

Telescope: 61"

Frame prefix #: SP89F

Day of Week: Sa

RA offset:

Focus:

Humdty: 90% Sheet #: 1

Observers: Rick, Gung & Kelly Date MST/UT: July 30/31

Dec offset:

Tailpiece: 34.3

Balance: 200 Temp O/I: 55/58

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
001	BS 7272	20	0.5	8190	7:18	19:08 45	+34:34 48	1:21	1.05
002	"	"	"	8800	7:20	"	"	1:25	"
003	"	"	"	7100	7:22:10	"	"	1:26	" the 360.5/427
004	BS 9107	1.0	"	7300		0:04:32.2	+34:30:20		
005	(#82)	"	"	9600	7:52	"	"	-3:00	1.26
006	"	"	"	7000	7:53	"	"	-2:58	1:25
007	"	"	"	8500				-2:55	"
008	"	"	"	7400	7:58	"	"	-2:54	1.24
009	BS 660	0.50	"	11800	8:05	2:16:23	+34:11:24	-4:58	2.08
010	#12	0.40	"	9500	8:08			-4:55	2.02
011	"	"	"	10250	8:09			-4:54	2.01 look good
012	"	"	"	5800	8:12			-4:51	1.97
013	"	"	"	9500	8:15			-4:48	1.94 ↓ clear mag 1.5
014	BS 7	3.00	"	nothing	8:55	3:05:21	+35:19:33	-5:17	2.29 B.M. "open" in clear
015	BS 7	3.00	"						

Telescope: 61"

Frame prefix #: SP89F Day of Week: MONDAY

RA offset:

Focus:

Humdty: 80% Sheet #: 2

Observers: Grundy, Tegler Date MST/UT: 31/1

Dec offset:

Tailpiece:

Balance:

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
15	BS 9107	1.5	.5mm	8000/	6:47				
16	"	"	"	10000/					1.53
17	"	.7	"	6000/	6:51				DISK
18	"	"	"	6000/	6:52	0:04:25.6	34:36:24	-3:53	1.50 PROBLEMS
19	"	"	"	5300/					ON IMA:
20	"	"	"	6300/	6:59	0:04:25.6	34:36:25.9	-3:49	1.47 Not Saved (Software problem)
21	BS 7906	.5	1mm	10000/	7:26	20:39:05.3	15:52:20.6	+0:03:	1.04 /
		.4							
Problem with IMA disk huge 11-20 results have disappeared									
20	BS 7906	0.4	1.0mm	9000		20:39:04	+15:52:16	+0:32	1.05 rtd
21	"	"	"	8800	7:57	"	"	0:35	1.05
22	"	"	"	8750	8:	"	"		
23	"	"	"	8740	8:20	"	"	0:37	1.06
24	BS 660	"	0.50	9700	8:29	2:16:27	+34:11:14		1.72
25	"	"	"	"	8:29	"	"	-4:30	1.72

COMP *

Standard *

Telescope: 614

Frame prefix #: SP89C

Day of Week: Monday

RA offset:

Focus:

Humdty:

Sheet #:

13

Observers: *Rich Jones*
Thylen

Date MST/UT: Jul 31 / Aug 01

Dec offset:

Tailpiece:

Balance:

Temp 0/I:

[illegible]

Telescope: 61"

Frame prefix #: SPJ9E Day of Week: Tue

RA offset:

Focus: 2125 Humdty: 70 Sheet #: 4

Observers: Fred & Judy Tegen Date MST/UT: Apr 21/02

Dec offset:

Tailpiece:

Balance:

Temp O/I: 58/60

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
034	BS9107	1.0	0.50	8700	~6:52	6:04 24	+34 37 10	-3:47	1.46 pink clouds
035	"	"	"	10100	6:58	"	"	-3:45	1.45
036	"	"	"	9216	7:03	"	"	-3:39	1.42
037	"	"	"	9800	7:08	"	"	-3:36	1.40
038	BS7906	0.80	1.0	9400	"	"	"	"	1.07 pink shift off
039	"	0.80	"	10600	8:19	20:39:02	+15 52 05	+1.01	1.07
040	"	"	"	10800	"	"	"	"	1.07 appen clear
041	"	"	"	11700	8:24	"	"	1:03	1.08 hot cloud here
042	BS 660	0.50	0.50	6700	"	2:16 26	34 11 16	-4:22	1.70 2 stars
043	4660	"	"	4000	8:42	"	"	-4:14	1.63
44	BS 660	0.4s	0.5mm	7500	8:44	"	"	-4:11	1.61
45	"	"	"	11000	8:45	"	"	-4:10	1.60
46	"	"	"	10000	8:47	"	"	-4:08	1.59
47	B-M	600	"	4100/800	9:09	3:27 11.8	37 11 28	-4:57	1.98 quite clear
48	"	"	"	4300/900	9:20	17.7	48.6	-4:46	1.81 "

Solar star

Standard *

Solar comp *

Telescope: 61⁴

Frame prefix #: SP84G

Day of Week: Tue

RA offset:

Focus :

Humidity:

Sheet #:

5

Observers: *Ed, Fred Taylor*

Date MST/UT: **A.01/02**

Dec offset:

Tailpiece:

Balance:

Temp 0/I:

[illegible]

Telescope: 61"
Day of Week: Thurs.

