

Intensified      Reticon  
 TO CAM 3/4  
 Spectrograph 5001 ECHELLE      Log Sheet      RAW RET 16  
 Grating SH      Date MAR 3-4 1987      Observer GR0 1477  
 Telescope \_\_\_\_\_      Disk \_\_\_\_\_

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		TH-AR			↓	90 <sup>s</sup>	5187 A 80μSLIT
1		SKYVIEW	0	0°		2 <sup>m</sup>	
2		TH-AR			↑	90 <sup>s</sup>	
3		TH-AR			↓	90 <sup>s</sup>	
4		SKYVIEW	4 <sup>h</sup> W	0°		2 <sup>m</sup>	
5		TH-AR			↑	90 <sup>s</sup>	
6		TH-AR			↓	90 <sup>s</sup>	6563 A
7		2 ORT	5 52 28	07 24		1 1/2 <sup>m</sup>	BALUNAS
8		TH-AR			↑	90 <sup>s</sup>	
9		TH-AR			↓	90 <sup>s</sup>	5187
10		G175-39	04 31 59	55 19		3 1/2 <sup>m</sup>	HALO
11		TH-AR			↑	90 <sup>s</sup>	
12		TH-AR			↓	90 <sup>s</sup>	
13		H74000	08 38 31	-16 10		9 <sup>m</sup>	
14		TH-AR			↑	90 <sup>s</sup>	
15		TH-AR			↓	90 <sup>s</sup>	
16		1022+11	10 22 37	11 22		5 <sup>m</sup>	VCNS
17		TH-AR			↑	90 <sup>s</sup>	
18		TH-AR			↓	90 <sup>s</sup>	
19		G53-30	10 09 56	-00 23		3 1/2 <sup>m</sup>	HALO
20		TH-AR			↑	90 <sup>s</sup>	
21		TH-AR			↓	90 <sup>s</sup>	
22		1049-02	10 49 28	-08 50		10 <sup>m</sup>	VCNS
23		TH-AR			↑	90 <sup>s</sup>	
24		TH-AR			↓	90 <sup>s</sup>	
25		1127-15	11 27 55	-15 03		3 <sup>m</sup>	
26		TH-AR			↑	90 <sup>s</sup>	
27		TH-AR			↓	90 <sup>s</sup>	
28		78991	11 18 23	28 21		3 <sup>m</sup>	
29		TH-AR			↑	90 <sup>s</sup>	
30		30-2141	11 20 30	29 50		2 <sup>m</sup>	
31		TH-AR			↓	90 <sup>s</sup>	
32							

Intensified      Reticon

TO CAM 3/4

Spectrograph ECHELLE      Log Sheet      RAW/RET 16

Grating 300L      Observer na

Telescope SH      Date 3/3-4/87      Disk ORU 1478

Change....	File	ID	RA	Dec	1950.0 L/R ↑/↓	Exposure	Comments
		1	30147	11 21 26	29 45		10 <sup>h</sup> 5187A. 80μ SLIT NGP
		2	TH-AR			↑	90 <sup>s</sup> TH-AR
		3	30-2153	11 22 37	30 02		3 MIN
		4	TH-AR			↑	90 <sup>s</sup>
		5	29-2157	11:22:37	29:16:28		4 MIN
		6	TH-AR			↑	90 <sup>s</sup>
		7	31-2265	11:22:46	30:51:32		4 MIN
		8	TH-AR			↑	90 <sup>s</sup>
		9	30155	11:23:01	29:56:48		10 MIN 10.6/ (CLDS)
		10	TH-AR			↑	90 <sup>s</sup>
		11	29162	11:24:38	28:29:57		4 MIN 9.7/
		12	TH-AR			↑	90 <sup>s</sup>
		13	29164	11:25:05	28:59:05		10 MIN 10.3/ (CLD HOLDS)
		14	TH-AR			↑	90 <sup>s</sup>
		15	128007	11:25:36	28:04:40		7 MIN 10.6/ END IN OVERCAST
		16	TH-AR			↑	90 <sup>s</sup>
		17	INCANDS				120 MIN
		18	INCANDS				120 MIN
		19	INCANDS				120 MIN
MAR 4/5		20	TH-AR			↓	90 <sup>s</sup>
		21	SKY/EVEN	0 HA	+20		2 <sup>h</sup>
		22	TH-AR			↑	90 <sup>s</sup>
		23	TH-AR			↓	90 <sup>s</sup>
		24	SKY/EVEN	4 1/2 W	+20		2 <sup>h</sup>
		25	TH-AR			↑	90 <sup>s</sup>
		26	TH-AR			↓	90 <sup>s</sup> 6707A <sup>o</sup>
		27	P1540	05 32 12	-05 26		20 <sup>h</sup>
		28	TH-AR			↑	90 <sup>s</sup>
		29	P1540	"	"		20 <sup>h</sup>
		30	TH-AR			↑	90 <sup>s</sup>
		31					
		32					

Spectrograph ECHELLE Intensified Reticon TO CAM 3/4  
 Grating 304L Log Sheet RAW RET 16  
 Telescope SIT Date 3/4-5/87 Observer JA  
 Disk ORD 1479

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	70 <sup>s</sup>	5187A <sup>0</sup>
		2	0432102	04 37 34	02 13	8 <sup>m</sup>	CNVS
		3	TH-AR		↑	90 <sup>s</sup>	
		4	TH-AR		↓	90 <sup>s</sup>	
		5	1022+11	10 22 37	11 21	8 <sup>m</sup>	
		6	TH-AR		↑	90 <sup>s</sup>	
		7	TH-AR		↓	90 <sup>s</sup>	
		8	H74000	08:38:31	16:09:35	7 MIN	9.6/60 HALO
		9	TH-AR		↑	90 <sup>s</sup>	
		10	TH-AR		↓	90 <sup>s</sup>	
		11	25-2367	11:20:02	25:00:29	3 MIN	NGP
		12	TH-AR		↑	90 <sup>s</sup>	
		13	124350	11:21:29	24:07:29	6 MIN	11.0/
		14	TH-AR		↑	90 <sup>s</sup>	
		15	26210	11:22:48	25:36:47	5 MIN	10.7/
		16	TH-AR		↑	90 <sup>s</sup>	
		17	23350	11:25:08	27:18:29	5 MIN	10.4/
		18	TH-AR		↑	90 <sup>s</sup>	
		19	23353	11:25:31	23:27:59	3 MIN	8.6/
		20	TH-AR		↑	90 <sup>s</sup>	
		21	21324	11:27:06	21:27:28	4 MIN	10.1/
		22	TH-AR		↑	90 <sup>s</sup>	
		23	22365	11:27:40	22:09:05	3 MIN	9.3/
		24	TH-AR		↑	90 <sup>s</sup>	
		25	19-2462	11:28:18	19:12:39	5 MIN	
		26	TH-AR		↑	90 <sup>s</sup>	
		27	19468	11:30:37	19:05:47	3 MIN	8.1/
		28	TH-AR		↑	90 <sup>s</sup>	
		29	19-2479	11:34:07	18:43:27	3 MIN	
		30	TH-AR		↑	90 <sup>s</sup>	
		31					
		32					

Intensified      Reticon  
TO CAM 3/4

Spectrograph ECHELLE      Log Sheet      RAW RET 16

Grating 3000      Observer G<sup>S</sup>

Telescope 61" WYETH      Date MAR 4.5 1987      Disk ORO 1480

Change....	File	ID	RA	Dec	1950.0 L/R ↑/↓	Exposure	Comments
		1			↓	90°	5187A 80 μs...
		2	563020	12:26:38	+31:40:00		2 MIN 7.9/50 HALOS
		3	TH-AR			↑	90°
		4	TH-AR			↓	90°
		5	1049-08	10:49:29	-08:49:40		12 MIN 11.2/ CYNS
		6	TH-AR			↑	90°
		7	TH-AR			↓	90°
		8	37810	10:04:46	-21:00:36		6 MIN 6.4/ F STAR
		9	TH-AR			↑	90°
		10	TH-AR			↓	90°
		11	96050	11:02:05	-20:51:18		8 MIN 9.0/ F STAR
		12	TH-AR			↑	90°
		13	TH-AR			↓	90°
		14	1127-15	11:27:55	-15:02:47		4 MIN 9.4/ CUN5
		15	TH-AR			↑	90°
		16	TH-AR			↓	90°
		17	H92588	10:38:51	-01:28:41		2 MIN 6.3/ IAU STND
		18	TH-AR			↑	90°
		19	TH-AR			↓	90°
		20	5138815	12:27:09	-03:02:57		3 MIN 9.0/15 HALOS
		21	TH-AR			↑	90°
		22	TH-AR			↓	90°
		23	+102495	12:56:49	09:30:42		6 MIN 9.7/30 HALOS
		24	TH-AR			↑	90°
		25	TH-AR			↓	90°
		26	G63-27	13:22:10	15:07:00		18 MIN 11.1/20 HALOS
		27	TH-AR			↑	90°
		28	TH-AR			↓	90°
		29	+182757	13:34:07	18:24:24		4 MIN 9.8/20 (NO CHART) HALOS
		30	TH-AR			↑	90°
		31					
		32					

Intensified Reticon

TO CAM 3/4

Spectrograph ECHELLE

Log Sheet

RAW RET 16

Grating 3008

Observer GS

Telescope L1 WYETH

Date MAR 4-5 1987

Disk ORD 1481

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5147A 80μ slit
		2	34-2222	11:23:45	33:43:31	2 MIN	NGP
		3			↑	90 <sup>s</sup>	
		4	35-253	11:22:58	34:42:49	6 MIN	10.1
		5			↑	90 <sup>s</sup>	
		6	36-2186	11:24:28	36:02:42	4 MIN	
		7			↑	90 <sup>s</sup>	
		8	34-2224	11:24:41	34:13:19	7 MIN	
		9			↑	90 <sup>s</sup>	
		10	35-2249	11:22:46	35:05:53	5 MIN	
		11			↑	90 <sup>s</sup>	
		12	37-2182	11:26:37	37:11:15	3 MIN	
		13			↑	90 <sup>s</sup>	
		14	36-2190	11:27:06	36:14:56	3 MIN	
		15			↑	90 <sup>s</sup>	
		16	36194	11:28:39	35:45:00	6 MIN	10.5
		17			↑	90 <sup>s</sup>	
		18	138251	11:28:58	37:31:39	8 MIN	10.6
		19			↑	90 <sup>s</sup>	
		20			↓	90 <sup>s</sup>	
		21	1022+11	10:22:37	11:21:26	9 MIN	10.6 CVNS
		22			↑	90 <sup>s</sup>	
		23			↓	90 <sup>s</sup>	
		24	1127-15	11:27:55	-15:02:48	5 MIN	9.1
		25			↑	90 <sup>s</sup>	
		26			↓	90 <sup>s</sup>	
		27	U223	11:45:09	01:06:00	18 MIN	11.1 (ALSO NEARBY) SPACE MOTION
		28			↑	90 <sup>s</sup>	61447
		29			↓	90 <sup>s</sup>	
		30	1552-23	15:52:02	-23:38:28	5 MIN	8.8 CVNS
		31			↑	90 <sup>s</sup>	
		32					



Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300P Log Sheet RAW/RET 16  
 Telescope SH Date 3/5-6/87 Observer GS  
 Disk ORU 1423

