

TO CAM 10/8

Spectrograph ECHELLE Intensified Reticon  
 Grating 300L Log Sheet RAW/RET 13  
 Telescope 5+1 Date OCT 8-7/86 Observer non  
 Disk ORO 1213

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A SUN
		2				2 <sup>m</sup>	0 HA 10 = SEC
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5				2 <sup>m</sup>	42 HAW 40 = SEC
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	H14605	16 11 43 -03 34		2 <sup>m</sup>	NO = 0.3 FILTER
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	H192572	19 22 35 11 50		2 <sup>m</sup>	
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	G16644	16 52 46 -08 15		14 <sup>m</sup>	
		15			↑	90 <sup>s</sup>	
		16			↓	90 <sup>s</sup>	
		17	Z LAC	22 38 53 56 34		4 <sup>m</sup>	
		18			↑	90 <sup>s</sup>	
		19			↓	90 <sup>s</sup>	
		20	SV VVL	19 49 38 27 20		2 <sup>m</sup>	
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	
		23	CI CYG	19 48 21 35 33		9 <sup>m</sup>	
		24			↑	90 <sup>s</sup>	
		25			↓	90 <sup>s</sup>	
		26	X CYG	20 41 27 35 24		2 <sup>m</sup>	
		27			↑	90 <sup>s</sup>	
		28			↓	90 <sup>s</sup>	
		29	AG PEG	21 48 30 12 23		2 <sup>m</sup>	
		30			↑	90 <sup>s</sup>	
		31					
		32					

TO CAM 10/8

RAWRET 13

Spectrograph ECHELLE Intensified Reticon

Grating 3008 Log Sheet

Telescope SH Date 10/8-9/86 Observer DM

Disk OKO 1214

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR			90°	S127A 70μ
		2	S167161	21 29 39	-12 29	2~	
		3	TH-AR			10°	
		4	G5830	21 27 19	-12 44		
		5	TH-AR			90°	
		6	TH-AR			90°	
		7	U427	19 44 27	31 54	9"	NW, BRIGHTER STAR
		8	TH-AR			90°	
		9	U428	19 44 27+	31 54-	16 1/2"	SE, FAINTER STAR
		10	TH-AR			90°	
		11	TH-AR			90°	
		12	EG/And	00 41 53	40 27	2~	
		13	TH-AR			90°	
		14	TH-AR			90°	
		15	VX PER	02 04 18	58 12	15"	
		16	TH-AR			90°	
		17	TH-AR			90°	
		18	S2-CFS	02 23 33	59 14	20~	
		19	TH-AR			90°	
		20	VY PER	02 23 56	58 42	8"	CLD IN CLDS
		21	TH-AR			90°	
		22	TH-AR			90°	
		23	B AQR	21 28 56	-05 48	6"	6563A ND=0.3
		24	TH-AR			90°	
		25	TH-AR			90°	
		26	X AQR	22 03 13	-00 34	7"	ND=0.3 FILTER
		27	TH-AR			90°	
		28	TH-AR			90°	
		29	P CYG	20:15:16	37:59:36	5" ND	4.8/
		30	TH-AR			90°	
		31					
		32					

Intensified Reticon

TO CAM 10/8

Spectrograph ECHELLE

Log Sheet

RAW RET 13

Grating 3000

Observer GS

Telescope 61" WYETH

Date OCT 8-9 1986

Disk ORO 1215

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90°	5187A 80μ SLIT
		2	19:23:14	50:08:31		15 MIN	7.0/ SYMBIOTIC
		3			↑	90°	
		4			↓	90°	
		5	22:45:18	44:17:00		12 MIN	9.6/ SPACE MOTION
		6			↑	90°	
		7			↓	90°	
		8	23:47:55	30:04:30		13 MIN	9.3/
		9			↑	90°	
		10			↓	90°	
		11	00:40:52	33:34:36		10 MIN	8.7/ MIRROR MOISTURE SATURATED
		12			↑	90°	"HOLD FOR WETNESS"
		13			↓	90°	6563A 80μ SLIT
		14	23:25:06	46:11:14		3 MIN	3.9/ END INCLUDES H ALPHA
		15			↑	90°	MIRRORS STILL WET
		16			↓	90°	
		17	05:52:28	07:23:38		7 MIN	0.8/ (2ND FILT)
		18			↑	90°	
		19			↓	90°	
		20	05:12:16	-08:16:00		10 MIN	0.1/ (2ND FILT)
		21			↑	90°	
		22			↓	90°	
		23	05:06:45	08:49:00		12 MIN	4.3/ (3ND FILT)
		24			↑	90°	
		25			↓	90°	
		26	05:36:33	04:05:41		17 MIN	4.5/
		27			↑	90°	
		28			↓	90°	5187A 80μ SLIT
		29	06:22:31	07:06:53		4 MIN	6.6/ MIRRORS STILL WET
		30			↑	90°	
		31					
		32					

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet

TO CAM 10/10

Grating 3000

Observer GS

Telescope 61" WYETH

Date OCT 8-9 1986

Disk DR0 1216

RAW RET 13

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90°	5187A 80 μ SLIT
		2	SV MON	06:18:45	06:29:41	6 MIN	8.9 (MIRROR STILL WET) CEPHEIDS
		3	TH-AR		↑	90°	
		4	TH-AR		↓	90°	
		5	RX AUR	04:57:55	39:53:17	3 MIN	9.2/
		6	TH-AR		↑	90°	
		7	TH-AR		↓	90°	
		8	H26162	04:06:14	19:28:43	2 MIN	5.5/ IAU STAND.
		9	TH-AR		↑	90°	
		10	TH-AR		↓	90°	
		11	SKYDWN DUNSKYE	4 1/2 HR HA	+35°	2 MIN	
		12	TH-AR		↑	90°	
		13	TH-AR		↓	90°	
		14	SKYDWN M	0 HR HA	+35°	2 MIN	
		15	TH-AR		↑	90°	
		16	INCANDS			120 MIN	
		17	INCANDS			170 MIN	
OCT 9/10		18	TH-AR		↓	90°	5187A 80 μ SLIT
		19	SKYEUEM	0 HR HA	+35°	2 MIN	OVERCAST (1730)
		20	TH-AR		↑	90°	
		21	TH-AR		↓	90°	
		22	SKYEUEW	4 30" WES	+35°	6 MIN	(BLACK CLOUD WEST)
		23	TH-AR		↑	90°	
		24	TH-AR		↓	90°	
		25	Z LAC	22:38:53	56:34 05	13 MIN	8.9 (12 SEC SLIT) CEPHEIDS
		26	TH-AR		↑	90°	
		27					
		28					
		29					
		30					
		31					
		32					

Intensified Reticon

TO CAM 10/10

Spectrograph ECHELLE

Log Sheet

RAW/RET 13

Grating 3000

Observer GS MORSEY

Telescope 6" WYETH

Date OCT 10-11 1986

Disk ORO 1217

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80μ SLIT
		2		+30°		24 <sup>m</sup>	(CLEAR)
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5		+30°		2 <sup>MIN</sup>	
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	H 182572	19:22:35	11:50:09	2 <sup>MIN</sup>	5.2/ IAU STD
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	U SGR	18:28:57	-19:09:42	2 <sup>MIN</sup>	7.1/ CEPH.
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	SU VUL	19:49:28	27:19:53	2 <sup>MIN</sup>	7.8/
		15			↑	90 <sup>s</sup>	REBOOTED GRAPHICS FAILED
		16			↓	90 <sup>s</sup>	
		17	X CYG	20:41:27	35:24:24	2 <sup>MIN</sup>	6.4/
		18			↑	90 <sup>s</sup>	
		19			↓	90 <sup>s</sup>	
		20	DL CAS	00:27:11	59:56:12	9 <sup>MIN</sup>	10.6/
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	
		23	VX PER	02:04:18	58:12:22	10 <sup>MIN</sup>	9.7/
		24			↑	90 <sup>s</sup>	
		25			↓	90 <sup>s</sup>	
		26	G 141-47	18:50:55	10:33:42	12 <sup>m</sup>	6.5
		27			↑	90 <sup>s</sup>	
		28			↓	90 <sup>s</sup>	
		29	S 189153	20:17:01	-20:4:12	4 <sup>m</sup>	9.2
		30			↑	90 <sup>s</sup>	
		31					
		32					