Frame prefix #: SP89F

Day of Week: *Thurs.*

RA offset:

Focus: 2174

Humdty: 86 Sheet #:

Sheet #:

Observers:

Date MST/UT: 2/4

Dec offset:

Tailpiece:

Balance:

Temp O/I: 56/57

[illegible]

Telescope: 61"

Frame prefix #: 5P89F Da
Observers: Wycoff, Womack, Da
Grundy

Date MST/UT: 4/5

Dec offset:

Tailpiece: 944.5

Temp O/I:

Sheet #:

[illegible]

Telescope:

61"

Frame prefix #: 5P89F

Day of Week: SUNDAY

RA offset:

Focus: 3960 Humdty: 66% Sheet #: 8

Observers: Gurney, Womack
Wycoff

Date MST/UT: 1/6/7

Dec offset:

Tailpiece: 34.5

Balance: Same Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
66	BS6998	1s	Dichro .25		3:18?				1.91
67	"	3s	"	9000	3:22	18:38:19	-21:3:20	-1:37	1.90 clouds moving!
?	"	3s	"					-1:32	1.88
?	"	1s	"	3300				-1:31	1.87
69	"	"	"	4800					1.87
70	"	"	"	3000	3:31			-1:28	1.86
71	TRITON	5m	"	low	3:4?	18:43:46	-22:7:44	-1:19	1.87
72	"	"	"	1000 ^{over}	3:50	18:43:46	-22:7:37.4	-1:13	1.85
73	"	"	"	1000 ⁺	4:00			-1:04	1.82 cloud H ₂ 74%
74	"	"	"	"	4:08	18:43:46	-22:7:47	-1:55	1.79 CLOUDS
74	BS6998	2sec	"	4800	5:15	18:38:18	-21:03:35.5	+1:16	1.69 clouds fading
75	"	"	"	4000	5:16				"
76	"	"	"	7200					
77	"	"	"	5300	5:18	18:38:18.2	-21	+1:19	1.69
78	"	"	"	6200	5:19			+20	"

CMP
*

Telescope: 61⁴
Day of Week: SUNDAY
Date MST/UT: 6/7

Frame prefix #: 5P89F

Day of Week: SUNDAY

RA offset:

Focus :

Humidity:

Sheet #:

Observers:

Date MST/UT: 6/7

Dec offset:

Tailpiece:

Temp O/I:

Balance:

[illegible]

44-01+68607
catlog. 5965981

Log sheets
for Aug 3-7, 1989
UT

61" Steward
Mt. Bigelow

New Observing Run
61" Steward
Mt. Bigelow

1st night

Observers: Fink
Grundy
Wyckoff
Womack

Aug 3-6, 1989

12:35 am MST
 $T_1 = 58^\circ F$
 $T_0 = 55^\circ$
Humid. = 88%

Aug 3/4, 1989
(Fri. morn.
Aug 4)

Setting up first on Stat #1300.

to line up scope (Bright light
station)

$T_1 = 57$
 $T_0 = 54$

Humid 95%
2 am MST

condensation on spectrophotometer
camera lens

Skies clearing at 2 am MST

3:10 am MST

90% humidity

murky sky

$57^\circ F$
 $54^\circ F$

Rained and/or
clouded out entire
night.

