Telescope: 61") 930

Frame prefix #: WF93D Day of Week: Sat RA offset: Focus: 1580 Humdty: Sheet #: WF1
Tailpiece: 95°

Observers: Date MST/UT: Jan 20 Dec offset: Balance: 3m 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.)
TST93D 0004	GL-22B Landolt	3 sec	open		~9:20	17:02:09	29:53:1m	+2:50	1-2+ 1.2" binned Focus close but not perfect.
0005	" SAGI	12 sec	open	/29m					initial
WF93D 0009	"	12 sec	open	GL225 30m/3m	9:40:16	17 02 :09.0	+29 53 18	3:09	Tailpiece +4.5 To 1-31 unbinned. HW=5pixels
0012	"	60 sec	open	running 53m/3m	9:55:17	"	"	3:24	Tailpiece 95 1-37
0013		300 sec	open					3:29	1-40
0014	P/Feige	300 sec	"		10:50	1h 10 49.5	8° 22 23	-4:03	2.06
0015	Flat	0.2 sec	open	twilight 30m/3m	11:03	0h	dflip-60 -32:39		Varian PS -65°
0016	"	0.2	"	30m/3m	11:06				"
0017	"	0.1	"	20m/3m	11:08				"

Telescope: 61"

Frame prefix #: WF93D | Day of Week: Su | RA offset: — | Focus: 5620 1360 [illegible] | Humdty: | Sheet #: WF2

Tailpiece: 95

Observers: Fink, Hicks, Grundy | Date MST/UT: June 21 | Dec offset: — | Balance: 100 | 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.)
0008	Sha-ley	300 sec	open	[illegible] 7500/670	4:30:26	12:08:21	-1 59 19	2:46	1.70 zeeing [illegible]
0009	"	"	open		4:37	"	"	3:02	1.75
0010	"	600 sec	open		4:44			3:10	1.81
0011	"	"	"		4:50:11			3:22	1.92
0012	"	"	"		5:08			3:33	2.06
0013	SA84-0	10 m	open		5:51	16:16:27	+14 55 10	0:08	1.05 Center of SA84 field
0014	SA84-1	600	open		5:59	16:18:28	14 55 10.5	0:15	1.05 offset 30" = 2.0m [illegible] E
0015	-2	"	"		6:12	16:17:08	14 55 11.0	0:	1.06 −1m20s = 20" Collet 8
0016	-3	"	"		6:26	16:15:48	14 55 11	0:44	1.07 [illegible] in $\dot{\alpha}$ = −.0065 $\dot{\delta}$ = Collet 9
0017	-4	"	"		6:37:29	16:14:27.8	14 55 11	0:57	1.08 Collet 10
0018	-5	"	"		6:49:39	16:14:27.7	14 45 11		Collet 11
0019	-6	"	"	/7000	7:02:03	16:15:47.3	14 45 12		Collet 12
0020	SA 84 -1	"	"	/7350	7:15:53	16:18:28	14 55 11	1:31	1.12 Collet 13
021	-2	"	"	center /8000	7:27	16:17:08.0	14 55 11	1:45	1.15
022	-3	"	"		7:39:40	16:15:48.0	14:55 1.0	1:58	1.18

For [illegible] drift for 4 ([illegible]) = 7 [illegible]

good ~ 8 = 10 ([illegible]) = 15 [illegible]

medium ~ 12 = 22 [illegible]

[illegible] ~ 20

Telescope: 61"

Frame prefix #: WF93A Day of Week: Sunday RA offset: Focus: Humdty: Sheet #: WF-2

Tailpiece:

Observers: Date MST/UT: Dec offset: 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.)
023	SA89 - 4	600	open	/8000	7:52	16:14:27.9	14 55:11	2:11	1.21
024	-5	"	open		8:04 55	16 14 27.7	14 45 11	2:23	1.25
025	-6	"	open	/8500	8:16:11	16 15 47.5	14 45:12	2:35	1.29
026	-1	1200	"	/14500	8:30	16 18 27.1	14 55 11	2:45	1.33
027	Field	0.2	open	2500/	9:39				Variable 60 lights on RA console while
028	"	"	"		9:43				
029	"	0.3	"	3600/	9:45				
030	"	0.3		2000					Variable 60 dome lights off

Telescope: 61"

