

Intensified Reticon

TO CAM 4/1

Spectrograph ECHELLE

Log Sheet

RAW RET 11

Grating 300L

Observer mmw

Telescope 61" WYETH

Date APR 12 1986

Disk 0R0972

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80 μ slit
		2				5 min	
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	6563A 80 μ slit
		5	AM ERI 05:06:45	-08:49:00		3 1/2 min	4.3/
		6			↑	90 <sup>s</sup>	
		7	B ORI 05 13 52	-08 13		6 min	NB = 2 FILTER
		8			↑	90 <sup>s</sup>	
		9			↓	90 <sup>s</sup>	
		10	W ORI 05 36 33	04 06		4 1/2 min	
		11			↑	90 <sup>s</sup>	
		12			↓	90 <sup>s</sup>	
		13	X ORI 05 52 28	07 23		6 min	NB = 2 FILTER
		14			↑	90 <sup>s</sup>	
		15			↓	90 <sup>s</sup>	5187A 80 μ
		16	L081 04 38 41	13 08		20 min	
		17			↑	90 <sup>s</sup>	
		18			↓	90 <sup>s</sup>	
		19	U077 04 17 55	48 13		7 min	
		20			↑	90 <sup>s</sup>	
		21			↓	90 <sup>s</sup>	
		22				3-20 <sup>s</sup>	
		23			↑	90 <sup>s</sup>	
		24			↓	90 <sup>s</sup>	
		25	U082 04 55 00	49 46		6 min	
		26			↑	90 <sup>s</sup>	
		27			↓	90 <sup>s</sup>	
		28	U090 04 59 22	53 04		7 min	
		29			↑	90 <sup>s</sup>	
		30			↓	90 <sup>s</sup>	
		31	U106 05 37 27	53 28		6 min	
		32			↑	90 <sup>s</sup>	



Intensified Reticon

TO CAM 4/2

Spectrograph ECHELLE

Log Sheet

RAW/RET 11

Grating 300L

Observer Don

Telescope SM

Date 4/1-2/76

Disk ORU 9773

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

Change....	File	ID	1950.0 RA	Dec	L/R	Exposure	Comments
		1			↓	90s	
		2				3m	
		3			↑	90s	
		4			↓	90s	
		5				5m	
		6			↑	90s	
		7			↓	8m	
		8			↑	90s	
		9				20m	
		10			↑	90s	
		11			↓	90s	
		12				5m	
		13			↑	90s	
		14			↓	90s	
		15				6m	
		16			↑	90s	
		17				5m	
		18			↑	90s	
		19			↓	90s	
		20				1min	
		21			↑	90s	
		22			↓	90s	
		23				4 1/2 min	UPPER STAR
		24			↑	90s	
		25				6 min	LOWER STAR
		26			↑	90s	
		27			↓	90s	
		28				6 min	
		29			↑	90s	
		30					
		31					
		32					



Intensified      Reticon TO CAM 4/2

Spectrograph ECHELLE      Log Sheet RAW RET 11

Grating 300L      Observer GS

Telescope 6"      Date APR 12 1986      Disk ORO 974

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80μ slit
		2	U184	09:49:37	09:27:24	8 <sup>MIN</sup>	8.8/30 SPACE MOTIONS
		3	TH-AR		↑	90 <sup>s</sup>	
		4	TH-AR		↓	90 <sup>s</sup>	
		5	U196	10:26:21	01:05:58	8 <sup>MIN</sup>	9.6/
		6	TH-AR		↑	90 <sup>s</sup>	
		7	TH-AR		↓	90 <sup>s</sup>	
		8	U200	10:42:30	38:46:20	5 <sup>MIN</sup>	9.3/
		9	TH-AR		↑	90 <sup>s</sup>	
		10	TH-AR		↓	90 <sup>s</sup>	
		11	U204	10:59:57	22:14:12	7 <sup>MIN</sup>	9.5/ CLDS
		12	TH-AR		↑	90 <sup>s</sup>	
		13	TH-AR		↓	90 <sup>s</sup>	
		14	U209	11:08:20	30:45:12	6 <sup>MIN</sup>	8.4/ EAST ONE OF PAIR
		15	TH-AR		↑	90 <sup>s</sup>	
		16	TH-AR		↓	90 <sup>s</sup>	
		17	U224	11:48:33	35:32:48	9 <sup>MIN</sup>	9.8/ INCREAS. CLDS
		18	TH-AR		↑	90 <sup>s</sup>	
		19	TH-AR		↓	90 <sup>s</sup>	
		20	U226	11:49:02	35:28:06	4 1/2 <sup>MIN</sup>	9.6/
		21	TH-AR		↑	90 <sup>s</sup>	
		22	TH-AR		↓	90 <sup>s</sup>	
		23	U243	12:39:43	26:38:00	4 <sup>MIN</sup>	9.3/
		24	TH-AR		↑	90 <sup>s</sup>	
		25	TH-AR		↓	90 <sup>s</sup>	
		26	W11450	13:08:51	31:05:32	15 <sup>MIN</sup>	7.0/100 SA 57
		27	TH-AR		↓	90 <sup>s</sup>	
		28	W11449	13:08:50	31:05:34	10 <sup>MIN</sup>	9.4/15
		29	TH-AR		↑	90 <sup>s</sup>	
		30					
		31					
		32					



Intensified      Reticon      TO CAM 4/2

Spectrograph ECHELLE      Log Sheet      RAW/RET 11

Grating 300L      Observer CS

Telescope 61" WYETH      Date APR 12, 1986      Disk ORO 975

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90°	5187A 80μ SLIT
	U256		13:17:12	35:24:12		4 1/2 MIN	9.5/ SPACE MOTION
		3			↑	90°	
		4			↓	90°	
	U260		13:21:14	29:29:42		4 1/2 MIN	8.9/
		6			↑	90°	
		7			↓	90°	
	U281		13:46:48	27:14:00		2 MIN	7.6/
		9			↑	90°	
		10			↓	90°	
	U294		14:19:48	29:51:42		2 1/2 MIN	8.6/
		12			↑	90°	
		13			↓	90°	
	U307		14:59:09	16:04:06		3 MIN	9.1/
		15			↑	90°	
		16			↓	90°	
	U312		15:06:54	24:12:12		3 1/2 MIN	9.3/
		18			↑	90°	
		19			↓	90°	6663. A 80μ SLIT
	P CYG		20:15:57	37:52:36		3 MIN	4.8/ ENR IN OVERCAST
		21			↑	90°	
		22			↓	90°	5187A 80μ SLIT
	H136202		19:16:45	01:57:12		3 1/2 MIN	1 AU STANDARD (CLDS)
		24			↑	90°	
		25			↓	90°	
	SKY DAW					5 MIN	(0510) CLDS
		27			↑	90°	
		28				120 MIN	
		29				120 MIN	
		30				45 MIN	
		31					
		32					



