs	+30°		4m	cts ≈ 350
		Th-Ar			↑↓	60s	
	SKY-DWN		"	"		3m	
		Th-Ar			↑↓	60s	
	SKY-DWN		"	"		2m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKY-DWN		"	"		2m	
		Th-Ar			↑	60s	

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 300L Log Sheet RAW/RET
 Telescope 61" Wyeth Date 8-9 May 1988 Observer RPS
 Disk ORD 2135

Change....	File	ID	1950.0 RA	Dec	L/R +/+	Exposure	Comments	Filter	Tasty
		Th-Ar			↓	60s			
	SKY-DWN	φ hrs	+30°			2m			
		Th-Ar			↑	60s			
	INCANDS					120m			
	INCANDS					120m			
9-10 MAY JMZ		ThAr			↓	60s	25187Å / FIBER / HIGH clouds		
		SKYEVEN	φ hrs.	+30°		3m	16 SKY		
		ThAr			↑	60s			
		ThAr			↓	60s			
		SKYEVEN	"	"		3m	" "		
		ThAr			↕	60s			
		SKYEVEN	"	"		4m	" "		
		ThAr			↕	60s			
		SKYEVEN	"	"		2m	" "		
		ThAr			↕	60s			
	SKYEVEN	"	"		2m	" "			
	ThAr			↕	60s				
	SKYEVEN	"	"		2.5m	" "			
	ThAr			↕	60s				
	SKYEVEN	"	"		9m	" "			
	ThAr			↕	60s				
	SKYEVEN	"	"		4m	" "			
	ThAr			↑	60s				
	ThAr			↓	60s				
	H81777	9:25:08	08:26:28			3m	2.0 IAU STANDARD		
	ThAr				↕	60s			
	H81797	"	"			3m	" "		
	ThAr				↕	60s			
	H81797	"	"			3m	" "		
	ThAr				↕	60s			
	H81797					3m	" "		
	ThAr				↑	60s			

Intensified Reticon TO CAM
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating 300f Observer 0120 2136
 Telescope 61" WYETH Date MAY 9-10 88 Disk JM 2

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	25187Å HIGH CIRrus
	H66141		7:59:40	2:28:24		10m	4.4 IAU STANDARDS
	ThAr				↑↓	60s	
	H66141	"	"	"		10m	" "
	ThAr				↑	60s	
	ThAr				↓	60s	
	H89449		10:17:01	19:43:31		3M	4.8 IAU STANDARDS
	ThAr				↑↓	60s	
	H89449	"	"	"		3M	" "
	ThAr				↑↓	60s	
	H89449	"	"	"		3M	" "
	ThAr				↑↓	60s	
	H89449	"	"	"		3M	" "
	ThAr				↑	60s	
	ThAr				↓	60s	
	H114762		13:09:55	17:46:55		15m	7.3 IAU STANDARDS
	ThAr				↑	60s	STAR didn't come up
	ThAr				↓	60s	AFTER "0.5"-Found in Finder
	H114762	"	"	"		20m	" "
	ThAr				↑↓	60s	
	H114762	"	"	"		20m	" "
	ThAr				↑↓	60s	
	H114762	"	"	"		20m	" "
	ThAr				↑	60s	
	ThAr				↓	60s	
	H136202		15:16:45	01:57:12		7m	5.1 IAU STANDARDS
	ThAr				↑↓	60s	through clouds
	H136202	"	"	"		6m	" "
	ThAr				↑↓	60s	
	H136202	"	"	"		6.5m	" "
	ThAr				↑	60s	CUT short BY
	/					/	clouds

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Intensified Reticon TO CAMI
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating 300l Observer JMZ
 Telescope 61" WYETH Date 9-10 MAY 88 Disk 020 2137