Frame prefix #: WFQ3 Day of Week: Monday RA offset: 15m (ra) Focus: 5580 (det) Humdty: 45% Sheet #: WF-4

Observers: Fink, Hicks, Grimley Date MST/UT: June 22 Dec offset: Tailpiece: Balance: 100 Temp O/I: 60/64

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.)
031	Shea-Leg	60s	open		4:11:08	12:08:35.8	-2 07 49	2:40	1.60 (7'N Count rate in field Offset was not entered)
032	"	60s	"		4:24	12 08 35.6	-2 00 52	2:54	1.72
033	"	60s	"		4:41	"	"	3:10	1.81
034	"	60s	"			"	"		
035	"	60s	"		5:05:53	12:08:36.9	-2:00 45	+3:33	2.07
036	SA84 - 0	10s	"		5:27	16:16:27.3	14:55 19	-0:11	1.05 Central star
037	SA84 -7	60s	"		5:32	16:14 15.3	15 03 13.1	-0:03	1.05 offset 8'N, 32'W Collect #1
038	SA84 -8	"	"		5:44:09	16:15:21.1	15 03 18.9	+0:06	1.05 offset 16'E Collect #2
039	-9	60s	"		5:57	16:16:26.9	15 03 13	+0:20	1.05 offset 16'W Rate ~.005 3
040	-10	"	"			16:17:32.8	15 03 13	0:28	1.05 offset 16'S 4
041	-11	"	"		6:21	16:18:38.6	15 03.13	0:39	1.06 offset 16'E 5
042	-12	"	"		6:33	16:18 38.4	15 11 13.6	0:52	1.07 offset 8'N 6
043	-13	"			6:45:45	16:17 32.1	15 11 14.2		1.09 offset 16'W Collect # 7
044	14	"	"		6:57:41	16 16.26.1	15 11 14.2	1:19	1.10 8
045	15	"	"		7:08 28	15:19.9	14.7		1.12 9

FOV: SA84 16.4 8'+16'

17'68

SA84

offset for 7 = 8'N 32'W = 2m12s

Run that 16' ~ 64s = 66.2s

1.15 = 1m06s

Telescope: 61"

Frame prefix #: WF93 | Day of Week: Mon/Tues | RA offset: | Focus: 5560 | Humdty: | Sheet #: WF-5

Tailpiece: 95

Observers: | Date MST/UT: June 22 | Dec offset: | Balance: 100 | 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.)
046	SA84-16	600	green	/750	7:21:22	16:14:13.8	+15 11 15.2	1:45	1.15 10
047	-7	"	"		7:33 08	16:14 15.3	15 03 13	1:57	1.18 Collect 1
048	-8	"	"	/7700	7:45:08	16:15:21	15 03 12		1.20 chg Rate -0.0033 Collect 2
049	-9	"	"	/7700		16 16 26.9	15 03 13		Collect 3
050	-10	"	"		8:08 47	16 17 23	15 03 13	2:23	1.31 Collect 4
051	-11	"	"		8:21	18 36.9	03 13.5	2:41	1.32 5
052	SA84-12	"				18 38.4	15 11 13.7		6
053	13	"	"	/8300	8:44:09	17 32.3	11 14.8	3:05	1.42 Rate -0.0016 7
054	14					16 26.2	11 15.0		1.50 8
055	15			/850	9:07			3:28	1.58 9
056	16			/850	9:19:36	16 14 13.9	15 11 15.3	3:43	1.67 7000/8500 ~82%
057	Flat	0.3		39000					Varian 65 + Dome light (RH console mid)
058	"	0.3		35000					Varian 60 + Dome light
059	"	"		"					20000
060	"	"		"					2000

10 × (16×8') / 128 − 1280 ?² = 0.36 [illegible]

Telescope:

Frame prefix #: | Day of Week: | RA offset: | Focus: | Humdty: | Sheet #: WF-6
Tailpiece:
Observers: | Date MST/UT: | Dec offset: | 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.)
061	Flat	0.3		20006					Dome lights off - Varian 60
062	"	0.3							Dome lights on
063	"	0.4		27000					. Lamps shining on dome instead of FF screen
064	"	"							
									- FF lamps on windscreen [illegible] slightly Right | same as FF screen
065	Sky Flat SA90	60 sec			10:30	2217182	1547123	-1:08	1.08 bin 2+2 IRIS 300
066	"	"			10:32				IRIS 280
067									IRIS 260
068									IRIS 240
069									IRIS 220
070	Dark	1.0 sec		~2880					bin 1+1