Intensified Reticon

TO CAM 10/10

Spectrograph ECHELLE

Log Sheet

RAW/RET 13

Grating 3000

Observer MORSEY

Telescope 61" Wyeth

Date 10/10-11/86

Disk OKO 1218

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90s	
		2	S189226	20:26:39	-21:31:05		4m 8.7
		3	TH-AR		↑	90s	
		4	TH-AR		↓	90s	
		5	G24-25	20:37:42	+00:22:42		17m 10.6
		6	TH-AR		↑	90s	Boy, Dave leaves and immediately I get 12" seeing
		7	TH-AR		↓	90s	
		8	G25-15	21:01:37	+02:48:00		2m 7.4
		9	TH-AR		↑	90s	
		10	TH-AR		↓	90s	
		11	S127141	21:51:28	+06:37:42		2m 6.2
		12	TH-AR		↑	90s	
		13	TH-AR		↓	90s	
		14	G26-38	21:56:12	+00:34:18		6m 10.3
		15	TH-AR		↑	90s	
		16	TH-AR		↓	90s	
		17	G27-29	22:25:20	-05:32:06		10m 11.2
		18	TH-AR		↑	90s	
		19	TH-AR		↓	90s	
		20	S191353	22:39:17	-21:02:48		5m 9.3
		21	TH-AR		↑	90s	(4" seeing up down south.
		22	TH-AR		↓	90s	
		23	G157-21	23:06:29	-02:49:18		3m 9.3
		24	TH-AR		↑	90s	
		25	TH-AR		↓	90s	
		26	G28-41	23:06:45	-02:31:48		2m 8.6
		27	TH-AR		↑	90s	
		28	TH-AR		↓	90s	
		29	S165532	23:07:49	-13:34:54		8m 8.4
		30	TH-AR		↑	90s	
		31					
		32					

TO CAM 10/10

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet RAW RET 13  
 Grating 300 Observer Mason  
 Telescope 61" Wyeth Date 10/10/86 Disk 0201219

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	G68-31	23:33:33	18:09:48	2 m	7.7
		3			↑	90s	
		4			↓	90s	
		5	G19-42	23:52:30	20:06:21	2 m	9.0
		6			↑	90s	
		7			↓	90s	
		8	G130-10	23:43:58	34:58:12	2 m	9.1
		9			↑	90s	
		10			↓	90s	
		11	G130-32	23:57:31	33:54:42	2 m	8.5
		12			↑	10s	
		13			↓	90s	
		14	G171-58	00:22:26	47:46:12	2 m	7.5 <i>Some vignetting?</i>
		15			↑	90s	
		16			↓	90s	
		17	G171-57	00:22:23	45:24:41	3 m	9.6 <i>may have cut this one off early</i>
		18			↑	90s	
		19	G190-10	23:05:39	41:35:12	15 m	11.2 } <i>Sony.</i>
		20			↑	90s	
		21			↓	90s	
		22			↓	90s	
		23	G34-16	01:13:55	18:15:30	2 m	8.5
		24			↑	90s	
		25			↓	90s	
		26	G37-26	03:05:28	26:09:06	2 m	8.1
		27			↑	90s	
		28			↓	90s	
		29	L13753	03:15:43	+32:08:41	7 m	10.0 <i>TJ Per (many/medium)</i>
		30			↑	90s	
		31					
		32					

Intensified Reticon TO CAM 10/10

Spectrograph ECHELLE Log Sheet RAW/RET 13

Grating 300L Observer Mosey

Telescope 61" Wyeth Date 10/10-11/86 Disk ORO 1220

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90s	1024398
		2	L13779	03:50:58	31:42:41	8 m	10.2 13779 → • ← 13778
		3	TH-AR		↑↓	90s	[ I.D.'s are questionable since actually 13778 looks fainter ]
		4	L13778	03:50:57	31:42:42	3 m	
		5	TH-AR		↑↓	90s	
		6	TH-AR		↓	90s	1024398 → • ← 13778
		7	L13777	03:50:56	31:44:22	6 m	11.3 switch w of 1024398
		8	TH-AR		↑↓	90s	← (no features)
		9	L13776	03:50:58	31:44:03	4 m	9.5
		10	TH-AR		↑	90s	
		11	TH-AR		↓	90s	
		12	L13843	03:48:25	34:43:18	3 m	I.D.? came right up, but field obscuring ↓
		13	TH-AR		↑	90s	Computer going crazy!!! REBOOT
		14	TH-AR		↓	90s	
		15	L13847	03:50:09	34:45:43	6 m	10.5 came right up - (seems fainter?)
		16	TH-AR		↑	90s	
		17	TH-AR		↓	90s	
		18	L13864	03:50:10	35:34:09	8 m	9.6 came up nicely
		19	TH-AR		↑	90s	
		20	TH-AR		↓	90s	
		21	L13824	04:00:06	33:32:56	8 m	10.2 came up
		22	TH-AR		↑	90s	
		23	TH-AR		↓	90s	
		24	L13806	04:02:20	33:44:42	8 m	10.0 came up
		25	TH-AR		↑	90s	
		26	TH-AR		↓	90s	
		27	L13855	04:02:38	34:29:51	10 m	10.6 came up
		28	TH-AR		↑	90s	
		29	TH-AR		↓	90s	
		30	RX AUR	04:57:55	34:53:17	3 m	1.2 (too bright) but also [unclear]
		31	TH-AR		↑	90s	too faint also
		32					[ came from ... up from 28446 object clear! ]



Spectrograph ECHELLE

Intensified Reticon

TO CAMGrating 3000

Log Sheet

RAW RET 13Telescope 11" 102cmDate 10/10-11/86Observer MoseleyDisk ORO 1221

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
		1			↓	90s		
		2	SV MIN	06:19:45	106:29:41		5m 3.9	
		3			↑	90s		
		4			↓	90s		
		5	T MIN	06:22:31	07:06:53		3m 5.8(7.6)	
		6			↑	90s		
		7			↓	90s		
		8	G88-5	07:03:12	18:42:54		5m 10.2	but finding exact - must be the bright one.
		9			↑	90s		
		10	TH-AR	<del>07:10:24</del>	<del>17:31:18</del>	↓	90s	<del>10.3</del>
		11	G88-13	07:10:24	17:31:18		6m 10.3	
		12			↑	90s		
		13			↓	90s		
		14	G89-14	07:19:48	05:55:12		18m 10.4	
		15			↑	90s		
		16			↓	90s		
		17	G89-34	07:35:23	05:42:06		3m 8.2	
		18			↑	90s		
		19			↓	90s		
		20	G90-25	07:50:22	30:45:40		5m 8.3	didn't come right up, but only bright one around.
		21			↑	90s		
		22			↓	90s	DAWN!!	
		23	SKYDOME	10h	0°		5m	(3" east.)
		24			↑	90s		
		25			↓	90s		
		26	SKYDOME	7h	0°		5m	
		27			↑	90s		
		28	INCLANS				120m	
		29	INCLANS				110m	
		30						
		31						
		32						