Spectrograph ECHELLE Intensified Reticon TO CAM 4/3  
 Grating 300L Log Sheet RAW RET 11  
 Telescope 6" WYETH Date APR 23 1986 Observer nmj  
 Disk ORO 976

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TH-AR		↓	90 <sup>s</sup>	5187A 80μ SLIT
		2	SKY EVE			5 <sup>m</sup>	
		3	TH-AR		↑	90 <sup>s</sup>	
		4	TH-AR		↓	90 <sup>s</sup>	
		5	HZC 162	04:06:14	19:28:43	29 <sup>m</sup>	S.S. / 1 ALL STANDARD
		6	TH-AR		↑	90 <sup>s</sup>	
		7	TH-AR		↓	90 <sup>s</sup>	
		8	G8-36	04 24 50	24 20	9 <sup>m</sup>	
		9	TH-AR		↑	90 <sup>s</sup>	
		10	TH-AR		↓	90 <sup>s</sup>	
		11	G15301	08 10 50	-13 46	6 <sup>m</sup>	
		12	TH-AR		↑	90 <sup>s</sup>	
		13	TH-AR		↓	90 <sup>s</sup>	
		14	G15319	08 40 02	09 44	5 <sup>m</sup>	
		15	TH-AR		↑	90 <sup>s</sup>	
		16	TH-AR		↓	90 <sup>s</sup>	
		17	G15268	07 06 37	38 37	20 <sup>m</sup>	
		18	TH-AR		↓	90 <sup>s</sup>	
		19	G15319C	08 40 02	09 44	17 <sup>m</sup>	
		20	TH-AR		↑	90 <sup>s</sup>	
		21	G15319	08 40 02	09 44	8 <sup>m</sup>	
		22	TH-AR		↑	90 <sup>s</sup>	
		23	TH-AR		↓	90 <sup>s</sup>	
		24	G147-36	11 14 34	29 51	22 <sup>m</sup>	
		25	TH-AR		↑	90 <sup>s</sup>	
		26	TH-AR		↓	90 <sup>s</sup>	
		27	W11450	13 08 51	31 05	12 <sup>m</sup>	
		28	TH-AR		↑	90 <sup>s</sup>	
		29	W11449	13 08 51	31 05	10 <sup>m</sup>	
		30	TH-AR		↓	90 <sup>s</sup>	
		31	W13771	13 11 19	30 03	2 <sup>m</sup>	
		32	TH-AR		↑	90 <sup>s</sup>	



TO CAM 4/3

Spectrograph ECHELLE Intensified Reticon  
 Grating 300L Log Sheet RAWRET 11  
 Telescope 5M Date 4/2-3/86 Observer ra/gg  
 Disk ORD 977

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	70 <sup>s</sup>	
		2	W13781	13 11 23	30 04	6 <sup>m</sup>	
		3			M	90 <sup>s</sup>	
		4	W13784	13 11 20	30 05	2 <sup>m</sup>	
		5			↑	90 <sup>s</sup>	
		6	W13796	13 11 54	30 09	9 <sup>m</sup>	
		7			↑	90 <sup>s</sup>	
		8			↓	90 <sup>s</sup>	
		9	8139010	12 99 38	-00 40	4 <sup>m</sup>	
		10			↑	90 <sup>s</sup>	
		11	G15488	12 48 16	-00 30	2 <sup>m</sup>	
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	G15338A	09 10 52	52 54	4 <sup>m</sup>	
		15			↑	90 <sup>s</sup>	
		16	S15338A	09 10 54	52 54	4 <sup>m</sup>	
		17			↑	90 <sup>s</sup>	
		18			↓	90 <sup>s</sup>	
		19	G65-22	13:59:16	09:10:18	17 <sup>min</sup>	11.6/20
		20			↑	90 <sup>s</sup>	
		21			↓	90 <sup>s</sup>	10.7/15
		22	G66-16	14:34:58	11:15:06	6 <sup>min</sup>	10.7/15
		23			↑	90 <sup>s</sup>	
		24	G66-15	14:34:58	11:14:36	2 1/2 <sup>min</sup>	9.6/15
		25			↑	90 <sup>s</sup>	
		26			↓	90 <sup>s</sup>	
		27	S140306	15:02:10	-08:37:18	4 <sup>min</sup>	9.5/20
		28			↑	90 <sup>s</sup>	
		29			↓	90 <sup>s</sup>	
		30	G15159	15:23:19	-01:53:48	6 <sup>min</sup>	10.4/15
		31			↑	90 <sup>s</sup>	
		32					



Intensified      Reticon TO CAM 4/3

Spectrograph ECHELLE      Log Sheet RAWRET 11

Grating 300L      Observer GS

Telescope 6" WY 471      Date APR 2-3 1986      Disk ORO 978

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80μ SLIT
		2	G153-21	16:00:20	-06:19:00	6 <sup>MIN</sup>	10.2/20
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	G17-21	16:28:01	04:18:18	2 <sup>MIN</sup>	7.3/30
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	5141333	16:41:20	-02:32:18	6 <sup>MIN</sup>	8.3/100
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	G169-45	17:03:19	27:00:06	4 <sup>MIN</sup>	10.0/20
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	G180-46	16:37:47	34:22:30	9 <sup>MIN</sup>	11.0/20
		15			↑	90 <sup>s</sup>	
		16	TH-AR	16:52:46	-08:15:17	90 <sup>s</sup>	9.1/ M STARS
		17	GLs 644A	16:52:46	-08:15:17	5 <sup>MIN</sup>	9.1/
		18			↕	90 <sup>s</sup>	
		19	GLs 643	16:52:43	-08:14:30	15 <sup>MIN</sup>	11.7/
		20			↕	90 <sup>s</sup>	
		21	GLs 643	"	"	18 <sup>MIN</sup>	11.7/
		22			↑	90 <sup>s</sup>	
		23			↓	90 <sup>s</sup>	
		24	G139-11	17:03:59	12:40:18	2 <sup>MIN</sup>	8.5/15
		25			↑	90 <sup>s</sup>	
		26			↓	90 <sup>s</sup>	
		27	G122332	17:20:30	00:53:12	2 <sup>MIN</sup>	7.7/20
		28			↑	90 <sup>s</sup>	
		29			↓	90 <sup>s</sup>	
		30	G19-27	17:28:49	-02:30:06	2 <sup>MIN</sup>	8.1/20
		31			↑	90 <sup>s</sup>	
		32					







