

Frame prefix: SP94D

Telescope: 61"

Sheet #: 2

Date: June 12/13

Focus:

Humidity: 45%

Iris:

Tailpiece:

Balance:

Temp: 63/65

Guidepoint: (395, 2, 408)

Observers: HICKS GRUNDY

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon, LHA, VME crashes, clouds, etc.
18	TEMPEL 1	600	0.5	4k	3:48	13:11:04.0	-1:56:59.9	1.23	0:39
19	"	1200	"	6.2k	3:59	13:11:04.3	-1:57:13.9	1.24	
20	"	"	"	6.6k	4:20	13:11:04.9	-1:57:13.1	1.27	
21	"	"	"		4:41	13:11:05.4	-1:57:54	1.32	38 SMALL PROB GUIDING (LADDER)
22	TAK 94C	1200	0.5	7.9	5:21	13:13:14.0	-12:09:58	1.71	
23	"	800	"	5.2	5:42	13:13:09.8	-12:09:48	1.87	1.97 we pause to
24	(COMP) BS 5542	1.0	0.5	9k	5:59			2.36	let field 2:22 pass
25	"	1.5	0.5	14.0	6:00	14:52:12.0	-30:33:07	2.36	
26	"	1.5	0.5		6:01			2.37	
27	"	2.0	0.5	18					
28	"	2.0	0.5	15k				2.38	
29	"	2.0	0.5					2.39	
30	BS 5183	1.5	0.5	14.5k	6:08	13:46:41.4	+06:27:51.1	1.35	
31	"	1.5	0.5					1.36	
32	"	1.5	0.5	16k				1.36	
33	"	1.5	0.5	16k				1.36	
34	"	1.5	0.5	17k				1.36	
35	BS 5968	0.75	0.5	22k	6:15	16:00:48	133:19:29.5	1.00	

260

Telescope: 61"

Sheet #: 3

Frame prefix: SP94D

Date: June 12/13

Focus:

Humidity:

Iris:

Tailpiece:

Balance:

Temp:

Guidepoint:

Observers: GRUNDY, HICKS

BS
5968
(not 5928)

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon, LHA, VME crashes, clouds, etc.
36	(supers) BS 5928	0.75	0.5	25K		16:00:48	+33:19:30	1.00	
37	"	"	"	20K					
38	"	"	"	25K	6:18			1.00	
39	"	"	"					1.00	
40	"	0.75	"	18K	6:21	16:00:48.2	+33:19:39.0	1.00	WE OFFSET 10"
41	"	"	"	20K	6:22	16:00:48.3	+33:19:49.9	1.00	
42	"	"	"	21K			33:19:19.9	1.00	
43	"	"	"	19K	6:24		34:19:09.7	1.00	
44	BS 5511 (STD)	0.75	1.0	23K	6:30	14:45:57	+01:55:04	1.29	
45	"	"	"	18K	6:31			1.30	
46	"	"	"	23K				1.30	
47	"	"	"	19K				1.30	
48	TAK 94I	0.5	1200	5.8K	6:37	13:13:00	-12:10:11	2.50	-2.93 LHA +3.27
49	PLUTO	0.5	180	1.7K	7:08	15:48:05.6	-05:17:36	1.35	-36
50	"	"	"	1.8K	7:13	15:48:05.6	-05:17:36	1.36	-37
51	"	"	"	1.7K	7:17	15:48:05.6	-05:17:21.6	1.38	-38
52	PLUTO	0.5	180	1.9K	7:22	15:48:05.5	-05:17:51.5	1.39	-40
53	"	"	"	1.8K	7:27	15:48:05.6	-05:17:36.5	1.40	-41
54	"	"	"	1.6K	7:31	15:48:05.5	-05:17:16.6	1.42	-43 (LHA = 1:46)

Telescope: 6"

Sheet #: 4

Frame prefix: SP94D

Focus:
Iris:
Tailpiece:
Balance:

Date: JUNE 12/13

Humidity:

Observers: HICKS GRUNDY

Temp:
Guidepoint:

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon, LHA, VME crashes, clouds, etc.
55	6060	1.5	1.0	38K	8:03	16:15:19.9	-8:20:57	1.51	
56	"	1.0	"	23K	8:05			1.51	
57	"	1.0	"					1.52	
58	"	1.0	"		8:06			1.52	VHMP
59	"	"	"	24K	8:08	16:15:20.0	-8:20:42.2	1.52	VHMT
60	"	"	"			16:15:20.0	-8:21:12.0	1.52	
61	6441	2.0	1.0	19K	8:13	17:20:15	-19:14:35	1.67	
62	"	"	"	17K	8:14			1.67	
63	"	"	"		8:14			1.67	
64	SAO 122301	3.0	1.0	23K		17:20:51.7	1:27:00	1.20	
65	"	1.1	"	18K	8:18			1.20	
66	"	"	"					1.21	
67	BS 6458	0.75	1.0	23K	8:22	17:20:25.2	22:28:43	1.03	
68	"	"	"	22K				1.03	
69	"	"	"	27K				1.03	
70	BS 6580	2.0	"	22K	8:26	17:31:47	+31:16:43	1.02	
71	"	"	"					1.02	
72	"	"	"					1.02	

Frame prefix: SPAND

Telescope: 61"

Sheet #: 5

Date: JUNE

Focus:

Humidity:

Iris:

Tailpiece:

Balance:

Temp:

Guidepoint:

Observers: GRUNDY HICKS

12/13

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon, LHA, VME crashes, clouds, etc.
73	^{BS} 6697	2.0	1.0	27K	8:31	17:57:01	23:59:54	1.02	
74	"	"	"					1.02	
75	"	"	"					1.02	
76	^{SAO} 085632	4.0	1.0	34K	8:36	18:00:26	+29:34:17	1.01	
77	"	4.0	1.0					1.01	
78	"	4.0	1.0					1.01	
79	^{SAO} 123112	3.0	1.0	27K	8:41	18:05:22.6	4:39:27	1.14	
80	"	"	"					1.14	
81	"	"	"					1.14	
82	^{BS} 6847	2.0	1.0	23K	8:46	18:15:17	+45:14:00	1.03	
83	"	"	"					1.03	
84	"	"	"					1.03	
85	^{BS} 7162	0.75	1.0		8:51	18:56:47	+32:53:56	1.00	
86	"	"	"	25K				1.00	
87	"	"	"					1.00	
88	^{BS} 7272	3.0	1.0	31K		19:09:51	34 35:47	1.00	DOUBLE TO WEST
89	"	"	"					1.00	
90	"	"	"						

Telescope: 61"

Sheet #: 6

Frame prefix: SP94D

Focus:
Iris:
Tailpiece:
Balance:

Humidity:

Date: JUNE

12/13

Guidepoint:

Temp:

Observers: HICKS, GRUNDY

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon, LHA, VME crashes, clouds, etc.
91	5968	0.75	1.0	21k	9:01	16:00:47	33:19:19	1.27	
92	"	"	1.0					1.28	
93	"	"	1.0					1.28	
94	"	"	"	19k	9:42	16:00:48	33:19:17	1.45	LHA = 3:44
95	"	"	"	19k	9:43			1.46	
96	"	"	"	19k	9:44			1.46	
97	7692	0.5	"	14k	10:04	20:03:52	17:03:30	1.04	
98	"	"	"					1.04	
99	"	"	"	14k				1.04	
100	7914	1.0	"		10:11	20:40:30	19:55:15	1.03	
101	"	"	"					1.03	
102	"	"	"	14k				1.03	
103	8041	1.0	"	13k	10:17	21:00:16	-04:45:08	1.27	
104	"	"	"					1.27	
105	"	"	"					1.27	
106	5968	0.75	"	21k	10:23	16:00:49	33:19:16	1.73	LHA = 4:25
107	"	"	"	19k				1.74	
108	"	"	"					1.75	

