

13

PG 15

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 10/11

Observer HJx/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CE15875/76	Inboard/outboard				4509					1/2
77	BIAS(4)							19:19		1
78	Comp							20?		3
79	HD62509 (RV Standard)	7:39:12	28:16:04							1/4
80	Comp									3
81	Comp									3
82	HD84999	9:43:53	09:30:33					20:18:44		
83/87	HD84999	"	"					20:26:57		4
88	Comp									3
89	BIAS(4)							21:01		1
90/95	HD84999							21:03:49		5
96	Comp									3
89/102	HD84999							21:58:33		6
903	Comp									4
04	BIAS(4)									0
05	HD84999							22:45:51		1

Dome Temp. H

Focus

Dome Temp. H

LST

End

Ech. 1/2

1.7

1.7

Dome Temp./Hum.

5.8°C / 40.9%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

6

Focus

231

Transparency Conditions

clear

Dome Temp./Hum.

00256102441 CCD/FMT

LST End	LHA End	Tilt	Exposure	Seeing	REMARKS
Echellz 17:30	0600h 4620	1000h 400h	4/3		source thr Ar Max 12K
			0		
			45		
1.7	1.7K		120S		
			45		
			45	2"	
	0.45K		360s		
			360s		BATCH job x5
			45		
			0		
			360s		360 obs. bat x6
			4		
			360s		360 obs. bat x6
			45		
			0		
			360s		360 obs. bat x6 (Batch job doesn't work again)

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PG 2UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 10/11

Observer HJX/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
LE15906/07	HD84999	9:43:53	59:30:33			FDIV	40V	22:53:12		2
08	comp									3/4
09/12	HD84999							23:08:17		4
13	comp									3
14	BIAS(4)							00 05		1
15	Comp									3
16	HD102647							00:15:21		4
17	"							00:19:09		5
18	"							00:22:51		6
19	Comp									3
20	Comp									3
21	HD12762	14:28:03	38:44:44			ATIII	32V	00:33:39		4
22	"							00:42:22		5
23	"							00:49:08		6
24/26	HD12762							00:36:56		7
27	comp									3

Dome Temp. h

Focus

Dome Temp. h

LST
Est

Dome Temp./Hum.

2.6 / 45.5

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus

Transparency Conditions

Some thin clouds 8

Dome Temp./Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
2		360s		
3		4s		
4		360s		360 obs. but ^{x6} only did 4 times of repeat and then died.
3		4s		
1		0		
3		4s		
4	0.67K	180s		
5		180s		
1		210s		
3		4s		
3		4s		
4		360s		a little bit cloudy
5		360s		
6		360s		
7		360s		360 obs. done x3
8		is		

a
PG 3

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 10/11

Observer H₃x/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CE15928	BIAS(4)							01 18		
29/34	HD127762	14:28:03	38:44:44			ATIL	32V	01:20:17		4
41	comp									3
35/40	HD127762	"	"					02:02:12		5
42	comp									3
43	BIAS(4)							02 44		1
44/49	HD127762							02 47 30		6
50	comp							02 29 18		3
51/53	HD127762							03 29 18		7
954	comp									3
55	HD127762							04:12:54		2
36	"							04:21:38		
57	"							04:28:25		4
58	"							04:35:07		5
39	"							04:41:51		
60	"							04:48:40		

Dome Temp. h

Focus

Dome Temp. h

LST
End

Dome Temp./Hum.

1.9 / 49.4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus

0.231

CCDT

Transparency Conditions

hazy

Dome Temp./Hum.

-100.4°

LST End	LHA End	Exposure	Seeing	REMARKS
		0		
4		360s	2-3"	360obs. bat x6
3		4s		note: saved later.
5		360s		360obs. bat x6
3		4s		
1		0		
6		360x6		
3		4s		
7		360x8		Batch job problem: only repeats 3 times.
3		4s		
2		471s		
		361s		
		360s		
4		360s		
5		360s		
		360s		
		370s		

11PG 4

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 April 11

Observer Hix/Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CE15961	H0127762	14:28:03	38:44:44					04:55:34		
62	COMP									
63/72	FLAT (10)									2
73	BIAS (4)							05 22		1

Dome Temp. H

Focus

Dome Temp. h

LST

End

MPG 1

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr. 11/12

Observer HJx/Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CE15974/75	In/out board				4509					3/4
76	BIAS(4)							19:09		1
77	comp							.		3
78/79	HD62509	07 39 12	28 16 04					19:25 27, 19 28 42		4
80	comp									3
81	comp									3
82/87	HD84999	09 43 53	59 30 33			FOIV	4.0V	19 59 44		4
88	comp									3
89	BIAS(4)							20 41		1
90/95	HD84999							20 43 08		5
96	comp									3
CE15997/ CE16002	HD84999								22:04:21	
03	comp									3
04	BIAS(4)							22:06:11		1
05	HD84999							22:26:34		
06	"							22:38:05		

Dome Temp. / Hum.

8.8 / 37.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

comp source ¹⁴

Focus

.231 not changed

Transparency Conditions

clear

flat source

Dome Temp. / Hum.

CCDFMT 0 0 256 1024 4 1

Tung

LST End	LHA Exp Counts	Exposure	Seeing	REMARKS
3/4		4/4		Echelle CCD cross-grating 17.70 x 0.600 in / 4620
1		0		slit W 100 μ flat slit H = 0.215
3		3	Max 10.3K	H 400 μ 225. 500 μ
4	3 K, 2.7K	150	1"-2"	
3		3		
3		3		
4	600~650	360x6		
3		3		
1		0		
5	1100.	360x6	1"	
3		3		
		360x6		
3		3		
1		0		
		360		
		364		

need to revise header

Batch problem! run again, failed again, only got one repeat.

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PG 2UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 11/12

Observer H₂X/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CE16007	HD84999	9:43:53	59:30:33					22:45:00		2
08	comp									3
09	BIAS (4)							23:35:00		1
10	comp									3
11/12	HD127762					A7III	32V			4
13/22	"							23 49		5
33	comp									3
34/73	HD127762							00:40:40		
74	comp									3
75	BIAS							02:28		1
76/95	HD127762							02:31:15		7
096	comp									3
097/106	FLAT									2
107/114	HD127762							03 48 :		6
115	comp									3
116	HD127762							04:33:53		2

Dome Temp. / Hum.

5.90 / 45.0

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus a. 231

Transparency Conditions

clear

Dome Temp. / Hum.

Ex.	LST End	LHA End	Exposure	Seeing	REMARKS
2			360s		
3			3s		
1			0		
3			3s		
4	~1K		150s x 2	1'	150 obs
5	~1K		120s x 20		120 obs
3			3s		
			120s x 40		120 obs
3			3s		
1			0		
7			120s x 20		120 obs. clouds coming. 93, 94, 95 low counts
3			3s		
2			25s	'	slit H 500 = 0.215 source Tung
6				1.2'	bad job problem, only repeat 7 times
3			3s		
2	420		180s		

Dome Temp. / Hum.

3.5 / 50.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus

Transparency Conditions

some clouds

Dome Temp. / Hum.

LST
EndLHA
End

Exposure

Seeing

REMARKS

1 305

1805

readout problem.

2 340

2405

3 420

2405

4 335

2405

3

0

15
PG 1

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 13/13

Observer HJx/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
G1 CE16123/24	2w/out board				4509					1/2
25	BIAS(4)							19 37		1
26	comp									3
27	HD 62509	07 39 12	28 16 04					19 41 28		4
28	comp									3
29	comp					KOIII _b	1.14			3
30	HD 84999	09:43:53	59:30:33			FOIV	4.0V	19 52 16		5
31	"							20 02 59		6
32	"							20:14:01		6
33	comp									3
34	HD 84999							20:25:42		4
35	"							20:36:21		5
36/38	"							20:43:36		6
39	comp									3
40	BIAS(4)							21:04		1
41/46	HD 84999							21:08:52		4

Dome Temp. / Hum.

9.7 / 42.3

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

20

Focus

-231

Transparency Conditions

thin cloudy

Dome Temp. / Hum.

0 0 256 1024 4 1

LST End	LHA End	Exposure	Seeing	REMARKS
	Counts		4/4	cloudy
1/2				Echelle CCD T = -101.3
1				17.70 x 0.600 in / 46.20
3		3s		slit H 400 μ .225 for stellar.
4	1180	240s	2-3"	W 100 μ .262 comp
3		3s		H 500 μ .215 for flats
3		3s		3s comp Max 815K
5	373	600s		
6	270	600s		
6	313	600s		
2		3s		
1	595	600s		getting better.
5	450	360s		
6		360s x 3	1"-2"	3600bs. bal.
3		3s		
1		0		
1		360s x 6		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

PG 2
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Date 1998 Apr 12/13

Observer Hgx/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CE16147	comp				4509					3
48/53	HD 84999	9:43:53	59:30:33					21:50:42		
54	comp									3
55	HD 84999							22:32:06		6
56	BIAS(4)							22:43'		
57/60	HD 127762 + comp				* * * * *	AT III	3.2V	22:56:00		4c
161/200	HD 127762 + comp							23:09:16 (second)		
201	BIAS(4)							00:31		1
202/231	HD 127762							00:33:02		1
232	BIAS(4)							01:59		1
33	HD 127762							01:52:13		3
34	comp									3
35/T2	HD 127762							01:57:46		
73	BIAS(4)									1
274/323	HD 127762									
324/334	BIAS(4)	FLAT						05:10		1

Dome Temp. / Hum.

7.5/49.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

22

Focus

a. 231

Transparency Conditions

clearing

Dome Temp. / Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
		3s		
		360s x 6		360 obs. bat x 6
		3s		
	670	600s		
		1		
	400	(180, 3) x 2		180 obs. bat x 2
	400	(180, 3) x 20		180 obs. bat x 20. each run takes 4'18"
		0		(x, c)
	360	(180, 3) x 15		180 obs. bat x 20 Batch job crashed
		0		
	666	180	~1"	
		3		Max 9.3K
		(180, 3) x 19		180 obs. bat
		0		
		(180, 3) x 25		180 obs. bat
		0, 25s		→ slit H = 0.215 ⇒ 500μ

73

FA: SAT

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

p9#1

Date 1998 APR 17/18

Observer Gld/ATH/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	C _D Emulsion	Filter	Temp SIT	Starting Time EST	Ending Time UT	P.H.
CC 53369	SKY			CASS CCD	5894A ⁰		250 th	21 55 51		34
70/71	Inboard / outboard			Tgrating	51.58		1800 th grating			44
72	BIHS(A)							22 06		40
73	HD124752 <small>companion of</small>	14 10 18	+68 03 00					22 48 19 47 57		4
74	Comp									5
75	Comp									6
76	Tyc 3443-521	10 57 17	+46 53 09					23 02 12		7
77	"	"	"					23 12 27		8
78	"	"	"					23 23 16		9
79	Comp									10
80	Comp									10
81	TYC 4385 152	11 03 32	+67 34 20					23 41 03		11
82	"	"	"					23 58 08		12
83	Comp									13
84	Comp									13
85	TYC 4152 484	11 04 54	+65 44 07					00 18 22		14

Dome Temp./Hum. $+7.5^{\circ}$ 56.38H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

24

Focus 6.85

Transparency Conditions PART Cloudy

400 0 50 1024 41
CCDFWT

Dome Temp./Hum.

Using uncorrected (original) encoder program

LST End	met End COUNTS	secs Exposure	Seeing	REMARKS
	1000	401	3	Sky at Zenith - PART cloudy
		4/7		focus test
		0		
	1320K 490	330 500	3"	NORTH comparison. Part cloudy restarted when clear.
		4s		10.5K ADU
	6.6k	600s		
	5984	617s	3-4"	
	5.6K	600		
	3.9k	1000s		
	4.2K	1000s		
	2640	1200		
	2640	1200		

25 1998

Fr/Sat

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 17/18 Observer Gd/At/Tn Julian Day

Plate No.	Object	R.A.	Declination	Inst.	λ Emission	Filter	Temp.	Starting Time EST	Ending Time UT	P.H.
CC 53386	TYC 4152 484	11 04 54	+65 44 07	Cass ccd	S844A			00 38 49		15
87	comp.									16
88	TYC 4152 491	"	"							17
89	comp									18
90	"									19
91	TYC 3460 301	13 29 59	+46 30 04					01 30 42		20
92	"							01 51 06		21
93	"	"	"					02 11 36		22
94	comp.									23
95	BIAS(4)									1
97	HD 120315	13 43 36	+49 48 49	(1800)		ND1.2		02 42 25		25
96	→ comp					in stellar beam				24
98	comp.									26
99	comp									27
400	TYC 494 354	16 46 49	+62 47 57	2000		no filter		02 58 58		28
401	E-n	"	"					03 09 16		29

Dome Temp. F

Focus

Dome Temp. F

LST

End

Dome Temp. / Hum. $+5.2$ 55.4^A UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 6.89 Transparency Conditions *Clear.*

Dome Temp. / Hum. $+7.1^C$ $57.5^A/H$

1320V

LST End	LHA Exp End Mete	(Secs) Exposure	Seeing	REMARKS
	2683	1200	4"	
	2180	1200 sec		auto guider test, start @ 0, Conditions same as previous 2!
		4s		
		4s		
	2050	1200s		auto guid
	1816	1200s		auto guider test, start @ 0, 1471 cont. in 1000 sec
	2027	1200s		
		4s		
		0s		
	121K!	500s		ND 1.2 in beam
		4s		
	8.4K	600s	3-4"	
	8.5K	600s		

Pg#3 27

Fri / SAT

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 17/18

Observer Gld / Att / Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emission	Filter	Temp.	Starting Time EST	Ending Time UT	ci	LST End
cc53402	TYC4194359	16 46 49	⁵⁰⁰⁰ +62 47 57		5894R			03 19 40		30	
03	Comp									31	
04	Comp									1	
05	TYC41385152	11 03 32	+67 34 20					04 03 00		2	
06	"	"	"					04 13 26		3	
07	Comp									4	
08	Comp									4	
09	TYC4152484	11 04 54	65 44 07					04 28 07		6	
10	Comp									7	
11-13	BIA (4) X3							04 39		1	
14-17	FLATS X 4					Tung ND4				5s	

Dome Temp. H
Focus 6
Dome Temp. H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

28

Dome Temp./Hum.

Focus 6.85 - No change for 600ln, ~~But should~~ Transparency Conditions Fine

Dome Temp./Hum.

But focus should be ~7.0 or so.

Experiment

LST End	Start End	SECS Exposure	Seeing	REMARKS
	15:20V			
30	8.6k	600s.		
31		7s		
1		4s		370 050 1024 4 1 CCD/FIT
2	3.6k	600s		
3	3.7k	600s.		
4		4s		
5		4s		11.5k
6	3.2k	600s.	4"	sky brightening at end.
7		0s		
1				8k MAX
5				

PG 12

Sat/Sun

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 18/19

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC 53418/19	In/out board									3/4
20	comp									5
21	HT Vir	13 46 07	05 06 57		5184	7.16 _v	G0	22 02 25		6
22	"	"	"					22 10 15		7
23	"	"	"					22 17 35		8
24	"	"	"					22 24 57		9
25	comp									10
26	BIAS(4)							22 34		11
27	HT Vir	"	"					22 35 41		12
28	"	"	"					22 44 11		13
29	"	"	"					22 55 17		14
30	comp									15
31	HT Vir	"	"					23 07 11		16
32	"	"	"					23 17 37		17
33	"	"	"					23 27 57		18
34	"	"	"					23 38 17		19

Dome Temp. (h)

Focus

Dome Temp. (h)

LST
End

Dome Temp./Hum. 10.9 / 43.8

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

30

Focus 6.82

CCD T = -100.22 Transparency Conditions

hazy

Dome Temp./Hum.

400 0 50 1024 41 CCD FMT

LST End	LHA End	Exposure	Seeing	REMARKS
3/0		4/7		c source FeAr cassccd grating tilt 47.06.
5				356 μ slit
6	1080	420	2-3"	filter 2 for comp
7	1190	420		
8	1100	420		
9	950	480		
10		4		
11		0		
12	775	480		
13	700	600		
14	452	600		
15		4		
16	435	600		
17	408	600		
18	600	600		
19	717	600		

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 April 19

Observer

Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC53435	comp									19
36	BIAS (4)							23 50		1
37	comp									19
38	HD 95660	10 57 24	30 58 00		5184	8.0 F3		23 57 04		20
39	comp									21
40	comp									21
41	HD 124897	14 11 06	19 42 11			-9.04 K1.5 III		00 25 26		22
42	"	"	"					00 27 44		23
43	"	"	"					00 29 43		24
44	comp									25
45/51	flats									2

Dome Temp. h

Focus

Dome Temp. h

LST
End

Dome Temp. / Hum.

10.2 / 46.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

32

Focus

6.82

CCD T -100.2°C Transparency Conditions

hazy

Dome Temp. / Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
19		4		< source FeAr.
1		0		
19		4		
20	255	900	2.5"	very hazy
21		4		
21		4		
22	7.8K	90		
23	8.8K	90		
24	15.5K	124		
25		4		
2		6		< source ^{Fung} filter + 11.7K

PG 1 93 Mon/Tues

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 20/21

Observer [Vys] Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	C λ Emission	MAG Filter	SP Type	Starting Time UT	Ending Time UT	P.H.
CC53452/53	In/outboard		1900	CHSS CCD	5300					3/4
CC53454	BIAS(4)							19 31		1
55	Comp									5
56	HD 75735	10 57 54	36 38 00			7.48	M12	19 52 15		6
57	Comp									7
58	"									7
59	Vys 357	00 21 09	+69 35 29			10.54	M0	20 10 16		8
60	Comp									9
61	Comp									9
62	Vys 105	0 3 53 19	+82 38 57			11.0	M0	20 48 16		10
63	Comp									11
64	Comp									11
65	Vys 238	06 32 57	+71 59 24			11.0	M0	21 26 18		12
66	Comp									13
67	BIAS(4)							21 57		1

Dome Temp. H

Focus

Dome Temp. H

LST

End

Dome Temp./Hum. $10.8^{\circ}\text{C}/44.9$

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

39

Focus 6.82

CCD T = -100.8°C

Transparency Conditions OK

Dome Temp./Hum. $18.8^{\circ}\text{C} 44.6\% \text{RH}$

400 0 50 1024 41

LST End	CH4 End COUNTS	Exposure	Seeing	REMARKS
	1000V	4/2		[c source FeNe filter 5 integrating 47.74, CASS CCD 306 μ slit.
		0		
		4		
	2600	437	2	MARcy STD
		4		
		4		
	245	1306		AC +69173 $\Delta\alpha -000040$ $\Delta\delta +000100$ Tel East side SBiquorning Both X & Y Reversed
		4		
		4		
12.26	1320V 4.2K	1606		$\Delta\alpha -000219$ $\Delta\delta +000100$ $\Delta\alpha -000200$ $\Delta\delta +000051$ Near RLY 1026356
		4		
		4		
	4.1K	1826		
		4		
		0		

pg #2 ¹³⁵ Mon/TuesUNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 20/21

Observer Lu/Tu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	^{C2} Emission	Filter	Temp.	Starting Time ^{UT} EST	Ending Time UT	P.H.
CC53468	Comp		1900	CMS CCD	5300Å					13
69	Vys 677A	12 45 50	+40 54 39			11.5	MO	22 11 32		14
70	comp									15
71	Comp									15
72	Vys 148	13 54 15	79 20 23			10.6	MO	22 55 50		16
73	Comp									17
74	BIAS(4)							23 17		1
75	Comp									17
76	Vys 638	12 08 17	+17 15 24			11.96	MO	23 23 13		18
77	Comp									19
78	Comp									19
79	Vys 635AB	12 04 52	+06 00 42			11.41	MO	00 00 57		20
80	Comp									21
81	Comp									21
82	Vys 686	13 03 29	+17 30 27			11.8	MO	00 29 14		22
83	Comp									23

Dome Temp. Hu

Focus

Dome Temp. Hu

LST

End

Dome Temp. / Hum. 9.0 / 44.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

36

Focus 6.82

Transparency Conditions clear

Dome Temp. / Hum. X meter

LST End	LMA End	Exposure	Seeing	REMARKS
	1320V			
13		4 sec		
14	3.5K	2053	2.3"	AC+41 537-54
15		4		
15		4		
16	3.9K	1199	2.4"	AC+79 4347 $\Delta\alpha -0000 37$ $\Delta\delta +00 01 03$ © OIE Reversed
17		4		
17		0		
17		4		
18	2.1K	1800	2.3"	<u>OK</u> $\Delta\alpha -0000 29$ $\Delta\delta -00 01 30$
19		4		
19		4		
20	2.1K	1400	2.4"	A & B not separated tonight <u>OK</u> $\Delta\alpha -00 00 19$ $\Delta\delta -00 01 18$ © 0130W
21		4		
21		4		
22	2K	1603		ACHF 478-60 $\Delta\alpha -0000 21$ $\Delta\delta -0000 09$
23		4		

PG 3 37

Mon/Tues

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 20/21

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC53484	BIAS(4)				0			00 57		1
85 86	comp HD 119850	13 40 36	15 27 00		5300	8.48	M1	01 02 44		23 24
87	comp									25
88 89	flats X7									2
CC53495	comp ✓				5184					5
96	HD 95660	10 57 24	30 58 00			8.0	F3	01 23 23		6
97	"							01 33 49 ✓		7
98	Comp									8
99	Comp									9
CC53500	HD FO V _{IV}	13 29 47	01 05 48			6.7	A7V	01 54 30		10
01	"	"	"					02 02 33		11
02	comp									12
03/05	comp HD 144579	16 01 30	39 24 00	comp		6.66	d48	02 29 37		13/14
CG81239/4A	HD 144579	16 01 30	+39 24		Seeing Test					4 x 67ms
CC53506	BIAS(4)							02 36 13		2 x 133ms

Dome Temp. / Hum.

