

74

-j,b

I DIDN'T DO IT.

Spectr. Temp. Dome Temp./Hum. Transparency Conditions
Focus 2
Spectr. Temp. Dome Temp./Hum.

[illegible]

#1³

0.23-0.71 NaD

Emulsion Batches:

Date 1993 June 11/12

Observers Hdy/Fbr

0.98-0.91

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.
cc 5029	Bins (4)									
30-31	Focus							Fbr	45s	
32	Comp						Comp	FeAr	60s	
33	H037901	100303	12 2722	20 50 23					9Ds	39K
34	"			20 52 44					101s	41.4K
35	COMP							FeAr Clear	9Ds	
36-8	FLAT x3							Tung A=1/2	12s	
39	BIAS (4)									
40	BIAS (4)									
41	COMP							FeAr 60s	60s	
42	FLAT							Tung A=1/2	11s	
43	H0150484			21 26 01					65Ds	675
44	"			3711						736
45	"			4821						768

Spectr. Temp. Dome Temp./Hum. 17.5°/53.5%

Transparency Conditions Ptly. Clear 4

Focus 6.67

Spectr. Temp. Dome Temp./Hum.

[illegible]

#2 5

Emulsion Batches:

Date 93 JUNE 11/12 Observers Hd. J. For

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison		Exp. Mu
								Type/Filter	Exp.	
15046	HD 150484			215931						726
47	"			231041						680
48	Bins (4)									
49	Comp							FLAT	60s	
50	FLAT							TUNG 1/2	11s	
51	HD 150484			222659						665
52	"			223809						625
53	"			4919						601
54	"			230029						625
55	"			231139						665
56	Bins (4)									
57	Comp							FLAT	60s	
58	FLAT							TUNG 1/2		
59	HD 150484			232746						539
60	"			233855						456
61	"			5005						507

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions ... Crown In South

Focus

Spectr. Temp. Dome Temp./Hum.

[illegible]

#3 7

Date ... 93 JUN 11/12 ... Observers ... Hdy / Fbr

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.	Exp. Mtr.
15062	HD 150484			00 01 15						580
63	"			00 12 25						550
66	Bias(4)									
64	Comp								60s	5346
65	FLAT							A=1/2	11s	
67	HD 150484			00 27 35					65Ds	587
68	"			00 38 45					65Ds	640
69	"			00 49 55					65Ds	560
70	"			01 01 05					"	7844
71	"			01 12 15					"	1373s
72	BIAS(4)									
73	COMP								60s	
74	FLAT							A=1/2	11s	
75	HD 150484			01 27 11					65Ds	659
76	"			01 38 21					"	547
77	"			01 49 31						488

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions *some cases*.....

Focus

Spectr. Temp. Dome Temp./Hum.

8

[illegible]

#4

Date _____

Date _____

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Focus .

Spectr.

Exp. Mu

10-

517

577

101

2

255

251

#1 11

0.61-0.91
H α

Date 93-JUNE 12/13..... Observers Hclly./Fbr.....

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		Exp. Mu
								Type/Filter	Exp.	
CC15095	BIAS (4) (DONE AFTER FOCUS TESTS)									
96-7	FOCUS TEST. $\leftarrow$ (CHIP 2 - 114°C) (FOCUS TEST ONLY!)									
98	COMP						clear	Fair	80s	
99	HD177724	19 00 49	+13 43	22 55 13					128s	35K
15100	"	"	"	22 57 56					149s	40K
01	COMP							Fair	80s	
02-04	FLAT x 3	19 00 49	+13 43				1/2	TUNG	8s	
05	BIAS (4)									
06	BIAS (4)									
07	COMP						Clear	Fair	90s	
08	FLAT						1/2	TUNG	8s.	
09	HD150484	16 36 12	+00 41	23 17 54					650s	920
10	"			29 03						989
"	"			40 13						970
12	"			51 23						
13	"			00 02 33						2330

Spectr. Temp. Dome Temp./Hum.

12

[illegible]

#2 13

Date 93-June 12/13.... Observers Hdy/For

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		Exp. Mtr.
								Type/Filter	Exp.	
14	BIAS (4)									
15	COMP						Canon	FAr	80s	
16	FAT						1/2	FAr	8s	
17	HD150484			0620 11						1100
18	"			31 21						1095
19	"			42 31						1090
20	"			53 41						1050
21	"			01 04 51						
22	BIAS (4)									
23	COMP									
24	FAT									
25	HD150484			01 20 45						1150
26	"			31 55						1100
27	"			43 05						1060
28	"			54 15						106
29	"			02 05 25						1082

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions

Focus

Spectr. Temp.

Dome Temp./Hum.

[illegible]

#3 15

Emulsion Batches:

Date .. 9.3 - June 12./13.. Observers ... Hdy / Fbr

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.
30	Bias (u)								
31	Comp						$\frac{1}{2}$ Clear	F4r	80s
32	FLAT						$\frac{1}{2}$	WAX	P5
33	HD150484			022051					
34	"			023201					
35	Bias (u)								
36	Comp						Clear	F4r	80s
37	FLAT						$\frac{1}{2}$	WAX	
38	Comp						Clear	F4r	80s
39	HD177724	120049	$\frac{1}{3}$ 43	025653					14/5
40	"			025935					15/5
41 HD177724	Comp								
42	Bias (u)								
42-44	FLAT x 3						A = $\frac{1}{2}$	WAX	8s
45	Bias (u)								

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

Focus

Spectr. Temp. Dome Temp./Hum.

[illegible]

#1 17

Date 93-June 13/14... Observers Hdy/Fbr.....

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.
cc15146	BIAS (4)								
47-49	Focus Test						Clear	FAR	45s
49	BIAS (4)								
50	COMP								
51	H087901	10 03 03	12 27 22	³⁸⁰⁷ 20 22 22					52s
52	"	"	"	20 41 59					48s
53	COMP						Clear	FAR	90s
54-56	FLAT x3						1/2	TUNG	8s
57	BIAS (4)								
58	BIAS (4)								
59	COMP						Clear	FAR	90s
60	FLAT						1/2	TUNG	8s
61	H0150484	16 36 12	50 41	21 08 46					
62	"			21 19 56					
63	"			31 06					
64	"			42 16					

Spectr. T

Focus..

Spectr. T

Exp. Mtr.

48s

48

1130

1060

1000

1135

Spectr. Temp. Dome Temp./Hum. 19.6°C/46.9% Transparency Conditions Clear

Focus 6.6.7

Spectr. Temp. Dome Temp./Hum.

[illegible]

#2 19

Emulsion Batches:

Date 93 - June 13/14 ... Observers Hdy. / Fbr

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.
65	HD 150484			215326					650
66	Bins (u)								
67	Comp						Clear	Fbr	805
68	Fat						1/2	TNA	1160
69	HD 150484			221021					1160
70	"			2131					1163
71	"			3241					1260
72	"			4351					1220
73	"			5501					1150
74	Bins (u)								
75	Comp						Clear	Fbr	805
76	Fat						1/2	TNA	85
77	HD 150484			231118					1220
78	"			2228					1220
79	"			3338					1140
80	"			4448					

20

[illegible]

B3

21

Emulsion Batches:

Date 93-June 13/14 Observers Hdy./Fbr

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	H0150484			235558					
82	Bias(4)								
83	Comp								
84	End								
85	H0150484			051116					
86	"			2226					
87	"			3336					
88	"			4446					
89	"			5556					
90	Bias								
91	Comp								
92	End								
93	H0150484			011253					
94	"			2403					
95	"			3514					
96	"			4624					

Spectr.

Focus.

Spectr.

Exp. Mir.

849

790

687

560

635

635

550

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

Focus

Spectr. Temp. Dome Temp./Hum.

[illegible]

25

Emulsion Batches:

Date 93. JUNE 14/15..... Observers 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.
615213	BIAS								
14	DARK (1200s)								1200s
15	BIAS								
16	DARK (1200s)								
17	BIAS								
18	DARK (1200s)								
19	BIAS								
20	DARK BIAS								
21	DARK (1200)								
22	BIAS								
23	DARK (1200)								
24	BIAS								
25	DARK (1200)								
26	BIAS								
27	DARK (1200)								
28/29/30	BIAS/DARK/BIAS								

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions Cloudy

26

[illegible]

29

Date ~~93-JUNE 15/16~~... Observers ~~KK/Fbr~~.....

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.
CDO00001	SKY FLAT (4 Filter)	(193) 13 41 55	(193) 29 19 21					Filter u	60s
2	SKY FLAT							"	"
3	SKY FLAT							B	30s
4	SKY FLAT							B	30s
5	SKY FLAT							V	40s
6	SKY FLAT							V	40s
7	BIAS (4)								
8	NGC 5272	(2000) 13 42 12	(2000) 28 23 00	21 09 38				V	120s
9	"	"	"					B	120s
10	"	"	"	21 52 39				B	300s
11	NGC 6720 (RING)	(2000) 18 53 36	(2000) 33 03 00	22 43 48				H _α	200s
12	"	"	"	22 49 19				5100	200s
13	"			22 55 17				65 H _α	200s
14	BIAS (4)								
15	BIAS (4)								
16	BIAS (4)								

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

Focus

Spectr. Temp. Dome Temp./Hum.

30

[illegible]

31

Thurs / Fri

Date 1993 JUNE 17/18. Observers H. W. J. T.

Emulsion Batches:

CSS 386 24 sec. Ahead of U.W.V. MENT Time

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.
Fm000503	HD 123782	14 08	¹⁴⁹³⁵ +49 29		20 56	00 15W	+49 29		14' mark 47.4
CC15231	BIAS(4)								
CC15242	Comp/ Stellar	HARTMAN	DONE AFTER FLATS	22 00		with F18 stop Diffuser in	clear	FeNe	40/50
CC15232	Comp					all with		FeNe	30s
33	HD 123782	14 0436	+49 56	21 2348		F18 stop and			353s 362
34	Comp					5100 Å filter for exp. meter.		FeNe	30s 381
35	Comp					F18 OUT 5100 Å left in		FeNe	30s 265
36	HD 123782			21 3614		for this set			484 330
37	Comp					01 05W		FeNe	30s
-38	FLATS x2					F18 still out	clear	TUNG	6s
-39	FLATS x2					F18 in now	"	"	6s
-40	FLATS x2					F18 OUT	(clear)	FeNe	40/50
-41	Comp/ Stellar	HARTMAN		22 06		F18 OUT			
-42	BIAS(4)								
45	Comp/ Stellar	HARTMAN							
46	BIAS(4)								
47-54	Comps							FeNe	

Spectr. Temp. Dome Temp./Hum. 17.6°C 64.6% Transparency Conditions ... *Part Cloudy*

Focus 6.72

32

Spectr. Temp. Dome Temp./Hum. $+17.4^{\circ}\text{C}$ 64.8% *C LAMDAH* *Part Cloudy for seeing test*

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
47x97pinks				CASS CCD	1800inches (6990) ABOVE SLIT	310a			Seeing test	Also Tel Norm star D720 WNW V light SE Breeze	
						310a 3 in x 6 in	51408				
								11ci 12ci	focus test	(Right on at 330 Row) Sp control failing often grating disabled 5100A Filter for Exp meter	
362	4"	5.55	M31ab					4ci	Std Vel	cloud 79K photons above Background Sun AUG	
362								5			
265								6			
330								7	Std Vel	thick cloud.	
								8			
								9			
								10			
								13/14			
								1ci			
								15ci	H/W tests for ideal exposure length	(F8 stop out) time of comp.	

33 Mon-Tues

Date 1993 JUNE 21/22 Observers In./Fbr

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.
	BIAS(4)								
CC15253 256	Comp/stellar	(Also Line ID test)		200 27		Duration Yellow Filter needed	Clear	FEAR	40/20
FM00050A	HD 153399	16 54 18	+43 50	23 24		00 12W	Decircle +43 46	"N" mode	
	Comp for Line IDs etc. not written, chip still wet						Ap = 1/8	FeNe 10s	

Spectr. Temp. Dome Temp./Hum. 16°C 84% Transparency Conditions $sl. hazy$
 Focus
 Spectr. Temp. Dome Temp./Hum. 22.0°C 84% $No FANS Tonight$

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
20	$T = +16.4^{\circ}\text{C}$	Set 700		CASS CCD	150 lines/mm $G = 2320$	250a clacker	5600A	$3\frac{1}{4}^{\circ}$		Actual grat. angle 22.8° $\lambda = 6220\text{\AA}$	
	39x39 pixels	V 7.50	G5 IV		Above 250a clacker out				Seeing test	V light NW breeze Dome WSW,	
	1200				150 lines/mm G 2474		7150A			8 K max	

① 35

Date JUNE 22/23 1993 Observers Fbr./Sgs

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.	Exp. Mtr.
CC15257	Bias (4)									
58-7	Focus.									
60	COMP			21:58:00			Clear	FeAr	60s	
61	HD 136849	15 17 48	33 17 30	21:29:54						
62	COMP						Clear	FeAr	60s	
63	Bias (4)									
64	COMP						Clear	FeAr	60s	
65	HD 140913	15 41 06	28 47	22 13 44					1583	2/100
66	COMP						Clear	FeAr	60s	
67-70	FLATS X4						Clear 1/2 Tung		7s	
71	BIAS (4)									
72	COMP						Clear	FeAr	60s	
73	HD 141926	17 47 17	-06 07 12	22 55 00					660s	3533
74	COMP						Clear	FeAr	60s	
75	COMP						Clear	FeAr	60s	

Spectr. Temp. Dome Temp./Hum. 17.0°C/58.6% Transparency Conditions ... CLEAR
 Focus 8.67 +16.3°C/59.2% FRAME FORMAT
 Spectr. Temp. Dome Temp./Hum. 480 0 50 10.24 4 1 36

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
<u>5500</u> <u>30K</u>	<u>4"</u>	<u>?</u>							<u>TELLURIC</u>	<u>CHIP CLEAN</u> <u>FOCUS GOOD. NO ON</u> <u>SATURATED CHIP FIRST TIME</u> <u>TRYING AGAIN!</u>	
<u>2100</u>		<u>8.2</u>	<u>G0V</u>						<u>RV STANDARD</u>	<u>TELESCOPE OFF BALANCE</u> <u>& NOT TRACKING THAT WELL</u>	
<u>3533</u>	<u>6"</u>	<u>6.15</u>	<u>WIB</u>						<u>Sgs Program</u>	<u>SEEING GETTING WORSE</u>	

② 37

Date JUNE 22/23 1993 Observers Fbr/Sgs

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.
76	HD 154417	17 00 12	00 51 00	23 20 00					518
77	COMP						Clear	FeAr	60s
78	Bias (u)								
79	COMP						Clear	FeAr	60s
80	HD 173297	18 39 20	-20 45 00	23 54 25					1878
81	COMP						Clear	FeAr	60s
82-85	Faint						1/2	TON	7s
86	Bias (u)								
87	COMP						Clear	FeAr	60s
88	HD 198726	20 47 13	27 52 30	00 38 00					312s
89	COMP						Clear	FeAr	60s
90	HD 203156 COMP	21 15 23	37 41 00	00 52 05			Clear	FeAr	60s
91	COMP HD 203156	↓	↓	↓			Clear	FeAr	60s
92	COMP						↓	↓	↓
93	COMP						Clear	FeAr	60s

Spectr. Temp. Dome Temp./Hum. 14.0°C .. 68.5% Transparency Conditions ... CLEAR

Focus 6.67

38

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Secing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3500	6"	6.0	60V						RV Standard		
3200	7"	7.48	60Ib						Sgs Program	2.48 AIR MASSES	
4500	6"	5.75	60Ib						Sgs Program		
4600 ↓	6" ↓	5.7 ↓	F2 ↓						Sgs Program ↓		

(3)

39

Date JUNE 22/23 Observers Fbr/Sgs

Emulsion Batches:

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Hour Angle End	Declination	Type
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[illegible]

① 41

Date .. Feb 23/84..93 Observers ... Fbr./Sg.S.

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.
ec15306	BIAS (4)						CLEAR		
07	COMP						FeAr	FeAr	60s
08	HD136849	15 17 48	33 17 30	21 13 15	2				250s
09	COMP						CLEAR	FeAr	60s
10	BIAS (4)								
11	COMP						CLEAR	FeAr	60s
12	HD140913	15 41 06	20 47 00						1062s
13	COMP						CLEAR	FeAr	60s
14-17	FLATS X4						1/2	Tung	7s
18	BIAS (4)								
19	COMP						CLEAR	FeAr	60s
20	HD141926	17 47 17	-06.07 12	22 10 43					491
21	COMP						clear	FeAr	60s
22	COMP						CLEAR	FeAr	60s
23	HD 173297	18 39 20	12 45 00	22 44 34					193s

Spectr. T

Focus..

Spectr. T

Exp. Mtr.

OK

2200

5860

3200

Spectr. Temp. Dome Temp./Hum. 118.3°C / 34.3% Transparency Conditions CLEAR
 Focus 6.7
 Spectr. Temp. Dome Temp./Hum. 42

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
10K	1"								TELLURIC	SEEING GREAT!	
2200									RV STANDARD		
5800		V 8.24	G0I2						SGS PROGRAM	NICE SPECTRUM	
3200	3"	7.48	G0I6						SGS PROGRAM	SPECTROGRAPH CONTROLLER FAILURE - RESET THROUGH 3 AIR MASSES	

② 43

Date JUNE 23/24 Observers Fbr./Sgs

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.	Spectr.
24	COMP						CLEAR	FeAr	60s	Focus.
25	BIAS (4)									Spectr.
26	COMP						CLEAR	FeAr	60s	
27	HO198726	20 47 13	27 52 30	23 25 42					296	4500
28	COMP						CLEAR	FeAr	60s	
29-32	FLATS X4						Y2	Tung	7s	
33	COMP						CLEAR	FeAr	60s	
34	HO203156	21 15 23	37 49 00	23 42 30					283s	4500
35	COMP						CLEAR	FeAr	60s	
36	COMP						CLEAR	FeAr	60s	
37	HO214975	22 36 55	56 18 24	00 01 00					1007	2500
38	COMP						CLEAR	FeAr	60s	
39	BIAS (4)									
40	COMP						CLEAR	FeAr	60s	
41	177724	19 00 49	13 42 00	00 32 04					149s	27K

Spectr. Temp.

Dome Temp./Hum. $+15.9^{\circ}\text{C}/52.4\%$

Transparency Conditions Clear

Focus 6.67

Clouds South

44

Spectr. Temp.

Dome Temp./Hum.

Exp. Mir.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4500		5.75	60 Ib						Sgs Program	NICE!	
4500		5.7	F2						Sgs Program	NICE AGAIN!	
2500		8.4	60 Ib						Sgs Program		
27K									TELLURIC	116 AIR MASS	

Spectr. Temp. Dome Temp./Hum. +16.1°C / 46.2% Transparency Conditions CLEARISH

Focus

Spectr. Temp. Dome Temp./Hum.

46

[illegible]

P44 47

Thurs / Fri

Date 1993 June 24/25 Observers [J.H.]^{Service}.....Th. / Fri.....

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.
ce06287	HARTMAN Focus					01 31W	+49 30	ThAr	6/4
88	IN BOARD / OUT BOARD								
89	BIHSC(4)								
90	Comp hand fired - no RS 232 Line			Tonight till	ce06297			ThAr	4s
91	HD 123782	14 04.6	+49 56	21 5322		02 04 W			1384 145
92	Comp							ThAr	4s
93	Comp							"	"
94	HD 136202	15 14 12	02 09	22 2539		01 32W			1743 50
95	Comp							ThAr	4s
96	BIHSC(4)								
97	Comp							ThAr	4s
98	HD 137909	15 2342	+29 2700	23 2502		02 03 W			990s 160
99	Comp							ThAr	4s
300	Comp							"	"
301	HD 177424	19 00 49	+13 43	23 4824				s	592 110
302	Comp							ThAr	4s
303	Buss (4)								

Spectr. Temp. Dome Temp./Hum. 19°C ... $50\% \text{H}$ Transparency Conditions .. P.R.T. Cloudy
 Focus ... 231 increasing by 50 48
 Spectr. Temp. Dome Temp./Hum. $+17.5^{\circ}\text{C}$... $53\% \text{H}$ 90 CGAIN 0 0 256 1024 9 1 CCFWTT

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle CCD	19.07 300/5645	60u 400u height	6619R	3/4c	60u width = .277u 400 height = .225u		
								1c:	HP123782 also Tel no. 123782		
								2c:		Star.	
145				325 M20ab				5c:	Std Vel	20K AVG of 10 cols of the same Bkgnd.	
								2c:			
								6c:		~ 2K ADU above bkgnd max	
50				506 F80-Z				7c:	Std Vel/HK	Thin Cloud $\Rightarrow$ GETTING	
								2c:		7000 ADU AVG of 10 cols of the	THICKER
								1c:		Dome $T = +18.0^{\circ}\text{C}$	
								2c:	CCD3 control	Restored now	
150	3"			366 Fop				6c:	HK pgn	FOR PAISON & sources, some cloud	
								2			
110				2.99 AOY				5c:	Telluric Std		

Date 1993 June 24/25 Observers [SKJ] In. / Fbr

Emulsion Batches:

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[illegible]

Spectr. Temp. Dome Temp./Hum. 17.5°C 53% Transparency Conditions . Part. Cloudy
 Focus 231
 Spectr. Temp. Dome Temp./Hum. 17.0°C 55%
 Complete cloud at end

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
15	(Using 100 TSCALE & 15 Flat)				19.07 300/5645	60um 60um height	6619A			13.875K ADU max	
15					1705 300/5628	60um 60um	6619A			other side of blaze flats. 140K ADU max	
22						400 height		4ci		CCDT = -100.9°C	
23	1 ? 3* 299							5ci	Telluric Std	cloudy max $\approx 2\text{K ADU}$	
23	20 for Comp							2ci			
23								2ci			
24	not much I guess	385	Fop						1K pgn		
24										Exp meter doesn't respond much since going to this side of blaze?	
25											
26	0							4	std. Vel.	cloudy	
26										HiRmes 1.94	
26										Note. This std vel only one possible and sp Type Reasonable for xcorr latn I presume T_1	

#1 pg 51

SAT SYN

Date .1993.. June .26/27

Observers

..[KK]..

Hlw..T.G.

At some

Meylan p.m.

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Spectr.

Focus . . .

Spectr.

Exp. Mtr.

[illegible]

Spectr. Temp. Dome Temp./Hum. 20.6°C 54% Transparency Conditions... *Mostly clear*
 Focus... 234 ... *Changel from previous night* *after TOUR* TOUR looked at m3, very nice
 Spectr. Temp. Dome Temp./Hum. *2215* TOP done by 2215

52

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle CCD	19.05 300/15628	60u W 100u H	6619A	1c:			
								3c:			
0	3"	5.06	F8D-7					4c:	Std Vel KK	$\approx 1300 \text{ ADU}$ in Ar above bkgnd! AIRMASS 1.458. 169/1 SN estimated.	
								2c:			
5	3"	3.66	Fop					5c:	KK pgn	4500 ADU max above bkgnd Hi mass 1.122	
								3c:			
7								6c:	KK pgn	Revol 1 5c:	
								2c:			
								1c:		PHOT = $+19.6^{\circ}\text{C}$	
								2c:			
7		2.99	AOR					6c:	Telluric Std	AIRMASS 1.19	
								2c:			
								2c:			
0		6.20	G2E					4c:	Median pgn	All (40000 photos) A.R. mass 1.039 $\approx 200/1 \text{ SN}$	

Spectr. Temp. Dome Temp./Hum. 19°C ... $67\% \text{H}$ Transparency Conditions part. cloudy
 Focus ... 1234
 Spectr. Temp. Dome Temp./Hum. 18.2°C ... 72%
 → incr cloudiness

54

Exp. Mtr.	Seeing	Re. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
0	3'	6.20	62V	cd	17.05- 300/15628	60u 400u	6619A	7c	Maylan p5u	(Spec from different than Maylan p5u?)	
								3c			
								1c			
80								7c	Maylan p9u	2K photons EAVG Too cloudy	
50 cts for comp duration								2c			
								2c			
		2.91	60B					5c	std vel	(20K photons EAVG) 1.547 cloudy A10MAS	
								3c			
1		2.91	60B					5c	std vel	slightly more clear	
								2c			
100 t scale						60u 600 High		3c		CCD T = -108.0°C	
								1c			
						too High		1c	Prob total of 2 300K photons		
.234 T = $+18.5^{\circ}\text{C}$								2c	Focus	FOR HD 186427	
(H1 worsened & to Persious)								2c		> 300/15/N	

55

p41

sun - moon

Date 1993 June 27/28... Observers [J.K.] [Mayer]... Tn.....

Emulsion Batches:

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CSS 386 Time Righten with wave Time, strangely enough

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.
CE06358	BIAS (4)								
59 63	FLATS x 5					00 04W	+29 08	Tung	155
64	Comp			21 2824				ThAr	25
65	HD137909	15 23 42	+29 27	21 29 24		00 20W			6555
66	Comp							ThAr	25
67	HD137909	15 23 42	+29 27	21 42 00		00 32W			6285
68	Comp							ThAr	25
69	Comp							ThAr	25
70	HD136202	15 14 12	+02 09 00	21 57 43		01 02 W			960
71	Comp							ThAr	25
72	BIAS (4)								
73	Comp							ThAr	25
74	HD177724	19 00 49	+13 43	22 22 16		02 28 E			457
75	Comp							ThAr	25
76	Comp For	HD 186408						"	"

Spectr. Temp.

Dome Temp./Hum. 21.5°C $75\% \pm$

Transparency Conditions ... clearing ... some cloud ...

Focus 234

Spectr. Temp.

Dome Temp./Hum.