Intensified Reticon TO CAM 4/14

Spectrograph ECHELLE Log Sheet RAW RET 11

Grating 300L Observer GS

Telescope SH 61" Date APR 14-15 1986 Disk ORO 980

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5127 A SPLIT
	G147-36	2	11:14:34	29:50:34		2 <sup>m</sup> 4 <sup>sec</sup>	9.3/15
	TH-AR	3			↑	90 <sup>s</sup>	
	TH-AR	4			↓	90 <sup>s</sup>	
	H 2588	5	10:38:51	-1°28'42"		2 MIN	6.3/ 1 AU STANDARD
	TH-AR	6			↑	90 <sup>s</sup>	
	TH-AR	7			↓	90 <sup>s</sup>	
	S138815	8	12:27:09	-3°02:57		2 MIN	9.0/15 HALO BINARIES
	TH-AR	9			↑	90 <sup>s</sup>	
	<del>TH-AR</del> TH-AR	10			↓	90 <sup>s</sup>	
	G14-54 TH-AR	11	13:25:44	-0°34:30		3 MIN	7.4/20
	TH-AR	12			↑	90 <sup>s</sup>	
	TH-AR	13			↓	90 <sup>s</sup>	
	S63020	14	12:26:38	31°40:00		2 MIN	7.9/50
	TH-AR	15			↑	90 <sup>s</sup>	
	TH-AR	16			↓	90 <sup>s</sup>	
	W11450	17	13:08:51	31:05:32		10 1/2 MIN	7.0/100 SA 57
	TH-AR	18			↑	90 <sup>s</sup>	
	W11449	19	13:08:50	31:05:34		5 1/2 MIN	9.3/15
	TH-AR	20			↑	90 <sup>s</sup>	
	TH-AR	21			↓	90 <sup>s</sup>	
	+362165	22	11:10:00	36:01:00		5 MIN	9.7/50 HALO BINARIES
	TH-AR	23			↑	90 <sup>s</sup>	
	TH-AR	24			↓	90 <sup>s</sup>	
	G122-5	25	11:50:06	38:04:39		2 MIN	6.4/20
	TH-AR	26			↑	90 <sup>s</sup>	
	TH-AR	27			↓	90 <sup>s</sup>	
	G123-9	28	12:08:25	44:16:54		3 1/2 MIN	10.5/15
	TH-AR	29			↑	90 <sup>s</sup>	
		30					
		31					
		32					







Intensified      Reticon TO CAM 4/14

Spectrograph ECHELLE      Log Sheet RAW RET 11

Grating 300L      Observer GS

Telescope 6" W/ETH      Date APRIL 10 1986      Disk ORO 982

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90°	5187A 80μ SLIT
		2	G202-25	15:58:22	45:52:48	6 min	11.1/15 HALOS
		3			↑	90°	
		4			↓	90°	
		5	G169-44	17:03:06	28:06:18	12 min	11.8/15
		6			↑	90°	
		7			↓	90°	
		8	G187-7	17:23:01	38:04:54	3 min	8.1/100
		9			↑	90°	
		10			↓	90°	
		11	S66051	17:24:50	31:07:03	2 min	8.5/30
		12			↑	90°	
		13			↓	90°	
		14	G141-19	18:30:59	13:07:18	7 min	10.6/30
		15			↑	90°	
		16			↓	90°	
		17	G208-29	19:30:32	48:28:51	7 min	8.5/200
		18			↑	90°	
		19			↓	90°	
		20	G209-35	20:31:05	41:43:24	2 min	7.1/30
		21			↑	90°	
		22			↓	90°	
		23	G230-45	20:38:54	54:02:18	13 min	11.4/20
		24			↑	90°	
		25			↓	90°	
		26	G210-46	20:58:01	40:03:42	3 min	6.6/300
		27			↑	90°	
		28			↓	90°	
		29	G130-32	23:57:31	53:54:42	3 min	8.5/20
		30			↑	90°	
		31					
		32					



Intensified      Reticon  
TO CAM 4/15  
Spectrograph ECHELLE      Log Sheet      RAW RET 11  
Grating 300L      Observer GS  
Telescope 6"      WYAMI      Date APR 14-15 1986      Disk ARO 983

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80 μ SLIT
		2	G126-62	22:09:06	17:51:12	18 <sup>MIN</sup>	9.5/100
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	H213014	22:25:45	17:00:28	4 <sup>MIN</sup>	7.7/ 1 AU STANDARD
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	H182572	19:22:35	11:50:10	2 <sup>MIN</sup>	5.2/ 1 AU STANDARD
		9			↑	90 <sup>s</sup>	<del>1 AU</del>
		10			↓	90 <sup>s</sup>	
		11				5 <sup>MIN</sup>	
		12			↑	90 <sup>s</sup>	
		13				120 <sup>MIN</sup>	
		14				120 <sup>MIN</sup>	
		15				120 <sup>MIN</sup>	
		16				48 <sup>MIN</sup>	
APR 15/16		17			↓	90 <sup>s</sup>	5187A 80 μ SLIT
		18				5 <sup>MIN</sup>	
		19			↑	90 <sup>s</sup>	
		20			↓	90 <sup>s</sup>	
		21	H66141	02:59:39	02:28:24	2 <sup>MIN</sup>	11.4/ 1 AU STANDARD
		22			↑	90 <sup>s</sup>	
		23			↓	90 <sup>s</sup>	
		24	S95160	06:00:15	19:22:17	5 <sup>MIN</sup>	9.3/30 HALOS
		25			↑	90 <sup>s</sup>	
		26			↓	90 <sup>s</sup>	
		27	S58912	06:12:35	37:44:38	6 <sup>MIN</sup>	7.9/30 (RIGHT STAR?)
		28			↑	90 <sup>s</sup>	
		29			↓	90 <sup>s</sup>	
		30	G90-25	07:50:22	30:45:10	5 <sup>MIN</sup>	8.3/50
		31			↑	90 <sup>s</sup>	
		32					



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Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAWRET 11

Grating 300L Observer GS

Telescope 61" WYATI Date APR 15 16 1986 Disk ORU 984

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80 μs
	+251981		08:41:27	24:59:00		11 min	9.3/100 END IN OVERAST
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
	G43-3		09:46:12	13:59:18		6 1/2 min	8.3/50 H/1 C105
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
	G58-25		10:48:48	20:32:57		3 1/2 min	8.2/30
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
	G147-36		11:14:34	29:50:36		4 min	9.3/15
		12			↑	90 <sup>s</sup>	
	INCANDS					120 min	
	INCANDS					120	
	INCANDS					120	
	INCANDS					120	
	INCANDS					120	
	INCANDS					50	
Apr 18/19		19			↓	90 <sup>s</sup>	5187A 80 μs
	SKY-EVE					5 min	clear (1245)
		21			↑	90 <sup>s</sup>	
	TH AR				↓	90 <sup>s</sup>	
	H66141		07:59:39.9	02:28:24		2 <sup>m</sup>	IAU Standard
		24			↑	90 <sup>s</sup>	
		25			↓	90 <sup>s</sup>	
	G112-54		07:52:02	-1:16:54		2 <sup>m</sup>	Haló Binaries
		27			↑	90 <sup>s</sup>	
		28			↓	90 <sup>s</sup>	
	H51754		06:56:06	-00:24:00		3 1/4 min	
		30			↑	90 <sup>s</sup>	
		31					
		32					



