

Telescope: (

Day of Week:

iris:

Frame prefix #: FR93H

Day of Week:

Focus: Humdty: 44 Sheet #:

Humidity: 44 Sheet #:

Observers:

Date MST/UT:

Tailpiece: 360°

Balance:

Temp O/I: 33/39 start

Guidepoint:

[illegible]

Telescope: 61"

Frame prefix #: FR93H Day of Week: Mon/Tues

Observers: Grundy, Wisniewski

Date MST/UT: ~~12~~13/14 Dec MST/UT

Iris:

Focus: 7600 octal Humidity: 20% Sheet #: 2

Tailpiece:

Balance:

Temp O/I: 35°F/40°F

Guidepoint: ~~3834~~ 413, 390

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	hour-angle exp-start	Sec Z	Comments: VME crashes, seeing, Moon, clouds, etc.)
6	SA 71-11	1	V	5k +		3:15:	15:44			W.W. STD bad
7	"	5	"		5:58	3:15:32	15:44:12	+1:51	1.07	nice out focus
8	"	1 sec	"	38k					1.07	focus → 7600 octal
9	"	1 sec	"		6:03				1.07	much better focus
10	lan 95-74	2 sec	"	34k	6:10	3:55:11	-0:10:20	+1:25	1.19	(95-73 also visible at edge) U.F. STD
11	"	"	"	38k					1.19	"
12	SAD-42446	.5	"	28k		8:36:14	44:57:24	-4:10	1.53	
13	"	.5	"		6:18					
14	Geographos	60	"	?	6:26	8:37:53	45:09:12	-4:02	1.49	$\alpha = -.0105$
15	"	"	"	?	6:29			-3:59	1.48	$\delta = +.0090$
16	"	120	"		6:32			-3:56	1.46	searching for object...
17	"	"	"	4k peak 37k phot.	6:37	8:37:58	45:09:37	-3:52	1.44	found it. Move to G.P.
18	"	"	"	34k phot	6:40				1.42	
19	"	"	"		6:43.5	8:37:58	45:09:40	-3:45.5	1.41	
20	SAD*	.5	"		6:46			-3:47	1.39	

Telescope: 61"

Frame prefix #: FR93H

Day of Week:

Iris:

Focus:

Humidity:

Sheet #: 3

Observers: Grundy
Wisniewski

Date MST/UT:

Tailpiece:

Balance:

Temp O/I:

Guidepoint: (390, 413)

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	Hour-angle exp-start	SecZ	Comments: VME crashes, seeing, Moon, clouds, etc.)
20	Geographos	120	V		6:47	8:			1.40	
21	SAO *	0.5	"		6:50	8:36:20	44	-3:37	1.38	
22	Geog.	120	"	1	6:51	8:37:57.8	45:09:38		1.38	
23	"	"	"		6:54			-3:35	1.37	
24	"	"	"		6:57				1.36	
25	"	"	"		7:02			-3:27	1.34	↑ talking to Uwe on phone ↓
26	"	"	"		7:07			-3:22	1.32	
27	SAO *	0.5	"		7:10				1.30	
28	SAO 42460	"	"		7:13.5	8:37:27	44:28:53		1.30	
29	Geog.	120	"		7:14.5	8:37:58	45:09:38	-3:14	1.29	
30	"	"	"		7:18				1.28	
31	"	"	"	Ph=75k now	7:21				1.27	
32	"	"	"		7:24				1.26	
33	"	"	"		7:27				1.26	
34	SAO 42442	0.5	"		7:30				1.24	

Tape 1

Telescope: 61"

Frame prefix #: FR93H

Day of Week:

Observers: W.G., W.W.

Date MST/UT:

Iris:

Focus:

Humdty:

Sheet #: 4

Tailpiece:

Balance:

Temp O/I:

Guidepoint:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	hour-angle exp-start	SecZ	Comments: VME crashes, seeing, Moon, clouds, etc.)
35	Geog.	120	V		7:30.5			-2:58	1.25	← check dome
36	"	"			7:34	8:37:55	45:10:09	-2:54	1.23	(looks good)
37	"	"			7:37				1.23	
38	"	"			7:39.5				1.22	
39	"	"			7:42.5				1.21	
40	SAO *	0.5			7:45.5	8:36:19.9	44:57:39		1.20	SAO 42446
41	Geog	120		22k pk 112k phot	7:46	8:37:55	45:10:09		1.20	
42	"	"		114k phot	7:49			-2:40	1.20	
43	"	"			7:52.5				1.19	
44	"	"		23k pk 120k phot	7:55			-2:33	1.18	
45	"	"			7:58	8:37:54	45:10:24	-2:31	1.18	
46	Sao *	0.5			8:01	8:36:19.9	44:57:39	-2:26	1.17	SAO 42446
47	Geog	120		116k phot	8:02	8:37:54	45:10:22	-2:27	1.17	← check dome
48	"	"	V		8:07				1.15?	
49	"	"		18k pk 114k phot	8:10	8:37:53	45:10:32		1.15	