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90°	5187A 80μSLIT
	1049-08	2	10:49:28	-08:49:40		10 MIN	11.2/ CVNS
		3			↑	90°	
		4			↓	90°	
	1127-15	5	11:27:55	-15:02:47		4 MIN	9.4/
		6			↑	90°	
		7			↓	90°	
	1022+11	8	10:22:37	11:21:26		6 MIN	10.6/
		9			↑	90°	
		10			↓	90°	
	27013	11	11:20:30	27:19:51		4 MIN	10.2/ NGP
		12			↕	90°	
	28-1999	13	11:21:53	27:30:05		3 MIN	
		14			↕	90°	
	228007	15	11:25:48	28:17:32		5 MIN	11.0/
		16			↕	90°	
	27-2031	17	11:27:03	26:50:34		3 1/2 MIN	
		18			↕	90°	
	25-2385	19	11:27:14	25:13:23		2 MIN	
		20			↕	90°	
	24363	21	11:28:57	23:32:23		4 MIN	10.3/
		22			↕	90°	
	22-2371	23	11:29:24	22:08:14		4 MIN	
		24			↕	90°	
	22372	25	11:29:45	22:08:11		6 MIN	11.0/
		26			↕	90°	
	25-2390	27	11:30:11	25:00:06		5 MIN	
		28			↕	90°	
	22376	29	11:31:59	22:29:16		10 MIN	10.8/
		30			↕	90°	
	25-2396	31	11:34:38	25:15:53		5 MIN	
		32			↑	90°	

Intensified      Reticon

Spectrograph ECHELLE TO CAM1

Grating 3000 Log Sheet RAW/RET 16

Telescope 61" WYETH Date MAR 5 6 1987 Observer GS

Disk ORO 1484

Change....	File	ID	RA	Dec	1950.0 L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90 <sup>s</sup>	5187A 80μ SLIT
	5043285	2	10:16:21	48:38:52		2 MIN	6.1/100 M STAR
		3	TH-AR		↕	90 <sup>s</sup>	
	GL <sub>2</sub> 380	4	10:08:13	49:42:09		2 MIN	6.6/100
		5	TH-AR		↑	90 <sup>s</sup>	
		6	TH-AR		↓	90 <sup>s</sup>	
	5043396	7	10:32:32	45:54:46		3 MIN	7.5/100
		8	TH-AR		↕	90 <sup>s</sup>	
	GL <sub>2</sub> 397	9	10:28:25	45:47:1		5 MIN	8.8/40
		10	TH-AR		↑	90 <sup>s</sup>	
		11	TH-AR		↓	90 <sup>s</sup>	
	5015472	12	11:16:06	62:27:22		3 MIN	7.0/100
		13	TH-AR		↕	90 <sup>s</sup>	
	GL <sub>2</sub> 430	14	11:28:22	63:26:00		16 MIN	9.0/40 (INCR. CLOS)
		15	TH-AR		↑	90 <sup>s</sup>	
		16	TH-AR		↓	90 <sup>s</sup>	
	H100018	17	11:28:07	41:33:50		3 MIN	7.0/200
		18	TH-AR		↑	90 <sup>s</sup>	
		19	TH-AR		↓	90 <sup>s</sup>	
	1552-23	20	15:52:02	-23:38:28		6 MIN	8.8/ CUNS
		21	TH-AR		↑	90 <sup>s</sup>	
		22	TH-AR		↓	90 <sup>s</sup>	
	H136202	23	15:16:45	01:57:11		2 MIN	5.1/ IAU STD STAR
		24	TH-AR		↑	90 <sup>s</sup>	
		25	TH-AR		↓	90 <sup>s</sup>	
	H135148	26	15:10:55	12:38:31		2 MIN	9.4/15 HALO
		27	TH-AR		↑	90 <sup>s</sup>	
		28	TH-AR		↓	90 <sup>s</sup>	
	G141-47	29	18:50:55	10:33:48		8 MIN	10.5/30 (WATCH DAWN)
		30	TH-AR		↑	90 <sup>s</sup>	
		31					
		32					



Spectrograph ECHELLE Intensified Reticon TO CAM  
 Log Sheet RAW/RET 16  
 Grating 300 Observer GS  
 Telescope 61" WYETH Date MAR 5-6 1987 Disk ORO 1485

Change....	File	ID	RA	Dec	L/R ↑/↓	Exposure	Comments
			1950.0				
	1	TH-AR			↓	90 <sup>s</sup>	5187A 80μ SLIT
	2	G170-47	17:30:38	23:46:18		4 MIN	8.9/100 HALO
	3	TH-AR			↑	90 <sup>s</sup>	
	4	TH-AR			↓	90 <sup>s</sup>	
	5	SKYDWNK	4 <sup>HRS</sup> EAST HA	+30		2 1/2 MIN	
	6	TH-AR			↑	90 <sup>s</sup>	
	7	TH-AR			↓	90 <sup>s</sup>	
	8	SKYDWN M	0 <sup>HR</sup> HA	+30		2 MIN	
	9	TH-AR			↑	90 <sup>s</sup>	
	10	Incond				120 MIN	
	11	Incond				"	
MAR 6-7	12	TH-AR			↓	90 <sup>s</sup>	5187 80μ SLIT
	13	SKYDWN M	0 <sup>HR</sup> HA	+30		2 MIN	OVERLAST
	14	TH-AR			↑	90 <sup>s</sup>	
	15	TH-AR			↓	90 <sup>s</sup>	
	16	SKYEVE W	4 <sup>HRS</sup> W HA	+30		3 MIN	
	17	TH-AR			↑	90 <sup>s</sup>	
MAR 7-8	18	TH-AR			↓	90 <sup>s</sup>	
	19	SKYEVEN	0 <sup>HR</sup> HA	+22°		3 min	5187 SKY EXP, Meridian
	20	TH-AR			↑	90 <sup>s</sup>	
	21	TH-AR	<del>4<sup>HRS</sup> W HA</del>	<del>+30</del>	↓	90 <sup>s</sup>	
	22	SKYEVEN	4 <sup>HRS</sup> W HA	+30°		4 <sup>min</sup>	5187 SKY EVE 4 <sup>HRS</sup> W.
	23	TH-AR			↑	90 <sup>s</sup>	
	24	TH-AR			↓	90 <sup>s</sup>	6707!
	25	P1540	05:32:13	-05:26:23		20 <sup>m</sup>	11.4/27 Σ 4 integrations!
	26	TH-AR			↑	90 <sup>s</sup>	
	27	P1540	-	-		20 <sup>m</sup>	11.4/25? Security Interlocking
	28	TH-AR			↓	90 <sup>s</sup>	
	29	P1540	-	-		20 <sup>m</sup>	11.4/28
	30	TH-AR			↑	90 <sup>s</sup>	
	31						
	32						

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300L Log Sheet RAW/RET 16  
 Telescope 61" Wyeth Date Mar 7-8, 1987 Observer JA  
 Disk ORO 1486

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
	1	P1540	05:32:13	-05:26:23		20min	λ 6707, last of 4 integr. 11/27
	2	Th-Ar			↓	90s	
	3	P1540-Sky	05:32:13	-05:26:02		20min	λ 6707; Sky 20" N of P1540.
	4	<del>Th-Ar</del>			↑	90s	last at 6707.
	5	Th-Ar			↓	90s	Back to 5187!
	6	P1540	05:32:12	-05:26:23		20min	P1540 again; 2 int.
	7	Th-Ar			↓	90s	
	8	P1540	05:32:12	-05:26:23		30min	—, 2 <sup>nd</sup> int.
	9	Th-Ar			↑	90s	
	10	Th-Ar			↓	90s	
	11	H 66141	07:59:40	02:28:24		3min	IHU Std 4.9/
	12	Th-Ar			↑	90s	
	13	Th-Ar			↓	90s	
	14	(5)	08:31:44	+15:17:51		15min	Asteroid 10.5/10
	15	Th-Ar			↑	90s	
	16	Th-Ar			↓	90s	
	17	+25 1981	08:41:28	+24:59:00		12min	Halos 9.5/120
	18	Th-Ar			↑	90s	
	19	Th-Ar			↓	90s	
	20	G 44-48	09:11:12	-03:41:18		12min	Halos 10.6/18
	21	Th-Ar			↑	90s	
	22	Th-Ar			↓	90s	
	23	G 44-45	10:50:48	+10:00:24		15min	Halos 10.7/36
	24	Th-Ar			↑	90s	
	25	Th-Ar			↓	90s	
	26	(15)	10:15:56	-03:18:27		15min	Asteroid
	27	Th-Ar			↑	90s	
	28	Th-Ar			↓	90s	
	29	H 92588	10:38:52	-01:28:41		3min	IHU Std. 6.3/250
	30	Th-Ar			↑	90s	
	31						
	32						

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300 l Log Sheet RAW/RET 16  
 Telescope 61" Wyeth Date 7-8 March 1987 Observer JA  
 Disk DR0 1487

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
					↓	90s	
	H 97916		11:13:19	02:21:36		15min	Halos 9.3/110
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	-01 2582		11:51:04	-01:43:48		10min	Halos
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	G59-5		12:10:56	23:32:36		5min	Halos
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	G59-32		12:37:37	21:05:12		10min	Halos 9.9/100
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	14610		13:21:51	14:11:42		20min	NGP 9.6/120
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	21521		13:23:46	21:04:23		7min	NGP 8.6/120
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	113674		13:30:02	13:15:55		12min	NGP 10.3/50
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	12601		13:30:18	12:07:33		8min	NGP 9.3/
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	35518		14:01:29	+35:10:01		10min	NGP 9.9/67
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	(2)		16:16:46	10:24:31		10min	Asteroid (2) 9.5/100
	Th-Ar				↑	90s	

3/8

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW RET 16

Grating 300L Observer RDS

Telescope 61" Wyeth Date 7-8 MAR. 1987 Disk ORO1488

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	H136202	15:16:45	01:57:12	3min	IAU Std.
		3			↑	90sec	
		4			↓	90sec	
		5	Sky down E	4 <sup>h</sup> E HA	+30°	3min	Sky spectrum - 4 <sup>h</sup> E, +30°
		6			↑	90s	
		7			↓	90s	
		8	Sky down	0 <sup>h</sup> HA	+30°	3min	Sky at dawn, 0 <sup>h</sup> HA, +30°
		9			↑	90s	
		10	INCANDS			120 <sup>MIN</sup>	
		11	INCANDS			120 <sup>MIN</sup>	
		12	INCANDS			96 <sup>MIN</sup>	
		13			↓	90s	
		14	SKY-EVE	φ <sup>h</sup>	+30°	2m	
		15			↑	90s	
		16			↓	30s	
		17	SKY-EVE	φ <sup>h</sup>	+30°	2m	30 sec Th-Ar test
		18			↑	30s	
		19			↓	30s	
		20	SKY-EVE	φ <sup>h</sup>	+30°	2.5m	30sec Th-Ar test; 3000 cts
		21			↑	30s	
		22			↓	90s	
		23	SKY-EVE	4 1/2 hrs W	+30°	2 1/2 m	
		24			↑	90s	
		25			↓	90s	
		26	H26162	04:06:15	19:28:43	2m	IAU Standard
		27			↑	90s	
		28			↓	30s	"
		29	H26162	"	"	2m	30sec Th-Ar test; ≈ 3000 cts
		30			↑	30s	
		31					
		32					