4/18

Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAWRET 11  
 Grating 300L Observer RJD  
 Telescope 61" Wyeth Date 4/18-19/86 Disk ORO 985

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	
	G191-55		05:53:04	58:40:24		14 <sup>m</sup>	Italo Binaries Latham
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
	H74000		08:38:31	-16:09:35		17 <sup>m</sup>	
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
	G114-26		08:56:39	-3:49:36		14 <sup>m</sup>	
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
	G41-34		09:20:06	11:29:06		3 <sup>m</sup>	
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
	G147-36		11:14:34	29:50:36		2 <sup>m</sup>	
		15			↑	90 <sup>s</sup>	
		16			↓	90 <sup>s</sup>	
	S138815		2:27:09.6	-3:02:57		2 1/2 <sup>m</sup>	
		18			↑	90 <sup>s</sup>	
		19			↓	90 <sup>s</sup>	
	S139010		12:49:38.2	-0:39:39		5 <sup>m</sup>	M Stars Mazeh
		21			↓	90 <sup>s</sup>	
	G15488		12:48:10	-0:29:42		4 1/2 <sup>m</sup>	
		23			↑	90 <sup>s</sup>	
		24			↓	90 <sup>s</sup>	
	(1)		10:37:28.4	24:21:54		2 <sup>m</sup>	Asteroid
		26			↑	90 <sup>s</sup>	
		27			↓	90 <sup>s</sup>	
	S043627		11:06:51	43:28:44		2 <sup>m</sup>	M Stars Mazeh
		29			↓	90 <sup>s</sup>	
	G15412A		11:02:43	43:47:39		4 <sup>m</sup>	
		31			↑	90 <sup>s</sup>	
		32					



4/18

Intensified Reticon TO CAM

Spectrograph ECHELLE Log Sheet RAW/RET II

Grating 300L Observer RJD

Telescope 61" Wyeth Date 4/18-19/86 Disk OR0 986

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	
		2	S0443396	10:32:32.2	45:54:46		2 1/2 <sup>m</sup> M Stars Mazeh
		3			↑↓	90 <sup>s</sup>	
		4	G15397	10:28:25	45:47:06		5 1/2 <sup>m</sup>
		5			↑↓	90 <sup>s</sup>	
		6	S043285	10:16:21	48:38:52		2 <sup>m</sup>
		7			↑↓	90 <sup>s</sup>	
		8	G15380	10:08:13	49:42:09		2 <sup>m</sup>
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	G15338A	09:10:52	52:53:43		4 <sup>m</sup>
		12			↑↓	90 <sup>s</sup>	
		13	G15338B	09:10:54	52:53:46		4 <sup>m</sup>
		14			↑	90 <sup>s</sup>	
		15			↓	90 <sup>s</sup>	
		16	H114762	13:09:54.5	17:46:55		3 <sup>m</sup> IAU R.V. Std
		17			↑	90 <sup>s</sup>	
		18			↓	90 <sup>s</sup>	
		19	W11450	13:08:51.1	31:05:32		13 <sup>m</sup> Standard Area 57 Latham
		20			↑↓	90 <sup>s</sup>	
		21	W11449	13:08:50.6	31:05:34		7 <sup>m</sup>
		22			↑↓	90 <sup>s</sup>	
		23	W31281	12:57:14.4	31:17:23		8 1/2 <sup>m</sup>
		24			↑↓	90 <sup>s</sup>	
		25	W60228	13:00:03.5	29:14:04		5 1/2 <sup>m</sup>
		26			↑↓	90 <sup>s</sup>	
		27	W61473	13:01:22.2	28:53:25		20 <sup>m</sup>
		28			↑↓	90 <sup>s</sup>	
		29	W13233	13:09:52.8	30:14:29		2 1/2 <sup>m</sup>
		30			↑↓	90 <sup>s</sup>	
		31	W13784	13:11:20.2	30:04:58		2 1/2 <sup>m</sup>
		32					







4/19

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW RET 11

Grating 300L

Observer RJD

Telescope 61" Wyeth

Date 4/18-19/86

Disk ORO 988

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	G15572	14:59:10	45:37:21		4 <sup>th</sup> M Stars Mazeh
		3			↑	90s	
		4			↓	90s	
		5	G15644A	16:52:46	-8:15:17		8 <sup>m</sup>
		6			↓	90s	
		7	G15643	16:52:43	-8:14:30		22 <sup>s</sup>
		8			↑	90s	
		9			↓	90s	
		10	G262-32	20:58:10	64:51:00		7 <sup>m</sup> Hal. Binaries
		11			↑	90s	
		12			↓	90s	
		13	G210-46	20:58:01	40:03:42		2 <sup>i</sup> m
		14			↑	90s	
		15			↓	90s	
		16	H182572	19:22:35.1	11:50:10		2 <sup>m</sup> IAU R.V. STD
		17			↑	90s	
		18			↓	90s	
		19	Sky Dumb			10 <sup>m</sup>	
		20			↑	90s	
		21	Incands			120 <sup>m</sup>	
		22	INCANDS			120 <sup>m</sup>	
		23	INCANDS			16 <sup>m</sup>	
4/19-20/86		24	TH-AR			90s	5107A 80M HIT
		25	SKY DUMB			5 <sup>MIN</sup>	
		26	TH-AR			90s	
		27	Th-Ar			90s	
		28	H66141	07:59:40	02:28:24		4 <sup>m</sup> IAU standard #1 ND filter
		29	Th-Ar			90s	
		30					
		31					
		32					



4/19

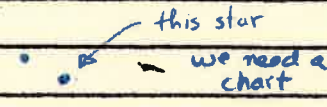
Spectrograph ECHELLE Intensified Reticon TO CAM  
 Grating 300L Log Sheet RAW RET 11  
 Telescope 61" Wyeth Date 4/19-20/66 Observer GRO 989  
 Disk