Condensation
on spectrophotometer
camera lens

14. 5. 201

Exp. #	Object	Exp. Time (s)	Filter	Peak (lt)	Centroid	UT time	R.A.	Dec	Hour Angle	Comments	A. T. (lt)
FR39F028	BS65-2	10s	NH ₂ (3-0)	14,000						OBSERVERS: Wyckoff, Womack, Grundy	1.01
SPS IF050	BS65-2	.05s	Dichroic				22 ^h 11 ^m 68 ^s			Slit = 0.25mm	1.01
51	"	.05s	"				rough scan 5959281			Flux Std	1.01
52	"	.05s	"			UT 8:58				"	1.01
53	"	.05s	"			"				"	1.01
54	"	.05s	"			"				"	1.01
55	BS660	1s	"			UT 9:5				G2V Solar mag. 4 (slit=0.25mm)	1.40
56	"	1s	"							"	1.38
57	"	1s	"							"	1.39
58	"	1sec	"							"	1.36
59	"	1sec	"							"	1.36
60	BS660	600s	Dichroic			9:48				Slit = 0.25mm	1.20
61	B-M Tail 6'	600s	"			10:04:20 UT	4 ^h 3 ^m 7.68	+39° 32' 37"			1.60
62	" 6'	"	"			10:16:00 UT	4 ^h 3 ^m 14.70	+39° 32' 54"	-4:13:04		1.59
63	50N Sky	800s	"			10:23:30 UT	4 ^h 3 ^m 20.61	+44° 33' 9.8"			1.49
64	B-M Tail 10'	400s	"			10:48:00	4:3:10.20	39:33:44.0		Ti = 56 To = 54 Exp. stopped early due to clouds	1.49
FR39F030	B-M Nuc	1000s	C ₂			11:21:52	4:24:22.9	39:34:45	-3:7	C ₂ round in shape	1.27
FR39F031	B-M	600s	NH ₂ (3-0)			11:33:51				No. 1. This is a dark, shutter didn't open	1.23
85	B-M	600s	NH ₂ (3-0) Continuum			11:45:52 UT				+ twilight (!)	1.21
↓ NEXT NIGHT ↓ August 6-7, 1989											
FR39F036	BD+28 (Andromeda)	45s	NH ₂ (3-0) cont.	9800	37500	7:30:05	21:50:49.29	+28:49:12.6	-0:39:52	BD +28° 42' 1" long body correct	1.01
87	BD+28 "	"	continuum	8800	36,305	7:33:00	"	"	-0:38:05	" after (wrong) in head	1.01
88	"	45s	"	8900	38,816	7:34:18	21:50:49.03	+28:49:11.7	-0:35:40	"	1.01
89	"	45s	"	87500	33,057	7:36:09	"	"	-0:33:56	Not saved	1.01

#	Object	Exposure Time (s)	Filter	Peak Cts	Centroid	UT time	R.A.	Dec	Hour Angle	Comments	Altitude	Tape?
25	BS862-2	10s	NH ₂ (3-0)	14,000						Observer's Wychoff, Wornack, Grundy	1.01	✓
25	BS862-2	.05s	Dichroic							Slit width = 0.25mm	1.01	✓
31	"	0.5s	"							Flux Std	1.01	✓
32	"	.05s	"			UT 8:58				"	1.01	✓
33	"	.05s	"			"				"	1.01	✓
34	"	.05s	"			"				"	1.01	✓
35	BS660	1s	"			UT 9:5				G2V Solar-type (slit=0.25mm)	1.40	✓
6	"	1s	"							"	1.38	✓
7	"	1s	"							"	1.37	✓
8	"	1sec	"							"	1.36	✓
9	"	1sec	"							"	1.36	✓
"	Brooklynn	600s	Dichroic			9:48				Slit = 0.25mm	1.80	✓
1	B-M Tail 6'	600s	"			10:04:52 UT	4h 3m 7.68	+34° 32' 37"			1.60	✓
2	" 6'	11	"			10:16:00 UT	4h 3m 14.70s	+31° 32' 54"	-4:13:04		1.59	✓
3	5°N Sky	800s	"			10:28:30 UT	4h 3m 20.61sec	+44° 33' 9.8"			1.49	✓
4	B-M Tail 10'	440s	"			10:48:10	4:3:10.20	39:33:44.0		T ₁ = 56 T ₂ = 54 Humidity = 83% Exp. stopped early due to clouds	1.49	✓
83	B-M NUC	1500s	C ₂ filter			11:24:52	4:4:22.9	39:34:45	-3:7	Ground in shape	1.27	not saved
84	B-M	600s	NH ₂ (3-0)			11:33:51				No! This is a dark, shutter didn't open	1.23	✓
86	B-M	600s	NH ₂ (3-0) Continuum			11:45:58 UT				+ twilight (!)	1.21	✓
NEXT NIGHT 6 August 6-7, 1989												
86	BD+28 (Wornack)	45s	NH ₂ (3-0) cont.	9800	37500	7:30:05	21:50:49.29	+28:49:12.6	-0:39:52	BD +28° 42' 11"	1.01	✓
37	BD+28	"	continuum	9800	36,305	7:33:00	"	"	-0:38:05	"	1.01	✓
38	"	45s	"	8100	30,816	7:34:18	21:50:49.03	+28:49:11.17	-0:35:40	"	1.01	✓
39	"	45s	"	7300	33,059	7:36:19	"	"	-0:33:56	Not saved	1.01	not saved

2nd night

UT Aug. 5, 1989 (Friday night/Sat. morn)

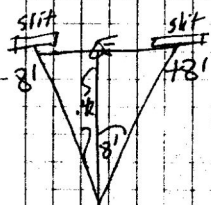
$\pm 4^\circ 21' 63''$
265981

For spectrograph slit offset in α tail:

Consider AAT/FORS night April 10, 1986

($r = 1.37 \text{ AU}$
 $\delta = 0.42 \text{ AU}$)

NH_2 , C_2 seen in tail (toward side, too)
out to $\pm 8'$.