8-9  
MARCH  
1987

318

TO CAM

RAW/RET 16

Intensified      Reticon

Spectrograph ECHELLE      Log Sheet

Grating 300 L      Observer RPS

Telescope 61" Wyeth      Date 8-9 MAR, 1987      Disk ORO 1489

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

RA      Dec      ↑/↓

1	Th-Ar			↓	90s	
2	(4)	02:04:11.5	07:31:36		3m	9.2 Asteroid
3	Th-Ar			↑	90s	
4	Th-Ar			↓	90s	
5	H382	04:23:32	16:44:30		2m	8.0 Hyades Binary
6	Th-Ar			↑	90s	
7	Th-Ar			↓	90s	
8	H388	04:23:48	16:38:08		2m	8.1 Hyades Standard
9	Th-Ar			↑	90s	
10	Th-Ar			↓	90s	
11	H448	04:26:08	16:03:00		2.5m	6.6 Hyades Binary
12	Th-Ar			↑	90s	
13	Th-Ar			↓	90s	
14	G25176	04:40:00	18:52:06		11.5	9.9/40 Mstars
15	Th-Ar			↑	90s	(Went for coffee & lost star!!)
16	Th-Ar			↓	90s	
17	G25176	"	"		6m	Mstars
18	Th-Ar			↑	90s	
19	Th-Ar			↓	90s	
20	RX AUR	04:57:55	39:53:17		2m	9.2 Cepheids
21	Th-Ar			↑	90s	
22	Th-Ar			↓	90s	
23	G88-5	07:03:12	18:42:54		5m	10.2/20 HALOS
24	Th-Ar			↑	90s	
25	Th-Ar			↓	90s	
26	G25319	08:40:02	09:44:18		7 1/2 m	9.7/40 Mstars
27	Th-Ar			↑	90s	
28	Th-Ar			↓	90s	
29	(5)	08:31:39	19:21:13		3m	10.6 Asteroid (? Two objects in field)
30	Th-Ar			↑	90s	
31	(5)	"	"		9m	Asteroid (?) "
32	Th-Ar			↑	90s	

clouds moving in.

Intensified Reticon

TO CAM 3/8

Spectrograph ECHELLE

Log Sheet

RAW RET 16

Grating 300L

Observer RPS

Telescope 61" Wyeth

Date 8-9 MAR. 1987

Disk ORO 1490

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	G25301	08:10:50	-13:45:46		10m 9.4/40 Mstars
		3			↑	90s	
		4			↓	90s	
		5	H74000	08:38:31	-16:09:35		20m 9.6/60 HALOS
		6			↑	90s	
		7			↓	90s	
		8	G25334	09:04:19	-08:36:20		21m 9.5/40 Mstars
		9			↑	90s	
		10			↓	90s	
		11	H085217	09:47:54	04:34:42		3.5m 6.2/200 "
		12			↑	90s	
		13			↓	90s	
		14	H89449	10:17:01	19:43:31		2m 4.8 IAU standard
		15			↑	90s	
		16			↓	30s	" <del>30sec Th-Ar</del>
		17	H89449	"	"	2m	" 30sec Th-Ar
		18			↑	30sec	
		19			↓	30sec	
		20	H89449	"	"	2m	" 30sec Th-Ar, x 3000 cts
		21			↑	30sec	
		22			↓	90s	
		23	85039	09:47:20	45:19:06		15m 8.1 Fstars
		24			↑	90s	
		25			↓	90s	
		26	100066	11:28:32	36:30:29		10m 8.2 "
		27			↑	90s	
		28			↓	90s	-overcast-
		29	78388	09:06:25	50:02:11		19m 7.6 "
		30			↑	90s	
		31					
		32					

Intensified Reticon

TO CAM

3/8

Spectrograph ECHELLE

Log Sheet

RAW RET 16

Grating 300L

Observer RPS

Telescope 61" Wyeth

Date 8-9 MAR 1967

Disk ORO 1491

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

Change....	File	ID	1950.0	RA	Dec	L/R	Exposure	Comments
		1				↓		-overcast-
		2	32179	1:38:59	32:01:22		4m 8.7	NGP - Andromeda
		3				↓	90s	
		4	32178	1:38:54	32:02:01		14m 9.9	" (in hole)
		5				↓	90s	
		6				↓	90s	
		7	H106516	2:12:36	10:01:14		2m 6.1/20	HALOS
		8				↑	90s	
		9				↓	90s	
		10	G61-24	2:55:04	18:57:48		13m 8.9/100	"
		11				↑	90s	
		12				↓	90s	
		13	G63-46	13:37:32	12:50:42		3m 9.4/20	"
		14				↑	90s	
		15				↓	90s	
		16	G60-47	12:52:44	18:06:12		20m 7.9/20	"
		17				↑	90s	
		18				↓	90s	
		19	112929	2:57:25	40:44:35		15m 7.9/	F stars
		20				↑	90s	
		21				↓	90s	
		22	118245	13:32:55	15:08:46		16.5m 7.5	"
		23				↑	90s	
		24				↓	90s	
		25	127295	14:27:18	30:53:58		15m 7.7	"
		26				↑	90s	
		27				↓	90s	
		28	132736	14:57:30	39:50:33		9m 6.8	"
		29				↑	90s	
		30						
		31						
		32						

Intensified Reticon

TO CAM 3/9

Spectrograph ECHELLE

Log Sheet

RAW/RET 16

Grating 300L

Observer RPS

Telescope 61" Wyeth

Date 8-9 MARCH 1987

Disk ORO 1492

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		Th-Ar			↓	90s	5187A <sup>o</sup> - overcast -
	135631		15:13:03	38:28:57		10m	7.1 Fstars
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	142681		15:53:08	14:26:04		4m	8.1 "
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	149394		16:31:16	31:00:52		6 1/2 m	7.9 "
		Th-Ar			↑	90s	- heavy overcast
		Th-Ar			↓	90s	- light rain -
SKY		<del>150340</del>	<del>16:37:30</del>	<del>23:05:55</del>		2m	<del>7.0 " WEST STAR</del>
	SKY-DWN	Th-Ar	4 HRS E	+200	↑	90s	
		Th-Ar			↓	90s	
	SKY-DWN	φ hrs	-15°			2m	
		Th-Ar			↑	90s	
	INCANDS					120 MIN	
	INCANDS					120 MIN	
MAR 9-10		Th-Ar			↓	90 <sup>s</sup>	5187A 80M SL
WRONG MONTH		SKYEVE M	0 HRS HA	+5°		2 MIN	LITE SNOW FLURRIES
		Th-Ar			↑	90 <sup>s</sup>	
		Th-Ar			↓	90 <sup>s</sup>	
	SKYEVE W	4 HRS WHA	+5°			3 MIN	
		Th-Ar			↑	90 <sup>s</sup>	
		Th-Ar			↓	90 <sup>s</sup>	
	111005		12:43:41	02:44:11		20 MIN	7.7 (SEEING 10 <sup>s</sup> +) F STARS
		Th-Ar			↑	90 <sup>s</sup>	
		Th-Ar			↓	90 <sup>s</sup>	
	114538		13:08:38	14:10:28		15 MIN	7.9/
		Th-Ar			↑	90 <sup>s</sup>	
		Th-Ar			↓	90 <sup>s</sup>	
	118158		13:32:17	20:54:04		10 MIN	8.1/
		Th-Ar			↑	90 <sup>s</sup>	



Intensified      Reticon

TO CAM 3/9

Spectrograph ECHELLE      Log Sheet

Grating 3002      Observer GS

Telescope 61"      WYETH      Date MAR 9-10 1987      Disk ORD 1493

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90°	5187A 80μ slit
}		2	G59-32	12:37:37	21:05:12	20 MIN	9.0/60 (10% 20 <sup>sec</sup> see.) HALO
		3	TH-AR			90°	
}		4	G59-32	"	"	20 MIN	" "
		5	TH-AR			90°	
		6	TH-AR		↓	90°	
		7	121648	17:53:51	26:09:43	5 MIN	6.7/ F STARS
		8	TH-AR		↑	90°	
		9	TH-AR		↓	90°	
		10	124346	14:10:12	28:57:01	12 MIN	7.6/ "
		11	TH-AR		↑	90°	
		12	TH-AR		↓	90°	
		13	124712	14:12:16	29:18:59	8 MIN	8.2/ "
		14	TH-AR		↑	90°	
		15	TH-AR		↓	90°	
		16	125979	14:20:11	02:30:01	15 MIN	7.7/ "
		17	TH-AR		↑	90°	
		18	TH-AR		↓	90°	
		19	129538	14:40:27	08:17:16	15 MIN	7.9/ "
		20	TH-AR		↑	90°	
		21	TH-AR		↓	90°	
		22	131634	14:52:20	-03:25:43	12 MIN	7.7/ "
		23	TH-AR		↑	90°	
		24	TH-AR		↓	90°	
		25	H136202	15:16:45	01:57:11	2 MIN	5.1/ IAU STD STAR
		26	TH-AR		↑	90°	
		27	TH-AR		↓	90°	
		28	135282	15:11:49	-05:45:49	15 MIN	8.2/ F STARS
		29	TH-AR		↑	90°	
		30	TH-AR		↓	90°	
		31	153796	16:58:46	11:24:41	8 MIN	7.6/ "
		32	TH-AR		↑	90°	

Spectrograph ECHELLE Intensified Reticon TO CAM 3/10  
 Log Sheet RAW/RET 16  
 Grating 3000 Observer GS  
 Telescope 61" WYETH Date MAR 9-10 1987 Disk ORO 1494

Change....	File	ID	1950.0 RA	Dec	L/R +/-	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80μ SLIT
		2		+30°		2 MIN	
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5		+30°		2 MIN	40 TEMP OUTSIDE
		6			↑	90 <sup>s</sup>	
		7				120 MIN	
		8				120 MIN	
		9				61 MIN	
MAR 10-11		10			↓	90 <sup>s</sup>	<del>5187A</del> 80μ SLIT
		11	λ AND 23 35 06	46 11		8 <sup>m</sup>	ND=1.0 FILTER H2
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	λ OKI 05 51 27	07 24		2 <sup>m</sup>	
		15			↑	90 <sup>s</sup>	
		16			↓	90 <sup>s</sup>	5187A
		17	AX PER 01 33 06	54 00		20 <sup>m</sup>	SYMBIOTIC
		18			↑	90 <sup>s</sup>	
		19			↓	90 <sup>s</sup>	
		20	UV AVR 05 12 33	32 28		5 <sup>m</sup>	
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	
		23	0438+02 04 32 34	02 13		7 <sup>m</sup>	NCLV
		24			↑	90 <sup>s</sup>	
		25			↓	90 <sup>s</sup>	
		26	0505-05 05 05 01	-05 28		7 <sup>m</sup>	
		27			↑	90 <sup>s</sup>	
		28			↓	90 <sup>s</sup>	
		29	0152680			18 <sup>m</sup>	MSAR
		30			↑	90 <sup>s</sup>	
		31					
		32					