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		Th-Ar			↓	90s	
	576-73	47.46.12	27.13.42		↓	12m	HYADES
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	G161-73	49.13.47	44.26.30		↓	16m	HALO BINARY SURVEY
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	G53-34	10.41.56	47.23.12		↓	2 1/2 m	10.2/15
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	H97-716	11.13.19	62.21.36		↓	7m	9.3/100
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	G44-15	16.54.48	16.44.24		↓	4 1/2 m	10.2/30
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	G123-64	12.47.41	47.21.06		↓	4 1/2 m	10.1/20
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	G178-56	11.53.12	43.17.42		↓	14m	11.9/15
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	(6)	13.04.45	13.25.29		↓	7m	10.7 Asteroid (I hope!)
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	H11762	13.49.55	17.46.55		↓	2 1/2	7.3 IAU standard H11762
	Th-Ar				↑	90s	
	Th-Ar				↓	90s	
	G65-22	13.59.16	49.16.16		↓	14m	11.6/20
	Th-Ar				↑	90s	
	/						
	/						



4/19

Intensified Reticon TO CAM  
 Spectrograph ECHELLE Log Sheet RAW/RET II  
 Grating 300L Observer RPS  
 Telescope 61" Wyeth Date 4/19-20/86 Disk ORO 990

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	W21939	13:04:52	31:03:24		9m 10.5/50 SA57
		3			↑	90s	
		4			↓	90s	
		5	W34282	13:04:44	30:44:24		12m 11.4/20 
		6			↑	90s	
		7			↓	90s	
		8	W60267	12:59:32	29:17:39		9m 11.7/15
		9			↑	90s	
		10			↓	90s	
		11	W41124	13:08:25	28:48:39		5 1/2 9.7/50
		12			↑	90s	
		13			↓	90s	
		14	W11310	13:10:01	31:05:52		21m 10.7/? Seeing 6-7
		15			↑	90s	
		16			↓	90s	
		17	W61771	13:01:15	28:43:08		3m 9.2/?
		18			↑	90s	
		19			↓	90s	
		20	W61735	13:02:50	28:39:41		3 1/2 10.1/15
		21			↑	90s	
		22			↓	90s	
		23	G180-66	16:37:47	34:22:30		9m 11.0/20 HALO
		24			↑	90s	
		25			↓	90s	
		26	G153-21	16:04:24	-06:19:04		5 1/2 10.2/20
		27			↑	90s	
		28			↓	90s	
		29	H140283	15:40:23	-10:46:18		4m 7.2/100
		30			↑	90s	
		31					
		32					



Spectrograph ECHELLE

Intensified Reticon

TO CAM 4/20

Grating 300L

Log Sheet

RAW RET 11

Telescope 61" WyethDate 4/19-20/86Observer RPSDisk ORO 991

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90s	
		2	H146051	16:11:43	-03:34:41	2 1/2 m	IAU standard #2 ND filter
		3			↑	90s	
		4			↓	90s	
		5	G185644A	16:52:46	-08:15:17	8m	9.1 M star - MAZEH
		6			↕	90s	
		7	G185643	16:52:43	-08:14:36	2 1/2 m	11.7
		8			↑	90s	
		9			↓	90s	
		10	G141-19	18:30:59	13:07:18	9m	10.6/30 HALO
		11			↑	90s	
		12			↓	90s	
		13	G170-56	17:36:45	18:35:15	4m	9.8/30
		14			↑	90s	
		15			↓	90s	
		16	G183-11	17:52:35	20:16:54	8m	9.8/50
		17			↑	90s	
		18			↓	90s	
		19	H182572	19:22:35	11:50:10	2m	IAU standard #1 ND filter
		20			↑	90s	
		21			↓	90s	
		22	SKY-DWN	stow		5m	
		23			↑	90s	
		24	TNCAND			120 <sup>MIN</sup>	
		25	INCAND			120 <sup>MIN</sup>	
		26	INCAND			29 <sup>MIN</sup>	
		27					
		28					
		29					
		30					
		31					
		32					



Intensified      Reticon

TO CAM 4/26

Spectrograph ECHELLE      Log Sheet      RAW/RET 11

Grating 300L      Observer GS/lem

Telescope 61" WYETH      Date APR 20-21/1966      Disk 992 ORO

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90°	5187A 80μSLIT
		2				5 MIN	
		3			↑	90°	
		4			↓		
		5	S 092651	13:23:56	+12:53	5 MIN	60 / 5.9
		6			↓		
APR 24/25		7			↓	90°	5187A 80μSLIT
		8				5 MIN	(1852) CLEAR
		9			↑	90°	
		10			↓	90°	6563A 80μSLIT
		11	ONCAORI	5 <sup>h</sup> 36:33	04:05:41	4 MIN	4.5
		12			↑	90°	
		13			↓	90°	
		14	2 ORI	5 <sup>h</sup> 52:28	07:24	3 MIN	NID = 2 FILTER
		15			↑	90°	THIN OVERCAST
APR 25/26		16		IGNORE	↓	90°	5187A 80μSLIT
		17			↓	90°	
		18				5 MIN	
		19			↑	90°	
		20			↓	90°	
		21	H 89119	10:17:01	19:43:31	2 MIN	4.8 IAU STANDARD
		22			↓	90°	
		23	H 89119	"	"	3 MIN	4.8 repeat of above
		24			↑	90°	
		25			↓	90°	
		26	G 147-36	11:14:39	29:50:36	3 MIN	9.3/15
		27			↑	90°	
		28			↓	90°	
		29	W 11450	13:08:51	31:05:22	11 MIN	7.0/100
		30			↓	90°	
		31	W 11449	13:08:50	31:05:31	6 MIN	9.4/15
		32			↑	90°	



4/26

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW RET 11

Grating 300L

Observer Wm/GS/RPS

Telescope 61" WYETH

Date APR 25/26

Disk ORO 993

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

Change....	File	ID	1950.0	RA	Dec	L/R	Exposure	Comments
		1				↓	90°	6200 Å 120 μ slit
	HALLEY		11:15:53	-23:32:26			11 min	20° EAST OF HALLEY
	TH-AR					↕	90°	
	HALLEY		"	"			7 min	ON NUCLEUS ALL REMAINING QUOTE WEAK
	TH-AR					↕	90°	
	HALLEY		"	"			11 min	40° EAST OF HALLEY
	TH-AR					↕	90°	
	<del>INCANDS</del>						120	<del>20° SOUTH OF HALLEY</del>
	INCANDS						120	
	INCANDS						120	
	INCANDS						120	
	INCANDS						22 min	
APR 26/27	TH-AR					↓	90°	5187 Å 80 μ slit
	SKY EVE						5 min	(OVERCAST)
	Th-Ar					↑	90s	
	Th-Ar					↓	90s	
	H81797		09:25:48	-08:26:27			4m	2.0 IAU standard
	Th-Ar					↑	90s	no filter needed!
	Th-Ar					↓	90s	
	H89449		10:17:01	19:43:31			5m	4.8 IAU standard
	Th-Ar					↑	90s	
	Th-Ar					↓	90s	
	(1)		10:38:07	23:36:04			6m	7.9 Asteroid
	Th-Ar					↑	90s	
	Th-Ar					↓	90s	
	H92588		10:38:52	-01:28:42			4m	6.3 IAU standard
	Th-Ar					↑	90s	
	Th-Ar					↓	90s	(some clearing)
	G147-36		11:14:34	29:50:36			4 1/2 m	9.3/5 HALOS Seeing 6-12
	Th-Ar					↑	90s	
	/							