Telescope: 61"

Frame prefix #: SP93D Day of Week: Wed/Thur RA offset:

Observers: Grundy, Hicks Date MST/UT: 16/17 June Dec offset:

Focus: 7675 octal Humdty: 50% Sheet #: SP1

Tailpiece: 73

Balance: 396 Temp O/I: 59/61

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.)
001	PLUTO	600	1.0	8700 pk 7300 net	5:32	15:38:09	-4:18:36	+0:12	1.25
002	"	"	"	9961 pk 8500 net	5:43	15:38:10	-4:18:34	+0:23	1.25
003	"	"	"	9208 pk 7900 net	5:53	15:38:09	-4:18:33	+0:34	1.26
004	"	1200	"	17121 pk 15000 net	6:04	15:38:09	-4:18:33	+0:45	1.27
005	"	1200	"	11837 pk 10000 net	6:25	15:38:04	-4:18:32	1:05	1.30
006	"	"	"	15.8K pk 14K net	6:47	15:38:08	-4:18:38	1:27	1.35
007	"	"	"	15.7K pk 14K net	7:08	15:38:08	-4:18:31	1:48	1.41
008	"	"	"	17.6 K pk 15K net	7:30	15:38:07	-4:18:28	2:10	1.44 - ?
009	BS 6060	1.0	"	29K	7:56	16:13:13	-8:21:53	1:59	COMP STAR 1.55
010	"	1.0	"	20K	7:57				1.55
011	"	"	"	24K	7:58				1.55
012	"	"	"	26K	7:59				1.56
013	"	"	"	23K	8:00				1.56
014	"	"	"	24K	8:01				1.57
015	"	"	"	25K	8:02				1.57

Telescope:

Frame prefix #: SP93D Day of Week: Wed/Thu RA offset: Focus: Humdty: 48 Sheet #: 2

Observers: Grundy, Hicks Date MST/UT: 16/17 June Dec offset: Tailpiece: END → Balance: Temp O/I: 52/57

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.)
016	BS 6060	1.0	1.0	20K	8:03	16:15:13	-8:21:53	2:06	1.58
017	"	"	"	22K	8:04				1.58
018	"	"	"	20K	8:04				1.58
019	BS 5968	0.8	1.0	18K	8:10	16:00:49	33:19:05	2:28	1.16 SKY CLEAR
020	"	"	"	21K	8:11				BY EYE 1.17
021	"	"	"	19K	8:12				1.17
022	"	"	"	21K	8:13			2:31	1.17
023	"	"	"	22K	8:14				1.17 we prefuse for guide
024	"	"	"	18K	8:16				1.18
025	"	"	"	19K	8:17				1.18
026	"	"	"	20K	8:18				1.18 we prefuse for guide
027	"	"	"	21K	8:19			2:37	1.19
028	"	"	"	19K	8:20				1.19
029	BS 6629	0.25	1.0	22K	8:35	17:47:32	32:42:00	+1:04	STD 1.20
030	"	0.25	"	27K	8:36				1.20
031	"	"	"		8:37				1.20
032	"	"	"	22K	8:38				1.20
033	"	"	"	17K	8:39				1.20

Telescope: 61"

Frame prefix #: SP931D | Day of Week: Thur/Fri. | RA offset: | Focus: | Humdty: | Sheet #: 3