$$\tan 8' = \frac{x}{.42 \text{ AU}}, \quad x = \text{proj. distance down the tail in km.}$$

$$x = \left[\tan \frac{8}{60} \right] (.42 \times 1.58 \text{ km})$$

$$= 1.475 \text{ km} \approx 150,000 \text{ km}$$

(Halley at $8'$ proj.
distance at $\delta = .42 \text{ AU}$)

(Halley $8' = 150,000 \text{ km}$)
April 10, 1986

Brorsen-Metcalf

Aug 5, 1989

$r = \text{~~1.37 AU~~ } .97 \text{ AU}$

$\Delta = .63 \text{ AU}$

$$150,000 \text{ km} = x = \left[\tan \frac{\alpha}{60} \right] (.63 \times 1.58 \text{ km})$$

$$\frac{150,000}{(.63)(1.58)} = \tan \frac{\alpha}{60}$$

$$\alpha = 5.5'$$

Brorsen-Metcalf:

$$5.5' = 150,000 \text{ km}$$

Chart P/B-M $\Delta = .63 \text{ AU}$

$$360'' = 6' = -334.8 \text{ pixels} \approx 150,000 \text{ km}$$

$$8' = -446.4 \text{ pixels} = 220,000 \text{ km}$$

$$T_0 = 58^\circ \text{F}$$

$$T_0 = 53^\circ$$

Humid = 92%

At 1:45pm MST

Feige 15

Spectrophotometric std

Hi/Her 102

Hi/Her 102

$$\alpha(1950) = 01^\circ 05' 33.8''$$

$$\delta(1950) = 62^\circ 31' 32.1''$$

B0 III

$$m_{\text{F555}} = 10.35$$

BS 8622

Std Star

EXP #	Object	Expos. Time(s)	Filter	Backlit	Ch	UT time	R.A.	Dec	H.A.	Comments	Airmass	Total
#71	BD 28	45s	NH ₂ (80) 6338A	7100	35,000	7:38:30	21:50:48.8	28:49:10.7	-0:32:19		1.01	✓
#72	"	"	"	8900	36,000	7:40:26	21:50:49.05	"	-0:29:57	+H1 + H2 from 21:51:21	1.01	✓
#73	"	4	"	10,000	35,000	7:44:26	"	"	-0:25:25		1.01	✓
#74	"	"	"	11,000	36,000	7:46:30	21:50:48.59	+28:49:08.2	-0:23:45		1.01	✓
(93)	"	"	NH ₂ (80) cont. 6338A	8400	34,000	7:48:33	"	"	-0:21:48	Back to Continuum/Model filter for NH ₂ (80) filter	1.01	✓
94	"	"	CN(1-0) Continuum	3600	35,000	7:53:01	21:50:48.51	+28:49:08.1	-0:17:10	soft focus?	1.00	✓
95	"	"	"	3700	32,000	7:54:40	"	"	"		1.00	✓
96	"	"	"	4000	33,000	7:56:43	21:50:48.46	+28:49:07.3	-0:13:27		1.00	✓
97	"	90s	CN(1-0) 9180	2900	33,000	8:00:50	21:50:48.40	+28:49:06.6	-0:09:28		1.00	✓
98	"	90s	"	2700	31,000	8:03:40	21:50:48.33	"	-0:06:52		1.00	✓
99	"	90s	"	3000	32,000	8:06:32	21:50:48.33	+28:49:07.9	-0:03:45		1.00	✓
100	BS 9107	1s	CN(1-0) 9180	5600	40,000	8:14:08	0:04:29.05	+34:36:59.5	"		1.12	✓
101	"	"	"	5500	38,000	8:15:21	"	"	-2:03:37		1.12	✓
102	"	"	"	5700	41,000	8:16:36	"	"	-2:07:10		1.12	✓
103	"	.55s	CN 8600A	8200	63,000	8:18:24	"	"	-2:05:35		1.12	✓
104	"	.55s	"	7900	65,000	8:19:48	0:04:29.30	+34:36:56.4	-2:04:13		1.11	✓
105	"	"	"	6700	67,000	8:20:44	"	+34:36:56.4	-2:03:17		1.11	✓
106	"	"	NH ₂ (80) 6338A	8200	34,000	8:22:09	"	"	-2:01:47		1.11	✓
107	"	"	"	7400	34,000	8:23:32	"	"	-2:00:27		1.10	✓
108	"	"	"	9100	35,000	8:24:30	"	"	-1:59:23		1.10	✓
109	"	"	NH ₂ (80) cont. 6338A	6200	34,000	8:25:39	"	"	-1:58:22	NH ₂ (80) 6338A filter	1.10	✓
110	"	"	NH ₂ (80) cont. 6338A	11,000	35,000	8:26:44	"	"	-1:57:16		1.10	✓
111	"	"	"	12,000	36,000	8:27:57	"	"	-1:56:03		1.10	✓

