



PARTIAL INDEX for "Setup" examples

1990 JAN 15/16 150ln/mm grating in Fiber Fed PCS mode, 4200 μ

Note Subtract $\approx 6.5^\circ$ from Fiber Fed grating angles for Reg Tel Cass setup

7

#2

Emulsion Batches:

Date 1989 Oct 25/26 Observers Fds./FRM./T.M./SAS....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.	Exp. Mtr.
15	HD 22928 SFS	03 35 48	+47 28 4	22 27	23 04	24 ¹²			37"	8000
16	Comp								10	
17	Comp							THA	10	
18	HD 11415 ECG	01 47 2	+63 11	23 10	23 40	00 16 ^E			30"	
19	Comp							THA	10	
20	Comp								10	
21	HD 35468 XORI	05 19.8	+6 16	23 54	00 14		E +		20"	8000
22	comp								10	
	4 flats @ 20s	1550, 1512, 1489, 1523								
	4 flats @ 27	1948, 1989, 1930, 1948								
	4 flats @ 34	2489, 2445, 2490, 2447								
	4 flats @ 45	3217, 3205, 3229, 3251								
	2 flats @ 65	4889, 4859								

11 pg#2

Emulsion Batches:

Date .19.89. Oct.26/27. Observers .F.d.S. T.m.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
16	HD 32630 η Aur	04 59 30	+41 05	21 30	22 30	04 00 E	+41 18		1"
17	COMP								10
18	COMP								10
19	HD 11415 ϵ Cas	01 47.2	+63 11	22 37	23 12	00 38 E			35"
20	COMP								10
21	COMP								10
22	HD 32630 η Aur	04 59 30	+41 05	23 24	00 03	2 59 E			39"
23	COMP								10
24	COMP								10
25	HD 35465 δ Ori	05 19.8	+6 16	00 11	00 23	2 57 E			12"
26	Comp							THA	105
27	COMP								10
28	HD 11415 ϵ Cas HD 32630 η Aur	01 47.2	+63 11	00 33	00 57	01 07 W			24"
29	Comp								105
30	COMP								10

Spectr. Te

Focus....

Spectr. Te

Exp. Nr.

6744

8009

8009

8285

8009

15

#4

Emulsion Batches:

Date .. 1959 Oct 26/27.. Observers .. Fols-Tn.....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
46	HD 34568 δ ORI	05 19.8	+6 16	03 02	03 08			F	6 ^m
47	comp							Th AR	10 _s
48	comp								10 _s
49	HD 32630 η Aur	04 54.30	+41 05	03 12	03 29		+41 21		17 ^m
50	comp								10
51	comp								10
52	HD 34568 δ ORI	05 19.8	+6 16	03 33	03 40				7 ^m
53	comp								10 _s
54	comp								10 _s
55	HD 32630 η Aur	04 54.30	+41 05	03 45	04 04		+41 21		19 ^m
56	comp								10
57	comp								10
58	HD 22928 δ Pen	03 35 48	+47 28	04 08	04 29		+		21 ^m
59	comp								10
60	comp								10

Spectr. Te

Focus....

Spectr. Te

Exp. Nr.

9028

8010

9000

8009

8009

17 #5

Emulsion Batches:

Date 1989 Oct. 26/27... Observers ... Fds.-Tm.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
61	HD 34568 Xori	05 19.8	+6 16	04 33	04 41				8 ^m
62	comp							THAR	10 ^{sec}
				Last Topup before Flats					
	4 Flats @ 32sec	2009, 2009, 2012, 2003		07 55					
	4 Flats @ 37sec	2283, 2268, 2252, 2265							
	4 Flats @ 45sec	2769, 2737, 2731, 2794							
	4 Flats @ 40.5sec	2436, 2440, 2454, 2457							
	2 Flats @ 84sec	4973, 5041							

21

#2

Emulsion Batches:

Date .1989 Oct 27/28.. Observers .Fds.-Tr.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
16	HD 22528 SPen	03 35 48	+47 28	20 13	20 51	04 44 E	+47 46		38"
17	Comp							Th HR	10
18	Comp								10
19	HD 32630 nAur	04 59 30	+41 05	20 56	21 56	05 02 E			1"
20	Comp								10
21	Comp								10
23	HD 11415 ECAS	01 47.2	+63 11	22 04	22 37	01 09 E			33"
24	Comp								10
25	Comp								10
26	HD 32630 nAur	04 59 30	+41 05	22 43	23 31	3 25 E	+41 16		
27	Comp								10s
28	Comp								
29	HD 34568 FORI	05 19.8	+6 16	23 37	23 56	E			
30	Comp								10
31	Comp								10

Spectr. Tem

Focus.....

Spectr. Tem

Exp. Mr.

7397

8013

7950

8000

23

#3

Date .1.9.59. Oct. 27/28. Observers Fds. Ta.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
32	HD 11415 ECAS	147.2	+63 11	00 15	00 41	00 55 W			26"
33	Comp							Th-Gr	103
34	Comp								105
35	HD 32360 MAUR	04 59 30	+41 05	00 48	01 09	01 47 E			10
36	Comp								10
37	Comp								10
38	HD 22928 δ Per	03 35 48	+47 28	01 24	01 45	W			10
39	Comp								10
40	Comp								10
41	HD 11415 ECAS	01 47.2	+63 11	01 49	02 16	02 30 W			27"
42	Comp								10
43	Comp								10
44	HD 34568 KORI	5 19.8	+6 16	02 20	02 28				8"
45	Comp								10
46	Comp								10

Spectr. Ten

Focus.....

Spectr. Ten

Exp. Mtr.

8001

8018

8015

25

#4

Emulsion Batches:

Date 1989 Oct 27/28 Observers Fds.-T.O.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
47	HD 32360 η Aur	04 59 30	+41 05	02 33	03 10	00 13 W			37"
48	comp								105
49	HD 32360 η Aur	04 59 30	+41 05	03 12	03 41	00 44 W			29"
	comp								10
	comp								10
	HD 34568 κ Ori	5 19.8	+6 16	03 45	03 55				10m
	comp								10
	comp								10
	HD 22928 δ Ori	03 35 48	+47 28	03 59	04 23				24"
	comp								10
	comp								10
	HD 32630 η Aur	04 59 30	+41 05	04 27	04 54	01 57 W			27"
	comp								10
	comp								10
	HD 34568 κ Ori	05 19.8	+6 16	04 59	05 08				9"
	comp								10

Spectr. Tem

Focus.....

Spectr. Tem

Exp. Nr.

8080

8049

7715

8005

8080

#5

Emulsion Batches:

Date 1989 Oct 27/28 Observers Fols-Tn.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	4 flats @ 43.5s	2408, 2412, 2390, 2411							
	4 flats @ 47s	2570, 2578, 2579, 2602							
	4 flats @ 49s	2730, 2732, 2729, 2734							
	4 flats @ 53	2930, 2932, 2913, 2912							
	2 flats @ 95	5238, 5227				T = .141			
	1989 Oct 28/29	SAT-SUN							
	Seeing Test								
229, In	HD 207754	21 50 ²⁰⁰⁰ .2	+43 53	19 40		00 00	+43 47	'N' mode	
230, In	HP 197433 VW Cep	20 38 ¹⁹⁰⁰ .6	+75 14	20 06		01 40W	+75 37	'N' mode	
		20 38 ^{1989.5} .9	+75 27	given 1989.5 posn don't work out.					

Spectr. Te

Focus...

Spectr. Te

Exp. Mtr.

31x31

39x39

(Note)

Spectr. Temp. Dome Temp./Hum. Transparency Conditions

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H. <small>OR</small>	Program	Remarks	Quality
				Echelle	18.91	400 n 105 w	4481	127			
31x31		7.3	KOIII	Intx4	Fiber Head View		4 frames			Field Drawn Dome facing west (no wind at all) Hazy says <u>MAR 28/89</u> Header date (Tues)	
39x39				Intx4			4 frames			Hdy request Slight NE breeze	
(Note, On CCD; both image acquisition and fiber head guidance view showed no other components) (of previous Hdy request)											

29

SAT SUN

Date 1989 Oct 28/29 Observers Fds - Tn

Emulsion Batches:

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Prompted flat								60s
	Comp for S Per			21 49				Th-Ar	10s
	HD 22928 S Per	03 35.8	+47 28	21 53	22 34	02 55 E	+47 49		41"
	comp								10
	comp								10s
	HD 11415 e Cas	1 47.2	+63 11	22 42	23 30	00 11 E	+63 41		48"
	Comp								10s
	comp								10s
	HD 32360 η Aur	04 59.30	+41 05	23 38	00 36	02 16 E			58"
	Comp								10s
	comp								10s
	HD 34568 δ Ori	05 19.8	+6 16	00 42	00 54	02 16 E	+6 23		12"
	comp								10s
	4 flats @ 56s	3454, 3321, 3306, 3298							
	4 flats @ 45s	2680, 2699, 2705, 2689							

Spectr. Te

Focus...

Spectr. Te

Exp. Mtr.

6644

8000

31

SAT-SUN

Emulsion Batches:

Date 1989. Oct. 28/29... Observers Fds - Tg.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	comp							T _h -AR	10sec
	HD 22428 dPen	03 35.8	+ 47 28	01 16	01 53	00 15 W	+		37 ^m
	comp								10s
	—								
	comp							T _h -AR	10sec
	HD 14386 Mira	02 ^h 14.3	-3° 26'	02 11	03 41	03 35 W	-2 59		1 ^m 30 ^s
	comp								10 ^s
	4 flats @ 11s	2270, 2245, 2238, 2216							

Spectr. Te

Focus...

Spectr. Te

Exp. Mir.

25440

33

Sun-mon Pg #1

Emulsion Batches:

Date 1989 Oct 29/30... Observers Mkr-Ta.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2049	Comp			18 22	18 27			FeA A=1/2	300s
50	HD 197433 ^{vW} Cep	20 38.8	+75 143	18 44	19 15	00 54 W	+75 37		1800
51	Comp						n	FeA A=1/2	300
52	BM Cass	00 48.6	+63 33	19 27	19 57	02 42 E	+64 04		1800
53	Comp						n		300
54	HD 3765	00 35.3	+39 40	20 13	20 23	02 00 E	+40 12		600
55	Comp							FeA A=1/2	300
56	PUVul	20 19.0 ¹⁹⁵⁰	+21 25	21 41	21 51	03 50 W	+21 32		600
57	Comp	20 19.0 ¹⁹⁵⁰	+21 25					FeA A=1/2	300
58	Sky near PUVUL	n	n	22 01	22 11	04 08 W	+21 32		600
60	PUVUL	20 19.0	+21 25	22 13	22 23	04 19 W	n		600
61	Comp						n	FeA A=1/2	300
62	PUVul	20 19.0	+21 25	22 37	22 57	04 53 W	n		1200
63	Sky \approx 20 min East of PUVUL					W	n		1200
2064	Comp								300

Spectr. Te

Focus....

Spectr. Te

Exp. Mtr.

160

Comp 8

Exp. 1800

170 12

80 21

145 10

500 30

150 14

500

150 8

5170 < 10

700 15

100 10

210 < 10

Spectr. Temp. Dome Temp./Hum. 16°C $66\% \text{H}$ Transparency Conditions *Hazy* \rightarrow *S! cloudy* 34
 Focus
 Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
160				PCS Rel Col	831 1800 1398	BS	6600A	IA	*		
Counts as high \approx 1/600		7.8- 8.2						IB	600+1200 secs	'B' channel out. cloud	
170 12								IA			
500 21		\checkmark 2.9						IA		part cloudy	
145 10								IA			
2500 30		\checkmark 7.36	dk5					IA		field drawn	
150 14								IA			
500								IA	[Forgot to change header]	str H α emission	
160 8								IA			
5/710/210								IA			
700 15								IB		[note start/end time on head of run]	
								IA		Same times as for this comp.	
100 10								IA		ND 0.6 in stellar beam	
210 210								IA		ND 0.6 still in; part cloudy now	
								IA			

THERE IS NO 2059

(Note This record same size as previous?)

Emulsion Batches:

Date 1989 Oct 29/30... Observers M.Ki. - T.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
2065	HD 12029	01 53.0	+28 54	23 33	23 43	00 01 W	+29 22		600s
	Comp							Fe A A-1/2	300
2066	V471 Tau	03 44.7	+16 57	00 05	00: 25	01 07 E			1200
	V471 Tau	"	"	00:30	00 50	00 42 E	+17 15		1200
	Comp								300
	V471 Tau	03 44.7	+16 57	01 02	01 22	00 10 E			300
	V471 Tau	"	"	01 24	01 44	00 12 W			1200
	Comp								300
	V471 Tau	03 44.7	+16 57	01 53	02 13	00 40 W			1200
	"	"	"	02 16	02 36	01 04 W			1200
2075 M.Ki.	Comp								
2076	V471 Tau	03 44.7	+16 57	02 43	03 03		W		1200
	"	"	"	03 06			W		1200
	Comp								300
2077	V471 Tau	03 44.7	+16 57	03 06	03 26				1200

Spectr. Temp. Dome Temp./Hum. $+11^{\circ}$ 75% Transparency Conditions *Hazy* \rightarrow *cloudy* 36

Focus

Spectr. Temp. Dome Temp./Hum. *Mira still appears $\approx V=3.5$ sl fainter than α Cet, but in more haze.*

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
* 700 20		7.80	K2M	PCS Rel/Col.	831 1800 /39.8	BS	Hd	TA	std/ue/	sl cloudy	* (ND 0.6 still in beam)
								IB			
		V 9.4-9.7	KOV					IA		note RA = Dec in header not correct. ND out now	
600 15								TA			
150 10								IA			
300 10								IA		hazy	
400 10								IA			
160 10								TA			
400								TA			
600 10								IA			
								IA			
350 10								IA			
350 10								IA			
								IA			
										Noise counts when dome moves.	

31 #3

Emulsion Batches:

Date 1989 Oct 29/30 Observers MKE - Tn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2078	V471 Tau	03 44.7	+16 57	03 28	03 48	W			1200
2079	Comp.			0				FeA	
2080	V471 Tau			03 56	04 16	W	+17 15		1200
	"			04 17	04 37	W		Fe	1200
2082	Comp							FeAr A=V2	300
	V471 Tau			04 45	05 05	W			1200
	"			05 06	05 26	W			1200
2085	Comp								300
2086	V471 Tau	03 44.7	+16 57	05 33	05 54	04 22W	+17 15		1200
2087	Sky Spectrum			05 56	06 06	01 20W	+17 15		600
2088	Comp						"		300
2089	Flat on timer			06 26		platform	ND102	TUNG A=1/16	7200

Spectr. Ten

Focus.....

Spectr. Ten

Exp. Mir.

500 0

165 12

400 10

500 14

600 8

300 10

410/410

160 12

2650 44

Spectr. Temp. Dome Temp./Hum. 10°C 77% Transparency Conditions *hazy* 38

Focus
 Spectr. Temp. Dome Temp./Hum. 9°C 82%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
500 10			H0V	PCS	831 1800/39.8	BS	H α	IA			
165 12								"			
400 10								"			
500 14								"			
160 8								"			
								"			
								"			
								IA			
300 10								IA			
410/40								IA			
160 12								IA			
2650 44								IA		Note ND 1.2 in place. (It doesn't quite fit holder)	

39

Mon-Tues py#1

New D-19

Date 1989 Oct 30/31 Observers G. T. B. T.

Emulsion Batches:
8^m 68° Ilab.e. 218... 11 Oct / 89
3^m 68° 415. Film... (D. 4. C. K. open on)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
50688	HD 206778	21 39.3	+09 25	18 30.5	18 54	00 30 E	+9 52	FeNe clear	80-82
50689	HD 214665	22 34.7	+56 17	20 05	20 50	00 30 W	+56 51	FeNe clear	10+515
Note Not labelling Exp Film strips. TD should be obvious.									
50690	H014386 MIRA	02 14.3	-3 26	21 11	21 29	02 30 E	-2 57	FeNe clear	DIFF IN 20-20
50691	H014386 MIRA	02 14.3	-3 26	21 37	21 45	02 14 E	-2 57	FeNe clear	20 20
50692	"	"	"	21 58	22 57	01 02 E	"	FeNe clear	50-50
50693	MIRA	02 14.3	-3 26	²² 23 01	23 33	00 23 E	-2 57	FeNe clear	50-50
50694	MIRA	02 14.3	-3 26	23 38	23 54	00 04 E	"	"	50-50
50695	HR 19058 PER	02 58.8	+38 27	00 00	01 00	00 16 W	+38 54	"	50-50
50695T	Spot Cal'n for	50688;	50692 →	96.	15 min @ 15V	3900	4300	4810	

Spectr. Te.
Focus 788
Spectr. Te.

Exp. Mir.

1443 +

9350

25000

25000

Note

15 sec

80000

Note

43000

15077

Note

10,100

5,000

15,000

Spectr. Temp. 60°F.....

Dome Temp./Hum 130°C./89%

Transparency Conditions ... Hazy... a few clouds. ⁴⁰

Focus 388 for G16, 390 for G12.

Spectr. Temp. ... 56°F. 23°FST

Dome Temp./Hum.....

Diffuser IN, B Filter OUT for 1200/40-5 exps ^{G16}

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1443 + 9350	B Filter in	B 3.98	K2IB	BC	G=5430 1200/50.8	BS	II40-e	1	st vel	Diffuser OUT Exp meter cuts 1500 in 80 sec	Fine sl wk Fine
25000 25000	No Filter Exp meter	V 5.5	M4II	BC	G=4270 1200/40.5	BS	4415 Film	1	rG pgr	Diffuser IN 10 sec = 600 counts for comp	
note examples of 4415 film use on JAN 27/28/89											
15 sec = 900 counts exp meter.											
15 sec FeNe = 2200 after Aperture wheel home & brought back to "clear"											
80000	No Filter for x meter	V 3.5		BC	G4270 1200/40.5	BS	4415 Film	1	rG pgr	(20 sec FeNe = 2800 counts) Backing plate broke probably during the exposure	
Note Focus Reset to 388, Temp = 55°F for 1st MIRA exp.											
43000		V 3.5	Hd Em	BC	G4270 1200/40.5	BS	4415 Film	1	rG pgr	T=55°F, set 390	Fine sl wk
15077	B Filter in	V 3.5		BC	G4270 830/40.2	"	II40-e	1	"	Diffuser OUT (50 sec FeNe = 556)	Fine
Note: June 24/25/89 has good examples of Blue photographic work											
10,100		V 3.5		BC	830/40.5	BS	II40-e	1	rG pgr	830 grating had beam sloff in tilt	
5,000		"		BC	G=4238 830/40.2	BS	II40-e	1	"	Exp OK Was end of focus?	
15000		V 3.5	M4II	BC	830/40.2	BS	II40-e	1	"	Exp OK 0.4 sec out focus?	
							II40-e				

41

Pg #2

Mon - Tues

Date 1989 Oct 30/31... Observers Bt. - Tn.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
50696	HD14386 MIRA	02 14.3	-3 26	01 12	02 07	02 09W	-2 57	FeNe clear	50s 50
50696T	Spot Calc for	50689-91		15 min @	D4 15V 4810	D2 7V H α	D3 7V 5450		
		Oct 31/Nov 1/89 Tn - Rainy						Diffuser out	
50696F1	Focus Test	Set 390, T=57°F		18 50		0 0	0°	FeNe clear	80 50
50696F2	" "	Set 390, T=57°F		19 05		0 0	0°	"	400 250
50696F3	Green Focus Test			20 53		0 0		FeNe Clear	300 300

Spectr. Tem

Focus.....

Spectr. Tem

Exp. Mtr.

15000

B Filter

1300/210

620/35K

B Filter

55/150

43

Wed-Thurs

Date 1989 NOV 1/2..... Observers ^{L22} ~~L22~~ / Tn.....

Emulsion Batches:

new batch 4415 Film Nov 1/89

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
50697	HD14386 MIRH	02 143	-3 26	23 44	00 20	0033 W	-2 57	FeNe Clear	* *
* Comp for previous exp ≈ 10 secs, 15 secs = 2950 cnts, 10 secs = 1300 cnts									
50697T	Spot Calc for	50697-98,		15 min	D415 Volt 4810	D2 7V Hd	D3 7V 5450		
50698	HD 14386	02 143	-3 26	01 05	01 55	02 08 W	-2 57	FeNe Clear	20-20
[nothing much 01:05 \rightarrow 01:30] out of cloud at 01:30 - 01:40									

Spectr. Te

Focus... 3

Spectr. Te

Exp. Mir.

No. of Hel

29,300

13,000

(Genov)

Date #5

no filter

800

45

Fri/Sat
Date 1989 Nov 31..... Observers SAS/LZZ/cks.....

Emulsion Batches:
5^m 68° III.S. ref. 1A7... 1/Nov
8^m 68° I.S. - c... 218... 1/Nov

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
50699	HD 198026 HR 7951	20 ^h 42.5	-5° 24'	18 00	19 57	1 ^h 47 W	-05° 01	FeNe Clear	2 min
50700	HD 14386 MIRA	02 ^h 14.3	-3 26	20 16	22:14	1 ^h 25 E	-3° 00		2 min
	MIS (1980)	21 29.1	+12 05	20 30	4				
50700T	Spot Cal. for 50699, 50700, 50701.	15 minute in 24300			24810, 25456	@ 15v, 15v, 7v (note)		used D2	instead
50701	HD 14386 MIRA ^{COM}	02 ^h 14.3 ^m	-3° 26'	22 53	0 ^h 14	0 ^h 32 W	-3° 00	FeNe clear	2 min
50702	HD 14386 MIRA	02 ^h 14.3 ^m	-3° 26'	00:44	01:07	0 ^h 25 W	-3° 00	FeNe clear	
50703	HD 14386 MIRA	02 ^h 14.3 ^m	-3° 26'	1:22	1:37	1 ^h 55 W	-3° 00		
50704	HR 921 Per	2 ^h 58.8 ^m	+38° 27'	2:20 ^{start} (2:57 ^{real})	2:50	2 ^h 22 W	-3° 00		
50703T	Spot Cal to 50703	15 min			3600, 3900, 4300	: 15v			
50705	HD 14386 MIRA ^{Region}	3 ^h 43.2 ^m	+23 50	3:48	3:50	2 ^h 48 W	+24° 04'	FeNe	1 min

Spectr. Temp. 70° Dome Temp./Hum. $0^{\circ}\text{C}/56\%$ Transparency Conditions Clear 46Focus 3911 ~~for 1000 1000 1000~~
~~2000 2000~~
~~1000 1000~~

Spectr. Temp.

Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
5 filter				BC							
12500		V 4.42 B 6.05	M3 III	BC BC	G=4890 1800/46°	BS	IIaJ	1	rG program	Diffuser out. 2 min FeN = 2400 counts	Fine
15200			II II	BC	G=4890 1800/46°	BS	IIaJ		rG Program	only 1 coup JBL tour ~ 25 people	sl str
of D3 on 5450)	good	V					IIaJ				//
30000		3.5	gm6e	BC	G=4890 1800/46°	BS	IIaJ	1	rG Program	diffuser out 2 min FeN = 2500 counts	str
10000				BC	G=4238 830/40.5°	BS	IIa0-e	1	rG Program	60 sec FeNe 1317	Fine Em str
5000				BC	G=4890 830/40.5°	BS	IIa0-e	1	rG Program	60 sec FeNe 1317	Fine
7520		V 3.2	M4 II-II	BV	G=4890 830/40.5°	BS	IIa0-e	1	rG Program	1317	Fine
7595										1912 1325 FeNe	//
7595		V 5.04	BS p		"		IIa0	1			V/str

47

Date 89 Nov 10/11 Fri/Sat
Observers SAS/Tu

Emulsion Batches:

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.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
0	Flat (prompted)		at posn of Vega			W		TUNGSTON	10sec
1	Comparison	18 33.3	+38 41	19 06				Th-AR	10s
2	Vega HD 172167	18 ^h 33.3	+38° 41	19 ^h 06	19 ^h 10	3 ^h 38 W	+38° 50		
3	Comp								10s
4	Comp			19 ^h 23					10
5	SPer HD 22928	03 ^h 35.8	+47 28	19 30	19 58 [*]	03 39 E	+47° 47		
6	Comp							Th AR	10sec
7-10	Flats x 4	DRIVE OFF		20 08	20 12	03 30 E	+47 47	TUNG	22sec
11-14	Flats x 4	FOR Vega		20 14			"	"	
15	Comp			22 20				Th-AR	10s
16	SPER HD 22928	03 35.8	+47 28	22 24	22 47	1 49 E	+47° 48		
17	Comp			22 49				Th-AR	10s
	Flats x 4	at Topup posn.		23 11		03 00 W	+17°	TUNG	31sec 270sec

Spectr. Te

Focus....

Spectr. Te

Exp. Mtr.

17000

~~17000~~

20, 285

3860

760

233K

512

2

38K

Spectr. Temp. Dome Temp./Hum. $+3.8^{\circ}\text{C}$ 75%

Transparency Conditions ... Clear ... PARTLY ... 48

Focus

Lower Finder found way off in Dec.
 $\approx 1/2$ fld Radius, Had to use lens to
 Renormalize finder center.

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H. or Δv	Program	Remarks	Quality	
17000				Echelle Ret	18.93	H 400 W105	4481 A xgrad, 4931	127	Fds program	Top up just before Obs start dewar tilt 2.5	ADU 990	
20, 285											2118	
20, 285		V = 1.04	A05I								5669	
		V = 3.00	B5							T = +0.179	2093	
3860		V = 3.00	B5III	*Effective exp end = 1950 due to cloud						T = +0.194 same cloud	1448	
760											2224	
$\approx 33\text{K}$					22secs	23secs for #4						
					1433, 1426, 1417,	1476				T = +0.194		
					5526, 5632, 5672,	5670			85-87secs	T = +0.194		
											2095	
5121		V = 3.00	B5III						Fds pgm	cloud began T = +0.190 @ 23:42	1796	
										filled dewar	T = 0.186	2104
$\approx 38\text{K}$					1734, 1779, 1839,	1820				T = +0.184	1734	
Packed up as NOV1089.DAT & Repacked Someone had disconnected 74" from Vax line Sent as NOV1089.DAT next night.												

Sat-Sun

Emulsion Batches:

Date 1989. Nov. 11/12. Observers Mki-Tn-SAS

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2090.mki	Flat 2hrs	note 18605 bytes		17 11	19 11	0 0	platform	Tung A=1/8	2hrs
forgot to WRITE.	PRINTED through FLAT #2	should be closer, no?		20 09	22 09	"	"	li	2hrs
2091.mki	FLAT #3	note 15662 bytes		22 13	00 13	"	"	"	2hrs
Comparing plots indicated that FLAT # must have cut out early. ie FIFO failure.									
2092.mki	FLAT Last Flat on TIMER	16295 bytes		01 47	03 47	0 0	platform	Tung A=1/8	2hrs
93	FLAT Nov 12/13	17616		17 38	19 38	"	"	"	
94	FLAT #2 Nov 12/13	16455		19 57	20 57	"	platform (just above)	Tung A=1/2	1 hr
95	FLAT #3 Nov 12/13	16214		21 05	00 05	"	"	Tung A=1/16	3 hr
96	FLAT #4	16503		00 08	01 08			Tung A=1/8	1 hr
97.	DARK	4 hrs	8993 bytes	01 25	04 25				4 hrs

Spectr. Temp.

Dome Temp./Hum. $+6.5^{\circ}\text{C}$ 80% Transparency Conditions *Clear - Thin Rain* 50

Focus

Spectr. Temp.

Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Exposure	P.H.	Program	Remarks	Quality
1750 65				PCS Red Cal	831/39.8	RS	6600 Å	IA	Peak at ~ 5000 cts	(ND in = 2.3) written	
1750 60				"	"	"	"	IB	Peak at ~ 2.5000 cts	ND=2.3 B channel cut out sometime	
1810 60				"	"	"	"	IB	~5000 cts	ND=2.3 written	
? I'm sure the source was on for duration.											
1800 60								IA	~ 5000 cts	ND = 2.3 written	
1880 60				PCS Red Cal	831/39.8	RS	6600 Å	IB	~ 5000 cts	ND = 2.3 written	
5150 170				"	"	"	"	IA	~ 6000 cts	ND = 2.3 + 0.6 outside tray "B" channel out near start	
1200 50				"	"	"	"	IB	~ 5000 cts peak	ND = 1.2 + 0.6 written "B" channel on at start "B" channel off near end	
3870 110				"	"	"	"	IA	~ 5000 cts peak	ND 1.2 + 0.6 written B on at start	
(8-20) both A & B								IA		written	

Note On Nov 13, I noted that dark signal went down from > 20 cts to < 10 cts by turning the light tight door slightly. Signal went down to < 4 cts with warm room lights off. Previous nights "dark" exp. was too "dark" until lights were off anyway.

Date *1989* *Nov. 13/14* ^{Mon/Tues} Observers *Fds. - In. - SAS*.....

Emulsion Batches:

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
0	Promoted flat								
1-4	4 flats @ 225.	~1300							
5	comp							Th-Ar	10s
6	MD22928 \rightarrow Pen	03° 35.8	+47 28	23 36	00 35	00 09 W	+47 47		
7	Comp							Th-Ar	20s
8-11	4 flats @ 10s	572, 564, 654, 555							
<p>*Note: Discovered that the primary mirror was completely fogged over with dew. This is why the exposure is so slow.</p>									
<p>Nov 17/89 Cloudy. ∴ Just doing test flats</p>									
2098	Flat			18	20	00	platform		2hrs
2099	Flat #2 *			(before exp) 15-20	22 43	11	"		2hrs
<p>*Note (1st attempt started @ 2252 EST Failed at 22 30 ie Both FIKO lights were noticed to be out.</p>									

Spectr. Temp

Focus.....