Observers: Fink + | Date MST/UT: 17/18 June | Dec offset: | 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.)
034	VAISALA	600	0.5	400 net	4:30	11:58:27	14:10:33	2:34	1.30 -1.33 FAT STAR NEARBY
035	VAISALA	1200	0.5	400 net	5:19	11:58:36	14:10:00	3:43	1.69 1.88 HAD TO WAIT TRACKING POOR
036	"	"	"	500 net	5:40	11:58:36	14:09:47	4:04	1.89 -2.15
037	BS 6629	0.1	1.0	12K	6:26	17:47:52	2:42	-0:54	1.19 Clouds started to move in
038	" (STD)	0.2	"	19K	6:27				1.19 but appeared to receded
039	"	0.2	"	21K	6:28				1.19
040	"	0.2	1.0	21K	6:29				1.19
041	(COMP) BS 5183	2.0	0.5	21K	6:37	13:46:36	6:22:41		1.61 Fine high cirrus about
042	"	"	"	21K	6:38				1.62
043	"	"	"	11K	6:34			3:14	1.63
044	"	"	"	22K	6:54			3.30	1.75
045	"	"	"	20K					1.76
046	"	"	"		6:56				1.77 we wait for comet to rise.
047	Forbes	600	0.5	200nA	10:52	1:60:58	7:46:27	-3:46	1.88 Quite out of focus in guider camera
048	"	"	"		11:02				1.77 guiding pretty bad

Telescope: 61") No direct images possible)

Frame prefix #: DI930 Day of Week: Fri/Sat RA offset: Focus: Humdty: Sheet #: P1
Tailpiece:

Observers: Fink + Date MST/UT: 19/20 Dec offset: 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.)
X	ON GUIDER		/Silver mirror			374,435	ON	DIRECT	(343 332)
X				focus	silver	7674 →	moved to		7734 for direct
X				ON DIRECT		↓N →E	, on GUIDER	↓E →N	
X			Bright Star	swamping	comet,	we	do	focus test	on star

Telescope: .00[illegible] 600 10"

Frame prefix #: DI93D Day of Week: Sat/Sun RA offset: Focus: Humdty: 42 Sheet #: DI2

Tailpiece:

Observers: Fink + Date MST/UT: 20/21 Dec offset: Balance: Temp O/I: C2/65

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.)
X	Octal 7740	HW ≈ 7.0		77	34	HW ≈ 6.5	7730	HW ≈ 6.0	Focus Test
X	We set	focus	at	7730	Octal	in warm room			
001	SHOE-LEV	60	V+R	100 Net					1,43 BIAS ≈ 850?
002	"	300	"	500 Net	3:46	12:08:05	-2:05:07	+2:08	1.44
003	"	600	"	1000 Net	3:55			2:15	1,47
004	"	600	"		4:07			2:29	1,53 CENR = 400 EXT CENC = 550 EXTC = 650
005	"	600	"		420			2:42	1,60 CENR 400 EXTR = 450 CENC 550 EXTC = 625
006	"	600	"		4:31			2:52	1,68 1
007	"	600	"		4:41			3:05	1,78 WE FILL N_2 CAMARA
008	"	600	"		4:54			3:16	1.87 WARMING UP
009	"	600	"	600 NET	5:05				1.99 IMAGE BETTER
010	"	600	"		5:16			3:38	2,12 BIAS 98C
011	BS5911	0.1	"	55K	5:44	15:52:53	13:12:33	+0:21	1.06
012	"	0.08	"	38K				+0:22	1.06
013	"	0.08	"		5:46				1.06

Telescope:

Frame prefix #: D193D Day of Week: Sat / Sun RA offset: Focus: Humdty: Sheet #: A3

Observers: Fink + Date MST/UT: 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.)
014	BS 5911	0.08	V+R	48K	5:48	15:15:53	13:12:33		1.06
015	FLAT	1.5	V+R	30K					
016	"	"	"						
017	"	"	"						
018	"	"	"						

Telescope: 61" (setpoint 386.5, 413) 3835 fordec.

Frame prefix #: FR93D Day of Week: Wed/Thurs RA offset: Focus: 7675 oct Humdty: 50% Sheet #: 1

Tailpiece: ? (73° (meaningless)

Observers: Fink, Hicks, Grundy Date MST/UT: 16/17 June Dec offset: Balance: 300 Temp O/I: 59/61 °F

Slit is N/S

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.)
1	Pluto 6/17 UT	30	OPEN		4:47	15:38:11	-4:18:06	-:30	1.26 collect 1, collect 2
	NEWMAN 3								not found
	Pluto	15	B/dichr	~25k phot	~5:30	15:38:9.6	-4:18:37	~transit	1.25 Photometry ±10%
	"	"	"	25k	7:06	15:38:7.8	-4:18:31	+1:47	1.41 Photometry ± 1k
	BS 6060	0.1	"	20k pk 416k high phot	7:53	16:15:13	-8:21:53	+1:56	1.53 collect 4 Phot ± 15k
	BS 5968	0.1	"	Pk = ~35k pk. Phot = 550 k	8:10	16:0:48.5	33:19:06	+2:27	1.16 collect 5
	BS 7001	.01	"	Too bright!	8:25			~transit	1.01 ~~STD~~ *
	BS 6629	.01	"	Pk = Phot =	8:35	17:47:31.3	2:41:50	+1 hour	1.20 Collect 6 STD *
									(GP 386.5, 413)