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1	INCANDS				120m	25187A clouded out
	2	INCANDS				120m	RAINING!
	3	INCANDS				36m	
10-11 May 1988	4	Th-Ar			↓	60s	- rain -
	5	SKY-DAY	φ hrs	-15°		2m	2.0 ND Day-time SKY
	6	Th-Ar			↑↓	60s	
	7	SKY-DAY	"	"		2m	
	8	Th-Ar			↑	60s	(rebalance)
	9	SKY-DAY	"	"		2m	16 DAYTIME SKY 2.0 ND
	10	Th-Ar			↑↓	60s	
	11	SKY-DAY	"	"		2m	16 DAY-TIME SKY 2.0 ND
	12	Th-Ar			↑↓	60s	
	13	SKY-DAY	"	"		2m	" " " "
	14	Th-Ar			↑	60s	
	15	Th-Ar			↓	60s	rebalance
	16	SKY-DAY	"	"		2m	16 DAYTIME SKY 2.0 ND
	17	Th-Ar			↑	60s	
	18	Th-Ar			↓	60s	replaced filter w/ Taped filter
	19	SKY-DAY	"	"		2m	4.0 ND ON CGA/SKY MIRROR
	20	Th-Ar			↑↓	60s	
Th-Ar →	21	SKY-DAY	+	+	↓	60s	
	22	SKY-DAY	"	"		2m	16 DAYTIME SKY 4.0 ND
	23	Th-Ar			↑	60s	
	24	SKY-DAY	"	"		2m	16 DAYTIME SKY 4.0 ND
	25	Th-Ar			↑	60s	
	26	SKY-DAY	"	"		2m	16 DAYTIME SKY 4.0 ND
	27	Th-Ar			↑	60s	
	28	SKY-DAY	"	"		2m	16 DAYTIME SKY 4.0 ND
	29	Th-Ar			↑	60s	
	30	/					
	31						
	32						

FIBER TESTING

5/12

Intensified Reticon TO CAM
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating 3002 Observer JRL
 Telescope 61" Wynth Date MAY 11/12 1988 Disk 020 2139

Change.... File ID 1950.0 RA Dec L/R Exposure Comments FIBER TEST #4

Change....	File	ID	1950.0 RA	Dec	L/R	Exposure	Comments
	1	H146051	16 11 43	-3 34 01		3 ^m	IAM STD 2.7
	2	THAr			↕	60 ^s	
	3	H146051	"	"		8 ^m	" " (CLDS INTERR.) "
	4	THAr			↑	60 ^s	
	5	THAr			↓	60 ^s	
	6	H182572	19 22 35	11 50 00		3 ^m	IAM STD 5.2
	7	THAr			↕	60 ^s	
	8	H182572	"	"		3 ^m	" " "
	9	THAr			↑	60 ^s	
	10	THAr			↓	60 ^s	(rebalance 1500)
	11	SKY DWNM	Meridian	+20°		8 ^m	16 SKY L-R CT5 125-400
	12	THAr			↕	60 ^s	
19860	13	SKY DWNM	"	"		4 ^m	16 SKY L-R CT5 600-1100
	14	THAr			↑	60 ^s	
	15	INCAUS				120m	(rebalance)
	16	INCAUS				120m	
	17	INCAUS				120m	
	18						
	19						
	20						
	21						
	22						
	23						
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32						

End of April - May
 Echelle Run

5/19/89

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 300L Log Sheet RAW/RET
 Telescope 61" Wyeth Date 19-20 May 1988 Observer RPS
 Disk 0002140