24-51+68 809
 105965 8965901

offset 6' from nucleus

$$360'' = -32 \text{ (time) at } 240^\circ$$

$$RA = 4^h 3^m 7^s.68, \text{ Dec } 39^\circ 32' 37''$$

$$\text{Secs} = 1.67$$

$$\sim UT = 10:4:20$$

1st
 Tail
 Exposure
 8.11.0

10' offset

$$600'' = 5.4 \text{ sec time West}$$

$$\frac{10'}{15 \cos \delta} = 54 \text{ seconds}$$

8pm
 8.6.4

4th night: Aug 6-7, 1989

8pm: Humidity 73%
 $T_i = 63^\circ F$
 $T_a = 60^\circ F$

Humidity = 79%

$$T_i = 61^\circ$$

$$T_a = 59^\circ$$

11:28.42 MST

6:28.42 UT

Exp. #	Object	Exp. Time(s)	Filter	Peak W	Cont'd Cb	UT time	R.A.	Dec	Hour Ang	Comments	Airmass	See
112	BS 9107	.5s	NH ₂ (80) cont. 6250	11,000	37,000	8:29:05	+4:29:19	+4:36:54			1.09	L
113	"	.5s	"	6800	37,000	8:30:01	"	"			1.09	L
114	Brasen-M.	600sec	CN (100) 4180A	5000	88,000	8:51:10 8:51:10	+4:28:41.20	+40:43:41.1	-5:56:50	T _i = 60° Humid. 73% T _o = 60° (FOCUSSED)	2.78	✓
115	"	600sec	"	4900	89,000	09:03:57	+4:28:49.39	+40:43:40.2	5:54:50		2.54	✓
116	"	"	CN cont. 3600	3100	33,000	09:14:49	+4:28:56.12	+40:43:47.4	-5:33:27	wrong in header (filter is)	2.36	✓
117	"	"	NH ₂ (80) 6338A	2300	36,000	09:26:54	+4:29:02.74	+40:43:55.4	-5:21:30	focused	2.20	L
118	"	"	"	2300	37,000	09:38:57	+4:29:00.88	+40:44:11.1	-5:09:20		2.04	✓
119	"	"	NH ₂ (80) cont. 6250	1600	11,000	09:50:14	+4:29:10.57	+40:44:20.2	-4:58:15	T _i = 60°F Humid. 76% T _o = 58°F	1.83	✓
120	"	"	"	1500	10,000	10:01:36	+4:29:24.50	+40:44:34.3	-4:46:59		1.83	L
121	"	"	NH ₂ (80) 6338A	1900	23,000	10:12:36	+4:29:24.28	+40:44:33.9	-4:36:2	cloud?	1.73	L
122	"	"	"	2200	34,000	10:24:35	+4:29:38.01	+40:44:59.7	-4:24:20		1.64	L
123	"	"	NH ₂ cont. 6250A	1500	11,000	10:35:36	+4:29:44.91	+40:45:09.8	-4:13:20		1.57	✓
124	"	"	NH ₂ (80) 6338A	2100	29,000	10:47:24	+4:29:51.19	+40:45:25.4	-4:01:32		1.50	✓
125	"	"	"	2200	31,000	10:58:18	+4:29:57.22	+40:45:36.4	-3:50:41	T _i = 60° Humidity = 80% T _o = 57°	1.44	L
126	"	"	NH ₂ cont. 6250A	1700	13,000	10:09:25	+4:30:03.03	+40:45:47.1	-3:39:40		1.40	L
127	"	"	H ₂ O ⁺ 6185A	3100	43,000	11:23:23	+4:30:10.00	+40:46:11.8	-3:25:48		1.33	L
128	"	"	H ₂ O ⁺ 6185A	3900	53,000	11:34:16	+4:30:16.97	+40:46:12.9	-3:15:01		1.29	L
129	Brasen-M.	180sec	C2 6165A	10,000	?	11:45:19	+4:30:22.33	+40:46:22.33	-3:04:02	twilight	1.26	L
130	"	"	"	10,000	175,00	11:49:56	+4:30:24.93	+40:46:28.1	-3:0:00	twilight	1.25	✓
131	PLATFLD	2s	C2 6165A	—	—	—	—	—	—	"Variac = 85" (how bright lamp is)	2.37	✓
132	FLAT	"	"	8000	—	—	—	—	—		"	✓
133	FLAT	"	"	8000	—	—	—	—	—		"	✓
134	FLAT	.5s	CN 9180A	11,000	—	—	—	—	—		"	✓
135	FLAT	.5s	"	—	—	—	—	—	—		"	✓

+4-91+68607
Cathodolum 5965281

7-7-66 17-00
Cash
from 8965931

Light clouds in area after about
10:30 LT (3:30 MST)