Intensified Reticon

TO CAM 3/10

Spectrograph ECHELLE

Log Sheet

RAW RET 16

Grating 001

Observer RA

Telescope SH

Date 3/10-11/77

Disk ORO 1495

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5127 A <sup>0</sup>
		2	5191-55	05 53 04	52 40	14 <sup>m</sup>	HALO
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	87810	10 04 46	-21 01	85 <sup>m</sup>	
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	31267	11 25 43	31 21	8 <sup>m</sup>	NGP
		9			↑	90 <sup>s</sup>	
		10	29-2177	11 28 55	29 17	4 <sup>m</sup>	
		11			↑	90 <sup>s</sup>	
		12	33123	11 28 34	32 35	2 <sup>m</sup>	
		13			↑	90 <sup>s</sup>	
		14	33124	11 28 42	33 14	10 <sup>m</sup>	
		15			↓	90 <sup>s</sup>	
		16	34-2229	11 29 50	33 50	39 <sup>m</sup>	
		17			↓	90 <sup>s</sup>	
		18	33127	11 29 54	33 13	4 <sup>m</sup>	
		19			↑	90 <sup>s</sup>	
		20	33128	1 30 29	33 06	4 <sup>m</sup>	
		21			↑	90 <sup>s</sup>	
		22	33-2129	11 30 33	33 25	2 <sup>m</sup>	
		23			↑	90 <sup>s</sup>	
		24			↓	90 <sup>s</sup>	
		25	1049-08	0 49 28	-08 50	15 <sup>m</sup>	CNVS
		26			↑	90 <sup>s</sup>	
		27			↓	90 <sup>s</sup>	
		28	127-15	11:27:55	15:0248	5 MIN	14/
		29			↑	90 <sup>s</sup>	
		30			↓	90 <sup>s</sup>	
		31	139010	12:49:38	00:39:39	6 MIN	2.8/100 M STARS
		32			↑	90 <sup>s</sup>	

Intensified Reticon

TO CAM 3/00

Spectrograph ECHELLE

Log Sheet

RAW/RET 16

Grating 3001

Observer GS

Telescope 61" WYETH

Date MAR 10 1987

Disk ORO 1496

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5127A 80 μs/l
	GLS 488	2	12:48:10	00:29:42		7 MIN	8.5/40 M STARS
	TH-AR	3			↑	90 <sup>s</sup>	
	TH-AR	4			↓	90 <sup>s</sup>	
	34-2233	5	11:32:19	34:04:43		3 MIN	NGP
	TH-AR	6			↑	90 <sup>s</sup>	
	TH-AR	7			↓	90 <sup>s</sup>	
	28-2021	8	11:33:26	28:10:50		2 MIN	"
	TH-AR	9			↑	90 <sup>s</sup>	
	27-2059	10	11:33:41	27:15:04		4 MIN	"
	TH-AR	11			↑	90 <sup>s</sup>	
	27042	12	11:36:44	26:29:16		7 MIN	10.6/ "
	TH-AR	13			↑	90 <sup>s</sup>	
	26-2248	14	11:39:14	26:12:18		2 MIN	"
	TH-AR	15			↑	90 <sup>s</sup>	
	28031	16	11:39:42	27:43:52		7 MIN	10.4/ "
	TH-AR	17			↑	90 <sup>s</sup>	
	30-2180	18	11:35:60	30:02:01		3 MIN	"
	TH-AR	19			↑	90 <sup>s</sup>	
	32-2169	20	11:35:28	32:09:29		5 MIN	
	TH-AR	21			↑	90 <sup>s</sup>	
	33134	22	11:35:28	33:02:55		10 MIN	10.8/ "
	TH-AR	23			↑	90 <sup>s</sup>	
	33136	24	11:36:14	32:55:05		7 MIN	10.0/ "
	TH-AR	25			↑	90 <sup>s</sup>	
	136207	26	11:36:33	35:51:43		7 MIN	10.7/ "
	TH-AR	27			↑	90 <sup>s</sup>	
	37206	28	11:37:38	37:14:35		6 MIN	10.3/ "
	TH-AR	29			↑	90 <sup>s</sup>	
	39463	30	11:37:56	38:39:03		10 MIN	10.6/ "
	TH-AR	31			↑	90 <sup>s</sup>	
		32					

Intensified Reticon

TO CAM 3/10

Spectrograph ECHELLE

Log Sheet

RAW/RET 16

Grating 300R

Observer GS

Telescope 61" WYETH

Date MAR 10-11 1987

Disk ORD 1497

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90°	5187A 80μ slit
		2	41-2223	11:38:33 41:18:25		5 MIN	NG1
		3			↕	90°	
		4	40452	11:39:46 39:40:55		5 MIN	10.2/
		5			↕	90°	
		6	40-2455	11:40:01 39:28:32		4 MIN	"
		7			↕	90°	
		8	38-2271	11:40:29 37:31:23		3 MIN	"
		9			↕	90°	
		10	140458	11:41:17 39:48:20		10 MIN	11.0/
		11			↕	90°	
		12	40-2459	11:41:49 39:46:27		4 MIN	"
		13			↕	90°	
		14	141228	11:41:52 41:24:03		10 MIN	10.9/
		15			↕	90°	
		16	142242	11:41:52 41:52:20		10 MIN	10.6/
		17			↕	90°	
		18	40-2462	11:43:22 40:20:16		3 MIN	"
		19			↕	90°	
		20	38277	11:43:57 37:53:11		5 MIN	9.9/
		21			↕	90°	
		22	40-2468	11:46:06 39:53:40		5 MIN	"
		23			↕	90°	
		24	139470	11:46:41 39:15:50		9 MIN	10.8/
		25			↕	90°	
		26	141236	11:47:02 40:52:36		10 MIN	10.9/
		27			↑	90°	
		28			↓	90°	
		29	H136202	15:16:45 01:57:11		2 MIN	5.1/ IAU STD STAR
		30			↑	90°	
		31					
		32					

Intensified Reticon

TO CAM 3/11

Spectrograph ECHELLE

Log Sheet

RAW RET 16

Grating 300

Observer GS

Telescope 61" WYETH

Date MAR 10-11 1987

Disk ORO 1498

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80μ slit
	1552-23	2	15:52:02	-23:38:28		4 min	8.8/ CVNS
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
	(2)	5	16:18:23	11:08:13		5 min	9.5/ ASTEROID
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
	G182-7	8	17:23:01	38:04:54		4 min	8.1/100 HALO
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
	G170-38	11	17:25:35	26:49:54		2 min	7.7/20 HALO
		12			↕	90 <sup>s</sup>	
	G170-39	13	17:25:35	27:03:42		2 min	8.7/20 HALO
		14			↕	90 <sup>s</sup>	
	S66051	15	17:24:50	31:07:03		2 min	8.5/30 HALO
		16			↑	90 <sup>s</sup>	
		17			↓	90 <sup>s</sup>	
	SKYDWN	18	4 <sup>HRS</sup> HA	+30		2 min	
		19			↑	90 <sup>s</sup>	
		20			↓	90 <sup>s</sup>	
	SKYDWN	21	0 <sup>HRS</sup> HA	+30		2 min	
		22			↑	90 <sup>s</sup>	
	INCANDS	23				120 min	
	INCANDS	24				120 min	
	INCANDS	25				112	
3/11-12		26			↓	90 <sup>s</sup>	
	SKYEVEN	27	0 MA	+10		2 h	
		28			↑	90 <sup>s</sup>	
		29			↓	90 <sup>s</sup>	
	SKYEVEN	30				2 h	
		31			↑	90 <sup>s</sup>	
		32					

Spectrograph ECHELLE Intensified Reticon TO CAM 3/4  
 Grating 304f Log Sheet RAW/RET 16  
 Telescope SH Date 3/11-12/77 Observer AG  
 Disk ORD 1499

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90 <sup>s</sup>	5197A
		2	H26162	04 06 15	19 29	2 <sup>m</sup>	HALO
		3	TH-AR		↑	90 <sup>s</sup>	
		4	TH-AR		↓	90 <sup>s</sup>	
		5	V8 PER	02 04 13	52 12	5 <sup>m</sup>	CEN
		6	TH-AR		↑	90 <sup>s</sup>	
		7	TH-AR		↓	90 <sup>s</sup>	
		8	G172-50	01 27 13	47 45	5 <sup>2</sup> <sup>m</sup>	HALO
		9	TH-AR		↑	90 <sup>s</sup>	
		10	TH-AR		↓	90 <sup>s</sup>	
		11	04 32 102	04 32 34	02 13	3 <sup>m</sup>	CNVS
		12	TH-AR		↑	90 <sup>s</sup>	
		13	TH-AR		↓	90 <sup>s</sup>	
		14	0505-05	05 05 06	-05 28	3 <sup>m</sup>	
		15	TH-AR		↑	90 <sup>s</sup>	
		16	TH-AR		↓	90 <sup>s</sup>	
		17	H24000	02 37 31	-16 10	9 <sup>m</sup>	HALO
		18	TH-AR		↑	90 <sup>s</sup>	
		19	TH-AR		↓	90 <sup>s</sup>	
		20	1022+11	10 22 36	11 21	6 <sup>m</sup>	CNVS
		21	TH-AR		↑	90 <sup>s</sup>	
		22	TH-AR		↓	90 <sup>s</sup>	
		23	1049-08	10 49 02	-02 50	13 <sup>m</sup>	
		24	TH-AR		↑	90 <sup>s</sup>	
		25	TH-AR		↓	90 <sup>s</sup>	
		26	29819	04 39 31	09 32	4 <sup>m</sup>	ESTAR
		27	TH-AR		↑	90 <sup>s</sup>	
		28	TH-AR		↓	90 <sup>s</sup>	
		29	32306	04 59 33	-05 34	7 <sup>m</sup>	
		30	TH-AR				
		31					
		32					

Spectrograph ECHELLE Intensified Reticon TO CAM 3/11  
 Grating 200 Log Sheet RAW RET 16  
 Telescope 24 Date 3/11-12/77 Observer nan  
 Disk ORO 1500

Change....	File	ID	1950.0 RA	Dec	L/R +/-	Exposure	Comments
		1			↓	90 <sup>s</sup>	5127
		2	23673	05 09 33 11 12		4 <sup>m</sup>	F57-AR
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	34892	05 18 00 -08 05		4 <sup>m</sup>	
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	659-32	12 37 37 21 05		5 <sup>m</sup>	HALO
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	111179	12 44 31 51 54		9 <sup>m</sup>	CIRUS FSTAR
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	92258	10 36 21 -20 19		9 <sup>m</sup>	
		15			↑	90 <sup>s</sup>	
		16			↓	90 <sup>s</sup>	
		17	21409	09 22 39 -17 00		20 <sup>m</sup>	
		18			↑	90 <sup>s</sup>	
		19			↓	90 <sup>s</sup>	
		20	55155	07 10 43 53 40		20 <sup>m</sup>	
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	
		23	60077	07 31 41 52 19		10 <sup>m</sup>	
		24			↑	90 <sup>s</sup>	
		25			↓	90 <sup>s</sup>	
		26	44849	06 23 40 62 45		20 <sup>min</sup>	
		27			↑	90 <sup>s</sup>	
		28			↓	90 <sup>s</sup>	
		29	65601	07:58:42 61:46:16		6 <sup>min</sup>	2.1
		30			↑	90 <sup>s</sup>	
		31					
		32					