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

Change....	File	ID	1950.0	RA	Dec	L/R	Exposure	Comments
1		LHO.90						
2		RHO.90						
3		LHO.925						
4		RHO.925						
5		LHO.950						
6		RHO.950						
7		LHO.975						
8		RHO.975						
9		LHO.980						
10		RHO.980						
11		LHO.978						
12		RHO.978						
13		LHO.978						Signal = 10 L-R = 0.20
14		RHO.978						
15		LHO.978						Signal = 2 L-R = 0
16		RHO.978						
17		INCANDS					6M	
18		ThAr				↓	60s	
19	SKYDAY1	4 th West	+15°				2M	
20	ThAr					↑↓	60s	
21	SKYDAY2	"	"				2M	
22	ThAr					↑↓	60s	
23	SKYDAY3	"	"				2M	
24	ThAr					↑↓	60s	
25	SKYDAY4	"	"				2M	
26	ThAr					↑↓	60s	
27	SKYDAY5	"	"				2M	
28	ThAr					↑↓	60s	
29	SKYDAY6	"	"				2M	
30	ThAr					↑↓	60s	
31	SKYDAY7	"	"				2M	
32	ThAr					↑	60s	

Start May-June
Echelle Run

5/19

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW RET

Grating 300L

Observer RPS & JME

Telescope 61" WYETH

Date 19-20 MAY 88

Disk 020 2141

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

		1				↓	60s	25187A
		2	SKYDAYS	4h West	+15°		2M	
		3	TLA			↑↓	60s	
		4	SKYDAYS	"	"		2M	
		5	TLA			↑	60s	
		6	TLA			↓	60s	
		7	SKYDAYS	"	"		2M	
		8	TLA			↑	60s	
		9	INCANDS				120M	
		10	INCANDS				120M	
		11						
		12						
		13						
		14						
		15						
		16						
		17						
		18						
		19						
		20						
		21						
		22						
		23						
		24						
		25						
		26						
		27						
		28						
		29						
		30						
		31						
		32						

5/24/88

TO CAM1

Spectrograph ECHELLE Intensified Reticon
 Log Sheet
 Grating 300f Observer JRC / JMZ
 Telescope 61" WYETH Date 5/22-23/88 Disk 0120 2142

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

Change....	File	ID	RA	1950.0	Dec	L/R	Exposure	Comments
		1	ThAr			↓	60s	25.187A
		2	H114762	13:09:55	17:46:55		4m	17 IAU STD. 7.3
		3	ThAr			↑	60s	SET A AUTO-GUIDE } NOT WORKING }
		4	ThAr			↓	60s	
5/23-24/88 P.A. REPAIRED during day clouded out		5	SKYEVEN	0 hrs.	+30°		2m	16 sky cloudy
		6	ThAr			↑	60s	
		7	ThAr			↓	60s	
		8	SKYEVEN	4 hrs. West	+30°		2m	
5/24-25/88 cloudy JMZ/JRC		9	ThAr			↑	60s	
		10	ThAr			↓	60s	
		11	H89449	10:17:01	19:43:31		2m	4.8 IAU STANDARD
		12	ThAr			↑	60s	
		13	ThAr			↓	60s	
		14	G165-22	13:35:51	39:26:10		2m	8.9/15 HA105 (926)
		15	ThAr			↑	60s	* PAUSE -- PASSING CLOUDS
		16	ThAr			↓	60s	
		17	W13777	13:11:19	30:02:42		3m	8.59/20 SAS7 (25)
		18	ThAr			↑	60s	
		19	ThAr			↓	60s	
		20	W20942	13:04:27	31:22:22		5m	9.68/10 SAS7 (43)
		21	ThAr			↑	60s	
		22	ThAr			↓	60s	
		23	H114762	13:09:55	17:46:55		2m	7.3 IAU STANDARD
		24	ThAr			↑↓	60s	
		25	H114762	13:09:55	17:46:55		2m	" "
		26	ThAr			↑↓	60s	
		27	H114762	"	"		2m	" "
		28	ThAr			↑↓	60s	
		29	H114762	"	"		2m	" "
		30	ThAr			↑	60s	
		31	/				/	SKY TOO POOR TO CONT
		32	/				/	

5/26/88

Intensified Reticon TO CAMI
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating 300f Observer _____
 Telescope 61" WYETH Date 5/26-27/88 Disk ORC 2143

