

Telescope: 61"

Frame prefix #: FR93A Day of Week: Thurs/Fri

Observers: Fink, Hicks, Gandy Date MST/UT: March 11/12

Iris: 300
 Focus: 3750^{decimal} Humdty: 75% Sheet #: 1
 Tailpiece: 34.2
 Balance: 400 Temp O/I: 36(I)/32(O)

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST UT	RA set	Dec set	Hour-angle exp-start	Windy Comments (P.A., seeing, Moon, clouds, etc.)	
1	P/Schaumasse	30 sec	B/dichr	~1000	Peak	Phot ~ 27k	GP (39 1.5, 406)	dec: ~ +47°	bouncing around in dec ~ 30 arcsec.	Very windy.
2	terrible tracking	←	moved	balance → 300,	& put up windscreens					
1	Schaumasse	5 min	C2	PK = 2k Ph = 73k	4:37	5:59:57	46:58:37	+2:30	sec Z = 1.19	
2	"	5m	6250		4:43	5:59:58	46:58:40	+2:41	sec Z = 1.20	
3	sky	60 sec	"		4:50.5	5:52:0.4	46:58:43	+2:55	sec Z = 1.24	
4	"	"	C2		4:53			+2:57	1.24	
5	Schaum...	300 sec	CN	PK = 600 Ph = 27k	4:59	6:0:1.7	46:57:45	+2:55.5	1.24	
6	"	"	8600		5:05.5			+3:02	1.26	
7	sky	60 sec	8600		5:11.6	5:52:6	46:57:52	+3:16	1.30	
8	"	"	CN		5:13.6			+3:18	1.31	haze on horizon, but otherwise
9	Schaum...	300 sec	C2	PK ~ 1900 Ph = 70k	5:18	6:0:7.3	46:57:56	+3:15	1.30	sky looks clear.
10	"	"	6250		5:25			+3:22	1.32	
11	sky	60 sec	"		5:31	5:52:10	46:58:1	+3:35	1.37	
12	"	"	C2		5:33			+3:37	1.37	

fixed focus

Telescope: 61"

Frame prefix #: FR93A Day of Week:

Observers: Hicks, Grundy Date MST/UT: Thurs/Fri. March 11/12

Iris: 300 decimal
Focus: 3555 Humdty: 79% Sheet #: 2
Tailpiece: 34.2
Balance: 300 Temp O/I: 32/36600²

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST UT	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
13	Schaum...	300sec	H ₂ O+	PK=600 Ph=15k	5:37	6:0:11.7	46:58:4	+3:33	sec Z = 1.36 → 1.38
14	Sky	60sec	6250		5:44	5:52:13.6	46:58:8	+3:48.5	1.42
15	BS 3951	.05s	30k B/dichr	~30k peak					Comp star (sec Z = 1.0)
16	BS 3750	.05s	B/dichr	~30k peak					Comp Star (sec Z = 1.3)
17	BS 4534	.01sec	B/dichr	~65k saturated					Std. Star (sec Z = 1.1)
15	"	.05	C2	PK = 28k Phot = 901k	6:54	11:48:47	14:36:32	-1:58	sec Z = 1.08 ← defocus to 3450
16	"	.05	"	37k 980k	6:55			-1:57	1.08 (saturated when focused)
17	"	.05	6250	PK = 19k Phot = 241k	7:01			-1:50	1.07 (jumped in east) ← refocus to 3555
18	"	.05	"	22k 243k	7:02.5	11:48:44	14:36:42	-1:49	1.07
19	"	.20	CN	Peak = 14k Phot = 463k	7:08.			-1:43	1.07 ← still at 3555 focus
20	"	"	"	17k 458k	7:10			-1:42	1.07
21	"	.20	8600	Peak = 46k Phot = 1m	7:11			-1:40	1.06
22	"	.10	"	18k 441k	7:13			-1:39	1.06
23	BS 3750	1.5	"	25k 611k	7:17	9:27:24	-6:2:37	+1:46	sec Z = 1.44
24	"	"	"		7:18			1:47	1.44

256²

Telescope: 61"

Iris: 300

Frame prefix #: FR93A

Day of Week: Thurs/Fri

Focus: 3555^{dec.} Humdty:

Sheet #: 3

Observers: Hicks

Date MST/UT: March 11/12

Tailpiece: 34.3
Balance: 300 Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST/UT	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
25	BS 3750	1.5	8600	23k 731k	7:19	9:27:23.8	-6:2:29	1:48.5	1.45
26	"	2.0	CN	14k 500k	7:23			1:52	1.46
27	"	"	"	13k 480k	7:24			1:53	1.46
28	"	3.0	"	20k 722k	7:25	9:27:23.8	-6:2:28.8	1:55	1.47
29	"	0.2	C2	46k 200k	7:33			2:02.5	1.50 ← these are in focus
30	"	"	"	31k 202k	7:34			2:04	1.51
31	"	"	"		7:35			2:05	1.51
32	"	0.5	6250	10k 134k	7:39	9:27:24.0	-6:2:25.4	2:08	1.53
33	"	1.0	"	24k 282k	7:40			2:10	1.53
34	"	"	"	27k 282k	7:41			2:11	1.54
35	BS 3951	1.0	"	32k 305k	7:44.5	10:0:38.3	31:57:18	1:41	1.07
36	"	"	"	36k 313k	7:46			1:42	1.07
37	"	"	"	34k 310k	7:47			1:43	1.08
38	"	0.2	C2	38k 220k	7:48			1:45	1.08
39	"	"	"	53k 222k	7:49			1:45.5	1.08