Spectr. Temp

Exp. Mir

2400

1100

1050 45

At the

Spectr. Temp. Dome Temp./Hum. ... 13°/68% Transparency Conditions *Hazy - cloudy* 52

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle Rticon	18.97	H400 W105	4481 Å X-RAY 4426	127	Fds program	Slit width 0.259, Dewar tilt 2.5	
2400		V 3.00	BS III						Fds-pgm	40.144	519 4273
										Top up 0045, TA 70.145	
1100				PCS Red Col	831/398	RS	6600 Å	IA		Warm Room in 11g/11g off for ^{exp} bulk wt	
105045				"	"	"	"	IA		Light left on in warm room wt	
At the time, I was in PC mode trying to use and install 'VI' editor's stuff. Tm											

53

Pg#1

SAT-Sun

900 21^{*}

Emulsion Batches:

Date .. 1989. Nov. 18/19. Observers .. Hdq. : T.N.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2	Comp							A=1/2 Fe-Ar	200
2103	HD197433	20 38.6	+75 14	18 22	18 42	1 ^h 38 ^m W	+75 25		1200
4	Comp					01 40 W	"	Fe-Ar A=1/2	200
5	Flat			18 00	19 46	0 0		Tung A=1/2	2830
6	Comp			19 47			+75 36	Fe-Ar A=1/2	200
7	HD197433 "C"	20 38.6	+75 14	19 53	20 23	03 20 W	+75 36		1800
8	Comp								250
2109	HD197433	20 38.6	+75 14	20 34	21 04	04 00 W	+75 36		1800
FM 000231.TN	"	"	"	21 10		04 06 W	"	31x31	Tot x4
32.TN	HD199476	20 52.4	+74 23	21 20		04 08 W	+74 44	31x31	Tot x4
	HD199476	"	"	21 22	21 [*] 47	04 34 W	"		* 1800
	Comp							Fe-Ar A=1/2	EN U450
	HD199476	20 52.4	+74 23	21 55	22 17	05 05 W	+74 44		1300
	Comp						"	Fe-Ar A=1/2	200
(WRONG HD)	197433 VVV HD197433	Cephei 20 38.6	+75 14	22 44	23 14		+75 34		1800
	Comp								200

Spectr. Ten

Focus.....

Spectr. Ten

Exp. Nr.

A B

1900 30

1500 60

230 18

1800

200 20

240 70

4 frames

2 images

1200 50

1300 50

220 15

3000 ?

Spectr. Temp.

Dome Temp./Hum. $-2.7^{\circ}/57\%$ Transparency Conditions *Semi Cloudy* 54

Focus

Spectr. Temp.

Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A B				PCS							
				RefrCol	83/1398	RS	6600	IA			
1900 30		\checkmark 7.5	G5V					IA	Hdy-pym		
								IB			
1500 60				Halted @ 2830	% observe			IA		"B" duned not to be cut test	
230 18								IA		Reversal	
1600		\checkmark 7.5	G5V					IA	Hdy-pym	Reversal	
								IA			
260 20								IA			
240 70		\checkmark 7.5	G5V					IA	Hdy-pym	Centrally guided	
										Above fiber band on monitor	
4 frames											
4 frames		\checkmark 7.81							Light wost	Wind, Dome NNW	
1200 50								IA	Hdy std	* Halted due to FIFO getting cloudy	Failure
								IA			
1300 50		\checkmark 7.81						IA		clouded out	
220 15								IA		Halted early	
3000 ?								IA		Ch "B" failed during integration	
								IB			

 $\left[\begin{matrix} 0.6 \\ ND + 1.2 \end{matrix} \right]$

* image to low left of hole
(Tending to guide at 290° pos angle)

(note
could be a seeing test also)

(counts as high as 2400)

55

#2

Emulsion Batches:

Date 1987.. Nov 18/19.... Observers Hdy-T.M.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	VW Cep(c) HD 197433	20 38.6	+75 14	23 22	23 52	06 48W	+75 34		1800
	Comp							Fair Clean	200
	(AB) HD 197433	20 38.6	+75 14	23 58	00 10	07 06W 05 07 W	" "		1800 200
SP002119.HDY	Comp (WRONG TITLE IN FILE)								200
2120.HDY	FLAT AT REVERSE			00 24		Reversal 07 06W	+75	FUNG A=1/8	
2121.HDY	DARK Lights out, shutter closed			02 40	05 40	00	platform		
2122.HDY	Flat Nov 19/20			18 33	20 33	"	"	Fung A=1/8	
	DARK Wm room Light on			21 22		"	"		
	Flat			18 33		00	platform	FUNG A=1/8	

Spectr. Te

Focus....

Spectr. Te

Exp. Mtr.

2700 90

220 20

1500 60

230 18

2100 90

1500 60

1500

40 210

A B

1500 60

Spectr. Temp. Dome Temp./Hum. -4.2°C 67% Transparency Conditions . Part. Cloudy

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Secing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2700 80			K5	PCS Red Col	83/328	RS	6600A	IA	guiding at upper	Right of image "B" channel Failed during exp	
220 20		7.5V	G					TB	guided on LHS of image		
1500 60		7.5V	65V					IA	guided of LHS of image	CLOUDED OUT VW Cephei (A B)	
230 18								IA			
2100* 90								IA		B FAILED t ~ 1000 sec	
1500 60								IB	backed up	SP002100.HDY - 2120.HDY	
1500								IA			
410 410								IA			
600 60								IB			

ND = 2.3

after moving down to platform,

ND = 2.3

ND = 2.3

Date 1989. Nov. 21/22... Observers K.K.-Tn./Tn.-Hdg..

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.	
Hartmann Frames A	Deneb			~ 17 55		01 05 W	+45 16	30, 60, 90 secs		
1	" re focussed to smaller image			18 00		01 10 W		60, 30, 90 secs		
7	2 Agr			~ 18 10		20 0	= 0 20	1 min		
2124	Flat while setting up			21 38	21 57		ND=23	Tung A=1/8		
SP 002125 HOY	Comp #1					Reversal	no ND	Fe-H A=1/2	200	
26	HD 197433	20 38.6	+75 14	22 06	22 36	05 46 W	+75° 33'		1800	
27	Comp								200	
28	HD 197433	20 38.6	+75 14	22 42	23 12	06 22 W			1800	
29	Comp							FeHR A=1/2	200	
30	HD 199476	20 52.4	+74 23	23 18	23 48	06 46 W	+74 43		1800	
31	Comp							FeHR A=1/2	200	
32	HD 199476	20 52.4	+74 23	23 53	00 23	07 18 W			1800	
33	Comp							FeHR A=1/2	200	
2134	HD 199476	20 52.4	+74 23	00 28	00 59	07 55 W			1800	
•HOY				PCS failed, unable to Reload.						

Spectr. Ten

Focus.....

Spectr. Ten

Exp. Mtr.

A B

1500 50

170 10

160 20

150 15

1100 30

160 10

660 20

150 10

800 25

140 10

500 25

Spectr. Temp. Dome Temp./Hum. ... ^{at 22 EST} -7.7 74% Transparency Conditions ... getting cloudy 58

Focus

Spectr. Temp. Dome Temp./Hum. ... -9.0°C 75% KK visitors Looked at Jupiter, m32, m77

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		1.34	A2Ia	35mm camera			2415 (red sensitive) Film			mask in place at end of tube Hurtman Mirror Figure setup	
							u				
A B		4	G2Ib				u			cloudy attempt	
1500 50				PCS Red Col	83/39.8	RS	6600Å	IA			
170 10								IA			
100 20		7.5	G5V					IB	Hdg-pgm	Field drawn → checks out	
150 15								IA			
100 30								IB	Hdg-pgm	thin cloud no "B" channel during this exp	
160 10								IA			
660 20		7.81	G8V					IB	Hdg std	As B channel had quit [cloudier] in H & R done 2330	
150 10								IA			
800 25		7.81	G8V					IB	Hdg-std,		
140 10								IA			
500 25		7.81	G8V					IB	Hdg-std	some cloud	
										packed up.	

59

Py #1 Wed-Thurs

Emulsion Batches:

Date 1989 Nov 22/23... Observers T.N., ... Hdg. checking & doing photometry on 24"

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2135	HD Flat at Start			17 20	19 07 18 58	0 0	Platform	TUNG A=1/8	
	Flat #2			19 26					
36	Comp			20 25			No ND	Felt A=1/2	200
37	M32			20 32*	20 52				
38	Comp								200
2139	HD 197433 (AB)	20 38.6	+75 14	21 05	21 21	04 33 W	+75 34		900 1800
2140	Comp "	"	"	21 22	21 37	04 50 W	"		900
41	Comp								200
42	HD 197433 (AB)	20 38.6	+75 14	21 44	22 04	05 17 W			1200
43	Comp								200
44	HD 199176	20 52.4	+74 23	22 09	22 39	05 36 W	+74 44		1800
45	Comp							Felt A=1/2	200
2146	HD 197433 (AB)	20 38.6	+75 14	22 45	23 00	W			900
	Comp								200

Spectr. Te

Focus...

Spectr. Te

Exp. Mir.

14 13

1700 40

50 6

200 13

200 60

2500 45

240 20

250

240 15

1800 30

250 13

1800

Spectr. Temp. Dome Temp./Hum. -4.7°C 588% Transparency Conditions ... Clear at first 60

Focus Fans on = Dome shutters open @ 1715

Spectr. Temp. Dome Temp./Hum. Bln Tour - Lighting Eng Society Lookalot M32

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1700	40	ND=2.3		PCS Red Coll	831/39.8	RS	6600A		Halter's Resonance	@ 1809 due to RIFoculaut due to Halts. 5 mins night	
Note "Flat at Start" may have some contamination from M32											
50	6							IA			
200	13							IB		* 1912 → 51920 added to earlier exp	
3000	60	7.5	G5V	Halt at 900 secs & written				IA	Hdy-pgm	* some 7500 counts Compts to 4800, then cloud acting as a Necessary ND Filter,	
2500	45	"	"					IA	"		
240	20							IB			
2500		7.5	G5V					IA	Hdy-pgm	ch "B" cutout counts to 3500	
240	15										
2000	30	7.81	G8V					IA	Hdy-std	thin cloud cnts to 2600	
250	13							IB		It opened shutter closed partially	
1800								IB	Hdy-pgm		
								IA			

61

#2

Emulsion Batches:

Date 1989 Nov 22/23.... Observers ..Tn..... (some Hdy).....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2147.HDY	HD 197 433	20 38 46	+75 14	23 09	23:29	6 ^h 42 ^m W +			1200
48	Comp								200
49	HD 197 433			23 36	23 52	7 06 W	+75 33		1200
2150.HDY	Comp								200
51	Flat at End (not so now)			00 11	01 15	0 0	-20° mostly	Tung A=1/8	200
52	Comp								200
53	HD 197 433			01 30	01 50		W +		1200
54	"			01 50	02 10		W		1200
55	Comp								200
56	HD 197 433			02 15	02 35		W		1200
SP002157.	HD 197 433 HD 197 433			02 38	02 58		W		1200
	HD 197 433			02 59	03 19	10 32 W	+75 32		1200
	Comp								
	HD 197 433			03 24	03 44	10 57 W			1200
	HD 197 433			03 44	04 04	11 18 W			1200

#2 Spectr. Temp. Dome Temp./Hum. -5.8°C 77% Transparency Conditions ... *Fuzzy to sl. cloudy* 62

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A B				PCS Red Cdl	831/398	RS	6600A	IA	Hdg - pjm	h	
1800 60								IA			
240 10								IA			
2000 50								IA	Hdg - pjm	* Halted by cloud, some cloud	
240 10								IA			
1300 30	ND-2.3							IA	* Halted @	3920 secs, written	
230 15								IB			
1300 1300 55								IA	Hdg - pjm	Halted resumed to boot "A" channel clear again	
1600 50								IB	"	"B" channel cutout	
200 15								IA			
1400 50								IA	Hdg - pjm	"B" channel cutout cnts to 2500/sec	
1900 50								IA	"	cnts to 3200/sec	
2400 80*								IB	"	channel B cutout and High counts *(to 120)	
190 10								IA			
2200 70								IA	Hdg - pjm		
1900 60								IB	"		

3pg #3

Emulsion Batches:

Date 1989 Nov 22/23... Observers Tn.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Comp						No ND	Fe Ar A=1/2	200
	HD 199476	20 52.4	+74 23	04 09	04 29	11 30 W	+74 42		1200
	Comp	done while unreversing						unreversed	200
	HD 197433	20 38.6	+75 14	04 44	05 04	11 40 E	+75 33		1200
	"	"	"	05 05	05 25	11 20 E			1200
	Comp							Fe Ar A=1/2	200
	HD 197433	20 38.6	+75 14	05 34	05 54	10 52 E			1200
2169	"	"	"	05 55	06 25	10 19 E			1800
2170	Comp								200
2171	Flat of PAWN			06 42		0	platform	TUNG A=1/8	7200

Spectr. Temp. Dome Temp./Hum. $-8.2^{\circ}C$ 74% Transparency Conditions *Fine* 64

Focus

Spectr. Temp. Dome Temp./Hum. $-10.3^{\circ}C$ 74%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS			6600A	IA			
1300 50		$V=$ 7.81	G8V					IA	Hdy pgr stel	"B" cut out during exp	
90 15								TB			
1100 50		V 27.5	G5V					IA	Hdy-pgr		
1200 50								IA	"		
200 20								TB			
700 1000 40	v poor							IA	Hdy pgr		
800 35	v v poor							II	"	Both AcB channels secured	
200 16								TB		To improve throughout nights	
400 40								IA	ND=2.3		

Spectr. Temp.

Dome Temp./Hum. $-7^{\circ} / 66\%$

Transparency Conditions

Clear!

66

Focus

Spectr. Temp.

Dome Temp./Hum. $-7^{\circ} / 78\%$

→ cloud

→ clear & hazy

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
										nice	
										OK	
										nice rich cluster	
										fds four ~ 45	
										then it clouded over	
										brilliant → shows clint	
										on eyepiece	
										Nice in finder.	
										then looked for other objects, but	
										needed finder chart	

67

Date 1989 Nov. 24/25.. Observers SAS.....

Fri/Sat

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp
2174	Flat	Platform		17 ^h 05				Tung 1/8 Ap	7200
2173	Dark (Shen)			14 ^h 37 ^m	16 ^h 37 ^m				7199
2175	Flat NOV 25			16 ^h 50 ^m	18 ^h 50 ^m				7200

Spectr. Ten

Focus.....

Spectr. Ten

Exp. Mtr.

A B

30 1000

69

Date 1989 Nov 26/27... Observers SAS/MKJ.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP00 2176	Flt			16:50				details?)	
2177	Comp			19:09				$\frac{1}{2}$ FeA	200s
2178	Comp			19:58	20:02			1.	20c
2179	HD 8779	1 ^h 21.4	-0° 55	20:22	20:33		-0° 20		30c
2180	Comp			20:37		0 40 E		$\frac{1}{2}$ FeA	200
SP00 2181	Comp	3^h 44	+16 57	21:19				$\frac{1}{2}$ FeA	200
* 82	V471 Tau ^{ditto} wrong star	3 ^h 44	+16 57	21:26	21:46	1 ^h 50 E	+17 28		20 min.
83	Comp			21:52					
84	Flt			22:05				Tung	7100
85	Comp	3^h 44	+16 57	22:55	22:59			$\frac{1}{2}$ Ap FeA	200
86	V471 Tau	3 ^h 44	+16 57	23:02	23:22	00 20 E	+17° 15		20 min
87	V471 Tau	3 ^h 44	+16° 57	23:25	23:45				20 min
88	Comp			23:58					200s
89	V471 Tau	3 ^h 44	+16° 57	00:04	00:24				20 min.
90	V471 Tau			00:25	00:45	1 ^h 02 W			20 min

Spectr. Te

Focus...

Spectr. Te

Exp. Mr.

~200

300

~150

~100

~150

~200

~275

50

275

300

Spectr. Temp. Dome Temp./Hum. $+1^{\circ}/68\%$ Transparency Conditions *Clear* 70
 Focus *becoming cloudy*
 Spectr. Temp. Dome Temp./Hum. $0^{\circ}/77\%$

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				<i>pe's Red Cell</i>	<i>831/39.8</i>	<i>RS</i>	<i>6600Å</i>	<i>IA</i>		<i>Ch. B failed 2X</i>	
								<i>IA</i>		<i>wrong reader</i>	
								<i>IA</i>			
<i>~300</i>								<i>FA</i>		<i>St. Rad Vol. some cloudy</i>	
<i>~150</i>								<i>FA</i>			
								<i>FA</i>			
<i>~100</i>	<i>* DID WRONG STAR **</i>							<i>IA</i>		<i>Fifo dropped out 1X</i>	
								<i>IA</i>		<i>clouded out</i>	
								<i>FA</i>		<i>cutout 2X 4X</i>	
<i>~150</i>								<i>IA</i>			
<i>~200</i>	<i>poor</i>	<i>9.5</i>	<i>KOV</i>					<i>IA</i>		<i>hazy but clear</i>	
<i>~275</i>								<i>IA</i>			
<i>150</i>								<i>IA</i>			
<i>275</i>								<i>IA</i>		<i>cutout 2X</i>	
<i>300</i>								<i>IA</i>		<i># cutout 2X</i>	

71 p2

Emulsion Batches:

Date 1989 Nov 26/27 Observers SAS/Mki

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP00 2191	Comp							AP 1/2 FeA	2005
92	V471 Tau	3 ^h 44	16° 57	00 ^h 54	1 ^h 14				20 min
93	V471 Tau			01 ^h 17	1 ^h 37	1 54 W			20 min
94	Comp			01 ^h 38				1/2 ap. FeA	2005
95	V471 Tau			01 45	2:05				20 min
96	V471 Tau			02:06	02:26	2 44 W	+17° 15		20 min
97	Comp			02:28				1/2 ap. FeA	2005
98	V471 Tau			02:36	02:56	3 15 W			20 min
99	V471 Tau			02:58	03:18				20 min
SP00 2200	Comp			03:19				1/2 FeA	2005
01	V471 Tau			03:25	03:45				20 min
02	Comp			03:47	03:51				2005
03	Flat			Platform Start		4:53		1/16 Tung	2 hrs
Nov 27/28		Eds/SAS Echelle + Retican							
Flexure Tests		→ 40 comp. arco		→ 12 @ +60 dec		14 @ +40 dec		13 @ +20 dec	

Date 1989... ^{Tues/Wed} Nov. 28/29 Observers Fols/SAS.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
0	Promoted flat								
1	Flat								
2	Comp							Th-Ar	205
3	6 Per HD22928	03 ^h 35.8	+47 28	20 46	21 37	1 50 E			
4	Comp								
5-8	Flats 4 @ 13 Dec	730, 722, 714, 711							
9	flat								
10	Comp								205
11	6 Per HD22928	03 ^h 35.8	+47 28	02 ^h 09	03 26	04 00 W	+47 49		
12	Comp								
13-16	Flats @ 22s	1223, 1188, 1170, 1160							

75

Pg #1

Thurs-Fri

Date Nov 30/Dec 1, 1949. Observers Fds.-SAS.-T.M.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
0	Prompted Flat Delta Per			~ 17 24				ThA	20secs
1	Comp at Delta Per pos'n							ThA	10sec
2	HD22928 Delta Per	03 35.8	+47 28	17 34	18 24	04 56 E	+47 47		
3	Comp			18 27				ThA	20 sec
4	HD22928 S Per			18:27	19:17	04 04 E			
5	comp								20S
6	HD22928 S Per			19:19	19:47	03 33 E			
7	comp								20
	4 flats @ 20s	1011, 990, 961, 951							
	4 flats @ 35	1620, 1591, 1565, 1573.							
16	DARK (Noise Tests, Dark Slide open)			20 "	21 26	DRIVE OFF 03 40 E	+47 47	(Gen off)	
17	"			21 27	21 42	"	"		
	1K5			21 44					
18	comp	wider slit - 150M.						Th-Ar	20sec
19	HD22928	03 35.8	+47 28	22 03	22 33				

Spectr.

Focus.

Spect

Exp. Mtr.

4000

4500

2706

Dome cl.

3000

Spectr. Temp. Dome Temp./Hum. -4.3°C 56.5% Transparency Conditions .PART. cloudy..... 76

Focus Dome opened
 Spectr. Temp. Dome Temp./Hum. Fans on by 17:10
 Slit width set = .253
 Dewar T.H = +2.5°

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion λ	P.H. ORDER	Program	Remarks	Quality
				echelle Ref	18.65	H=400um W=105um	4481A	127	Fds-pgm	Dewar Topped @ 1720	926 1846
											1846
4000		V 3.00	B5III						4 PT.	T = +0.213 @ 1745	1521
											3707
4500									4 PT.	Dome T = -5.5°C T = +0.219 @ 1957	1630
											3844
2706									NO 4 PT.	T = +0.221 / Dome T = -6.1	952
											3770
Dome closed (Regular house lights on)						H=400 150um			Comp mode	4pt observed, Slit widened to 150 um (Raw looks OK) T = +0.219	40 22
				echelle Ref	18.65	H=400 150um	4481A	127	Fds-pgm	T = +0.219 Dome T = -7.2	
3000		V 3.00	B5III							T = +0.223 Dome T = -8.0	1012

77pg #2

Thurs/Fri

Date 1989 Nov 30/Dec 1 Observers Fds/SAS/Tn.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Comp							Th-A	205
	4 Flats @ 15 sec	1082,	1082,	1071,	1079				
25	DARK			22 40	23 03				
26	DARK			23 04	00 05				
	DARK			00 09	00 14				
	DARK			00 15	01 16				
	comp							Th-A	20
	HD 22928 open	03 35.8	+47 28	01 20	01 38	02.18 W	+47 49		
	Comp							Th-A	20
	4 Flats @ 7s	484,	484,	487,	478				

py# 2
 Spectr. Temp. Dome Temp./Hum. ... $-8^{\circ}/.67\%$ Transparency Conditions ... Variable Cloud ... 78

Focus
 Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emission	P.H.	Program	Remarks	Quality
205				Echelle/Ret.	18.65	H=400 μ m W=105 μ m	4481 Å	0.002	Fds Program	Dewar Tilt 2.5° Slit width = .253	3654
										Dome closed Topped up @ 22:50	
										(Inverso 4pt pattern? - Release affected this time)	
										Dome T = -6.9° Still closed, (Inverso 4pt pattern)	
										" -6.6° " "	Not seen (clean) 26
										no 4pt seen	clean. 25
											3922
1570		V=3.00	B5 III	echelle Ret	18.65	W=150 μ m	4481 Å	127	Fds-pgm	Dome T = -9.7 @ 01:30 T = +0.219 @ 01:30 ↳ 4 pt	415 1899

79 Fri-Sat note A & B channels reversed from previous practice

Date 1989 Dec 1/2 Observers T.A. - SAS

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat			17 46	18 46		ND=06	TUNG A=1/4	3600
	Fe-Ar Comp-long			18 52			No ND	Fe-Ar A=1/4	600
	Comp [For Reg Observing]						"	Fe-Ar A=1/4	200sec
	BD+284211	21 46.7	+28 24	19 58	20 58	03 34W	+29 52		3600
	Comp					"	"	Fe-Ar A=1/4	200sec
	HD 23169	03 37.9	+25 25	21 17	21 38		+		3600
	Comp								200sec
	Flat			21 50	22 50				
	Note - Dec 2/3 2 Flats written in anticipation of observing that didn't materialize.								

Spectr.
 Focus...
 Spectr.
 Exp. Mtr.
 8 A
 250 80
 250 15
 280 15
 96 8
 300 1
 300 2
 300 2
 1700 7

Spectr. Temp. Dome Temp./Hum. $-8^{\circ}\text{C} \cdot 55\%$ Transparency Conditions *Clear \rightarrow Hazy* 80

Focus Fans on & Dome opened @ 1645

Spectr. Temp. Dome Temp./Hum. S/H S Tour before observing

Exp.	Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B	A											
3600	2050	80			PCS Red Coll	43A/mm 150 lal/mm	RS	4300A	IA			
600	290	15							IA		Echelle Top up @ 1950	
2000	280	18							IA		Fans on again @ 1950 cloud at end	
3600	90	8	poor	v	sd 0				IA	Sp. phot std	SI hazy Fld Drawn	
2100	300	15	poor						IB			
2600	300	20	*very poor	v	62V		Halter - Too cloudy		IA	STD vel	* Rapid Temp drop -10.6 @ 2117 cloud	
2000	300	20							IA		Field checks with α T 25 drawing in Fld ^{book} drawing	
	1900	70							IA		Ret top up @ 00:10	

81 pg 41

Sun - Mon

Date Dec. 31.4.189.... Observers Fds. - T. n.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
1	Prompted Flat			17:26		206 E	+47° 47'	Tung Halide	20 sec
2	Comp							Th-Ar	15s
3	HD 22928 Delta Per	03 35.8	+47 28	17 40	18 27	04 49 E	+47° 46'		20s
4	comp								20s
5	HD 22928 Delta Per	03 35.8	+47 28	18 28	19:13	03 58 E			
6	comp								20s
7	HD 22928 Delta Per	03 35.8	+47 28	19:15	19:57	03 14 E			
8	comp								20
9	HD 22928 Delta Per	03 35.8	+47 28	19:59	20:47	02 24 E			
10	comp								20
11	HD 22928 Delta Per	03 35.8	+47 28	20:49	21:31	01 37 E	+47° 47'		
12	comp								20
13	HD 22928 Delta Per	03 35.8	+47 28	21:33	22:21	00 47 E			
14	comp								20
15	comp								15
16	HD 22928	03 35.8	+47 28	22:30	23:10	00 02 W			

py #1 Dec 34

Spectr. Temp. Dome Temp./Hum. $-10.8^{\circ}\text{C} / 56\%$ Transparency Conditions *Fine* 82

Focus Dome opened / FAN on @ 17 EST

Spectr. Temp. Dome Temp./Hum. Dewar topup 17 EST

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H. ORDER	Program	Remarks	Quality
				Echelle Reticon	18.65	400H 150W	600, 4484	127		Dewar TILT $+2.5^{\circ}$	1623
											2680
5006	V= 3.00	B5III		4 pt	noise obvious				Fds-pgm	DOME T @ 18:10 = -11.4° T = $+0.241$	2140
											3505
5002	3.00	B5III		No obvious	4 pt.				"	Dome T = -11.6° @ 19:15	1939
											3457
5006	3.00	B5III		No obvious	4 pt.				"	DOME T @ 19:40 = -12.1° Dewar T = $+0.242$	1685
											3631
6009	3.00	B5III		"	"		"		"		1999
											3578
6600	3.00	B5III		Weak	4 point.				"	DOME T @ 21 EST = -13.5° ↓ Dewar T = $+0.243$ [2nd Fan turned on @ 21:00 EST]	2034
											3811
6505	3.00	B5III		"	"				"	T = -14.1° @ 21:36 Dewar turned fan East To N. Gusts from NNW	2157
										Top up @ 22:25 T = $+0.247$	3644
										@ 22:30 Dome T = -15° Dewar Turned to NW	2646
7650	3.00	B5III							"		2460

83 pg 42

Sun - Mon

Date Dec 3/4, 189..... Observers Fds-Tn.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
17	COMP								20
18	HD 22928	03 35.8	+47 28	23:12	23:52	00 44W			
19	COMP								20
20	HD 22928	03 35.8	+47 28	23:55	00:35	01 27W	+47 47.5		
21	COMP								20
22	HD 22928	03 35.8	+47 28	00:37	01:23	02 15W			
23	COMP								20
24	HD 22928	03 35.8	+47 28	01:25	02:10 01:25	03 03W			
25	COMP								20
26	HD 22928	03 35.8	+47 28	02:13	02:53	03 46W			
27	COMP								20
28	HD 22928	03 35.8	+47 28	02 55	03:38	04 31W			
29	COMP								20
30	COMP								20
31	HD 22928	03 35.8	+47 28	03:46	04:26	04 19W	+47 47		
32	COMP								20

Spectr.

Focus.

Spec.

Exp. Mtr.