Exp. #	Object	Time (s)	Filter	Packets	Centroid	UT time	R.A	Dec	Hour Ang.	Comments	Airmass	Total
136	FLAT	.6s	CN9180A	—	—	—					2.37	✓
137	FLAT	.5 sec	CN cont. 8600	11,000	✓	—	21+45.00				11	✓
138	FLAT	"	"	11,000			21+45.00				"	✓
139	FLAT	"	"								"	✓
140	FLAT	3s	NH2 (3s) 6338A	9,000							"	✓
141	"	3s	"	9000							"	✓
142	"	3s	"	—							"	✓
143	FLAT	3s	NH2 cont. 6250A	8400							"	✓
144	"	"	"	8500							"	✓
145	"	"	"	8900							"	✓

Telescope: 61¹¹ en 360.5, 427

en 360.5, 427

GUIDHIST. BMGUIDE

Frame prefix #: FR89F

Day of Week: Sun/Mon

RA offset:

Focus: 2910

Humidity: 78 Sheet #:

Observers: Fink, Grundy
Schultz

Date MST/UT: July 30 / Aug 1

Dec offset:

Tailpiece:

Balance: 220

Temp O/I: 56/58

[illegible]

361, 427

1815463 megabyte
1815463.15

Frame prefix #: FR89F

Observers: Grundy, Tegler,
Fink

Telescope: 61"

Day of Week: MONDAY

Date MST/UT: 31/1

Guidhist. BM GUIDE 1

360.5, 427

RA offset:

Dec offset:

Focus: 115305

Tailpiece: 34.5

Balance: 220

rebalanced in RA today

Humdty: 80% Sheet #: 2

Temp O/I: 57/60

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
* 1	Set up FK4 #	1525							→ Clouds
									→ RAIN
4	BD 253941	20 sec	Open	Saturated	5:50	19:43:59.8	+26:11:42.0	0:33	right near guidepoint (for finding chart)
5	"	7 sec	NH2 6624	10000/1066	6:06				1.01
6	"	"	"	/	6:07				
7	"	5 sec	CONT 6450	9000/					
8	"	"	"	/	6:12				
9	"	20 s	NH2 6338	11000/	6:15				1.01
10	"	"	"	11000/	6:17				
11	"	15 s	CONT 6250	8000/	6:23				
12	"	"	"	9000/1060	6:24				1.01
12	BR0057	30	B/DICHR	2000/1200	9:04				
13	"	"	"						
14	"	"	"		9:23				Clouds

Standard Star

Not Saved

Guiding

New Guidepoints: 362, 425 after # 111

1869963 megabytes
987.456

Frame prefix #: FR89F

Observers: Fink, Grand
Tegler

Telescope: 6"

Day of Week: MONDAY

Date MST/UT: 3/1

RA offset:

Dec offset:

Focus: "

Tailpiece: "

Balance: "

Humdty: 83% Sheet #: 3

Temp O/I: 54/56

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
15	BRORSEN	300	NH2 6624		10:13	3:16:43	36:19:59	3:26	1.44
16	"	300	CONT 6450		10:23			3:26	1.40
17	"	300	NH2 6624		10:30				1.36
18	"	"	CONT 6450		10:36				1.33
✓ 19	"	600	NH2 6624		10:42	3:16:			1.31
20	"	"	CONT 6450						Not taken (clouds)
✓ 20	"	"	6185		10:55	3:17:00	36:21:20	-3:3:45	1.27
21	"	"	CONT		11:07	3:17:6	36:21:498	-2:49	1.22
✓ 22	"	"	CONT 6250		11:20			-2:39	1.19 (Tracking Jumped RA)
✓ 23	"	"	NH2 6338		11:31				56°F (I)
24						DAWN			54°F (O)
25									
26									
27									
28									

Log 804 21.57
1.55:13, mag. 4.70

Telescope: 61"
 Frame prefix #: FR89F
 Day of Week: TUESDAY
 RA offset:
 Observers: Tegler, G. W. Jr.
 Date MST/UT: 1/2
 Dec offset:
 Focus:
 Tailpiece:
 Balance:
 Humidity: 62%
 Sheet #: 4
 Temp O/I: 62/65°F

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
24	FLATS	1	NH2 6624	7000					Variac = 85
25	"	"	"	7000					
26	"	"	"	7000					S = 150
27	"	1	CONT 6450	8000					
28	"	"	"	8000					
29	"	"	"	8000					
30	"	3	NH2 6338	8000					
31	"	"	"	8000					
32	"	"	"	8000					
33	"	"	"	8000					
34	"	4	CONT 6250	10000					
35	"	"	"	10000					
36	"	"	"	9000					
37	"	"	"	9000					
38									

Log 89F22-ktf
 1989/6/2 15:45

Telescope:

61"

Frame prefix #: FR89F

Day of Week:

TUESDAY

RA offset:

Focus:

Humdty:

Sheet #:

5

Observers: Taylor, Fink, Grundy

Date MST/UT:

1/2 Aug.