Intensified      Reticon

TO CAM 3/14

Spectrograph ECHELLE      Log Sheet

Grating 300R      Observer CS

Telescope 61" WYETH      Date MAR 11-12 1987      Disk ORD 1501

RAW RET 16

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90°	5187A 80μSLIT
		2	75 230	08:47:34	57:42:48	20 MIN	7.6/ F STAR
		3			↑	90°	
		4			↓	90°	
		5	1196 03	13:41:18	34:32:20	20 MIN	8.0/ "
		6			↑	90°	
		7			↓	90°	
		8	5045 246	14:50:17	46:40:54	2 MIN	7.1/ 100 H STAR
		9			↕	90°	
		10	GLS 572	14:59:10	45:37:21	7 MIN	9.1/ 30 "
		11			↑	90°	
		12			↓	90°	
		13	116 879	13:23:47	30:57:35	5 MIN	7.9/ F STAR
		14			↑	90°	
		15			↓	90°	
		16	120702	13:48:02	42:48:13	20 MIN	6.9/ "
		17			↑	90°	(INCREAS CLOS)
		18				120 MIN	
		19				120 MIN	
		20				120 MIN	
		21				120 MIN	
MAR 14/15		22			↓	90°	5187A 80μSLIT
		23	SKYEVIEW	0 HRS HA	+30°	2 MIN	CLEAR
		24			↑	90°	
TH-AR		25	SKYEVIEW	4 HRS W HA	+30°	↓	90°
		26	SKYEVIEW	4 HRS W HA	+30	2 MIN	
		27			↑	90°	
		28			↓	90°	
		29	RX AUR	04:57:55	39:53:17	3 MIN	9.2/ CEPH
		30			↑	90°	
		31					
		32					

TO CAM 3/14

Intensified      Reticon

Spectrograph ECHELLE      Log Sheet      RAW/RET 16

Grating 3000      Observer RJD

Telescope 6"      WYATH      Date MAR 14 15 87      Disk ORO 1502

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A. 80μ SLIT
		2	T MON	06:22:31	07:06:53	2 min	6.6/ CLFH
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	(4)	02:13:17	08:30:13	6 <sup>m</sup>	Asteroid
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	0438+02	04:38:34	02:12:56	12 <sup>m</sup>	CVNS Maccacaro
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	0505-05	05:05:01	-05:28:00	9 <sup>m</sup>	
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	G142-46	01:13:37	51:35:48	16 <sup>m</sup>	Halo Binaries
		15			↑	90 <sup>s</sup>	
		16			↓	90 <sup>s</sup>	
		17	G173-2	01:27:49	52:29:18	6 <sup>m</sup>	
		18			↑	90 <sup>s</sup>	
		19			↓	90 <sup>s</sup>	
		20	H66141	07:59:39.9	02:28:24	3 <sup>m</sup>	IAU Rad Vel Std. NO1.
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	
		23	H74000	08:38:31	-16:09:35	11 <sup>m</sup>	Halo Binaries
		24			↑	90 <sup>s</sup>	
		25			↓	90 <sup>s</sup>	Computer F.P. Crash
		26	1022+11	10:22:37	11:21:26	12 <sup>m</sup>	CVNS Maccacaro 15% Moon
		27			↑	90 <sup>s</sup>	(Full Moon 15° East)
		28			↓	90 <sup>s</sup>	Another F.P. Crash
		29	(5)	08:31:48.5	19:39:51	5 <sup>m</sup>	Asteroid
		30			↑	90 <sup>s</sup>	
		31					
		32					

~~24~~  
25

Spectrograph ECHELLE Intensified Reticon TO CAM 3/14  
 Grating 300L Log Sheet RAW/RET 16  
 Telescope 61" W. J. P. H. Date 3/14-15/87 Observer RJD  
 Disk ORO 1503

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	
	1127-15	11:27:55	-15:02:48			5 <sup>m</sup>	CYNS Meccacar 0. 20% Moon
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
	G123-9	12:08:25	44:16:54			6 <sup>1/2</sup> <sup>m</sup>	Halo Binaries
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
	G164-56	13:13:52	36:09:06			2 <sup>m</sup>	
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
	W12469	13:11:24.2	30:38:39			5 <sup>m</sup>	SAS7
		12			↓	90 <sup>s</sup>	
	W11109	13:13:51.4	31:09:32			7 <sup>m</sup>	
		14			↓	90 <sup>s</sup>	
	W13211	13:09:42.2	30:18:59			5 <sup>1/2</sup> <sup>m</sup>	
		16			↓	90 <sup>s</sup>	
	W13935	13:08:52.9	30:04:31			5 <sup>m</sup>	
		18			↓	90 <sup>s</sup>	
	W14250	13:12:31.2	30:00:49			5 <sup>m</sup>	15% Moonlight
		20			↓	90 <sup>s</sup>	
	W14261	13:12:48.7	30:01:19			5 <sup>1/2</sup> <sup>m</sup>	
		22			↑	90 <sup>s</sup>	
		23			↓	90 <sup>s</sup>	
	G224-81	15:44:07	63:00:48			2 <sup>m</sup>	Halo Binaries
		25			↑	90 <sup>s</sup>	
		26			↓	90 <sup>s</sup>	
	(15)	10:10:07.2	-2:50:27			5 <sup>m</sup>	Asteroid
		28			↑	90 <sup>s</sup>	
		29			↓	90 <sup>s</sup>	
	H92588	10:38:51.5	-1:28:41			2 <sup>m</sup>	IAU Rad Vel Std.
		31			↑	90 <sup>s</sup>	
		32					

Intensified      Reticon

TO CAM 3/14

Spectrograph ECHELLE      Log Sheet      RAW/RET 16

Grating 300 L      Observer RJD

Telescope 61" Wyeth      Date 3/14-15/87      Disk OR01504

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	
		2	1022+11	10:22:37	11:21:26	12 <sup>m</sup>	CVNS Maccacaro
		3			↑	90 <sup>s</sup>	About 10% Moon
		4			↓	90 <sup>s</sup>	
		5	1127-15	11:27:55	-15:02:48	5 <sup>m</sup>	About 10% Moon
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	+182757	13:34:07	18:24:24	3 <sup>m</sup>	Italo Binaries
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	+102495	12:58:49	09:30:42	6 <sup>m</sup>	
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	563020	12:26:38	31:40:00	2 <sup>m</sup>	
		15			↑	90 <sup>s</sup>	
		16			↓	90 <sup>s</sup>	
		17	5138815	12:27:09.6	-3:02:57	2 <sup>m</sup>	
		18			↑	90 <sup>s</sup>	
		19			↓	90 <sup>s</sup>	
		20	34280	11:57:53.8	34:08:01	6 <sup>1/2</sup> <sup>m</sup>	NGP Andersen
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	
		23	131315	11:54:55.4	31:13:37	7 <sup>m</sup>	
		24			↑↓	90 <sup>s</sup>	
		25	134281	12:00:44.2	34:07:23	7 <sup>m</sup>	
		26			↑↓	90 <sup>s</sup>	
		27	33197	12:08:17.6	33:01:37	6 <sup>1/2</sup> <sup>m</sup>	
		28			↑↓	90 <sup>s</sup>	
		29	35320	12:08:11.5	35:00:08	5 <sup>m</sup>	
		30			↑	90 <sup>s</sup>	
		31					
		32					

Intensified      Reticon

TO CAM 3/14

Spectrograph ECHELLE      Log Sheet

Grating 300 l      Observer RJD

Telescope 61" Wyeth      Date 3/14-15/87      Disk ORO 1505

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	ThAr		↓	90 <sup>s</sup>	
	39497	2	12:07:35.9	39:02:26		6 <sup>m</sup>	NGP Andersen
		3	ThAr		↑↓	90 <sup>s</sup>	
	38312	4	12:11:42	38:18:42		5 <sup>m</sup>	
		5	ThAr		↑↓	90 <sup>s</sup>	
	36251	6	12:13:02.7	35:46:02		5 <sup>m</sup>	
		7	ThAr		↑↓	90 <sup>s</sup>	
	36254	8	12:13:18.2	35:31:30		3 <sup>m</sup>	
		9	ThAr		↑↓	90 <sup>s</sup>	
	33-2211	10	12:13:10.4	33:04:10		3 <sup>m</sup>	
		11	ThAr		↑↓	90 <sup>s</sup>	
	32233	12	12:15:22.7	32:16:15		5 <sup>m</sup>	
		13	ThAr		↑↓	90 <sup>s</sup>	
	33221	14	12:16:35.2	33:01:57		3½ <sup>m</sup>	
		15	ThAr		↑↓	90 <sup>s</sup>	
	33-2226	16	12:19:38.3	32:38:31		3 <sup>m</sup>	
		17	ThAr		↑↓	90 <sup>s</sup>	
	33230	18	12:20:42.8	33:13:21		3 <sup>m</sup>	
		19	ThAr		↑↓	90 <sup>s</sup>	
	33231	20	12:21:12.7	33:15:13		9 <sup>m</sup>	
		21	ThAr		↑↓	90 <sup>s</sup>	
	33235	22	12:23:40.8	33:15:18		4 <sup>m</sup>	
		23	ThAr		↑	90 <sup>s</sup>	
		24	ThAr		↓	90 <sup>s</sup>	
	S101380	25	15:05:06	12:38:30		7 <sup>m</sup>	Italo Binaries
		26	ThAr		↑	90 <sup>s</sup>	
		27	ThAr		↓	90 <sup>s</sup>	
	1552-23	28	15:52:02.6	-23:38:29		5 <sup>m</sup>	CVNS Maccauro
		29	ThAr		↑	90 <sup>s</sup>	
		30	ThAr		↓	90 <sup>s</sup>	
	+013070	31	15:20:08	01:26:30		8 <sup>m</sup>	Italo Binaries
		32	ThAr		↑	90 <sup>s</sup>	

Intensified      Reticon      TO CAM 3/15

Spectrograph ECHELLE      Log Sheet      RAW/RET 16

Grating 3002      Observer RJD

Telescope 61" Wyeth      Date 3/14-15/87      Disk ORO 1506

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

                                 RA    Dec    ↑/↓

1		THAr			↓	90 <sup>s</sup>	
2	G135-16	14:01:42	22:46:00			3 <sup>m</sup>	Halo Binaries
3		THAr			↑	90 <sup>s</sup>	
4		THAr			↓	90 <sup>s</sup>	
5	(2)	16:20:14.4	12:08:05			3 <sup>m</sup>	Asteroid
6		THAr			↑	90 <sup>s</sup>	
7		THAr			↓	90 <sup>s</sup>	
8	G153-21	16:00:20	-6:19:00			6 <sup>m</sup>	Halo Binaries
9		THAr			↑	90 <sup>s</sup>	
10		THAr			↓	90 <sup>s</sup>	
11	G169-13	16:27:49	30:48:06			5 <sup>m</sup>	
12		THAr			↑	90 <sup>s</sup>	
13		THAr			↓	90 <sup>s</sup>	
14	(1)	17:58:538	-21:11:49			5 <sup>m</sup>	Asteroid
15		THAr			↑	90 <sup>s</sup>	
16		THAr			↓	90 <sup>s</sup>	
17	S141333	16:41:20	-2:32:18			5 <sup>m</sup>	Halo Binaries
18		THAr			↑	90 <sup>s</sup>	
19		THAr			↓	90 <sup>s</sup>	
20	H146051	16:11:43	-3:34:01			2 <sup>m</sup>	IAU Rad Vel Std.
21		THAr			↑	90 <sup>s</sup>	
22		THAr			↓	90 <sup>s</sup>	
23	SKYDWE					3 <sup>m</sup>	3 <sup>h</sup> E, +15°
24		THAr			↑	90 <sup>s</sup>	
25		THAr			↓	90 <sup>s</sup>	
26	SKYDWNM					2 <sup>m</sup>	Meridian, +30°
27		THAr			↑	90 <sup>s</sup>	
28	INCANDS					120 <sup>MIN</sup>	
29	INCANDS					120 <sup>MIN</sup>	
30	INCANDS					76 <sup>MIN</sup>	
31							
32							