875

8011

7005

5703

7005

6004

6029

85

Pg# 3

Emulsion Batches:

Date Dec. 31/4, 1969..... Observers Fds. - T. G.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
33	COMP								20
34	HD 87901 a Leo	10 03.1	+12 27	04 37	04 50	0 42E			
35	COMP								20
36	COMP								20
37	HD 120315 η UMa	13 43.5	+49 49	05 08	05 34	03 38E			
38	COMP								20
39-42	4 flats @ 19s	1484, 1451, 1437, 1530.							
43-46	4 flats @ 23s	1738, 1739, 1726, 1715							
47-49	3 flats @ 29s	2189, 2172, 2174							
50-53	4 flats @ 34s	2541, 2529, 2533, 2571							
54, 55	2 flats @ 38s	2874, 2862.							
56, 57	2 flats @ 58s	4297, 4288							

87 pg#1

Thurs/Fri

Date 1989 Dec 7/8... Observers Th... S.H.K.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
18	Flat } previous night								
19	Flat }								
20	DARK 3hrs (previous night to morning)								
21	Flat (hungup after 23370secs) 2hrs			17 13 intended	18 10			Tung A=1/8 NO filter?	
22	Flat (Halted due to clearing)			19 25	20 13	Halted @	2800secs	Tung A=1/8	
23	Comp #1			20 16				Fe Ar A=1/2	300
24	HD AB AUR	04 49.4	+30 23	20 25	20 55	03 10 E			1800
25	Comp							Fe Ar A=1/2	300s
26	AB AUR	04 49.4	+30 23	21 07	21 31	02 34 E	+30 35		
27	Comp								300
28	Flat during cloudy stretch			21 50		Halted	* 4370secs		
28	Comp			23 35					300
29	Comp (after uploading)			23 46				Fe Ar A=1/4	300
2230.11	AB AUR	04 49.4	+30 23	23 51	00 21	00 16 W			1800
31	Comp							Fe Ar A=1/4	300

Spectr. Temp. Dome Temp./Hum. ^{@ 20 EST} ~~-8.8°C~~ 69.78 Transparency Conditions Clearing 89
 Focus Cloudy stretches) Fans 1st ~~on~~ done
 Spectr. Temp. Dome Temp./Hum. open @ 16:50
 Reopen shutters & Turn Fans on @ 19:50

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H. Buffer	Program	Remarks	Quality
B 4				PCS Red Col	831/40.1	RS	6700Å			Note OG 550 filter is noted by KK presumably in front of RS.	
										KK - Per still off Top up @ 20 EST Reticon	
500 24				ND = (same as previous) (ie 2.0 + 0.3)				IA			
250 18								IA			
2200 25		7.01	B9	[Note Hα Region getting = 4 → 5 counts per sec]				IA	SHK pgm	Counts to 3200/sec	
240 13								IA		ABAU Field drawn	
500				With ND = 0.6 written OK				IA	SHK pgm	then cloud ∴ Halted	
240 20								IA			
1500 25								IA		* Note H _α B pifo lights notice / lit up @ 23:14. It had been OK @ 23 EST	
-PCS failed, hung up completely ∴, Uploaded & Reset etc.									IA		
220 15								IA			
2500 30								IA	SHK pgm		
220 15								IA			

Spectr. Temp. Dome Temp./Hum. -9.9°C 75% Transparency Conditions .. *Cloudy* 90

Focus
 Spectr. Temp. Dome Temp./Hum. -9.3 74.4 @ 02 EST *Shutters closed at 00:30*
(Note logtemp plot for 14:50 open to close)

Chan/Exp. Mt.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1360 28	ND=20+013			PCS Red Col	831/401	RS		T/A		written	
<p>Note: This Flat int completed normally, but green FIFO light remained on after int finished.</p>											
				to 4:14	831/401	RS		T/A		ignore written next night	

91pg #L

Fri-Sat

Date 1989 Dec 8/9... Observers Ty/mki.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Fe-Ar							Fe-Ar A=1/2	300
2235	HD 17929	02 01.5	+22 59	19 20	19 32	01 30 E	+29 23		
SP002236.mki	Fe-Ar							?	300
31	Fe-Ar							RC Center shifted (Blue) / [Note: this comp shifted blue of previous due to getting out of Control]	300
38	V471 TAU	03 44.7	+16 57	20 02	20 22	02 33 E	+		1200
39	V471 Tau			20:23	20 43				1200
40	Fe-Ar.			20 45					200
41	V471 Tau			20 51	21 11				1200
42	V471 TAU			21 12	21 32	01 23 E	+17 14		1200
43	Fe-Ar								300
44	V471 TAU			21 39	21 59				1200
45	V471 Tau			22 03	22 24				
46	Fe-Ar								200
2247	V471 TAU			22 30	22 51	00 04 E			1200
48	V471 TAU			22 55	23 15				1200
49	Fe-Ar								200

P/

Spectr.

Focus.

Spectr.

Exp. Mtr.

1200

1200

1200

1200

1200

1200

1200

1200

1200

1200

1200

1200

1200

Page 1
Spectr. Temp.

Dome Temp./Hum. ... -6.9°C 14.66%

Transparency Conditions ... Clearing 92

Focus

Dome open & Fans on by 17 EST

Spectr. Temp.

Dome Temp./Hum.

Exp.	Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
306	A				RedEd	1800/630	RS	6650A	IA		written (star in "B" channel)	
1200	20		7.8	K2III					IA	std dev	691 secs Fld checks with Oct 29 Fidd	
308	10								IA			
300	15				(shift prob from RE setting same angle)				IA	Repat, (increase gratng moved)		
1700	8		9.5	K0V					IA	mn: pgrm		
1700									IA			
1200									"			
1200	8								"			
300	10								"			
1200	15								"			
200	9								"			
1200	8								"			
1700	10								"		counts to 270/sec	
200									"			

Spectr. Temp. Dome Temp./Hum. → 8.4°C 75%* Transparency Conditions .OK. v. s/ hazy 94

Focus @ 2330

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H. Buffer	Program	Remarks	Quality
230	10			PCS Red Cell	1800/63°	RS	6650A	IA	MTI-pym		
230	10							IA			
140	13							IA			
240	10							IA			
230	8							IA			
								IA			
260	10							IA			
250	8							IA		Domo T _a = 8.1°C Humidity = 69.3% *	
								IA			
250	10							IA			
								IA			
								IA			
220	8							IA			
210	8							IA			
								IA			

95 P9#3

Emulsion Batches:

Date 1989 Dec. 8/9.... Observers M.K. - Tq.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
	V 471 THU	03 44.7	+16 57	03 40	04 00	05 04 W	+17 13		1200
	"	"	"	04 03	04 23	05 27 W			1200
	Comp							Fe Ar A=1/2	200
	V 471 THU	03 44.7	+16 57	04 29	04 49	05 55 W			1200
	Comp								200
	BM Cass	00 48.6	+63 33	05 03	05 23	09 24 W			1200
	Comp							Fe Ar A=1/2	300
	BM Cass	00 48.6	+63 33	05 32	05 52	09 53 W	+64 01		1200
	Comp								300
	HD 112299	12 50.6	+26 16	06 07	06 27	01 33 E	+25 49		1200
	Comp								300
	HD* 86801	09 [*] 55.8	+29 [*] 02	06 ^z 35	06 49		W +28 37		1200
	HD 86801	09 55.8	+29 02	06 51	06 56	01 51 W	+28 38		1200
2278 ^{mtl}	Comp							Fe Ar A=1/2	300
2279 ^{mtl}	Flat (on timer)			07 20	09 20	(ND=20+0.3)		4nG A=1/4	7200

Spectr. Temp.

Dome Temp./Hum. -8°C 68%

Transparency Conditions ... Fine

96

Focus

Spectr. Temp.

Dome Temp./Hum. -8.0 55%

Note = 70% increase in signal upon reversing telescope.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
R * 330 15	A	~9.5	KOV	PCS Red 61	1800/63°	RS	6650	IA	mk1-pgm	Reversel *	
260								IA			
110 6								IA			
220 10								IA			
300 10								IA		Dome T = -7.7°C H = 64%	
100 10								IA			
230 12								IA		Look for in reduction odd line feature Red 61 Hx?	
730 18		✓ 8.66	F8V					IA	std vel	Fld drawn check it	
780 20		* 8.88	* G0V					IA	std vel	Fld drawn check it	
450 15		n	n					IA	std vel	North of previous exp	
150 11								IA			
2004								IA		written next night @ 1738	

@ 1740 Dome STAR closed
 -5.0 74%

Transparency Conditions Part cloudy - Very cloudy⁹⁸

Spectr. Temp.

Dome Temp./Hum.

Focus

Spectr. Temp.

Dome Temp./Hum. -5.6 85% @ 19 EST

745

1500
Exp.

200

880

200

600

1800

200

400

200

Exp.	Mir.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B	A				PCS Red Cell	1800/630	RS	6650A	IA		Halted to observe	
	35								IA			
	10								IA			
	8								IA	mki pgm	thin cloud / ^{then} thick cloud	
	8								IA			
<p>note, sp002282 written before halting. Any problems? Halt was intended, but sometimes key board doesn't respond. Backed up to sp002283.mki</p>												
	8								IA		written,	
									IA		written	
	90		9.5 ^v	KOV					IA	mki pgm	Thin cloud	
	12								IA			
									IA			
	150								IA		too cloudy again	
	14								IA			
<p>Backed up to end 2289.mki</p>												

199

Sun-mon

Emulsion Batches:

Date 1989 Dec 10/11..... Observers J.M.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
2291	FLAT			19 00	21 00	0 0	platform	TUNG H=1/4	7200sec
	A test			21 58 40					
	B								
	B								
	C								
2292	DARK - No Lights on at All			22 10	01 34	0 0	platform		200 mins
2293	Flat			01 50	03 50	"	"	TUNG A=1/4	7200

Spectr. Temp. Dome Temp./Hum. Transparency Conditions

Focus

Spectr. Temp. Dome Temp./Hum.

Exp.	Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7300	2400		[ND 2.0+0.3]		PCS Rad Cell	1800/63	RS	6650A	IA		Note: After 7:00 scan finished, the "B" channel F:FO light (green) remained "on". Usually, it goes out. Is this relevant?	
	240	160	(per min)	gated							- no light on in warm room nor on Dps floor.	
	490	440	(per min)	"							light Full in warm room (main light & overheads)	
	747			in 2nd min							Totals 9026 & 947	
	9090										Light on ~ doubles dark count for B Light on ~ triples dark count for A	
	250	170	(per min)	gated							Repeat of A test (light off)	
	238	168	per min	"							" " " " " "	
	Accumulated counts B=39,700/A=34,680									IA		
7300	2400	45	[ND 2.0+0.3]						IA		on Timer, written 00116pm (Peak on Plot 1/2 Ek Level)	

101

pg #1 Mon-TUES

Date 1989 Dec 11/12... Observers T.N. / Ady.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
94	Comp after focus steps							FeAr A=1/2	200
95	V471 THU	03 44.7	+16 57	19 43	20 43	E	+17 16		3600
96	Comp							FeAr A=1/2	200
2297	V471 THU	03 44.7	+16 57	20 54	21 24	01 20 E			1800
2298	Comp							FeAr A=1/2	
99	Comp	et New	?				Reversal	FeAr A=1/2	200
2300	HD 197433	20 38.6	+75 14	22 18	22 28	W	+75 32		600
01	HD 197433			22 30	22 40				600
02	HD 197433			22 41	22 51				600
03	Comp			22 52	22 55.5				200
04	HD 197433			22 56	23 06				600
05	HD 197433			23 07	23 17				600
06	HD 197433			23 18	23 28				600
07	Comp			23 28.5	23 32				200
08	HD 197433			23 33	23 43				600

Spectr. Temp. Dome Temp./Hum. $+8.5$ 72% Transparency Conditions $Hazy$ 162

Focus \approx Full moon

Spectr. Temp. Dome Temp./Hum. * seems seems poor, but sign. should be higher?

Person	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		B A				PCS Red Cell	1800/630	RS	6650Å	IA			
200		135 10		V									
300		80 8 *	59.5	KO V						IA	mki-pgm	Full Moon \approx 04 40 RA	
200		140 8								IA		+27°	
1800		65 8								IA	mki-pgm	$\circ \approx 25^\circ$ NE of star	
		140 10								IA		writer	
200						PCS Red Cell	1800/525	RS	5200Å	IA			
600		600 8	7.5	V#		"	"	"	"	IA	Hdy-pgm	* variable 7.3 - 7.7 V	
600		500 9											
600		600 10											
200		200 5											
600		550 10											
600		650 12											
600		600 15											
200		200 8											
600		100 700	15										

Note backed up to 50002298. mki

Spectr. Temp. Dome Temp./Hum. -11°C 79% Transparency Conditions *OK - sl/cloudy* 104

Focus
Spectr. Temp. Dome Temp./Hum.

Person	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		B A			G5 +K0		1800/525	RS	5090A	IA			
	600	10					n			IA			
	20	170	5				n			IA			
	100	500	10		Center sl BLUE of previous exp's		1800/523		5040A	IA		Note attempted to change grating angle - no luck!	
	20				n " n " " "		" "		5040A	IA		I should have done another "before" comp. but had	
	20				Change center to Red (ideal now)		1800/527		5120A	IA		New grating angle now ↓	Coming in
	600	500	11				n		5120A	IA			
	600	800	18				n		n	IA			
	600	550	15							IA			
										IA			
	600	800	20							IA		H ₂ -pym cnts to 1100/sec	
	600	900	22							IA			
	600	750	12							IA			
	200									IA			
	1000	670	13		68 I					IA			
	200	170	7							IA			

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pg#3

Date 1989 Dec 11/12 Observers Holy-Ton

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	HD 199492			02 48	02 51	11 07W	+74 42		
	Comp			*	*			FeAr A=1/2	200
	HD 197433	20 38.6	+75 14	03 00	03:13 → 03:17	11 47W			600
	Comp			03 27		3/2 E		FeAr A=1/2	200
	HD 197433	20 38.6	+75 14	03 38	03 46	11 42E			600
2331	"	"	"	03 49	03 59	E			600
	"	"	"	04 04	04 14	E			600
	Comp								200
	HD 197433	20 38.6	+75 14	04 20	04 30	E			600
	HD 197433			04 31.5	04 41.5				600
	HD 197433			04 42	04 52				600
	Comp			04 53					200
	HD 197433			04 57	05 07				600
	HD 197433			05 08	05 18				600

Spectr. Temp. Dome Temp./Hum. Transparency Conditions

Focus

Spectr. Temp. Dome Temp./Hum. -12° 80%

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
600	1000 18					1800/52.7	RS	5120A	IA			
200	220 9											
600	1000 20											
200	230 8										Clouded in Fast	
	2000 30										IA written @ 0106 PM Dec 12	
											Signal too low; Flat must have failed early in integration	
7200	2000 30					1800/52.7	RS	5120A	IA		Repeat Flat attempt.	
	<p>Note. This Flat stopped. FIFO CH "B" only stopped (no FIFO Light) @ 45.70 sec approx. I Halted & did "RI" to continue this integration.</p>											
7200	1130 25				PCS Red Coll	1800/45.2	RS	3950A	IA		Test for TANG (student)	
300	230 10				PCS Red Coll	1800/45.2	RS	3950A	IA		written	
					✓	✓	✓	✓	IA		written	

Emulsion Batches:

Date .1989. Dec. 13/14... Observers .T.A. Hd. y. en. 24."

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2349	Comp							FeAr A=1/4	200
50	HD 192889	20 122	+75 57	18 14	18 44	03 47 W	Reversed +76 14		600
51	Comp								200
52	HD 197433	20 386	+75 14	18 53	19 03	03 40 W	+75 34		600
53	"	"	"	19 04	19 14	03 51 W			600
54	"	"	"	19 15	19 25	04 02 W			600
55	"	"	"	19 26	19 36	04 13 W			600
56	Comp							FeAr A=1/4	200
57	HD 197433	20 386	+75 14	19 42	19 42	04 18 W			600
58	"	"	"	19 53	20 03	04 39 W			600
59	"	"	"	20 04	20 14	04 50 W			600
2360	Comp	20 088		20 15					200
61	HD 197433	20 088		20 19.5	20 29.5				600
62	HD 197433			20 30.5	20 40.5				600
63	HD 197433			20 41	20 51				600
64	HD 197433			20 52	21 02				600

111

pg #2

Date 1989 Dec 13/14..... Observers J4.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2365	Long Comp ?2			21 07 21 12	21 12				600s
				A handup ^{all} Fido Lights on channel B					
66	HD 197433			21 13	21 23	06 00W			600
67	HD 197433			21 26	21 36	06 13W			600
68	HD 197433			21 37	21 47	06 24W			600
69	Comp							FeAr A=1/2	200
70	HD 197433	20 38.6	+75 14	21 55	22 05	W			600
71	"	"	"	22 08	22 18	W			600
72	"	"	"	22 20.5	22 30.5	W	+75 32		600
73	"	"	"	22 31.5	22 41.5	07 20W			600
74	Comp								200
75	HD 197433	20 38.6	+75 14	22 47.7	22 57.7	W			600
76	"	"	"	22 59.4	23 09.4	W			600
77	"	"	"	23 02	23 22	W			600
78	Comp								200
79	HD 197433	20 38.6	+75 14	23 29	23 39	08 18W			600

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions ..

thin cloud

112

Focus

Spectr. Temp.

Dome Temp./Hum.

** Signal up despite cloud and greater air seeing nothing special either? mass

Exp.	Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
600s	R A											
600s	230 7					1820/520 ⁰	RS	5120A	IA			
600	1800 30								IA	Hdy-pgm	T = -13.6°C Dome	
600	1600 30								IA		counts to 2200	
600	1600 30								IA		VERY high signal after previous Comp	
600	1600 30								IA		FIFO Trouble ?? ↑	
200	200 13								IA		[close to MAX brightness however]	
600	1400 25								IA		counts to 1900/sec	
600	1000 20								IA			
600	1200 20								IA	Hdy-pgm	PERIOD = 03:20 ^h	
600	1000 20								IA		MIN @ 22:23 says Hdy	
600	1000 20								IA		Dome T = -14.2	
600	180 10								IA			
600	1000 20								IA			
600	1000 20								IA		counts to 1400/sec	
600	1000 25								IA			
600	190 8								IA			
600	1100 25								IA			

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Pg#3

Emulsion Batches:

Date 1989 Dec 13/14..... Observers J. A.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2380	Hd 197433	20 38.6	+75 14	23 42.0	23 52	W	+75 32	600	
81	n	n	n	23 53	00 03	08 42W		600	
82	Comp							200	
83	Hd 197433	20 38.6	+75 14	00 10.5	00 20.5	W		600	
84	n	n	n	00 23.0	00 33.0	W		600	
85	v	v	n	00 34.0	00 44.0	W		600	
2386	Comp							200	
	Hd 197433	20 38.6	+75 14	00 51.0	01 01	W		600	
	n	n	n	01 04.0	01 14	W		600	
	n	n	n	01 15.5	01 25.5	10 03W		600	
	Comp						F ₂	Fe Ar A=1/2	200
	Hd 197433	20 38.6	+75 14	01 34.0	01 44	10 21W		600	
	n	n	n	01 46.0	01 56.0	10 33W		600	
	n	n	n	01 58.5	02 08.5	10 46W		600	
	n	n	n	02 10.0	02 20.0	10 59W		600	
2395	Comp							Fe Ar	200

Spectr. Temp.

Dome Temp./Hum. -14.2° / 60%Transparency Conditions OK

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Focus

Spectr. Temp.

Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B A							a				
900 20		3 7.5	G5+ KO	PCS RedGal	1800/52.7	RS	5120A	IA	Hdy-pym		
800 15								IA		@ MAX?	
180								IA			
750 15								IA			
850 22								IA			
850 22								IA			
170 10								IA			
800 20								IA			
800 15								IA		Dome T = -14.7	
650 12								IA		(30th frame) of HD17433	
160 15								IA			
750 15								IA		MIN @ 0144	
450 15	poor							IA			
500 15								IA			
700 17								IA		Dome T = -15°C	
								IA			

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pg#4

Emulsion Batches:

Date 1989 Dec 13/14..... Observers TN.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	HD 197433	20 38.6	+75 14	02 33.5	02 43.5				600
	"	"	"	02 44.5	02 54.5				"
	"	"	"	02 55.0	03 05.0	11 42W			"
2399	Comp							Fe-Ar STILL Reversal A-1/2	200
	HD 197433	20 38.6	+75 14	03 10.0	03 20.0	11 57W	+75 32		600
	"	"	"	03 20.4	03 30.2	11 52 E			600
2402	Comp								200
2403	Flat Long	On timer		03 51		00	platform		10,800
						aperture?	filter?		
						note - probably A=1/4 ND=2.0+0.3			
						Almost certainly TN Dec 20/29			

Spectr. Temp.

Dome Temp./Hum. -15°C 62%Transparency Conditions OK ... cloud by 03:15¹¹⁶

Focus

Spectr. Temp.

Dome Temp./Hum. -15.5°C 62.3%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
608	750	7.5	G5+ KO	PCS Red Col	1800/52.7	RS	5120A	IA		haze down there	
*	400							IA		* counts up to 800 though	
4	500 10							IA			
200	150 10							IA			
608	600 20							IA		MAX @ 03:24 slightly	
600	600 15							IA		(end at West Limit Nprgr)	
200	200 10							IA		white unreversing no - white closing	
1000	7050 30							IA			

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Sun/Mon
17/18

Date 1989 Dec 17/18 Observers Mki/SAS

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
Sppp2408	Flat at platform			16:30	19:30			A=1/4 Tung	3hr
2409	Comp			0 ^h 01				A=1/2 FeA	200s
2410	V471 Tau	03 44.7	+16° 57	0^h 11	0 ^h 31	2 ^h 11 W	+17° 15		1200s
2411	V471 Tau	03 44.7	+16° 57	0 ^h 32	0 ^h 52				1200s
2412	Comp			0 53				A=1/2 FeA	200s
2413	V471 Tau	03 44.7	+16° 57	0 ^h 58	01 ^h 18	2 ^h 58 W			1200s
2414	V471 Tau	03 44.7	+16° 57	01 ^h 18	01 ^h 38	2^h 58 W			1200s
2415	Comp			01 ^h 40					200s
2416	V471 Tau	03 44.7	+16° 57	01 ^h 44	02 ^h 04	3 ^h 45 W			1200s
2417	V471 Tau	03 44.7	+16° 57	02 ^h 05	02 ^h 25				1200s
2418	Comp			02 ^h 26					200s
2419	V471 Tau	03 44.7	+16° 57	02 ^h 30	02 ^h 50				1200s
2420	Comp			02 ^h 51					200s
2421	Comp			3 ^h 15				A=1/2 FeA	200s
2422	HD 65583 (1989.5)	7 ^h 59 53.3	+29 14 42	3 ^h 20	03 ^h 40	01 ^h 11 W	+29 17		1200s

Spectr. Temp. Dome Temp./Hum. $-12^{\circ}/6.7\%$ Transparency Conditions *partly cloudy + hazy* 118

Focus
 Spectr. Temp. Dome Temp./Hum. *buffer* *Overcast until 23:00*

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A/B 2400				PCS Red Coll	1800/63°	RS 1000	6600 Å	IA	MKE pgm		
10/130	POOR							IA			
10/60		9.5	KOV					IA			
10/70		9.5	KOV					IA			
10/130								IA			
10/55		9.5	KOV					IA			
10/50		9.5	KOV					IA			
10/130								IA			
10/50		9.5	KOV					IA			
10/70		9.5	KOV					IA			
10/130								IA			
10/60		9.5	KOV					IA			
10/130								IA			
10/130								IA			
10/500		7.00	dG7					IA		Radial Velocity	

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Date 1989 DEC 17/18... Observers Mki/SAS.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP 2423	Comp			3 ^h 42	03 45			A = 1/2 FeA	2005
2424	Comp			3 ^h 57				A = 1/2 FeA	200
2425	HD 92588 (1989.5)	10 ^h 40 52	-1° 14 10	4 ^h 02	4 ^h 22				1200
2426	Comp			4 ^h 23	4 ^h 26			A = 1/2 FeA	2005
2427	Flat at platform			4 45				A = 1/4 Tung	3hr

Spectr
 Focus
 Spect
 Exp. M
 A/B
 10/13
 10/13
 20/10
 10/13
 30/20

121

Mon/Tue

Date 1989 Dec 18/19... Observers SAS (Hdy. in 24")

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP002429	Flood			16 ^h 30				A=1/4 Tung	1 hr
30	Comp			17 ^h 37				A=1/2 FeA	2005
31	V471 Tau	3 ^h 44.7	+16° 57	17 ^h 43	18 ^h 03	4 ^h 13 E	17° 14		1200
32	V471 Tau	3 ^h 44.7	+16° 57	18 ^h 05	18 ^h 25				1200S
33	Comp			18 ^h 27				A=1/2 FeA	2005
34	V471 Tau	3 ^h 44.7	+16° 57	18 ^h 31	18 ^h 51	3 ^h 24 E			1200S
35	V471 Tau	3 ^h 44.7	+16° 57	18 ^h 52	19 ^h 12				1200S
36	Comp			19 ^h 13				A=1/2 FeA	2005
37	V471 Tau	3 ^h 44.7	+16° 57	19 ^h 19	19 ^h 39				1200S
38	V471 Tau	3 ^h 44.7	+16° 57	19 ^h 40	20 ^h 00				1200
39	Comp			20 ^h 00				A=1/2 FeA	2005
40	V471 Tau	3 ^h 44.7	+16° 57	20 ^h 13	20 ^h 33				1200S
41	V471 Tau	3 ^h 44.7	+16° 57	20 ^h 34	20 ^h 54	1 ^h 20 E			1200S
42	Comp			20 ^h 55				A=1/2 FeA	2005
43	V471 Tau	3 ^h 44.7	+16° 57	21 ^h 00	21 ^h 20				1200

Spectr. Temp. Dome Temp./Hum. $-9.5^{\circ}\text{C}/63\%$ Transparency Conditions *Clear*

Focus
 Spectr. Temp. Dome Temp./Hum. $-7.2^{\circ}\text{C}/73\%$ *buffer*

person Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1/kr	A/B 2300				PCS Red Cell	1800/ 63°	RS	6600 Å	IA	Hdy prgm		
2005	10/130								IA			
1200	10/100		√ 9.5	KOⅡ					IA		* Ch B out	
12005	10/100		√ 9.5	KOⅡ					IA			
2005	10/130								IA			
12005	10/105		√ 9.5	KOⅡ					IA			
12005	10/100		√ 9.5	KOⅡ					IA		(Header Dec4 RA wrong upto this exposure)	
2005	10/130								IA			
12005	10/100		√ 9.5	KOⅡ					IA			
1200	10/130		√ 9.5	KOⅡ					IA			
2005	10/130								IA			
12005	10/150		√ 9.5	KOⅡ					IA			
12005	10/150		√ 9.5	KOⅡ					IA			
2005	10/130								IA			
1200	10/120		√ 9.5	KOⅡ					IA			

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Date 1949 Dec. 18/19... Mon/Tues

Observers SAS (Hdy in 24")

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP 002444	V471 Tau	3 ^h 44.7	+16° 57	21 ^h 21	21 ^h 41				1200s
45	Comp			21 ^h 42				A=42 Fed	200s
46	V471 Tau	3 ^h 44.7	+16° 57	21 ^h 46	22 ^h 06				1200s
47	V471 Tau	3 ^h 44.7	+16° 57	22 ^h 08	22 ^h 28	0 ^h 13 W			1200s
48	Comp			22 ^h 29				A=1/2 Fed	200s
49	V471 Tau	3 ^h 44.7	+16° 57	22 ^h 33	22 ^h 53				1200
50	Comp			22 ^h 55					200
51	Comp			23 ^h 35					200
52	V471 Tau	3 ^h 44.7	+16° 57	23 ^h 40	24 ^h 00				1200
53	V471 Tau	3 ^h 44.7	+16° 57	0 ^h 01	0 ^h 21				1200s
54	Comp			0 ^h 23					200
55	V471 Tau	3 ^h 44.7	+16° 57	0 ^h 27	0 ^h 47				1200
56	V471 Tau	3 ^h 44.7	+16° 57	0 ^h 49	0 ^h 59				1200
57	Comp			1 ^h 00					200
58	V471 Tau	3 ^h 44.7	+16° 57	1 ^h 19	1 ^h 39	3 ^h 25 W			1200

Spectr. Temp. Dome Temp./Hum. $-12^{\circ}\text{C} / 73\%$ Transparency Conditions *Clear* 124

Focus

Spectr. Temp. Dome Temp./Hum. $-12^{\circ} / 79\%$

buffer

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emission	P.A.	Program	Remarks	Quality
10/120		\checkmark 9.5	KOV	PES Red Coll	1800/ 63°	RS	6600Å	IA	Hdy prgm		
10/130								IA			
10/90		\checkmark 9.5	KOV					IA			
8/80		\checkmark 9.5	KOV					IA			
10/130								IA			
8/80		\checkmark 9.5	KOV					IA			
10/130								IA			
10/130								IA			
10/85		\checkmark 9.5	KOV					IA			
10/80		\checkmark 9.5	KOV					IA			
10/130								IA			
10/80		\checkmark 9.5	KOV					IA			
10/80		\checkmark 9.5	KOV					IA			
10/130								IA			
10/80		\checkmark 9.5	KOV					IA			

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Date 1989 Dec 18/19 Mon/Tues
Observers SASEmulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP00 2459	V471 Tau	3 ^h 44.7	+16°57	1 ^h 40	2 ^h 00				1200S
60	Comp			2 ^h 02				A=1/2 FeA	200S
61	V471 Tau	3 ^h 44.7	+16°57	2 ^h 06	2 ^h 28				1200
62	V471 Tau	3 ^h 44.7	+16°57	2 ^h 30	2 ^h 50				1200
63	Comp			2 ^h 52				A=1/2 FeA	200
64	Comp			3 ^h 27				A=1/2 FeA	200
65	HDX 65583 (A)	7 ^h 54.3	+29°31	3 ^h 33	3 ^h 48				1200
66	Comp			3 ^h 49					
	flat							aperture? filter?	

127 pg#1

Date 1989 Dec 21/22 ^{Thur/Fri} Observers Tn./SAS/LZZ.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP00 2470	Flat			16:53 17:53	17:53		ND 2.0 only	A=1/2 Tung	1 hr
2471	Comp			18:11			no ND	A=1/2 FeNe	200S
2472	HD 11503 (south)	01 48.0	18 48 +18 48	18:20	18:30		119 18		600S
72	HD 11503 (south)	01 48.0	+18 48	18:31					600S
73	HD 11503 (south)	01 48.0	+18 48 +18 48	18:35	18:45				600S
74	HD 11503 (south)	01 48.0	+18 48 +18 48	18:47					600S
75	Comp							A=1/2 Tung	200S
76	HD 11503 (south)	01 48.0	+18 48 +18 48	19:03	19:13				600S
77	HD 11503 (south)	01 48.0	+19 17	19:14					600S
77	HD 11503 (south)	01 48.0	+18 48 +18 48	19:15	19:25				600S
78	HD 11503 (south)	01 48.0	+18 48 +18 48	19:27	19:37	0 ^h 30 E			600S
79	Comp			19:38				A=1/2 FeNe	200S
80	HD 11503 (South)	01 48.0	+18 48 +18 48	19:42.5	19:52.5				600S
81	HD 11502 (North)	01 ⁽²⁰⁰⁰⁾ 48.0	+18 48	19:53	20:03				600S
82	HD 11503 (South)	01 48	+18 48	20:08	20:18				600S

Spectr.
Focus.
Spectr.

