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Feb 87 - May 88

3

77 p. 11 - 78 267

Spectr. Temp

Focus.....

Spectr. Temp

Exp. Mir. S

4.

Dome Temp./Hum.

[illegible]

5

Emulsion Batches:

Date FEB 24/25 1987 Observers Boly. Y. K. - 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.
SP000 388	COMP	06 05.4	25 02	19:37	19:40			Fe A A $\frac{1}{2}$	200
389	HD 42397	"	"	19:43	19:48				30
390	COMP			19:51	19:55			Fe A A $\frac{1}{2}$	200
391	DARK			19 50	20:08				
392	COMP			20:17	20:20			Fe A A $\frac{1}{2}$	200
393	V471 TAU	03 44.7	+16° 57	20:21	20:41				1200
394	V471 TAU	"	"	20:44	21:05				+1200
395	COMP			21:07	21:10			Fe A A $\frac{1}{2}$	200
396	V471 TAU	03 44.7	+16° 57	21:12	21:32				120
397	V471 TAU	"	"	21:35	22:02			APP Fe A	+1200
398	COMP			22:04	22:07			A $\frac{1}{2}$	20
399	V471 TAU			22:10	22:30				1200
400	"	"	"	22:30	22:50				+1200
401	COMP	"	"	22:53	22:56			Fe A A $\frac{1}{2}$	200
402	DARK								

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 6

Focus

Spectr. Temp. Dome Temp./Hum.

Comparison Filter	Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
20		400		8.03	GOTV	P.C.	1200/42.1 4480	R.S.	Hd			STELLAR IN CH "A"	
30		4000		"	"	P.C.S.	1200/42.1 4480	R.S.	Hd				
20		400				P.C.S.	1200/42.1 4480	R.S.	Hd				
20		478				P.C.S.	1200/42.1 4480	R.S.	Hd			9ELE REVERSED	
120		1500		V=8.4- 9.7		P.C.S.	1200/42.1 4480	R.S.	Hd				
120				"		"	"	"	"				
20				V=8.4- 9.7		P.C.S.	1200/42.1 4480	R.S.	Hd				
120				"		"	"	"	Hd			SYSTEM CRASH	
20				"		"	"	"	"				
20				"		"	"	"	"				
20		800		"		"	"	"	"				

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Date FEB 24/25/87 Observers B01-MK1-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.
403	COMP		1946	23:22	23:24			Fe H A $\frac{1}{2}$	200
404	BM CAS	00 53.9	+64° 00	23:28	23:48			Fe H A $\frac{1}{2}$	120
405	COMP			23:50	23:53			Fe H A $\frac{1}{2}$	200
406	COMP			23:56	23:58			Fe H A $\frac{1}{2}$	200
407	BM CAS			00:00	00:30				1800
408	COMP			00:32	00:35			Fe H A $\frac{1}{2}$	200
409	DARK								
410	COMP			00:50	00:53			Fe H A $\frac{1}{2}$	200
411	COMP			01:22	01:25			Fe H A $\frac{1}{2}$	200
412	HD 86801	9 55.8	+29° 02	01:27	01:32				300
413	COMP			01:35	01:38			Fe H A $\frac{1}{2}$	200
414	COMP			01:42	01:45			Fe H A $\frac{1}{2}$	200
415	HD 86801	9 55.8	+29° 02	01:46	01:51				300
416	COMP			01:54	01:57			Fe H A $\frac{1}{2}$	200
417	COMP			02:04	02:07			Fe H A $\frac{1}{2}$	200

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 8...

Focus

Spectr. Temp. Dome Temp./Hum.

Comparison Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
20					P.C.S.	1200/4480 42.1	R.S.	Hx				
100	1000		V= 8.8	A7	P.C.S.	1200/4480 42.1	R.S.	Hx				
20					"	1200/3860 36.5	R.S.	5160A				
20					"	"	"	"				
100	350		V= 8.8	A7	P.C.S.	1200/3860 36.5	R.S.	5160A				
20					P.C.S.	1200/3860 36.5	R.S.	5160A				
					"	"	"	"				
20					"	"	"	"				
20	360				"	"	"	"			RETESTED NEW FLAT ON BRANT	
300	2500		V= 8.9	GOV	"	"	"	"				
100					"	1200/3860 36.5	"	5160A		STD VEL		
200					"	1200/4480 42.1	R.S.	Hx				
300	2500		V= 8.8	GOV	"	"	"	"				
200					"	"	"	"		STD VEL		
200					"	1200/3860 36.5	R.S.	5160A				

Date FEB 21/25/87 Observers 301-MK-R

Emulsion Batches:

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[illegible]

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Wed. Thurs

Tour

Emulsion Batches:

Date Feb 25-26/87... Observers KBH-Tu.....

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.
SP000426	Dark				*				
FILE DELETED SP000427	FLAT FLD	0 Hr L	+43°	18:00	19 28	0h 0m	zenith	Tung A 1/4	
FILE DELETED 428	Dark	While moving		19:30					
	Comp							FeA H 1/8	200
	Polaris B								
SP000427	Flat Field			21:11	22 41	0h	zenith	Tung A 1/8	
428	Dark while setting telescopes								
430	Comp for AW UMa "B"	1900	1900					FeA A 1/4	200
431	AW UMa "B"	11 24.9	+30 31				+30 13		
L	Comp for AW UMa "B"							FeA H 1/4	200
	" " " "							"	"
435	AW UMa "B"	1900	1900	23 50	00 20				
436	Comp for AW UMa "B"							FeA A 1/4	
437	BMCass	0 53.9	+64			Comp #438		"	200
	Comp for BMCass								

Spectr. Temp.

Dome Temp./Hum. $-1.0^{\circ}\text{C}/53\%$ Transparency Conditions *Fine* 12.

Focus

Spectr. Temp.

Dome Temp./Hum.

Dark 2 160/sec @ 1730

Dome T = 0°C

Comparison Exp.	Exp. Mir.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	<i>PCS</i> B B				<i>PCS</i> BC		NA RS	*			Dark ended before intended end time. 10° 561. sec, not 14400 sec	
	1100, 270	ND 1.2 + 2.3			BC	$\frac{1800}{400}$ 46	150 μ slit	HB		5,240 sec	Decker out all the way	
	440, 230				BC	$\frac{1800}{490}$ 46	150 μ slit	HB			Setup with decker out	
					"	"	"	"			Star in Top Left window of TV image	
	For Some Time, I had forgotten about adjustment of flat mirror when going to slit.											
	1200, 700				BC	$\frac{1200}{4480}$ 42.1	RS	H α				
200	330, 200				BC	$\frac{1200}{4430}$ 42.4	RS	H α				
					"	"					RA 1987 11 29.5	
200	200, 290				-	10 "	RS					
"	200, 280				"	$\frac{1200}{3650}$ 36.5	RS	5160 $\text{\AA}$				
	200, 240				"	"	"	"		1800 sec		
										+200	No "LB" in mirror with previous Exp	
					BC	$\frac{1200}{4480}$ 42.1	RS	H α			Reversed of course	

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Pg #2

Emulsion Batches:

Date Observers *M.K. - J.n.*

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
439	BM Cass					1200sec + 600sec			
440	Comp for BM Cass							FeA A 1/4	200
441	Comp for BM Cass								
442	BM Cass								
443	Comp for HD 132737								
444	HD 132737	14 55.6	+27 33						
445	Comp for HD 132737								
	" " " @ H ₂							FeA A 1/4	200
	HD 132737						+27 18		
	Comp for HD 132737 @ H ₂							FeA A 1/4	200
	Comp Labelled "Dark" on header for NGC 4151								
	Comp for NGC 4151							FeA A 1/4	200
	NGC 4151								
	Comp for NGC 4151			03 32					
	Comp for HD 140913								
455	HD 140913	15 41.1	+28 47						

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions 14

Focus

Spectr. Temp. Dome Temp./Hum.

[illegible]

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Date Feb. 25-26. 187 Observers

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.
456	Comp for HD 140913							Felt A 1/4	200
457	" Nova Her	18 432	+15 19						
458	Nova Her	"	"						
459	Comp for Nova								
460	" " "								
461	Nova Her					1200secs			
462	Comp for Nova								
63	Comp for Nova							Felt A 1/8	100
64	Nova Her								
65	Comp							Felt A 1/8	100
66	Dark	15mins							
467	Flat Field			06 09		0 0	Zenith	Tung A 1/4	2hrs

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 16

Focus

Spectr. Temp. Dome Temp./Hum. 100%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
350,250				PCS BS	1200/4480 4210	RS	Hx				
400,260				"	"	"	2				
1100,200				"	"	"	"			cloud at end	
				"	"	"	"				
				"	1200/3750 357	"	4900 Å HB + He				
				"	"	"	"				
				"	"	"	"				
					1200/5014 470	"	7800 Å				
400,180					"	"	"			clouds fog H=97%	
					"	"	"				
2 hrs 2400,3400				RC	1200/5014 470	RS	7800 Å	Note 2500 → 3500 cts Right for Flat			

Date Feb. 26-27/187 Observers M.K.S. - Tu.....

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.
468	Flat Field			16 12	18 12	0 0	Zenith	Tung A 1/4	215
469	Dark *			18 30	18 50	18 moving			
470	Comp for BM Cass			18 55				Fe 4 A 1/4	200
471	BM Cass	00 53.9	+64 01	19 02				1200sec	
472	Comp for II	IB Buffer							200
473	BM Cass	00 53.9	+64 01	19 40	20 10			1800sec	
	Comp for BM Cass				20 18				
	BM Cass	00 53.9		20 19				1800sec	
	Comp for BM Cass								200
	Comp for SV								
	HD 75935	08 47.9	+27 18	21 14				300sec	
	Comp for Stival								
	Comp for AW								
483	AW UMa "B"	11 24.9	+30 31	21 40				1800sec	
	Comp								

Spectr. Temp. Dome Temp./Hum. 28.4 / .5376 Transparency Conditions Part cloudy 18..

Focus

Spectr. Temp. Dome Temp./Hum. 1

Comparison Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	<u>A B</u>				<u>PCS</u>							
<u>215</u>	<u>2900, 4100</u>				<u>BC</u>	<u>1200 / 64480</u> <u>42.1°</u>	<u>RS</u>	<u>ND-9+</u>	<u>2.3</u>	<u>Hx</u>		
					"	"	"				<u>(Labelled Tungsten)</u>	
<u>200</u>					"	"	"					
<u>25</u>	<u>2400, 300</u>	<u>OK</u>			"	"	"			<u>Hx</u>	<u>Reversed</u>	
<u>200</u>					"	"	"					
						<u>1200 / 63840</u> <u>36.5°</u>	<u>u</u>			<u>5160A</u>		
	<u>500, 250</u>				"	"	"			"	<u>some cloud</u>	
					"	"	"			"		
					"	"	"			"		
					"	"	"			"		
					"	"	"			"		
	<u>1000, 300</u>			<u>G8V</u>	"	"	"			<u>std vel</u>	<u>Fainter of 2 stars at same dec</u>	
					"	"	"				<u>Dark 3 220/sec</u>	
	<u>400, 300</u>				"	"	"					
	<u>500, 250</u>				"	"	"				<u>Header entered as Fe Ar</u>	
					"	"	"					

Dome Temp./Hum. 1.7.30

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[illegible]

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Wed-Thurs

Emulsion Batches:

Date March 4-5/87 Observers Mki-Tn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
SP000502	Dark					0 0			
503	Flat Field			18 14		0 0	+6°	Tung A 1/4	
4	Dark - while going Reverse								
5	Comp								
6	V471 TAU	03 44.7	+16 57	19 39			+17 09		
7	Comp								
8	" For BM Cass			20 28				Fe A H = 1/4	
9	BM Cass	1986.3 00 53.9	+64 01	20 32					
510	Comp for BM Cass								
511	Comp for BM Cass - @ 5160 Å							Fe A H 1/4	
512	BM Cass	00 53.9	+64 01	21 05	21 25				
513	" "	1200 + 1200		21 28	21 46				
514, 515	Comparison.								
516	BM Cass								
517	BM Cass			22 19					
518	Comp								

Spectr. Temp. Dome Temp./Hum. $-2^{\circ}\text{C}/60\%$ Transparency Conditions $So So$ 24...

Focus

Spectr. Temp. Dome Temp./Hum.

[Times 33 sec. SLOW]

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4	B										
2400, 4200	ND 2.3 + 0.6			BC	1200/A2.1 G 4480	RS	Hx				
				"	"	"	"			Reversed	
				"	"	"	"			"	
1600, 210	OK			"	"	"	"			OK for this exp getting cloudy	
420, 270				"	"	"	"			cloudy	
440, 300				"	"	"	"				
2000, 300	OK			"	"	"	"	IA		semi cloudy	
				"	"	"	"	IA			
				2	1500/36.5 G 3860	"	5160A	IA			
7000, 200				"	"	"	"	IA			
1100, 200				"	"	"	"	"			
				"	"	"	"	"			
1000, 220				"	"	"	"	"		Terrific counts.	
"				"	"	"	"	"			
				"	"	"	"	"			

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Pg # 2

Emulsion Batches:

Date ... Mar. 4-5, 1987 ... Observers

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
519	Dark								
520	Comp	NO CB of previous Dark						Fe A H 1/4	200
521	AW UMa "B"	11 24.8	+30 31	23 06		1800 sec			
522	Comp for "B"								
523	Comp for Std Vol								
524	HD H 2299	12 50.6	+26 16		00 04	600 sec		#251	
525	Comp for HD 112299								
526	HD 112299	12 50.6	+26 16					Comp H 26	200
528	Comp for HD 112299 -	Only one to use with HD 112299							
529	Comp								
530	AW UMa "B"	11 24.8	+30 31	00 55	01 19				
531	Comp							Fe Ar	200
532	Comp							Fe Ar	200
533	AW UMa "B"	11 24.8	+30 31	01 31	01 41		600 sec		
534	AW UMa (Bright One)			01 43	01 53				
535	Comp			01 57					

RA set at 12 43 → 12 44

wrong star

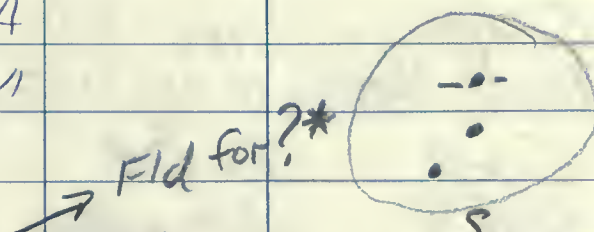
Spectr. Temp. Dome Temp./Hum. Transparency Conditions *part cloudy* 26.

Focus

Spectr. Temp. Dome Temp./Hum.

Comparison
Filter Exp

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
<i>B</i>				BS	1200/36.8 G 3880	RS	5160A	IA		during Unreversal	
				"	"	"	"	IA			
1000, 200				"	"	"	"	IA			
				"	"	"	"				
				"	"	"	"				
5500, 400				"	"	"	"	IA	<i>stutter</i>	Wrong star can't push as 6,100 int	
350, 240				"	"	RS	"	IA			
600, 300				"	"	BS	"	"		Test of BS over RS	
520, 180				"	"	"	"	"		(Yes, a 2x signal with BS then with RS)	
530, 170				"	"	"	"	"			
200, 200				"	"	"	"	"		Test of BS over RS	
				"	"	"	"	"			
360, 180				"	1800/39.5 G 4190	"	3900	"			
330, 150				"	"	"	"	"			
500, 320				"	"	"	"	"		Great	
				"	"	"	"	"			



27.

Emulsion Batches:

Date Observers

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[illegible]

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 28

Focus

Spectr. Temp. Dome Temp./Hum. 19.32

Comparison
Filter Exp.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	1800/3915 G 4190	BS	3900				
					"	"	"				
					1800/46 G 4900	"	HB			Cloud	
					"	"	"				
					"	BS	"				
A 1900, 300					1800/3915 G 4190	BS	3900			Shows probable grating Flaw @ pixel # 3583 ie ()	

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Emulsion Batches:

Date *Mar. 5-6, 87*..... Observers *Tn - MKi*.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat Field	1800sec				0 0	Zenith		
	Dark	while going reversed							
	Comp for V471 Tau							Fe A A 1/4	200
45	V 471 Tau	1200sec		19 30	19 50				
46	"	1200 + 1200		19 52					
47	Comp For V 471 Tau								
48	V 471 Tau	1200sec		20 21	20 41				
49	" "	1200 + 1200		20 42					
550	Comp for V471 Tau								
551	Sky near V471 Tau	600sec		V 471 Tau taken to far		Left of Agassiz's Screen			
552	Comp for V471 Tau								200
	V471 Tau	1200sec		21 25	21 45				
	II	1200 + 1200 sec		21 46	22 05				
	Comp for V471 Tau								
	Comp for BM Cass			22 22					
	over								

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions *Sl. hazy* 30

[illegible]

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Pg # 2

Emulsion Batches:

Date Observers Tim

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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.
	Wrong Star BM Cass	1986.3 x	33	22 27	22 37				
	BM Cass	00 53.9	+64 01	22 41					
	Comp for BM Cass			22 56				Fe H A 1/4	200
	Comp "w" @	5160 Å						"	"
	BM Cass	"							
	BM Cass	1200 + 1200							
	Comp "								
	Comp for AW UMa "B"								
	AW UMa "B"	1200		00 11	00 31				
	"	1200 + 1200		00 32					
	Comp								
	Sky N of UMa "B"			900 sec; 01 02					
	Comp for AW UMa "B"								
	AW UMa "B"	1986.3							
	Comp	11 29.4	+30 02					Fe H A 1/4	

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 32...

Focus

Spectr. Temp. Dome Temp./Hum.

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		A B											
		1800, 260	Fine			BC	1200/47.1 G 4480	BS	Hx		Field noted on obs chart fld.	due North of BM Cas Reversal of course	± 15'
		3900/340										Cnts as high as 4500	
246		600, 250											
		1600, 300				BC	1200/36.5 G 3860	BS	5/60A				
		1600, 300											
		1600, 300 still										plotted	
		2000, 330										P1221 112 28 -	
		246, 230											
		500, 260											
		1600, 290											

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pg 3

Emulsion Batches:

Date Observers MKi.-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.
	Comp for Stillvel Dark			600 sec	while setting telescope				
	Comp for HD 112299								
	HD 112299	12 54.8	+25 48				600 sec		
	Comp for Stillvel								
	Comp for TZ Boo	15 07.7	+40 02						200
	TZ ^{wrong star} Boo	15 07.7	+40 02				600 sec		
	TZ Boo	"	"				600 sec		
	Comp for TZ Boo								
	Comp for TZ Boo - (probably no CB of last record)								
	TZ Boo	15 07.7	+40 02						
	Comp for TZ Boo								
	Comp for Nova Her								
	Nova Her	18 ¹⁹⁹⁷ 43.1	+15 18.5				248 sec		
	Comp for Nova Her								
	Nova Her			600 sec					
	Nova Her			600 + 600					

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions 34

Focus

Spectr. Temp.

Dome Temp./Hum.

[illegible]

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Pg 4

Emulsion Batches:

Date Observers

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
	Comp for Nova Her								
	Comp for Cyg X1								
	HOE 226868 Cyg X1	19 54.6	+34 56	04 26	04 36				
	Comp for Cyg X1								
	Comp " " @ H α								
	Comp Cyg X1	19 54.6	+34 56						
	Comp for X1								
	Comp for PU Vul								
	PU Vul 1987	20 20.6	+21 32						
	Comp								
	Comp @ HB for PU Vul								
	PU Vul	20 20.6	+21 32						
	Comp for PU Vul								
	Flat Field for 1200/42.1 grating								

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions 36

Focus

Spectr. Temp.

Dome Temp./Hum. - 48. / 98.6.

Comparison	
Filter	Exp

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
A B				BC	1800/46 G 4900	BS	HB				
				"	1800/ G 4770	L	4686A				
1700, 230				"	"	"	"				
					"	"	"				
					1800/ G 6000	L	Hx				
1000, 230					"	"	"				
					"	"	"				
					"	"	"				
2400, 280					"	"	"				
					1800/46 G 4770	"	HB				
					"	"	"				
					"	"	"				
					1200/421 G 4480	"	Hx				
										Cloud & fog	

37

Mon - Tues

1136

Emulsion Batches:

Date Mar. 9-10/87 Observers R.B. + Th

Plate No. <i>FIVE</i>	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
5P000605 B43	Flat		43 00	14:59	17:11			longex ~A 1/8	12807
606	Dark			18:39					
607	Comp for BD5 1668	note probably not labelled correctly							
608	BD+5 1668	07 24.7	+5 23	21 00	21:20				
609	Comp for same								
610	BD+5 1668	07 24.7	+5 23	21 35	21 55				
611	Comp for same			21 59					
612	Comp for Pol B								
613	Polaris B				23:01				
614	Comp for Pol B			23 06					
615	Pol B			23 23		PC halted @ 980secs "A Crash"			
616	Comp								
17	Polaris "B"			00 38	00 58				
18	Comp for Polaris B			01 01					
19	" " "								

Spectr. Temp. Dome Temp./Hum. $-6^{\circ}\text{C}/56\%$ Transparency Conditions *Fine* 38

Focus

Very Gusty from N

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
<i>Counts</i> A B				PCS	1800/45	150μ slit	200μ neg HB				
190, 190				"		"					
340, 340	poor			"	1800/46 G4910	"	5200				
500	poor			"	"	"	"	CH/A			
340, 340				"	"	"	"				
550	V=9.82			"	"	"	"	CHB			
				"	"	"	"			Refocused PCS OK now	
	OK now			"	1800/45 G4900	"	HB	CHB			
300, 400				"	"	"	"	CHA		L.H window on TV	
				"	"	"	"				
150, 2000				"	"	"	"	GHB		decenter for "B" window	
85, 420					"	"	"			Dark 2 G5/sec	
60, 2000					"	"	"	CHB repeat		T = -13°C in dome	
35, 416					"	"	"	"			
					1800/39.8 G4230		4000A	CHB		seeing deteriorating	

Pg 2

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Date Observers

Spectr. T
Focus ...
Spectr. T

Exp. Mtr.
48

130 400

- pl

50 110

20,100

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 40.

Focus

Spectr. Temp. Dome Temp./Hum. 16470

Comparison Iter. Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	30, 400	poor again			PCS	1800/34.8 G 4230	150 μ	4000A	CHB			
						"	"	"	"	Problem after for 30 min with possible light from Polaris on PCS		
						1800/46 G 4910	150 μ	5200				
						"	"	Dark @ 04 hrs $\approx$ 28/sec & stable!				
						"	"	5200				
						"	"	"				
	40, 110				PCS	1800/55.5 G 6000	150 μ	H α	CHB		OK	
	80, 1100	poor			"	"	"	"	CHB		A = B acting up again	
											" " " "	
										Dome T = -14°C		

'B'

b

plots done,

41² Tues - Wed

Date Mar 10-11/87 Observers MKI-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.
629	Flat Field	ND 1.2	+2.3	15 59	17 59	00	Zenith	Tungsten A 1/8	2 hrs
630	Dark 30mins			18 17					
631	Comp for Silver (probably a throwaway)			19 04	19 08			Fe Hr A 1/4	20
632	HD 45397 Repeat of Comp after realignment			19 21				12	4
633	HD 42397	06 05.4	+26 55	19 25					
634	Comp for Silver								
636	Comp for V471								
637	V 471 Tau	03 47.7	+16 57	19 56	20 16				
38	Comp for "			20 20					
39	V 471 Tau								
40	Comp							Fe Hr A 1/4	200
41	V 471 Tau			20 49	21 09				
42	Comp			21 10	21 30				
643	V 471 Tau								
644	Comp over								

Spectr. Temp. Dome Temp./Hum. $-6.5^{\circ}\text{C} / 60\%$

Transparency Conditions *Fire* 42

Focus

Spectr. Temp. Dome Temp./Hum. /

PCS

[illegible]

43

Pg #2

Emulsion Batches:

Date Observers

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.
645	V471 Tau	03 44.7	+16 57	21 42	22 02	1200sec			
	Camp "			22 04					
	V471 Tau			22 09	22 29		+17 07	reversed	
	Camp "								
	Dur ft	5 mins	while resetting						
	Comp for BM Cass	1986.3							
	BM Cass	00 53.9	+64 01						
652	Camp for BM Cass								
653	" " "	@ 5160 Å							
654	BM Cass	00 53.9	+64 01	23 22		1800sec			
655	Camp, Fe-Mg								
56	Comp for HD 112299	1986							200
57	HD 112299	12 54.6	+25 48						
58	Camp								
59	Camp for 3C 273								

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 44

Focus

Spectr. Temp. Dome Temp./Hum.

Comparison Star Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt °	Slit	Emulsion	P.H.	Program	Remarks	Quality
	2000, 170	OK			PCS BC	1200/423 G 4480	BS	H+			Sky ~ 15-20 cats above dark	
	500, 110											
	500, 110										Sky ~ 15-20 cats above	
	500, 110											
	560, 110										Dark ~ 80/sec	
	7000, 220										Dome T = -10°C	
	540, 110				BC	1200/365 G 3860	BS	5160			Name on Label / maybe former i.e. 471.	
	2300, 150				"	"	"	"			(A bump ~ 5 s ⁻¹ higher) Dark ~ 75 s ⁻¹	
	6000, 180										Sky : 5-10 counts above dark.	
						1200/365 G 4060						

45

py #3

Emulsion Batches:

Date Observers

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.
660	3C 273				01 04				
61	Comp for 3C			01 06					
62	Comp for 44 ¹⁴⁰⁰	11 24.8	+30 31						
63	AWUMia "B"	11 24.8	"	01 23	01 33				
64	Comp for B								
665	Flat Field	<u>NP 2.3 + ND 0.6</u>						Tung A V 8	
667	Comp for Nova Her							FeAr A 1/4	
668	Nova Her	¹⁹⁸⁷ 18 43.2	+15 19						
69	Comp "								
70	Comp @ 4900 Å								
71	Nova Her			03 44	04 04	1700 sec			
72	Comp for Nova								
73	" " " @ H α			04 10	04 27	760 sec			
74	Nova Her @ H α								
75	Comp								
	Dark								

Spectr. Temp. Dome Temp./Hum.

Focus

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions 76

Note PCS clock $\approx$ 6 secs fast toning lit.

Comparison Wt. Exp.	Exp. Mtr. <i>PSCB</i>	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					<i>BC</i>	<i>1200/ G 4060</i>	<i>BS</i>	<i>HB redshifted 800Å</i>				
					"	"	"	"				
					"	<i>1200/365 G 3860</i>	"	<i>5160Å</i>				
	<i>3000, 170</i>					"	"	"				
						"	"	"				
	<i>2500, 170</i>					"	"	"			<i>Domo T = -11.5°C</i>	
	<i>550, 77</i>					"	"	"		<i>1st Comp accidently was Tungsten CHA got too</i>		
	<i>700, 100</i>					"	"	"		<i>much lighter & DARK after Zap done</i>		
					<i>Rune still "Novo Her"</i>	"	"	"		<i>" " " #566</i>		
	<i>1000, 110</i>				<i>BC</i>	<i>1200/357 G 3750</i>	"	<i>4900</i>				
	<i>1000, 110</i>				"	"	"	"				
					"	"	"	"				
	<i>480, 130</i>				"	<i>1200/423 G 4480</i>	"	<i>H2</i>				
	<i>2800, 200</i>				"	"	"	"		<i>"FeHr" on Label</i>		
					"	"	"	"				

pg 4

Emulsion Batches:

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[illegible]

Spectr. T.

Focus . . .

Spectr. T.

Exp. Mr.

2109,200

49

Date THURS. FEB. MAR 12-8/43 Observers MK1-R1

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.
81	TUNGSTEN			17:20	19:20			TUNG A $\frac{1}{2}$	7200 SEC.
82	DARK			19:51	20:01				
83	COMP			20:33	20:36			Fe A A $\frac{1}{2}$	2400 SEC.
84	V471 TAU	03 44.7	+16°57'	20:38	20:59				1200
85	COMP			21:01	21:04			Fe A A $\frac{1}{2}$	200
86	V471 TAU	03 44.7	+16°57'	21:05	21:25			Fe A A $\frac{1}{2}$	1200
87	COMP			21:27	21:30			Fe A A $\frac{1}{2}$	200
88	V471 TAU	03.44.7	+16°57.1	21:32	21:52				1200
89	COMP			21:54	21:58			Fe A A $\frac{1}{2}$	200
90	SKY			22:00	22:05				300
91	V471 TAU			22:06	22:26				1200
92	COMP			22:27	22:31			Fe A A $\frac{1}{2}$	200
93	COMP			23:06	23:10			Fe A A $\frac{1}{2}$	200
94	BM CAS			23:11	23:31				1200
95	COMP			23:32	23:36			Fe A A $\frac{1}{2}$	200
96	SKY			23:37	23:42				

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 50

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
200				P.C.S.	1200/42.3 4480	B.S.	Hd			u 2.3 + 0.9	
										TELE REVERSED	
200	600			P.C.S.	1200/42.3 4480	B.S.	Hd				
1200	2000/220	9.4	KO	P.C.S.	"	"	"				
200	600			P.C.S.	1200/42.3 4480	B.S.	Hd				
1200	2400/280			P.C.S.	1200/42.3 4480	B.S.	Hd				
200	600			P.C.S.	1200/42.3 4480	B.S.	Hd				
1200	1800			P.C.S.	1200/42.3 4480	B.S.	Hd				
200	600			P.C.S.	1200/42.3 4480	B.S.	Hd			300/s to sky	
300	233			P.C.S.	1200/42.3 4480	B.S.	Hd				
1200	1500/200			P.C.S.	1200/42.3 4480	B.S.	Hd				
200	600			P.C.S.	1200/42.3 4480	B.S.	Hd			Dark ~ 140 c/s	
200	600			P.C.S.	1200/42.3 4480	B.S.	Hd				
1200	3500/200			P.C.S.	1200/42.3 4480	B.S.	Hd				
200	600/200			P.C.S.	1200/42.3 4480	B.S.	Hd				
	210/189			T.C.S.	1200/42.3 4480	B.S.	Hd			200/s sky	

Date Observers

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	
698	COMP			23:44	23:47			Fe A A $\frac{1}{4}$	200	600
699	BH CAS			23:48	00:18				1800	1800
700	COMP			00:20	00:24			Fe A A $\frac{1}{4}$	200	600/15
701	BH CAS			00:25	00:55				1800	1300/200
702	COMP			00:57	01:00			Fe A A $\frac{1}{4}$	200	600/200
703	COMP			01:09	01:13			Fe A A $\frac{1}{4}$	200	600/200
704	HD 112299	12 50.6	+26° 16	01:14	01:19				300	600/400
705	COMP			01:19	01:23			Fe A A $\frac{1}{4}$	200	600/200
706	COMP			01:25	01:28			Fe A A $\frac{1}{4}$	200	600/200
707	HD 112299	12 50.6	+26° 16	01:30	01:35				1300	600/375
708	COMP			01:36	01:40			Fe A A $\frac{1}{4}$	200	
709	COMP			01:46	01:50			Fe A A $\frac{1}{4}$	200	
710	AW UMA "B"			01:50	02:10			Fe A A $\frac{1}{4}$	1200	600/240
711	COMP			01:11	02:15			Fe A A $\frac{1}{4}$	200	
712	TUNGSTEN			02:19	03:04			TUNGSTEN A $\frac{1}{4}$	2700	2800/280

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 52

Focus

Spectr. Temp. Dome Temp./Hum.