Telescope: 61"

Sheet #: 8

Frame prefix:

Focus:

Date: JUNE

Humidity:

Iris:

Tailpiece:

13/14

Temp:

Guidepoint:

Observers: Hicks, Grundy

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon, LHA, VME crashes, clouds, etc.
112	BS 5868	0.7	1.0	32k	4:49	15:46:12	7:22:33	1.13	SPLIT WRONG
113	"	"	"					1.13	IN HEADER
114	"	"	"					1.13	
115	5968	0.7	1.0	15k	4:55	16:00:48	33:19:46	1.02	SEEING POOR
116	"	"	"		4:56			1.02	
117	"	"	"					1.62	
118	6060	1.0	1.0	19k	5:01	16:15:25	-08:20:55	1.30	
119	"	"	"		5:07			1.30	
120	"	"	"		5:02			1.30	WE FIND TAK,
121	TEMPEL	1200	0.5	5k	5:32	13:12:14	-2:22:03	1.52	CONVOLVED W/ FIELD STAR. MOVE TO TEMPEL 1
122	TAK 941	"	"	6k	5:57	13:08:55	-12:15:26	2.05	-29?
123	WE MOVE AND TAKE ONE LAST						SET OFF SK-9		
123	TAK 941	1200	0.5	4k	6:39	13:08:47.4	-12:15:33	2.69	LHA 3:37
124	BS 4345	3.0	0.5	12k	7:04	11:12:14	135:50:58	3.14	
125	"	3.0	"	"				3.17	
126	"	3.0	"					3.19	
127	"	"						3.21	
128	STD 6629	0.5	1.0	46k	7:11	17:47:38	2:42:58	1.16	

Telescope: 61" Sheet #: 9
 Focus: 3849 Humidity: 46% → 50/55 at 10:38 UT
 Iris: Temp: 55/60 → Guidepoint:
 Tailpiece:
 Balance:

Frame prefix: SP94D
 Date: JUNE 13/14
 Observers: GRUNDY, HICKS

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon, LHA, VME crashes, clouds, etc.
129	STD BS6629	0.4	1.0	43K				1.16	
130	"	0.3	"					1.16	
131	"	"	"	34K	7:14			1.16	
132	"	"	"					1.16	
133	REINHUTH2	1200	0.5	500	9:51	60:16:02	06:36:53	2.36	NOT GUIDED WELL ALWAYS OFF IN ONE DIR.
134	"	"	"	500	10:17			2.04	BEHAVING BETTER
135	"	"	"	500	10:33			1.80	
136	"	600	"	3000	10:56			1.61	
137	Dome Flat	8	0.5	27K					Vzuzc 60
138	"	"	"						
139	"	"	"						
140	"	"	"						
141	"	"	"						
142	"	"	"						
143	"	"	"						
144	"	"	"						
145	"	2	2.0	28K					
↓				20					

↓

Frame prefix: FR94D

Telescope: 61"

Sheet #: 1

Date: UT 6/12/1994

Focus: 3864 decimal

Iris:

Humidity: 45%

Observers: Hicks, Grundy

(MST 6/11) (Sat/Sun)

Tailpiece:

Balance:

Temp: 63^{out} 65_{in}°F

Guidepoint:

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon, LHA, VME crashes, clouds, etc. (HAZE)
1	Mueller ephemeris posn.	60	OPEN	sky ~ 27k	3:44 UT	10:07:26	-11:50:44	2.64	LHA=3:30 (wrong times in header wrong dates too?)
2	"	"	"	sky ~ 26k	3:46			2.68	3:37
3	"	"	"	sky ~ 25k	3:48	10:07:26	-11:50:10	2.72	3:39 (moved in dec)
4	"	"	"	sky ~ 25k	3:51	10:07:28		2.77	3:41 (moved in RA)
5	"	"	"	sky ~ 24k	3:53			2.82	3:44
6	"	"	"	sky ~ 24k	3:55	10:07:28	-11:50:11	2.88	3:46 (moved in dec)
7	"	"	"	sky ~ 25k	3:57			2.92	3:48
8	"	"	"	sky ~ 24k	3:59	10:07:29	-11:50:22.5	2.98	3:50 (move in dec)
check guidepoint, fix VME clock, etc. → (395.2, 406)									
9	Jupiter	0.01 sec	B/dichr	(Jupiter is saturated)	4:28				for Jupiter (395.2, 408)
10	FIELD SP2	"	"		4:43	14:13:51	-12:05:59	1.41	offset -10.00 sec RA from Jupiter hop size +0.69 sec RA
11	SP3	"	"	Europa: 38k phot	4:48	14:13:52		1.41	0:32 Europa visible
12	SP4	"	"		4:54	14:13:52.56	-12:05:58.7	1.42	0:38 Europa on Goobar (HAZE to South)
13	SP5	"	"	Europa 41k phot	4:59	14:13:53		1.43	0:44
14	SP6	"	"	Europa 40k phot	5:06	14:13:54		1.44	
15	SP7	"	"	39k	5:13				← saved some extra frames, oh well.
19	SP8	"	"		5:21	14:14:04	-12:05:57.4	1.47	1:05
20	SP9	"	"		5:27	14:14:05		1.48	1:12

Frame prefix: FR94D

Telescope: 61"

Sheet #: 2

Observers: Grundy, Hicks

Date: UT June 12, 1996

Focus:

Humidity:

MST June 11/12, 1996
Sat./Sun.

Iris:

Temp:

Tailpiece:

Guidepoint:

Balance:

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon, LHA, VME crashes, clouds, etc.
21	SP10	0.01	3/Dichr	Io phot: 41k	5:33	14:14:05		1.50	
22	SP11	"	"	Io phot: 39k	5:39	14:14:06		1.51	1:23
23	SP12	"	"	Io phot: 43k	5:44	14:14:07	-12:05:56	1.53	1:29
24	SP13	"	"	" 39k	5:51	14:14:06.81	-12:05:55.5	1.55	Ganymede comes into view
25	SP14	"	"	" 37k	5:56	14:14:08		1.57	1:40
26	SP15	"	"	" 36k	6:02	14:14:08		1.59	1:46
27	SP16	"	"	" 32k	6:07	14:14:08.83	-12:05:54.1	1.62	1:52
28	SP17	"	"	"	6:14	14:14:09.56	-12:05:53.6	1.65	1:58
	Now	we	go	Comet	hunting	---			
	Tempel 1	60	OPEN	Saturated	6:21	13:10:05	-1:36:10	1.80	+3:10 (found it!)
29	"	30	"	pk = 34k Phot = 782k	6:24	13:10:07	-1:35:45.5	1.82	3:13
30	TAKAMIZAWA 1994-I	30	"	pk = 43k Phot = 1.1 M	6:30	13:17:24	-12:04:15	2.26	3:11 (found it!)
	Shoemaker 4	"	"	Phot = 69k	6:41	17:02:44	-12:24:10	1.41	-:23
31	"	"	"	pk = ~3k above Phot = 67k	6:50	17:02:48.3	-12:22:42	1.41	-:14 (found it! very busy star field)
32	Pluto field +	"	"		6:54	15:48:10.6	-5:17:49	1.32	+1:05 (plus 2 meteors?!)
33	Pluto field	"	"	"	6:56	"	"	1.32	1:07
34	Dome Flat	3	open	35k					
35	"	"	"	"					
36	"	"	"	"					
37	"	"	"	"					

