15 Oct 1988

Intensified Reticon: TO CAM

Spectrograph: ECHELLE — Log Sheet: RAW/RET

Grating: 300 ℓ — Observer: RPS

Telescope: 61" Wyeth — Date: 14-15 Oct. 1988 — Disk: ORO 2341

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments
	1	LH9.0					Start Oct-Nov Echelle Fiber Testing — Many problems to get this far. Difficulties remain.
	2	RH9.0					
	3	LH8.5				1.5m	(1) focus OK but lines are
	4	RH8.5				1.5m	L-R = ∅ wider than they should
	5	LH8.5				3.0m	be.
	6	RH8.5				3.0m	L-R = -0.1 (2) L-counts constantly
	7	Th-Ar				33m	drift upward.
	8	1				120	(3) L&R Incands not
	9	"				"	symetrical
	10	"				"	(clouds)
15-16 OCT. 1988	11	Th-Ar			↓	90s	(balanced) Tdewar = 13°C
	12	SKY-EVE	∅ hrs.	+25°		30m	(R>L Tcooler = -39°C.
	13	Th-Ar			↕	90s	by about 40 on Th-Ar)
	14	SKY-EVE				2m	
	15	Th-Ar			↕	90s	
	16	SKY-EVE				2m	
	17	Th-Ar			↕	90s	
	18	SKY-EVE				2m	
	19	Th-Ar			↑	90s	
	20	Th-Ar			↓	60s	all Temperatures
	21	SKY-EVE				2m	stable
	22	Th-Ar			↕	90s	
	23	SKY-EVE				2m	
	24	Th-Ar			↕	90s	
	25	SKY-EVE				2m	
	26	Th-Ar			↕	90s	
	27	SKY-EVE				2m	
	28	Th-Ar			↕	90s	
	29	SKY-EVE				3m	
	30	Th-Ar			↑	90s	R>L by about 70
	31						
	32						

15 Oct 88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer RPS

Telescope 61" Wyeth Date 15-16 OCT 1988 Disk ORO 2342

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	Fiber Testing
	1	Th-Ar			↓	90s	(Rebalanced)	-cloudy-
	2	H182572	19:22:35	11:50:09		13m	5.2	IAU standard
	3	Th-Ar			↕	90s		
	4	H182572	"	"		11½ m		
	5	Th-Ar			↕	90s		
	6	H182572	"	"		10m		
	7	Th-Ar			↕	90s		
	8	H182572	"	"		9m		
	9	Th-Ar			↕	90s		
	10	H182572	"	"		11m		
	11	Th-Ar			↑	90s		
	12	Th-Ar			↓	90s		
	13	H176670	18:58:08	32:04:28		10m	5.0	IAU Standard (Griffin standard)
	14	Th-Ar			↑	90s		
	15	Th-Ar			↓	90s		
	16	H176670	"	"		8.5m		
	17	Th-Ar			↕	90s		
	18	H176670	"	"		10m		
	19	Th-Ar			↑	90s		
	20	Th-Ar			↓	90s		
	21	H176670	"	"		12m		
	22	Th-Ar			↑	90s		
	23	Th-Ar			↓	90s		
	24	H212943	22:25:20	04:26:39		6m	4.9	
	25	Th-Ar			↕	90s		
	26	H212943	"	"		9m		
	27	Th-Ar			↑	90s		
	28	Th-Ar			↓	90s		
	29	H212943	"	"		7m		
	30	Th-Ar			↕	90s		
	31	H212943				8m		
	32	Th-Ar			↑	90s		

ΔT(°C) from 1st obs. of night till here:

Spectrograph body bottom 0.13°C

" " Top 0.37

" " Middle 0.36

Retion Head 0.30

Outside Air 2.56

← ΔT's are the same, except outside = 3.39°C

a bit out of balance R-L ≠ 40 out of 500.

moved telescope 3½ hrs. East; balance shifted so that R-L ≈ −40. Changing stress in the fiber?

10/17/88

Spectrograph ECHELLE Intensified Reticon TO CAM

Grating 300 ℓ Log Sheet RAW/RET

Telescope 61" Wyeth Date 15-16 Oct. 1988 Observer RB Disk ORO 2343

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R +/+	Exposure	Comments: Fiber Testing
	1	Th Ar			↓	90s	
	2	H693	00 08 43	-15 44 33		9m	5.0 IAU standard
	3	Th-Ar			↕	90s	← ΔT(°C) = 0.13, 0.43, 0.47, 0.32, 4.53
	4	INCANDS	"	"		12 c	balance very good.
	5	"				"	Stopped by clouds - overcast
	6	"				"	
	7	"				"	Note: Did not need to rebalance during
	8	"				"	the night — balance reasonably constant.
16-17 Oct 1988	9	Th-Ar			↓	90s	← ΔT(°C) from last sky on 17 Oct =
	10	SKY-EVE	0 hrs	+20°		2m	0.20, 0.44, 0.49, 0.40, 4.53 °C
	11	Th-Ar			↕	90s	balance off by about R-L ≈ 80;
	12	SKY-EVE	"	"		2m	Rebalanced & Reset ΔT.
	13	Th-Ar			↕	90s	on Th-Ar
	14	SKY-EVE	"	"		2m	
	15	Th-Ar			↕	90s	
	16	SKY-EVE	"	"		2.5m	
	17	Th-Ar			↕	90s	
	18	SKY-EVE	"	"		3m	
	19	Th-Ar			↑	90s	
	20	INCANDS				120m	
	21	"				120m	
	22	"				120m	
	23	"				120m	
	24	"				120m	
	25	INCANDS				120m	← ΔT = 0.08, 0.43, 0.44, 0.11, 2.13 °C
17-18 Oct. 1988	26	Th-Ar			↓	90s	R-L ≈ 40. Rebalanced, Reset
	27	SKY-EVE	0 hrs.	+20°		2m	Tdew = 14 °C
	28	Th-Ar			↕	90s	Rebalanced on INCANDS (≈ 1000/side)
	29	SKY-EVE				2m	(Munn Wet)
	30	Th-Ar			↑	90s	
	31						
	32						

10/18/88

Spectrograph ECHELLE Intensified Reticon TO CAM

Grating 300 ℓ Log Sheet RAW/RET

Telescope 61" Wyeth Date 17-18 Oct 1988 Disk ORO2344 Observer RPS & JMZ

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments: Fiber Testing
	1	Th Ar			↓	90s	
	2	SKY-EVE	6 hrs	120°		2m	
	3	Th-Ar			↕	90s	
	4	SKY-EVE	"	"		2m	
	5	Th-Ar			↕	90s	
	6	SKY-EVE	"	"		2m	
	7	Th Ar			↕	90s	
	8	SKY-EVE	"	"		2m	
	9	Th Ar			↕	90s	
	10	SKY-EVE	"	"		2m	
	11	Th Ar			↕	90s	
	12	SKY-EVE	"	"		3m	(low cts)
	13	Th-Ar			↑	90s	(½ mm wet)
	14	INCAND				120m	- overcast & fog -
	15	INCAND				120m	(Bad INCAND Power Supply)
	16					120m	
	17	↓				120m	
	18					120m	
	19	INCANDS				120s	← ΔT(°C) = 0.08, 0.20, 0.22, 0.08, 1.21 °C
10/18-19/88 JMZ	20	ThAr			↓	90s	L-R ≈ 0 (Incands)
	21	H22460	03:34:19	00:44:44		4.5m	(IAU) Reset Tavern = 15°C
	22	ThAr			↕	90s	
	23	H22460	"	"		4m	4.4m IAU STANDARD
	24	ThAr			↕	90s	
	25	H22460	"	"		2m	" "
	26	ThAr			↕	90s	
	27	H22460	"	"		3m	" "
	28	ThAr			↕	90s	
	29	H22460	"	"		2m	" "
	30	ThAr			↑	90s	
	31						
	32						

10/13/88

Spectrograph ECHELLE Intensified Reticon TO CAM

Grating 300 ℓ Log Sheet RAW/RET

Telescope 61" Wyeth Date 18-19 Oct 1988 Observer JMS Disk ORO 2345

FIBER TESTING

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	90s	λ = 5187Å CLEAR
	2	HR7779	1:23:54	-00:39:29		20m	6.4 IAU STD. (Priority)
	3	ThAr			↕	90s	
	4	HR7779	"	"		15m	" "
	5	ThAr			↕	90s	(ON DOME)
	6	HR7779	"	"		15m	" "
	7	ThAr			↑	90s	
	8	ThAr			↓	90s	REBALANCED INTENSITIES
	9	HZ 44	13:06:15	19:28:43		7.5m	5.5 IAU STD (Priority)
	10	ThAr			↕	90s	PARTLY cloudy
	11	HZ44	"	"		10m	" "
	12	ThAr			↕	90s	
	13	HZ44	"	"		10m	" "
	14	ThAr			↑	90s	
	15	ThAr			↓	90s	
	16	HS4716	7:08:13	39:24.15		6m	4.9 IAU STD (G)
	17	ThAr			↕	90s	
	18	HS4716	"	"		5m	" "
	19	ThAr			↕	90s	
	20	HS4716	"	"		7.5m	" "
	21	ThAr			↕	90s	
	22	HS4716	"	"		10m	" "
	23	ThAr			↑	90s	} Through clouds
	24	ThAr			↓	90s	
	25	HR6111	7:59:41	2:28:24		15m	4.4 IAU STD (Priority)
	26	ThAr			↕	90s	
	27	HR6111	"	"		15m	" "
	28	ThAr			↕	90s	Getting cloudy
	29	HR6111	"	"		20m	" "
	30	ThAr			↑	90s	
	31						
	32						

10/20/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMZ

Telescope 61" Wyeth Date 10/18-19-20/88 Disk ORO 2346

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	90s	λ = 5167 Å cloudy
	2	HB1797	09:27:00	-8:36:21		10m	2.0 IAU STD (Priority)
	3	ThAr			↑↓	90s	
	4	ThAr			↑↓	90s	
	5	SKY-DWN	Ø hrs	+20°		3m	16 Sky
	6	ThAr			↑↓	90s	
	7	SKY-DWN	"	"		3m	"
	8	ThAr			↑↓	90s	
	9	SKY-DWN	"	"		3m	"
	10	ThAr			↑↓	90s	
	11	SKY-DWN	"	"		2M	"
	12	ThAr			↑↓	90s	
	13	SKY-DWN	"	"		2M	"
	14	ThAr			↑↓	90s	
	15	SKY-DWN	"	"		2M	"
	16	ThAr			↑↓	90s	
	17	SKY-DWN	"	"		2M	"
	18	ThAr			↑	90s	
	19	INCANDS				120M	
	20	INCANDS				120m	
	21						
	22						
	23						
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32						

FIBER TESTING

ΔT(°C) = 0.69, 0.45, 0.54, 1.75, 5.64 and much more variation in the Balance. Due to large change in ambient Temperature

Reset Tovem = ~~11~~ 11°C

? System came up with twice the Th-Ar & Incand counts they had last night with same settings ??? Internal Grain locked open — down till we can get it to Cambridge.