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	2518.7 Å CLEAR
	SKYEVIEW	0 hrs.	730°			2M	16 SKY
		ThAr			↑	60s	
		ThAr			↓	60s	
	SKYEVIEW	4h West	+30°			2M	16 SKY
		ThAr			↑	60s	
		ThAr			↓	60s	
	H9258B	10:38:52	-1:28:42			2M	6.3 IAU STANDARDS
		ThAr			↑	60s	
		ThAr			↓	60s	
	G111-33	7:45:13	46:44.4			4M	10.0/15 HALOS (554)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G1380	10:06:19	49:42.2			2M	6.59 M STARS NEARBY (14)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G1388	10:16:54	20:07.18			6M	9.43 NEARBY (15)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G2411	11:00:37	36:18.18			2M	7.50 SPACE NEARBY (17)
		ThAr			↑	60s	
		ThAr			↓	60s	
	+222411	11:48:59	22:23:36			10M	9.30/70 HALOS (787)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G61-24	12:55:00	16:57.48			9M	8.97/100 HALOS (869)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G62-52	13:33:29	1:27:47			14M	10.89/30 HALOS (973)
		ThAr			↑	60s	
		/				/	
		/				/	

5/26/88

Intensified Reticon TO CAM
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating 300 Observer JMZ/JRC
 Telescope 61" WYETH Date 5/26-27/88 Disk 0RO 2144

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	25187A CLEAR
	(14)		11:44:18	13:42:58	↓	13m	10.9 ASTEROIDS
		ThAr			↑	60s	
		ThAr			↓	60s	
	H114762		13:09:55	17:46:55		2m	7.3 IAU STANDARDS
		ThAr			↑↓	60s	
	H114762		"	"		2m	" "
		ThAr			↑↓	60s	
	H114762		"	"		2m	" "
		ThAr			↑↓	60s	
	H114762		"	"		2m	" "
		ThAr			↑	60s	
	W13777		13:11:19	30:02:42	↓	3m	8.59/20 SAS7 (25)
		ThAr			↑	60s	
		ThAr			↓	60s	
	W20942		13:04:37	31:22:22		9m	9.68/10 SAS7 (43)
		ThAr			↑	60s	
		ThAr			↓	60s	
	SO82651		13:03:56	27:53:00		25m	5.9/100 M STARS (40)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G15449		13:03:49	20:59:42		8m	9.4/20 M STARS (41)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G15508		13:17:36	48:02:29		7m	9.0/50 M STARS (42)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G17-22		16:30:22	3:21:12		3m	8.64/15 HALOS (1089)
		ThAr			↑	60s	
		/				/	
		/				/	

TO CAM 5/26/88

Spectrograph ECHELLE Intensified Reticon
 Log Sheet

Grating 3000

Observer JRC

Telescope 61" Wyeth

Date 5 26/27 88

Disk 020 2145

Change....	File	ID	RA	Dec	1950.0	L/R	Exposure	Comments
						↑/↓		
		TNR				↓	60s	25157A
	1092223	16 31 13	09 12 42				6M 15	Halos 8.84/30
		TNR				↑	60s	
		TNR				↓	60s	
	G17-25	6 32 04	-4 07 06				7M 15	Halos 9.6/15
		TNR				↑	60s	
		TNR				↓	60s	
	G17-30	16 35 42	-2 20 24				7M 15	Halos 8.4/15
		TNR				↓	60s	
	5141333	16 41 20	-2 32 18				18M 15	Halos 8.31/100
		TNR				↑	60s	
		TNR				↓	60s	
	S122332	17 20 30	00 53 12				2M 15	Halos 7.75/20
		TNR				↑	60s	
		TNR				↓	60s	
	G154-32	17 50 16	-7 54 24				2M 15	Halos 7.6/15
		TNR				↑	60s	
		TNR				↓	60s	
	G141-9	18 23 59	8 35 24				2M 15	Halos 9.0/15
		TNR				↑	60s	
		TNR				↓	60s	
	G23-7	18 53 13	-5 48 24				2M 15	Halos 7.4/15
		TNR				↑	60s	
		TNR				↓	60s	
	G23-6	19 32 33	11 18 48				2M 15	Halos 7.91/20
		TNR				↑	60s	
		TNR				↓	60s	
	H182572	19 22 35	11 50 9				2M 17	IMM STDS 5.2/
		TNR				↑	60s	
		TNR				↓	60s	
	G92-15	19 33 47	4 39 18				M 15	Halos 210° 504 7.2/15
		TNR				↑	60s	