Intensified Reticon

TO CAM 19/11

Spectrograph ECHELLE

Log Sheet

RAW/RET 13

Grating 3002

Observer Mossy

Telescope 61" Wyeth Date 10/11-12/86

Disk CR01222

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	18 <sup>h</sup> 30 <sup>m</sup>	+01 <sup>o</sup>		3m	to start due to no proton, in use for the night again
		3			↑	90s	only time for an sky...
		4			↓	90s	
		5	18:28:57	-19:09:42		2m	seeing ~4k
		6			↑	90s	
		7			↓	90s	
		8	19:49:28	27:19:53		3m	
		9			↑	90s	
		10			↓	90s	
		11	20:41:27	35:24:24		2m	
		12			↑	90s	
		13			↓	90s	
		14	22:38:53	56:34:05		3m	seeing ~2"
		15			↑	90s	
		16			↓	90s	
		17	00:27:11	59:56:12		6m	
		18			↑	90s	
		19			↓	90s	
		20	23:24:15	60:21:06		15m	10.5
		21			↑	90s	
		22			↓	90s	
		23	23:09:39	41:35:12		10m	11.2
		24			↑	90s	
		25			↓	90s	
		26	19:30:32	48:29:54		8m	8.5
		27			↑	90s	
		28			↓	90s	
		29	20:14:45	19:06:36		6m	10.8
		30			↑	90s	
		31					
		32					

Spectrograph ECHELLE

Intensified Reticon

TO CAM 10/11

Grating 300 Å

Log Sheet

RAW RET 13

Telescope 11" WhippleDate 10/11-12/66Observer W. W. [unclear]Disk 080/223

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	-145870	20:53:23	-13:42:42		10 m 10.2
		3			↑	90s	
		4			↓	90s	
		5	G197-40	21:19:46	27:14:18		6 m 10.5 good seeing!
		6			↑	90s	
		7			↓	90s	
		8	VX PER	02:04:18	58:12:22		5 m
		9			↑	90s	
		10			↓	90s	
		11	G188-30	21:53:03	32:24:24		10 m 11.1
		12			↑	90s	
		13			↓	90s	
		14	G18-12	21:57:42	33:07:54		7 m 11.0
		15			↑	90s	
		16			↓	90s	
		17	G18-24	22:03:14	12:08:18		3 m 9.6
		18			↑	90s	
		19			↓	90s	
		20	G214-19A	22:13:08	39:31:36		90s 7.6
		21			↑↓	90s	
		22	G214-18B	22:13:08	39:31:36		20 m VMA actually fainter - about 12.5
		23			↑	90s	
		24			↓	90s	
		25	G262-14	20:27:25	61:50:54		8 m 11.5
		26			↑	90s	
		27			↓	90s	
		28	G127-33	22:25:40	24:41:00		2 m 10.0 good seeing!
		29			↑	90s	
		30					
		31					
		32					

• F-A ~ 7.8  
on 8-12-4

TO CAM 10/12

Intensified      Reticon

Spectrograph ECHELLE      Log      Sheet      RAW/RET 13

Grating 3000      Observer Wojcik

Telescope 61" Wyeth      Date 10/11-12/86      Disk ORO 1224

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	GR-55	22:30:20	09:03:25	2 m	9.4
		3	TH-AR		↑	90s	
		4	TH-AR		↓	90s	
		5	G67-38	22:56:49	11:55:36	2 m	8.4
		6	TH-AR		↑	90s	
		7	TH-AR		↓	90s	
		8	G128-45	23:15:33	31:15:30	13 m	11.7 seeing blowing up.
		9	TH-AR		↑	90s	
		10	TH-AR		↓	90s	
		11	G29-25	23:19:46	11:53:06	8 m	10.8
		12	TH-AR		↑	90s	
		13	TH-AR		↓	90s	
		14	G171-3	23:30:57	42:34:06	2 m	~7.0
		15	TH-AR		↑	90s	
		16	TH-AR		↓	90s	
		17	G216-45	23:25:02	49:59:12	8 m	11.1
		18	TH-AR		↑	90s	
		19	TH-AR		↓	90s	
		20	G34-36	01:30:13	23:26:30	2 m	9.0
		21	TH-AR		↑	90s	
		22	TH-AR		↓	90s	
		23	G71-27	01:39:22	01:39:00	2 m	8.9
		24	TH-AR		↑	90s	
		25	TH-AR		↓	90s	
		26	S129772	02:12:04	-01:25:59	2 m	9.1
		27	TH-AR		↑	90s	
		28	TH-AR		↓	90s	
		29	G73-57	02:23:23	5:23:12	on 90s	8.0
		30	TH-AR		↑	90s	
		31					
		32					

10/12

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW/RET 13

Grating 3000

Observer M. Long

Telescope 61" Weyth

Date 10/11-12/86

Disk 0201225

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
	G72-60		02:05:38	31:09:24		2 m	10.3
		3			↑	90s	
		4			↓	90s	see
	G172-61		01:31:18	48:29:06		3 m	11.0
		6			↑	90s	Seeing amazing! star disappears in slit
		7			↓	90s	
	G172-38		01:02:41	49:11:18		4 m	11.1
		9			↑	90s	
		10			↓	90s	
	G172-58		01:28:13	47:44:54		3 m	10.2
		12			↑	90s	
		13			↓	90s	
	G172-46		01:13:37	51:35:48		6 m	11.2
		15			↑	90s	
		16			↓	90s	
	G172-49		01:17:59	51:43:24		90s	7.6
		18			↑	90s	
		19			↓	90s	
	G173-2		01:27:49	32:29:18		4 m	10.1 seeing blowing up.
		21			↑	90s	
		22			↓	90s	
	G70-35		01:01:54	-2:38:00		2m20s	9.2 (2h 40' West.)
		24			↑	90s	Clouds coming! (from SW)
		25			↓	90s	[correct]
	G96-20		05:01:59	40:11:24		3 m	9.7 Clouds blow North seeing good
		27			↑	90s	but I suspect more over the
		28			↓	90s	
	HD 37148		05:34:01	11:51:21		2 m	9.5 LAM-021 (thin/mox)
		30			↑	90s	
		31					
		32					

10/25

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Log Sheet RAW RET 13  
 Grating 3000 Observer Morsey  
 Telescope 61" Wlyoth Date 10/11-12/86 Disk OR01226

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90s	
		2	H245454	05:33:50	09:50:14	2m	8.4
		3	TH-AR		↑	90s	
		4	TH-AR		↓	90s	
		5	H245299	05:32:59	10:22:09	6m	9.7
		6	TH-AR		↑↓	90s	
(H244907)	→	7	H244907	05:31:06	09:44:38	12m	10.4 Clouds! - blue north again. rough going. (50 counts)
		8	TH-AR		↑↓	90s	
		9	907-M	05:30:59	09:39:10	6m	10.5 (25 counts)
		10	TH-AR		↑↓	90s	
		11	H245042	05:31:44	09:23:51	8m	10.5
		12	TH-AR		↑↓	90s	
		13	H03709	05:33:38	09:43:22	2m	8.6
		14	TH-AR		↑↓	90s	
		15	H245460	05:33:49	09:34:04	4m	9.6
		16	TH-AR		↑	90s	Clouds coming again
		17	TH-AR		↓	90s	
		18	RX-AUR	04:57:55	39:53:17	3m	
		19	TH-AR		↑	90s	
		20	TH-AR		↓	90s	Muchos cloudy - still trying
		21	SVMON	06:18:45	06:29:41	5m	Waiting... have to stop (4 counts)
		22	TH-AR		↑	90s	well, that's it kids...
		23	INCANP			90m	clouded out!
		24					
		25					
		26					
		27					
		28					
		29					
		30					
		31					
		32					

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet  
 Grating 300L  
 Telescope SH Date 10/14-15/88