Gone

•II
Ⓟ
•I
•III

$[X + X_{max} + Y]$

Frame prefix: FR94D

Telescope: 61"

Sheet #: 4

Observers: GRUNDY, HICKS

Date: UT JUNE 13, 1994
(Sun/Mon)

Focus:
Iris:
Tailpiece:
Balance:

Humidity: 45%

Temp: 63/65 °F Guidepoint (395.2, 408)

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon , LHA, VME crashes, clouds, etc.
///	Mueller 93 P								
41	Tempel 1	30	B/dichr	Pk = 1400 Phot = 39k	3:48	13:11:04	-1:57:01	1.23	+1:39 $\alpha = +.0107$ $\delta = -.0163$
42	TAKAMIZAWA	"	"	Pk = Phot = 51k	5:22	13:13:14	-12:09:49	1.72	+2:11 $\alpha = -.0425$ $\delta = -.0038$
43	Pluto	20	"	Pk \approx 2200 above Phot \approx 29k	7:27	15:48:06	-5:17:36	~1.4	+1:41
44	Shoemaker 4	100	OPEN	Pk = 8000 above Phot = 244k	7:49	17:02:00	-12:29:55	~1.45	+1:50
///	Reinmuth 2	60	OPEN	Pk = 4900 above Phot = 150k					$\alpha = +.0193$
45	"	"	B/dichr	Pk = 200 above Phot = 5700	10:35	00:14:09	6:21:51	1.81	-3:36 $\delta = +.0113$
46	SKY FLAT	60	"	10k					
47	"	40	"	9k					
48	"	30	"	9k					

labeled "Reinmuth" in header (since it is that field, actually)

Frame prefix: FR94D

Telescope: 61"

Sheet #: 5

Date: JUNE 13/14

Focus:

Humidity:

Iris:

Tailpiece:

Balance:

Temp:

Guidepoint:

Observers: GRUNDY, HICKS

Exp. #	Object	Exp. time	Filter (slit)	Counts: Peak/Phot	UT time Start	RA α	Dec δ	SecZ	Comments: seeing, moon, LHA, VME crashes, clouds, etc.
049	SKY FLAT	2.0	Open	36K	3:07	14:08:55.7	-12:42:56.4	1.46	
050	"	2.3	"	33K	3:08	14:08:55.5	-12:42:44.8	1.46	
051	"	3.0	"	27K	3:11	14:08:54.2	-12:42:44.2	1.46	↔
052	"	3.5	"	27K		14:08:51.4	-12:42:44	1.45	VME CRASHES
053	"	4.0	"	26K	3:14	14:08:51.3	-12:43:05	1.45	
054	"	5.0	"	28K		14:08:51.2	-12:41:20	1.45	
055	"	6.5	"	29K	3:17	14:08:51.4	-12:41:49	1.45	
056	"	8	"	27K	3:19	14:08:55.6	-12:41:49	1.44	
057	"	11	"	30K	3:21	14:08:55.6	-12:43:00	1.44	
058	Shoe-Levy 9	200s	"		4:00	14:08:58	-12:42:22	1.41	-:02 (+ satellite trail?)
59	"	240s	"		4:07			1.41	+:04
60	"	"	"		4:13			1.41	+:10
61	"	"	"		4:18	14:08:58	-12:41:47	1.42	+:15 (Moon still up)
62	"	"	"		4:23	14:08:58.46	-12:41:46.7	1.42	
63	"	"	"		5:05	14:08:58	-12:41:47	1.48	+1:02
64	"	"	"		5:10			1.49	+1:08
65	Tempel 1	30	B/dichr	~35k phot	5:43	13:12:15	-2:22:23	1.58	+2:37 $\delta = -.0164$ $\alpha = 0.0000$
66	TAKAMIZAWA	30	B/dichr	~47k phot	5:58	13:08:55	-12:15:22	2.08	+2:56 $\delta = -.0038$

$\alpha = -.0426$