90CGAIN 0 0 256 1024 4 1 CCDPMT

Topup from scratch done by 21 56

Exp. Mir.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle CCP	17.05 300/5625	60u 500u	6614A	1c	Tel Normalization	on HD137909 19935 pixels	
100 fscale						h 50K Filt		4c		CCDT $\rightarrow -101.3^{\circ}\text{C}$ MAX 14K ADU	
1000 fscale						60u $\lambda/\lambda_c = .277$ 100u $\lambda/\lambda_c = .275$		3c	Note - for	Comp FLTs, RS232 Line NOT Responding occurred. All Source Fps were OK though h 80K photos above bkgnd	
5	42"	366	Fop					2c	Kk pgm		
								3c			
5	2"	366	Fop					2c	Kk pgm		
								3c			
								3c			
0		506	F8W2					5c	Std vel	80K photos above bkgnd Air mass = 1.375	
20								6c			
								1		1985 Dome T	
4	23"	299	40V					2c	Telluric Std		
								3c			
								6c			

Spectr. Temp. Dome Temp./Hum. $+19.3^{\circ}\text{C}$.. 79% Transparency Conditions *part cloudy* ..
Focus *234* ..
Spectr. Temp. Dome Temp./Hum. $+18.6^{\circ}\text{C}$ 79% *Thunderstorms to S W again* 58

[illegible]

pg #1 59
Mon - Tues

Date 1993 June 28/29... Observers *W. Tn.*

Emulsion Batches:

Normal Diffuser in gen. F18. Ap. stop 1.17 for Source

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.
<i>CC 15351¹¹⁸</i> <i>cc 52</i>	Comp/Stellar	Hartman		<i>Note [No Exp meter Filter used]</i>			<i>+49 29</i>	<i>FeNe clear</i>	<i>30 s</i>
cg01011	HD123782	14 04.6	49 56		20:49	+0:51W	+49 29		
cc15353	Bias (4)								
54	Comp							<i>FeNe clear</i>	<i>60s</i>
55 ^e	HD123782	14 04 36	49 56 00	20:52:34					<i>285 s</i>
56	Comp							"	<i>60 s</i>
57 ^e	HD123782	"	"	21:00:32		+1:06W			<i>285 s</i>
58	Comp								<i>60s</i>
59 ^e	HD123782	14 04 36	+49 56 00	21 07 56		01 16W			<i>292</i>
60	Comp							<i>clear</i>	<i>FeNe 60s</i>
56 ¹¹⁸ → 63	FLATS x3 <i>handorect</i>					01 20W	<i>+49 29 Ap = 1/2</i>	<i>clear</i> <i>TUNG</i>	<i>10s</i>
64	Comp							<i>FeNe clear</i>	<i>60s</i>
65 ^e	HD136202	15:14:12	+2:09:00	21:28:59		0:22:54			<i>418</i>
cg01012	"	"	"						
66	Comp						<i>clear</i>	<i>FeNe</i>	<i>60 sec</i>

Spectr. Temp. Dome Temp./Hum. 17.28 53.78 Transparency Conditions Fin

Focus 6.75

FANS ON 90CGAIN 60

Spectr. Temp. Dome Temp./Hum.

ccdfmt. 480.0.50.1024.4.1

Exp. Mir.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	G=4990 1800 μ mm	300 μ Full Length	cd-S140A	3/4ci	Focus Test	Note: Headers times are 6 seconds <u>past</u> of WWV	
									Seeing Test		
								1ci			
								5ci		SNR $\approx$ 150	
10365		S.25	M2 II ab					6ci	Std Vel.	Still some twilight	
								7ci			
10130	2"	"	"					8ci	"	X $\sim$ 1	
								9ci			
10,330	2.3"	"	"					10ci	Std Vel		
								11ci			
								12ci		MAX = 5 k ADU/pixel	
56594								13ci			
11616		5.06	F8 III-V					14ci	Std Vel	X = 1.354	
								—	Seeing Test		
								15ci			

Pg #2 61 Mon - Tue

Date June 28/29 1993 Observers Hlw/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		Exp. Mtr.
								Type/Filter	Exp.	
cc15367	HD136202	15:14:12	+2:09	21:42:38		+0:36	+1:46		377s	10525
68	Comp							FeNe Clear	60s	
69	HD136202	"	"	21:53:35		+0:48			397s	10616
70	Comp							"	60s	
71	Bias (4)									
72	Comp								60s	
73	HD171232	18:28:30	+25:25	22:10:29		-2:07	+25°27'		812s	235
74	Comp							"	60s	
75	HD171232	"	"	22:27:24					803s	237
76	Comp								60s	
77	HD171232	"	"	22:43:16		-01:24E			824s	260
78	Comp						clear	FeNe	60s	
79	Bias (4)									
cg01013-17	HD171232	"	"			20110E	+25°		.067s	L
cg01018-19	"	"	"						.133s	
80	Comp							FeNe clear	60s	

Spectr. Temp. Dome Temp./Hum. 15.3°C/61.4% Transparency Conditions ... Clear ... Windy ...
 Focus ... 6.75 ...
 Spectr. Temp. Dome Temp./Hum.
 note No Filters used for exp 62 meter.

Exp	Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7	10525		5.06	F8 II-V	CASS CCD	1800 μ m G=4990	300 μ m	central λ = 5140 Å	16ci	Std Vel		
60s									17ci			
7	10616		"	"					18	Std Vel	X=1.208	
4									19			
60									20ci			
00	2357		7.73	G8II					21ci	Std Vel.	For Comp. Exposure meter dropped in sensitivity by a factor of X=1.176 80 100 Signal to Noise Rat	
3	2371	4"	"	"					22ci			
									21ci	"	X=1.125	
4									22ci			
2	2607								21ci	std vel		
									23ci			
									1ci		Dome T +15.0°C	
7	Light N W wind image above 300 μ slit								Seeing Test	Dome ESE		
55s									"			
0									24ci			

Pg# 3 63

Mon-Tue

Date Jun 28/29 1993 Observers Hlw/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.
CC15381	HD3765	00 35 18	39 40 00	23:20:43		-6:55	+40:11		805s
82	Comp							FeNe clear	60s
83	HD3765	"	"	23:36:36		-6:37			845s
84	Comp							FeNe clear	60s
85	HD3765	"	"	23:53:50					837s
86	Comp							"	60s
87	Bias (4)								
88	Comp							"	"
89	HD123782	14 04 36	49 56 00	00:17:44		+4:26	+49 31		303
90	Comp							FeNe clear	60s
91	HD123782	"	"	00:25:39		+4:34	"		307s
92	Comp							"	60s
93	HD123782	"	"	00:33:13		+4:42	"		330s
94	Comp							"	60s
95	BIAS(4)								
96	Comp								60s

Spectr. Temp. Dome Temp./Hum. $14.4^{\circ}\text{C}/65.3\%$ Transparency Conditions ... Clear

Focus

Spectr. Temp. Dome Temp./Hum. $13.8^{\circ}\text{C}/1.6856$

64

Exp. Mtr.	Seeing	✓ Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1587		7.36	dk5	CASS CCD	1800 l/mm G=4990	300μ	central λ = 5140 Å	25ci	Std Vel.	X=3.163, SNR=70	
								26ci			
1933		"	"					25ci	"	X=2.809	
								26ci			
2136		"	"					25ci	"	X=?	
								1ci			
								28ci			
10080		5.25	M2 III ab					29ci	Std Vel	X=1.396	
								30ci			
10091		"	"					29ci	"	X=1.429	
								30ci			
10312		"	"					29ci	"	X=1.465	
								30ci			
								32			

Pg #4

Mon-Tue

65 Date Jun 28/29 1993 Observers Hlw/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.
97	HD136202	15 14 12	02 09 00	00:50:21		+3:45			201s
98	Comp							FeNe Clear	60s
99	HD136202	"	"	00:56:16		+3:55			206s
cc15400	Comp							"	60s
01	HD136202	"	"	01:01:41					201s
02	Comp							"	60s
03	Comp							FeNe Clear	60s
04	HD171232	18 28 30	25 25 00	01:14:26		+1:07	+25:28		800s
05	Comp							"	60s
06	HD171232	"	"	01:31:57		+1:24	"		800s
07	Comp							"	60s
08	HD171232	"	"	01:48:05		+1:38	"		933
09	Comp							"	60s
410	Bias (4)								
11	Comp							FeNe Clear	60s
12	HD123782	14:04:36	49:56:09	02:15:31		+6:24	+49.28		331

Spectr. Temp. Dome Temp./Hum. 14.0°C / 69.3% Transparency Conditions Clear

Focus

Spectr. Temp. Dome Temp./Hum.

66

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3900		5.06	F8 II-V	CASS CCD	1800 λ /mm G=4940	30 μ m	Central λ 5140Å	18ci	Std Vel	X=2.390	
								2ci			
4270		"	"					18ci	"	X=2.480	
								2ci		ccdtemp = -100.9°C	
3830		"	"					18ci	"	X=? , Note 1/3 of	
								2ci		telescope mirror	
								2ci		covered by dome floor!!!	
								2ci		[ie near Platform in west]	
3239		7.73	G8 III					21ci	Std Vel	X=1.086	
								22ci			
3450		"	"					21ci	"	X=1.104	
								22ci			
3920		"	"					21ci	"	X=1.124	
								22ci			
								1ci		X=2.085	
		5.25	M2 III					2ci	Std Vel	Telescope on East Side	
?								29ci	Std Vel	of Pier!!!!	

pg#5

Mon Tue

67

Date Jun 28/29 1993

Observers

H/W/Tn

Emulsion Batches:

Spectr. Tr.

Focus..

Spectr.

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.
cc15413	fts Comp							FeNe Clear	60s
14	HD123782	14:04:36	+49:56	02:24:27		+6:32	+49:28		358s
15	Comp							"	60s
16	HD123782			02 33:17		06 43W			359s
17	Comp							"	6s
18	Comp							"	"
19	HD3765	00:35:18	39:40:00	02:45:52		-3:35	+40:07		400s
20	Comp							"	60s
21	HD3765	"	"	02:57:51		-3:22			456s
22	Comp							"	60s
23	HD3765	"	"	03:07:52		-3:16			400s
24	Comp							"	60s
25	HD123782 Bias(4)								
26	Comp							FeNe	60s
27	HD123782	14:04:36	+49:56	03:25:00		+7:34		FeNe	361s
28	Comp							FeNe	60s
29	"	"	"	03:34:47		+7:41			400s
30	Comp							FeNe	60s
31	"	"	"	03:43:46		+7:53			385s

Exp. Mtr.

1007

1024

1750

2200

2098

0350

10000

10650

Spectr. Temp. Dome Temp./Hum. $13.2^{\circ}\text{C}/73.2\%$ Transparency Conditions Clear
 Focus... 6.75 still
 Spectr. Temp. Dome Temp./Hum.

68

Exp.	Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					CASS CCD	1800 l/mm G=4990	300 M	Clamdon 5140A	2ci			
10075		5.25	M2 IIab						29ci	Std Vel	X = 2.158	
									2ci			
10,240									29ci	std vel		
									5ci			
									5ci			
1750		7.36	K5						25ci	Std. Vel.	West Side of Plan X = 1.300	
									33ci			
2200		"	"						25	"	X = 1.260	
									33ci			
2098		"	"						25ci			
									33ci			
									34ci	1ci		
10350		5.25	M2 IIab						29ci	Std. Vel.	X = 2.916	
10000		"	"						34ci	"	X = 3.061	
10650		"	"						34ci	29ci	X = 3.250	

pg # 6

69 Date Jun 28/29 1993 Observers Hlw/Tn

Emulsion Batches:

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[illegible]

Dome Temp./Hum.

Focus ... 6.75

Spectr. Temp.

Dome Temp./Hum.

12.8°C 75%

70

[illegible]

Pg. ①

Date Jun 29/30 1993 Observers H.W./Tn

Emulsion Batches:

CSS 386 Time 9 secs ahead of U.W.V. time

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.
cc15438.ft	Bias (4)			Note: No Filter Before exp meter, Tonight.					
39/40	Comp/stellar	Hartman		(Also f18 stop in and Diffuser for sources)					40s/40s
41	Comp	→ 14:04:36	[Refer to June 17/18 Tests with 5100R Filter Before Exp meter]			clear	Felle	60s	
42	HD123782	14:04:36 49:56:00	49:56:00	20:40:11		+0:50	+49 29	202s	
43	Comp						clear	Felle	60s
44	HD123782	14 04 38	149 56 00	20:49:42				202s	
45	Comp							60s	
46	HD123782	"	"	20:56:50		01 07W		202s	5000
47	Comp						clear	Felle	60s
→ 48 50	FLATS x 3					00 02W +38°	Tung Hp 1/2	10s	
51	Comp						clear	Felle	60s
52	HD136202	15 14 12	102 09 00	21 12 29	not written to fls			250s	93000
52	Comp						clear	Felle	
53	HD136202			21 20 11				250s	845
54	Comp						clear	Felle	60s

Spectr. Temp. Dome Temp./Hum.

ccdfmt 480 0 50 1024 4 1

72

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	G=4990 1800 l/mm	300 μ	clambda 5140A	1ci			
								$\frac{3ci}{4ci}$	Focus Test		
								5ci			
		5.25	M2 #ab					6ci	Std Vel	Sp control failed during exp	
								7ci			
		"	"					8ci	Std Vel		
								9ci			
5000		"	"					8ci	Std Vel		
								0		CCD T = -101.8°C	
								12ci		MHX 6000/1001/pixel	
								11ci			
9,300	3"	5.06	F8IV-V					12ci	Std vel	30° N of 3/4 moon	
								13ci			
8450	2"							12ci			

73 P4#2

Date . 1493 June 29/30 Observers ... H. W. ... I. T. ...

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.	Exp. Mtr.
CC15455	HD136202	15 14 12	+02 09 00	21 29 35					250s	
56	Comp						Clear	Felle	60s	
57	HD136202	"	"	21:37:13					370s	9650
58	Comp							"	60s	
59	Bias (4)									
60	Comp						Clear	Felle	60s	
61	HD171232	18 28 30	+25 25	21 49 40		02 17 E			600s	2600
62	Comp						Clear	Felle	60s	
63	HD171232			22 02 21		02 05 E			600	2800
64	Comp						Clear	Felle	60s	
65	HD171232			22 14 46					600	2750
66	Comp								60s	
67	Comp							"	"	
68	HD123782	14 04:36	49:56:00	22:32:33		02:40 W			220s	9700
69	Comp									
70	HD123782	"	"	22:38:48		02:47 W			210s	9700

Spectr. Temp. Dome Temp./Hum. $+15.7^{\circ}\text{C} \dots 64.5\%$ Transparency Conditions $\dots \text{Fine} \dots$
 Focus $\dots 6.75 \dots$
 Spectr. Temp. Dome Temp./Hum.

74

Exp. Mtr.	Seeing	Re- Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	2"	5.06	F80-V		18006/m G4990	300u	5140A	12ci	Std Vel		
								13ci			
9650		"	"					12ci	Std Vel	$X = (1.254)?$	
								13ci			
								1ci			
	2"							14ci			
2600	2"	7.73	G8 III					15ci	Std Vel	Air Mass 1.1957	
								16ci			
2800								15ci	Std Vel	Air mass 1.1702	
								16ci			
2750								15ci	Std Vel		
								16ci			
								17ci			
9700		5.25	M2 IIIab					8ci		$X = 1.131$	
								9ci			
9700		"	"					8ci		$X = 1.142$	

PJ ③

Tue - Wed

75

Date

Jun 29/30 1993

Observers

Hlw/Hn

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.	Exp. Mtr.
cc15471.fhs	Comp							FENE Clear	60s	
72	HD123782	14 04 36	+49 56 00	22:44:43					228s	9900
73	Comp (for HD3765)			22 54 51				"	60s	
74	HD3765	00 35 18	+39 40 00	22:56:45		07 16 E			700s	15"
75	Comp			23 09 30				"	60s	
76	HD3765	00 35 18	+39 40 00	23 11 27					777	15"
77	Comp							FENE Clear	60s	1970
78	HD3765	00 35 18	+39 40 00	23 27 47					827s	258
79	Comp							FENE Clear	60s	
80	BIHS(4)									
81	Comp							FENE Clear	60s	
82	HD136202	15:14:12	+02:09:00	23:54:15		2:55 W			400s	877
83	Comp									20000
84	HD136202	"	"	24:03:24		3:04 W			410s	693P
85	Comp									
86	HD136202	"	"	24:12:42		3:16				867

Spectr. Temp. Dome Temp./Hum. $15.0^{\circ}\text{C}/68.77$ Transparency Conditions Clear..sl/hazy.....
 Focus 607.5
 Spectr. Temp. Dome Temp./Hum. 76

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
600				CASS CCD	1800 $\text{\AA}/\text{mm}$ G=4990	300 M	clambda 5140A	9ci			
9800		5.25	M2 III ab					8ci		No extend comp done!!	
15 ^x		7.36	dK5					18ci			
								19ci	std vel	X _{start} = 4.1 Guiding on arrow	
15 [*]				5 k photons Σ AVE above	buckled (recds)			20ci			
1970 for comp duration only								19ci	std vel	* AIR MASS 3.59 exp meter failure.	
258 6"								22ci			
								19ci	std vel	(exp meter came back 4 06 45 East)	
								21ci			
								1ci		Dome T = +14.8 $^{\circ}\text{C}$	
8770 10000		5.06	F8 II-V					22ci			
								12ci	Std Vel	X = 1.825	
								13ci			
6938		"	"					12ci	"	X = 1.883	
								13ci			
8670		"	"					12ci	"		

pg. ④

Tue - Wed

77

Date Jun 29/30

Observers

Hlw/Tn

1993

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. Mtr.
87	Comp							F/Ne	
cg01028 ^{fts} → 31	HD171232	18 28 30	+25 25 00			00000			67ms
cg01032 ^{fts} 33	"	"	"	00 31					133ms
88	Comp			38			clear	F/Ne	60s
89	HD123782	14 04 36	+49 52	00 39 52					261
90	Comp			00 45 10			clear	F/Ne	60s
91	HD123782	"	"	00 47 55					260s
92	Comp						clear	F/Ne	60s
93	HD123782	"	"	00 54 37					289s
94	Comp						clear	"	60s
95	Comp						"	"	"
96	HD171232	18 28 30	+25 25	01:19:38					600s
97	Comp						clear	F/Ne	60s
98	HD171232			01 31 58		01 26 W			664
99	Comp						clear	F/Ne	
CE1500	157A								

Spectr.

Focus.

Spectr.

Exp. Mtr.

700

5490

4890

1684

5130

Spectr. Temp. Dome Temp./Hum. 14.3°C / 73.5% Transparency Conditions Clear, ... beginning ...

Focus

Spectr. Temp. Dome Temp./Hum.

Fans OFF tonight. to get hazy if
78

Exp. Mtr.	Seeing	V Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	18002/nm G=4980	300 M	chamblin 5140A	130			
	poor	7.73	G8 III	Dome SSH, light NW wind					Seeing Test	Intensifier at 235 G1	
									"	"	
7900		5.25	M2 III _{ab}					13			
								8ci	std vel		
								9ci			
5490		"	"					8ci	std vel	X = 1.538	
								9ci			
4840		"	"					8ci	std vel	ccdtemp = -100.5°C	
								9ci			
								8ci			
1684		7.73	G8 III					15ci	Std Vel		
								16ci			
2130	3 3/4"							15ci	std vel		
								17ci			

Pg #5

79 Date Jun 29/30 Observers H. L. T. T. T.

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.
CC15500	HD171232	182830	+2525	014542					711s
01	Comp						clear	Felle	60s
02	BINS(4)								
03	Comp							"	"
04	HD3765	00 35 18	+39 40	02:07:20					175s
05	Comp							"	60s
06	HD3765	"	"	02:21:04		3:50 E			680s
07	Comp							"	60s
08	HD3765	"	"	02:34:55					671s
09	Comp							"	60s
10	Comp							"	60
11	HD123782	14 0436	+49 5600	02 5722					160s
12	Comp							"	60
13	HD123782	"	"	03:03:00					199
14	Comp							"	60s
15	HD123782	"	"	03:08:42					159s

Spectr. 1

Focus ..

Spectr. 2

Exp. Mtr.

2470

1495

777

1746

?

4345

3150

Spectr. Temp. Dome Temp./Hum. $+13.7^{\circ}\text{C}$ 7728 Transparency Conditions *S1 hazy*Focus *6.75*

Spectr. Temp. Dome Temp./Hum.

80

Exp. Mtr.	Seeing	Pr. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2470		7.73	G81D				5140A	15c	Std Vel	1.111 H ₂ mass	
								18c			
								1c			
								18c			
1495		7.36	2K5					19c	Std. Vel	$x = 1.404$	
								20c			
717		"	"					19c	"	$x = 1.348$	
								20c			
1796		"	"					19c	"		
								20c			
								8c	Std vel	Tel. now Reversed	
?	3'	5.25	m2 H14b					20c			
4345		"	"					8c	"		
								20c			
3050		"	"					8c	"		

pg #6

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Spectr. T.
Focus ...
Spectr. T.
Exp. Mtr.

67

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions

Focus 6:7.5.

Spectr. Temp.

Dome Temp./Hum.

82

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							5140R	20c:			
								1c:			
	67 msec						11600 300u slit			scale for Seeing test	Too cloudy

Spectr. Temp. Dome Temp./Hum. *18.2°C 62.5% RH* Transparency Conditions *Fine*

Focus ... *6.78*

Spectr. Temp. Dome Temp./Hum.

90 CGAIN

84

Exp. Mtr.	Seeing	WV V Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CHSS CCD	1800 l/mm G9990	382 Full length	51A09	3/4	Focus	<i>25-30 pixels</i> 326-335 x plot	
								5ci			
8121		5.25	M2 Hab					6ci	std vel		
								7ci			
9360		"	"					8ci	Std. Vel		
								9ci			
		"	"					10ci	"		
								11ci			
								12ci			
								13ci			
								14ci			
								15ci			
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								96ci			
								97ci			
								98ci			
								99ci			
								100ci			

Focus left at
6.78

L2" 526 B9V

(440 0 50 1024 41)

3ci

4ci

5ci

Telluric & General std
Tell still West side of
Piers.

F00 B41 SN1993J pgm

guided

85 pg #2

Some [B+I]

Emulsion Batches:

Date 1993 June 30/4/91 Observers H.L.W./J.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		Exp. Mr.
								Type/Filter	Exp.	
CC15539	SN 1993J	09 47 10	+69 29 31	21 37 00		06 24 W			1274	5
40	Comp						Ap 1/8	FeNe	5s	Fe
⁴¹ 43	FLATS x3						Ap 1/4	Tung	4s	
44	Comp						Ap 1/8	FeNe	5s	
45	SN 1993J	09 47 10	+69 29 31	22 04 44					810	3
46	Comp						Ap 1/8	FeNe	5s	
⁴⁷ 49	FLATS x3	At SN Posn.		22 0			Ap 1/4	Tung	4s	
cg01046-f1s cg01048-f1s	SN 1993J on 250x SLIT									
50	BHSC(4)	@ 440	0 50	10 24 4	1 CCD	FMT				
51	BHSC(4)	480	0 50	10 24 4	1 CCD	FMT				
52	Comp						Clear	FeNe	60s	
53	HD123782	14:04:36	+49:56:00	22:37:20		2:51 W			171s	9580
54	Comp						"	"	60s	
55	HD123782	"	"	22:42:35					172s	9790
56	Comp							"	60s	
57	HD123782	"	"	22:47:37					179	9858

Spectr. Temp. Dome Temp./Hum. 18°C 61.5% H Transparency Conditions ... Fine

Focus... 6:78.....

Spectr. Temp. Dome Temp./Hum.

86

[illegible]

Spectr. Temp. Dome Temp./Hum. 62° 69.5° Transparency Conditions Clear
 Focus 6.78
 Spectr. Temp. Dome Temp./Hum. 85

Exp. Mtr.	Seeing	P.C. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS	1800/nm	300μ	5140A	16c			
				CD	G 4990	FULL		17c			
10,500	4.2	5.06	F8					18	std vel		
								19			
9840		"	"					20	std vel	1.58 AIRMASS	
								21	"		
9300		"	"					22	"		
								23			
								24c			
3080		7.73	G8					25c	Std Vel		
								26c			
3000		"	"					28c	std vel		
								29c			
3260		"	"					30c	Std Vel		

89 1944

Date 1943 June 30/... Observers H. W. J. T. J.

July 1

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.	Exp. Mtr
CG01053 - 56	HD 171232	18 28 30	+25 25	00 16						67 msec
CG 57 59	"	"	"	00 18						133 msec
74	Comp							FeNe clear	60s	
75	HD 3765	00:35:18	+39:40:00	00:29:52		~ -5:40			404s	1540
76	Comp							"	60s	
77	HD 3765	"	"	00:40:29					400s	1495
78	Comp							"	60s	
79	HD 3765	"	"	00:49:42					400s	1619
80	Comp									
81	Bias (4)									
82	Comp							FeNe clear	60s	
83	HD 123782	14:04:36	+49:56:00	01:10:11					250s	11000
84	Comp							"	60s	
85	HD 123782	"	"	01:17:06					250s	7940
86	Comp									
87	HD 123782	"	"						252	

pg #5

91

Date Jun 30/Jul 1
1993

Observers

Hlw/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.
88	Comp							FeNe clear	60s
89	Comp							"	"
90	HD171232	18 28 30	+25 25	01:41:26		1:34W			400s
91	Comp							"	60s
92	HD171232	18 28 30	+25 25	01:50:30					402
93	Comp							"	60s
94	HD171232	"	"	02:00:01					401s
95	Comp							"	
96	BIHS(4)								
97	Comp						clear	FeNe	60s
98	HD 3765	00 35 18	+39 40 00	02 15 09					408
99	Comp						clear	FeNe	60
CC15600	HD 3765			02 24 42					407
01	Comp						clear	FeNe	60s
02	HD 3765			02 34 01					406
03	Comp						clear	FeNe	

Spectr.

Focus.

Spectr.

Exp. M

226

241

229

* 40

1860

35

1750

35

Spectr. Temp. Dome Temp./Hum. $15.2^{\circ}\text{C}/72.4\%$ Transparency Conditions *Clear*Focus ... *6.78*

Spectr. Temp. Dome Temp./Hum.

92

Exp.	Exp. Mtr.	Seeing	PLU V Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					CAS CCD	1800 λ/m 64990	300 full	5140A	17c			
									18c			
4.5	2260	2"	7.73	G8 II					19	Std Vel	Airmass 1.123	
2.5									20			
2.5	2416	"	"	"					21	Std Vel		
1.5									22c			
2.5	2290	"	"	"					23c	Std Vel		
									24			
									1c			
1.5	* 40								24c	* exp meter failed during exp		
7.5	1860	7.3		dk5					25	Std Vel		
1.5									26c			
2.5	35								27c			
1.5	1750								28c			
2.5	35								29c			
									30c			

9 H photons 2 AUG
above bg nd

Spectr. Temp. Dome Temp./Hum. ^{7/49} ^{74%} Transparency Conditions ^{Fine}

Focus ... 6:78

Spectr. Temp. Dome Temp./Hum. 14.7°C... 77%

[illegible]

Spectr. Temp. Dome Temp./Hum. $\pm 19.2^{\circ}\text{C}$ 56% Transparency Conditions ... Clouding in
 Focus 6.78 90C Gain To point clear
 Spectr. Temp. Dome Temp./Hum. 510 0 50 1024 41 CCD FMT 96

Exp. Mtr.	Seeing	Mag. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emission	P.H.	Program	Remarks	Quality
				CASS CCD	150W/mm G 2471	250μm rect				CCDT = -100°C	
70		526	B9V				* 7150Å	4C1	Telluric Std for possible use with previous night OBS AT 7150Å Despite Replacement of grating and slit, a fair match was made to last night's spectrum. However last night's grating may have been slightly out of alignment rel to tonight, As FMT for centering Sp was 446 0 50 1024 41 Then. Tr * About 5 pixels Blue of CC15545.fts Region		

pg ①
97 July 34 1993 Observers Hlw/Fbr
Date

Emulsion Batches:

WRITE COMP CC 15624

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.
cc15624.fts	Bias (4)								
25/26	Comps								
27	Comp							FeNe clear	60s
28	HD123782	14 04 36	+49 56	23:58:33		+4:22	+49:29		259 10500
29	Comp	epoch 2000.	epoch 2000.	00:43:38					60
30	BD +4 3561	17 57 49	+4 40 48	2449		2: W	+4:37'		2000, 2040
32	Comp	Not written!							60
31/32	Bias (4)								
31/32	Comp								60s
33	Comp								60s
34	AC+62 26749	17:34:30	+61:45:00	01:42:09		1:20W			3020s 1613
35	Comp								60s
36→38	3x flats							Tung 1/2	10s
39	Bias (4)								

Spectr. Temp. Dome Temp./Hum. 480 0 50 1024 4 1

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CED	1800 $\sqrt{\text{mm}}$ G=4990	310 μ	claydon 51409				
									3/4 _{cl} Focus Test		
									3ci		
10500	$\sqrt{5.25}$		M2 IIIab						4ci	Std Vel	Encoder offsets: -0.019 -0.042
									5ci		
2040			M5 II						6ci	H/w Pgm.	Having big problems with Spectrograph Controller - have to turn it on, off etc.
									7ci		
									1ci		
									8ci		
1613									9ci	H/w Pgm.	