TO CAM 10/15  
 RAW/RET 13

Observer JM  
 Disk ORO 1227

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A
		2	X CYG 20 41 27	35 24		4 <sup>m</sup>	MIRROR STILL WARM
		3	TH-AR		↑	90 <sup>s</sup>	FROM DEW-DRYING
		4	TH-AR		↓	90 <sup>s</sup>	12 sec seeing.
		5	Z LAC 22 38 53	56 34		20 <sup>m</sup>	
		6	TH-AR		↑	90 <sup>s</sup>	
		7	TH-AR		↓	90 <sup>s</sup>	
		8	RX AVK 04 57 55	39 53		13 <sup>m</sup>	
		9	TH-AR		↑	90 <sup>s</sup>	
		10	TH-AR		↓	90 <sup>s</sup>	
		11	U079 04 26 02	21 49		10 <sup>m</sup>	
		12	TH-AR		↑	90 <sup>s</sup>	
		13	TH-AR		↓	90 <sup>s</sup>	
		14	U099 05 20 43	17 17		8 <sup>m</sup>	
		15	TH-AR		↑	90	
		16	TH-AR		↓	90	
		17	DL CAS 00 27 11	59 56		15 <sup>m</sup>	
		18	TH-AR		↑	90	
		19	TH-AR		↓	90	
		20	VX PER 02 04 18	58 12		19 <sup>m</sup>	
		21	TH-AR		↑	90	
		22	TH-AR		↓	90	
		23	T MON 06 22 31	07 07		3 <sup>m</sup>	
		24	TH-AR		↑	90	
		25	SV MON 06 18 45	06 30		4 <sup>1/2</sup> <sup>m</sup>	
		26	TH-AR		↑	90	
		27	TH-AR		↓	90	
		28	HD 59927 07 20 26	25 09		6 <sup>m</sup>	
		29	TH-AR		↑	90	
		30	TH-AR		↓	90 <sup>s</sup>	6563
		31	2 ORI 05 52 27	07 24		5 <sup>m</sup>	ND = 1.0 FILTER
		32	TH-AR			90 <sup>s</sup>	

Intensified Reticon

TO CAM 10/15

Spectrograph ECHELLE

Log Sheet

RAWRET

Grating 300L

Observer Jim 13

Telescope SH

Date 10/14-15/86

Disk ORU 1228

Change....	File	ID	1950.0 RA	Dec	L/R +/-	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A
		2	H66141	07 59 40	02 28		2 <sup>m</sup>
		3			↑	90 <sup>s</sup>	
		4			↓	90	
		5	SKYDWE			2 <sup>m</sup>	4 <sup>h</sup> EAST +30°
		6			↑	90	
		7			↓	90	
		8	SKYDMM			2 <sup>m</sup>	0 <sup>h</sup> +30°
		9			↑	90	
		10	INCAND			120 <sup>m</sup>	
10/15-16		11	INCAN			120	
		12	INCAN			85 <sup>m</sup>	
		13			↓	90 <sup>s</sup>	
		14	SKYEVEIM			2 <sup>m</sup>	0 <sup>h</sup> -130
		15			↑	90	
		16			↓	90	
		17	SKYEVEW			2 <sup>m</sup>	4 <sup>h</sup> WEST +30
		18			↑	90	
		19			↓	90	
		20	H182592	19 22 35	11 50		2 <sup>m</sup>
		21			↑	90	
		22			↓	90	
		23	V433Her	18 20 03	23 26		20 <sup>m</sup>
		24			↑	90	
		25			↓	90	
		26	U Sgr	18 28 57	-19 09		3 <sup>m</sup>
		27			↑	90 <sup>s</sup>	
		28			↓	90	
		29	SV VUL	19 49 28	27 20		3 <sup>m</sup>
		30			↑	90	
		31					
		32					



Spectrograph ECHELLE

Intensified Reticon

TO CAM 10/15Grating 300L

Log Sheet

RAW RET 13Telescope SHDate 10/15-16/86Observer sgmDisk ORO 1229

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

Change....	File	ID	1950.0	RA	Dec	L/R	Exposure	Comments
						↑/↓		
1		TH-AR				↓	90 <sup>s</sup>	5187
2	X CYG		20 41 27		35 24		2 <sup>m</sup>	
3		TH-AR				↑	90 <sup>s</sup>	
4		TH-AR				↓	90	
5	G190-10		23 05 39		41 35		20 <sup>m</sup>	
6		TH-AR				↑	90 <sup>s</sup>	
7		TH-AR				↓	90 <sup>s</sup>	
8	Z AND		23 51 15		48 33		15 <sup>m</sup>	
9		TH-AR				↑	90 <sup>s</sup>	
10		TH-AR				↓	90 <sup>s</sup>	
11	DL CAS		00 27 11		59 56		15 <sup>m</sup>	
12		TH-AR				↑	90 <sup>s</sup>	
13		TH-AR				↓	90	
14	AX PER		01 33 06		54 00		20 <sup>m</sup>	
15		TH-AR				↑	90	
16		TH-AR				↓	90	
17	VX PER		02 04 18		58 12		12 <sup>m</sup>	
18		TH-AR				↑	90	
19		TH-AR				↓	90	
20	U438		20 28 03		26 40		8 <sup>m</sup>	
21		TH-AR				↑	90	
22		TH-AR				↓	90	
23	U440		20 29 33		33 36		4 <sup>m</sup>	
24		TH-AR				↑	90	
25		TH-AR				↓	90	
26	U446		20 42 11		31 08		13 <sup>m</sup>	
27		TH-AR				↑	90	
28		TH-AR				↓	90	
29	U452		20 52 47		11 04		4 <sup>m</sup>	
30		TH-AR				↓	90	
31	U451		20 52 42		12 59		4 <sup>m</sup>	
32		TH-AR				↑	90	

10/18

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW/RET 13

Grating 300L

Observer Jan

Telescope SH

Date 10/15-16/86

Disk ORO 1230

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

Change....	File	ID	1950.0	RA	Dec	L/R	Exposure	Comments
		1				↓	90 <sup>s</sup>	5187
		2		H 450	20 52 18	61 58	3 <sup>m</sup>	
		3		TH-AR			TH 90 <sup>s</sup>	
		4		U 448	20 52 05	62 00	3 <sup>m</sup>	
		5		TH-AR			↑ 90 <sup>s</sup>	
		6		TH-AR			↓ 90 <sup>s</sup>	
		7		U 447	20 50 57	62 00	62 <sup>m</sup>	
		8		TH-AR			↑ 90 <sup>s</sup>	
		9		TH-AR			↓ 90 <sup>s</sup>	
		10		Z LAC	22 38 55	56 34	8 <sup>m</sup>	
		11		TH-AR			↑ 90	
		12		TH-AR			↓ 90	
		13		U 477	22 08 10	22 32	3 1/2 <sup>m</sup>	
		14		TH-AR			TH 90	
		15		U 480	22 08 28	22 33	2 <sup>m</sup>	
		16		TH-AR			TH 90	
		17		U 482	22 22 24	22 18	2 1/2 <sup>m</sup>	
		18		TH-AR			↑ 90	
		19		TH-AR			↓ 90	
		20		U 483	22 26 09	57 26	7 <sup>m</sup>	
		21		TH-AR			↑ 90	
		22		U 484	22 26 23	57 28	12 <sup>m</sup>	
		23		TH-AR			↑ 90	
		24		TH-AR			↓ 90	
		25		U 006	00 15 40	43 45	3 <sup>m</sup>	
		26		TH-AR			↑ 90	
		27		TH-AR			↓ 90	
		28		RX AVR	04 57 55	39 53	10 <sup>m</sup>	CLOS
		29		TH-AR			↑ 90	
		30		/				
		31		/				
		32		/				