5/27/88

Spectrograph ECHELLE Intensified Reticon TO CAM1
 Grating 3002 Log Sheet RAW RET
 Telescope 6" Wynth Date 5 26/27 88 Observer JRC
 Disk 020 2146

Change....	File	ID	RA	Dec	L/R +/-	Exposure	Comments
		1			↓	60s	25187A
		2	SKYDWN	4 hrs East	+20°	2"	16 SKY
		3	ThAr		↑	60s	
		4	ThAr		↓	60s	
		5	SKYDWN	0 hr	+200	2"	16 SKY
		6	ThAr		↑	60s	
		7	INCANS			120"	
		8	"			120	
		9	"			115	
5/27-28/88		10	ThAr		↓	60s	25187A clear!
JM2		11	SKYVIEW	6 hrs	+30°	2M	16 sky
		12	ThAr		↑	60s	
		13	ThAr		↓	60s	
		14	SKYVIEW	4h West	+30°	2M	16 sky
		15	ThAr		↑	60s	
		16	ThAr		↓	60s	
		17	HB1797	9:25:08	8:26:28	2M	2.0 IAU STANDARD
		18	ThAr		↑	60s	
		19	ThAr		↓	60s	
		20	HOBS217	9:47:54	4:39:42	3M	6.2/100 M STARS (28)
		21	ThAr		↑	60s	
		22	ThAr		↓	60s	
		23	G40-S	8:01:46	15:30:36	3M	8.48/15 1/10s (568)
		24	ThAr		↑	60s	^ 4h 45m West
		25	ThAr		↓	60s	
		26	W13777	13:11:19	30:02:42	2M	8.59/20 SAS7 (25)
		27	ThAr		↑	60s	Trouble with
		28	ThAr		↓	60s	OFFSET.
		29	W20942	13:04:37	31:22:22	9M	9.68/10 SAS7 (43)
		30	ThAr		↑	60s	OFFSET WEST
		31	/			/	NOT WORKING -
		32	/			/	ALL OFFSETS going WEST DONE MANUALLY

5/27/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 300 Log Sheet RAW/RET
 Telescope 61" WYETH Date 5/27-28/88 Observer JMZ
 Disk 0120 2147

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	25187A CLEAR
		H114762	13:09:55	17:46:55		2M	7.3 IAU STANDARD
		ThAr			↑↓	60s	
		H114762	"	"		2M	" "
		ThAr			↑↓	60s	
		H114762	"	"		2M	" "
		ThAr			↑↓	60s	
		H114762	"	"		2M	" "
		ThAr			↑	60s	
		ThAr			↓	60s	
		(14)	11:45:00	13:32:16		10m	17 ASTEROIDS
		ThAr			↑	60s	
		ThAr			↓	60s	
		GLS26	13:43:17	15:09:42		3M	8.5 NEARBY (173)
		ThAr			↑	60s	
		ThAr			↓	60s	
		10928X	14:14:07	08:41:48		6M	9.44/30 HALOS (955)
		ThAr			↑↓	60s	
		GG5-43	14:15:47	±2:58:30		8M	10.57/15 HALOS (956)
		ThAr			↑	60s	
		ThAr			↓	60s	
		1E1247	12:47:03	5:48:22		6M	9.0/25 W UMA (1)
		ThAr			↑	60s	
		ThAr			↓	60s	
		E6660	15:02:25	10:25:54		10M	10.78/15 HALOS (1013)
		ThAr			↑	60s	
		ThAr			↓	60s	
		G15-6	15:02:30	4:16:48		5M	9.87/15 HALOS (1014)
		ThAr			↑	60s	
		ThAr			↓	60s	
		S101380	15:05:06	17:38:30		13M	9.20/50 HALOS (1016)
		ThAr			↑	60s	