~~END FIBER TESTING~~

Intensified Reticon TO CAM 10/24/85

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JPC, JMT

Telescope 61" Wyeth Date 10/20-21/85 Disk ORO 2347

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments all IAU STDS FIBER
	1	ThAr			↓	90s	*1 = 5187Å cleaned
	2	H212943	22 27 15	04 38 06		6m	Rebalanced cnts.
	3	ThAr			↕	90s	Temp controller in
	4	H212943	"	"		6m	oven not working (1/2 hr)
	5	ThAr			↕	90s	but Retained
	6	H212943	"	"		6m	
	7	ThAr			↕	90s	Note: Gain still locked out
	8	H212943	"	"		6m	but Th-Ar ½ of last night
	9	ThAr			↕	90s	but still high. Dark 2-3.
	10	H212943	"	"		6m	Fiber appears to have moved -
	11	ThAr	"	"		90s	L²R λ response is diffent
	12	ThAr			↓	90s	from start of nun. Relatim Diffent!
	13	H213014	22 25 45	17 00 28		17m	7.7 IAU STANDARD
	14	ThAr			↕	90s	
	15	H213014	"	"		15m	" "
	16	ThAr			↕	90s	
	17	H213014	" "	"		15m	" "
	18	ThAr			↕	90s	
	19	H213014	" "	"		17m	" "
	20	ThAr			↑	90s	Rebalanced cnts.
	21	ThAr			↓	90s	
	22	H3346	00 34 03	44 12 47		6m	5.3 IAU STDS
	23	ThAr			↑	90s	
	24	ThAr			↓	90s	
	25	H3346	" " "	" " "		6m	" " "
	26	ThAr			↕	90s	
	27	H3346	" " "	" " "		6m	" " "
	28	ThAr			↕	90s	
	29	H3346	" " "	" " "		3m	" " "
	30	ThAr			↑	90s	
	31						
	32						

*Note: Oven Temperature not stable at start of night.

Intensified Reticon TO CAM 10/21/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date Oct 20-21, 1988 Disk ORO 2348

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments: fiber testing
	1	ThAr			↓	90s	
	2	H4128	00 41 05	-18 15 39		2M	2.0 IAU STDS
	3	ThAr			↕	90s	
	4	H4128	〃	〃		2M	〃 〃 〃
	5	ThAr			↕	90s	
	6	H4128	〃	〃		2M	〃 〃 〃
	7	ThAr			↕	90s	
	8	H4128	〃	〃		2M	〃 〃 〃
	9	ThAr			↑	90s	
	10	ThAr			↓	90s	
	11	H8779	01 23 54	-00 39 29		10M	6.4 IAU STDS
	12	ThAr			↕	90s	
	13	H8779	〃 〃 〃	〃 〃 〃		10M	〃 〃 〃
	14	ThAr			↕	90s	
	15	H8779	〃 〃 〃	〃 〃 〃		10M	〃 〃 〃
	16	ThAr			↕	90s	
	17	H8779	〃 〃 〃	〃 〃 〃		10M	〃 〃 〃
	18	ThAr			↕	90s	
	19	H8779	〃 〃 〃	〃 〃 〃		10M	〃 〃 〃
	20	ThAr			↑	90s	
	21	ThAr			↓	90s	
	22	H22484	03 34 19	00 14 40		2M	4.4 IAU STD
	23	ThAr			↕	90s	
	24	H22484	〃 〃 〃	〃 〃 〃		2M	〃 〃 〃
	25	ThAr			↕	90s	
	26	H22484	〃 〃 〃	〃 〃 〃		2M	〃 〃 〃
	27	ThAr			↕	90s	
	28	H22484	〃 〃 〃	〃 〃 〃		2M	〃 〃 〃
	29	ThAr			↕	90s	
	30	H22484	〃 〃 〃	〃 〃 〃		2M	〃 〃 〃
	31	ThAr			↑	90s	
	32						

Intensified Reticon TO CAM 10/21/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date OCT 20-21 1988 Disk ORO 2349

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments Fiber Testing
	1	ThAr			↓	90s	rebalanced Th-Ar 25/87
	2	H26162	04 06 15	19 28 43		5M	5.5 IAM STD
	3	ThAr			↕	90s	
	4	H26162	"	"		5M	" "
	5	ThAr			↕	90s	
	6	H26162	"	"		5M	" "
	7	ThAr			↕	90s	
	8	H26162	"	"		5M	" "
	9	ThAr			↕	90s	
	10	H26162	"	"		5M	" "
	11	ThAr			↑	90s	
	12	ThAr			↓	90s	
	13	H28099	04 23 47	16 38 08		15M	8.1 IAM STD
	14	ThAr			↕	90s	
	15	H28099	"	"		15M	" "
	16	ThAr			↕	90s	
	17	H28099	"	"		15M	" "
	18	ThAr			↕	90s	Th-Ar's out of balance 1990–300
	19	H28099	"	"		15M	" " rebalanced
	20	ThAr			↕	90s	
	21	H28099	"	"		15M	" "
	22	ThAr			↑	90s	
	23	ThAr			↓	90s	(heater box quit)
	24	H66141	07 59 39	02 28 24		8M	17 IAM STD 4.4 Oven heater off
	25	ThAr			↕	90s	
	26	H66141	"	"		8M	" " "
	27	ThAr			↕	90s	
	28	H66141	"	"		8M	" " "
	29	ThAr			↕	90s	
	30	H66141	"	"		8M	
	31	ThAr			↑	90s	
	32						

10/21/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date OCT 20-21 1988 Disk ORO 2350

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

	File	ID	RA	Dec	L/R ↑/↓	Exposure	Comments
1		THAr			↓	90s	7518.7 Å
2		H81797	09 25 08	-08 26 28		3m	2.0 IAM STD
3		THAr			↕	90s	
4		H81797	"	"		3m	" "
5		THAr			↕	90s	
6		H81797	"	"		3m	" "
7		THAr			↕	90s	
8		H81797	"	"		3m	" "
9		THAr			↕	90s	
10		H81797	"	"		3m	" "
11		THAr			↑	90s	
12		THAr			↓	90s	
13		SKYDWNM	0hrs	+20°		2m	16 SKY
14		THAr			↕	90s	
15		SKYDWNM	"	"		2m	16 SKY
16		THAr			↑	90s	
17		INCANDS				120m	Rebalanced at 1100
18		INCAND				120m	was 3400 – 1500
19		INCANDS				120m	far out of balance!
20		INCANDS				110m	back in balance !!
21							
22							
23							
24			END OF FIBER TESTING				
25							
26							
27							
28							
29							
30							
31							
32							

No Temp. control on Cover

10/23/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer RPS

Telescope 61" Wyeth Date 22-23 OCT. 1988 Disk ORO 2351

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments
	1	LH0.966					Back to Normal Echelle
	2	RH0.966					L-R = 0.2ϕ
	3	LH0.969					
	4	RH0.969					
	5	LH0.963					
	6	RH 0.963					L-R = ϕ
OCT. 23-24/ 1988 JMI2	7	ThAr			↓	60s	(Moved 5176.96 to 595 from 560)
	8	SKY/FLAT	ϕ hrs.	+30°		2m	1G SKY
	9	ThAr			↑	60s	λ = 5187 Å cloudy
	10	ThAr			↓	60s	
	11	SKY/FLAT	4h West	+30°		3.5m	1G SKY
	12	ThAr			↑	60s	
	13	ThAr				60s	
	14	HR8257	19:22:35	11:50:10		2m	5Z IAU STANDARD
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	HR7662	18:58:08	32:04:28		2m	5.0 IAU STANDARD
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	DL CAS	00:27:11	59:56:12		7m	10.6 CEPHEIDS (1)
	21	ThAr			↑	60s	
	22	Th-Ar			↓	60s	2-3" Seeing!!
	23	Gl534B	00:46:08	57:33:00		4m	7.5/20 M stars
	24	Th-Ar			↑	60s	
	25	Th-Ar			↓	60s	
	26	SΦ21738	00:46:18	56:48:10		2m	7.1/20 "
	27	Th-Ar			↑	60s	
	28	Th-Ar	"		↓	60s	
	29	G92-15	19:33:47	04:39:18		3.5m	9.2/15 Halos
	30	Th-Ar			↑	60s	
	31	/					
	32						

