

3/1/88

Intensified Reticon TO CAMI  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 300L Observer RJD & JMZ  
 Telescope 61" Wyeth Date 2/27-3/1/88 Disk ORO 2018

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	Clear 25187A
	GL699	17:55:23	04:33:18			6 <sup>m</sup>	36/45 9.54/40
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	
	592-16	19:35:19	04:11:54			6 <sup>m</sup>	15 Halofin 10.18/30
		6			↑	60 <sup>s</sup>	
		7			↓	60 <sup>s</sup>	
	X CYG	20:41:27	35:24:24			2.5 <sup>m</sup>	38 Cepheids 6.4/2100
		9			↑	60 <sup>s</sup>	
		10			↓	60 <sup>s</sup>	
	GL628	16:27:31	-12:32:18			5 <sup>m</sup>	36/45 (5% Dawn) 10.12/40
		12			↑	60 <sup>s</sup>	
		13			↓	60 <sup>s</sup>	
	H146051	16:11:43	-3:34:01			2 <sup>m</sup>	17 IAU 1.0ND 2.7/1500
		15			↑	60 <sup>s</sup>	
		16			↓	60 <sup>s</sup>	
	SKYDOWN					3 <sup>m</sup>	16 SKY 1/1400+
		18			↑	60 <sup>s</sup>	
		19			↓	60 <sup>s</sup>	
	SKYDOWN					2 <sup>m</sup>	16 SKY 1/2000+
		21			↑	60 <sup>s</sup>	
		22				120 <sup>m</sup>	
		23				120 <sup>m</sup>	
3/1-2/88		24			↓	60s	clear 25187A
	SKYEVEN	meridian	+30°			2m	16 sky
		26			↑	60s	
		27			↓	60s	
	SKYEVEN	4h west	+30°			2m	16 sky
		29			↑	60s	
		30			↓	60s	
	HB779	1:23:54	-00:29:39				17 IAU standards
		32			↑	60s	

3/1/88

Intensified      Reticon  
 Spectrograph ECHELLE      Log Sheet      TO CAM  
 Grating 300f      Observer JMZ  
 Telescope 6.1" WYETH      Date 3/1-2/88      Disk OPC 2019

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	clear 251848
	GG-26		3:36:43	18:13:36		3M	9.0/50 HALOGEN (78)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G84-39		5:10:06	4:15:48		8M	10.58/15 HALOGEN (47)
		ThAr			↑	60s	
		ThAr			↓	60s	
	DL CAS		00:27:11	59:56:12		7M	10.6 nebulas (1)
		ThAr			↓	60s	
	Z851		60:29:33	58:03:27		7.5M	7.02/400 FSTARS (11)
		ThAr			↑	60s	
		ThAr			↓	60s	
	S915		00:58:40	63:20:14		6.5M	8.19/150 FSTARS (27)
		ThAr			↑	60s	
		ThAr			↓	60s	
	8210		01:23:45	43:25:55		9M	6.93/500 FSTARS (45)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G172-49		1:17:59	51:43:24		2M	7.62/20 HALOS (97)
		ThAr			↑	60s	
		ThAr			↓	60s	
	10108		1:37:04	54:35:36		20M	8.19/400 FSTARS (47)
		ThAr			↑	60s	
		ThAr			↓	60s	
	10629		1:41:15	39:42:22		20M	8.1/300 FSTARS (48)
		ThAr			↑	60s	← LARGE H.A.
		ThAr			↓	60s	
	114064		21:14:34	42:21:28		6.5M	7.82/100 FSTARS (65)
		ThAr			↑	60s	
		ThAr			↓	60s	
	15579		2:28:37	46:21:58		13.5M	7.00/400 FSTARS (72)
		ThAr			↑	60s	

3/1/88

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300f Log Sheet RAWRET  
 Telescope 61" WYETH Date 3/1-2/1988 Observer JMZ  
 Disk ORO 2020

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	ThAr		↓	60s	λ5187A CLEAR
		2	19923A	3:10:20	38:57:35		15m 8.19/100 FSTARS (84)
		3	ThAr		↑	60s	
		4	19923B	3:10:20	38:57:35		17m 8.19/100 FSTARS (84)
		5	ThAr		↑	60s	
		6	ThAr		↓	60s	
		7	21844	3:29:48	47:46:56		2m 6.68/100 FSTARS (94)
		8	ThAr		↑	60s	
		9	ThAr		↓	60s	
		10	31855	4:57:41	45:48:59		5.25m 7.42/150 FSTARS (129)
		11	ThAr		↑	60s	
		12	ThAr		↓	60s	
		13	(10)	10:15:39	5:56:32		5m 17 Asteroids
		14	ThAr		↑	60s	
		15	ThAr		↓	60s	
		16	88972	10:13:10	-10:56:12		6m 7.96/100 FSTARS (271)
		17	ThAr		↑	60s	
		18	ThAr		↓	60s	
		19	92748	10:40:11	16:36:40		4m 7.47/40 FSTARS (288)
		20	ThAr		↑	60s	
		21	ThAr		↓	60s	
		22	94120	10:49:23	16:21:34		6m 7.89/100 FSTARS (295)
		23	ThAr		↑	60s	
		24	ThAr		↓	60s	
		25	92577	10:38:38	-14:05:48		4m 8.09/100 FSTARS (286)
		26	ThAr		↑	60s	
		27	ThAr		↓	60s	
		28	G195-30	09:26:52	52:22:24		2.5m 9.8/15 HALOFIN (236)
		29	ThAr		↑	60s	
		30	ThAr		↓	60s	
		31	11085217	9:47:54	4:34:42		3m 6.2/200 M STARS (28)
		32	ThAr		↑	60s	

3/1/88

TO CAM

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet RAW/RET  
 Grating 300f Observer JME  
 Telescope 61" WYETH Date 3/1-2/1988 Disk ORO 2021

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	2.5187 CLEAR
	H100018		11:28:07	41:33:50		3.25m	7.0/200 M STARS (37)
		ThAr			↑	60s	
		ThAr			↓	60s	
	106158		12:10:22	-12:30:40		7m	7.89/120 F STARS (331)
		ThAr			↑	60s	
		ThAr			↓	60s	
	107040		12:16:00	-14:07:40		8m	7.6/200 F STARS (332)
		ThAr			↑	60s	
		ThAr			↓	60s	
	LAM-vir		14:16:24	-13:08:31		2.25m	4.6/700 M STARS (47)
		ThAr			↑	60s	
		ThAr			↓	60s	
	116462		13:21:18	-10:36:35		7.25m	8.1/150 F STARS (362)
		ThAr			↑	60s	
		ThAr			↓	60s	
	(14)		12:04:51	17:35:39		5m	9.84 ASTEROID
		ThAr			↑	60s	
		ThAr			↓	60s	
	GLs 508		13:17:36	48:02:24		4.5m	9.0/50 M STARS (42)
		ThAr			↑	60s	
		ThAr			↓	60s	
	147428		16:18:35	40:22:34		4m	7.89/100 F STARS (440)
		ThAr			↑	60s	
		ThAr			↓	60s	
	GLs 628		16:27:31	-12:32:18		8.5m	10.12/ - nearby SPACE (22)
		ThAr			↑	60s	
		ThAr			↓	60s	
	144451		16:03:54	-21:43:46		5m	8.19 F STARS (432)
		ThAr			↑	60s	
		/				/	
		/				/	



Intensified Reticon

TO CAMI Mar 4, 1988

Spectrograph ECHELLE

Log Sheet

RAW/RET

Grating 3002

Observer JRC

Telescope 61" Wmethyl

Date MAR 4-5 1988

Disk ORO 2023

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	25187A
	095369	2	10:58:17	24:20:12		4 <sup>m</sup>	MOV-GRP #98 8.2
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	
	098562	5	11:17:57	23:53:23		4 <sup>m</sup>	MOV-GRP #98 8.8
		6			↑	60 <sup>s</sup>	
		7			↓	60 <sup>s</sup>	
	101841	8	11:40:46	28:19:55		11 <sup>m</sup>	40 FSTARS 7.39/200
		9			↑	60 <sup>s</sup>	
		10			↓	60 <sup>s</sup>	
	113284	11	12:59:57	30:37:27		20 <sup>m</sup>	40 FSTARS 8.19/400
		12			↑	60 <sup>s</sup>	
		13			↓	60 <sup>s</sup>	
	113674	14	13:02:53	-2:17:22		20 <sup>m</sup>	40 FSTARS (145) 8.3/400
		15			↓	60 <sup>s</sup>	only got 307 cts
	113674	16	13:02:53	-2:17:22		20 <sup>m</sup>	40 FSTARS (100) 8.3/400
		17			↑	60 <sup>s</sup>	
	114449	18	13:08:07	-4:40:31		20 <sup>m</sup>	40 FSTARS 7.6/400
		19			↑	60 <sup>s</sup>	
		20			↓	60 <sup>s</sup>	
	122693	21	14:00:34	24:48:17		2 <sup>m</sup>	45 MOV-GRP 8.1
		22			↑	60 <sup>s</sup>	
		23			↓	60 <sup>s</sup>	
	129357	24	14:39:12	29:16:27		2 <sup>m</sup>	45 MOV-GRP 7.8
		25			↑	60 <sup>s</sup>	
		26			↓	60 <sup>s</sup>	
	139007	27	15:32:40	25:9:59		4 <sup>m</sup>	45 MOV-GRP 8.26
		28			↓	60 <sup>s</sup>	
	130353	29			↓	60 <sup>s</sup>	
	130353	30	14:44:26	43:40:28		15 <sup>m</sup>	40 FSTARS 6.61-117
		31			↑	60 <sup>s</sup>	
		32					



TO CAM 3/5

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet  
 Grating 3002 Observer RJD  
 Telescope 61" Wyeth Date 3/5-6/88 Disk ARO 2025