Dec offset:

Tailpiece:

Balance:

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
38	FLAT	2.5	H ₂ O+	13000					
39	"	"	"	"					
40	"	"	"	"					
41	"	25	CO+	10000					
42	"	"	"	11000					
43	"	.1	R	12000					
44	"	"	"	12000					
45	"	"	"	12600					
46	"	.01	Open	10000					
47	"	"	"	11000					
48	"	"	"	11000					
49	"	1s	B/dich	10000					
50	"	"	"						
51	"	"	"	10000					
52	"	"	"	10000					

250

175913 megabytes
11/2 96.3.15 F

Telescope: 61"
Day of Week: TUESDAY
Date MST/UT: 7/2 Aug

New Girdpoint: 364.5, 425.5
BMGUIDE2 2.75 120

Frame prefix #: FR89F

Day of Week: **TUESDAY**

RA offset:

Focus: 2175

Humidity: 67% Sheet #:

Observers: Fink, Grund,
Tealer

Date MST/UT: 7/2 Aug.

Dec offset:

Tailpiece:

Balance:

Temp O/I: 59/63

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
53	FLAT	1.	B/dich	10000	4:09				
54	Setup	FK4	#	1535	at 1 hour EAST			6:23 UT time	New focus
54	BS 9107	.1	NH2 6624	6000	7:25			3:18	1.33 Am
55	"	"	CONT 6450	6000				3:17	1.32
56	"	"	NH2 6338	2200	7:27			3:16	1.32
57	"	"	CONT 6250	2100	7:28			3:15	1.31
58	"	"	NH2 6624	4500				3:13	1.31 T ₀ = 55°F
59	"	"	CONT 6450	✓	7:31			3:11	1.30 T _i = 60°F
60	"	"	NH2 6338	✓					
61	"	"	CONT 6250	✓	7:34			3:09	1.29 ✓ a cloupe passed over
62	"	"	H ₂ O ⁺ 6185	24000	7:55(?)			2:48	1.22 ← cloud
63	"	"	"	26000	7:56				"
64	"	"	"	22000	8:00			2:43	1.20
65	BS 7906	.03	"	50000					1.07

Results in byte
1 gbt 24.67

Telescope:

61"

364.5, 425.5 ← old guidepoints

Frame prefix #: FR289F

Day of Week: TUES

RA offset:

Focus:

Humidity: 90% Sheet #: 7

Observers: Tegler, Grundy, Finh

Date MST/UT: 1/2

Dec offset:

Tailpiece:

Balance:

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
66	BS 7906	.03	H ₂ O ⁺	52000					← slammed rail on floor
67	BRORSEN	10s	Blue Dichr.	8500	9:08			(see spectra start of exp #47)	New Guidepoints: (361, 423) Now
68	"	"	"	9000	9:20			(line #48 9000)	
69	"	"	"	9400	9:40				in guide
70	"	"	"	9400	9:52				
71	"	600	H ₂ O ⁺		10:00			-4:06	1.56 1.8 - 2.0
72	"	600	NH2 6338		10:13			-3:53	1.48 1 mag
73	"	600	CONT 6250		10:25			-3:42	1.42
74	"	600	CONT 6450	Peak 2800	10:35			-3:31	1.37
75	"	"	NH2 6624	Peak 3500	10:46			-3:20	1.33 GUIDE
76	"	"	"	2900	10:57			-3:09	1.28 (bad tracking)
77	"	"	NH2 6338	2400	11:08	3:28:11.3	+37:15:25.8	-2:59	1.25
78	"	"	CONT 6450	3200	11:18	3:28:16.3	+37:15:46.8	-2:48	1.22 T _i =56 jumped in RA T _o =54
79	"	"	CONT 6250	1800	11:30	3:28:21.4	+37:16:8.6	2:37	1.19
81	"	"	H ₂ O ⁺		11:41			2:26	1.16 moved 28 seconds late into exposure -12 second (not) exp.

82

"

19.0s C2

11:53

56.103 megabytes

log 89425-HF

DAWN

-2:14

1.13

moved back west

(T_{ij}15)Guiding
256x256

512x512

Scanned
twice 80,

Telescope:

61"

Frame prefix #: FR89F

Day of Week: WEDNESDAY RA offset:

Focus:

Humdty:

Sheet #: 8

Observers: Fink, Tegler, Grundy

Date MST/UT: 2/3

Dec offset:

Tailpiece:

Balance:

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
83	BRORSEN	180	C+			3:39:56.51	38:7:1.2	+2:45	1.21 not saved (foulsy)
84									
85									
86									
87									
88									
89									
90									
91									
92									
93									
94									
95									
96									
97									
98									
99									
100									

1815463 meg. 100
1815463 20.27

61

Frame prefix #: FR89F

Day of Week: FRIDAY

RA offset:

Focus: 3880

Humidity: 88% Sheet #:

Observers:

Observers: Grundy
Wycoff, Womade Date MST/UT:

-Date MST/UT:

 $\frac{4}{5}$

Dec offset:

Tailpiece: 944 1/2

Balance:

Temp 0/1:

Same

[illegible]

388880
3890

86516, megal. hgt.
L 108^h f 27. K

Telescope:

61"

Frame prefix #: FR89F

Day of Week: SUNDAY

RA offset:

Focus: 3960

Humdty:

Sheet #: 10

Observers: Womach, Wyett
GrundyDate MST/UT: 6/7
(Peak)

Dec offset:

Tailpiece:

Balance:

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
86	BD +28...	45 sec	CONT 6338	peak 9800	7:30				1.01
87	"	"	wrong in "	8800	7:32				"
88	"	"	header (cont)	8700	7:34				1.01
89	"	"	(cont)	7300	7:36				1.01 not saved
89	"	"	NH? 6338	7100	7:38				"
90	"	"	"	8900	7:40				"
91	"	"	"	10000	7:44				"
92	"	"	"	11000	7:46				1.01
93	"	"	CONT 6250(?)	8400	7:48				
94	"	"	CONT 8600	3600	7:53				1.06
95	"	"	"	3700	7:55				"
96	"	"	"	4000	7:57				"
97	"	90 sec	CN 9180	2900	8:01				"
98	"	"	"	2700	8:03				"
99	"	"	"	3000	8:06	21:50:48.3	28:49:08.9		1.00

Standard *
10th magnitude

header wrong

further out of focus

18.5K 2 mag 7:00
21:50:48.3

focus not adjusted for red stuff

Telescope:

61"

Frame prefix #: FR81F

Day of Week:

SUNDAY

RA offset:

Focus:

Humdty:

Sheet #: 11

Observers: Womach, Wycoff
Grundy

Date MST/UT:

6/7

Dec offset:

Tailpiece:

Balance:

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
100	BS 9107	1sec	CN on band	5600	8:14				1.12
101	"	"	"	5500	8:15				"
102	"	"	"	5700	8:16				"
103	"	.5	CN off Band	8200	8:18				"
104	"	"	"	7900	8:20				1.11
105	"	"	"	6700	8:21				"
106	"	"	NH2 6338	8200	8:22				"
107	"	"	"	7400	8:23				1.10
108	"	"	"	9100	8:25				"
109	"	"	"	6200	8:26				"
110	"	"	NH2 CONT	11000	8:27				"
111	"	"	"	12000	8:28				"
112	"	"	"	11000	8:29				1.09
113	"	"	"	6800	8:30				"

1805463.ingulbytes -
1805463.29.47

Telescope:

61"

Frame prefix #: FR89F

Day of Week: SUNDAY

RA offset:

Focus:

3950

Humdty: 73% Sheet #: 12

Observers: Wycoff, Womach
Gundy

Date MST/UT:

6/7

Dec offset:

Tailpiece: 34.5

Balance: same

Temp O/I: 58°/60°

512x512

Header
wrong

Exp #	Object	Exp time	Filter slit	Counts Peak Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
114	BRORSEN	600	CN 9180	5000	8:51	4:28:41.20	+40:43:41.1		2.78 Foc = 3915
115	"	"	"	4900	9:03				2.54 "
116	"	"	CN OFF	3100	9:15				2.30 "
117	"	"	NH2 ON	2340	9:27				2.20 Foc = 3953
118	"	"	"	2320	9:39				2.04 "
119	"	"	NH2 CONT	1600	9:50				" 76% Humidity
120	"	"	"	1500	10:02				1.83
121	"	"	NH2 ON	1940	10:13				1.73
122	"	"	"	2200	10:24				1.64
123	"	"	NH2 CONT	1500	10:36				
124	"	"	NH2 ON	2100	10:47				1.50
125	"	"	"	2235	10:58				1.44 T _i = 60°F T _o = 57°F
126	"	"	NH2 CONT	1700	11:09				1.40 Humdty = 80%
127	"	"	H ₂ O ⁺	3100	11:23				1.33 Not shifted
128	"	"	"	3900	11:34				1.29
129	"	180	C2	10060					1.26
130	"	180	C2	10000	11:49				1.2

1865963 mm. 1/2" -
1/2" 9+30.1K

Telescope:

61"

Frame prefix #: FR89F

Day of Week:

SUNDAY

RA offset:

Focus:

Humdty: 82% Sheet #: 13

Observers: Mycoff, Womach

Date MST/UT:

6/7

Dec offset:

Tailpiece:

Balance:

Temp O/I: 57/59

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
131	FLAT	2sec	C2						VariaC = 85
132	"	"	"	8000					
133	"	"	"	8100	12:03				- 65° dec off.
134	"	.5s	CN _{ON}	11000	12:08				
135	"	"	"	11000					
136	"	"	"	11000					
137	"	"	CN OFF	11000					
138	"	"	"	11000					
139	"	"	"	11000					
140	"	3sec	NH _{2 ON}	9000					
141	"	"	"	9000					
142	"	"	"	9000					
143	"	"	NH _{2 OFF}	8400					
144	"	"	"	8500					
145	"	"	"	8400					

186 5963 megabytes

59431.tcf