99

Date July 4/5 1993 Observers Srtb/Fbr

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.
CC15640	BIAS (4)					BG39			
CC15641	Focus TEST								
642	Focus TEST								
643	COMP							FeNe	60s
644	H0113226	125712	+11 30	20 ⁴¹ 56 56					800s
645	COMP						Clear	FeNe	60s
646	COMP						Clear	FeNe	60s
47	H0177724	190049	+13 43						
48	COMP								
49	BIAS (4)								
50	COMP						Clear	FeNe	60s
51	HD113226	125712	+11 30	21:36:35					
52	COMP							FeNe	60s
53	COMP							FeNe	60s
54	HD124897 (XB00)	14 ^h 11 ^m 06 ^s	+19° 42'	22:06:46	22:48:59				

Spectr.

Focus

Spectr.

Exp. Mtr.

51K

160000

102

[illegible]

Spectr. Temp.

Transparency Conditions

Focus

Spectr. Temp.

102

102

[illegible]

103 ①

Date JULY 5/6..... Observers Sgs./Fbr.....

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.
CC15667	BIAS (4)								
66-69	FOCUS TEST								
70	COMP						CLEAR	FeAr	60s
71	HD 136849	15 17 48	33 17 30	21 33 52	-	-			539
72	COMP						CLEAR	FeAr	60s
73	COMP						CLEAR	FeAr	60s
74	HD 162714	17 47 17	-06 07 12						600s
75	COMP						CLEAR	FeAr	60s
76	BIAS (4)								
77	COMP						CLEAR	FeAr	60s
78	HD 173297	18 39 20	-20 45 00	22 27 00					
79	COMP								
80-84	FLATS X5						1/2	Tung	7s
85	BIAS (4)								
86	COMP						CLEAR	FeAr	60s

Spectr.

Focus

Spectr.

Exp. Mtr.

16K

52/100

Spectr. Temp. Dome Temp./Hum. 24.8°C / 73.27% Transparency Conditions HAZY + HUMID

Focus

Spectr. Temp. Dome Temp./Hum.

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					CASS CCD G=5910	1800 l/pin	250 darker	6400 A				
	10K	4.5"								TELLURIC		
	52 (EXP METER)	4.5"	6.15		G01b					SOS PROGRAM	EXPOSURE METER NOT WORKING! - SET EXPOSURE TIME TO 600 seconds	
					7.48 G01b					SOS PROGRAM	THROUGH 9.5 AIR MASSES EXPOSURE METER METER STILL BROKEN - 40 MINUTE EXPOSURE - LOW COUNTS ON CHIP - HAZY!	

105 (2) Date JULY 5/6 Observers Sgs/Fbr

[illegible]

Spectr. Temp. Dome Temp./Hum... 24.5°C / 74.8% Transparency Conditions... HAZ.V... + HUMID... ..

Focus

Spectr. Temp. Dome Temp./Hum.

106

Exp. Mtr.	Secing	Pig. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3000		V 7.73	G8II						RV STO	EXPOSURE METER WORKING AGAIN!!! THROUGH HAZE	
5000	SHIT	V 5.8	F2						Sgs Program	THROUGH HAZE	
4500		V 5.75	G07b						Sgs Program	THROUGH HAZE	
20K		W 2.99 V 2.99	AOI AOII						TELLURIC TELLURIC	THROUGH HAZE	

107
Date JULY 6/7 Observers Sgs/Fbr

Date JULY 6/7 Observers SAS/FBI

Emulsion Batches:

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[illegible]

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions ... Clear

1 LARGE SAT TOUR m13 viewed

110

Exp.	Mir.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					Caltech CCO	$\lambda = 400 \mu (220)$ $\lambda = 60 \mu (270)$					* 6591.484 Å at Row 520 and Column 125	
											* 6591 Å [6th complete from Top]	Right on
										1ci	CCT = -100.5°C	
										3ci		
20	4"	6.30	G2V			17.80 echelette 300-5620	600 width 600 height			4ci	Min pgm	32 K photons
										3ci		
32	4"	6.3	G2V							5ci	Min pgm	~ 40 K photons 2 AUG 1.110 Air mass
										3ci		
23		6.3	G2V							6ci	Min	
										3ci		
39	3"	6.3	G2V							7ci	Min	
175			299 AOF							2ci	Min pgm	Telluric

211

Sun / Mon

Date _____

Date 1993 July 11/12

Observers

$$K_C/T_n$$

Emulsion Batches:

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[illegible]

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions *heavy cloud*

Focus

Hartmann shift -0.18 pix

Spectr. Temp.

Dome Temp./Hum. $+23^{\circ}\text{C}$... 76% H

6/0H
Fibertel Reticon

lighting

112

[illegible]

113 Pg#1 Mon - Tues

Emulsion Batches:

Date 1993 July 12/13..... Observers K.H./T.H./H.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.
CG200	MIZAR HD116657	13 19 56	+55 27 00	20 22		20 06 W	+55°		
	HD116656 (Pair)				20 37				
RF00023	FLATS x2					Diffuser In	R60 filter	TUNG	100sec
24	Comp					No diffuser	R60 filter	FeNe	20sec
25	HD116656	13 19 54	+55 27	20 37 32	20 43 21	02 25 40 W	06 56 00	for stellar	20sec
26	"			20 44 24	20 53 48				3000
27	Comp							FeNe	20s
28	HD116657	13 19 56	+55 27	20 57 43	21 07 23	03 10 W			Prob 20kont
29	Comp							FeNe	20s
30	HD159561	17 30 18	+12 38 00	21 36 23	21 47 17	00 41 E			3000
31	"	"	"	21 50 00	21 59 02				30k
32	"	"	"	21 59 53	22 08 55	00 19 E			30k
33	Comp							FeNe	20s
34	HD172167	18 33 34	+38 42	22 15 12	22 18 37				30k
35				22 19 30	22 22 06				30k
				22 23 22	22 26 15				30k

[illegible]

page 2

115

Date

Jul 12/13 1993

Observers

KK/Tn/Hlw

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.
RF00036	HD172167	18:33:34	+38:42	22:27:12	22:34:47				
37	Dark								
38	Comp	18 33	+38					FeNe clear	20s
39	Comp	19 20 27	+2 55					FeNe R60	20 ^s
40	HD182640	"	"	22 45 07	23 14 54	01 03 E			
41	"	"	"	23 15 57	23 48 51				
42	"			23 49 37	0 19 37	00 02 W			
43	Comp							FeNe R60	
44	Flat before fill-up					(Diffuser IN)	R60	TUNG	100 ^s
45	Flat after fill-up					"	R60	"	100 ^s
46	Comp					Diffuser OUT		FeNe R60	20s
47	HD177724	19 00 49	+13 43	00 41 56	01 01 52				
48	Comp					Diff out for comps		FeNe R60	20s
49	HD203280	21 16 12	+62 10	01 10 34	01 24 36	00 47 E			
50	"			01 25 40	01 25 40				
51	"			01 47 56	01 47 17 02 13 29	0:02 W			

Spectr.

Focus

Spectr.

Exp. Mtr.

100

579

413

2410

304

30K

26K

Spectr. Temp. Dome Temp./Hum. $18.8^{\circ}\text{C}/59.2$ Transparency Conditions ... Clear, ... partially ...
 Focus cloudy in the North 116
 Spectr. Temp. Dome Temp./Hum. 02:10 EST

Exp. Mir.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
100 K		0.03	A0 I	Fibered Reticon	600/40.4	titar splitter	8700A		KK	5900 ADU max 25 ADU max	
579	4"	3.36	F0 IV						KK pgn	Exposure slow? 1.438 AIRMASS 1000 ADU max	
413										1129	
2410										789	
	3"	2.99	A0 V						KK pgn	Also Regularly used Telluric STD	
30 F		2.44	A7 II-V							865 1400 ADU max	
30 K											
26 K									1481	clouds drifted over this last exposure.	

117

Date _____

Jul 12/13 1993

Observers

Tn/Hlw

Emulsion Batches:

[illegible]

Spectr. Temp. Dome Temp./Hum. 16.8°C/64.8% Transparency Conditions ... Cloudy, clear patches

Focus

Dome Temp./Hum. +17°C... 65%

118

[illegible]

119

Emulsion Batches:

Date July 13/14 1993 Observers KK / HIW

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.
RF00056	Flats							Jung Diffuser In	100s
57	Comp						Diffuser Out	FeNe Clear	20s
58	HD156164	17:10:54	+24:57	20 52 30	21 27 21				
59	HD 156164	"	"	21 29 07	21 44 29				
60	Comp							FeNe Clear	20s
61	HD172167	18 33 34	+38 42	21 50 58	21 51 50	-1:34			
62	HD172167	"	"		21 53 50				
63	HD172167	"	"	21 54 27	21 57 35				
64	HD172167	"	"	21 58 14	21 58 27				
65	HD172167	"	"	21 59 02	59 19				
66	Comp	"	"					FeNe clear	20"
67	Comp	17 30 18	+12 38					"	"
68	HD159561	"	"	22 6 52	22 13 51				
69/70	Dark x2	"	"						
71-73	Flats								100"
74-76	Flats								25"

Spectr. Temp. Dome Temp./Hum. 18.6°C/86.1% Transparency Conditions PLY. CLOUD.

Focus . . .  . . .

Spectr. Temp. Dome Temp./Hum.

RG0 FILTER FOR COMP OAS60 FOR STAR

[illegible]

Spectr. Temp. Dome Temp./Hum. 18°C ... 59.1% Transparency Conditions ... Fine ...
 Focus ... ~~230~~ ... 2302
 Spectr. Temp. Dome Temp./Hum. $+15^{\circ}\text{C}$... 65.0% 129

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
73					19.05 300- 660	60u	6484A			04T809RD vs 1 Ael	
					H = .205 = 60u			1ci		Temp just brought CCDT = -101.7°C	
								2ci		MAX 14K	
0	6.30	G2V						3ci	Mln pgn	3K photons above bkgnd Σ AVG Crash, but focus good	
								4ci		and Hadex calibrated.	
0								5ci	Mln pgn	18K photons Σ AVG above Background.	
665 for comparison										25K photons	
0								6ci		CCDT = -100.8°C	
70	4"									Dome T = $+15.6^{\circ}\text{C}$	
	(lots of scintillation)				TV guider Refocused Before This Exp.			3ci	Mln pgn	40K photons Σ AVG Tel focus 2291	
								2ci			
38	5"							5ci	Mln pgn	40K photons 1.417 Air MASS	
								4ci			
73	4"							6ci	Mln pgn	CCDT = -100.7°C	

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions *S1 hazy*.....

Focus ... 2322

Spectr. Temp.

Dome Temp./Hum. 14.8°C 65.7%

126

[illegible]

127 pg#1

Emulsion Batches:

Date 1993 July 17/18..... Observers [H.K.] T. & I. F. Br.

CSS Time 12 secs ahead of WWV

RG610 Filter in as usual

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.
ce 06431									
33	FLATS x 3			22 10		0230 W	10°		1 sec
34	BIHSC4)								
35	Comp							THAr	1.5s
36	HD 137909	15 23.7	+29 27	20 25 45					381s
37	Comp								
38	Comp								
39	HD 136202	15 14 12	+13 43	20 36 45					493
40	Comp								
41	BIHS (4)								
42	Comp							THAr	1.5 sec
43	HD 177724	19 00 49	+13 43	22 28 17					581s
44	Comp							THAr	1.5s
45	Comp							"	1.0 sec
46	HD 136202	15 14 12	+13 43	22 58 58					1107
47	Comp							THAr	10s
48	Comp for next star			23 21				"	"

Spectr. Temp. Dome Temp./Hum. 19.1°C ... 57.6% Transparency Conditions ~~clearly in~~ some cloud.
 Focus ... 2.302 ...
 Spectr. Temp. Dome Temp./Hum. SAT TOUR after exp 100640 128

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
using 100 t x d e				Echelle CCD	$w = 60\mu$ $H = 185$ 14.05 300/5866	6489 H2	2c 1c			10 K pix	
				[Cross SI changed From previous night]		6489 in H2	3c	Actual Center AT col 126 Row 512		A.B.P. grainy (Like tweed pattern) only $\pm 1-2$ ADU	
180 cm/s	2"	366	Fop		$w = 60\mu = 277$ $H = 205 = 600$		4c 5c			70 K photons Σ Avg above Background	
32	12"	506	P8V-V				6c			Std Vel KK 11 K photons Σ AVG (Then TOUR 1.5 hrs)	
191		299	A0V				7c 8c			Telluric Std.	
				Echelle	17.05	4689A					
				Gross	300/5500	*6534A					
1 (now!)							4c 3c 3c			(accurate center) Center est at col 125 Row 512 Std Vel KK 32 K photons Σ AVG	

Spectr. Temp. Dome Temp./Hum. $+17^{\circ}\text{C} \dots 728$ Transparency Conditions $\dots \text{partly cloudy} \dots$
 Focus $\dots 2302 \dots$
 Spectr. Temp. Dome Temp./Hum. 130

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3	3"	366	FOP	Echelle CCD	17.05 W 300.550 H	60 μ 600 μ	653A ^P	5ci	kt pgn		
								7ci			
								1ci		200K photons Σ Aug 450/1 above bkgnd.	S/N
9		2.99	AOV					2ci	Telluric Std	1.158 Air mass	
								1			
								1ci			
0	2.3"	630	G2V					2ci	Min pgn.	50K photons Σ Aug above bkgnd. CCNT = -100.7°C	
(unfortunately 1/10 sec for this comp)											
0								3ci			
								7ci	Min pgn	≈ 50 K photons Σ Aug above bkgnd.	
								3ci			
0	4"							5ci	Min pgn	≈ 50 K photons again	
								2ci			
								7ci	for std ve/ (extra)		

Spectr. Temp. Dome Temp./Hum. $+15.7^{\circ}\text{C}$ 80% Transparency Conditions *Fine*

Focus 2302

Spectr. Temp. Dome Temp./Hum. *+15.5° 81%*

Transparency Conditions Fire

132

Exp.	Mtr.	Seeing	P.V. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
T7	23	3"	291	GOT6		⁶⁰ H=600	6534R	1c;	Std vel	extra MAX AKADU		
								2c;		.		
						w = 60 H = 800 _m		2c;		13K ADM max		
								1c;				
V1	0 0 128 1024 81					w = 60 _m H = 800 _n		3/4c	Focus	not too Persoon = 46/		
	Set . 2320 now T = +21.0°C RG 610 filter still in										OUTBOARD vs 1 Red	
						H = 800 _a still 6534 1/2						

133
①

Date ... JULY 20/21 ... Observers ... Sgs/Tn ...

CSS 386 TIME 18s AHEAD OF WWV ... DIFFUSER IN FOR SOURCES

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.
CG30001 -GG-06	HD144579 SEEING TEST	16 01.5	+39 24	20 35	4x67msec +2x133msec	200 15W	+39°	Int <u>220</u> Gain 10	
CC15 715.85	BIAS (4)								
716 717	FOCUS TEST	comp/stellar pos'n					Clear	FeAr	30/45
718	Comp						"	"	60s
719	HD 144579	^{1993.5} 16 04 43	^{1993.5} 39 10 26	21 11 36					47s
720	COMP (1900)	16 01.5	+39 24				CLEAR	FeAr	60s
721	COMP						CLEAR	FeAr	60s
722	HD 162714	17 47 17	-06 07 12	21 34 06					373s
723	COMP						CLEAR	FeAr	60s
724	BIAS (4)								
725	COMP						CLEAR	FeAr	60s
726	HD 173297	18 39 20	-20 45 00	21 50 59		00 33E			2516
727	COMP						CLEAR	FeAr	60s
728	Comp						"	"	"
729	HD 331970 WRONG STAR.	20 08 27	32 34 16	22 43 47		01 41E			528s
	= 10' NW of intended								

Spectr. Temp.

Dome Temp./Hum. 18.9°C/.60.97.

Transparency Conditions SOME HIGH CIRRUS

Focus ... 6.67 fin/set

Spectr. Temp.

Dome Temp./Hum.

$CCDT \rightarrow -100^{\circ}C$

134

Both Funs on by 19 45, Both on for seeing

	Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Test	Quality
0.70 10	[Using default box]		G-66	dF8	CASS CCD	1800 l/nm G=5910	250 μ m DECKER	6400A	Above 25 μ slit seeing		Dome w. [Strong NW wind] MAX < 155 on all		
									1c:				
									3/4c:		VUU S / R / e / Row 512		
									5c:				
2000	4"		G-66	dG8					6ci	STO VEL			
									7ci				
									8ci				
.3500	4"		G-66	G0Ib					9ci	Sgs PROGRAM	≈ 250 SNR		
									10ci				
									1ci				
									2ci				
3280			F48	G0Jb					11ci	Sgs PROGRAM	2.5 AIR MASSES	HDS31970	
									12ci				
									12ci		wrong star done		
242	4"								Rci		E	N	

Emulsion Batches:

p9#2

125

Date 1973 July 20/21... Observers Sgs. / T₁.....

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
cc 15730	COMP		*				CLEAR	FeAr	60s	
731	HD 331970	20 08 27	32 14 16	22 38 43	23 51 00				3137	1300
732	COMP		32 34 16				CLEAR	FeAr	60s	
733	BIAS (4)		previous page T ₁							
734	Comp						CLEAR	FeAr	60s	
735	HD 198726	20 47 13	27 52 30	00 03 38					465	4900
736	Comp						CLEAR	FeAr	60s	
737	COMP						CLEAR	FeAr	60s	
738	HD 214975	22 36 55	56 18 24	00 32 54			+56 51 Dec Drum Reading	FeAr	60s	1920
739	Comp									
740	COMP BIAS (4)									
741	COMP						CLEAR	FeAr	60s	
742	HD 187691	19 46 12	10 10 00	01 28 23					230s	5200
743	COMP						CLEAR	FeAr	60s	
744	COMP						CLEAR	FeAr	60s	

Spectr. Temp. Dome Temp./Hum. 11.5°C 69.3% Transparency Conditions ... *part cloudy*Focus ... *6.67*

Spectr. Temp. Dome Temp./Hum.

no encoders tonight.

136

Exp. Mtr.	Seeing	Mg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		9.4	62Ib	CASS CCD	1500-1/m 5910 w/detector	500 500	6400A	14c	SGS PROGRAM		
1300	4"	9.4	62Ib					15c	SGS PROGRAM		
								16c			
								1c			
								2c			
4900	4"	5.75	60Ib					17c	SGS PROGRAM	TELESCOPE CONTROL COMP FAILED - FOUND STAR MANUALLY	
								18c			
								19c		SPECTROGRAPH CONTROLLER FAILED BEFORE THIS COMP	
1920	4"	8.40	60Ib					20c	SGS pgm	FOUND STAR FROM CIRCLES AGAIN	
								21c			
								21c			
								2c			
5200	5"	5.11	F8II					18c	RV STD		
								5c			
								6c			

Date JULY 20/21 Observers Sgs/Tn

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[illegible]

Spectr. Temp.

Focus 6.67

Spectr. Temp.

Dome Temp./Hum. 15.8°/47.5%

Dome Temp./Hum. $+15.6^{\circ}\text{C}$... 79.5%

Transparency Conditions CLEAR

138

[illegible]

Pg#1 139

Wed Thurs

Date 1993 July 21/22

Observers (B. L. ... Francis) ... T. ... / H. W.

Emulsion Batches:

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..... Di. F. user ... 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.
CC15762									
63	Focus Test	Comp/	Stellar	20 10		00 20W	(30°) Ap = 1/8	Felle	4s/6s
66	BIAS(4) written letter			20 20					
67	Comp			20 36			Ap = 1/8	Felle	5s
68	HD 136849	15 17 48	+33 17 00	20 37 06					
69	Comp						Ap 1/8	Felle	5s
70	Comp						"	Felle	5s
71	80 Umd HD 116842	13 21 13	+55 31	20 53 35		3 13W			31
72	Comp			20 55 19			Hp 1/8	Felle	5s
73	Comp						"	Felle	5s
74	SN 1993 J	09 47 10	+69 29 31	21 22 35		7 17W			444
75	Comp						Ap = 1/8	Felle	5s
76	SN 1993 J	09 47 10	+69 29 31	21 44 27		8 19 W			2728
77	Comp						Ap = 1/8	Felle	5s
78	BIAS(4)						+70°		
→ 79	FLAIS x 4		15 779	in a bias structure		8 25W	Ap 1/8	TUNG	9s
80				~ Lu					

Spectr. Temp. Dome Temp./Hum. $+19^{\circ}\text{C} \dots 55\%$ Transparency Conditions $\dots V. C. / \text{EPR} \dots$

Focus $\dots 6:40 \dots$

140

Spectr. Temp. Dome Temp./Hum.

Tel mounted on HR 6092

Exp. Mtr.	Seeing	Mag. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CHSS CCD	1501/w/250 G2913 check	250 6563R	3/4		Focus Right	CCDFMT 480 0 50 1024 41	
[OG560 Filter in Stellar Beam for ORD sep with Bohman grating.]											
~350		5.26	B9V					6c:	Telluric Std	Tel East Side URA -080050 Asc -00 0435	
								7c:			
								8			
600		4.02	A5V					9	UBVR1 Std	Also used for SN @ Accur offset MAX 5K ADU 200 0045 -00 0527	
								10c:			
								11			
0		14						12	maybe it (VUU faint)		
								13	actually sl visible on slit		
0								14	SN pgrm	H/R M/HSS = 1.927	
								15c:			
[1st frame 2 sec TV Int, G1 mode, 970 Int Images used of SN on slit + 1 SN in Comp Rack posn + 2 of 2 stars 1st frame to East of SN 1993J SN frames of 2 field stars done with no change in adjustment, 6563A 2nd Field Star Image adj for <255 max level.]											
								16	10 K Index	CG 3000 - CG 30010 FG images	

141 pg #2

Date

July 21/22
1993

Observers

Hlw/Tn

Emulsion Batches:

Again... Diffuser... 1/2

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.
CC15781.45 82	Comp/Stellar	Hartman						FeNe Clear	30/40 sec
83-85	Flat x3					≈ Zenith		Tung 1/2 ap.	7s
86	Bias (4)								
87	Comp							FeNe Clear	60s
88	HD 123782	14 04 36	49 56	23 15 32		05 W			391s
89	Comp							FeNe	60s
90	Comp							"	"
91	AC+62 26749	17 34 30	+61 45	23 32 56		2 2W			3000
92	Comp							FeNe	60s
93	BIA 5(4)								
94	Comp							FeNe Clear	60s
95	AC+65 6955	20:29:00	+65 06 00	00 43 14		0:52 W			340s
96	Comp							FeNe Clear	60s
97	AC+65 6955	"	"	01:42:50					600s
98	Comp							"	60s
99	Bias (4)								

Spectr. Temp. Dome Temp./Hum. 16.7°C/61.8% Transparency Conditions Clear

Focus 6.75

Spectr. Temp. Dome Temp./Hum.

480 0 50 1024 41 ccdfmt

142

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 λ /mm G=4990	300 μ long slit	clambda =5140 $\text{\AA}$	3ci/4	Focus Test	good focus	
								18ci		max = 7000 on chip	
								1ci			
								5ci			
10900		5.25 10.8	M2 IIIab					19ci	HIW/KK(Std Vel)	250/1 s/h	
								5ci			
900	4"	9.85	M1 Ve					20ci	HIW pgm/KK		
								5ci			
								1ci		Dome T = +16.1°C	
								5ci			
689	3"	10.4	M3					21ci	HIW pgm	Air mass 1.0757	
								5			
89		"	"					22	HIW pg		
								5			
								1			

143 pg#3

Date July 21/22, 1993 Observers H.W./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.	Exp. Mtr.
cc15800	Comp						clear	FeNe	60s	
01	BD+57 2735	23:19:54	+57:20:00	02 07 24		00 28 E			3678	1100
02	Comp						clear	FeNe	60s	
03	BIAS(4)									
04	Comp	0000 Epoch					clear	FeNe	60s	
05	Vesta	23 04 59	-13 56 35	03 22 27					1039	4200
06	Comp						clear	FeNe	60s	
07	Vesta	"	"	03 43 30		00 36 W			865	3370
08	Comp						clear	FeNe	60	
09	Comp						"	"	"	
10	HD 222368	23 34 48	+05 05	04 04 22		00 11 W			192	10,700
11	Comp						clear	FeNe	60	
12	BIAS(4)									
→ 13	FLATS x 3					00 17 W	45 32	AP 1/2 TUNG	7 sec	
14	Comp/stellar	HARTMAN				00 19 W	"	FeNe	30/40	

Spectr. Temp. Dome Temp./Hum. 15.1°C/70.4% Transparency Conditions Clear
 Focus G.75 144
 Spectr. Temp. Dome Temp./Hum. 15.0°C...70.3%

Exp. Mtr.	Seeing	Ex. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						300 no. decker	5140A	5c;		MAX ~ 9K ADY	
1100	3"	10.05	M2					23c;	H/w pgr	5K photons 2 AUG	
								24c;			
								18c;			
								25c;			
4200	5"	~63	Solar G2K					26c;	FOR STD	OBVIOUS BRIGHEST H FEL	
								27c;			
3370								26c;	Repeat;		
								28c;			
								28c;			
10,700	4"	4.13	FIV					29c;	Std vel		
								30c;			
								31c;			
								3/4		30 35 pools 566 - 575 xplal a/-0.2 pixel BLUE	

page 1

145

Thu - Fri

Emulsion Batches:

Date July 22/23 1993 Observers HIW/Tn/Fbr

D. Fisher in. 99.9%

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.
818 cccl5819.8s	Comp/Stellar	Hartman				00 10	+46°	FeNe Clear	30/40
20	BIH5C4)								
21 → 23	FEATs x3							Tung FeNe Clear	60s
24	Comp								
25	HD123782	14 04 36	49 56 00	20 26 41					232
26	Comp							FeNe Clear	60s
27	Comp							"	1
28	BD+4 3561	epoch 2000: 17 57 49	epoch 2000: +04 40 48	20 17 30					1800s
29	Comp							FeNe Clear	60s
30	Comp							FeNe Clear	"
31	AC+62 26749	17 34 30	+61 45 00	22 05 03		01 10W			3220
32	Comp							FeNe Clear	60s
33	Bias (4)								
34	Comp							"	"
35	AC+65 6955	20 29 00	+65 06 00	23:10:17				FeNe Clear	3600
36	Comp							FeNe Clear	60s

Spectr. Temp. Dome Temp./Hum. $19.4^{\circ}\text{C}/53.0\%$ Transparency Conditions *Clear, some clouds....*
 Focus 6.75 around horizon
 Spectr. Temp. Dome Temp./Hum. $17.3/57.5$ 480 0 50 1024 41 ccdfmt 146

Exp.	Exp. Mtr.	Seeing	W. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	S/K Quality
1					Cass ccd	18001/mm 300μ G=4990 long slit		Clamdbn -51408	4ci 1ci	Focus Test	Stellarvisi Red Telescope normalized to HR 6023	
2	10500	2"	M2 III qb	5.25					5ci	std/ce/		
3			10 M5 II						5ci	42-00 00 11 45-00 02 12	used HR 6029 to see encoder offset 6K photos E mug of scots BARNARDS STAR	70/1
4	1566	2"	10 M5 IV						7ci	H/w pgn		
5	1470	2"	9.95 M1 V						5ci			
6									8ci	H/w pgn	Δ2 -00 00 39 Δ5 -00 06 48	
7									18ci			
8									1ci			
9									5ci			
10	657	2"	10.4 M3 I						9ci	H/w pgn	4K photos E mug	

147

Emulsion Batches:

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[illegible]

* CC15839. is a REWRITE of previous nights 19ci HD123782 TH
I Didnot Readout Before WFITS & OBSERVATION
not noticed until too late.