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
200	600				P.C.S.	1200/36.5 3860	B.S.	5160				
600	1800		18.5 9.33		P.C.S.	1200/36.5 3860	B.S.	5160				
200	600/150				P.C.S.	1200/36.5 3860	B.S.	5160				
1800	1300/200				P.C.S.	1200/36.5 3860	B.S.	5160				
200	600				P.C.S.	1200/36.5 3860	B.S.	5160				
200	600/200				P.C.S.	1200/36.5 3860	B.S.	5160				
300	4000/400				P.C.S.	1200/36.5 3860	B.S.	5160				
200	600/200				P.C.S.	1200/36.5 3860	B.S.	5160				
100	4500/275				P.P.S.	1200/42.3 4480	B.S.	Hd				
300					P.P.S.	1200/42.3 4480	B.S.	Hd				
200					P.C.S.	1200/42.3 4480	B.S.	Hd				
400					P.P.S.	1200/36.5 3860	B.S.	5160			GRAND SE NOT Dark ~ 180 c/s	
200	8000/240				P.P.S.	1200/36.5 3860	B.S.	5160			PROPLY SET	
200					P.C.S.	1200/36.5 3860	B.S.	5160				
200	2800/280				P.P.S.	1200/36.5 3860	B.S.	5160			UD 2.3+.6	

#3

53

Date THUR FRI MAR 12-13 Observers MK1-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.	Exp. Mir.
SP000 713	COMP			03:18	03:22			Fe A A $\frac{1}{8}$	200	375/175
714	NOVA HER 1987	18 43.1	+15 18	03:22	03:42				1200	600/177
715	COMP			03:45	03:48			Fe A A $\frac{1}{8}$	200	350/200
716	SKY			03:49	03:54				300	185/154
717	COMP			03:56	04:00			Fe A A $\frac{1}{8}$	200	500/234
718	NOVA HER 1987	18 43.1	+15 18	04:00	04:01				1200	200/230
719	COMP			04:22	04:26			Fe A A $\frac{1}{8}$	200	500/213
720	COMP			04:32	04:35			Fe A A $\frac{1}{8}$	200	500/200
721	PU VUL			04:36	05:07				1200	500/300
722	COMP			05:08	05:11			Fe A A $\frac{1}{8}$	200	500/200
423	COMP			05:12	05:16			Fe A A $\frac{1}{8}$	200	375/180
424	PU VUL			05:16	05:36				1200	1800/240
425	COMP			05:38	05:42			Fe A A $\frac{1}{8}$	200	350/135
426	SKY	18 43.1	+15 18	05:44	05:49				300	
427	DARK			05:50	6:00				600	
428	TUNGSTED			06:04				TUNGSTED A $\frac{1}{8}$	700	

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 54

Focus

Spectr. Temp. Dome Temp./Hum.

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
20	375/175				P.C.S.	1200/35.7 3750	B.2	4900			SET SC NOT PROPERLY SET	
120	600/177				P.C.S.	1200/35.7 3750	B.5	4900				
200	550/200				P.C.S.	1200/35.7 3750	B.5	4900				
300	185/159				P.C.S.	1200/35.7 3750	B.5	4900				
200	500/234				P.C.S.	1200/42.3 4480	B.5	Hd				
1200	1000/230				P.C.S.	1200/42.3 4480	B.5	Hd				
20	550/213				P.C.S.	1200/42.3 4480	B.5	Hd			100/SEC SKY 150/SEC	
200	500/200				P.C.S.	1200/42.3 4480	B.5	Hd			DARK ~160 s-1	
200	500/300				P.C.S.	1200/42.3 4480	B.5	Hd			SOME CLOUDS 2 HALTS	
200	500/250				P.C.S.	1200/42.3 4480	B.5	Hd				
20	375/180				P.C.S.	1200/35.7 3750	B.5	4900				
1200	1800/240				P.C.S.	1200/35.7 3750	B.5	4900				
20	350/175				P.C.S.	1200/35.7 3750	B.5	4900				
300					P.C.S.	1200/35.7 3750	B.5	4900			BEGIN 400/s SKY END 1200/s	
600					P.C.S.	1200/42.3 4480	B.5	Hd			DARK 150/SEC	

55

Date MAR 14/87 SAT Observers Ri

Emulsion Batches:

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[illegible]

Spectr. T.

Focus...

Spectr. T.

Eq. 11.

1345

2453

1406

199

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions 56 -

Focus

Spectr. Temp.

Dome Temp./Hum.

[illegible]

57

Date SUN MON MAR 15-16/80 Observers R. (TON PHONG LU)

Emulsion Batches:

MAR17 Ri 7min@67pc II-0-E 315-01227

[illegible]

Spectr. Temp. ..36°F.....

Focus 394

Spectr. Temp.

Dome Temp./Hum. . . 0°C . . . 48%

Dome Temp./Hum. -04°C 65%

Transparency Conditions *V. Good* 58.

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
e 30-60		4148		V=			1200/50.7					SET FOR G12	Comp sl/wk
e 30-60		3852		7.0	dG7	B.C.	5440	B.S.	IIao-E	4	STD VEL	T= 36°F F= 394	1 sl/wk
e 30-60		1444					"	"	"	"		SET FOR G12	Comp sl/wk
R 28		1521					"	"	"	"		T= 36°F F= 394	Comp sl/wk
e 30-60		4500		V=			830/40.2						Comp sl/wk
R 28		4503		4.79	F6IV	B.C.	4260	B.S.	IIaw-E	4	STD VEL	T= 36°F F= 394	Fine
									IIao-E				VL
e 30-60		4336					830/40.2						Comp OK
R 28		4462		6.76	09.5V	B.C.	4260	B.S.	IIao-E	4	Blk OV		Fine
e 30-60		4007					830/40.2						Comp OK
R 28		3993		7.20	G8II	B.C.	4260	B.S.	IIao-E	4	Asm-Sp/KK		Fine
e 30-60		4000					830/40.2						Comp OK
R 28		3033		6.8	G8V	B.C.	4260	B.S.	IIao-E	4	Asm-Sp/KK	T= 32°F F= 396	Fine
e 30-60		1318					830/40.2						
R 28		1535					4260	B.S.	IIao-E	4		T= 31°F F= 396	OK

59

Date MON. TUES. MAR. 16-17 Observers Bt R.

Emulsion Batches:

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[illegible]

Spectr. T.

Focus...

Spectr. T

Exp. Mtr.

4000

400

Focus

Spectr. Temp.

Dome Temp./Hum. ... 0°C ... 53%

Dome Temp./Hum. -04°C 59%

Transparency Conditions Good 60

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4000		V=									
4000		6.66	G8	B.C.	830/40.2 4260	B.S.	IIco-E	4	STD. VEL	T = 32°F F = 396	Comp 1 str 51 str

Date Tue-Wed MAR 17-18... Observers BK-Ri / Xi (MKI IN MAIN BUILDING)

Trav-E 315-01277
Wheat -03157

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.
49904 ✓	HD 66141 T _n HD 65934*	7 57.4 7 56.1x	+02° 36' +02° 55'	19:05	19:41	00° 58E	+02° 32'	Fe Ne CLEAR	30-614 30-626 30-634
49905	HD 62437	7 38.9	+02° 39'	19:48	20:30	00° 11W		Fe Ne CLEAR	30-627 60-1230
49906	HD 62437	7 38.9	+02° 39'	20:35	21:17	00° 55W	+02° 35'	Fe Ne CLEAR	45-978 45-934
49907	HD 62437	7 38.9	+02° 39'	21:20	22:01	0° 40W		Fe Ne CLEAR	45-945 45-981
49908	HD 62437	7 38.9	+02° 39'	22:05	22:46	02° 25W		Fe Ne CLEAR	45-100 45-1012
49909	HD 62437	7 38.9	+02° 39'	22:50	23:31	03° 10W	-	Fe Ne CLEAR	45-102 45-105L
49910	HD 62437	7 38.9	+02° 39'	23:34	00:10	03° 50W		Fe Ne CLEAR	45-106 45-106
49910T	SPOY CAL FOR PLATES 49903-49910			15 MIN @ 15 VOLTS	3900	D4 D3 D2 4300 4810		Fe Ne CLEAR	70-1513 70-167 70-177
49911 ✓	HD 86360	9 52.9	+12° 55'	00:26	02:32	03° 56W	+12° 39'	Fe Ne CLEAR	70-1513 70-167 70-177
49911T ✓	SPOY CAL FOR PLATES 49911-12			15 MIN @ 15 VOLTS	3900	D4 D3 D2 4300 4810		Fe Ne CLEAR	70-1513 70-167 70-177
49912	HD 139892	15 35.6	+36° 58'	02:43	03:36	00° 40E	+36° 50'	Fe Ne CLEAR	69-152 69-1529 69-155
	* Corrected HD #s RA 1900 very sure due to velocity measure.						T _n		

Spectr. Temp. 38°F.....

Dome Temp./Hum. ... +01°C ... 49%

Transparency Conditions 62

Focus 394

Spectr. Temp.

Dome Temp./Hum. 55%

[illegible]

63 Mar 18-19/87

Dev Mar 22 @ 68°F

Emulsion Batches:
..U-60-E-315.....-03177

Date Wed-Thurs Observers Tn

[illegible]

177

394/398

64

Set 393

40%

+32°F / 60%

120
250

65

Thurs - Fri

IIIa developed
with mar 17-ras IIIaIIa Os Dev mar 22
with pressure 9 8^m 68°
nights

Emulsion Batches:

IIa O-E 315... -03177
IIa J-E... -03157

Date Mar 19-20/87... Observers Tn./Ly.-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.	Exp. My.
49917	HD 62437	07 38.9	+02 39	19 04	19 41	00 30E	+2 34	FeNe Clear	45-45	4121
49918	"	"	"	19 48	20 24	00 13W	"	"	"	4500
49919	HD 66141	07 57.1	+02 36	20 30	20 44	00 13W	+2 31	"	"	4750
49920	HD 62437	07 38.9	+02 39	20 49	21 25	01 13W	+2 34	"	"	4043
49921	HD 93521	10 42.7	+38 06	21 33	22 27	00 50E	+37 47	"	30-30-3	5100 5110
49922	HD 86360	09 52.9	+12 55	22 44	00 07	01 43W	+12 41	"	70-1519 70-1530 70	20821 20844
49921T	Spot Colls for 49917-21				15 min @ 15V	D4 3900	D3 4300	D2 4810		
49922T	Spot Colls for 49922-27				15 min @ 17.5V	D4 3900	15V 4300	15V 4810		
49923	HD 139892	15 35.6	+36° 58	00 21	01 45	02 22E	+36 50	FeNe Clear	70 70-156	2600 2530
49924	"	"	"	01 53	03 04	01 03E	"	"	70 70- 70 70	20050 20001
49925	"	"	"	03 11	04 03	00 04E	"	"	70 70 70	20070 20001
49926	"	"	"	04 07	04 54	00 47W	"	"	70 70 70	20000 20000
49927	"	"	"	05 02	05 49	01 42W	"	"	70 70 70	20000 20000
49927F	Focus test	"	"	05 54		01 42W	"	"	100-4	

Spectr. Temp. ... 43°F Dome Temp./Hum. ... $+40^{\circ}/46\%$ Transparency Conditions *Fine* 66

Focus ... 39.3 ... 391 for 68

Spectr. Temp. Dome Temp./Hum. ... $+30^{\circ}/60\%$

Comparison ter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
45-46	4121	poor	6.34	F0	BC	830/402 4260	BS	II40-E	4	Wat prog		* Fine
"	4500	"	2	"	"	"	"	"	4	"		"
"	4750	"	4.39	K2M	"	"	"	"	4	std vel	Note, HD 62437 must be	"
"	4043	"	6.34	F0	"	"	"	"	4	Wat prog	much brighter than	"
30-31	5100	5050	6.76	095V	"	"	"	"	4	Bln-0*	6.34. All things being	OK S/str
70-75	5110	50-50	6.76	095V	"	"	"	"	4	Bln-0*	equal, compare	
70-75	20,021	OK	5.22	B9IF	"	1200/50.7 5440	"	III40-E	4	Lg pgm	Exp times with std vel exp.	
	20844							II40-E			OR std Vel is fainter than indicated.	
								III40-E			Maybe labeled "22"	
70-75	20605	OK	5.0	B7V	BC	1200/50.7 5440	BS	III40-E	4	Lg pgm	T=39.5 f Set 391	
70-75	20530	"	"	"	"	"	"	"	"	"	"	
70-75	20050	"	"	"	"	"	"	"	"	"	"	
70-75	20001	"	"	"	"	"	"	"	"	"	"	
70-75	25270	"	"	"	"	"	"	"	4	"	"	
70-75	15040	"	"	"	"	"	"	"	"	"	"	
70-75	17170	"	"	"	"	"	"	"	"	"	"	
70-75	20200	"	"	"	"	"	"	"	"	"	"	
70-75	20000	"	"	"	"	"	"	"	"	"	"	
70-75	20200	"	"	"	"	"	"	"	"	"	"	
70-75					"	"	"	09B	4		T=365 f Set 391 v. SI blue	
											* Note previous page	

67

Sun - Mon

Date Mar 22-23/87... Observers Ly-Tn.....

Emulsion Batches:

8^h 68^m5^h 69^m

..II-40-E-315-03177

..III-40-E-315-03157

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. Min plate
49928F	Focus, test			19 03		00 10W	~45°	FeNe clear		
49928	HD65041	07 51.7	+43 47	19 10	20 13	00 03'E	+43 38	"	30 30 30	4270 9690
49929	HD72359	08 27.2	+10 24	20 20	21 21	00 31'W	+10 11	"	30 30	4260 4497
49930	HD65041	07 51.7	+43 47	21 29	22 37	02 22W	+43 38	"	30 30	4210 4065
49931	HD139892	15 35.6	+36 58	22 45	00 17	03 40E		"	70	20530 2.300
49930T	Spot Cal'n for 49928-30,32				15 min @ 15V	D4 3900	D3 4300	D2 4810		
49931T	Spot Cal'n for 49931,33,34,35				15 min @ D4	17.5V 3900	15V 4300	15V 4810		
49932	HD128220	14 30.6	+19 39	00 34	03 34	00 47W	+19 21	FeNe clear	30 50 20	2545 2710
49933	HD139892	15 35.6	+36 58	03 41	04 18	00 22W	+36 46	"	70 70	20,200 19,800
49934	HD170200	18 23.1	+06 08	04 27	05 25	01 17E	+6 16	"	70 70	15495 13500
49935	HD139892	15 35.6	+36 58	05 31	05 59	02 04W	+36 46	"	70 70 70	5048 15000

Spectr. Temp. 327

Focus... 388-391.....

Spectr. Temp. 40°FDome Temp./Hum. 48°/53%Dome Temp./Hum. +39°/83%

Transparency Conditions . . . *Five - photometric* . . . 68

✓ Right breast at night

[illegible]

87

Spectr. Temp. 52°f

Dome Temp./Hum. $+48^{\circ}\text{f}/48\%$

Transparency Conditions *Fine*.....70...

Focus 389

Spectr. Temp. 43°f

Dome Temp./Hum. $+40^{\circ}\text{f}/70\%$

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		<i>R Filter</i>											
	143					BC	1200/507 5440	BS	$\text{II}_{100}\text{-E}$	4		* last of past batch	center sl/Red
	50	9036		19	A0IV	"	"	"	$\text{II}_{100}\text{-E}$	4	Asm Sp KK		fine
	50	9,500		"	"	"	"	"	"	4	"		fine
		6,200	ok	4.39	K2III	"	"	"	"	4	st/vel		fine
Separate Records kept for Ry													
	35	4000	var h				1200/507						
	35	4000	OK	72	G8VI	BC	5440	BS	$\text{II}_{100}\text{-E}$	4	Asm Sp KK	Set 390 T = 47°f	vs/wk
	35	4045					"	"	"	4	"		vs/wk
	35	4040	OK	66	d65	"	"	"	"	4	"		"
	35	4005	Ugood	7.1	dKi	"	"	"	"	4	"		"
	35	4000					"	"	"	4	"		"
	50	7500	fine	3.93	Fop	BC	1200/507 5440	BS	"	4	Asm Sp KK		fine
	50	7400	"	"	"	"	"	"	"	4	"		"

II. O. E. 315-23037

Date Mar. 24-25, 1987..... Observers Rm. - Tm.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
49944F	Focus Test			19 11		00 38W	+7 11	FeNe clear	200 100
49944	HD 44990	06 19.8	+07 08	19 17	32:31	03 57W	"	"	35 35 35
49944T	Spot Calc	for 49944-16			15 min	15V 3400	D3 D2 4300 4810		35 35 35
49945	HD 65041	07 51.7	+43 47	22 41	00:55	04 48W	+43 38	FeNe clear	35 35 35
49946	HD 107328	12 15.3	+3 53	01 02	02:27	02 00W	+3 28	"	35 35
Tm Apr 6/87 Focus & illuminat. test of Ti-Ne tube Done Temp = 44 °F H-99°									
49946T1	Ti-Ne test			21 33		0 0		Ti-Ne clear	5 min + 5 min
5 min test of Ti-Ne with diffuser slide "UP" gives						1234	cnts	Ti-Ne clear	5 min
49946F1	Focus test							FeNe clear	150 sec 50 sec
F2	"						"	"	150 sec 150 sec
F3	"						"	"	150 50
F4	"						"	"	"

Spectr. Temp. 53°.....

Focus .. 388

Spectr. Temp. 48°F.

Dome Temp./Hum. +50°F/55%

Dome Temp./Hum. 40°/80%

Transparency Conditions *Fine... r. cloud coming* 72

East wind increasing

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	200 100	Blue filter				BC	1200/50.7 5440	BS	IIa F-E	4	fog test?	not sure if comp will straighten out at Blue	carter vs Ral at Blue
	35 35	4169 2658	5050 OK	27.5	2G	"	"	"	IIa O-E	4	Ceph-Rm	severe RA oscillate @ 3hr W seeing going fast	✓ sl. wt
	35 35	4016 3185	OK par	6.87	B2V	BC	1200/50.7 5440	BS	IIa O-E	4	SB-Ly Ly proxy	same RA oscillate @ 3hr W	sl. wt
	35 35	1267 2545	✓ bad	4.96	K1 III	"	"	"	"	"	STD VEL	Cirrus	sl. wt
	5 min	Blue filter											
	5 min	314 264				BC	1200/50.7	BS	IIa O-E	4	T = 49.0° set 388	cuts (10 min total) somewhat slow	
	5 min	1234											
	5 min	2800				BC	1200/50.7	BS	IIa O	5	T = 49.5° set 388		
	5 min	2900				"	"	"	"	4	"		
	5 min	2633				"	"	"	"	5	"		
	5 min	2900				"	"	"	"	5	"		
	5 min	2763				"	"	"	"	4	"		
	5 min	2910				"	"	"	"	4	"		
	5 min	2420				"	"	"	"	4	"		
		Note only 3/3 IIa Os in vacuum. "Fresh" box from frig of last week was empty but with on 4x5? (not even touched as this)											

Date Tues/Wed Apr 7/8 1987 Observers Rm - Th - Ly

Emulsion Batches:
 II. O.E. 315 - 04067
 5^m 67 1/2. III. O.J.-Efg. - 24037

[illegible]

Spectr. T

Nine Filter

1,750 units

Tet8

100%

10.91

1871
1871

2780

4312

4640

13815

9032

30767

1942

1102

2153

293 ✓

1909

6500

[illegible]

Spectr. Temp. 52°FDome Temp./Hum. $45^{\circ}\text{F}/68\%$ Transparency Conditions *Fine*.....74

Focus...391.....

Spectr. Temp. 41.5°FDome Temp./Hum. $43.5^{\circ}\text{F}/88\%$ *gusty NW winds*

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
13-35	Blue filter 1750 +648	SSO	7.7	F5b- F4b	BC	830/40.2	BS	IIaOE	4	Cep/Rm		comp s/str V S/WK
								IIaOE				LL
13-35	1871 2780	OK poor	6.5- 8.0	F7- K1	BC	830/40.2	BS	IIaOE	4	Ceph/Rm	severe AA oscillate 3'20W	comp s/str Fine
13-35	4372 4040	poor	6.2	A5V	BC	1200/50.7	BS	IIaOE	4	SB/Ly	" " 3'17W	fine
13-35	13815 9032	poor	5.2	B9V	"	1200/50.7	BS	IIaOE	4	BLN SB	" " 3'20W	fine
70	20767 19933	"	5.00	B7V	"	"	"	"	4	SB/Ly	set 391 T=43°F <u>blending</u>	Fine
								"				V
13-35	3450	vpoor	9.2	A5V	BC	1200/50.7	BS	"	4	Asm Sp-AK		Fine
13-35	6500	"	3.9	K2III	"	"	"	IIaOE	4	Std/Vel		OK
						"	"	IIaOE	4		set 391 T=41.5°F	sl red in blue but OK

Note - Apr 8/9 - Develop IIaOs from this night & next together, as 1 strip may be in wrong box
 KK Note. Only 4 IIaOs left in Dome

Cub Tour Mars & Moon seen

Date Wed./Thurs. 0
April 8/9 1987

Observers Ly - m -

Emulsion Batches:
 512680 II-00-E-315 - Apr 7
III-01-E-315 - 24037

51 ~ 68

..Π.Ο.-Ρ. 315-17pr +

24037

[illegible]

Spectr. Temp. 47°F

Dome Temp./Hum. 45°F/77%

Transparency Conditions OK - some cloud 76

Focus 3.89 - 390

Spectr. Temp.

Dome Temp./Hum. 38°F/80%

Fm000002.kwi
Moon Frame Saved on grabber after Tour

Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	Blue Filter											
35	4505	20-30	6.2	40V	BC	1200/50.7	BS	IIIaD-c	4	SB-Ly		comp OK
35	4208					5440						OK
70	0365	OK	5.22	B9IV	"	"	"	IIIaJ-cy	4	SB-Bln	near Moon	fine
70	0780				"	"	"	IIIaJ-cy				"
35	0006	OK	8.5	8.5	"	"	"	IIIaD-c	4	SB-Ly	Frame Saved Fm000003.kwi	comp OK w/kr
								IIIaD-c				v2
35	0016	OK	5.0	B9IV	BC	1200/50.7	BS	IIIaJ-cy	4	SB-Ly	resolved set 390	fine
35	0030	poor		DF8		5440						
35	0000	5.50	6.2	8	"	"	"	IIIaD-c	4	SB-Bln		v5/wk
120	0020											
120	35476	OK	3.0	AQV	"	"	"	IIIaJ-cy	4	SB-Bln		fine

kk - more IIIaJ needed in dome

Spectr. Temp. ... 51°C

Dome Temp./Hum. / 70%

78

1

Mon-Tues

Emulsion Batches:
5 1/2^h 68 ... D-1-cfg. 1A7 ... Apr 9

[illegible]

Spectr. Temp. 54°F Dome Temp./Hum. $45^{\circ}\text{F}/90\%$ Transparency Conditions $\text{Cloudy} \dots \text{Semi} \dots 80$ Focus 387.5 Spectr. Temp. 50°F Dome Temp./Hum. $44^{\circ}\text{F}/90\%$

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Blue Filter											
35893	OK	2.2	AS II	BC	1200/50.7 5440	BS	III a S-egg	4	Asm Sp Hk		comp st w/ fine
							III a S-egg				
(DT 000003, T _n = AN# saved)					partly cloudy				Worm gear between "E" & "F" p.		comp st w/ sluck
Blue Filter											
33000	OK	3.68	FO II	BC	1200/50.7 5440	BS	III a S-egg	4	Asm Sp Hk	some cloud	
Note BS reset in to place making sure that Rotat'n set set to set limit. (Darker and placed at 51.5 f. set 389) Blue Filter 2523 BC 1200/50.7 5440 BS II a O-E 4 Spat temp 51.5 f. set 389 3240 " " " " 5 Slope (Blue more Red) 0600 " " " " 5 Focus set 391 T=54.5 f - slope 3264 " " " " 5 Center Red but Flat 1946 " " " " 5 Blue and Fuzzy? 2722 " " " " 5 1900 " " " " 4 2700 " " " " 4 1216 " " " " 5 1660 " " " " 5 1260 " " " " 4 1600 " " " " 4											

Recker coupling system has and still feels rough, sluggish & sometimes one feels the need to be slightly forceful in order to be sure it has gone full intended travel.

Drive Tests

Emulsion Batches:

Date Apr 20-21/87 Observers T. J. ...

Using EST Clock

[illegible]

Spectr. Temp.

Dome Temp./Hum. /

Transparency Conditions Hazy..... No Wind 82

Computer Clock Reads 30 secs earlier
than Astro Clock. It's also DST not
EST

[illegible]

81

83

Cont

Drive Tests

Emulsion Batches:

Date Apr 20-21

Observers T.G.

Plate No.	Object	R.A. 1900-1987.5-1900	Declination	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp. Mtr.
22	BS 6588	17 39 06.7	+46 00 45	22 00 00					
23	"			01 30					
24	"			03 00					
25	"								
26	BS 6588	17 39 06.7	+46 00 45	22 16 00					
27	"			17 30					
28	"			19 00					
29	"			20 00					
30	"			28 00					
31	"			29 30					
32	"			22 30 12					
				40 25	Sign. A too weak				

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 84

Focus

Spectr. Temp. Dome Temp./Hum. 63% / 80.8

Compens.
type/Filter

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							4057				
							4115				
							31				
							53				
							4210				
							18				
300 frames										Too near RH edge of Box during most of	
1 (2 on guider)										Started over with star centered in box (don't use previous frames.)	
"											
"											
150 2 on guider										Plot Looks Flat?	
1											
1											
180 2 on guider										Note some frames are blank (var star?) Worm Leaving K3 @ 22 33 EST	
180 2 on guider										ie K3 is 3rd grave right of K at E side of worm gear	
										Seeing suddenly very bad, & trouble saving files F= show files now doesn't do anything.	

85

Sun - Mon

Drive Tests

Emulsion Batches:

Date Apr. 26-27. 187. Observers K.K. - T.

Plate No.	Object	R.A. 1900-1987.5 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
	BS 3881	09 47.8	+46 05	19 51 00		00 05 W			
09.	B "	Hung up - Restart		19 57 01		00 11 W			
10									
11				20 00 00					
12				01:30					
13				20 03 00					
14				20 04 30					
15				20 06 00					
16				07 30					
17				09 00					
DT... 32				20 19 00		42 W			
FM... 18	83 Leo	11 26.5	+3 17	20 42 12	2 frames	0 44 E			
FM 19	"			20 45 26	2 frames				
FM 20	Bit star next to 12 Her	16 38.5	+49°	21 06 00					
				21 09 05					
				21 10 30					

all stored in
hence, deleted

Spectr. Te

Focus...

Spectr. Te

Exp. Mtr.

200 frames

150

86

no wind

Dome Temp./Hum.

Geo P/Q
Scale on p/b/

pg 2

Emulsion Batches:

.....

.....

.....

[illegible]

Focus

Dome Temp./Hum.

Transparency Conditions 88

88

Exposure	Filter	Exp.	Companson	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
														Dismissed	
				LH image				To get dec axis as seen on screen							
				RH image				" " " " " "							
				100 frames				Drive Test.							
														Gear Q3	
				Guider Test for scale with comp in fld											
				Drift set of Frames											
				100 Frames @ 95 columns,				(95 blank, some others blank) @ 2x on guider							

Pg 3

Emulsion Batches:

IIaOE.....09107

[illegible]

Spectr. Temp. 51.0°.....

Dome Temp./Hum. ~~48~~°F / 42%

Transparency Conditions 90

Dome Temp./Hum.

7 or 9 seeing ball

[illegible]

Cont ~~Cont~~

Emulsion Batches:

.....

.....

.....

[illegible]

Spectr. T
Focus...
Spectr. T

~~Exp. No.~~
Gear Pos.

T: 800

4:362306

60 mer

V. Lee

V. 70 end

1/10/01

Totoprac

93

Wed-Thurs

Drive Tests

Emulsion Batches:

Date Apr. 29-30/87 Observers Tn

Gear V:8 @ Start

TV
Gyde
Int
Frames

Plate No.	Object	R.A. 1987 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
46.KWK	BS 5392	14 23.6	+5 53	19 51	19 58 07	04 15 E +		200	0
46.ANH	analysis								
47.KWK	5392			20 01	20 08 03			200	0
47.ANH									
48.KWK	5392			20 09 28	20 23 41	03 47 E +6 04		400	0
48.ANH									
Apr 30-May 1/87 Both Astr's Best clocks absolutely synchronized									
DT 0000 49.KWK	(BS 5200)	13 49.9	+15 52	19 45 59	19 53 05	3 41 E +16 02		200	0
49.ANH	Analysis								
50.KWK	BS 5200			19 58 00	20 05 07			200	0
50.ANH									
51.KWK	BS 5200			20 08 30		E		400	x2
51.ANH									
52.KWK	BS 5200	Prob no good		20 29 40	21 12 38	2 20 E		999	x6
		too much drift to Right							

95 cont of

Date Apr 30-May 1 Observers Tn

.....

.....

.....

TV
Integrat

[illegible]

Spectr. Te

Focus...

Spectr. T

Exp. Mtr.

1947

X: 4.1

10/1/19

✓

No wind

77

754 per

71

July 14

107 1457

to / en

2

1.5 g/mol

to 1000

~~2/11/11~~

28

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

Spectr. Temp.

Dome Temp./Hum.

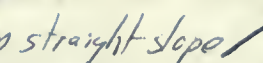
Transparency Conditions ... 51. Hazy → cloudy 96

Focus

not much wind

Spectr. Temp.

Dome Temp./Hum. 37°F / 64%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
gear posn at end									# C6 Tomas		
x4 X:1 just left gear	OK	5.58		Dome moved near 100th frame	BS	(Some Frames missing)			71 is optimal 71 for Fld size)	looks OK. discont. but Re-positioned Image of left not drifting to Right so fast now.	
No wind either.									nfp=9 Interesting slope 		
x9 Z:7 dome move @ 780th frame									71	Repositioned image to Left, some cloud	
90sec period starts to occur.										At a same time, the RHS of worm is starting to engage next notch. (I just like to re-verify this visually but it is obvious.)	
									nfp=9	OK  slope	
x0 Z:3 just Left gear (more accurate than most notings)									71	re-centered	
									nfp=9	OK Flat	
x9 1:3 (just starting to leave gear) dome turn @ 60th frame									71	944th frame lost no re-centering from previous	
→ very accurate timing									nfp=9	very nice semi flat	
x0 4:5 about 6 to leave	very poor	3.85	A+LVs		BS				71	Image moving to upper right fast cloud too	
									nfp=9	steep straight slope 	
x0 B8 (still solidly in gear @ end starting to leave a 30secs after last frame)									71	Reset image to Left edge of box	
									nfp=9	Wow 	

97

Emulsion Batches:

Date *May 1 cont* Observers *TJ*

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[illegible]

98

Dome Temp./Hum.

Comparison ite. Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	# Program Columps	Remarks	Quality
x0	203 well into worm	5050	3.85	A4V ₅	Dome turned @ 110th Frame		BS			71 nfp=9	image moved to LH side of box before start, but rapidly moved R during integrator (steep slope)	
x0	:10 Just OK Left LH worm						BS			71 nfp=9	OK some / slope	
x0	~B:8						BS			71 nfp=9	no change of image posn from last integrator.	
x0							BS			71 nfp=9	getting flat ^{OK} worm (image moved Left during integrator)	
										nfp=9		

99

Sun-mon

Gear pos'n B:8 → F. not done, because of Sat. night
Tour usage of telescope

Emulsion Batches:

Date May. 3-4/87.....

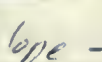
Observers T. J.

Using Comp time

TVJm

Plate No.	Object	R.A. 1900 1987.7	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	# Type	Comparison Filter	Exp
DT000062.kwk	BS 5110	13 34.2	+37 15	19 45 30	19 53 41	03 12 E	+37 25	200	x0	
62.ANH	Analysis									
63.kwk	BS 5110			19 56 02	20 36	02 30 E		999	x0	
63.ANH	note this one									
64.kwk	BS 5110			20 40 28	20 48 39	02 17 E		200	x0	
64.ANH										
65.kwk	BS 5110			20 51 21	20 59 34	02 07 E		200	x0	
65.ANH										
66.kwk	BS 5110			21 05 03	21 46 10	01 19 E		999	x0	
66.ANH										
67.kwk	BS 5110			21 50 31	22 31 38	00 34 E		999	x0	
67.ANH	OK slope									
68.kwk	BS 5110			22 36 44	23 17 51	00 12 W		999	x0	
68.ANH	Very interesting									
69.kwk	BS 5110			23 20 50	23 29 02	00 23 W		200	x0	

Spectr. Temp. Dome Temp./Hum. $76^{\circ}\text{F.} / \text{H} = 47\%$ Transparency Conditions ... *Fine* 100
 Focus
 Spectr. Temp. Dome Temp./Hum. /
Comp time behind Astro by 4 secs
I had it right on on Thurs-Fri.