Intensified Reticon TO CAM 4/28

Spectrograph ECHELLE Log Sheet RAW RET 11

Grating 300L Observer RPS

Telescope 61" Wyeth Date April 26/27 '86 Disk ORO 994

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1	TA-AR		↓	90s	Complete overcast
		2	Gls 380	10:08:13	49:42:09	3m	6.6/100 M-stars
		3	TA-AR		↑	90s	
		4	TA-AR		↓	90s	
		5	S 43285	10:16:21	48:38:52	3m	6.1/100
		6	TH-AR		↑	90s	clouds & lightning - rain
APR 27/28		7	TH-AR		↓	90s	5187A 80 μ slit
		8	SKY EVE			5 MIN	OVERCAST
		9	TH-AR		↑	90s	
		10	TH-AR		↓	90s	
		11	H 81797	09:25:07	-08:26:27	6 MIN	2.0 / NO 2.0 FILT. 1 AU STAND
		12	TH-AR		↑	90s	
		13	TH-AR		↓	90s	
		14	G 147-36	11:14:34	29:50:36	5 MIN	9.3/15 HALOS
		15	TH-AR		↑	90s	
		16	TH-AR		↓	90s	
		17	W 11450	13:08:51	31:05:32	15 MIN	7.0/100 SA 57 (END IN CLDS)
		18	TH-AR		↑	90s	
		19	TH-AR		↓	90s	
		20	W 20942	13:04:37	31:22:22	8 MIN	9.7/10 (CLDS)
		21	TH-AR		↑	90s	
		22	TH-AR		↓	90s	
		23	(1)	10:38:19	23:29:25	7 MIN	8.1 (ASTEROID)
		24	TH-AR		↑	90s	
		25	INCAND			120 MIN	
		26	INCAND			120	
		27	INCAND			120	
		28	INCAND			120	
		29	INCAND			120	
		30	INCAND			46"	
		31					
		32					



TO CAM 4/28

Intensified      Reticon

Spectrograph ECHELLE      Log Sheet      RAW RET 11

Grating 300L      Observer ren/gs

Telescope 61" WYEM      Date APR 28-29 1986      Disk ORO 995

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80 μ SLIT
		2				5 min	CLEAR
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	H92588	10:38:51	-1:28.42	3 min	6.3 1 AU STD
		6			↑	90 <sup>s</sup>	
		7			↓	2 min	6300 Å 120 μ SLIT
		8	HAL6300	11 01 37	-20 07	6 min	ON NUCLEUS
		9			↑	2 min	<del>12<sup>s</sup> WEST OF NUCL.</del>
		10	HAL6300	"	"	10 min	12 <sup>s</sup> WEST OF NUCL
		11			↑	2 min	
		12	HAL6300	"	"	10 min	12 <sup>s</sup> EAST " "
		13			↑	2 min	
		14	HAL6300	"	"	10 min	12 <sup>s</sup> SOUTH " "
		15			↑	2 min	
		16	HAL6300	"	"	10 min	24 <sup>s</sup> WEST " "
		17			↑	90 <sup>s</sup>	
		18	HAL6300	"	"	10 min	24 <sup>s</sup> EAST " "
		19			↑	90 <sup>s</sup>	
		20	HAL6300	"	"	15 min	248 <sup>s</sup> WEST " "
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	5187A 80 μ SLIT
		23	W11450	13 08 51	31 06	15 min	
		24			↑	90 <sup>s</sup>	
		25	W11449	13 08 51	31 05	10 min	
		26			↑	90 <sup>s</sup>	
		27			↓	90 <sup>s</sup>	
		28	G114-26	01 56 39	-03 50	15 min	
		29			↑	90 <sup>s</sup>	
		30			↓	90 <sup>s</sup>	
		31	G41-34	07 20 06	11 29	8 min	
		32			↑	90 <sup>s</sup>	



Intensified Reticon

TO CAM 4/28

Spectrograph ECHELLE

Log Sheet

RAW RET 11

Grating 300L

Observer nan / 65

Telescope SH 61"

Date 4/28-29/76

Disk ORO 976

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>	5187A
		2				4 <sup>m</sup>	HALOS
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5				18 <sup>MIN</sup>	11.6/20
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8				6 <sup>m</sup> 07 <sup>s</sup>	10.9/15 SA57
		9			↕	90 <sup>s</sup>	
		10				6 <sup>1/2</sup> <sup>MIN</sup>	10.1/30
		11			↑	90 <sup>s</sup>	
		12				8 <sup>MIN</sup>	10.2/15
		13			↕	90 <sup>s</sup>	
		14				6 <sup>1/2</sup> <sup>MIN</sup>	11.0/10
		15			↑	90 <sup>s</sup>	
		16				8 <sup>MIN</sup>	11.6/10
		17			↑	90 <sup>s</sup>	
		18				5 <sup>MIN</sup>	10.8/10
		19			↑	90 <sup>s</sup>	
		20				4 <sup>MIN</sup>	10.7/10
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	
		23				2 <sup>MIN</sup>	8.4/20
		24			↕	90 <sup>s</sup>	
		25				2 <sup>1/2</sup> <sup>MIN</sup>	10.1/15
		26			↕	90 <sup>s</sup>	
		27				3 <sup>1/2</sup> <sup>MIN</sup>	10.7/20
		28			↕	90 <sup>s</sup>	
		29				2 <sup>MIN</sup>	10.6/10
		30			↕	90 <sup>s</sup>	
		31				2 <sup>MIN</sup>	8.9/10
		32			↑	90 <sup>s</sup>	