Spectr. Temp. Dome Temp./Hum. $+17.3^{\circ}\text{C}$ 5768H Transparency Conditions sl. cloudy, Gen. OK

Focus ..6.75.....

Spectr. Temp.

Dome Temp./Hum. $+16.5^{\circ}\text{C}$ 607/24

Exp.	Exp. Mtr.	Seeing	Flt. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					CH55 CCD	1800/1/2 64990	300a Full L	51408	1c:			
									5c:			
249	1925	3"	9.3	110					19c:	H/10 pgn		
28									20c:			
75											Declination Clamp & slew failed → must close up!	
8					Star 6.75 = T = +16.5°				4/3c	100% Red for stellar exp		

pg. 1
149

Date July 23/24 1993 Observers H/w/Fbr

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.
cc15846.fts	Bias (4)								
47	Comp	Not written						FeNe Clear	60s
47 48	HD123782	14 04 36	49 56 00	20:49:19		+2:33	+49:30		290
48 49	Comp							"	60s
49	Comp							"	60s
50	AC+76 5308	15 43 12	76 20 00	21 16 07		+2:12 11	+76:03		2311
51	Comp								60s
52	Bias (4)								
53	Comp								60s
54	AC+62 26749	17:34:30	61 45 00	22:11:58			+61:43		3600
55	Comp							FeNe Clear	60s
56	Bias (4)								
57	Comp								
58	AC+65 6955	20:29:00	65 06 00	23:29:03		-0:09	-65:09		3600
59	Comp								
60	Bias (4)								

151 Date July 23/24 1993 Observers HLW/Fbr

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[illegible]

Spectr. Temp. Dome Temp./Hum. 18.2°C / 59.4 Transparency Conditions Some clouds.

Focus

Spectr. Temp. Dome Temp./Hum.

[illegible]

Pg. 1

Sat-Sun

153

Date July 24/25 1993

Observers

H.W./Fbr

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.
cc15868.fts	Comp							FeNe clear	60s
69	HD123782	14 04 36	49 56 00	22 15 04		+4:05			200s
70	Comp							FeNe clear	60s
71	Bias (4)								
72	Comp							"	60s
73	AC+76 5308	15 43 12	76 20 00	22 41 16					3600s
74	Comp							"	60s
75	Bias (4)								
76	Comp							"	60s
77	AC+62 26749	17 34 30	61 45 00	23:54:46		+3:10			3600
78	Comp							FeNe clear	60s
79	Bias (4)								
80	Comp							"	"
81	AC+65 6955	20 29 00	65 06 00	01:04:40		+1:28	+65 22		3600
82	Comp								
83	Bias (4)								

Spectr.

Focus.

Spectr.

Exp. Int.

9870

0

1739

1235

Spectr. Temp. Dome Temp./Hum. 21.4C/54.0 Transparency Conditions Clear

Focus

154

Spectr. Temp. Dome Temp./Hum.

480 0 50 1024 4 1 ccd fnt

Exp. Mtr.	Seeing ☒ Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
			CASS CCD	1800l/mm G=4990	300 μ	51408	3ci		Fans On after	
9870	5.25	M2 IIIa					4ci	Std Vel	tour.	
							3ci			
							1ci		Chip may still be	
							3ci		a bit warm?	
0	11.6	M4 II					5ci	Hlw Pgm	Telescope on East	
							3ci		side of pier	
							1ci			
							3ci			
173a	9.95	M13c					6ci	Hlw Pgm		
							3ci			
							1ci			
							3ci			
1235	10.4	M3 R					7ci	Hlw Pgm		
							3ci			
							1ci			

pg² Sat-Sun

155

Date _____

July 24/25

Observers

Hlw/Fbr

Emulsion Batches:

[illegible]

Spectr. Temp. Dome Temp./Hum. 19.4°C / 56.8% Transparency Conditions light haze, bad seeing
 Focus
 Spectr. Temp. Dome Temp./Hum. 156

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS			5140Å	3ci			
2095		9.3	M0V					5ci	Hlw Pgm	Fans turned off by Hlw	
								3ci		at 02:00 EST	
								3ci			
1403		10.05	M2V					8ci	Hlw Pgm		
								5ci			
								1ci			
								3ci			
5410		?	G2V					8ci			
								3ci			
								1ci			
				All to			Wormies	&	Perseus		

157 Date July 25/26 1993 Observers H.W./Fbr

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[illegible]

Dome Temp./Hum.

Soye Court + Humid

161

51

Date JULY 27, 1933 Observers Set/Fbr

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.
cc15917	Bias (4)								
18/19	Focus Test.						B639		
20	Comp							Fine Clear	60s
21	HD113226	12 57 12	11 30	20 45 56					600s
22	Comp							Fine Clear	60s
23	Comp							"	"
24	HD185144	19 32 33	⁺ 69 29	21 19 01					1200s
25	Comp								
26	HD185144 Comp	19 32 33	⁺ 69 29	21 45 25					1200s
27	Comp								
28	Bias (4)								
29	Comp								
30	HD124897	14 11 06	10 42	22 21 57					120s
31	"			22 25 10					120s 120s
32	Comp							Fine Clear	60s

Spectr. Temp. Dome Temp./Hum. $22.7^{\circ}\text{C}/68.5\%$
(2000)

Transparency Conditions *Clear - Few Clouds* 62

Focus

Spectr. Temp. Dome Temp./Hum.

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					243	1800 5080 G=4210	250	$\lambda_c = 3150$			430 050 1024 41	
	28 K									Srt Pgm.		
	10.3 K									Srt Pgm		
	16.3 K											
											480 050 1024 41	
	92 K									Srt Pgm		
	130 K											

All Headers this page

Show grating 1800/G=4210

In 1200 22/93

Header says 1800/G=4210

163
B2

Emulsion Batches:

Date July 27/28-73..... Observers S.H./F.R.....

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.
33-37	FLAT X 5 (480 050 1024 41) }								12100
38-42	FLAT X 5 (430 050 1024 41) }								42150
43	BIAS (4)								1505
44	COMP (430 050 1024 41)							F/No Cen	605
45	H0216131	22 45 11	24 04	00 09 02 22 46 00					6005
46	Comp							F/No Cen	605
47	BIAS (4)								
48	Comp							F/No Cen	605
49	H03712	00 34 50	+ 55 59	01 49 41					3605
50	Comp							F/No Cen	605
51	Comp								
52	H010700	01 39 25	-16 -28	02 04 10					1000
53	H010700	"	"	02 36 29					1000
54	BIAS (4)								

Spectr. T.

Focus..

Spectr.

Exp. Mtr.

433 H

434

H216

49 K

45 K

H2

165
Pg#1 Set Sun

Date 1993 July 31 / Aug. 1... Observers H.K. / Tn.....

Emulsion Batches:

...CSS TIME only 2.5 secs
...ahead of WUV time

Visit by M.L. Perry, Robbie, (To family)

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.
CG30015 → 26	HD 137909	152342	+2927	20 EST			12→13 frames taken		
CG30027 → 32 33	HD 173607	184104	+3930	SAYS UT 033935 in Header					20ms
CG CG30051	HD 183912	192641	+2745					6560	4ms
55mm FWS	HD 183912	"	"	2113		0205E	RANGE of Exps.	6560 none → 2 sec	3ms
CC15955	BINS(4)			21 40					
56 57	Focus Test	Comp/stellar	HARTMANN				DIFFUSION	FEAR CLEAR	40/50
58	Comp						"	"	60s
59	HD 162714	174717	+060712	22 0735		0046W			571
60	Comp	Late start		22 22				FEAR CLEAR	60s
61 → 63	Flats x 3 (While the getting good)					0106W	-6°	TUNG HP1/2 FEAR CLEAR	4s
64	Comp						Dec Circle	FEAR CLEAR	60s
65	HD 331970	200827	+323416	22 48 50			+3257		3002
66	Comp							FEAR CLEAR	60s
67	BIA5(4)								

Spectr. Temp. Dome Temp./Hum. 22°C 53% Transparency Conditions Fine - inc. thin cloud
 Focus 6:6.5 for CCD Almost Full moon 166
 Spectr. Temp. Dome Temp./Hum. 19°C 64% Tel. NORMALIZED on BCR 1993.5 counts 200 slit

Exp. Mtr.	Seeing	No. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
No FARS TONIGHT										Speckle Images. 197 mag, 230	
					(Intens = 83, G1)		High magnification in "Home" posn. with IEEV CAMERA			used for scale	
					Edmund 2x barlow + 1 1/4" adapter on		IEEV Camera			used for scale too	
							35mm CAMERA HP5		knife edge tests		
					CASS 1500/ul/mm CCD G=5910		2500 decker 6400A	3/4		Right on - usual Bel at center	
								5			
3700	4"	6.5	G01b					6	Run/Sys pgn	1.585 Air MASS	
								7ci	(3713) *	sp contr failed before this comp. Grating disabled though it's OK.	
								8ci		MAX 10K	
								9ci	25K photons SAvg of 7 cols	S/N 150/1	
1300	4"	9.4	G01b					10ci	Sgs pgn	Seems too slow. Flt not obvious.	
								11ci		No further Flt to go by	
								1ci		Field drawn. Flt checks It's prob OK, Yes	

167 p42

Emulsion Batches:

Date 1993. July 31 / Aug. 1... Observers [Sgs/Rn]... T. 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.
CC15968	Comp							F40 Clear	60s
69	HD 187691	19 46 12	+10 10	23 45 51		00 19 W			119
70	Comp								60
71	Comp								60
72	HD 177724	19 00 49	+13 43	23 54 45		01 13 W			115
73	Comp								60
74	Comp								60
75	HD 198726	20 47 13	+27 52 30	00 01 29		00 25 E			149
76	Comp								60
77	Comp								60
78	HD 203156	21 15 23	+37 49	00 11 07		00 41 E			325
79	Comp								60s
80	Comp								60s
81	Vesta	²⁰⁰⁰ 23 02 04	-15 02	00 25 21		02 06 E			536
82	Comp								60s

Spectr. Temp. Dome Temp./Hum. 71.8°C 62.7% Transparency Conditions *thin cloud*Focus ... 6.65

168

Spectr. Temp.

Dome Temp./Hum. 71.8°C 62.5%

Exp	Exp. Mtr.	Seeing	It. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
28	.					1800 G 5910	25Q	640A	12			
19	2680	4"	5.11	F8V					13	std vel		
2									14	^{MAX} (3065)	sp contr partial failure before comp worked through	
3									15	(3082)		
5	7000	3"	2.99	A0V					16	Telluric std.		
10									17	.		
60									18			
19	3750		5.75	G016					19	Rm pgn		
4									20	(3053)		
7			5.8 -5.9 ↓	F2 V					21	.		
25	4600	3"							22	Rm pgn		
83									23c	(2988)		
65									24G	2915		
53	2080	5"	2.65	G2					25c	std vel (minor Planet)		
64									26c	.	Another obj 2 mag fainter 12-15" North of this.	

Spectr. Temp. Dome Temp./Hum. Transparency Conditions *sl cloudy*

Focus 665

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions *5/ clearly*

170

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CHSS CCD		252 darker	6400A	10. 3K;		MAX 10K ADV/pixel	
										All To Perseus and UOrn. no UOrn problems. using 14 indocent no DU) & Pos copy commands	

171 #1

Mon / Tues

Date 1993 Aug 21/3

Observers

[P.M.]

Tr. / F.B.T.

(Sgs pgm also)

Emulsion Batches:

CSS 386

only 4-5 sec ahead of WWV Time again

P. Husar 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.
CC15989 990	Focus Comp / Stellar Hartman					00 55W	+39 10	FeAr Clear	40/50
CG30052 55	HD 144579	16 01 30	+39 25 36	20 22		00 45W			67ms
Q-54	"	2 exps							133ms
CC15991	Comp							FeAr Clear	60s
92	HD 144579	16 01 30	+39 25 36	20 35 04		01 05W			322
93	Comp							FeAr Clear	60s
94	BIAS(4)								
95	Comp							FeAr Clear	60s
96	HD 162714	17 47 17	-06 07 12	20 59 42					520
97	Comp							FeAr Clear	60s
98	Comp							"	60s
99	HD 203156	21 15.4	+37 49	21 16 29		03 27W			311
CC16000	Comp							FeAr Clear	60s
01	Comp							"	"
02	HD 173297	18 39 20	-20 45	21 31 59		00 13E			1845
03	Comp							FeAr Clear	60s

Spectr.

Focus.

Spectr.

Exp. Mtr.

2000

4576

4040

3730

Spectr. Temp. Dome Temp./Hum. $+22^{\circ}\text{C}$ 54.5% Transparency Conditions .. Part Cloudy
 Focus 6:65
 Spectr. Temp. Dome Temp./Hum. Both Finson good hr before seeing tests

172

Exp. Mir.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800/nm G=5910	250 data	6400R	3/4		uvvs/relat cat than only NE rim on 4000s Done west	
		666	G8V			decker out			seeing test		
				Also Tel encoder NORMALIZATION STAR					Light west Breeze	Depos " "	
2000	2"	666	G8V					6c	std vel		
								5c			
								1c			
								5c			
7570	2"	615	G01b					7c	Rm pgm		
								8c			
								8c			
4040	2"	589	F2					9c	Rm pgm		
								10c			
								10c			
3730	4"	718	G01b					11c	Rm pgm	2.37 Air mass	
								5c			

173

#2

Date ... 1993 Aug 2/3 ... Observers [Rm] ... Tn / Fbr

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.	Exp. Mtr
CC16004	BIASC4)									
05	Comp							FeAr CLEAR	60s	
06	HD 198726	20 4713	+27 5230	22 1458		02 02E			301s	4000
07	Comp							FeAr CLEAR	60s	
08	Comp							"	"	
09	HD 331970	20 0827	+32 3416	22 2954		00 15E			3	5 1330
10	Comp							FeAr CLEAR	60s	
11	Comp							"	"	
12	HD 214975	22 3655	+56 1824	23 3742		01 51E			2584	1900
13	Comp									
14	BIASC4)									
→ 15 17	FLATS x 3					01 47E	+56 50	TUNG AP42	4 sec	
18	Comp							FeAr CLEAR	60	
19	HD 187691	19 4612	+10 10	00 3413		01 16W			195	3866
20	Comp							FeAr CLEAR	60	

Spectr. Temp. Dome Temp./Hum. $+20.7^{\circ}\text{C}$ 59.8
 Focus ... 6.65
 Spectr. Temp. Dome Temp./Hum. $+18.5^{\circ}\text{C}$ 68.5

Transparency Conditions ... *sl. hazy - cloudy* ...
FULL moon tonight. 174

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 h/m G-5410	250 darker	6400A				
4000		5.75	G0Ib					13c	Rm pgn	^{over 8 cols} 60,000 photons 2 Aug. chive bkad.	
								5c			
								14c			
1330	23	9.1 9.8	G2Ib					15c	Rm pgn	some cloud	
								16c			
								17c			
1900	3"	8.10	G0Ib					18c	Rm pgn		
								19c			
								1c			
								19c		with 12K ADU/pixel	
								5			
3866								20c	Std vel		
								21c		sp contr. Failure before this comp	

175 pg #3

Date 1993 Aug. 2/3..... Observers [Fin].... Fbr./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.
cc16021	Comp							FeAr clear	60s
22	HD177724	19 00 49	+13 43	00 49 25		2 15W			46s
23	Comp							FeAr clear	60s
24	Comp							"	60s
25	Pallas	22 03 25	+11 26	01 04 21		00 15W			2628
26	Comp							FeAr clear	60s
27	Comp							"	60s
28	Vesta	20 23 01	-15 24	01 54 48		00 29.5E			360s
29	Comp							FeAr clear	60s
30	Bias (4)								
31	Comp							FeAr clear	60s
32	HD 203156	21 15 23	+37 49	02 08 51		01 24W			277
33	Comp							FeAr clear	60s
34	Comp							"	"
35	HD 237190	03 46 10	58 21 18	0 22 40		04 10E			2860

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions ... *S. 1. 14. 24*Focus ... *665*

Spectr. Temp.

Dome Temp./Hum. *11.7.4C ... 75%*

176

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD		20 data	6400A	21c			
5006		2.99	HOU					22c	Teller, ST	1.33 Air mass	
990	3"	5.95	G2					5c	Asteroid	30° from Full moon	
								22c	STDUEI	just NORTH 3' from HD209459	
								24c			
								25c			
1000	4"	7.6	G2					26c	ASTEROID 570 Vell.	235° from full moon	
								27c			
								28c			
4000		5.89	F2					29c	Rm pgn		
360	4"	8.64	G0Ib					30c	Rm Pgm.	RWCam	

Transparency Conditions *S/hazy*.....

Focus 6-65

Dome Temp./Hum. $+17.3^{\circ}\text{C}$ 77%

178

Spectr. Temp.

Dome Temp./Hum.

[illegible]

Transparency Conditions Good in N.W.

Cloudy Periods. 180

Dome Temp./Hum.

Exp.	Exp. Mtr.	Seeing	V. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					CASS CCD	1800 l/m G=5910	250 μ darker	6400A				
	10K		2.99	A0V						TELLURIC		
	2000		7.73	G8III						RV STD	SOME CLOUDS	
	4471		6.15	G0Ib						Sgs PROGRAM	C=0.007 (N.N.W.)	
	3120		7.48	G0Ib						Sgs PROGRAM	2.35 AIR MASSES	
	3120		7.48	G0Ib						$\downarrow \downarrow$	$\downarrow \downarrow$	

181
#2Date AUGUST 4/5 Observers Sgs./Fbr

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		Exp. Mtr.
								Type/Filter	Exp.	
58	BIAS(4)									
59	COMP						CLEAR	FeAr	60s	
60	HD 331970	20 8 27	32 34 16	22 33 31					1347	200
61	COMP						CLEAR	FeAr	60s	
62	BIAS(4)									
63	COMP						CLEAR	FeAr	60s	
64	HD 198726	20 47 13	27 52 30	23 03 37					600s	4400
65	COMP						CLEAR	FeAr	60s	
66	COMP						CLEAR	FeAr	60s	
67	HD 203156	21 15 23	37 49 00	23 20 36					485s	4000
68	COMP						CLEAR	FeAr	60s	
69	BIAS(4)									
70	COMP						CLEAR	FeAr	60s	
71	HD 214975	22 36 55	56 18 24	23 48 21					1800s	4400
72	COMP						CLEAR	FeAr	60s	

Spectr. Temp.

Dome Temp./Hum. ... 5°C/.67.1

Transparency Conditions 182

Focus 6.65

Spectr. Temp.

Dome Temp./Hum.

Exp. Mtr.	Seeing ☒ Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
200	9.1- 4.8	62Ib						Sgs Program	ABORTED - EXPOSURE METER COUNTING TOO SLOW - WOULD TAKE 3 1/2 h TO DO PROPERLY	
4400	8"	5.75 60Ib							SEEING REALLY BAD!!! SOME CIRRUS UP THERE? HUMIDITY 77% (IN) 92% (OUT) DOME DAMP	
4000		5.8 F2							SEEING AWFUL!	
1400		8.4 60Ib							SEEING REALLY REALLY REALLY BAD + EXPOSURE COUNTER SLOW, SLOW, SLOW THROUGH CLOUDS AT END	

43

Date . Aug 4 / 5 / 93 Observers . Sgs / Fnr

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Exp. Mtr.

Spectr.

Focus.

Spectr.

251

Spectr. Temp.

Dome Temp./Hum.

[illegible]

185 Thurs / Fri

Date 1993 Aug 5/6

Observers

KK / Fbr

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.
FT00970	dark			20:02					16400
CC16082	Bias (4)								
83-4	Focus								
85	Comp						Clear	FNe	60s
86	HD137909	15 23 49	+ 29 27 00	20 36 08		0201W			697
87	Comp						Clear	FNe	60s
88	Comp						Clear	FNe	60s
89	HD183912	19 26 49	27 45	20 56 50					792
90	Comp								
91	Bias (4)								
92	Comp						Clear	FNe	60s
93	HD186791	19 41 30	+ 10 22	21 17 24		6137E			619s
94	Comp						Clear	FNe	60s
95-99	FLAT 5						Clear	Turn	400s
16100	Bias (4)								

Spectr.

Focus.

Spectr.

Exp. Mtr

50 K

100 K

100 K

Spectr. Temp. Dome Temp./Hum. 14.9°C / 62.2% Transparency Conditions .. CLEAR .. CLASSICAL C40 ..

Focus 6.68

Spectr. Temp.

Dome Temp./Hum. 14.9°C / 62.2% Transparency Conditions . . . CLEAR . . . OCCASIONAL CLOUDS .

Dome Temp./Hum.

O again

Transparency Conditions... CLEAR... OCCASIONAL, CLO...

186

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
410				FF	Res-		PCS			Tube stack $T = -28^{\circ}\text{C}$	
				Cass	800 A210	250	CCD	3950A			
412	50 K	2"	V 366	FOP			Ocgen		KK Pgm.	Some Cloud.	
412	100 K		V 8=4.2	K5 III					KK Pgm		
414	100 K		V 2.62	K3 II				6.2	KK Pgm.		
										DONE AT A VARIETY OF POSITIONS.	

#2

Date 93 Aug 5/6..... Observers KK/Fbr.....

Emulsion Batches:

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[illegible]

Spectr. Temp. Dome Temp./Hum.

[illegible]

1993

Thu/Fri

Emulsion Batches:

Date Aug. 12/13, 1993 Observers Hlw / Fbr

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle Mid Dark	Declination	Comparison Type/Filter Exp.	
cc16101-As	Bias (4)								
102/3	Comp/Stellar	Hartmann							
104	Bias (4)								
105	Comp							FeNe Clear	60s
106	AC+65 6955	20 29 00	+65 06	21:01:48		-1:50	+65:26		3600
107	Comp							"	60s
108	Bias (4)								
109	Comp							"	"
110	BD+4 3561	epoch 2000: 17 57 49	+04 40 48	22:50:32		+2:15	+4:39		1801
111	Comp							"	60
112	Bias (4)								
113	Comp							"	"
114	HDZ13947	22 29 54	26 05 00	23:30:39		-1 54	+26 32		301
115	Comp								
116	Comp								
117	BD+76 785	20 13 54	76 55 00	00:10:45		+1:30	+77 19		3399

Spectr. Temp. Dome Temp./Hum. 23.7°C / 61.5% Transparency Conditions Clear: clouds on 190
 Focus 6.68 all horizons
 Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	WAV Å	Program	Remarks	Quality
				CASS CCD	1800 G=4990	300 micron	5140	1		Fiber still in, columnator installed with aid of phone instructions Frank	
								3/4	Focus Test	Good, no need to adjust	
								1			
								3			
747			10.4 M3	II				4	Hlw/KK pgm		
								3			
								1			
								3			
1320			10 M5	II				5	4lw	Barnard's Star	
								3			
								1			
								3			
2300			7.5 K4	III				6	Std Vel.		
								3			
								3			
3399			9.3 M0					7	Hlw/KK		

②

191 Date Aug. 12/13 1993 Observers Hlw/Fbr

Emulsion Batches:

[illegible]

page 1

193

Date Aug. 13/14 1993 Observers Hlw / Fbr

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.
cc16127	Bias (4)								
28/29	Focus								
30	Comp							FENE Clear	60s
31	HD123782	14 04 36	49 56 00	20 16 19		+3:24	+49 29		200,
32	Comp							"	60s
33	Comp							"	"
34	AC +62° 26' 49"	17 34 30	61 45 00	20:27:55		+1:04	+61 40		3600
35	Comp							"	60s
36	Bias (4)								
37	Comp							"	60s
38	BD+4 3561	2006: 17 57 49	2000: 04 39 48	21 38 54			+4:39		2400
39	Comp							"	60s
40	Bias (4)								
41	Comp								
42	BD+76 785	20 13 54	76 55 00	22 31 06					
43	Comp								

Spectr. T.

Focus...

Spectr. T.

Exp. Mtr.

4750

734

957

2260

Spectr. Temp. Dome Temp./Hum. 47.4°C / 52.3%

Focus 668

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions Hazy, ... partial ... clouds..

194

Exp.	Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					MS CCD	1800 $\alpha = 4990$	300 μ	$\lambda_c = 5140$			Catwalk Humidity = 57% @ 2000 EST	
60, 100, 60,	4750		MZ 5.25 IIab						3ci	4ci Std Vel		
									3ci			
									3ci			
600 60,	734		9.95 MI Ie						5ci	Hlw/KK		
									3ci			
									1ci			
60, 60,									3ci			
60, 60,	957		10 MSII						6ci	H/w/Kk	Looking through thick haze	
60, 60,	2260		9.3 MD							H/w/KK		

195

#2

Emulsion Batches:

Date Aug. 13/14 1993 Observers H. L. L. / P. Br.

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.
cc16144	BIAS(4)								
45-49	FAST						1/2	Tuna	8s.
50-51	FOCUS TEST								
52	Comp							FeNa Clear	60s
53	AC+65 6955	20 29 00	65 06 00	00 21 30					3600
54	Comp							"	60s
55	Bias (4)								
56	Comp							"	"
57	Vesta	^{2000:} 22 54 08	^{2000:} -16 55 24	01 33 38		+0:02	-17		600s
58	Comp							"	60s
59	Comp							"	"
60	BD+57 2735	23 19 54	57 20 00	01 52 29		+0:39	+57 50		3436
61	Comp							"	60s
62	Bias (4)								
63	HD 3765 Comp							"	"
64/5	HD 3765/comp	00 35 18	39 40 00	02 58 11			+40 11		600

Spectr. Temp. Dome Temp./Hum. Transparency Conditions ... Hazy ... 196

Focus ... 6.28

Spectr. Temp.

Dome Temp./Hum. 80.2°C / 64.6% 0200

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS	1800/ 4990	300 Micro	5140A	1			
								3/4 3			
478		10.4	M3						Hlw/Kk		
2140			~6?	G2 II					Hlw		
540		10.05	M2c						Hlw/KK	80% Humidity on catwalk 0200	
								(5)		SCATT. CLOUD.	
										Clouding in.	
1600		7.36	dks							Done	

199
B1

Date

Aug 20/21 1993 Observers Hlw./Fbr

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 Mid	Declination	Comparison Type/Filter	Exp.
cc16166	Bias (4)								
67/68	Focus Test								
69	Comp							FeNe clear	60s
70	AC+65 6955	20:29:00	+65:06:00	22:29:07		+0:10	+65:28		3610s 403
71	Comp							"	60s
72	Bias (4)								
73	Comp							"	"
74	LHS 3693	21:31:24	+51:04:49	23:41:27		+0:20	+51:33		3600s 0
75	Comp								60s
76	Bias								
77	Dark	"	"						300s
78	Dark	Clock Drive off	"						3600s
79	Bias(4)								
80	Comp							"	60s
81	Vesta	<u>2000</u> 22:48:27	<u>2000</u> -17:54:42	02:18:57		+1:18	-17:58		600s
82	Comp								

Spectr. T

Focus...