Telescope: 61"

Frame prefix #: FR93H

Day of Week:

Iris:

Focus:

Humdty:

Sheet #: 5

Tailpiece:

Observers:

Date MST/UT:

Balance:

Temp O/I:

Guidepoint:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	hour-angle exp-start	SecZ	Comments: VME crashes, seeing, Moon, clouds, etc.)
50	Geog.	120	✓		8:13				1.14	
51	"	"			8:15.5				1.14	
52	SAO 42446	0.5			8:19.5	8:36:19.9	44:57:39		1.13	
53	SAO 42460	0.4			8:20.5	8:37:27	44:28:54		1.13	
54	Geog.	120			8:21	8:37:52	45:10:53	-2:08	1.13	not well centered on asteroid
55	"	"		102 k ph.	8:25				1.12	
56	"	"		98k phot.	8:28	8:37:52	45:12:02	-2:00	1.12	better.
57	"	"			8:31			-1:58	1.11	
58	"	"			8:33.5			-1:55	1.11	
59	SAO 42446	0.5			8:37	8:36:19.9	44:57:39		1.10	
60	Geog.	120		16k ph 79k phot	8:38	8:37:52	45:12:00	-1:51	1.10	
61	"	"			8:41				1.10	
62	"	"			8:44.5				1.09	) Jumped in east guided back)
63	"	"			8:47	8:37:51	45:12:10	-1:42	1.09	
64	"	"	✓		8:50	8:37:47	45:12:11	-1:38	1.09	

Telescope: 61"

Frame prefix #: FR293H Day of Week: MON/TUES

Observers: W.G. & W.W.

Date MST/UT: Dec. 13/14

Iris:

Focus:

Humdty:

Sheet #: 6

Tailpiece:

Balance:

Temp O/I:

weights near rear (numbers are weird)

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.)
65	SAO 42446	0.5	✓		8:53	8:36:19.9	44:57:37	-1:34	1.08
66	Geograph.	120			8:55	8:37:51	45:12:07	-1:34	1.08 (Jumped again)
67	"	"			8:59.5	8:37:46	45:12:19		1.08
68	"	"			9:02.5	8:37:46	45:12:21	-1:26	1.07
69	"	"		30k phot	9:05			-1:23	1.07
70	"	"		35k phot	9:08			-1:20.5	1.07
71	SAO 42446	0.5			9:11	8:36:18	44:57:50	-1:16	1.06
72	Geogr.	120			9:12	8:37:45.6	45:12:24	-1:17	1.06 (Jumped again)
73	"	"							messed w/ telescope balance. Result: no change.
74	"	"			9:21			-1:07	1.05
75	"	"		35k phot	9:24	8:37:44.7	45:12:35	-1:04	1.05
76	"	"			9:27.5				1.05
77	SAO 42446	0.5							1.04 Poorly centered
78	"	"			9:32	8:36:14	44:59:18		1.04 well centered
79	Geogr.	120	✓	46k ph	9:33	8:37:45	45:12:36	-0:55	1.04

minimum light

Telescope: 61"

Iris:

Frame prefix #: FR83H Day of Week:

Focus:
Tailpiece:

Humdty:

Sheet #: 7

Observers: W.G., W.W. Date MST/UT:

Balance:

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST	RA set	Dec set	Hour-angle exp-start	Sec Z (P.A.)	Comments (seeing, Moon, clouds, etc.)
80	Geograph.	120	V		9:37				1.04	excellent seeing.
81	"	"		59k phot	9:40	8:37:44	45:12:50		1.04	No periodic
82	"	"		64k	9:43				1.04	error in tracking
83	"	"			9:46	8:37:44	45:12:53		1.04	also
84	SAO 42446	0.5			9:49	8:36:14	44:59:19		1.03	
85	Geog.	120		73k	9:50				1.04	
86	"	"			9:53	8:37:43	45:12:55		1.03	
87	"	"		82k ph	9:56				1.03	
88	"	"		88k	9:59			-129	1.03	
89	"	"			10:02				1.03	
90	SAO 42446	0.5				8:36:14	44:59:18		1.03	← move dome
91	SAO 42460	0.3			10:08	8:37:20	44:30:31		1.03	
92	Geog	120		96k	10:09			-120	1.03	← VME crashed
93	"	"		101k	10:16			-113	1.03	
94	"	"				8:37:42	45:13:14		1.03	

Telescope: 61"

Frame prefix #: FR93H Day of Week: Mon/Tues RA offset:

Focus: ^{octal} 7600 Humdty: Sheet #: 8
Tailpiece:
Balance: Temp O/I:

Observers: W.G., W.W. Date MST/UT: Dec 13/14 Dec offset:

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.)
95	Geog.	120	✓	102 ^k _{phot}	10:23			-1:05	1.03 ← checked dome
96	"	"			10:26	8:37:42	45:13:17	-1:02	1.03 Cirrus to the West
97	SAO 42446	0.5		53 ^k pk	10:29	8:36:14	44:59:19	+1:02	1.03
98	Geog.	120		95 ^k phot	10:30				1.03 (← cirrus?)
99	"	"		121 ^k _{phot}	10:33	8:37:41	45:13:24	+1:05	1.03
100	"	"		121 ^k phot	10:36			+1:08	1.03
101	"	"		118 ^k _{phot}	10:39			+1:11	1.03
102	"	"			10:42			+1:14	1.03
103	SAO 42446	0.4		26 ^k peak	10:45	8:36:14	44:59:19	+1:18	1.03
104	Geog.	120		115 ^k _{phot}	10:46			+1:17	1.03 ← check dome
105	"	"			10:50.5	8:37:40	45:13:29	+1:22	1.03
106	"	"		108 ^k	10:53			+1:25	1.03
107	"	"		107 ^k	10:57			+1:28.5	1.03
108	"	"			10:59			+1:31	1.03
109	SAO 42446		✓		11:02	8:36:14	44:59:18		1.03

Frame prefix #: FR93H

Telescope:

61"

Day of Week: Mon/Tues

Iris:

Observers: W.G., W.W.

Date MST/UT: Dec. 13/14

Focus:

Humdty:

Sheet #: 9

Tailpiece:

Balance:

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	Hour-angle exp-start	Comments (P.A., seeing, Moon, clouds, etc.)
110	Geograph.	120	✓	97.5 ^k	11:03			+1:35	1.03 ← check dome
111	"	"		86 ^k	11:07.5	8:37:40	45:13:46	+1:39.5	1.04 well centered at G.P.
112	"	"		20^k	11:10			+1:42	1.04
113	"	"		65^k	11:13.5			+1:45.5	1.04 Cirrus persists
112	"	"			11:17				1.04 ← saved on Sys:
113	SAO *	0.4			11:24	8:36:14	44:59:19		1.05 ← deleted extra files 001-034
114	Geograph.	120		58 ^k phot	11:29			+1:01	1.05 ← VME Crashed
115	"	"			11:33	8:37:38	45:14:02	1:05	1.05 near 2 stars
116	"	"			11:36			1:08	1.05
117	"	"		34 ^k	11:55	8:37:37	45:14:15		1.07 ← Wait
118	"	"						1:30	1.08
119	SAO 42446	0.4			12:01	8:36:14	44:59:18		1.08
120	Geog.	120		36 ^k	12:02			1:34	1.08
121	"	120		40 ^k	12:05	8:37:37	45:14:21	1:38	1.09
122	"	120	✓		12:08			1:40	1.09

disk
5011

Telescope: 61"

Frame prefix #: FR93H Day of Week: MON/TUES

Observers: WG, WW Date MST/UT: Dec. 13/14 UT

Iris:

Focus:

Humdty:

Sheet #: 10

Tailpiece:

Balance:

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.)
123	Geog	120	V	48K phot	12:11			+1:43	1.09
124	"	"			12:16	8:37:36	45:14:28		1.10 clear now
125	SAO 42446	0.4							
126	SAO 42446	0.4							1.11 centered
127	SAO 42460	0.3			12:22	8:37:20	44:30:31	+1:54	1.11
128	"	"							1.11 centered
129	Geograp.	120		67K	12:24			1:56	1.11
130	"	"		72K	12:27	8:37:36	45:14:32	1:59	1.12 cent.
131	"	"		80K	12:30				1.12
132	"	"		87K					1.13
133	"	"			12:36				1.13 sky ~2000
134	SAO 42446	0.4			12:39	8:36:13	44:47:47	2:13	1.14
135	Geograp.	120		96K phot	12:40			2:12	1.14 sky ~2050
136	"	"		99K	12:43	8:37:35	45:14:39	2:15	1.14
137	"	"	V	104K	12:45.5			2:18	1.15

Telescope: 61
Day of Week: MON/TUES

Frame prefix #: FR93H

Observers: WG, WW

Date MST/UT: Dec. 13/14 1993

Iris:

Focus:
Tailpiece:
Balance:

Humidity:

Sheet #:

Temp O/I:

[illegible]

Telescope: 61"

Frame prefix #: FR93H

Day of Week: Tues/Wed.

~~RA offset~~Focus: 7650^{actual} ← focus on slit jaws

Humidity: ~40% Sheet #: 12

Tailpiece:

Observers: Hicks, Grundy

Date MST/UT: Dec. 14/15 UT

~~Dec offset~~

Balance: Temp O/I: 31/36 °F

Guidepoint: (888.4, 413)