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	Clear 2.5187
		2				2 <sup>m</sup>	Meridian, +37° 16 SKY/3000-
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	
		5				2 <sup>m</sup>	16 SKY 4 <sup>h</sup> W +18° 1/3000-
		6			↑	60 <sup>s</sup>	
		7			↓	60 <sup>s</sup>	
		8	H66141	07:59:39.9	02:28:24	2 <sup>m</sup>	17 IAU 4.4/4500
		9			↑	60 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	Hα 2.6562
		11	Alph Ori	05:52:28	07:23:58	6 <sup>m</sup>	00 Sally Hα <sup>NO</sup> 0.8/800
		12			↑	90 <sup>s</sup>	
		13			↓	60 <sup>s</sup>	2.5187
		14	H65607	07:56:50	7:22:06	12 <sup>h</sup>	40 Fstars 2.0/290
		15			↑	60 <sup>s</sup>	
		16		4:02:01.8	↓	60 <sup>s</sup>	
25697		17	<del>4:02:01.8</del>	<del>3:28:29</del>	↓	20 <sup>m</sup>	40 Fstars 8.19/130
		18			↑	60 <sup>s</sup>	
		19			↓	60 <sup>s</sup>	
		20	DL CAS	00:27:11	59:56:12	7 <sup>m</sup>	38 Cepheid 10.6V/95
		21			↑	60 <sup>s</sup>	
		22			↓	60 <sup>s</sup>	
		23	G133-57	01:54:31	11:50:06	2 <sup>m</sup>	15 Halo fin 9.01/110
		24			↑	60 <sup>s</sup>	
		25			↓	60 <sup>s</sup>	
		26	G6-26	03:36:43	18:13:36	6 <sup>m</sup>	15 Halo fin 9.0/140
		27			↑	60 <sup>s</sup>	
		28			↓	60 <sup>s</sup>	
		29	G84-39	05:10:06	04:15:48	6 <sup>m</sup>	15 Halo fin 10.58/22
		30			↑	60 <sup>s</sup>	
		31					
		32					





Intensified Reticon

TO CAM 3/5

Spectrograph ECHELLE

Log Sheet

RAW RET

Grating 300L

Observer RJO

Telescope 61" Wyeth

Date 3/5-6/88

Disk ORO 2027

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	Clear 2.5187
	G88-11	07:07:39	20:31:36			3 <sup>m</sup>	15 Halofin 9.09/110
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	1 1/2 hour break - Engineering
	H89449	10:17:01	19:43:31			2 <sup>m</sup>	17 JAU 4.8/2200
		6			↑	60 <sup>s</sup>	Partly Cloudy
		7			↓	60 <sup>s</sup>	
	G40-5	08:01:46	15:30:36			2 <sup>m</sup>	15 Halofin 8.48/90
		9			↑	60 <sup>s</sup>	
		10			↓	60 <sup>s</sup>	
	G41-34	09:20:06	11:29:06			3 <sup>m</sup>	15 Halos 9.65/75
		12			↑	60 <sup>s</sup>	
		13			↓	60 <sup>s</sup>	
	G9-42	08:57:54	21:39:12			2 <sup>m</sup>	15 Halofin 8.80/160
		15			↑	60 <sup>s</sup>	
		16			↓	60 <sup>s</sup>	
	G195-30	09:26:52	52:22:24			3 <sup>m</sup>	15 Halofin 9.8/85
		18			↑	60 <sup>s</sup>	
		19			↓	60 <sup>s</sup>	
	G58-23	10:47:12	20:45:30			4.5 <sup>m</sup>	15 Halofin 9.96/50
		21			↑	60 <sup>s</sup>	
		22			↓	60 <sup>s</sup>	
	+222411	11:48:59	22:23:36			8 <sup>m</sup>	15 Halos 9.30/40
		24			↑	60 <sup>s</sup>	
		25			↓	60 <sup>s</sup>	
	H085217	09:47:54	04:34:42			3 <sup>m</sup>	34 M Stars 6.2/1600
		27			↑	60 <sup>s</sup>	
		28			↓	60 <sup>s</sup>	
	H100018	11:28:07	41:33:50			4 <sup>m</sup>	34 M Stars 7.0/900
		30			↑	60 <sup>s</sup>	
		31					
		32					

TO CAM 3/5

Intensified      Reticon

Spectrograph ECHELLE      Log Sheet      RAW/RET

Grating 3002      Observer RVD

Telescope 61" Wyoth      Date 3/5-6/88      Disk ORO 2028

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	Slight Haze 2.5/187
	35-2284	2	11:47:06.2	35:12:35		2 <sup>m</sup>	40 ANGP 5.7/2600
		3			↑↓	60 <sup>s</sup>	
	34250	4	11:39:56.8	33:58:17		7.5 <sup>m</sup>	40 ANGP 10.6/33
		5			↑↓	60 <sup>s</sup>	Clear Again
	34246	6	11:38:18.9	33:30:30		7.5 <sup>m</sup>	40 ANGP 10.8/28
		7			↑↓	60 <sup>s</sup>	
	33-2147	8	11:41:20	32:51:34		3 <sup>m</sup>	40 ANGP 9.0/160
		9			↑↓	60 <sup>s</sup>	
	31286	10	11:40:55.7	30:32:21		4.5 <sup>m</sup>	40 ANGP 10.3/38
		11			↑↓	60 <sup>s</sup>	
	31-2302	12	11:45:46.4	30:54:18		4 <sup>m</sup>	40 ANGP 9.6/100
		13			↑↓	60 <sup>s</sup>	
	33-2161	14	11:48:33.6	32:45:26		3 <sup>m</sup>	40 ANGP 8.7/200
		15			↑	60 <sup>s</sup>	
		16			↓	60 <sup>s</sup>	
	139476	17	11:52:01.1	38:31:56		8 <sup>m</sup>	40 ANGP 10.4/42
		18			↑↓	60 <sup>s</sup>	
	37217	19	11:47:20.4	37:01:34		3 <sup>m</sup>	40 ANGP 9.1/100
		20			↑	60 <sup>s</sup>	
		21			↓	60 <sup>s</sup>	
	(14)	22	12:06:37	17:18:45		4 <sup>m</sup>	17 Asteroid 9.8/100
		23			↑	60 <sup>s</sup>	
		24			↓	60 <sup>s</sup>	
	5082651	25	13:03:58.6	22:53:00		2 <sup>m</sup>	34 M-Stars 5.9/1900
		26			↑↓	60 <sup>s</sup>	
	615499	27	13:03:49	20:59:42		7 <sup>m</sup>	34 M-Stars 9.4/75
		28			↑	60 <sup>s</sup>	
		29			↓	60 <sup>s</sup>	
	LAM-VIR	30	14:16:24	-13:08:31		2 <sup>m</sup>	34 M-Stars 4.6/5000
		31			↑	60 <sup>s</sup>	
		32					

TO CAM 3/5

Intensified      Reticon

Spectrograph ECHELLE      Log Sheet      RAW/RET

Grating 300L      Observer RJD

Telescope 61" Wyeth      Date 3/5-6/88      Disk OKO 2029

Change....	File	ID	RA	Dec	1950.0 L/R +/-	Exposure	Comments
		1	ThAr		↓	60 <sup>s</sup>	Clear 2.5187
	+102495	2	12:56:49	09:30:42		6 <sup>m</sup>	15 Halos 9.72/60
		3	ThAr		↑	60 <sup>s</sup>	
		4	ThAr		↓	60 <sup>s</sup>	
	G61-24	5	12:55:04	18:57:48		10 <sup>m</sup>	15 Halos 8.9/100
		6	ThAr		↑	60 <sup>s</sup>	
		7	ThAr		↓	60 <sup>s</sup>	Scat. Clouds
	G62-52	8	13:33:29	01:27:42		20 <sup>m</sup>	15 Halo fin. 12% Mon. 10.89/20
		9	ThAr		↑	60 <sup>s</sup>	
		10	ThAr		↓	60 <sup>s</sup>	
	G165-22	11	13:35:51	39:26:00		2 <sup>m</sup>	15 Halo fin. 8.9/240
		12	ThAr		↑	60 <sup>s</sup>	
		13	ThAr		↓	60 <sup>s</sup>	
	G15508	14	13:17:36	48:02:24		5 <sup>m</sup>	34 M-stars 9.0/90
		15	ThAr		↑	60 <sup>s</sup>	
		16	ThAr		↓	60 <sup>s</sup>	
	G15430	17	11:28:22	63:26:00		15 <sup>m</sup>	34 M Stars 9.0/25
		18	ThAr		↑	60 <sup>s</sup>	
		19	ThAr		↓	60 <sup>s</sup>	
	G15572	20	14:59:10	45:37:21		6 <sup>m</sup>	34 Mstars 9.1/45
		21	ThAr		↑	60 <sup>s</sup>	
		22	ThAr		↓	60 <sup>s</sup>	
	G66-65	23	15:05:22	09:04:18		2 <sup>m</sup>	15 Halo fin. 8.28/200
		24	ThAr		↑	60 <sup>s</sup>	
		25	ThAr		↓	60 <sup>s</sup>	
	G17-22	26	16:30:22	03:21:12		2.5 <sup>m</sup>	15 Halo fin. 8.84/45
		27	ThAr		↑	60 <sup>s</sup>	
		28	ThAr		↓	60 <sup>s</sup>	
	SV KUL	29	19:49:28	27:19:53		2 <sup>m</sup>	38 Cepheid 7.8/900
		30	ThAr		↑	60 <sup>s</sup>	
		31					
		32					

TO CAM 3/6

Intensified      Reticon

Spectrograph ECHELLE      Log Sheet

Grating 3002      Observer RJD

Telescope 61" Wyeth      Date 3/5-6/88      Disk ORO 2φ3φ

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	clear 25187
		2	H136202	15:16:45.4	01:57:12	2 <sup>m</sup>	17 IAU 5.1/4000
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	
		5	SKYDUNE			3 <sup>m</sup>	16 SKY 4 <sup>h</sup> +20° /1300+
		6			↑	60 <sup>s</sup>	
		7			↓	60 <sup>s</sup>	
		8	SKYDOWNM			2 <sup>m</sup>	16 SKY /2000+
		9			↑	60 <sup>s</sup>	
		10	INCANDS			120 <sup>m</sup>	
		11	INCANDS			120 <sup>m</sup>	
3/6-7/88		12			↓	60 <sup>s</sup>	clear 25187
		13	SKYEVEN			2 <sup>m</sup>	16 SKY 0 <sup>h</sup> +31° /3000-
		14			↑	60 <sup>s</sup>	
		15			↓	60 <sup>s</sup>	
		16	SKYEVEN			2 <sup>m</sup>	16 SKY 4 <sup>h</sup> +20° /3500-
		17			↑	60 <sup>s</sup>	
		18			↓	60 <sup>s</sup>	
		19	H66141	07:59:39.9	02:28:24	2 <sup>m</sup>	17 IAU 4.4/5000
		20			↑	60 <sup>s</sup>	
		21			↓	60 <sup>s</sup>	
		22	(4)	07:42:41.5	26:16:19	2 <sup>m</sup>	17 Asteroid 7.88/600
		23			↑	60 <sup>s</sup>	
		24			↓	60 <sup>s</sup>	
		25	6469	01:03:21.3	35:14:52	10 <sup>m</sup>	40 F Stars 7.52/500
		26			↑	60 <sup>s</sup>	
		27			↓	60 <sup>s</sup>	
		28	EGAnd	00:41:53	40:24:22	3 <sup>m</sup>	45 Symbiotic 7.50/350
		29			↑	60 <sup>s</sup>	
		30			↓	60 <sup>s</sup>	
		31	G69-1	00:29:55	27:55:18	15 <sup>m</sup>	15 Halos 8.72/80
		32			↑	60 <sup>s</sup>	