7.3 / 46.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

30

Focus

6.82

Transparency Conditions

clear + a little hazy

Dome Temp. / Hum.

Exp. meter

LST
End

LHA

End
1320 V

Exposure

Seeing

REMARKS

✓ fixed

0

note Headers All have wrong

4

Tilt noted. Should have been

8.1K

440

Murray std.

47.74

4

wavelength was OK

4

c source tung filter 3 Max 14K

4

c source FeAr filter 2, T grating ~ 97.06° 308a slit

10.7K

600

3-4"

 $\Delta x = -00.0023$ $\Delta y = 00.0000$ @ 4 West

10.7K

600

grating tilt 47.06

4

4

25 K

440

27 K

480

4

26 K

300, 4

3"

Seeing Test, Domo E, Tel East Side

0

PG4 29

Mon/Tues

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 20/21

Observer Lu/Tu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time EST	Ending Time UT	P.H.	LST End
cc 53507 13	flats x 7				5184					2	
cc 53514	comp				bs63					5	
15	SN 1998af	11 56 27	55 07 36			~12.7		02 53 25	a	6	
16	comp									7	
17	SN 1998af							03 38 41		8	
18	Comp									9	
19	comp									9	
20	CH Cy9	19 21 54	+50 02 00			~6.5	Red	04 17 09		10	
21	"	"	"					04 19 53		11	
22	comp									12	
23	Comp									12	
24	HP 148 783	16 25 21	+42 06 06			5.04	M6 III	04 39 01		13	
25	Comp									14	
26/31	flats x 6									2	
32	B/HSC4)							04 40		1	

Dome Temp. / Hum.

7.0 / 49.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

40

Focus

6.82

Transparency Conditions

clear

Dome Temp. / Hum.

+ 7.0°C 47.9%RH

400 0 50 1024 4 1

LST End	LHA End	Exposure	Seeing	REMARKS
2	1330V	6		Max 12K source Tung filter 4
5		4		Filter 1. source FeAr
6	1500	2295		<u>1800h</u> gratrag tlr 56.10
7		4		
8	870	1246		
9		4		
9		4		
10	10K	123s	2-3"	H α @ 4K AD9 max
11	20K	271		
12	1000V			
13	8.5K	70		Std for CH Cyg 16K But not saturated
14		4		
15		8		source Tung filter 5 14K

u1 pg#1 Tues/wed

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 21/22

Observer Lu/Tn [Rmpgm] Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	MVS Filter V mag	SP Temp Type	Starting Time UT EST	Ending Time UT	P.H.	LIST End
CC 53533/24	Inboard/out Board	1900	HARTMANN	CASS CCD	6400A					3/4	
35	Comp		WRONG STAR SOUTH of		H030282					5	
36	H030282	4 4106	+363200					201950		6	
37	Comp									7	
38	H030282	4 4106	+363200					204720		8	
39	Comp									9	
40	BIAS (4)							2104		1	
41	Comp									9	
42	H044990	061949	+070825					211224		10	
43	comp									11	
44	Comp									11	
45	HD65583	075418	293100			7.0	dG7	213430		12	
46	Comp									13	
47	BIAS (4)									1	
48/54	FLATS x 7									2	
55	BIAS (4)									1	

Dome Temp. F

Focus 64

Dome Temp. F

Dome Temp./Hum. 11.8°C 45%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

42

Focus 6.78

Transparency Conditions Fine

Dome Temp./Hum.

LST End	LHA End X m. filter	X m. filter Exposure 1000 V	Seeing	REMARKS
34	1000 V	4/6	3'	Tgrating 90 59.93 306u slit
5		4	5'	
6	350	523	6'	wrong star South of HD 30282 2.5 arcmin ^{South}
7		4	7'	
8	2650	872	8'	$\Delta \alpha -00 00 25$ $\Delta \delta +00 00 42$ 13K
9		4		
1		0	"	
9		4		
0	43K	644		
		4		
		4		
2			2'-3'	std vel 3K max 404
3				
1		8 sec		
2			Filter 5/Tung	14K AP4 max

Wp922 Tues/Wed

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 21/22

Observer Lu/Tn

Julian Day

01

Plate No.	Object	R.A.	Declination	Inst.	CA Emulsion	MV Filter	SP Type	Starting Time UT EST	Ending Time UT	P.H.	LST End
CC53556	Comp		1900	CASS CCD	518AA					18	
57	HD 95660	10 57 24	+30 58 00			8.0	F3	22 02 35		15	
58	Comp									16	
59	HD 95660	"	"					22 14 26		17	
60	Comp									18	
61	BIAB(4)							22 34 05		1	
CG 81 1245/51	HD 103095	11 47 13	+38 26 10			6.45	B8Vp		4 x	33ms	3x13
CC53562	Comp									18	
63	HD 103095	11 47 13	+38 26 10					22 43 22		18	
64	Comp									20	
65/69	flats X5									2	
70/71	infrared tool			Lost							
71	BIAS(4)									1	
72	Comp									3	
73	SN 1998 4g	11 51 14	+55 41 00		6000A	12-13		233 003		4	

not correct noted MAY 26/98, Tn, But encoders OK

2000

approx

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum.

Focus 6.78

Transparency Conditions Fine

Dome Temp. / Hum.

400 0 50 1024 4 1 CCD FMT

LST End	LHA End	Exposure	Seeing	REMARKS
	x mki 1000V	45		FeAr Tygrating % 47.06 3064 Filter 2
	1.3K	603	2.3"	mki pgm 12 -00 00 25 18 -00 00 36 @ 01 Hr W
		4		
	1.2K	544		
		4		
		0		Telescope East side
	<u>3x 133ms</u>	Seeing test	above	3064 class Dome SE, no wind Low Rel/H
		4		
	5K	384	2"	3.4K ADU max
		4		
		7		filter 4, coarse Tuning
		4/7		150In/min 425 0 25 1024 8 1
				Grating slit 23.29. filter R60 for comp
	1320V			2nd Order OR 560 for stellar
	560	1721		12 -00 00 35 18 +00 00 09

PG 345

Tues/Wednes

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 21/22

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	MV Filter	Temp.	Starting Time UT	Ending Time UT	P.H.	LST End
CC53574	comp			CASS CCD						5	
75	NGC 3982	11 51 14	55 41 00		6000	(COR 2)		00 05 35		6	
76	comp									7	
77	BIAS (4)							00 37		1	
78	Comp									8	
79	HD 124752	14 10 18	+68 03 00		6000	n/3		00 48 06		9	
80	Comp									10	
81	HD 124752	"	"		6000			01 17 30		11	
82	Comp									12	
83	BIAS (4)							~ 01 28		1	
84/89	FLATS X6				6000R			ND 12 + OG 560 FILTERS		2	
CC53590	Int. Lat. Board			Comp	4500R					1	400
91	HD 124752B	14 10 18	68 03 00			M?		01 56 29		2	
92	"							02 16 55		3	
93	Comp									4	
94	BIAS (4)							02 48		1	

Dome Temp./Hum. 9.0 / 42.4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

46

Focus 6.78 -- no focus change Transparency Conditions clear

Dome Temp./Hum. 42.5 0 25 1024 81 CCD FMT

LST End	LHA End x mark	Exposure	Seeing	REMARKS
5	1320V	4		
6	396	1800		
7		4		
8		0		
8		4		
9	1140	1551	1.2"	good separation between faint star NNW ~5" from HD 124752, ^{max 2.8K}
10		4		@ 0030 W, ^{5.2 -00 00 36} ^{4.5 +00 00 30}
11	3.6K	405		7.6K
12		4		
1		0		
2		5		MAX 11.5K
1	400	@ 50 1024 4 1 CCD FMT	FeAr	Tgrating 20 25.0
2	1400	1200		
3	2240	1800		
4		4		
5		0		

47
PG 4

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 21/22

Observer Lu / Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Frag	Temp.	Starting Time UT	Ending Time UT	P.H.
CC53595	HD 124752	14 10 18	68 03 00	CHSS CCD	4506	K.II 9	K.II K.II	02 49 46		5
96	comp									6
97	BIAS(4)							03 01		7
98/ 1602	flats									2
CL53603	comp				5100					7
04	HD 124752	14 10 18	68 03 00			M?	13	03 13 00		8
05	Comp									9
06	HD 124752	"	"			K	9	03 47 23		10
07	comp									11
08	BIAS(4)							03 58		1
09	HD 124752	"	"					03 58 28		12
10	comp									13
11/15	flats x5									2
16	BIAS(4)									

Dome Temp. 1
Focus 6
Dome Temp. 1

LST
End

Dome Temp. / Hum.

8.6 / 43.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

48

Focus

6.78

(should really be ≈ 6.9 but

Transparency Conditions

clear

Dome Temp. / Hum.

7.9°C 44.6% RH

inaccessible
at this angle

LST End	LHA End	Exposure	Seeing	REMARKS
	13:20V			
5	11.5K	524	1"	2K max
6		4		
7		0		
2		2		c source T ^{filter} ND = 1,
7		4		c source 1, filter 4, grating 0600/27.1 Max comp 12K.
8	2.5K	1950	1"	Faint companion to NNW $\approx 5''$
9		4		10.2K max
10	10.4K	555	1"	
11		4		
1		0		
12	1550	1200		fainter
3		4		
2		4		filter 5, c source T _{eq} M6R 11.4K

PG 1 49 Wed/Thur.

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 22/23

Observer [HI]/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC 53617/18	In/out board			CASS CCO	5894 grainy					3/4
19	BIAS(4)				1800/51.58			19 34		1
20	comp									5
21	USNO 0551498	11 45 22	+63 40 22			A3V	12.5	20 02 17		6
22	comp									7
23	USNO 0551498	"	"			"	"	20 33 58		8
24	comp									9
25	BIAS(4)							21 06		1
26	USNO 0551498	"	"			"	"	21 06 49		10
27	comp									11
28	USNO 0551498	"	"			"	"	21 38 52		12
29	comp									13
30	BIAS(4)							22 10		1
31	USNO 0551498	"	"			"	"	22 11 21		14
32	comp									15
33	USNO 0551498	"	"			"	"	22 44 07		16

Dome Temp. H

Focus

Dome Temp. H

LST

End

HV 1300

Dome Temp./Hum.

24.1/38.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

50

Focus

6.75

Transparency Conditions

clear

Dome Temp./Hum.

CCD T = -1d.0 400 0 50 1024 4 1 CCD FIT

LST End	LMA End counts 132eV	Exposure	Seeing	REMARKS
		4/3		csource FeAr. filter 4 Max 6K
		0		
		4		
	HV 1320 1563	1800	1"	sky a little bright. sk +17 ^s sd 1'6"
		4		
	1112	1800		
		4		
		0		
	1095	1800		
		4		
	1050	1800		
		4		
		0		
	967	1800		
		4		
	910	1800	-2"	

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PG 2

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 22/23

Observer [HI] / Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC53634	comp			CASS CCD	5894					17
35	BIAS(4)				1800/5158			23 15		1
36	comp									17
37	BD+472064	13 29 59	46 30 05			B-V H2	10.8	23 22 29		18
38	comp									19
39	BD+472064	"	"			"	"	23 55 09		20
40	comp									21
41	BD+472064	"	"			"	"	00 26 57		22
42	comp									23
43	BD+472064	"	"			"	"	00 59 07		24
44	comp									25
45	BIAS(4)							01 30		1
46	comp									25
47	HD 120315	13 43 36	49 48 45			B3V	18.6	01 40 10		26
48	comp									27
49	comp									27

Dome Temp. Hum
Focus 6
Dome Temp. Hum

LST
End

Dome Temp. / Hum. 10.6 / 39.4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

52

Focus 6.75

Transparency Conditions clear.

Dome Temp. / Hum.

LST End	LHA ³⁰⁰ End Counts	Exposure	Seeing	REMARKS
17		4		source FeAr. Filter 3.
1		0		
17		4		
18	4040	1800		
19		4		
20	3890	1800		
21		4		
22	3760	1800	2"-3"	
23		4		
24	2860	1800	3"-4"	
25		4		
1	4280	0		
25		4		
26	86.7K	420		Telluric std. ND 1.2 in steller path
27		4		
27		4		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

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PG 3

Date 1998 Apr. 22/23

Observer [HI]/Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC53650	HD 177724	19 00 49	13 42 53		5894	AOV _n	2.99	01 57 46		28
51	comp									29
52	comp									5
53	TYC 3887 138	17 10 57	53 21 10			B-V .16	10.9	02 20 04		6
54	comp									7
55	TYC 3887 138	"	"		"	"	"	02 53 56		8
56	comp									9
57	TYC 3887 138	"	"		"	"	"	03 26 41		10
58	comp									11
59	TYC 3887 138	"	"		"	"	"	03 58 17		12
60	comp									13
61	BIAS (4)							04 20		1
62/71	flats x10									2

Dome Temp. Hu

Focus

Dome Temp. Hu

LST
End

Dome Temp./Hum.

9.0/40.4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

54

Focus

6.75

Transparency Conditions

clear

Dome Temp./Hum.

LST End	LHA 1320 V End Counts	Exposure	Seeing	REMARKS
28	29K	600	3-4"	Telharic std. ND 1.2 in stellar path
29		4		
5		4		
6	3310	1850		$\Delta\alpha + 8^s$, $\Delta\delta + 40''$ — [no signal]
7		4		
8	3580	1814		$\Delta\alpha + 7^s$, $\Delta\delta + 42''$
9		4		
10	3685	1800	3-4"	
11		4		
12	2670	1215	2-3"	
13		4		
1		0		
2		3		source Tung. filter 4 Max 11K

PG 155

Thur/Fri.

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 23/24

Observer

[HI]/Chris/Jennifer/Lu
Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag. Temp.	Starting Time UT	Ending Time UT	P.H.
CC53672/23	2 nd out board			CAS CCD	5894 189/51.58					3/4
74	BIAS(4)							19 48		1
75	comp	(2000)								5
76	USNO 0551498	11 45 22	63 40 43			A3V	12.5	20 02 35		6
77	comp									7
78	USNO 0551498	"	"			"	"	20 34 51		8
79	comp									9
80	BIAS(4)							21 06		1
81	USNO 0551498	"	"			"	"	21 07 05		10
82	comp									11
83	USNO 0551498	"	"			"	"	21 38 51		12
84	comp									13
85	BIAS(4)							22 10		1
86	comp									13
87	TYC 4385 152	11 03 32	67 34 20			A0.5V	9.66	22 22 53		14
88	"	"	"					22 40 20		15

Dome Temp. Hu

Focus 6

Dome Temp. Hu

LST
EndHV
1320

Dome Temp. / Hum.

14.6/38.7

Focus

6.73

Dome Temp. / Hum.

CCDT = -100.5

Transparency Conditions

clear + hazy.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
3/2	HV 1320	4 7		source FeAr, filter 3
1		0		
5		4		
6	1640	1800	2"	
7		4		
8	1071	1800		
9		4		
10		0		
10	1085	1800		
11		4		
12	1052	1800		
13		4		
1		0		
3		4		
14	5300	1000		$\Delta\alpha -43^s$, $\Delta\delta -30''$
15	5250	1000		

Dome Temp. / Hum. 14.9 / 42%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

58

Focus 6.73

Transparency Conditions clear

Dome Temp. / Hum.

LST End	LHX End counts	Exposure	Seeing	REMARKS
16		4	2"	
17	5600	1000		
18		4		
19		0		
20		4		
21	5282	1800		
22		4		
23	5000	1806		
24		4		
25	4155	1800		
26		4		
27		0		
28		4		
29	100 K	328		$\Delta\alpha = -30''$ $\Delta\delta = -33''$ ND1.2 in the stellar path. Telluric std.
30		4		
31		4		

Dome Temp. / Hum. 11.0 / 41.2

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

60

Focus 6,73

Transparency Conditions

clear

Dome Temp. / Hum.

LST End	LHA End seconds	Exposure	Seeing	REMARKS
27	3390	1934	2-3"	$\Delta\alpha = -25^s$ $\Delta\delta = 436''$ HA -42"
28		4		
29	2970	1800		
30		4		
31		0		
31	2820	1800		
5		4		
6	2820	1800		
7		4		
8	2970	1800	1-2"	
9		4		
1		0		
2		3		filter filter 4. source Tung Max 11K

Dome Temp. / Hum.

10.6 / 59.8

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

62

Focus

6.82

CCD T -100.4°C

Transparency Conditions

OK

Dome Temp. / Hum.

405 0 50 1024 4 1 CCD FMT

LST End	LHA End Counts	Exposure	Seeing	REMARKS
3/1	HV=1320	4/6		CSOURCE FeAr. Max 12k, filter 4
4		0		
5		4		
6	2690	600	2"-3"	
7	5510	1200		
8		4		
9	5900	1200		
10		4		
11		0		
12		4		
13	5500	1800		
14		4		
15	5270	1800		
16		4		
17	5370	1800		
18		4		

PG 2 (27)

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 24/25

Observer Cas/Bar Au Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
C253744	BIAS(4)			CASS CC9	4100 5894			23 25		1
45	comp									16
46	TYC 3879 928	16 43 13	53 04 19			B-V =0.189	11.7	23 36 21		17
47	comp									18
48	BIAS(4)									1
49/58	flats X10									2
59	comp									5
60	TYC 3879 928	"	"			"	"	01 15 12		6
61	comp									7
62	TYC 3879 928	"	"			"	"	01 47 31		8
63	comp									9
64	TYC 3879 928	"	"			"	"	02 20 35		10
65	comp									11
66	BIAS(4)							02 52		1
67	comp									11
68	TYC 3887 1381	17 10 57	53 21 10				10.9	03 00 02		12

Dome Temp. / Hum.

7.1/67.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

64

Focus

6.82

CCD T -100.4°C

Transparency Conditions

OK + some clouds

Dome Temp. / Hum.

LST End	LHA End	Counts	Exposure	Seeing	REMARKS
			0		
			4		
	1300		818		through clouds
			4		
			0		
			7		source Tung filter 4, Max 12K
			4		
	2950		1801		clear up.
			4		
	2850		1799		
			4		
	2900		1800		
			4		
			0		
			4		
	4800		1500		

PG 3 65

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 24/25

Observer Cas/Barr/Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	$\frac{2P}{\text{Ether}}$	$\frac{Mag}{\text{Temp.}}$	Starting Time UT	Ending Time UT	P.H.	LST End
CC53769	comp			CASS CCD	4100					13	
70	TYC 38871381	²⁰⁰⁰ 171057	53 21 10		0600/25 ²⁰		10.9	03 26 32		14	
71	comp									15	
72	TYC 38871381	"	"				"			16	
73	comp									17	
74	BIA 5(C)							04 20		1	

Dome Temp. / H

Focus _____

Dome Temp. / H

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

PEL 67

Date 1998 Apr 25/26

Observer [HI] Gld/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC53775/76	In/outboard			CASS CCD	5894					3/4
77	BIAS(4)				18001/51,58			2233		1
78	comp									5
79	T/C41811452	10 48 50	65 07 57			A0	6	22 01 34		6
80	"	"	"			"	"	23 11 59		7 ⁶
81	comp									8
82	comp									8
83	HD120315	13 43 36	49 48 45			B3V	1.86	23 45 09		9
84	comp									10
85	comp									10
86	HD94010	10 46 00	65 19 00			A5	8.5	00 03 36		11
87	comp	x	x2							12
88	BIAS(4)							00 49		1
89/98	flats									2

Dome Temp. H
Focus
Dome Temp. H

LST
End

Dome Temp./Hum.

69/438

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

68

Focus

6.78

CCD T

Transparency Conditions

fairly cloudy

Dome Temp./Hum.