Intensified Reticon TO CAM 4/29

Spectrograph ECHELLE Log Sheet RAW RET 11

Grating 300L Observer G<sup>s</sup>

Telescope 61" WYETH Date APR 28-29 1986 Disk ORO 997

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80μ SLIT
		2	G180-66	16:37:47	34:22:30	8 <sup>MIN</sup>	11.0/20 (HALOS)
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	H136202	15:16:45	01:57:12	2 <sup>MIN</sup>	5.1 IAU STD - (INCREA.FUG)
		6			↑	90 <sup>s</sup>	
		7			↓	90 <sup>s</sup>	
		8	S105417	19:52:47	10:36:15	5 1/2 <sup>MIN</sup>	8.8/30 (HALOS)
		9			↑	90 <sup>s</sup>	
		10			↓	90 <sup>s</sup>	
		11	G209-29	19:30:32	48:28:34	11 <sup>MIN</sup>	8.5/200
		12			↑	90 <sup>s</sup>	
		13			↓	90 <sup>s</sup>	
		14	G209-35	20:31:05	41:43:24	2 <sup>MIN</sup>	7.1/30
		15			↑	90 <sup>s</sup>	
		16			↓	90 <sup>s</sup>	
		17	G210-46	20:58:01	40:03:42	6 <sup>MIN</sup>	6.6/300
		18			↑	90 <sup>s</sup>	
		19			↓	90 <sup>s</sup>	
		20	P CYG	20:15:57	37:52:36	3 <sup>MIN</sup>	4.8/ HALPHA STARS
		21			↑	90 <sup>s</sup>	
		22			↓	90 <sup>s</sup>	
		23	ALPHA QR	22:03:13	-00:33:49	3 <sup>MIN</sup>	2.9/
		24			↑	90 <sup>s</sup>	
		25			↓	90 <sup>s</sup>	
		26	BETA QR	21:28:56	-09:47:32	6 <sup>MIN</sup>	2.9/ ND 1.0 FILTER
		27			↑	90 <sup>s</sup>	
		28			↓	90 <sup>s</sup>	
		29	LAM AND	23:35:06	46:11:14	4 <sup>MIN</sup>	3.9/ ND 1.0 FILTER
		30			↑	90 <sup>s</sup>	
		31					
		32					



Spectrograph ECHELLE Intensified Reticon  
 Grating 300L Log Sheet  
 Telescope 61" WYETH Date APR 28-29 1986

TO CAM 4/29  
RAW RET 11

Observer GS  
 Disk ORD 998

Change....	File	ID	RA	Dec	1950.0 L/R ↑/↓	Exposure	Comments
		1			↓	90°	5187A. 80μ SLIT
		2				7 MIN	(0416)
		3			↑	90°	
		4				120 <sup>MIN</sup>	
		5				120 <sup>MIN</sup>	
		6				120 <sup>MIN</sup>	
APR 29-30		7			↓	90°	5187A. 80μ SLIT
		8				5 MIN.	(center)
		9			↑	90°	
		10			↓	90°	
		11	H81797	09 25 08 -08 26		3 <sup>m</sup>	ND = 1 FILTER
		12			↑	90°	
		13			↓	90°	
		14	S133165	06 19 35 -05 26		12 <sup>m</sup>	
		15			↑	90°	
		16			↓	90°	
		17	G87-45	07 29 47 31 14		15 <sup>m</sup>	
		18			↑	90°	
		19	G87-45	" "		10 <sup>m</sup>	CLS IN CLDS
		20			↑	90°	
		21			↓	90°	
		22	G147-36	11 14 34 29 51		3 <sup>m</sup>	
		23			↑	90°	
		24			↓	90°	
		25	S63020	12 26 38 31 40		2 <sup>m</sup>	
		26			↑	90°	
		27			↓	90°	
		28	G59-5	12 10 56 23 33		3 <sup>m</sup>	
		29			↑	90°	
		30			↓	90°	
		31	G61-24	12 55 04 17 58		12 <sup>m</sup>	
		32			↑	90°	



TO CAM 4/30

Intensified      Reticon

Spectrograph ECHELLE      Log Sheet      RAW RET 11

Grating 300L      Observer GS

Telescope 61" WYETH      Date APR 29-30 1986      Disk ORO 999

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80μ SLIT
		2	G14-54	13:25:44	-00:34:30	2 <sup>min</sup>	7.4/20 HALO
		3			↑	90 <sup>s</sup>	
		4			↓	90 <sup>s</sup>	
		5	W11450	13:08:51	31:05:32	18 <sup>min</sup>	7.9/100 SAST
		6			±	90 <sup>s</sup>	
		7	W11449	13:08:50	31:05:34	12 <sup>min</sup>	9.4/15
		8			↑	90 <sup>s</sup>	
		9			↓	90 <sup>s</sup>	
		10	S082651	13:03:56	22:53:00	2 <sup>min</sup>	5.9/100 M STAR
		11			±	90 <sup>s</sup>	
		12	GL499	13:03:49	20:59:40	11 <sup>min</sup>	9.4/20 INCREASES CLOS
		13			↑	90 <sup>s</sup>	
		14				120 <sup>min</sup>	
		15				120	
		16				60	
APR 30/MAY 1		17			↓	90 <sup>s</sup>	5187A 80μ SLIT
		18				5 <sup>min</sup>	
		19			↑	90 <sup>s</sup>	
		20			↓	90 <sup>s</sup>	
		21	H89449	10:17:01	19:43:31	2 <sup>min</sup>	4.8/ IAU STD
		22			↑	90 <sup>s</sup>	
		23			↓	90 <sup>s</sup>	
		24	(1)	10:39:02	23:09:35	3 <sup>min</sup>	8.1/ ASTEROID
		25			↑	90 <sup>s</sup>	
		26			↓	90 <sup>s</sup>	6563A
		27	α ORI	05 52 28	07 24	8 <sup>min</sup>	NO - 2 FILTER CLOS IN OVERCAST
		28			↑	90 <sup>s</sup>	
		29			↓	90 <sup>s</sup>	5187A
		30	W11450	13 08 51	31.06	20 <sup>min</sup>	CLOS
		31			±	90 <sup>s</sup>	
		32					