Spectrograph ECHELLE Intensified Reticon TO CAM 5/28
 Grating 3002 Log Sheet RAW/RET
 Telescope 61" Wyeath Date 5/26/88 Observer JRC
 Disk 020 2149

Change....	File	ID	RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	Ptly cloudy 25/87A
		2	SKYDOWNE	4 hrs East +20°		3m	16 SKY
		3			↑	60s	
		4			↓	60s	
		5	SKYDWNM	0 hr +20°		2m	16 SKY
		6			↑	60s	
		7	INCANS			120m	
		8	"			"	
		9	"			"	
		10	"			75	
28-29 MAY 1988		11	Th-Ar		↓	60s	5187A - scattered clds -
		12	SKY-EVE	6 hrs +30°		2m	
		13	Th-Ar		↑	60s	
		14	Th-Ar		↓	60s	Note: Th-Ar balanced;
		15	SKY-EVE	4 1/2 hrs W +30°		2m	Left sky > Right sky by 10%.
		16	Th-Ar		↑	60s	
		17	Th-Ar		↓	60s	
		18	H89449	10:17:01 19:43:31		3m	4.8 IAU standard
		19	Th-Ar		↑	60s	
		20	H89449	" "		2m	
		21	Th-Ar		↑	60s	-cloudy-
		22	Th-Ar		↓	60s	
		23	H114762	10:38:52 -01:28:41		5m	7.3 IAU standard (H114762)
		24	H114762	13:09:55 17:46:55	↑↓	60s	
		25	H114762	" "		5m	"
		26	Th-Ar		↑↓	60s	
		27	H114762	" "		5m	
		28	Th-Ar		↑↓	60s	"
		29	H114762	" "		5m	
		30	Th-Ar		↑	60s	
		31					
		32					

5/28

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW/RET

Grating 300L

Observer RPS

Telescope 61" Wyeth

Date 28-29 MAY 1988

Disk ORO 215φ

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
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1		Th-Ar			↓	60s	
2	W13777		13:11:19	30:02:42		3 1/2 m	8.6/20 SAS7
3		Th-Ar			↑	60s	
4		Th-Ar			↓	60s	
5	W20942		13:04:37	31:22:22		13m	9.7/ SAS7
6		Th-Ar			↑	60s	
7		Th-Ar			↓	60s	
8	122693		14:00:34	24:48:12		2m	8.1 Mwing-Group
9		Th-Ar			↑	60s	
10		Th-A			↓	60s	
11	129357		14:39:13	29:16:27		3 1/2 m	7.8 "
12		Th-Ar			↑	60s	
13		Th-Ar			↓	60s	
14	GR5430		11:28:22	63:26:00		17m	9.0/40 Mstars
15		Th-Ar			↑	60s	
16		Th-Ar			↓	60s	
17	H100018		11:28:07	41:33:50		5m	7.0/200 "
18		Th-Ar			↑	60s	
19		Th-Ar			↓	60s	
20	GR5572		14:59:10	45:37:21		6m	9.1/30 "
21		Th-Ar			↑	60s	
22		Th-Ar			↓	60s	
23	139007		15:32:40	25:09:59		4m	8.3/ Mwing-Group (close pair)
24		Th-Ar			↑	60s	
25		Th-Ar			↓	60s	
26	H146051		16:11:43	-03:34:01		2m	2.7 IAU standard 1.0 ND
27		Th-Ar			↑↓	60s	← forgot to remove filter
28	H146051		"	"		2m	
29		Th-Ar			↑	60s	"
30	/						
31	/						
32	/						