=-100.2

390 0 50 1024 41

LST End	LHA End Counts	Exposure	Seeing	REMARKS
3/4	HV=1320V	4/7		c source FeAr. Filter 3.
1		0		
5		4	3	Max 6.3K
6	25.5 K	600	3"-4"	Through clouds. sometimes,
7 (6?)	72.2 K	1200		$\Delta\alpha = -44^s$, $\Delta\delta = -54''$, HA = +2 ^h 28 ^s , Reverse Tel.
8		4		
8		4		
9	24 K	700	3"-5"	std Telluric 1.2 ND in.
10		4		
10		4		
11	Sk	1000s.		partly thru clouds.
12		4		
1		0		
2		3		source Tung, filter 4, Max 11.5 K

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum.

41.8 / 47.6

Focus

6.94

Transparency Conditions

cloudy

Dome Temp. / Hum.

425 0 50 1024 41

LST End	LHA End	Exposure	Seeing	REMARKS
4		4s		
5	1.7k	300s		sky (reflected/clouds)
5	1.6k	300s		"
2	1.8k max	5s		
4				
5	1.45k	300s		sky (reflected/clouds)
6	1.26k	300s		"
2	1.1k max	3s		
5	1.1k max	5s		
4		4s		
5	1.1k	326s		sky (reflected/clouds)
6	1.01k	312s		"

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORYDate ~~1997~~ Apr 25/26 Observer [G.E.] Gld Mu/tec Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
cc53814	comp			CAS CCD	S400 600/27.6					4
15	sky									5
16	"									6
17/18	flats.							NDS		2
19/20	flats.				S400 600/28.6			NDS		2
21	comp									4
22	sky									5
23	"									6
24-27	BIASx4(x4)									1
28	comp				7300 150/20.9			ND6		4
29	comp							ND4		4
30	sky									5
31	"									6
32/33	Flat.							ND6,		2

Dome Temp. / Hum.

4.8 / 49.2

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

72

Focus

6.94

Transparency Conditions

cloudy

Dome Temp. / Hum.

42.5 0.30

1024

4

1

LST
EndLHA
End

Exposure

Seeing

REMARKS

4

4s

5

1.1k

300s

sky (reflected/clouds)

6

1.3k

300s

"

2

3s

11k max

2

2s

11k max

4

3

1.35k

300s

sky (reflected/clouds)

6

.93k

300s

"

1

4

1s

4

10s

5

~~2.68~~~~300s~~ 100s

sky (reflected/clouds)

6

9.12

300s

"

1

6s

73
Pg#1

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Sun mon

Date 1998 Apr 26/27

Observer Mki/Tn

Julian Day

ci

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	SP Filter	MAG Temp.	Starting Time UT EST	Ending Time -UT	P.H.
CC538 ^{34/35}	Inboard / outboard	HARTMANN		CASS CCD	6570 ± 1A 2 Hour 572 center					3/4
36	BIAS(4)									1
37	Comp	1900				FEAR, Filter #2				5
38	HD84441	9 40 11	+241405			ND 1.2 G111	2.98	19 46 10		6
39	Comp									7
40	Comp	2000				ND12 removed				7
41	XY Leo	10 01 40	+172436					20 11 31		8
42	"	"	"					20 31 08		8
43	Comp									9
44	BIAS(4)							20 43		1
45	Comp	1900								19
46	HD 84901	10 03 03	+22722			ND12 Filter		20 47 53		10
47	Comp									11
48	Comp	1900				ND removed				11
49	Vys 250B	08 02 34	+330625					20 57 33		12
50	Vys 250 A	"	"					21 11 39		13

Dome Temp./Hum. 6.9°C 43% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

74

Focus 6.86

Transparency Conditions Fine

Dome Temp./Hum.

395 0 50 1024 4 1 CCD FINT

LST End	LHA Ex End COUNTS	Exposure secs	Seeing	REMARKS
	1000 V	4/6		1800 h/mm @ 5610 Tegeting setup 3064 slit
		0		
	4	4		
	4K	359		std vel 6K max
	4	4		
	4	4		
	300 466	1080	2"	Kiss program requests Ha em search →
	227	600	2-3"	
	4	4		
		0		
		4		
	7.2K	162		Telluric std 1.2 Air mass 5K max
		4		
	1320V	4		
	1K	807	2.3"	
	3.4K	658		

75
p9#2

Sun / Mon

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 26/27

Observer MKI / Th

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	MV Filter	SP Type	Starting Time UT EST	Ending Time UT	P.H.	LST End
CC53851	Comp			CASS CCD	6570A					14ci	
62	Comp									14	
53	HD95660	10 5724	+30 5800			8.0	FD	21 29 01		15	
54	n							21 39 31		16	
55	Comp									17	
56	BIAS(4)							21 52		1	
57/63	FLATS x 7									2	
CG81258/57	HD103095	11 4713	+38 2610							4x 67ms	2x133ms
CC53884	Comp									18	
65	HD103695	11 4713	+38 2610			6.45	G8E _p	22 07 36		19	
66	Comp									28	
CC53867	Comp				5184A	ND #2	Fear			28	
68	HD103095	n	n					22 19 24		19	
69	Comp									21	
70	BIAS(4)							22 29		1	

Dome Temp./Hum. +5.4°C 44.6RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.86

Transparency Conditions Fine, But Gusty From NNW

Dome Temp./Hum.

CCDT = -100.5°C

21 Pearson NNW 26 Km/hr 10.694 ^{Pressure} Rising

LST End	Exp Exp End Meter COUNTS 1000V	Exposure _{secs}	Seeing	REMARKS
14		4		
14		4		
15	1350	600	3.4"	
16	1.1K	620	3.5"	
17		4		
1		0		
2		8		FILTER #5 MAX 15K ADU
15	2x133ms	ALT 84°		SEEING TEST Above 306u CHSS/jt
18		4		
19	3.4K	365	4"	std vel 2.6K ADU
20		4		
21		4		T greating 70 47.06 .. 5K MAX
11	33K		3.6"	std vel 2K MAX
12		4		
13				

XP9#3 Sun/Mon

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 26/27

Observer MKi / Tn

Julian Day

CI

Plate No.	Object	R.A.	Declination	Inst.	C _λ Emulsion	Filter	Temp.	Starting Time EST	Ending Time UT	P.H.
CC53871	Comp	1900		CBS CCO	5184A	#2	FeAr			21
72	HD95660	10 57 24	+30 58 00			MV 8.0	spType FO	22 36 04		22
73	"	"	"					22 47 27		22
74	Comp & [75 next Comp]									23
76	HD 109247	12 28 12	+55 21 00			8.2	F2	23 04 26		24
77	"	"	"					23 16 49		25
78	Comp									26
79	B/H/S(4)							23 31		1
80	HD 1169247	"	"					23 32 33		27
81	"	"	"					23 46 29		28
82	Comp									29
83	Comp									5
84	FO Vir	²⁰⁰⁰ 13 29 47	01 05 48					00:10:16		6
85	"							00 18:34		7
86	"							00 24:47		8

Dome Temp./Hum. $+4.3^{\circ}\text{C}$ 468/4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

78

Focus 6.86

Transparency Conditions Fine,

Dome Temp./Hum.

385 0 50 1024 4 1 CCDFAST

LST End	LHA Exp End meter 1000V	Exposure secs	Seeing	REMARKS
				TGR imaging 4706
	690	652	4.6"	~ 500 ADU MAX
	850	619		
		4		
	~ 11K	700		~ 700 ADU MAX
	1350	802		
		4		
		0		
	1.1K	767		
		4		
	2500	430.		
	2460	450.		Wristle = code 6 after starting in code 7. Fix this.
	2400.			

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sun/moon

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1999 Apr 26/27

Observer Mike / TG

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Sp. Temp.	Starting Time UT EST	Ending Time UT	Cache P.H.
CC538 87	Comp.				CX 5184A					9
88	FO Vir							02:24:47		10.
89	"							02:57:33		1
90	"							50:02		12
91	Comp									13
92	BIAS(4)							0105		1
93	Comp.									13
94	VZ Lib	15 31 53	75 41 06			10.1	F5	011146		14
95	"	"	"					012710		15
96	Comp									16
97	VZ LIB	"	"					014423		17
98	"							020043		18
99	Comp									19
900	VZ LIB	"	"					021808		20
901	Comp									21
902	BIAS(4)							02 34		1

Dome Temp. H

Focus 6

Dome Temp. H

LST
End

80

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. _____

Focus 6-86 _____

Transparency Conditions *Fine* _____

Dome Temp. / Hum. _____

LST End	LHA Exp. End <i>mk</i>	Exposure (s)	Seeing	REMARKS
	1000V			
	2000	486		
	2400	450		
	2580	471	3-5"	
		4		
		0		
	1320V	4		
	2K	901	4"	
	2.1K	901		
		4		
	2.2K	901		
	2.2K	900		
		4		
	2.05K	900		
		4		
		0		

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Pg #5

Sun/Mon

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 26/27

Observer MKi/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time EST	Ending Time UT	P.H.	
CC53903	Comp				5184A					21	
904	HD136924	15 1812	H163708			8.2	G5	02:46:57		22	
905	"							02:55:46		23	
906	"							03:04:40		24	
907	Comp.									24	
908	HD136924							03:15:52		25	
909	"							03:24:52		26	
910	"							03:34:14		27	
911	Comp									28	
912	HD136924							03:44:45		29	
913	"							03:53:08		30	
914	"							04:01:53		30	
915	Comp									31	
916/18	HD136924							[04:11:57] [04:20:18]	[04:29:00]	22	
19120	Comp. εBIAS(A)									.	
21/28	FLATS x8									TUNG, NDA	2

Dome Temp. H

Focus 6

Dome Temp. H

LST

End

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

82

Dome Temp. / Hum.

Focus 6-86

Transparency Conditions

Fine

Dome Temp. / Hum. -00.5°C 53524

LST End	LHA End Exp. Rate	Exposure (s)	Seeing	REMARKS
		4		
	770.	483		52 20 00 14 58 20 00 24 @ 01 30W
		480.		But should be -00008? By new error chart
	740	472		
		4		
	~700	491		
	715	500		
	730	485		
	7	4		
	715	480		
	720	483	3-4"	
	700	491		
		4		
	700, 700, 800	480, 496, 480	2-4"	
		4, 0		

PG 163 Mon/Tues.

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 27/28

Observer Gld/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC53929/30	In/out board			CASS CCO	5184 (800/47.06)					3/4
31	BIAS(4)							1951		1
32	comp									5
33	HD 102870	11 45 29	02 19 42			F9	3.61	20 05 18		6
34	"	"	"					20 07 43		7
35	comp									8
36	comp									8
37	FFCnc	08 29 40	17 17 02			K1+k4	10.5	20 23 44		9
38	comp									10
39	FFCnc	"	"			"	"	20 55 17		11
40	comp									12
41	BIAS(4)							21 27		13
42	FFCnc	"	"			"	"	21 27 32		13
43	comp									14
44	FFCnc	"	"			"	"	21 59 04		15
45	comp									16

Dome Temp. Hum
Focus 6
Dome Temp. Hum

LST
End

Dome Temp. / Hum.

516 / 552

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

84

Focus

6.84

Transparency Conditions

clear

Dome Temp. / Hum.

395 0 50 1024 41

CCD T = -160.4°C

LST End	LHA End counts	Exposure	Seeing	REMARKS
3 4	4/2	4/7		source FeAr. filter 2
1	0	0		
5	4	4		
6	107K	100		
7	15K	150		
8		4		
8		4		
9	201	1800		
10		4		
11	180	1800	2"-3"	
12		4		
13		0		
13	183	1800		
14		4		
15	183	1800		
16		4		

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 27/28

Observer

G/b / Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
cc53946	FFCnc	08 29 40	17 17 02	CASS CCD	5184 1800/47.06			22 30 59		17
47	comp									18
48	BVAs (4)									1
49-56	flats (x8)								ND4	2
57	comp									5
58	Tyc 1441874	11 54 30	+17 34 57		5894 1800/51.58	B-V	✓ 9.47	← 23 14 45		6
59	"							← 23 30 09		7
60	comp									8
61	comp									8
62	Tyc 34521023	11 49 43	+46 45 03			B-V 0.095	10.14	23 56 10		9
63	"	"	"			"	"	0 11 27		10
64	"	"	"			"	"	0 27 24		11
65	comp									12
66	BVAs (4)							00 44		1
67	comp									12

Dome Temp. H

Focus

Dome Temp. H

LST

End

Dome Temp. / Hum. 3.9 / 57%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

86-

Focus 6.84 / 6.82

Transparency Conditions clear

Dome Temp. / Hum.

LST End	LHA Eng Counts	Exposure	Seeing	REMARKS
17	146	1800		$\Delta\alpha = -16^s$, $\Delta\delta = -21''$. HA + 4 ^h 18 ^m
18		4s		
1		0s		
2		6		source Tung.
<hr/>				
5	13200.	4s		
56	5950	900		fant comp 2" SW filter 3.
7	5915	900		
8		4		
8		4		slight spec focus change \rightarrow 6.82
9	2470	900		
10	2450	932		
11	2580	900		
12		4		
1		0		
2		4		

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 27/28

Observer Eld/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CCS3968	TYC3452 1048	11 57 04	46 47 36	CCS CCD	5894	B-V -39	11.1	00 46 34		13
69	comp				1800/51.58					14
70	TYC3452 1048	"	"			"	"	01 18 09		15
71	comp									16
72	comp									16
73	TYC 3452 2143	11 55 06	46 28 40			B-V .132	8.3	01 54 24		17
74	comp									18
75	BLAS(4)							02 02		1
76	comp									18
77	HD 102315	13 43 36	49 48 45			B3V	1.86	02 06 44		19
78	"	"	"			"	"	02 09 56		20
79	comp									21
80	comp									21
81	TYC 3452 663	12 45 25	45 22 10			B-V .18	11.68	02 21 22		22
82	"	"	"					02 42 26		23
83	comp									

Dome Temp.

Focus

Dome Temp.

LST

End


Dome Temp./Hum. 3.4/58.2

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

88

Focus 6.82 CCDT-1004 Transparency Conditions clear.

Dome Temp./Hum. 385 0 50 1024 4 | CCDPMT

LST End	LHA End Counts	Exposure	Seeing	REMARKS
13	3200?	1800	2-5"	
14		4		
15	2870	1800		
16		4		
17		4		
17	21,3k!	300s		double double.  identification?? too bright.
18				
19	200k	134		ND0.6
20	300 K	198		traced
21		4		
22		4		
22	1306	1200s	2"-3"	
23	1306	1200s		

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 27/28

Observer Eld

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC53 984	comp			CASS CCD	5894					24
85	tyc 2459 1926	12 52 52	45 34 21			B-V -33	9.95	03 06 05		25
86	comp									26
87	comp									26
88	tyc 4194 2188	16 49 45	64 07 17			A6V	11.5	03 36 33		27
89	comp									28
90/96	Tung									2

Dome Temp. h

Focus

Dome Temp. h

LST
End

cu
pg 11

Tues / wed

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 28/29

Observer Gld / Tu

Julian Day

CI

Plate No.	Object	R.A.	Declination	Inst.	λ Emission	MV Filter	SP Type	Starting Time EST	Ending Time UT	P.H.	LST End
CC53997/98	Inblout Board			CASS CCD	5184 Å	ND#2	FeAr			3/4	
99	Comp									5/2	
CC54000	FF Cnc	082940	+71702			10.5	K1+K4	20 17 27		6	
01	Comp									7	
02	FF Cnc							20 49 41		8	
03	Comp									9	
04	FF Cnc							21 21 50		10	
05	Comp									11	
06	FF Cnc							21 56 14		12	
07	Comp									13	
08	BIHS (A)							22 28		1	
09	FF Cnc							22 31 18		14	
10	Comp									15	
11	FF Cnc							23 04 17		16	
12	Comp									17	
13	BIHS (A)							23 35		1	

Dome Temp. / Hum. 7105°C 38.8%
UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.82 Transparency Conditions Fine - sl SW haze

Dome Temp. / Hum. 385 0 50 1024 4 1 CCD FMT

CI

LST End	LHA X End COUNTS	Exposure sec	Seeing	REMARKS
34	1320V	4/6		
5		4		
6	5430	1800	1.3"	using / adjusting SBIG guider Telescope East Side
7		4		
8	5300	1800		partially occulted by dome!!
9		4		
10	5K	1916		still working on guider
11		4		
12	4.6K	1800	1"	Tel Focus 2709 ^{2670 for I Acquisition,} great seeing, focus on slit
13		4		
14	?	1851	1.2"	
15		4		
16	3K	1800		
17		4		
		0		

93

pg #2

Thurs / wed

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 28/29

Observer Gld / Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	^{C2} Emission	Filter	Temp.	Starting Time <u>EST</u>	Ending Time UT	P.H.
CC54014	Comp			CASS SCD	5184A					19
15	HD 90861	1900 10 24 18	+29 05 00					23 40 06		19
16	Comp									20
17	BIAS (4)							23 48		1
18/23	FLATS x 6					TUNG ND4				7
24	BIAS (4)									1
24	Comp				6600A					2
25	HD 126315									17
26	Comp									2
27	Comp									2
28	Mk 2/21	2000 11 04 27	+38 12 32					00 25 47		7
29	"	"	"					00 41 08		8
30	"	"	"					00 56 22		9
31	"	"	"					01 11 40		10
32	Comp									11
33/36	BIAS (4) x 4									1

Dome Temp.

Focus

Dome Temp.

LST

End

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

94

Dome Temp. / Hum.

Focus

6.87 for 150m
setup

Transparency Conditions

slightly hazy

Dome Temp. / Hum.

LST End	LHA x End <i>metal</i>	Exposure <i>Sec</i>	Seeing	REMARKS
17	1320 1320V	4		
9	37K	400		std vel 2-6K ADU
20		4		
1		0		
7		2		14K ADU
1		0		
3		2		290 0 50 1024 41 CCD FWHM
4	41k			150ln/mm @ 23.7° gratings 11k max
2				
2				
7	347	900		
8	343	900		
9	341	900		
10	328	921		
		2		
		0		

95 p4#3

Tues/Wed

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 28/29

Observer Gld/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC510 ^{39/42}	FLATS x 6			CASS CCD	6600 Å	ND1.2 + Filter #5	+06560			2
CC54043	Comp		2000		5894A	Filter 2 FeAr				12
44	TYC 4194 2188	16 49 45	+64 07 17					01 36 20		13
45	Comp									14
46	TYC 4194 2188	"	"					02 30 47		15
47	Comp									16
48	TYC 4194 2188	"	"					03 02 47		17
49	Comp									18
50	TYC 4194 2188	"	"					03 34 39		19
51	Comp									20
52	Comp		1900							21
53	HD 177724	19 00 49	+13 42 53					04 26 51		22
54	Comp									23
55	BIHSCA									1
56/61	FLATS x 6					JUNG ND #4				2

Dome Temp.

Focus 6

Dome Temp.

LST
End

Dome Temp. / Hum.

6.6°C / 42.2

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

76

Focus

G-82 for 1800h grading

Transparency Conditions

some thin cloud

Dome Temp. / Hum.

46.5°C 70.9%RH

LST End	LHA x End counts	Exposure	Seeing	REMARKS
2	1320V	8sec		
12		4		385 0 58 1024 41
13	3300	1962	1"	1800 / 5658 250u slit
14		4		
15	3092.	1801	1.2"	
16		4		
17	3081	1800		
18		4.		
19	4602	2700	2"	
20		4		
21		4		
22	190K	440		Telluric std. , trailed
23		4		
1		0		
2		4s		14K MAX

Dome Temp./Hum. $+13.5^{\circ}\text{C}$ $47\% \text{H}$

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

98

Focus -231 Transparency Conditions *Part Cloudy*

Dome Temp./Hum.

LST End	LHA X End <i>meter</i>	Exposure <i>secs</i>	Seeing	REMARKS
1/2	1000V	1/1		$x = .3480$ Echelle = 19.20, <i>Height</i> Slit 400 = .225 STAR 600 = .205 FLATS
1		0		<i>width 400 = .266</i> <i>Height 1800 = .261</i>
3		1sec		MAX 8.8K
4	650	425	1"	Telluric Std in cloud 3.6K max
3		1sec		
2		3sec		MAX 13.6 K ADU
3	1320V	1	3	$\Delta L +000010$ $\Delta S +000030$ FOR HP153597, 5881 near TYC 4194 2188
5	nothing	731	5	(1" But darky) Tel west SIDE @ 00 15 W
1		0	1	Then TYC 4194 2188 @ 00 28 W $\Delta L +000007$ $\Delta S +000039$
3		1	3	
1		0	1	

pg 199 Thur/Fri

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 30 / May 1

Observer Cas/Bar/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CE16352/53	In/out board			Echelle CD	5888A					1/2
54	BIAS(4)							20 08		1
55	comp									3
56	HD120315	13 43 36	49 48 45			B3V	1.86	20 21 19		4
57	"	"	"					20 22 34		5
58	comp									3
59	comp									3
60	HD93427	10 42 09	65 39 36			B-V +0.03	6.4	20 54 54		4
61	"	"	"					21 10 49		5
62	comp									3
63	comp									3
64	HD 103498	11 55 06	46 28 40			B-V +0.03	7.0	21 58 30		5
65	comp									3
66	comp									3
67	HD120315	13 43 36	49 48 45			B3V	1.86	22 25 10		6
68	Comp									3

Dome Temp. 14.1

Focus

Dome Temp. 14.1

Dome Temp./Hum.