Exp. Mtr.

8/1

1530/1

230/1

2000/3

1800/3

2000/3

1800/3

2000/3

230/10

230/10

2200/3

2000/3

2000/3

2000/3

2300/3

2300/3

240/13

2000/3

1500/3

1500/3

1500/3

Spectr. Temp.

Dome Temp./Hum. -14/47%

Transparency Conditions .. Clear ..

Focus

Spectr. Temp.

Dome Temp./Hum. -17/56%

Exp.	Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B	A											
hr	* 1530	/ 35			PCS Red Coll	1800/46.0	RS	4090A	IA	AST 1040	* 89k cuts/min in "B"	
200s	220	/ 10							IA			
400s	2000	/ 35	v = 4.68	A0p					IA		Fifo B bombed (all lights on)	
600s									not written			
600s	1800	/ 30	v = 4.68	A0p					IA			
600s	2000	/ 30	v = 4.68	A0p					IA			
200s	230	/ 10							IA			
600s	2200	/ 35	v = 4.68	A0p					IA			
600s									not written		Fifo B cut out again (all light on)	
600s	2200	/ 35	v = 4.68	A0p					IA			
600s	2300	/ 35	v = 4.68	A0p					IA			
200s	240	/ 13							IA			
600s	2000	/ 34	v = 4.68	A0p					IA			
600s	1500	/ 30	v = 4.59	B9I					IA			
600s	1500	/ 30	v = 4.68	A0p					IA			

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Pg 42

Date 1989 Dec 21/22 Observers Tn/SAS/LZZ

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
83	Comp			20:20				A=V ₂ FeNe	200
84	HD 11503 (South)	01 ^h 48 ^m	+18° 48'	20:29	20:39				600s
85	HD 11503 (South)	01 ^h 48	18 48	20:40	20:50	0 ^h 42 W			600s
86	HD 11503 (South)	01 ^h 48	+18 48	20:52	20:02				600s
87	Comp			21:04					200s
88	HD 11503 (South)	01 ^h 48	+18 48	21:08	21:18				600s
89	HD 11503 (South)	01 ^h 48	+18 48	21:19	21:29	1 ^h 22 W			600s
90	HD 11503 (South)	01 ^h 48	+18 48	21:31	21:41				600s
91	Comp			21:44				A=V ₂ FeNe	200s
92	HD 11503 (South)	01 ^h 48	+18 48	21:48.4	21:58.4				600s
93	"	"	"	22:01.0	22:11.0				600
94	"	"	"	22:11.7	22:21.7				600
95	Comp			22:23				A=V ₂ FeNe	200
96	HD 11503 (South)	01 ^h 48	+18 48	22:28.0	22:40				600
97	HD 11502 (North)	01 ^h 48	+18 48	22:41	22:51				600

Spectr. Temp. Dome Temp./Hum. $-17/56\%$ Transparency Conditions ... *Clear* 130

Focus
Spectr. Temp. Dome Temp./Hum. $-19/63\%$

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	RH	Program	Remarks	Quality
<i>B/A</i> 240/10	<i>Poor</i>			PCS Red Coll	1800/40°	RS	AD40A	BJP IA	AST ^{L22} 1040		
1800/30		V= 4.59	B9V					IA			
1500/30		"	"					IA			
1500/30		"	"					IA			
240/10								IA		(wrong header)	
1800/30		"	"					IA			
1700/30		"	"					IA			
1500/30		"	"					IA			
240/10								IA			
1700/25		"	"					IA			
1900/30		"	"					IA			
1500/30	^V <i>poor</i>	"	"					IA			
240/10								IA			
1500/20		"	"					IA			
1300/30		4.59	A0p					IA			

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Emulsion Batches:

Date 1989 Dec 21/22 ... Observers LZZ:ISA/TA.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
98	HD 11503 SOUTH	01 48.0	+18 48	22 54.2	23 04.2	W +			600
99	Comp							FeNe A=1/2	200
SP00 2500	HD 11503 SOUTH			23 11.5	23 21.5				600
01	"			23 22.2	23 32				600
02	HD 11503 South			23 38	23 43	03 38W			600S
03	Comp							FeNe A=1/2	200
04	HD 11503 South			23.52.0	00:02	03 57W			600
05	"			00:07	00:17				600
06	"			00:18	00:28				600S
07	Comp			00:29				A=1/2 FeNe	200
08	HD 11503 South			00:34	00:44	04 36W			600S
09	HD 11503 South			00:45.7	00 55.7				600S
10	Comp			0:57					200S
11	HD 23480 ^{23TA9}	03 ^h 40'23	23° 38' 13	1:08.7	01 18.7				600S
12	Comp							A=1/2 FeNe	200

Spectr. T

Focus..

Spectr.

Exp. Mr.

B A

1000 1

250 1

1200 2

1300 2

1100/20

1000/20

1100/20

170/10

1000/20

1100/20

170/10

1000/20

170/10

1000/20

170/10

1000/20

170/10

1000/20

170/10

1000/20

170/10

1000/20

170/10

Spectr. Temp. Dome Temp./Hum. $-19.5/63\%$ Transparency Conditions $S/ Hazy$ 132

Focus
 Spectr. Temp. Dome Temp./Hum. $-21./68\%$

Exp.	Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
600	1000	18	4.59 8.9V	R9V	PCS	1800/46.0	RS	4040A	IA	AST 1040Y		
200	250	15							IA			
600	1200	25							IA			
600	1300	20							IA			
600	1100	20							IA			
200									IA			
600	1000	20							IA			
600	1100	20							IA			
600	1000	20							IA			
200	170	10							IA			
600	900	20							IA			
600	800	20							IA			
200	130	10							IA			
600	1300	15	4.2	B6Ie					IA	fds. rad. vel.		
200	200	10							IA			

133g #4

Date 1989 Dec 21/22 Observers LZZ/SAS/Tn.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP00 2513	HD 23302 ^{17 Tau}	03 38 56	23 47 57	01:25		3h 36 W	+24° 07'		6005
14	Comp						No ND	A=1/2 Fene	2005
15	HD 23630 ^{25 Tau}	03 ^h 41 32	23° 47' 46	01:45.6	01 55.6	03 55 W	+24 07	N.D. 0.3	600
16	Comp								200
17	HD 23302 ^{17 Tau}	03 ^h 38 56	+23° 47' 57	02:09	02:19		ND	ND 0.3	600
18	Comp			02:20			No ND	A=1/2 Tung	200
19	HD 23480 ^{23 Tau}	03 ^h 40 23	+23° 38' 13	02:25	2:45	04 46 W		ND 0.3	12005
20	Comp			02:46.8				A=1/4 Tung	200
21	HD 25940 ^{MX PER}	04 ^h 01 24	+47 26 44	02:54	03:14	04 55 W		ND 0.3	1200
22	Comp			03:15					200
23	HD 25940 ^{MX PER}	04 ^h 01 24	+47 26 44	3:20	3:30			NO N.D.	600
24	Comp			3:32					200
25	HD 102 870	11^h 45.5	+2° 20' 11^h 46	3:45.5	3:55				600
26	Comp			3:59					200
27	HD 102 870	11 ^h 45.5	+2° 20'	4:07.4	4 27.4	01 36 E		ND 0.3	1200

Spectr. Temp. Dome Temp./Hum. ... *-21/68.* Transparency Conditions ... *Sl. hazy*

Focus Dome Temp./Hum. ... *-22/66.*

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	B/A				PCS	1800/						
600	2500/55		3.7	B6IIIe	Reel Coll	46°0	RS	4040	IA	Fds Red Vel		
200	225/B								IA			
600	3000 40		2.9	B7IIIe					IA	"	Note NDO.3ms teller beam	
200									IA			
600	1200/		3.7	B6IIIe					IA	"	"	
600	170/15								IA			
600	500/10		4.2	B6IIIe					IA	"	(wrong coords in header) "	
200	150/10								IA			
1200	900/20		4.0	B3Ve					IA	"	"	
200	170/10								IA			
600	1900/		4.0	B3Ve					IA		" No N.D.	
200	160/13								IA			
600	1300/25		3.6	F9V					FA	SI Vel		
200	290/14								IA			
600	600		3.6	F9V					IA	SI Vel	NP 0.3	

buffer

137

Date 1989 Dec 22/23. Observers Tr/SAS/LZZ...

Fri/Sat

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP202530	Flat			16:50			ND=2.0	A=1/2 Tung	1hr
31	Comp							A=1/2 FeNe	200
32	HD 11503 South	01 ^h 48 ^m	+18° 48'	18:13	18:23				600
33	HD 11503 S	"	"	18:26	18:36				600
34	HD 11503 S	"	"	18:47	18:57			ND.3	600
35	Comp			19:01				A=1/2 FeNe	200
36	HD 11503 S	"	"	19:06	19:14			ND.3	600
37	HD 11503 S	"	"	19:17	19:27			ND.3	600
38	HD 11503 S	"	"	19:28	19:38			ND	600
39	Comp			19:39				A=1/2 FeNe	200
40	HD 11503 S	"	"	19:43	19:53				600
41	HD 11503 S	"	"	19:54	20:04				600
42	HD 11503 S	"	"	20:10	20:20			ND 0.3	600
43	Comp			20:21				A=1/2 FeNe	200
44	HD 11503 S	"	"	20:25.5				ND.3	600

Spectr. T.

Focus..

Spectr. T.

Exp. Mir.

A/B

30/112

7/1

55/200

40/250

17/27

20/100

20/900

30/200

17/27

50/250

50/300

25/200

17/280

35/100

Spectr. Temp. Dome Temp./Hum. 17°/67%

Transparency Conditions *part cloudy* 138

Focus

Spectr. Temp. Dome Temp./Hum.

Buffer

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	A/B 30/1120	good			PCS Red Coll.	1800/ 46°0	RS	4040 Å	IA	L22 AST1040Y		
	20/1120								IA			
			4.9	B9V					IA			
	35/2000		"	"					IA			
	40/2500		"	"					IA		ND 0.3	
	17/270								IA			
	20/1000		"	"					IA		"	
	20/900		"	"					IA		"	
	30/2000		"	"					IA		No ND - cloudy	
	17/270								IA			
	50/2500		"	"					IA			
	50/3000		"	"					IA		Cleared	
	35/2000		"	"					IA		ND 0.3	
	17/280								IA			
	35/1900		"	"							ND 0.3	

139 P 2

Date 1989 Dec 22/23 Observers Tn/SAS/Lzz

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2545	HD 11503 North	01 48	+18 48	20:37	20:47	0 ^h 43 W	+19 17	ND.3	600
46	HD 11503 South	"	"	20:49.4	20:59			ND.3	600
47	Comp			21:00.5				A=1/2 Fene	200
48	HD 11503 S	"	"	21 11.0	21:21			ND.3	600
49	HD 11503 S	"	"	21 22	21:32	1 ^h 27 E		ND.3	600
50	HD 11503 S	"	"					ND.3	600
51	Comp								200
52	F-Yat. (#53=Previous Comp)			21 57	22 49	Halted early (clear) A=1/2		ND.2	3110
53									
54	HD 11503 S	01 48	+18 48	22 57.8	23 07.8	W	+19 17	ND.3	600s
55	HD 11503 South	"	"	23 17.0	23:21	W		No ND	600s
56	HD 11503 south	"	"	23:25	23 35.0	03 30 W		"	600s
57	Comp								200
58	HD 11503 S	"	"	23:43	23:53			No ND	600
59	HD 11503 S	01 ^m 48	+18 ^m 48	23:56	00:06			No ND	600
60	HD 11503 S	"	"	00:08	00:18				600

Spectr. Temp. Dome Temp./Hum. *-18.5/72%* Transparency Conditions *Clear* 140

Focus

Spectr. Temp. Dome Temp./Hum.

Exp.	Exp. Mtr.	Seeing	Hv. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emission	P.H.	Program	Remarks	Quality
	30/2000	Good	4.59	A0p	PC5 Red Coll	1800/46°0	RS	4040Å	IA	L22 AST 4040Y	N.D. 0.3	
	30/1800		4.9	B9V					IA		ND 0.3	
	17/290								IA			
	30/200		4.9	B9V					TH		ND 0.3	
	35/1900		"	"					IA		ND 0.3	
			"	"					IA		stopped due to cloud	
									IA			
	35/1150								IA			
	1150								IA			
	25/1000		"	"					IA		ND = 0.3 in stellar beam	
	50/2500		"	"					TH		ND removal from beam	
			"	"					IA			
									IA			
	30/2500	Good	"	"					IA			
	35/2000		"	"					IA			
	30/1700		"	"					IA			

buffer

141 P3

Date 1949 Dec. 22/23 Observers Tr/SAS/LZZ.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP2561	Comp			0:18.5				A = 1/2 FeNe	200
62	HD 11503 S	0 ^h 48	+18 48	0:23.3	00:33				600
63	HD 11503 North	"	"	0:34.5	00:44.5				600
64	HD 11503 South	"	"	00:45	00:55	4:52 W			600
65	Comp			00:56					200
66	HD 23480 ^{23 Tau}	03 40.7 +2338		01:10.5	01:20.5				1200
67	Comp			01:31					150
68	HD 23302 ^{17 Tau}	3 ^h 44.9	+24 06.9	01:36.5	01:46	3 ^h 52 W	+24 08		600
69	Comp			01:47					200
70	HD 23630 ^{25 Tau}	3 ^h 41.8	+23 47.8	02:00.8		4 14 W	+24 07		600
71	Comp			02:12				p = 1/2 FeNe	200
72	HD 25940 ^{MX Per}	04 ^h 01.6	+47 26.7						600
73	Comp			02:36				FeNe A = 1/2	500
74	HD 102870	11 ^h 45.5	+2 20	03:02	03:12			No ND	600
75	Comp			03:14				A = 1/2 FeNe	200

Spectr. Temp.

Dome Temp./Hum.

-20 / 72%

Transparency Conditions

Clear

142

Focus

Spectr. Temp.

Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A15 10/220				PCS Red Coll	1800/ 46°0	RS	4040A	IA	L22 AST 1040Y		
35/1500	bad	4.89	B9II					IA			
35/1200		4.59	A8p					IA			
25/1400		4.9	B9V					IA			
17/300								IA			
25/1000		4.2	B6IVe					IA	Fds Rad Vel	ND 0.3	
10/300								IA			
15/1800		3.7	B6IVe					IA	"	ND 0.3	
13/250								IA			
40/3000		2.9	B7IIIe					IA	"	ND 0.6	
12/250								IA			
		4.0	B3IVe					IA	"	"	
								IA		uploaded p sheet prg 2x	
40/2200		3.61	G9II					IA	Std Vel		
								IA			

buffer

143
P4

Date 1989 Dec 22/23 Observers SAS/Tn/LZZ.....

Fri/Sat

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP002576	HD 89449	10 ^h 14.3	+19 59	3:20.5	3:30			NO ND	600
77	Comp			3:32				A=1/2 FeNe	200
78	Comp			03 52				h	200
79	HD 84441	09 40.2 09 40.2	+24 14'	03:59	04 09			FeNe	6 200
81	HD 112185	12^h 49^m 38^s	56° 30'						
81 82	Flat on Timer					A=clear	NO 2'0 + 0.3	FeNe FeNe	2hr
2583	DARK very long			30ksecs	over Xmass				written Dec 26/89
Last written record SP000584, LZZ 13, 711 bytes, 12 24 89 05 56 PM									

Spectr. Temp. Dome Temp./Hum. $-21/71\%$ Transparency Conditions *Clear* 144

Focus

Spectr. Temp. Dome Temp./Hum. $-22^{\circ}/71\%$

buffer

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	<i>ND</i>											
	40/2020		4.79	F6II	PCS Red Coll	1800/ 46°0	RS	4040 Å	IA	Std Vel		
	15/380								IA			
	5/360		468						IA	<i>std vel</i>		
	/1500		2.98	G3T46					IA	<i>std vel</i>	ND=0.6	
			1.8	A0P1V (C450)							ND=0.6	
2hr	30/1000								IA		all L22 backed up	

145

Tues-wed

Date Dec. 26/27.189..... Observers T.J./S.B.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
SP002584 SP002587	Flat at 6635A				18 00			Tung A=1/8	4000
SP002585	FLHT of 5148A			18 32.4	20 32	0 0	platform	Tung A=1/8	7200
86	Comp						Reversed	A=1/2 FeA	200
87	HD 197433	20 38.6	+75 14	21 44	22 04.5	W	+75 32		1200
88	"	"	"	22 06.2	22 16		"		1200
89	Comp			22 17				A=1/2 FeA	200
90	HD 197433	"	"	22 34	22 54				1200
91	"			22 54	23 15	0843W			
92	Comp					W		FeAr H-1/2	200sec
93	HD 197433	20 38.6	+75 14	23 22.2	23:44	W			1000
94	HD 197433	"	"	23 45	00 05	0933W			
95	Comp			00 06					200
96	HD 197433	"	"	00 11.6	00 26				800
97	Flat Comp							Tung H=1/8	7200
98	Flat on Timer							Tung A=1/8	7200

Spectr.

Focus.

Spectr.

Exp. Mtr.

A

35/160

5/168

10/23

10/23

10/120

10/33

15/35

12/18

10/35

15/40

10/18

80/150

80/150

Spectr. Temp.

Dome Temp./Hum. $-17^{\circ}\text{C}/64\%$ Transparency Conditions \dots Hazy \rightarrow cloudy \dots 146

Focus

Spectr. Temp.

Dome Temp./Hum. $-20.5^{\circ}\text{C}/65\%$

Exposure	Exp. Mir.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	A B											
400	35/1600	ND=2.0			PCS Red Coll.	1800/63°	RS	6635A	IA	Hyd. Progn.	Red Coll.	
720	35/1680	ND=2.0				1800/52.9°	RS	5148A	IA		* Hit center at 2048 pixel II	
200						"	"	"	IA			
120	10/230	BAD	V=7.5			"	"	"	IA	"	@ 5148 Å	
1200	10/230	"	"			"	"	"	IA	"		
200	10/170								IA			
1200	10/330					"	"	"	IA	"		
	15/350					"	"	"	IA	"		
200	12/180								IA	"		
200	10/350								IA	"		
	15/400								IA	"		
200	10/180								IA	"		
800									IA	"		
720	80/1550	ND=2.0							IA	"		
7200	80/1550	ND=2.0							IA	"		
									IA	"	stopped due to cloud	
									IA	"		

* Note - Integrate Residual for 300 sec due to failure

Emulsion Batches:

Date 1989 Dec 28/29 Observers T.M.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2601.TN	DARK, very Long			Started late Dec 27 or Dec 28 02 AM		0 0	platform		30K
2602.TN	Flat at start			17 50.6	19 50.6	"	"	TUNG A=1/8	7200
2603	DARK Long			from Dec 28/29 01					11000 ^{se}
SP002604.TN	Flat			Focus steps done before starting	19 32	21 32	0 0	platform	TUNG A=1/8 7200
Note - Flat #SP002599 written @ 7 52 PM Dec 27									
DARK 2600 written @ 12 31 AM Dec 28									

Spectr. 1

Focus..

Spectr.

Exp. Mir.

A

75/75

35/100

Note

35/100

Spectr. Temp. Dome Temp./Hum. Transparency Conditions

Focus

Spectr. Temp. Dome Temp./Hum.

Comparison Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	A B											
30K	75/75				PCS Red Cell	1800/529	RS	5148A	IA		written Dec 28	
7200	35/1600								IA		Signal near 24K steel	
	Note Flat cuts 100K/min in "B"; 2200/min in "A" for previous Flat											
11000									IA	Wm Rem	Light on	
7200	35/1600				PCS Red Cell	1800/529	RS	5148A	IA		Signal near 24K from plot	

149

Pg #1

Tues-wed

Emulsion Batches:

Date 1.9.90 JAN. 21.3.... Observers T.N.... (M.K. checking on me)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
2605	Long Comp	For map	improvement			00	platform	FeAr A=1/2	400s
	Flat			17 21	17 45			Tung A=1/8	380
	Comp							FeAr A=1/2	500 750
	V471 TAU	03 44.8	+16 57	17 53.5	18 03.5	03 15 E	+17 15		600
	Comp							FeAr A=1/2	200
10	Comp at H ₂			18 33			E	FeAr A=1/2	200 500
11	V471 TAU	03 44.8	+16 57	18 33.0	18 43.0		E		600s
12	V471	"	"	18 43.3	19 03.3		E		1200
13	Comp								200
14	V471 TAU	03 44.8	+16 57	19 11	19 31		E		
spoon 2615.1N	" "	"	"	19 36	19 56	01 21 E	+17 15		1200
16	Comp							FeAr A=1/2	200
17	V471 TAU	03 44.8	+16 57	20 07.3	20 27.3	00 50 E			1200
18	"	"	"	20 30	20 50	00 27 E			1200
2619	Comp							No ND filter	FeAr A=1/2

Spectr. Temp. Dome Temp./Hum. ... $-1.4^{\circ}\text{C}/72\%$

Transparency Conditions ... 51 Hazy 150

Focus

Dome opens & fans on by 17

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		No ND.		PCS Ref Cell	PCS 1800/52.9	RS	5148A ^o	IA		Written for trip improved	
40	1700	ND=2.0		"	"	"	ii	IA			
		No ND		"	"	"	"	IA			
10	300	$\approx 9.5\text{ KOV}$		"	"	"	"	IA			
				"	"	"	"	IA			
10	200			"	1800/63 ^o	"	6600A ^o	ii		miss use 627 film (included)	
10	200			"	"	"	"	IA			
10	200			"	"	"	"	IA			
15	150			"	"	"	"	IA			
10	200			"	"	"	"	IA			
10	200			"	"	"	"	IA			
16	140							IA			
10	200							IA			
10	240							IA			
								IA			

Spectr. Temp. Dome Temp./Hum. $-1.8^{\circ}\text{C}/80.6\%$ Transparency Conditions *Hazy* 152

Focus

Spectr. Temp. Dome Temp./Hum.

Exp.	Exp. Mtr.		Seeing	Prg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	A	B											
600	10	400		$\sqrt{2}$ 9		PCS Red Cell	1800/63°	RS	6600A	IA		w	
1200	8	500		$\sqrt{8.75}$	G2V					IA	std vel	w	
200			10	ND filter						IA			
1200	10	200		$\sqrt{9.5}$	K0V					IA			
200	10	230		"	"					IA			
200	10	125								IA			
1200	12	450		$\sqrt{9}$						IA			
1200	15	480								IA			
200	10	160								IA	*Reversed on V471 Tau, Comp signal was very low: Aperture openclap.		
1200	10	160		$\sqrt{9.5}$	K0V					IA			
1200	8	130								IA			
200	10	150								IA			
1200	10	120								IA			
1200	10	140								IA			
										IA			

Emulsion Batches:

Date .1990 JAN 2/3.... Observers J.S.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination Revised	Comparison Type/Filter	Exp.
2635	HD 29587	04 34.5	+41 57	01 24	01 34	03 26 W	+42 07	F	600
	Comp					W	+64 01	Fe-Ar Clear	200
	BM Cass	00 48.6	+63 33	01 45	02 05	07 54 W	"		1200
	Comp							FeAr Clear	200
	Flat (on timer)					0 0	platform ND=2.0	TUNG A=1/8	7200
	JAN 3 at Sundown			17 16				TUNG A=1/4	3060
2640 TN	FLAT Like previous but with 0.3ND added					0 0	platform		7200
							Written @ 18 17 after all FIFO Lights noted		
								FIFO Failure occurred at \approx 18 07 [about when I turned on the SE Dome Fan within one minute]	
								There had been no failures the night before.	

Spectr. Temp. Dome Temp./Hum. -1.9°C 84% Transparency Conditions ... S1 hazy 154

Focus
Spectr. Temp. Dome Temp./Hum. -2.0°C 85%

Exp.	Exp. Mtr. A/B	Seeing	Mag. V=	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
600	20 750		7.7A	G2	PCS 1600/63°	1800/63°	RS	6600Å	IA	Std Vel	Cnts to 1200/sec Fld checks with chart.	
200	0 140	(at BM Cass position)			Reversed				IA			
1200	10 150	poor	N 9		PCS Real Cell	1800/63°	RS	6600Å	IA		Hazy down here	
200	(130-220) while un-reversing									IA		
7200	20 120				PCS Real Cell	1800/63°	RS	6600Å	IA		Note count is lower than flats at 5148Å Not sure what is normal in this range Check this → Dec 26/27, last flat at 6635Å	
300	* 90/2050	ND = 2.0 ± 0.3			PCS Real Cell	1800/63°	RS	6600Å	IA	* Gated for 30 secs	A 1 min 139, 2 min 2800/min 139, 200/min	
	to be on.											

Wed-Thurs

Date 1990 JAN 3/4..... Observers T.A.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2641.TN	FLAT * (51 min flat on previous page)	(2640.TN)		18 34.5	18 57.5	(while opening & set up)		TUNG H=1/4	1380
	Comp at start			19		E	+17 15	Fe-Ar Clear	200
	V471 TAH	03 44.8	+16 57	19 08.0	19 28.0	E	+17 15		1200
	V471 TAH	03 44.8	+16 57	19 31.0	19 51	01 23 E			1200
	Comp							Fe-Ar Clear	200
	V471 TAH	03 44.8	+16 57	19 59.5	20 19.5	E			1200
	"	"	"	20 20.5	20 40.5	E			1200
	Comp							Fe-Ar Clear	200.5
	V471 TAH	03 44.8	+16 57	20 50.5	21 10.5				1200
	"	"	"	21 11.5	21 31.5	00 17 W			1200
51	Comp							Fe-Ar Clear	200
2652.TN	HD 23169	03 37.9	+25 25	21 38.5	21 55	00 47 W			1000
2653.TN	Comp					0 0	platform	Fe-Ar Clear	
54.TN	Flat at end			22 16.5		0 0	platform	TUNG H=1/4	7200
Backed up on 3.5" to end of Flat at end.									
55.TN	Flat for Jan 4/5 - cloudy ND=2+0.3 A=1/4 cnts=2000/30								

Spectr. Temp. Dome Temp./Hum. $+1.7^{\circ}\text{C}$ 80% Transparency Conditions Sl. Hazy 156

Focus Dome Temp./Hum. $+1.5^{\circ}\text{C}$ 80% gusty from SW

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1380	A 45 ² 2000	ND=2.0+0.3			PCS Red Cell	1800/63°	RS	6600A	IA		* Use previous page Flat too	
200	15 230	176	ND						IA			
1300	10 160		2V 2915	KOV					IA	Obs pgr	printed	
1200	10 160								IA			
200	15 220								IA		printed	
1200	10 160								IA			
1200	10 170								IA			
200	12 210								IA			
1200	10 160								IA			
1200	8 150								IA		some cloud	
200									IA			
1300	18 220								IA	std vel	Halted due to cloud inner cloud printed	
1300	40 1950	ND=2.0+0.3				1800/63°	RS	6600A	IA	18.50 Cntrl/min	A B 3 images 224K 2237/min 117K/min	
					Ch "A" FFO mtd "ad" # 2310							

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Emulsion Batches:

Date 1990. Jan. 5/6. Fri/Sat Observers SAS.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
Step 2656 SAS	Flat	@ Platform		16:40	18:06	0 ^h	ND 2.0+ 0.3	Tung A=44	5660s
57	Comp			18:33				Fe-A A=clear	200s
58	V 471 Tau	03 44.8	+16 57	18:43	19:03	2 ^h 03 E	+17° 15'		+1200s
59	Comp			19:07				FeA clear	200s
60	V 471 Tau	03 44.8	+16 57	19:12	19:32	1 ^h 30.3 E			1200s
61	V 471 Tau	03 44.8	+16 57	19:38	19:58	1 ^h 07 E			1200s
62	Comp			19:59				FeA Clear	200
63	V 471 Tau	03 44.8	+16 57	20:05	20:25	0 ^h 41 E			1200
64	V 471 Tau	"	"	20:26	20:46				1200
65	Comp			20:48				FeA clear	200
66	V 471 Tau	03 44.8	+16 57	20:52	21:12				1200
67	V 471 Tau	"	"	21:14	21:34	0 ^h 28 W			1200
68	Comp			21:35				FeA clear	200
69	V 471 Tau	03 44.8	+16 57	21:44	22:04	0 ^h 58 W			1200
70	V 471 Tau	"	"	22:06	22:26	1 ^h 20 W			1200

Spectr. Temp. Dome Temp./Hum. $-1^{\circ}\text{C}/64\%$ Transparency Conditions ... *Clear* 158

Focus
 Spectr. Temp. Dome Temp./Hum. $-3/74\%$

buffer

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2000				PCS Red Coll	1800/ 63°	RS	$\lambda = 6600\text{\AA}$	IA	Mki prgm	1 st quarter max near $\sqrt{471}$ Tou.	
220/10		$\sqrt{8}$						IA			
120/10		$\sqrt{9.5}$	KOV					IA		Apparently, prev. comp was not cleared.	
220/10								IA			
130/10		9.5	KOV					IA			
180/10		9.5	KOV					IA			
220/10								IA			
200/10	Good	9.5	KOV					IA			
170/10		9.5	KOV					IA			
220/12								IA			
180/10		9.5	KOV					IA			
200/12		9.5	KOV					IA			
220/10								IA			
220/12		9.5	KOV					IA			
230/12		9.5	KOV					IA			

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P2

Date 1990. Jan 5/6. Fri/Sat Observers SAS / MKI

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
⁵⁸⁵ SP002671	Comp			22:27				FeA Clear	200S
72	V471 Tau	03 ^h 44.8	+16° 57	22:32	22:52	1 ^h 46 W			1200S
73	V471 Tau	"	"	22:53	23:13	2 ^h 07 W			1200S
74	Comp			23:14				FeA Clear	200S
75	V471 Tau	03 ^h 44.8	+16° 57	23:29	23:49				1200S
76	V471 Tau	"	"	23:54	00:11	3 ^h 05 W			1200
77	Fe-Ar Comp.			00:13				FeA Clear	200
78	V471 Tau	03 ^h 44.8	+16° 57	00:17	00:37	3 ^h 32 W			1200
79	V471 Tau	"	"	00:39	00:59	3 ^h 54 W			1200
80	Comp			1 ^h :00				FeA Clear	200S
81	V471 Tau	03 44.8	+16° 57	01:05	01:25	4 ^h 19 W			1200S
82	V471 Tau	"	"	01:26	01:46				1200S
83	Comp			01:46.5					200S
84	HD 65583	7 5463	29° 31' 42"	02:02					300S
85	Comp			02:09					200S

Spectr. Temp. Dome Temp./Hum. *-3/74%* Transparency Conditions *Clear* 160 5

Focus
Spectr. Temp. Dome Temp./Hum. *-5/85%*

buffer

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emission	P.H.	Program	Remarks	Quality
200s	220/10				PCS Red Coll	1800/ 63°0	RS	$\lambda =$ 6600Å	IA	Mki prgm	1st quarter moon near V471 Tau.	
120s	170/10		9.5	K0V					IA			
120s	170/10		9.5	K0V					IA			
200s	220/10								IA			
120s	160/10		9.5	K0V					IA			
200	140/10		9.5	K0V					IA			
200	220/10								IA			
120	140/10		9.5	K0V					IA			
120	150/10		9.5	K0V					IA			
200s	220/12								IA			
200s	90/10		9.5	K0V					IA			
200s	90/10		9.5	K0V					IA			
100s	200/10								IA			
300s	1000/30		7.0	d67					IA	Std Vel		
200s	"								IA			

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Sat/Sun

Date 1990 Jan 6/7... Observers SAS / S. Chen

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
Sleeve 2689	Flat		platform	17:00	17:41		ND2.0+0.3	Tung A=1/4	2500
90	Comp			17:55			No N.D.	FeA A=clear	200
91	V471 Tau	03 ^h 44.8	+16° 57	18:02	18:22		"		1200S
92	V471 Tau	"	"	18:29	18:49				1200S
93	Comp			18:51				FeA A=clear	200S
94	V471 Tau	03 ^h 44.8	+16° 57	18:55	19:15				1200
95	V471 Tau	"	"	19:17	19:37	1 ^h 24 E			1200
96	Comp			19:39				FeA Clear	200
97	V471 Tau	03 44.8	+16° 57	19:50	20:10				1200
98	V471 Tau	"	"	20:11	20:31				1200
99	Comp			20:34				FeA Clear	200
2700	V471 Tau	03 ^h 44.8	+16° 57	20:38	20:58	00 ^h 03 E			1200
01	V471 Tau	"	"	20:59	21:19				1200
02	Comp			21:20				FeA Clear	200S
03	V471 Tau	03 ^h 44.8	+16° 57	21:25	21:45	00 ^h 43 W			1200

Spectr. 1

Focus

Spectr. 1

Exp. Mir.