10/18

Intensified Reticon

TO CAM1

Spectrograph ECHELLE

Log Sheet

RAW/RET 13

Grating 3602

Observer RPS

Telescope 61" Wyoth

Date 10/18-19/1986

Disk 1231 ORO

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
	U SGR	18 28 57	19:09:42			5m	Cepheids
		3			↑	90s	
		4			↓	90s	
	GOS 763	19:32:10	04:28:16			5m	9.4/30 M-stars
		6			↑	90s	
		7			↓	90s	
	S124835	19:33:45	05:53:44			2m	6.7/100
		9			↑	90s	
		10			↓	90s	
	GLS 820A	21:04:54	38:32:06			5min	5.2/100
		12			↑	90s	
		13			↓	90s	
	GLS 820B	21:04:54	38:32:06			3min	5.9/100
		15			↑	90s	
		16			↓	90s	
	HD 200370	20:59:59	39:03:49			8min	7.4/500 F STARS, needs new program ID!
		18			↑	90s	
		19			↓	90s	HALOS
	G190-10	23:05:39	41:35:12			12m	11.2/20
		21			↑	90s	
		22			↓	90s	
	HD 213014	22:25:46	17:00:28			3min	7.7/100 IAU
		24			↑	90s	
	HD 213014B	22:25:46	17:00:28			6min	IAU
		26			↑	90s	
		27			↓	90s	
	SV Vul	19:49:28	27:19:53			4m	6.7/150 CEPH
		29			↑	90s	
	<del>TH-Ar</del>				↓		
		31					
		32					

10118

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW/RET 14

Grating 300 P

Observer RPS + SA

Telescope 61" Wyeth

Date 10/18/9/1986

Disk 1232 ORO

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

Change....	File	ID	1950.0	RA	Dec	L/R	Exposure	Comments
						↑/↓		
1	Th-Ar					↓	90s	
2	X Lys	20:41:27	35:24:24				3m	6.7/100 CEPHEID
3	Th-Ar					↑	90s	
4	Th-Ar					↓	90s	MSTARS
5	GLS 2	00:02:35	45:30:30				7m	7.9/130
6	Th-Ar						90s	
7	Th-Ar						90s	
8	GLS 4A	00:03:05	45:32:06				6m	8.9/40
9	Th-Ar					↑	90s	
10	GLS 4B	00:03:05	45:32:06				6m	9.0/40
11	Th-Ar					↑	90s	
12	Th-Ar					↓	90s	
13	S 036250	00:15:41.2	44:16:52				5m	7.7/100
14	Th-Ar					↑	90s	
15	Th-Ar					↓	90s	8.1/50
16	GLS 15A	00:15:40.5	43:44:37				5m	
17	Th-Ar					↑	90s	
18	Th-Ar					↓	90s	
19	GLS 14	00:14:28	40:40:18				9m	9.0/40
20	Th-Ar					↑	90s	
21	Th-Ar					↓	90s	
22	G 171-S7	00:22:23	45:24:48				14m	HALOS
23	Th-Ar					↑	90s	
24	Th-Ar					↓	90s	
25	HD 373	φφ:05:53	52:03:24				6 3/4 m	F-stars
26	Th-Ar					↑	90s	
27	Th-Ar					↓	90s	
28	DL CAS	φφ:27:11	59:56:12				10m	cephalids
29	Th-Ar					↑	90s	
30								
31								
32								

10/18

Intensified Reticon

TO CAM1

Spectrograph ECHELLE

Log Sheet

RAW/RET 14

Grating 3002

Observer RPS

Telescope 61" Wyeth

Date OCT 18-19, 1986

Disk ORO 1233

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

Change....	File	ID	1950.0	RA	Dec	L/R	Exposure	Comments
		Th-Ar				↓	90s	
	Sφ21738	φφ:46:17		56:48:10			4m	7.1/100 M-stars
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	Grs 34B	φφ:46:09		57:33:00			4m	7.5/100 "
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	Sφ 76208	φ3:45:07		24:50:08			3m	6.8/100 "
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	Grs 154	φ3:43:19		26:03:42			7m	9.6/40 "
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	Sφ 76588	φ4:20:45		22:54:59			4m	7.2/100 "
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	Grs 169	φ4:26:02		21:48:47			4m	8.3/40 "
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	H448	φ4:26:08		16:03:00			3m	6.6 Hyades Binary
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	G 864	φ4:44:11		20:47:39			4m	9.9 "
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	S76773	φ4:46:12		21:43:00			5m	9.6 "
		Th-Ar				↑	90s	
		Th-Ar				↓	90s	
	LP 416	φ4:48:48		17:12:04			7m	11.0 "
		Th-Ar				↑	90s	
		/						
		/						

10/18

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300L Log Sheet RAW/RET 14  
 Telescope 61" Wyeth Date 18-19 OCT 1986 Observer RPS  
 Disk ORO 1234

Change....	File	ID	1950.0 RA	Dec	L/R +/-	Exposure	Comments
		Th-Ar			↓	90s	- could not find (9) or (29)! -
	H 26162	04:06:15	19:28:43			3m	IAU standard
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	L 81	04:38:41	13:07:34			15m	11.0 Hyades DSB
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	RX AUR	04:57:55	39:53:17			3m	9.2 Cepheids
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	G 25176	04:40:04	18:52:06			10m	9.9/40 M-stars
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	G 220-13	02:31:47	59:34:30			4m	8.9/30 Halos
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	G 175-39	04:31:59	55:18:52			2m	8.3/20 <del>8.3/20</del> 11
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	G 25268	07:06:37	08:36:48			10m	11.5/20 M stars (Too close to dawn, watch for SKY) BAD
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	G 112-54	07:52:02	-01:16:54			2m	7.4/30 HALOS
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	SKY-DWN	4.5 Hours	EAST			2m	$\delta = 30^\circ$
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	SKY-DWN	4 Hours				2m	$\delta = 30^\circ$
		Th-Ar			↑	90s	
		/					
		/					

10/19

Spectrograph ECHELLE Intensified Reticon TO CAM  
 Log Sheet RAW RET 1Y  
 Grating 300R Observer VPS  
 Telescope 61" Wyeth Date 10/17-19/76 Disk ORO 1235

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1				120 <sup>s</sup>	
		2				120 <sup>s</sup>	
		3				87 <sup>s</sup>	
		4			↓	90s	
		5		φ hours		2 1/2 m	δ = 30°
		6			↑	90s	
		7			↓	90s	
		8		4 1/2 hours West		3m	δ = 30°
		9			↑	90s	
		10			↓	90s	
		11	HD 182572	19:22:35	11:50:09	3m	240 star.
		12			↑	90s	
		13			↓	90s	
		14	GLS 644A	16:52:46	-08:18:17	20m	9.1/50 M STARS
		15			↑	90s	
		16			↓	90s	
		17	V Sgr	18:28:57	-19:09:47	8m	6.5 / 150 CEPIC
		18			↑	90s	
		19			↓	90s	
		20	SV Vul	19:49:28	27:19:53	4m	7.8 / 100 CEPIC
		21			↑	90s	
		22			↓	90s	
		23	X Cyg	20:41:27	35:24:24	4m	6.4 / 150 CEPIC
		24			↑	90s	
		25			↓	90s	
		26	S 164461	21:29:39	-12:29:20	3m	6.9/100 M STARS
		27			↑	90s	
		28			↓	90s	
		29	GLS 830	21:27:19	-12:43:46	10m	9.1/40
		30			↑	90s	
		31					
		32					

10/19-20





10/19

TO CAM

Intensified Reticon

Spectrograph ECHELLE

Log Sheet

RAW/RET 14

Grating 300

Observer RPS + JA

Telescope 61" Wye H.