TO CAM 3/6

Intensified      Reticon

Spectrograph ECHELLE      Log Sheet      RAW/RET

Grating 300L      Observer RJD

Telescope 61" Wyeth      Date 3/6-7/58      Disk OKO 2031

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	clear 25187
		2	G171-58	00:22:26	47:46:12	2.5 <sup>m</sup>	15 Halos 7.52/360
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	
		5	G72-58	02:05:31	28:04:36	5 <sup>m</sup>	15 Halofin 9.99/29
		6			↑↓	60 <sup>s</sup>	
		7	G72-59	02:05:31	28:04:18	12 <sup>m</sup>	15 Halofin 10.55/18
		8			↑	60 <sup>s</sup>	
		9			↓	60 <sup>s</sup>	
		10	G6-26	03:36:43	18:13:36	4 <sup>m</sup>	15 Halofin 9.0/160
		11			↑	60 <sup>s</sup>	
		12			↓	60 <sup>s</sup>	
		13	H65607	07:58:50	-7:22:06	13 <sup>m</sup>	40 F Stars 8.0/190
		14			↑	60 <sup>s</sup>	
		15			↓	60 <sup>s</sup>	
		16	P2445	05:34:22.8	-5:01:20	14 <sup>m</sup>	42 Marschall 11.0/11
		17			↑	60 <sup>s</sup>	
		18			↓	60 <sup>s</sup>	
		19	HD 37148	05:34:00.7	09:51:21	3 <sup>m</sup>	3 2 Ori 8.46/160
		20			↑	60 <sup>s</sup>	
		21			↓	60 <sup>s</sup>	
		22	G84-39	05:10:06	04:15:48	12 <sup>m</sup>	15 Halofin 10.58/17
		23			↑	60 <sup>s</sup>	
		24			↓	60 <sup>s</sup>	
		25	G6-20	03:34:10	25:49:48	4 <sup>m</sup>	15 Halofin 9.1/250
		26			↑	60 <sup>s</sup>	
		27			↓	60 <sup>s</sup>	
		28	G83-34	04:49:46	17:37:36	11 <sup>m</sup>	15 Halofin 9.697/100
		29			↑	60 <sup>s</sup>	
		30			↓	60 <sup>s</sup>	
		31	G8-40	04:29:29	26:21:36	12 <sup>m</sup>	15 Halofin 10.70/13
		32			↑	60 <sup>s</sup>	

Spectrograph ECHELLE

Intensified Reticon

TO CAM 3/6

Grating 300L

Log Sheet

RAW RET

Telescope 61" Wyeth

Date 3/6-7/88

Observer RJD

Disk ORO 2032

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	ThAr		↓	60 <sup>s</sup>	Clear 2.5/187
	G102-20	2	05:37:21	13:09:12		7 <sup>m</sup>	15 Halos 10.22/26
		3	ThAr		↑	60 <sup>s</sup>	
		4	ThAr		↓	60 <sup>s</sup>	
	G175-15	5	04:03:08	54:03:12		4 <sup>m</sup>	15 Halo fin 9.9/47
		6	ThAr		↑	60 <sup>s</sup>	
		7	ThAr		↓	60 <sup>s</sup>	
	G247-42	8	04:53:31	62:57:24		2.5 <sup>m</sup>	15 Halo fin 8.4/260
		9	ThAr		↑	60 <sup>s</sup>	
		10	ThAr		↓	60 <sup>s</sup>	
	G191-55	11	05:53:04	58:40:24		15 <sup>m</sup>	15 Halos 10.47/30
		12	ThAr		↑	60 <sup>s</sup>	
		13	ThAr		↓	60 <sup>s</sup>	
	H65607	14	07:58:50	-7:22:06		18 <sup>m</sup>	40 Fstars 8.0/140
		15	ThAr		↑	60 <sup>s</sup>	
		16	ThAr		↓	60 <sup>s</sup>	
	G103-48	17	06:36:55	30:04:54		15 <sup>m</sup>	15 Halo fin 10.87/12
		18	ThAr		↑↓	60 <sup>s</sup>	
	G103-48	19	"	"		15 <sup>m</sup>	" "
		20	ThAr		↑	60 <sup>s</sup>	
		21	ThAr		↓	60 <sup>s</sup>	
	(10)	22	10:11:50	06:16:10		6 <sup>m</sup>	17 Asteroid 10.6/45
		23	ThAr		↑	60 <sup>s</sup>	
		24	ThAr		↓	60 <sup>s</sup>	
	H92588	25	10:38:51.5	-1:28:41		2 <sup>m</sup>	17 JAU 6.3/1000
		26	ThAr		↑	60 <sup>s</sup>	
		27	ThAr		↓	60 <sup>s</sup>	
	H106516	28	12:12:36	-10:01:14		3 <sup>m</sup>	15 Halos 6.11/1100
		29	ThAr		↑	60 <sup>s</sup>	
		30	ThAr		↓	60 <sup>s</sup>	
	G12-30	31	13:17:25	07:07:18		4 <sup>m</sup>	15 Halo fin 9.78/60
		32	ThAr		↑	60 <sup>s</sup>	

Intensified Reticon

TO CAM 3/6

Spectrograph ECHELLE

Log Sheet

RAW RET

Grating 3000

Observer RJO

Telescope 61 Wyeth

Date 3/6-7/88

Disk ORO 2033

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	clear 25187
	H100018	2	11:28:07	41:33:50		3 <sup>m</sup>	34 M stars 7.0/950
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	
	29-2225	5	11:50:10.5	28:41:13		3 <sup>m</sup>	43 ANGP 8.7/220
		6			↑↓	60 <sup>s</sup>	
	27069	7	11:53:20.1	27:12:27		6 <sup>m</sup>	43 ANGP 10.6/33
		8			↑	60 <sup>s</sup>	
		9			↓	60 <sup>s</sup>	
	24-2409	10	11:54:25.2	23:53:01		5 <sup>m</sup>	43 ANGP 9.4/110
		11			↑↓	60 <sup>s</sup>	
	23-2408	12	11:54:45.1	23:15:17		3 <sup>m</sup>	43 ANGP 9.0/130
		13			↑↓	60 <sup>s</sup>	
	25-2442	14	11:55:29.5	25:24:58		2 <sup>m</sup>	43 ANGP 8.3/320
		15			↑↓	60 <sup>s</sup>	
	27-2075	16	11:55:37.5	27:11:24		3 <sup>m</sup>	43 ANGP 9.4/100
		17			↑	60 <sup>s</sup>	
		18			↓	60 <sup>s</sup>	
	30207	19	11:55:37.4	30:05:55		4 <sup>m</sup>	43 ANGP 9.3/100
		20			↑↓	60 <sup>s</sup>	
	30-2212	21	11:59:10.4	29:49:41		2 <sup>m</sup>	43 ANGP 8.5/220
		22			↑↓	60 <sup>s</sup>	
	32-2212	23	11:59:34.7	31:31:40		2 <sup>m</sup>	43 ANGP 8.7/150
		24			↑↓	60 <sup>s</sup>	
	31325	25	12:01:21.2	30:56:39		9 <sup>m</sup>	43 ANGP 10.6/33
		26			↑↓	60 <sup>s</sup>	
	32225	27	12:05:05	32:18:22		2 <sup>m</sup>	43 ANGP 8.3/240
		28			↑↓	60 <sup>s</sup>	
	35316	29	12:06:12.7	34:28:59		2 <sup>m</sup>	43 ANGP 8.7/175
		30			↑↓	60 <sup>s</sup>	
	35318	31	12:06:44.7	35:17:08		3 <sup>m</sup>	43 ANGP 9.9/55
		32					



Intensified Reticon

TO CAM 3/6

Spectrograph ECHELLE

Log Sheet

Grating 300 L

Observer RAW/RET  
RJD

Telescope 61" Wyeth

Date 3/6-7/88

Disk ORO 2034

Change....	File	ID	RA	Dec	1950.0 L/R ↑/↓	Exposure	Comments
		1			↑↓	60 <sup>s</sup>	clear 25187
		2	34291	12:07:02.1	34:13:18	5 <sup>m</sup>	43 ANGP 9.8/60
		3			↑↓	60 <sup>s</sup>	
		4	33195	12:07:52.3	33:24:23	5 <sup>m</sup>	43 ANGP 9.7/65
		5			↑↓	60 <sup>s</sup>	
		6	32-2228	12:08:51.4	32:15:37	2 <sup>m</sup>	43 ANGP 8.2/240
		7			↑	60 <sup>s</sup>	
		8			↓	90 <sup>s</sup>	Hα 26562
		9	VCVn	13:17:17	45:47:22	12 <sup>m</sup>	00 Hα 7-9V/1100
		10			↑	90 <sup>s</sup>	
		11			↓	60 <sup>s</sup>	clear 25187
		12	11477	12:33:58.5	11:00:20	3 <sup>m</sup>	43 ANGP 8.7/150
		13			↑↓	60 <sup>s</sup>	
		14	12491	12:33:24.4	11:44:37	4 <sup>m</sup>	43 ANGP 10.1/38
		15			↑↓	60 <sup>s</sup>	
		16	10446	12:33:32.5	09:30:25	2.5 <sup>m</sup>	43 ANGP 9.2/85
		17			↑	60 <sup>s</sup>	
		18			↓	60 <sup>s</sup>	
		19	H136202	15:16:45.4	01:57:12	2 <sup>m</sup>	17 IAU 5.1/5000
		20			↑	60 <sup>s</sup>	
		21			↓	60 <sup>s</sup>	
		22	G227-37	18:34:48	63:39:18	2 <sup>m</sup>	15 Halos 8.07/300
		23			↑	60 <sup>s</sup>	
		24			↓	60 <sup>s</sup>	
		25	26-2508	13:53:52.2	26:09:47	3 <sup>m</sup>	43 ANGP 6.8/1200
		26			↑↓	60 <sup>s</sup>	
		27	27313	13:53:18.4	26:55:50	3 <sup>m</sup>	43 ANGP 9.3/90
		28			↑↓	60 <sup>s</sup>	
		29	28-2280	13:58:09.3	28:29:09	8 <sup>m</sup>	43 ANGP 10.0/65
		30			↑	60 <sup>s</sup>	
		31					
		32					

3/7

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300 Log Sheet RAW RET  
 Telescope 61" Wyeth Date 3/6-7/88 Observer RJD  
 Disk ORO 2035