Exp # 151	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT UT	RA set	Dec set	Hour-angle exp-start	sec Z (P.A.)	Comments seeing, Moon, clouds, etc.)
	Encke	30	B/dichr	~2500 phot.	~3:30	22:30:39.6	5:01:14	+3 hours	~1.6	$\alpha = -.0033$ $\delta = -.0049$
	Mueller 930	30	B/dichr	~1800 phot	~4:30	22:50:40.6	1:19:27.5	+4 hours	~2.2	$\alpha = +.0005$ $\delta = -.0215$
151	SAO 42446	0.4	V	~14K peak	6:26	8:36:19.2	44:57:52	-4 hrs	1.47	
152	"	"		110K phot	6:29				1.45	← check dome
153	Geographos	120			6:37				1.42	
154	"	"		69K					1.39	
155	"	"		71K	6:46			-3:37	1.38	
156	"	"		76K	6:49			-3:35	1.37	
157	"	"			6:52				1.36	
158	SAO 42446	0.4			6:55				1.34	
159	Geographos	120		85K	6:56	8:36:56	44:57:52		1.34	
160	"	"		91K	6:59				1.33	
161	"	"		95K	7:02			-3:21	1.32	
162	"	"		98K	7:04				1.31	
163	"	"	V		7:07				1.30	

RA 5m ← → big

Frame prefix #: FR93H

Observers: Hicks, Gandy
Wisniewski

Telescope: 61"

Day of Week: Tues/Wed ~~RA offset~~Date MST/UT: Dec. 14/15 UT ~~Dec offset~~Focus: 7600
Tailpiece:
Balance:

Humdty:

Sheet #: 13

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start	RA set	Dec set	Hour-angle exp-start	Sec Z (P.A., seeing, Moon, clouds, etc.)	Comments
164	SAO 42446	0.4	V	116K	7:10				1.29	
165	Geography	120			7:11	8:36:55	45:22:26	-3:13	1.29	
166	"	"		102	7:14				1.20	
167	"	"		100	7:18				1.27	wk guide
168	"	"			7:20				1.26	
169	"	"			7:23				1.25	
170	SAO 42446	0.4			7:26				1.24	check dome
171	Geography	120		110	7:27				1.24	
172	"	120		111	7:30	8:36:54	45:22:34		1.23	
173	"	120		111	7:33				1.23	
174	"	120		106	7:35				1.21	
175	"	120		107	7:38				1.21	
176	"	120		106	7:41				1.20	
177	"	120		106	7:45				1.20	wk guide collect
178	"	120	V		7:48				1.19	Jump N-S

Telescope: 61"

Frame prefix #: FR93H

Day of Week: Tues / Wed ~~THU-FRI-SAT~~Focus: 7600_{act} Humdty:

Sheet #: 14

Observers: Grundy, Hicks
WisniewskiDate MST/UT: Dec. 14/15 ~~THU-FRI-SAT~~

Tailpiece:

Balance: Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST UT	RA set	Dec set	Hour-angle exp-start	sec Z (P.A., seeing, Moon, clouds, etc.)	Comments
178	Geographos	120	V	97K	7:51	8:36:55	45:22:44		1.18	
180	SAO 42446	0.4			7:57	8:36:20	44:57:52		1.17	
181	SAO 42460	0.3				8:37:20	44:29:04		1.17	
182	SA 71-07	1.0			8:15		15:04:03		1.46	
183	"	1.0		33pk	8:16				1.47	
184	"	1.0			8:17				1.48	
185	SA 71-20	2.0			8:19				1.48	
186	"	5.0		237K phot		3:16:25	15:25:53		1.49	
187	"	5.0			8:23				1.50	
188	LAN 95-71	2.0		157ph	8:29	3:55:12	-06:10:5		1.54	
189	"	"						+2:48	1.60	
190	"	"			8:31				1.60	
191	Geographos	120		39K	8:42				1.61	
192	"	"		33K	8:45	08:36:49	45:24:35	-1:37	1.61	
193	"	"	V	31K	8:48				1.63	

Telescope: 61"

Frame prefix #: FR93H

Day of Week: Tues/Wed

Focus: 7600

Humdty:

Sheet #: 15

Observers: Grundy, Hicks
Wisniewski

Date MST/UT: Dec. 14/15 UT

Tailpiece:

Balance:

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start MST UT	RA set	Dec set	Hour-angle exp-start	sec Z (P.A., seeing, Moon, clouds, etc.)	Comments
194	Geographos	120	✓	33K	8:52			-1:28		1.08
195	"	"		34K	8:54					1.07
196	"	"			8:57					1.07
197	SAO 42446	0.4		109K	9:00					1.07
198	"	"			9:02					1.07
199	Geographos	120		46K	9:04	8:36:48	+45:24:43	-1:18		1.07 jump in East happened
200	"	"		48K	9:07					1.06 between exposures
201	"	"		52K	9:10			-1:13		1.06 prompted by bump on joystick
202	"	"		55K	9:13					1.06
203	"	"			9:16			-1:07		1.05
204	SAO 42446	0.4		109K	9:19	8:36:17	+44:58:57	-1:03	1.05	
205	"	"			9:21				1.05	
206	BIAS	1.0								
207	SAO 42446	0.4			9:49				1.03	
208	Geographos	120	✓	112K	9:51	8:36:43	+45:24:54		1.03	

Telescope: 61"