10/23/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer RPS

Telescope 61" Wyeth Date 23-24 OCT. 1988 Disk ORO 2352

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure		Comments
	1	Th-Ar			↓	60s		
	2	(2)	20:01:09	01:14:38		2m	10.6	Asteroid (?) 4 objects in field
	3	Th-Ar			↕	60s		↳ South object is Brighter
	4	(2)	"	"		4.5m		← North is Fainter
	5	Th-Ar			↑	60s		
	6	Th-Ar			↓	60s		
	7	V433Her	18:20:03	23:25:47		20m	10.5	Kenyon / Symbiotics
	8	Th-Ar			↑	60s		
	9	Th-Ar			↓	60s		
	10	Gls725A	18:42:18	59:34:22		2m	8.9/20	MStars & Nearby
	11	Th-Ar			↕	60s		
	12	Gls725B	18:42:19	59:34:06		5.5m	9.7/20	" "
	13	Th-Ar			↑	60s		
	14	Th-Ar			↓	60s		
	15	G227-37	18:34:48	63:39:18		5m	8.1/20	Halos
	16	Th-Ar			↕	60s		
	17	G227-38	18:34:49	63:39:18		7m	10.7/15	"
	18	Th-Ar			↑	60s		
	19	Th-Ar			↓	60s		
	20	156-48E	22:45:15	-04:29:30		3m	6.7(?)/15	"
	21	Th-Ar			↑	60s		
	22	Th-Ar			↓	60s		
	23	AG Peg	21:48:36	12:23:27		10m	8.5	Kenyon / Symbiotics
	24	Th-Ar			↑	60s		
	25	Th-Ar			↓	60s		
	26	G18-55	22:30:20	10:09:00		5m	9.4/15	Halos
	27	Th-Ar			↑	60s		
	28	Th-Ar			↓	60s		
	29	Gls820A	21:04:54	38:32:06		2m	5.2/20	MStars & Nearby
	30	Th-Ar			↕	60s		
	31	Gls820B	21:04:55	38:32:06		2m	6.0/20	" "
	32	Th-Ar			↑	60s		

10/24/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer RPS & JMZ

Telescope 61" Wyeth Date 23-24 OCT 1988 Disk ORO 2353

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments
	1	INCANDS				120m	Rebalanced at 1200 -clouding up-
	2	"				"	
	3	"				"	
	4	"				"	
	5	"				120	
24-25 OCT 1988 JMZ	6	ThAr			↓	60s	λ = 5167Å Cloudy
	7	SKYEVEN	Meridian	0°		2m	1G SKY
	8	ThAr			↑	60s	RAIN THREAT dec = 0°
	9	ThAr			↓	60s	
	10	SKYEVEN	3h West	0°		3.5m	1G SKY
	11	ThAr			↑	60s	cloudy
	12	ThAr				60s	- cleared by 11:30 EDT
	13	HB 779	1:23:54	-00:39:29		2.5m	6H IAU STANDARDS
	14	ThAr			↑	60s	
	15	ThAr			↓	60s	
	16	G69-1	00:29:55	27:55:18		6m	8.72/100 HALOS (35)
	17	ThAr			↑	60s	
	18	ThAr			↓	60s	
	19	Z-LAC	22:38:53	56:34:05		4m	8.9 CEPHEIDS (9)
	20	ThAr			↑	60s	
	21	ThAr			↓	60s	
	22	TUCET	3:12:03	2:34:16		5m	8.6/100's FSTARS (679)
	23	ThAr			↑	60s	
	24	ThAr			↓	60s	
	25	EG And	00:41:53	40:24:22		3m	7.5 KENYON (1)
	26	ThAr			↑	60s	
	27	ThAr			↓	60s	
	28	G133-57	1:54:31	41:50:06		2m	9.01/15 HALOS (171)
	29	ThAr			↑	60s	
	30	ThAr			↓	60s	
	31	G72-58	2:05:31	28:04:36		7m	9.99/15 " (181)
	32	ThAr			↑	60s	> 10% step

10/24/84

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer

Telescope 61" Wyeth Date 24-25 Oct 84 Disk ORO 2354

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R +/+	Exposure	Comments
	1	ThAr			↓	60s	λ = 5187Å CLAMP
	2	G15154	3:43:19	26:03:42		5m	9.6/20 MSTARS (11)
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	SA76206	3:45:07	24:50:16		2m	6.8/20 MSTARS (12)
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	G15156	3:52:09	-6:58:29		5m	9.0/20 MSTAR (13)
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	S130860	3:56:24	-5:36:40		2m	6.0/20 " (14)
	12	ThAr			↑	60s	
	13	ThAr			↓	60s	
	14	SA76588	4:20:44	22:50:39		2m	7.2/20 " (15)
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	G15169	4:26:02	21:48:47		3.5m	8.3/20 " (16)
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	SA76455	3:23:53	34:15:18		2m	6.74/50 HALOS (223)
	21	ThAr			↑	60s	clouding up
	22	ThAr			↓	60s	
	23	G73-57	2:23:23	5:33:12		2m 5s	7.95/15 " (213)
	24	ThAr			↑	60s	clouded out
	25	ThAr			↓	60s	2:30 A.M → 5 A.M.
	26	TV CAT	3:12:03	2:34:10		12m	8.6/100's FSTARS (679)
	27	ThAr			↑	60s	
	28	ThAr			↓	60s	
	29	G83-34	4:45:46	18:37:36		2m	9.69/15 HALOS (301)
	30	ThAr			↑	60s	
	31						
	32						

10/25/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMZ

Telescope 61" Wyeth Date 24-25 oct 88 Disk ORO 2355

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	60s	λ = 5187Å CLEARING
	2	T MON	6:22:31	7:06:53		2m	6.0 CEPHEIDS (5)
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	G108-53	7:02:29	1:28:30		2m	8.45/15 HALOS (1)
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	S133424	6:31:51	-3:02:51		2m	7.1/20 MSTARS (20)
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	G154128	11:02:43	43:47:39		3m	8.8/20 MSTARS (31)
	12	ThAr			↑↓	60s	
	13	SA43627	11:06:51	43:28:44		3.5m	6.0/20 " (35)
	14	ThAr			↑	60s	
	15	ThAr			↓	60s	
	16	-122411	11:48:59	22:23:26		4.5m	9.3/15 HALOS (792)
	17	ThAr			↑	60s	>10% SKY
	18	ThAr			↓	60s	
	19	HR2588	10:38:51	-1:28:42		2m	6.3 IAU STANDARD
	20	ThAr			↑	60s	
	21	ThAr			↓	60s	
	22	SKYDOME	4h East	+20°		2m	16 SKY
	23	ThAr			↑	60s	
	24	ThAr			↓	60s	
	25	SKYDOME	0 hrs	+20°		2m	16 SKY
	26	ThAr			↑	60s	
	27	INCANDS				120m	
	28	INCANDS				120m	
	29						
	30						
	31						
	32						

10/25/88

Spectrograph ECHELLE Intensified Reticon TO CAM

Grating 300 ℓ Log Sheet RAW/RET

Telescope 61" Wyeth Date 25-26 Oct 88 Observer JMZ Disk ORO 2356

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	60s	2 - 5167Å cloudy
	2	SKYFLAT	0 hrs	+30°		2m	1ℓ SKY
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	SKYFLAT	4h West	+30°		2m	1ℓ SKY
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	HR6252	19:22:35	11:50:09		2m	3.2 IAU STANDARD
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	G21-20	18:35:15	-6:50:30		3m	8.34/15 11 Hds (1216)
	12	ThAr			↑	60s	stopped by clouds
	13	ThAr			↓	60s	
	14	G130-10	23:43:38	34:56:12		2m	9.13/20 11 Hds (1552)
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	(18)	22:41:37	-10:21:55		5m	9.6/- ASTEROIDS
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	HZ 13014	22:25:46	17:00:28		2.5m	7.7 IAU STANDARD
	21	ThAr			↑	60s	-•-
	22	ThAr			↓	60s	ø
	23	G1 763	19:32:10	4:28:16		11m	9.4/20 MSTARS (71)
	24	ThAr			↑↓	60s	
	25	SA 124835	19:33:46	5:53:45		2m	6.7/20 11 (72)
	26	ThAr			↑	60s	
	27	ThAr			↓	60s	
	28	G1 830	21:27:19	-12:43:1K		12m	9.1/20 11 (76)
	29	ThAr			↑↓	60s	
	30	SIC44C1	21:29:39	-12:29:2K		2m	6.9/20 11 (79)
	31	ThAr			↑	60s	
	32	/				/	

10/25/88

Spectrograph ECHELLE Intensified Reticon TO CAM

Grating 300 ℓ Log Sheet RAW/RET

Telescope 61" Wyeth Date 10/25-26/88 Observer JMZ Disk ORO 2357

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	60s	λ = 5187 Å P. cloudy
	2	Gls 846	21:59:38	1:09:30		7m	9.2/20 M STAR
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	SJ27114	21:48:59	00:32:09		2m	6.9/20 M STAR
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	SJ26427	23:49:24	2:39:09		2m	5.9/20 "
	9	ThAr			↑↓	60s	
	10	Gls 908	23:46:37	2:07:37		7m	9.0/20 "
	11	ThAr			↑	60s	
	12	ThAr			↓	60s	
	13	-18271	1:34:54	-17:44:12		14m	9.8/20 H/A/OS
	14	ThAr			↑	60s	
	15	ThAr			↓	60s	
	16	G 71-27	1:39:22	1:39:00		2m	8.88/20 "
	17	ThAr			↑	60s	
	18	ThAr			↓	60s	
	19	Z-LAC	22:38:53	5C:34:06		4m	8.0/ — COPIED IDS
	20	ThAr			↑	60s	
	21	ThAr			↓	60s	
	22	Gls 4A	00:03:05	45:32:06		4m	8.9/20 M STAR & SPACE
	23	ThAr			↑↓	60s	
	24	Gls 4B	00:03:05	45:32:00		4m	9.0/20 "
	25	ThAr			↑	60s	
	26	ThAr			↓	60s	
	27	Gls 15A	00:15:46	93:44:37		3m	8.1/20 M STARS, NEARBY H AND SPACE
	28	ThAr			↑	60s	
	29	ThAr			↓	60s	
	30	Gls 2	00:02:05	45:30:31		9m	9.9/20 M STARS & SPACE
	31	ThAr			↑	60s	
	32						