Telescope: 61"

Iris: 300 ^{dec}

Frame prefix #: FR93A

Day of Week: Th/Fr

Focus: 3555 Humdty:

Sheet #: 4

Observers: Hicks, Grundy

Date MST/UT: 3/11/12

Tailpiece: 34.3

Balance: 300 Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST UT	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
40	BS3951	0.2	C2	46k 223k	7:50	10:0:38.4	31:57:26	11:47	1.08
41	"	3.0	CN	23k 693k	7:54.3			1:51	1.09 ← not well focused at longer λ
42	"	"	"	22k 608k	7:55.5			1:52	1.09
43	"	"	"	25k 656k	7:57	10:0:38.3	31:57:25	1:53	1.09
44	"	1.5	8600	33k 730k	7:58.5			1:55	1.10
45	"	"	"	29k 738k	7:59.5			1:56	1.10
46	"	"	"	27k 676k	7:58.005	10:0:38.2	31:57:25	1:57	1.10 ← failed to save this one.
46	FLAT	2.0	"	30k	8:				-65° offset Flat fields
47	"	"	"		8:11.18				Variac = 65
48	"	4.0s.	CN	30k	8:19				3 lamps are burned out out of a total of 8
49	"	"	"		8:20.5				
50	"	15sec.	C2	28k	8:26				
51	"	"	"						
52	"	20sec	6250	28k	8:33				
53	"	"	"						

Telescope: 61"

Iris: 300

Frame prefix #: FR93A

Day of Week: 12/13

Focus: 3560^{dec} Humdty: 55% Sheet #: 6

Observers: Hicks / Gundy

Date MST/UT: Fri/Sat March 1993

Tailpiece: 34.3

Balance: 300 Temp O/I: 28/35 °F

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST UT	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
/	P/Schoumass	30	V+R	Pk 7k Phot 239k	~ 4:10	6:5:24.1	47:5:48	+2:5	1.13 focus = 3560
62	SKY	60	C2		4:12.5	5:57:25	47:5:48	2:16	1.15 focus = 3560
63	"	"	6250		4:15			2:18	1.15 "
64	COMET	300	6250	Pk = 700 Ph = 16k	4:17	6:5:26	47:5:50	2:12	1.14 → 1.15 "
65	"	"	C2	Pk = 3k Ph = 89k	4:23.5			2:18.5	1.15 → 1.16 ^{mostly} " sky is more clear than ever,
66	SKY	60	C2		4:30.5	6:13:29	47:5:45	2:17.5	1.15 " but a little bit hazy"
67	"	"	6250		4:33			2:19.7	1.16 "
68	"	"	CN		4:38.5			2:25	1.17 focus = 3520
69	"	"	8600		4:40.5			2:27.5	1.17 "
70	COMET	600	"	Peak = 2k Phot = 78k	4:42.5	6:5:32:	47:5:49	2:37.5	1.19 → 1.22 "
71	"	"	CN	Pk = 1200 Ph = 61k	4:53.5			2:48.5	1.22 → ? "
72	SKY	60	CN		5:06	6:13:38	47:5:54	2:52.5	1.23 "
73	"	"	8600		5:08			2:54.5	1.24 "

Short camera has been removed from spectrograph

Telescope: 61"