15.8/52.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

(100)

Focus

.255 0.240

CCD T

= -100.4°C

Transparency Conditions

OK

Dome Temp./Hum.

0 0 256 1024 4 1

LST End	LHA End Counts	Exposure	Seeing	REMARKS
1/2	1320 HV	2/1		$x = .3486$ Echelle - 19,200
1		0		slit height $400\mu = 0.225$ for stellar
3		1		$600\mu = 0.205$ for flat,
4	16 K	151	1.2"	Max 7.2 K Telluric Std
5	20 K	177 177		
3		1		
3		1		
4	1500	905		$\Delta x + 10^5, \Delta \delta + 9''$
5	1233	900		
3		1		
3		1		
5	375	1200		(double double). The fainter was chosen,
3		1		
3		1		
6	18 K	735		fairly cloudy - Telluric Std.
3		1		

PG 2/101

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 30 / May 1

Observer Cas/Bar/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp	Starting Time UT	Ending Time UT	P.H.
CE16369/73	Platz			Echelle CCD	5888					2
74	BIAS(4)				1920x0600/3480			22 54		1
75	comp									3
76	HD116405	13 18 24	45 14 00			AOV	8.2	23 09 55		4
77	comp									3
78	comp									3
79	HD103498	11 49 59	47 01 34			B-V 0.53	7.0	23 46 31		5
80	comp									3
81	HD103498	"	"			"	"	00 08 07		6
82	comp									3
83	BIAS(4)							00 30		1
84	HD103498	"	"			"	"	00 31 58		4
85	comp									3
86	comp									3
87	HD120515	13 43 36	49 48 45			B3V	1.86	00 56 50		7
88	comp									3
89	BIAS(4)							01 05		1

Dome Temp. / Hum.

13.1 / 57.8

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

cloudy

202

Focus

~~0.225~~ 0.240, CCD T Transparency Conditions

Dome Temp. / Hum.

-100.4°C

LST End	LHA End counts	Exposure	Seeing	REMARKS
2		3		600 μ = 0.205 for flats Max 1515 K
1		0		
3		1		source THAr
4	177	1800		change slit height to 0.225 (400 μ)
3		1		
3		1		
5	582	1200		
3		1		
6	434	1200		
3		1		
1		0		
4	290	1200		
3		1		
3		1		
7	20 K	264		
3		0		

Dome Temp./Hum. +14.5°C 73%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

104

Focus 240

Transparency Conditions Clearing by 0:30 EST Nice Aurora Tonight,

Dome Temp./Hum.

0 0 256 1024 4 1 CCDPMT

LST End	LHA End 1000 ✓	Exposure	Seeing	REMARKS
		1/1		focus test X = .3480 Edelle 1920
		0		CCDT = -101.4°C S11TH = 400u = .225 Slit W = 100u = .261
		1		Tel west SIDE
	2.8K	265	2-3"	Telluric Std Δt ^{00 00 11} 3.5 00 00 18 @ 02 14 W 7K MAX 8.7K max
	1320V			
	35*	1800s	3-4	* exp. meter likely misbehaving
		1s		
		1s		S11TH now .120 setting, orders just separated.
	93*	1800	3-4"	Image at "Left" of slit view
		1		
	2*	1800		Image at "Right" of slit view
	1000V	4.5		
		1s		
	2.7K	503	4"	Telluric Std finished

105
05/22UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 31/4

Observer Gld/tn

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.	LST End
CE16407	BIASCA)									1	
08/11	FLATS X 4									2	

Dome Temp.

Focus

Dome Temp.

PG 104

Tues/Wed

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 5/6

Observer WXL/TW

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	SP Filter	V _m Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC54062/63	Inboard / out board			CASS CCD	5184A					1/2
64	BIAS(4)							20 16		1
65	Comp									3
66	HD 102870	71 4529	+2 19 42			F9V	3.61	20 4304		4
67	Comp									5
68	Comp									6
69	HD 95660	10 57 24	30 58 00			F3	8.0	21 00 32		7
70	Comp									8
71	comp									8
72	HD 109247	12 28 12	55 21 00			F2	8.2	21 20 07		9
73	Comp									10
74	Comp									10
75	HT Vir	13 46 07	²⁰⁰² 05 06 57			G0	7.16	21 37 33		11
76	"	"	"			"	"	21 45 53		12
77	Comp									13
78	BIAS(4)							21 55		1

Dome Temp.

Focus 6

Dome Temp.

LST
End

Dome Temp. / Hum.

16.6°C 70.2H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

1.06

Focus

6.75

Transparency Conditions

PART Cloudy

Dome Temp. / Hum.

LST End	LHA End <i>xmeter</i>	Exposure	Seeing	REMARKS
12	1000V	4/6	7.2	
1		0	+	
3		4		
4	7.1K	3.4	1.3"	std vel 6.6K ADU max
5		4		6.8K ADU MAX
6		4		
7	1570	800	2"	1.4 K max
8		4		
9		4		
9	1000	651	1.3"	some cloud
10		4		
10		4	1	
11	1640	480	1.2"	
12	1585	480		
13		4		
14		0		

PG 2109

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date

1998 May 05/06

Observer

Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54079	comp			CASS CCD	5184					13
80	FO Vir	13 29 47	2000 01 05 48		1000/47.06	A7V	6.7	22 00 16		14
81	"	"	"			"	"	22 08 36		15
82	comp									16
83	comp									16
84	HD133640	15 00 29	48 02 36			GOV	4.26	22 23 29		17
85/90	"	"	"							18
91	comp									19
92	BIAS(4)							22 59		1
93/99	HD133640	"	"			"	"	23 00 59		20
CC54100	comp									21
01/07	HD133640	"	"			"	"	23 32 36		22
08	comp									23
09	BIAS(4)							00 03		1
10/16	HD133640	"	"			"	"	00 05 03		24
17	Comp									25

Dome Temp. / h

Focus

Dome Temp. / h

LST
End

Dome Temp. / Hum. 15.9 / 74.0

Focus 6.75

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Transparency Conditions

fine

Dome Temp. / Hum. _____

110

LST End	LHA End Counts	Exposure	Seeing	REMARKS
13	1000V	4		
14	2380	480	~1.2"	
15	2250	480		
16		4		
16		4		
17	5000 TOTALS	180	1.2"	well separated, mainly guided on brighter SW component. 0.2678 44 i B₀₀
18	~32K	240x6	2"	not well separated guiding on NE fainter one. Repeat 2400RS.BAT 6
19		4		
1		0		
20	~39K	240x7		
21		4		
22	~38K	240x7	2-3	
23		4		
1		0		
24	~27K	240x7	2-3"	
25		4		

pg 43 III

Tues/Wed

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 5/6

Observer Lu/Ta

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	^{CA} Emission	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC 54 113/24	HD 133640	15 00 29	+48 02 36	CASS CCD	5184A	GOV	4.76			26
25	comp									27
26	BIAS(4)							01 09		0
27/33	HD 133640	"	"			"	"	01 12 11		28
41	comp									29
34/40	HD 133640	"	"			"	"	01 43 57		30
42	comp									31
43	BIAS(4)							02 16		1
44/50	HD 133640	"	"			"	"	02 18 01		6
51	comp									7
52/58	HD 133640	"	"			"	"	02 50 09		8
59	comp									9
60	BIAS(4)							03 21		1
61/67	HD 133640	"	"			"	"	03 22 34		10
68	comp									11

Dome Temp. H

Focus 6

Dome Temp. H

LST
End

Dome Temp. / Hum.

13.6 / 82.0%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

112

Focus

6.75

Transparency Conditions

Fine → slightly foggy

Dome Temp. / Hum.

LST End	LHA End counts	Exposure	Seeing	REMARKS
26	~ 30K	240x7	2-3	Trying to guide on fainter NE component
27		4		
28		1		
29	~ 32K	240x7		
30		4		* Saved it later!
31		240x7	3-4	
32		4		
33		0		
34		240x7		
35		4		
36	31K	240x7		
37		4		
38		0		
39		240x7		
40		4		

PG #4 113

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 05/06

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	mag Temp.°	Starting Time UT	Ending Time UT	P.H.
CC 54169/71	HID 033640	15 00 29	48 02 36	CASS CED	5184 1800/4706	GOV	4.76	03 54 16		12
72	comp									13
73	BIAS(4)							04 08		1
74/80	flats							04 12		2

Dome Temp. / H
Focus
Dome Temp. / HLST
End

PG 115

Wed/Thurs

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 06/07

Observer Lu/Tn

Julian Day

CI

Plate No.	Object	R.A.	Declination	Inst.	CA Emission	SP Filter	MV Temp.	Starting Time EST	Ending Time UT	P.H.
CC541 ^{81/82} 81 82	In board Loui BOARD			CASS CCD	5184Å					3/4
83	B/H/S(A)							20 02		1
84	Comp		1900							5
85	HD 103695	11 47 13	38 26 10			G8Vp	6.45	20 11 10		6
86	comp									7
CC54 1 87	comp		2000							7
88	FFCuc	08 29 40	17 17 02			K1+K4	10.5	20 23 36		8
89	Comp									9
90	Comp		1900							9
91	HD 95660	10 57 24	13 05 800			F3	8.0	21 00 30		10
92	comp									11
93/94	Comp B/H/S \leq Comp							21 19		11
95	HT Vir	13 46 07	2060 +050607			G0	7.16	21 21 53		12
96	"	"	"			"	"	21 32 50		13
97	comp									14
98	comp									14

Dome Temp. H

Focus 6

Dome Temp. H

LIST
End

Dome Temp. / Hum. $+17.0^{\circ}\text{C}$ 65.3%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

116

Focus 6.72

Transparency Conditions Fine \rightarrow part cloudy

Dome Temp. / Hum.

CT

LST End	LHA End <i>Exp meter</i> 1000 V	Exposure secs	Seeing	REMARKS
3/4		4/6		
4		0		
5		4		
6	2810	360		st. vel
7		4		
8		4		
8	218	1892	1-2"	hazy here
9		4		
9		4		
10	1100	893	3"	mk. pgm
11		4		
11		4		
12	1400	600		
13	1600	600		
14		4		
14		4		

Pg 2 117

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 06/07

Observer Lu/Tu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54199	FO Vrr	13 29 47	2000 01 05 48	CASS CCD	5184	A7V	6.7	21 48 50		15
200	comp									16
01	comp									16
02	HD 109247	12 28 12	¹⁹⁰⁰ 55 21 00			F2	8.2	22 06 28		17
03	comp									18
04	comp									18
05	FO Vrr	13 29 47	²⁰⁰⁰ 01 05 48			A7V	6.7	22 29 25		19
06	comp									20
07	BIAS(4)							22 41		1
08	comp									20
09	HD 136202	15 19 05	¹⁹⁰⁰ 01 46 56			F8IV-V	5.06	22 46 11		21
10	comp									22
11	comp									22
12/18	HD 133640	15 00 29	48 02 36			G0V	4.76	22 57 31		23
19	comp									24
20/26	HD 133640	4	-					23 29 33		25

Dome Temp.

Focus

Dome Temp.

LST
End

Dome Temp. / Hum.

14.7 / 78.0

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

115

Focus

6.72

Transparency Conditions

fine

Dome Temp. / Hum.

LST End	LHA End <i>counts</i>	Exposure	Seeing	REMARKS
15	2410	600		
16		4		
16		4		
17	723	900	3"-5"	
18		4		
18		4		
19	2410	600		
20		4		
20		0		
20		4		
21	3870	240		std vel
22		4		
22		4		
23		240x7	2"-4"	
24		4		
25	3200	240x7	1"-2"	

Pg #3 119

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 06/07

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time EST	Ending Time UT	P.H.
CC 54 227/28	Comp = BIAS(4)		1900		5184A			00 01		26
29/35	HDA 33640	15 00 29	+48 02 36			GOV	4.76			27
36	"	"	"			"	"	00 32 55		28
37	comp									29
38	comp									29
39	FO Vtr	13 29 47	01 05 48			A7V	6.7	00 42 19		30
40	comp									31
41	BIAS(4)							00 54		1
42	comp									5
43	HT Vtr	13 46 07	05 06 57			GO	7.16	00 57 45		6
44	comp									7
45	Comp									7
46	HD 109247	12 28 12	55 21 00			F2	8.2	01 15 33		8
47	comp									9
48/54	flat 3 x 7									2
55	BIAS(4)							01 35		1

Dome Temp./Hum. 4138 83% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

120

Focus 6.72Transparency Conditions Hazy

Dome Temp./Hum.

CCDT -100.4°C400 0 50 1024 41

LST End	Start End <u>1000V</u>	Exposure	Seeing	REMARKS
26			5.0	
27		240.7	2"	
28	3980	242		
29		4		
29		4		
30	1965	600		
31		4		
1		0		
5		4		
6	1110	600		
7		4		
7		4		
8	700	900		$\Delta \alpha -00 00 11$ $\Delta \delta +00 00 09$
9		4		
2		7		filter 4, Source Tung $M_{\text{ax}} 12.4 \text{ K}$
1		0		

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p944UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 6/7

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	MU Temp.	Starting Time UT EST	Ending Time UT	P.H.	LST End
CG 81258/63	HD 144579	16 01 30	¹⁹²⁰ 7392400			Above 30 μ slit			48		
CC54256	Comp									9	
57	HD 144579	"	"		5784A	G8V	6.66	015205		10	
58	comp									11	
59	comp									11	
60	HD 136924	15 18 12	16 37 00			G5	8.2	020606		12	
61	"	"	"			"	"	021507		13	
62	comp									14	
63	BIAS(4)							0224		1	
64	HD 136924	"	"					022734		15	
65	comp									17	

Dome Temp. 1

Focus 6

Dome Temp. 1

Dome Temp./Hum. +13°C 88% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

122

Focus 6.72

COOT Transparency Conditions slightly foggy

Dome Temp./Hum. +12.5°C 89% H

100.5°C

LST End	LHA End Exposure	Exposure	Seeing	REMARKS
	1000V	4 x 67ms 2 x 133ms	1.2"	Seeing test ALT 83°, Dome West, Foggy, no wind
9		4		
10	2300	515	1.2"	std vel
11		4		
11		4		
12	451	480	1.2"	
13	438	480		
14		4		
1		0		
15	451	480		
17		4		

Dome Temp./Hum.

+17.8°C 57/18H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

124

Focus 6.72

90C gain

Transparency Conditions

PART Cloudy

Dome Temp./Hum.

400 0 50 1024 4 1 CLOFMTT

LST End	LHA End <i>Exposure</i>	Exposure <i>SES</i>	Seeing	REMARKS
	1060V	4/6/0		
6		4		
7	104K	222	1.2"	8K max
8		4		
9		4		
10	<u>1320V</u> 3700	1970	1.3"	
		4		
11		0		
12		4		
13	9000	984	1.3"	
14		4		
15	7900	904		
16		4		
17		4		
18	7600	600		
		4		

125
Pg 42

Thurs / Fri

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 7/8

Observer MKI/Ta

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT EST	Ending Time UT	P.H.	LST End
CC54284	Comp									18	
85	FO Vrr	13 29 47	²⁰⁰⁰ 01 05 48			A7V	6.7	20 17 19		19	
86	comp									20	
87	01A5(A)							22 29		1	
88	Comp									21	
89	HD 109247	12 28 12	¹⁹⁰⁰ +55 51 00			F2	8.2	22 35 28		22	
90	"	"	"					22 50 46		23	
91	Comp									24	
92	HD 109247	"	"					23 08 54		25	
93	"							23 24 14		26	
94	Comp									27	
95	HD 109247							23 42 59		28	
96	"							00 00 00		29	
97	Comp.									30	
98	MD 109247							00 19 20		31	
99	"							00 35 48		7	

Dome Temp.

Focus 6

Dome Temp.

Dome Temp./Hum. $+16.7^{\circ}\text{C}$ 57%²¹ UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.72 CCDT = -100.4 Transparency Conditions South mainly cloudy

Dome Temp./Hum. $+15.8^{\circ}\text{C}$ 60%¹¹

LST End	LHA End	Exposure	Seeing	REMARKS
18	1320 ^v	4		
19	8.1K	600s	2.3"	
20		4		
1		0		
21		4		
22	9.9K	900s	2"	P = 0.825 @ 23EST = .71 ~ 800ADU max
23	7.9K	966s	2"	
24		4		
25	6.6K	900		
26	7.5K	920		
27				
28	7.6K	950.		
29	6.6K	950.		
30				
31	5.5K	958		
32	7.9K	959	3"	

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Thurs/Fri

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 7/8

Observer

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	SP Filter	ND Temp.	Starting Time UT EST	Ending Time UT	P.H.	LST End
CC54300/01	Comp	BIAS(4)		CASS CED	5184A			00 53		8/1	306.51+
02	Comp		1900							9	
03	HD144579	16 01 30	+392400			G8V	645	01 03 22		10	
04	Comp									11	
05/11	FLATS x 7						ND #3			2	
CG8 1264/70	HD144579	n	n						4x 2x	67ms 133ms	
CC543	SN1998aq	seen	But not observed				too cloudy &	1:35 AIR MASS			
CC54312	Comp		2000		6000A					R60 order Sep	1-
13	SN1498aq	11 56 26	+550739		6000A	SN1998AQ		014836		06560 ORDER SEP	3+
14	Comp							0225			1
15	BIAS(4)										
16/20	FLATS x 4	+ BIAS(4)					ND	12+06560+Filter #5		2	

Dome Temp. / Hum. _____

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

128

Focus 6.72

Transparency Conditions

part cloudy ~ increasing cloud

Dome Temp. / Hum. _____

LST End	LHA End	Exposure	Seeing	REMARKS
3/1	1320 V	9/0		
9		4		
0	18K	380	2"	std vel 1.4 K ADU
1		4		
2		55		14K
3				Some SW Seeing test Light East wind
	Ad -00 0016 AS+00 0021			much fainter than two field stars ~ 3' 55W
306 slit		15		150 ln/mm @ 2329 gratings. 455 0 05 1024 81 COOPMT Bright means cloud to SW
~650		1212		~ 25 ADU ABOVE sky Background of 110 ADU
		0		
		5		MAX 10.5 K ADU

PG 129

UNIVERSITY OF TORONTO

DAVID DUNLAP OBSERVATORY

Date 1998 May 13/14

Observer [HI]/Brn/Rue/Lu Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC 5432/22	In/out board			CASS CCD	5894 1800 $\frac{1}{2}$ in 51.58					3/4
23	BIAS(4)							20 17		1
24	comp		2000							5
25	T/C 4152 113	11 09 54	66 45 25			B-V 0.274	8.11	20 46 25		6
26	comp									6
27	comp									7
28	T/C 4152 113	11 09 54	66 45 25			"	"	21 13 05		8
29	comp									9
30	comp									9
31	T/C 4152 370	11 07 17	65 21 09			B-V 0.269	10.27	21 29 44		10
32	comp									11
33	BIAS(4)							21 51		1
34	T/C 4152 370	11 07 17	65 21 09			"	"			12
35	comp									13
35	comp									13
36	HD 120315	13 43 36	49 48 45			B3V	6.68	22 4 15		14

Dome Temp. / Hum. 16.7 / 40.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

1:30

Focus 672

Transparency Conditions cloudy

Dome Temp. / Hum.

39.0 / 50.1024 4 1

LST End	LHA Eng. counts	Exposure	Seeing	REMARKS
3/0		54		filter 3.
1		0		
5	1000HV	4		
6	901	600	2"-5"	
6		4		
7		4		
8	708	600		
9		4		
9		4		
10	1320 HV 2170	1200		
11	228	4		
11		0		
12	2300?	1205		through clouds. [lost image]
13		4		
14	100K	122		Telluric std.

PE 2/131

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 13/14 Observer CHI/Brn/Rue/Lu Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54337	comp			ZASS	5894					15
	38/48 flats			CCD	1870/yt.58					2
	49 BIAS (4)							22 34		1

Dome Temp. H
Focus
Dome Temp. H

LST
End

PG 1 123

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 14/15

Observer MKL/Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC54350/51	In/out board			ZASS CCD	5184 1800/47.06					3/4
52	DIAS(4)							20 20		1
53	Comp									5
54	HD 102870	11 45 29	02 19 42			F9V	3.61	20 31 17		6
55	Comp									7
56	Comp									7
57	HD 95660	10 57 24	30 58 00			F3	8.0	20 42 32		8
58	Comp									9
59	Comp									9
60	FO Vir	13 29 47	01 05 48			A7V	6.7	21 01 27		10
61	Comp									11
62	Comp									11
63	HT Vir	13 46 07	05 06 57			G0	7.16	21 22 12		12
64	Comp									13
65	Comp									13
66	HD 114726	13 07 18	03 13 00			F2	8.4	21 40 57		14
67	Comp									15

Dome Temp. H

Focus

Dome Temp. H

LST

End

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum.