10/25/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer J M Z

Telescope 61" Wyeth Date 10/25-26/84 Disk ORO 2358

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	60s	λ = 5187Å CLEAR
	2	6171-5	00:22:23	45:24:48		5m	9.61/20 HALOS
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	949	00:11:25	44:13:58		15m	8.19/300 FSTARS
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	Gls 14	00:14:18	40:40:18		5m	9.0/20 MSTARS & SPACE
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	ZAnd	23:31:15	48:32:32		10m	10.0 Symbiotics
	12	ThAr			↑	60s	2 watch for HIGH sky
	13	ThAr			↓	60s	
	14	DL CAS	00:27:11	59:56:12		5m	10.6 CEPHEIDS
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	G2-19	1:63:29	1:26:30		3m	9.46/15 HALOS
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	G70-35	1:01:54	-2:38:00		3.5m	9.15/15 HALOS
	21	ThAr			↑↓	60s	
	22	270-174	1:10:46	-2:07:42		3m	8.95/15 "
	23	ThAr			↑	60s	
	24	G70-51A	1:16:07	-1:07:42		2m	8.04/15 "
	25	ThAr			↑	60s	
	26	ThAr			↓	60s	
	27	G1-51	1:08:17	9:17:48		2m	7.27/15 "
	28	ThAr			↑↓	60s	
	29	G33-48	1:13:53	9:21:41		2.5m	8.75/15 "
	30	ThAr			↑	60s	
	31						
	32						

10/25/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMZ

Telescope 61" Wyeth Date 10/25-26/88 Disk ORO 2359

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
31	1	ThAr			↓	60s	λ = 5187Å clear
	2	G33-56	1:22:11	18:14:30		2m	E.53/15 HA/OS
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	GS-27	3:15:40	15:10:10		2m	7.35/15 HA/OS
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	GS-44	3:31:21	22:49:24		3m	9.18/15 HA/OS
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	G7-6	3:47:31	17:19:42		2m	7.5/15 HA/OS
	12	ThAr			↑	60s	
	13	ThAr			↓	60s	
	14	G6-40	3:53:31	22:32:00		2m	7.84/15 "
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	G83-27	4:36:48	13:01:36		2m	8.93/15 "
	18	ThAr			↑	60s	clouds
	19	ThAr			↓	60s	
	20	G83-50	4:59:20	14:00:54		2m	8.24/15 HA/OS
	21	ThAr			↑	60s	
	22	ThAr			↓	60s	
	23	G97-45	5:28:22	15:44:30		2m	8.64/15 "
	24	ThAr			↑	60s	
	25	ThAr			↓	60s	
	26	G99-22	5:37:21	6:02:12		3m	8.67/15 "
	27	ThAr			↑	60s	
	28	ThAr			↓	60s	
	29	G102-42	5:54:09	15:44:14		2m	8.21/15 "
	30	ThAr			↑	60s	
	31						
	32						

10/25/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer J M 2

Telescope 61" Wyeth Date 10/25-26/88 Disk ORO 2360

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
41	1	ThAr			↓	60s	λ = 5187Å P. cloudy
	2	T Mon	6:22:31	7:06:53		2m	6.6 CEPHEIDS
	3	ThAr			↑	60s	thicker clouds
	4	ThAr			↓	60s	
	5	37603	5:37:27	15:19:18		15m	6.65/150 FSTHITS
	6	ThAr			↑	60s	B component done
	7	ThAr			↓	60s	
	8	067767	8:07:27	25:39:38		2m	5.71 - MOV - GIRT
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	075767	8:49:35	8:15:18		2m	6.6 MOV - GIRT
	12	ThAr			↑	60s	
	13	ThAr			↓	60s	
	14	69-42	8:57:54	21:39:12		3m	8.8/15 HALOS
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	SO43725	10:16:21	48:34:52		2m	6.1/20 MSINRS
	18	ThAr			↑↓	60s	
	19	Gls 380	10:08:13	49:42:10		2m	6.6/20 NEARBY MSINRS
	20	ThAr			↑	60s	
	21	ThAr			↓	60s	
	22	G1388	10:16:54	20:07:16		10m	9.43 NEARBY
	23	ThAr			↑	60s	
	24	ThAr			↓	60s	
	25	G 41C	11:00:37	36:18:18		3m	7.5 NEARBY & SPACE
	26	ThAr			↑	60s	
	27	ThAr			↓	60s	
	28	H1103095	11:50:06	38:09:39		2m	6.5 IAU STANDARD
	29	ThAr			↑	60s	
	30	ThAr			↓	60s	
	31	H925 88	10:38:52	-1:28:42		2m	6.3 " "
	32	ThAr			↑	60s	

10/26/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMZ

Telescope 61" Wyeth Date 10/25-26-27/88 Disk ORO 2361

Change....	File	ID	RA (1950.0)	Dec	L/R ↑/↓	Exposure	Comments
88	1	ThAr			↓	60s	λ = 5187Å P. cloudy
	2	SkyDome	4h East	+30°		2m	16 sky
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	SkyDome	Meridian	+30°		2m	16 sky
	6	ThAr			↑	60s	
	7	Incands				120m	
	8	"				120	
	9	"				70	
10/26-27/88 JMZ	10	Th-Ar			↓	60s	λ = 5187Å - cloudy -
	11	SKY-EVE	0 hrs.	+0°		2m	16 sky
	12	Th-Ar			↑	60s	
	13	Th-Ar			↓	60s	
	14	SKY-EVE	4hrs. W	+10°		3m	16 sky
	15	Th-Ar			↑	60s	
	16	ThAr			↓	60s	
	17	H212943	22:25:20	4:26:39		2m	4.9 IAU STANDARD
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	H213014	22:25:46	17:00:28		2m	7.7 IAU STANDARD
	21	ThAr			↑	60s	
	22	ThAr			↓	60s	
	23	LE1037	19:37:05	30:17:58		9m	9.5/30 LARRY
	24	ThAr			↑	60s	
	25	ThAr			↓	60s	
	26	LE1846	18:46:10	33:05:30		15m	10.3/30 LARRY
	27	ThAr			↑	60s	
	28	ThAr			↓	60s	
	29	G24-15	20:28:43	5:02:48		4m	8.75/30 HALOS
	30	ThAr			↑	60s	
	31						
	32						

10/26/68

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMZ

Telescope 61" Wyeth Date 10/26-27/68 Disk ORO 2362

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
	1	ThAr			↓	60s	λ = 5187Å	c/cm12
	2	G18-55	22:30:20	10:09:00		3m	9.35/15	Halos
	3	ThAr			↑	60s		
	4	ThAr			↓	60s		
	5	G18-60	22:33:05	5:07:06		3m	8.26/50	11/cm/os
	6	ThAr			↑	60s		
	7	ThAr			↓	60s		
	8	G26-17	22:48:13	1,36:18		3m	9.34/15	"
	9	ThAr			↑	60s		
	10	ThAr			↓	60s		
	11	G26-41	23:06:45	-2:41:38		2m	8.59/15	"
	12	ThAr			↑	60s		
	13	ThAr			↓	60s		
	14	G28-45	23:08:17	00:08:30		2,5m	8.99/15	"
	15	ThAr			↑	60s		
	16	ThAr			↓	60s		
	17	G29-21	23:16:21	5:08:00		2m	8.02/15	"
	18	ThAr			↑	60s		
	19	ThAr			↓	60s		
	20	G29-48	23:32:09	1:56:42		2m	8.4/15	"
	21	ThAr			↑	60s		
	22	ThAr			↓	60s		
	23	S73293	23:27:00	30:09:30		2m	7.67/30	Halos
	24	ThAr			↑	60s		
	25	ThAr			↓	60s		
	26	G171-3	23:30:57	42:34:06		2m	7.14/20	"
	27	ThAr			↑	60s		
	28	ThAr			↓	60s		
	29	G192-42	23:52:30	20:06:24		2m	8.96/20	"
	30	ThAr			↑	60s		
	31							
	32							

10/26/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAH/RET

Grating 300 ℓ Observer JMZ

Telescope 61" Wyeth Date 10/26-27/88 Disk ORO 2363

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments
15	1	ThAr			↓	60s	λ = 5187Å CLEAR
	2	G68-31	23:33:33	18:09:48		2m	7.66 HALOS
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	(1)	23:35:55	-17:57:49		3m	8.7 ASTEROIDS
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	HG93	00:08:43	-15:44:33		2m	5.0 IMU STANDARD
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	013313	00:34:12	33:26:00		10m	8.61 LINDROOS
	12	ThAr			↑	60s	
	13	ThAr			↓	60s	
	14	SIGERO	00:18:13	-25:44:12		6m	8.34/20 HALOS
	15	ThAr			↑	60s	WAAY MID MASSES
	16	ThAr			↓	60s	
	17	H3008	00:30:42	-11:00:00		7m	9.46/15 HALOS
	18	ThAr			↑	60s	PARTLY cloudy
	19	ThAr			↓	60s	
	20	G131-59	00:20:23	22:06:00		2m	7.6/15 HALOS
	21	ThAr			↑	60s	
	22	ThAr			↓	60s	
	23	G69-42	00:33:32	29:43:24		2.5m	7.98/15 HALOS
	24	ThAr			↑	60s	
	25	ThAr			↓	60s	
	26	2 LAC	22:38:53	56:34:05		5m	8.5 CEPHEIDS
	27	ThAr			↑	60s	
	28	ThAr			↓	60s	
	29	GL896A	22:26:13	57:26:48		9.5m	9.85 NEARBY M STARS
	30	ThAr			↑	60s	2 cut short by clouds. MARGINAL
	31						
	32						