Date 10/19-20/86

Disk ORO 1237

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	Z Lac	22:38:53	56:37:05	6m	8.9/150 CEPH
		3			↑	90s	
		4			↓	90s	
		5	208632	21:52:40	46:55:00	3m	F-STARs
		6			↑	90s	
		7			↓	90s	
		8	218427	23:05:13	48:46:24	15m	F STARs
		9			↑	90s	
		10			↓	90s	
		11	219612	23:14:16	54:55:30	7m	
		12	23 Th-Ar			↑	90s
		13			↓	90s	
		14	(4)	φφ: 37:29	-φ8: 40:44	2m	7.4 Asteroid
		15			↑	90s	
Th-Ar →		16	<del>H4128</del> Th-Ar	<del>φφ: 41:05</del>	<del>-18:15:39</del>	90s	IAU standard 0.3ND
H4128 →		17	H4128 Th-Ar	φφ: 41:05	-18:15:39	2m	
		18			↑	90s	
		19			↓	90s	
		20	-18271	φ1: 34:54	-17:44:12	8m	9.8/20 HALOS
		21			↑	90s	
		22			↓	90s	
		23	S13φ860	φ3: 56:24	-φ5: 36:40	3m	6.0/100 M-stars
		24			↑	90s	
		25			↓	90s	
		26	GRS 156	φ3: 52:φ9	-φ6: 58:24	8m	9.0/40
		27			↑	90s	
		28			↓	90s	
		29	V1φ4	φ4: 35:22	12:24:44	3m	4.3 Hyades
		30			↑	90s	
		31					
		32					

10/19

Intensified Reticon

TO CAM1

Spectrograph ECHELLE

Log Sheet

RAWRET 14

Grating 300L

Observer RPS

Telescope 61" Wyeth

Date 19-20 OCT 1986

Disk ORO 1238

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		Th-Ar			↓	90s	- stop for clouds -
	VB76		04:26:26	26:33:48		5m	9.2 Hyades
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	V109		04:37:05	23:12:30		2m	9.4 II
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	G243-63		01:06:30	61:16:48		4m	7.7/100 Halos
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	S011983		01:44:10	63:36:14		2m	5.7/100 M-stars
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	II
	G2569		01:40:10	63:34:24		3 1/2 m	8.4/100 II
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	G243-62		01:05:10	63:15:00		12m	11.5/15 Halos
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	VX PER		02:04:18	58:12:22		7m	9.7 Cepheids
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	G25268		07:06:37	38:36:48		18m	11.5/20 Mstars
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	G25234		06:26:52	-02:46:42		16m	11.5/20 II
		Th-Ar			↑	90s	
		Th-Ar			↓	90s	
	S133424		06:31:51	-03:02:43		2 1/2 m	7.1/100 II
		Th-Ar			↑	90s	
		/					
		/					

TO CAM 10/20

Intensified      Reticon

Spectrograph ECHELLE      Log      Sheet

Grating 3002      Observer RPS

Telescope 61" Wyeth      Date 10/17-20/86      Disk ORO 1239

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	RX AUR	04:57:55	39:53:17	2m	Cepheid
		3			↑	90s	
		4			↓	90s	
		5	H448	04:26:08	16:03:00	3m	Hyades
		6			↑	90s	
		7			↓	90s	
		8	G105-38	06:26:09	17:46:54	2m	7.6/30 Halos
		9			↑	90s	
		10			↓	90s	
		11	H66141	07:59:40	02:28:24	2m	44 IAU standard
		12			↑	90s	
		13			↓	90s	
		14	SKY-DWN	4 hours	East	2m	$\delta = \phi^0$
		15			↑	90s	
		16			↓	90s	
		17	SKY-DWN	$\phi$ hours		2m	$\delta = \phi^0$
		18			↑	90s	
		19			↓	90s	
		20	SKY-DWN	4 hours	West	2m	$\delta = \phi^0$ 0.3 ND
		21			↑	90s	
		22	INCAN			2 <sup>m</sup> 0 <sup>m</sup>	
		23	INCAN			1 <sup>m</sup> 53 <sup>m</sup>	
		24	TII-AR		↓	90s	
		25	SKY/EVEN			2 <sup>m</sup>	0 <sup>h</sup> +30 <sup>o</sup>
		26	TII-AR		↑	90	
		27	TII-AR		↓	90	
		28	SKY/EVEN			2 <sup>m</sup>	4 <sup>h</sup> W +30
		29	TII-AR		↑	90	
		30	TII-AR		↓	90	
		31	H182572	19 27 35	11 50	2 <sup>m</sup>	IAU STAND
		32	TII-AR		↑	90	

10/20-21

Intensified Reticon

TO CAM 10/20  
RAW/RET 14

Spectrograph ECHELLE

Log Sheet

Grating \_\_\_\_\_

Observer RCM

Telescope \_\_\_\_\_

Date 10

Disk ORO 1290

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90 <sup>s</sup>	518 <sup>7</sup>
		2	U SGR	12 28 57	-19 10	2 <sup>m</sup>	2)
		3	TH-AR		↑	90 <sup>s</sup>	
		4	TH-AR		↓	90 <sup>s</sup>	
		5	SV VUL	19 49 28	27 20	2 <sup>m</sup>	
		6	TH-AR		↑	90 <sup>s</sup>	
		7	TH-AR		↓	90 <sup>s</sup>	
		8	G1564A	16 52 46	-08 15	15 <sup>m</sup>	
		9	TH-AR		↑	90 <sup>s</sup>	
		10	TH-AR		↓	90 <sup>s</sup>	6563A
		11	FF AQR	21 58 01	-02 59	20 <sup>m</sup>	
		12	TH-AR		↑	90 <sup>s</sup>	
		13	TH-AR		↓	90 <sup>s</sup>	
		14	B AQR	21 28 56	-05 48	2 <sup>m</sup>	MD = 0.3 FILTER
		15	TH-AR		↑	90 <sup>s</sup>	
		16	TH-AR		↓	90 <sup>s</sup>	
		17	♀ AQR	22 03 13	-00 34	2 <sup>m</sup>	MD = 0.3
		18	TH-AR		↑	90 <sup>s</sup>	
		19	TH-AR		↓	90 <sup>s</sup>	
		20	λ AND	23 35 06	46 11	2 <sup>m</sup>	
		21	TH-AR		↑	90 <sup>s</sup>	
		22	TH-AR		↓	90 <sup>s</sup>	
		23	OL CAS	00 27 11	59 56	4 <sup>m</sup>	
		24	TH-AR		↑	90	
		25	TH-AR		↓	90	
		26	VX PER	02 04 18	58 12	10 <sup>m</sup>	
		27	TH-AR		↑	90 <sup>s</sup>	
		28	TH-AR		↓	90 <sup>s</sup>	
		29	G24-25	20 37 42	00 23	20 <sup>m</sup>	11)
		30	TH-AR			90 <sup>s</sup>	
		31					
		32					