21.1 / 63.7

Focus

6.67

Transparency Conditions

Very
light clouds, hazy

134

Dome Temp. / Hum.

CCD T = -100.5°C

390 - 50 1024 4 1

LST End	LHA End <i>counts</i> (1000 volts)	Exposure	Seeing	REMARKS
		4/2		filter 2 FeAr
		0		
	6.95K	400		Max 6.5K
	6.95K	2604		
		4		
	366	720	2"	
		4		
		4		
	735	1000		
		4		
		4		
	950	600		
		4		
		4		
	818	1200		
		4		

Pg 2.135

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 14/15 Observer MKi/Lu Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC54368	BIAS(4)			CASS CCO	5184			22 02		1
69	HD114726	13 07 18	03 13 00			F2	8.4	22 04 25		16
70	comp									17
71	HD114726	"	"			"	"	22 27 11		18
72	comp									19
73	BIAS(4)							22 49		#
74	comp									19
75	HD133640A	15 00 29	48 02 36			G0	4.76	22 55 50		20
76	HD133640BtA	"	"					22 59 48		21
77	comp									22
78	comp									22
79	HD141990	25 46 54	38 09 00			G5	8.7	23 11 52		23
80	"	"	"					23 22 14		24
81	"	"	"					23 32 55		25
83	comp									26
82	BIAS(4)							23 44		1

Header
edited
to this
time
JN

Dome Temp.

Focus

Dome Temp.

LST

End

Dome Temp. / Hum. 20.3 / 64.8

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

136

Focus 6.67

Transparency Conditions

hazy

Dome Temp. / Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
	Counts	0		
16	891	1200	2"	
17		4		
18	790	1200	2"-3"	
19		4		
		0		
19		4		
20	4420	180		
21	4000	240		
22		4		
22		4		
23	565	600		
24	430	600		
25	408	610		
		4		
		480		

Pg 7 137

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1948 May 14/15

Observer MKi/Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Sp. Filter	Magn. Transp.	Starting Time UT EST	Ending Time UT	Cache P.H.
CC 54384	Bias (4)							23 52		37
85	Comp.									1
86	MD 141990	15 46 54	38 09 00			G5	8.7	23 56 02		3
87	"	"	"			"	"	00 06 58		4
88	"	"	"			"	"	00 18 52		5
89	Comp									6
90	BIA 5(4)							00 37		1
91/99	flats x9									2

Dome Temp.

Focus 2

Dome Temp.

LST
End

PG 139

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 15 / 16

Observer MKc/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CL54400/01	In/outboard			CASS CCD	5184 1800/4706					3/4
02	BIAS(4)							20 13		1
03	comp									5
04	HD 102870	11 45 29	02 19 42			F9V	3.61	20 22 05		6
05	comp									7
06	comp									7
07	HD 95660	10 57 24	30 58 00			F2	8.0	20 29 39		8
08	"	"	"			"	"	20 39 58		9
09	comp									10
10	comp									10
11	HT Vir	13 46 07	05 06 57			G0	7.16	21 00 05		11
12	Comp									12
13	BIAS(4)							21 11		1
14	comp									12
15	FO Vir	13 29 47	01 05 48			A7V	6.7	21 16 22		13
16	"	"	"			"	"	21 26 42		14

Dome Temp.

Focus

Dome Temp.

LST

End

Dome Temp./Hum.

23.0/58.3

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

140

Focus 6.64

Transparency Conditions

fine - hazy.

Dome Temp./Hum.

CCD T = -100.4°C

LST End	LHA End counts	Exposure	Seeing	REMARKS
3/1		4/8		filter 2
1		0		
5		4		
6	10.8K	150	1.2"	std Vel
7		4		
7		4		
8	577	600		
9	410	600		
10		4		
10		4		
11	1630	600		
12		4		
1		0		
12		4		
13	3215	600		
4	3250	600	1.2"	

PG 2 141

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 15/16

Observer MKW / Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54417	FO Vir	13 29 47	01 05 48		5184	A7V	6.7	21 37 07		15
18	comp									16
19	FO Vir	"	"			"	"	21 48 50		17
20	"	"	"			"	"	21 59 12		18
21	"	"	"			"	"	22 09 32		19
22	comp									20
23	BIAS(4)							22 21		1
24	comp									20
25	HD 141990	15 46 54	38 09 00			G5	8.7	22 26 20		21
26	"	"	"			"	"	22 36 41		22
27	"	"	"			"	"	22 47 03		23
28	comp									24
29	comp									24
30	HD 133640A	15 00 29	48 02 36			G0	4.76	23 07 30		25
31	HD 133640B	"	"			"	6.	23 13 25		26
32	comp									27

Dome Temp.

Focus

Dome Temp.

LST

End

Dome Temp. / Hum.

21.8 / 56.0

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

142

Focus

6.64

Transparency Conditions

fine

Dome Temp. / Hum.

LST End	LHA End counts	Exposure	Seeing	REMARKS
15	3400	610	1"-2"	
16		4		
17	3120	600		
18	3250	600		
19	3400	610		
20		4		
1		0		
20		4		
21	455	600		
22	445	600		
23	409	653		
24		4		
25		4		
25	5800	240		
26	4820	240		
27		4		

PG 3 143

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 15/16

Observer MK: / Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54433	BIAS(4)				5184			23 19		1
34	comp									27
35	FO Vir	²⁰⁰⁰ 13 29 47	01 05 48			A7V	6.7	23 26 53		28
36	"	"	"			"	"	23 37 20		29
37	"	"	"			"	"	23 47 41		30
38	comp									31
39	FO Vir	"	"			"	"	23 59 54		6
40	"							00 10 35		7
41	"							00 21 21		8
42	comp.									9
43	Bras (4)							00 39		1
44	comp									9
45	HD 136202	15 14 12	02 28 37			F8IV	5.06	00 45 05		10
46	comp									11
47	comp									11
48	HD 136924	15 18 12	16 3 700			G45	8.2	00 59 39		12

Dome Temp. / Hum.

20.4 / 69.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

144

Focus

6.64

Transparency Conditions

fine - slightly hazy.

Dome Temp. / Hum.

LST End	LHA End <i>counts</i>	Exposure	Seeing	REMARKS
		0		
		4		
	2630	600	2-3"	
	2560	600		
	2600	600		
		4		
	2820	600		
		610		
	2200.	951		
		4		
		0		
		4		
	6300	300		std Vel
		4		
		4		
	590	450		

Pg 4 145

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 15/16

Observer MK: / Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54449	HD136924	15 28 12	16 37 00		5184	G5	8.2	01 08 13		13
50	"	"	"					01 16 32		14
51	"	"	"					01 25 11		15
52	comp									16
53	BIAS(4)							01 34		1
54	HD136924	"	"					01 35 40		17
55	"	"	"					01 44 25		18
56	"	"	"					01 52 45		19
57	"	"	"					02 01 05		20
58	comp									21
59	HD136924	"	"					02 10 33		22
60	"	"	"					02 19 02		23
61	"	"	"					02 27 24		24
62	comp									25
63	HD136924	"	"					02 37 11		26
64	"	"	"					02 45 34		27

Dome Temp. / Hum.

19.1 / 62.5

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

146

Focus

6.64

Transparency Conditions

clear

Dome Temp. / Hum.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
13	547	480		
14	604	500	1-2"	
15	648	480		
16		4		
17		0		
17	645	480		
18	630	480		
19	648	480		
20	690	480		
21		4		
22	661	480		
23	690	480		
24	723	480		
25		4		
26	670	480		
27	680	480		

995 147 Fri/Sat.

1998 May 15/16

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date

Observer

MK/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp	Starting Time UT	Ending Time UT	P.H.
ce54465	HD 136724 15 18 12	16 37 00		CASS CCD	5784	G5	8.2	02 53 59		28
66	comp							25		29
67	BIAS(4)							03 03		1
68	comp									29
69	HD 144579	16 04 48	39 10 07			d48	6.66	03 13 38		30
70	comp									31
71	comp									5
72	HD 202924	21 13 54	30 10 00			A0 ?	8.1	03 25 48		6
73	HD 202924 companion							03 36 44		7
74	comp									8
75	HD 202924	"	"			"	"	03 54 29		9
76	comp									10
77	BIAS(4)							04 04		1
78/86	Flats x9									2

Dome Temp. H

Focus

Dome Temp. H

LST

End

1320 HV

Dome Temp. / Hum.

19.0 / 59.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

148

Focus

6.64

Transparency Conditions

clear

Dome Temp. / Hum.

LST End	LHA End	counts	Exposure	Seeing	REMARKS
28		684	480	1-2"	
29			4		
1			0		
4			4		
5		2130	300		std vel
31			4		
5			4		
6		1111	600	1-2"	
7	1320 HV	2000	900	1"	fainter companion 3"4" SSE
8			4		
9		1080	480		sky getting bright.
10			4		
1			0		
2			7		filter 4 Max 13.3 K

ADS 1483 SAB

RG 149

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 17/18

Observer MKi/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC544 87/88	In/out board			CASS 100	5184					3/4
89	BIAS(4)				1800/47.06			20 24		1
90	Comp									5
91	HD102870	11 45 29	02 19 42			F9V	3.61	20 31 58		6
92	comp									7
93	comp									7
94	FOV _{IR}	13 29 47	01 05 48			A7V	6.7	20 42 12		8
95	"							20 52 38		9
96	"							21 03 04		10
97	comp									11
98	BIAS(4)							21 14		1
99	FOV _{IR}							21 15 11		12
545 00								21 25 29		13
01								21 36 02		14
02	comp									15
03	FOV _{IR}							21 47 48		16

Dome Temp. / Hum.

20.9/40.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

150

Focus

6.64

Transparency Conditions

fine

Dome Temp. / Hum.

CCDT = -100.4°C

390 0 50 1024 4 1

LST End	LHA End Counts	Exposure	Seeing	REMARKS
3		4/8		filter 2.
1		0		
5		4	2-4	
6	15K	150		trailed
7		4		
7		4		
8	3660	600	2-4	
9	3650	600		
10	3650	600		
11		4		
11		0		
12	3460	600		
13	3470	610		
14	3470	600		
15		4		
15	3240	600	2-5	

PG 2/51

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 17/18

Observer MKr/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54504	FO Vir	13 29 47	01 05 48		5184	A7V	6.7	21 58 15		17
05	"	"	"			"	"	22 10 47		18
06	comp									19
07	BIAS(4)							22 22		1
08	comp									19
09	HD 95660	10 57 24	30 58 00			F2	8.0	22 27 59		20
10	comp									21
11	comp									21
12	HT Vir	13 46 07	05 06 57			G0	7.16			22
13	comp									23
14	comp									23
15	HD 141990	15 46 54	38 09 00			G5	8.7	22 58 19		24
16	"							23 09 09		25
17	"							23 20 02		26
18	comp									27
19	BIAS(4)							23 31		1

Dome Temp. / Hum.

19.4 / 41.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus

6.64

Transparency Conditions

clear

Dome Temp. / Hum.

LST End	LHA End counts	Exposure	Seeing	REMARKS
17	3730	724	2-5"	
18	3035	600		
19		4		
20		0		
21		4		
22	713	600		
23		4		
24		4		
25	1620	600		
26		4		
27		4		
28	510.	600.	"	
29	490	610		
30	500	600		
31	.	4		
32		0		

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Mon/Tues

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date May 18/19 1998

Observer Hml/Cas/Tn

Julian Day _____

CI

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Sp Filter	Mag Temp	Starting Time UT EST	Ending Time UT	P.H.
CC545 33/34	Inboard / 625 BOARD	HARTMAN		Cass CCD	5894 Kodak	51.58 grating Tilt				3/4
CC54535	Bias (4)				2500 slit			20 11 20		~
36	Comp	1900								
37	HD 120 315	13 43 36	+49 48 45		ND12 in Sk/42 Beam	B3V	1.68	20 31 29		6
38	Comp									7
39	Comp	2000								7
40	TYC 4151 526	10 53 48	66 49 17		ND12 Removed	B-V + 267	9.34			8
41	Comp									9
42	TYC 4151 526	"	"					21 29 04		8
43	comp	1								9
44	TYC 4151 526	"	"					21 53 56		10
45	comp									9
46	Bias (4)							22 15 32		1/2
47	comp									9
48	TYC 4151 526	"	"					22 17 56		He
49	Comp									

Dome Temp. _____
Focus _____
Dome Temp. _____

LST _____
End _____

156

Dome Temp./Hum. 22.6/53.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.69

Transparency Conditions Clear, bit o' haze

Dome Temp./Hum. 20.9/62.5

CCOT - 99.8°C

390 0 50 1024 4 1 CCDFMT

LST End	LHA End <i>Exposure</i>	Exposure	Seeing	REMARKS
		3/4		
	1000V			
	1015K	355	1"	Telluric Std. <u>MAX ADU 8K</u>
	130V			
	7880	1261	1.5"	6d -0000 45 8 8 -00 0027 <u>MAX ADU 1.1K</u>
	7643	1200		MAX ADU ~ 1K ADU
		4s		
	7410	1200s		MAX ADU ~ 1K
		4s		
		4s		
	7180	1200s	2"	

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Mon / Tues

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date May 18/14 1998

Observer Hrd/Cas/Th

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	mg Temp.	Starting Time UT	Ending Time UT	P.H.
CC545 50	comp									9
51	TYC 43853061	11 02 03	67 40 03		5814 1200/μm 50M					12
52	Comp.									13
53	TYC 43853061	" "						23 20 38		14
54	comp									13
55	TYC 43853061	" "	" "					23 53 00		15
56	comp									13
57	BIAS							00 25 10		12
58	comp									13
59	TYC 43853061	" "	" "					00 27 21		16
60	comp									17
61	BIAS (4)							00 59		1
62	comp									18
63	TYC 41521341	11 09 40	67 12 37							19c
64	comp									
65	comp									

Dome Temp.

Focus

Dome Temp.

LST

End

B-V = .216

6.07

01 03 16

Dome Temp./Hum.

20.9/62.5

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

158

Focus

6.64

Transparency Conditions

hazing up.

Dome Temp./Hum.

LST End	LHA End Exp. <i>met</i>	Exposure	Seeing	REMARKS
1	1320V	9s		
2	7.6K	1804	1-3"	
3				
4	7.3K	1800		~900 maxadu
5		9s		
6	4.9K	1818		seeing is good → base max ~400 ADU
7		4s		
8		4s		
9	4.5K	1805		some cloud
10		7s		
11		0		
12		4		
13	10K	1120s		running out of film - dousing up
14		4		
15		4		

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date May 18/19

Observer Hnd/Cas/Th

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time MEST	Ending Time UT	P.H.
CC 54566	HP177729	19 00 49	13 42 53	Cass CCD	5849 1800/1mm 250u			0129 08		
67	comp									
68	Bias(H)							0135 59		
69/78	Flats x10									

Dome Temp.
Focus
Dome Temp.

LST
End

Dome Temp./Hum.

20.2/62.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus

Transparency Conditions

Cloudy

Dome Temp./Hum.

LST End	LHA End <i>Exp meter</i>	Exposure	Seeing	REMARKS
	124.8K	300s 4s		Telluric std - clouds as Neutral density filter, ^{guiding to} spread it at 6Kmes
		4s		filter 9, 13.1K ADU max tungsten
				<u>Note</u> - Both λ and Grating Header fields are incorrect. Should be <u>5894 Å</u> = <u>1800/51.58</u>

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

pg#1

Tues/Wed

Date MAY 19/20/98

Observer HIgrap/Tu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	C ₂ Emulsion	SP Filter	MU Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC545 79/80	Inboard/outboard			CASS CCD	5894					3/4
81	Comp		1900	250u slit	grating 1800/5158					5
82	HD120315	13 43 36	+49 48 45			B32	1.68	205656		6
83	Comp									7
84	B1A5(A)							21 14		1
85	B1A5(A)							22 22		1
86	Comp		2000							8
87	TYC 4152113	11 09 54	+66 45 25			B-V +0.274	8.11	22 32 11		9
88	Comp									13
89	TYC 4152113	"	"					22 57 34		14
90	Comp									17
91	Comp		2000							17
92	(TYC 41523701)	11 07 17	+65 21 09			B-V +0.269	10.27	23 22 39		18
93	Comp									20
94	TYC 41523701	"	"					235428		21
45	COMP									22

Dome Temp. 18

Focus 8.5

Dome Temp. 18

LST

End

Dome Temp. / Hum. 720.0°C 67%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.64

Transparency Conditions *Pure Clear - Hazy*

Dome Temp. / Hum.

390 0 50 1024 4 1 CCD FWT

LST End	LHA End <i>Exposure</i>	Exposure SECS	Seeing	REMARKS
34	<i>1000V</i>	4/6		
5		4		
6	6.7K	801	4.6"	3.8K ADU MAX
7		4		
1		0		Cloudy gap ~ 1 hr
1		0		
8	<i>1320V</i>	4		
9	13.7K	1364	3.7"	152 -00 00 43 25 00 0 @ 3W Tel Reversed 1.2K max ADU
13		4		
14	16.5K	1239		
17		4		
17		4		
18	3.5K	1800	2.4"	
20		4		
21	2.8K	1826		~ 350 ADU above Background
22		4		

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Pg#2

Tues/Wed

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 19/20

Observer HI group / Tn

Julian Day

CT

Plate No.	Object	R.A.	Declination	Inst.	CX Emulsion	Filter	Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC545 96	BIHSC(4)			CAS 250u ST.7	5894B					1
97	TYC41523701	11 0717	+6521 09	2000				002753		23
98	Comp					#3				24
99	Comp			2000						25
600	TYC415122	10 5859	+6703 30					010302		26
601	Comp									27
602	TYC415122	"	"					014201		28
603	Comp									29
604	TYC 415122	"	"					022508		30
605/06	Comp = BIAS(4)							0258		5/1
07	Comp			1900						5
08	HD177724	19 00 49	+134253					034098		6
09	Comp							Then removed during exposure		7
10/	FLATS x10					#4				2

Dome Temp. H

Focus 66

Dome Temp. H

LIST

End

Dome Temp. / Hum. $+18.9^{\circ}\text{C} +75.6\%$ UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 669 Transparency Conditions some cloud & haze

Dome Temp. / Hum.

CT

LST End	LHA End <i>Exposure</i>	Exposure	Seeing	REMARKS
	1320V	0		
23	2.8K	1827	2-3"	
24		4		
25		4		
26	3.3K	2226		$\Delta\alpha -00^{\circ}00'45''$ $\Delta\delta -00^{\circ}00'21'' @ 05^{\circ}48'W$
27		4		
28	3K	2		
29		4		
30	2.3K	1850		
51		4		
5	1020V	4		
6	12.7K	3	4"	Telluric std.
7		4		
2		45		12.6K ADU

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Pg #1

WED/THUR

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 20/21

Observer Rue/Att/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	λ Emulsion	SP Filter	MV Temp.	Starting Time UT EST	Ending Time UT	CI B.A.
CC54820/21	Inboard / outboard			CASSCO 250u slit	5894A					3/4
22	BIAS(4)									1
23	Comp					ND0.6 in beam			Filter 1/3 Feat	5
24	HD 120 315	13 43 36	19 ⁰⁰ +49 48 45			B3V	1.68	20 3222		6
25	Comp					ND Removed				7
26 27	TYC 4152 1341	11 09 40	20 ⁰⁰ +40 67 12 37			B-V 0.216	6.07	20 48 51		8
28	Comp									9
29	TYC 4152 1341	"	"			"	"	21 20 42		10
30	Comp									11
31	BIAS (4)									1
32	Comp									12
33	TYC 415 176	10 58 43	20 ⁰⁰ 67 08 29			B-V 0.282	10.69	22 03 24		13
34	Comp									14
35	TYC 415 176	"	"			"	"	22 40 56		15
36	Comp									16
37	BIAS(4) TYC 415 176							23 20 26		17

Dome Temp.

Focus 6

Dome Temp.

LST

End

Dome Temp./Hum. 19.8°C

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 6.64Transparency Conditions Part cloudy & gusty NW wind

Dome Temp./Hum.