10/26/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMZ

Telescope 61" Wyeth Date 10/26-27/88 Disk ORO 2364

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	60s	λ = 5182Å P. cloudy
	2	24623	3:52:11	-9:39:54		4m	7.06/150 FSIMIZ
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	24779	3:53:55	6:33:57		5.5m	7.69/150 "
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	DL CAS	00:27:11	59:56:12		5m	10.6 CEPHEIDS
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	G173-59	2:30:30	49:17:12		2m	7.75/15 HALOS
	12	ThAr			↑	60s	
	13	ThAr			↓	60s	
	14	G173-56	2:21:53	46:16:36		3m	9.52/15 HALOS
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	G74-31	2:30:58	42:34:12		2m	7.61/15 HALOS
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	G74-17	2:17:55	42:32:54		2m	8.75/15 HALOS
	21	ThAr			↑	60s	
	22	ThAr			↓	60s	
	23	G74-38	2:37:13	42:03:06		4m	9.63/15 "
	24	ThAr			↑	60s	
	25	ThAr			↓	60s	
	26	G36-114	2:52:41	26:46:24		2m	7.46/15 "
	27	ThAr			↑	60s	a bit cloudy
	28	ThAr			↓	60s	may contaminate
	29	G36-33	02:45:12	26:51:42		2m	7.6/15 HALOS
	30	ThAr			↑	60s	
	31						
	32						

10/26/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMG

Telescope 61" Wyeth Date 10/26-27/88 Disk ORO 2365

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments
35	1	ThAr			↓	60s	λ = 5187Å CLEAR
	2	G37-4	2:43:20	25:26:36		2M	7.89/15 HALOS
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	G78-40	3:28:40	43:30:06		2M	8.56/15 HALOS
	6	ThAr			↑↓	60s	
	7	G78-44	3:35:31	42:14:06		2M	8.96/15 "
	8	ThAr			↑↓	60s	
	9	G78-47	3:40:22	42:27:00		2M	7.49/15 "
	10	ThAr			↑	60s	
	11	ThAr			↓	60s	
	12	G39-1	4:04:14	37:52:42		2M	7.16/15 "
	13	ThAr			↑	60s	
	14	ThAr			↓	60s	
	15	G81-14	4:23:46	41:44:48		2M	6.73/15 HALOS
	16	ThAr			↑	60s	
	17	ThAr			↓	60s	
	18	P1457	5:31:59	-4:35:16		5M	9.6/20 LARRY (orion)
	19	ThAr			↑	60s	
	20	ThAr			↓	60s	
	21	V643 ori	6:04:31	-2:21:36		15M	10.5/100 PLEIADES
	22	ThAr			↑	60s	
	23	ThAr			↓	60s	
	24	SW CMA	7:06:08	-22:21:36		13M	9.5/100 "
	25	ThAr			↑	60s	
	26	ThAr			↓	60s	
	27	T MON	6:22:31	7:06:53		2M	6.4 CEPHEIDS
	28	ThAr			↑	60s	
	29	ThAr			↓	60s	
	30	G88-11	7:07:39	20:31:36		2M	9.09/15 HALOS
	31	ThAr			↑	60s	
	32						

Intensified Reticon TO CAM 10/27/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer J M Z

Telescope 61" Wyeth Date 10/26-27-28/88 Disk ORO 2366

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	60s	λ = 5187Å CLEAR
	2	GBB-8	7:06:14	15:30:18		2M	8.00/15 HALOS
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	GBB-14	7:10:51	25:06:10		2M	8.4/15 HALOS
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	GBB-21	7:27.30	19:04:18		2M	8.49/15 HALOS
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	GBB-40	7:31:43	17:10:46		2M	8.95/15 HALOS
	12	ThAr			↑	60s	
	13	ThAr			↓	60s	
	14	GBB-41	7:31:46	25:04:46		2M	7.38/15 HALOS
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	HG6141	7:59:40	7:26:24		2M	4.4 IAU STANDARD
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	SS4716	7:08:13	39:24:15		2M	5.0 IAU STANDARD
	21	ThAr			↑	60s	
	22	ThAr			↓	60s	
	23	SKYDWNE	4h East	+30°		2M	16 SKY
	24	ThAr			↑	60s	
	25	ThAr			↓	60s	
	26	SKYDWNE	Meridian	+30°		2M	16 SKY
	27	ThAr			↑	60s	
	28	TARGET				120m	
	29	"				120	
	30	"				25	
	31	\				\	
	32						

Intensified Reticon TO CAM 1/27/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date Oct 27-28 1988 Disk ORO 2367

Change....	File	ID	1950.0 RA	Dec	L/R +/+	Exposure	Comments
	1	ThAr			↓	60s	1 hr-delay-no Dec control from any position-Fixed by RPS & JRC
	2	SKYFLEM	0 hrs	+34°		2M	
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	H1825-2	18 22 35	-11 50 09		2M	17 IDH STD 5.2
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	G92-15	11 33 47	+04 39 18		2M	15 HALOS 9.2/15
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	G22-7	18 53 13	-05 48 24		2M	15 HALOS 7.46/15
	12	ThAr			↕	60s	
	13	ThAr	[illegible]	[illegible]	↓	60s	[illegible]
	14	G142-2	18 59 36	+15 59 36		5M	15 HALOS 10.38/15
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	G23-16	19 51 54	01 48 48		2M	15 HALOS 8.94/15
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	OB76C	18 47 50.3	32 44 43		9M	LINDROOS BINARIES /20
	21	ThAr			↑	60s	
	22	ThAr			↓	60s	
	23	G24-25	20 37 42	00 22 42		15.5M	15 Halos 10.56/50
	24	ThAr			↑	60s	
	25	ThAr			↓	60s	
	26	G26-38	21 56 12	00 34 18		4M	15 Halos 10.29/15
	27	ThAr			↑	60s	
	28	ThAr			↓	60s	
	29	G19-28	22 03 14	12 08 18		4M	15 Halos 9.54/30
	30	ThAr			↑	60s	
	31						
	32						

Intensified Reticon TO CAM 10/29/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date Oct 27-28 1988 Disk ORO 2368

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
1	ThAr				↓	60s		λ5567 Å
2	214-18A	22 13 08	+39 31 26			2M	15 Halos	7.57/20
3	ThAr				↑	60s		
4	ThAr				↓	60s		
5	G127-33	22 25 40	24 41 00			7M	15 Halos	9.99/15
6	ThAr				↑	60s		
7	ThAr				↓	60s		
8	5191333	22 39 17	-21 02 48			7M	15 Halos	9.27/30
9	ThAr				↑	60s		
10	ThAr				↓	60s		
11	(18)	22 43 00	-18 18 59			4M	17 Asteroids	
12	ThAr				↑	60s		
13	ThAr				↓	60s		
14	GL 876	22 50 35	-14 31 12			12M	34 MSTARS & Nearby	10.2/20
15	ThAr				↑	60s		
16	ThAr				↓	60s		
17	5164532	23 07 48	-13 34 54			7M	15 Halos	8.41/100
18	ThAr				↑	60s		
19	ThAr				↓	60s		
20	G157-21	23 06 29	-02 49 18			3M	15 Halos	9.27/20
21	ThAr				↑	60s		
22	ThAr				↓	60s		
23	157-41W	23 15 02	-01 47 36			2M	15 Halos	9.0/15
24	ThAr				↑	60s		
25	ThAr				↓	60s		
26	G128-64	23 23 52	+32 54 54			3M	15 Halos	9.58/15
27	ThAr				↑	60s		
28	ThAr				↓	60s		
29	G33-30	00 58 27	+16 06 18			9M	15 Halos	10.65/30
30	ThAr				↑	60s		
31								
32								

Intensified Reticon TO CAM 10/27/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date OCT 27-28 1988 Disk ORO 2369

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
	1	ThAr			↓	60s		25k7 Å
	2	G94-70	02 25 20	+25 37 30		2M	15 Halos	9.36/15
	3	ThAr			↑	60s		
	4	ThAr			↓	60s		
	5	755	00 09 26	28 19 39		5M	40 fSTARS	7.14/400
	6	ThAr			↑	60s		
	7	ThAr			↓	60s		
	8	852	00 10 25	12 03 03		10M	40 fSTARS	7.8/400
	9	ThAr			↑	60s		
	10	ThAr			↓	60s		
	11	H4128	00 41 04	-18 14 39		2M	17 IAN STDS (1.0 ND filt) 2.0	
	12	ThAr			↑	60s		
	13	ThAr			↓	60s		
	14	2 LAC	22 38 53	+56 34 05		2M	38 Cepheids	
	15	ThAr			↑	60s	One of the cooler tubes came loose- fixed	
	16	ThAr			↓	60s		
	17	G134-40	02 34 26	+43 46 42		3M	15 Halos	10.18/15
	18	ThAr			↑	60s		
	19	ThAr			↓	60s		
	20	7048	01 08 11	-05 06 22		3M	40 fSTARS	7.15/1 stobs
	21	ThAr			↑	60s		
	22	ThAr			↓	60s		
	23	G3-10	01 35 31	+17 34 30		2M	15 Halos	9.42/15
	24	ThAr			↑	60s		
	25	ThAr			↓	60s		
	26	G72-25	01 38 52	+27 25 36		2M	15 Halos	8.68/15
	27	ThAr			↑	60s		
	28	ThAr			↓	60s		
	29	G94-8	01 43 06	+20 03 30		2M	15 Halos	9.12/15
	30	ThAr			↑	60s		
	31							
	32							

Intensified Reticon TO CAM 10/27/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date Oct 27-28 1988 Disk ORO 2370