B/A

270/3

230/15

70/10

80/10

220/10

60/10

80/10

100/10

100/10

200/12

100/10

100/10

210/15

100/10

100/10

Spectr. Temp. Dome Temp./Hum. $-3/66\%$ Transparency Conditions ... *Clear*

164 35

Focus

Spectr. Temp. Dome Temp./Hum.

buffer

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	B/A				PCS	1800/		$\lambda =$				
2500	2000/35				Red Coll	63.0	RS	6600Å	IA	Mki pgm	Cut at 2500s to begin observing.	
200	230/15								IA			
1200	70/10	bad	9.5 ^{v=}	KO \bar{V}					IA		- Moon very close - 45 min RA; 5 min	
1200	80/10	bad	9.5	KO \bar{V}					IA		moon very close	
200	220/10								IA		- Turned off ONE FAN directly below some slits Refocused.	
1200	60/10	bad	9.5	KO \bar{V}					IA		TEMP falling quickly	
1200	80/10		9.5	KO \bar{V}					IA			
200									IA			
1200	100/10		9.5	KO \bar{V}					IA			
1200	100/10		9.5	KO \bar{V}					IA			
200	200/12								IA		Turned fan back on	
1200	100/10		9.5	KO \bar{V}					IA			
1200	100/10		9.5	KO \bar{V}					IA			
200	210/15								IA			
1200	110/10	poor	9.5	KO \bar{V}					IA		Seeing is better	

Spectr. Temp. Dome Temp./Hum. $-7^{\circ}/74.7\%$

Transparency Conditions *Clear* 166 356

Focus

\rightarrow Cloud @ 23h

Spectr. Temp. Dome Temp./Hum. $-7^{\circ}/75.9\%$

buffer

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	c.P.H.	Program	Remarks	Quality
1200	B1A 170/10	<i>fair</i> 5.5	9.5	KOD	PCS Red Coll	1800/ 63°	R5	$\lambda =$ 6600Å	IA	Mki pgm		
500	210/15								IA			
200	130/10		9.5	KOD					IA			
1200			9.5	KOD					IA			
200	220/15								IA		Clouded over	
1100	1900/35								IA			

167

p1

Date 1990 Jan 7/8 Sun/Mon Observers SAS

Emulsion Batches:

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
27	Flat	00^h 48.6	platform	16:49	18:49	ND = 2.0 + 0.3		Tung A = 1/4 A = clear FeA	7200s
11	Comp								200s
12	Bm Cass	0 ^h 48.6	+63 33	19:42	20:02	2 ^h 01 W	+64 03		1200s
13	Bm Cass	"	"	20:06	20:24	2 ^h 25 W			1200s
14	Comp			20:28				clear FeA	200s
15	Bm Cass	0 ^h 48.4	+63 33	20:37	20:57	2 ^h 56 W			1200s
16	Bm Cass	"	"	21:00	21:20	3:19 W			1200
17	Comp			21:21				A = clear FeA	200
18	Bm Cass	0 ^h 48.6	+63 53	21:25.5	21:45.5	3 ^h 45 W			1200
19	Bm Cass	"	"	21:47	22:07	4 ^h 06 W			1200s
20	Comp			22:08				A = clear FeA	200
21	Sky (near Bm Cass)			22:13	22:33	4 ^h 32 W			1200
22	Comp			22:57				FeA clear	200
23	HD 29587	4 ^h 34.5	+41° 57	23:02	23:12				600s
24	HD 65583	7 54.3	+29° 31	23:31	23:41	1 ^h 26 E			600s

Spectr. Temp. Dome Temp./Hum. 0°/84%

Transparency Conditions ..light.. Cloud.....

168 35

Focus

Spectr. Temp. Dome Temp./Hum. -1°/85%

buffer

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	D.H.	Program	Remarks	Quality
B/A 1800/35				PCS Red Cell	1800/ 63.0	RS	$\lambda = 6600\text{\AA}$	IA	Mki pgm		
150/								IA			
190/12		8.82- 9.33						IA		Telescope "Reversed"	
180/12		"						IA			
150/								IA			
170/10	Poor	"						IA			
150/10	bad	"						IA			
150/10								IA			
140/10		"						IA			
200/10		"						IA			
140/10								IA			
10/10								IA			
200/10								IA		Unreversed Telescope	
1700/20		7.29	62					IA			
1200/25		7	097					IA			

Spectr. Temp. Dome Temp./Hum. ... $-1.0/85\%$ Transparency Conditions Clear 170

Focus

Spectr. Temp. Dome Temp./Hum. ... $-1.0/86\%$

buffer

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
200	200/12				PCS Red Coll	1800/ 63°0	RS	$\lambda = 6600\text{\AA}$	IA	Hki prgm		
200	190/12								IA			
120	1000/20	fair							IA			
200	200/13								IA			
300	1800								IA			
200	200/15								IA			
850	850/20										3 hr Flat at end has dropped too 850 counts from 1800 !!	

171

Emulsion Batches:

Date 1990 Jan 8/9... Mon/Tues Observers SAS/Chan.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP00 2733	Flat			17:25	19:25		ND=2.0+0.6	A=1/8 Tung	7200
34	Comp			23:27.5			ND ND	A=1/2 Fe-A	200
35	V471 Tau	03 ^h 44.8	+16° 57	23:32.5	23:52.5		17° 15		1200
36	Sky near V471 Tau			23:54	0:14				1200
37	Comp			00:15				A=1/2 Fe-A	200
38	V471 Tau	03 ^h 44.8	+16° 57	00:20.5	00:40.5	3 ^h 48 W	+17° 15		1200
39	Comp			00:47				A=1/2 Fe-A	200
40	Flat						ND=2.0+0.6	Tung A=1/8	10800
41	Flat			15 48.5	17 48.5	0 0	ND 2.0+0.6	Tung A=1/8	7200x

173

Date 1990 Jan 15/16 Observers J.M./S.H.S./K.K.

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
47	Flat for 83/33.4 deg grating		JAN 12/13/90	23 49		0 0	platform	TUNG A=1/2	7200s
43	Flat 01/13/90		JAN 13/14/90		17 50	"	"	A=1/8	7200s
44	Comp for map					"	"	Fe-Ne A=1/4	600
	Comp for map					"	"	Fe-Ar A=1/4	600
2745	Flat 01/14/90			17:21	19:21			A=1/8 TUNG	7200
2746	Sky								1200s
2747	Comp							A 1/2 Fe A	150s
2748	Flat							A 1/4 TUNG	7200s
2749	Flat (at Lower rate)			17 36	19 36			A 1/8 TUNG	7200
2750	DARK			00 36	01:28				3/20
2751	Comp						No ND	Fe Ar A 1/4	200
2752	BD +884			1:54.5	2:14.5	07 22W	88° 56		1200
2753	Comp			2:15.5	2:19				200
2754	BD + 889			2:26.5	3:26.5	07 30W	89 03		3600
2755	Comp			3:28				Fe Ar A=1/4	200
2756	Flat		at Plate horn	3:40				TUNG A=1/4	7200

Spectr. Temp. Dome Temp./Hum. 0°/94%...

Transparency Conditions ... fog 174

Focus

Spectr. Temp. Dome Temp./Hum. 0°/95%...

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B A											
2250 50	ND=2.0			PCS Red Coll	831/33.4	RS	4160Å	IA		written	
1250 35	ND=2.0			PCS RC	150/28.6	BS	4300Å	IA		written with ^{new} blue over sep filter	
1300	no ND			"	"	"	* "	IB	* actual center @ 4185Å	written for MAPS	
270	no ND			"	"	"	"	IA	" " @ 4185Å	written not written	
1250/30	ND 2.0			PCS RC	150/28.6	BS	"	IA			
2300/40				"	"	"	"	"			
500				"	"	"	"	IB			
B A											
3000	ND 2.0			"	"	"	"	IA		written	
1250/45	ND 2.0			"	"	"	"	IA		written	
				PCS RS	150/ 28.6	BS	4300Å	IA			
200		6.5	A2	"	"	"	"	IA		T=0°C H=94% reversed	
2000/55		6.5	A2	"	"	"	"	IA	KK prgm	Polaris C2	
140/10				"	"	"	"	IA			
350/20		8.0	F2	"	"	"	"	IA	"	Polaris C4	
110/8				"	"	"	"	IA			
2150/80								IA			
								IA			

175

Thurs - Fri

Date ... Jun. 18/19. / 1990. Observers .. Fds.

Emulsion Batches:

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	1 FLAT, 3 DARKS & 2 COMPS			in RET. DAT at START of OBSERVING.					
	COMP FOR SOCI								10s
	HD 35468 SOCI	5 19 46	6 15 33	19 56	20 29				10s
	COMP								10s
	COMP								10s
	HD 26912 MTAM	4:10	78 38.5	20:43	21:23				10s
	COMP								10s
	COMP								10s
	HD 73630 ZETA	03 41.5	23 47.5	21:36	22:10				10s
	COMP								10s
	4 flats @ 12s	850, 868, 860, 856							
	4 flats @ 42s	2973, 2873, 2834, 2865							
	COMP		slit narrowed to 1271			ZETA			10s
	HD 35468	5 19 46	6 15 33	22:33	23:03				10s
	COMP								10s
	4 flats @ 10s	397, 396, 394, 393							

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pg #2 Fri-Sat

Emulsion Batches:

Date 1990 JAN 19/20..... Observers Fds-Tk.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	HD 35468 ORI	05 19.8	+6 16	21:59	22:35	00 50W	+6 22		
	comp							ThA	10
	HD 35468 ORI	05 19.8	+6 16	22:37	23 00	01 15 W			
	comp								10
	comp								10
	HD 35468 ORI	05 19.8	+6 16	23:07	23 26	01 41 W			
	Comp								10
	HD 35468 ORI	05 19.8	+6 16	23 27.5	23 52.5	02 07W			
	Comp								10
	HD 35468 ORI	05 19.8	+6 16	23 54	00 39.5	02 54W			
	comp								10
	4 flats @ 30s	1249, 1204, 1223, 1229							
	4 flats @ 40	1544, 1548, 1524, 1527							
	4 flats @ 55	2104, 2103, 2109, 2116							

Spectr. T

Focus

Spectr. T

Exp. Nr.

2500

2500

2516

2516

3000

1844

MIRROR Figure Hartmann tests

Emulsion Batches:

Mon-Thurs
Date 1900 JAN. 22/23... Observers K.K. - T.G./T.G.....

Plate No.	Object	R.A. 1900 1990.5	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
N	E Per-	03 57.2	+39 58	20 27	20 30	00 22W	+40°		
	31 Lyn	08 22.2	+43 13	20 30	20 40	03 48E	+43 14		
O	SIRIUS	06 44.7	-16 42	21 59	22 01	00 53E	-16 39		
P	α CMi	07 38.8	+5 15	23 55		00 08W	+5 17		
Q	25 η Tau	03 46.9	+24 05	00 09	00 13	04 17W	+24 07		
	10 R CAM	05 02.6	+60 26		00 28	03 15W	+60 29		
	"	"	"		00 30	03 17W	"		
JAN 24/25 wed-Thurs Tu									
	Flat (1st after PCS work)			20 46	22 46	00	platform	Tung A=1/4	720
	22 θ Hya	09 13.9	+2 21		01 18	00 05W	+2 23		
	BS 1605	05 01.3	+43 49			04 30W			
	3775	09 32.2	+51 43			00 05W	+51		
	11 α Dra	14 09.4	64 25			04 22E			
	7310	19 12.6	67 39			09 17E			

Spectr. Temp. Dome Temp./Hum. $0^{\circ}\text{C}/90\%$

Focus

Spectr. Temp. Dome Temp./Hum. $-3^{\circ}\text{C}/95\%$

Transparency Conditions ... Mostly Cloudy 182

Dome opened & Fans on by 19 EST

Light SW wind

Exp.	Exp. Mtr. Times	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	10 20 40 secs, + 20 secs				35mm Camera	MASK at end of Tube				Hurtman Figure Tests	Semi Cloudy	30 ^s good
	40, [80 sec (cloud/blank)]										Semi Cloudy - complete cloud/blank	
	3, 6, 12 secs		+1.46	A0m							Part Cloudy - completely	
	3, 6, 12, 20 secs		+0.38	F5		B-V = +0.42	(sp F5 IV-V)			Fans on again at 2345		6 good
	8, 16, 22, 35 secs		2.87	B7 III		B-V = -0.09						35 ^s weak
	10, 20, 30, 45 sec		4.03	G1		B-V = +0.92				[These 3 exps may be vigneted, i.e. not extend		blank light
	45 secs		"	"	"	Last on roll				This one should be well centered of last.		weak
70	B/A 1550/35		ND 20+0.6		PCS AC	1800/63 ⁰	BS	6640A	174		Grating Rotated to max signal in CH 'B' x 5000 with max extend of exp. This north	
	5, 10, 20, 30 secs		3.88	B9.5 IV	35mm Camera	(Kodak T P film)				Hurtman Mask Mirror figure tests		
	3, 6, 12, 26		2.99	F0.6		B-V +0.54						
	5, 10, 20, 30		3.17	F6		B-V = +0.46						
	"		3.65	A0 IV		B-V = -0.05						
	7, 13, 26, 35		3.07	G9		B-V +1.00						

183

Emulsion Batches:

Date 1990 JAN 24/25.. Observers .. T.N.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	BS 5235	13 54.2	+18 27		02 14	03 42E			
	BS 3994	10 10.1	-12 18		02 30	00 20W			
	DARK	while observing		00 36	01 36				
Jan 26/90	Flat	platform		18:10	20:10			Tung 1/8	72005
Jan 27/90	Flat.	platform		17:10	19:10			Tung 1/8	72005

Spectr. Temp. Dome Temp./Hum. 0.0°C 77.5% Transparency Conditions *Semi cloudy* 184

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
36, 12, 20, 30		2168	GOLK	B-V = +0.58							
0, 15, 20, 30, 40, 5, 15		V=361	KO	B-V = +1.01						where's end of Role? decided to stop before end	
B/A											
25 45										Room lights off, when "On" dark signal > 10 in A & B.	
										Note Feb 1/90 - All JAN 24/25 Tests on 1 roll were blank? Camera messed up? Tr	
1500/25				PES/RC	1800/ 63.0	BS	$\lambda =$ 6640 Å	JA		ND = 2.0 + 0.3	
1750/?				"	"	"	"	"		"	

185

Sun - Mon Pg#1

Emulsion Batches:

Date 1990 JAN 28/29.. Observers SAS-Tn.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
•SAS SP002362	FLAT			16 19	17:45	0 ^h 0	platform	TUNG 1/8	5140
63	Comp			17:59	18:02			FeA Clear	200s
64	V471 Tau	03 ^h 44.8	+16° 57	18:13.5	18:33.5	01 01 E	+17° 16		1200s
65	V471 Tau	"	"	18:34	18:54	0 41 E	"		1200s
66	Comp			18:55				FeA clear	200s
67	V471 Tau	03 ^h 44.8	+16° 57	19:00	19:20	0 ^h 15 E			1200
68	V471 Tau	"	"	19:22	19:42	00 07 W			1200
69	Comp							FeA Clear	
70	V471 TAU	03 44.8	+16 57	19 49.5	20:09.5	00 35 W			1200
71	V 471 Tau	"	"	20:12	20:32	00 57 W			1200
72	Comp			20:33				FeA Clear	200
73	V471 Tau	03 ^h 44.8	+16° 57	20:37.5	20:57.5	01 23 W			1200s
74	V471 Tau	"	"	20:58	21:18	01 43 W			1200s
75	Comp			21:19				FeA Clear	200
76	V471 Tau	03 ^h 44.8	+16° 57	21:23.5	21 43.3	02 08 W			1200

Spectr.

Focus.

Spectr.

Exp. Mir.

B

1700/3

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

240/10

Spectr. Temp. Dome Temp./Hum. $\pm 1.8^\circ\text{C}/\text{H} = 49.4\%$ Transparency Conditions ... *Clear* 186

Focus Dome opened - Fans both on by 17:50.
 Spectr. Temp. Dome Temp./Hum.

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	B A				PCS	1800/		$\lambda =$				
540	1700/30				Red Coll	63°0	BS	6400 Å	IA	Hki prgm	ND. 2.0+0.3	
200s	240/10								IA		No N.D.	
120s	200/10		9.5	KOV					IA		Light baffle <u>not</u> on	
120s	200/10		"	"					IA			
200s	240/10								IA			
120	180/10		9.5	KOV					IA			
120	220/10		9.5	"					IA			
	220/10								IA			
120	180/8		9.5	KOV					IA			
120	160/		"	"					IA			
200s	240/10								IA			
200s	150/8		9.5	KOV					IA			
200s	150/8		"	"					IA			
200	230/10								IA			
200	140/8		9.5	KOV					IA			

187

Pg#2

Emulsion Batches:

Date 1990 JAN 28/29. Observers T.n./S.H.S... + Some MKi

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
77	V471 TAU	03 44.8	+16 57	21 46.5	22 06.5	02 30 W	+17° 16		1200s
78	Comp						NO ND	Fe Ar Clear	200s
79	V471 TAU	03 44.8	+16 57	22 11.8	22 31.8	02 56 W			1200
80	"	"	"	22 34	22:59	03 16 W			1100
81	Comp			22:53.5					200s
82	Plat			23 44	01 44.	0 0	platform	TUNG	7200

Spectr.

Focus.

Spectr.

Exp. Mir.

B/L

160/1

230/1

150/1

120/5

230/10

160/2

Spectr. Temp. Dome Temp./Hum. $-1.6^{\circ}\text{C}/58.5\%$ Transparency Conditions *Fine - cloudy* 188

Focus

Spectr. Temp. Dome Temp./Hum.

Mission Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	Baffle		Remarks	Quality
									P.H.	Program		
1200s	B/A		\checkmark 9.5	KOV	PCS Red Coll	1.800/ 63.0°	BS	6600A	IA	Mki-pgm		
200s	230/10				"	"	"		IA			
700	150/8		\checkmark 9.5	KOV	"	"	"	6600A	IA	Mki-pgm		
1100	20/5		"	"	"	"	"	"	IA	"	Halted due to cloud	
200s	230/10								IA			
720	1680/20								IA		NO 2.0+0.3	

Put sky baffle back in place at close up time, written
Backed up to end of night.

189

Mon/Tue

Date 1990 Jan 29/30 Observers Fds/SAS

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
0	Prompted Flat	Taken at different settings: 4567 Å etc.						Tung	
1	Comp							Th-Ar	10s
2	HD 120315 η UMa	13 ^h 43.5	+49 49	2:31.5	03:01.				
3	Comp							Th-Ar	10s
4	HD 120315 "	"	"	03:04.	03:34				
5	Comp			03:35				Th-Ar	10s
6	HD 120315 "	"	"	03:36.5	04:00.5				
7	Comp							Th-Ar	10s
8	HD 120315 "	"	"	04:04	04:30	0 ^h 55 ^m E	+49° 25'		
9	Comp			04:31				Th-Ar	10s
10	HD 120315 η UMa	"	"	04:33	4:54.5				
11	Comp			04:55				Th-Ar	10s
12	HD 120315 η UMa	"	"	04:56	05:17.5	00 ^h 08 ^m E			
13	Comp			05:18		00^h 08^m W		Th-Ar	10s
14	HD 120315 η UMa	"	"	05:19.5	05:35.5				

193

Date 1990. Jan. 30/31. ^{Tue/Wed} Observers Fds/SAS

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
0	Prompted flat			20:46.5				tung.	30s
1	comp.			20:56				Th-Ar	10s
2	HD 44743 β CMa	6 ^h 18 ^m 18 ^s	-17° 54'	20:58	21:11				
3	comp			21:12				Th-Ar	10s
4	HD 44743 β CMa	"	"	21:13	21:29				
5	Comp			21:29.5				Th-Ar	10s
6	HD 44743 β CMa	"	"	21:30.5	21:50	0 ^h 09 E			
7	Comp			21:51				Th-Ar	10s
8	HD 44743 β CMa	"	"	21:51.5	22:23	00 24 W 00 24 W	-17° 55'		
9	comp							Th-Ar	10s
10	HD 44743 β CMa	"	"	22:24.5	22:43	00 42 W 00 42 W			
11	comp			22:43.5				Th-Ar	10s
12	HD 44743 β CMa	"	"	22:44	23:19	01:20 W			
13	comp							Th-Ar	10s
	4 flats @ 8s	549, 543, 541, 533							
	4 flats @ 15s	964, 954, 956, 926							

Spectr. Temp. Dome Temp./Hum. 0°/72%

Transparency Conditions Var. Cloud

1946

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion X Grating	P.H. ORDER	Program	Remarks	Quality
				Echelle/ Reticon	17.62	105 μ m =.259	$\lambda = 4567 \text{ \AA}$ e4892		Fds prgm	dewar tilt = 2°5	1067
											1905
3500	not bad	V 1.9	BIIL							Strong 248	589
											1953
6000		"	"								915
											2039
7800		"	"								1002
											2053
7000		"	"							2-4-8 not checked cloudy during 1 st 15 min	937
											2016
7000											949
											2011
4704										cloudy, RA limit	521
											1963
										Topped dewar @ 23:50 T=0.181	

195

P2

Tue/Wed

Date 1990 Jan 30/31... Observers Fds/SAS

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
22	Comp			23:56.5				Th-Ar	10s
23	HD 120315 η UMa	13 ^h 43.5	+49° 49	00 ^h 08.5	0 ^h 30		-49 24		
24	Comp			00:31				Th-Ar	10s
25	HD 120315 η UMa	"	"	00:31.5	00:54.5				
26	Comp			00:55				Th-Ar	10s
27	HD 120315	"	"	00:56	01:15	04 10 E			
28	Comp			01:16				Th-Ar	10s
29	HD 120315	"	"	01:17	01:43				
30	Comp			01:44				Th-Ar	10s
31	HD 120315	"	"	01:45	02:14.5				
32	Comp			02:15				Th-Ar	10s
33	HD 120315	"	"	02:16	02:42				
34	Comp			02:43				Th-Ar	10s
35	HD 120315	"	"	02:44	03:14.5	02 10 E			
36	Comp							Th-Ar	10s

199

Wed/Thur

Date 1990 Jan/Feb. 31/1. Observers Fds./SAS.....

Emulsion Batches:

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.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
0	Prompted flat			17:44					
1	Sun / δ Per			17:48	17:55				
2	Comp			17:56				R-Ar	10s
3	HD 22929 δ Per	3 ^h 35.8	+47° 29	17:58	18:40	00 36 E	-47 50		
4	Comp			18:41.5					10s
5-8	4 Flats @ 58s	3033, 2945, 2988, 3057							
9	Comp			19:10				R-Ar	10s
10	HD 44743 β CMa	6 ^h 18 18	-17° 54	19:15	20:05				
11	Comp			20:06				R-Ar	10s
12	HD 44743 β CMa	6 18 18	-17° 54	20:07.5	20:42	01 13 E			
13	Comp			20:42.5					10s
14	HD 44743 β CMa	6 18 18	-17° 54	20:44	21:11	00 45 E	-17 55		
15	Comp			21:11.5					10s
16	HD 44743 β CMa	6 18 18	-17° 54	21:12	21:25.5	00 30 E			
17	Comp			21:26					

20/2

Wed/Thur

Date 1990 Jan/Feb 31/1. Observers Fds/SAS

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
18	HD 44743 β CMa	6 ^h 18 18	-17 54	21:26.5	21:43	00 13 E			
19	COMP		21:44	21:44				Th-Ar	10s
20	HD 44743 β CMa	6 ^h 18 18	-17 54 21:44.5	21:44.5 22:13.5	22:13.5	00 18 W			
21	COMP		22:14.	22:14				Th-Ar	10s
22	HD 44743 β CMa	6 ^h 18 18	-17 54 22:15	22:15	22:36	00 40 W			
23	COMP			22:37				Th-Ar	10
24	HD 44 743 β CMa	6 ^h 18 18	-17 54	22:38	23:09	01 14 W			
25	COMP			23:10				Th-Ar	10
26-29	4 flats @ 16s	1026, 1029, 1015, 497							
30	Comp			23:32.5				Th-Ar	10s
31	HD 120315 η UMa	13 ^h 43.5	+49° 49	23:36	0:03				
32	Comp			0:03.5				Th-Ar	10s
33	HD 120315 η UMa	"	"	0:06	0:36				
34	Comp			0:37				Th-Ar	10s
35	HD 120315 η UMa	"	"	0:38	01:05		+49 24		

Sun/Mon

Date 1990 Feb. 4/5..... Observers SAS/Tn./KK.....

Emulsion Batches:

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
^o SAS SP2785	Flat		at platform			0 ^h		Tung A=1/8	1850
86	Comp			18:20				FeA clear	200
Hartman R	γ Eri	^{1990.5} 03 57.6	-13 32	[~] 19 25		00 18 W	-13 31	10, 20, 20, 40	
S	α And	00 07.9	+29 02		19 43	04 18 W		10, 10, 20, 20	
T	ϵ Aur	05 01.7	+43 49		19 55	00 25 E		10, 10, 20, 20	
U	ι UMa	08 36.6	+48 05		20 10	04 07 E		10, 20, 40, 60	
	ϵ UMa	12 ^h 53.6	+56° 01	20 18	20 20	07 53 E		5, 2x10, 2x20	
V	ζ Hyd	8 ^h 54 53	+5° 59	[~] 20:27	20:31	03 40 E		10, 20, 20, 40	+40
87	Flat		at platform		00:02			Tung 1/8	6050s
<p>Note, From previous Day (no observing though) 2 written frames.</p> <p>FLAT SP2783.SAS</p> <p>DARK SP2784.SAS</p>									
88	Comp (Weak?)	^{RA} 00 54		^{Dec} 64° 00	00:34			FeA clear	300s
89	Comp			0 ^h 51	0:53			FeA clear	300s
90	HD 65583	7 ^h 54.3	+29° 31	01:07	01:27	2 ^h 08 W			1200s

Spectr. Temp. Dome Temp./Hum. ... -5/70%

Transparency Conditions ... Clear 206

Focus

Spectr. Temp. Dome Temp./Hum.