Comparison Exp. Mag.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	# Columns Emulsion	Program	Remarks	Quality
gear down at END										
0 x0 F05	good	5.38	F2 IV			BS	71		No wind at all	
								7	s/slope 	Fine
9 x0 G4						BS	71		no change of box or image from previous	
								7	s/slope 	
0 x0 G01 just left gear						BS	71		no change from previous image moving down & to right	
								7	s/slope 	
0 x0 G08 just left gear						BS	71		again, no guiding or box changes	
								7	Flat	
9 x0 10 (good soso)				Big Done Turn		BS	71	very light North breeze	Image re-focused first Image re-centered first	
				between these integrations				7	OK s/slope 	
9 x0 4:10 just leaving worm						BS	71		Image moving down in Dec No change in mag guiding from previous	
								7	I may change it later.	
9 x0 Just noticed that date on best computer is wrong - ie									Sat May 12/1987	
0 x0 0:1 about soso				no wind at all		BS	71		Image re-centered first & focussed	
start leaving worm)				meridian passage				7	slope 	
0 x0 0:19						BS	71		no guiding or box change from previous int image may have gone too far Left	

101

cont

Emulsion Batches:

Date May 3-4/87 Observers T.H.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
PT600069.HN#	Analysis of BS 5110	1987.5							
70.KWK	BS 6695	17 55.8	+37 15	23 39 42	23 47 54	03 40 E	+	200	x0
70.AN#	Analysis	OK							
71.KWK	BS 6695			23 50 40	23 53	03 35 E		70	x0
71.AN#									
72.KWK	BS 6695			23 55 32	00 36 39	02 50 E		999	x0
72.AN#	Note this one								
73.KWK	BS 6695			00 40 11	01 21 18	02 06 E		999	x0
73.AN#									
74.KWK	BS 6695			01 25 20	02 06 27	01 21 E	+37 25	999	x0
74.AN#									
75.KWK	BS 6695			02 10 11	02 51 18	00 35 E		999	x0
75.AN#									
76.KWK	BS 6695			02 55 42	03 03 54			200	x0
	Not able to save or analyze - hung up								

Spectr. Temp. Dome Temp./Hum. Transparency Conditions ... *Fire* ... 102 ...
 Focus *Barometric pressure fairly high* 102.6 kpc & rising *V* light N wind
 Spectr. Temp. Dome Temp./Hum. *37.4/65.7* @ 0 hr EST

Comparison Filter Exp	End Exp. Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	# Columns Emulsion	h.f.p. P.H.	Program	Remarks	Quality
	<i>near posn</i>								7		<i>slope</i> 	
0	K.1 Just OK	5.20	K1				BS	71		<i>exactly same dec as previous star.</i>	<i>started @ Left of Fld.</i>	
	<i>starting to leave worm (very exactly noted)</i>								7		<i>slope</i> 	
0	K.5 fully OK						BS	71			<i>no change to guiding or box</i>	
	<i>engaged in worm</i>								7		<i>slope</i> 	
9	L 4 fully so so						BS	71		<i>getting close to west of Dome opening @ End</i>	<i>image moving right at first</i>	
	<i>engaged in worm</i>								7		<i>wow</i> 	
9	L 4 fully poor						BS	71		<i>Far Right of Box at End</i>	<i>moving down no changes to guiding in Dec & To Right or Box</i>	
	<i>engaged</i>								7		<i>slight slope</i> 	
9	M 4 fully OK						BS	71			<i>had to Recenter image</i>	
	<i>engaged</i>								7		<i>semi flat</i> 	
9	N 4 fully so so						BS	71			<i>no change to box or guiding image</i>	
	<i>engaged</i>								7		<i>semi flat</i>	
0	N 2 just so so						BS	71			<i>near RH of Box no changes to image since last int's</i>	
	<i>leaving worm</i>								7		<i>near</i>	

103 Mon-Tues

Date May 4-5/87

Observers Jh

Emulsion Batches:

Clock's Date Reset... Clock within 2 sec of Astro

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	#Frames Type/Filter	Comparison Exp. Int.
DT 0000 76.KWK BS 5392		14 23.6	+5 53	19 54 12	20 02 24	E	+6 03	200	x0
76.ANH	Analysis								
77.KWK BS 5392				20 05 49	20 14 01	E		200	x0
77.ANH									
78 BS 5392				20 16 57	20 25 09	03 27 E		200	x0
78.ANH									
79 KWK BS 5392				20 30 38	21 11 45	02 40 E	+6 03	999	x0
79.ANH									
80.KWK BS 5392		14 23.6	+5 53	21 14 18	21 55 25	E		999	x0
80.ANH									
81.KWK BS 5392				21 58 55	22 40 02	01 11 E		999	x0
81.ANH									
82 BS 5392				22 43 46	23 23 53	00 27 E		999	x0
82.ANH									
83.KWK BS 5392				23 27 06	23 55 54	00 04 W		700	x0
83.ANH									

Start of Sky Spect
+00

Spectr. Temp. Dome Temp./Hum. 50°F / 146% Air pressure 102.9 kpc steady no wind Transparency Conditions Fine 104

Focus

Spectr. Temp. Dome Temp./Hum.

of Astro

comparison

x0

x0

x0

x0

x0

x0

x0

x0

Worm gear Exp. Mtr. ② End	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	PH	Columns Program	Remarks	Quality
M:7 just Starting to leave worm (very exact)	5050	5.22	A5V	BC		BS			71		
05 firmly in worm						BS		9	OK - slope	dip starting down @ end	
03 well in						BS		9	OK slope		
0.2 just left worm								9	OK slope	Repositioning up to lower left before starting	
0.4 well poor in worm						BS		9	OK slope	Recentered image before start	
0.3 well in poor						BS		9	OK slope	had to move dome @ Frame # 690	
0.3 well in OK						BS		9	OK slope	Image moving close to upper R of box @ end	
0.2 just left gear								9	OK slope	Recentered image before start	
0.2 well in 5050						BS		9	OK slope	Dome turn @ 510th frame	
0.3 just left worm	OK					BS		9	OK slope	Recentered & focused before start	
								9	OK slope	Flat → slope	
								9	OK slope	no change from previous image	
								9	OK slope	no change from previous image	

Meridian passage at
583 th frame

105

cont

Date May 4-5/87 Observers T.J.

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.
PT 0000 84.KWK	BS 5392			23 58 36	00 27 24	00 37 W		700	x0
84.AN#				end of Sky Spectrum	00 29	"			
85.KWK	BS 6220	16 42.5	+38 57	00 36 27	00 44 39	01 25 E	+	200	x0
85.AN#	Note. The intention of setting on BS 6220 at this time is to match for Hr L, Dec and Gear of								
49966T	Sky Spectrum while doing BS 5392			20 31	00 29	00 38 W	+6 03	FeNe clear	45-45
86.KWK	BS 6220	16 42.5	+38 57	00 47 59	01 29 06	00 41 E		999	x0
86.AN#	Analysis								
87.KWK	BS 6220			01 33 33	02 14 40	00 05 W		999	x0
87.AN#									
88.AN#	BS 6220			02 18 17	03 00 18	00 51 W	+39 07	999	x0
88.AN#									
89.KWK	BS 8097	21 09.7	+10 05	03 11 14	03 19	E	+10 16	200	x0
89.AN#	Note - designed to match obs of 46.KWK → 48.5000								
* 90.KWK	BS 8097		(didn't save or analyze)	03 23 03	03 39 29	E		400	x0
	11			03 45 00					
DRTEST	Bombard again ?								

Spectr. Temp. Dome Temp./Hum. Transparency Conditions *No wind at all* 106

Focus

Spectr. Temp. Dome Temp./Hum. *102/65.2...*

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	<i>n.f.f.</i> F.H.	<i>columns</i> Program	Remarks	Quality
x0	0.4 just left	OK	5.22	A5V			BS			71	no change from previous iuts	
									9		OK same as last one	
x0	T:6 finally		4.45	G7III-IV			BS			71		
r of	in worm observations of Apr 28/29 starting at DT000039.1KWK								9		Big amplitude sl slope	
e 45-	50				BC	1200/507	BS	II-E	5			not much
9 x0	1.6	<i>poor</i> OK					BS			71	image recovered before start	
									9		Flat - OK	
9 x0	V6 well in gear						BS			71	no image change from previous integrator	
									9	71	sl slope	
9 x0	V:7 findi in gear	<i>so so</i> Move/dome			at 460 th frame		BS			71	moved image up in Dr to avoid BS	
									9	slope	Image getting close to upper left of Box, but didn't get too far by end.	
0 x0	W10	poor	4.95	Fopv			BS			71	Prob OK	
									9		OK slope	
00 x0	1.3 well in	poor					BS			71	no guidy or box change from previous	
	V:17	poor					BS			71	" " " "	

107

Tues-Wed

Date May. 5/6/87..... Observers T. J. ... Ly.....

Emulsion Batches:

8^m 680 Ital-E 375..... 04107
5^m 680 Ital-E 275..... 21 Apr

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.
49966F	Focus test			19 42		0 0	-1° 15'	FeNe Clear	120 40
DT0000 90.KWK (x Vir) closed db1		12 41	-01 23	19 52 57	20 01 09	2 04 E	"		
DT 90.A/H	" "								
Fm 24	" "								
25	" "								
49966	HD 86360	09 52.9	+12 55	20 17	21 38	2 16W	+12 40	FeNe Clear	90 90 90
49966T	Spot Culn for 49966-72,			15 mi @ 124		175V 15V 15V 3900 4300 4810			
49967	HD 139892	15 35.6	+36 58	21 49	23 20	01 42E	+36 51	FeNe Clear	90 90 90
49968	"	"	"	23 24	00 15	00 47E		"	90 90 90
49969	"	"	"	00 20	01 10	00 07W		"	90 90 90
Fm 26.KWK	"			00 21 03					
49970	HD 139892	15 35.6	+36 58	01 17	02 09	01 06W		FeNe Clear	90 90 90
Fm0000 27.KWK BS 7141 ^{serp} db1		18 55.6	+4 11	02 18		02 00 E		Fm 26.KWK	
DT0000 91.KWK	"	Just too see what happens		02 21 32		02 00 E			
91.A/H	"								

Spectr. Temp.

Dome Temp./Hum 55.9 / 40.7

Dome Temp./Hum.

Transparency Conditions ... *Free* 108

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	120	2600				BC	1200/50.7	BS	IIcO-E	5		Center More Red @ Blue and Center Red	✓
	40	2550											
		X10 in worm @ end				Image above slicer		BS			71 columns	I know, I'm early, just for fun of it.	
						"		BS		9 nfp		Flat.	
						"		BS			71		
						"		BS			71		
	90	22000											
	90	21300	OK	5.22	B9IV	BC	1200/50.7	BS	IIIcS-efg	5	SB Blh		OK
									IIIcS-efg				✓
	90	17000	Poor	5.0	B7V	BC	1200/50.7	BS	IIIcS-efg	5	SB-Ly	seeing getting very bad	OK
	90	20000											
	90	20023	Fine	"	"	"	"	"	"	"			OK
	90	20,000											comp OK
	90	20,200											exp OK!
	90	20,200											
			Fine					BS				(but fuzzy edges??)	
	90	20,300											
	90	19900	Fine	5.0	B7V	BC	1200/50.7	"	IIIcS-efg	5	SB-Ly		OK
		as well	OK	4/4		PH 103°	Sep 22.3	in 1926	in Slicer	Fld		Field scaling purposes	
		0.5 just beginning to leave specrm						BS	71 columns	nfp 9		ok well	

pg #2 cont

Emulsion Batches:

[illegible]

Spectr. Temp. Dome Temp./Hum. Transparency Conditions ... *Fine* 110....

Focus

Spectr. Temp. Dome Temp./Hum. *+44.9/50.3*

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
90 90 71	<i>Blue filter</i> 20,200	<i>5050</i> Fine	5.0	B7V	BC	1200/50.7	BS	<i>Dal-ef</i>	5	SB/Ly	T=52.9 set 389	OK
130	7198											
	29825	<i>poor</i>	3.93	R2111	"	"	"	"	"	std vel		<i>fine</i>
	<i>near posn</i> <i>@ End</i>	<i>Fine</i>	5.38				BS		nfp	# columns	<i>Dome temp = 60°F H = 40%</i>	
x0	<i>F:9 just</i> <i>Leaving</i>									71	<i>Bur pres 101.2 & falling</i>	
									7		<i>Yes, it has the dip</i>	
x0	<i>F:6 Firmly</i> <i>in gear</i>	<i>Fine</i>								71		
	<i>(program didn't like an nfp of 7 this time) 9 vs slope — 5.5 dips all right</i>											
x0	<i>Note RH end of worm starts to engage gear after LH end 71</i>											
	<i>has left gear. It is when RH end is starting to engage that the rapid West "dip" starts.</i>											
	<i>I would think that a slight lowering of RH end of plate would be the direction to go. Tu</i>											
x0	<i>G:4 firmly</i> <i>in</i>	<i>Fine</i>							9		<i>Flat</i>	
							BS			71	<i>cloud by 570 th. turned up intensifier</i>	
									9		<i>Lost by 640th</i>	
										<i>vs slope</i>		

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.
PICCO 96.KKK	BS 5392	14 23.6	+5 53	21 46 39	21 54 51	E +		200	x0
I checked visually on outside monitor to note the relative pos'n of worm 90 sec periodic error. When "dip" starts, The RH worm is starting to get farth fully into the									

Spectr. Te
Focus ...
Spectr. Te

Exp. Mtr.

year

text no

an

Conc.

is the

The

Transparency Conditions .. *semi-closely* 112 ..

Spectr. Temp.

Dome Temp./Hum.

[illegible]

113 Thurs - Fri

Date MAY 7-8/87..... Observers Th. / Ky.....

Emulsion Batches:

...II-0-315-04107

...III 95:479. 215. ... 21 Apr

[illegible]

Spectr. Temp. +53°F

Dome Temp./Hum. 148°F/45%

Transparency Conditions Fine 114

Focus 389

Spectr. Temp. 48°F

Dome Temp./Hum. 40/42%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Blue filter											
3500	OK	6.2	AOV	BC	1200/507	BS	1700-e	5	SB Ly	No severe RH oscillations?	slack
3500											
20100											
20054	5050	500	B7V	"	"	"	1700-e	5	SB Ly		OK
1960											
20005	50-50	"	"	"	"	"	"	5	SB Ly		OK
17600											
17600	11	"	"	"	"	"	"	5	"		OK
							"				V

115 Tues. - wed.

Date May 12-13/87 Observers Lgt / Tn

Emulsion Batches:
8^m 68° II-0-R315-04107
5^m 68° II-1-J-069.215-21 Apr

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.
DT0000 97 ^{KWK}	HD 66751	7 ^h 59 ^m .9	+70°.0	20:11:12	20 19 24	3 13 W	+69° 38'	200	x0
97.Ant#	Looks fairly flat, not much if any of the			90 sec periodicity					
49977	HD 66751	7 ^h 59 ^m .9	+70°.0	20:26 ^m	23 19	6 13 W	+69° 38'	Fe Ne clear	45 45
49977T	Spot Cn'n for 49977-78, 81.				15 min @ 15V	04 3900	03 4300	02 4810	45 45
49978	HD 158633	17 ^h 25 ^m .3	+67° 24'	23 ^h 32 ^m	01 ^h 56 ^m	0 ^h 24 ^m E	+67 28	Fe Ne clear	45 45
49979	HD 137909	15 ^h 23 ^m .7	+29° 27'	02 06	02 33	2 ^h 11 ^m W	+29° 19'	Fe Ne clear	130 130
49980	HD 159561	17 ^h 30 ^m .3	+12° 38'	02 42	02 47	0 ^h 18 W	+12° 44'	Fe Ne clear	130 130
49980T	Spot Cn'n for 49979-80, 82.				15 min @ 17.5V	04 3900	15V 4300	15V 4810	65 65-65
49981	HD 161096	17 ^h 38 ^m .5	+4° 37'	02 ^h 56 ^m	03 ^h 02 ^m	0 ^h 24 ^m W	+4° 44'	Fe Ne clear	65 65-65
49982	HD 182640	19 ^h 20 ^m .5	+2° 55'	03 ^h 11 ^m	03 44	E	+3 15	Fe Ne clear	75 75
DT0000 98.KWK	Drive Test.	"	"	03 4830	03 5642	00 23E	"	# Frang 200	int x0
98.Ant#	Analysis						"		
99.KWK	HD 182640			04 0130	04 09	00 11E	"	200	x0
99.Ant#							"		
49982F	Focus test					00 08E	"	Fe Ne clear	

Spectr. Ten
Focus. 3A
Spectr. TeExp. Mir
8/100/60T: 2 Just
Leaving

(W)

3500
35613522
3523

39149

35259

7109

22316
20115809 in
warm up

end

6.7 in
warm

4107
(Apr

Spectr. Temp. 59°F
Focus $\rightarrow 386 \rightarrow 389$
Spectr. Temp. 44.5°F

Dome Temp./Hum. $53^{\circ}\text{F} / 64\%$
Dome Temp./Hum. $43^{\circ}\text{F} / 75\%$

Transparency Conditions ... a bit hazy ... clear later

Comparison
Filted Exp

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Blue filter T:2 Just Leaving	O.K.	$V=6.48$	dF8	BC	1200/50.7	BS			71 columns	Reversed	
(not much drive error expected at $+70^{\circ}$)								nfp = 9 p/s		not bad off hand	
3500 3561	O.K.	$V=6.48$	dF8	BC	1200/50.7	BS	IIa0-e	5	Asm-spec/KK	change focus $\rightarrow 386$	sl wk uneven
3561							IIa0-e				wk
3522 3523	O.K.	7.09	dK1 or 69V	BC	1200/50.7	BS	IIa0-e	5	Asm-spec/KK	no longer reversed	good
39149	good	3.93	F0p	BC	1200/50.7	BS	IIIaJ-efg	5	"	T=488 Set 389	blue end focus poor
35259	good	2.2	A5 $\overline{\text{IV}}$	BC	1200/50.7	BS	IIIaJ-efg	5	"		fine
							IIIaJ-efg				
7109	O.K.	3.93	K2 $\overline{\text{III}}$	BC	1200/50.7	BS	IIa0-e	5	Std vel		fine
22316 20115	O.K.	3.68	F0 $\overline{\text{IV}}$	BC	1200/50.7	BS	IIIaJ-efg	5	Asm-spec/KK		fine
B09 in worm end	soso	n	n						71 columns		
									similar 90sec per unit slope		
B07 in worm											
				BC	1200/50.7	BS	IIa0-e	5		look at this one	
										Set 389 T=45.2	sl wk blue end

117

Wed.-Thurs.

Date

May 13-14/87

Observers

Lgt / T.

 Emulsion Batches: 04107 ~~14024~~
 5^m 68^m ~~11.0-2~~ old batch finished
 8^m 68^m 11.0-2 315 - Apr 16

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.
49983F1	Focus Test				19 56	0 ^h 02 ^m W	+1° 50'	Fe Ne clear	120 40
83 F2	Focus	"				2 25 W	+37°	"	90 30
DT 000100, KWK 49983	HD 95735	10 57.9	+36 38	20 14 11	20 22 23	2 28 W		200 frame	X0
49983	"	"	"	20 ^h 24 ^m	23 39	3 ^h 45 ^m W	+36° 16'	Fe Ne clear	35 35 35
49983T	Spot Cul'n for	49983, 84, 86			15 min @ 15V	P4 D3 3900 4300	D3 4810		
DT 000101, KWK	HD 95735			23 41 13		4 02 W	+36 16	200 frame	X0
102, AN#									
102, KWK 49984	HD 140538	15 39.1	+2 50	23 55 46	00 03 58	0 32 E		200	X0
102, AN#									
49984	HD 140538	15 39.1	+2 50	00 09	01 48	1 13 W	+2 34	Fe Ne clear	45 45 45
DT 000103, KWK 49984	"	"	"	01 50 58	01 59 21			Fe Ne clear	200 frame X0
103, AN#									
104, KWK 49985	HD 159561	17 ^h 30.3	+12° 38'	02 06 23	02 14 46				
104, AN#									
49985	"	"	"	02 19	02 25	0 ^h 01 E	+12° 44'	Fe Ne clear	130 130

Spectr. Te

Focus...

Spectr. Te

Exp. Mfg

Blue 4/4

C5 shank

to lens cap

1800

1800

Fod in

warm

F:3

Leaving

3504

3500

H:1 con

in

J in

3-589

Spectr. Temp. 58°F

Dome Temp./Hum. 55°F/50%

Transparency Conditions ... Fine ... sl. hazy ... 118

Focus ... 386

Spectr. Temp.

Dome Temp./Hum.

NEW D19

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Blue 4 Ha				BC	1200/50.7	BS	II 40-e	5			Center hole blue end
				"	830/40.2	"	"	4		Set 388 T=57.5%	Center sl. Rel
C5 starting to leave gap	fine					"	II 40-e	5	71 columns	nfp for AP# = 7	fairly flat
1800	fine	V- 7.60	Mb	BC	830/40.2	"	II 40-e	5	Asm Sp Kk		sl. flex
	poor						II 40-e				✓✓
F 94 in worm						BS			71 columns	No severe RA oscillation (seems cured)	
							Afp=7			slope	
F 3 Leaving	fine	6.55	dG5	BC	1200/50.7	BS	II 40-e	5	71 columns		1.07
							nfp=7			Obvious 90 sec period	
3504	50-50	6.55	dG5	BC	1200/50.7	BS	II 40-e	5	Asm Sp Kk		good
3500	OK					BS			71 columns		1.11
4:1 coming in							nfp=7				
1 in	50-50	2.2	A5 III								
34589	OK	2.2	A5 III	BC	1200/50.7	BS	III aJ-efg	5	Kk asm sp		good

119 Pg. #2 Wed-Thurs.

Date May 13-14/87 Observers Lgt Hⁿ

Emulsion Batches:

Emulsion Batches:
..III. S. e. g. 2.1.5..... Apr 21

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.
49986	HD 187691	19 ^h 46. ^m 2	+10° 10'	02 35	03 04	1 ^h 37 ^m E	10° 34'	Fe Ne Clear	65 65
49987	HD 182640	19 ^h 20. ^m 5	+2° 55'	03 12	03 37	E	+3 16	Fe Ne Clear	75 75
49987T	Spot Calc	for 49985, 87			15 min @	17.5V D4 3900	15V 4300	15V 4810	
DT000105, KKK	HD 182640			~ 03 40	04 04 35	00 10 E	+3 15	600	X0
105, AP# Analysis									
49987F1	Focus test	May 20 (after today's Rot'n of mount.)				0 0	+10° 00'	Fe Ne Clear	140/50
F2	"					"	"	"	11
F3	"					"	"	"	11
F4	"					"	"	"	11
Dev @ 68°F		7 min May 20/87 Tn							

Spectr. Temp. Dome Temp./Hum. Transparency Conditions fine - sl. hazy 120

Focus

Spectr. Temp. ~~50°F~~ 53°F

Dome Temp./Hum. 150°F/80%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6128	OK	5.7	F8V	BC	1200/50.7	BS	IIaO-e	5	std vel		s/wk
20082 20093	OK	3.68	FoIV	BC	1200/50.7	BS	IIIaJelg	5	asm sp/100	development	ok exp
							ILT-Jelg				il
K ⁰ 5 in. worm	OK								71 columns		
							np=7			Look at this one!	
										(Polaris move was well after obvious turn around of inap on screen)	
				BC	1200/50.7	BS	IIaO-e	5	Set 386, T = +56.5°F		center sl blue in red sloped
								4	"		center sl blue
								3	"		center blue
								1	"	T = +57.0°F end	center sl blue
Note										LHS of PH #1 interferes with plate cap. ie catches it making uncoupling difficult.	

121 Thurs / Fri

Hdy = Handry

Emulsion Batches:

Date May 21 / 22 / 87... Observers Jm - Hdy.....

Plate No.	Object	R.A. 1900 1987.5	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
107ri DT 00107ri	5 α Cr B	15 34.2	+26 45	20 37 23		E	+26 54	D-frances 600	x0
107. An#									
108ri	"			21 10 45	21 18 57			200	x0
108. An#									
109ri	"			21 23 01	21 47 41			600	x0
109. An#									
110ri	"			21 57 05	21 21 46	1 33 E		600	x0
110. An#									
111ri				21 28 31				20	x0
412									
112ri	5 α Cr B			21 33 12	21 43 22			249 999	aborted x0
112. An#									
113ri	"			21 48 25				20	x0
113. An#									

Spectr. Te

Focus...

Spectr. T

End

Exp. Mtr.

9.44 pm

4.3

L:5

M:3 just

Leaving

M:6 just

Leaving

M:10 in

Spectr. Temp.

Dome Temp./Hum. $7.59^{\circ}\text{F}/182\%$ Transparency Conditions *Very hazy* 1221

Focus

Spectr. Temp.

Dome Temp./Hum. $7.60^{\circ}\text{F}/192\%$ Comparison
Filter + Exp

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H. n.p.f.	Program # columns	Remarks	Quality
<i>End warm gear-push</i>											
<i>4:3</i>	<i>OK</i>	<i>2.2</i>	<i>ADV</i>	<i>BS</i>		<i>BS</i>			<i>71</i>	<i>some sensitivity variation due to clouds. Dome turned @ Frame #470</i>	
								<i>7</i>		<i>slope / fairly flat</i>	
<i>4:5</i>						<i>BS</i>			<i>71</i>		
								<i>7</i>		<i>slope / obvious 90 sec period</i>	
<i>No 3 just Leaving</i>	<i>Fine</i>					<i>BS</i>			<i>71</i>		
								<i>7</i>			
<i>No 6 just Leaving</i>									<i>71</i>	<i>(@ Frame 510 I increased TV guider gain slightly due to clouds)</i>	
								<i>7</i>		<i>interesting</i>	
									<i>71</i>		
								<i>7</i>		<i>trying to see short period oscilⁿ of order of 3/4 sec for dbl beat.</i>	
<i>No 1 in</i>						<i>BS</i>			<i>71</i>	<i>cloud at times</i>	
								<i>7</i>		<i>" "</i>	
									<i>23 columns</i>	<i>in cloud</i>	
								<i>7</i>			

123

Date May 28-29/87 Observers KH-Jg.....

Emulsion Batches:

Emulsion Batches:

... <u>II-1-1</u> ...	215	Apr 21
... <u>II-1-2</u> ...		Apr 16

[illegible]

21
pr 16

Spectr. Temp. 77°F

Dome Temp./Hum. 80°F / 75%

Transparency Conditions hazy 124

Focus 384

Spectr. Temp. 74.5°F

Dome Temp./Hum. 70°F / 82%

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
125		Blue filter											
125		30000			1	BC	1200/50.7	BS	III 6.5-25	4	std. val		fine
50		8860	OK	3.93	Fop	"	"	"	II 40-e	4	Asm Sp		fine
50		8033	"	"	"	"	"	"	"	4	"		fine
50		9256	"	2.2	F2	"	"	"	"	"	"		fine
50		9000	"	"	"	"	"	"	"	"	"		fine
127									"				"
480		2032							"				"
60-65		2068	OK	6.55	d65	BC	1200/50.7	BS	"	4	Asm Sp		not ok
140						"	"	"	"	4	T = 74.5°F set = 384		OK

125

Sun - Mon

Date May 31 - June 1/87 Observers Tn... (KK... checking a.m.o)

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	Int Exp.
DT000114 Ri	BS 5392	14 23.6	+5 53	20 28 08	20 36 20	E	+6 01	200	x0
114, 9/14									
115 Ri	"	curtailed	due to cloud	20 42 05	21 02 41	01 03 E		500 999	x0
115, 11/14									
* 116 Ri	"			21 05 58	21 47 05	00 17 E		999	x0
June 1/2	Focus tests	Tn	H=90%	Dome T=	69°F				
49994 F1	Additional focus tests before new adjustments					0 0		FeNe Clear	150 50
F2	(Developed @ 4 min 70°F same night)								
F3									
F4									
F5									
F6									
	Remember								
	Remember my Trouble sheet about II PH. Plate copper								

Spectr. T

Focus..

Spectr.

Wavelength

Exp. Time

Depth

X: 180

14

Y: 9 Jcs

Left work

Note

Exp. Time

2500

2330

grabs

[illegible]

127

Date 3 June 1987 Observers KK

Emulsion Batches:

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.....

[illegible]

Transparency Conditions 128

Spectr. Temp. Dome Temp./Hum.

Cross

[illegible]

129

Wed - Thurs

$$\#_g = \text{Hendrey} = \text{Hdy}$$

Date .. June .. 3 .. 4 .. / .. 87 ..

Observers

Hdy-Tn.....

Emulsion Batches:

IIaO-e..... May 21
IIaO-e..... June 2

W. A. S. C. F. J. June 2

[illegible]

Spectr. Temp. 73°F.....

Dome Temp./Hum. 65°/80%

Transparency Conditions ... *5/1424* 130

Focus 386

Spectr. Temp.

Dome Temp./Hum. 59.7 / 82.10

Comparison Filter	Exp.	Exp. Mtr. <i>Blue filter</i>	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
70	70	8000	OK	2.2	F2	BC	1200/50.7	BS	IIaD-Q	4	Asm Sp		OK
"	"	7923	"	"	"	"	"	"	"	4	"		OK
		* clsb for 49999 → 50002						"					✓✓
70	70	15045	poor	3.93	Fop	BC	1200/50.7	BS	IIIaJ-eg	4	Asmsps	Reversal	Fe s/wk S/wk
		15000							IIIaJ-eg				
X0	X0	B:9 in norm						BS	7/columns			Reversal	
									npt=9			reversed in RH dirn of course. I guess comp ok	ok
110	110	28464	poor	2.2	A5II	BC	1200/50.7	BS	IIIaJ-eg	4	H-sm Sp	unreversal	comp s/wk S/wk
110	110	22983	"	3.68	F0IV	"	"	"	"	4	"		S/wk

131 Thurs - Fri

Hdy

Emulsion Batches:

..T.C.O.-e..... May 21

Date June 4-5 / 87 Observers #1-Jn

Thurs. June 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	Ex
49999	HD 66751	07 59.9	+70 00	20 39	23 15	7 43 W	+69 39	Fene clear	60 60
[50K]	HD 158633	17 25.3	+67 24	23 31	01 54	1 05 W	+67 26	"	60- 60-
50001	HD 8890	01 22.6	+88 46	02 10	02 14	7 38 E		"	90 90
50002	"	"	"	02 21	02 24	7 28 E		"	90 90
50003	AD 209790	22 00.9	+64 08	02 39	04 00	E +		"	90 90
50003T	Spot Cul/h for 50003			15 min @	17.5V D4 3900	15V 4300	15V 4810		
	HD 222368	2-	No time for	std vel.	- Sorry.				
			BS seems too slow!	Must compare rate with slit					TU

May 21
4/2

Spectr. Temp. 67°F
Focus 386-388-390
Spectr. Temp. 54°F

Dome Temp./Hum. 63°F/80%
Dome Temp./Hum. 50°F/88%

Transparency Conditions Fine 132

Comparison e/Filter Ex	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
60	3000	soso	7	df8	BC	1200/50.7	BS	ITeO-e	4	Asm Sp	reverse	slut
60	3310											
60	3201											
60	3220	OK	7.09	dk1	"	"	"	"	4	"	unreversed Set 388 T=82°F	slut
90	7798	"	2.2	F2	"	"	"	"	4	"		fine
90	7487		"	"	"	"	"	"	4	"		"
90	17698											
90	17780	OK	4.63	A3m	"	"	"	MaJ-efg	4	"	Set 390 T=54°F nice dbl EW	slut
								MaJ-efg		"		✓✓

4/0 slit

Spot culn of previous night is for these ITaOs also.

Note - blent extrain Maj box is from older Maj unexp box Apr 9.
Just threw it in for fog test.