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
	1	ThAr			↓	60S		λ 5187 Å
	2	G35-24	02 02 10	22 34 00		3M	15 Halos	9.51/15
	3	ThAr			↑	60S		
	4	ThAr			↓	60S		
	5	G72-50	01 56 11	+32 58 18		2M	15 Halos	7.12/15
	6	ThAr			↑	60S		
	7	ThAr			↓	60S		
	8	G72-60	2 05 38	31 09 24		3M	15 Halos	10.24/15
	9	ThAr			↑	60S		
	10	ThAr			↓	60S		
	11	G94-48	02 12 34	27 07 36		2M	15 Halos	8.13/15
	12	ThAr			↑	60S		
	13	ThAr			↓	60S		
	14	G4-9	02 13 45	12 09 00		2M	15 Halos	7.99/15
	15	ThAr			↑	60S		
	16	ThAr			↓	60S		
	17	G76-21	02 38 32	+9 33 24		12M	15 Halos	10.18/60
	18	ThAr			↑	60S	(focusing slit)	
	19	ThAr			↓	60S		
	20	137 04	02 11 24	30 29 30		5M	40 FSTARS	7.31/300
	21	ThAr			↑	60S		
	22	ThAr			↓	60S		
	23	DL Cass	00 27 11	59 56 12		25M	38 Ceph	9.7
	24	ThAr			↑	60S		
	25	ThAr			↓	60S		
	26	V 643 ORI	06 04 31	-02 54 36		11M	40 FSTARS Ecl. BIN.	10.5
	27	ThAr			↑	60S		
	28	ThAr			↓	60S		
	29	SV CMa	07 06 08	-22 21 36		15M	40 FSTARS ECL BIN	9.5
	30	ThAr			↑	60S		
	31							
	32							

Intensified Reticon TO CAM 10/29/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date Oct 27-28 1988 Disk ORO 2371

Change....	File	ID	1950.0 RA	Dec	L/R +/+	Exposure	Comments	
	1	ThAr			↓	60s		λ5187 Å
	2	P145-7	05 31 59	-04 35 16		4M	LARRY 2-7	9.6/20
	3	ThAr			↑	60s		
	4	ThAr			↓	60s		
	5	T Mon	06 22 31	07 06 53		2M	38 Cepheids	5.6
	6	ThAr			↑	60s		
	7	ThAr			↓	60s		
	8	G103-48	06 36 55	30 04 54		9M	15 Halos	10.87/39
	9	ThAr			↑	60s		
	10	ThAr			↓	60s		
	11	G102-49	06 05 33	+11 28 12		3M	15 Halos	9.8/15
	12	ThAr			↑	60s		
	13	ThAr			↓	60s		
	14	G113-22	08 14 24	+00 10 30		3M	15 Halos	9.66/15
	15	ThAr			↑	60s		
	16	ThAr			↓	60s		
	17	G113-24	08 15 00	-03 49 42		2M	15 Halos	7.73/30
	18	ThAr			↑	60s		
	19	ThAr			↓	60s		
	20	G52-19	08 31 57	+09 32 48		2M	15 Halos	8.96/15
	21	ThAr			↑	60s		
	22	ThAr			↓	60s		
	23	G9-13	08 37 07	+11 42 36		2M	15 Halos	7.61/15
	24	ThAr			↑	60s		
	25	ThAr			↓	60s		
	26	G9-14	08 37 49	+13 44 06		8M	15 Halos	10.18/15
	27	ThAr			↑	60s		
	28	ThAr			↓	60s		
	29	H26162	04 06 14	+19 28 43		2M	17 IAU SDS	5.5
	30	ThAr			↑	60s		
	31							
	32							

Intensified Reticon — TO CAM 10/28/88

Spectrograph ECHELLE — Log Sheet — RAW/RET

Grating 300 ℓ — Observer JRC

Telescope 61" Wyeth — Date Oct 27-28 1988 — Disk ORO 2372

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments	
	1	ThAr			↓	60S		λ5187 R
	2	27850	04 21 08	-04 14 04		20M	40 f STARS	8.1/350
	3	ThAr			↕	60S		
	4	27850	11	11		7M	11	11
	5	ThAr			↑	60S		
	6	ThAr			↓	60S		
	7	SA901	07 08 25	15 24 52		2M	40 f stars	7.26/120
	8	ThAr			↑	60S		
	9	ThAr			↓	60S		
	10	+251981	08 41 27	+24 59 00		6M	15 Halos	9.29/100
	11	ThAr			↑	60S		
	12	ThAr			↓	60S		
	13	SKYNNE	+ hrs East	+20°		2M	16 SKY	
	14	ThAr			↑	60S		
	15	ThAr			↓	60S		
	16	SKYNNW	0 hrs	+20°		2M	16 SKY	
	17	ThAr			↑	60S		
	18	INCANDS				120M		
	19	INCANDS				120M		
	20	INCANDS				120M		
Oct 26-29 1988	21	ThAr			↓	60S		
	22	H212943	22 25 20	24 26 39		3M	17 IAU STDS	gthy cldy temp 48° λ5187 thrnded up Lamp voltage to 100 — cts were Low 700
	23	ThAr			↑	60S		
	24	ThAr			↓	60S		(mirror forced-heater on 9pm)
	25	H8779	01 23 53	-00 39 29		3M	17 IAU STD (3/4 unforgiven by midnight)	
	26	ThAr			↑	60S		MIRROR very hot - bad seeing!
	27	ThAr			↓	60S		
	28	7660	01 14 21	02 28 17		9M	40 f Stars	7.89/100
	29	ThAr			↑	60S		
	30	ThAr			↓	60S		
	31	9024	01 26 26	07 02 15		4M	40 f Stars	6.85/800
	32	ThAr			↑	60S		

Intensified Reticon TO CAM 11/28/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date Oct 28-29, 1988 Disk ORO 2373

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
	1	ThAr			↓	60S		
	2	(1)	23 42 03	-15 13 12		5M	17 Asteroids	8.7
	3	ThAr			↑	60S		
	4	ThAr			↓	60S		
	5	TV Cet.	03 12 03	+02 34 10		9M	40 FSTARS Ecl. Bin.	8.6/100
	6	ThAr			↑	60S		
	7	ThAr			↓	60S		
	8	G4-44	02 49 16	11 10 12		2M	15 Halos	8.39/15
	9	ThAr			↑	60S		
	10	ThAr			↓	60S		
	11	G95-4	03 01 50	+34 34 42		2M	15 Halos	8.66/15
	12	ThAr			↑	60S		
	13	ThAr			↓	60S		
	14	G78-17	03 04 29	+36 25 42		2M	15 Halos	7.37/15
	15	ThAr			↑	60S		
	16	ThAr			↓	60S		
	17	G37-26	03 05 28	+26 09 06		10M	15 Halos	8.06/200
	18	ThAr			↑	60S		
	19	ThAr			↓	60S		
	20	Z Lac	22 38 53	+56 34 05		3M	38 Cepheids	7.9/
	21	ThAr			↑	60S		
	22	ThAr			↓	60S		
	23	DL Cass	00 27 11	+59 56 12		4M	38 Cepheids	8.0/
	24	ThAr			↑	60S		
	25	ThAr			↓	60S		
	26	V 643 ORI	06 04 31	-02 54 36		20M	40 fstars Ecl. BIN.	10.5
	27	ThAr			↑	60S		
	28	ThAr			↓	60S		
	29	SW CMa	07 06 08	-22 21 38		20M	40 fstars Ecl. BIN.	0.5
	30	ThAr			↑	60S		
	31							
	32							

Intensified Reticon TO CAM 10/25/91

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRL

Telescope 61" Wyeth Date _____ Disk ORO 2374

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments	
	1	ThAr			↓	60S		λ5187 Å
	2	V 643 Ori	06 04 31	-02 54 36		19M	40 Fstars Ecl. Bin.	10.5
	3	ThAr			↑	60S		
	4	ThAr			↓	60S		
	5	TV Cet	03 12 03	+02 34 10		9M	40 fstars Ecl. Bin.	8.6
	6	ThAr			↑	60S		
	7	ThAr			↓	60S		
	8	P1457	05 31 59	-04 35 16		5M	Larry	9.6/20
	9	ThAr			↑	60S		
	10	ThAr			↓	60S		
	11	G102-20	05 37 21	12 09 12		5M	15 Halos	10.22/15
	12	ThAr			↑	60S		
	13	ThAr			↓	60S		
	14	G97-43	05 26 08	04 45 18		3M	15 Halos	9.10/15
	15	ThAr			↑	60S		
	16	ThAr			↓	60S		
	17	G99-21	05 36 48	+03 55 36		6M	15 Halos	10.36/15
	18	ThAr			↑	60S		
	19	ThAr			↓	60S		
	20	G102-27	05 42 49	+14 40 18		2M	15 Halos	9.05/15
	21	ThAr			↑	60S		
	22	ThAr			↓	60S		
	23	G99-40	05 50 25	-03 30 00		4M	15 Halos	9.16/15
	24	ThAr			↑	60S		
	25	ThAr			↓	60S		
	26	τ Mon	06 22 31	+07 06 53		2M	38 Cepheids	5.6/
	27	ThAr			↑	60S		
	28	ThAr			↓	60S		
	29	H66141	07 39 40	02 29 23		2M	17 FAINT STDS	4.4
	30	ThAr			↑	60S		
	31							
	32							

Intensified Reticon TO CAM 10/29/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ 28-29 Observer JRC

Telescope 61" Wyeth Date Oct 29-30, 1988 Disk ORO 2375

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments	
	1	ThAr			↓	60s		
	2	G89-34	07 35 23	05 42 06		3m	15 Halos	8.21/15
	3	ThAr			↑	60s		
	4	ThAr			↓	60s		
	5	66302	8 00 35	11 29 18		18m	40 Fstars	8.10/200
	6	ThAr			↑	60s		
	7	ThAr			↓	60s		
	8	75638	8 48 42	12 18 49		20m	40 Fstars	7.80/400
	9	ThAr			↑	60s		
	10	ThAr			↓	60s		
	11	76735	8 55 29	-4 39 48		4m	40 Fstars	6.68/200
	12	ThAr			↑	60s		
	13	ThAr			↓	60s		
	14	HR9449	10 17 01	19 43 31		2m	17 IAU Std	4.8
	15	ThAr			↑	60s		
	16	ThAr			↓	60s		
	17	SKYDWNE	4 hrs East	+20°		2m	16 Sky	
	18	ThAr			↑	60s		
	19	ThAr	Meridian		↓	60s		
	20	SKYDWNM	Meridian	+20°		2m	16 Sky	
	21	ThAr			↑	60s		
	22	INCANDS				120m		
	23	INCANDS				120m		
	24	INCANDS				93m		
Oct 29-30 1988	25	ThAr			↓	60s		
	26	SKYEVEM	Meridian	+20°		2m	16 Sky	
	27	ThAr			↑	60s		
	28	ThAr			↓	60s		
	29	SKYEVE-W	4 hrs West	+20°		2m	16 Sky	
	30	ThAr			↑	60s		
	31							
	32							