390 0 50 1024 4 1 CCMFNT

LST End	LHA End	Exposure	Seeing	REMARKS
				Focus test
	<u>1000V</u>			6 K ADU max
	103K	336	4"	5.2 K ADU max
	<u>1320V</u>			
	49K	1727	3.6"	5 K max
		1799		
	~6.3K	~ 6.3K 1799 sec		
	2068	2000		
	2K	2185		
	2989	2460		

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Pg #2

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 20/21

WED / THUR

Observer Rue / A+ / Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	λ Emulsion	δ Filter	MV Temp.	Starting Time UT EST	Ending Time UT	CI P.H.
CC54638	comp			CASS 250u	589A					19
39	BIAS (4)									1
40	TYC 415 176	10 58 43 ^{20 00}	67 08 29			B-V 0.282	10.69	00 05 24		19
41	comp									20
42	Comp									21
43	TYC 4148239	10 54 35 ²⁰⁰⁰	+64 3359			B-V 0.298	10.91	00 51 12		22
44	Comp									23
45	TYC 4148239	"	"			"	"	01 29 20		24
46	Comp									25
47	BIAS (4)									1
48	TYC 4148 239	"	"			"	"	02 07 30		26
49	Comp									27
50	TYC 4148 239	"	"			"	"	02 43 03		28
51	Comp									29
52	Comp									29
53	HD 177724	19 00 49 ^{10 00}	13 42 53			1		03 21 37		30

Dome Temp.

Focus

Dome Temp.

LST
End

Dome Temp./Hum. $+14^{\circ}\text{C}$ 50%*H*

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 664

Transparency Conditions *Fine* \rightarrow *part cloudy*

Dome Temp./Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
	1320 <i>V</i>			
	2600	2262	4.6"	
		4		
		4		
	2086 1650	2086	4.6"	
	1600	2076		
	1600	2046		
		4		
		0		
	1602	2023		
		4		
	1290	1694		
	1000 <i>V</i>			
	12 <i>K</i>	414		Telluric stel. <i>Felersgo</i> west side now

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 20/21 Observer H. I. group Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time <small>UT</small> EST	Ending Time UT	P.H.
54	Comp				5894B					5
55	BIDS (w)									1
56-65	FLATS x(10)									

Dome Temp.
Focus
Dome Temp.

LST
End

Dome Temp. / Hum.

-11.8° 84RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus

6.64

Transparency Conditions

Part Cloudy

Dome Temp. / Hum.

LST
End

LHA
End

Exposure

Seeing

REMARKS

30

5

1

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Page #1UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

THURS / FAI

Date 1998 MAY 21/22

Observer Roe/Hml/Tm

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CX Emission	Filter	MV Temp.	Starting Time EST	Ending Time UT	CI PH.
CC54666/67	INBOARD / OUTBOARD			CASS-CCD	4100 Å					
68	BIAS (4)			4100 Å slit				20:15:34		1
69	COMP	10 48 50	65 07 57		FeAr	FILTER#A		20:24:28		5
70	TYC 41511452	10 48 50	65 07 57				6.4	20:24:28		6
71	TYC 41511452	"	"					20:30:35		7
72	TYC 41511452	"	"					20:37:49		8
72	TYC 41511452	"	"					20:50:44		8
73	COMP							21:02:23		9
74	COMP							21:05:48		10
75	TYC 4152484	11 04 54	65 44 07				10.45	21:08:17		11
76	COMP									12
77	TYC 4152484	"	"					21:40:36		13
78	COMP							22:14:01		14
79	BIAS (4)							22:15		15
80	COMP									

Dome Temp.

Focus

Dome Temp.

LST

End

HV

Dome Temp./Hum. 10.5°C 60%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 6.85

Transparency Conditions Clearing

Dome Temp./Hum.

405 D 50 1029 41 CCDPMT

CC #	LST End	LHA ^X End METER	Exposure SECS	Seeing	REMARKS
		1000V			FOCUS TEST
5			4s		
6	1500		311	5"	~ 2K MAX ADU
7	1550		392		
8	2430		634		
9	2000		604		BAD GUIDING
			4s		
	HV 1320V		4s		
	2.2K		1808	5"	Bad seeing (S/N < 50/1)
	#2		4s		
13	2370		1540		
			4s		
			4s		

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1958 MAY 21/22 Observer Hurl/Rue/Tm Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	CX Emulsion	Filter	Hv Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC546681	TYC4385152	11 03 32	67 34 20	Inst. Cass. Co. 470m. slit T. scanning 25.2°	4100 Å		9.66	22:22:39		16
82	Comp									17
83	TYC4385152	"	"				"	22:54:27		18
84	Comp							23:25		19
85	BIAS(4)							23:26		1
86	COMP							23:30:05		20
87	TYC 4152370	11 07 17	65 21 09				10.27	23:31:19		21
88	COMP							00:02:27		22
89	TYC 4152370	"	"				"	00:03:43		23
90	COMP							00:34:27		24
91	COMP							00:38:11		25
92	TYC 4385306	11 02 03	67 40 03				9.68	00:40:17		26
93	COMP							01:11:12		27
94	TYC 4385306	"	"				"	01:12:23		28
95	comp									
96	BIAS(4)							01:38:17		

Dome Temp.

Focus 6

Dome Temp.

LST

End

Dome Temp./Hum. $+8.8^{\circ}\text{C}$ 62% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 6.85

Transparency Conditions mostly clear

Dome Temp./Hum.

905 0 50 1024 4 1 CCD/FMT

LST End	LHA End <i>Exp meter</i>	Exposure	Seeing	REMARKS
	<i>HU 1320V</i> 4200	1800	3.7"	
		4s		
	4200	1800		
		4s		
		4s		
	2700	1824		
		4s		
	1800	2250	3"	
		4s		
		4s		
	3256	1800s		
		4s		
	2775	1484s		clouded out
		9s		
	Tden CC 54697- 706.Fts 10 FLATS @ 7sec, VND3 MAX 14K HDU			

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FRI/SAT

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 22/23

Observer [HI]/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54707/08	In/out board			CASS CCD	5894					3/4
09	BIAS(4)				1800/51.58			22 14		1
10	comp									5
11	HD 120315	13 43 36	49 48 45			B3V	1.86	22 32 41		6
12	comp									7
13	comp									7
14	Tyc 4385306 41451284	11 01 07 02 02	62 24 16 67 40 23			B-V 0.29	10.45 9.78	23 20 44		8
15	"	"	"			"	"	23 41 04		9
16	comp							.		10
17	BIAS(4)							00 02		1
18	Tyc 41451284	"	"			"	"	00 04 59		11
19	"	"	"			"	"	00 25 28		12
20	comp									13
21	Comp									13
22	Tyc 4148754	10 47 39	63 27 35			B-V 0.286	10.09	00 52 10		14
23	"	"	"			"	"	01 13 09		15

Dome Temp.

Focus

Dome Temp.

LST
End

13:20 HV

Dome Temp./Hum. 12.1/53.7

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 6.75

Transparency Conditions clear

Dome Temp./Hum.

CCDT = -100.5^o

395 0 50 1024 4 1

LST End	LHA End Count	Exposure	Seeing	REMARKS
3/6	1320 HV	4 1/2		filter 3 Max 5.5K
1		0		
5		4		
6	107K	300		1.2 ND filter. Max 5K, trailed, Telluric std.
7		4		
7		4		
8	3120	1200	2"-3"	
9	3030	1200		
10		4		
11		0		
11	2630	1200	3"-5"	
12	2150	1200		
13		4		
14		4		
14	2926	1200		
15	2777	1200		

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

FRI / SAT

→ Att/Tec

Date 1998 MAY 22/23

Observer

[HI]/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	MAG Temp.	Starting Time UT	Ending Time UT	P.H.
CC54724	Comp				589f					16
25	BIAS(4)							01 35 02		1
26	TYC 41487541	10 47 39	+63 37 35			B-V 0.286	10.09	01 36 54		17
27	"	"	"			"	"	01 57 22		18
28	Comp									19
29	"									19
30	TYC 41521135	11 09 54	+66 45 25			B-V 0.274	8.11	02 23 41		20
31	"	"	"			"	"	02 34 01		21
32	"	"	"			"	"	02 44 22		22
33	Comp									23
34	BIAS(4)							02 56		1
35	Comp									23
36	TYC 41523701	11 07 17	65 21 09			B-V .269	10.27	03 02 17		24
37	Comp									25
38	Comp									25
39 A0	HD 177724 Comp	19 00 49	13 42 53			AOV _n	2.99	03 42 25		26 27

Dome Temp.

Focus

Dome Temp.

LST

End

Dome Temp./Hum. 9.8/64.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 675

Transparency Conditions CLEAR

Dome Temp./Hum. CDT =

LST End	LHA End COUNTS	Exposure	Seeing	REMARKS
		4		
		0		
	2919	1200		
	2675	1200		
		4		
		7		
	7498	600	4-8	
	6820	600		
	6645	600		
		4		
		0		
		4		
	3430	1800		
		4		
		4		
	24.5K	300		CC54744 50 flats x 10 filter # 4 sec. NDL2 in beam min 13.1K
		4		CC54751 BIAS (4) @ 03:55

PG 1 179

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 23/24

Observer Gld / Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54752/53	In/out board			CASS CCD	5894					3/4
54	BIAS(4)				1800/51.58			22 58		1
55	comp									5
56	HD120315	13 43 36	49 48 45			B3V	1.86	23 00 34		6
57	comp									7
58	comp									7
59	TYC 41523701	11 07 17	65 21 09			B-V 0.269	10.27	23 21 56		8
60	"	"	"			"	"	23 4		9
61	comp									10
62	BIAS(4)							00 03		1
63	TYC 41523701	"	"			"	"	00 04 47		11
64	comp									12
65/74	flat3 X10									2
75	BIAS(4)							00 36 47		1
76	comp									12
77	TYC 4149-1297	11 06 30	64 51 02			B-V 0.26	11.60	00 39 49		13

Dome Temp./Hum.

14.1/40.2

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

180

Focus

6.75

Transparency Conditions

clear

Dome Temp./Hum.

CCOT = -10.5

LST End	LHA End CamB	Exposure	Seeing	REMARKS
	1320 HV	4/7		filter 3
		0		
		4		Max 5.4 K
	120 K	300	1-2"	ND 1.2 in beam. Max 5K Telluric Std.
		4		
		4		
	4060	1200	2-3"	
	4100	1200		
		4		
		0		
	5020	1500		
		4		
		4		filter 4, Max 13.9 K
		0		
		4		
	2330	1800		

Pg 2 (81)

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 23/24

Observer Gld/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54778	comp				5894					14
79	TYC 4149-1297	11 06 30	64 51 02			B-V .26	11.60	01 11 54		15
80	comp									16
81	BIAS(4)							01 43		1
82	comp									16
83	TYC 4151-76	10 58 43	67 08 28			B-V .28	10.7	01 47 41		17
84	comp									18
85	TYC 4151-76	"	"					02 10 00		19
86	comp									20
87	TYC 4151-76	"	"					02 31 30		21
88	comp									22
89	BIAS(4)							02 52		1
90	comp									22
91	TYC 4151-22	10 58 59	67 03 29			B-V 0.510	10.53	02 56 27		23
92	comp									24
93	TYC 4151-22	"	"			"	"	03 18 19		25

Dome Temp. / Hum. 13.1 / 40.2

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

182

Focus 6.75Transparency Conditions clear

Dome Temp. / Hum.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
14		4		
15	2035	1800	4.6"	
16		4		
17		0		
18		4		
19	2238	1260		
20		4		
21	2071	1200		
22		4		
23		0		
24		4		
25	2015	1200		
26		4		
27		0		
28		4		
29	2210	1200		
30		4		
31	2730	1200		

PG 3
187

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 23/24

Observer Gld / Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CCS4794	comp				5894					26
95	comp									26
96	HD177724	19 00 49	13 42 53			AOVn	2.99	03 45 23		27
97	comp									28
98	BIAS(4)							03 52		1

Dome Temp.
Focus
Dome Temp.

LST
End

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 25/26 Observer Gld/Ky Julian Day _____

185
195

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
cc 54799	dark									3
800	"									3
801	"									4
802	"									5
803-806	BIAS (4)									1
cc 54807'	BIAS (4)							23 38		1
08	"							23 39		1
09/15	flat 3 X 7									2
16	comp									3
17	TYC 4385-366	11 02 03	67 40 00			B-V 22	9.7	23 51 49		4
18	comp									5
19	comp									5
20	TYC 4151-526	10 53 48	66 49 16			27	9.4	00 16 06		6
21	"	"	"			"	"	00 28 02		7
22	comp									8

Dome Temp.
Focus
Dome Temp.

LST
End

Dome Temp./Hum. 15.0/77.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.75

Transparency Conditions

f cloudy

1183

Dome Temp./Hum.

395 0 50 1024 41

LST End	LHA End	Exposure	Seeing	REMARKS
		1200s		
		1200		Dark tests.
		1800		
		1800		
		0		
	1320 HV	0		450 16 512 12 2 CCDPMT
		0		
		5		filter 5. Max 12.8 K
		4		filter 5 Max 14.5 K
	3600	1200		Some clouds Throughout
	4150	700		clouds clearing
	4890	600		

Dome Temp. / Hum. 14.4 / 80.7

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

1878

Focus 6-75

Transparency Conditions

clear

Dome Temp. / Hum.

415 16 512 127

LST End	LHA End	Exposure	Seeing	REMARKS
		4		
	4630	1200	4"	new completely clear.
	3444	900		
		4		
		4		
	2150	900	5"	
	2840	1260		
		4		
		4		
		0		
	2602	901		
	2430	900		
		4		
		4		
	2370	900	7"	
	2488	900		

189P & 3

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date

1998 May 25/26

Observer

Gld/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Magn Temp.	Starting Time UT	Ending Time UT	P.H.
CC54839	comp				4100					22
40	comp									22
41	TYC 4148-754	10 47 39	63 37 35				10.1	03 11 23		23
42	"							03 23 46		24
43	comp									25
44	BRAS(4)									1

Dome Temp.

Focus

Dome Temp.

LST

End

Dome Temp./Hum.

12.6/64.5

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

190

Focus

Transparency Conditions

clear

Dome Temp./Hum.

415 0 16 512 12 2

20	LST End	LHA End	Exposure	Seeing	REMARKS
22			4		
22			4		
23		2906	730		
24		3545	670		
25			4		
1			0		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

1998
Tues/Wed

Date 1998 MAY 26/27

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	C _D Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC548 ^{45/46}	Inb/out BOARD		Tgrating	150 In 23-29	6000Å	OG560				3/4
47	BIAS(4)					stellar Beam		2027		1
48	Comp	1900				R60 FOR comparison				5
49	HD102328	11 41 35	56 1104					202917		6
50	Comp									7
51	Comp	2000								8
52	SN1998A9 AQ	11 5626	+550739					20 5136		9
53	Comp									10
54	Comp	2000								11
55	HD124752B	14 10 18	+680300					21 3145		12
56	HD124752'							21 5221		13
57	comp									14
58	BIAS(4)							22 01		1
59/64	flats x b									2

Dome Temp.

Focus 6"

Dome Temp.

LST

End

Dome Temp./Hum.

16.2°C 56% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

192

Focus 6.59

Transparency Conditions mostly clear.

Dome Temp./Hum.

412 0 25 1024 81 CCD FMT

LST End	LHA End <i>Exposure</i>	Exposure	Seeing	REMARKS
		4		
	1000V	4		
	1120V	29	3"	$\Delta L = 00 00 04$ $\Delta S = 00 00 06$ @ 0 43W
		4		
	110V	4		
	1320V	4		
	860	1990		$\Delta L = 00 00 06$ @ 01 09 W $\Delta S = 00 00 15$ Galaxy core seen to ESE in 8" circle
		4		
		4		
	1050	1203		$\Delta L = 00 00 07$ $\Delta S = 00 00 42$
	3000	426		Max 5.2 K
		4		
		0		
		5 = 0.55		OG 560 filter. tscale = 1000

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 26/27

Observer Lu/Tn

Julian Day

PG 2

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Imp.	Starting Time UT	Ending Time UT	P.H.
CC3486 ^{1/2} /66	comp Inhour			CASS CCD	5184					3/4
67	comp				1800/47.06					5
68	HD 95660	11 02 52	30 24 55		306 μ slit	F3	8.0	22 26 44		6
69	comp									7
70	BIAS(4)							22 40		1
71	comp									7
72	FO Vir	13 29 47	01 05 48			A7V	6.7	22 46 05		8
73	"	"	"			"	"	22 56 35		9
74	comp									10
75	comp									10
76	HT Vir	13 46 07	05 06 57			G0	7.16	23 12 48		11
77	"	"	"			"	"	23 23 10		12
78	comp									13
79	comp									13
80	HD 136202	15 14 12	02 08 37			F8IV-II	5.06	23 37 47		14
81	comp									15

Dome Temp.

Focus

Dome Temp.

LST
End

Dome Temp. / Hum.

12.7 / 54.4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

194

Focus

6.75

Transparency Conditions

fine

Dome Temp. / Hum.

. CCD T = -100.4

390 0 50 1024 4 1 CCD FMT

LST End	LHA End Counts	Exposure	Seeing	REMARKS
		4/7		filter 2
		4		
	1014	720	3-4"	
		4		
		0		
		4		
	2700	600		
	2700	600		
		4		
		4		
	1455	600		
	1700	600		
		4		
		4		
	7080	300		Max 4.6 K Vel std
		4		

MPG 3

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 26/27

Observer Lu / T_n

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.	LST End
CC54882	BIAS(4)			CASS CCD	5184			23 44		1	
83	comp		1900							16	
84	HD144579	16 01 30	39 24 00			dG8	6.66	23 50 43		17	
85	comp									18	
CG 81270/75	HD144579	"	"			Above	3064	slit			
CC54886	Comp		1900							18	
87	HD109247	12 28 12	75 52 00			F2	8.2	00 14 11		19	
88	Comp									20	
89	HD109247	"	"			"	"	00 37 05		21	
90	comp									22	
91	BIAS(4)							00 58		1	
92	comp		1900							22	
93	HD141990	15 46 34	38 09 00			G5	8.7	01 03 43		23	
94	"	"	"			"	"	01 15 30		24	
95	"	"	"			"	"	01 26 52		25	
96	comp									26	

Dome Temp. H

Focus _____

Dome Temp. H

Dome Temp./Hum.

12.1/49.8

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

196

Focus

6.75

Transparency Conditions

fine - Hazy

Dome Temp./Hum.

CCD T = -100.4°C

LST End	LHA End Counts	Exposure	Seeing	REMARKS
	1000V	0		
6		4		
7	2640	360	3"-2"	Vel std
18		4		
8		4x67ms 2x133ms +	2'-3'	Seeing test ALT 85° Dome SW, light N wind
11	1890	1204	2'-4"	
20		4		
21	1822	1200		
22		4		
1		0		
23		4		
23	490	680		
24	490	660		
25	496	600		
26		4		

PPG 4

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 26/27

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A. ¹⁹⁰⁰	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54897	HD 141990	154654	38 09 00	CAF CCD	5184	G5	8.7	01 38 46		27
98	"	"	"			"	"	01 49 14		28
99	"	"	"					01 59 43		29
54900	comp									5
01	BIAS(4)							02 11		1
02	HD 141990							02 12 13		6
03	"							02 22 34		7
04	"							02 32 55		8
05	comp									9
06	HD 141990							02 44 31		10
07	"							02 54 49		11
08	"							03 05 10		12
09	comp									13
10	HD 141990							03 16 48		14
11	comp									15
12	BIAS(4)							03 28		1
13/21	flat3x7									2

Dome Temp.

Focus

Dome Temp.

LST

End

Dome Temp. / Hum. 11.1 / 45.3

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

98

Focus 6.75

Transparency Conditions clear - hazy

Dome Temp. / Hum.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
23	545	600	2"-4"	
24	571	610		
29	630	601		
5		4		
1		0		
6	670	600		
7	660	600		
8	715	600		
9		4		
10	700	600		
11	730	600		
12	738	600		
13		4		
14	695	600		
15		4		
1		0		
2		7		filter 4 Max 13.2K

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Wed / Thurs

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 27/28

Observer Lu / Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC54922/23	In/outboard			CASS CCD	5184 1800/47.06					3/4
24	BIAS(4)				306x slit			20 22		1
25	Comp									5
26	HD102870	11 45 29	02 19 42			F9V	3.61	20 34 46		6
27	Comp									7
28	Comp	12 40 15	-18 48 00			F7V	9.5	20 46 28		8
29	HD SX CRV	"	"					20 58 50		9
30	SX CRV	"	"							10
31	Comp									10
32	Comp									10
33/35	HD141990	15 46 54	+38 09 00			G5M	8.7	21 16 39		11/12
36/37	comp, BIAS(4)							21 50		13
38/40	HD141990							21 50 38		14
41	comp									15
42/44	HD141990							22 33 21		16
45	Comp									17
46/47	HD141990							22 56 08		18

Dome Temp.
Focus
Dome Temp.

LST
End

Dome Temp./Hum.

19.2/54.4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

200

Focus

670

Transparency Conditions

clear

Dome Temp./Hum.