Fans on & Dome opened @ 18 hrs
Low cloud Fast moving from NNW
Medium Breeze NNW

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B/A 1150/				PCS Red Cell	1800/ 63°	BS	$\lambda = 6600\text{\AA}$	IA	written	ND 2.0 + 0.3	Fans turned on during Flat
150/20								IA	written	no ND of course	
40		2.95	M05				TP _{em} film				
40		2.06	B9							thin cloud	40 good
40, 46		2.99	F0							thin cloud	should be 60
		3.14	A7IV								60's st. wd
		1.77	A0p							thin cloud	too weak
+ 4x4's		3.11	S9II-III								40's weak
				PCS						ND 2.0 + 0.3	
1150/											
40/				PCS	1800/ 63°	BS	$\lambda = 6600\text{\AA}$	IA			telescope was "reversed"
90/								IA			too much cloud to do 6M Cas
750/25		2.00	d67					IA	st vel		

209 pg#1

Mon/Tues

Date 1990 Feb 5/6 Observers SAS/Tn

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
0	Flat prompted			18:42				TUNG	
1	Comp			18:43				Th-Ar	10s
2	HD22928 δ Per	3 ^h 35.8	+47° 28	18:46	19 42	0 46 W	+47 49		
3	Comp							Th-Ar	10sec
4	HD22928 δ Per	3 35.8	+47 28	19 46	20:36	1 ^h 40 W			
5	Comp			20:37				Th-Ar	10s
6	HD22928 δ Per	"	"	20:39	21:21	2 25 W			
7	Comp			21:22				Th-Ar	10s
8	HD22928 δ Per	"	"	21:25	22:20	03 25 W	+47 48		
9	Comp			22:21				Th-Ar	10s
10-13	Flats x 4			22 37		01 34 W	+47 48	TUNG	35s
14-17	Flats x 4								20s
18	Comp							Th-Ar	10s
19	HD120315 η UMa	13 ^h 43.5	+49° 49	00:32	01:11				
20	Comp			01:12				Th-Ar	10s

Spectr.

Focus.

Spectr.

Exp. Mtr.

11/150

1090

9200

5380

2560

12000

211 pg #2

Mon/Tue

Date 1990 Feb. 5/6..... Observers SAS/T.G.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
21	HD 120315 η UMa	13 ^h 43.5	+49° 49	01:13	01:55		+49 24		
22	Comp			01:56				Th-Ar	10s
23	HD 120315 η UMa	"	"	01:58	02:25	02 ^h 35E			
24	Comp			02:28				Th-Ar	10s
25	HD 120315 η UMa	"	"	02:28.5	02:54.5	02 ^h 06 E			
26	Comp			02:55				Th-Ar	10s
27	HD 120315 η UMa	"	"	02:56	03 20	5			
28	Comp							Th-Ar	10s
29	HD 120315 η UMa	"	"	03 21.6	04:00.5				
30	Comp			04:01				Th-Ar	10s
31	Comp			04:07				Th-Ar	10s
32	HD 120315 η UMa	"	"	04:09.5	04:49.5				
33	Comp			04:50				Th-Ar	10s
34	HD 120315 η UMa	"	"	04:51	05:19				
35	Comp			05:19.5				Th-Ar	10s

Spectr. T.

Focus

Spectr. T.

Exp. Mtr.

15000

5000

15000

15000

6000

15000

16000

213

P3

Emulsion Batches:

Date 1990 Feb. 5/6 Mon/Tue Observers SAS/Tn.....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
36	HD 120315 η UMa	13 ^h 43 ^m 5 ^s	+49° 49'	05:20	05:37	0 ^h 37 ^m W			
37	Comp			05:39				THAT	105
	Flats	4@ 47s	2971, 2943, 2923, 2932						
	Flats	4@ 37s	2294, 2280, 2279, 2292						
	Flats	4@ 21s	1306, 1303, 1299, 1302						
Data (Ret.dat) backed up to 5 1/4" floppy									
Repacked: files Feb0590.DAT ; #Feb0590.dat									

Spectr.

Focus.

Spectr.

Exp. Mtr.

988

215

Wed/Thur

Date 1990 Feb. 7/8 Observers SAS/Tn

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
0	Prompted Flat			18:20				Tung	40s
1	Comp			18:21				Th-Ar	10s
2	HD 22928 δ Per	3 ^h 35.8	+47° 28	18:25	19:15	2 14 W			
3	Comp			19:16				Th Ar	10s
4	HD 22928 δ Per	"	"	19:17 ✓	20:09	1 ^h 20 W 1 ^h 40 W			
5	Comp			20:10				Th Ar	10s
6	HD 22928 δ Per	"	"	20:11 ✓	21:09 ✓	2 ^h 20 W 2 ^h 29 W	+47° 48		
7	Comp							Th-Ar	10s
8	HD 22928 δ Per	"	"	21:10.5	22:01 ✓	03 ^h 13 W			
9	Comp			22:02		02 ^h 14 W			
10	HD 22928 δ Per			22:03					
10-13	Flats		4@ [~] 33s	2245, 2224, 2178, 2223					
14-17	Flats		4@ [~] 42s	2706, 2689, 2724, 2719					

Spectr. Temp. Dome Temp./Hum. 2°/83%.

Transparency Conditions *Hazy*..... 216

Focus

Spectr. Temp. Dome Temp./Hum. 0°/88%.

Fog, thick cirrus @ 22:00

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion x GRAT	P.H. order	Program	Remarks	Quality
				Echelle/ Reticon	18.45	150 μ m .241	$\lambda = 4481 \text{ \AA}$.457	127	Fds prgm	Topped dewar @ 18:00	2373
							\uparrow prob .4961				1303
	15000	3.01	B5 III								2621
											1270
	14800	"	"								2791
	14800										1197
	15000	"	"								2832
	13200	"	"								1259
											2239
											1186

stopped due to dewar

Mike
Note: Somehow we managed to mess up some of the time & HA entries. Based on calculations the HA for #4 + #6 are as corrected, assuming ending time is correct. I believe the start time to #6 is really 20:11 not 20:21. Better check these out when you look at the data. - I just looked at header - 20:11 for start of #6 is correct
^{file}

217

pg #1 Thurs - Fri

Emulsion Batches:

Date 1990 Feb 8/9..... Observers Jn.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP002798.TN	FLAT at Start			17 21	18 36	1	Platform to Raising	TUNG A=1/8	4470
.99	Comp				18 44			Fe-Ar A-clear	200
2800.TN	HD 22484	03 31.8	+00 05	18 58.6	19 16		W +00 24		1090
01	Comp							Fe-Ar Clear	
02	HD 22484			19 21.8	19 25.1	00 46	W		200
03	Comp			19 27				Fe-Ar Clear	200
04	HD 22484			19 40.6	19 45.6		W		300
05	n			19 48.0	19 51.0	01 12	W		W/flat 200
06	Comp			19 53				Fe-Ar Clear	200
07	Flat			20 19	21 24		Half/earthy	TUNG A=1/8	3890 7200
08	Comp			21 25				Fe-Ar Clear	200
09	HD 26162	04 03.5	+19 21	21 32	21 37		W +	Fe-Ar A-clear	300
2810	Comp								200
11	HD 26162	04 03.3	+19 21	21 56.8	22 02		W		300
12	n	n	n	22 02.4	22 07.4				300

Spectr. Temp. Dome Temp./Hum. $+5.5^{\circ}\text{C} / 77\% \text{ H}$ Transparency Conditions *Getting cloudy* 218

Focus

Spectr. Temp. Dome Temp./Hum. Done on MKW PC

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B A 1800/35			ND = 2.0 + 0.2	PCS/RC	1800/63°	BS	6560	IA	Note counts in	Halted early "B" with ND 2.0 + 0.3 = 1200	
			no ND for comparisons of course					IA			
10-500/ 190/		4.28	F8V	(mostly in medium cloud)				IA	std vel	Halted early @ 1040	
500-200/ 190/								IA	std vel	Halted @ 200 secs semi thick cloud	
600-1900/ (500 → 3000)								IA	std vel	uniform cloud Halted at 174 secs variable cloud	
190/20								IA			
1850/38			ND = 2.0 + 0.2					IA			
200/20								IA			
600-1200/ 200/20		5.50	K1M					IA	std vel		
200-1500/35								IA	std vel	Uniform cloud	
Sure								IA	"	" "	

Spectr. Temp. Dome Temp./Hum. $+55^{\circ}\text{C}$ $74\% \text{H}$ Transparency Conditions *PART or mostly cloudy* 220

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B - A											
1400								IA	std vel		
190/20								IA			
(1500-500)								IA	std vel	var cloud	
(1000-2500)								IA	"	semi clear	
200/20								IA			
(600-1500)								IA	std vel	var cloud	
2000/40								IA	"	clearing	
180 15								IA			
All backed up on Floppy. Originals in "Sheet" on MX III											

Spectr. Temp. Dome Temp./Hum. $-18^{\circ}\text{C}/4=51.6\%$ Transparency Conditions *Photometric now* 224

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
<i>B/A</i>		<i>7.00</i>									
<i>500-800</i>		<i>7.00</i>	<i>dG7</i>	<i>PCS hel Coll</i>	<i>1800/63°</i>	<i>BS</i>	<i>6650A</i>	<i>II</i>	<i>std vel</i>		
<i>400-750</i>								<i>IA</i>			
<i>180 20</i>											
<i>100-250)</i>		<i>8.9-9.3</i>							<i>Obs pyg</i>		
<i>160 20</i>											
<i>130 250</i>											
<i>70 17</i>											
<i>200 10</i>											
<i>160 12</i>											
<i>1500-2800</i>		<i>5.50</i>	<i>K1III</i>						<i>std vel</i>	<i>ND 0.1 in beam</i>	
<i>1400-2800</i>									<i>std vel</i>	<i>ND 0.1 in</i>	
<i>1500-2700</i>									<i>"</i>	<i>ND 0.1 in still</i>	
<i>1400-2800</i>									<i>"</i>	<i>ND 0.1 in</i>	
<i>"</i>										<i>ND 0.1 in stellar beam still</i>	

225 #3

Emulsion Batches:

Date 1990 Feb 10/11... Observers T. H.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
51	Comp							Fe-Ar clear	200
52	HD 26162	04 033	+19 21	23 11.0	23 16.0	04 14 W	+19 37		300
53	"	"	"	23 20.0		W			
54	Comp							FeAr	200
	HD 66141	07 ^h 57.1 ^m	+ 2° 36'	23 46.0	23: 51				300
	HD 66141			23: 52	23: 57				"
	HD 66141			23: 58	00 03				"
	HD 66141			00 05.3	00 10.3	01 14 W			"
	Comp								200
26607N2	HD 103095	11 47.2	+38 26	00 24.2	00 29.2	E			300
	"	"	"	00 31.5	00 36.5	02 10 E			300
	"	"	"	00 39.3	00 44.5	E	+37 49		300
	"	"	"	00 46.0	00 51.0	E			300
	Comp							FeAr CLEAR	200
	HD 90861	10 24.3	+29 05	01 07.1	01 07.1	00 15 E	+28 39		300

Spectr. Temp. Dome Temp./Hum. $-3.0^{\circ}\text{C} / 60\% \text{H}$ Transparency Conditions *Mostly clear* 226

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
<i>B/A</i>											
180 20				<i>PCS Red Cell</i>	1800/65°	BS	6650A	TH			
2000-3000		\checkmark 5.50	K1 III						std vel	ND removed from beam	
2000-3000		"	"						"		
190 20											
1700 30		\checkmark 4.39	K2 III							ND = 0.6 in beam	
1700 30											
1600 35											
1000 30		\checkmark 6.45	G8Vp						std vel	<i>No ND in beam</i> Vel = -99 km/sec	
"										cuts to 1500	
"											
"											
1100 25											
1000 20		\checkmark 7.2	K2 III						std vel	Bright in fld there is a faint star to SW	

227

#4

Emulsion Batches:

Date 1990 Feb 10/11/90 Observers MKI-T₄

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	HD90861	10 24.3	+29 05	01 11.5	01 16.5				300
	"	"	"	01 17.4	01 22.4				300
2868JN2	"	"	"	01 24.6	01 31.6	00 08W	00 08W		300
69	Comp								200
70	SKY near HD90861			01 38.5	01 43.5	00 19W	+28 37		300
71	Comp							FeAr Clear	200
72	HD107328	12 15.3	+03 53	01 58.5	02 03.5		E		300
73	"	"	"	02 06.8	02 11.8				300
74	"	"	"	02:12.6	02 17.6				300
75	"	"	"	02 20.1	02 25.1	00 46E			300
76	Comp								200
77	HD123782	14 04.6	+49 56	02 38	02 43		E		300
78	"	"	"	02 45.5	02 50.5		E		300
79	"	"	"	02 51.3	02 56.3				300
80	"	"	"	02 56.8	03 01.8	02 00E			300

229

#5

Emulsion Batches:

Date 1990 Feb 10/11..... Observers M.A.I. - T.G.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
81	Comp							FeAr Clear	200
82	HD144579	16 01.5	+39 24	03 13.2	03 18.2	E			300
83	"	"	"	03 20.4	03 30.4				600
84	"	"	"	03 31.0	03 36.0				300
85	"	"	"	03 37.7	03 42.7	03 15 E			300
86	Comp								200
28 87.TN2	HD 145001	16 03.6	+17 19	03 53	03 58	E			300
88	"	"	"	03 59.2	04 04.2				300
89	"	"	"	04 07.2	04 12.2				300
90	"	"	"	04 13.8	04 18.8	02 42 E			300
91	Comp							FeAr Clear	200
92	HD103095	11 47.2	+38 26	04 34.2	04 39.2	W			300
93	"	"	"	04 40.0	04 45.0				300
94	"	"	"	04 46.0	04 51.0				300
95	"	"	"	04 51.6	04 56.6				300

Spectr. Temp. Dome Temp./Hum. $-47^{\circ}\text{C} / 68\% \text{H}$ Transparency Conditions *some cloud*

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
<i>B/A</i>							<i>6650Å</i>	<i>7A</i>	<i>st</i>	<i>NO-06</i>	
<i>500-1100</i>		<i>6.66</i>	<i>G8</i>						<i>st/vel</i>	<i>no ND</i>	
<i>200-1000</i>										<i>some cloud</i>	
<i>900/18</i>											
<i>h</i>											
<i>1000 25</i>		<i>5.00</i>	<i>G8III</i>						<i>st/vel</i>	<i>NP=0.6 in</i>	<i>Br+ one of pair</i>
<i>900 35</i>											
<i>1000 30</i>											
<i>800 20</i>											
<i>1300 30</i>		<i>6.45</i>	<i>G8Vp</i>						<i>st/vel</i>		
<i>900 20</i>											
<i>800 20</i>											
<i>900 20</i>										<i>Cloud at end</i>	

233
py #1

Sun - Mon

Emulsion Batches:

Date 1.990 Feb. 11. 112... Observers T.n. M.K. checking by phone

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
98	Flat at start			17 45.8	18 25.6			TUNG A=1/8	secs 230
99	Comp			18 29				FeAr CLEAR	200
2900.TN2	HD 8779	01 21.4	-00 55	18 33.5	18 38.5	02 22W	-00 25		300
1	"	"	"	18 42.3	18 47.3				300
2	"	"	"	18 49.5	18 54.5				300
3	"	"	"	18 55.8	19 00.9				300
4	Comp								200
5	HD 26162	04 03.3	+19 21	19 12.9	19 17.9	00 18W			300
6	"	"	"	19 19.8	19 24.8	00 26W			300
7	"	"	"	19 25.5	19 30.5	00 31W			300
8	"	"	"	19 31.7	19 36.7				300
9	Comp							Fe-Ar CLEAR	200
10	BM Cass	00 48.6	+63 33	20 03	20 15.6	4 32W	Reversed +64 02	762sec	1200
2911.TN2	Comp							FeAr CLEAR	200
2912	HD 66141	07 57.1	+2 36	20 39.0	20 44.0	2 09 E	+2 24		300

Spectr. Temp. Dome Temp./Hum. $-1.5^{\circ}\text{C} / \text{H } 63\%$ Transparency Conditions *part. cloudy* 234

Focus

Fans on & Dome open by 18 hrs

Spectr. Temp. Dome Temp./Hum.

SAME setup as previous night

Exp.	Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emission	P.H.	Program	Remarks	Quality
1650	50	ND=	2.0	0.2	PCS Red Coll	1800/63°	BS	6650Å	IA			
180	18											
2200	40		6.41	gk0						std vel	no ND in beam	
1400	20									"	thin clouds & seeing change	
1500	30									"	CH'A cutout during exp	
2200	45										cuts to 3300 in clear sky	
170	15											
Var			5.50	K1111						std vel	(1000-4000) cuts in cloud	
2200	40											
2500	40											
2400	40										some high cuts > 3500	
160	20											
250	10		8.8 -9.3							Obs pgrm	halts, cuts to 350/sec then cloud Pt	
150	15											
2500	50		4.39	K2111						std vel	NO 0.6 in beam + thin cloud	

235

#2

Emulsion Batches:

Date 1990. Feb. 11/12 Observers T.K.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
SP002913.TN2	HD 66141	07 57.1	+2 36	20 48.9	20 53.9	1 58 E	+2 24		300
	"	"	"	20 56.2	21 01.2				300
	"	"	"	21 02.1	21 05.1				300
	Comp							Fe Ar clear	200
	Comp			21 22				"	200
	HD 26162	04 03.3	+19 21	21 29	21 34.0	02 36 W	+19 28		300
2919.TN2	"	"	"	21 34.9	21 39.9				300
20	"	"	"	21 42.2	21 47.2				300
21	"	"	"	21 49.0	21 54.0				300
2922.TN2	Comp								200
23	FLAT			22 09	00 09			Tung A=1/8	7200

Spectr. Temp. Dome Temp./Hum. -215°C 64% Transparency Conditions *cloudy* 236

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulston	P.H.	Program	Remarks	Quality
B A 1500 40		✓ 439	K2III	PCS Red Coll	1800/63°	BS	6650A	JA	std vel	ND 0.3 in + cloud	
1500 35										ND removed cloudier	
* 2000 40										* in and out some cuts to 40000s	
180 20											
180 20											
2000 40									std vel	no ND in beam - thin cloud	
2000											
1800											
2000 50											
170 20											
1600 30		1VD	2.0	+0.2							
										Backed up on 3 1/2" to end.	
										+ All backed up NFS to Centaur DATA\PCS1990	

Spectr. Temp. Dome Temp./Hum. $-5^{\circ}/62.7\%$ Transparency Conditions *Clear*

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
35/35				Speckle	831/ 44°	150 μ m	4100 Å				
200-500		0.08	66III							8 Mbyte	
600-900		1.46	A0								
10000/15000											
<p>Note blue region is IR contaminated (or IR dominated) wrong order separation filter used. Should have been CuSO_4</p>											

Spectr. Temp. Dome Temp./Hum. Transparency Conditions

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
300	4"			1800 Speckle	1800/52°	300μ	5200Å			apertures ".055 at 35° Dome would not rotate - closed up	
				Speckle	1800/52°	300μ	5200Å				
				"	"	"	"				
				"	"	"	"				

251

Tues-wed

Emulsion Batches:

Date 1990 Feb 27/28 Observers Bagnuolo (CHARA), KK/TN, SAS

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
COMPO08	Comparison			17:41	17:47			Special FELVE	
CAP09 ^{TAG} _{SUM}	α Aur (Capella)	1990.5 5 ^h 16	+45 59	18:06	18:08	00 57E			
CAP10 ^{TAG} _{SUM}	α Aur (Capella)	"	"	18:13	18:30	00 34E			
CAP11 ^{TAG} _{SUM}	α Aur (Capella)	"	"	18:31	18:56.5	00 08E	+46 03		
CAP12 ^{TAG} _{SUM}	α Aur	"	"	18:58	19:08	00 03W			
Cap13 ^{TAG} _{SUM}	α Aur	"	"	19:09	19:30	00 25W			
Cap14 ^{TAG} _{SUM}	α Aur	"	"	19:35	19:55	00 50W			
Cap15 ^{TAG} _{SUM}	α Aur	"	"	20:03	20:27	01 22W			
	α Aur Seeing test	"	"	20:30		Note CCD	stopped down	2 stops	
POLLUX01 ^{TAG}	POLLUX (B Gem)	1990.5 7 ^h 44.8	+28° 03	20:41	20:52	00 32E			
POLLUX02 ^{TAG}	Pollux	"	"	20:54	21:14	00 10E			
POLLUX03 ^{TAG}	Pollux	"	"	21:15	21:28	00 04W			
	" Seeing test	"	"	21:29		CCD	wide open	down 2 stops	
	" Seeing test	"	"	21:33		CCD	WIDE OPEN		
FLAT008	Flat field					0 0	platform	Tungsten A 1/8	3600
COMPO09	Comparison			23:50			normal FELVE	clear	9000s

Spectr. Temp. Dome Temp./Hum. ... -5°/62%

Transparency Conditions Clear ... cloudy soon ... 254

Focus

medium NW wind

Spectr. Temp. Dome Temp./Hum.

Cloudy @ 20:30

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A/B											
1900/2400				Specule	1800/52.7	300µ	5/20Å				fiber still at 25°, .055
40/40							(5120Å actual/plat center)				
900/1300		0.08	66 III							Dome facing west 10.8 megabytes 4.6 meg. part cloudy	
		"	"								
		"	"							cuts 100 → 1900 in cloud/out of cloud	
		"	"							4.2 meg 8.5 meg.	
				4 frames	31x31	Real time	CCD noisy when in "H" mode but ok in software mode			FM000237.SAS	
							CCD remained OK after switch back to Hardware mode.			L-Nouveau tour ~ 30 people	
35/45											
1100/1450										Diffuser OUT	
										I Horned Aperture: Tried signal at A=1/4 [A=100, B=130] ND=0.2 TUNG CHANNEL	
										A=clear, A=100, B=1450 again.	
										Also checked that ND=0.2 and it is. FeNe (clear) no ND still @ A/B 35/45	
										Also (TUNG, no ND, A=1/8, A/B 170/210)	

Spectr. Temp. Dome Temp./Hum. $0^{\circ}\text{C}/73\%$ Transparency Conditions *PART cloudy* 256

Focus *very gusty from SW*

Spectr. Temp. Dome Temp./Hum. Note *All Rates \approx equal in A&B now.*

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3600 100/1050				Spacde	1800/47°	300 μ	4250Å			aperture 20° 0.055 CAPELIN + SKY	
3600 30/30				"	"	"	"		Skilar signal at 4250 \approx 200 prob too low		
37min 60/60					1800/52.7°	300 μ	5110Å			* actual plot center	
A and B 200-500	super poor			(2.27 meg tag file)					[19.00-19.15 Restart @ 1918	signal in clouds high wind < 100 average	(574K)
600-1000				variable clouds seeing (signal 100-600 in A and B)							
L10 A&B										DNAI-CI-TAG (170K)	
L10 H&B				Room light on Full this time							
				Room light off this time,							

257 #1

Fri - SAT

Date MAR 2/3 1990... Observers Jn./mki.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2925 MKI	FLAT			16 30	18 30	ND=2.0 0 0	platform	TUNG A=1/8	7200sec
	Comp (test)					"	"	Fe-AR CLEAR	600
26	Comp at BM Cass pos'n					Reversal		"	400
27	BM CASS	00 48.6	+63 33	21 50	22 10	07 40 W	+64 02		1200
28	"	"	"	22 13.3	22 33.3	08 03 W			1200
29	Comp					"			400
30	BM Cass	00 48.6	+63 33	22 45.0	23:05	08 35 W			1200
31	"	"	"	23 07	23 27	08 57 W			1200
32	Comp							Fe-AR CLEAR	400
33	HD 103095	11 47.2	+38 26	23 46	00 06	01 07 E	+37 49		1200
34	Comp at HD 103095 pos'n							Fe-AR CLEAR	400
2935 MKI	HD 107328	12 15.3	+03 53	00 27.3	00 37.3	01 18 E	+3 25		600
	Comp							Fe-AR CLEAR	400
2936 MKI	HD 123782	14 04.6	+49 56	00 51	01 06	02 36 E	+49 33		900
37	Comp							Fe-AR CLEAR	400

Spectr. Temp. Dome Temp./Hum. 6°C 56% Transparency Conditions ... clearing by 21:30²⁵⁸

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A/B							D				
40/1400	Diffuser IN			PCS Red Coll	1800/62°	BS	*6496A	IA	written	* Actual plot center	4000man
14/90	Diffuser out							IA	not written		
10/30	Diff out							IA	written	Signal way down	
10/150	✓ 29							IA	written		
10/60								IA	written		
210/30	diffuser out							IA			
410/50								IA			
40/60								IA			
10/30	diff out							IA			
10/400	OK	645	680p					IA	std vel		
410/50	diff out							IA			
30/1700	soso	496	K1 III					IA	std vel	cuts to 2500/sec ND 0.3 in beam	
410/80								IA	Forgot to write		
30/1600	poor	525	M2 III ab					IA	std vel	cuts to 2200 ND 0.3 in still	
410/65								IA			

Spectr. Temp. Dome Temp./Hum. $-2.5^{\circ}/57\%$ Transparency Conditions *Fine* 260

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
20/175	50	6.27	G1V	PCS Red Coll	1800/62°	BS	6500A	IA	std vel	* ND removed cuts with ND 0.3 = 300-400	
10/70								IA			
10/700	OK							IA	std vel	cuts to 1400	
10/75		5.76						IA			
20/1400		5.76	F6V/G0V					IA	mki-pgm	close dbl (brighter one)	
20/1600								IA	n		
20/80		Var	G5					IA	mki-pgm	(Brighter one) Close dbl N.S. alignment	
40/50								IA		Fe-Ar cuts down again we are at 60° Dec again too.	
40/70								IA	mki-pgm		
40/140		8.4	K2V/K6V					IA	mki-pgm	Fld drawn	
40/55								IA			
40/130		8.4						IA	mki-pgm	It too has a faint companion	

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SAT - SUN Pg #2

Emulsion Batches:

Date 1990 MAR 3/4... Observers ... J.n. ... (MKI checking in)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.	
55, MKI	Comp	at BM Cass Locatn		19 09		Reveal	NO ND	FeAr Clear	400	
56	BM Cass	00 48.6	+63 33	19 23.7	19 53.7	05 28 W	+64 01		1800	
57	Comp			19 56		"	"		400	
2958	BM Cass #2	00 48.6	+63 33	20 07.3	20 37.3	06 11 W			1800	
2959, MKI	Comp	at HD 65583 pos'n					ND	FeAr Clear	400	
	HD 65583	07 54.3	+29 31	20 55.6	21 25.6	00 05 E	+29 16		1800	
	Comp							FeAr Clear	400	
	HD 66141	07 57.1	+2 36	21 45.8	22 05.9	00 33 W	+2 24		1200	
	Comp	while moving to next star (Signal Remained the same)							FeAr Clear	300
	HD 92588	10 36.3	-1 13	22 17	22 37	01 25 E	-01 40		1200	
	Comp							FeAr Clear	300	
	HD 92588	10 36.3	-1 13	22 46.5	23 06.5	00 55 E	-01 40		1200	
	Comp		1					FeAr Clear	300	
SP002968, MKI	(HD 103095)	11 47.2	+38 26	23 17.0	23 47	01 37 E	+37 49		1800	
2969	Comp					"	"	FeAr Clear	300	

Spectr. Temp. Dome Temp./Hum. $-8^{\circ}\text{C} \cdot 60\%$ Transparency Conditions ... *photometric* 264

Focus

Dome open & Fans on by 18:15
Also Newtonian flat needed rotation at start.Spectr. Temp. Dome Temp./Hum. $-11.2^{\circ}\text{C} \cdot 65\%$

I had to upload sheet before 1st comp.