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	Clear 25187
	G142-2	18:59:36	15:59:36			7 <sup>m</sup>	15 Halos 10.38/25
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	
	G92-16	19:35:19	04:11:54			8 <sup>m</sup>	15 Halo fin 10.18/20
		6			↑↓	60 <sup>s</sup>	
	G92-15	19:33:47	04:39:18			3.5 <sup>m</sup>	15 Halo fin 9.20/71
		8			↑	60 <sup>s</sup>	
		9			↓	60 <sup>s</sup>	
	SU VUL	19:49:28	27:19:53			2 <sup>m</sup>	38 Cepheid 7.84/600
		11			↑	60 <sup>s</sup>	
		12			↓	60 <sup>s</sup>	
	GL820a	21:04:40	38:30:00			2 <sup>m</sup>	34/45 5.22/1400
		14			↑↓	60 <sup>s</sup>	
	GL820b	21:04:40	38:30:00			3 <sup>m</sup>	34/45 6.03/800
		16			↑	60 <sup>s</sup>	
		17			↓	60 <sup>s</sup>	
	H182572	19:22:35.1	11:50:09			2 <sup>m</sup>	17 IAU 5.2/2000
		19			↑	60 <sup>s</sup>	
		20			↓	60 <sup>s</sup>	
	H146051	16:11:43	-3:34:01			2 <sup>m</sup>	17 IAU 1.0ND 2.7/1700
		22			↑	60 <sup>s</sup>	
		23			↓	60 <sup>s</sup>	
	SKYDOWNE					2 <sup>m</sup>	16 SKY 4 <sup>h</sup> E+2.0° /2500+
		25			↑	60 <sup>s</sup>	
		26			↓	60 <sup>s</sup>	
	SKYDOWNM					2 <sup>m</sup>	16 SKY 0 <sup>h</sup> +31° /2600+
		28			↑	60 <sup>s</sup>	
	INCAVDS					120 <sup>m</sup>	
		30				120 <sup>m</sup>	
		31					
		32					

3/7/88

Intensified Reticon TO CAMI  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 300f Observer JMZ  
 Telescope 61" WYETH Date 3/7-8/88 Disk ORC 203C

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	λ 5187 Å CLEAR
	SKYEVEN	MERIDIAN	+30°			2m	16 SKY
		ThAr			↑	60s	
		ThAr			↓	60s	
	SKYEVEN	4h west	+30°			2m	16 SKY
		ThAr			↑	60s	
		ThAr			↓	60s	
	H8779	1:23:54	-00:39:29			3m	17 IAU STANDARD
		ThAr			↑	60s	
		ThAr			↓	60s	
	5843	0:57:35	11:39:55			5.25m	8.0/60 F STARS (25)
		ThAr			↑	60s	
		ThAr			↓	60s	
	6696	1:05:17	17:08:42			10m	7.64 F STARS (33)
		ThAr			↑	60s	
		ThAr			↓	60s	
	DLCAS	00:27:11	59:56:12			3.5m	10.0/- CEPHEIDS (1)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G172-49	1:17:59	51:43:24			2m	7.62/20 HALOS (97)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G133-57	1:54:31	41:50:06			2m	9.01/15 HALOS (22)
		ThAr			↑	60s	
		ThAr			↓	60s	
	12637	2:01:43	39:11:42			10m	R.1 F STARS (59)
		ThAr			↑	60s	
		ThAr			↓	60s	
	H65607	7:56:50	-7:22:11			13m	8.0/200 F STARS (687)
		ThAr			↑	60s	
		/				/	
		/				/	

archived → G133-57



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Intensified      Reticon      TO CAM

Spectrograph ECHELLE      Log Sheet      RAW RET

Grating 300f      Observer JMZ

Telescope 61" WYETH      Date 3/7-8/88      Disk ORO 2038

Change....	File	ID	RA	Dec	1950.0 L/R ↑/↓	Exposure	Comments
		1	ThAr		↓	60s	25187A CLEAR
	72297	2	8:29:09	-19:20:08		2.5m	7.60/100 FSTARS (215)
		3	ThAr		↑	60s	
		4	ThAr		↓	60s	
	85367	5	9:48:29	-21:13:34		7m	8.1/120 FSTARS (256)
		6	ThAr		↑	60s	
		7	ThAr		↓	60s	
	87810	8	10:04:46	-21:00:37		3m	6.67/200 FSTARS (263)
		9	ThAr		↑	60s	
		10	ThAr		↓	60s	
	87827	11	10:04:55	-75:12:31		7m	8.12/150 FSTARS (264)
		12	ThAr		↑	60s	
		13	ThAr		↓	60s	
	H65607	14	7:56:50	-7:22:06		2.9m	8.0/200 FSTARS (687)
		15	ThAr		↑	60s	
		16	ThAr		↓	60s	
	(4)	17	7:42:35	-26:17:21		2m	7.76 ASTEROID (4)
		18	ThAr		↑	60s	
		19	ThAr		↓	60s	
	H92588	20	10:36:52	-01:28:42		2m	6.3 IAU STANDARD
		21	ThAr		↑	60s	
		22	ThAr		↓	60s	
	H100018	23	11:28:07	-41:33:52		2m	7.0/200 M STARS (37)
		24	ThAr		↑	60s	
		25	ThAr		↓	60s	
	G195-30	26	9:26:52	-52:22:24		2m	9.8/15 HALOGEN (236)
		27	ThAr		↑	60s	
		28	ThAr		↓	60s	
	88991	29	10:15:58	-19:14:52		9m	8.25/100 FSTARS (272)
		30	ThAr		↑	60s	
		31	/			/	
		32	/			/	

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TO CAM

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet RAW/RET  
 Grating 300A Observer JMZ  
 Telescope 61" WYETH Date 3/7-8/88 Disk 080 7039

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	7.51/7.9 CLEAR
	89322	2	10:15:43	00:59:31		8m	8.11/150 ESTARS (275)
		3			↑	60s	
		4			↓	60s	
	89507	5	10:17:05	04:58:31		9.5m	7.72/200 ESTARS (277)
		6			↑	60s	
		7			↓	60s	
	G46-31	8	9:14:28	3:14:12		12m	10.85/15 HAI OF W (234)
		9			↑	60s	
		10			↓	60s	
	93589	11	10:45:28	20:04:31		10m	7.98/100 ESTARS (291)
		12			↑	60s	
		13			↓	60s	
	92197	14	10:36:19	16:14:37		8.5m	8.00/100 ESTARS (284)
		15			↑	60s	
		16			↓	60s	
	94500	17	10:52:01	-1:15:07		12m	8.6/200 ESTARS (297)
		18			↑	60s	
		19			↓	60s	
	24-2422	20	12:01:39	24:23:53		5m	8.6 ANGP (217)
		21			↓	60s	
	25-2454	22	12:01:29	25:13:00		7m	8.3 ANGP (216)
		23			↓	60s	
	124422	24	12:01:17	24:15:46		15m	10.7 ANGP (214)
		25			↑	60s	
		26			↓	60s	
	15-2418	27	12:06:41	15:06:34		5m	7.8 ANGP (248)
		28			↓	60s	
	17441	29	12:06:59	16:41:18		6m	9.4 ANGP (248)
		30			↑	60s	
	/	31				/	
	/	32				/	

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Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 300 Observer JM?  
 Telescope 61" WYETH Date 3/7-8/88 Disk 020 7046

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	25187A CLEAR
	36-2436		14:00:12	36:21:13		2m	7.2 ANGP (1079)
		ThAr			↑	60s	
		ThAr			↓	60s	
	22-2654		13:59:38	21:47:47		2m	7.9 ANGP (1078)
		ThAr			↑	60s	
		ThAr			↓	60s	
	32-2411		13:53:57	32:16:32		2m	6.3 ANGP (1044)
		ThAr			↑	60s	
	31560		13:54:00	30:36:37		5m	9.3 ANGP (1045)
		ThAr			↑	60s	
	29-2472		13:53:49	29:23:38		20m	9.9 ANGP (1041)
		ThAr			↑	60s	↑ few lines
		ThAr			↓	60s	
	30-2464		13:54:27	30:25:13		3.5m	9.2 ANGP (1049)
		ThAr			↑	60s	
	30-2466		13:54:30	30:32:03		3.5m	9.0 ANGP (1050)
		ThAr			↑	60s	
		ThAr			↓	60s	
	18803		13:54:16	17:56:05		4.5m	9.4 ANGP (1047)
		ThAr			↑	60s	
	17-2682		13:54:20	17:16:11		4m	9.2 ANGP (1048)
		ThAr			↑	60s	
		ThAr			↓	60s	
	16-2593		13:56:36	15:47:30		6.5	8.1 ANGP (1060)
		ThAr			↑	60s	
		ThAr			↓	60s	
	H136202		15:16:45	1:57:12		2m	17 I H U STD
		ThAr			↑	60s	
	/						
	/						
	/						

Intensified      Reticon      TO CAM1

Spectrograph ECHELLE      Log Sheet      RAW/RET

Grating 300P      Observer JMZ

Telescope 61" WYETH      Date 3/7-8/88      Disk 000 2091

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	ThAr		↓	60s	25187A clear
		2	SKYDUNE	4h EAST	+30°	2m	16 sky
		3	ThAr		↑	60s	
		4	ThAr		↓	60s	
		5	SKYDUNE	MERIDIAN	+30°	2m	16 sky
		6	ThAr		↑	60s	
		7	INCAND			120m	
3/8-9/88		8	ThAr		↓	60s	25187A PLY cldy
		9	SKYEVEN	MERIDIAN	+30°	2m	16 sky
		10	ThAr		↑	60s	
		11	ThAr		↓	60s	
		12	SKYEVEN	4h west	+30°	2m	16 sky
		13	ThAr		↑	60s	
		14	ThAr		↓	60s	
		15	H2G1G2	4:06:15	19:28:43	2m	17 TAU STANDARD
		16	ThAr		↑	60s	
		17	ThAr		↓	60s	
		18	GG-26	3:36:43	18:13:36	7.5m	9.0/50 HALO FIN (78)
		19	ThAr		↑	60s	
		20	ThAr		↓	60s	
		21	GB4-39	5:10:06	4:15:48	6m	10.58/15 HALO FIN (117)
		22	ThAr		↑	60s	
		23	ThAr		↓	60s	
		24	G103-46	6:36:55	30:04:54	10.5m	10.87/39 ? HALO FIN (102)
		25	ThAr		↑	60s	↑ v. good seeing!
		26	ThAr		↓	60s	
		27	GL15a	00:15:31	43:44:16	5m	8.07 <sup>NEARBY (2)</sup> METARS A SPACE
		28	ThAr		↑	60s	
		29	GL15b	00:15:31	43:44:16	20m	11.04 <sup>NEARBY (3)</sup> METARS A SPACE
		30	ThAr		↑	60s	
		31	/			/	
		32	/			/	