Spectr. T

Exp. Mtr.

Spectr. Temp. Dome Temp./Hum. 19.7°C / 67.1% Transparency Conditions Clear 200

Focus 61.8

Spectr. Temp. Dome Temp./Hum. ccdfmt 480 0 50 1024 4 1

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 μ m G=4990	300 μ m	$\lambda_c=5140$				
403		10.4	M3 II					4ci	HLW	Left side of chip is 50 to ~100 ADU higher background than Right side. Sharp division in middle!	
0		11.8	M3.5 II					5ci	HLW	Again, left side of chip 30 ADU hotter than right!!	
										immediately obvious	
										- Not sign of problem.	
										- Problem quite obvious.	
										Uncool	
										- Comps varying in intensity during exposure	
										(Exposure meter whines up and down)	
				GZ II				Std Vel. (HLW)			

#1

203 Date Aug 21/22 1993 Observers Hlw/ Fbr

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 Mid End	Declination	Comparison Type/Filter	Exp.	Exp. Mir.
cc16196	Bias (4)									
97-98	Focus Test									
99	Comp							FeNe	60 sec	
cc 16200	BD+76 785	20 13 09	+76 55 00	22 51 04		+0:50	77:15		3000	1400
201	Comp							FeNe	60 sec	
202	Bias (4)									
203	Comp							FeNe	60 sec	
204	AC+75 8347	21 57 36	+75 08 00	21 56 34		+0:15	75:36		3600	750
205	Comp							FeNe	60 sec	
206	Bias (4)									
207	Comp							FeNe	60 sec	
208	BD+57 2735	23 19 54	57 20 00	01 06 20		-0:05	57:51		3800	1779
209	Comp							FeNe	60 sec	
210	Bias (4)									
211	Comp							FeNe	60 sec	
212	HD 3765	00 35 18	39 40 00	02 20 23		-0:30	40:09		400	1740

Spectr. Temp. Dome Temp./Hum. 15.0°C / 70.9% Transparency Conditions Clear, ... some high
 Focus 6.8
 Spectr. Temp. Dome Temp./Hum. A good, CLEAN circus night. 204

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Cass CCD	1800 lines per millimeter G=4990	300 μ C1		1 =5140		Tour went late, plus late top-up	
				Luminosity Class				3/4 3			
1400		9.3	M0	V				4 3 1 3	Hlw		
750		10.5	M0	V				5 3 1 3	Hlw	90% Humidity on catwalk	
1779		10.1	M2e	V				6 3 1 3	Hlw	91% on catwalk Dome sweating. Shutters dripping.	
1740		7.4	K5	V				5	Std. Vel.		

Spectr. T
Focus . .
Spectr. T

Exp. Mtr.

207

Date AUGUST 23/24 1993 Observers Sgs / Fbr

Emulsion Batches:

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[illegible]

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions. CIRRUS + HAZE.....

Focus

Spectr. Temp. Dome Temp./Hum.

208

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 ln/mm $G=5910$	250 μm decker	6400A			BECAUSE W/ HUMIDITY = 72% INSIDE DOYE, BUT $\frac{1}{2}$ HOUR AFTER OPEN, $H_{OUT} = 93\%$ $H_{IN} = 82\%$, DOYE WET. SHOULDN'T HAVE USED TRISO.	

209

(1)

Date AUGUST 24/25 1993 Observers Sgs/Fbr/Smt/DRz
YORK U.

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.	Exp. No.
CC 16224	BIAS (4)									
25-26	FOCUS TEST									
27	COMP						CLEAR	FeAr	60s	
28	HD173297	18 39 20	-20 45.0	19 54 42					3600	2370
29	COMP						CLEAR	FeAr	60s	
30	BIAS (4.)									
31	COMP			19 54 42			CLEAR	FeAr	60s	
32	HD331970	20 08 27	32 34 16	21 07 11					3600s	2357
33	COMP						CLEAR	FeAr	60s	
34	BIAS (4)									
35	COMP						CLEAR	FeAr	60s	
36	HD177724	19 00 46	13 43	22 17 20					70s	12K
37	COMP						CLEAR	FeAr	60s	
38	BIAS (4)									
39-41	FLATS X3						1/2	Tung	4s	

Spectr. Temp. Dome Temp./Hum. 23.3°C/75.1% Transparency Conditions ... Hazy

Focus 6.68

Spectr. Temp. Dome Temp./Hum.

210

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/nm G=5910	250m darker	6400A				
2370	7.48	60Ib							SGS Program	2.4 AIR MASSES THROUGH HAZE	
2357	9.1-9.8	F8-60Ib							SGS Program	1.04 AIR MASSES	
12K	2.99	A0V							TELLURIC	CLOUD IN WEST/SW H=86%	

Transparency Conditions. HAZY, CLOUDS...IN...S/W...

Dome Temp./Hum.

212

All to Persons! women

213

Date Aug 25/26-93... Observers Fbr. (Sgr. buehno)

Emulsion Batches:

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[illegible]

Spectr. Temp. Dome Temp./Hum. 24.5 / 69% Transparency Conditions Clear

Focus 6. 7. 1.

Spectr. Temp. Dome Temp./Hum.

214

	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
S ₉					CSS CCO	150ln/MM	230 M	$\lambda_c = 6563$				
S ₈						G=7415						
S ₇	O										$\Delta\alpha - 00^{\circ} 00' 44''$ $\Delta\delta - 00^{\circ} 03' 24''$ 1100ms/d.	
S ₆	O (LOST IT IN HAZE)										MUM=7770 _{out} MAYBE NOT SN TVGUIDER FAILURE,	
S ₅											SOX & TURN CLOUD	

215

Date Sept 5/6 - 93 Observers ... F.K.K. / Flor. (K.K. on Twins)

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.
206478	Bins (4)								
79	Comp						ThAr		1s
80	HD137909	152349	29 27	20 08 21					1200s 30
81	Comp						ThAr		1s
82	HD137909	152349	29 27	20 31 19					1600
83	Comp						ThAr		1s
84	Bins (4)								
85	Comp						ThAr		1s.
86	HD177724	190049	13 47	21 10 26					609
87	Comp						ThAr		1s.
88	Comp						ThAr		1s.
89	HD187691	194612	10 10	21 26 08					1200
90	Comp						ThAr		1s.
91	Bins (4)								
92-96	FLAT 5						TUNG		1s
97	Bins (4)								

Spectr.

Focus.

Spectr.

Exp. Mtr.

30

68

40

0

Spectr. Temp. Dome Temp./Hum. 15.2°/57.7° Transparency Conditions PARTLY CLOUD

Focus 2.520

216

Spectr. Temp. Dome Temp./Hum.

0 0 2 5 6 1 0 2 4 4 1

Exp. Mtr.	Seeing	Prg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Canon	19.05	w=60μ H=205	Hα.				
					300/.567						
30	4-5"	3.66	FOP						βCBr(KK)	CLOUD IN S.W. BAD SEEING ONE CORNER SATURATION	
68		3.66	Fop						βCBr(KK)		
40		2.99	AOV						TELEMAC 570	CLOUD	
0		5.11	F8V						STO VIL.	THROUGH CLOUD	
						w=60μ H=195					

217

① Tues / wed

Date .. Sept. 7 / 8 - 93. Observers .. I. B. J. T. / F. P.

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.
CC/16262	BIAS								
63-64	Focus						FelAr	Clear	30s
65	Comp						Curse	FelAr	60s.
66	HD162714	17 47 17	-06 07 27	1932 09		00 39 W			512 52
67	Comp						Curse	FelAr	60s
68	Comp						Curse	FelAr	60s.
69	HD173297	183920	-2045	194813		00 20 W			1527
70	Comp						clear	FelAr	60s
71	BIAS(4)								
72	Comp			20 23 29			clear	FelAr	60s
73	HD 203156	21 15 23	137 49	20 23 29		02 00 E			268
74	Comp						clear	FelAr	60s
75-79	F57 x 5						$\Delta = 1/2$	Tenn	4s
80	Comp						FEAR	FelAr	60s
81	HD187691	19 46 12	10 10	20 38 08					174.
82	Comp						clear	FelAr	60s

Spectr.

Focus.

Spectr.

Exp. Mtr.

4456

3100

3500

3500

Spectr. Temp. Dome Temp./Hum. .. 5.5°C / 71.6% Transparency Conditions Clear - Some Cloud ..

Focus ... 6.71

Spectr. Temp. Dome Temp./Hum.

218

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CCO	1800 G = 5910	250 μ dexter	$\lambda_c = 6400$			Right on at chip center	
4456	3.5"	$\checkmark$ 615	G050						Sci [Rm] Yoph.		
3100	4"	$\checkmark$ 7.48	G050						Sci [Rm]	HAZE	
										Dome T = +14.6°C	
3500		$\checkmark$ 58-59 F1							Sci [Rm]		
		$\checkmark$ 58-59 F2									
3500		$\checkmark$ 5.11	F8V						Sci stel Vel.	RACK FAILURE	

219
#2Date Sept 7/8-93 Observers [Pm] Tr / Flor

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.
CC16283	BIAS (4)								
84	Comp						Clear	FeAr	60s
85	HD 198726	20 47 13	+27 52 30	205331					253
86	Comp						Clear	FeAr	60s
87	Comp						Clear	RAr	60s
88	HD 214975	22 36 55	+56 18 24	210741					1614
89	Comp						Clear	FeAr	60s
90	Comp						"	"	"
91	HD 171232	18 28 30	25 25	21 49 32		W			995s
92	Comp						Clear	FeAr	60s
93	BIAS (4)								
94	Comp						Clear	FeAr	60s
95	HD 177724	19 00 49	13 43	22 14 02					58s
96	Comp						Clear	RAr	60s
CG30 ⁵⁸⁻⁶³	HD 207754	21 46 12	A3 25	22 30	X	00 24E	4x67ms	2x133ms	

Spectr. Temp.

Dome Temp./Hum. 14.7°C/74.2

Transparency Conditions H.A.Z.E.

Focus ... 6.71

220

Spectr. Temp.

Dome Temp./Hum.

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion λ	P.H.	Program	Remarks	Quality
				cross CCO	1800 G=5910	250 M.	6900A				
3000		V 5.75	G020					9ci	[RM]		
3000	4"	V 8.4	G01b					10ci	[RM]		
3000	3"	V 7.73	G8II					11ci	std vel.		
10000		2.99	A0V						Telluric		
		V 7.32	K0II			250u decker out			Seeing Test (Some cloud)	V Light N Breeze NO FANS Tonight Dome Facing West	

Spectr. Temp.

Dome Temp./Hum. ± 13.577/64

Transparency Conditions *SOME CLOUD*

Focus .. ~~6.60~~ 6.71

(HAZE)

222

Spectr. Temp.

Dome Temp./Hum.

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					Cass cep	1.800 G=5910	250 μ	$\lambda_c = 6400$				
	1000	3"?								[Rm]	Humidity 90%+ (out)	
	5000		V 2.91	GOIb					13ci	Sto V ₂		
	3500	3"	V 5.8-59	F2					3ci 11ci	[Am] pgr	Clouds + Humid.	

223
pg #1 Wed-Thurs

Greg Wade

Date Sep. 8/9 1993

Observers

Tn/Hlw/Wde

Emulsion Batches:

.....
.....
..... d. f. fuser in 95 NORM/H

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle M. h	Declination	Comparison Type/Filter	Exp.
CC 16315 316	Focus comp/stellar H ₂ TMAH posns.					= 00	45° Dec Clear	FelNe	40/40
317	BIAS(4)								
318	Comp							Clear FelNe	60s
319	HD 171232	18 28 30	+25 25	19 51 28		+0:20	+25 29		765s
320	BIAS(4) comp	"	"			"	"		60s
321	BIAS(4)								
322	Comp							Clear FelNe	60sec
323	BD+76 785	20 13 54	+76 55	20:19:01		-0:39	+77:12		1807s
324	Comp							Clear FelNe	ouch! 60sec
325	Comp							"	"
326	AC+65 6955	20 29 00	+65 06 00	20:56:43		-0:05	+65:25		3619 ouch!
327	Comp							"	60s
328	BIAS(4)								
329	Comp							"	"
330	LHS 3693	21 31 24	51 04 49	22:07:56		0:00	+51:30		3606s
331	Comp							Clear FelNe	ouch! 60sec

Spectr. Temp. Dome Temp./Hum. 15.8°C / 74.8% Transparency Conditions Clear ... Clouds at ...Focus G: 80Horizon 224

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Cass CCD	1800 L/mm	300	5140R	5/4i		center 2.3 pixel/real	
					G=4000	Full length					
								5ci			
2540		7.73	G8 III					6ci	std vel	20K photos 2 Aug of 8 cols	
								7ci			
								7ci			
1507	3"	9.3	M0 V					8ci	H/w/KK	6K photos	
								9ci			
								10ci			
648		10.4	M3 V					11ci	H/w/KK	4K photos	
								12ci			
								13ci			
41		11.8	M3.5 V					14ci	H/w/KK		
								15ci			

225 pg #2

Date Sep 8/9 1993

Observers

Tn/Hlw

Emulsion Batches:

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle Mid	Declination	Comparison Type/Filter	Exp.
ccl6332	Bias (4)								
333	Comp							FeNe Clear	60 _{sa}
334	Ross 226	22 50 30	60 28 00	23:22:19					600 _s
335	Comp							"	60 _s
336	Comp								
337	BD+57 2735	23 19 54	57 20 00	23 40 54		-0:20	57 51		3613 ross
338	Comp								
339	Bias (4)								
340	Comp								
341	HD 3765	00 35 18	39 40 00	00 49 48		-0:50	40:11		601 _s
342	Comp							FeNe Clear	60 _s
343	Comp					HA end ↓		n	4
344	LHS 1176	00 55 11	60 49 52	01:10:09		+00 05W			3600 ahh
345	Comp							FeNe Clear	60 _s
→ 346	FL4 TS x 3							Tune	9 _s
348								Ap 1/2	
349	BHS (4)								

Spectr. T.

Focus...

Spectr. T.

Exp. Mtr.

0

1416

440

Spectr. Temp. Dome Temp./Hum. 13.2°C/75.6% Transparency Conditions Clear → inc. cloud
 Focus G:80
 Spectr. Temp. Dome Temp./Hum.

226

Exp. Mtr.	Seeing	✓ Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS			5140A				
								16c			
0	2.3"	13.2	M4					17c		- Bad time to do such a dim star	
								18c		- Moon just rose, some scattered	
								19c		cloud developing.	
1416		10.1	M2e					20c			
								21c			
								22c			
		7.36	dKS					23c	std vel		
								24c			
								25c			
440	3"	10.8	M25I					26c		some cloud again	
								2c			
								1c			

Spectr. Temp. Dome Temp./Hum. 12.9°C/66.9% Transparency Conditions Partially cloudy...

Focus ... 5.83

230

Spectr. Temp. Dome Temp./Hum. CCDT $\rightarrow$ -100°C FANSON; then only SWORE

Exp. Mtr.	Seeing	Pre Mag.	Sp.	Inst.	Gratings/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 μ m G=4996	300 μ	clambda = 5140A	3/4	Focus	+ center Stellar 0.3 pixel Red	
								1c			
								5c			
1754	4"	7.73	G8 II					6c	std vel	16K photons	
								7			
								8			
699	5"	9.95	M1K					9c	H/W pgm	(3K Photons) Had to Reset CSS386 Before Readout. (After En. up CCD3 again) Edited Header tags	
								10c			
								1			
								11c			
0	4"	12.5	* (The Pinf Star)					12c	KK/HW	500 photons 2 Avg above Background	
								13c			
								1c			
								14c			
700		10.5	M0					15c			
								16c			

231

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.
cc16376	Bias (4)								
377	Comp							FeNe Clear	60s
378	LHS 535	23:03:42	+68:07:32	23:16:53		-0:16	+68:40		1880s
379	Comp							FoNe Clear	60s
380	Comp							"	60s
381	HD223094	23 41 30	+28 09	23 36 06		-00 36 E	+28 37		632
382	Comp							FeNe Clear	60s
383	FLATS x 6					00 30 E	"	TUNG Ap = 1/2	95
389	BIAS (A)								
CG3006A CG300	HD223094	23 41 30	+28 09					4x67 msec 2x133 msec	
cc16590 91	Focus after topup			Comp / stellar H α Triang	00 38	0 0	+30°	FoNe Clear	30/45

Spectr. Temp. Dome Temp./Hum. $9.6^{\circ}\text{C}/82.0\%$ Transparency Conditions .. Clear, ... cool ..
 Focus ... 6:53 (some clouds 232
 Spectr. Temp. Dome Temp./Hum. $19.2^{\circ}\text{C}/83\%$ - Solid cloud

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1500 G-990	300 F _{4.5} /100	5140A	17c			
	4"	12.5	m					18c	HIW/KK	95% Humidity	
								19		on catwalk, Dome	
								20	std vel	is dripping.	
1970	3"	7.45	K511					21	std vel	inside: 82.8% @ 23:30	
								22			
								23:		MAX 10K 1004	
only 67ms		7.45	K511			300 does it				Seeing Test ONLY SE Fun on TOO Cloudy to complete set	
								34:	Focus test	(Right on)	

233
pg 41

SAT / SUN

Date 1993 Sept. 11/12 ... Observers [Rm] ... 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		Exp. Mtr.
								Type/Filter	Exp.	
CC 16392	Comp							FeAr Clear	60s	
93	HD 203156	21 1523	+37 49	22 3444					40s	400
94	Comp							FeAr Clear	60s	
95	BIAS (4)									
96	Comp							FeAr Clear	60s	
97	HD 187691	19 46 12	+10 10	22 52 07		02 14 W			326	300
98	Comp							FeAr Clear	60s	
99	Comp							n	n	
CC 16400	HD 198726	20 47 13	+27 52 30	23 04 00		01 28 W				3600
01	Comp							FeAr Clear	60s	
02	Comp							n	n	
03	HD 214975	22 36 55	+56 18 24	23 20 22		00 39 W			3144	550
04	Comp							FeAr Clear	60s	
05	BIAS (4)									
06	Comp for VESTA							FeAr Clear	60s	

Spectr. Temp. Dome Temp./Hum. ... 71.1°C ... 68.7% Transparency Conditions ... *Sl... hazy*Focus 6.80

Spectr. Temp.

Dome Temp./Hum. ... 71.3°C ... 72.2%

234

Exp. Mtr.	Seeing	W. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CH55 CCD	1800 G590	250u detector	6400A	3ci			
4400	4"	5.8 5.9	F2					4ci 5ci	Rm pgn		
								6			
3940	3"	5.11	F8V					7 8 9ci	std vel		
								10ci			
3600	3"	V 5.75	GOIb					11ci	Am pgn		
								12ci			
1550	3"	8.4	GOIb					13ci	Rm pgn		
		8.4						14ci			

235
Date 1993 Sep 11/12

Observers

[Rem] Tr

RASC Gery

Р.А.И.Л. Нејна

Emulsion Batches:

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[illegible]

Spectr. Temp. Dome Temp./Hum. 71.3°C 72.4% Transparency Conditions inc. cloud

Focus 6:50

Spectr. Temp.

Dome Temp./Hum. *+10.3°C... 72.4%*

Dome Temp./Hum. $+10.2^{\circ}\text{C}$ 74%

Transparency Conditions *INCR cloud*.....

236

Exp. Mtr.	Seeing	H. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2123	5"	6	G2	CASS CCD	1800/4° G-5910	250μ	6400	15c	FOR Std Vel	thin cloud	
								16c			
								17c			
2140	3"	9	G2					18c	FOR Std Vel	thin cloud	
								19			
								20			
230	3"	8	G2					21	FOR std vel if one wants		
								22c			
								23c			
								24/25	Focus		

237

Sun / Mon

Date 1993 Sep 12/13

Observers

[Rm.] Tr... Mki checking

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.
CC 16423								Feltr Clear	30/45
24	Focus	Comp / stellar NORMAN						Feltr Clear	60s
25	Comp			20 06 08				Feltr Clear	60s
26	HD 203156	21 1523	+37 49	19 59 13		01 53 E			56A 4000
27	Comp							Feltr Clear	60s
28	BIAS (4)								
29	Comp							Feltr Clear	60s
30	HD 162714	17 4717	+06 07 12	20 23 59		01 56W	-6 12 54		823 4100
31	Comp							Feltr Clear	60s
32	Comp							"	"
33	HD 171232	18 2830	+25 25	20 4418		01 28W			329 300
34	Comp							Feltr Clear	60s
35								TUNG Ap 1/2	5s
→ 39	FLATS x 5					01 34W	+25 25		
40	HD 171232	18 2830	+25 25	20 5846		01 44W			394 570
41	Comp							Feltr Clear	60s
42	BIAS (4)								

Spectr. Temp. Dome Temp./Hum. $+15.8^{\circ}$... 74.0% Transparency Conditions *Part cloudy - windy*Focus 6.72 Spectr. Temp. Dome Temp./Hum. $+15.6^{\circ}$... 77.3%

238

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 l/mm G=5910	250 darker	6900A	3/4		Right on at center	
4000	4"	5.8 -5.9	F2					7 ₈			
								8	Rim pgr	Some cloud	
								9			
								1c ₁			
								10c ₁			
4100	4-6"	6.15	G01b					11c ₁	Rim pgr		
								12c ₁			
								12c ₁			
300	4-5"	7.73	G8II					13c ₁	Std vel	cloud at end	
								14c ₁			
								2c ₁			
570		7.73	G8III					15c ₁	Std vel	MMX 11K ADA no extra comp deemed needed	
								16c ₁		A Repeat, because previous exp prob weak	
								1c ₁		Fast moving cloud again	

239

Thurs / Fri

Emulsion Batches:

Date 1993 Sep 16/17..... Observers [M.W.] / T.O. / W.D.E.....

CSS 386 Time 2 55 sec. behind U.M.V. Time

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.
CC16443	Comp / Stellar	HARTMAN		19 10		01 14E	+10°	Felt Clear	30/40
44									
45	Comp							Felt Clear	60s
46	HD187691	19 4612	+10 10	19 1330					16 1/2
47	Comp							Felt Clear	60s
CG300 65									
68	HD171232	18 2830	+25 25	19 28				4x	67 msec
CG300 69								4x	0.67 sec
70	"					00 24W		2x	0.133 sec
CC16448	Comp							Felt Clear	60s
49	HD171232	18 2830	+25 25	19 3245		00 38W			635
50	Comp							Felt Clear	60s
51	BI45(4)								
52	Comp							Felt Clear	60s
53	AC+62 26749	17 3430	+61 45	19 5135		2 31 W			2862.5
54	Comp							Felt Clear	60s
55	BI45(4)								
56	FL4Ts x5					0 0	+30°	Tung Ap 1/2	11.5

Spectr. Temp. Dome Temp./Hum. $\pm 12.1^{\circ}\text{C}$... 65.3% H Transparency Conditions ... FINE $\Rightarrow$ Cloudy
 Focus ... 6.83 Fans both on - Dome open by 18:15
 Spectr. Temp. Dome Temp./Hum. $\pm 10.9^{\circ}\text{C}$... 72.4% H NE turned off by 19:15. 240

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1300 μm Length	300 μm FULL	5140A		Focus	Stellar vs! Red shifted	
					G499D			8c:			
3650		5.11	F8V					9c:	Std vel	For 7 core 34K photons, 5 Aug about 18:00	
3650								10c:			
					300 μm Above slit				Only SE FAN on for seeing tests		
10 133 mpc					?				Seeing Tests	Dome WEST, SE FAN on wind 4 knots from North	
								11			
2000	4"	7.73	G8III					12	Std vel		
								13c:			
								1c:			
								14c:			
837	3"	9.95	M1Ve					15c:	H/w pgn	C load from SE	
								16c:			
								1c:			
								17c:			
										MAX 10.7 K ADX	
										All to work on 2 PERSENS.	

241
pg#1 Wed/Thurs

Date 1993 Sep. 29/30

Observers

[Rem.]... Ten

CSS386 TIME adjusted during 1st stellar exp

Emulsion Batches:

* CSS 386 was ~.5 min. behind W.V.U Time

Di. fuser. in as usual

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. Mtr.
CC16461 62	Comp / Stellar HARTMANN POSIS					00 00	+38°	FeAr CLEAR	30/45
63	BIHSC4)								
64	Comp							FeAr CLEAR	60s
65	HD 173 297	18 39 20	-20 45 0	* 18 47 54		00 46 W			15/14
66	Comp							FeAr CLEAR	60s
67	HD 173 297	"	"	19 17 34		01 17 W			15/72
68	Comp							FeAr CLEAR	60s
69	Comp							"	"
70	HD 162 714	17 47 17	-06 07 12	19 50 05		02 30 W			850s
71	Comp							FeAr CLEAR	60s
72	BIHSC4)								
73	Comp							FeAr CLEAR	60s
74	HD 203 156	21 15 23	+37 49	20 11 22		00 42 E			502
75	Comp							FeAr CLEAR	60s
76 80	FLATS x 5					00 01 W	+25°	AP 1/2 TUNG	5 sec

Spectr. Temp. Dome Temp./Hum. $+6.0^{\circ}\text{C}$... 76.4% Transparency Conditions ... *clearing from NW 242*

Focus ... 6.83

**Dramatic Temp drop expected*

Spectr. Temp.

Dome Temp./Hum. $+1.5^{\circ}\text{C}$... 80.3%

90CGAIN - CCDT $\rightarrow -100^{\circ}\text{C}$ as is NOAA HL

Exp. Mtr.	Seeing	Re. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800L/oa G: 5910	250 drcker	6400A	3/4ci		* Stellar 2.3 pixel Red	
								1ci			
								5ci			
740	5"	7.48	G01b					6ci	Rm pgn	prob lots of sky lines some cloud (lost half)	
								7ci			
1625	5"	7.78	G01b					8ci	Rm pgn	suddenly clear here, so previous star merged	
		7.48	G01b					9ci			
								10ci			
4000	5"	6.15	G01b					11ci	Rm pgn		
								12ci			
								1ci		Dome T = $+4.3^{\circ}\text{C}$	
								12ci			
4000	4.2" $\rightarrow$ 5.8 5.9		F2					13ci	Rm pgn		
								14ci			
								20ci			

243

p9#2

Emulsion Batches:

Date 1993 Sep 29/30..... Observers [Pm]... Tr..... MK: 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.
cc16481	Comp							FeAr Clear	60s
82	HD171232	18 28 30	+25 25	20 31 35		2 29 W			709
83	Comp								60s
84	HD171232	18 28 30	+25 25	20 49 12		2 57 W			1334
85	Comp							FeAr Clear	60s
86	Comp							n	60s
87	HD187691	19 46 12	+10 10	21 20 40		1 53 W			310
88	Comp							FeAr Clear	60s
89	BIAS (4)								
90	Comp							FeAr Clear	60
91	HD198726	20 47 13	+27 52 30	21 32 09		1 08 W			569
92	Comp							FeAr Clear	60s
93	Comp							n	60s
94	HD214975	22 36 55	+56 18 24	21 48 37		00 01 E			1974
95	Comp							FeAr Clear	60s

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions ... *PART. cloudy only* ... 244Focus *6.83*

Spectr. Temp.