Exp.	Exp. Mjr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
400	4/95	Diffuser out	*		PCS RedCell	831/39.8	BS	6480A actual	IA		* Cnts at Zenith, diff in = 140 in 'B'	
800	4/48	poor	2.9						IA	obs pgm		
400	10/70								IA			
1800	10/50	poor							IA	obs pgm		
400	10/100	Diffuser still out,							IA			
1800	15/300	poor	7.00	G67					IA	std vel	A TRAIN went by at 21:21, vibrating telescope Some cloud at end diffuser out still	
400	12/160								IA		Fe-Hr signal again	
1200	30/1000 2000	poor	4.39	K2 III	ND 0.3	put in beam			IA	std vel	Dome T ₂ -11°C Clear again / seeing improving	
300	12/150								IA			
1200	15/500	so so to poor	6.26	sg K1	ND Removed	(2) 50cnts within it			IA	std vel	1000cnts in Rel good seeing	
300	10/140								IA			
1800	15/800	so so poor	6.26	sg K1					IA	std vel		
300	10/150								IA			
1800	13/600		6.45	G8Vp					IA	std vel	cloud by end	
300	10/120								IA		note - Diffuser still OUT	

Spectr. Temp. Dome Temp./Hum. Transparency Conditions

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A B 40/2450	Diffuser		IN	PCS Red Coll	831/398	BS	6480A ⁰	TA	ND=2.0	TA written	
25/1500	"		"	"	"	"	"	TA	ND=2.040.2	(written for temp use)	
40/2400	Diffuser		IN	"	"	"	"	TA	ND=2.0		
<p>Note FLAT with $\frac{1}{2}$ ND 200 + 0.3 (signal) = 1100 in Behrman // ND 20 + 0.1, B = 1800 cts/sec</p>											

267

SUN - MON

Date 1990 MAR 4/5... Observers Udalski / Ta.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2973	Flat			18 44	19 44	0 0	platform	Tung A=1/8	3600
74	Comp at HD 66141 pos'n							Fe Ar clear	300
75	HD 66141	07 57.1	+02 36	20 55	21 05	00 24 E	+02 22		600
76 76	Comp prob written 2x by mistake c ^o 76 deleted							Fe Ar clear	300
78 78	XY UMA	09 02.7	+54 54	21 48	22 18	00 19 E	+54 35		1800
79 79	Comp					"	"	Fe Ar clear	300
80	XY UMA	09 02.7	+54 54	22 32.3	23 02.3	00 25 W	"		1800
81.40	Comp							Fe Ar clear	300
82	XY UMA	09 02.7	+54 54	23 19.4	23 59.4	01 14 W			1800
83	Comp at xy uma pos'n								300
84	HD 92588	10 36.3	-1 13	00 08	00 28	00 22 W	-1 39		600
85.40	Comp at HD 92588 pos'n					"	"	Fe Ar clear	300
86	Flat			01 06		0 0	platform	Tung A 1/8	3600

Spectr. Temp. Dome Temp./Hum. ... $-8.5^{\circ}C$ 60%Transparency Conditions ... *semi cloudy* 268

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A/B 1800	ND	2.0 + 0.1		PCS Red Coll	831/39.8	BS	6480	I/H		DIFFUSER IN	
10/80								I/A		DIFFUSER IN	
70/1500		4.39	K2III					I/A	std vel	ND 0.2 in beam	
10/130								I/A		DIFFUSER OUT	
1800 410/45		9.5	G2V					I/H	UD pgm	Hazy	
300 8/100								I/A			
1800 8/55								I/H	UD pgm	not as hazy as before	
300 10/100								I/A			
1800 10/50								I/A	UD pgm	cloudy by end	
300 12/90								I/H			
600 15/500		6.26	sg K1					I/A	std vel	cuts to 1400 briefly thin cloud	
300 15/140								I/A			
300 30/1900	ND	2.0 + 0.1						I/A			
										All backed up to before final Flat, (3.5" floppy)	

269 pg #1

MON-TUES

UD = Andy Uda/ski

Emulsion Batches:

Date ... 1990 MAR 5/6 ... Observers ... U.D., Kgc., Tm ...

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
87	FeAR	at pos'n of HD66141					+02 22	FeAr A=1/2	200 152
88	HD 66141	07 57.1	+02 36	18 47.8	18 52.8	2 32 E	+02 22		300
89	Comp	while moving to next star							300
90	XY UMA	09 02.7	+04 54	19 04.8	19 34.8	E	+54 34		1800
91	Comp	"	"			"	"		200
92	XY UMA	"	"	19 41.5	20 11.5		"		1800
93	Comp						"		200
94	XY UMA	"	"	20:17.6	20 ^{23.6} 23.6		"		BOB
95	XY UMa	"	"	20 44.4	21 14.4				1800
96	Comp								300
97	XY UMa	"	"	21 20.0	21 50.0				1800
98	Comp								200
99	XY UMa			21 55.2	22 05.2				1800
800300.40	Comp								200
01	XY UMa			22 31.0	22 01.0	0029 W			1800

Spectr. Temp. Dome Temp./Hum. $-72^{\circ}\text{C}/49\%$ Transparency Conditions *Photometer* 270

Focus Dome Temp./Hum.
 Spectr. Temp. Dome Temp./Hum.
Dome opened & Fans on by 18:15
** seeing estimated Rel To 2nd Fiber input hole.*

Exp. Mtr. A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion 6480	P.H.	Program	Remarks	Quality
10/160				PCS Red Coll	831/39.8	BS	6480A	IA	Diffuser IN for All		
40/2000		\checkmark 4.39	K2 III					IA	std vel	NO $\frac{1}{2}$ in beam	
								IA			
14/400	\checkmark 3"	\checkmark 9.5	G2V					IA	UD pgn	Ecl Bin \approx 0.5 day period	
12/130								IA			
15/350	3"	9.5	G2V	"	"	"	"	IA		Train @ \approx 20 10	
13/130								IA			
12/300	3"	9.5	G2V	"	"	"	"	IA	FIFOs failed (all Vitup) written anyway		
10/350	4"	"	"					IA	Had to upload PCS pgn 1st.		
10/130								IA			
10/380								IA			
10/120								IA			
10/400	\checkmark 3"							IA		most light in fiber hole	
10/120								IA			
10/400	3"							IA			

Spectr. Temp. Dome Temp./Hum. -10°C 46% H Transparency Conditions ... Fine 272

Focus

Spectr. Temp. Dome Temp./Hum.

Dome Facing N. Light NW wing

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	A/B											
200	10/130				PCS Red Coll	831/398	BS	6480A	1A			
1800	8/400								IA	40 pgm		
200	10/125								IA			
1800	10/350								IA			
200	10/120								IA			
1800	10/300	4"							IA		plotted	
200	10/130	3.5"							IA		& seeing not as good as before	
1800	10/250								IA			
200	10/130								IA			
1800	10/200								IA			
200	10/130								IA			
1800	10/150	poor							IA			
200	10/120								IA			
1800	10/100								IA			
200	10/120								IA		while unreversing	

273 #3

Udalski

Emulsion Batches:

Date ..1990..MAR..5/6.. Observers ..U.D./T.J.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
17	XY UMA	08 07.2	54 54	3:25.1	03 55.1	05 23 W			1800
18	Comp							FeAr A=1/2	200
19	XY Uma			04 00.5	04 30.5	05 59 W	+54 31		1800
20	Comp								200
21	XY UMA	"	"	4:37.4	5:07.4	W			1800
22	Comp								300
23	WD 126053	14 18.1	+01 43	05 19.6	05 24.6	00 43 W			300
24	Comp								200
25	HD 144579	16 01.5	+39 24	05 34.5	05 39.5	00 12 W			300
26	Comp								200
27	HD 161817	17 44.7	+25 46	05 47.0	05 53.0	01 15 E			360
28	Comp								200
29	HD 154417	17 00.2	+0 51	05 59.2	06 09.2	00 19 E			600
30	Comp								200
31	F/9+			06 30		00	platform	TUNG A=1/16	7200

Spectr. Temp. Dome Temp./Hum. $-12.0^{\circ}\text{C} / 58\% \text{H}$ Transparency Conditions *still Fine* 274

Focus

Spectr. Temp. Dome Temp./Hum. $-12.6^{\circ}\text{C} / 56\%$

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1800 10/240	4'	9.5	G2V	PCS Ard Coll	831/398	BS	6480A	IA	UD pygm	Unreversed now	
200 10/100								IA			
1800 10/140	poor							IA	UD pygm		
200 10/95								IA			
1800 10/125								IA			
300 8/100								IA			
300 25/1200		6.27	G1V					IA	std vel	ND=0.3	
200 10/140								IA			
300 30/1700	OK	6.66	d68					IA	std vel	ND=0.3 still	
200 3/1900								IA			
360 30/1400		6.99						IA	UD pygm	ND removed	
200 10/160								IA			
600 35/2000		6.0	G0V					IA	std vel	ND 0.3 inserted	
250 10/150								IA			
7200 30/1850				ND 2.0+0.1, Diff		in as usual		IA			

215

Tues-Wed

Emulsion Batches:

Date 1990 MAR 6/7... Observers Th... Fe checking on me

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
5000 3032.Tn	Comp			18 33		0 0		FeAr clear	300
33	HD 65583	07 54.3	+29 31	19 03.3	19 13.3	02 06 E	+29 17		600
34									
34	Comp at XY Uma posn							FeAr clear	300
35 F1100	XY UMa	09 07.2	+54 54	19 40.3	20 00.3	2 30 E	+54 35		1200
236.Tn	" seeing test		Done NE, no wind						
36	Comp at XY UMa posn.							FeAr clear	200
37	XY UMa	09 07.2	+54 54	20 13.0	20 33.0	01 27 E			1200
38	Comp							FeAr clear	200
39.Tn	XY UMa	09 07.2	+54 54	20 40.0	21 00.0	01 00 E			1200
40	Comp at XY UMa posn					Reversed		FeAr clear	200
41.	B.M. Cass	00 48.6	+63 33	21 38.1	21 58.1	W			1200
42	Comp							FeAr clear	200
43	B.M. Cass	00 48.6	+63 33	22 03.3	22 23.3	08 09 W	+64 00		1200
44	Comp who moving tel							FeAr clear	200
45	FLAT at end			01 24		0 0	platform	TUNG AV16	3600

Spectr. Temp. Dome Temp./Hum. $-6.3^{\circ}\text{C} / 48.6\%$ Transparency Conditions *Photometric*

Focus Dome Temp./Hum. $-9.6^{\circ}\text{C} / 55\%$ Dome open & Fans on by 18:15
Spectr. Temp. Logtemp running

Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
300	10/135	ND 0.1			PCS Red Coll	831/39.8	BS	6480A	IA			
600	40/2200	3"	7.00	dG7	($< 10^{\circ}$ from $\frac{1}{2}$ moon)				IA	std/ve/	ND0.2 * cuts to 3400 for a stretch	
					Sky cuts at end 1915 EST near 4065583 = A/B 5/15							
300	10/170	ND out							IA			
1200	8/480	3"	9.5	G2V					IA	Ud pgm	cuts to 700/sec in B almost full in 2.4" hole seeing better than previous night	
	3B:23	"	"	"	"N" mode Int x 4 ($\frac{1}{15}$ sec)				2	on Fiber hole, 4 off hole.		
200	10/260	200 secs, NO ND, DIFFUSER IV							IA			
1200	10/600	3"	9.5	G2V					IA	Ud pgm	Continuing to Fill Φ gap From PCS failure last night	
200	10/270								IA			
1200	13/650	2.5"	9.5	G2V					IA	Ud pgm	All light in hole 750 cuts in B	
200	<10/260								IA			
1200	15/600	3"	9.0						IA	Obs pgm	Cuts to 800 in Rel/gal seeing	
200	10/210								IA	Dome T = -9.5°C		
1200	10/400								IA	Obs pgm	cuts to 700 in 3" seeing	
200	15/210								IA	Backup to incl this exp.		
600	30/1800								IA	ND 0.1-10.1, Drift IN, A = $\frac{1}{16}$		

Spectr. Temp. Dome Temp./Hum. -6°C 59% Transparency Conditions ... *Fine* 278

Focus

Spectr. Temp. Dome Temp./Hum. * *Focus attempt messed up gratings tilt. We lost our λ pos'n s had to get back to 39.8 of 831 grating*

Exp.	Exp. Mir.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
200	10/260	Diffuser IN			PCS Red Call	831/39.8	BS	6480*	IA			
300	40/2900	Fine	7.00	dG7					IA	std vel	counts to 3200 briefly ND 0.2 in beam	
300	1								IA			
1900	10/500	OK	9.5	G2V					IA	Ud Ecl Bin	NO Removal of course	
200	10/230								IA			
1800	10/500								IA	Ecl Bin		
200									IA			
1820	10/550								IA	Ecl Bin		
200	15/230								IA			
1800	10/550								IA			
200	10/230								IA			
1800	10/550								IA			
200	14/230								IA			
1900	15/420								IA	Ch B Fito failed	at 900 sec into exp tilt s RI done	
200	10/210								IA			

283

Tues - Fri

Emulsion Batches:

Date 1990 MAR 15/16..... Observers MKi-SAS-Tn.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
3086 SAS	FLAT			20 08.5	22 08.5	00 00 Reversed	platform		
88	Comp					21 30 W	+64 00	FeAr clear	2065
89	BmCASS			00 39.6	00 51.8	11 16 W	+64 00		730
90	Comp								200
3087 SAS	DARK (was written before 1st Comparison)								
SAS	MAR 16/90 MAP Frames								
91 SAS	Fe-Ar MAP						No ND	FeAr clear	300
92	Fe-Ne						ND 2.0	FeNe A=1/4	300
93	Fe-Ne						ND 2.0	FeNe A=1/2	300
94	Fe-AR						No ND	FeAr A=1/8	300
95	Fe-AR						No ND	"	300
96	Fe-Ne				11 35 written		ND=2.0	FeNe A=1/2	300
97	Fe-Ne						ND 2.0	FeNe clear	300
98	Fe-AR						ND 2.0	FeAr clear	300
30 99	Fe-AR						ND 2.0	"	300

Spectr. Temp. Dome Temp./Hum. $+12^{\circ}\text{C}$ 80% Transparency Conditions *Clear - hazy - cloudy* 284

Focus

Spectr. Temp. Dome Temp./Hum.

Exposure	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	A B				PCS Red Cell	831/39.8	BS	6480A	IA			
200s									IA			
730	<60	poor	vs 9.5						IA	Obs pgm	cloud, haze, air	
200	<10/150								IA			
									IA?			
	A B		Control prompt wavelength		PCS Red Cell	831	BS	Est central wavelength				
300			6612			831/39.8		6480	IA			
300			11			"		"	IB			
300	13/300		6981.68			831/40.8		6800	IA			
300	13/140		"			"		"	IB	Note excessively str lines at the end		
300	10/260		7349A			831/41.8		7200	IA	WR (Header wrong)	same as previous header?	
300	10/250		"			"		"	IB			
300			771A			831/42.8		7550	IA	WR		
300	15/150		"			"		"	IB	WR		
300	15/160		8077A			831/43.8		7900	IA	WR		

Spectr. Temp. Dome Temp./Hum. Transparency Conditions

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr. A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion <i>estimate</i>	P.H.	Program	Remarks	Quality
300 30/280	NO M.D.	8077		PCS Red Cell	831/438	BS	7900	IB	^{WR: 1/16} Diffuser IN	For all MHP frames	
300 15/140	NO ND	8437					8300	IA	written		
300 10/150	NO ND	"					"	IB	wr		
300	NO ND	8795					8650	IA	wr		
300 15/130	NO ND	8795					"	IB			
A B											
350 35 2000	ND 2.0, A 1/16			Red Cell	831/398	BS	6460 A	IA	written any way.	Can be used with next night.	

Spectr. Temp. Dome Temp./Hum. $+20^{\circ}\text{C}/53\%$ Transparency Conditions *Part cloudy - overcast* 288

Focus

Spectr. Temp. Dome Temp./Hum. $+1^{\circ}\text{C}/54\%$

FANS on & Dome open by 1910

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A B				PCS Red Coll	831/39.8	BS	6480A	IA		Halted due to clearing	
10 / 150	1.0	N.D.		Diffuser IN				IA			
7 / 180	4-5"	29.5						IA	Obs pgn	cuts to 350/sec	
10 / 140								IA			
8 / 200	3-4"							IA	Obs pgn	+63:57:54 Puddle Reading	
								IA			
40 / 410								IA		All lights out [MAY as well, PCS shutter dead/work wrong]	

289

#1

Date 1990. Mar. ^{Tue/Wed} 20/21..... Observers Tn/SAS.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
0	Prompted Flat at δ Per pos'n				19 51		+47 49		30sec
1	Comp							Th AR	10sec
2	HD 22928 δ Per	3 ^h 35.8	+47 28	20:01	20:41	W		Th AR	
3	Comp			20:42					10s
4	HD 22928 δ Per	"	"	20:43	21:25	05 19 W	47° 49		
5	Comp							Th AR	10sec
6-9	Flats at δ Per pos'n			25sec \rightarrow 1480,	24sec \rightarrow 1403				15 33
10	Comp at ϵ Uma pos'n							Th AR	10sec
11	ϵ Uma	13 43.5	+49 49	23 09.7	23 15.7	2 ^h 25 E	+49 25		
12	Comp							Th AR	10sec
13	ϵ Uma HD 120315	"	"	23 49	00 20.1	1 ^h 50 E			
14	Comp							Th AR	10sec
15	HD 120315	"	"	00 24	00 51				
16	Comp			00 52				Th AR	10s
17	Comp			00 58				Th AR	10s

Spectr. Temp. Dome Temp./Hum. $0^{\circ}\text{C}/67\%$.Transparency Conditions *Clear* 290

Focus

Lovely AURORA with Red in the west

Spectr. Temp. Dome Temp./Hum.

Green in NORTH TO Zenith.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion x Grad	P.H.	Program	Remarks	Quality
				Echelle/ Reticon	18645	150 μm 0241	$\lambda = 4481\text{\AA}$.4950	127	Fob prgm	Topped @ 19:45	1966
											1246
7700	bad	\checkmark 3.01	B5II								1369
960											1215
8860	Bad	"	"							T = +0.184	1538
990											1173
55,500	FOR	25sec								T = +0.185	
										Top up @ 2240	1224
15,500	poor	\checkmark 1.9	B3V							T = +0.197	3837
											1264
15,100		"	"							(No ppt evident)	3554
1,000											1205
15,000	better	"	"								3410
											1228
										Moved Tel. in Dec + back again, in order to move dome	1222

29
Pg 2

Tue/Wed

Date 1990 Mar 20/21 Observers Tn/SAS

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
18	HD 120315 ^{η Uma}	13 43.5	49° 49	01:01	01:25	00 ^h 45 E			
19	Comp			01:25.5				Th-Ar	10sec
20	HD 120315 ^{η Uma}	"	"	01:26.5	01 48.3	00 22 E			
21	Comp							Th-Ar	10s
22	HD 120315 ^{η Uma}	"	"	01:50	02 10	00 ^h 00			
23	Comp			02:11				Th-Ar	10s
24	HD 120315 ^{η Uma}	"	"	02:13	2:32				
25	Comp			02:34				Th-Ar	10s
26	HD 120315 ^{η Uma}	"	"	02:34.7	02:51.7				
27	Comp			02:52				Th-Ar	10s
28	HD 120315 ^{η Uma}	"	"	02:53.5	03 11.1	1^h25 W			
29	Comp							Th-Ar	10s
30	HD 120315 ^{η Uma}	"	"	03 13	03 33.8	1 ^h 25 W			
31	Comp							Th-Ar	10s
32	HD 120315 ^{η Uma}	"	"	03:36	03 52.6				

293
P3

Emulsion Batches:

Date 1990 Mar 20/21 Tue-Wed
Observers T.M./SAB

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp
33	Comp			03 54				Th-Ar	10S
34	HD 120315 η Uma	13 ^h 43.5	+49°49	03:54.5	04:16				
35	Comp			04:17				Th-Ar	10S
36	Comp η Uma	"	"	04:21				Th-Ar	10S
37	HD 120315 η Uma	"	"	04:22.6	4:45				
38	Comp			04:45.5				Th-Ar	10S
39	HD 120315 η Uma	"	"	04:46	5:09				
40	Comp			5:10				Th-Ar	10S
41	HD 120315 η Uma	"	"	05:11	05:36	03 28 W			
42	Comp			05:36.6				Th-Ar	10S
	Flats	4 @ 6 sec		2749, 2852, 2854, 2867					
		4 @ 80 sec		3429, 3449, 3453, 3465					
		4 @ 87 sec		3782, 3790, 3792, 3781					
	Files backed up to floppy:	Repacked + named		Mar2190.dat + H Mar2190.dat on					drive C

Spectr. Temp. Dome Temp./Hum. +5.2°C ... 45.70H Transparency Conditions H4.2g.?? increasing cloud..... 296

Focus

Spectr. Temp. Dome Temp./Hum. last Afternoon topup @ 15:37 T = +0.110

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H. ORDER	Program	Remarks	Quality
				Echelle Tilt	CROSS	50μ	5160Å	110		prompted Edolle = 17.38 prompted CROSS = .4355	1598
751				17.30	0.4377	781					1387
616	OK	V = 1.93	A0IV						KK pgn	ΔRA -06 as 18 / ΔDec 00 05 03 cloud	206
											1360
										Topup after Flats. 19:55, T = +0.130	
										Topup @ 22:40 T = +0.126 GCON, GLONG started	

297

FRI-SAT

Emulsion Batches:

Date MAR 23/24/90..... Observers MKI-Tn-Shen.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp
TAG PCS 00001.MKI	Flat			17 16	19 16	0 0	platform	TUNG A=1/4	7300
TAG PCS 00002.MKI	Comp						Resolout at Dec DRUM	FeAR A=1/2	200
TAG 00003.MKI PCS 00004.MKI	MWC 560	07 21 01	-07 32 12	?	22 50 ^{slap}	03 14 W	-7 42		
TAG 00005.MKI PCS	Comp			22 54 24	22 57 52 st			FeAR A=1/2	200
TAG PCS 00006.MKI	HD 52961	06 58.1	+10 55	23 00 10	23 40 00	04 25 W	+10 49		
TAG PCS 00007.MKI	Comp			23 41 52	23 45 17			FeAR A=1/2	200
TAG 00008.MKI PCS	HD 66986	09 57 04	+15 02	23 57 30	00 55 00	02 42 W	+14 38		
TAG 00009.MKI PCS	Comp			00 56 28				FeAR A=1/2	200
TAG PCS 00010.MKI	HD 146361	16 10.9	+37 07	02 14 30	02 14 30	E	+33 56		
TAG PCS 00011.MKI	Comp				02 20				200
TAG PCS 00012.MKI	HD 146361	16 10.9	+37 07	02 41 30	03 41 30	00 44 E	-8 16		
TAG PCS 00013.MKI	Comp.			03 43 13	03 46 40				
TAG PCS 00014.MKI	V1054 Oph	16 52 48	-08 14 42	03 50 10	04 27 10	00 38 E	-8 16		
TAG PCS 00015.MKI	Comp		* present	04 28 51	04 32			FeAR A=1/2	200
00016.MKI	SKY at	16 55 04	-08 18 36	04 33 38	05 03 22	00 03 E	-8 16		

Spectr. Temp. Dome Temp./Hum. -3.7°C 55% Transparency Conditions ... Clear,

298

Focus

Spectr. Temp. Dome Temp./Hum.

Xmin = 161 [To eliminate ring of Fe]
Xmax = 3940

Exp.	Mir.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
30	A B 1800	110	20+03		TIME TAG PCS Red Cell	150/286	BS	4300A			Fld Drawn in old Finder book	
50	430										(At 21:11, ~3secs noise burst when turning dome)	
5	40	3-4	v= 9.5		Note 00003 exp. short early trial End Time of 1st short exp					Encoder base 21:50 Δ-0 0 4 R4 Δ-0 3 33 DEC		
10	380											
10	120	4"	B ^e 7.92	A?						Fe pgm	Dome Turn burst 23 29 29	
8	280		V 7.93	FHB _A						Mki pgm	Fld drawn encoder R 15 -00 00 3A RA	
8	300										AT → 400 04 39 DEC 00 22	
30	2000	4"	V 5.76	F6V/GOV						Mki pgm	bitano of dbl (20 megabytes)	
35	2300		V 5.76	F6V/GOV							Big vibration Train @ 0315	
											encoder Δ RA -0 0 22 @ 0315 Δ Dec -0 0 06 Reset TIME had 22sec	
5	35	3"	V 9.76	me						mli pgm		
10	350											
510	410	* Star			centered at 16 54 47					-0815 on 74" encoders	thin haze	

299

#2

Emulsion Batches:

Date MAR 23/24/90... Observers M.K.I. - T.L.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
00017.MKI	FLAT			05 11	06 01 16	0 0	To platform	TUNG A=1/4	3700
PIS 00018.MKI	FLAT MAR 24/25/90 ↓			19 15	20 19 10	0 0	"	TUNG H 1/8 FeAR	200
00019.MKI	Comp				20 19 10		Rec DRUM		200
00020.MKI	MWC 560	07 25 23 ¹⁹⁰⁰ 07 21 01	-07 42 55 -07 32 12	20 23:20	20 45:00 20 23:20	01 12 W	-7 39		
00021.MKI	Comp			21 13 10		W			200
00022.MKI	Flat			22 24 10	23:27:00	0 0		TUNG H=1/8	
23	Comp			23 56 20	23 59 42		Reversed	FeAR A=1/2	200
24	HD 52961	06 58 1	+10 55	00 11 05	00 48 30	05 40 W	+10 47		
25	Comp			00 49 50	00 53 28		Reversed		
26	HD 869 86	09 57 04	+15 02	01 13 30	00 33 30	03 25 W	+14 37		
27	Comp								200
28	BM Cass	00 44 6	+63 33	01 58 22	02 50 30	10 11 E	+64 02		
29	Fe-A ₁ Comp.				02 55 28				200
30	V1054 op.	16 50 05 ¹⁹⁰⁰	-8 09 47	03:03:00	03 11	01 52 E	-8 16		
31	HD 14 5001	16 03 06	+17 19		17 09 00				

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions ...

clouding in

300

Focus

Spectr. Temp.

Dome Temp./Hum. ... -6.6°C 6.5%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
30 1500	ND	20+0.3		PCS Red Coll	150/286	BS	4300				
50 2000	ND	2.0		"	1800/50.8	BS	4820			[Dome T = -3°C H = 59%] HB good (Red center 116A)	
7 150	OK	~9.5								cloud start 204130 ..	
10 300											
50 2100	ND = 2.0										
10 250										PCS got zapped by Flat with no ND in place but A=1/8 for ~3 seconds here	
<10 200		7.92								A?	
10 210	OK	7.93								FHB A	
8 80	OK	9									1990.3 20054.08 764.02.25
10 40		9.76									165459.551832
		5.34									cloudy 03:11 std dev brt one of pair cloud

301

#2 FOR

Date MAR 24/25..... Observers Mki-Tu / Stan.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat for MAR 24/25			03 38 10	04 39 05	00		TUNG A 1/8	4K
TAG 000 PCS 32.TN	FLAT MAR 25-26		[Tu]	18 48 20	19 18 40	0 0	0° -8	TUNG A 1/8	30 min
33.TN	Comp		[Mki Chan]	19 23 00			Dec Drum	Fe AR H 1/2	200s
TAG PCS 0003A.TN	MWC 560	07 21 01	-07 32 12	19 30 40	22 38 33	3 09 W	-7 42	Fe AR A 1/2	200
35	Comp								
36	HD 52961	06 58 1	+10 55	22 46	23 15 00	4 07 W	+10 50	Fe AR A 1/2	
37	Comp								
38	HD 86986	09 57 04	+15 02	23 21 20	23 50 00	1 44 W	+14 39	Fe AR A 1/2	
39	Comp								
40	HD 109995	12 34 01	+39 51 28	23 58 34	00 19 00	00 20 E			
41	Comp								200
42	HD 103095	11 47 2	+38 26	00 30 55	00 48 00	00 50 W	+		
43	Comp							Fe AR A 1/2	
44	FLAT			01 06 00	03 07 00	0 0	platform	TUNG A 1/8	

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions ..

Cloudy

302

Focus

Spectr. Temp.

Dome Temp./Hum. ... -1.0°C ... 66%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A B 50 2000	ND	2.0		PCS Red Coll	1800/50.8	BS	4820A				
50 2200	ND	2.0		Setup same as previous night						Dome T = +2°C H = 49% Clear	
15 300	no ND									Dome instr 20:06:10	
10 250	Fire	2.95		PCS Red Coll	1800/50.8	BS	4820A			Wharion Hole ΔRA - 0000 (4-00) 3552 15 Dec 00 02 23. Dome turning up 22:10:40 A/B up 40	
	3-4	B 7.92								Loud Train @ 23:03	
10 300											
20 750	3"	V 7.93	FHB A							phot std	
10 300 → 350											
30 1200		V 7.58	FHB A							phot std	
50/2500 10 300 → 350	3-4	V 6.45	G8Vp							std vel some dead	
50/2100	ND	=2.0								TAG is 1 megabyte	

Date 26/27 March Observers K.K. Tests, d. A. Ring, Dug./J.n (MKI checking)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
3113.HRT	Hartmann - In							Ti-Ne Fwdl	180
3114	Hartmann - Out							"	180
3115	Hartmann - Out							"	200
3116	Hartmann - In							"	180
3117	Hartmann - In							"	180
3118	Hartmann - Out							"	180
YAG PCS 00045.MKI	Flat started by KK KK			217	M 18 30	0 0	platform	TUNG A=V8	5400
46.Tn	Flat			18 4650	19 2930	(To 1st posn moved)		"	5400
47.Tn	Comp at MWC 560 posn			19 36			Dec Drum	FEAR A 1/4	330
00048.Tn	MWC 560	07 2101	-07 32 12	19 4400	22 3200	03 07W	-7 41		
44 *	Comp (* extension forgotten I guess)							PAR A 1/4	330
30.Tn	HD 52961	06 58.1	+10 55	22 4450	22 5943	3 56W	+10 50	FEAR A 1/4	33
51.Tn	Comp			23 0120	07 33			FEAR A 1/4	330
52.Tn	Flat			23 2030	01 2107			TUNG A 1/8	7300

Spectr. Temp. Dome Temp./Hum. -2°C 51.6%
 Focus at 19 EST
 Spectr. Temp. Dome Temp./Hum. -5°C 70%

Transparency Conditions .. P.A.R.T. study
 → completely cloudy

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
180	250										
180	"									shift OUT - IN = 4.3 pix	
200	"										
180	"										
180	"									atra 13 'S' steps net	
180	"									shift OUT - IN = 0.0 pix	
540	A B	ND2.0		PCS Tag Acid Cell	1800/508	BS	4820Å				
540	110/2100	ND2.0									
330	5/95	no AD								encoder setup right on 2.8 mag	
8/80	poor 95			B mag on MAR 17 reported @ 916				noise? @ 205800	XMIN 161	clear sky now	
7/80								Dec:	XMAX 3940		
330	20 300			OK at 1st, but in & out at cloud by 2250				→ Big TRAIN @ 21 22, vibrated stellar image			
330	20 90								Tag 161-3940	TAG copied to H:MKITG	
730	20 2000	NP 2.0							2 highest Comp lines	2 1060/333secs	
										c's 3 photo./pixel/sec	

305

Tues - wed

Date 1990 MAR 27 128 Observers T.M. M.K. phone in...