3/8

Intensified      Reticon      TO CAM

Spectrograph ECHELLE      Log      Sheet      RAW/RET

Grating 300 l      Observer JME

Telescope 6" YETH      Date 3/8-9/88      Disk ORO 2042

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	25187A High clouds
		2	H65607	7:56:50	-7:22:06		20M 8.0 FSTARS (687)
		3			↑	60s	
		4			↓	60s	
		5	40673	5:57:24	-16:47:11		3M 8.0/75 FSTARS (165)
		6			↑	60s	
		7			↓	60s	
		8	41311	6:01:18	-21:47:08		3M 7.5/100 FSTARS (166)
		9			↑	60s	
		10			↓	60s	
		11	46601	6:31:24	-20:05:56		15M 7.43/500 FSTARS (175)
		12			↑	60s	
		13			↓	60s	
		14	45311	6:25:04	-39:08:32		5M 7.60/75 FSTARS (174)
		15			↑	60s	PAUSE - clouds
		16			↓	60s	
		17	H085217	9:47:54	4:34:42		3.5M 6.2/200 MISTARS (7E)
		18			↑	60s	
		19			↓	60s	
		20	H100018	11:28:07	41:33:50		5.5M 7.0/700 MISTARS (37)
		21			↑	60s	
		22			↓	60s	
		23	(14)	17:04:21	17:40:08		15M 9.84 ASTEROIDS
		24			↑	60s	PASSING thick clouds
		25			↓	60s	
		26	H114762	13:09:55	17:46:55		4M 7.3 IAU STANDARD
		27			↑	60s	
		28			↓	60s	
		29	18700	13:09:56	17:46:56		7.3 ANGP (775)
		30			↑	60s	
		31					
		32					



Spectrograph ECHELLE Intensified Reticon  
 Grating 300l Log Sheet  
 Telescope 61" WYETH Date 3/8-9/88

TO CAM 31 9/88  
RAW/RET  
 Observer JMZ  
 Disk CR0 2044

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	2518.7 & cloudy
	33-2337	2	13:24:17	32:50:37		12m	9.8 ANGP (847)
		3			↑	60s	
		4			↓	60s	
	32-2350	5	13:23:37	32:07:18		4.5m	8.3 ANGP (840)
		6			↑	60s	
		7			↓	60s	
	35-2452	8	13:25:18	35:00:44		9.5m	9.1 ANGP (860)
		9			↑	60s	
		10			↓	60s	
	34-2428	11	13:27:45	33:32:20		3m	8.9 ANGP (873)
		12			↑	60s	
		13			↓	60s	
	35461	14	13:30:31	35:11:35		5m	9.1 ANGP (896)
		15			↓	60s	
	35-2463	16	13:30:56	35:17:17		15m	9.9 ANGP (899)
		17			↑	60s	
		18			↓	60s	through clouds
	H146051	19	16:11:43	103:34:01		2m	2.7 JAP. STANDARDS
		20			↑	60s	
		21			↓	60s	
	SKYDOME	22	4 <sup>h</sup> EAST	+30°		3m	16 sky
		23			↑	60s	
		24			↓	60s	
	SKYDOME	25	MERIDIAN	+30°		2m	16 sky
		26			↑	60s	
	INCANDS	27				120m	
	INCANDS	28				120	
	INCANDS	29				66	
		30					
		31					
		32					

TO CAM 3/10

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet RAW/RET  
 Grating 300L Observer JRC  
 Telescope 61" Wynth Date Mar 9-10 1988 Disk 020 2045

MAR 9-10  
1988  
CLOUDY  
DVT

MAR 10-11 1988

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60 <sup>s</sup>	CLOUDY 25187A
		2	SKYEVEW	Meridian	+20°	2 <sup>m</sup>	16 SKY
		3			↑	60 <sup>s</sup>	
		4			↓	60 <sup>s</sup>	
		5	SKYEVEW	4 <sup>th</sup> West	+20°	4 <sup>m</sup>	16 SKY
		6			↑	60 <sup>s</sup>	
		7			↓	60 <sup>s</sup>	windy; Clear 25187A
		8	SKYEVEW	Meridian	+20°	2 <sup>m</sup>	16 SKY
		9			↑	60 <sup>s</sup>	
		10			↓	60 <sup>s</sup>	
		11	SKYEVEW	4 <sup>th</sup> West	+20°	2 <sup>m</sup>	16 SKY
		12			↑	60 <sup>s</sup>	
		13			↓	60 <sup>s</sup>	
		14	H26162	04:06:14	19:28:43	"	17 IN STD S.S
		15			↑	60 <sup>s</sup>	
		16			↓	60 <sup>s</sup>	26562, A
		17	2 021	5:52:28	7:23:58	7 <sup>m</sup>	Hz Prof. Les - Sally +.8/1000
		18			↑	60 <sup>s</sup>	
		19			↓	60 <sup>s</sup>	5187A
		20	H411	04:24:35.6	14:09:00	10.5m	10.5 Hyades Binary
		21			↑	60 <sup>s</sup>	
		22			↓	60 <sup>s</sup>	
		23	H397	04:24:11.4	15:15:45	17.5m	11.1 "
		24			↑	60 <sup>s</sup>	
		25			↓	60 <sup>s</sup>	
		26	L38	04:21:09	22:00:17	20m	11.0 "
		27			↑	60 <sup>s</sup>	
		28			↓	60 <sup>s</sup>	
		29	H357	04:22:46	15:49:43	6.5m	6.5 "
		30			↑	60 <sup>s</sup>	
		31					
		32					

TO CAM 3/10/88

Intensified      Reticon

Spectrograph ECHELLE      Log Sheet      RAW/RET

Grating 300R      Observer RDS

Telescope 61" Wyath      Date 10-11 MAR. 1988      Disk ORO 2046

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60S	
		2	V856	04:22:36	17:48:55	3m	4.3 Hyades Binary
		3			↑	60S	
		4			↓	60S	
		5	G84-39	05:10:06	04:15:48	12m	10.6/15 Halo
		6			↑	60S	
		7			↓	60S	
		8	Q103-48	06:36:55	30:04:54	25m	11.9/40 " 25min!
		9			↑	60S	
		10			↓	60S	
		11	H65607	07:56:50	-07:22:06	20m	8.0/20min (UX Mon) Fstars
		12			↑	60S	
		13			↓	60S	
		14	G46-5	08:47:46	07:49:00	16m	11.3/15 HALOS
		15			↑	60S	
		16			↓	60S	
		17	S179-28	10:45:05	-25:10:24	8m	9.3/30 HALOS
		18			↑	60S	
		19			↓	60S	
		20	G9-36	8:55:03	24:40:12	15m	11.95/15 HALOS
		21			↑	60S	
		22			↓	60S	
		23	G11-44	2:08:22	0:41:00	15m	11.13/30 HALOS
		24			↑	60S	
		25			↓	60S	
		26	G60-6	12:25:29	7:43:54	10m	11.08/15 HALOS
		27			↑	60S	
		28			↓	60S	λ 6562
		29	VCVN	3:17:17	45:47:22	85m	SALLY Hz Profiles 7-9/1000
		30			↑	60S	
		31					
		32					



TO CAM 3/10/88

Spectrograph ECHELLE Intensified Reticon  
 Grating 300L Log Sheet  
 Telescope 61" Wmgeth Date Mar 10-11 1988 Observer JRC  
 Disk 020 2048

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		tblr			↓	60s	λ 5187 Å
	G15-24	tblr	15:28:17	8:34:00		11 <sup>m</sup>	15 HALOS 11.44/15
		tblr			↑	60s	
		tblr			↓	60s	
	G16-13	tblr	15:48:34	8:34:30		4 <sup>m</sup>	15 HALOS 10.0/15
		tblr			↑	60s	
		tblr			↓	60s	
	G16-20	tblr	15:55:47	2:11:48		19 <sup>m</sup>	15 HALOS 10.8/40
		tblr			↕	60s	
	G16-31	tblr	16:06:24	1:59:18		5 <sup>m</sup>	15 HALOS 10.16/15
		tblr			↑	60s	
		tblr			↓	60s	
	-2312603	tblr	15:55:28	-23:41:48		6 <sup>m</sup>	15 HALOS (Cts Very Low; Sec 125) 10./15 HOPELESS I gave up. ↑ + # 100 DM
		tblr			↑	60s	
		tblr			↓	60s	
	G169-13	tblr	16:27:49	30:48:06		4 <sup>m</sup>	15 HALOS 10.24/15
		tblr			↑	60s	
		tblr			↓	60s	
	G170-47	tblr	17:30:38	23:46:18		8 <sup>m</sup>	15 HALOS 8.95/100
		tblr			↑	60s	
		tblr			↓	60s	
	SV VII	tblr	19:49:28	27:11:52		2 <sup>m</sup>	36 Cepheids 7.8/ -
		tblr			↑	60s	
		tblr			↓	60s	
	G208-29	tblr	19:30:52	48:28:54		11 <sup>m</sup>	15 HALOS 8.51/200
		tblr			↑	60s	
		tblr			↓	60s	
	H146051	tblr	16:11:43	-3:31:01		2 <sup>m</sup>	17 I44 STDS 1.0 ND Filter 2.7/ -
		tblr			↑	60s	
		tblr			↓	60s	
	184183	tblr	17:00:52	25:42:37		2 <sup>m</sup>	48 MOV-GRP 8.7
		tblr			↑	60s	

3/11

TO CAM

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet  
 Grating 300L Observer JRC  
 Telescope 61" Wyeth Date MAR 10-11 1988 Disk 020 2049