Spectrograph ECHELLE Intensified Reticon TO CAM 3/15  
 Grating 3000 Log Sheet RAW/RET 16  
 Telescope LI WYLTU Date MAR 15-16 1987 Observer RJD  
 Disk ORO 1507

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
		1			↓	90 <sup>s</sup>	5187A 80 μ SLIT	
		2				2 <sup>m</sup>	Meridian, +30°	
		3			↑	90 <sup>s</sup>		
		4			↓	90 <sup>s</sup>		
		5				2 <sup>m</sup>	3" W, +15°	
		6			↑	90 <sup>s</sup>		
		7			↓	90 <sup>s</sup>		
		8	H66141	07:59:399	02:28:24		2 <sup>m</sup>	JAU Rad Vel Std.
		9			↑	90 <sup>s</sup>		
		10			↓	90 <sup>s</sup>		
		11	558455	03:23:53	34:15:18		2 <sup>m</sup>	Halo Binaries
		12			↑	90 <sup>s</sup>		
		13			↓	90 <sup>s</sup>		
		14	G171-58	00:22:26	47:46:12		2 <sup>m</sup>	
		15			↑	90 <sup>s</sup>		
		16			↓	90 <sup>s</sup>		
		17	0438+02	04:38:34	02:12:56		8 <sup>m</sup>	CVNS MaccaCaro
		18			↑	90 <sup>s</sup>		
		19			↓	90 <sup>s</sup>		
		20	0505-05	<del>05:05:00</del>	-5:28:00		9 <sup>m</sup>	
		21			↑	90 <sup>s</sup>		
		22			↓	90 <sup>s</sup>		
		23	G172-61	01:31:18	48:29:06		10 <sup>m</sup>	Halo Binaries. 15% Moon
		24			↑	90 <sup>s</sup>		
		25			↓	90 <sup>s</sup>		
		26	G172-49	01:17:59	51:43:24		2 <sup>m</sup>	
		27			↑	90 <sup>s</sup>		
		28			↓	90 <sup>s</sup>		
		29	G243-63	01:06:30	61:16:48		3 <sup>m</sup>	
		30			↑	90 <sup>s</sup>		
		31						
		32						





TO CAM 3/16

Intensified      Reticon

Spectrograph ECHELLE      Log Sheet      RAW RET 16

Grating 3002      Observer RJD

Telescope 61" Wyeth      Date 3/15-16/87      Disk ORO 1509

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

1	THAR				↓	90 <sup>s</sup>	
2	H92588	10:38:51.5	-1:28:41			2 <sup>m</sup>	IAU Rad Vel Std.
3	THAR				↑	90 <sup>s</sup>	
4	THAR				↓	90 <sup>s</sup>	
5	45-2031	12:22:40.3	45:04:34			2½ <sup>m</sup>	NGP Andersen
6	THAR				↑	90 <sup>s</sup>	
7	47961	12:24:12.9	46:44:26			15 <sup>m</sup>	
8	THAR				↑	90 <sup>s</sup>	
9	245041	12:28:58.7	45:12:31			6 <sup>m</sup>	
10	THAR				↑	90 <sup>s</sup>	
11	45049	12:33:00	44:47:58			5 <sup>m</sup>	
12	THAR				↑	90 <sup>s</sup>	
13	44209	12:33:09.3	43:42:45			9 <sup>m</sup>	
14	THAR				↑	90 <sup>s</sup>	
15	44214	12:38:40.0	43:39:31			3 <sup>m</sup>	
16	THAR				↑	90 <sup>s</sup>	
17	THAR				↓	90 <sup>s</sup>	
18	42-2341	12:46:29.3	41:50:32			2 <sup>m</sup>	
19	THAR				↑	90 <sup>s</sup>	
20	THAR				↓	90 <sup>s</sup>	
21	39572	12:49:39.8	38:49:04			4 <sup>m</sup>	
22	THAR				↑	90 <sup>s</sup>	
23	<del>THAR</del>	<del>12:52:48.8</del>	<del>44:22:56</del>			120 <sup>m</sup>	Clouds
24	Incand					120 <sup>m</sup>	Clouded Out
MAR 16/17	25	TH-AR			↓	90 <sup>s</sup>	5187A
26	SKYELE17	0 11.4	+30			2 <sup>m</sup>	
27	TH-AR				↑	90 <sup>s</sup>	
28	TH-AR				↑	90 <sup>s</sup>	6563A
29	<del>05 52 28</del>	05 52 28	07 24			2½ <sup>m</sup>	BALUNAS
30	2 ORI TH-AR				↑	90 <sup>s</sup>	
31							
32							

Spectrograph ECHELLE Intensified Reticon TO CAM 3/17  
 Grating \_\_\_\_\_ Log Sheet RAW/RET 16  
 Telescope SCH Date 2/16-17/77 Observer \_\_\_\_\_  
 Disk ORO 1510

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

Change....	File	ID	1950.0 RA	Dec	L/R	Exposure	Comments
					↑/↓		
1					↓	90 S	5127A
2		TH-AR				2h	
3		T MON	06 22 31	07 07		90 S	CEP II
4		TH-AR			↓	90 S	
5		SV MON	06 12 45	06 20		4 1/2 h	
6		TH-AR			↑	90 S	
7		TH-AR			↓	90 S	
8		VX PER	02 04 12	52 12		12 h	CEST CLDS
9		TH-AR			↑	90 S	
10		TH-AR			↓	90 S	
11		1002411	10 22 39	11 21		7 MIN	FEW CLDS CEP II
12		TH-AR			↑	90 S	
13		TH-AR			↓	90 S	
14		114301	13:02:05	06:14:41		8 MIN	8.1/ F STARS
15		TH-AR			↑	90 S	
16		TH-AR			↓	90 S	
17		119731	13:42:12	27:35:07		17 MIN	8.2/
18		TH-AR			↑	90 S	
19		TH-AR			↓	90 S	
20		128901	14:36:07	52:14:46		10 MIN	7.9/
21		TH-AR			↑	90 S	
22		129308	14:38:32	48:55:19		8 MIN	8.1/
23		TH-AR			↑	90 S	
24		130667	14:46:12	46:39:50		16 MIN	8.0/
25		TH-AR			↑	90 S	
26		TH-AR			↓	90 S	
27		147428	16:18:34	40:22:33		11 MIN	7.9/ (INCREASING CLDS)
28		TH-AR			↑	90 S	
29		INCLANDS				120 MIN	
30		INCLANDS				120 MIN	
31		INCLANDS				120 MIN	
32							

Intensified Reticon

TO CAM 3/18

Spectrograph ECHELLE

Log Sheet

RAW/RET 16

Grating 5000

Observer GS

Telescope 6" WYETH

Date MAR 17-18 1987

Disk ORD 1511

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90 <sup>s</sup>	5187A. 80 μ slit
		2	39519	12:22:21 38:35:40		3 <sup>MIN</sup>	8.0/ NGP
		3	TH-AR		↕	90 <sup>s</sup>	
		4	38333	12:23:02 37:40:41		3 <sup>MIN</sup>	8.7/
		5	TH-AR		↕	90 <sup>s</sup>	
		6	38-2342	12:26:31 37:52:17		5 <sup>MIN</sup>	
		7	TH-AR		↕	90 <sup>s</sup>	
		8	36-2270	12:26:47 35:48:32		3 <sup>MIN</sup>	RD/ (CLDS)
		9	TH-AR		↕	90 <sup>s</sup>	
		10	35-2343	12:26:47 34:58:45		2 <sup>MIN</sup>	
		11	TH-AR		↕	90 <sup>s</sup>	
		12	33-2244	12:29:02 33:17:33		6 <sup>MIN</sup>	
		13	TH-AR		↕	90 <sup>s</sup>	
		14	36-2279	12:30:07 36:06:25		3 <sup>MIN</sup>	(CLDS)
		15	TH-AR		↑	90 <sup>s</sup>	
	INCANDS	16	<del>TH-AR</del>		↕	120 <sup>MIN</sup>	
	INCANDS	17	<del>37-2289</del>	<del>12:30:04 37:19:17</del>		120 <sup>MIN</sup>	SEVERAL CLD HOLDS
	INCANDS	18				120 <sup>MIN</sup>	
	INCANDS	19				120 <sup>MIN</sup>	
3/18-19		20	TH-AR		↓	90 <sup>s</sup>	
		21	SKYEVIEW	0 <sup>HA</sup> +10		2 <sup>h</sup>	
		22	TH-AR		↑	90 <sup>s</sup>	
		23	TH-AR		↓	90 <sup>s</sup>	
		24	SKYEVIEW	4 <sup>W</sup> +10		2 <sup>h</sup>	
		25	TH-AR		↑	90 <sup>s</sup>	
		26	TH-AR		↓	90 <sup>s</sup>	
		27	H26162	04 06 15 19 28		2 <sup>h</sup>	IAN STAND
		28	TH-AR		↑	90 <sup>s</sup>	
		29	TH-AR		↓	90 <sup>s</sup>	
		30	VX PER	02 04 17 58 12		5 <sup>h</sup>	CEPH
		31	TH-AR		↑	90 <sup>s</sup>	
		32					

Spectrograph ECHELLE Intensified Reticon TO CAM 3/18  
 Grating 200A Log Sheet RAW/RET 16  
 Telescope SH Date 3/12-19/87 Observer Jim  
 Disk ORO 1512

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5197
0432+02		2	043840	04 37 39	02 13	5 <sup>m</sup>	CUMS
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	050505	05 05 01	-05 27	4 1/2 <sup>m</sup>	
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	1022+11	10 22 37	11 21	4 1/2 <sup>m</sup>	
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	1049-08	10 49 27	-02 50	16 <sup>m</sup>	
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	H74000	08 38 31	-1610	7 <sup>m</sup>	HAKOS
		15			↑	90 <sup>s</sup>	
		16			↓	90 <sup>s</sup>	
		17	GL273	07 24 43	05 23	5 1/2 <sup>m</sup>	NEARBY + UPGRADE
		18			↑	90 <sup>s</sup>	
		19			↑	90 <sup>s</sup>	
		20	GL388	10 16 54	20 07	6 <sup>m</sup>	NEARBY
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	
		23	GL411	11 00 37	36 18	3 1/2 <sup>m</sup>	
		24			↑	90 <sup>s</sup>	
		25			↓	90 <sup>s</sup>	NGP
		26	26-2226	11 29 22	26 18	4 <sup>m</sup>	
		27			↓	90 <sup>s</sup>	
		28	128018	11 32 34	27 46	6 <sup>m</sup>	
		29			↓	90 <sup>s</sup>	
		30	29184	11 33 12	29 08	5 <sup>m</sup>	
		31			↓	90 <sup>s</sup>	
		32	27-2190	11 29 47	29 20	2 <sup>m</sup>	
		33			↑	90 <sup>s</sup>	