Iris: 300

Frame prefix #: FR93A

Day of Week: Fri/Sat

Focus: Variable Humdty: 55% Sheet #: 7

Observers: Hicks, Gundy

Date MST/UT: 12/13 March

Tailpiece: 34.3

Balance: 300 Temp O/I: 29/34 °F

600²

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST/UT	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
74	SKY	60	C2		5:14	6:13:40	47:5:57	3:01	secZ = 1.25 → 1.26 focus = 3560 dec.
75	"	"	6250		5:16			3:03	1.26 "
76	COMET	600	"	Pk = 1100 Ph = 31k	5:18	6:5:41	47:5:59	3:13	1.29 → 1.32 "
77	"	"	C2	Pk = 6k Ph = 177k	5:29.5			3:24.5	1.33 → 1.36 "
78	SKY	60	"		5:42	6:13:47.2	47:6:3	3:28	1.34 "
79	"	"	6250		5:44			3:30	1.35 "
~~~~~									change filter slide, focus ~
80	SKY	60	CN		5:49			3:36	1.37 T _o = 31°F focus = 3520
81	"	"	8600		5:51			3:38	1.38 T _i = 34°F Hum = 54% "
82	COMET	600	"	Pk = 2k Ph = 79k	5:53	6:5:50	47:6:8	3:48	1.42 → 1.46 "
83	"	"	CN	Pk = 1300 Ph = 63k	6:06			4:00	1.47 → 1.52 "
84	SKY	60	"		6:17.5	6:13:57	47:6:17	4:04	1.49 "
85	"	"	8600		6:20			4:06	1.50 same as before: " hazy, but looks evenly spread.
/	MUELLER	60	V+R	Pk = 11k Ph = 183k	6:32	7:24:23	57:53:32	3:09	1.32 moon about to rise
/	VAISALA	"	"	/	6:38	9:21:46	23:13:2	1:18	1.06 could not find Comet

Telescope: 61"

Iris: 300

Frame prefix #: FR93A Day of Week: FRI/SAT

Focus: 3520 Humdty: Sheet #: 8

Observers: Hicks, Grand, Date MST/UT: 12/13 March

Tailpiece: 34.3  
Balance: 300 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.)	
/	Daniel	60	V+R		6:50	11:41:7	37:52:44	-:50	1.02	moon rising behind trees
/	Can't find			Daniel or Vaisala.						Mueller is very nice.
86	BS 3626	.3	C2	pk = 35k ph = 221k	7:14	9:8:23	26:39:36	2:06	1.13	focus = 3560
87	"	"	"	28k	7:15			2:07.5	1.13	"
88	"	"	"		7:16			2:08.5	1.14	"
89	"	1.3	6250	19k 247k	7:20			2:12	1.15	"
90	"	"	"	28k 250k	7:21			2:13.5	1.15	"
91	"	"	"	23k 250k	7:22			2:14.5	1.15	"
92	"	2.0	CN	16k 431k	7:30			2:22	1.17	focus = 3520
93	"	"	"	16k 438k	7:31			2:23.5	1.17	"
94	"	"	"	24k 454k	7:32			2:24.5	1.18	"
95	"	2.0	8600	44k 824k	7:33	9:8:23	26:39:37	2:26	1.18	"
96	"	1.2	"	23k 496k	7:34.7			2:27	1.18	"
97	"	"	"	30k 493k	7:36			2:28	1.19	"
<del>98</del>										

3750







Telescope: 61"

Iris: 30

Frame prefix #: SP93A01 Day of Week: Th.

Focus: 3750 Humdty: Sheet #: /

Observers: Fink, Hicks, Grub Date MST/UT: Mond 11/12

Tailpiece: 39.2  
Balance: 400 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.)
SP93A01	Schermene	300	0.50	16K	3:14	5:59:38	46:57:54	+1:10	$\sigma = 36$ $\phi = 392$ 1.06 40 391.5, 400
A002	"	1200	"		3:21	5:59:40	46:57:57	1:17	net 900 30sec. ^{not} windy - very + tracking poor = 624 1.08
A003	"	1260	"	4,2K	3:47	5:59:45	46:58:17	+1:44	1.10 moved weights, screens to 300 killed exp started again
A004	"	"	"		4:08	5:59:50	46:58:24	2:05	1.13 - much improved
<del>X</del>	to avoid stars			2.6K A004		Dark slide in UT 4:15:15		Dark slide out 4:22:49	
5	BS 3951	1.0	0.5mm	28K	6:05	10:06:39	+31:57:36		1.00 $\frac{15}{7.54}$
006	"	1.0	"	26K	6:08	"			1.00
007	"	1.0	"	21K					1.00
008	"	"	"						1.00
009	"	"	"	25K					1.00
010	"	"	"	27K	6:11			0:07	1.00
011	BS 3750	2.0	"	30K	6:18	0:27:24	-6:02:44	0:48	1.31
012	"	"	"	43K	6:19			0:49	1.31
013	"	"	"	43K				0:50	1.31
014	"	"		47K				0:51	1.31

Telescope:

Iris: 300

Frame prefix #: SP93A Day of Week: Th

Focus: 3750 Humdty: 79 Sheet #: 2

Observers: Finley, Grundy  
Hicus Date MST/UT: March 11/12

Tailpiece: 34.2

Balance: 200 Temp O/I: 30/36

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.)
015	B5 3750	2.0	0.5	39k	6:22			0:52	1.31
016	B5 4534	0.1	1.0	27k	6:32	11:48:47	+M:36:31	-1:14	1.11 moonlight shines in dome
017	"	0.1	"	24k	6:33				1.11 Bad seeing not well centered
018	"	0.1	"	31k					1.10
019	"	"	"	36k				-1:17	1.10
020	"	"	"	36k					1.10
021	"	"	"	35k					1.10
	- Main crew cut spectrograph power cable								
	- Not able to acquire further spectra.								
	- Run was quite cloudy								
	- One night we used worky in noise problem.								