Dome Temp./Hum. *+3.2°C* ... *83.57H* ...*Cloud By 22:30*

Exp.	Exp. Mtr.	Seeing	M. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					CASS CCD	1800 G 5910	250 detector	6400A	15ci			
	1200	4"	7.73	G8IV					16ci	Std Vel	Cut short by sp contr failure	
									17ci		Exp's comps should be OK though	
	2300	5"							18ci	Std Vel	ie Grating was disabled.	
									19ci			
									20ci			
	4000	5"	5.11	F8V					21	std Vel		
									22			
									1ci		DonoT +1.0°C	
									2ci			
	4000	6"	5.75	G0Ib					23	Rm pgn		
									24			
									25			
	1950	<i>4</i> 6"-8"	8.40	G0Ib					26ci	Rm pgn	* seeing getting 2 Lac worse	
		6" 8.40	8.40	G0Ib					07ci			

245

pg #3

Emulsion Batches:

Date 1993 Sep 29/30 Observers [Rn] Tn mki ground

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.
CC16496	Comp							Fear Clear	60sec
97	HD 22 3094	23 41 23	+28 08 54	22 39 16		00 33 E	A		949
98	Comp							Fear Clear	60s
CG 300 71	HD 22 3094	23 41 23	+28 08 54	Last 4 valid of this group			+28 40	A X 67	msec
72	"	✓	✓						
77	"	✓	✓			00 17 E		2 x 133	msec
CC16499	B145(4)								
CC16500	FLHTS x 4	Done Before slit detector removed, ie before seeing tests					+28 40	JUNG Ap=1/2	5sec
CC16504	Komp / Stellar	HARTMAN POSNS		23 25		0 0	+35°		30/45

Spectr. Temp. Dome Temp./Hum. $+3.2^{\circ}\text{C}$ 8356 Transparency Conditions *Half cloudy* 246.

Focus 6.83

Spectr. Temp. Dome Temp./Hum. $+3.3^{\circ}\text{C}$ 8546

To completely cloudy

Exp. Mtr.	Seeing	Pr. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						250u with dectar	6400A	28			
2000	8"	7.45	K5III					29c	51/101	some cloud	
								30c			
		7.45	15III		250u dectar OUT	Image above slit			Seeing Test	Dome SW No FAIRIS Tonight NW wind 8 km/hr	
2								1c			
								3/c			
						250u dectar inserted		3/4	Focus Test	stellar still vs! Red 2.2 pixel	
										All to work on PERSUS.	

247

247
pg 41

Thurs / Fri

Date 1993 Sep 30/Oct 1 Observers [K.K.] Fbr./Tm.....

Emulsion Batches:

Dr. Flyser in as normal

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Type/Filter	Exp.	Exp. Mic.
CC16506 507	Comp / Stellar	HATWATHA	poshs					FelNe Clear		
508	Bias (4)									
509	Comp							FelNe Clear	455	
510	HD159561	17 30 18	+12 38	19 26 26					120s	50,300
511	Comp							FelNe Clear	455	
512	Comp							"	"	
513	HD165908	18 03.2	+30 33	19 35 20					1825	58000
514	Comp							FelNe Clear	455	
515 516	FLAT 5x2							TUNG Clear	120s	
517	Bias (4)									
518	Comp							FelNe Clear	455	
519	HD183912	19 26 42	+27 45	20 21 23					353	60000
520	Comp							FelNe Clear	455	
521	Comp							"	"	
522	HD186791	19 41 30	+10 22 00	20 39 34					296	64K
523	Comp							FelNe Clear	455	

Spectr. Temp. Dome Temp./Hum. $+6.7^{\circ}\text{C}$ $50\% \text{RH}$ Transparency Conditions ... Mostly clear 248

Focus .. 6:9.4

Spectr. Temp.

Dome Temp./Hum. $+5.6^{\circ}\text{C}$ $61\% \text{RH}$ No encoder use tonight.
Grating Tilt by hand too.

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 lines/mm <u>394°</u>	250 Arlex	3950A		focus test		
50,300		B 2.2	A5 III						ht. pgm		
58000	3"	B 5.5	F7 IV					5c 6c 7c	KK pgm		
										10K max	
60000	3"	B 4.2	K5 II? + B?					8c 9c 10	KK pgm	note default FG box just sl too small to include Both stars in slit view	
64K		B 5.6 4.72	K3 II					11 12c	std vel		

249 py#2

Date 1993 Sep 30/Oct 1... Observers [K.H.] Jn. / F.B.T.....

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.
CC 16524	HD 186791	19 41 30	+10 22 00	20 39 55					475
25	Comp							FeNe Clear	455
26	Comp							"	"
27	HD 182640	19 20 30	+2 55	21 03 22					580
28	Comp							FeNe Clear	455
29	BIAS(4)								
30	Comp							FeNe Clear	455
31	HD 202109	21 08 42	+29 49	21 22 16					436
32	Comp							FeNe Clear	455
33	Comp							"	"
34	HD 215182	22 38 18	+29 42	21 37 25					330
35	Comp							FeNe Clear	455
36	Comp								
37	HD 209790	22 00 ⁵⁴	69 08	21 59 09					1732
38	Comp								
39	BIAS(4)								

Spectr.

Focus

Spectr.

Exp. Mtr.

102K

7K

70K

77K

106K

Spectr. Temp. Dome Temp./Hum. ^{+5.5° 61.48H} Transparency Conditions ^{5072.2 < 100%} 250.

Focus .. B.99

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Prg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
102K		^B 2.72	K3II		1800 39.4°	254 closed	39508	^H 12c	Std/Vol		
								12c			
								13c			
7K	4"	^B 3.43	FOIV					14c	KK pgm	* Exp. under zeroed 9200 for 0.5/s	
								15c			
								16c			
70K	3"	^V 3.20	G8II					17c	KK pgm	32K plots (7c/s) Std for HD215182	
								18c			
								19c			
77K		^B 3.8	G8II? +F?					20c	KK pgm	≈ 250/1 S/N	
								21c			
100K		^B 4.63	A3m					22c	KK pgm	MAX 2.12K ADU Companion on LHS of slit view ≈ 300/1 S/N	

251 Pg #3

Emulsion Batches:

Date ...1993 Sep 30/Oct 1 Observers [KK]... T.A. / F.B.

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.
40-42	FLATS x3	while on	HD 209790						120s
43	BIAS (4)								
CG 300 79-82	HD 209790	22 00 54	+64 08	4 frames					67ms
CG 300 83-84	"	"	"	2 frames	22 30 00	201 00W			133ms
CC16544	Comp							Fe No Clear	45s
45	HD 217675	22 57 18	+41 47	23 11 20					524
46	Comp							Fe No Clear	45s
47	Comp							"	"
48	HD 217782	22 58 00	+42 13	23 29 22					2069
49	Comp							Fe No Clear	45s
50	Comp							"	"
51	HD 6961	01 05 00	+54 37	00 17 19					1130
52	Comp							Fe No Clear	45s
53	BIAS (4)								
54	Comp for	HD 29316	next page					Fe No Clear	45s

Spectr. Temp.

Dome Temp./Hum. $+5.2^{\circ}\text{C}$ 66%Transparency Conditions *Some thin clouds* 252Focus *6:74*

Spectr. Temp.

Dome Temp./Hum. $+1.6^{\circ}\text{C}$ 73%*SE FAN on all night*

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						252	3950A	2c		10K max ADU	
		B 4.63	A3m		ABOVE 3522 slit Detector removed				(non standard) Seeing Test For scale	Dome N/NW Double = 10" sep in Box completely	
75K	2.3"	B 3.6	B6p					23c			
								24c	K/K pgn	MAX 13K 4-5 hundred S/N	
								25			
								26			
70,500	3"	B 5.17	A2					27	K/K pgn	MAX 13K 350/1 S/N	
								26c			
								28			
70,000	2.3"	B 4.50	A7V					29	K/K pgn	MAX = 13K ADU	
								6c			
								1c			
								6c			

253 Pg #4

Date 1993 Sep 30/Oct 1... Observers [K.A.] Th. / F.S.T.....

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.
CC16555	HD29316	043200	+5317	00 5454					2250s
56	Comp							FeNe Clear	45s
57	HD29316	043200	+5317	013535					220p
58	Comp							FeNe Clear	45s
59	Bins (4)								
60	Comp			023049				FeNe Clear	45s
61	HD56986	071412	2210	023047					934
62	Comp							FeNe Clear	45s
→ 63 65	FLATS X 3								
66-68	FLATS Bins								
67-68	Focus Test							FeNe	
CG 30085 89	HD56986	in Im acquisition			A 310				

Spectr.

Focus.

Spectr.

Exp. Mtr.

24K in

30K

30K

30K

30K

30K

30K

30K

30K

30K

30K

30K

30K

30K

30K

30K

30K

30K

Spectr. Temp. Dome Temp./Hum $+1.7^{\circ}\text{C}$ 73.5°H Transparency Conditions ... $5/1$ hazy 2.54 .

Focus $6.9.9$

Spectr. Temp. Dome Temp./Hum $+5.2^{\circ}\text{C}$ 74.5°H

FULL Moon Too.
Finally clouding in.

Exp. Mtr.	Seeing	✓ Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Approx Quality S/N
* out to 24K in last 28 mins	2"	VAB 5:36	A511	CHSS CCO	1800W	250 electro	3950A	2ci	kk pgn	* Again, Exp meter continuously ZEROED a few times this time Too slow at first too.	250/1
30K	10" perhaps				(8 min for (keep cats)			3ci			
								2ci	kk pgn	Repeat exp	
								6ci			
70K	3"		F012						kk pgn	Faint comp seen 2.6" from primary To SW	
								4ci			
Still set 6.9.9 T = $+5.1^{\circ}\text{C}$											
										Some saturated pixels to BRing up Fnt comparison	

255
pg 1

Fri / Sat

Date 1993 Oct 1/2.... Observers T.n..... focus & Grating Efficiency Tests
scaling

Emulsion Batches:

.....
.....
..... DIFFUSER... IN 45 NORMIN

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison		Exp. Mtr.
								Type/Filter	Exp.	
CC16569										
70	Comp/Stellar HARTMAN Poshs			21 07		0 0	+35°	FeNe GG385 FeAR Ap=1/4	40/65	Set 7
71	"	"		21 22		"	"	"	40/65	Set 6
72										
73				21 28		"	"	"	40/65	Set 6
74										
75	BIAS(4)							(GG385 in for TUNG)	40 sec	W/exp Back
76	FLATS x2			21 42				(clear)	40s	
77								FeNe clear	40s	
78	Comp							FeAR clear	120s	
79	Comp			22 22				TUNG Ap=1/4	15s	(Note)
80	FLATS x2									
81										
82	BIAS(4)									
83								FeAR clear	90/120	Set 4
84	Comp/Stellar HARTMAN Poshs			22 30						
85	BIAS(4)			23 08						
86								FeAR clear	50/70	For
87	Comp/Stellar HARTMAN			23				FeNe Ap=1/4	3 sec	
88	Comp FeNe							TUNG Ap=1/4	9 sec	
89	FLATS x2			23 15				FeNe clear	20 sec	
90										
91	Comp FeNe			00						

Spectr. Temp. Dome Temp./Hum. $+11.4^{\circ}\text{C}$ 79.0CCD FMT $[430 \ 0 \ 50 \ 1024 \ 4 \ 1]$ 20 ESTTransparency Conditions .. *C. cloudy ... Raining ... 256*

Focus

Actually warming up outside

Spectr. Temp. Dome Temp./Hum. $+11.8^{\circ}\text{C}$ 92.790 CGAIN CCDT $\rightarrow -100^{\circ}\text{C}$

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Set 7.20	T = $+11.7^{\circ}\text{C}$			CHSS CCD	1800 l/mm G = 4500	25 μm F grating	* 4400	3c/ 1ci	Focus Test	* $\pm 5\text{Å}$ Stellar posn Exp longer to match strength close to correct focus	
Set 6.90	T = $+11.8^{\circ}\text{C}$							5c/ 6ci	"		
Set 6.60	T = $+11.8^{\circ}\text{C}$							7/8	"	All for set vs shift scale	
11 exposures tonight								1ci			
Back To Set = 6.90								9ci	FOR Grate Eff Tests	MAX = 11.5 K ADU	
								10ci			
					1800 l/mm G = 6010		6525	11ci			
(Note use of Aperture Thistle)					F grating			12ci		MAX 10.6 K ADU fixed	
								1ci			
Set = 6.90	T = $+11.7 \Rightarrow 11.8^{\circ}\text{C}$							5c/ 6ci	Focus Test	Stellar 1.5 pixels Red center	
								1ci	Note Back to 4400Å Revealed that Focus there was OK	Stellar $< .3 \text{ Red}$	
FOR ID purposes too	T = $+11.8^{\circ}\text{C}$ Set 6.90				1300 l/mm G = 4470		6525	15/16	Focus Test	50 1024 4 1 CCD FMT change	OK
					"E" grating			17ci			
								18ci		MAX 12.1 K ADU	
					600 l/mm G = 2660		4400Å	19ci	CCD FORMAT To 480 0 50 1024 4 1		
					"C" grating					now	

257
Pg #2

Emulsion Batches:

Date 1993 Oct 1/2 Observers T. Grating efficiency tests

..... STILL with GG385 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.
92 CC16593	FLATS x2			00 08		0 0	+35°	TUNG CLEAR	9sec
94	BIAS(4)								
95	FLAT			Note: Aperture Honed before near changes in selection)				TUNG Ap=1/4	9sec
96	FLATS x2							"	90sa
97	FLATS x2							Fene Ap=1/4	2sec
98 CC16598	FLATS x2	Comp for ID						TUNG Ap=1/4	7sec
16599	FLATS x2							Fene Ap=1/4	7/11
16600	FLATS x2							TUNG Ap=1/4	3sec
16601	Comp/stellar	HARTMAN posns						Fene Ap=1/4	7/11
02	Comp for "A" grating	Comp/stellar						Fene Ap=1/4	7/11
03	FLATS x2							TUNG Ap=1/4	3sec
04	FLATS x2							"	3sec
05	FLATS x2								
06	FLATS x2								
07	FLATS x2								
08	FLATS x2								

Note Perhaps use of t scale 100 for better shutter accuracy
could have been used ? OR for fractional speeds ?
Grating "D" and "J" next night.

Spectr. Temp. Dome Temp./Hum. $+11.8^{\circ}$ 92.7% Transparency Conditions 258

Focus 6-90

Spectr. Temp. Dome Temp./Hum. $+11.7^{\circ}$ 90.5%

480 0 50 1024 4 1 CCD FMT

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					6004/m G=660 'C' grating	250 data	4400A	21ci		MAX=14.6K	
								22ci		MAX=1.41 K ADU	
								23ci		MAX=13.66 K ADU	
(2 sec exp)					6004/m G=3100 'C' grating		6530A	24ci		MAX 5500 ADU	
								25ci		MAX 13.8K	
								5/6ci	Focus Test	stellar et cetera w/ pixel Blue	
					1004/m G=2422	29A	6500A	26ci	5/6 Focus Test	stellar to Pix Blue streaker Region ID	
					"	"	"	26ci		MAX 10.9 K ADU	
								27ci		MAX 11.7 K ADU	

GG385 out (non OG560 filter only)

Spect control & grating motion. Fine tonight, ~~but~~ BUT
 RS Grating motion. I noticed Big displacement in Y of images with 1800 ln grating
 WORK DONE Relative to previous night, Format Y Ref changed from #480
 EARLIER Today, to 430 to center Incp in window tonight
 in $\approx 1\text{mm}$ change

259
B1.

After good Rey Sat Night Tour

Emulsion Batches:

Date 1993 Oct 21/3... Observers [Rm]...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.
CC 16609	NGC 6826	19 44 48	2000 +50 31 00	18 41 11	Before Tour view of object				510
10	Comp							FeAr Clear	60s
✓ 11	BIAS(4)								
12	FLAT							TUNG Ap = 1/2 FeAr Clear	5
CC 16613	Comp/Stellar	HARTMAN Pairs				01 34W	+38		40/55
14	BIAS(4)								
15	Comp							FeAr Clear	60s
16	Comp								
17	HD 203156	21 15 23	+37 49	22 40 35		01 585 W			436
18	Comp							FeAr Clear	60s
19	Comp							"	"
20	HD 187691	19 46 12	+10 10	22 53 47		03 47 W			829
21	Comp							FeAr Clear	60s
22	HD 187691	19 46 12	+10 10	23 10 01		03 57 W			468
23	Comp							FeAr Clear	60s
24	Comp	for HD 198726							

* Perhaps this exp not proper for stove use...

Spectr.

Focus.

Spectr.

Exp. Mtr.

430

3300

3300

Transparency Conditions . *PART cloudy* 260

Focus ~~6-90~~ 6-90

Spectr. Temp.

Dome Temp./Hum. 8 480 0 50 1024 4 1 ccd FmT

Exp.	Exp. Mtr.	Seeing	Pc. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
0		10R	9			1800/Hm G=6020	250u later	6525A	4ci	Blinking Nebula (for Dams purposes)		
5		T = 6.1° C	6-80			G=5920		6400R			@ chipcautoexp Stellar ~ .2 pixel Red	
4630	4"	5.8 -5.9	F2						1ci 6ci 7ci 6ci 6ci 7ci 8ci 9ci 10ci 11ci	Rm pgm	60K photons above bkgnd	
3300	5"	5.11	F8V							std vel	* Observed mostly on west NW by dome. Thought it slow because of cloud	
3300		5.11	F8V							std vel / Repeat	now some cloud	

CA 6d
197

SAT SUN

Date 1993..Oct 21/3.

Observers *Rm. / Tg.*.....

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[illegible]

Spectr. Temp. Dome Temp./Hum. $+4.8^{\circ}\text{C}$ 70% Transparency Conditions *Clouding in* 262
 Focus ... 6.80
 Spectr. Temp. Dome Temp./Hum. $+5.6^{\circ}\text{C}$ 68.5% 2

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4306	5"	5.75	G016	CHSS CCD	1800 G=5920	250 μ factors	6400R	12c:	Rm psm		
								13c:			
								14c:		MAX 11 K ADU	
								1c:			
T = $+5.0^{\circ}\text{C}$				CHSS CCD	831 ln/mm G 3610	250 μ factors	6510R		Grating Eff tests continued	sk/for US1 Red	
				"	"D" grating		"	15c:	300 0 50 1024 4 1 CCD FMT		
								1c:	for 831 ln/mm exps.	15.8 MAX ADU	
4300	50	1024	4	1 CCD FMT	600 ln/mm G 3400		6530R	T = $+5.2^{\circ}\text{C}$	1st ORDER	3rd order	
					"J" grating			16c:		MAX = 15.1 K ADU	
								1c:			

263

①

Date 93 OCT 5/6 Observers [Rm] Pbr

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.
cc16643	Bias (4)								
44-45	Focus								
46	Bias (4)								
47	Comp						Clear	F4r	60s
48	HD 203156	21 15 24	+37 49	19 11 10					252
49	Comp						Clear	F4r	60s
50	Comp						Clear	F4r	60s
51	HD 198726	20 47 13	27 52 30	19 25 09					345
52	Comp						Clear	F4r	60s
53	Bias (4)								
54	Comp						Clear	F4r	60s
55	HD 214975	22 36 55	+56 19 24	19 44 34					1800
56	Comp						Clear	F4r	60s
57-61	FST x 5						1/4	True	15s
62	Bias (4)								

Spectr.

Focus.

Spec.

Exp. Mir.

5500

5500

1800

Spectr. Temp. Dome Temp./Hum. ... 8.6 / 59.1. Transparency Conditions Clear 354
 Focus 6.8.2
 Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				ASS COP	1800 u = 5910	250 A	λ = 6100				
										HAD SOME FOCUS PROBS	
5500		V 5.89	6026						Rm		
5500		V 5.95	6020						Rm		
1900		V 8.4	6020								

265

②

Date 93 Oct 5/6

Observers GRWJ/Prr

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.
63	Comp	.					Clew	Rlr	60
64	HD 331970 *	20 0827	20 1025	203454					2900
65	Comp	BD+20 4478	T ₁ Oct 10				Clew	Fldr	60s
66	Bins (4)								
67	Comp						Clew	Fldr	60s
68	HD 203156	21 1523	+ 37 49	213257					302
69	Comp							Rlr	60s
70	Comp							"	"
71	HD 204867	21 2618	-06 01	215146					48
72	Comp							Rlr	60s
73	Comp							"	"
74	HD 177724	19 0049	13 4253	220129					47
75	Comp							Rlr	60s
76	Bins (4)								
77	Bins (4)								

267
(3)

Date 93. Oct 11 Observers [Rm]/[Rm]

Emulsion Batches:

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[illegible]

Spectr. Temp. Dome Temp./Hum. Transparency Conditions Saye & Gross (N)
Focus West. 268
Spectr. Temp. Dome Temp./Hum.

[illegible]

269
Pg #1

Fri / Sat

Date 1993 Oct 8/9..... Observers [Rm] J.n. / wide.....

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.
cc16692								Fear	30/43
93	Comp/stellar Hartman			19 50		01 15 W	+39°	C/200	
94	B145(4)							Fear	60s
95	Comp							clear	
96	HD 162714	17 47 17	-00 07 12	20 05 59	15 53				553 s
97	comp								60
98	Comp			20 00					60
99	HD 203156	21 15 23	+37 49	20 30 17					454
cc16700	Comp								60
01	comp								60
02	HD 187691	19 46 12	+10 10	20 48 44		01 57 W			284
03	Comp								60 s
05	HD 331970*	20 08 27	20 10 25	21 01 44					1658
06	Comp								60
07	Bias (4)								60
08	Comp (for HD 331970)								60

→ 60 second / comp cc16704 → 60 s

Determined to be BD+20 4478 (mc 10.1) (KO) T_n

Photographic

Spectr. Temp. Dome Temp./Hum. $41.8.7^{\circ}\text{C}$ 69.5% Transparency Conditions *Hazy* 2.70

Focus 6.73

Spectr. Temp. Dome Temp./Hum. $41.7.9^{\circ}\text{C}$ 71.7%
unchanged from previous night

Exp. Mtr.	Seeing	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
			CASS CCD	1800 l/w/m $G=5910$	250μ <i>data</i>	$2.6400A$	3ci	Focus test	$\odot$ Pixel Res ≈ 450 stellar pixel.	
			CASS CCD	1800 l/w/m $G=5910$			5ci			
2100	6.15	G01b					6ci	Rm Pgm.		
							7ci			
							8ci			
4600	5.8 $\rightarrow 5.4$	F2					9ci	Rm Pgm.		
							10ci			
	5.11	F8V					11ci			
5724							12ci	std vel		
2nd							13ci	14ci		
727	9.1 $\rightarrow 9.8$	F8 (looks FORG)					15ci	$\odot$ Sgs/Rm pgm	* wrong star check exp previous night + co.	
							16ci			
							16ci			
							17ci			

Spectr. Temp.

Focus 6-73

Spectr. Temp.

Dome Temp./Hum. 17.5°C.....72.5%

Dome Temp./Hum. $71.6.6^{\circ}$ 75.3/6

Transparency Conditions... *Hozg* 272

1825-1826 1827 1828 1829 1830 1831 1832 1833 1834 1835 1836 1837 1838 1839 1840 1841 1842 1843 1844 1845 1846 1847 1848 1849 1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643

[illegible]

273

Pg #1 Sun / Mon

Date 1993 Oct 10/11..... Observers (K.K.) 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.
CC16725									
26	Comp / Stellar	HARTMAN POSITS		19 11		0 0 00	+39°	Felt Clear	30/36
27	B145(4)								
1 KKA. PC	trouble light								4x20
1 KKA. PC	HD 197345	20 38 01	+44 55	~ 20 20					4x20
2 KKA. PC	HD 197345								8x20
3 KKA. PC	n								8x20
4 KKA. DL	Vega HD 172167	18 33 33	+38 41	20 37					8x20
5 KKA. DL	HD 172167			20 42					8x20
6	fluorescent tube								4x20
SDMK. RAW	dark								
GET 6728	Comp / Stellar	HARTMAN POSITS		Test not written, & focus changed for observing					
728	Comp							Felt Clear	60s
729	LMS 1176	00 55 11	+60 49 52	21 42 40		01 44 E			1966
730	Comp							Felt Clear	60s
731	B145(4)								
732	←								

Spectr. Te.

Focus..

Spectr. Te.

Exp. Mir.

ST

173

275
pg #2

Date 1993 Oct 10/11... Observers [M.H.]... Tm.....

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.
CC 16732	LHS 1176	00 55 11	+60 49 52	22 18 21		01 09 E	61° 20 39		1934
33	Comp							FelNo Clear	60s
CG30096 - 101	LHS 1176 above 300 μ slit			22 56					
34	Comp							FelNo Clear	60s
35	HD 223094	23 41 30	+28 09	23 05 40		00 30 W			577
36	Comp							FelNo Clear	60s
CG300102 107	HD 223094								
37	HD 223094	23 41 30	+28 09	23 24 42		00 49 W			561
38	Comp							FelNo Clear	60s
39	BIAS(4)								
40	Comp							FelNo Clear	60s
41	HD 18884	02 57 06	+3 42	23 41 58		02 17 E			49
42	Comp							FelNo Clear	60s
43	HD 18884	02 57 06	+3 42	23 46 37					103
44	Comp							FelNo Clear	60

Spectr. Temp.

Dome Temp./Hum. 7.3°C ... 73.5% Transparency Conditions *Partly cloudy* ... 2.76 Focus ... 6.95

Spectr. Temp.

Dome Temp./Hum.

NE FAN Turned Back on @ 22:20
Both FANS on at start of night for 2 hrs

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
185	4"	10.8	M2.5		<u>1800 1/4" m</u> <u>G = 5000</u>	300 μ	5140A	8c	KK pgr	Repeat exp mostly clear	
								9c			
4x67ms + 2x133ms (2800 Into G1 for 111) above 300 μ slit											
								10c		Seeing Test (w/ std object) Dome NORTH V Light NW wing	
2600	4"	7.15	M5III					11c	std vel		
								12			
4x67ms + 2x133ms (246 Into G1 for 111) Int = 200 for 133ms exps above 300 μ slit											
3063		7.15	M5III					13c	std vel / Repeat	Dome SW VV Light NW Wind.	
		7.15	M5III					14c			
								15c		Dome T = +3.2 $^{\circ}\text{C}$	
8000	8"	2.53	M15 Lab					16c	std vel	guides somewhat up & down too	
								17c		(only a bit of cloud to slow it down)	
24K								18c	std vel	Big guiding again	
								19c			

277
pg #3

Date .. Oct 10/11 Observers .. KH .. TG

Emulsion Batches:

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[illegible]

Spectr. Temp.

Transparency Conditions

Part 5. Clouds.

278.

FOCUS 6-95

Spectr. Temp.

Dome Temp./Hum.

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3							300	5140A	20c		MHX 1/K ADY	
3											T = +2.9° suddenly Sci/Focus test stellar vs! Ref, OK Should be a good set for velocity comparisons. T _n	

279

Mon / Tues

Emulsion Batches:

Date 1993. Oct 11/12..... Observers [Rm]... Tm.....