133

Date JUNE 8-9/87 ^{WWT} WWT Observers KK-R

Emulsion Batches:

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[illegible]

Transparency Conditions 134

Spectr. Temp.

Dome Temp./Hum.

[illegible]

135

Tues. - Wed.

Date _____

June 9-10/87

Observers

Lgt - Ri

Emulsion Batches:

No. 315-05217...
 IIcrist 197-04097...

Ilcnet 1A7-04097...

[illegible]

Spectr. Temp. ~~58°F~~
 Focus ~~set 387~~
 Spectr. Temp. ~~58°F~~
 Dome Temp./Hum. ~~53°F/59%~~
 Dome Temp./Hum. ~~46°F/59%~~

Spectr. Temp. ~~58°F~~
 Focus ~~set 387~~
 Spectr. Temp. ~~58°F~~
 Dome Temp./Hum. ~~53°F/59%~~
 Dome Temp./Hum. ~~46°F/59%~~

Transparency Conditions ~~clear~~ WITH SOME CLOUDS
 136

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		BLUE FIC 101				BC	1200/50.7	BS	IIaO-e	4		58° F set F = 387	
	90	9002	poor	2.2	F2	BC	1200/50.7	BS	IIaO-e	4	KK Asm Sp	numbered '4' on plate	fine
	90	9049	poor	2.2	F2	BC	1200/50.7	BS	IIaO-e	4	KK Asm Sp		fine
	90	20010		3.93	Fop	BC	1200/50.7	BS	IIaJ-ef	4	KK Asm Sp		OK
	90	20006							IIaO-E				✓
	60	3750	O.K.	6.55	dG5	BC	1200/50.7	BS	IIaO-E	4	KK Asm Sp	SOME CLOUDS 56° F (spect. temp.) leave focus	OK
	60	3768							IIaJ-ef				✓
	120	35008	O.K.	2.2	A5III	BC	1200/50.7	BS	IIaJ-ef	4	KK Asm Sp	Sp. T = 53° leave focus	
	120	40018	O.K.	3.68	F0IV	BC	1200/50.7	BS	IIaJ-ef	4	KK Asm Sp		Fine
	120								IIaO-E	APRIL 16			✓-✓
	120	39517	O.K.	3.93	K2III	BC	1200/50.7	BS	IIaJ-ef	4	Rad. Vel. 5H		Fine
	120	40017	O.K.	V=3.78	F5IV	BC	1200/50.7	BS	IIaJ-ef	4	KK Asm Sp	T=51° F ⇒ set F=388	Focused OK exp
	140					"	"	"	IIaO-e	4			✓s/Blue

* Note #50012 cannot be used with this Spot because it ended up developed slightly later at later date.

137 Wed. - Thurs.

Date June 10-11 / 87 Observers Lgt-Ri -KK

Emulsion Batches:

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.....

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[illegible]

Spectr. Temp. 63°F.....

Focus 385

Spectr. Temp. ... 60° F

Dome Temp./Hum. 60°F/47%

Dome Temp./Hum. 56°F / 66%

Transparency Conditions *clear, some have*

138

[illegible]

139

Sun - Mon

Date June 14-15/87... Observers Jh.....

Emulsion Batches:

4³/₄ 6p III-e₁..... June 2
 II-e₂..... June 10

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.
50018	HD 137909	15 23.7	+29 27	21 16	22 11	0004E	+29 19	FeNe clear	90 90 90
50018T	Spot Cal'n for 50018, 22, 24 + (next night)				15 min @ D4	3900	15V 4300	15V 4810	
50019	HD 158633	17 25.3	+67 24	22 20	23 49	0024E	+67 29	FeNe clear	60 60 60
50020	HD 8890	01 22.6	+88 46	00 03	00 07	0906E	+89 21	n	90 90 90
50021	"	"	"	00 13	00 21	0852E	n	n	90 90 90
50021T	Spot Cal'n for 50019-21, 50023 + (next night)				5 min @ 15V		D4 D3 D2 3900 4300 4810		
50022	HD 159561	17 30.3	+12 38	00 33	00 47	0 27W	+12 44	FeNe clear	90 90 90
50023	HD 161096	17 38.5	+4 37	00 55	01 06	0 38W	+4 44	n	90 90 90
50024	HD 170200	18 23.1	+06 08	01 13	03 33	2 22W	+6 21	n	90 90 90
50024F	Focus test					0 0	+6 20	FeNe clear	140 50

Spectr. Te
Focus...
Spectr. Te

Exp. Mtr.
Power-Split

18.500
18.550

34.90
30.75

85.30

85.00

18.200
85.70

63.00

13.000
2.500

ne 2
ne 10

Spectr. Temp. 80°f

Dome Temp./Hum. $77^{\circ}\text{f}/60\%$

Transparency Conditions $sl\ cloudy$

Focus 383

140

Spectr. Temp. 73°f

Dome Temp./Hum. $67^{\circ}\text{f}/70\%$

Comparison
Filter Exp.

90
90

90
90

90
90

90
90

90
90

90
90

90
90

90
90

90
90

90
90

90
90

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
<i>Blue filter</i> 18,500											
18,550	OK	3.93	Fop	BC	1200/507	BS	IIIaJ-efg	4	Asm Sp Hk		* fine fog?
							IIIaJ-efg				
3490	OK	7.09	HK1	BC	1200/507	BS	IIaD-e	4	Asm Sp Hk	cloud at end	slwk
3075											
8530	OK	2.2	F	"	"	"	"	4	"		fine
8500	"	"	F	"	"	"	"	4	"	cloud	* fine
							"				uv
8200	OK	2.2	A5III	BC	1200/507	BS	IIIaJ-efg	4	Asm Sp Hk		* fine
8570											
5,300	"	3.93	K2III	"	"	"	IIaD-e	4	Std Vel		fine
15,000	OK	5.7	B8III	"	"	"	IIIaJ-efg	4	Ly prog	T=77f getting gusty	slwk
2,500	poor		IV							very slow 2nd half	
				BC	1200/507	BS	IIaD	4	"	set 383 T=73°f	sl Bine
										* dust spot @ upper slicer (reverse from recently)	

Date June 15-16/87 Observers Tn KK (some) / Tn.

Emulsion Batches:

4 3/4 690 Dr. L. e. g...... June 2

Ilco-e June 10

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.
KK 5	Fests of new	3200	ASA color film	on "Pluto"					
				I actually found Pluto	~ 22 hrs EST				
50025	HD 139892	15 35.6	+36 58	23 14	01 20	2 59 W	+36 49	FeNe clear	90 90
50026	HD 209790	22 00.9	+64 08	01 44	03 14	1 32 E	+64 44	FeNe clear	90 90
50027	HD 8890	01 22.6	+88 46	03 26	03 29	5 35 E		n	90
50028	11	n	n	03 33	03 39	5 25 E		n	n
DT 117R	Polaris	31	columns	200	frames				

2

70% / 603

U.S. / 17422

385.

68.4

65.../75

142

[illegible]

Thurs Wed

Emulsion Batches:

III. a-f, g, June 2

Pal-e..... June 10

[illegible]

Spectr. Te
Focus 30
Spectr. Te

Exp. Mtr.
Chas. H.

7800

22.200

17

1012.

1200

17.700

11

8100

7 vern

3000

9000

1210

500,

50511

Step 1

1

1

25

4

Spectr. Temp. 6.5° F

Dome Temp./Hum. 65°/90%

Transparency Conditions same as last.....

144

Exp.	Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
90-90	Blue filter											
7800												
22,200	Fine	5.00	BTV	BC	1200/50.7	BS	IITa-S-ag	4		Ly pgm	but too cloudy	
Note - bulk of this exp obtained in last hour												
								IITa-S-ag			Set life thru fld @ 23 55	VV
12,000	Fine	5.00	BTV	BC	1200/50.7	BS	IITa-S-ag	4		Ly pgm	seeing going, but clear for a change	
17,700	poor									+ mild oscillation in wind, I can't win on this star,		
8,100	OK	2.2	F	BC	1200/50.7	BS	IITa-e	4		Asm Sp k/k		fine
8000	"	"	"	"	"	"	"	"	4	"	Set 386 T=68°f	fine
9010	OK	3.6	B6p	"	"	"	"	"	4	"		OK
5000	poor	4.64	F7H	"	"	"	"	"	4	std vel		slwk
				"	"	"	"	IITa-O	4		T=65°f Set 386	OK
Stellar may be w.k. - (Decker or BS problems?)												
IITaOs go with Spot Cals of June 4/15												
KK - Only 1 IITa S strip in done												
P.S. Are old IITa's in vacuum OK? (no 4x5 for it)												
There are recent uses of them?												

145

Wed-Thurs

Date June 17-18/87..... Observers T.....

8^m 68^o

Emulsion Batches:

5^m 69^o

IIA-ee...3.I.I..... June 10
 IIIA-ee... June 2
 IIA-ee...3.I.I..... June 16

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.
50035 F	Focus test			20 20		0 0	+36 30	FeNe clear	150 50 inf
DT 118A1	HD 136202	15 14.2	+2 09	20 40 51	20 49 03	01 03 E	+1 59	200 frames	XO
118A1 ⁴									
50035	HD 136202	15 14.2	+2 09	20 55	21 17	00 35 E	+1 59	FeNe clear	90 90
50036	HD 139892	15 35.6	+36 58	21 23	22 09	00 06 E	+36 49	"	90 90 90
50037	HD 158633	17 25.3	+67 24	22 16	23 39	00 22 E	+67 28	"	60 60 60
FM 32A11	NGC 6543	17 58.8 ¹⁹⁵⁰	+66 38	.			+66 47	☽	
33	"			Saved for visitors etc (very opportune seeing) Prob < 1" well?					
34	"	high contrast							
35	"	"	"						
50038	HD 8890	01 22.6	+88 46	00 37	00 43	08 18 E	+89 21	FeNe clear	90 90 90
50039	"	"	"	00 50	00 56	08 05 E	"	"	90-90 90
50040	HD 195987	20 29.4	+41 32	01 12	03 44	00 38 W	+42 01	"	60 60 60
50040	T Spot Culn for 50035, 37, 40.				15 min @ 15V	D4 3900	D3 4300	D2 4810	
				(Very precise guiding; focus maximizing when highest contrast 5 longer int ic(x.14)					

Spectr. Temp. 72°f.....

Dome Temp./Hum. 68°f. / 50%

Transparency Conditions *Fine*

Focus ... 386

Spectr. Temp. . 65°

Dome Temp./Hum. $+60^{\circ} \text{F} \dots 62\%$

... ..

146

Comparison Iter	Exp.	Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
150	2339	Blue Filter											
50	2055					BC	1200/50.7	BS	098	4	Decker compler. fixed between now	No focus change or tilt change since last night.	cont slit
100	2055		OK	5.6	F8			BS	71cdun		a stlvel		
100	2055								9nfp			90sec period but flat	OK
90	7,500		fine	5.6	F8	BC	1200/50.7	BS	II ₄₀ -e	4	stlvel		fine
90	19,945		"	5.0	BTV	"	"	"	II ₄₀ -e	4	Ly pgm	Use previous night's spot color	
60	2070		fine	7.09	JK1	"	"	"	II ₄₀ -e	4	Asm Sp k/k		fine
60	2020		"									A nice Planetary Nebula	
60			"									Looks like a spiral galaxy to me. This shot a galaxy with a QSO in center to me.	
60			"									Looks like a gas Kar/or maybe	
60			"									(Negative looks better) God?	
90	8040		OK	2.2	F	BC	1200/50.7	BS	II ₄₀ -e	4	Asm Sp k/k	T=69° Coki	fine
90	8200		"	"	"	"	"	"	"	4	10	(next night)	fine
60	3400		fine	7.82	G9V	"	"	"	II ₄₀ -e	4	11		slut
60	3300								II ₄₀ -e				rr
60												Br 511 like moving NE past Vega @ 2 35 EST	

147 Thurs - Fri

Date June 18-19/87 Observers T.G.

Emulsion Batches:

II-00-e 3.IJ..... June 16

[illegible]

Spectr. Temp. 68°

Dome Temp./Hum. 63° / 60%

Transparency Conditions . *sl. cloudy* 148

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1: 90	7300	fine	5.6	F8	BC	1200/50.7	BS	JT-0-e	4	std vel		fine
1: 60	3500	"	7.62	G8V	"	"	BS	"	4	asm sp KK	some cloud	3' cut
2: 80	* + 500	38	39	(Previous Night)				"				uv
1: 90	8000	2.2	F	BC	1200/50.7	BS	"	"	4	Asm Sp KK		fine
1: 90	8000	"	"	"	"	"	"	"	4	"		fine

149

Tues-Wed

8^m 67°

Emulsion Batches:

J.D.C. 375

June 16

Date June 23-24/87... Observers K.K.-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
50045	Focus test			20 35		E	+2°	FeNe Clear	180
50045	HD 136202	15 14.2	+2 09	20 50	21 23	00 06 E	+1 58	FeNe Clear	90 90
35mm Camera	Pallas			21 46		1 sec exp 15 sec "	+25 32		
"	M92								
"	NGC 6543								
(Fm 000038 Tn)	NGC 6503	1987.6 17 50.0	+70 10	22 30			+70		
50046	HD 8890	01 22.6	+88 46	00 04	00 10	8 27 E	+89 20	FeNe Clear	90 90
50047	"	"	"	00 29	00 35	8 02 E	"	"	90 90
50048	HD 217675	22 57.5	+41 47	00 59	01 09	4 02 E	+42 23	"	90 90
50049	HD 219080	23 08.0	+48 51	01 27	01 49	3 33 E	+49 29	"	90 90
50049 T	Spot Calc	for 50045-52		15 min @ 15V		04 3900	D3 4300	D2 4810	
50050	HD 217782	22 58.0	+42 13	01 56	02 34	2 38 E	+42 50	FeNe Clear	90 90
50051	HD 196524	20 32.9	+14 15	02 45	02 59	0 13 W	+14 43	"	90 90
50052	HD 206901	21 40.1	+25 11	03 07	03 33	0 23 E	+25 44	"	90 90

4/26/16

Spectr. Temp. ... 76°F

Dome Temp./Hum. +75.9/60%

Transparency Conditions fine... getting hazy.....

Focus ... 384

Spectr. Temp. ... 72°F

Dome Temp./Hum. +66°F/82%

150

Comparison Filter Exp	Exp. Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
90	Blue filter											
90	No 90				BC	1200/50.7	BS	II ₄₀ -e	4		Hartmann mask not Running correctly.	
90	109	OK	5.6		"	"	"	II ₄₀ -e	4	std vel		slwt
Also Fin 000037819 for 159 x 159 pixels 300 frames (NGC 6503) Large faint galaxy												
90	8160	poor	2.2	FJ	BC	1200/50.7	BS	II ₄₀ -e	4	Asm Sp		fine
90	900	"	"	"	"	"	"	"	4	"	T = 74°F	fine
90	7,420	"	3.6	B6p	"	"	"	"	4	"		OK
90	8680	"	4.9	F0IV	"	"	"	"	4	"		slwt
								"				✓
90	8660	poor	5.7	A2	BC	1200/50.7	BS	"	4	Asm Sp Hk	73°F	slwt
90	8746	Fair to poor	5.4	F5IV	"	"	"	"	4	"		vs lwt
90	8650	"	4.4	F5IV	"	"	"	"	4	"		vs lwt
					* Hk	Last of cut II ₄₀		Thought there was more, but couldn't find any				

(51)

Wed - Thurs

$[M_n]_{-of}$ @ 68° 5 mins

Date . June 24-25/87.. Observers T₁.....

Emulsion Batches:

Emulsion Batches:

III a-l-efg	2A6	June 23
8 ^m 67 ^o II a-o-e	1A7	June 23

[illegible]

4me23
4me23

Spectr. Temp. ... 80°F ... 25°C
Focus ... 3.83 ...
Spectr. Temp. ... 75°F ...

Dome Temp./Hum. 80°F / 65%
Dome Temp./Hum. 72°F / 80%

Transparency Conditions ... *hazy ... slightly* ...

New II₂O batch

152

Comparison Filter	Exp.	Exp. Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	180					BC	1200/507	BS	0981st	4	in II ₂ O box	Hartmann mask wouldn't have on its own offer	center ✓ vs/Red
	60					"	"	"	III ₂ J-ef ₂	4	Ly pgm		
	900	2008	fine	5.00	B7V	"	"	"	"	4	AsmSp kK		OK
	900	9900	"	3.93	Fop	"	"	"	"	4			✓
	900	18053											
	900	8012											
	900	9994	OK	5.00	B7V	BC	1200/507	BS	"	4	Ly pgm		
	900	91700											
	900	14090	"	"	"	"	"	"	"	4	"	78°F 24°C	
	900	8300											
	900	2650	OK →	5.7	B8III	"	"	"	"	4	"	some have better results	
	900	8400	5050										
	900	7530	5050	4.64	F7V	"	"	"	II ₂ O-e	4	std vel		vs/wk

Note, extra III₂J plate is slightly fogged missing (#50012 - staged = tuck in box)

Wed-Thurs

Percy Tour

Emulsion Batches:

IlcD 147 30/Jan

Date JULY 8-9/87 Observers Jn

[illegible]

Focus

Dome Temp./Hum. +80°/92%

Transparency Conditions . . . 5/14/2019

154

Spectr. Temp.

Dome Temp./Hum. 70°/95%

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		Gear Pos noted								nfp	# columns		
X0		4	OK	V=4.86	G8III	.96 pix	B5			7	63	Analysis shows 90 sec still	
X0		Just leaving	850	"	"	.66 pix	"			7	63		
												Looks better than 119 AM	
		Echelle				1200/ .325	50P .285	ItoDe	1			F = .340	

155 Sun-Mon #1

Date July. 12-13/87... Observers T.H.

Emulsion Batches:

...Ilav.e... 1A7- Sun 23

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.
DT000121T _n	74 Oph	18 20.2	+3 22	20 42 46	20 50	2 26 E	+3 32	II Frang 200	Int x0
121 A _n [†]									
122 T _n	"	"	"	20 54 14	21 15 35	2 00 E		600 500 *	x0
122 A _n [†]									
123 T _n	"	"	"	21 18 50	21 25 55	1 50 E		200	x0
123 A _n [†]									
124 T _n	"			21 28 46	21 57 17	1 19 E		800	x0
124 A _n [†]									
50059	HD 8890	01 22.6	+88 46	22 28	22 32	8 53 E	+89 17	FeNo clear	290 90
50060	"	"	"	22 39	22 45	8 40 E	"	"	90 90
50060T	Spot C ₆ H ₆	For 50059-64 (next night)			15 min @ 15V	3900	D3 4300	D2 4810	
DT000125T _n	HD 187691	19 46.2	+10 10	22 57 31	23 04 37	1 44 E	+10 31	200	x0
125 A _n [†]									
50061	HD 187691	19 46.2	+10 10	23 09	23 48	0 59 E		FeNo clear	90 90
DT000126T _n	"	"	"	23 51 05	00 19 37	0 26 E		800	x0

Jan 23

Spectr. Temp. ... 85°F

Dome Temp./Hum. 85°F/73%

Transparency Conditions ... s/hazy

Focus ... 38.3

156

Spectr. Temp.

Dome Temp./Hum.

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		1:2 well in	Fine	486	(Back centered @ 19800)	BS				7	63	not b	
		1:9 just starting to leave worm			G8II	(Image moving too far right in box)				7	63	not bad but some noise some noise down middle of Box (heat no doubt)	
		N6 well in								7	63		
		W:7 well in	Fine							7	63		
		Blue Filter								7	63	* it didn't like nfp or 9	
		3438	OK	2.2	F2	BC	1200/50.7	BS	II 0.0-e	4	Asm Sp ktr	Must be noise effect	Fine
		3550	"	"	F2	"	"	"	"	4	"		fine
										11			
		X:2 well in	OK	5.7	F8V			BS		7	std vel 63	Some cloud some noise still ie vertical through mid box	v.v
		5064	OK	5.7	F8V	BC	1200/50.7	BS	II 0.0-e		std vel	step	
		22 in	OK	"	"			"			63		

12

Emulsion Batches:

.....

.....

.....

[illegible]

Spectr. T
Focus...
Spectr. T

Exp. Mtr.

1900
1800

Transparency Conditions

158

Dome Temp./Hum. *77.8°/88%*[illegible]

159

Thurs Fri

Date July 16-17/87

Observers

Tn

IIa 0-e @ 68°F July 19

III @ 68°F July 23

Emulsion Batches:

..IIa 0-e... 1A7 - June 23

..IIa 0-e... 2A5 - June 23

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.
50062F	Focus Test			20 50		03 38 E	+10° 30	FeNo clear	150 50
DT 127. Tn	HD 187691	19 46.2	+10 10	21 00 54	21 08	03 20 E	"	200	int
128. Tn	"	"	"	21 12 06	21 19 10	03 09 E	"	"	"
129. Tn	"	"	"	21 24 25	21 45 49	02 45 E		600	"
50062	HD 187691	"	"	21 49	22 09	02 22 E	+10 30	FeNo clear	90 90
DT 130. Tn	"	"	"	22 12 10	22 20 00	02 11 E	"	200	
50063	HD 8890	01 22.6	+88 46	22 31	22 35	08 32 E	+89 17	FeNo clear	90 90
50064	"	"	"	22 42	22 46	08 20 E	"	"	90 90
50065	HD 209790	22 00.9	+64 08	23 01	23 23	02 21 E	+64 40	"	110 110
50066	HD 182640	19 20.5	+2 55	00 33	01 01	00 58 W	+3 13	"	150 150
50066T	Spot C/n For 49 50065-66				15 min @ D4	17.5V 3900	15V 4300	15V 4810	

Spectr. Te

Focus...

Spectr. T

Exp. Mr.

Blue 6H

2247

2200

8:3 in

C1 in

C.8 in

5500

D0 in

8463

21100

20096

24000

37000

Spectr. Temp. ... 70°f

Dome Temp./Hum. ~~67~~⁷⁰/~~49~~⁵⁰

Transparency Conditions *some could*

Focus .. 385

Spectr. Temp. ... 6.7...°F.....

Dome Temp./Hum. 60°/75%

160

[illegible]

Mon - Tues

IIaO Dec 68⁹ July 23

Date July 20-21, 187 Observers Tn - Hdy

Emulsion Batches:

Emulsion Batches:

Wal-e	1A7 -	June 23
Wal-e	2A5 -	June 23

[illegible]

Spectr. Te
Focus... 3
Spectr. T

Exp. Mr.
Blue Film

1850

1706

82/8

8222

0222

13400

1055

Spectr. Temp. ...80°F.....

Dome Temp./Hum. 80°F / 60%

Transparency Conditions *Some cloud*

Focus .. 382.....

Spectr. Temp. ... 78° f

Dome Temp./Hum. 80.5.../80.2

162

	Exp.	Mtr. Filter	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
r	150 50	Blue Filter			BS	1200/50-7	BS	I _c O-e	4			OK WK
	90 90	8210	sos	F2	"	"	"	"	4	Ason Spr-kk	what dispersion? →	wk
	90 o	8222			"	"	"	"	4	"	→	wk
								"				VV ✓✓
b r	110 110	13400 1055	sas	A63	H3m BS	1200/50H	BS	Lita-leg	4	Ason Sp Hk cloud		fog & wk

163

Tues - Wed

Emulsion day July 23

Emulsion Batches:

Halo-e 1A7 June 22

5 min @ 68°F

Halo-e 2A5 June 23

Date July 21-22, 1987..... Observers Hdy = 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.
50070 F	Focus test			20 13		0 0	+35 15	FeNe clear	180 60
50070	HD 161096	17 38.5	+43 37	20 29	20 41	1 24 E	+4 42	"	90 90
50071	HD 159561	17 30.3	+12 38	20 52	21 05	0 50 E	+12 43	"	150 150
50071 T	Spot C _u /h	for 50071 + 50069 (previous night) 15 min @ D4					17.5V 15V 15V 3900 4300 4810		+Sp
50072	HD 158633	17 25.3	+67 24	21 15	23 43	1 58 W	+67 26	FeNe clear	70 70
50073	HD 8890	01 22.6	+88 46	23 58	00 04	6 45 E	+89 18	"	100 100
50074	"	"	"	00 13	00 19	6 30 E	"	"	100 100
50075	HD 209790	22 00.9	+64 08	00 29	01 48	0 36 E	+64 41	"	100 100
50074 T	Spot C _u /h	for 50070, 50072-74, 50077, 78.				15 min @ 15V	D4 D3 D2 3900 4300 4800		
50076	HD 217675	22 57.3	+41 47	01 59	02 44	0 37 E	+42 23	FeNe clear	100/100 100
50077	HD 217782	22 58.0	+42 13	02 52	03 28	0 06 W	+42 48	"	100 100
50078	HD 219080	23 08.0	+48 51	03 36	04 12	0 43 W	+49 27	"	100 100

Spectr. Te.
Focus...
Spectr. Te.Exp. Mir.
21/22/872300
2006

7434

36378

+Sp

3586
3599

8093

89000

19724
1928818012
1705

8499

9098

Sun 22 Spectr. Temp. 83°F... 28°C
 Focus... 3.82
 Spectr. Temp. 74°F.....

Dome Temp./Hum. +85°F/60%
 Dome Temp./Hum. 70°F/18%
 70°F/18%

Transparency Conditions Sl. Cloudy..... 164
 CCD still too noisy for Drive Tests
 Also too difficult to focus or estimate seeing

Compans	Exp. Mt	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1/2 180	2300				BC	1200/507	BS	IIaD-e	4			OK
1/2 180	2006											
90	7434	OK	4	K2III	"	"	"	"	4	std Vel		
90	36378	"	2.2	H5III	"	"	"	IIaD-e	4	Asm Sp kK		OK*
150	+ Spot for 50075-76 + 50079 (next night)											
150	3586											✓✓
150	3599	seso	7.09	dk1	BC	1200/507	BS	IIaD-e	4	Asm Sp kK		fine
100	8093	—	2.2	F2	"	"	"	"	4	"	T=78°F 25°C	"
100	58000	—	"	"	"	"	"	"	4	"		"
100	19754	—	4.63	A3m	"	"	"	IIaD-e	4	"		OK*
100	19288											✓✓
100	+ 50080-84 (next night)											
100	18012	—	3.6	B6p	BC	1200/507	BS	IIaD-e	4	Asm Sp kK	cloud	OK*
100	7705	—	5.17	A2	"	"	"	IIaD-e	4	"		OK
100	8485	—	4.90	FOIV	"	"	"	"	4	"		OK
100	9088	—										

* Some emulsion fog

165 Wed. Thurs

Date July 22-23/87... Observers Ady-Tan.....

IIcO Dev July 23 @ 68°F

Emulsion Batches:

Emulsion Batches.

... H₂O - efg 2A5 - June 23

... D₂O - efg 1A7 - June 20

Do.C. 147 ~ June 20

[illegible]

June 23
June 20

Spectr. Temp. 83°F
Focus 3.82
Spectr. Temp. 78°F

Dome Temp./Hum. $78.7^{\circ}\text{F}/57\%$
Dome Temp./Hum. $77.6^{\circ}\text{F}/80\%$

Transparency Conditions *some clouds* 166
A few brt meteors, slow E N $\rightarrow$ S
I saw one NS one last night too, Ta
SPIKE JUNK?? Ta

Comparison
Filter Exp
No 180
200
150
70
70
70
70
90
90
90

Exp. Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2000 $\approx$				BC	1200/50.7	BS	IIa0e	4			
2000 $\approx$											
37990	OK	3.93	F0p	"	"	"	IIa0e	4	Asm Sp-KK		ok exp
3336				"	"	"	IIa0e	4	"		
3270	OK	7.62	G8U	"	"	"	IIa0e	4	"		
3443				"	"	"	"	4	"		
3482	Fine	7.82	G9U	"	"	"	"	4	"		
8092	OK	2.2	F2	"	"	"	"	4	"		
7993	"	"	"	"	"	"	"	4	"		
4107	poor	4.64	F7U	"	"	"	"	4	std vel		

IIa0s put in previous nig ltr's
Exp box for IIa0.

167 Sun Mon

Date .. 14/9. 26-27/87. Observers .. T. H. ... HK

Emulsion Batches:

Emulsion Batches.

...tt.a.srefg... 1A7 - July 23

...D40-e... 1A7 - June 20

[illegible]

July 23
June 20

Spectr. Temp. 78.0°F.....

Dome Temp./Hum. +70°F./78.8

Transparency Conditions ... 51 Hazy ... OK. Heavy 4.....

Focus ... 383.....

168

Spectr. Temp. 69.5°F.....

Dome Temp./Hum. +66°F./80.7

F 01000038. T₂ 101.716 2, 4

Comparison
e/Filter: E

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
47 leaving	OK	3.93	Fop	BC	1200/50.7	BS	1		63 columns	AN# 13.1M 7DF-7	
Blue filter	OK	"	"	"	"	"	III-J-eg	4	Asm Sp-kt	1" broken off end	OK
30,000	OK	"	"	"	"	"	"	4	SB-Ly	AA oscillate @ end	finger prints
4000	500	5.00	BTV	"	"	"	"	4		severe	OK
8100							"				rv
61 Cygnus also photographed by Kt. (W. J. B. S.) =											
8000	OK	2.7	F2	BC	1200/50.7	BS	IIqD-e	4	Asm Sp		Fine
8084	OK	"	"	"	"	"	"	4	"		"
7000	very poor	4.64	F7V	"	"	"	"	4	std vel		Fine
2500				"	"	"	"	4		still set @ 383 T=69.5°F	usr blue

169

Mon - Tues

Date July 27-28/87.

Observers .. T. n.

T. n.

6 m 8 680

Emulsion Batches:

Emulsion Batches.
Hoe-e. 1A7 - July 23

IV-5-89..1.A7.... July 23

(date-room time wrecked again)

[illegible]

Spectr. Temp. 75.5°F.....

Dome Temp./Hum. 73°F/55%

Transparency Conditions Fine.....170

Focus 3.83 ~ 3.84.....

Spectr. Temp. 67°F.....

Dome Temp./Hum. 62°F/85%

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
180	Blue Filter	2580				BC	1200/50.7	BS	IIc0	4			sl blue
60	Clear	2400 ~											
100	Worm Posn	margin	Fine	3.93	K2M	"	"	"			63 columns	npf=7 - AN# smooth periodic	
100		7180	"	"	"	"	"	BS	IIa0e	4	std vel		Fine
100		20012	"	5.00	B7V	"	"	"	IIaJef	4	SB Ly		Fog
100		20053	"										Fine
100		8000	ok	"	"	"	"	"	"	4	"	Severe RA osc: 10% @ 290W	8/ fog
100		30000										Set 384 T=73°F	OK
70		3000	1.2"	7.82	G9V	"	"	"	IIc0-e	4	Asm Sp KK	smo clud	vs/ wk
76		2990											
110		8900	2-3"	4.90	F0IV	"	"	"	"	4	"		OK
110		8200	5"	2.2	F2	"	"	"	"	4	"		Fine
110		8220	5	"	"	"	"	"	"	4	"		fine

Spectr. Temp. 77°F... 22°C Dome Temp./Hum. 165°F/55%

Focus ... 38.4 ... unchanged from last night

Spectr. Temp. 68°F 20°C Dome Temp./Hum. +60°F 75%

Transparency Conditions... *Fine - cloudy*
Fine May 1954 172

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		Blue Filter											
e	90	3157											
er	90	3154	2-3"	7.09	dK1	BC	1200/50.7	BS	II4D-e	4	Asm Sp Kk	some cloud	fine
									II4D-e	Note	Spot color referring to Previous or Next neg. it means that all are developed together.		fine
	110								"	4	Asm Sp Kk		fine
	110	8165	OK	2.2	F2	BC	1200/50.7	BS	"	4	Asm Sp Kk		fine
	110	8177	poor	"	"	"	"	"	"	4	"	clouded in	"
	110												

423

Spectr. Temp. 78.9°F ... 25.9°C Dome Temp./Hum. 74.4°F ... 18.0% Transparency Conditions *Some cloud*.....Focus 3.82

174

Spectr. Temp. 73.4°FDome Temp./Hum. 67.4°F ... 18.8% comparison
filter Exp.