CCP T = -100.5°C

390 0 50 1024 4 1 CCD FMT

LST End	LHA End Count	Exposure	Seeing	REMARKS
3/2		4/7		↑
4		0		filter 2
5	1000 V	4		
6	23 K	200	1.2"	trailed
7		4		
8	530	721		
9	475	773	2"	
10		4		
11		4		
12	1030	600 X 3	1.2"	
13		4/0		
14	1230	600 X 3		3x
15		4		
16	1230	600 X 3	1"	3x
17		4		
18		600 X 2		

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Wed/Thurs

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 27/28

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54948	Comp				5184A					19
49	BIAS(4)							23 18	22	19/1
50	Comp									19
51/53	HT Vtr	13 46 07	05 06 57			G0	7.6	23 22 21		20
54	comp									21
55/57	HT Vtr							23 55 33		22
58/59	comp/BIAS(4)							00 27		23/1
60/62	HT Vtr							00 28 54		24
63	comp									25
64/65	HT Vtr							01 01 29		26
66	comp									27
67	BIAS(4)							01 23		1
68	Comp									27
69/71	HD 141990	15 46 54	38 09 00			G5	8.7	01 28 30		28
72	Comp									29

Dome Temp.

Focus 6.7

Dome Temp.

LST
End

Dome Temp./Hum. $+18.3^{\circ}\text{C}$ 57.5%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

202

Focus 6.70

Transparency Conditions

clear

Dome Temp./Hum.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
18		4		
19		0		
19		4		
20	2350 ⁺³	600x3	1.2"	
21		4		
22	2270	600x3		
23		4/0		
24	2100	600x3		
25		4		
26	1860	600x2		
27		4		
28		0		
28		4		
28		600x3	1"	
29		4		

Dome Temp./Hum. $+17.2^{\circ}\text{C}$ 5758H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

284

Focus 6.70

Transparency Conditions Hazy a wind NW increasing

Dome Temp./Hum. $+17.0^{\circ}\text{C}$ 5538H

LST End	LHA Exp End 1000V 900	Exposure	Seeing	REMARKS
6	1000	600x3	1.3"	
7		4s		
1		0		
8	900	600x3		
9		4		
9		4		
10	3310	360		Max 3K std Vel
11		4		
11		4		
12	3280	300		std Vel
13		4		
13		4		
14	9.8K	300		trailed. Max 7K
15		4		
1		0		
2		7		filter 7 13.2K \rightarrow 12.9K

Dome Temp. / Hum. 23.3°C 57.5%
208

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 665

Transparency Conditions

Hazy

Dome Temp. / Hum.

Engelers carefully acclimatized after long previous non-usage

LST End	EMR End Exp. meta	Exposure	Seeing	REMARKS
4.5		3/7		focus Test
5		0		
6	1000V	4 sec		
7	10K	786	1.3"	Telluric Std - Tel East side G8Kmax
8		4s		
9		4s		
10				
11	1578	600	2-3	
12	1594	606		
13				
14	14V 1320V			
15	3.2K	1800	2"	
16				
17	3.3K	1889		
18		4		
19				
20	2.9K	1805		
21		4		

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UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Thurs/Fri

Date 1998 MAY 28/29

Observer Kap/Bra/Ta

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	SP Filter	MV Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC550019	BIHS (4)				5894A			2259		1
20	Comp									18
21	TYC 4152 370	11 0717	+652109				1027	230337		19
22	Comp									20
23	TYC 4152 370	"	"					233555		21
24	Comp									22
25	BIHS (4)							000859		1
26	Comp									7
27	TYC 4145 284	11 0107	+622416					001405		8
28	Comp									9
29	Comp									10
30	HD 121409	13 5010	+541313			HOE	5.70	005000		11
31	Comp									12
32	Comp									12
33	HD 177724	19 0649	+134253					011103		13
34	Comp									14

Dome Temp.

Focus 60

Dome Temp.

LST

End

Dome Temp./Hum. +21.6° 61.9%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

258

Focus 665

Transparency Conditions Hazy - part cloudy

Dome Temp./Hum.

LST End	CMK End 1320 V	Exposure	Seeing	REMARKS
1				
19				
19	4K	1800	2-3"	
20				
21	4.8K	1846		
22	4.8K	1846		
1		0		
F		4		
8	2.8K	1573		cloud at end Eustone of pair; sep 2.1' $\Delta\alpha$ - 00 00 40 6.8 - 00 01 00 @ 5.22 W
9		4		
10		4		
11	4.9K	696	2-3'	Telluric std in cloud. 1.178 Air mass
12		4		
12	1060V	4		Tel west side now; Telluric std
13	10K	992	3"	6K MAX
14		4		

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THURS / FRI

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 28/29

Observer HI group / TH

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC55035	BIAS (9)				5894A			01 29		1
36	Comp									16
37	TYC 386622	2000 16 5644	+52 3346					01 3735		16
38	Comp									17
39/48	FLATS x10					Filtered 4				29
	OMIT	CC55049 - next night								

Dome Temp. / h

Focus /

Dome Temp.

LST

End

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Jason Clark

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FRI / SAT

Date 1998 MAY 29/30

Observer

[HI]/Gld/Jac

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CA Emission	Filter	mV Temp.	Starting Time +T EST	Ending Time UT	P.H.
CC55049	BIAS(4)			250u	5894A			2016		1
50/51	Inbound/out			tegrating	51.58°					3/4
52	Comp		1900							5
53	HD 120315	134336	+494845			0.640		203403		6
57	"	"	"							6
59	"	"	"					203830		7
55/56	Comp									8
56	Comp		2000			NO removed				9
58	Tyc 3816-150	10 3344	+532951				6.5	205303		10
59	Comp									11
60	Comp		2000							12
61	TYC 3816-999	10 3042	+530803				11	200932		13
62	Comp									14
63	TYC 3816-999	"	"					214122		15
64	Comp									16
65	BIAS(4)							2220		1

213

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp./Hum. +21.0°C 68.4%RH

Focus Transparency Conditions *Fine*

Dome Temp./Hum.

LST End	LST End Exp meter	Exposure	Seeing	REMARKS
1		0		
34		3/7		
5	1000V	4		
6	18K	96		7.8K max
6	23K	172		7K written later.
7	35K	188		16K max.
8		4		
9	1320V	4		
10	63K	618		3.8K max
11		4		
12		4		
13	3822	1800	2-3"	
14		4		
15	7K	2059		
16				
17				

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 May 29/30

Observer [HI] T₉

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	MV Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC55066	Comp		2000		5894A	#3 Fear				17
67	TYC 4151-83	10 50 58	+66 32 19					22 21 39		18
68	"	10 50 50	66 32 9					22 31 58	ditto ✓	18
69	Comp									19
70	Comp		2000							19
71	TYC 4151-488	10 53 22	+66 31 01					22 49 08		20
72	Comp		2000							21
73	TYC 4151-488	10 53 22	66 31 01					23 22 25		21
74	→ B17314)									22
75	Comp									23
76	Comp		2000							24
77	TYC 4149-325	11 03 37	+62 57 12				9.8	00 01 56		25
78	"	✓	✓					00 22 27		26
79	Comp									27
80	Comp									24
81	TYC 4149-1382	11 04 31	64 05 13					00 47 12		29
82	Comp									5

Dome Temp. 1

Focus 6

Dome Temp.

LST

End

Dome Temp. / Hum. $+18.7^{\circ}\text{C}$ 64.4% UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

24

Focus 6.65

Transparency Conditions *Fine*

Dome Temp. / Hum.

LST End	UAA End	Exposure	Seeing	REMARKS
17	1320V	45		
18	7190	600S		
18	9.8K	799	3.4"	
19		4		
19		4		
20	3371	1900S		
21		4		
22	2103	1805S		
23		4		
24		4		
25	"	1200	3.4"	SE one of close pair
26	404K	1208		
27		4		
28		4		
29	4082	1800		
30				

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORYDate 1998 May 29/30 Observer _____ Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time 251	Ending Time UT	P.H.
CL 55083	comp									6
84	tyc 4149-1382	11 04 31	64 05 13					01 22 58		7
85	comp									8
86	comp									9
87	tyc 4152-26	11 03 22	66 01 30					01 56 19		10
88	comp									11
89	tyc 4152-26	11 03 22	66 01 30					02 27 41		12
90	comp									13
91	comp									14
92	tyc 3866-22	16 56 44	52 33 46					03 01 58		15
93	comp									16
94	comp									17
95	HD 173667	18 41 21	20 27 02					03 28 30		18
96	comp									19
97	comp									19
98	HD 22724	19 00 49	13 42 53					03 35 55		20

Dome Temp./Hum. 16.1 C/40.5H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

216

Focus 6.65

Transparency Conditions Fine

Dome Temp./Hum.

LST End	LMA End	Exposure	Seeing	REMARKS
6		4		100 bias (4)
7	4.11k	18005	4"	101-106 flats x 6 filter + 4s exp.
8		4		107-114 bias
9		4		
10	3987	18005		
11		4		
12	3254	17065	10"	
13		4		
14		4		
15	2525	17200	8"	
16		4		
17	1020V	4		
18	9.8k	213		
19		4		
20		4		
21	17k	146		H = 51.8

214

Sun / Mon

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 31 / June 1

Observer MKI / Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	C8 Emulsion	SP Filter	MV Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC55 #17/18	In board / out board				5184A					3/4
19	Comp	1900				#2 NO FOAM				5
20	HD 110834	12 39 44	+44 39 01			F5	6.22	20 39 45		6
21	Comp									7
22	B/H S(4)							20 47		1
23	Comp	1900								8
24	HD 1021870	11 45 29	+02 19 42			F9V	3.61	20 51 35		9
25	Comp									10
26	Comp	2000								11
27	HT Vir	13 46 07	+05 06 57			G0	7.16	21 01 48		12
28	Comp									13
29	Comp	1900								14
30	HD 95660	10 57 24	+30 58 00					21 21 39		15
31	n							21 34 36		16
32	Comp									17
33	B/H S(4)							21 48		1

Dome Temp.

Focus 6

Dome Temp.

LST

End

Dome Temp./Hum. $+15.5^{\circ}\text{C}$ 63.2%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

218

Focus 6.70 Transparency Conditions *Fine but gusty*

Dome Temp./Hum.

390 0 50 1024 41 CCDENT

LST End	LHA Exp End 1000V	Exposure	Seeing	REMARKS
3		1/7		focus Test
5		4		7.7K ADU max
6	3K	365	4.6"	1.5K " "
7		4		
1		0		
8		4		
9	11K	190	5"	Trailing std vel 5.5K max
0		4		
1		4		
2	2.3K	813		1.3K
3		4		
4		4		
5	1K	750	3-7"	
6	940	926		
7		4		
		0		

219

Pg #2 Sun/Mon

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 31 / June 1 Observer Tn

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	SP Filter	MU Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC65 7 34	HD 95 660	10 57 24	+30 58 00		5184A					18
35	"	"	"					22 02 30		18
36	Comp									19
37	Comp									19
38	HD 103095	11 47 13	+38 26 10			G82p	675	22 17 16		20
39	Comp									21
40/47	FLATS x 8					ND5 Tungsten				21
48	BINS(4)							22 57		1
	Comp					ND4		FeAr		22

Dome Temp.

Focus 6

Dome Temp.

LST
End

Dome Temp./Hum. +12.8°C 84.5% H UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

220

Focus 6.70

Transparency Conditions Fine

Dome Temp./Hum.

CCD T -100.4°C

LST End	LHA Exp End 1000 V	Exposure	Seeing	REMARKS
18		621	3-5"	
18	860	600	"	
19		4		
19		4		
20	51K	773	3-5"	std vel
21		4		
21		7		12.8K max
1		0		
32		4		After reopening

M
Pg #1

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 2/3 1998 Observer mki/sc/Tn Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	Filter	Temp.	Starting Time - UT. <u>yes</u>	Ending Time UT	P.H.
CC55149/50					5184A					1/2
51	Comp									3c
52	S92	19 41 03	2000 40 11 00						04:14:30	4c
53	S92							04:16:15		5c
54	Comp									5c
55	B/A5 x1									'
56	S92							04:57:23		7c
57	Comp									8c
58	S92							05:39:05		10c
59	B/A5 x1									11
60	Comp									12
61	S92							06:22:42		12
62	Comp									13
63	B/A5 x1							~ 07:01		14
64	Comp									14

Dome Temp. _____
Focus _____
Dome Temp. _____

LST
End

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. 23°

Focus 6.65

Dome Temp. / Hum. _____

Transparency Conditions SI HAZE
1st CCD5 use engineering

No	LST End	LHA End <i>Exposure</i>	Exposure	Seeing	REMARKS
112					
3					
4			905s		GPiB; so Readout error
5					
6					
7		HV 1320V			
8		1454	2141		
9					
10		1375	2254	2"	
11					
12			7s		
13		1600	2279		
14			4s		
15			0s		
16			4s		

923 p9 #2

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 2/3 Observer WKS/Sc/Ta Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	^{ca} Emission	Filter	Temp.	Starting Time UT ^{Yes}	Ending Time UT	P.H.
CC55165	HD 187691	19 46 14	²⁰⁰⁰ 40 09 55	CAS CCD	5184			07 04 10		14
66	Comp									15
67	Comp		¹⁹⁸⁰							16
68	HD 22268	23 34 48	+05 05 03					07 21 28		16
69	Comp									17
70	Comp		¹⁹⁰⁰							18
71	HD 1280	00 11 52	7 38 07 35					07 34 03		19
72	Comp									20
73	Comp		^{1989.03}							21
74	PVVu1	20 26 46	721 32 16					08 01 42		23
75	Comp									24
76	BIAS (4)									21
77	Comp		¹⁹⁰⁰							25
78	HD 14252	02 13 09	+28 10 52					08 20 20		26
79	Comp									27

Dome Temp. _____

Focus _____

Dome Temp. _____

LST
End

26

Dome Temp. / Hum.

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

224

Focus

Transparency Conditions

Fine

Dome Temp. / Hum.

+17.6°C 64%RH

LST End	LHA End	Exposure	Seeing	REMARKS
	Exp. done 1000V 7.8K	241		
4		4		
15		4		
16	135K	198		10K AD4 max
17		4		
18		4		
19		183		
20				
21	1320V	45		
22	874			
23		45		
24		0		
25		45		
26	26800	402		3.4 K max
27		45		

225

#3

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 2/3

Observer _____

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.	LST End
CC55/80	Comp		1900							28	
↗ 81	HD 15385		note switch					08 3419		29	
↘ 81	Comp									30	
83	Comp									31	
84	HD 225451	23 354	+36 0957					08 4702		31	
85	Comp									31	
86	FLATS	X	repeat flat. later?			ND4					
86	BIAS(4)										
87/96	FLATS x 10					ND4					
96											

Dome Temp. _____

Focus _____

Dome Temp. _____

LST
End

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. _____

Focus _____

Transparency Conditions *smo cloud*

Dome Temp. / Hum. _____

No.	LST End	LHA End	Exposure	Seeing	REMARKS
28		1000V	45		
29		2.8K			
30			45		
31			45		
32		4K			
33			45		
			75		12K AD4
			75		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

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Date 1998 Jul 04/05

Observer Vnk/Blg/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC55197/98	In/out board			CAS3 CCD	6600					36
CC55199	BIAS(4)				1800/5635			23:54		1
260	comp									5
01	HD 187691	19 46 14	10 09 55			F8V	5.11	23 59 35		6
02	comp									7
03	comp									7
04	HD 229414	18 46 18	12 14 00			F8	10	00 17 50		8
05	comp									9
06	comp									9
07	HD 347827	17 56 49	19 15 00			F8	10	00 42 33		10
08	comp									11
09	HD 347827	"	"			F8	10	01 20 20		12
10	comp									13
11	BIAS(4)							01 53		1
12	HD 347827	"	"			"	10	01 55 31		14
13	comp									15

Dome Temp. H
Focus 6
Dome Temp. H

LST
End

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

228

Dome Temp./Hum.

17.1/83.5

Focus

6.65

Transparency Conditions

clear

Dome Temp./Hum.

000 T - 101.4 °C

395 0 50 1024 4 1

LST End	LHA End	Exposure	Seeing	REMARKS
	counts	4/6		NO 3. source FeAr.
		0		
		4		
	2000	117		
		4		
		4		
	290	1081	3"	
		4		
		4		
	360	1800	2"-3"	
		4		
	338	1823		
		4		
		0		
	300	1800		
		4		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Jul 04/05

Observer Vrk/Blg/Lu Julian Day _____

229
PG 2

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	M _{eq} Temp.	Starting Time UT	Ending Time UT	P.H.
CL55214	comp			CASS CCD	6600					15
15	HD 354511	19 56 35	15 31 00			FG	10	02 33 29		16
16	comp									17
17	BIAS(4)							03 05		1
18	comp									17
19	BD+3 4437	20 50 13	03 39 08			FG	8.8	03 09 46		68
20	comp									19
21	comp									19
22	HD 222368	23 34 48	05 05 03			F7	4.13	03 27 46		20
23	comp									21
24/30	flat3									2
31	BIAS(4)							03 37.		101

Dome Temp. _____

Focus _____

Dome Temp. _____

LST

End

PG 1
27UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Jul 05/06

Observer Vnk / Blg / Lu

Julian Day

EST

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp	Starting Time UT	Ending Time UT	P.H.
cc55232/33	In/outboard			CASS CCD	6000 1800/56.35					3/4
34	BIAS(4)							20 30		1
35	comp									5
36	HD156202	15 14 12	02 08 37			F8	5.0	20 47 50		6
37	comp									7
38	comp									7
39	HD 347827	17 56 49	19 15 00			F-G	10	20 58 21		8
40	comp									9
41	comp									9
42	HD 229414	18 41 18	12 14 00			F-G	10	21 34 16		10
43	comp									11
44	BIAS(4)							21 56		1
45	comp									11
46	HD145001	16 07 34	17 18 48			G5	5	22 05 57		12
47	comp									13
48	comp									13

Dome Temp.

Focus

Dome Temp.

LST
End

Dome Temp./Hum.

20.4 / 49.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

slightly

232

Focus

665

Transparency Conditions

clear - hazy - more hazy.

Dome Temp./Hum.

39.5 0 50 1024 4 1

CCD T -100.4°C

LST End	LHA End	Exposure	Seeing	REMARKS
		4/6		NO 3 Source A. - FeAr
		0		
		4		
	10K	240	2"	
		4		
		4		
	670	1804		
		4		
		4		
	475	1205		
		4		
		0		
		4		
	7000	320		
		4		
		4		

237 PG 2

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 05/06

Observer Vnk/Blg/Lu

Julian Day

EST

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
0255249	HD229680	18 45 54	15 49 00	CASS CCD	6600 1800/56,55	SP FG	11.1	22 19 26		14
50	comp									15
51	comp									15
52	HD154417	17 00 11	00 50 58			GOV	6.01	22 54 30		16
53	comp									17
54	BIAS(4)							23 05		1
55	comp									17
56	HD356104	19 52 48	10 46 00			FG	1.0	23 10 50		18
57	comp									19
58	comp									19
59	HD354511	19 56 35	15 31 00			FG	10.5	23 46 23		20
60	comp									21
61	BIAS(4)							00 18		1
62	comp									21
63	V572 Agl	19 57 27	00 25 00			FG	11.2	00 23 18		22
64	comp									23

Dome Temp.

Focus

Dome Temp.

LST

Erd

Dome Temp./Hum. 19.3 / 52.2

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

234

Focus 6.65

Transparency Conditions hazy

Dome Temp./Hum.

3950 50 1024 4 1

No.	LST End	LHA End Counts	Exposure	Seeing	REMARKS
4		197	1804	2"-3"	
5			4		
6			4		
16		7000	513		
17			4		
1			0		
17			4		
18		725	1800		
19			4		
19			4		
20		470	1799		
21			4		
1			0		
21			4		
22			2498		
23			4		

Dome Temp. / Hum.

17.3 / 60.7

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

236

Focus

6.65

Transparency Conditions

fairly cloudy

Dome Temp. / Hum.

No.	LST End	LHA End <i>counts</i>	Exposure	Seeing	REMARKS
23			4		
24		8.5K	369	2-3"	
25			4		
26			4		
27		620	1221		
28			4		
29		400	1798		
30			4		
1			0		
2			6		ND 5, source Tung.

232

Mon/Tues

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 6/7

Observer T_n / WxL

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC55282	DARK Determination series				0, 1, 5, 10, 30, 60 mins				with BIAS(4) Between each	
To CC55284										
A	Then Gain series,				CX 5100				ND0.6 + Regular ND #5	
CC55295-312	1, 2, 4, 8, 16, 32, 64, 96, 128 secs. +								3 x 128 sec DARKS	
	BIAS(4) Before and after.									
C	JULY 7/8	Repeat of Gain. BAT x 3						UT	02 01	
CC55325-75	BIAS(4), 1, 2, 4, 8, 16, 32, 48, 96, 128 sec,							BIAS(4)	3 x 128 sec DARK 02 18	
CC55376-426	SAME Repeat of Gain. BAT x 3				@ 400 0	200 1024 1	1	CCD FMT.		
CC55427	Running of Noise. BAT				@ 400 0	200 1024 1	1	CCD FMT		

Dome Temp.