BS 7001

Telescope: 61" Guidepoint: (386.5, 413) 7654 octal

Frame prefix #: FR93D Day of Week: Thurs./Fri. RA offset: Focus: 3840 focus Humdty: Sheet #: 2

Tailpiece:

Observers: Fink, Hicks, Grundy Date MST/UT: 17/18 June Dec offset: 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~~, a few clouds, etc.)
	COMET Schaumasse	60	B/dichr		3:23			+1:20	1.15 could not find it
	"	20	Open						twilight fading ↓ "
2	"	60	Open	~1k peak 49k phot	3:45	12:23:43	9:7:50	+1:43	1.20 —Very faint comet
3	"	"	"		3:48				1.21
	COMET Vaisala	"	"	3300 pk 164 k phot					1.25
	"	"	B/dichr	200 pk 7575 phot			quite	consistent → ~ 7500 phot	~ 300 peak
	ASTEROID 93GE	"	Open	6000 peak 183k phot				f/2:40	1.29 Guidepoint (370, 400)
4	"	"	V+R	Pk Phot 100k	4:44	12:12:56.3	17:31:17	2:53	1.34 for filter photometry
5	"	"	"	Pk 3k Phot 100k	4:47			2:56	1.35
6	"	"	"	Pk Phot	4:49			2:58	1.36
7	ASTEROID 93 HM1	"	"		+5:00	14:20:01	9:36:07	+1:02	1.12
8	"	"	"	1300 pk 35k phot	+5:02			+1:04	1.12
9	"	"	"	37k	+5:04			+1:06	1.13
10	"	"	B	250 pk 5900 phot	+5:06			+1:08	1.13
11	"	"	"		+5:08			+1:10	1.13

Telescope: 61"

Frame prefix #: FR93D Day of Week: Thurs/Fri. RA offset: Focus: Humdty: Sheet #: 3

Tailpiece:

Observers: Fink, Hicks, Grundy Date MST/UT: 17/18 June 1993 Dec offset: 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 Comments (~~P.A.~~, ~~seeing~~, ~~Moon~~, clouds, etc.)
/	VAISALA	60s	B/DICH	200 pk 6500 phot	~5:17			+3:40	1.67
12	Lan. 61-228	5	V+R	30k peak 10k peak	7:06	17:2:7	29:46:44	:26	1.01 (362, 390) ← 62-225 Guidept.
13	"	"	"		7:07			:27	1.01 (434, 397) ← 62-228 Guidpt
14	"	30	B	585 k phot	7:10			:30	1.01
15	"	"	"		7:12			:32	1.01
/	FORBES	60	OPEN	2k pk 82k phot					2.00 Tail: N E
/	"	120	B/Dich.	200 Pk ~7k phot				-3:45	1.85

Telescope: 61"

Frame prefix #: FR93D Day of Week: Fri./Sat. RA offset: Focus: Humdty: Sheet #: 4

Observers: Fink, Hicks, Grundy Date MST/UT: 18/19 UT Dec offset: 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.)
									Guidepoint (374, 435)
									for Ag → direct imaging
		focus:		7674	octal →		7734	octal	(gold box south)
				383,	437		7740 is	best	→ direct (343, 332)
16	Shoe-Levy 93E	10	open	(low.)	5:23	12:7:57	-2:3:13	+3:40	2,16 Bright Star blots out Comet.

Telescope: 61"

Frame prefix #: FR93D Day of Week: Sat./Sun. RA offset: Focus: 7730 actual Humdty: Sheet #: 5
Tailpiece:

Observers: Fink, Hicks, Grundy Date MST/UT: 19/20 June Dec offset: 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.)
17	Shoe-Levy 93e	10	open		3:40	12:8:6.3	-2:5:7.8	+2:04	1.42 camera is warm