150

150

150

150

no

no

no

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3/42 5/49	1.5"										
34966	Fine	3.93	F0p	BC	1200/50.7	BS	1014 Serf	4	Asm Sp k k	some cloud	OK
37970	ok	2.2	A5 III	"	"	"	"	4	"	clouding in	"
							"				"
7300* 4400	2"	3.68	F0 IV	BC	1200/50.7	BS	1 "	4	Asm Sp k k	* Most exp. gained in 1st hour too cloudy (prob good sky speed) Et 384 T=73°F	OK

175

Mon - Tues

Date Aug. 17-18/87... Observers Ri / Hdy.....

Emulsion Batches:

JED-E. 1A7-AUG 15...

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.
50103	HD 137909	15 23.7	+29 27	20 28	20 33	02 ^h 32W	+29°13	Fe/Ne CLEAR	110 110
50104	HD 137107	15 19.1	+30° 39	20:44	21:14	03 ^h 15W	+30°26	Fe/Ne CLEAR	90C1214 90C1247 90C1277
50105	HD 158633	17 25.3	+67°24	21:20	22:46	02 ^h 46W	+67°24	Fe/Ne CLEAR	90C1285 90C1287 90C1286
50105	SPOT ON FOR PLATES 50103-50112			15 MIN @	15 MIN @	02 ^h 43W	+67°24	Fe/Ne CLEAR	90C1285 90C1287 90C1286
50106	HD 195987	20 29.4	+41°32	23:07	02:07	03 ^h 00 W	+41°56	Fe/Ne CLEAR	90C1205 90C1222 90C1226
50107	HD 212943	22 22.8	+04 12	02:15	02:21	01 ^h 25W	+04°44	Fe/Ne CLEAR	90C1201 90C1159 90C1233
50108	HD 219080	23 08.0	+48°51	03:20	03:36	01 ^h 50W	+49°25	Fe/Ne CLEAR	90C1243 90C1254 90C1247
50109	HD 8890	01 22.6	+88 46	03:45	03:51	01 ^h 11 E	+89°16	Fe/Ne CLEAR	110C1477 110C1498
50110	HD 8890	01 22.6	+88° 46	03:55	04:00	01 ^h 03 E	+89°16	Fe/Ne CLEAR	110C1477 110C1474
50111	HD 217782	22 58.0	+42° 13	04:07	04:31	02 ^h 55 W	+42°56	Fe/Ne CLEAR	90C1166 90C1173 90C1181
50112	HD 217675	22 57.3	+41°47	04:35	04:44	03 ^h 07W	+42°20	Fe/Ne CLEAR	110C1430 110
50112E	FOCUS TEST			COMPARISON / STELLAR				Fe/Ne CLEAR	110C1477 60C283

177

Date WED-THURS. AUG. 9-22/97 Observers Hdx-Ri.....

Emulsion Batches:

5th 18th THURS. 1A7-AUG. 19.....
FROE. 1A7-AUG. 15.....

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. Nr.
50113F	FOCUS TEST							Fe Ne CLEAR	180(249) 60(255)	
50113	HD 137909	15 23.7	+29° 27	19:55	20:28	02h 33W	+29° 15	Fe Ne CLEAR	150(216) 150(226)	35020
50114	HD 159561	17 30.3	+12° 38	20:39	20:52	00h 50W	+12° 39	Fe Ne CLEAR	150(205) 150(280)	35084
DT000135.R	DRIVE TEST	POSITION "S"		20:59	21:05	00h 56E	+03° 12			
50115	HD 182640	19 20.5	+02° 55	21:05	21:34	00h 17E	+03° 12	Fe Ne CLEAR	110(143) 110(143) 110(146)	7444 7646
50116	HD 188041	19 53.4	-03° 07	21:40	00:32	02h 12W	-03° 03	Fe Ne CLEAR	110(1516) 110(1531) 110(1698)	7518 15003
50116T	SPOT CALN FOR PLATES 50113-117, 50119-120.			15 MIN @ D4		① 17.5V ② 15V ③ 15V 3900 4300 4810				
DT000136.R	DRIVE TEST	POSITION "V:"		00:33	00:36	02h 16W	-03° 03			
50117	HD 196524	20 32.9	+14° 15	00:44	01:23	02h 20W	+14° 39	Fe Ne CLEAR	110(167) 110(168) 110(172)	7525 7523
50118	HD 212943	22 22.8	+04° 12	01:31	02:14	01h 21W	+04° 44	Fe Ne CLEAR	90(1302) 90(1357) 90(138)	4019 4005
50118T	SPOT CALN FOR PLATES 50118, 50121-124.			15 MIN @ 15VOLTS		① D4 ② D3 ③ D2 3900 4300 4810				
50119	HD 209790	22 00.9	+64° 08	02:21	03:12	02h 42W	+64° 39	Fe Ne CLEAR	110(165) 110(168) 110(166)	4537 4523
50120	HD 217675	22 57.3	+41° 47	03:16	03:39	02h 11W	+42° 21	Fe Ne CLEAR	110(153) 110(152) 110(152)	4568 4591
50121	HD 8890	01 20.6	+88° 46	03:46	03:52	01h 03E	+89° 18	Fe Ne CLEAR	110(154) 110(154)	8149
50122	HD 8890	01 20.6	+88° 46	03:55	04:01	00h 54E	+89° 18	Fe Ne CLEAR	110(153) 110(153)	8305

Spectr. Temp. Dome Temp./Hum. 70°F ... 71% Transparency Conditions Good 178

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				B.C.	1200/50.7 5430	B.S.	^{OLD} IIaDE	4		$T = 75^{\circ}\text{F}$ $F = 382$	
35020	3.93	Fop	B.C.		1200/50.7 5430	B.S.	IIaTe f	4	Asm-Sp/kk		fine
35084	2.2	A5II	B.C.		1200/50.7 5430	B.S.	IIaTe f	4	Asm-Sp/kk		ll
17494											
17646	3.68	FOII	B.C.		1200/50.7 5430	B.S.	IIaTe f	4	Asm-Sp/kk		fine
15018											
15003	5.85	A5p	B.C.		1200/50.7 5430	B.S.	IIaTe f	4	Asm-Sp/kk		"
							IIaTe f	4			✓✓
17525											
17523	3.78	FSII	B.C.		1200/50.7 5430	B.S.	IIaTe f	4	Asm-Sp/kk	$T = 68^{\circ}\text{F}$ $F = 384$	fine
4019											
4205	5.84	HQII-11	B.C.		1200/50.7 5430	B.S.	IIaO-E	4	SD VEL		"
							IIaO-E				✓✓
15037											
15028	4.63	A3m	B.C.		1200/50.7 5430	B.S.	IIaTe f	4	Asm-Sp/kk		fine
17568											
17591	3.6	B6p	B.C.		1200/50.7 5430	B.S.	IIaTe f	4	Asm-Sp/kk	$T = 65^{\circ}\text{F}$ $F = 385$	"
8149	2.2	F	B.C.		1200/50.7 5430	B.S.	IIaO-E	4	Asm-Sp/kk		fine
8305	2.2	F	B.C.		1200/50.9 5430	B.S.	IIaO-E	4	Asm-Sp/kk		"

179

Date Aug 17-20/87 Count 5 Observers Holy-Ri

Emulsion Batches:
7 1/2^u 690 Jan. 197 - AUG 15

[illegible]

Spectr. Te

Focus . . .

Spectr. Ten

Exp. Mkt.

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions . . . Good 180 . . .

Focus

Spectr. Temp.

Dome Temp./Hum. 60°F 95%

[illegible]

181

Date THURS. FEB. AUG 20-21/87

Observers Hdy-Ri.....

Emulsion Batches:

Plated 1A7-AUG 19.

7 1/2" 69° IIao - R 1A7 AUG 20

[illegible]

Transparency Conditions SOME CLOUDS 182

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2605				B.C.	1200/50.7 5430	B.S.	IIao-E	4		$T=710F$ $F=383$	sl blue
2710				B.C.	1200/50.7 5430	B.S.	IIao-E	4			
18063				B.C.	1200/50.7 5430	B.S.	IIao-E	4	Asm-Sp/KK	SOME CLOUDS	fine
18053	3.93	FOP		B.C.	1200/50.7 5430	B.S.	IIao-E	4	Asm-Sp/KK		OK
3152				B.C.	1200/50.7 5430	B.S.	IIao-E	4	Asm-Sp/KK		OK
2680	7.62	G8I		B.C.	1200/50.7 5430	B.S.	IIao-E	4	Asm-Sp/KK	BROKEN 2 PIECES	OK
4003				B.C.	1200/50.7 5430	B.S.	IIao-E	4	Asm-Sp/KK	CLOUDS	OK
3716	7.82	G9I		B.C.	1200/50.7 5430	B.S.	IIao-E	4	Asm-Sp/KK		✓
							IIao-E				✓
							IIao-E				✓
2751				B.C.	1200/50.7 5430	B.S.	IIao-E	4		$T=650F$ $F=383$	sl blue
3435				B.C.	1200/50.7 5430	B.S.	IIao-E	4			
8022	2.2	F		B.C.	1200/50.7 5430	B.S.	IIao-E	4	Asm-Sp/KK	$F=384$	OK
8132	2.2	F		B.C.	1200/50.7 5430	B.S.	IIao-E	4	Asm-Sp/KK	CLOUDS	fine
8007	5.81	G5Vp		B.C.	1200/50.7 5430	B.S.	IIao-E	4	Asm-Sp/KK	BROKEN 2 PIECES	OK
8050	4.50	A7I		B.C.	1200/50.7 5430	B.S.	IIao-E	4	Asm-Sp/KK	BROKEN 2 PIECES	OK

183

Date FRI SAT AUG 21/22/87 Observers Hdy-Ri

Emulsion Batches:
7 1/2 69° II-00-B 1A7 Aug 20
III-2-4 1A7 Aug 19

[illegible]

Spectr. Temp. ..7.50F.....

Dome Temp./Hum. 70°F 75%

Transparency Conditions . . . SOME CLOUDS 184 . . .

Focus 383

Spectr. Temp.

Dome Temp./Hum.

Companson Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
e 90 2.4	R 90 1.4	4013					1200/50.7						
		4005		5.7	F8V	B.C.	5430	B.S.	IIaD-E	4	STD VEL		fine
e 110 1.4	R 110 1.4	17500					1200/50.7						
		17530		3.68	F0IV	B.C.	5430	B.S.	IIIaTef	4	Asm-Sp/KK		fine
e 110 1.4	R 110 1.4	17530		U2			1200/50.7						
		17518		3.71	F5IV	B.C.	5430	B.S.	IIIaTef	4	Asm-Sp/KK		fine
									IIIaTef				✓
e 110 1.4	R 110 1.4	2323					1200/50.7						
		2427				B.C.	5430	B.S.	IIaD-E	4		I=739 F: 383	sl blue

Spectr. Temp. Dome Temp./Hum. 58°F

Transparency Conditions 186

Focus

Spectr. Temp.

Dome Temp./Hum.

Exposure	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1300 V	30		3.93	FOP	ECHELLE	1200/.325	50u (.285)	IIa De	I.T.	Akm. Sp/KK	ECHELLE TILTY = 1.6/10 STELLAR .250 comp. 320 180	bad contrast = poor focus
											F = .850	r
1000			0.04	ADV	ECHELLE	1200/.325	50u (.285)	IIa De	I.T.	Std Val		
1013			0.04	ADV	"	1200/.400	70 (.285)	IIa De	I.T.	"	H8	
440						1200/.250	70u (.285)	IIc De	I.T.	"		

187

Emulsion Batches:

Date Mon Tue Aug 24-25/87 Observers K.K.-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.	Exp. Nr.
50139	HD 137909	15 23.7	+29° 27	20:18	20:48	34 14W	+29° 14	TH-A FeNe	8500.180 8500.320	130
50140	HD 137909	15 23.7	+29° 27	20:55	21:25	34 52W	+29° 14	TH-A	8500.320 8500.180	38
50140T	Spot for 50139-140	① 5100 D2 9" ② 5450 D2 9" ③ 5450 D3 7 1/2"								
50141	HD 172167	18 33.5	+38 41	21:43	21:52	14 10W	38° 53	TH-A	405.180 405.320	410
Focus Tests 3 3PM EST Sept 2/87 Done Temp = 63°F H = 45% outside										
50141 F1	Focus tests comparing all plate holders					0 0	+6 41	FeNe A 1/4	12 12	160 150
F2	Note use of different apertures, times Exp meter blank filter holder in and use of diffuser (slide down)							n	n	n
F3								FeNe A 1/2	15 15	460 330
F4								n	20 20	830 920
F5								n	n	820 880
F6	Focus tests @ 4 PM EST Sept 2/87							n	n	800 850
F7								n	n	110
F8								n	n	
F9								n	n	
F10								n	n	

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 188

Focus

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1300 ✓											
102		3.93	Fop	ECHELLE	1200/.400	60μ (.280)	IIa De	I.T.	Asm-Sp/KK	ECHELLE TILT=1.600 H=1/2mm(.223) S=250	
38		3.93	Fop	ECHELLE	1200/.325	60μ (.280)	IIa De	I.T.	Asm-Sp/KK	F=.105	
410		0.04	AOI	ECHELLE	1200/.325	60μ (.280)	IIa De	2	STD. VEL		good
no filter 150 150				BC	1200/405	G4310	BS	098	1	T=60.5°F Set 388 ^{discarded}	Too W. k to a new app
n				n	n	n	n	n	2	n discarded	n n n
460				n	n	n	n	n	3	n	OK
330				n	n	n	n	n	4	n	ideal
830				n	n	n	n	n	5	n	
920				n	n	n	n	n	1		
820				n	n	n	n	n	2		
880				n	n	n	n	n	3		
800				n	n	n	n	n	4		
850				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		
7				n	n	n	n	n	1		
7				n	n	n	n	n	2		
7				n	n	n	n	n	3		
7				n	n	n	n	n	4		
7				n	n	n	n	n	5		

189 cont. of S. Wed Sept 2 @ 4 PM EST

Date Sept 2/87 Observers J.L.

Emulsion Batches:

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.....

.....

[illegible]

Spectr. Te

Focus . . .

Spectr. Te

Exp. Mr.
A. C. Her

$$= 800$$

Blue Affe
26K
28K

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions 190

190

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	20	No filter = 800				BC	G 4310 1200/40.5	BS	098	1		T=62.5°F Set 388	
	20	= 900											
	4	Blue Filter											
	4	26K				BC	G5440 1200/50.7	BS	098	1		T=62.9°F Set 388	
	4	28K											
										2			
										3			
										4			
										5		T=62.5°F	
										1			
North		when clamping in								2			
to post		"								3			
		"								4		1/4" broke off during de	
		"								5		loading	
												T=63°F Set 388	

191

Mon - Tues

Date Sept. 14/15/87 Observers Ly. Th.

Emulsion Batches:

...II a.o.-e... 1A7... Aug 20
...III a.s.-e... 1A7... Aug 19

5m 680

[illegible]

Spectr. Temp. ... 67°F

Dome Temp./Hum. 63°F/70%

Transparency Conditions ... Fine ... 192

Focus ... 38.7

Spectr. Temp. ... 63°F

Dome Temp./Hum. 57°F/85%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Blue filter											
12126	OK	6.2	G ₁₂ dF8	BC.	1200/50.7 (5440)	B8	II ₀ -e	4	SB-Ly.	* Timer set on "1 sec" results in much longer exp 2 3 sec	OK
							II ₀ -e				✓
19000			B811		5440						
19000	OK	5.7	-IV	BC	1200/50.7	B8	III ₀ S-efg	4	SB-Ly	T=66°F	fog Exp OK
							III ₀ S-efg				✓
8700	OK	4.6	FTV	BC	5440 1200/50.7	B8	II ₀ -e	4	STD VEL.		fine

Spectr. Temp. 59°F.....

Dome Temp./Hum. 53°F./75%

Transparency Conditions *OK - sl. cloudy*

Focus . . . 390

Spectr. Temp. ... 54°

Dome Temp./Hum. 48°/88%

194

[illegible]

195

Fri - Sat

Date Sep 25-26/87 Observers Tn At. checking on me.

Emulsion Batches:

Was. cty. 3.5.5. ... Sept 22

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. Film/Filter
								Type/Filter	Exp.	
50146F	Focus test			18 30		0 0	+20 56	FeNe clear	4	26K 29K
501467	^{96 Her} HD 164852	17 58.1	+20 50	18 40	19 55	1 55W	"	"	1 sec 1 sec 1 sec	23K 22K 15K 11,700
50148	HD 170200	18 23.1	+6 08	20 01	21 33	3 04W	+6 16	"	1 sec 1 sec	14,300 14,600
50148g	HD 220368	23 34.8	+5 05	21 37	22 16	1 24E	+5 39	FeNe clear	1 sec 1 sec	14,300 14,600
DT 000 139.Tn	"	"	"	22 19	22 26	1 14E	"	K03	in gear	14,600
140.Tn	"	"	"	22 28	22 36	1 03E	"	K010	Just leaving	

Spectr. Temp. 57°FDome Temp./Hum. 52°F / 50%Transparency Conditions ExcellentFocus 390

EST = ST Tonight 196

Spectr. Temp. 53°FDome Temp./Hum. 47°F / 80%

Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
26K				BC	65440 1200/50.7	BS	098	1			slabed
29K											
23K	OK	5.19	B3IV	"	"	"	Uta 5-ef	1	SB-Lg	S/ hazy @ end	fine
22K										Severe RIT oscillation 3" dia	"
15K	SOSO	5.7	B8 III-IV	"	"	"	"	1	"	No wind at all	"
11,700											
14,300											
14,000	SOSO	4.6	F7V	BC	1200/50.7	BS	Uta 5-ef	1	STPVD	T=54°F	fine
14,000	poor		Drive Test				npf=7		63 columns	normal looking	
	SOSO						"		"	Program quit upon rt saving "	

Mon - Tues

Inoj Dev Oct 3 5 min @ 68°F
T_n

Emulsion Batches:

Emulsion Batches.
...III and ofy... 315-... Sep 22

Date Sep. 28-29/87... Observers L. G. - T. A......

[illegible]

Spectr. Temp. . 69°f.....

Dome Temp./Hum. 46°F / 70%

Transparency Conditions .. Sl. Hazy / Sl. cloudy ..

198

Comparison Filter	Exp.	Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
e	450	6 K					G=5440						center
r	450	8 K				BC	1200/507	BS	0918	1			51 Red
e	1500	4300	~3"				"	"	III-S-efg	1	SB-Ly	some cloud	ok
r	1500	2120	5050	5.19	B3IV	"	"	"	III-S-efg			severe RA oscillation 2.47"	✓

199

Tues-Wed

Date Oct. 13-14. 187. Observers Ly. T. L.

Emulsion Batches:

8^m 680

D.O.-E. 1A7 Aug. 20 187

D.O.-E. 1A7 Sept. 13/187

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.
50151 F1	Focus test			17 50		0 0	+34°	FeNe none	4 4
F2	"					"	"	"	"
F3	"					"	"	"	"
F4	"				18 08	"	"	"	"
50151	HD 183656	19 25.6	+03 14	18 09	19 10	00 50 W	+3 30	* FeNe	1-1-1
50151 T	Spot C/L for 50151-58				15 min @ 15V	D4 3900	D3 4300	D2 4810	
50152	HD 182917	19 24.2	+50 13	19 18	23 16	05 03 W	+50 24	Fe/Ne	1-1-1 2050 c/s
50153	HD 11188	01 44.9	+46 58	23 22	00 50	00 11 W	+47 33	FeNe	1-1-1
50154	HD 14633	02 16.7	+41 02	00 55	02 18	01 07 W	+41 37	"	1-1-1
50155	HD 25638	03 59.0	+62 04	02 29	04 04	01 09 W	+62 29	"	1-1-1 2050 2200
50156	HD 27295	04 13.6	+20 54	04 16	04 31	01 23 W	+21 18	"	1-1-1 2050 2200
50157	HD 44990	06 19.8	+07 08	04 38	05 21	00 07 W	+7 17	"	1-1-1 2050 2200
50158	HD 62509	07 39.2	+28 16	05 25	05 27	01 05 E	+28 15	"	1-1-1 2050 2200

Spectr. T.

Focus...

Spectr. T.

Exp. M.

6K

7K

6009

7040

2200

2240

4500

4500

6010

6030

4500

4500

10000

8000

9200

Spectr. Temp. 50.5°FDome Temp./Hum $48^{\circ}\text{F}/58.6$ Transparency Conditions Fine
200Focus 39.2Spectr. Temp. 44°FDome Temp./Hum $48^{\circ}\text{F}/58.6$ 800 m byte for $2^{\circ}2000$

Comparison Filter: Exp	Exp. Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	Blue filter											
	6K				BC	G5440 1200/50.7	BS	098	1			3/Red
	7K				"	"	"	II ₆₀ -e	5			
					"	"	"	"	3			
					"	"	"	"	2			
	6009	OK	6.0	A0e	"	"	"	II ₁₀₀ -E*	1	Kub-Ly	* Record of Prob-3° 37' T _h Rock @ 19600 iden/for guiding	Fine bubbles? v-
	7040							II ₁₀₀ -E*			(Cold box on Eschelo) severe R/A oscills @ 4" 12" W SI hazy & end T=48°F	sl w/
	2200	OK	8.4	Mb	BC	1200/50.7	BS	II ₁₀₀ -E*	1	CH Cys		
	2240											
	4550	good	7.1	B8	"	"	"	"	1	Ly SB	T=46°F	OK
	4500	"	7.3	O8V	"	"	"	"	1	SB-Ly	focus Set 393	fine
	6010											
	6030	OK	7.3	B0	"	"	"	"	1	EB-Evans	NW comp of Dbl (The correction)	OK
	4500											
	10000	OK	5.3	B9V	"	"	"	"	1	Am-Ly	T=44°F	OK
	8005	SSO	5.6-6.6	F7Iab	"	"	"	"	1	Bin Cep-Evans		OK
	9200	OK	2.1	K0IIIb	"	"	"	"	1	SD Vee	T=44°F	No Good 1 plate has 3 arcs

Spectr. Temp. ... 53°F

Dome Temp./Hum. 54°F/50%

Transparency Conditions S1. hazy 202

Focus ... 391

Spectr. Temp. ... 49.5°F

Dome Temp./Hum. 43°F/80%

gusty from SW
(cold box off escillette for this set)

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6080 6000	OK	6.0	A0e	BC	G5440 1200/50.7	BS	IIaO-E	1	Kub-Ly		fine
						"					
6010 6000	OK	6.2	dF8 +G	BC	G5440 1200/50.7	BS	IIaO-E*	1	SB-Ly	mild RA same type as escillette	fine
						"					
4500 4730	S.S.	7.1	B8	BC	G5440 1200/50.7	BS	IIaO-E	1	SB-Ly	some cirrus.	OK
4510 5000	OK	7.3	O8V	"	"	"	"	1	"	T=53°F	OK
2500 2600	poor	~7	G8III	"	"	"	"	1	H+K-Ly		sl wky
11,086	OK	5.27	B9IV	"	"	"	"	1	Am-Ly		OK
8150	OK	4.5	F8V	"	"	"	"	1	S7D VEL		OK
4000 3756	OK - poor	5.6-6.6	F7Iab	"	"	"	"	1	Bin Ceph-Gem.		OK
				"	"	"	"	1		set 391 T=49.5°F (4.1/10 color red in 1/49 and	

14/87

Spectr. Temp. 54.5°F.....

Dome Temp./Hum. 55°F/70%

Transparency Conditions hazy.....204.....

Focus 3.90.....

Spectr. Temp. 52°F.....

Dome Temp./Hum. 48°F/85%

Comparison
filter Exp

4/4

1-1

1-1

1-1

Oxid

1-1

1-1

1-1

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Blue filter											
6 K				BC	1200/50.7	BS	IIaD-E	1			+ tilt. ✓ Redix Blue Rost OK
8.4 K	vgd										
6004	vgd	6.0	H0e	r	"	"	"	1	Kub-Ly		fine
6000	vgd										
140 and	vgd	4.64	F7U	n	"	"	"		63 columns	npf=7	normal
8450	"	"	"	r	"	"	"	1	std Vel		OK
Note 998	"	"	"			"			63 columns	npf=7	normal
Emess spec: bide											
2 1/2 V on gear											
Vol in gear fine									63 columns	npf=7 sl cloudy	normal

205

Sun - Mon

50159 ~ 50171 Rev Oct 20 @ 68°F T₉

Emulsion Batches:

Emulsion Batches:
II₉₀-E 1A7 - Oct 14/87

Date Oct 18-19/87..... Observers Lg-Tg.....

[illegible]

Spectr. T

Focus...

Spectr. T.

Exp. Mtr. ✓

6020

5979

5005

6240

4020

4200

187

527/887

...5! kazuy

591

50%

44 of 1977

Comparison Filter	Exp. Mtr. Exp.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
24-1	6020 5979	OK	6.0	A0e	BC	G 5440 1200/50.7	BS	IIaD-E	#1 EB	Kub-Ly		OK
								IIaD-E				✓
12-1	5,995 6,000	5050	6.2	G+F8	BC	G 5440 1200/50.7	BS	IIaD-E	#1 EB	Triple-Ly.	around 4-5 hrs W Only slight RA oscillations	OK
1-1	4020 4300	"	7.1	B8	"	"	"	"	#1 EB	SB-Ly	51° f cloud	slwk

207

Wed-Thurs

Echelle - Roticon tests

Emulsion Batches:

Date Oct 21-22, 1987... Observers Kk-Tk-Sc.....

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[illegible]

Spectr. T

Focus...

Spectr. T.

Exp. Mtr.

Retiro:

Focus

Spectr. Temp.

Spectr. Temp. Dome Temp./Hum.

[illegible]

22/87

Spectr. Temp. 73°FDome Temp./Hum. $44^{\circ}\text{F}/66\%$ Transparency Conditions $\text{OK} \sim \text{sl cloudy}$ 210...Focus 392.9 393Warm Room Temp = 66°F Heat Pump working nowSpectr. Temp. 38°FDome Temp./Hum. $30^{\circ}\text{F}/98\%$ Comparison
filter Exp

1-1-1

1-1-1

2-1-1

1-1-1

1-2-1

3-3

Exp. Mtr. <i>Blue filter</i>	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6230	OK	6.0	A0e	BC	G5430 1200/50.8	BS	$\text{I}^{\text{A}}\text{0-e}$	1	Kub-Ly		fine
6270							$\text{I}^{\text{A}}\text{0-e}$				"
5000			dF8								
5900	so so	6.2	+G	BC	G5430 1200/50.8	BS	$\text{I}^{\text{A}}\text{0-e}$	1	Triple-Ly	seeing going v. bad thin cloud $T=42^{\circ}\text{F}$	fine
6050											
6065	so so	7.1	B8	"	"	"	"	1	SB-Ly	42°F	OK
4100											
4100	poor	7.3	08V	"	"	"	"	1	"	$T=40^{\circ}\text{F}$ Set 393	slwk
4100											
4080	OK	4.5	F8V	"	"	"	"	1	std vel		fine
6000											
7,500				"	"	"	"	1		$T=38^{\circ}\text{F}$ Set 393	"

Transparency Conditions *clearing* 212

Focus . . . 391

Rm T @ 18:30 = 66°F

Spectr. Temp. 45°.....

Dome Temp./Hum. 73.8 / 98.6

[illegible]

Spectr. Temp. ~~1037~~ 41°f.

Dome Temp./Hum. 133°/97%

Transparency Conditions *Some Cloud* 2/4

Win Rm Temp = 63°F @ 21 hrs
drafty too. Cool air from ducts

Comparison Filter	Exp.	Exp. Mtr. Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1-1-	1-1-	4,500	SSO	6.17	F2	BC	G5430 1200/50.8	BS	TaO-e	1	Ceph-Rm	big temp drop in spectrograph	Since
1-1-	1-1-	4,500	poor	7.3	08V	"	"	"	"	1	SB-Ly	T=42°F Set 393	sl wk
1-1-	1-1-	4,050	"	4.5	F8V	"	"	"	"	1	std vel	T=42°F some cloud	sl wk
1-1-	1-1-	4,045	"	"	"	"	"	"	"	1	"	cloud Set 393 still	OK but Rel. blue end

215 Tues-Wed

IIaV's Developed Now!! by KK

Emulsion Batches:

Date Nov 10-11/82 Observers Blm-Tk

Emulsion Batches:

IIa0-e	1A7-	Oct 22/87
* IIa0-e	1A7	Oct 27/87
IIa0-e-fg	315	Sept 22 26/85

[illegible]

7 Oct 22/87
Oct 27/87
Sept 22 2000

Spectr. Temp. ... 33°f

Transparency Conditions .. mostly clear .. hazy .. 216

Focus 399,401

Spectr. Temp. .. *29°f*

Dome Temp./Hum. *+22°f. / 85%*

KK's class Tour looked @ M32 :

Comparison	Filter	Exp
o	26-11-1	
ut	1-1-1	
le	2-3-11-1	
ar	1-1-1	
e		
er	1-1-1	
le		
x	1-1	
le		
r	1-1-1	
le		
ar	1-1-1	
	1-1-1	
	5/5	

219

Eschelle Reticon

Date Nov. 12-13/87..... Observers TK-TJ.....

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.
								100sec	100sec
	100 sec Flat Field								100sec
	Comp							ThA	100sec
'S	H _A AD 358	00 03 13	+28 32	21 09	21 22				
	Comp							ThA	100
	Comp							ThA	50
	HD 358			21 39	21 51				
	Comp							ThA	100 50
	Flat Fld		no "dust", compared to 1st one. (λ diff source)						50
	repeat								100
	Jupiter	01 22	+7	22 16	22 32			ThA	100
	Purks x 4							ThA	100
			1, 10, 100, 1000 secs.						

Spectr. Temp.

Dome Temp./Hum.

19270

Transparency Conditions ...

hazy to cloudy

220

Focus

Spectr. Temp.

Dome Temp./Hum.

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. Ret counts	Grating/ Tilt	Slit	Emulsion Grating tilt	P.H.	Program	Remarks	Quality
		106f										(3620 cross gr + tilt)	
	100sec	5520				1223	.3620	FSH	.3620				
	100sec	96				1142/2000							
		550		1.92		450/1000						2 And	
	100					1169/2000							
	50	53					.3268		2nd comp → .3262				
		610				1181/2000	.3262						
	50					1310/2000	.3262					should be = λ 4550 Å	
	50					"	"						
	100	4417				3744/4000	"						
	100	500				"	"	FSH				Comp	

221

Tests Rev Dec 1 Tn

Emulsion Batches:

Date Dec. 1. / 87..... Observers Tn.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
501.90 F1	(Focus Tests to determine repeatability * Particularly the apparent "sponginess" at the north end of PH in mounts IT seems that If one "normally" mounts PH (ie just pressure at mid point while clamping in) and then gives an additional push up at N end of PH, that N end goes up more and stays at new posn when released. It's very subtle to the eye,			20 13		0 0	+10°	FoNo clear	6
F2						"	"	FoNo clear	6
F3						"	"	"	6
F4						"	"	"	6

Spectr. T

Focus...

Spectr. T

Exp. Mtr.

Plate Filter

4964

1374

4632

4964

4964

4964

Spectr. Temp. *36.5°F*.....Dome Temp./Hum. *+33°F/85%*.....Transparency Conditions *222*.....Focus *395*.....Spectr. Temp. *36.5°F*.....

Dome Temp./Hum.

Expan- sion filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		<i>Blue filter</i>											
						<i>BC</i>	<i>G 5430</i> <i>1200/50-8</i>	<i>BS</i>	<i>Ilford</i>	<i>1</i>		<i>normally placed in mount</i>	<i>OK</i> <i>blue/red</i>
		<i>4964</i>				<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>		<i>* N end pushed up more</i>	<i>Flat</i> <i>blue</i>
		<i>1374</i>				<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>		<i>normal</i>	<i>vsl blue</i> <i>blue/red</i>
		<i>4682</i>				<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>		<i>* N end pushed up more</i>	<i>vsl blue</i> <i>blue/red</i>
		<i>2900</i>				<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>			<i>OK</i>
		<i>4813</i>				<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>			
		<i>10,900</i>											
									<i>-1</i>	<i>1</i>			
									<i>-1</i>	<i>1</i>			

223 Sat-Sun

Date Dec 5-6/87..... Observers Tn.....