Spectrograph ECHELLE Intensified Reticon  
 Log Sheet

TO CAM 10/20

RAW RET 14

Grating 7000

Observer DA

Telescope S14

Date 10/20-21/86

Disk ORU 1241

Change....	File	ID	1950.0 RA	Dec	L/R +/-	Exposure	Comments	
		1			↓	90 <sup>s</sup>	5187	
		2	G25-15	21 01 37	02 48		20 <sup>m</sup>	
		3			↑	90		
		4			↓	90		
		5	G27-29	22 25 20	-05 32		15 <sup>m</sup>	
		6			↑	90 <sup>s</sup>		
		7			↓	90 <sup>s</sup>		
		8	S191333	22 39 17	-21 03		7 <sup>m</sup>	
		9			↑	90 <sup>s</sup>		
		10			↓	90 <sup>s</sup>		
		11	S165532	23 07 48	-13 35		9 <sup>1/2</sup> <sup>m</sup>	
		12			↑	90 <sup>s</sup>		
		13			↓	90 <sup>s</sup>		
		14	G157-21	23 06 29	-02 49		6 <sup>m</sup>	FEW CLOS
		15			↑	90 <sup>s</sup>		
		16			↓	90 <sup>s</sup>		
		17	G130-32	23 57 31	73 55		2 <sup>m</sup>	
		18			↑	90 <sup>s</sup>		
		19			↓	90 <sup>s</sup>		
		20	X CYG	20 41 27	35 24		3 <sup>1/2</sup> <sup>m</sup>	
		21			↑	90 <sup>s</sup>		
		22			↓	90 <sup>s</sup>		
		23	U491	22 28 00	42 46		3 <sup>1/2</sup> <sup>m</sup>	RIGHT STAR??
		24			↑	90 <sup>s</sup>		
		25	U492	22 44 18	44 02		5 <sup>m</sup>	
		26			↑	90 <sup>s</sup>		
		27	U493	22 44 43	44 05		13 <sup>m</sup>	
		28			↑	90 <sup>s</sup>		
		29			↓	90 <sup>s</sup>		
		30	<del>U491</del>	<del>00 02 24</del>	<del>45 24</del>		4 <sup>1/2</sup>	CLOSED BY CLOS
		31	Z LMC	22 38 53	56 37	↑	90 <sup>s</sup>	
		32						

Spectrograph ECHELLE  
 Grating 300L  
 Telescope 511"

Intensified Reticon  
 Log Sheet  
 Date 10/20-1/86

TO CAM 10/22  
RAW RET 14  
 Observer JAN  
 Disk ORO 1242

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90	6563A
		2	05 52 28	09 24	↓	1 <sup>h</sup>	OVERCAST + 0.3 100 FILTER
		3			↑	90	
		4	"	"	↓	3 1/2 <sup>h</sup>	" " 1.0 " "
		5			↑	90	
		6			↓	90	5127
		7	05 16 33	32 28	↑	8 <sup>h</sup>	
		8			↑	90 <sup>s</sup>	
		9			↓	90 <sup>s</sup>	
		10	04 37 55	39 53	↑	2 <sup>h</sup>	
		11			↑	90 <sup>s</sup>	
		12			↓	90	
		13	06 22 31	07 07	↑	2 <sup>h</sup>	
		14			↑	90 <sup>s</sup>	
		15			↓	90 <sup>s</sup>	
		16	06 18 45	06 30	↑	9 <sup>h</sup>	PASSING CLOUDS
		17			↑	90 <sup>s</sup>	OVERCAST
		18				120 <sup>m</sup>	
		19				120 <sup>h</sup>	
10/22-3/76		20				42 <sup>h</sup>	
		21			↓	90 <sup>s</sup>	
		22				2 <sup>h</sup>	0 <sup>h</sup> HA + 90 DEC
		23			↑	70 <sup>s</sup>	
		24			↓	90 <sup>s</sup>	
		25				2 <sup>h</sup>	4 <sup>h</sup> W + 90 DEC
		26			↑	90 <sup>s</sup>	
		27			↓	90 <sup>s</sup>	
		28	16 11 45	-05 34		2 1/2 <sup>h</sup>	ND - 1.0 FILTER
		29			↑	90 <sup>s</sup>	
		30	19 22 35	11 50	↓	90	
		31				2 <sup>h</sup>	
		32			↑	90 <sup>s</sup>	

Spectrograph ECHELLE Intensified Reticon  
 Grating 3028 Log Sheet  
 Telescope SM Date 10/22-23/86

TO CAM 10/22

RAW RET 14

Observer \_\_\_\_\_ Disk ORO 1243

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

Change....	File	ID	1950.0 RA	Dec	L/R	Exposure	Comments
1	TH-AR				↓	70	
2	1 SGR		18 28.54	-19 10		2 1/2	
3	TH-AR				↑	90	
4	TH-AR				↓	70	
5	G15644A		16 32 46			10	
6	TH-AR				↑	90	
7	TH-AR				↓	90	
8	SU VUL		19 49 28	27 20		4	
9	TH-AR				↑	90	
10	TH-AR				↓	90	
11	X CYG		20 41 27	35 29		2	
12	TH-AR				↑	90	
13	TH-AR				↓	90	
14	S031042		18 38 37	59 27		2	
15	TH-AR				↑	90 <sup>s</sup>	
16	G15725A		18 42 18	59 37		8	
17	TH-AR				↑	90 <sup>s</sup>	
18	TH-AR				↓	90	
19	G141-47		18 50 55	10 39		11 <sup>m</sup>	
20	TH-AR				↑	90	
21	TH-AR				↑	90	
22	G171-52		00 22 26	47 46		2	
23	TH-AR				↑	90 <sup>s</sup>	
24	TH-AR				↓	90 <sup>s</sup>	
25	VX PER		02 04 16	56 12		15 <sup>m</sup>	CLS AT END
26	TH-AR				↑	90 <sup>s</sup>	
27	TH-AR				↓	90 <sup>s</sup>	
28	209560		22 01 52	-06 56		5 <sup>m</sup>	
29	TH-AR				↑	90	
30	TH-AR				↓	90	
31	U495		22 44 46	12 07		4 <sup>m</sup>	
32	TH-AR				↑	90	

Intensified Reticon

TO CAM 10/23

Spectrograph ECHELLE

Log Sheet

RAW RET 14

Grating 300L

Observer JM

Telescope SH

Date 10/22-23/86

Disk OKO 1244

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
		1	TH-AR	22 47 43	-07 21	↓	90 <sup>s</sup>	5187
		2	U497				9 <sup>m</sup>	
		3	TH-AR			T	90 <sup>s</sup>	
		4	TH-AR			+	90 <sup>s</sup>	
		5	U510	23 30 10	-17 02		9 <sup>m</sup>	CLOS
		6	TH-AR			N	90 <sup>s</sup>	
		7	U511	23 30 12	-17 07		9 <sup>m</sup>	CLOS
		8	TH-AR			T	90 <sup>s</sup>	
		9	INCAND				120	
		10	INCAND				26 <sup>m</sup>	CLEAR AGAIN
		11	TH-AR			↓	90	
		12	G217-8	23 24 15	60 21		8 <sup>m</sup>	CLOSED IN CLOS
		13	TH-AR			T	90	
		14	TH-AR			+	90	
		15	DL CAS	00 27 11	59 56		10 <sup>m</sup>	CLOSED IN CLOS
		16	TH-AR			T	90	
10/23-4/86		17	TH-AR			↓	90	6563A
		18	FF AQR	21 58 01	-02 59		20 <sup>m</sup>	
		19	TH-AR			T	90	
		20	TH-AR			↓	90	
		21	λ AMP	23 35 00	46 11		3 1/2 <sup>m</sup>	ND = 0.3 FILTER
		22	TH-AR			T	90	
		23	TH-AR			↓	90	
		24	B AQR	21 20 56	-05 48		9 1/2 <sup>m</sup>	ND = 1.0 FILTER
		25	TH-AR			T	90	
		26	TH-AR			+	90	
		27	λ AQR	22 03 13	-00 34		9 <sup>m</sup>	ND = 1.0 FILTER
		28	TH-AR			T	90	
		29	TH-AR			↓	90	5187A <sup>0</sup>
		30	SV VIL	19 49 27	27 20		5 <sup>m</sup>	
		31	TH-AR			T	90	
		32						