Intensified Reticon TO CAM 10/2-3/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date Oct 29-30 1988 Disk ORO 2376

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R +/+	Exposure	Comments	
	1	ThAr			↓	60s		λ 5187 Å
	2	HIS6014	17 12 22	14 26 46		2M	17 IDH STD 1.0 ND filter	3.1
	3	ThAr			↑	60s		
	4	ThAr			↓	60s		
	5	G17-22	16 30 22	03 21 12		3M	15 Halos	8.64/15
	6	ThAr			↑	60s		
	7	ThAr			↓	60s		
	8	G20-8	17 37 16	32 26 30		20M	15 Halos (46 cts)	9.94/100
	9	ThAr			↑	60s		
	10	ThAr			↓	60s		
	11	(2)	20 05 01	00 27 16		6M	17 Asteroid id not certain	
	12	ThAr			↑	60s		
	13	ThAr			↓	60s		
	14	G170-38	17 25 35	26 49 54		2M	15 Halos	7.70/20
	15	ThAr			↕	60s		
	16	G170-39	17 25 35	27 03 42		2M	15 Halos	8.7/20
	17	ThAr			↑	60s		
	18	ThAr			↓	60s		
	19	SA6051	17 24 50	31 07 03		2M	15 Halos	8.5/30
	20	ThAr			↑	60s		
	21	ThAr			↓	60s		
	22	G182-19	17 37 55	37 13 00		2M	15 Halos	8.37/15
	23	ThAr			↑	60s		
	24	ThAr			↓	60s		
	25	G183-11	17 52 35	20 16 54		11M	15 Halos	9.76/50
	26	ThAr			↑	ThAr		
	27	ThAr			↓	60s		
	28	G140-10	17 44 29	10 08 18		2M	15 Halos	8.53/15
	29	ThAr			↑	60s		
	30	ThAr			↓	60s		
	31	G24-18P	20 28 43	25 02 48		3M	15 Halos	8.75/30
	32	ThAr			↑	60s		

Intensified Reticon TO CAM 10/24/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date Oct 29-30 1988 Disk ORO 2377

Change....	File	ID	1950.0 RA	Dec	L/R +/+	Exposure	Comments
	1	ThAr			↓	60s	
	2	GLS 156	00 15 31	43 44 16		13M	45 Nearby & 4007 11.04
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	(18	22 44 30	-18 14 50		5M	17 Asteroid 9.8
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	156-48E	22 45 15	-04 29 30		2M	15 Halos 6667/15
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	G130-10	23 43 38	34 58 12		3M	15 Halos 9.13/20
	12	ThAr			↑	60s	
	13	ThAr			↓	60s	
	14	221972	23 33 57	20 23 18		6M	40 FStars 7.67/300
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	221479	23 29 57	17 07 31		11M	40 FStars 7.10/600
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	G69-1	00 29 55	27 55 18		5M	15 Halos 8.72/100
	21	ThAr			↑	60s	
	22	ThAr			↓	60s	
	23	633-30	00 58 27	16 06 18		9M	15 Halos 10.65/30
	24	ThAr			↑	60s	
	25	ThAr			↓	60s	
	26	G72-58	02 05 31	28 04 36		3M	15 Halos 9.99/15
	27	ThAr			↑	60s	
	28	ThAr			↓	60s	
	29	270-172	01 09 59	-09 29 18		2M	15 Halos 7.71/20
	30	ThAr			↑	60s	
	31						
	32						

Intensified Reticon TO CAM 10/29/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date Oct 24-30 1988 Disk ORO 2378

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	60S	
	2	4982	00 49 12	-06 22 15		10M	40 FStars 8.00/200
	3	ThAr			↑	60S	
	4	ThAr			↓	60S	
	5	6478	01 03 18	15 06 52		4M	40 FStars 7.3/300
	6	ThAr			↑	60S	
	7	ThAr			↓	60S	
	8	11119	01 47 10	27 12 57		7M	40 FStars 8.10/250
	9	ThAr			↑	60S	
	10	ThAr			↓	60S	
	11	Z Lac	22 38 53	56 34 05		3M	38 Cepheids 8.9/
	12	ThAr			↑	60S	
	13	ThAr			↓	60S	
	14	223661	23 49 03	47 12 27		5M	40 FStars 7.75/200
	15	ThAr			↑	60S	
	16	ThAr			↓	60S	
	17	TV Cet	03 12 03	02 34 10		6M	40 FStars Ecl. BIN 8.6/100
	18	ThAr			↑	60S	
	19	ThAr			↓	60S	
	20	H22484	03 34 19	00 14 40		2M	17 IAU STDS 1.0 filter 4.4
	21	ThAr			↑	60S	
	22	ThAr			↓	60S	
	23	GL 166C	04 12 58	07 43 48		20M	45 Nearby 11.17
	24	ThAr			↑	60S	
	25	ThAr			↓	60S	
	26	DL Cass	00 27 11	59 56 12		12M	38 Cepheids 10.6
	27	ThAr			↑	60S	
	28	ThAr			↓	60S	
	29	23822	03 45 58	23 42 18		8M	40 FStars 6.56/700
	30	ThAr			↑	60S	
	31						
	32						

10/30/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMC & JMZ

Telescope 61" Wyeth Date Oct 29-30 1988 Disk ORO 2379

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1	INCANDS				120M	λ 5187 R
	2	INCANDS				120M	
	3	INCANDS				120M	
	4	INCANDS				120M	
	5	INCANDS				120M	
10-31/88 JMZ	6	ThAr			↓	60s	λ = 5187 Å clouds
	7	SKYFLAT	Meridian	+20°		2M	16 sky
	8	ThAr			↑	60s	
	9	ThAr			↓	60s	
	10	SKYFLAT	4h West	+20°		2m	
	11	ThAr			↑	60s	
	12	ThAr			↓	60s	
	13	HIL670	18:56:07	32:04:28		2m	5.0 JHG STANDARD
	14	ThAr			↑	60s	
	15	ThAr			↓	60s	
	16	G21-20	18:35:15	-6:50:30		2m	8.34/1.5 Halos
	17	ThAr			↑	60s	
	18	ThAr			↓	60s	
	19	G27-7	18:53:13	5:48:24		2m	7.46/1.5 "
	20	ThAr			↑	60s	
	21	ThAr			↓	60s	
	22	HIL4284	16:00:57	58:41:59		2M	4.1/2.0 HISTANDS
	23	ThAr			↑	60s	
	24	ThAr			↓	60s	- partly cloudy -
	25	G156-16.2	16:15:59	55:23:48		15m	9.96/2.0 "
	26	ThAr			↑	60s	clouded out 4½ hrs
	27	ThAr			↓	60s	
	28	G133-57	16:54:31	41:50:06		2M	9.01/1.5 HALOS
	29	ThAr			↑	60s	
	30						
	31						
	32						

Intensified Reticon TO CAM 12/30/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMZ

Telescope 61" Wyeth Date 10/30-31/1988 Disk ORO 2380

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	60s	λ = 5187 Å clean
	2	(1)	23:34:34	-17:46:24		4m	8.7 ASTEROID
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	HR779	1:23:54	-00:39:29		3.5m	6.4 IAU STANDARD
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	2-LAC	22:38:00	56:34:05		5m	8.9 CEPHEIDS
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	G1&60A	22:26:13	57:26:44		8m	9.85 MISSES NEARBY ?
	12	ThAr			↕	60s	Binary NOT fully resolved
	13	G1&60b	22:26:13	57:26:44		15m	11.3 NEARBY & SPACE
	14	ThAr			↑	60s	
	15	ThAr			↓	60s	
	16	G77-56	3:26:43	1:46:24		6m	10.45/15 H/K/os
	17	ThAr			↑	60s	
	18	ThAr			↓	60s	
	19	G8-36	4:24:50	24:20:10		6m	9.42/30 H/K/os
	20	ThAr			↑	60s	
	21	ThAr			↓	60s	
	22	G83-16	4:31:38	12:38:26		5m	9.7/15 H/K/os
	23	ThAr			↑	60s	
	24	ThAr			↓	60s	
	25	G82-5	04 12 29	-05 45 24		10m	10.66/15 Hyades
	26	ThAr			↑	60s	
	27	ThAr			↓	60s	
	28	DL CASS	00 27 11	59 56 12		12m	38 Cepheids 10.6/
	29	ThAr			↑	60s	
	30	ThAr			↓	60s	
	31	P1457	05 31 59	-04 35 16		4m	Lamy 9.6/100
	32	ThAr			↑	60s	

Intensified Reticon TO CAM 10/30/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JAC

Telescope 61" Wyeth Date Oct 30-31 1988 Disk ORO 2B81

Change....	File	ID	1950.0 RA	Dec	L/R +/+	Exposure	Comments
	1	ThAr			↓	60s	
	2	V643 ORI	06 04 31	-02 59 36		20m	F Stars Ecl. BIN. 10.5/100
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	T MON	06 22 31	07 06 53		2m	38 Cepheids 6.6
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	G111-33	07 45 13	46 44 12		3m	15 Halos 9.43/15
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	G103-48	06 36 55	30 04 54		8m	15 Halos 10.87/39
	12	ThAr			↑	60s	
	13	ThAr			↓	60s	
	14	G83-34	04 45 46	18 37 36		2m	15 Halos 9.69/15
	15	ThAr			↑	60s	(forgot to turn on Lamp - redid)
	16	ThAr			↓	60s	
	17	-011792	07 37 17	-01 24 12		2m	15 Halos 9.24/15
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	071148	08 24 08	45 49 24		2m	48 MSV-GRP 6.3
	21	ThAr			↑	60s	
	22	ThAr			↓	60s	
	23	V643 Ori	06 04 31	-02 59 36		20m	F Stars Ecl. Bin 10.5/100
	24	ThAr			↑	60s	
	25	ThAr			↓	60s	
	26	-191422	06 19 00	-19 14 06		6m	15 Halos 9.69/15
	27	ThAr			↑	60s	
	28	ThAr			↓	60s	
	29	G106-46	06 22 34	00 40 48		3m	15 Halos 9.09/15
	30	ThAr			↑	60s	
	31						
	32						