Emulsion Batches:

Emulsion Batches:
 7^m 72°F II-o-e
 Nov 5^m 68°F III-o-e-s-g. I.A.F. - Nov 24 23hrs
 Dec 8^m T_m

[illegible]

23ms

Comparison	Filter	Exp.
1		
2		
3		
4		
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92		
93		
94		
95		
96		
97		
98		
99		
100		

1-1496

277/807.

1902

224

Note I hand tightened down cuss hole light
baffle in posn that best corresponded to old scratches
from previous tightening of nuts

[illegible]

225

Tues

Dev De 8/87 T₄

5 min @ 68°F

Emulsion Batches:

..Trans-efg. 1.07... 24 Nov/87
23 hrs 90s

Date Dec 8/87 Observers Tn

[illegible]

20/1/87
3 hrs 90s

Spectr. Temp. 3.7°F

Dome Temp./Hum $40^{\circ}\text{F}/100\%$

Transparency Conditions *Cloudy*..... 226...

Focus 39.6

Spectr. Temp.

Dome Temp./Hum. /

Comparison
filter Exp.

Exp. Mtr. *	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
<i>Blue filter</i>											
5,400	comp				65430						
4,670	stellar			BC	1200/50.8	BS	<i>Tri-Lex</i>	1		* Rate Count Rate for this source is about	vs Red
7560											
7640				"	"	"	"	1		1/2 of former count rate!!	vs Red
PS. Upon development, it was obvious that "upper comp" with blue @ Left, is much weaker. Red end looks too weak too. <i>Tu</i>											
1920	stellar										
1975	stellar										
1073	comp										
6751	comp										
6787	"										
6180	stellar										
6126	stellar										
5958	stellar										

} Forget to take off diffuse
cover

} seem tentatively to be $\approx 1,600/\text{sec}$ as compared to $\approx 1,150/\text{sec}$ for the two earlier focus tests. Timer not too accurate for < 3 sec however.

227

Mon - Tues

Using Warm Run
Clock

Emulsion Batches:

Date Dec. 21-22/87... Observers KK-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.
Plats x 4							Tungsten lamp	822	339
Comp	H₂						Hellon cathode	45 sec	41 cats
	α And	^{1986.5} 00 07.6	+29 01	18 31	18 42	00 19 W		Comp @ end	45
	"	"	"	18 45	18 59	00 36 W	+29 13	"	45
	Supster	01 22	+6 40	19 09	19 24		+	Comp	45 sec
	Polaris	¹⁹⁰⁰ 01 22.6	+88 46	19 49	20 16	00 31 E	much cloud	Comp Comp	45 45
	"	"	"	20 20	20 42	00 05 E			45
	Flat Fld x 3	"	"		20 47	"			8
									8
	Capella	^{1986.5} 05 15.6	+45 59					Comp	45
	α Per	03 23.4	+49 49	22 27	22 47	1 07 W	+	Comp Comp	45 45
	"	"	"	22 50	23 10	1 30 W	+50 00	Comp	45
	Flat Fld x 3	"	"	(They are too weak) ??			"		
Repeat	Flat Fld			(drive off)			"		15
	" "								40

Spectr. Te

Focus...

Spectr. Te

Exp. Mtr.

7383

339

41 cats

300 fol

400

600

500

500

1868

1666

28

600

600

2500

7383

Spectr. Temp. Dome Temp./Hum. ^{+3C/60%} Transparency Conditions *Fine* 228

Focus

Spectr. Temp. Dome Temp./Hum. /

Echelle Testing

Comparison Filter Exp.	Exp. Mtr. <i>1/2 f/100</i>	Seeing	Ptg. Mag.	Sp.	<i>ECH</i> Inst. <i>Focus</i>	Grating Tilt	Slit	<i>not</i> Emulsion <i>Counts</i>	P.H.	<i>CROSS GR</i> Program <i>TILT</i>	Remarks	Quality
<i>100</i>	3319 <i>3319</i>	<i>3319 cuts</i>			<i>.314</i>	<i>1.535</i>	<i>45m</i>			<i>.3578</i>	<i>Sharp lines incl on lower</i>	
<i>45m</i>	<i>41 cuts</i>				<i>"</i>	<i>"</i>	<i>"</i>			<i>"</i>		
<i>15</i>	<i>300 for steller</i>	<i>2050</i>		<i>B9p</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>273 cuts</i>		<i>"</i>	<i>Take start of slit</i>	
<i>45</i>	<i>400</i>	<i>5050</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>345</i>		<i>"</i>	<i>before Terminating exp</i>	
<i>45m</i>	<i>600</i>				<i>"</i>	<i>"</i>	<i>"</i>	<i>800</i>		<i>"</i>		<i>good</i>
<i>15</i>	<i>500</i>	<i>poor</i>	<i>2.1</i>	<i>F16</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>240</i>		<i>"</i>	<i>*1999 actual start</i>	<i>slowly</i>
<i>45</i>	<i>500</i>							<i>121</i>			<i>of star on slit</i>	
<i>82</i>	<i>1868</i>										<i>clockwise twist to source</i>	
<i>8</i>	<i>1666</i>											
<i>15</i>	<i>28</i>											
						<i>Problem with Echelle grat. mnt.</i>					<i>Comp counts slower</i>	
<i>45</i>	<i>600</i>	<i>OK</i>	<i>2.3</i>	<i>F16</i>	<i>.314</i>	<i>1.535</i>	<i>45m</i>	<i>500</i>		<i>.3578</i>		<i>OK</i>
<i>45</i>	<i>600</i>							<i>389</i>				
<i>15</i>	<i>2500</i>							<i>772</i>	<i>no good, not kept</i>			
<i>40</i>	<i>7383</i>							<i>1566</i>				

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions 230

230

[illegible]

231

Wed. Thurs

Proticon Echelle work

Emulsion Batches:

Date Dec 23-24/87 Observers T.G. - K.K.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat Fld x								5sec
	" "								
	" "								
	" "								
	Jupiter	¹⁹⁸⁸ 01 15	+6 40	20 47	20 59	01 38W	+6 44	Comp	45sec
	"	"	"	21 03	Lost due to plotting				
	Jupiter			21 13	21 33			Comp	45sec
	Capella	¹⁹⁸⁸ 05 15.7	+46° 00	21 45	21 55	E	+46 11	Comp	45sec
	Capella			21 57	22 07	01 20E			
	Flat	(2) Capella pos'n.							?
	Flat	"	"						90
	Flat	"	"						90
	Flat	"	"						45
	Capella	05 15.7	+46 00		22 37	00 50E		Comp	45
	Darks	2, 20, 200, 2000		seconds					

Spectr. Temp.

Dome Temp./Hum. $0^{\circ}\text{C}/80\%$ Transparency Conditions OK 232...

Focus

Spectr. Temp.

Dome Temp./Hum. $-1^{\circ}\text{C}/90\%$

USING ECHELLEX from FORTRAN 3.2

Comparison
filter Exp

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Cnts Emulsion	S) P.H. Height	Cross Grating Program	Remarks	Quality
AE Filter					1.540	45u	1540/2000	600	1200, 4348	Cross support Plate 3571	
8931, 8							1585/2000				
8992							1751/2000				
8990							1764/2000				
4,500											
39 cnts for comp							271/2000			Comp OK Some bad comps in noisy spectra	OK
775							829/2000				
51							914				
1714							1554				
52							2200				
2014							2166				
53,000							2221				
53,108							1115				
54420							1219				
27069							(29/1000 Lost one)				
2257											

0.5 sec
1515 sec
15 sec
15 sec1
1

90

90

45

AE
45

233 Tues - Wed

Date JAN 5-6/88..... Observers Bly-Ty.....

Emulsion Batches:

1.83, 0.30	$1\frac{1}{2}^{\circ}$ 69°	II-e	JAN 4/88
2.43, 0.10		III-e, f, g	24 Nov. 87 23hrs in gas

Emulsion Batches:

JAN 4/88

W. a. e. f. y. ... 24 Nov. 87 23hrs
in gas

[illegible]

Spectr. Temp. $+15^{\circ}\text{F}$Dome Temp./Hum. $-12^{\circ}\text{C}/70.2$ Transparency Conditions V gusty but clear.....Focus $404-405$Spectr. Temp. $+11^{\circ}\text{F}$Dome Temp./Hum. $14^{\circ}/75.6$

234

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Blue Star 3,500 4226 19490	VBd	4.85	F8V	BC	830/40.2	BS	IIaD-e	1	std Vol	(Grating tilt) G=4290	OK
2-22 150 4800	poor	3.60	09V	BC	830/40.2	BS	IIIa-JE	1	VB-131u	2 sec comp gives 1942 cnts ADS 4241 attempted but curtailed	fine no fog v.l
5000 5600	poor	6.170	B2Vp	BC	830/40.2	BS	IIaD-e	1	Ho Rich	1 sec comp = 1500 cnts T = +12.5 set 405	fine
							IIaD-e				v.l
				BC	830/40.2	BS	IIaD-e	1		T = +11.9 set 405	OK

235 Wed-Thurs

 T_h $7\frac{1}{2}^{\text{h}} 69^{\circ}$

Ilco JAN 4 188

Date JAN 6-7/88..... Observers .. Ly-Tn.....

Da. J. - c f g Nov. 24/87

Spectr. T
Focus . .
Spectr. '

Exp. Mtr.

14.10

4045

20100

20 04r

2520

Spectr. Temp. $\pm 17^{\circ} \text{f.}$Dome Temp./Hum. $-13^{\circ}\text{C}/60\%$ Transparency Conditions ... OK 236

Focus 400

Spectr. Temp. *13.0°f*.....

Dome Temp./Hum. -15C/80%

Comparison Filter	Exp.	Exp. Mtr.	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality	
		Blue Filter											
-1-1		14010 4845	S250	7.1	B8	BC	G5430 1200/50.7	BS	IIcO-e	1	SB-Ly	Lg hnd problem with slicer hope BS not vibrated	st wk
-1-2		20100 26,040		3.6	O9V	"	830/40.2	BS	IIIaJe	1	VB-Bln	T=14° Set 404	Fine
-1-3		2500	OK	6.4	B2U	"	"	"	IIdc	1	VB-Bln	By testing with Exp mater we can separate this from HB	wk
8-3					"	"	"	IIIdc	1	13° set 404	clouds	OK	
							</						

237

Fri-Sat

Reticon / Echelle

Emulsion Batches:

Date Jun 8-9 188 Observers Kk-Tn271,0.16 5^m 68 1/2°

III. S. - etc. Nov. 24. 187

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat Fld			18 06 30					
	Flat Fields x4			18 32			+70	Tungsten	2
	Jupiter	01 42	+70	18 36	18 51	00 27W	~+70	Hollow cuth	45
	HD 20902	¹⁹⁰⁰ 03 18 40	¹⁹⁰⁰ +49 30	19 06 30	19 22	01 07E	+50 01	"	45
	"	¹⁹⁰⁰ 03 17 12	"	19 25	19 40	00 49 E	"	"	45
	Flat Fields	@ same pos'n as HD 20902		19 50			"	Tungsten	2-2-2 3-3
	HD 20902	¹⁹⁰⁰			20 06	00 24E	"	Hollow cuth	45
	HD 34029	05 09.3	+45 54	20 15	20 21			"	45
	Capella		"	20 23	20 30	01 52E	+46 09	"	45
	"		"						10 to 16 10
	Flat Field x4	(at same pos'n)						Tungsten	
50199	HD 37468	05 33.7	-02 39	21 01	21 28	01 14E	-02 26	FENE clear	12-1
50199	T Spot + Colh	for	50199-201		15 min @ D4	^{17.5V} 3900	^{15V} 4300	15V 4810	
50200	^{HD 14386} MIRA	02 14.3	-03 26	21 44	22 55	03 30W	-02 52	FENE clear	1-2-1
50201	^{HD 39801} α ORIONIS	05 49.8	+07 23	23 23	23 33	00 33 W	+07 34	"	2-2

Spectr. Temp.

Dome Temp./Hum. $10^{\circ}\text{C}/70\%$ Transparency Conditions $S.1. \text{Hazy} \dots \text{cloudy} \dots 238$

Focus

Spectr. Temp. 41.9°F Dome Temp./Hum. $-10^{\circ}\text{C}/90\%$

Echelle

slit cross grating

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H. Height	Program	Remarks	Quality
20 Filter						275 45u	212/1000	600u			
						214/1000			1700/4348		
2 3500					1.680	281 50u		600u	H j + main array		
548							965/1000				OK
617	OK	V=1.79	F5J6				1300/				OK
607							1305				
3 32249/14											
612	OK	V=1.79	F5L6								
1015		0.89	G8M				1500?				
Blue Filter							1700 1408			Dark (short) done after	
20310	OK	3.51	09J	BC	830/402	BS	TUJ-efg	1	VB Bln	Set 404 T = $+20^{\circ}\text{F}$	* Figure sl. str
21768							"			(prob due to gamma adjust. during exp)	OK
7682	so so	V=*	gm6e	BC	830/402	BS	TUJ-efg	1	International Obs program	campaign * B=3.6	good
8750		V=*						1			
32008	"	0.80	M2J4b	"	"	"	"	1	"	B=2.66	stray

239 Wed-Thurs

$T_{min} Dev @ 68^{\circ}F \quad T_u$

Emulsion Batches:

Emulsion Batches:
 ...Tae... Oct 27/87

Date JAN. 13-14. 1888 Observers T. H.

[illegible]

Spectr. Temp. $+21^{\circ}\text{f}$

Dome Temp./Hum. $+11^{\circ}\text{F}/72\%$ in Dome Transparency Conditions... Snow... but clear/soso...

Focus . . . 399

240

Spectr. Temp.

Dome Temp./Hum. /

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		Blue Filter											
180		7093 →	still	comp 28 min		BC	G=5430 120/50.7	BS	Ilde	1	5	Diffuser OUT	focus ok near drops red sl work
20		7745				1	"	"	"	1		Diffuser IN	focus ok, red sl work
10		10,088				"	"	"	"	1		" "	good
600		4,942				"	"	"	"	1		" "	good
1200		1082				"	"	"	"	1		" "	good
		1265				"	"	"	"	1		" "	good
												Note - No tilt of comp lines as there is on next night.	

241

Thurs - Fri

Dev Jan 15 5 min @ 68°F.

Emulsion Batches:

Date JAN. 14-15/88... Observers T. H......

255,020. WAS-efg..... JAN 6/88 25hrs

[illegible]

Spectr. Temp. $+10^{\circ}\text{f}$

Focus 405

Spectr. Temp. $+10^{\circ}F$Dome Temp./Hum. *+57/62*

Dome Temp./Hum. +5° / 80%

Transparency Conditions OK . - Cloudy from SSW

242

	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
Comparison Sec Exp	Blue filter											
-7-26/9	8500	S.S.O	3 ¹ / ₈	gmbe	BC	G 4240 830/40.2	BS	Tal-eq	1	Obs Pym	Severe RH oscillate @ end	OK
-7-28/7	8,000							Tal-eq				V.L
+28/6	18,510	pour	3.51	OgV	BC	830/40.2	BS	Tal-eq	1	VB Bln		foc flex? str
-7-35/5	18,580											
-7-20/8												
-24/5	14045	ok	266	gmbe	BC	830/40.2	BS	Tal-eq	1	Obs Pym		OK
-35/8	7,200	OK	2.14	KOMG	"	"	"	"	1	std vol		OK
-6+15/8	7,144	OK	1.9	AOTU	"	G=5430 1200/50.7	"	"	1	Hsm Sp Hk	Set #01 T=HIOF	OK
-5+11/5												
-7-28/31												
-37/54												
-65/00												
								Note All comp lmax tilted severely				
								Note During the day Jan 14, Fiber guide was inserted & BC Reinstalled. Some thing changed in BS tilt no doubt,				

243

Fri-Sat

Reticon Echelle work

Emulsion Batches:

Date JAN. 15-16/88.

Observers

Tn-KK

Page #1

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat 8sec, 4sec, 4sec,		Near Jupiter				Tungsten	Tungsten	8sec
							"	"	4
							"	"	4
	JUPITER			18 00	18 17	W	Hollow Cathode		30sec
	"			18 17	18 27				
KK-Tn →	JUPITER				18 57			Comp H. Cath.	5sec
	HD 20902	03 17.2	+49 30	19 07	19 19		+50 00	Comp H. Cath.	60
	HD 20902	"	"	19 23	19 41	00 22E	+50 00		60
	Flat Fields x2		10 sec					H. Cathode	10 sec
	HD 20902	03 17.2	+49 30	19 54	20 08	00 05W		H. Cathode	60 sec
	"	"	"	20 11	20 33				60 sec
	20th Per								
	HD 24398	03 52.8	+35 30	20 39	21 25	W		Hollow Cathode	60
	Flat Fields x4			21 30					
	HD 48915	06 40.8	-16 35	21 41.5	21 44.5			Hollow Cathode	60
	"	"	"	21 47	21 57				
	Flat Flds (strong) x4								30 sec

Spectr. T.

Focus ..

Spectr.

Exp. Mt.

3889

1754

500

313

305

504

750

492

758

300

756

2507

2200

Spectr. Temp. Dome Temp./Hum. $+20^{\circ}\text{F. } 1.887_0$ Transparency Conditions ... *Hazy*

Focus

244

Spectr. Temp. Dome Temp./Hum.

(Actual
CROSS GRAT)

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	Slit P.H. Height	TILT Program	Remarks	Quality
3889, 1754						50u	2560/4000				
1754							1154, 2000				
							1098/2000				
500										(Picket Fence) Faded 3194/4000	
313							490/1000				
305				500/3930	1.68	50u	208/1000	60u	0.4239		
504							121			(Field Field 924/2000)	
150							798/1000				
					1.670	50u		60u	0.4294	4255 Predicted Emulsion 1.670	
492					"	"	116/1000	"	"		
758					"	"	629	"	"		
300	4	07			"	"	768	"	"	same class	
							594/1000	"	"	Sirius	
756							1021	"	"		
2507							3800	"	"		
22,000							(3500-3600)	"	"		Very mild

Date Observers

Emulsion Batches:

.....

.....

.....

Spectr. Test

Focus . . .

Spectr. Te

Exp. Mtr.

[illegible]

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

Focus 246

Spectr. Temp. Dome Temp./Hum.

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion- <i>Exp Coats</i>	Length P.H. <i>Slit</i>	Tilt Program- <i>CROSS</i>	Remarks	Quality
	1803					1'67	50μ	2094/400	600	0.4294		
						"	"	"	"		Not kept.	
						"	"		"			
	E+0.1300 end					"	"	194/1000	"	Note @ end	not Flat Field noticed temp	
	E @ end					"	"	79/1000	"	reading @	- 1.236 (no further top up done)	

247

Thurs Fri

Echelle work

Emulsion Batches:

Date JAN 21-22/88 Observers In. - A.G. (Raddia Gershon)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat Fields x 3	19 38 16	12 55 15	(Too Strong I think)		E +40°		Tungsten	4.4 3-3
	EPS PER A	03 57.1	139 59	19 39	20 04			yellow Cath	30 30
	ALP ORI	05 54.4	+7 30	20 17	20 44	E +7 35		yellow Cath	30 30
	Flat Fields x 4					"		Tungsten	2 sec
	T = +240	Topped	up @	21 hrs.	after Flat Fields				
	HD 48915	06 40.8	-16 35	21 23	21 31	E -		yellow Cath	30 30
	"	"	"	21 39	21 51	E	"	"	45
	"	"	"	21 56	22 04	E		"	45
	Flat Fields	at this locat'n x 3	(10 secs, 8 secs, 12					Tungsten	2000-30
	HD 48915	06 40.8	-16 35	22 48	22 56			yellow Cath	30 45
	"	"	"	23 08	23 19	00 22W	-16 34	"	45 45
	Flat Flds x 3			23 25		"	"	Tungsten	6-7 -6
	DARK	2000 secs, 600 secs							
	Park	600 secs							
	checked area	ORDER for Cross tilt	.3240-.3290						B275 is best

Spectr. T

Focus ...

Spectr. T

Exp. Mtr.

only
7 counts

500

243-50

562

838

752

2000-30

504

397

Spectr. Temp. Dome Temp./Hum. ^{-5°C} ~~70.8~~ / 70.8 Transparency Conditions ... *OK but seeing terrible*

Focus

Spectr. Temp. Dome Temp./Hum. ^{-10°C} / 80.7

CROSS Tilt

248

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					1.670	50μ	3886/4000		3225-2073	14000	
only 7 counts	✓	289	B05IV						3330	Too slow Doesn't Look Good.	
500	"	05	M2Ic6		1.670	50μ	711/1000		"		
243 560							^{approx} 710/1000		"	had to avoid fastest count rate	
562	✓	-1.5	H1V		1.670	50μ	3966/4000		3330		OK
338	7	"	"		"	"	5308/5000		"		
752	"	"	"		"	"	4227/5000		"		
2000-3000					4200/8000, 3310/8000,		5130/8000		"		
504	poor	-1.5	H1V		1.670	50μ	2992/4000		3200	Order 124?	
597							4684/5000		3205	" "	
							4284 4371 5171		"		
							14/1000		"		
							15/1000		"		

249

Fri - Sat

Echelle work

Emulsion Batches:

Date .. JAN 22/23/88.. Observers .. John Lesta - Th

.....

.....

.....

[illegible]

Spectr. Temp. Dome Temp./Hum. 160.7 Transparency Conditions ... Clouding in ... 250

Focus

Spectr. Temp. Dome Temp./Hum.

Echelle

Exp

CROSS GRATING

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
373	poor	V= 2.1	B8V		1.685	50μ	1598/2000		13330		
1360							1600 per field				
930					1.685	50μ	1269/2000		13330		
					1.685		1633/2000				
					1.685		1574/2000		13330		
					1.675		172/1000		13330		
30					1.665		1733/2000		"	1050 diff in Echelle tilt	
34					1.715		1668/2000		"		
30					1.635		1589/2000		"		
					1.635				13200, 13219		
					1.660				13720	OR Der 125	
					1.675				13210 13219		
					1.715				13205		
					1.650		17/1000		13295	Like dark	
					1.650				13280		

251

Sun

Dev Sun 24 T_{min} @ 68°F T_n

Emulsion Batches:

... Old T₄O₅

Date ... Jan 24, 1988 ... Observers ... JH

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.
50206F1	Focus & BS Tilt test			18 30		0 0	+4°	F ₁ Ne clear	6 min 2 min
F2	" " " "							F₂ Arc clear	20 sec 10 sec
50206F2	Focus test & BS Tilt test			19 00	19 20	0 0	0500	F ₂ Arc clear	20 10
Note: Before Tests, BS was removed & reinserted carefully and with care to rotate & clamp at its intended Rotat'n angle. Upon unclamped at 1st, no incorrect placement was observed. It seemed to be correct.									
JAN 25 BS Tests									
50206F3	Focus/tilt tests	CW 30° of original				W	+	F ₃ Arc clear	2 20 10
F4	" "	CCW 60° of original						"	
F5	" "	CW 200° of original (one full thread)						"	
F6		CW 360 from F5						clear	
F7		CW 330 from F6						"	

Transparency Conditions *Clouley* 252

Spectr. Temp. Dome Temp./Hum.

[illegible]

Spectr. Temp. $+20^{\circ}\text{f}$ Dome Temp./Hum. *+14° / 72%*

Transparency Conditions *Sun. cloudy* 254

Focus 400

Spectr. Temp.

Dome Temp./Hum. *+11° F. / 88%*[illegible]

255 pg#1

Reticon on Echelle

Emulsion Batches:

Date JAN 28/29. 1988.. Observers ... J.H.

Plate No.	Object	R.A. 1988 1900/1986	Declination 1900/1986	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
2,68,134 260	Flat Field x 4	03 57.1	+39 59			01 30E	+40 06	Tungsten	2 3
	DARK			18 16		01 20E	"	600sec HC	2 45
266 C	1st Comp						"		4
332 S	EPS PER	03 57.1	+39 59	18 36	18 57			HC	45
464 S	"	"	"	19 01	19 18			HC	45
662 S	"	"	"	19 24 35	19 51				45
794 S	"	"	"	19 59	20 33				"
	" (note split width increase)	"	"	20 44 36	21 17			H Cath	35
	Flat Fields et same posn x 3			21 21					2 sec 1 sec
	EPS PER H HD 24760	03 57.1	+39 59	21 36	22 10	02 28W		H Cath	30
	DARK 5min			22 17				H Cath	30
1652 S	SORUS HD 48915	06 44.6	-16 42	22 30	22 34		-	H Cathode	300 45
	"	"	"	22 39	22 46			"	45
	"	"	"	22 50	23 00				45
	"	"	"	23 04	23 15				
	Flat Fields x 4			4 sec (5689) (6 sec (5802)) (6 sec (5994))				Tungsten	

Spectr. Temp. Dome Temp./Hum. $+12.9 / 65.6$ Transparency Conditions *Fine* 256

Focus

Spectr. Temp. Dome Temp./Hum. $+8.9 / 90.2$

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1138				ORDER 2			1800				
812				125 4550	1.650	50m	2408		.3315		
817							2430				
							1610				
							55/1000	For Part		Not kept	
38	u	2.89	B0.5IV				1925/2000			T = -1.144	
119	"	"	"				678/1000				
100							408/1000			Looks funny <i>u u u u u</i> Noisy?	
120				127/4481	1.691	50m			.3330	1478/2000 for 45 sec exp	
140							687/1000		"	T = -1.100	
39 cuts											
240					1.691	80m	1228/1000		.3330		
						80m	4364/1000				
							1608				
							1424				
280					1.691	80m	1279/2000				
					1.691	50m	36/1000			Dewar Tapped up during Part	
62)	V = -1.46	AO		127/4481	"	50m	3940/4000		.3330		
210							7136/8000				
651							9570/10000				
983							4767/8000			Cloud T = +.200	
							3704/4000	for 4 secs.			

Spectr. Temp. $+18.0^{\circ}\text{F}$

Dome Temp./Hum.

Transparency Conditions 258

Focus 403

Spectr. Temp.

Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							24/1000, 28/1000				
							25/1000				
				BC	830/40.2	BS	Ti40-E	1		Fe Arc a problem	Exp/s/str
				"	"	"	"	1			focus OK
				BC	830/40.2	BS	IIIa S	1	Diffuser IN	Set 400 T=23°F	

259

Date 1988 FEB 2/3... Observers Blu-Tn.....
TUE/WED

3t, 0.52, ~~0.39~~ 5m 680
1.68, 0.24

Emulsion Batches:

III. S-e-fy... JAN 6/88 25hrs
II. A-e... JAN 4/88

[illegible]

25hrs

Dome Temp./Hum. 20°F. / 80%

Transparency Conditions *Poor - lots of Corros. 260.*

Focus 400

Spectr. Temp.

Dome Temp./Hum. ✓

Comparison Filter & Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1135 1190 1150	13 Filter 20026 20010	poor	3.6	09.5V	BC	830/40.2	BS	IIIa-Jef IIIa-Jefy	1	SB-BIn	* Comps 7sec 12sec 7sec	FC Arc sl str Exp OK ✓✓
1140 1130 1150	3000 5040	poor	6.70	B2Vp	BC	830/40.2	BS	IIa0-e IIa0-e	1	He-Rich	* 8-10-? Comp 3x5secs somewhat	FC sl str Exp OK ✓✓

261

Thurs - Fri

Roticon/Echelle Tests

Emulsion Batches:

Date Feb 4-5/88..... Observers Tn... + Andria.....

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
	Focus tests								
	Ideal focus found for this dome temp at this dispersion								
	Went from .250 $\rightarrow$.350 on focus adj. to max signal and min pixel number.								
	Flat Fields x 2							Tungsten	4 sec
	(4secs, 6secs , 6secs.)							"	6
	Comp							H Cath	60 sec
	Dark								
	1200secs,								
	Looking for ideal for λ 4471 centered, since Eps per has ^{stronger} 4471 but ^{weak} not 4481								
								H Cath	30 sec
									"
									"
	Flat @ Cross .3357	9secs							"
	.3362	9secs							"
		95 sec	.3335	OK	1869/2000				"
		Eps	.3348	4471 w/ 2nd str					"
			.3357	OK					"
			<u> </u>	prob ideal for					15 sec
				λ 4471					30
	Comp (kept)								30

Spectr. Temp. Dome Temp./Hum. ... $-10^{\circ}\text{C}/60\%$ Transparency Conditions ... *cloudy after all 262*

Focus

Spectr. Temp. Dome Temp./Hum. *Note. I changed H mic Reading from .208 $\rightarrow$.205*

Comparison Filter	Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
						127/4481	1.691	269 80u			13330 13280	Ideal/Focus T=-10°C Focus Set @ .290	
											.3320	<i>Note - (Cross set @ .3325</i>	
		5439				127/4481	1.691	50u	3496/4000		13342	Maximises 4481 signal, but	
		4335				"	"	"	5562/8000		"	Cross @ .3342 gets OK 4481	
		62				"	"	"			"	and Blue to Red ends as well)	
						127/4471	1.750	50u	1288/2000		13340		
						"	1.760	"	1153		13350		
						"	"	"	1161		13360		
						"	"	"	379/1000		13370	No good - Too far off	
						"	"	"	1153/2000		13355		
						"	"	"	1220/2000		13342	wk 4471 too Blue end weaker	
						"	"	"	1194/1000		13365		
						"	"	"			13380	Nothing	
						"	"	"	919/1000		13330	kept kept	
									89/1000		13320	no good too nt	

263

#1

Echelle Tests

Emulsion Batches:

Date Feb. 5-6/88 Observers Tn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat Field			18 30				Tung	6
									6
	1.700	.3315							6
6secs all	1.700	.3340	5237						6
	1.700	.3350	Red cutoff						6
	1.700	.3320							6
	1.700	.3340							6
	1.680	.3340	Red cutoff					Tung	4
	1.680	.3330	5791 Red cutoff						
	1.680	.3335							6
	1.680	.3325	6705						6
	1.680	.3315	7643						6
	1.680	.3328	6531						6
									4
									4

New (Foster) posn of source

cutoff in blue

blue cutoff → Red

Ideal for this Ech Tilt

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 269

Focus

Spectr. Temp. Dome Temp./Hum.

Echelle

CROSS

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		no filter											
6		5055				* 1200, 4971	1.760	50u	379W4K		.3362	* Prompts CROSS to .3395	
6		5004							5013/8K		.3350		
6		4994							4841/8K		.3340		
6		50030							4423/8K		.3355		
6		5172							3986/4K		.3367	sharp Red cutoff	
6		5100							5247/8K		.3345	nothing @ .3380	
6		4805									.3330		
4		5694							4232/8		.3347		
											.3358		
6							1.740		5207/8		.3358		
6		6253					1.800		6093		.3358	Ideal for this tilt	
6		200					1.800		1951/2K		.3375		
6							1.720		6785		.3330		
4							1.700		5095		.3320		
4							1.700		3686		.3340		

(Note 1.800 is a max
Adj to Echelle grating tilt)

265 #2

Emulsion Batches:

Date Observers

.....

.....

.....