Intensified Reticon

TO CAM 3/19

Spectrograph ECHELLE

Log Sheet

RAW RET 16

Grating 3008

Observer GS

Telescope 6" WYETH

Date MAR 18-19 1987

Disk ORO 1514

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80 μ SLIT
		2				3 <sup>MIN</sup>	9.4/ ASTEROID
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	G139-6	16:59:05 13:53:48		3 <sup>MIN</sup>	10.1/15 HALO
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	G139-11	17:03:59 12:40:18		2 <sup>MIN</sup>	8.5/15
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	G141-47	18:50:55 10:33:48		12 <sup>MIN</sup>	10.5/30 (INCREAS. CLDS)
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	H182572	19:22:35 11:50:09		2 <sup>MIN</sup>	5.2/ IAU STD STAR
		15			↑	90 <sup>s</sup>	
		16			↓	90 <sup>s</sup>	
		17	179423	19:09:33 18:00:11		6 <sup>MIN</sup>	7.6 (OVERLAST) F STAR AT END
		18			↑	90 <sup>s</sup>	
		19			↓	90 <sup>s</sup>	
		20	SKYDWN G	4 <sup>HRS</sup> HA +30°		2 1/2 <sup>MIN</sup>	MOSTLY CLDY
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	
		23	SKYDWN M	0 <sup>HRS</sup> HA +30°		2 <sup>MIN</sup>	
		24			↑	90 <sup>s</sup>	
		25				120 <sup>MIN</sup>	
		26				120 <sup>M</sup>	
		27				120 <sup>M</sup>	
3/19-20		28			↓	90 <sup>s</sup>	
		29	94729	10 53 32 -01 21		5 <sup>MIN</sup>	F STARS
		30			↑	90 <sup>s</sup>	
		31					
		32					



Intensified      Reticon  
TO CAM 3/23

Spectrograph ECHELLE      Log Sheet      RAW/RET 16

Grating 3002      Observer RJD

Telescope 61" Wyeth      Date 3/20-21/87      Disk ORO 1516

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	H66141	07:59:39.9	02:28:24		2" IAU Rad Vel Standard
		3			↑	90s	
		4			↓	90s	
		5	G15 319	08:40:02	09:44:18		13" M Stars
		6			↑	90s	Clouded Out
		7	INCANDS			120	
		8	INCANDS			120	
3/21-22/87		9	Th-Ar		↓	90s	5187Å - Rain + Snow -
		10	SKY-EVE	4h E	+10°	2m	-7500 cts-
		11	Th-Ar		↑	90s	
		12	Th-Ar		↓	30s	
		13	SKY-EVE	4h E	+10°	2m	30sec Th-Ar; 1500 cts Th-Ar
		14	Th-Ar		↑	30s	~6000 cts
		15	Th-Ar		↓	30s	
		16	SKY-EVE	4h E	+10°	2m	30sec Th-Ar; 3000 cts Th-Ar
		17	Th-Ar		↑	30s	~4000 cts
		18	Th-Ar		↓	90s	
		19	SKY-EVE	φ hrs	-15°	2m	
		20	Th-Ar		↑	90s	
		21	Th-Ar		↓	30s	
		22	SKY-EVE	φ hrs	-15°	2m	30sec Th-Ar; 3000 cts Th-Ar
		23	Th-Ar		↑	30s	~2500 cts
		24	Th-Ar		↓	90s	
		25	SKY-EVE	4h W	+10°	2.5m	200-150 cts
		26	Th-Ar		↑	90s	
		27	INCANDS			120MIN	
		28	INCANDS			"	
		29	INCANDS			"	
		30	INCANDS			"	
		31	INCANDS			"	
		32					



Spectrograph ECHELLE Intensified Reticon TO CAM 3/23  
 Grating 300P Log Sheet RAW/RET 16  
 Telescope 6" WYETI Date MAR 23-24 1987 Observer \_\_\_\_\_  
 Disk ORO 1517

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90 <sup>s</sup>	5187A 80 μ slit
		2	SKYEVEN	0 <sup>h</sup> 14 <sup>m</sup>		2 <sup>m</sup>	
		3	TH-AR		↑	90 <sup>s</sup>	
		4	TH-AR		↓	90 <sup>s</sup>	
		5	SKYEVEN	5 <sup>h</sup> 14 <sup>m</sup>		2 <sup>m</sup>	
		6	TH-AR		↑	90 <sup>s</sup>	
		7	TH-AR		↓	90 <sup>s</sup>	6563A
		8	λ ORI	5 52 28	07 24	4 <sup>m</sup>	ND=2.0 FILTER H2 PROF
		9	TH-AR		↑	90 <sup>s</sup>	SALLY
		10	TH-AR		↓	90 <sup>s</sup>	
		11	λ ORI	23 35 06	46 11	2 <sup>m</sup>	
		12	TH-AR		↑	90 <sup>s</sup>	
		13	TH-AR		↓	90 <sup>s</sup>	5189A
		14	S076206	03 45 07	24 50	2 <sup>1/2</sup>	MSTAR S
		15	TH-AR		↓	90 <sup>s</sup>	
		16	GLS 154	03 43 19	26 04	16 <sup>m</sup>	
		17	TH-AR		↑	90 <sup>s</sup>	
		18	TH-AR		↓	90 <sup>s</sup>	
		19	S13 3424	06 31 51	-03 02	2 <sup>m</sup>	
		20	TH-AR		↑	90 <sup>s</sup>	
		21	GLS 234	06 26 52	-02 47	18 <sup>m</sup>	
		22	TH-AR		↑	90 <sup>s</sup>	
		23	TH-AR		↓	90 <sup>s</sup>	
		24	T MON	06 22 31	07 07	4 <sup>m</sup>	CEPH
		25	TH-AR		↑	90 <sup>s</sup>	
		26	TH-AR		↓	90 <sup>s</sup>	
		27	H74000	08 38 31	-16 10	10 <sup>m</sup>	HALO
		28	TH-AR		↑	90 <sup>s</sup>	
		29	TH-AR		↓	90 <sup>s</sup>	
		30	96363	11 03 55	00 10	4 <sup>m</sup>	FSTAR
		31	TH-AR		↑	90 <sup>s</sup>	
		32					

Spectrograph ECHELLE Intensified Reticon TO CAM 0/23  
 Grating 300L Log Sheet RAW/RET 17  
 Telescope S14 Date 3/23-4/87 Observer DM  
 Disk ORO 1518

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187.A
		2	95 938	11 01 26 -08 49		10 <sup>m</sup>	ESTAR
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	85626	10 59 36 -15 24		10 <sup>m</sup>	
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	77710	10 04 46 -21 01		3 1/2 <sup>m</sup>	
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	100043	11 27 07 -12 46		10 <sup>m</sup>	
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	100604	11 32 02 -28 01		10 <sup>m</sup>	
		15			↑↓	90 <sup>s</sup>	
		16	100350	11 30 11 -28 20		14 <sup>m</sup>	
		17			↑	90 <sup>s</sup>	
		18			↓	90 <sup>s</sup>	NCP
		19	31-2281	11 33 28 30 59		3 1/2 <sup>m</sup>	
		20			↑↓	90 <sup>s</sup>	
		21	32-2167	11 34 38 31 39		4 1/2 <sup>m</sup>	
		22			↑	90 <sup>s</sup>	
		23			↓	90 <sup>s</sup>	
		24	126238	11 34 49 25 29		8 <sup>m</sup>	
		25			↑↓	90 <sup>s</sup>	
		26	23369	11 36 16 23 04		5 1/2 <sup>m</sup>	
		27			↑↓	90 <sup>s</sup>	
		28	124384	11 40 04 23 50		9 <sup>m</sup>	
		29			↑↓	90 <sup>s</sup>	
		30	23-2370	11 37 11 23 22		6 <sup>m</sup>	
		31			↑↓	90 <sup>s</sup>	
		32	21-2345	11 40 15 21 22		2 <sup>m</sup>	
		33			↑	90 <sup>s</sup>	

Spectrograph ECHELLE

Intensified Reticon

TO CAM 3/23Grating 3000

Log Sheet

RAW RET 17Telescope S14Date 2/23-24/97Observer GSDisk DR0 1519

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90 <sup>s</sup>	5187A
		2	223977	11:41:56	22:09	6 <sup>MIN</sup>	NGP
		3	TH-AR		↑	90 <sup>s</sup>	
		4	26251	11:42:04	25:48:56	5 <sup>MIN</sup>	10.3/
		5	TH-AR		↑	90 <sup>s</sup>	
		6	20-2650	11:44:54	20:18:39	3 <sup>MIN</sup>	
		7	TH-AR		↓	90 <sup>s</sup>	
		8	121360	11:45:39	21:08:43	9 <sup>MIN</sup>	10.6/
		9	TH-AR		↑	90 <sup>s</sup>	
		10	22406	11:47:09	21:44:31	15 <sup>MIN</sup>	10.9/
		11	TH-AR		↑	90 <sup>s</sup>	
		12	24403	11:50:18	24:03:33	6 <sup>MIN</sup>	9.8/
		13	TH-AR		↑	90 <sup>s</sup>	
		14	TH-AR		↓	90 <sup>s</sup>	
		15	GLS 338A	09:10:52	52:53:43	3 <sup>MIN</sup>	7.6/100 M STARS
		16	TH-AR		↑	90 <sup>s</sup>	
		17	GLS 338B	09:10:53	52:53:46	3 1/2 <sup>MIN</sup>	7.7/100
		18	TH-AR		↑	90 <sup>s</sup>	
		19	TH-AR		↓	90 <sup>s</sup>	
		20	GL 380	10:08:19	49:42:30	2 1/2 <sup>MIN</sup>	6.6/ NEARBY
		21	TH-AR		↑	90 <sup>s</sup>	
		22	TH-AR		↓	90 <sup>s</sup>	
		23	U223	11:45:09	01:06:00	15 <sup>MIN</sup>	11.1/ ALSO NEARBY SPACE MOTION
		24	TH-AR		↑	90 <sup>s</sup>	
		25	TH-AR		↓	90 <sup>s</sup>	
		26	TXC VAN	12:42:18	37:02:15	3 1/2 <sup>MIN</sup>	9.0/ SYMBIOTEK
		27	TH-AR		↑	90 <sup>s</sup>	
		28	TH-AR		↓	90 <sup>s</sup>	
		29	GLS-27	13:22:10	15:07:00	11 <sup>MIN</sup>	11.1/20 HALOS
		30	TH-AR		↑	90 <sup>s</sup>	
		31					
		32					

Intensified Reticon

TO CAM 3/23

Spectrograph ECHELLE

Log Sheet

RAW/RET 17

Grating 3000

Observer GS

Telescope 61"