Intensified Reticon TO CAM Shx

Spectrograph ECHELLE Log Sheet RAW RET

Grating 3002 Observer RDS

Telescope 61" Wyeth Date 28-29 MAY 1988 Disk ORO 2151

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

1		Th-Ar				↓	60s	
2	154183	17:00:53	25:42:37				5.5m	8.7 MOVING-GROUP/mathieu
3		Th-Ar				↑	60s	
4		Th-Ar				↓	60s	
5	156563	17:15:18	25:04:37				5.5m	9.0 "
6		Th-Ar				↑	60s	
7		Th-Ar				↓	60s	
8	154962	17:06:17	-03:49:03				2.5m	6.4 "
9		Th-Ar				↑	60s	
10		Th-Ar				↓	60s	
11	GL628	16:27:51	-12:32:18				12m	10.1 Nearby 's' Star Motion
12		Th-Ar				↑	60s	
13		Th-Ar				↓	60s	
14	GL699	17:55:23	04:33:18				10m	9.5 " "
15		Th-Ar				↑	60s	
16		Th-Ar				↓	60s	
17	USGR	18:28:57	-19:09:42				3.5m	7.1 Cepheids $\phi = .86$
18		Th-Ar				↑	60s	
19		Th-Ar				↓	60s	
20	SU VUL	19:49:28	27:19:53				3m	7.8 Cepheid $\phi = 0.89$
21		Th-Ar				↑	60s	
22		Th-Ar				↓	60s	
23	169245	18:20:41	26:11:55				3m	8.7 Moving-Group/Mathieu
24		Th-Ar				↑	60s	
25		Th-Ar				↓	60s	
26	GL820a	21:04:40	38:30:00				2.5m	5.2 Nearby 's' M stars
27		Th-Ar				↑↓	60s	
28	GL820b	"	"				2.5m	6.0 " "
29		Th-Ar				↑	60s	
30		/						
31		/						
32								

25 →
Th-Ar
(do not use)

5/29/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 300L Log Sheet RAW/RET
 Telescope 61" Wyeth Date 28-29 May 1988 Observer RPS
 Disk ORO 2152

Change....	File	ID	1950.0 RA	Dec	L/R +/-	Exposure	Comments
		1			↓	60s	
		2	177758	19:03:39	-11:58:10	2m	7.4 Moving-Group/Methuine
		3			↑	60s	
		4			↓	60s	
		5	184700	19:33:11	-00:20:51	3m	8.8 " "
		6			↑	60s	
		7			↓	60s	
		8	184768	19:33:27	-00:00:55	2m	7.6 " "
		9			↑	60s	
		10			↓	60s	
		11	H182572	19:22:35	11:50:09	2.5m	5.2 IAU standard
		12			↑↓	60s	
		13	H182572	"	"	2.0m	"
		14			↑	60s	
		15			↓	60s	
		16	161797A	17:44:30	17:44:55	2.5m	3.4 Moving Group/Methuine
		17			↑	60s	
		18			↓	60s	
		19	SKY-DWN	4hrs E	+20°	2m	
		20			↑	60s	
		21			↓	60s	
		22	SKY-DWN	φ hrs.	+20°	2m	
		23			↑	60s	
		24	INCANDS			120m	
		25	INCANS			120m	
29-30 MAY 1988		26			↓	60s	S187A - prtly cldy -
		27	SKY-EVE	φ hrs.	+30°	2.5m	
		28			↑	60s	
		29			↓	60s	
		30	SKY-EVE	4.5 hrs. W	+30°	2m	
		31			↑	60s	
		32	/				