10/31/88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JRC

Telescope 61" Wyeth Date Oct 30-31 1988 Disk ORO 2382

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
	1	ThAr			↓	60S		
	2	S113885	06 24 03	03 27 24		2M	15 Halos	8.24/30
	3	ThAr			↑	60S		
	4	ThAr			↓	60S		
	5	G104-38	06 24 42	24 21 18		2M	15 Halos	9.34/15
	6	ThAr			↑	60S		
	7	ThAr			↓	60S		
	8	G103-34	06 25 59	27 02 42		2M	15 Halos	8.6/30
	9	ThAr			↑	60S		
	10	ThAr			↓	60S		
	11	HS1754	06 56 06	-00 24 00		2M	15 Halos	9.02/20
	12	ThAr			↑	60S		
	13	ThAr			↓	60S		
	14	G112-43	07 41 11	00 03 18		7M	15 Halos	10.18/30
	15	ThAr			↑	60S		
	16	ThAr			↓	60S		
	17	BS796	09 51 47	03 39 53		11M	40 FStars	8.10/300
	18	ThAr			↑	60S		
	19	ThAr			↓	60S		
	20	G162-16	10 01 29	00 50 00		3M	15 Halos	9.81/15
	21	ThAr			↑	60S		
	22	ThAr			↓	60S		
	23	H89449	10 17 01	19 43 31		2M	17 IAU STDs	4.8
	24	ThAr			↑	60S		
	25	ThAr			↓	60S		
	26	SKYDWNE	4 hrs East	+20		2M	16 Sky	
	27	ThAr			↑	60S		
	28	ThAr			↓	60S		
	29	SKYDWNM	Meridian	+20°		2M	16 Sky	
	30	ThAr			↑	60S		
	31	INCANDS				120M		
	32	INCAND				120M		

HALLOWEEN 88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer RDS & JMT

Telescope 61" Wyeth Date 31 Oct - 1 Nov. 1988 Disk ORO 2383

Change....		File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1		Th-Ar			↓	60s	
	2		SKY-EVE	0 hrs	+20°		2m	
	3		Th-Ar			↑	60s	
	4		Th-Ar			↓	60s	
	5		SKY-EVE	4 hrs. W	+20°		2m	
	6		Th-Ar			↑	60s	
	7		Th-Ar			↓	60s	
	8		HR 2572	19:22:35	11:50:09		2m	5.2 IAU Standard
	9		Th-Ar			↑	60s	
	10		Th-Ar			↓	60s	
	11		HR 2785	19:23:39	07:05:48		11.5m	8.0/300 F stars
	12		Th-Ar			↑	60s	
	13		Th-Ar			↓	60s	
	14		G92-15	19:33:47	04:39:18		3m	9.2/15 Halos
	15		Th-Ar			↑	60s	
	16		Th-Ar			↓	60s	
	17		(2)	20:06:31	00:11:36		6m	10.6 Asteroid
	18		Th-Ar			↑	60s	
	19		Th-Ar			↓	60s	
	20		IE 1848	18:48:10	33:05:30		11m	10.3/30 Marschall
	21		Th-Ar			↑	60s	
	22		Th-Ar			↓	60s	
	23		IE 1037	19:37:05	30:27:58		6m	9.5/30 "
	24		Th-Ar			↑	60s	
	25		Th-Ar			↓	60s	
	26		CI-Cyg	19:48:21	35:33:24		16m	11.0 Kenyon/Symbiotics
JMT	27		ThAr			↑	60s	
	28		ThAr			↓	60s	
	29		Gls 69	1:40:10	63:34:24		5m	8.5/20 M STARS
	30		ThAr			↑	60s	
	31							
	32							

HALLOWEEN 88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMI

Telescope 61" Wyeth Date OCT 31 - NOV 1 88 Disk ORO 2384

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	60s	λ = 5167 Å CLEAR
	2	SA 111 783	1:44:10	63:36:14		2M	5.7/20 MSTARS
	3	ThAr			↑	60s	
	4	ThAr			↓	60s	
	5	Ax Per	1:33:06	54:00:19		7M	11.0 Symbiotics
	6	ThAr			↑	60s	
	7	ThAr			↓	60s	
	8	156-48	22:45:15	-4:29:2		4M	6.6 / 15 HALOS
	9	ThAr			↑	60s	
	10	ThAr			↓	60s	
	11	G158-11	23:54:11	-7:07:3		7M	10.69/15 HALOS
	12	ThAr			↑	60s	DEST SEEING IVE
	13	ThAr			↓	60s	SEEN AT 6170 ! JMI
	14	G 29-25	23:19:46	11:53:0		6M	10.82/15 HALOS
	15	ThAr			↑	60s	
	16	ThAr			↓	60s	
	17	G172-3	1:02:4	49:11:1		6M	11.08/15 HALOS
	18	ThAr			↑	60s	
	19	ThAr			↓	60s	
	20	G172-61	1:31:14	48:29:0		7M	11.0/15 "
	21	ThAr			↑	60s	
	22	ThAr			↓	60s	
	23	G173-59	2:30:30	49:17:1		2M	7.75/15 "
	24	ThAr			↑	60s	
	25	ThAr			↓	60s	
	26	G134-40	2:34:26	43:46:42		6M	10.18/15 "
	27	ThAr			↑	60s	
	28	ThAr			↓	60s	
	29	G76-21	2:38:32	9:33:24		10M	10.18/15 "
	30	ThAr			↑	60s	
	31						
	32						

Intensified Reticon TO CAM 10/31/88

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ Observer JMZ

Telescope 61" Wyeth Date 10/31 - 11/1 84 Disk ORO 2385

Change....	File	ID	RA	Dec (1950.0)	L/R ↑/↓	Exposure	Comments	
	1	ThAr			↓	60s	λ=5181 Å	CLEAR
	2	TVCAT	3:12:03	2:34:10		6M	8.6/100's	FSTARS
	3	ThAr			↑	60s		
	4	ThAr			↓	60s		
	5	63B-13	3:42:71	28:53:48		12M	11.49/15	HALOS
	6	ThAr			↑	60s		
	7	ThAr			↓	60s		
	8	SDTL206	3:45:07	24:50:08		3M	6.6/20	MSTARS
	9	ThAr			↑	60s		
	10	ThAr			↓	60s		
	11	Gls 154	3:43:19	26:03:42		6M	9.6/20	MSTARS
	12	ThAr			↑	60s		
	13	ThAr			↓	60s		
	14	MVASSO	21:37:19	57:26:16		16M	11.7/15	W UMA
	15	ThAr			↑	60s		
	16	ThAr			↓	60s		
	17	Z-LAC	22:38:53	56:34:15		5M	8.9	CEPHEIDS
	18	ThAr			↑	60s		
	19	ThAr			↓	60s		
	20	GB-46	4:34:53	19:59:12		10M	11.03/15	HALOS
	21	ThAr			↑	60s		
	22	ThAr			↓	60s		
	23	137 22	2:10:55	-15:08:25		12M	7.69/150	FSTARS
	24	ThAr			↑	60s		
	25	ThAr			↓	60s		
	26	14562	2:18:48	8:38:57		13M	7.8/300	FSTARS
	27	ThAr			↑	60s		
	28	ThAr			↓	60s		
	29	17613N	2:47:11	8:43:57		20M	8.74/100	FSTARS
	30	ThAr			↑↓	60s	2 STARS	○ = 17613N ● = 17613S
	31	176135	2:47:11	8:43:57		18M	8.74/100	FSTARS
	32	ThAr			↑	60s		

2 NOV 88

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 ℓ 31Oct - 1NOV Observer JC & RPS

Telescope 61" Wyeth Date ~~1/2 Nov~~ 1988 Disk ORO2386

Change....	File	ID	RA (1950.0)	Dec (1950.0)	L/R ↑/↓	Exposure	Comments
	1	ThAr			↓	60S	λ 5187 Å
	2	25697	04 02 02	-03 28 29		20M	40 Fstars 8.19/500
	3	ThAr			↕	60S	
	4	25697	"	"		20M	40 Fstars 8.19/500
	5	ThAr			↑	60S	
	6	ThAr			↓	60S	
	7	H26162	04 06 15	19 26 43		2M	17 IDM STDS 5.5
	8	ThAr			↑	60S	
	9	ThAr			↓	60S	λ 6562 Å
	10	2 ORI	05 52 28	07 23 58		20M	SALLY Hα Profiles (2.0 nd) 0.8
	11	ThAr			↑	60S	
	12	ThAr			↓	60S	λ 5187 Å
	13	44300	06 19 15	30 58 13		20M	40 Fstars 7.50/350
	14	ThAr			↕	60S	
	15	44300	"	"		10M	" " (interr. by clds) " "
	16	ThAr			↑	60S	(clded out 4 min)
	17	ThAr			↓	60S	
	18	SKY ENE	4 hrs East	+20°		2M	16 SKY
	19	ThAr			↑	60S	
	20	ThAr			↓	60S	
	21	SKY MNM	Meridian	+20°		2M	16 SKY
	22	ThAr			↑	60S	
	23	INCANDS				120M	
	24	INCANDS				120M	
2-3 NOV 1988	25	Th-Ar			↓	60S	- cloudy -
	26	SKY-EVE	0 hrs	+20°		2m	
	27	Th-Ar			↑	60S	
	28	Th-Ar			↓	60S	
	29	SKY-EVE	4hrs W	+20°		2m	
	30	Th-Ar			↑	60S	
	31	/					
	32						