Change....	File	ID	RA	Dec	1950.0 L/R ↑/↓	Exposure	Comments
		1	thAr		↓	60s	λ 5187A
		2	156963	17:19:18	25:21:37	3m	48 MOV-GRP 8.98/-
		3	thAr		↑	60s	
		4	thAr		↓	60s	
		5	154962	17:26:16	-3:47:03	2m	48 MOV-GRP 6.4/-
		6	thAr		↑	60s	
		7	thAr		↓	60s	
		8	SKMDNNE	4hrs East	+20°	3m	16 SKY
		9	thAr		↑	60s	
		10	thAr		↓	60s	
		11	SKMDWNM	Meridian	+20°	3m	16 SKY
		12	thAr		↑	60s	
		13	INCANS			120m	
		14	INCANDS			120m	
11-12 MAR. 1988		15	Th-Ar		↓	60s	5187A - clear-
		16	SKYEVE	φ hrs	+10°	2m	
		17	Th-Ar		↑	60s	Th-Ar balanced but Left sky
		18	Th-Ar		↓	60s	x400 > than Right sky!
		19	SKY-EVE	4hrs. W	+10°	2m	
		20	Th-Ar		↑	60s	
		21	Th-Ar		↓	60s	
		22	VB1	03:14:45	07:28:25	5m	7.4 } Hyades Binary
		23	Th-Ar		↕	60s	} WRONG! (Telescope not tracking ORDER! (correctly)
		24	VB2	03:14:52	07:30:28	7m	
		25	Th-Ar		↑	60s	(Don't know how I did this!!!)
		26	Th-Ar		↓	60s	Balance instead of Focus!!
		27	G37-10	02:49:54	35:26:06	10m	8.4/50 HALO
		28	Th-Ar		↑	60s	
		29	Th-Ar		↓	60s	
		30	G77-56	03:26:43	01:48:24	15m	10.45/15 HALO
		31	Th-Ar		↑	60s	
		32	/				



3/11

Intensified Reticon

TO CAM1

Spectrograph ECHELLE

Log Sheet

RAW/RET

Grating 3002

Observer RPS & TM

Telescope 61" wyeth

Date 11-12 MAR. 1988

Disk ~~RPS & TM~~ ORO 2050

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	
		2	G79-42	03:26:54	10:23:48		17m 10.8/20 HALOS
		3			↑	60s	
		4			↓	60s	
		5	G6-26	03:36:43	18:13:36		6.5m 9.0/50 "
		6			↑	60s	
		7			↓	60s	
		8	G84-79	05:10:06	04:15:48		11m 10.6/15 "
		9			↑	60s	TV Problems:
		10			↓	60s	Little TV Gain Control
		11	G111-33	07:45:13	46:44:12		35m 10.0/15 "
		12			↑	60s	
		13			↓	60s	
		14	G103-48	06:36:55	36:04:54		20m 10.9/39 "
		15			↑	60s	
		16	G103-48	"	"	7m	" "
		17			↑	60s	
		18			↓	60s	
		19	G87-26	06:59:40	38:13:12		3.5m 9.5/15 "
		20			↑	60s	
		21			↓	60s	
		22	(10)	10:08:16.5	66:35:14		6m 10.7/ ASTEROID
		23			↑	60s	
		24			↓	60s	
		25	G88-5	07:03:12	18:42:54		9m 10.2/20 HALOS
		26			↑	60s	
		27			↓	60s	
		28	G249-71	06:01:35	63:50:36		3m 9.2/15 "
		29			↑	60s	
		30			↓	60s	
		31	G40-5	08:01:46	15:30:36		8.5/15 "
		32			↑	60s	

3/11

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 3000 Log Sheet RAW/RET  
 Telescope 61 WYETH Date 11-12 MARCH 1988 Observer RPS + TDM  
 Disk ORO 2051

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		Th-Ar			↓	60s	
	G90-43	08'02'29	34'13'24			11m	11.9/15 HALOS
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	G116-75	09'58'59	35'09'06			18.5m	11.9/15 "
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	G195-30	09'26'52	52'22'24			3m	9.8/15 "
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	G11-44	12'08'22	00'41'00			20m	11.12/30 "
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	G13-38	12'24'26	01'50'54			9m	10.5/15 "
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	H100018	11'28'07	4'11'57			7m	7.0200 M STARS
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	G62-45	13'30'08	08'08'06			12.5m	11.5/15 HALOS
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	G124-45	14'25'27	-00'55'12			11m	11.2/15 "
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	S182556	14'24'10	-22'01'12			20m	9.1/100 "
	Th-Ar				↑↓	60s	
	S182556	14'24'10	-22'01'12			5.5m	9.1/100 "
	Th-Ar				↑	60s	
	Th-Ar				↓	60s	
	H114762	13'09'54.5	17'46'55			7.3	IAU STANDARD
	Th-Ar				↑	60s	

TO CAM 3/12

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet RAWRET  
 Grating 300R Observer RPS & TDM  
 Telescope 6" WYETH Date 11-12 MAR 1988 Disk ORO 2052

Change....	File	ID	RA	Dec	1950.0 L/R +/+	Exposure	Comments
		1	Th-Ar		↓	60s	
		2	G203-69	17:28:45	44:00:24	5m	110/15 HALO
		3	Th-Ar		↑	60s	
		4	Th-Ar		↓	60s	
		5	<del>G180-24</del>	<del>16:01:27</del>	<del>42:27:12</del>	4m	<del>4.9/50 WATCH FOR JET</del>
		6	12606φ Th-Ar	14:23:28.6	52:04:52	4.1 60s	Moving Group / Mathieu
		7	Th-Ar		↓	60s	
		8	SKY-DWN	4.5 hrs. E	+30°	2.5m	
		9	Th-Ar		↑	60s	
		10	Th-Ar		↓	60s	
		11	SKY-DWN	0 hrs. E	+30°	2m	
		12	Th-Ar		↑	60s	
		13	INCAND			120	
		14	"			12	
		15	"			12	
3/12-13/88 RJD		16	Th-Ar		↓	60s	cloudy λ 5187
		17	SKYOSKM	0h	+30°	2m	16 SKY / 5000-
		18	Th-Ar		↑	60s	
		19	Th-Ar		↓	60s	
		20	SKYOSKW	4h W	+15°	2m	16 SKY / 3500-
		21	Th-Ar		↑	60s	
		22	Th-Ar		↓	60s	
		23	H66141	07:59:39.9	02:28:24	2m	17 IAU 4.4/500-2000
		24	Th-Ar		↑	60s	
		25	Th-Ar		↓	60s	
		26	067767	08:07:26.7	05:39:38	3m	48 Moving 5.73/280+
		27	Th-Ar		↑	60s	
		28	Th-Ar		↓	60s	
		29	071148	08:24:08	45:49:24	2m	48 Moving 6.32/700+
		30	Th-Ar		↑	60s	
		31					
		32					



Start MAR-APRIL  
RUN

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300R Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 23 MAR. 1988 Observer \_\_\_\_\_  
 Disk ORO 2054

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

Change....	File	ID	RA	1950.0	Dec	L/R	Exposure	Comments
		1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		10						
		11						
		12						
		13						
		14						
		15						
		16						
		17						
		18						
		19						
		20						
		21						
		22						
		23						
		24						
		25						
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		27						
		28						
		29						
		30						
		31						
		32						

LH1.000  
RH1.000  
LH0.875  
RH0.875  
LH0.893  
RH0.893  
LH0.896  
RH0.896  
ROT. 575  
INCAWS  
Th-Ar

5m

≈ 1400/1900

3/23

Spectrograph ECHELLE Intensified Reticon

TO CAM

Grating 3002

Log Sheet

RAW/RET

Telescope 61" Walth

Date MAR 22/23 1988

Observer JRC

Disk 020 2055

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

Fiber Test

1		<u>THAR</u>					<u>5"</u>	
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								<u>L R</u>
24								<u>~1400-1800</u>
25								
26								
27								
28								
29								
30								
31		<u>THAR</u>						
32								

51872



3/23

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Log Sheet RAWRET  
 Grating 300R Observer RDS  
 Telescope 61" W. J. Smith Date 22-23 MAR 1968 Disk ORO 2057

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

Change....	File	ID	RA	1950.0	Dec	L/R	Exposure	Comments
		1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		10						
		11						
		12						
		13						
		14						
		15						
		16						
		17						
		18						
		19						
		20						
		21						
		22						
		23						
		24						
		25						
		26						
		27						
		28						
		29						
		30						
		31						
		32						



3/23

Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAW/RET  
 Grating 300L Observer RPS  
 Telescope 61" Wyeth Date 22-23 MAR 1988 Disk ORO 2058

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	Fiber Test
		1						
		2						
		3						
		4					1230/2200 counts	
		5					} DO NOT USE -Re-balanced counts	
		6						
		7						
		8					1800/1650	18.3°C
		9						
		10						18.4°C
		11						
		12						
		13						
		14						
		15					1500/1650	18.4°C
		16						
		17						
		18						
		19						
		20					1750/1670	18.5°C
		21						
		22						
		23						
		24					1750/1670	
		25				5m	1750/1670	18.6°C
		26				60m	Rotation off	1650/1800
		27						
		28						
		29						
		30						
		31						
		32						



3/24

Spectrograph ECHELLE Intensified Reticon TO CAMI  
 Grating 300L Log Sheet RAW/RET  
 Telescope 61" Wyeth Date MAR 23/24 1988 Observer JRC  
 Disk ORO 2060

Change....	File	ID	RA	Dec	L/R ↑/↓	Exposure	Comments
			1950.0				
	1	H14651	16:11:43	-3:34:01		10 <sup>m</sup>	SKY 510 27 MIG 25157A
	2	TWR			↕	90 <sup>s</sup>	Acctemp -40° 2 1555-1630
	3	H14651	"	"		10 <sup>m</sup>	
	4	TWR			↕	90 <sup>s</sup>	
	5	H14651	"	"		10 <sup>m</sup>	Inter. by clouds Many times
	6	TWR			↕	90 <sup>s</sup>	
	7	H14651	"	"		10 <sup>m</sup>	" " " " " 24 cis
	8	TWR			↑	90 <sup>s</sup>	clouded out 350 nm temp 41
	9	TWR			↓	90 <sup>s</sup>	← Mirror completely frosted over
	10	SKYDWN	4 hrs East	+20°		5 <sup>m</sup>	16 SKY rebalanced at 1400
	11	TWR			↑	90 <sup>s</sup>	
	12	TWR			↓	90 <sup>s</sup>	
	13	SKYDWN	Meridian	+20°		2 <sup>m</sup>	16 SKY
	14	TWR			↑	90 <sup>s</sup>	
	15	INCANS				120 <sup>m</sup>	balanced 1150-1200
	16	INCANS				90 <sup>m</sup>	room = 42°F 19.3°C - spot.
	17	Th-Ar			↓	90s	
	18	SKYφ+4φ	φ hrs.	+40°		2.5m	54°F 20.2°C
	19	Th-Ar			↑	90s	
	20	Th-Ar			↓	90s	
	21	SKY1E4φ	1 hr. E	+40°		2.50m	
	22	Th-Ar			↑	90s	
	23	Th-Ar			↓	90s	
	24	SKY2E4φ	2 hrs. E	+40°		2.5m	
	25	Th-Ar			↑	90s	
	26	Th-Ar			↓	90s	
	27	SKY3E4φ	3 hrs. E	+40°		4.5m	
	28	Th-Ar			↑	90s	
	29	Th-Ar			↓	90s	
	30	SKY4E4φ	4 hrs E	+40°		4.5m	55°F 20.4°C
	31	Th-Ar			↑	90s	
	32	/					