CSS 386

7 sec. abnd. of ... W.L.V. T. in a. not changed

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.
CC16753 54	Comp 1stella	Hurtman	posns	18 10				Fair Clear	60/70
55	Comp	18 39 20	-20 45					Fair Clear	60
56	HD 173297	'	'	18 25 20		01 07 W			1242
57	Comp							Fair Clear	60s
58	BIASCA								
59	Comp							Fair Clear	60s
60	HD 203156	21 15 24	+37 49 00	18 56 35		01 05 E			713
61	Comp							Fair Clear	60s
62	Comp							n	r
63	HD 187691	19 46 12	+10 10	19 19 00		00 44 W			672
64	Comp							Fair Clear	60s
65	Comp							n	4
66	HD 171724	19 00 49	+13 42 53	19 36 22		01 38 W			110s
67	Comp							Fair Clear	60s
→ 72	FLATS x5					00 00	-6°	TUNG Ap/2	6 sec
73	BIASCA								

Spectr. Temp.

Dome Temp./Hum. +7.1°C... 59%

Transparency Conditions . Part. cloudy... 280.

Focus... 6.82

Spectr. Temp.

Dome Temp./Hum. +6.2°C... 65.3%RH

480 0 50 1024 4 1 CC OF ATT

Tel normalized on HR 7056

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				C 455 C C D	1800 1/4 100 G=5910	252 22.14	6900A	3/4c	Focus test	Right on	
								5	Rm pgn	Some cloud	
2	600	4"	7.16	60 Ib				6a	"	lots of cloud here.	
								7c			
								10c			
3				5.8 5.9 F2				8c			
3	3650	3"	5.5 5.9	60 Ib				9c	Rm pgn	some cloud	
								10c			
								11c			
1	3050	3"	5.11	F8 V				12c	std vel		
								13c			
								14			
3	9095		2.99	A0				15c	Telkric std	10K ADU MAX 1.24 Air mass	
								16c			
								17c		2 MAX 15K ADU	
								1c			

281 Tues / wed

Date 1993 Oct 12/13 Observers ... K.K. / Tm. PCS Fiber Fed

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.
FIT 981-2	Hartmann OUT & IN						off slope w/ graph	Hg	180
983	Comparison						$A = F$ or A = 1/2	FeNe	180
984	flat			#			$A = 1/2$	tung	7200
FIT 985	HD 172167	18 33 33	+38 41 00	19 32	19 41	2 14 W			
THG FIT 986	HD 197345	20 38 01	+44 55	19 59		0 57 W			1800
THG FIT 987	"	"	"	20 30 46	21 00 48	1 28 W			1800
FIT 988	Comp			21 03			Ap-c/comp	FeNe	1800
THG FIT 989	HD 217675	22 57 18	+41 47	21 13 10		00 10 E			1800
CG 30108 110	"	"	"	21 40		00 13 E			
CG 111 116	"			21 47			4x67ms, 2x133msec		
THG FIT 990	"			21 48 17		00 26 W			1800
n 991	"			22 20 20		01 00 W			1800
FIT 992	Comp (Comp 992)						Ap-c/comp	FeNe	1800
THG FIT 993	HD 3712	00 34 48	+55 59	23 00 54	23 31	00 00			1800
99A	Comp							FeNe	180
995	FLAT			00 34 44			Ap = 1/2	TUNG	7200

Spectr. Temp. Dome Temp./Hum. *+15°C 65%* Transparency Conditions *part cloudy* 28.2

Focus

Spectr. Temp. Dome Temp./Hum. *+3.0°C 63%*

Both Funs on medium NW wind, get START

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
CH A										SEFAD off at 22:30	
				PCS Fiber Opt	83/45	8μ	PCS				
					83/A1.2						
					"						
					"						
Peak 1500	V peak	0.04	A2J							Speckle Std	
Peak 600	V peak	1.26	A2Ja							"	
Peak 950		"	"							"	
230											
max 140nds	V peak										
67msec	V peak	262	(G1 gain)								
	V peak	1.26	A2Ja								
130max	"	B 3.6	B6p								
160max	V peak	"	"								
230 c/f											
500max	V peak	2.23	K0Ma								
max 1085											
All to Persae & WOrn, except 995 T _h should be on Persae's H ₂ N ₂											

Speckle Std

(2 meg TAG)

Refocused before starting
= 3.5 meg TAG

cloud 21 20 - 21.28 ins out
cloudy occasionally (.4 meg)

on top of clouds now

Seeing Test Done W, NE FAD on

All Clear now (.4 meg TAG)

seeing sl better (.5 meg TAG)

XX
= 3 → 4 cts/sec for strongest line

Speckle Std + Std Vcl clouds

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pg#1

Wed/Thurs

Date 1993 Oct 13/14 Observers K.K./Tn

PCS Fibered

Emulsion Batches:

Clock set Before FIT 999

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.
FIT00996	Comp			17 44 19				FeNe Clear	180s
997	FLHT			21 18 actual	21 19 00 secs			Tung Ap 1/2	
TAG FIT 998	HD 172167	18 33 33	+38 41 00	18 35 (header 7 min L)		01 41 W			1800
TAG FIT 999	HD 197345	20 38 01	+44 55	19 16 50		00 03 W	ended 882 sec	FeNe Clear	180s
FIT01000	Comp							FeNe Clear	180s
TAG FIT 1001	HD 197345	20 38 01	+44 55	19 48 20		00 50 W			1800
TAG FIT 1002	"	"	"	20 21 50	20 44	01 15 W	ended Before 1800 sec	FeNe Clear	180s
1003	Comp							FeNe Clear	180s
TAG FIT 1004	HD 217675	22 57 18	+41 47	20 54		00 25 E			1800s
01005	"	"	"	21 27 00		00 08 W			"
06	"	"	"	21 59 30		00 41 W			"
CG 300117 119	"			22 16					Int 16 min
007	"	"	"	22 30 55		01 12 W			1800s
008	Comp							Ap Clear	FeNe 180s
009	HD 3712	00 34 48	+55 59	23 07 50					

Spectr. Temp. Dome Temp./Hum. $+1.4^{\circ}\text{C}$ 55.3% Transparency Conditions *clear $\rightarrow$ cloudy* 28.4

Focus

Spectr. Temp.

Dome Temp./Hum.

No FANS Tonight, Light ~~WIND~~ NINE wind

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
230	much better than seeing last night, (still not great)				831 Gr Tilt 412	84 FF	6563A				
1000 max										10 mag TAG	
3200		0.04	A0V						std use	Big signal RATE Range	
750 max		1.26	A2Iq						"	some cloud Ashigh as 5900	
240										some cloud by 1928. 3 mag	
700 peak	so so	1.26	A2Iq							clear after 2005	
into to 1250 sometimes										very cloudy here now (1.9 mag)	
600										seeing getting worse	
240										clear at 1st clear rate	
230 max	poor	B 3.6	B6p						htk speckle pgrm	just Hazy now 1.5 mag	
300 max	so so	"	"						"	Focus optimized again	
250 max	not so good	"	"							6.6 mag	
										some clouds 1st	
3	FRAMES taken with star @ best count RATE on Fibex Bundle										
350	OK									TAG = 0.85 mag	
2300 max	OK	2.23	K0Ia						Speckle std & Vel std		

Spectr. Temp.

Dome Temp./Hum. $+11^{\circ}\text{C}$ 64% H

Transparency Conditions *Fine* 286

Focus

Spectr. Temp.

Dome Temp./Hum. ... $+1.0^{\circ}\text{C}$... 65%

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2	2400max				PCS Fiber Ed	831 41-20	84 ff	6563A			seeing sl worse at end	
3	90	OK	var	BBV							HH speckle pgm	
4	900max		"	"							"	
5	800		"	"							Algo/ of course (no where near 4 min. in use now)	
6	1090										This one not backed up	
											All To Persons: including previous night FLAT N:\FTS and N:\Speckle, except FIT01016	
											Do work in Tomacrow, backup too long for now.	

287 pg 41

Date 1993 Oct 14/15 Observers K.K./Tn./Fbr.....

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.
FIT 017	FLHT			18 09 27					800
018	Comp							Felt Clear	180s
FIT TAG 019	HD 197345	20 38 01	+44 55	18 38 10		00 17 E			1800
" 020	"	"	"	19 11 20		00 16 SW			180s
021	Comp							Felt Clear	180s
FIT TAG 022	HD 217675	22 57 18	+41 47	20 01 40		01 13 E			1800s
023	"			20 32 42					1800s
024	Comp							Felt Clear	180s
025	HD 217675	22 57 18	+41 47	21 11 38		00 03 E			1800
026	"	"	"	21 45 30					1800
027	"	"	"	22 15 56		01 01 W			1800
028	Comp			22 46 00		01 31 W			1800
029	Comp							Felt Clear	180s
030	HD 3712	00 34 48	+55 59	23 25		00 32 W			1800s
031	"	"	"	23 56		01 03 W			1800s
032	Comp							Felt Clear	180s

Spectr. 1

Focus..

Spectr. 1

Exp. 1

MAX

400

300s

240

MAX

350

MAX

600

500max

280 max

1800 max

1400 max

289 pg #2

Emulsion Batches:

Date 1993 Oct 14/15 Observers KK/TG/Flt

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[illegible]

291

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Date Oct. 18, 19 - 93 Observers Rji./Fbr.

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.
6616774	BIAS(4)								
75-76	Focus						CLMR	FLAR	30s.
77	Comp								
78	HD182917	192154	+5002	193640					469
79	Comp.								
80-82	FST x3						CLMR	TONE	10s
83	Comp							FLAR	60s
84	HD182917	192154	+5002	200203					1800
85	Comp								
86	BIAS(4)								
87-89	FST x3						CLMR.	TONE	15s
90	Comp							FLAR	60s
91	HD182917	192154	+5002	204640					295
92	Comp							FLAR	60s
93-94	FST x2								100

Spectr. Temp. Dome Temp./Hum. 8.22 / 65% Transparency Conditions Clear / Haze 292

[illegible]

2

Emulsion Batches:

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[illegible]

Spectr.

Focus.

Spectr.

Exp. Mtr.

5K

7000

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions . . . *Soye & Gross* 294

Focus

Spectr. Temp. Dome Temp./Hum.

[illegible]

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions . *Mostly cloudy* 296

Focus.....

Spectr. Temp.

Dome Temp./Hum. $+5.3^{\circ}\text{C}$ 67.1% H

Exp.	Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							90 μ .265	$\rightarrow$ comp line		slit 4 pixels FWHM	slit + H = 600 μ = .205	
							A 60 μ slit gives slit 3 pixels FWHM					
											Use 600 μ H = .205 for flats & 400 μ for observations	

297

297
pg #1

SAT/SUN

Date 1993.Oct.23/24.

Observers

[mental msmith] Ty

ESS 386 updated to new v Time,..... Again, NO filters

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.
Ce06498	BIASCA)								
99/ 100	Focus								
Ce06601 Ce06503	FLAT x 2			28 40		00 48W	+45°	TUNG	30 sec
504	Comp DARK			27 54.1		05 E	+45°	THAR	4 sec
505	H D Comp							ThAr	6 sec
506	HD10307	01 35 42	+42 07	19 29 58		03 38 E			2474
507	Comp							ThAr	6 sec
508	HD10307	01 35 42	+42 07	20 15 41		02 50 E			2595
509	Comp							ThAr	6 sec
510	HD10307	01 35 42	+42 07	21 01 17		02 07 E			2550
511	Comp							ThAr	6 sec
512	BIAS(4)								
513	HD10307	01 35 42	+42 07	21 45 45		01 25 E			2293
514	Comp							ThAr	6 sec
→ 515 516 517	FLATS x 2			22 29		02 E	+10°		

Spectr. Temp. Dome Temp./Hum. $+8.0^{\circ}\text{C}$ 67%Focus $\rightarrow 290 \rightarrow 237$

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions $\text{File} = \text{S1.kuzy} \dots 298$

All 0 0 256 1024 4 1 CCD FORMAT

CCD Temp = -100°C

Tel encoders NORM on S Cyl

Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle CCD	600 lm/mm $\lambda = 557$	600 600 μm H	4550A			Echelle grating = 18.15°	
	Set. 290					600 μm H = .205 cm micrometer				Right on at 4388A	
	Set. 237 now					600 μm width				exp meter stuck?	
	Just a DARK					600 μm height				MAX 12K ADU	
						600 μm W = .272					
						400 μm = .225 height 4ci					
						" "		3ci	Maylan pgn	4377 Blue cal of FORNER	
						" "		5ci	" "	with 4388A	
						" "		6ci		SRH + 1.6 sec, add -0.0192	
	700	2.3" ^B 5.57	G2V	[AT 4388 S/N = 126] 10 cols. 16K photons SAME FOR 4471 region						MAX = 10K ADU	
	655	2.3"		(16K photons)				2ci	Maylan pgn	4477 Red cal of FORNER	
								3ci		including 4471A	
	850	2"		(20K photons Avg)				6ci	Maylan pgn		
								3ci			
								1ci		Domo T = $+7.6^{\circ}\text{C}$	
	715	2.3" ^B 5.57	G2V					2ci	Maylan pgn		
								3ci			
								4ci		12.7 K ADU max	

299 pg 2

Date 1993 Oct 23/24 Observers [Meyers/Smith]...Ty + Wade

Emulsion Batches:

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[illegible]

Spectr. Temp. Dome Temp./Hum. $+7.6^{\circ}\text{C}$ $63\% \text{H}$ Transparency Conditions ... $sl. hazy$... 300
 Focus ... 23.7 ...
 Spectr. Temp. Dome Temp./Hum. ...
And WORLDSERIES win for B/40SAYS. I can hear horns honking on Yonge Street.
only slit width changed.

Exp.	Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
17					eccl/k CCD	600/n/war -557	100u 50u	width = 0 4550A	261 4ci	annimicrometer	11K ADUMAX	
18							400u height 100u width		1ci		Lies noisy & typical pattern	
19	Unrotatable intermittent 7cits	8"	B 407	B2IV			51.11 4550A		5ci	Mykon Smith pgn.	(4K photons 2Avg) λ ERI (65/1 S/N)	
20									3ci	60		
21	25?	6"-10"							2ci		very hazy here (8K photons 2Avg above background)	
22		6"							3ci			
23	60	poor							4ci	Exposure prob correct now. (8K photons)	Some cloud too	
24									3ci			
25									1ci	BIAS Looks cleaner now	Dome $T = +7.4^{\circ}\text{C}$	
26	115	poor							2ci		$\Delta RA -00 00 08$	
27									3ci		$\Delta dec -00 04 30$	
28	125								5ci		(9K photons 2Avg) 80/1	
29									3ci			
30	120								4ci			
31									3			

Spectr. Temp.

Dome Temp./Hum. *+ 7.6°C : 67%*

Transparency Conditions. *PART Closes* 302

Focus ... 237

Spectr. Temp.

Dome Temp./Hum. $+7.8^{\circ}\text{C}$ 70% H

	Exp. Mtr.	Seeing	Pg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
120 62	90	*10"	B=407	B2IV		W 100x H 100x		455D*	7ci		*vv poor. (8kpl obs) VUR: HALE seeing	
									3ci			
									1ci			
129 -52	113	8"							2ci		just hazy	
									3ci?			
							500x Height		2ci			
									1ci			
						All to warm & Persens.						

203
pg 1 Sun / Mon

Date 1993 Oct 24/25 Observers [Mln] Fhr / 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.
CE06544 45	Focus	in board / out board				00 40W +450		Th Ar	6/13s
46	BIAS(4)								
47	Comp							Th Ar	6sec
48	HD10307	01 3542	+42 07	18 4458		4 16E			2692 730
49	Comp							Th Ar	6sec
50	HD10307	01 3542	+42 07	19 33 22					2300
51	Comp							Th Ar	6s.
52	HD10307	01 3542	+42 07	20 1327					2440 270
53	Comp							Th Ar	6sec
54	BIAS(4)								
55	HD10307	013542	+42 07	205939					2400 515
56	Comp							Th Ar	6sec
57	HD10307	013542	+42 07	214105					2400 510
58	Comp								
59	BIAS(4)								

Spectr. Temp. Dome Temp./Hum. $+12.5^{\circ}\text{C}$... $63.4\% \text{H}$ Transparency Conditions .. *Part clear* 304
 Focus ~~240~~ $\cdot 243$
 Spectr. Temp. Dome Temp./Hum.

Exp.	Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6/13					Etal/e CCD	600/n 1557	W H	60u 100u	3ci 4ci	out board sl Res (2px)	<i>Bianian</i> 128 1024 81	
									1ci		0 0256 1024 41	
									3ci			
	730	2"	B 6.57	G2V					4ci	mln pgm.		73
			BV 4.95	G2V					3ci			
									5ci			
									3ci			
	640	2"							4ci	mln pgm.		
									3ci			
									1/2 ci			
	845	2"							5ci	mln pgm	20K photons E. Arg u base backgnd.	
									3ci			
	840								4ci	mln pgm.		

Date 1993 Oct. 24/25 Observers [Mln/Smith]...Tn./Fhr

Blue Exp. meter. Filter inserted

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.
ce06560									
62	FLATS x3					02 W	+14°	TUNG	255
63									
65	FLATS x3				22 40	01 E	-9°	n	1650
66	BIAS(4)								
67	Comp							ThAr	650
68	HD 33328	050422	-0853	230240		03 40 E			1800
69	Comp							ThAr	650
70	HD 33328	050422	-0853	233502					1800
71	Comp							ThAr	650
72	BIAS(4)								
73	HD 33328	050422	-0853	000936					1800
74	Comp							ThAr	650
75	HD 33328			00 44 14		01 56 E			1800
76	Comp							ThAr	450
77	HD 33328			01 15 55		01 24 E			1835
78	Comp							ThAr	450
79	BIAS(4)								

354

Spectr. Temp. Dome Temp./Hum. $+9.5^{\circ}\text{C}$ 664% Transparency Conditions ... 51.5 cloudy 306.
 Focus 243
 Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
28				ec/d6 CCD	600 W/mm $\times .55$ 5F	600 W 600 H 1000 W 600 H	45508			Slit width changed MAX 10 KADU	
29						1000 W 400 H =		3ci		43880 Row 675 3rd from Top (4471 at Row 240 5th from Top)	
not Reading S. H. in 3 Blue	5"	4.07	B2 IV	[100/1 S/N]	43880	45508	4ci			M. Smith from "dimples"?	
32								2ci		some thin cloud	
0	3"			[150/1 S/N]				5ci		same cloud	But seeing much better than previous nights
38								3ci			
								1ci			
0	2-3"			[150/1 S/N]				2ci		shows bump in 43885	
sup meter Filter Removal now											
400	2-10"			[150/1 S/N]				4ci		*seeing suddenly ^{very} poor (01:08 (Bump diminished)	
								3ci			
370	3-4"							6ci		(Red end dimples?) > 150/1 S/N	
								5ci			
								1ci			

307
p. 43

Date 1993 Oct 24/25 Observers [M. Smith] F. L. T. A.

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/Filer	Exp
CE06580	HD 33328	05 04 22	-08 53	01 50 46		01 01 E			1206
81	Comp							Th Ar	4.5
82	HD 33328			02 12 26					1200
83	Comp							Th Ar	4.5
84	HD 33328			02 34 00					1208
85	Comp							Th Ar	4.5
86	BIAS (4)								12
87	HD 33328			02 58 10		00 07 W			1232
88	Comp								4.5
89	HD 33328			03 20 22		00 28 W			
90	Comp							Th Ar	4.5
91	HD 33328			03 43 09		W			1202
92	Comp							Th Ar	4.5
93	BIAS (4)								4.5
94	HD 33328			04 06 09					1200
95	Comp								4.5

Spectr. Temp. Dome Temp./Hum. $\pm 7.8^{\circ}\text{C}$ 73% Transparency Conditions ... *P.A.T. ... Cloudy. (thin.)*
 Focus *r. 243*
 Spectr. Temp. Dome Temp./Hum. 308

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
526	2"	^B 4.07	B2V				4550	2c	<i>msmith/gyr</i>	4550 @ c6/ (155-170)	
								3c		CCD T = -100.6°C	
800	2"							4c		s/l < 200/i S/N	
								3c			
780	2"							5c		200/i S/N @ 9388H	
								3c			
425								1c			
425								2c		(no dimples)	
								3c			
780	2"							6c			
								7c			
720								4c			
720											
690								5c			

309
Pg #4

Date 93 Oct 24/25 Observers [M. Smith] Fbr/Tn

Emulsion Batches:

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[illegible]

311-
 p#1 Mon/Tues - Election day

Emulsion Batches:

Date 1993 Oct 25/26..... Observers [M. L. Smith].. Tu. / F. br

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.
1006609 - 11	F/ots x3				7809	0 0	+10°		25s
12	BIAS(4)			18 10 18					
13	Comp							ThAr	4s
14	HD198802	20 47 37	-11 57	18 23 42		00 11 W			2434
15	Comp							ThAr	4s
16	HD198802	20 47 37	-11 57	19 06 19		00 55 W			2466
17	Comp							ThAr	4s
18	BIAS(4)								
19	HD198802	20 47 37	-11 57	19 50 39		W			2400
20	Comp							ThAr	4s
21	HD198802	20 47 37	-11 57	20 32 16					2400
22	Comp							ThAr	4s
23	HD198802			21 13 49		03 00 W			
24	Comp							ThAr	4s
25	BIAS(4)								
25	BIAS(4)								

Spectr. Temp. Dome Temp./Hum. $+80^{\circ}$ 61.4% H Transparency Conditions $+4^{\circ}$ cloud 312

Focus ... 243

Spectr. Temp. Dome Temp./Hum. $+5.4^{\circ}$ 57.7% H -100° 90 CRAIN as usual

Exp.	Exp. Mtr.	Seeing	Prg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
25						600/m/m	60 μ					
						557	600 μ H	4550A	2ci		$1 \rightarrow 600\mu = .205$	
						557			1ci		$400\mu = .225$	
									3ci			
12	Too faint						400 μ H for OBS					
12	Far exposure	2-3"	B						4ci	Mln pgm	4K photons 3Aug above bright.	
			7.05	G1 V					5ci		We need 160K photons for	
									6ci	Mln pgm	400/1 S/N	
									3ci		Too much	
									1ci		hazy 12K photons @ 4550A	
									2ci	Mln pgm	Duro T = $+6.0^{\circ}$	
									5ci		12K photons @ 4550A	
									4ci	Mln pgm.	10K photons	
									3ci		5.7 $^{\circ}$ C / 71.8% Hum.	
									6ci			
									5ci			
									1ci			
									1ci			

313

pg 122

Date 1993 Oct 25/26.... Observers [Mln./Smith.]... Tr. / Fbr

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.
CO06626 - 30	FLATS x 5			22 13		01 E	-90	TUNG	16s
31	BIAS (4)					"	"		
32	Comp							ThAr	4 sec
33	HD 33328	05 04 22	-08 53 00	22 53 37		3 44 E			1805
34	Comp							ThAr	4 sec
35	HD 33328			23 27 04		3 11 E			1805
36	Comp							ThAr	4 sec
37	BIAS (4)								
38	HD 33328			00 01 15		2 47 E			1200
39	Comp							ThAr	4s
40	HD 33328			00 22 54					1205
41	Comp							ThAr	4s
42	HD 33328			00 45 21					
43	Comp							ThAr	4s
44	BIAS (4)								

Spectr. Temp. Dome Temp./Hum. $+5.5^{\circ}\text{C}$ 64.8% H Transparency Conditions *si hazy* 314
 Focus 243
 Spectr. Temp. Dome Temp./Hum. $+4.6^{\circ}\text{C}$ 60.6% H Top up @ 02 EST

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					chelle CCD	600 μm X.557	100 μm W 600 μm H	4550A	2c		MAX 10K H2O	
									1c			
							100 μm 400 μm H		3c			
	92	5"		B	407 B2 IV				2c	M Smith	He's doing 6678A at Kitt Peak	
									4c		14K photons (120/1 @ 7388A)	
	350	4.6"							5c		24K photons 150/1 S/H	
									3c			
									1c		$D_{2500}T = +4.7^{\circ}\text{C}$	
	405	3"							2c			150/1
									4c			
	410	3"							4c			
									4c			
	388	3.4							4c			
									3c			

315
P#3

Date 1993 Oct 25/26 Observers [M. Smith]... T. ... / F. B. R.

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.
ce 06645	HD 33328			01 08 27					1200
46	Comp							T3 Ar	45s
47	HD 33328			01 30 14					1215
48	Comp							T3 Ar	4s
49	HD 33328			01 52 03		00 55 E			1206
50	Comp								45s
51	HD 33328			02 15 08		00 22 E			1850
52	Comp							T3 Ar	4s
53	BIAS (4)								
54	HD 33328			02 49 26					1484
55	Comp							T4 Ar	4s
56	HD 33328			03 15 36					1200
56	Comp							T4 Ar	4s
57	BIAS (4)								
58	HD 33328			03 42 01		00 57 W			
59	Comp							T4 Ar	4s

Spectr. Te.

Focus ...

Spectr. Te.

Exp. Mtr.

415

451

412

430

536

308

440

Spectr. Temp. Dome Temp./Hum. $+4.5^{\circ}\text{C}$ 61.3% Transparency Conditions ~~some thin~~ cloud $+316$

Focus 243

Spectr. Temp. Dome Temp./Hum. $+3.4^{\circ}\text{C}$ 68%

S/N

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
400	415					600 μ /in	100 μ W 400 μ H	4550A	2ci	M Smith pgm	S/L 150/1	S/H
42									3ci	no cosmic rays @ 4385 fura change symmetrical, ie no obvious bumps		
45	415	3							5ci			
7									3ci			
126	412	3-5"							4ci		18k plots	
12									3ci			
17	430	4"							6ci		into some cloud	
7									3ci			
155	586								1s		Pure T = $+3.8^{\circ}\text{C}$	
7									2ci		26k plots	
7									3ci			
20	268	4"							7ci		some cloud - increasing	
7									3ci			
45	440	3-4"							2ci		thick cloud	
45									1ci			

[illegible]

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions .. *PART. Clearly* 318

Focus

Dome Temp./Hum. 43.3°C 73%

Finally complete cloud.

Spectr. Temp.

Dome Temp./Hum.