[illegible]

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 266

Focus

Spectr. Temp. Dome Temp./Hum. *Slit H now 500μ = .1215 micrometer set*

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6	7308				1209, 4471	1.680	50μ	6047/8K		.3328		
6						1.600		6224/8K		.3308	slow cutoff @ blue	
6	6340					1.600				.3315		
6						1.600		7209		.3303		
						1.790		5568		.3360	blue wk	
						1.790		5685		.3354		
						1.600		7205		.3308	Repa tot	
6	6579					1.600		6890		.3320		
	667					1.600		7399		.3315	blue cuts out	
	6707					"		5277		.3325		
						"		6250		.3322	OK for Reland of order	
94 45	40					"		1735		"	T = -11°C in dome	
7 45						1.790				.3365		
7						"				.3357		

267

Date Feb 8-9/88 Observers Tu

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.
	Flat							Tung	6
	"							"	6
	Comp							H Cath	30
	Comp							"	30
	Flat							Tung	6
	"							"	6
	"							"	6
								"	6
								"	6
								"	6
								"	6
								"	6
								"	6
	Flats for HD 48915							"	5
	HD 48915	06 44.6	-16 42	21 12	21 25			H Cath	
	"	"	"	21 28 ²	21 39				

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 268

Focus

Spectr. Temp. Dome Temp./Hum.
H = 210 = 500 m

Comparison Filter	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6	7398				1200/4550	1.790	1281 50μ	5034/8000		.3355	say .3209	
6	7431				"	1.790	"	4806/8K		.3330	going for order 125	
30	13				"	"	"			"		
30	13				"	"	"	2444/4K		.3225		
										.3220		
6	5734				"	1.790	50μ	6378/8K		.3240	Red cutoff	
6	7250					1.750	"			"	Red cutoff to blue of previous	
6	5445					"	"	6739/8K		.3230		
6	7715					"		7406		.3225	up & down	
6	7176					"		7259		.3218	better not so up & down	
6	7205					"		8654/16K		.3210		
6	7406					"		8735		.3203		
5	8500				1200/4481	1.650	50μ			.3315	H = 400m	
6	600		V = -146	A0	"	"	"			"		OK
	750							3578				

pg 2

Emulsion Batches:

.....

.....

.....

Plate No.	Object	R.A. 1900-865	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	H _D 47105	06 36.9	+16 25	21	22 07	00 26W		Hcath	45
	Flats @ this posn			x4					45
	Flats @ " "	new	WCH	x3					
	H _D 47105	06 36.9	+16 25		22 39	:		Hcath	45
	"	"	"	22 44	22 59				45
	Darks	10, 100 secs,	1000 [*] secs	Picket fence effect on	this 1000 sec dark				30
	DARK	1000 secs			23 51				\

271

Wed-Thurs

Dev Feb 13 5min
@ 68°F T_n

Emulsion Batches:

. Illa L. ref. g. JAN. 6/88. 25hrs
..... 3t, 0.51, 0.40Date Feb 10-11/88.... Observers Lg. T_n.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
50211	HD 37468	05 33.7	-2 39	18 26	19:40	00 55E	-2 29	FOARC Clear	15 sec 15 sec
50211 T	Spot Culin for 50211				15 min @ D4	17.5V 15V 15V 3900 4300 4810			
	Feb 15-16 Echelle Tests,								30 sec
	H cathode								
	"								
	"								
	"								
	"								
	"								
	Flat x2								
	Comp								45
	Flat								3
	Comp								45
	Flat								3

Spectr. Temp. 22°F Dome Temp./Hum. $41.0^{\circ}\text{F}/60\%$ Transparency Conditions OK 272Focus 402

Spectr. Temp.

Dome Temp./Hum. 1 BS installed; no further Rots adj tonight.
will measure G8 & G12 more before adjusting further

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
38270	So so / OK	3.6	095J	BC	G 4290 830/402	BS	III-L-efg	1	SB-Blu	* Prob too much comp Diffuser IN $\rightarrow$ cloud.	
10					EchTilt 1.630	277 60K	III-L-efg 1265/2K	H-550 210	.3250		✓✓
9							1152		.3260		
							1379		.3240	4510 wk	
							1231		.3255	4510 OK goal of brand	
							1352		.3245	4510 wk 4545 str	
							1246		.3253		
							1112		.3263	OK	
523						277 60K	2180 2212	1-600 205	.3263	Very flat/	Kept
617						n		n	n		Kept
					1.680		2458/4K	"	.3280	OK	
					1.730		1711/2K		.3295	OK	
5250							1974/2K		.3295	blue wk	
506							3043/4K		.3290	13303 too high (wk)	
500							2059		.3285		

273

Echelle Tests

Emulsion Batches:

Date Feb 15-16/88 Observers Tn

[illegible]

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 279

Focus

Spectr. Temp. Dome Temp./Hum.

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
30		22					1.790	60M	262/1K		.3320	too wt	
30		23							527		.3313		
30		23							775		.3307		
30		23							83A		.3300		
30									880		.3295		
30									942		.3290	Ref and much ie 24510 stronger now	
3		5053							3177		.3290		
3		5035							2700		.3300	blue wt	
3									685		.3315		
45		34							797/1K		.3315		
25		18							763/1K		.3288	- prob str signal	
3		787									.3288		
25		18							592		.3280	Finally weaker now	

275

Dev Feb 16/88 5 min

Emulsion Batches:

@ 68°F T_m

Was old Jan 6/88

Ind-e. JAN 4/88.

Date Feb 16-17/88 Observers Tn

[illegible]

Spectr. Temp. 28°f Dome Temp./Hum. Transparency Conditions 276

Focus

Spectr. Temp. Dome Temp./Hum.

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	<u>R FILTER</u>											
rc 4x	6428				BC	G=5430 1200/50.8	150u	HuJ	1	Set 398	Small diaphragm for slit in	Str
5x	1842				"	G=4240 830/40.2	"	"	1	Set 400	" " "	S/str
3x	2255				"	"	250u	Iu O-e	1	"	T=+29°f "	str
rc 1/2 4x	2798 3614				"	G 5430 1200/50.8	250u	"	1	"	" " "	Vs/str
rc 1/2 4x	1244 → (Some FeNe also)				"	"	* 150u	"	1	Set 397.5	" " " <u>cont</u>	Focus OK Comp slow
rc 1/2 4x	349 (only Fe arc)				"	"	"	"	1		" " " <u>5/Red</u>	

* proper stellar spect decker installed now.

T1 & T2 had experimental decker in place.

Note Fe Arc count rate somewhat erratic. Go by exp meter counts as guide.

Note Off hand from comparing exps with same slit and if we can go by Exp meter counts:
 then 1200 l/mm grating is ~~in better~~ somewhat less efficient than 830 l/mm grating in the blue.
 Compare exps 50207 and 50208 to check with stellar exps. Th

277

Thurs-Fri

Echelle work

Emulsion Batches:

Date Feb. 18-19. 188... Observers Ty. (kth for lbr.).....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp
	Comp for stellar exp (Durtis done earlier) h, k		+16					H cath	35
	HD 47105	06 31.9	+16 29	18 46	19 07	E		H cath	35
	"	"	"	19 11	19 35			H cath	35
	Flats x4 in HD 47105 posn								
	Flats x4 for SIRIUS								4 sec
	1st Comp for SIRIUS							H cath	35
	HD 48915	06 40.8	-16 35	19 53	19 57			Th A	35
	"	"	"	20 00	20 04			Th A	35
	HD 39801	05 49.8	+7 23	20 12	20 21			Th A	35
	"	"	"	20 25	20 43				
	Flats for HD 39801 x 3							Tung	1 sec
	Flats for HD 58715 x 4							"	1 sec
21805	HD 58715	07 21.7	+08 29	21 03	21 32	0018 E	+8 26	Th A	35
23785	HD 87901	10 03.1	+12 27	21 49	22 06	0225 E	+12 08	Th A	35
25105	"	"	"	22 09	22 41	0130 E	"	Th A	35
	Flats for HD 87901 x 4					"	"	Tung	4

Spectr. Temp. Dome Temp./Hum. 73.4°/56.6 Transparency Conditions Sl. hazy 278

Focus

Spectr. Temp. Dome Temp./Hum.

* Carded λ 4493
Note Ech Tilt = 1.620 should be mid order for our system

Comparison (Filter) Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H. X-gel	Program	Remarks	Quality
35	21					1.620	60u	1072/2K	.3328			
35	396	very poor	1.9	AOIV	Order 127			2325		1.5u Sp		Line
35	450		1.9	AOIV				2448				Fine
	2129 2100							0000 1944				
	2485 ?							2400 ?				
	5100 5366							4417 4486				
	5000 14417 4950											
35	847/1000							847/1000				
35	1005	OK	1.5	AOm				6094				
35	1000		2.66	m2Iab								
35	395		2.66	m2Iab				982/1K				
	340										Picket fence effect!	not right
150	567 878							1058 1054				
150	856 992							1051 1033				
35	798 690							1000 961 1038				
35	112	900d	2.8	B8V				997/1000			* SCORER RA oscillate	
35	700	5050	1.36	B7V				2619			Seeing going to poor	
35	700	5050	1.36	B7V				4978/8K			Flat looking	
35	5376 3121							4231 4189/8K				
35	207 5951							4179 4724/8K				

279 #2

Emulsion Batches:

Date Observers ... 19

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat Flds For ↓ (@ HD 97633 _s)			22 54					2sec
#1	Camp for ↓		(Position)					Th-A	35sec
3236S	HD 97633	11 09.0	+15 59	23 02	23 52	E	+15 36	Th-H	35sec
"	"	"	"	23 54	00 24	01 14 E		Th-H	35sec
	DARK while topping up							Th-A	300
3500S	HD 97633	11 09.0	+15 59	00 57	01 33	00 05 E	+15 35	Th-H	35
3698S	HD 97603	11 08 47	+21 04	01 38	02 05	00 27 W	+20 41	Th-A	35
3896S	HD 97633	11 09.0	+15 59	02 13	02 54	01 16 W	+15 36	"	35
"	"	"	"	02 58	03 46	02 08 W	"	"	"
	Flat Fields x 4 @ this posn.			1, 1, 1.5,	1.3 sec		"	Tungsten	4sec
	DARKSx2 180sec (16/1K real clean)			180sec			"		

Spectr. Temp. Dome Temp./Hum. Transparency Conditions *Fine* 280

Focus

Spectr. Temp. Dome Temp./Hum.

Comparison Filter	Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		2058 1885				1200/4493	* 1.620	60μ	2142 2161	13328			
		22							958/1K				
		104	50 sec → OK	3.3	A2V				*2090/14K			Shows a few narrow lines though *Picket fence damn! kept	
		100	OK	4	"				794/1K			Note During previous exps I noticed outside monitor Flash brightly once. I wasn't pushing any buttons either. I wonder if it's related to noise problem.	
									30/1K				
		23	good	3.3	A2V				1046/2K			No sep Flats because I only moved 5° in dec; (slowly)	
		138	"	2.68	A4V				1015/2K			Flat	
		187 *	"	3.3	A2V				* 867/1K			* why 867 cuts? cloud thinly	
		105	fine	"	"	"	"	"	864			cloud thickly	
		918 8820							827 1513				
		947 1387							882 1261				

*Note. perhaps grating tilt was 1.630, as it is Feb 24 T_n

281

Tues-Wed

Emulsion Batches:

Date Feb. 23/24/88. Observers KK-Ty

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
	Seton Moon & Capella & notel image on Fiber feed half - notable to see notches in moon or capella								
	Capella with Speedometer Fiber feed. Image with h/seeing sl larger than feed circle								
	Flat Field 10 sec <u>ideal</u> in normal 37500 sp contr posn								
	Echelle Reticon Tests (Looking for Idea setting for 74560 centered)								
	Flat Field							Tung	4
	"							n	4
	"							n	4
	"							n	4
	"							n	4
	"							n	4
	"							n	4
	Comp							H cath	30
	"							n	40

Spectr. Temp. Dome Temp./Hum.

X 73

	Exp. Mir.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
rela image.											Gap between wedges is $\approx$ width of Star image with bad seeing	
d circ image.											High background noise (indicator lights on Power supplies?) <u>not starlight</u> (Yes, we blocked them out and reduced background)	
2000/						Echelle TH=600	X grating				ORDER 127 centered on 4493 Å	
						1.630 60μ	.3310					
						" "	.3205 .3300			ORDER 125 λ 4560	Red wk	
						" "	.3426			"		
							.3465 .3845					
							.3195					
							.3190					
							6544	.3185			Comp ok Too 1177/2K	
							5687	.3178			Comp Blue end wk	
							6670	.3187			Idea / I think	
							5569	.3193			Red getting wk	
								.3193				
							.3205	.3187			Printed	
Note:											Not many "dicket fence" patterns,	

283 Wed-Thurs

Echelle work

Emulsion Batches:

Date .. Feb 24-25/88 Observers T. H.

Forgot to correct PC Time

[illegible]

Spectr. Temp. Dome Temp./Hum $+18^{\circ}\text{F}/90\%$

Transparency Conditions *Semi... cloudy* 284..

Focus

* Note PC Time Behind ASTO
EST Time By 2 min 27 sec

Spectr. Temp. Dome Temp./Hum. /

Comparison Filter Exp.	Exp. Mtr. <i>no filter</i>	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	.. Program	Remarks	Quality
<i>4 sec</i>	2563	2525						5052	5090			
	2412	2580				1.630	60u	5038	5110	ORPDR125	centered 4560Å	
<i>30</i>	28					"	"	1438/2K		"		
<i>30</i>	280					"	"	1403		"		
<i>30</i>	129					"	"	777		"	Snow	
								18/1K			can't seem to get any without "picket fence" effect?	

Much "picket fence" stuff with darks

can't seem to get any without "picket fence" effect?

285 Mon-Tues

Echelle Reticon

Emulsion Batches:

Date Feb. 29 / Mar. 1 / 88 Observers Tn. - Fds. / K.K.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat Fields x2							Tungsten	6 sec
Comp for	HD 24760			18				Hcath	30 sec
2005	HD 24760	03 57.1	+39 59	18 50	19 04	W		Hcath	30 sec
	RIGEL HD 34085	05 09.7	-8 19	19 12	19 25			Hcath	30
	"	"	"	19 29	19 42				
	"	"	"	19 46	20 07				
	Flats x2								7 sec 11 sec
	Flats x2 for SIRIUS								11 sec 15 sec
	SIRIUS HD 48915	06 40.8	-16 35	20:30	20			Hcath	30
				21 08	21 12	(picket fence d/s)		Hcath	30
				21 13	21 15.48				
					21 22 21				
	DARK x2							Hcath	30. 300 sec

Spectr. Temp. Dome Temp./Hum. $-5^{\circ}\text{C}/52\%$ Transparency Conditions *thin cloud* 286...

Focus

Spectr. Temp. Dome Temp./Hum. $-10^{\circ}\text{C}/90\%$

Comparison Filter Exp.	Exp. Mtr. <i>no filter</i>	Seeing	Ptg. Mag.	Sp.	Inst. <i>x tilt.</i>	Grating/ Tilt	Slit <i>H=500u</i>	Emulsion	P.H.	Program	Remarks	Quality
4, 6 sec	1064							950/1K				
	1051				.3187	1.630	60u	973/1K		OR 125		
4, 30 sec	11							1718/2K				
	1718/21											
4, 30 sec		✓ poor						"picket fence"		discarded	Too slow: curtailed	
4, 30	120	"			1/2 "picket fence" effect	(kept though)					1st comp had 1/2 picket fence effect.	
	190	"	0.0	B8La				1766/2K				
	301							3500/4000.				
7 sec	1133							1324				
11 sec	1774							2116				
11	1808							2093				
15 sec	26-3											
4, 30	197		-1.5	A0m	13187	1.630	60u	(picket fence → discard of 1st attempt)				
	264							(4906) (1912)			2nd one has 'picket' effect too - discarded 3rd one OK	
	106							1009.				
	168							1806				
4, 30 sec	60 sec, 60 sec							33, 88				

287 Tues-Wed

Echelle Reticon Work

Emulsion Batches:

Date Mar 1-2/88 Observers Tn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
	Flat Fields x 4 @ Rigels posn + One long (35sec)					*		Tungsten	15, 15
3985	Rigel HD 34685	05 09.7	-8 19	19 08	19 15			H Cath	45sec
5305	"	"	"	19 19	19 29			"	45
6625	"	"	"	19 35	19 43			"	45
	"	"	"	19 46	19 58				45
8605	SIRIUS HD 48915	06 40.8	-16 35	20 11	20 17				—
9265	"	"	"	20 18	20 21.30				—
9925	"	"	"	20 26	20 29				45sec
1129	"	"	"	20 32.30	20 40				—
1190	"	"	"	20 40.30	20 51			H Cath	45sec
13225	"	"	"	20 59.30	21 04				—
13865	"	"	"	21 05.30	21 09				45sec
	Flat Flds @ Sirius's posn				25sec, 35sec, 45sec				45sec
1784	Regulus HD 87901	10 03.1	+12 27	21 27	21 41				—
1850	"	"	"	21 43	21 55				45sec
	Flat Flds x 2			30sec,					—

Spectr. Temp. Dome Temp./Hum. $-11^{\circ}\text{C} / 48\%$ Transparency Conditions *Some cloud* 288.

Focus
Spectr. Temp. Dome Temp./Hum. $-10 / 70\%$
counts
1st comp attempt had "picket fence" effect
(No changes to slit or tilts from previous night)

Exposure	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. Tilt	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
15.1	2984	2034	*		X grating			950654	*			
11.1	2826	2085	7.500			1.630	60m	901.658	2388	ORDER 125	(1st Long Flat had picket fence 35 sec)	
43.2	33											
45	365	5050	0.0	B8Tg				1709/2K			[1st 5 half pickets* 19:01 - 19:07]	
45	363	"						1550				
45	312	OK						1206			guidelon LHS of slit	
45	328	5050									" " RHS picket fence Discarded	
	286		1.5	A0m				1310			guidelon RHS of slit	OK
	295							1164			" " LHS of slit	Blue w/ OK ?
45	751							3893			(Center guidel - 11)	Blue w/ OK
	285							1102			Guidelon LHS	
45	388							2101			" " RHS Cloud too	
	567							2274	✓		(Picket 1st shot) discarded	
	?							?			Guidel Lot center	
45	?										center guidel	
45	5765		11182					1012, 1515, 2057				
	328	OK						1699			center guidel	
	202							1118			Near moon $\approx 10^{\circ}$	
45	7383, 7930							1135, 1264			Guidelon	
											One picket fence 30 sec	

Darks x 2 End 300 sec
600 sec dark attempt
was p fenced

289 Thurs-Fri

Spectograph

Emulsion Batches:

Date MAR 3-4/88..... Observers T.n. + Andria.....

600sec + 1200sec + 1200sec.....

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.
734	HD 47105	06 31.9	+16 29	20 14 29	21 07 36	W	+16 32	FeNo clear	60sec 60sec
	"	"	"	21 20 40	21 41 23		"	"	"
748.TST	"	"	"	21 43	22 03 26	02 00W	"	"	40sec
	Q LEO AB HD 83808	09 35.49	+10 21	22 15 36	22 35 36			"	"
750.TST	" Cont			22 36 33	22 56 31			"	40sec
	Last Comp	@ 23:02							40sec
	Flat Field							Tungsten A=1/4	270
	Flat Field	600 secs Total						Tung A=1/8	300
	DARK	300 secs	(Cap, ie dust cover installed first)						Lights out
	DARK	3600 secs							300

Focus

Spectr. Temp.

Dome Temp./Hum. -6°C / 60%

Dome Temp./Hum. ✎

Transparency Conditions *Part Cloudy* 290

Cooling Bath temp @ 18:30 = $+4.9^{\circ}\text{C}$

Just int in "A"

PC clock $\approx 30\text{sec}$ ahead of Astro clock

[illegible]

291

FRI-SAT

Spectograph

Emulsion Batches:

Date MARCH 4-5/88... Observers Tr-Kk-Shenton.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Ex
	Flat Field			2 18 hrs		0 0	near platform	Tungsten A-18	1800
	1st Comp							FeNe clear	50
	16 ORI HD 33254	05 03 50	+9 42	* 19 06 20	19 * 11 38				30
	HD 47839	06 35.5	+09 59	19 46 35				FeNe clear	60
	Flat Field		in IB					Tungsten A-18	600
	Comp (Looking for Lino IDs)							FeA clear	70
	HD 47839	06 35.5	+09 59	21 18	21 36			FeA clear	50
	HD 66141	07 57.1	+12 36	21 42	22 02	00 33W	+12 28	FeA	90
	HD 86360	09 52.9	+12 55	22 13	23 00	E +		FeA Tung A-18	1200
	Flat								
	Dark								

Spectr. Temp. Dome Temp./Hum. $5^{\circ}\text{C}/50\%$

Focus

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions FINE..... 292

Chiller Bath @ $+7.8^{\circ}\text{C}$ @ 18:10 EST

PC CRASH beginning

Comparison Filter Ex	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion Wave Length	P.H.	Program	Remarks	Quality
180/40	11				PCS	1800/45°	120	3860 Å				
Ne 50											PC CRASH 19.5 sec into 1st comp.	
380/4	OK	5.67	A _m								* Astro clock time Exp to 19 40 EST	
370/11	OK	4.40	OTV(f)							600/sec		
2000/150												
700/36												
70						approx 1800/50°	120	4800 ✓				
440	OTV(f)	"	"	"	"	"	"	"		3000/sec		
2000/50		5.5	R2 III	"	"	"	"	"		IA.	Bath = 7.7°C 1200 sec Heat T = 35.7°C	
1800/60	SSD	5.22	B9 IV	"	"	"	"	"		IB (B _{1/4} SB)	[1200 sec + 1200 sec]	
3650/160				"	"	"	"	"		IA		

293 Mon-Tues

Photon Counting Spectrograph WORK

Emulsion Batches:

Date MAR 7-8/88... Observers J.H. + some KK.....

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
773	Flat Field	Done	while Tube still cooling (Tube stack $\approx 25\mu A$)					Tung A 1/16	600
774	" "	Tube	Stack $\approx 30\mu A$	-				"	1200
775	" "	"	" slt	$30\mu A$	Bath @ $+38^\circ C$			"	600
775	1st Comp	while on 1st star					+	FeA Clear	70
	HD 44990 ^{T mon}	06 19.8	+7 08	18 50 53	19 45				600
	"	"	"	19 45				FOA Clear	70%
776	NGC 2392	¹⁹⁸⁸ 07 29	¹⁹⁸⁸ +21 00	20 11	20 44				
	HD 66141	07 57.1	+2 36	20 49	20 59				
	HD 76151	08 49.4	-5 04	21 06	21 26.10				
	HD 93521	10 42.7	+38 06	21 40	22 00		779 Comp	FeA	70
							781 Comp	FeA	60
2,3	HD 95735	10 57.9	+36 38	22 25	23 06.43				
DR #6	^{CO or VIR} HD 115521	13 12.6	+06 00	23 12.12	23 32.15			clear FeA	60
DR 9	Flat Field	Tel on platform			00 05.35	0 0		Tung A 1/16	1200
	DARK	"	"	(Dustcap in place)		0 0		FeA DARK	600

Spectr. Temp. Dome Temp./Hum. $+4^{\circ}\text{C}/65\%$ Transparency Conditions *Some cloud coming*

Focus

294

Spectr. Temp. Dome Temp./Hum. $-2^{\circ}\text{C}/80\%$

Comparison Filter Exp	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
600	230 230/125				PC S 1800/51°	1800/51°	BS	2 4800			written	
1200	" "				"	"	"	"			not written - Superimposed on c (comp.)	
600	270/160				"	"	"	"			written	
70	390/22				"	"	"	"	IB	IB buffer	IB	
70	700/33	OK	^{mv} 5.666	F7Job	"	"	"	"	IA	Ly prg.	600sec + 1200sec [PC CRASH @ end of 600sec exp]	
70	800/30				"	"	"	"	IB	IB	CRASHed during expo 809cnts warm boot up	
	35/5	OK	8.3		"	"	"	"	IA	clown Face Map		
	3-5k/300 400	OK	5.5	K2M	"	"	"	"	IA		faster than last night	
70	4-13k/50	OK	^{v=6.00} 6.67	d63	"		"	"	IA	as high as 1500cnts/sec	equally kept 200sec @ 1200cnts until cloud	
60	400/15	OK	6.76	09.5V	"	"	"	"		Blk - OK	as high as 850/sec	
60	130/16	OK	7.60	mb	"	"	"	"			thin cloud	
60	500/40	OK	^{v=} 4.80	M2M	"	"	"	"	IB	std vel	cloud thickening	
1200	230/125				"	"	"	"	IA		Tube Start @ +35.0 uA	
600	1-7/1-7				"	"	"	"	IA			

295

Thurs-Fri

Date MAR 10-11/88..... Observers Tn.....

Emulsion Batches:

5m ... D. a. l. e. f. g. 255- ... Feb 2 1988
5m ... D. a. l. e. 147- Feb 16. 24 115

[illegible]

Spectr. Temp. 35.0°FDome Temp./Hum. $0^{\circ}\text{C} / 60\%$ Transparency Conditions $\text{Photometric-Sl. hazy}$Focus 397.5Spectr. Temp. 32.0°FDome Temp./Hum. $-5^{\circ}\text{C} / 98\%$

* DIFFUSER in / LARGE APERTURE

Comparison
Filter Exp

RC 10

2

10

10 sec

10

10

RC 10

RC 10

RC 10

2

15

10

RC 10

2

1182

627

Exp. Mtr. *	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1107 188 27139	OK	1.9	ACTV	BC	G=5430 1200/508	BS	III-J-efg	1	Asm Sp-KK		OK
64 14,500 62 15682	"	3.9	FOLD	"	"	"	"	1	" " "	MAR III hung up before last comp	OK
33 15682 100 7354	OK $\rightarrow$ 900	4.39	K2M	"	"	"	IIaD-e	1	std vel		slut
1201 / 1495				"	"	"	"	1		T=34.9 Set 397.5	car for
50 20000 20,100	OK	5.22	B9IV	"	"	"	III-J-efg	1	SB-Bln	mid comp 1900cnts	OK
							III-J-efg				lost in
3267 2300	so so	6.67	4G3	BC	1200/508	BS	IIaD-e	1	Asm Sp-KK	severe RA occultation @ 1300h	slut

297 THURS-FRI

Date MAR. 17-18. 188. Observers T. H.

Emulsion Batches:

Emulsion Batches:
 ...Tital-efy 2.55... Feb 2/88

DRIVE TESTS

[illegible]

6285

Transparency Conditions *Fine - Cloudy*

Note CCD connection loose, giving occasional unstable image. 298

Dome Temp./Hum. -5°C / 90%

Comparison	
Filter	Eu

[illegible]

#1
299

MON-TUES

Photon counting work

Emulsion Batches:

Date MAR 21-22/88.... Observers Tn... Ak.....

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.
DT 146TN	HD 55185	07 06.8	-00 20	19 05	19 11	0018E	-00 19	200 frames	
147TN	"	"	"	19 19	19 29			300 "	
148TN	HD 74739	08 40.6	+29 08	20 02	20 08			100	
FM000430TN	"	"	"		20 12	0050E	+28 56	3	
SP000788.TST	"	"	"	2035 14	20 44		"	600 sec	
"	"	"	"	2045 23	20 50			300 sec	
789JST	1st Comp							FeNe A=1/8	60 sec
790	2nd Comp.	after focus adj (1/4 Turn CW)						"	"
	3rd Comp	"	"	1/2 Turn CCW				"	"
SP000 791	HD 74738			21 24	21 56			FeNe A 1/16	"
792	Comp @ end			21 59				"	60 sec
	BD +20 2465	1988 10 19	1988 +19 55	22 07	22 30	Bombed @ 1460 frames			
								FeNe A 1/16	60 sec
795	"	"	"	23 00	23 40	01 06W	+20 03	FeNe A 1/16	60 sec
797	HD 103095	11 47.2	+38 26	23 51 25	00 11			FeNe	60
799	Flat Field	Tungsten A=1/16 (small aperture in) @ 00 24 → 00 34							6000

30i #2

Date MAR 21-22 cont. Observers KK-Ty.....

Emulsion Batches:

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[illegible]

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions

302

Focus

Spectr. Temp.

Dome Temp./Hum.

PC crashed
WARM START DONE

Comparison Filter Exp.	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
9950 1200	7200-2400				PCS	830/130°	Fiber Feed	Ht	IA	*Quit @ 523	(No one was here)	WRITTEN
3600	100-2300				"	"	"	"	"			

Note I had some problems doing a "Cold Setup". I think connection got bumped @ Com 1 when I plugged in printer to Best, because it was necessary to upload M6809 as in cold setup. I found I could do it going through instruct's completely, including the double dos stuff and Datacomm. Then I was able to "Warm START" in non double dos mode. ~~Both work double dos but~~ In

P.S. I don't know why the time changed in the "Sheet" program. The Best time was OK. I remembered how to Reset program time, OK now. I think I can now do a PCS cold start. I don't know why it took so many tries though.

Fri Sat

PCS Engineering with

SpeeDometer Fiber Head

Observers

Ty.

in
place

[illegible]

Spectr. Temp. Dome Temp./Hum. $+7^{\circ}\text{C}/90\%$ Transparency Conditions *Cloudy - s/clear* 304

Focus

Spectr. Temp.

Dome Temp./Hum. $+5^{\circ}\text{C}/95\%$ TV CCD guider @ 8 frames/s Y2 Int
for cloudy guiding - signal $\approx 100\text{ cnt/sec}$

Comparison Filter	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2 60	230 20											
1800	130 10		V=									
1800	100 15	5050	6.91	A2	PCS	830/30°	150 μ	H α	IA	Spectrometer Fiber Feed	Hilt @ 23 05/RI @ 2312 much cloud @ 1st	
1800	100 20	poor	7	4	"	"	"	"	IB	(550 cnts 14 clear)	clear now 500 cnts/sec through haze	OK
1800	150 25				"	"	"	"	IA			
1800	100 30	5050	V= 9.15	M	"	"	"	"	IB	clear	CCD INT easy to guide on @ 22 frames	
1800	150 22											
1800	2790/100	Note - Rack put to 17,500 to reduce signal from 5,500 or so. The signal from known sources like Fene's Tung. varied today when all other things were equal.										
1800	0 4				PCS	830/30°	150 μ	H α	IA	[Cloud now but last 2 stellar expos had clear sky]		
1800	0 5	(just for fun)			"	"	"	"	IB			

305 THES-WED

TUES-WED

Date MAR 29-30/88 Observers T. G.

Emulsion Batches:

[illegible]

Spectr. Temp.

Dome Temp./Hum. *+5 C. / 60. %*

Transparency Conditions . . . SHORT CLEAR MORE SUB

Spectr. Temp.

[illegible]

✓ TAKE TO ~~202~~ 812

3 TRACK Pump 30 M/30 M/1

Comparison Filter	Exp. Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
100	30 110				PCS	830/30°	BS	H+				
1500	200 13	5850 OK	9.5	M							Near Moon - Hazy [CCD focus on monitor of SLOT is poor]	
100	270 80											
1200	2600 580								IB			
1800	-5/1-7				.	.	.	.	IA	→ not continued, as I turned down PCS (Backed up on Floppy)		

307 Wed-Thurs

Note Astr clock ST 2 min ahead of
old ST clock.

Emulsion Batches:

Date MAR 30-31/88...

Observers ... T.H.

Astro clock appears
to be correct.