3/14

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 3002 Log Sheet RAWRET  
 Telescope 61" Wyeth Date 24-25 MAR 1988 Observer RPS  
 Disk OR02061

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

Change....	File	ID	RA	1950.0	Dec	L/R	Exposure	Comments
		Th-Ar				↓	90s	
	SKY4SE4	4.5 hrs. E	+40°				4.0m	cts ≈ 650
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	SKY4SE3	4.5 hrs. E	+30°				4.0m	cts ≈ 700 55°F 20.3°C
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	SKY4E30	4.0 hrs E	+30°				4.0m	cts ≈ 620
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	SKY3E30	3 hrs. E	+30°				4m	cts ≈ 690 55°F 20.4°C
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	SKY2E30	2 hrs E	+30°				4m	cts ≈ 850
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	SKY1E30	1 hr E	+30°				4m	cts ≈ 1100
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	SKYφ+30	φ hrs.	+30°				4m	cts ≈ 1600 56°F 20.4°C
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	SKYφ+20	φ hrs.	+20°				3m	cts ≈ 2000
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	SKY1E20	1 hr E	+20°				4m	cts ≈ 1200 56°F 20.5°C
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	SKY2E20	2 hrs E	+20°				4m	cts ≈ 800 (Th-Ar left ON!)
		Th-Ar				↑	90s	
		/						
		/						

also notation off starting to become unbalanced



3/27

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300L Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 24-25 MAR 1988 Observer RPS  
 Disk ORO 2063

Change....	File	ID	RA	1950.0 Dec	L/R +/+	Exposure	Comments
		1	Th-Ar		↓	90s	
		2	SKYφ+6φ	φ hrs	+60°	2 1/4 m	t ≈ 800, 56°F 20.5°C
		3	Th-Ar		↑	90s	
		4	Th-Ar		↓	90s	
		5	SKYφ+7φ	φ hrs	+70°	4m	cls ≈ 150 (thick clouds)
		6	Th-Ar		↑	90s	(limited to δ < 75° by TV cam)
		7	Th-Ar		↓	80s	balanced 25187A
		8	SKYEVE M	Meridian	+20°	2 M	16 SKY-FIBER Room 45°F Spec 19.9°C
		9	Th-Ar		↑	80s	
		10	Th-Ar		↓	80s	
		11	SKYEVE W	4 hrs west	+20°	2 M	16 SKY-FIBER test
		12	Th-Ar		↑	60s	
		13	Th-Ar		↓	60s	rebalance 1500
		14	H66141	7:59:39	+2:28:23	10 M	17 ION STD 44°F Room 4.4 MAG
		15	Th-Ar		↕	60s	cls = 150/m
		16	H66141	"	"	10 M	" " " Room 42°F
		17	Th-Ar		↕	60s	
		18	H66141	"	"	10 M	" " "
		19	Th-Ar		↑	60s	
		20	Th-Ar		↓	90s	
		21	H81797	09:25:08	-08:26:28	5.5m	2.0 IAU 41°F; 19.4°C, cls ≈ 1000
		22	Th-Ar		↕	90s	
		23	H81797	"	"	5m	
		24	Th-Ar		↕	90s	(Guiding is not easy!)
		25	H81797	"	"	5m	
		26	Th-Ar		↑	90s	
		27	Th-Ar		↓	90s	Rebalanced - Need fine control!!
		28	H66141	7:59:40	02:28:24	6.5m	4.4 IAU cls ≈ 120 40°F, 19.2°C
		29	Th-Ar		↕	90s	
		30	H66141	"	"	6.5m	"
		31	Th-Ar		↕	90s	
		32	H66141	"	"	6.5m	

MAR 27-28 1988

Fiber: TV field ≈ 50 arc sec.  
 Fiber ≈ 3 arc sec.



Spectrograph ECHELLE  
 Grating 300L  
 Telescope 61" Wyeath

Intensified Reticon  
 Log Sheet  
 Date MAR 27/28 1968

TO CAM 3/27/88  
RAW RET  
 Observer JRC  
 Disk 010 2065

Change....	File	ID	RA	Dec	L/R +/-	Exposure	Comments
			1950.0				<b>FIBER TESTS</b>
		1	H09449	10:17:01	16:43:31		5 <sup>m</sup> 4.8 IAN STD. 25187 Å
		2	thAr			↕	90 <sup>s</sup>
		3	H09449	"	"		2 <sup>m</sup> 4.8 IAN STD.
		4	thAr			↑	90 <sup>s</sup>
		5	thAr			↕	90 <sup>s</sup>
		6	H114762	13:09:59	17:46:55		10 <sup>m</sup> 7.3 IAN STD
		7	thAr			↕	90 <sup>s</sup>
		8	H114762	"	"		20 <sup>m</sup> 7.3 IAN STD
		9	thAr			↕	90 <sup>s</sup>
		10	H114762	"	"		10 <sup>m</sup> 7.3 IAN STD SOME clouds
		11	thAr			↑	90 <sup>s</sup>
		12	thAr			↕	90 <sup>s</sup> STOPPED BY CLOUDS AT 0045
		13	H146051	16:11:43	-3:34:01		2 <sup>m</sup> 2.7 IAN STD. CTS=216
		14	thAr			↕	90 <sup>s</sup>
		15	H146051	"	"		5 <sup>m</sup> 2.7 IAN STD. CTS=500
		16	thAr			↕	90 <sup>s</sup>
		17	H146051	"	"		10 <sup>m</sup> 2.7 IAN STD. CTS=1100
		18	thAr			↑	90 <sup>s</sup>
		19	thAr			↕	90 <sup>s</sup>
		20	H136202	15:16:45	1:57:11		10 <sup>m</sup> 5.1 IAN STD CTS=260
		21	thAr			↕	90 <sup>s</sup>
		22	H136202	"	"		5 <sup>m</sup> 5.1 IAN STD CTS=134
		23	thAr			↕	90 <sup>s</sup> 36°F 18.7°C (rebalanced after 1800)
		24	H136202	"	"		10 <sup>m</sup> 5.1 IAN STD CTS=300
		25	thAr			↕	90 <sup>s</sup>
		26	H136202	"	"		2 <sup>m</sup> 5.1 IAN STD CTS=60
		27	thAr			↑	90 <sup>s</sup>
		28	thAr			↕	90 <sup>s</sup>
		29	H146051	16:11:43	-3:34:01		2 <sup>m</sup> 2.7 IAN STD CTS=244
		30	thAr			↕	90 <sup>s</sup>
		31	H146051	"	"		5 <sup>m</sup> 2.7 IAN STD CTS=418
		32	thAr			↕	90 <sup>s</sup>



FIBER  
3/28

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300L Log Sheet RAW/RET  
 Telescope 61" Wynth Date MAR 27/28 1968 Observer JRC  
 Disk ORO 2066

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

Change....	File	ID	RA	1950.0	Dec	L/R	Exposure	Comments
		1	H146051	16:11:43	-3:34:01		10 <sup>m</sup>	2.7 ILM STD.
		2	thAr			↑	90 <sup>s</sup>	CTS=877
		3	thAr			↓	90 <sup>s</sup>	Rm=36°F Spect. 18.6°C
		4	H136202	15:16:45	1:57:11		16 <sup>m</sup>	5.1 ILM STD CTS=146
		5	thAr			↕	90 <sup>s</sup>	
		6	H136202	"	"		5 <sup>m</sup>	5.1 ILM STD CTS=125
		7	thAr			↕	90 <sup>s</sup>	
		8	H136202	"	"		10 <sup>m</sup>	5.1 ILM STD CTS=220
		9	thAr			↕	90 <sup>s</sup>	
		10	H136202	"	"		2 <sup>m</sup>	5.1 ILM STD CTS=44
		11	thAr			↑	90 <sup>s</sup>	
		12	thAr			↓	90 <sup>s</sup>	Rm=35°F Spect 18.5°
		13	H182572	19:22:35	11:50:09		10 <sup>m</sup>	5.2 ILM STD CTS=160
		14	thAr			↕	90 <sup>s</sup>	
		15	H182572	"	"		20 <sup>m</sup>	5.2 ILM STD CTS=325
		16	thAr			↕	90 <sup>s</sup>	
		17	H182572	"	"		2 <sup>m</sup>	5.2 ILM STD CTS=20
		18	thAr			↕	90 <sup>s</sup>	
		19	H182572	"	"		10 <sup>m</sup>	5.2 ILM STD <sup>INTERP. BY CLDS.</sup> CTS=125
		20	thAr			↑	90 <sup>s</sup>	
		21	thAr			↓	90 <sup>s</sup>	
		22	SKYDWN	4th East	+20°		4 <sup>m</sup>	16 SKY CTS=438
		23	thAr			↑	90 <sup>s</sup>	
		24	thAr			↓	90 <sup>s</sup>	
		25	SKYDWN	Meridian	+20°		2 <sup>m</sup>	16 SKY CTS=983
		26	thAr			↑	90 <sup>s</sup>	
		27	INCANS				120m	
		28	INC ADDS				81m	
		29	/					
		30	/					
		31	/					
		32	/					

3/28

Spectrograph ECHELLE Intensified Reticon TO CAMI  
 Grating 3002 Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 28-29 MAR 1988 Observer RPS  
 Disk OR02067

Change....	File	ID	1950.0 RA	Dec	L/R +/-	Exposure	Comments
		Th-Ar			↓	60s	5187Å -clear-
	SKYEVEN	φ hrs		+30°		2.5m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	SKYEVEN	4.5hrs. W		+30°		2m	
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	TV out of focus, alignment
	G111-38	07:46:05	41:35:54			4m	9.5/15 Halo
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	H66141	07:59:40	02:28:24			2m	4.5 IAU standard
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	(4)	07:47:57	26:10:57			2m	8.2 Asteroid
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	H65607	07:56:50	-07:22:06			17m	8.0/250 UX Mon/Fstars/Andersen
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	(set problems - bad chip)
	G103-48	06:36:55	30:04:54			20m	18.9/39 HALO
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	G87-20	06:59:40	38:13:12			3.5m	9.5/15 HALO
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	G249-37	06:01:35	63:50:36			2.5m	9.2/15 HALO
		Th-Ar			↑	60s	
		Th-Ar			↓	60s	
	G40-5	08:01:46	15:30:36			3m	8.5/15 HALO
		Th-Ar			↑	60s	
		/					
		/					

3/28

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300L Log Sheet RAW/RET  
 Telescope 61" Wyeth Date 28-29 MAR. 1988 Observer RPS  
 Disk ORD 2068