10/24

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW RET 1Y

Grating 300L

Observer JC

Telescope SH

Date 10/23-24/76

Disk ORU 1245

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
		1			↓	90	5187A	
		2	X CYG	20 41 27	35 24		2 <sup>m</sup>	
		3	TH-AR			↑	90	
		4	TH-AR			↓	90	
		5	VX PER	02 04 18	58 12		10 <sup>m</sup>	
		6	TH-AR			↑	90	
		7	TH-AR			↓	90	
		8	G262-14	20 27 35	61 51		12 <sup>m</sup>	CLOUD IN CLDS
		9	TH-AR			↑	90	
		10	TH-AR			↓	90	
		11	U445	20 40 14	57 15		15 <sup>m</sup>	
		12	TH-AR			↑	90 <sup>s</sup>	
		13	TH-AR			↓	90	
		14	U441	20 29 39	65 16		20 <sup>m</sup>	
		15	TH-AR			↑	90	
		16	TH-AR			↓	90	
		17	Z LAC	22 38 53	56 34		6 <sup>m</sup>	
		18	TH-AR			↑	90	
		19	TH-AR			↓	90	
		20	G217-8	23 24 15	60 21		6 <sup>m</sup>	CLOUD IN CLDS
		21	TH-AR			↑	90 <sup>s</sup>	
		22	TH-AR			↓	90	
		23	G217-8	"	"		20 <sup>m</sup>	
		24	TH-AR			↑	90	
		25	TH-AR			↓	90	
		26	DL CAS	00 27 11	59 56		8 <sup>m</sup>	CLOUD BY SEVERAL CLDS
		27	TH-AR			↑	90	
		28	TH-AR			↓	90	6563
		29	2 ORI	05 52 22	07 24		11 <sup>m</sup>	IND=0.3 FILTER + OVERCAST
		30	TH-AR			↑	90	
		31	INCAND				120	
		32	/					

10/24

Intensified Reticon

TO CAM1

Spectrograph ECHELLE

Log Sheet

RAW/RET 14

Grating 3002

Observer RPS

Telescope 61" Wyeth

Date 24-25 OCT 1986

Disk ORO 1246

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1				120m	
		2				120m	
		3				120m	
		4				120m	
24-25 OCT		5			↓	90s	clear
		6	φ hours	δ = 20°		2m	δ = 20°
		7			↑	90s	
		8			↓	90s	
		9	4 hours	West		2 1/2 m	δ = 200
		10			↑	90s	
		11			↓	90s	
		12	H192572	19:22:35	11:50:09	3m	IAU standard
		13			↑	90s	
		14			↓	90s	
		15	-2316310	20:29:05	-23:42:48	17m	10.4/30 HALOS
		16			↑	90s	
		17			↓	90s	
		18	U SGR	18:28:57	-19:09:42	6m	CEPHEIDS
		19			↑	90s	
		20			↓	90s	
		21	SV VUL	19:49:28	27:19:53	3m	
		22			↑	90s	
		23			↓	90s	
		24	Sφ31φ92	18:38:37	59:28:51	5m	7.1/100 M-stars
		25			↑	90s	
		26			↓	90s	
		27	GQ5725A	18:42:19	59:34:22	7m	8.9/50
		28			↓	90s	
		29	GQ5725B	18:42:19	59:34:05	8m	9.7/30
		30			↑	90s	
		31					
		32					



10/24

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAWRET 14

Grating 300l

Observer RPS

Telescope 61" Wyeth

Date 24-25 OCT 1986

Disk ORO 1248

Change....	File	ID	1950.0 RA	Dec	L/R +/-	Exposure	Comments
		1			↓	90s	
		2	Gls2	φφ 02:35 45:30:30		6m	9.9/30 Mstars
		3	Th-Ar		↑	90s	
		4	Th-Ar		↓	90s	
		5	H3008	00:30:42 -11:00:00		8m	9.5/15 HATOS
		6	Th-Ar		↑	90s	
		7	Th-Ar		↓	90s	
		8	G34-16	φ1:13:55 18:15:30		3m	8.5/30 "
		9	Th-Ar		↑	90s	
		10	Th-Ar		↓	90s	
		11	G173-57	φ2:28:49 45:39:12		11m	11.4/15 "
		12	Th-Ar		↑	90s	
		13	Th-Ar		↓	90s	
		14	-10548	φ2:44:31 -1φ:24:18		12m	10.1/20 "
		15	Th-Ar		↑	90s	
		16	Th-Ar		↓	90s	
		17	G37-26	φ3:05:28 20 09:06		4m	8.1/50 "
		18	Th-Ar		↑	90s	
		19	Th-Ar		↓	90s	
		20	-22395	φ2:19:39 -21:44:36		12m	10.5/20 "
		21	Th-Ar		↑	90s	
		22	Th-Ar		↓	90s	
		23	H448	φ4:26:08 16:03:00		5m	Hegeles Binary
		24	Th-Ar		↑	90s	
		25	Th-Ar		↓	90s	
		26	VB24	φ4:15:25 21:27:31		8m	"
		27	Th-Ar		↑	90s	
		28	Th-Ar		↓	90s	
		29	LS1	φ4:38:41 13:07:34		18m	" DLSB
		30	Th-Ar		↑	90s	
		31					
		32					

10/24

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW/RET 14

Grating 300L

Observer RPS

Telescope 61" Wyeck

Date 24-25 OCT 1986

Disk ORO 1249

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

Change....	File	ID	1950.0 RA	Dec	L/R	Exposure	Comments
		TB-Ar			↓	90s	
	H617		04:33:14	15:35:00		4m	Hyades Binary
		TB-Ar			↑	90s	
		TB-Ar			↓	90s	
	L59		04:24:02	10:45:36		4m	"
		TB-Ar			↑	90s	
		TB-Ar			↓	90s	
	H411		04:24:36	14:09:00		5m	"
		TB-Ar			↑	90s	
		TB-Ar			↓	90s	
	H270		04:19:52	16:40:32		2m	"
		TB-Ar			↑	90s	
		TB-Ar			↓	90s	
	RX AUR		04:57:55	39:53:17		2 1/2 m	Cepheids
		TB-Ar			↑	90s	
		TB-Ar			↓	90s	
	(9)		04:44:38	19:57:06		6m	Asteroid
		TB-Ar			↑	90s	
		TB-Ar			↓	90s	
	H26162		04:06:15	19:28:43		3m	IAU Standard
		TB-Ar			↑	90s	
		TB-Ar			↓	90s	
	G82-5		04:12:29	-05:45:24		8m	107/15 HALOS
		TB-Ar			↑	90s	
		TB-Ar			↓	90s	
	G84-37		05:07:06	05:29:42		5m	9.7/15 "
		TB-Ar			↑	90s	
		TB-Ar			↓	90s	
	VX PER		02:04:18	58:12:22		9m	Cepheids
		TB-Ar			↑	90s	
	/						
	/						



Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 3002 Log Sheet RAW/RET 14  
 Telescope 61" Wjeth Date 25-26 Oct 1986 Observer RPS  
 Disk ORO 1251

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2		4 Hours		2m	δ = +30°
		3			↑	90s	
		4			↓	90s	
		5		4.5 hours west		2m	δ = +30°
		6			↑	90s	
		7			↓	90s	- clouds -
		8	H182572	19:22:35	11:50:09	2 1/2 m	IAU standard
		9			↑	90s	
		10			↓	90s	
		11	192744	20:13:14	37:32:30	14m	25 F stars
		12			↑	90s	
		13			↓	90s	
		14	U469	21:28:45	23:06:56	20m	9.3 Space Motion
		15			↑	90s	- stopped by clouds -
		16	IN CAN			120	(s Not the ball game !!)
		17	"			120	
		18	"			120	
		19	IN CAN			120	
		20					
		21					
		22					
		23					
		24					
		25					
		26					
		27					
		28					
		29					
		30					
		31					
		32					