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.
53	F14t	(while moving Telescope)		18 56 30		0 0	platform	Tung A 1/16	600
54	1st Comp			19 15 43				# 4 A 1/4	60
55	F14t			19 23 48				Tung A 1/16	600
55	HD 86801 ??	09 558	+29 02	19 38 46	19 58 47	Cont. E	+28 42		1200
56	"	"	"	20 00 08	20 20		"		1200
56	"	"	"	20 20	20 40	01 04 E	"		1200
Comp 57	"	1988.3 Reading	"						
58	" None	09 10 01.3	"	20 46	21 16		+28 46		1800
59	Comp while moving to next star								
60	BP+20 2465	10 19.5	+19 55	21 25				# 4 A 1/4	60
61	Comp (Labeled BP+20 2465)								
62	AW UMa "B"	11 29.4	+30 02	22 07	22 38		+30 10		1800
	" "	Cont	"	22 41			"		1800
Restart (cold)	" " "A"	BRT one		23 14 37					1200
Restart (cold)	" " "			23 51					1200
	Near Moon	Channel A		18 cnts/sec	Channel B		53 cnts/sec		
	Nearer Moon	"	"	(33-45)	"		(80-130)		

Spectr. Temp. Dome Temp./Hum. $+4.1/65.8$ Transparency Conditions .. Fine 308

Focus

Spectr. Temp. Dome Temp./Hum. $0.0/180.7$

Penk metal

(Red Cd tonight) Chiller Temp = -20 at beginning
Stack Temp = 383 μ A
Previously, Blue Cd used.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B					830/30°		Red Columnar			Rate @ 39,000 (modified) ^{Bumpier the} us ua !?	
700/1200											
350/700											
700/1200										Rate @ 31750	
2/200	5050	V= 8.88	GOV	PCS		300 μ	HA	IA	std vel?	South one of pair *200 cnts done last year with PCS Tops	
1/250								"		Typical count in B = 170/sec	
4/250								"		Comp @ End @ 20 42.26 IB	
7/160								IB	std vel?	NW of pair	
							Note: There is a bit star	Rel (IA)		NNW 20' of this previous pair	
10/130		9.5	m			300 μ		IA		as high @ 210	
177/700								IB		I could have sworn it was	
7/75	5080				830/30°	300 μ		IB		Dark when without sky = 0-7 both A & B	
4/180	"							IB		Reversed for the last std vel	
4/600	"							IA		Crashed @ 58 sec into exp	
[CRASHED 3rd time at end of plot of top line]										CRASHED again part way through plot	
(exactly like 2nd CRASH)											
more moon cts										A (240-260) B (595-630)	

Spectr. Temp. Dome Temp./Hum. 148°F/92%
 Focus
 Spectr. Temp. Dome Temp./Hum. 143°F/98%

Transparency Conditions hazy 310
 Note "GRAPHICS" needed to plot on printer

The East End of Worm Gear

Comparison Filter	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	55	OK	6.45	AO	7		Fiber Feed	Rack = 11,900	Above	Fiberhead Slot	H1	
320	5				7			"		(moved Box up from previous)	H10	
600	55				9			"			H:8	J9
100	75	Var OK	6.04 D=1.0	dko	7	Both in Fld		"		dbl sep = 30.5"	J:3	J:7
100	5 box up				7	Lower Left star out of box	in Dec			bottom brt star out of box	J:2 approx	J:5
300	57	soso			7	(Lower symmetric in Box)		standing		stars RA centered in Box	J:8	J:10 = KO
300	9	OK	Sometimes too near LHS of Box		7, 9, 11 no go			above slot		brt star near Left of Box	K:5	K:9
300	39	soso			7					brt star near RHS of Box	K:4 leaving	K:9
10	9				7					brt star @ Left of center of box	K:2 entering	K:2
30	9									LHS of Box		K:9
60	23											
300	39	OK								center of Box	K:8	OK
	7x87	7569 pixels									sep 30.5" on Fiber Feed Head	
	7x87	OK seeing									" on	
											getting cloudy & foggy	

(Fiber View v2 + Image Acquisition View)

311

Fri Sat

Date .. APR. 8-9/88... Observers .. T.M.

Emulsion Batches:

.. Daley 2J5 .. Feb 2/88
(gas 24 hrs)

.. D.O.-C. 1A7- Feb 6

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.
50217	HD 86360	09 52.9	+12 55	20 17	22 17	01 12 W	+12 37	Fe ARC clear	20" 10"
50217T	Spot Calc for			50217.20 (next night)	+50223	15 min @ DA	171.8V 3900	15V 4300	150 4810
50218	HD 136202	15 14.2	+02 09	22 29	23 27	02 52 E	+01 56	Fe ARC clear	20 10 20 10
50218F	Focus Test			23 40		0 0	+23°	Fe ARC clear	20 10 10 10
Tests	Time/counts on HD 136202 ↓			00 20	00 30		+01 56		
"	(It seems to have a close fl/coma now)			00 43	00 53		"		

Spectr. Temp. 440°
Focus 394

Focus . . . 394

Spectr. Temp. 40°f.....

Dome Temp./Hum. *40.7/65.0*

Dome Temp./Hum. $+35^{\circ}\text{F} / 85\%$

Transparency Conditions... *Fine... but gudy from North*

* Comps with diffuser in, Large Aperture ³¹²

Early problems with E dome Turn Relay

[illegible]

313

Mon - Tues

Emulsion Batches:

formigas 24h

Date APR 11-12/88

Observers

Tn.....(Stefan phenylin)

1.56, 0.25

...D. S. 215- Feb 2/88

Page 1A7 Feb 16/88

[illegible]

7/9/88
Feb 2/88
6/18/88

Spectr. Temp. ... 50°F Dome Temp./Hum. 78°/50% Transparency Conditions ... Fine - sl. hazy 314
 Focus ... 39.2
 Spectr. Temp. ... 48°F Dome Temp./Hum. 6°/90%
 → Diffuser in for Fe ARCS
 note → Pl #s 19-21 labeled 18 → 20 on plate

Comp. Filter	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
BC	3700				BC	65430	BS	Utal-eg 1			T=58°F Set 392	center s. Red
BC	5,890					1200/30.8	BS	Utal-eg 1				shows periodicity
BC	77 columns	fine	V=+3.9	K211	npf=7	"	BS	U: 4 in worm		Rack posn 19550, (Tilted)	for image centered in slot	comp. slot
BC	710 cuts	"	"	"	BC	"	"	Utal-e 1		std-vel		OK
BC	5161	"	"	"	BC	"	"	Utal-e 1		SB-Blu	Rack 19,800 [image visible both sides]	OK
BC	4,700	"	5.22	B911	BC	"	"	Utal-eg 1				OK
BC	1,630											
BC	1,550											comp OK
BC	1,860	fine	6.76	6.76	BC	5=4940 830/40.2	BS	Utal-e 1		Blu-OK	T=149°F Set 393	OK
BC	77 columns	fine	5.6	F811-II			"	[Z 8 in worm]		Rack posn 19800	npf=11	
BC							"	Utal-e				✓ ✓
BC	300	fine	5.6	F811-II	BC	830/40.2	BS	Utal-e 1		std vel	thin cloud	comp OK
BC	77 columns	v fine	"	"			"	[Z 4.5]		Rack posn 19,800	cloud (moved dome during exp)	OK

315

Tues-Wed

Emulsion Batches:

...II. as-efg... 255 - Feb 2/88

Date APR. 12-13/88.... Observers ...T.H.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
50223	HD 29316	04 32.0	+53 17	19 38	20 26	05 00 W	+53 33	FOAK clear	1,190 1,600
<u>APR 14/15</u> Echelle Reticon exp tests.								Holov cutback	180 sec 250 sec
Flat Field @ α Leo's posn								Tungsten	12 sec
Test	OBSERVING NOW - APR 14/15			H=90%	T=+5°C	Dome, s/c cloudy		"	8 sec
	Flat Fld's x3 @ α Leo posn							Tung	6 sec
	1st Comp @ " " "					01 " W	+12 08	Hcath	45 sec
	Dark (no good, not kept)			21 53			"		120 sec
	HD 87901	10 03 03	+12 27	22 14	22 27	01 35 W	"		
5325	1	[started 22 28] Restart @			22 40	22 46			
	Comp.							Hcath	45 sec
	HD 87901	10 03 03	+12 27	22 49	23 11			Hcath	45 sec
	Comp								

Transparency Conditions . . . *Some cloud coming* . . . 316

Focus 391

Spectr. Temp.

Dome Temp./Hum. +9°C 180%

[illegible]

317

~~Fri~~ Thurs / Fri

Emulsion Batches:

Date Apr 14-15 cont Observers Ty

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.
596C	Comp	@	α Boo	pos'n	[picket fence 1st try]			Hcath	45
662S	HD 124897	14 1106	719 42	23 24	23 32	E			
728S				23 33	23 44				
794S				23 45	23 56	01 03E	+19 23		
860C	Comp @ same pos'n								
926S	HD 124897			00 0307	00 20				
	Comp @ end							Hcath	45
1058	Flat							Tungsten	6
1194	Flat							"	9
1190	Flat							"	16
1256D	DARK								600
	DARK								600
	Then GLONG done on TEST 1872								

at α Boo pos'n,

while closing (lights out)

while tapping dewar (lights still out)

Spectr. Temp. Dome Temp./Hum. Transparency Conditions ... *S. H. 2.4* ... 318 ...
 Focus
 Spectr. Temp. Dome Temp./Hum. *0°C / 90%*

Comparison Filter Exp.	Exp. Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	<i>no filter</i>				<i>2966/1K</i>							
<i>45</i>	<i>38642</i>				<i>1200/3182</i>	<i>1.630</i>	<i>60u</i>	<i>4560A</i>		<i>Order 125</i>	<i>Printed faulty comp</i>	
	<i>391</i>	<i>poor</i>	<i>V=0</i>	<i>K2mp</i>	<i>725/1K</i>						<i>→ mainly center guided</i>	
	<i>388</i>	<i>u</i>			<i>909</i>						<i>→ Guidel @ LHS of Slit</i>	
	<i>470</i>	<i>u</i>			<i>822</i>						<i>→ " @ RHS of Slit</i>	
					<i>3071</i>							
	<i>1280</i>				<i>2376</i>						<i>S/Left of center guided</i>	
<i>45</i>	<i>43</i>				<i>3160</i>							
<i>6</i>	<i>1161</i>				<i>1539</i>							
<i>9</i>	<i>1747</i>				<i>2319</i>							
<i>16</i>	<i>3244</i>				<i>4246</i>							
<i>600</i>												
<i>100</i>	<i>0</i>				<i>19</i>							

319 Thurs - Fri

Date APR 21-22/88 Observers 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.
DT000164TN	HD 95345	10 55.4	+04 09	19 47 08	19 52 53	E	+3 48	int x 0	300 fms
DT000165.Tn	"	"	"	58 32	19 10 36	01 07 E	"	"	600
	Echelle Raticon OBS Tests								
	Flat x 3	whisk on Regulus						Tungsten	7 sec
	HD 87901	10 03 03	+12 27	20 54 11	21 03			Heath	90 sec
	"	"	"	21 05	21 13			Heath	90
	Flats x 3	@ Ray posn						Tung	8 sec
	Flats x 3	@ Spica pos'n						Heath	8 sec
9925	HD 116658 ^{Spica}	13 14.9	-10 38	21 29	21 44 20	E	-10 59	Heath	90 sec
11245	"	"	"	21 49	22 04			"	90 sec
	"	"	"	22 08 27	22 21				90 sec
	"	"	"	22 24	22 40				90 sec
	Flats x 3	@ Spica pos'n						Tungsten	

Spectr. Temp. Dome Temp./Hum. $\pm 5^{\circ}\text{C} / .702$ Transparency Conditions *Fine* 320

Focus

Spectr. Temp. Dome Temp./Hum.

Exposure		Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
0 300		5050	V= 4.93	K1 III	BC	Rack posn 19800	BS	hpf=7		East side worm gear end		AN(PK)
600		"								HOT in	Int turned up	
0 filter						Exp counts		centr 7	H=5000	order		
179, 1165/168						1048 1059	600 277	4560A 515	Xgrat tilt	125		
300		poor	V= 1.36	B7V	1750						interesting effect of usual "glitch" posn. Not seen in any exp.	
2800					933							
836												
2685												
328		poor	V= 0.96	B1V	1775						NORTH is up on monitor guide? below slit	
313					1529						guide? above slit	
310											guide? below slit	
376					1722						" " "	
2800					1500						T = +0.524	

321

Conf.

Date APR 21-22/88 Observers KK-Tg.....

Emulsion Batches:

Шо. Фе

old

• • • • •

.....

Diffusivität

[illegible]

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions 322

Focus

Spectr. Temp.

Dome Temp./Hum.

[illegible]

Fri-SAT

Observers

Fds. - T. 17

Dev APR 23 T₉ 3+, 0.76, 0.65
Dev Apr 23 T₉ 1.54, 0.25

Emulsion Batches:

III-as.-ofy 255
II-o-e 117 F

..... Feb 24 1965

Comp
Counts

[illegible]

Spectr. Temp. 414

Dome Temp./Hum. +3C / 70%

324

Comparison Filter	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
947 1050 1350	12,504	OK	5	B5V	BC	G 5430 1200/508	BS	IIIa-fg	1	B stars		OK
850 900 940	12,869	OK- 5050	4.3	B3V	"	"	"	"	1	"	seeing variable	OK
	12,800							IIIa-fg				sl/fog ✓ Comp OK
1777 630 850	5000	5050	5.95	B4V	BC	1200/508	BS	II+0-e	1	B stars	Spectr Temp = +43°F	vs/ok
1500 1100 5	12,500	OK	4	B5IV	"	"	"	IIIa-fg	1	"		OK vs/ok
	12,600							II+0-e				✓
649 650 800	4,560	5050	5.6	B1V	BC	1200/508	BS	II+0-e	1	B stars	cloud coming in.	Comp/ok Sl/ok
700 1000 1600 1600	147	poor	5	F-G var	"	"	"	"	1	"	thick cloud (attempt)	very very wk
					"	"	"	"	1	Kept anyway	T = +41°F	center vs/ok

325

Sun-Mon

Date APR 24-25 1888 Observers Fds.-Tn

2.60, 0.14 5^m 68⁸ Emulsion Batches:
 1.72, 0.26 8^m 68⁰ T_n J.L.S.-efg. 215 MAR 15
 4^m 68⁰ J.L.S.-efg. 1A7 Feb 16
 J.L.F.-e. APR 18/1883

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
50230	HD 120315	13 43.6	+49 49	20 22	20 29	03 27 E	+	Fe Arc A=1/2	1050 1710
50231	HD 104337	11 55.7	-19 06	20 42	21 16	00 48 E	-19 28	"	512 1000 500
50232	HD 100600	11 29.5	+17 21	21 28	22 16	00 37 W	+	Fe Arc Clear	1000 500 800
50233	HD 147394	16 16.7	+46 43	22 35	22 58	03 27 E	+46 27	"	1400 1200
50232T	Spot Calc for 50230, 33, 34, 37, 40 + 50247.			15 min		17.5V 15V 3900 4300		15V 4810	
50234	HD 159561	17 30.3	+12 38	23 14	23 29	04 09 E	+12 42	Fe Arc Clear	2000 1960
50235	"	"	"	23 37	23 49	03 49 E	"	Fe Arc Clear	850
								Fe Arc Clear	1000 1000
50236	HD 213307	22 25.5	+57 54	00 03	00 56	7 35 E	+58 27	Fe Arc Fe Arc/Clear	3000 3000
50237	T Spot Calc for 50231, 32, 40.			15 min		15V 15V 3900 4300		15V 4810	
50237	HD 187929	19 47.4	+0 45	01 12	02 05	3 52 E	+01 06	Fe Arc Fe Arc/Clear	3000 3000
50238	T Spot Calc for 50235, 36, 37, 38.			15 min		15V 15V 3900 4300		15V 4810	
50238	HD 161592	17 41.3	-27 48	02 18	03 52	00 01 W	-27 42	Fe Arc Fe Arc/Clear	23K 23K
50239	HD 166182	18 04.5	+20 48	03 59	04 21	00 06 W	+	Fe Arc Clear	1000 1700
50240	HD 161096	17 38.5	+4 37	04 25	04 31	00 42 W	+	"	1000 1000

(B filter 10ft in for Exp meter)

Spectr. Temp. 43°FDome Temp./Hum. $+5^{\circ}\text{C}/86\%$ Transparency Conditions *part cloudy*..... 326Focus 394Spectr. Temp. 40°FDome Temp./Hum. $0^{\circ}\text{C}/90\%$

New D19

Diffuse in cell night for comparisons

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
25418		V=1.86	B3V	BC	G=5430 1200/50.8	BS	IIIaJ-efg	1	B stars		OK
5000		V=	B1.5V	"	"	"	IIaJ-e	1	"		OK
5000	OK	526	B1.5V	"	"	"	IIaJ-e	1	"		OK
5000		595	B4V	"	"	"	IIaJ-e	1	"		slwk
5000	SSO	595	B4V	"	"	"	IIaJ-e	1	"		slwk
2,100	"	4	B5IV	"	"	"	IIIaJ-efg	1	"		slwk
13,500	"	4	B5IV	"	"	"	IIIaJ-efg	1	"		slwk
26,220	poor	2.2	A5III	BC	1200/50.8	BS	IIIaJ-efg	1	Asm Sp-KK	cloud	slwk
30,000	"	"	"	BC	G=4278 1200/40.5	BS	IIaJ-e	1	"	set 394 T=41%	slstr
note - J p/ou											
38,000	poor	V=3.7	F5Ib	BC	1200/40.5	BS	IIIaJ-efg	1	Ceph pgm	each) in addition to FeVe 3x20sec each	slwk
40,000							IIaJ-e				slwk
40,000	poor	V=4.0	F6Jb	BC	1200/40.5	BS	IIIaJ-efg	1	Ceph pgm	3x20sec FeVe 3x10sec FeARC/clear	slwk
40,000							IIIaJ-efg				slwk
40,000	poor	V=4.2	F8	BC	1200/40.5	BS	IIIaJ-efg	1	Ceph pgm	some cloud	slwk
40,000	OK	4	B2IV	"	1200/50.8	"	IIIaJ-efg	1	B star	set 394	slwk
8,000	"	3.93	K2III	"	"	"	IIaJ-e	1	slwk		OK

Date APR 25-26/88 Observers Fds - Ty

2.83, 0.26

8m 680

Emulsion Batches:

now

8m 680 ... 1140-e 1A7 ... APR 23

4th @ 68°F 11/10/85 APR 18/85

$T_4 \rightarrow$ (See below)

[illegible]

Spectr. Temp. 49°F Dome Temp./Hum. $+9^{\circ}\text{C}/46\%$ Transparency Conditions Fine - cloudy 328
 Focus 39.2
 Spectr. Temp. 48°F Dome Temp./Hum. $+5^{\circ}\text{C}/70\%$

Comparison Filter	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality											
3000					BC	1200/508	BS	IIaO-e	1		T=49°F Set												
3200	3200	OK	4	B3V	"	"	"	IIaO-e	1	Bstar		OK											
5028	5028	OK	5	B3V	"	"	"	"	1	"		vstark											
500	500	Fine	5	B4V	"	"	"	"	1	"	Reversed	OK											
								"			In Reversed	21 24 ✓ 11 20											
10,000	10,000	OK	3.2	B1V	BC	1200/508	BS	"	1	Bstar		OK											
2,100	2,100	OK	6.4	B2V	"	"	"	"	1	"	in cloud	Flex or focus Exp OK											
50000	50000	5050	V=3.7	F616	"	1200/40.5	1	IIIa Fe *	1	Ceph pgn	Note 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000												*
											Cloud again	* *											
											note, for 50248, 2 Comps.												
											Fe ARC 4500 cuts, FeNe 3000 cuts, 20sec												
											* Wrong emulsion prob IIaO T-1												

note, for 50248, 2 Comps

Fe ARC 4500 cts,
Fe Ne 3000 cts, 20 sec

* Wrong emulsion
prob IIaO T-1

329

Tues - Wed

Date Apr 26/27/88... Observers Fds-TN.....

Dev MAY 12

Emulsion Batches:

Dev 5 min @ 68°C II. 0-2. 1.17. APR 23
Dev 4 min @ 68°C III. 0.1-0.2. 2.15. MAR 15
Dev 4 min @ 68°C III. 0.1-0.2. 2.15. APR 18/88

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
50247	HD 83754	09 38.5	-13 53	19 57	21 21	01 43 W	-14 11	FEARC clear	1400 1585
50248	HD 147394	16 16.7	+46 43	21 32	21 53	04 37 E	+	"	1400 1353 1400
50248	HD 177003	18 57.7	+50 24	22 02	22 35	06 21 E	+50 37	"	1100 1440
50248	Spot C/L for 50248				15 min @ 15V 3900	04 03 4300		P2 4810	
50249	HD 213307	22 28.5	+57 54	22 56	00 18	08 06 E	+58 26	FEARC clear	1400 1353 1400
50250	HD 187929	19 47.4	+0 45	00:48	02:17:33	03 29 E	+01 07	"	"
	<u>Labelled @ 51</u>			02 37	5 min @ 15V			FEARC clear	1400

0823
0815
18183

Spectr. Temp. $+49^{\circ}\text{F}$
Focus $39.2 - 395$ for G16
Spectr. Temp. $+40^{\circ}\text{F}$

Dome Temp./Hum. $+7^{\circ}\text{C}/60\%$
Dome Temp./Hum. $+3^{\circ}\text{C}/90\%$

Transparency Conditions $\text{OK} - \text{hazy} - \text{cloudy}$
330

Comparison Filter	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
142 153 141 135 140 1100 1410	05,000 05,500 04,550 00,400	so so OK " "	5.06 4 5	BSV 55V B25V	BC " "	1200/50.8 " "	BS " "	IIIaJ-e " IIaJ-e	1 1 1	Bstar " "	Spot Cal is #50232 T=47°F Labelled "51"	OK - Last in development Fine
05,000 00,084 00,159 05,000	05,000 00,084 00,159 05,000	OK OK OK "	V=3.7 V=4	F6Jb F6Jb	BC "	G4270 1200/40.5 " 1200/50.8	BS " "	IIaF-e IIIaF-e IIIaJ-e	1 1 1	Ceph pgm " B star	T=45°F set 395 Fe ARC cuts 3000 each shot Fe Ne cuts 2900 3X cloud set 394 T=41°F	UV OK OK

Note 50250, 51 unfortunately will have to use calibration plate #50238, which was not developed with these stellar plates

R 18/88

Transparency Conditions *clearing* 332

Spectr. Temp.

Dome Temp./Hum. *+4°C / 95%*

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
NO Filter											
120,200	SSS	V= 3.7	F61b	BC	64270 1200/40.5	BS	III _a -f-e III _a F-e	1	Ceph	* FO ARC 9000 cnts at beginning * FE ARC didn't fire extend	fine VL
23,200	poor	V= 4	F6Jb	BC	1200/40.5	BS	"	1	Ceph	* FE ARC 4,500 cnts at beginning FO ARC 6,000 cnts at mid	wk
										Much Clear now	

333 Sat-Sun Large TOURS earlier - m3 viewed.

Emulsion Batches:

IIIa Fe

APR 18/88

Date Apr 30 / MAY 1

Observers *Fds - Th*.....

 $3+, 0.38, 0.36$

50253T

 $3+, 0.40, 0.36$

50255T

[illegible]

2/18/88

Transparency Conditions .. *OK - some cloud*

gusty 334

Dome Temp./Hum. $+5^{\circ}\text{C}$ / 72%[illegible]

335

Tues-wed

PCS work again

Emulsion Batches:

Date MAY. 3-4. 1988. Observers Tn.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
879. KKT	1st Comp	1988	1988	(Note - Diffuser and small aperture ON in for Comps)				FeA clear	120sec
880	HD 90861	10 29.3	+28 38	21 00		01 24 W	+28 49	FeA clear	120sec
	HD 95735	11 02.6	+36 10	21 38	22 08	01 38 W	+36 13		1800
	Comp for HD 95735					"	"	FeA clear	120sec
	HD 95735	11 02.6	+36 10	22 14 55	22 45	W	"		
	Comp for HD 95735			22 48					
	FLAT Field			22 55				Jung A 1/16	600
	HD Comp for HD 112299			23 07			+25 58	FeA clear	120sec
	HD 112299	12 54.9	+25 48	23 12	23 42	01 18 W	"		1800
	Last Comp			23 44		"	"	FeA clear	230
890?	Flat Field	(Rack @ 27800)		23 52				Jung A = 1/8	1200
	DARK	Gen on, but no controls touched							60
	DARK	(" " , Dec Set motion often used)							60
	DARK			00 20					300 sec
	DARK	(FeA, Dec Set motions and Focus switchd often pushed)							300 sec
893	LONG DARK			01 15					7200

337

Wed-Thurs

Date MAY 4-5/88..... Observers Jn - KK.....

Emulsion Batches:

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[illegible]

339

Date _____

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.....

Spectr.
Focus...
Spectr.
ap. Mtr.
3.0 1
6
10
5 5
50 60

340

Dome Temp./Hum.

[illegible]

341 Tues-Wed

Date MAY 10/11.....

Observers

Th...

NSR

(~~Nr~~ = Neeser.)

Emulsion Batches:

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[illegible]

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions *Too closely - than fine...*
ruin by OI EST 342

FOCUS

Spectr. Temp.

Dome Temp./Hum.

Buffer

Compensation Filter	Exposure Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	B				BC	1800/52	BS	5000 Å PCS	IA		Exp time intended 10000 sec But current exp read 100 sec	2
1/16	3600	500	75		"	"	"	"	IA		written	OK
1/16	3600	500	75		"	"	"	"	IA		written	OK

343

Wed - Thurs

Emulsion Batches:

Date .. MAY 11-12, 1988 .. Observers .. Mr. - Th ..

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
	1st Comp	(7200 sec Flat written 1st)		20 05	20 08	0 0	+36 20	Fe A clear	200
	HD 95735	10 57.9	+36 36	20 18 45	20 48 49	00 53 W	+36 18		1800
	Comp for HD 95735			20 51	20 55		"	Fe A clear	200
	HD 90861	¹⁹⁸⁸ 10 29.3	¹⁹⁸⁶ +28 38	21 10 10	21 40	02 15 W	+28 48	Comp	1800 200
	HD 112956	12 55.2	+69 19	21 51 12	22 21 16	00 36 W	+68 56	Fe A Comp	1800 200
	Flat Field							Tung A-1/16	3600
	Comp for HD HD 13440			23 52				Comp Fe A	200
	HD 13440	15 04.8	-15 59	23 58	00 34 12	00 25 W	-16 12		1800 1800
	Last Comp			00 36		"	"	Fe A clear	200
	DARK Last Comp (again)			00 45		"	"	"	200
955	LONG DARK	(after complete close up & Gen "off")		01					7200
956	Flat			1200 ^s					
957	Flat			1200 ^s					
958	10000 ^s dark								

345 Thurs Fri

Date MAY 12-13/88. Observers Nsr.-Tn

Emulsion Batches:

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[illegible]

Spectr. Temp. Dome Temp./Hum.

Comparison
Filter

347 FRI-SAT Pg #1

Emulsion Batches:

Date MAY 13/14 1988. Observers N.E.T.-T.Y.

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.
	Solar Spectrum			19 35	19 55	0 0	platform		1200
	1st Comp	10 29.3	+28 38	20 05 41		W	+28 49	Fe A clear	600
	HD 90561	"	"	20 20 13	20 40 15	01 25 W	+28 49		1200
	Comp							Fe A clear	200
	HD 95735	10 57.9	+36 36	20 49	21 19	W		Fe A clear	1800
Em0000 46.TN	HD 112956	46.TN	3 frames	(Offset & gain @ zero) focused carefully			[Int	4 frames	
47.TN	"	47.TN	3 frames	(" " ") refocused			[n	4x	
	HD 112956	12 55.2	+59 19	21 37	22 07 24	00 20 W	+69 36	clear Fe A	1800
	HD 112956	" "	" "	22 15	22 45	00 59 W	"	" comp	1800
	HD 124752	14 10.3	+68 03	22 52	23 22		+67 48		2400 1800
	Fe A Comp	[Both A & B have green FIFOLights]			23 24	"	"	Fe A comp	240
	HD 124752	14 10.3	+68 03	23 30	00 04	00 58 W	"	comp	1800
	HD 147379	16 16.6	+67 28	00 10	01 10	0 0	+67 24		3600
	BD+68 946	17 36.7	+68 27	01 23	02 24	0 0 W	+68 30		3600
	HD 149162	16 27.9	+3 28	02 31		W	+03 28		3600
	Comp								240

Spectr. Temp. Dome Temp./Hum. 10°C / 60% Transparency Conditions Fine 34.8
 Focus
 Spectr. Temp. Dome Temp./Hum.
 Chiller Temp = -3.1°C
 T Electric cooler = 38 mA

Comparison Filter	Exp. Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	B				BC	1800/520	BS	PCS 5000Å	IA		wrote fks 7,200 sec Flat Field air/ver	
	12								IA	std vel	written	
	30*	OK	7.2	4200*	(u high as 950 cuts/sec)				IB	std vel	sky cuts 215 at beginning	
	10						BS	5000Å	IA			
	50	OK	7.6						IB	Asm Sp ktk	Camps done in "IA"	
Best Frames saved	5050	(slightly windy)		23x23 pixels	Image Acquisition made						seeing test	
	5050			47x47 pixels	guiding node, above fibre slot						" "	
	15	5050	8.2	d66	BC	1800/520	BS	PCS	IB	Fe A comp Between		
	12	"	"	"	"	"	"	"	IA	Asm Sp ktk	Repeat [note noise beyond ring of fire]	
	8	5050	B=9.6	KO	"	"	"	"	IB	Asm Sp	<u>No Lights on either FIFO</u>	
	7				"	"	"	"	IA	(earlier, sometimes "B" FIFO didn't have lights far a period)		
	5	poor	[Both FIFOs have green lights now]				"	IB	Asm Sp ktk			
	5	poor	8.63	M0					IB	" "		
	40	poor	9.2	M5					IB	" "	Field drawn on card	
	50		9.1	dKO					IA	" "	Field drawn on card	
	10								IA			

349

pg #2

Date May 13/14 Cont. Observers NSR-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.
Fm 0000 47.TN	HD 171232	1988				0	W	Int x 4	
	n	18 32.1	+25 28	04 06	04 20		W +25 39		800
	Last Comp							Fe A Clear	240
Seeing Tests (Fm 0000 47.TN) has 9 frames, 1st 3 are repeat of 46.TN									
2nd 3 frames are the 47x47 pixel box of fiber optic head view.									
	Flat Field (still labeled "LHST(Comp)"				06 34 20	0	0	platform	3/8

Spectr. Temp.

Dome Temp./Hum. $+4^{\circ}\text{C} / 70\%$

Transparency Conditions 350

Focus

Spectr. Temp.

Dome Temp./Hum. $+4^{\circ}\text{C} / 70\%$ Comparison
Filter E

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7 B	OK			31x31	(No wind anymore)	B ₁			Seeing Test	Last 3 Frames of 9	
200 6	OK	7.7	G8III		1800/52°	BS		IB	std vel		
110 10								IB	[Had to do "Cold Start" before last comp]		
300 80					1800/52	BS		IB			

351 Mon-Thurs

Date MAY 16-17 188. Observers M. H. - T. H.

Emulsion Batches:

[illegible]

Spectr. Temp. Dome Temp./Hum. / 95.3

Transparency Conditions *Clear by D1 EST* 352

Focus

Spectr. Temp. Dome Temp./Hum.

Compensator Filter	Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7 16 4 7200 600	A B 500 65				LC	1800/52°	BS	5000A				
1200	50 15	OK	V 80	KOIII	BC	1800/52°			IA	std vel	Times 30 sec. slow.	
1800	18 5								IB			
2400	D 8	poor 800	V= 9						IA			
1800	10 5								IB			
2400	5 10	poor	V= 8.8-9.3						IA		H/L held due to cloud	
									IB			

353 Tues-Wed

Date MAY 17-18/88

Observers . . . *Nst-Ty* . . .

1.56, 0.21

 $2.12, 0.08$

Rev May 27.

* Dev MAY 20_T

* (Temp may have been 268°F.)

Emulsion Batches:

Page 2A7 - Ad 28

III. 5. eq. 1. A. 7. Apr 25

[illegible]

Spectr. Temp. 55°F Focus 39.1 Spectr. Temp. 52°F Dome Temp./Hum. $70^{\circ}\text{C} / 86\%$ Dome Temp./Hum. $48^{\circ}\text{C} / 90\%$ Transparency Conditions $\text{Partly clear} - \text{Hazy}$ Astro $\rightarrow$ Sid Time seems wrong

Astro EST OK though

354

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B filter											
3500	so so										
2410	OK	7.2	G8II	BC	1200/50.7	BS	IIaDe	1	Asm Sp HK	Note: Set only 2' Not processed	vwk
							IIaDe				v
30,100	so so	393	Fop	BC	1200/50.7	BS	IIIaL-efg	1	Asm Sp HK		
							IIIaL-efg				v
29,550	OK	2.2	A5II	BC	1200/50.7	BS	IIIaL-efg	1	Hsm Sp HK		
35,300	so so	368	F0II	"	"	"	"	1	"		
10,200	FOUR	2	F	"	"	"	IIaDe	1	"	maybe fogged - PH came up	v
	n	"	"	"	"	"	"	1	"		v
				n	"	"	IIaDe	1			

355

Emulsion Batches:

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Date Observers

[illegible]