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	
		2	G111-33	07:45:13	46:44:12	2 1/4 m	10.0/15 HALOS
		3			↑	60s	
		4			↓	60s	
		5	G46-31	09:14:28	03:14:12	12.5	10.9/15 HALOS (20% Moon)
		6			↑	60s	
		7			↓	60s	
		8	G195-30	09:26:52	52:22:24	3m	9.8/15 HALOS
		9			↑	60s	
		10			↓	60s	
		11	GL388	10:16:54	20:07:18	11m	9.4 Nearby - Kenyon
		12			↑	60s	
		13			↓	60s	
		14	GL411	10:00:37	36:18:18	4m	7.5 " and Space Motion
		15			↑	60s	
		16			↓	60s	
		17	GL447	11:45:09	01:06:00	20m	11.1 Nearby & Space / Kenyon (15% Moon)
		18			↑	60s	
		19			↓	60s	
		20	GL526	13:43:12	15:09:42	5m	8.5 Nearby / Kenyon
		21			↑	60s	
		22			↓	60s	
		23	G62-52	13:33:29	01:27:42	20m	10.9/30 Halo
		24			↑	60s	
		25	G62-52	"	"	10m	"
		26			↑	60s	
		27			↓	60s	
		28	G165-22	13:35:51	39:26:00	3.5m	8.9/15 " ●●
		29			↑	60s	
		30			↓	60s	
		31	G61-24	12:55:04	18:57:48	12.5m	8.9/100 " ●●
		32			↑	60s	



3/30

Spectrograph ECHELLE Intensified Reticon TO CAM1  
 Grating 300L Log Sheet RAW/RET  
 Telescope 61" wyeth Date 28-29 Mar. 1988 Observer RDS  
 Disk ORO 2070

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	60s	
		2	H146051	16:11:43	-03:34:01	2m	2.7 IAU standard 1.0 NO
		3			↑	60s	
		4			↓	60s	
		5	SKY-DWN	4 hrs. E	+20°	2m	
		6			↑	60s	
		7			↓	60s	
		8	SKY-DWN	φ hrs.	+20°	2m	
		9			↑	60s	
		10	INCANDS			2h	
		11	INCANDS			2h	
		12	INCANDS			2h	
		13	ThAr		↓	60s	
		14	SKYDWN	4 hrs E.	+30°	2m	16 sky
		15	ThAr		↑	60s	
		16	ThAr		↓	60s	
		17	SKYDWN	φ hrs.	+30°	2m	16 sky
		18	ThAr		↑	60s	
		19	ThAr		↓	60s	
		20	SKYEVE	φ hrs	+30°	2m	16 sky
		21	ThAr		↑	60s	
		22	ThAr		↓	60s	
		23	SKYEVE	4h W	+30°	2m	16 sky
		24	ThAr		↑	60s	
		25	ThAr		↓	60s	
		26	H66141	7:59:39	2:28:23	2m	4.4 IAU STANDARDS
		27	ThAr		↑	60s	STOPPED BY clouds
		28	ThAr		↓	60s	
		29	G41-34	9:20:06	11:29:06	8m	9.65/15 HALOS (374)
		30	ThAr		↑	60s	
		31	/				
		32	/				

JM Z  
 3/29-30/88  
 NIGHT lost  
 EQUIPMENT  
 FAILURE  
 (DEC MOTOR)  
 3/30-31/88  
 JM Z

3/30/88

Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAW RET  
 Grating 300f Observer JMZ  
 Telescope 61" WYETH Date 3/30-31/1988 Disk ORO 2071

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	High clouds
		H085217	9:47:54	4:34:42		3m	6.2/200 M STARS (281)
		ThAr			↑	60s	
		ThAr			↓	60s	
		H100018	11:28:07	41:33:50		3m	7.0/200 M STARS (37)
		ThAr			↑	60s	
		ThAr			↓	60s	
		100066	11:28:31	36:30:28		9m	8.2/250 F STARS (315)
		ThAr			↑	60s	
		ThAr			↓	60s	
		G195-30	9:26:52	52:22:24		4m	9.8/15 HAIR FIN (236)
		ThAr			↑	60s	
		ThAr			↓	60s	
		78388	9:06:25	50:02:11		4m	7.61/100 F STARS (232)
		ThAr			↑	60s	
		ThAr			↓	60s	
		G6252	13:33:29	01:27:42		20m	10.9/30? HAIR FIN (314)
		ThAr			↑	60s	
		ThAr			↓	60s	
		114301	13:07:05	6:14:41		10m	8.10/150 F STARS (353)
		ThAr			↑	60s	
		ThAr			↓	60s	
		G15499	13:03:49	20:59:42		6m	9.4/20 M STARS (41)
		ThAr			↑	60s	
		S082651	13:03:57	22:53:00		3m	5.9/100 M STARS (40)
		ThAr			↑	60s	
		ThAr			↓	60s	
		(14)	11:45:57	19:18:42		5.5m	9.8 ASTEROIDS
		ThAr			↑	60s	
		ThAr			↓	60s	
		H92588	10:38:52	-1:28:42			6.3 IMU STANDARD
		ThAr			↑	60s	

3/30

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300d Log Sheet RAW/RET  
 Telescope 61" WYETH Date 3/30-31/88 Observer JMZ  
 Disk ORO 2472

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	ThAr			60s	clear 2 5187Å
		2	61,509	13:17:36	48:02:24	4.25m	9.6/50 M STARS (42)
		3	ThAr			60s	
		4	ThAr			60s	
		5	116879	13:23:48	30:57:22	4m	7.92/100 F STARS (363)
		6	ThAr			60s	
		7	ThAr			60s	
		8	323418	12:23:09	31:45:24	12m	10.8 ANGP (832)
		9	ThAr			60s	
		10	ThAr			60s	
		11	LAM-V12	14:16:24	13:08:31	3m	4.6/700 M STARS (47)
		12	ThAr			60s	
		13	ThAr			60s	
		14	125324	14:16:21	-14:17:54	20m	8.1/400 F STARS (393)
		15	ThAr			60s	
		16	125324	14:16:21	14:17:54	10m	" "
		17	ThAr			60s	
		18	ThAr			60s	
		19	21-2613	14:05:55	21:25:55	2.5m	7.8 ANGP (1102)
		20	ThAr			60s	
		21	ThAr			60s	
		22	20-2932	14:06:33	19:42:11	3m	8.8 ANGP (1106)
		23	ThAr			60s	
		24	ThAr			60s	
		25	19-2760	14:27:23	18:33:49	5m	9.2 ANGP (1108)
		26	ThAr			60s	
		27	ThAr			60s	
		28	22-2671	14:08:53	21:58:35	8m	8.6 ANGP (1114)
		29	ThAr			60s	
		30	/	/	/	/	/
		31	/	/	/	/	/
		32	/	/	/	/	/





Spectrograph ECHELLE Intensified Reticon  
 Log Sheet

TO CAM 3/31

Grating 3002

31 MAR -

Observer JMZ

Telescope 61" Wyeth

Date 1 April 1988

Disk ORO 2074

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		ThAr			↓	60s	25487 Å CLEAR
	SKYEVIEW	Øh	+26°			2m	16 SKY
		ThAr			↑	60s	
		ThAr			↓	60s	
	SKYEVIEW	4h West	+26°			2m	16 SKY
		ThAr			↑	60s	
		ThAr			↓	60s	
	H26162	4:06:14	19:28:43			2m	5.5 IAU STANDARDS
		ThAr			↑	60s	
		ThAr			↓	60s	
	G6-26	3:36:47	18:13:2			4.5m	9.0/50 HALOFORM (78)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G6-20	3:34:10	25:49:48			4m	9.1/100 HALOFORM (76)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G38-13	3:42:21	28:53:48			20m	11.49/15 HALOFORM (80)
		ThAr			↓	60s	POOR SEEING
	G38-13	"	"			10m	" "
		ThAr			↑	60s	
		ThAr			↓	60s	
	HDS4520	7:06:08	72:21:30			20m	9.5/200 F STAIRS (688)
		ThAr			↑	60s	
	HDS4520	"	"			20m	" "
		ThAr			↑	60s	
		ThAr			↓	60s	
	HG5607	7:56:50	7:22:06			20m	9.0/250 F STAIRS (687)
		ThAr			↑	60s	
		ThAr			↓	60s	
	G6273	7:24:43	5:22:42			20m	9.82 M STAIRS, SPACE & NEARBY (12)
		ThAr			↑	60s	↑ Through high clouds
		/				/	

Spectrograph ECHELLE Intensified Reticon TO CAM 3/31  
 Grating 300 Log Sheet RAW RET  
 Telescope 61" WYETH Date 31 MAR - 1 APR 88 Observer JMZ  
 Disk ORO 2075

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	ThAr		↓	60s	25187A High clouds
		2	H085217	9:47:54	4:34:42	↓	15m 6.2/200 M STARS (28)
		3	ThAr		↑	60s	
		4	ThAr		↓	60s	
19198		5	(4)	7:49:51	26:26:30	↓	2M 8.0 ASTEROIDS
		6	ThAr		↑	60s	
		7	ThAr		↓	60s	
19199		8	H89449	10:17:01	19:43:31	↓	3M 4.8 IAU STANDARD
		9	ThAr		↑	60s	
		10	ThAr		↓	60s	
		11	GL380	10:08:19	49:42:2	↓	2M 6.59 <sup>M STARS</sup> NEARBY (12)
		12	ThAr		↑	60s	
		13	ThAr		↓	60s	
		14	88162	10:07:37	21:11:29	↓	2.5M 7.27/120 F STARS (266)
		15	ThAr		↑	60s	
		16	ThAr		↓	60s	
		17	G165-22	13:35:51	39:26:00	↓	2M 8.9/15 Halcifer (315)
		18	ThAr		↑	60s	
		19	ThAr		↓	60s	- Heavy cirrus -
		20	118158	13:32:18	20:54:44	↓	9M 8.1/60 F STARS (369)
		21	ThAr		↑	60s	
		22	ThAr		↓	60s	
		23	23587	13:32:51	22:45:46	↓	4.5M 6.9 ANGP (912)
		24	ThAr		↑	60s	
		25	ThAr		↓	60s	
		26	35-2478	13:41:19	34:32:19	↓	15m 8.1 ANGP (975)
		27	ThAr		↑	60s	
		28	ThAr		↓	60s	
		29	33384	13:51:51	33:04:21	↓	7M 8.0 ANGP (1026)
		30	ThAr		↑	60s	
		31	/				↖ NW
		32	/				

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet

TO CAM 4/2/88

Grating 300L

RAW RET

Telescope 61" WYETH

Date 3/31 - 4/1 1988

Observer JM2

Disk ORO 2076

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