5/29/88

TO CAMI

Spectrograph ECHELLE Intensified Reticon
 Grating 300L Log Sheet

Telescope 61" wyeth Date 29-30 MAY 1988 Observer RPS
 Disk ORO 2153

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

Change....	File	ID	1950.0 RA	Dec	L/R	Exposure	Comments
		Th-Ar			↓	60s	
	H89449		10:17:01	19:43:31		2m	4.8 IAU standard
		Th-Ar			↑↓	60s	
	H89449		"	"		2m	"
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	(14)		11:46:28	13:11:02		10m	11.0 Asteroid (marginal) (near full moon)
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	H115521		13:15:04	05:43:58		2m	4.8 IAU standard
		Th-Ar			↑↓	60s	
	H115521		"	"		2m	"
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	H114762		13:09:55	17:46:55		2.5m	7.3 IAU standard
		Th-Ar			↑↓	60s	
	H114762		"	"		2m	"
		Th-Ar			↑↓	60s	
	H114762		"	"		2m	"
		Th-Ar			↑↓	60s	
	H114762		"	"		2.5m	"
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	W13777		13:11:19	30:02:42		4m	8.6 SAST
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	W20942		13:04:37	31:22:22		10m	9.7 SAST
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	089269		10:15:50	44:18:12		2m	6.7 Moving Group/Mathieu
		Th-Ar			↑	60s	
		/					

5/30/88

TO CAM

Spectrograph ECHELLE

Intensified Reticon

Grating 300L

Log Sheet

RAW/RET

Telescope 61" Wyeth

Date 29-30 MAY 1988

Observer RDS

Disk 0002155

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	Th-Ar		↓	60s	
		2	SKY-DWN	4.5 hrs E	+30°	2m	
		3	Th-Ar		↑	60s	
		4	Th-Ar		↓	60s	
		5	SKY-DWN	φ hrs	+30°	2m	
		6	Th-Ar		↑	60s	
		7	INCAUDS			120m	
		8	INCAUDS			120m	
30-31 MAY 1988		9	Th-Ar		↓	60s	SIFRA - cloudy -
		10	SKY-EVE	φ hrs	+10°	2m	
		11	Th-Ar		↑	60s	
		12	Th-Ar		↓	60s	
		13	SKY-EVE	3 1/2 hrs W	+10°	2.5m	
		14	Th-Ar		↑	60s	
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					
		26					
		27					
		28					
		29					
		30					
		31					
		32					

Spectrograph ECHELLE Intensified Reticon TO CAM 5/31/88
 Grating 3002 Log Sheet RAW/RET
 Telescope 61" Wyeth Date MAY 31, JUN 1, 88 Observer JRC
 Disk 020 2156

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		TAr			↓	60s	λ5167A
	H114762	13 09 54	17 46 55		↓	3 ^m	17 IM STD 7.3
		TAr			↕	60s	
	H114762	"	"		↓	3 ^m	" " " "
		TAr			↕	60s	
	H114762	"	"		↓	3 ^m	" " " "
		TAr			↕	60s	
	H114762	"	"		↓	3 ^m	" " " "
		TAr			↑	60s	
		TAr			↓	60s	
	NN15389	11 50 11	15 17 52			10 ^m	43 ANGP 10% sky 10.8
		TAr			↕	60s	
	NN14449	11 52 25	14 02 43			7 ^m	43 ANGP 10.1
		TAr			↑	60s	
		TAr			↓	60s	
	S158436	14 10 40	-11 55 24			7 ^m	15 HALOS 9.52/20
		TAr			↑	60s	
		TAr			↓	60s	
	DM VIR	14 05 12	-10 54 54			20 ^m	40 FSTARS 8.7
		Th-Ar			↕	60s	
	DM VIR	"	"			10 ^m	" " "
		TAr			↑	60s	
		TAr			↓	60s	
	W13777	13 11 18	30 02 42			3 ^m	SAS7 8.59/20
		TAr			↕	60s	
	W20942	3 04 37	31 22 22			8 ^m	SAS7 9.68/10
		TAr			↑	60s	
		Th-Ar			↓	60s	
	H136202	15 16:45	01:57:12			5 ^m	5.1 IAU standard. heavy clouds
		Th-Ar			↑	60s	± 4 magnitudes
		/					
		/					