[illegible]

P5 1
319

Date Oct 29/30 1993

Observers

[KK]/Hlw/Tn

Emulsion Batches:

Note. No Filters used for stellar or equinoctial

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.
ce 06668 69	in BOARD / out BOARD		HARTMAN			23 W	+300	ThAr	2/1
70	BIAS(4)								
71	Comp							ThAr	2 s
72	HD3712	00 34 48	55 59 00	01 01 30		2 52 W	+56.30		854
73	Comp							ThAr	2 s
74	HD3712	00 34 48	55 59 00	01 18 24					260
75	Comp							ThAr	2 s
76	Comp.							"	"
77	HD 34029	05 09 18	+45 54	01 40 38		1 17 W E			60 +20
78	Comp							ThAr	2 s
79	HD 34029	05 09 18	+45 54	01 44 31		01 14 E			60
80	Comp							ThAr	2 s
81	HD 34029	05 09 18	45 54 00	01:51:56		~1 E			70 s
82	HD 34029	05 09 18	45 54 00	01:53:44		"			75 s
83	Comp							ThAr	2 s
84	Bias (4)								

Spectr. Temp. Dome Temp./Hum. $+3.9^{\circ}\text{C}$ 50% Transparency Conditions *fast clearing* 320
 Focus *243* Some scattered
 Spectr. Temp. Dome Temp./Hum. Cirrus.
90 again CCT $\rightarrow -100^{\circ}\text{C}$

Exp.	Exp. Mtr.	Seeing	$\sqrt{\text{Mag.}}$	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
21					<i>edelle</i> 19-20	600 μm 5.2830	60 μm 80 μm	6563A			0 0 128 1024 81 CCT <i>fast</i>	
25							<i>60 μm width</i> 600 μm H				0 0 256 1024 91 CCT <i>fast</i>	
25	2030	4"	2.23	K0 IIa					5	KK <i>StA</i> Vel	Max ~ 7600 ADU	
25									4		MAY have SI saturation	
20	765								6	<i>stA vel</i>		
3									4c			
25	1200 2577	3"	0.08	G6 III +G IV					2c	KK <i>pgm</i>	<i>1.0297 AIRMAS</i> MAX 10K ADU	
25	1700	"	"	"					2c	KK		
25									4c			
25	1300	"	"	"					2ci	KK		
25	1890	"	"	"					2	KK		
25									4			
25									1c			

pg 42

321

Date Oct 29/30/93... Observers [KK]/Hlw./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
406685	✓ Comp							ThAr	25e
86	HD 47105	06 31 54	+16 29 00	02 02 05		02 08 E			600s 1700
87	Comp not written							ThAr	25e
87	HD 47105			02 14 10					699 2160
88	Comp			02 27 46				ThAr	2
89	HD 47105			02 27 46					740s 1300
90	Comp							ThAr	2s
91	BIAS(4)								
92	Comp								
93	HD 87901	10 03 03	+12 27	03 09 54					614 1300
94	Comp							ThAr	2s
95	HD 87901			03 29 15					490s 1500
96	Comp							"	
97-101	Flats x 5	3:20	+11:57			2:53	+11:57		1.5s 100
98	Flats								

Spectr. Temp.

Dome Temp./Hum. $+21^{\circ}\text{C}$ 568H

Transparency Conditions ... Part. Cloudy 322

Focus ... 243

Spectr. Temp.

Dome Temp./Hum.

90 c gain

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						60x W 60x H		4c			
1700	3"	B 1.9	A010				6583A	5c	Ktlygn	cloud at times Air mass 1.284	
2160								5c			
								4c			
2308								3c			
								4c			
								1c		Pure T +2.32	
2300		V 1.36	B7V					2c			
								4c			
2500								2c	Telluric Std.		
Using 100 tscu/e.						height = 800 m For Fluts		4c		max ~12000 ADU	

Pg 3

323

Date Oct 29/30 1993

Observers

[KK]/Hlw/Tn

Emulsion Batches:

(By accident)

Red Filter in box

Re... these OBS. ^{THIS PAGE}

still no filters used

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.
ce 06702	BIAS(4)								
703	Comp							ThAr	4s
704	HD 34029	05 09 18	45 54 00	04:37:09		+1:44	+46		317s
705	Comp							"	4s
706	HD 34029			04:47:01					344s
707	Comp								
708	Comp								
709	HD 47105	06 31 54	16 29 00	05:00:26		1 06W			153s
710	Comp							ThAr	4sec
711	Comp							"	4
712	HD 62509	07 39 12	+28 16	05 31 59		00 10 W			347s
713	Comp							ThAr	4sec
714	BIAS(4)								
715	Comp							ThAr	4s
716	HD 87901	10 03 03	+12 27	05 44 33		1:55 E			600s

Spectr. Te

Focus: 2

Spectr. Te

Exp. Mir.

3084

2760

1000

1200

573

Spectr. Temp. Dome Temp./Hum. $+0.08/63.7\%$ Transparency Conditions Clear, Cold 324

Focus: 243. *no wrap focus*

Spectr. Temp. *probably due*

to Red Filter in,

Dome Temp./Hum.

Now 0 c/gain

Now with
RG filter!

Exp. Mtr.	Seeing	PRG Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				ectob 17.00		600 μ W 600 μ W	65639	1ci		Other side of R422	
								3ci			
3084		0.08	G62 + G2					4ci			
2760											
1000		B 1.9	A0IV					3ci		6KADU max 2700/1 S/N	
								4ci			
1200	3"	V 1.4	K0					5ci	stl vel	2700/1 S/N	
								4ci			
		V 1.36	B7I								
573		V 1.36	B7V					6ci	telluric stl	320K p/ctans L 600/1 S/N	

325

Date Oct 29/30 1943 Observers LKKJ/HW/tn

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[illegible]

pg #1

Mon/Tues

Emulsion Batches:

Date 1993 Nov 1/2 Observers KK/Tn

No filters used for exp. meter.

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.
ce 6721 22	in/outboard HARTM 412					2 20W	+5°	ThAr	3440 (20/30)
6723	bias (4x)	mean 148.5	noise	sl. high (noise was higher earlier today)					
6724	Comp							ThAr	20 _s
25	HD 186791	19 41 30	+10 22	18 24 01 18 24 01		01 22 W			100 _f
26	Comp							ThAr	20 _s
27	comp							"	"
28	HD 183912	19 26.7	+27 45	18 49 01		02 11 W			143 _v
29	Comp							ThAr	20 _s
30	Comp							"	"
31	HD 202109	21 08 42	+29 49	19 22 09		01 07 W			180 ₉
32	Comp							ThAr	20 _s
33	BIAS(4)								
34	Comp							ThAr	20 _{se}
35	HD 215182	22 38 10	+29 42	20 00 02		00 09 W			144 ₇
36	Comp							ThAr	20 _{se}

251

Dome Temp./Hum. 70.7° 63.7%

Transparency Conditions *Fine* 328

CCDT $\rightarrow -100^\circ\text{C}$ 90C Gain

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2300				echelle 16.7	1200 / .A090	60μ		1c/2c	(outward S/Red)	CCDFMT 0 0 128 1024 8 1	
				= blaze				1cs		3985 4th from top	
				centered!				3985A	3ci	stl vel	max 212K ADU
2000	2-3"	2.72	B	153II	Slit height accidentally at 800μ = 185 (should have been 400μ)			4ci	stl vel	15K ADU ± Aug of 30cds above Backgrnd. at 3985A	
				Note							
				Also, echelle was unspaced for blaze centering, but agrees with "setup" pgm for 2 center.				3ci			
2400	3"	4.2	B	K5II?				5ci	UV pgm	3.6K ADU ± Aug of 30cds above 175 ADU Backgrnd. 3985A	
				K5II?				3ci			
				±B?				3ci			
1415	3"	4.2	B	G8II				6ci	UV pgm	6K ADU ± Aug of 30cds	
								3			
								1			
								3			
1410	2-3"	3.8	B	G8II?				2ci	UV pgm	4K	
				±F?				3ci			

329p2

Date 1993 Nov 1/2 Observers KK/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.
CE06737	Comp							ThAr	20
38	HD 218045	22 59.8	+14 40	20:32:09					573
39	Comp							ThAr	20
40	HD 218045			20 45 40					573
41	Comp								
42-46	FLATS					00 29W +15°		TUNGSTEN	40s
47	Comp							ThAr	20s
48	HD 218045	22 59.8	+14 40	21 25 23		01 01W			708
49	Comp							ThAr	20s
50	bias (4x)								
51	Comp							ThAr	20 ^s
52	HD 202109	21 08 42	+29 49 00	21 47 16		03 48W			2712
53	Comp							ThAr	20s
54	Comp							"	"
55	HD 215182	22 38 18	+29 42 00	22 39 47		02 44W			1115
								ThAr	20s

Spectr. Ten

Focus....

Spectr. Ten

Exp. Mtr.

1200

985

↓ s

Note S/m

1000

807

840

Spectr. Temp. Dome Temp./Hum. $+0.6 / 63.7\%$ Transparency Conditions *Fine, 7.31.11. hazy* ... 330

Focus ... 2.58

Spectr. Temp. Dome Temp./Hum. *Note exp meter filter use started 006739*

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		8		echelle 16.7	1200/ x 4090	60 μ	3985A			* 3985 close to chip center goal point for setup update.	
1200	2.3*	2.44	B95II					1ci	UV pym kit		
								3ci		2 ^{mm} BG39 in exp meter	
985								5ci		+ +	
								3ci			
$\downarrow$ Should have been 0.225 (error)						60 μ $> 800\mu H = .175$ 900 μ		3ci		MAX $\Delta 250$ ADU	
Note S/A changed to 2.00 16.7°					x = .1613		3650A	1ci	MAX 5K ADU	4th complete ORDER FROM TOP.	
1000	3*	2.44	B95II	203K photons 2 Aug at 30 cols above background © 3650A				4ci	UV pym	* 3635 - 3663A Ramp 3650A goal center for setup pym update	
						60 μ H set 200		3ci			
807	4*	1.3 4.2	G8II					5ci	UV pym	sl hazy	
								3ci			
840	3	3.8	G8II?					6ci	UV pym		
			+F?								

331 p. 3

Date 19.9.3. New 1/2 Observers K.K./J.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.
CE 06756	Comp							ThAr	20
57	Comp							ThAr	20
58	HD 34029	5 09.3	+45 54	23:13:23		3 29E			352
59	Comp							ThAr	20
60	HD 34029	"	"	23:21:32		2 59E			948
61	Comp							ThAr	20s
62	HD 34029			(with dome mirror) 23:33:32		2 59E			948
63	Comp								
64	bin (4x)			(with dome mirror)					
→ 65	flats x5					00 07E	+16 30	Tung	90sec
70	Comp			00 18				ThAr	20s
71	HD 34029	05 09.3	+45 54	00 19 30		02 19E			566
72	Comp							ThAr	20sec
73	HD 34029			60 33 29		02 05E			529
74	Comp							ThAr	20sec

Spectr. Te.
Focus....
Spectr. Te.

Exp. Mtr.

3000

3000

3000

5000

5100

Spectr. Temp. Dome Temp./Hum. 0°C 68.4% H Transparency Conditions .. 5.722 clear 332

Focus

Spectr. Temp. Dome Temp./Hum.

$\angle$ Full moon $\approx 25^{\circ}$ from Capella

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
20				echelle = 16.7 still		60 μ width 3650 Å				slit height set to .200 By ref. R.	
4						.200 set = 670 650					
3000		B 0.88	G6 III + G2 II						UV pgm		
3000								4c		in ear of cloud	
3000								4c			
5000		B 0.88	G6 III + G2 II			3650 Å 60 μ width [H = .190 FOR F16] = 750 μ set change H = 400 μ = .225		3c		≈ 1300 ADU at blue corner	
5000							3510 Å	5c	UV pgm	≈ 1200 ADU center 1st blue ORDER	
5100								3c			
5100								4c	UV pgm		
								6c			

333
pg #4 Mon/Tues

Date 1993 Nov 1/2

Observers Kk./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.
ce06775	BIAS(4)			22					
⁷⁶ → 78	FLATS x3					02 13E	+46°	TUNG	120s
ce06779	Outboard Inboard/outboard			01 27		02 30W	+70	ThAr	40/45
780									IDEAL
81	Bias (single)					4 W			
82	Comp			12 48		} Harman mask IN!		ThAr	20s
83	sky			12 51					180s
{ 83	sky			13 04					120
{ 84	Comp			13 07		0 W		ThAr	20
{ 85	Comp			13 09				ThAr	20
{ 86	sky			13 11					120
{ 87	comp			13 15				ThAr	30
{ 88	sky			13 18					120

Spectr. Te

Focus....

Spectr. Te

Exp. Mtr.

2000s
new

Ty

1000

1000

1000

Spectr. Temp. Dome Temp./Hum. -20.5°C $70.0\% \text{H}$ Transparency Conditions Part cloudy 334

Focus 12.58

Spectr. Temp. Dome Temp./Hum.

To Completely Cloudy by closeup

CCT still - 101.5°C

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality	
					Edel tilt	3510A	1c				1st ord =	
					16.7°	500u H	FOR FLATS = .215			A1150M14 Blue star	162	
					note A "prow" plot still shows inter order gap in Blue at a Rel high Level as at 3650A Flats.							
0.00°C now					OUTBOARD 8 Pixels Red at 3510A		748c	(00128102481) / 4854 pixels COUNT 472481 x plot				
Try exps of equal strength next time for Focus Tests at this λ												
For this setup Temp, focus set should be $\approx .268$? A bit high Rel to 'setup' values												
All to Pensers & worm												
1000					1200	.485					165	
2900					1200	500		5			169	
6100								3				

337

Tues/Wed

Date 1993 Nov. 3/4

Observers

[H.K.]

Tn

[CSS 386 Time 13secs ahead]

BG 39 f.l.h. for exp. meter

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.
ce06795 96	in board/outboard Focus			18 05				Th Ar	20/20
ce06794 800	BIHS(4)	Done after 6799 Comp		18 11					
98	Comp							Th Ar	20s
99	HD 186791	19 41 30	+10 22	19 54 43		3 20 W			21/46
ce06800	Comp							Th Ar	20s
01	BIHS(4)								
02	Comp							Th Ar	20s
03	HD 183912	19 26 42	+27 45	20 39 19		4 21 W			21/76
04	Comp							Th Ar	20s
05	Comp								
06	HD 8538	01 19 16	+59 43	21 35 37		00 32 E	+60° 18		2583
07	Comp							Th Ar	20s
08	BIHS(4)								
→ 09 13	FLATS x 5					00 30 W	+60°	TUNG	90s

Spectr. Tem

Focus...1/2

Spectr. T

Exp. Mtr.

44-5

338-34

600

310

580

Spectr. Temp.

Dome Temp./Hum. $+5.4^{\circ}\text{E}$ 7.22Transparency Conditions $\text{Clear} \rightarrow \text{Rapid clouding in}$

Focus ... 2.74

Dome Temp./Hum. $+4.2^{\circ}\text{C}$ 7.97To hazy & cloudy 338
(non Bln Acer DVX mode)
Norm encoders OK on HR 7924

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	X Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
44-54 red (VUSIR) 338-347 K10 (for Outgoing)				16-7	1.200/100	60x W	3650A		Focus	FOR Focus	
					0.4613	500x H				0 0 128 1024 8 1 CCD44T	
					500x H = .215	in 4 1/4	From Top	1c		0 0 256 1024 4 1 FOR OBS	
								2c			
600	2-3	B 2.72	K3 II					4c	std vel	sp std too	
								5		part cloudy	(30/1 S/N 5th ORDER FROM TOP)
								1c		Pure T = $+4.5^{\circ}\text{C}$	
								6			
310	2-3	B 4.2	K5 II?					2c	Alberio	The Brighter & Paler in SW	
								5c		(Only 51 Less signal than HD 186791 eq.)	
								5c			
580	3-4	B 2.81	A5 V					4c	K4 std	UV std cloud again	
								6c		(8K photons 2 Aug at 3650A)	
								1c		Pure T = $+4.1^{\circ}\text{C}$	
						60x W		3c		MAY 2K AD4	
						600x = .205 H					
										All to WORM & PERSONS	

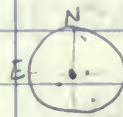
339
pg 1

Date Nov. 6/7, 1993 Observers H.W., [KSC]

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
cc16810-fls	Bias (4)								
11/12	Comp/Stellar			1900		0:58 W	+47 29	FeNe clear	30/40
13	Comp							FeNe clear	60s
14	HD 213947	22 29 54	+26 05 00	19:22:56			+26 34		702
15	Comp							"	60s
16	Bias (4)								
17	Comp								
18	AG+75 8347 ^{wrong star}	21 57 36	+75 08 00	20 02 25		1:10 W			1100s
19	Comp								
20	Comp								
21	BD+57 2735	23 19 54	+57 20 00	20 48 34					254
22	Comp								
23	Bias (4)								
cg 20121- 214 6	HD 6314	00 58 59	+39 27 18			-0:25 E	+39:57 40:14		67m
cg 30127-9	"	"	"			-0:19 E			133m
cc16824-29	Flats x 6					0	+41	Feing 1/2 Apert.	10s

Spectr. Temp. Dome Temp./Hum. $-0.2/59.0\%$ Transparency Conditions $\dots$ Thin clouds $\dots$ 340
 Focus $\dots$ 695
 Spectr. Temp. Dome Temp./Hum. $-1.1/61.3\%$ at start of observing 480 0 50 1024 4 1 ccd fnt

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Cass ccd	1800/mm G = 4999	300 A	$\lambda = 5140$	1		- Both Fans ON until 1920 then SE turned off.	
								3/4	Focus Test	Stellar $\frac{1}{10}$ pixel to red at 695	
								5ci		- ccd temp = 100.5	
3090	7"	7.53	K4III					6ci	Std. Vel.	catwalk hum = 83% @ 1930	
								7ci		125 SNR	
								8ci			
								9ci			
2040		8.5?	K?					10ci		 field does not match card, encoders must be way off	
								11ci			
								Sci			
588		10.1	MZe					6ci	KK	Yes, went to β Cep (nearby)	
								7ci		$\Delta\delta = -0.3333!!!$	
								1ci		Clouding in!	
										Done with rack in comp posn'	
		6.57	FOV _h						Seeing test	Intensifier = 210	
									"	"	
										Totally cloudy now.	

Pg 2

341

Mon - Tue

Date Nov 8/9, 1993 Observers Bin/Hlw

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.
cc16830,fts	Bias (4)								
31/32	Comp/Stellar	Hartman				0	+45	FeAr clear	60s
33	Comp							"	"
34	HD198183	20 43 30	+36 07 00	17:41:30					181s
35	Comp							"	60
36	Comp							"	"
37	HD186205	19:37:54	+8:59:00	17:58:01		+2:10	+9:13		3611s
38	Comp							"	60
39	Bias (4)								
40 - 42	Flats x3	"	"	19:00				Tung 1/2 Ap	4 sec
43	Comp								60s
44	HD235679	21 55 00	+54 01 00	19 14 02		+1:00	+21:58		2740
45	Comp								
46	HD235679	21 55 00	+54 01 00	20 04 38					2700
47	Comp								
cg30131 - 36	HD224720	23 55 06	+46 23 00						0.67

Spectr. Te

Focus....

Spectr. Te

Exp. Mtr.

3000

5630

2720

2935

Spectr. Temp.

Focus 685 685 7n

Spectr. Temp.

Dome Temp./Hum. +5.4 / 60.1 %

Dome Temp./Hum.

Transparency Conditions Clear 342

Fans on until 1745, then south one turned off

480 0 50 1024 4 1 ccd fnt

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emission λ (nm)	P.H.	Program	Remarks	Quality
				CASS CCD	1800 λ /nm G=6055	300 M	6563A	1ci			
								3/4	Focus Test	+5.3°C, perfect focus	
								5ci			
13000		B= 4.42	B5V					6ci	Bln	looks like SNR ~ 300 Be star	
								5ci		catwalk humidity	
								"		75% @ 1820	
										80% @ 1920	
5630		B= 8.42	B2V					7ci	Bln	84% @ 2020	
								5ci			
								1ci			
								8ci			
								5ci			
2720		B= 9.21	B2.5 Ib					9ci	Bln		
								5ci			
2935		B= 9.21	B2.5 Ib					10ci	Bln		
								5ci			
		V= 7.3	A2V								
									Seeing Test	Intensifier = 275	done in stellar posn

Pg 2

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Date Nov 8/9 1993 Observers Blin/Hlw

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
c930137-39	HD224720	23 55 06	+46 23 00						
cc 16848	Bias (4)								
49-51	Flats x 3							Tung 1/2 Ap FeAr clear	4s
52	Comp								60s
53	HD1061	00 09 50	+08 16 00	21:17:31					670s
54	Comp							"	60s
55	Comp							"	"
56	HD 6456	01 00 19	+20 56 16	21 39 05					574
57	Comp							"	60
58	Bias (4)								
59-61	Flats x 3	"	"					Tung 1/2 Ap FeAr	
62/63	Comp/Stellar	Hartman						1/2 Ap FeAr clear	60s
64/65	Comp/Stellar	Hartman						FeAr clear	40/60
66	Bias (4)								
67	Comp							FeAr	80s
68	HD21364	03 21 48	+09 23 00	22:48:46					43s

Spectr. Ter

Focus

Spectr. Ter

Exp. Mtr.

4950

-2000

50300

Spectr. Temp. Dome Temp./Hum. $\pm 3.4 / 69.2\%$ Transparency Conditions Clear 34.4
 Focus changed at 2225 to .695
 Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				CASS CCD	1800 λ /mm G=6055	300 μ	6563A		Seeing Test	Intensifier = 250	
								1ci			
								8ci			
								5ci			
9950		$mpt_3 =$ 6.15	A9s					11ci	* SB-B1n		1/2
								5			
								5			
14000		$V =$ 5.34	A1V					12	Telluric		
								5ci			
								1ci			
								8ci			
								5/6	Focus Test	+3.5 °C in dome	
					1800 λ /mm G=4565	250 μ	4475A	3/4	Focus Test	Now changed to .695 due to different grating tilt	
								1ci			
								5ci			
50300		$V =$ 3.81	B8p					6ci	SB3-B1n		

focus tests
done with aperture
set to 1/2

345

Date Nov 8/9 1993 Observers Dln/Hlw

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Spectr. Te

Focus...

Spectr. Te

Exp. Mtr.

50 K

0 k

pg 1
 347 Date Nov 9/10 1993 Observers Vst/Hlw/[rG]

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.
ccl6879	Bias (4)								
80/81	Comp/Stellar	Hartman						FeNe clear	40/60
82	Comp							FeNe clear	60s
83	HD 182835 HD 182835	19 21 24	+00 08 21	17 57 54		+2 hrs W	+0:20		1644
84	Comp							FeNe	60s
85	Comp								
86	HD188512	19 50 24	+06 09 00	18 40 53		+2:30	+6°		593s
87	Comp								
88	Bias (4)								
89	Comp								
90	HD204867	21 26 18	-06 01 00	19:05:51		+0:35	-5° 35'		120s
91 x	Comp							FeNe clear	60
92	HD204867	21 26 18	-06 01 00	19:10:55			-5° 35'		150s
93	Comp							FeNe clear	60s
94	HD204867	21 26 18	-06 01 00	19:16:50		+0:50	-5° 35'		151s
95-99	Flats x 5							Tung clear	20s

Spectr. T.

Focus...

Spectr. T.

Exp. Mtr.

50K

50K

19k

22k

22k

Spectr. Temp. Dome Temp./Hum. 6.1°C/58.3% Transparency Conditions ... clear
 Focus 695
 Spectr. Temp. Dome Temp./Hum.

348

Exp.	Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					Cass CCD	1800 λ /mm G = 4435	250 μ	43008	1ci			
									3/4	Focus Test	good	
									5ci			
	50 K	4.64	F2Ib						6ci	Vst/rG	~250 SNR	
									7ci			
									8ci			
	50 K	3.71	G8II						9ci	Vst/rG		
									10ci			
									11ci			
	19 K	2.89	G0Ib						12ci	Vst/rG		
									12ci			
	22 K	2.89	G0Ib						12ci	Vst/rG		
									13ci			
	22 K	2.89	G0Ib						14ci	Vst/rG	~180 SNR	
									15ci		max ADU = 4684	

- pg 2

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Date Nov 9/10 1993

Observers

Vst/Hlw / [LG]

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.
cc16900	Bias (4)								
901	Comp							FeNe clear	60s
902	HD 209750	22 00 39	-00 48 00	19:51:06					184s
903	HD 209750 HD 209750	22 00 39	-00 48 00	19:55:48					189s
904	HD 209750	22 00 39	-00 48 00	20:00:16					197s
905	Comp							FeNe	60s
906	HD 20975 HD 206859	21 39 47	+16 53 00	20:18:52					556s
907	HD 206859	21 39 47	+16 53 00	20:28:39					600s
908	HD 206859	21 39 47	+16 53 00	20:38:59					602s
909	Comp							FeNe	60s
CG 301405	HD 224720	23 55 00	+46 23 00	21:10					67ms
CG 30146-8	HD 224720	23 55 00	+46 23 00	21:11					133ms
CG 30147	HD 224720	23 55 00	+46 23 00	21:11					
cc 16910	Bias (4)								
11-15	Flats x5								
910	HD 17918	02 47 37	16 05 00	22:53:07				Tung clear Fe/Ne	20s 60s 1200s
918	HD 17918	02 47 37	16 05 00	23:14:02					1218s

Spectr. Te

Focus....

Spectr. Te

Exp. Mtr.

30K

30K

31K

31K

32K

33K

7

1000

Spectr. Temp. Dome Temp./Hum. $+4.3^{\circ}\text{C}/61.7\%$ Transparency Conditions .. clear 350
 Focus
 Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Cass CLD	1800 λ/mm G = 4435	250 μ	4300A	1ci			
		2.95	G2 Ib					5ci	Vst		
30 K		2.93	G2 Ib					6ci	Vst		
30 K		2.93	G2 Ib					7ci	"		
31 K		2.93	G2 Ib					8ci	"		
								9ci			
31 K		4.35	G5 Ib					10ci	Vst		
33 $\frac{1}{2}$ K		4.35	G5 Ib					10ci	"		
33 $\frac{1}{2}$ K		4.35	G5 Ib					10ci	"		
								11ci			
										Fans OFF	
										Intensifier = 265	
										Intensifier = 230	
								1ci			
								15ci			
7		6.29	F2 ⁺					6ci		~160 SNR	
11000		6.29	F2 ⁺					6ci			

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Pg 3.

Date .. Nov. 9 / 10 .. 1993 Observers .. Vst. / H.W. / [Er. 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.
919	HD 17918	2 47 37	16 05 00	29:35:13					1200s
920	Comp							FeNe clear	60s
921	Bias (4)								
922	Comp								
923	HD 840 17584	2 ^h 44 10	37 54 00	00:10:41					443
924	HD 840 17584	"	"	00:18:31					439
925	HD 17584	"	"	00:26:08					448
926	Comp							FeNe clear	60s
926 927	Comp							FeNe clear	60s
928	HD 20902	03 17 11	49:30:00	00 56 52					74s
929	HD 20902	"	"	00 58 23					70s
930	HD 20902	"	"	00 59 56					71s
931	Comp							FeNe clear	60s
932-41	Flats x10							Tung clear	20s
942	bias (4)								

Spectr. Te

Focus...

Spectr. Te

Exp. Mr.

7

30000

30000

30000

30k

31k

30k

Dome Temp./Hum. ... $+1.2/+71.6\%$ Transparency Conditions ... *clear* ... 352

Focus

Spectr. Temp.

Dome Temp./Hum. 77/60 ...

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7		6.29	F8III					6ci	Vst		
								7ci			
								8ci			
								11ci			
30000		4.22	F2III					12ci	Vst		
30000		"	"					12ci	"		
30000		"	"					12ci	"		
								13ci			
								13ci			
30k		1.8	FSIb					14ci	Vst	93% on catwalk	
31k		"	"					14ci	Vst		
30k		"	"					14ci	Vst		
								13ci			
								15ci			
								1ci			
All to Persens & worm											
										Humidity 96% on catwalk - shutters dripping.	

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Emulsion Batches:

Date Observers

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[illegible]

CASS Grating Efficiency Tests ~~4400~~, 6525A Oct 1/93