WYATH

Date MAR 23-24 1987

Disk ORO 1520

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80 μSLIT
		2	5101380	15:05:06 17:38:30		6 1/2 min	9.2/50 HALOS
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	(2)	16:22:56 14:26:07		3 min	9.4/ ASTEROID
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	H136202	15:16:45 01:57:11		2 min	5.1/ 1 AU STND STAR
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	5101758	15:47:12 12:42:34		2 min	6.7/100 H STAR
		12			↕	90 <sup>s</sup>	
		13	GLS 600	15:49:45 11:01:25		4 min	9.4/30
		14			↑	90 <sup>s</sup>	
		15			↓	90 <sup>s</sup>	
		16	H144515	16:03:32 10:49:11		3 1/2 min	8.5/70
		17			↑	90 <sup>s</sup>	
		18			↓	90 <sup>s</sup>	
		19	5065595	16:48:50 32:38:14		2 min	6.3/100
		20			↕	90 <sup>s</sup>	
		21	GLS 638	16:43:14 33:35:54		2 min	8.1/50
		22			↑	90 <sup>s</sup>	
		23			↓	90 <sup>s</sup>	
		24	GL 623	16:22:39 48:28:29		7 min	10.3/50 GIESE
		25			↑	90 <sup>s</sup>	
		26			↓	90 <sup>s</sup>	
		27	G 202-28	15:58:22 45:52:48		6 min	11.0/15 HALO
		28			↑	90 <sup>s</sup>	
		29			↓	90 <sup>s</sup>	
		30	CH C46	19:23:14 50:08:31		5 min	7.0/ SYMBIOTIC
		31			↑	90 <sup>s</sup>	
		32					

Intensified Reticon

TO CAM 3/24

Spectrograph ECHELLE

Log Sheet

RAW RET 17

Grating 300

Observer GS

Telescope 6" WYETH

Date MAR 23-24 1987

Disk 0001521

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90 <sup>s</sup>	5187A 80μ SLIT
	1016 C1G	2	19:55:20	39:41:30		15 MIN	10.0/ SYMBIOTIC
		3	TH-AR		↑	90 <sup>s</sup>	
		4	TH-AR		↓	90 <sup>s</sup>	
	CI-CYG	5	19:48:21	35:33:21		8 MIN	11.0/
		6	TH-AR		↑	90 <sup>s</sup>	
		7	TH-AR		↓	90 <sup>s</sup>	
	HM-SGC	8	19:39:41	16:37:36		8 MIN	11.0/
		9	TH-AR		↑	90 <sup>s</sup>	
		10	TH-AR		↓	90 <sup>s</sup>	
	GLS820B	11	21:04:54	38:32:06		2 MIN	60/100 LOWER STAR 4 STAR
		12	TH-AR		↑	90 <sup>s</sup>	
	GLS820A	13	21:04:54	38:32:06		2 MIN	UPPER STAR
		14	TH-AR		↑	90 <sup>s</sup>	
		15	TH-AR		↓	90 <sup>s</sup>	
	SKYDUNE	16	4 HRS CHA	+40°		2 MIN	
		17	TH-AR		↑	90 <sup>s</sup>	
		18	TH-AR		↓	90 <sup>s</sup>	
	SKYDWNM	19	0 HR HA	+40°		2 MIN	
		20	TH-AR		↑	90 <sup>s</sup>	
	INCANDS	21				120 MIN	
	INCAMM	22				120 MIN	
MAR 24-25		23	TH-AR		↓	90 <sup>s</sup>	5187A 80μ SLIT
	SKYEVEN	24	0 h	+10		2 h	
		25	TH-AR		↑	90 <sup>s</sup>	
		26	TH-AR		↓	90 <sup>s</sup>	
	SKYEVEN	27	4 h	+10		2 h	
		28	TH-AR		↑	90 <sup>s</sup>	
		29	TH-AR		↓	90 <sup>s</sup>	
	T MON	30	06 22 31	07 07		2 h	ZPH
		31	TH-AR		↑	90 <sup>s</sup>	
		32					

Spectrograph ECHELLE Intensified Reticon TO CAM 3/24  
 Grating 300L Log Sheet RAW/RET 17  
 Telescope SH Date 3/24-5/87 Observer DR  
 Disk ORD 1522

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	
		2	RS BOU 14 31 27	31 59		10 <sup>m</sup>	RA L/R
		3			↑	90 <sup>s</sup>	
		4	RS BOU "	"		10 <sup>m</sup>	
		5			↑	90 <sup>s</sup>	
		6	RS BOU "	"		10 <sup>m</sup>	
		7			↑	90 <sup>s</sup>	
		8	RS BOU "	"		10 <sup>m</sup>	
		9			↑	90 <sup>s</sup>	
		10	RS BOU "	"		9 <sup>m</sup>	
		11			↑	90 <sup>s</sup>	
		12	RS BOU "	"		9 <sup>½</sup>	
		13			↑	90 <sup>s</sup>	
		14	RS BOU "	"		9 <sup>½</sup> <del>10<sup>s</sup></del>	
		15			↑	90 <sup>s</sup>	
		16	RS BOU "	"		8 <sup>½</sup>	
		17			↑	90 <sup>s</sup>	
		18	RS BOU "	"		8 <sup>m</sup>	
		19			↑	90 <sup>s</sup>	
		20			↓	90 <sup>s</sup>	
		21	RS BOU "	"		7 <sup>m</sup>	
		22			↑	90 <sup>s</sup>	
		23	RS BOU "	"		7 <sup>m</sup>	
		24			↑	90 <sup>s</sup>	
		25	RS BOU "	"		7 <sup>m</sup>	
		26			↑	90 <sup>s</sup>	
		27	RS BOU "	"		5 <sup>m</sup>	
		28			↑	90 <sup>s</sup>	
		29	RS BOU "	"		6 <sup>m</sup>	
		30			↑	90 <sup>s</sup>	
		31	RS BOU "	"		6 <sup>m</sup>	
		32			↑	90 <sup>s</sup>	

Intensified Reticon

TO CAM 3/24

Spectrograph ECHELLE

Log Sheet

RAW RET 17

Grating 3000

Observer AK

Telescope 6" WYETH

Date 3/24-25/87

Disk ORD 1523

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

Change....	File	ID	1950.0 RA	Dec	L/R	Exposure	Comments
1	RS BOU		14 31 28	31 59		6 <sup>min</sup>	SIRTA 80% slit
2	TH-AR				TL	90 <sup>s</sup>	
3	BS BOU	"	"	"		6 <sup>min</sup>	
4	TH-AR				TL	90 <sup>s</sup>	
5	RS BOU	"	"	"		6 <sup>min</sup>	
6	TH-AR				TL	90 <sup>s</sup>	
7	RS BOU	"	"	"		6 <sup>min</sup>	
8	TH-AR				TL	90 <sup>s</sup>	
9	RS BOU	"	"	"		6 <sup>min</sup>	
10	TH-AR				↑	90 <sup>s</sup>	
11	RS BOU	"	"	"		6 <sup>min</sup>	
12	TH-AR				↑	90 <sup>s</sup>	
13	RS BOU	"	"	"		6 <sup>min</sup>	
14	TH-AR				↑	90 <sup>s</sup>	
15	RS BOU	"	"	"		7 <sup>min</sup>	
16	TH-AR				↑	90 <sup>s</sup>	
17	RS BOU	"	"	"		8 <sup>min</sup>	(SEE 4-6 SEC)
18	TH-AR				↑	90 <sup>s</sup>	
19	RS BOU	"	"	"		6 <sup>min</sup>	
20	TH-AR				↑	90 <sup>s</sup>	
21	RS BOU	"	"	"		7 <sup>min</sup>	
22	TH-AR				↑	90 <sup>s</sup>	
23	RS BOU	"	"	"		7 <sup>min</sup>	
24	TH-AR				↑	90 <sup>s</sup>	
25	RS-BOU	"	"	"		7 <sup>min</sup>	
26	TH-AR				↑	90 <sup>s</sup>	
27	RS BOU	"	"	"		7 <sup>min</sup>	
28	TH-AR				↑	90 <sup>s</sup>	
29	RS BOU	"	"	"		7 <sup>min</sup>	
30	TH-AR				↑	90 <sup>s</sup>	
31	RS BOU	"	"	"		7 <sup>min</sup>	
32	TH-AR				↑	90 <sup>s</sup>	

Intensified Reticon

TO CAM 3/24

Spectrograph ECHELLE

Log Sheet

RAW/RET 17

Grating 300l

Observer CS

Telescope 61" WYTH

Date MAR 24-25 1987

Disk ORO 1524

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90°	5187A 80μ SLIT
	RS B00	2	14:31:28	31:59		7 MIN	ADJUST POSITION MIC. RRLYRA
	TH-AR	3			↑	90°	
	RS B00	4	"	"		6 MIN	
	TH-AR	5			↑	90°	
	RS B00	6	"	"		6 MIN	
	TH-AR	7			↑	90°	
	RS B00	8	"	"		7 MIN	6 SEC SEC.
	TH-AR	9			↑	90°	
	RS B00	10	"	"		7 MIN	
	TH-AR	11			↑	90°	
	RS B00	12	"	"		8 MIN	
	TH-AR	13			↑	90°	
	RS B00	14	"	"		10 MIN	
	TH-AR	15			↑	90°	
	RS B00	16	"	"		10 MIN	
	TH-AR	17			↑	90°	
	RS B00	18	"	"		8 MIN	
	TH-AR	19			↑	90°	
	RS B00	20	"	"		8 MIN	
	TH-AR	21			↑	90°	
	RS B00	22	"	"		8 MIN	
	TH-AR	23			↑	90°	
	RS B00	24	"	"		8 MIN	
	TH-AR	25			↑	90°	
	RS B00	26	"	"		8 MIN	
	TH-AR	27			↑	90°	
	RS B00	28	"	"		8 MIN	
	TH-AR	29			↑	90°	
	RS B00	30	"	"		8 MIN	4 SEC SEC
	TH-AR	31			↑	90°	
	RS B00	32	"	"		8 MIN	
	TH-AR	33			↑	90°	



Intensified      Reticon

Spectrograph ECHELLE TO CAM

Grating 300 Log Sheet RAW RET 17

Telescope 6" WYETH Observer GS

Date MAR 24-25 1987 Disk ORO 1525

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A. 80 μSLIT
		2	14:31:28	31:59		8 MIN	POSITION ADJUSTED RR LYRA
		3			↑	90 <sup>s</sup>	
		4	"	"		8 MIN	
		5			↑	90 <sup>s</sup>	
		6	"	"		8 MIN	
		7			↑	90 <sup>s</sup>	
		8	"	"		8 MIN	
		9			↑	90 <sup>s</sup>	
		10	"	"		7 MIN	
		11			↑	90 <sup>s</sup>	
		12	"	"		6 MIN	
		13			↑	90 <sup>s</sup>	
		14			↓	90 <sup>s</sup>	
		15	H182572	19:22:35 11:50:09		2 MIN	52/ (3ND FILTER) 1AUSTND STAR
		16			↑	90 <sup>s</sup>	
		17			↓	90 <sup>s</sup>	
		18	SKYDUNE	4 HRS EHA +35		2 MIN	
		19			↑	90 <sup>s</sup>	
		20			↓	90 <sup>s</sup>	
		21	SKYDUNE	0 HRS HA +35		2 MIN	
		22			↑	90 <sup>s</sup>	
		23	INCANDS			120 MIN	
		24	INCANDS				
		25					
		26					
		27					
		28					
		29					
		30					
		31					
		32					