~r filename

Frame prefix #: PR9314 Day of Week: Thu/Wed

Focus: 7600 Humdty: Sheet #: 16

Observers: Grundy Date MST/UT: Dec 14/15
Hicks, Wisniewski MST/UTTailpiece: oct
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.)
209	Geographos	120	V	109K	9:54				1.03
210	DARK	"		109K	9:57	[unintentional dark]			1.03 ← shutter failed to open
211	Geographos	"		119K	9:59.5	8:36:41	45:25:24	-124	1.03
212	"	"		119K					1.03
213	"	"		119K	10:06			-118	1.03
214	"	"		118K	10:08			-115	1.03
215	"	"		117.6K	10:11.5	8:36:44	45:25:30	-112	1.03
216	"	"		117K	10:14			-109	1.03
217	"	"		116K	10:17			-106	1.03
218	"	"			10:20			-103	1.03
219	5A0 42446	0.4		117K	10:23				1.03
220	Geographos	120		109K	10:24	8:36:29	45:25:35	+101	1.03 checked clock VME perhaps
221	"	120		106K	10:27				1.03 1 sec fast at most
222	"	180		153K	10:30			+0:06	1.03
223	"	180	↓		10:35			+0:12	1.03

Talking to VME
Berlin

← Fix dome

Telescope: 61"

Frame prefix #: FR93H

Day of Week: Tues/Wed

~~RA offset:~~OCTAL
Focus: 7600

Humdty:

Sheet #: 17

Observers: Grundy, Hicks
Wieslaw W.Date MST/UT: Dec 14/15
MST/UT~~Dec offset:~~

Tailpiece:

Balance:

Temp O/I:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	Hour-angle sec 7 exp-start (P.A.,	Comments (seeing, Moon, clouds, etc.)
224	Geographos	180	✓	143 K	10:34			+0:16 1.63	
225	SAO 42446	0.4		56 K	10:43			1.63	Counts Low?
226	Geographos	180		78 K	10:44			1.03	Counts Low?
227	"	180		107 K	10:48			1.03	sky Background up
228	"	180			10:53			1.03	cloud
229	SAO 42446	0.4		81 K	10:57			1.03	smeared
230	"	0.4		123 K				1.03	
231	Geographos	180		73 K	11:00			+0:36 1.04	First clouds around
232	"	180		34 K	11:03			+0:40 1.04	sky up COUNTS DOWN
233	"	180		47 K	11:08			1.04	Normal?
234	"	180		37 K	11:14			1.04	
235	SAO 42446	0.4		93 K	11:18			1.04	
236	660	120		10.5 K	11:19			+0:56 1.65	
237	"	"		14.8 K	11:22			1.65	
238	"		↓	8.6 K	11:25			1.05	

Telescope: 61"

Frame prefix #: FR93H Day of Week: Tue/Wed ~~RA offset:~~

BCTAL

Focus: 7600 Humdty: Sheet #: 18
Tailpiece:
Balance: Temp O/I:

Observers: Grundy
Hicks, Wieslaw Date MST/UT: Dec 14/15 ~~Dec offset:~~

[illegible]

61"

Frame prefix #: FR9314

Day of Week: Thur / Fri

Observers: Hicks

Date MST/UT: Dec 16/17

Iris:

Focus:

Humidity:

Sheet #: 19

Tailpiece:

Balance:

Temp O/I:

Guidepoint:

[illegible]

Telescope: 61"

Frame prefix #: 7293H

Day of Week: Thu/Fri

Observers: Weiszw
Hicks

Date MST/UT: Dec 16/17

Iris:

Focus:

Humdty:

Sheet #: 20

Tailpiece:

Balance:

Temp O/I:

Guidepoint: 388.4 413

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	Hour-angle exp-start	SecZ	Comments: VME crashes, seeing, Moon, clouds, etc.)
250	SAO 70746	3	CN	35K	2:44	20:58:23	+38:07:52	+4:05	1.54	389, 412 Focus 7450 Oct 21
251	"	"	CN					+4:07	1.55	389, 412
252	"	"	CN							390, 413
253	"	"	CN						1.56	389, 413
254	"	3	8600	36K	2:48			4:10	1.57	389, 412
255	"	3	"						1.57	390, 412
256	"	3	"						1.58	390, 413
257	"	"	"						1.59	390, 413
258	MUELLER 73P	600	8600	15K	2:59	21:02:44	31:30:40	4:16	1.60	-1.78
259	"	600	CN	11K	3:11			4:29	1.79	-1.89
260	SAO 70746	3	CN	30K	3:24	21:58:23	38:07:49		1.85	385, 406
261	"	"	"		3:25				1.86	387, 415
262	"	"	"						1.87	388, 414 Dome slat vignetting?
263	"	"	"		3:28				1.88	388, 414
264	"	"	8600	37K	3:30				1.90	388, 413

Telescope: 61"

Iris:

Frame prefix #: FR934

Day of Week: Thu/Fri

Focus:

Humdty:

Sheet #: 21

Observers: Weislow +
HICKS

Date MST/UT: DEC 16/17

Tailpiece:

Balance:

Temp O/I:

Guidepoint:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	Hour-angle exp-start	SecZ	Comments: VME crashes, seeing, Moon, clouds, etc.)
265	SAD 70746	3	8600						1.91	388, 413
266	"	"	"		3:32				1.92	388, 413
267	"	"	"						1.93	256x256 387, 413
268	DARK	1	N/A		209 =	643.92 0 =	21.09			512x512
269	DOME FLAT	0.5	8600	23K						1 of 8 bulbs not working V2112C 95
270	"	0.6	"	27K						
271	"	0.6	"	27K						
272	"	0.6	CN	26K						
273	"	0.6	CN							
274	"									
275	SAD 38325	0.5	V	10K	4:14	21:46:48	+48:02:24	-0:12	1.04	
276	"	6.5	V	36K	4:20				1.04	Focus now 7534
277	?	60	V			2:45:35	+47:56:46		1.04	we seem to
278	?	60	V							find fast moving object
279	?	60	V			02:45:35	47:46:46			-NAW-

Telescope: 61"

Iris:

Frame prefix #: FR43H

Day of Week: Thu / Fri

Focus:

Humdty:

Sheet #: 22

Observers: Hicks
WEISLAW

Date MST/UT: DEC 16/17

Tailpiece:

Balance:

Temp O/I:

Guidepoint: 388.4 413

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	hour-angle exp-start	SecZ	Comments: (ME crashes, seeing, Moon, clouds, etc.)
X	Our Futile		Search over		we turn our		attention	elsewhere		
280	SAO 94480	0.2	V	18K		05:20:47	19:07:04		1.12	1 2
281	"	0.3	"					-1:41	1.12	
282	4272	60	V		5:25	05:17:32	20:02:57	-1:31	1.09	} we can't find the things but WW wants all fields searched
283	"	60	V		5:28			-1:29	1.09	
284	"	60	V		5:31				1.09	
285	"	60	V		5:37				1.09	
286	3953	60	V		5:46	05:21:01	16:20:46		1.09	
287	"	60	V		5:50			-1:10	1.08	near 2 field star
288	4822	60	V		6:00	5:28:24	16:08:41		1.08	
289	"	60	V	21K	6:06			-1:01	1.07	telescope jumped, do over
290	3953	120	V		6:15	5:21:03	16:23:12	-0:45	1.06	
291	4822	90	V		6:20	5:28:23	16:09:00		1.06	
292	3953	110	V	174K	6:23	5:21:03	16:21:12		1.05	
293	4822	90	V							

Telescope: 61"

Frame prefix #: FR93H

Day of Week: Thu/Fri

Iris:

Focus:

Humdty:

Sheet #: 23

Observers: Hicks

Date MST/UT: Dec 16/17

Tailpiece:

Balance:

Temp O/I:

WEISLAW

Guidepoint: 388.4 413

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	Hour-angle exp-start	SecZ	Comments: VME crashes, seeing, Moon, clouds, etc.)
294	SAO 94480	0.3	✓		6:32	5:20:47	14:62.03		1.03	
295	"	"	"							
296	3953	120	"		6:34	5:20:58	16:21:11	-0:25	1.05	
297	4822	90	"		6:38				1.05	
298	3953	120	"		6:42	5:20:58	16:21:11		1.04	
299	4822	90	✓	187	6:45				1.04	
300	3953	120	"	182	6:50				1.04	
301	4822	90	"	166	6:55	5:28:21	+16:08:58		1.04	
302	SAO 94480	0.3	✓		6:59	5:20:42	+19:01:59		1.03	
303	3953	120	✓	155	7:01	5:20:58	16:21:13	+0:01	1.04	CIRRUS CLOUDS
304	4822	90	✓	175	7:06	5:28:21	16:08:58		1.04	NOTICIBLE
305	3953	120	✓	155		5:20:56	16:21:13			
306	4822	90	✓	166	7:13	5:28:20	16:08:58	+0:05	1.04	
307	3953	120	✓	137		5:20:56	+16:21:12		1.04	near field star
308	4822	90	✓	176		5:28:20	+16:08:58	+0:12	1.04	

Telescope: 61"

Iris:

Frame prefix #: FR9311 Day of Week: Thur / Fri

Focus: Humdty: 60 Sheet #: 24

Observers: Hicks
Weislow Date MST/UT: Dec 16/17

Tailpiece: Balance: Temp O/I: 19/22

Guidepoint: 388.4 413

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	Hour-angle exp-start	SecZ	Comments: (ME crashes, seeing, Moon, clouds, etc.)
309	SAD 94480	0.3	V	177	7:23	5:20:42	+14:01:59	10:22	1.03	
310	3953	120	V	137K					1.05	
311	4822	90	V	189K	7:30	5:28:19	+16:08:59		1.05	
312	3953	120	V	118K	7:33	5:20:54	+16:21:12		1.05	
313	4822	90	V	193K	7:38				1.05	
314	3953	120	V	162K	7:42				1.05	
315	4822	90	V	192K	7:45				1.05	
316	SAD 94480	6.3	V	177K	7:49				1.05	
317	3953	120	V	77K	7:52	5:20:54	+16:21:12	10:53	1.06	
318	B/A5	1.0	-							
319	4822	90	V	187	8:01	5:28:19	+16:08:59	0:53	1.07	
320	3953	120	V	77K	8:04	5:20:53	+16:21:14	11:04	1.08	
321	4822	90	V	182K	8:08			10:00	1.07	
322	3953	120	V	88K	8:11			1:11	1.08	
323	4822	90	V	188K					1.08	

Telescope: 61"

Frame prefix #: FR9317

Day of Week: Thur / Fri

Observers: U.ck
Washw

Date MST/UT: Dec 16/17

Iris:

Focus:

Humidity: 60% Sheet #: 25

Tailpiece:

Balance:

Temp 0/I:

Guidepoint: 388.4 413

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	Hour-angle exp-start	SecZ	Comments: (VME crashes, seeing, Moon, clouds, etc.)
324	SAO 94480	0.3	✓	178	8:20	5:20:42	+16:21:17	+1:21	1.08	
325	3953	120	✓	112	8:22	5:20:52	+16:21:17		1.10	
326	4822	90	✓	185	8:26	5:28:17	+16:09:02		1.10	
327	3953	120	✓	130	8:29			1:30	1.11	
328	4822	90	✓	186	8:33			+1:26	1.11	
329	3953	120	✓	147	8:36			1:36	1.12	
330	4822	90	✓	182	8:40			1:33	1.12	
331	SAO 94480	0.3	✓	177	8:43				1.12	
332	3953	120	✓	166	8:47	5:20:51	+16:21:19	1:47	1.14	
333	4822	90	✓	182	8:50	5:28:16	+16:09:02		1.14	
334	3953	120	✓	179	8:55				1.16	← VME LOCKED UP, RESTART ARGOS
335	4822	90	✓	185	9:00				1.16	
336	3953	120	✓	190	9:03				1.18	beginning impact
337	4822	90	✓	183	9:08				1.18	
338	SAO 94480	0.3	✓	176	9:11				1.18	

Telescope: 61"

Iris:

Frame prefix #: FR9314

Day of Week: Thur / Fri

Focus:

Humidity:

Sheet #: 26

Observers: Hicks
Weislaw

Date MST/UT: Dec 16/17

Tailpiece:

Balance:

Temp O/I:

Guidepoint:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	Hour-angle exp-start	Sec Z	Comments: VME crashes, seeing, Moon, clouds, etc.)
339	3953	120	✓	—	9:14	5:20:48	+16:21:20	+2:14	1.21	"SKY FINE"
340	4822	90	✓	182	9:18			+2:11	1.21	
341	4822	90	✓	188	9:21			2:14	1.21	
342	4822	90	✓	189	9:24				1.22	
343	4822	90	✓	190					1.23	
344	4822	90	✓	189					1.24	
345	4822	90	✓	180	9:33				1.25	
346	3953	120	✓	174	9:37			2:37	1.29	
347	SAD 94480	0.3	✓	174	9:41	5:20:42	+16:01:59	2:42	1.28	
348	3953	120	✓	161	9:45	5:20:46	+16:01:23	+2:46	1.32	
349	4822	90	✓	175	9:49	5:28:12	+16:09:05	2:42	1.31	
350	3953	120	✓	143	9:53				1.35	
351	4822	90	✓	172					1.34	began exposure 3sec while still moving
352	3953	120	✓	122	10:01				1.39	
353	4822	90	✓	172						

Telescope: 61"

Frame prefix #: FR93H

Day of Week: Thu/Fri

Iris:

Focus:

Humdty:

Sheet #: 27

Observers: Hicks

Date MST/UT: Dec 16/17

Tailpiece:

Balance:

Temp O/I:

WEISLAW

Guidepoint:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	hour-angle exp-start	SecZ	Comments: VME crashes, seeing, Moon, clouds, etc.)
354	SAB 94480	0.3	✓	173	10:08				1.39	
355	3953	120	✓	108	10:11				1.44	
356	4822	90	✓	177	10:14				1.42	
357	3953	120	✓	864	10:17				1.48	
358	4822	90	✓	174	10:21			+3:14	1.46	
359	3953	120	✓	734	10:24				1.52	
360	4822	90	✓	176	10:27				1.44	
361	SAB 94480	0.3	✓		10:30				1.52	
362	3953	120	✓	684	10:32				1.57	
363	51-11	1	✓			07:30.78	24:40.24		1.06	
364	51-11	0.8	✓						1.06	
365	51-12	0.8	✓			07:29:42	24:38:40			not in field
366	51-12	0.5	✓					+1:35	1.07	centa
367	CHIRON	600	✓	234	10:57	10:34:25	2:34:30	-1:12	1.21	
368	CHIRON	600	✓		11:10				1.19	Jump in east we recenter