Emulsion Batches:

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
00033.AK	Flat				18 ~ 40	0 0	platform	TUNG A 1/8	3600
54.TN	Comp				19 21				333
55.TN	MWC 560	07 21 01	-07 32 12	19 26 22	22 35 00	3 13 W	-7 41		
00056.TN	Comp				22 11 35			FEAR A 1/4	333
00057.TN	HD 52961	06 58 1	+10 55	22 45 35	23 13 40	4 14 W	+10 51		
58.TN	Comp			23 14 48			Reversed		333
59.TN	BM CASS	00 48 6	+63 33	23 32 20	00 40 00	11 50 W	+63 59		
60.TN	Comp							FEAR A=1/2	333
61.TN	HD 109995	12 34 01	+39 51 28	01 13 48	01 38 40	01 05 W	+39 26		
62.TN	Comp							FEAR A=1/4	333
63.TN	BD+26 2606	14 46.51	+25 54 39	01 50 30	02 29 30	00 13 E	+25 46		
64.TN	Comp				02 36 00				333
65.TN	HD 132737	14 55 6	+27 33	02 38 25	02 56 00	00 01 W	+27 15		
66.TN	Comp							FEAR 1/4	333

307

#2

Emulsion Batches:

Date 1990 MAR 27/28..... Observers T.J.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
67.TN	HD140913	15 41.1	+28 47	03 0324	03 2700	00 02 E	+28 33		
68.TN	Comp			0328				FeAR H=1/4	333
69.TN	Flat			033700	043800	00	platform	TUNG H=1/8	
	MAR 28-29 (Cloudy/clear) FANS on dome open by 1910 Dome T = +3°C								
PCS000.TN	Flat (Tn Mt. phonon)			18 4638	19 1717			TUNG AYS	7300
PCS 71.TN	Comp			19 2010				FeAR H=1/4	333
TAGH PCS 72.TN	MWC 560	07 21 01	-7 32 12	19 3230	20 2042	03 03 W	-7 42		
PCS 73.TN	Comp			20 2152				FeAR H=1/4	333
TAGH PCS 74.TN	HD 52961	06 58.1	+10 55	22 3027	23 1018	04 15 W	+10 51		
PCS 75.TN	Comp			11 15				FeAR H=1/4	333
PCS 75.TN	HD 66986	09 57 04	+15 02	23 2220	23 4906	01 55 W	+14 39		
PCS 76.TN	Comp		present						333
PCS 77.TN	SKY	12 0000	-07 25	23 5636	00 2955	00 33 W	-7 28		
PCS 78.TN	Comp							FeAR H=1/4	333
PCS 79.TN	HD 90861	10 24.3	+29 05	00 3720	00 5308	02 32 W	+28 41		

Spectr. Temp. Dome Temp./Hum. -32°C H748 Transparency Conditions *Hazy*

Focus

Spectr. Temp. Dome Temp./Hum. *90% outside*

TIME TAGGED OBS pointed x min 161 x max 2990

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4 B		✓		PCS Reel Cell	1800/508	BS	4820A		std vel	Fid drawn - hazy	
30 500	2-4"	8.21	G0V								
10 95											
80* 1900	ND 2.0			Counts rose to 90*/2000 when finally right to platform					PCS written To H: MKITAG		
				All PCS files copied To H: MKITAG							
80 2100	ND 2.0			should be all the same as for 69.7N							
5 95	no ND										
10 100	2"	29.5		PCS Reel Cell	1800/508	BS	4820A		TIME TAGGED Obs pgn	* Hazy at start too Sky 2 10 above dark @ start.	
10 95	* seeing gory			4-5" by 21 EST					Big Dome move e	getting hazy or too near 2025 was partly obscuring	
30 600	3-4"	7.92	A						Fe pgn	Time Tagged to H: MKITAG	
30 600	3-6"	8.05	FHB A						Sp Phot Std	some cloud	
7 90											
<10/51>10				Hazy, like when doing MUC 560					sky (drive on)	one Pomo move @ 0029	
6 100											
50 1800	2-3"	7.2	K21D	cnts to 2700/sec					std vel	st Hazy NEs brightest of pair	

Emulsion Batches:

Date 1990. MAR. 28/29.... Observers T.J. Mki. still. phaniz. m

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp	
PCS 80.TN	Comp			5400		0 25W	+39 ⁰			
PCS 81.TN	H109995	12 34.01	+39 51.28	01 00.31	01 21 00	00 51 W	+39 25			
PCS 82.TN	Comp							Fe AP A=1/4	333	
PCS 83.TN	HD 132737	14 55.6	+27 33	01 27.50	01 58.44	00 52 E	+27 15			
PCS 84.TN	Comp			01 59.49				Fe AP A=1/4	333	
PCS 85.TN	HD 140913	15 41.1	+28 47	02 06.30 Approx	02 43.13	00 53 E	+28 33			
PCS 86.TN	Comp			02 44.30				Fe AP A=1/4	333	
TAG PCS 87.TN*	BMCASS	00 48.6	+63 33	02 00 Approx	03 27.00	09 19 E	+64 03			
PCS 88.TN	Comp			03 29		n	n	Fe AP A=1/4		
PCS 89.TN	Flat			03 39.30	04 59.00			Tung A=1/8		
	MAR 29/30									
PCS DARK. MKI										
TAG - DARK. MKI	DARK			12:31	20:33				Platform	8hr
PCS 0090-SAS	Flat			21 38	22:38			Tung 1/8	Platform	3600

Spectr. Temp. Dome Temp./Hum. -0.1°C 50% Transparency Conditions *S! Hazy*

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4 B											
10 120				PCS Time TAG	1800/50.8	BS	4-8.20A				
70 2400	2"	\checkmark 7.58	FHB A	Red Cell					Sp phot std		
10 110											
55 1100	2"	\checkmark 8.02	KOIV						std vel		
6 110											
30 600	2"	\checkmark 8.21	GOV						std vel	cloud coming	
5 90											
5 60	4"	\checkmark 2.9							obs pgm	* Limited Time TAG Time TAG 1000 x min FOR HFB 2000 x MAX	
10 100										good encoder Test,	
50 2100											
30/2100										TAG deleted	

A bit too hazy down here

* Limited Time TAG
Time TAG 1000 x min FOR HFB
2000 x MAX

315

Pg #1

Fri/Sat

Date 1990 Apr. 6/7..... Observers Tn/SAS.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
0	Prompted flat								
1	Dark								2 hrs
2	Comp			19:19				ThA	20s
3	HD 47105 δ Gem	6 ^h 31.9	+16° 29	19:24	19:38	1 ^h 43 W	+16 27		
4	Comp							ThA	20s
5	HD 47105 δ Gem	6 31.9	+16 29	19 40 36	20:11	2 ^h 16 W			
6	Comp			20:12				Th-A	20s
7	Comp			20:18				Th-A	20s
8	HD 56986 δ Gem	7 ^h 14.1	+22° 10	20:21.5	21:14	2 ^h 38 W	+22 04		
9	Comp			21:15				ThA	20
10	Comp			21:22				ThA	20
11	HD 76644 ϵ Uma	8 ^h 52.4	+48° 26	21:23	22:11	1 ^h 56 W			
12	Comp			22:12				Th-A	20s
13	Comp			22:34				ThA	20 ^s
14	HD 8890 Polaris	1 ^h 22.6	+88° 46	22:36	23:29	10 ^h 05 W	Reversal +89 10		

317

Pg#2

Date 1990 Apr. 6/7... Fri/Sat
Observers Tn/SAS

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
15	Comp			23 31				TR-A	20s
16,17,18	3 flats @ 28sec			3092, 3168, 3120					
19	Comp			23:47				TR-A	20 ^s
20	HD 121370 ^{η Boo}	13 ^h 49.9	+18° 54	23:56	00:41	0 ^h 29 E	+18 30		
21	Comp			00:42				TR-A	20s
21	HD 124897 ^{α Boo}								
22	Comp			00:47				TR-A	20 ^s
23	HD 124897 ^{α Boo}	14 ^h 11.1	+19° 42	00:51	00:56				
24	Comp			00:57				TR-A	20 ^s
25	HD 124897	"	"	00:59	01:09	0 ^h 22 E		$\lambda_c = 5104$ $\lambda_{max} = 556$ TR-A +filter	20 ^s
26	Comp			01:10				TR-A +filter	20 ^s
27	Comp			01:12				TR-A +filter	20 ^s
28	Comp			01:13				TR-A	20s
29	HD 124897	"	"	01:19	01:39			filter	
30	Comp			01:40	02:01			TR-A	20s

Spectr. Temp. Dome Temp./Hum. -2/.52%...

Transparency Conditions 36. haze 318

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mir.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Filt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle/ Reticon	24 17.10	50 μ 0.281	x 600 .4384 7 = 5160 \AA	110	KK prg 11		1413
										T = 10.176 Topped up @ 23:44	1577
5000	bad	B = 3.27	6 ϕ								1319
											1669
											127 1711
7000		B -0.04	KZ III								1583
		B 0.64	KZ III								1706
165		-0.04	KZ III							With Filter	801
										With Filter	245
										With With Filter	249
										No Filter	1855
316										With Filter	1724
										No Filter	1692

319 P3

Date 1990 Apr 6/7^{Fri/Sat} Observers Tn/SAS

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
31	Comp			01:44				ThA	20s
32	HD 137909 ^{p CrB}	15 ^h 23.7	+29 27	01 48.7	02 01	00 42E	+ —		
	Comp							ThA	20
	Flats x 4	14secs; 1816 ADU, 1765, 1759, 1706,				00 42E	+ —	} Flats extending pos'n of BcrB	
	Flats x 2	2secs for weak exp, in [240 ADU]				00 42E	+ —		
	Flats x 4	7secs; (993, 983)		14sec; (2029, 2014)		00 00	near platform		
	Flats x 2 with INT FILTER	45secs; (1694, 1690 ADU)				"	"		
<p>DATA BACKED up to floppy Apr0690.DAT + Repacked on C drive to Apr0790.DAT and HApro790.DAT RET.DAT deleted from C drive</p>									

323
P2

Date 1990 Apr 7/8 Sat/Sun Observers SAS/Tn

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Ex
15	Comp							TRAR	20 ^{sec}
16	α Boo	14 ^h 11.1	19° 42	02:54	02:59	1 32 W			
17	Comp							TRAR	20 ^s
18	α Oph HD 57561	17^h 34.3	+12° 38	03:12					
18	Comp			03:10				TR-A	20 ^s
19	HD 159561 α Oph	17 ^h 30.3	+12° 38	03:12	03:36	1 10 E	+12 36		
20	Comp			03:38				TR-A	20 ^s
21	Comp			03:42				TR-A	20 ^s
22	HD 161096 ρ Oph	17 ^h 38.5	+4° 37	03:44	04:30				
23	Comp			04:31				TR-A	20 ^s
24	Comp			04:34				TR-A	20 ^s
25	HD 172167 α Lyr	18 ^h 33 ^m 33	+38° 41	04:36.5	04:40				
26	Comp			04:41				TR-A	20 ^s
27	HD 172167 α Lyr	"	"	04:42	04:53			Filter	
28	Comp			04:55				TR-A	20 ^s
	Flats	4 @ 9 ^h 10 ^m Aec	1074, 961, 1054, 1067			4 @ 17s	1804, 1775, 1771		

Spectr. Temp. Dome Temp./Hum. $-2^{\circ}/73\%$ Transparency Conditions .. Cirrus .. 324

Focus
 Spectr. Temp. Dome Temp./Hum. $-2^{\circ}/73\%$

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
									KK pr		1659
5400		B -0.04	K2III						std/vel		1541
											1655
		B 2.2	A5III						KK prgm		1646
5100		B 2.2	A5III						KK prgm		1476
											1723
											1742
5000		B 3.93	K2III						St. vel		1283
											1680
											1742
5000		V 1.03	A0Va								1706
											1692
253										with filter	1231
											1850
1765										PACKED UP TO FLOPPY & RECORDED APR 07 1990. DAT	

325

Sun/Mon

Emulsion Batches:

Date 1990 Apr 8/9... Observers K.K./T.W./SAS.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Ex
X	β Tau	1989.5 05 25.7	1489.5 +28° 36		19 47				
Y	β Gem	07 44.7	+28° 03	19 51	19 54	01 00W			
Z	α Uya	09 27.1	+28° 37	20:00					
AA	η Uma	13 47.1	+49° 22	20:08		04 48 E			
AB	\circ UMa	08 29.4	+60° 45	20.17		00 42 W			
0	Promoted Flat			20:55					15 ^s
1	Comp			20:56				TR-Ar	20 ^s
2	HD 47105 ^{γ Gem}	6 ^h 37.0	+16 25	20:58	21 18.5	03 32 W	+16 28		
3	Comp							TR-Ar	20 ^s
4	Comp at Polaris pos.							TR-Ar	20 ^s
5	Polaris HD 8890	01 22.6	+88 46	21:36	21.52				
6	Comp			21:55				TR-Ar	20 ^s
7	HD 8890 ^{Polaris}	01 ^h 22.6	+88° 46	21:57	22:15				
8	Comp			22:16				TR-Ar	20 ^s

327
P2

Sun/men

Emulsion Batches:

Date ... 1990 Apr 8/9 ... Observers ... Tn/SAS

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
9	Comp							JLA	20 ^s
10	HD 87901 α Leo	10 0303	+12 27	22:28	23:38.5			NO FILTER	
11	Comp			22:39				JLA	20 ^s
12	HD 87901 α Leo	"	"	22:40.5	23 22	02 04W	+12 05	FILTER	
13	Comp								20
14-17	Flats with filter at α Leo posn			40secs 1211, 38secs	1150, 38secs	1139, 39sec	1166		
18	Comp			23:35				JLA	20 ^s
19	HD 137909 ^{BCB}	15 ^h 23.7	-129° 27	23:41	00:19	02 17E			
20	Comp			00:20				JLA	20 ^s
21-24	Flats	@ 8 sec	1103,	1095, 1100,	1099				
25-28	Flats	@ 12 sec	1636,	1634, 1614,	1619				
29	HD 137909 ^{BCB}	15 ^h 23.7	-129° 27	00:31.5	00:52				
30	Comp			00:54				JLA	20 ^s
31-34	Flats	4@ 2 ^s	246,	253, 255,	249				

Emulsion Batches:

Date April 9/10/11/12 ^{Wed/Thurs} Observers T.W./SAS.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
Flut 0									10^{-5}
Dark 1	2 hours								
Dark 2	2 hours								
Dark 3	2 hours								
Dark 4	3 hours								
PARKS	3 hours			19 02	20 53	0 0	platform		
Apr 11/12	Comp @ Capella ^{α Aur}			21:14				ThAr	20^s
↓	Capella	1990.5 5 ^h 15.9	1990.5 + 45° 59'	21:16	21:31	5 ^h 19'	+45° 02'		
8	Comp			21:32				Th-A	20^s
9	Comp for Regulus							Th-A	20^s
10	HD 87901 α Leo Regulus	1900 10 ^h 03	+12° 27'	21:45	22:08			NO FILTER	
11	Comp			22:09				Th-A	20^s
12	HD 87901 α Leo	"	"	22:12	23:32		+12 03	FILTER	
13	Comp			23:33				ThAr	20^s
14, 15, 16, 17, 18	Flats	@ 30 ^s	1010,	@ 25 ^h	828, 830, 831, 827			Filter	

Spectr. Temp. Dome Temp./Hum. ... 0°/65% ..

Transparency Conditions ... Scattered cloud ... 330

Focus

Spectr. Temp. Dome Temp./Hum.

order

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Filt	Slit	Emulsion x 500	P.H.	Program	Remarks	Quality
10 ^s				Echelle/ Recon	Echelle 17.10	50µm 0.281	04384 D = 5160	110	KK prgm		1010
										dewar tilt 3°2	
										dewar topped @ 21 ^h	1631
5000	really bad!	V 0.08	6611						11K prgm		950
											1649
											1822
4500	11	B 1.2	B7I								904
											1638
444	11	B 1.2	B7I							With filter	850
											1829
										With filter	

331

Pg #2

Emulsion Batches:

Date 1990 April 11/12 ^{Wed/Thu} Observers SAS/Tn.....
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
19, 20, 21, 22	Flats	@ 8 ^m	1004, 1005, 999, 1007						
23	Comp					encoder	Reverse	THAR	20 ^s
24	H08890 ^{Polaris}	01 ^h 22.6	+88° 46	00:07	00:58	11 55 W	+8909		
25	Comp			00:59				THAR	20 ^s
26	H08890 ^{Polaris}	01 22.6	+88 46	01:00	01:37	12 ^h 32 W			
27	Comp			01:38				THAR	20 ^s
28, 29, 30, 31	Flats	@ 12 ^m	1589, 1591, 1589, 1594						
	Backed up to	Apr 11 90	.Dat						

Spectr. Temp. Dome Temp./Hum. $-2.7^{\circ}C$ 69% Transparency Conditions *Hazy* 332

Focus

Spectr. Temp. Dome Temp./Hum. *Strong Aurora @ 1:00*

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H. ORDER	Program	Remarks	Quality
				<i>Echelle Ret</i>	<i>Echelle</i>	<i>50µm</i>	<i>14354 X-ray film</i>	<i>110</i>		<i>No Filter</i>	<i>1703</i>
<i>4900</i>	<i>poor</i>	<i>B</i> <i>2.02</i>	<i>F8V</i>		<i>17.10</i>	<i>0.281</i>	<i>5160Å</i>				<i>1530</i>
											<i>1749</i>
<i>3360</i>	<i>bad</i>	<i>"</i>	<i>"</i>							<i>Cloud</i>	<i>974</i>
											<i>1823</i>
										<i>Topped up 01:50 T² = 0.166</i>	

Spectr. Temp. Dome Temp./Hum. Transparency Conditions *Cloudy*

Focus

Spectr. Temp. Dome Temp./Hum. *1st use of APR 10/12 software changes, Sum in "FITS" Format*

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
<i>A</i>	<i>B</i>			<i>PCS TimeTag</i>	<i>1800/50.8</i>	<i>BS</i>	<i>4820Å</i>				
<i>70</i>	<i>2400</i>										
<i>70</i>	<i>2400</i>	<i>ND 2.0</i>								<i>(no) FITS here as File name 7200; Renamed to 2 photos/sec/line/epine) #900</i>	
<i>20</i>	<i>900</i>	<i><2"</i>	<i>B</i>	<i>A</i>					<i>Fe Pgm</i>	<i>Focus @ 755 Donut = -0.5C cent to 1400</i>	
<i>25</i>	<i>1000</i>	<i><2"</i>	<i>4</i>	<i>4</i>					<i>"</i>		
<i>8</i>	<i>200</i>	<i><2</i>								<i>* wrong star Fainter star # of 86986</i>	
<i>40</i>	<i>2300</i>										
<i>8</i>	<i>120</i>	<i>=9</i>							<i>Obs Pgm</i>		
<i>5</i>	<i>90</i>			<i>PCS TimeTag</i>	<i>1800/50.8</i>	<i>BS</i>	<i>4820Å</i>				
				<i>"</i>	<i>1800/62.7</i>	<i>BS</i>	<i>Hα</i>				

Spectr. Temp. Dome Temp./Hum. -1.0°C 73% Transparency Conditions *mostly cloudy*

Focus

Spectr. Temp. Dome Temp./Hum. -1.0°C 75%

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
<i>H B</i>											
				<i>PCS Time tag</i>	<i>1800/62.7</i>	<i>BS</i>	<i>Hx</i>				
<i>10 158</i>	<i>3"</i>	<i>9'</i>							<i>Obs pyro</i>	<i>In case of cloud</i>	
<i>2 1000</i>		<i>793</i>	<i>G8II</i>						<i>std vel</i>	<i>Clear now</i>	
<i>30 2508</i>	<i>ND 2.0</i>									<i>FOR next night's Hx work also</i>	

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Py #1

Fri - Sat

Date 1990 APR 13/14 Observers MKI - TM

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
112.mki	Flat			18 41	19 43	0 0	platform	Tung A 1/8	
113.mki	Comp						Reversal	FeAr A=1/4	330
114.mki	MWC 560	07 21 01	-7 32 12	20 14 33	21 50 50	3 37 W	-7° 43'	T	
115.mki	Comp							FeAr A=1/4	330
116.mki	Comp					W +		FeAr ACR	300
117.mki	HD 52961	06 58 1	+10 55	22 05	23 05	05 13 W	+10 48		3600
118.mki	Comp						still Reversal	FeAr clear	
119.mki	HD 109995	12 38 23	+39 21 41	23 15 14	23 45 15	00 22 W	+39 22		1800
120.mki	Comp							FeAr clear	300
121.mki	Comp							FeAr A=1/4	300
122.mki	HD 109995	12 38 23	+39 21 41	00 03	00 18	00 55 W			900
123.mki	Comp							FeAr A=1/4	300
124.mki	HD 156247	17 11 27	+1 19	00 44 51	01 00	3 05 E	+01 15		900
125.mki	Comp							FeAr A=1/4	300
126	β Lyr HD 174638	18 48 23	+33 15	01 07 21	01 20	4 18 E	+33 23		793

Spectr. Temp. Dome Temp./Hum. $^{\circ}\text{C}$ 57.2

Transparency Conditions . Hazy 338

Focus

Comp AST slow by 20secs

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1 B				Redcoll							
50 2500	NA 20			PCS TimeTag	1800/62.7	BS	H α				
5 80				"	1800/50.8		4820A H Beta				
70 140	3.4	3					"		Obs-pgm	cuts to 200/sec	
7 60				PCS	1800/62.7		6600A H α			Time on AST synchronized at 21:52	
70					"		"		Fe pgm		
8 250	3"	B 7.93	A		"		"		Fe pgm	cloud	
					"		"				
10 300	2"	BV 7.58	FHB A		"		"		Sp phot stel		
					"	1	"				
8 100		B	FHB				4820A B Beta				
15 1000		7.62	A				"		Sp phot stel	Hazy, but cuts to 1500/sec	
							"				
8 400		V 5.7	B5V				"			Very hazy - cloudy	
10 900	4"	V 3.3 7.3	B7Ve + A8p							Cloudy	

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#1

Sun Mon

Emulsion Batches:

Date 1990 APR 15/16... Observers Mki-Tn.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
FT00 129.mki	Flat			19 03 48	19 ²² 50			TUNG A 1/8	
130.mki	Comp			19 55			Reversed	FEAR A 1/4	200
131.mki	MWC 560	07 21 01	-7 32 12	19 59 20 00 41	22 30 40	4 25 W	-7 47		896
132.mki	Comp							FEAR A=1/4	200
133	Comp						Still Reversed	FEAR A=1/2	200
134	HD 52961	06 58.1	+10 55	22 46 08	²² 23 24	5 40 W	+10 44		2280
135	Comp						Still Reversed	FEAR A=1/2	200
136	HD 109995	12 38 23	+39 21 41	23 43 36	23 ²³ 54	00 35 W			601
137	Comp								
138	Comp							FEAR A=1/4	
139	HD 109995	12 38 23	+39 21 41	00 10 48	00 25 50	01 08 W	+39 17		900
140	Comp							FEAR A=1/4	200
141	Bm Cass	00 48.6	+63 33	00 37 36	00 58 40	10 35 E	+64 07		200
142	Comp								200
143	Beta Lyr	18 46 23	+33 15	01 14 14	02 14 20	3 16 E	+33 26		300

Spectr. Temp. Dome Temp./Hum. ... $+5^{\circ}\text{C}$ 77% Transparency Conditions ... *Part cloudy*

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Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A * B 50 1900	ND 200			PCS Rel Cd1	1800/50.8	BS	HB 4820Å			* cut was 2200 on platform while going reversed	
5 80							h				
10 80	poor						h			Someday at start	
80							HB 4820Å				
200					1800/47.4 *		HB * 4300Å		Actually @ 2	4240Å HB Too far left of center	
7 70	poor	B 7.92	A		h		h			Encoder failed in DEC setting to this posn & goes wrong way	
10 200					h		h				
		V 7.58	FHB A		h		h		Sp phot std		
					h		h				
					1800/50.8		HB 4820Å				
		B 7.62	FHB A		h		h		Sp phot std		
10 90		≈ 9									
5 100											
G 100		V 3.3	B7Ve								
B 1000-7000	3"	→ 4.3	H8p						MKi pgm	clouds 01 18	

Spectr. Temp. Dome Temp./Hum. $+1.5^{\circ}\text{C}$ 58%

Transparency Conditions ... PART cloudy..... 346

Focus

FANS on S Dome shutters open by 19²⁰

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS RodColl	1800/508	BS	H Beta 4820A				
3/1 x 3/1 A B		✓ 6.39	A5	4 frames			33 km/hr (NW breeze)		(Int x 4 = 1/15 sec)	Dome West ON FIBER Faltrol (South side)	
8 100				PCS	1800/508	BS	4820A				
0 120	3-5"	V _m 9.5		"	"	"	"			(cloud cut cuts to 180/sec. 22:05)	
5 65				"	"	"	"				
5 220	NO 2.0			"	"	"	"				

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pg#1

Wed Thurs

Date 1990 APR. 18/19..... Observers MKI-Ty.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
152mk	Flat			18 31	19 43			TUNG A=1/8	
153	Comp after seeing test 1989.5 14073992						Reversal	FeAR A=1/4	200
150	240.TN Seeing test	08 42.7	+39 03	19 50		00 38 W	+39°		20
154	MWC 560	07 21 01	-07 32 12	20 00	21 49	3 54 W	-7 45		
155	Comp							FeAR A=1/4	200
156	Comp at New D							FeA Clear	240
157	MWC 560	07 21 01	-07 32 12	22 13 51	22 32	4 37 W			
158	Comp @ 5850A / Comp #159 Comp @ 4320A							10A A=1/4	240
160	HD 52961	06 58 11	+10 55	22 54	23 18	05 43 W	+10 45		
161	Comp							FeAR 1/4	240
162	HD 109995	12 38 23	+39 21 41	23 26	23 56	00 49 W	+39 18		1800
163	Comp							FeAR A=1/4	240
164	HD Comp							FeAR A=1/4	200
165	HD 109995	12 38 24	+39 21 41	00 13 49	00 43 49	01 37 W			1800
166mk	Comp							FeAR A=1/4	200

Spectr. Temp. Dome Temp./Hum. $+3.7^{\circ}\text{C}$ 61.6% Transparency Conditions *sl. hazy* 350

Focus

Spectr. Temp. Dome Temp./Hum. $+2.6^{\circ}\text{C}$ 67%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
13	100			Red Collimator PCS Time Tag	* 1800/51.2	BS	4884Å			* of change = 69Å → Red	
30	200	B 2.4 7.62	FHB A		"		"		Sp plot stel	H beta just blue of center	
10	95										
3	64	♀			1800/62 1400/62.5		Hd? 6500Å			} not sure if grating Angle changed	
6	100	4.6 29		PCS Time tag	"	BS	6500Å			Time tag al too	
10	80				"	"	"				
40	250				"	"	"				

Spectr. Temp. ~~10~~/.....

Dome Temp./Hum. 6°/..75%.

Transparency Conditions haze.....

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Focus

Spectr. Temp.

Dome Temp./Hum. 5°/..86%.

Tour ~120 people viewed Jupiter + E Pole

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PTS Red Coll	1800/ 50.8	B5	4820Å		Hki prgm		
										Did by mistake	
200 ^s	7/90	bad									
200 ^s	10/120										
1800 ^s	20/800	5"								No tag	
200 ^s	10/100										
200 ^s	10/100										
300 ^s	10/130	4"								No tag	
200 ^s	10/90										
200 ^s	10/100										
1200 ^s	10/100									No tag No header	
200 ^s	10/100									FOG. Thick!!	
700 ^s	30/2100									On timer	

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Sun/Mon

Date 1990 April 22/23 Observers SAS/Miki

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison	
								Type/Filter	Exp.
190-mki	Flat at 4820Å	PLATFORM		18:23	19:23		ND=2.0	Tung 1/8	3600 ^s
191	Comp at 4820Å			20:19				FeA 1/4	200 ^s
192	MWC 560	07^h 21	7° 32						
192	Comp at 5900Å			21:34				FeA clear	200 ^s
193	HD 52961 HD 52961	6 ^h 58.1	+10° 55'	21:39	22:58	5 ^h 42W	Reversed +10° 45'		
194	Comp			22:59				FeA clear	200 ^s
195	Sky near HD 52961	"	"	23:04					400 ^s
196	Comp			23:11				FeA clear	200 ^s
197	Comp	1950		00:25			UNREVERSED	FeA clear	200 ^s
198	HD 109995	12 ^h 36 ^m 24 ^s	+39° 34' 58"	00:30	01:10	2 ^h 19W	39° 29'		2400 ^s
199	Comp			01:28				FeA clear	200 ^s
200	HD 114762	13 ^h 07.5 ^m	+18° 02'	01:34	01:43	2 ^h 18W	17° 40'		560 ^s
201	Comp			01:45					200 ^s
202	Flat	2m	"	02:07	03:07	2 ^h 24W	ND 2.0 + 0.3	Tung 1/8	3600 ^s
203	Comp at BM Cass			03:26				FeA 1/4	200 ^s
204	BM Cass	1900 00 ^h 48.6	+63° 33'	03:31	4:18	6 ^h 49E			2800 ^s
205	Comp			04:19				FeA 1/4	200 ^s
206	Flat			04:39			ND 2.0	Tung 1/8	7200 ^s

reversed = Telescope W of pier
unreversed = Telescope E of pier