Spectrograph ECHELLE  
 Grating 300L  
 Telescope SM

Intensified Reticon  
 Log Sheet

TO CAM 4/30

RAW RET 11

Observer DA  
 Date 4/30-5/1/86 Disk ORO 1000

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments	
		1	W11449	13:07:00	31:05:34	↓	10 <sup>m</sup>	5187
		2	TH-AR			TH	90 <sup>s</sup>	
		3	W21939	13:04:52	31:02:24		13 <sup>m</sup>	
		4	TH-AR			TH	90 <sup>s</sup>	
		5	W31291	12:59:15	31:17:23		9 <sup>m</sup>	
		6	TH-AR			TH	90 <sup>s</sup>	
		7	W34282	13:00:04	30:00:20		15 <sup>m</sup>	WRONG STAR?
		8	TH-AR			TH	90 <sup>s</sup>	
		9	W34282	"	"		15 <sup>m</sup>	" "
		10	TH-AR			↑	90 <sup>s</sup>	
		11	W60267	12:59:32	29:17:39		13 <sup>m</sup>	11.7/15
		12	TH-AR			↑	90 <sup>s</sup>	
		13	W140903	13:09:06	29:08:01		7 1/2 <sup>MIN</sup>	8.8/100
		14	TH-AR			↑	90 <sup>s</sup>	
		15	W23870	13:04:22	30:02:39		13 <sup>m</sup>	11.6/15
		16	TH-AR			↑	90 <sup>s</sup>	
		17	W125209	13:04:17	29:31:24		10 <sup>MIN</sup>	11.3/15
		18	TH-AR			↑	90 <sup>s</sup>	
		19	W25391	13:02:47	29:31:36		12 <sup>MIN</sup>	11.5/15 SW ON TV SCREEN
		20	TH-AR			↑	90 <sup>s</sup>	
		21	W334 <sup>35</sup>	12:59:49	30:18:39		9 <sup>MIN</sup>	11.2/15
		22	TH-AR			↑	90 <sup>s</sup>	
		23	W34615	12:59:02	29:53:42		3 <sup>MIN</sup>	10/2 10
		24	TH-AR			↑	90 <sup>s</sup>	
		25	W50670	13:04:26	28:52:05		7 <sup>MIN</sup>	10.6/15 SE OF PAIR
		26	TH-AR			↑	90 <sup>s</sup>	
		27	W152412	13:06:54	28:06:12		5 <sup>MIN</sup>	11/10
		28	TH-AR			↑	90 <sup>s</sup>	
		29	W60039	13:02:43	29:18:58		8 <sup>MIN</sup>	11.4/15
		30	TH-AR			↑	90 <sup>s</sup>	
		31	W60243	12:59:40	29:15:37		2 1/2 <sup>MIN</sup>	8.9/20
		32	TH-AR			↑	90 <sup>s</sup>	



Intensified Reticon TO CAM 4/30

Spectrograph ECHELLE Log Sheet RAW RET 11

Grating 300L Observer GS

Telescope 61" WYETH Date APR 30 MAY 1 / 86 Disk ORO 1001

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80μ SLIT
		2	W61064	12:57:51	28:57:23	8 <sup>MIN</sup>	11.1/15 (SA 57)
		3			↑	90 <sup>s</sup>	
		4	W61447	13:00:51	28:52:31	4½ <sup>MIN</sup>	10.5/15
		5			↑	90 <sup>s</sup>	
		6	W62620	13:01:18	28:27:33	4 <sup>MIN</sup>	11.0/10
		7			↑	90 <sup>s</sup>	
		8	W62717	13:01:54	28:22:51	6 <sup>MIN</sup>	9.3/50
		9			↑	90 <sup>s</sup>	
		10	W62776	13:02:48	28:20:23	7 <sup>MIN</sup>	11.6/10
		11			↑	90 <sup>s</sup>	
		12	W63160	12:59:45	28:04:57	7 <sup>MIN</sup>	11.4/10
		13			↑	90 <sup>s</sup>	
		14	W64390	13:01:46	27:59:35	14 <sup>MIN</sup>	10.6/50
		15			↑	90 <sup>s</sup>	
		16	W33111	13:00:15	30:32:57	3 <sup>MIN</sup>	9.2/15
		17			↑	90 <sup>s</sup>	
		18	W51212	13:04:46	28:43:45	7 <sup>MIN</sup>	11.2/10
		19			↑	90 <sup>s</sup>	
		20	W44447	13:09:32	28:07:52	2 <sup>02</sup> SK	4.3/100
		21			↑	90 <sup>s</sup>	
		22	W41677	13:13:14	29:00:21	2 <sup>MIN</sup>	7.3/20
		23			↑	90 <sup>s</sup>	
		24	W44485	13:10:10	27:57:51	9 <sup>MIN</sup>	10.5/15
		25			↑	90 <sup>s</sup>	
		26			↓	90 <sup>s</sup>	
		27	11-1223	18:48:19	-6:18:30	20 <sup>MIN</sup>	11.4/ M-11
		28			↑	90 <sup>s</sup>	
		29	11-926	18:48:26	-6:20:02	18 <sup>MIN</sup>	
		30			↑	90 <sup>s</sup>	
		31					
		32					



Intensified Reticon TO CAM 5/2

Spectrograph ECHELLE Log Sheet RAW RET 11

Grating 300L Observer GS

Telescope 61" WYETH Date APR 30 - MAY 1 86 Disk ORD-1002

Change....	File	ID	1950.0 RA	Dec	L/R ↑/↓	Exposure	Comments
		1			↓	90 <sup>s</sup>	5187A 80 μ SLIT
		2	S101299	14:54:51	16:35:19	9 <sup>MIN</sup>	5.8/100 (FOG) M STAR
		3	TH-AR		↑	90 <sup>s</sup>	"HOLD" NY FOG
		4	TH-AR		↓	90 <sup>s</sup>	
		5	SKY-DRAW			6 <sup>MIN</sup>	(0416)
		6	TH-AR		↑	90 <sup>s</sup>	
		7	INCAND			120 <sup>MIN</sup>	
		8	INCAND			120 <sup>MIN</sup>	
		9	INCAND			120 <sup>MIN</sup>	
MAY 1-2		10	TH-AR		↓	90 <sup>s</sup>	5187A 80 μ SLIT
		11	G14736	11:14:34	29:50:36	5 <sup>n</sup> 32 <sup>SEC</sup>	9.7/15 HALOS
		12	TH-AR		↑	90 <sup>s</sup>	
		13	TH-AR		↓	90 <sup>s</sup>	
		14	S138815	12:27:09	-3:02:57	3 1/2 <sup>MIN</sup>	9.0/15
		15	TH-AR		↑	90 <sup>s</sup>	
		16	TH-AR		↓	90 <sup>s</sup>	
		17	G6047	12:52:44	08:06:12	6 <sup>MIN</sup>	9.9/20
		18	TH-AR		↑	90 <sup>s</sup>	
		19	TH-AR		↓	90 <sup>s</sup>	
		20	+102495	12:56:49	09:30:42	7 <sup>n</sup> 03 <sup>s</sup>	9.7/30
		21	TH-AR		↑	90 <sup>s</sup>	
		22	TH-AR		↓	90 <sup>s</sup>	
		23	+182575	13:34:07	18:24:24	5 <sup>MIN</sup>	9.8/20
		24	TH-AR		↑	90 <sup>s</sup>	
		25	TH-AR		↓	90 <sup>s</sup>	
		26	H114762	13:09:54	17:46:55	3 <sup>MIN</sup>	7.3 IAU STD
		27	TH-AR		↑	90 <sup>s</sup>	
		28	TH-AR		↓	90 <sup>s</sup>	
		29	G135-16 G150-50	14:01:42 18:54:27	22:46:00 25:43:21	4 <sup>MIN</sup>	10.2/15 HALOS
		30	TH-AR		↑	90 <sup>s</sup>	
		31					
		32					