Telescope: 61

Day of Week: Titus / Fri

iris:

Frame prefix #: FR9314

Day of Week: Thurs / Fri

Focus:

Humidity:

Sheet #: 28

Observers: *Hicks*

Date MST/UT: DEC 16/17

Tailpiece:

Temp O/I:

WEISLAN

Guidepoint:

[illegible]

61"

Iris:

Frame prefix #: FR93H

Day of Week: Thurs / Fri

Observers:

Hicks
WEISLAW

Date MST/UT: DEC 18/19

Focus:

Tailpiece:

Balance:

Guidepoint:

Humdty: 82 Sheet #: 24

Temp O/I: 27/35

[illegible]

Telescope: 61"

Iris:

Frame prefix #: 3R93A

Day of Week: Mon/tue

Focus:

Humdty:

Sheet #: 1

Observers: Grundy
Hicks, Weigher

Date MST/UT: 13/14 Dec

Tailpiece:

Balance:

Temp O/I:

Guidepoint:

Exp #	Object	Exp time	Filter slit	Counts Object/Sky	Exp start UT	RA set	Dec set	hour-angle exp-start	SecZ	Comments: VME crashes, seeing, Moon, clouds, etc.)
001	Mueller 93A	60	0.5	1226 880	3:24	20:58:11	33:34:07	+4:34	1.81	
002	"	600	"	3687 1050	3:27	20:58:12			1.84	COMET DEFOCUSED?
003	"	660	"	3327 996	3:39	20:58:12	33:38:38	4:51	1.97	YES! Low clouds North west
004	"	600	"	2461 966	3:53	20:58:13	33:38:12		2.13	2.29
005	BS 8314	2	0.5	5K	4:07	21:44:14	14:44:43	14:31	2.26	COMP STAR
006	"	5	"	13K	4:09				2.28	
007	"	10	"	24K	4:10				2.30	
008	"	10	"	20K	4:11				2.32	
009	BS 8931	10	"	16K	4:17	23:31:12	-04:07:13	+2:5	1.75	
010	"	10	"	14K	4:14				1.76	
011	"	10	"	16K	4:20				1.77	
012	"	10	"	15K					1.78	
013	"	1	"	3.2K		ODD, STILL DEFOCUSED!			1.41	focused in slit, j248 3587 focus
014	BS 718	1.0	1.0	16K	4:39	2:27:50	8:25:59	+0:19	1.10	
015	"	1.5	4	29K	4:40				1.10	

Telescope: 61"

Then offset 40 Hex

Frame prefix #: SP93H

Day of Week: tue/wed

RA offset:

Focus: 3570

Humdty: 49

Sheet #: 3

Observers: GRUNDY,

Date MST/UT: 14/15

Dec offset:

Tailpiece:

Balance: 2280 Temp O/I: 31/36

HICKS ~~WHEELER~~

DEC

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.)
019	ENCKE	600	0.5	200 counts	3:19	22:30:39	5:01:15	+3:01	WIND 7mph, comet slightly defocused so that guider is in focus - 40A noise 15
020	ENCKE	1200	0.5	300 counts	3:44				1.75-9.7 Exposure lost?
X	WE FIND	THAT	THE	PSF IS	VERY LARGE IN	SPEC	JAWS		
X	WE	SHARPEN UP	STAR	IN SLIT	JAWS AT EXPENSE OF	GUIDER PSF			
021	MUELLER 93P	600	0.5	1000 counts	4:29	22:50:41	+01:14:34	+3:52	noise 17
022	"	"	"	1000 counts	4:40	22:50:11	01:14:16	4:02	2.33-2.54
023	BS 448 comp	1	0.5	7K	4:55	1:32:22	-07:03:	+1:34	1.42
024	"	2	"	33K	4:56				1.42
025	"	2	"		4:57			1:36	1.43
026	"	"	"	30	4:58				1.42
027	BS 8931 comp	3	0.5	10K	5:06	23:31:10	-4:07:27	3:48	2.38
028	"	5	"	25K					SEEING WENT TO POT
029	"	4	"	15K					2.44
030	"	"	"	14K					2.47
031	"	"	"						2.48

61¹¹

Frame prefix #: 6P93H

Day of Week: Tues

RA offset:

Focus :

Humidity:

Sheet #: 4

Observers: Hicks
Grundy

Date MST/UT: 14/15 Dec Dec offset:

Tailpiece:

Temp 0/I:

[illegible]

Telescope: 61
Day of Week: Thur / Fri

Frame prefix #: SP9BH

Observers: HICKS
WEISLAW

Date MST/UT: 16/17 DEC

Iris:

Iris:

Focus: 7527

Tailpiece:

Balance:

Guidepoint:

octz |

Humdty: 79% Sheet #: 5

Temp O/I: 23/18

Focus:

Tailpiece:

Balance:

Guidepoint:

[illegible]