Focus

Dome Temp.

LST
End

CCD

ND 0.6 +

Std. Power

Dome Temp./Hum. $+19^{\circ}\text{C}$ 75% H UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORYFocus _____ Transparency Conditions *closed for Tests Rain anyway*

Dome Temp./Hum. _____ A Group with 400 0 50 1024 4 1 CCD FMT

LST End	LHA End	Exposure	Seeing	REMARKS
	90 gain	- CCD T	To -100°C	using Batch noise.bat
	Ty rating	46.6°	1800 $1/4$ / min	using gain.bat Topup Done before this series started
	CCDT -100.5°C	(Done T $+18^{\circ}\text{C}$ H=92%) Had GPIB errors, so restarted capture. Reset HOUAICON		
				Repeat GAIN, BAT 3 should be ⁵¹ 48 frames
	ND 0.6 + regular ND #3	for FLATS	max of 3.5k ADU for 32 sec	Done T = -100.5°C @ 23:44 EST
	slit removed, gratings covered	CCDT @ -100.4°C	@ 0 EST	Done T $+18^{\circ}\text{C}$ 92% H

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pg #1

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 9/10

Observer Vnk/Blg/Tn

Julian Day

CIC

Plate No.	Object	R.A.	Declination	Inst.	^C Emulsion	^{MV} Filter	^{SD} Temp.	Starting Time UT <u>Yes</u>	Ending Time UT	P.H.
CC554 10/41	Inboard / OUTBOARD				4A28A IFA					3/4
42	BIAS(A)							0147		1
43	Comp					ND4	FeAr			5
44	HD 161868			1400		3.74	AD	015338		6
45	Comp									7
46	Comp			1400						8
47	HD 16549							020437		9
48	Comp									10
49	Comp BIAS(A)									11
50/56	BIAS(A) FLHTS x 7							IND 3 Tungsten		1
57	BIAS(A)							0446		2
58	Comp							0446		3
59	HD 191746							050557		4
60	Comp									5
61	Comp									6
62	HD 198183							052223		7

Dome Temp. 1

Focus 6

Dome Temp. 1

LST

End

206

Dome Temp. / Hum. +21°C 87.9/11

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

240

Focus 6.80

Transparency Conditions

Dome Temp. / Hum.

+50 0 50 100 4 1 CCDFMT

LST End	LHA End Exposure	Exposure	Seeing	REMARKS
3/4 T 20.6	6.80 set 1000 V			T rotating 25.85
5		4		
6	9.2K	1235	3.4"	14.8K max
7				
8				
9	1418	800s	5"	fainter stars @ 7 col #
10				
11				
12				
13				
14				
15				
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87				
88				
89				
90				
91				
92				
93				
94				
95				
96				
97				
98				
99				
100				

7 sec

Re booted cepheus and Auricom before starting again.

2050

592

5"

26K ADU max

6.4K

6.8K max

242

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. _____

Focus _____

Transparency Conditions _____

Dome Temp. / Hum. _____

No.	LST End	Exp End <i>Exp meter</i>	Exposure	Seeing	REMARKS
2		1320V	7s		
3					
4		~2000			[#14 Bly system]
5					
6			1170		#20 Bly system
7					
8					#7 Bly system
9					
10			1800		#12
11					
12					
13		~2000	600	4"	
14					
15					

249 #3

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 7/10

Observer Vnk/Bgl/pe/Tn

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
0554 78	Comp				44259	ND3	Felt			20
79	HD193702							08 11 38		21
80	comp									22
81	Comp									23
82	HD222173							08 22 02		24
83	Comp									25
84	Comp									26
85	HD7252							08 29 33		27
86	comp									28
87	Comp									29
88	HD214680							08 47 23		30
89	Comp (bias 4)									31
90	bias (4)									1

Dome Temp.

Focus

Dome Temp.

LST
End

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

244

Dome Temp. / Hum. _____

Focus _____

Transparency Conditions _____

Dome Temp. / Hum. _____

20	LST End	LHA End	Exposure	Seeing	REMARKS
20		<u>1320V</u>			
21		~2300	250		
22					
23					
24					
25					
26					
27		2100	510		
28					
29					
30		3100	<u>80 sec</u>		
31					
32					
33					
34					
35					

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Big Fri Tour 1st half

245
Pg#1
Fri / SAT

Date 1998 July 10/11 Observer VanK / Bly / Tu Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	MV Filter	SP Temp.	Starting Time UT	Ending Time UT	P.H.
CC 554 91/92	Inboard Low BOARD									1/2
93	Bias (4)							03 59		1
94	Comp				6600R	ND5	Felt			3
95	HD 161 868							040532		4
96	Comp									5
97	Comp									5
98	HD 178849							041948		6
99	Comp									7
500	Comp									7
501	HD 191746							043035		8
502	Comp									9
503	Comp									9
504	HD 198483							044609		10
505	Comp									11
506	Bias (4)							0449		✓

Dome Temp./Hum. $+17.1^{\circ}\text{C}$ 52% UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

246

Focus 6.80

Transparency Conditions s/ haze

Dome Temp./Hum.

Ex	LST End	LHA End	Exposure	Seeing	REMARKS
1/2		Exp. ends 1000V			-42.4° Targeting 1200 l/m ²
1					
3			4		
4		5.9K	.		10 K ADU max
5			4		
5			4		
6		3K	500 sec	2"	19.145 RHA, 'x in -15.5458 7 RA _{out} -186 3.8 ADU max
7			4		u ra -19.1445
7			4		ACUT-19.1443
8		2.2K	614	2 ³ -3"	3.6K ADU max
9					
9					
10					
11					
11					

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1958 July 10/11

Observer Vnk/Blg/Tn

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT <input checked="" type="checkbox"/>	Ending Time UT	P.H.
CC55507	Comp		1900		6600A					11
8	HD 206183							04 5612		12
9	Comp									13
10	Comp									14
11	HD 207538							05 1232		15
12	Comp									16
13	Comp with order separation							05 2652	end time.	17
14	HD 207538							05 2800	instr. broken	18
15	Comp									14
16	BIHS (4)							05 44		1
17	Comp									19
18	NGC 7128 # 14						V ₁₂ BO	05 51 59		20
19	Comp									21
20	NGC 7108 # 20						V ₁₀	06 2857		22
21	Comp									23
22	BIHS (4)							07 01		1

edit →
APPROX →

05 2652 end time.
05 2800 instr. broken

24X
pg 12

Dome Temp. _____
Focus _____
Dome Temp. _____

LST
End

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum.

Focus 6.80

Transparency Conditions OK

Dome Temp. / Hum.

No.	LST End	LHA ^{Exposure} End 1000V	Exposure	Seeing	REMARKS
4					
12		1679	620		
13			4		
14			4		
15		1890	600		2.5 K ADU max note Did not use order separation filters so FAR tonight
16			4		" " " " " "
17			4		OG 560 For comparison, GG 385 for stellar beam
18		1546	600		" "
19			4		" "
1			0		Both order separation filters removed, Peened not needed AT ALL.
19			4		
20		265	1875	3"	CCD = -10013 (still ok) <u>Strong Hα em</u>
21			4		
22		1450	1800		5.2 K ADU max
23					

Dome Temp./Hum. $+16^{\circ}\text{C}$ 57.1% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

250

Focus 6.80

Transparency Conditions Fine

Dome Temp./Hum. $+15.3^{\circ}\text{C}$ 58.7% H

365 0 50 1024 9 1 CCD FURT

LST End	LHA End	Exposure	Seeing	REMARKS
	1000V			1200 In / 42.4° (-100.3°C CCD Temp)
		45		
		45		
	650		3.4°	CCD T still -100.3°C
		45		
		45		
		45		13 at 700 00 28 Large sd ?? sd -00 00 36
		0		
		45		14.18K max
				Dewar just starting to warm up -99.9°C @ 04:15

25 p9#1

SAT / SUN

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

After SAT TOURS viewed M13

Date 1998 Jul 11/12

Observer Vnk/Blg/Tn

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	CA Emulsion	MV Filter	Temp.	Starting Time UT ✓	Ending Time UT	P.H.
cc55540/41	Inboard				6600A					3/4
42	B/H5(4)							0348		1
43	Comp					ND 5	FeAr			4
44	NGC 7128	#10				12.5		035846		5
45	Comp									6
46	NGC 7128	#15				12.5		043228		7
47	Comp									8
48	B/H5(4)							0508		1
49	NGC 7128	#6						051340		9
50	comp									10
51	NGC 7128	#11				13.0		054857		11
52	Comp									12
53	B/H5(4)	#2						0628		1
54	NGC 7128	#14				11.5		063037		13
55	Comp									14
56	NGC 7128	#5				13.3		070808		15

Dome Temp.

Focus 6"

Dome Temp.

LST

End

252

Dome Temp./Hum. +18.2°C 50%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6-76

Transparency Conditions Fine

Dome Temp./Hum.

365 0 50 1024 4 1 CCD Flat

LST End	LHA End 1822V	Exposure	Seeing	REMARKS
34				1200h / 42.4° Focus test
5	169	1805	2.3"	
6		45		
7	180	2014	2.3"	
8		45		
9	160	1840		
10		4		
4			3"	
1		4		
13	290	1804		
4		45		
5	170	2400		

SM
Py #2

SAT / Sun

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1948 Jul 11/12

Observer Vnk/Blg/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC55557	Comp				6600A					16
58	B145(A)							0750		1
59	Comp									16
60	HD 209481	21 58 43	+57 31 04					0756 02		17
61	Comp									18
62	Comp									18
63	HD 214923	22 36 28	+10 18 33					08 05 47		19
64	Comp	Comp								21
65	Comp	T. H. 1010								21
66	HD 222173							08 11 58		22
67	Comp									23
68	Comp									24
69	HD 19807					v=8		08 23 24		25
70	Comp									26
71	Comp									26

Dome Temp.

Focus 6

Dome Temp.

LST

End

Dome Temp./Hum. *17.3°C 50% H*

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Fine

284

Focus *6.76*

Transparency Conditions

Dome Temp./Hum.

LST End	<i>CFA X Exp net 1000V</i>	Exposure	Seeing	REMARKS
16		4		
1		0		
4	<i>4</i>	4		
17	<i>5K</i>	'		<i>8 K ADU max</i>
18	<i>5K</i>	4		
15		4		
19	<i>5K</i>	51		<i>6 K max</i>
2		4		
3		4		
22	<i>5.2K</i>	<i>27</i>		<i>7.1 MAX</i>
23		<i>4</i>		
24		4		
25		4		
26		4		
27		4		

PG 1
57

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Jul 13/14

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CA Emulsion	MV Filter	SP Temp.	Starting Time UT	Ending Time UT	P.H.
CC555 ^{82/83}	Inp/out Board		306u	slit	6000A					1/2
84	Comp									3
85	HD 123782					525	m210ab			4
86	Comp									5
87	BIAS(4)									1
88	Comp									6
89	HD 121409					5.7	AOV	020554		7
90	Comp	At pos'n of SN 9807			770u	slit		Not done		8
91										
CC555 92	BIAS(4)		306u	slit	6600A					1
92	Comp									5
93	HD 177441	18 59 36	01 09 00			8-9	K2	0343 21		6
94	comp									7
95	comp									7
96	HD 178359	19 03 12	01 09 00			7	F5	0403 59		8
97	comp									9

Dome Temp. h
Focus
Dome Temp. h

LST
End
239C 666

Dome Temp. / Hum. 24° 57.8H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus _____

Transparency Conditions clear with some thin clouds

Dome Temp. / Hum. _____

LST End	CFA End Exposure	Exposure	Seeing	REMARKS
12	1000V	4/7		
3		45		
4	700			Std Vel 14K ADU
5		4		
6		8		
7		4		
8			1"	Telluric Std 10K max
9		4		
1	22.9°C 6.62 Set for focus			1800ln / 58.35 Tgrating ND=3
5		4		
6	1170	900		
7		4		
7		4		
8	1299	360		
9		4		

PG 2
 ♂

Mon/Tues

UNIVERSITY OF TORONTO
 DAVID DUNLAP OBSERVATORY

Date 1998 Jul 13/14

Observer Lu/Tu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Mag Filter	SP Temp.	Starting Time UT	Ending Time UT	P.H.	LST End
CC55598	comp								04:16:24	9cs	
99	HD 187691	19 46 14	10 09 55			5.1 APRO	F8 Time	✓ 04:17	exp. + 1/1000	10cs	
600	Comp									11cs	
01	BIAS (4)							04:29		1	
02	comp									11	
03	HD 187921	19 47 24	27 12 00			7.2	G2	04:33:09		12	
04	comp									13	
05	comp									13	
06	HD 227464	20 00 36	33 50 00			8.9	F8	04:48:07		14	
07	comp									15	
08	comp									15	
09	HD 196028	20 29 36	46 16 00			9.4	F8	05:09:02		16	
10	comp									17	
11	comp									17	
12	RD + 39 4379					10	F5	05:49:40		18	
13	comp									19	

20572000
 054581
 401039

Dome Temp. H
 Focus 6
 Dome Temp. H

260

Dome Temp./Hum. 22.3/61.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.62

Transparency Conditions fine, some cloud in south

Dome Temp./Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
9		75		
	786	262		CC05 glitch caused loss of most header info.
		4		
		0		
		4		
12	2703	362		
13		4		
13		4		
14	1002	914		
15		4		
15		4		
16	830	1678	2"	
17		4		
17		7		
18	609	1662		
19		4		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

pg#3
761

Mon/Tues

Date 1978 July 13/14

Observer WxL/Tn/Pe

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	mag Filter	SP Temp.	Starting Time UT	Ending Time UT	P.H.
CC551a	comp bias(4)							0620		19
15	comp									19
16	BD+42 2935	21 00 06	42 35 51			8.8 -10	FS	062518		20
17	comp									21
18	comp									21
19	HD 204867	21 26 18	-06 00 40			2.91	GOT6	065426		22
20	Comp									23
21	comp									23
22	HD 222368	23 34 48	05 05 03			4.13	FTV	07:01:25 OK! (check header)		24
23	comp									25
24	BIAS(4)							0707		1
25	flats comp									28
26	CH Cyg	19 24 12	50 13 00			7.91	M6	07 15		26
27	"	"	"					071956		27
28	comp									28
29/35	flats									2

Dome Temp. _____
Focus _____
Dome Temp. _____

LIST
End

Dome Temp. / Hum.

21.0 / 64.8

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

262

Focus

6.62

Transparency Conditions

fine

Dome Temp. / Hum.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
19	1000V	0		
19		4		
20	1007	1362	1.2"	
21		4		
21		4		
22	8530	60		std vel
22		4		
23		4		
24	9389	192		std vel
25		4		
25		0		
25		4		
26	990	192		
27	1004	202		
27		4		
27		8		105 \approx 5ke T, 12.5K max

pg #2 Mon / Tues
263

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 13/14 Observer [hm pgm] WXL/Tn Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	MV Filter	SP Temp.	Starting Time UT ✓	Ending Time UT	P.H.
CC55636	Comp			CASS CCD	6400A			07-		5
37	HD 203156	21 15 23	+37 48 55		§			07 56 39		6
38	comp									7
39	Comp									7
40	HD 222368	23 34 48	+05 05 03			4.13	F7V	08 11 29		8
41	comp									9
42	BIAS (4)							08 14		1
43/ 49	flats x 7									2
50	comp									9
51	Comp HD 30282							08 26 24		10
52	comp									11
53	comp									11
54	HD 22484	03 31 46	+00 05 04			4.28	F9IV-V	08 43 00		12
55	comp									13
56	BIAS (4)							08 53		1

Dome Temp.
Focus
Dome Temp.
LST
End

264

Dome Temp./Hum. +20.3°C 61.5%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.62

Transparency Conditions Hazy

Dome Temp./Hum.

LST End	LHA Exposure End 1000 V	Exposure	Seeing	REMARKS
5		4		1800 μ /mm Tgrating 54.93 306 μ slit. ND 4
6	5452	387	1.2"	
7		4		
7		4		
8	10480	183		
9		4		
1		0		
2		8		ND 5 Max 12.5K
3		4		
10	900	704	2.4	@ 0610E Δd -00 00 07 -00 01 12
11		4		
12		4		
12	1547	482		@ 04 44E Δd -00 00 13 -00 01 45
13		4		
1		0		

Dome Temp./Hum.

25.6/55.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

26

Focus

6.60

Transparency Conditions

some clouds

Dome Temp./Hum.

3950 56 1024 41

24	LST End	LHA End	Exposure	Seeing	REMARKS
1			0		
5			4		ND 2
6		536	301		
7			4		
8		2635	602		
9			4		
9			4		
10		1500	670		
11			4		
11		7009	307		std vel
13			4		
1			0		
2			8		ND 4 Max 12.6K

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

pg 2
267

Tues / wed

Date 1998 July 14/15 Observer WXL/Tn (Service) Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	CD Emission	MV Filter	SP Temp.	Starting Time UT	Ending Time UT	CI P.H.
CC556 780	Inboard / outboard		Agr. Taurus	CHSS CCD	6600A	ND#3	FeAr			
78	Comp		1900							
81	HD 136202	15 14 12	+02 08 37			5.06	F8IV-V	03 04 29		6 cr
82	Comp									7 cr
83	Comp		1900							7 cr
84	HD 177441	18 59 36	+01 09 00			8.5	K2	03 15 59		8
85	Comp									9
86	Comp									9
87	HD 198359	19 03 12	01 09 00			7.0	F5	03 35 26		10
88	Comp									11
89	BIAS(4)							03 45		1
90	Comp									11
91	HD 187921	19 47 24	27 12 00			7.2	G2	03 51 51		12
92	Comp									13
93	Comp									13
94	HD 227463	20 00 36	33 50 00			8.9	F8	04 06 03		14

Dome Temp.

Focus 6

Dome Temp.

LST
End

Dome Temp./Hum. +24.8°C 58.6%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

268

Focus 6.62

Transparency Conditions Hazy

Dome Temp./Hum. +23.9°C 62.2%RH

395 0 50 1024 4 1 CCD FMT

C m	LST End	LHA End <i>MOV Exposed</i>	Exposure	Seeing	REMARKS
					focus test <i>grating 56.35 1800 l/mm</i>
			45		
6		6420	319	1.2'	std vel
7			45		
7			45		
8		1210	903	1'	SW one of PAIR
9			4		
9			4		
10		1483	483		
11			4		
11			0		
11			4		
12		2606	479		
13			4		
13			4		
14		2343	2574	1.2'	

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

770

Dome Temp. / Hum.

Focus 662Transparency Conditions Hazy to part cloudy

Dome Temp. / Hum.

No	LST End	LHA End 1000 ✓	Exposure	Seeing	REMARKS
15			4		
16			0		
17			4		
18		1 K	1589	1.5"	
19			4		
20			4		
21		1258	149		<u>Almost saturated @ Hd</u>
22			4		
23			4		
24		848	1894	2"	
25			4		
26			0		
27			4		
28		1001	1204	1"	
29			4		
30			4		

27th #1

Wed/Thurs

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 15/16

Observer Vnk/Blg/Tm

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	MU Filter	SP Temp.	Starting Time UT ✓	Ending Time UT	P.H.
CC 557 ^{2A} / ₂₅	Inboard (out board)				6608A	ND3	FEAR			3/4
26	BIAS(4)									1
27	Comp					ND4	"			1
28	HD 176202	151412	+020837			5.06	FB ^{IV}	033711		5
29	Comp									6
30	Comp									6
31	HD 347827	191500	+175649					040909		7
32	Comp									8
33	BIAS(4)							0441		1
34	Comp									9
35	HD 229414	181400	+101400					044645		10
36	Comp Only FOR next star (other lost)									11
37	HD 229680							052257		12
38	Comp									12
39	Comp									13
40	HD 22943	22 22 1900 0550 46	+1139					055359		14

Dome Temp. / Hum. $+25.6 \pm 0.33$

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

274

Focus 062

Transparency Conditions Hazy - increasing cloud

Dome Temp. / Hum.

395 0 50 1024 4 1 CCD FWT

Note that @ start of night, Focus switch stuck on, result Hel in
REMARKS change of Telescope Collimation

LST End	LHA End 1000 V	Exposure	Seeing	REMARKS
3/4		4/6		focused 1455 Focus 2628
1		0		1800 h/min 56.35°
1		45		
5	4.4K	3/95	2"	5.4 K 0.14 mag
6		45		
6		45		
7	590	1807		
8		45		
1		0		
9		45		
10	455		1.2"	
11		45		
12	250			
12				
12				
12				
12				

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

PGX
2/17

1998 Jul 16/17

Vnk/Blg/Lu

Date

Observer

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC55750	BIAS(4)			CASS CCD	6600 1800/56.35			01 47		1
51	comp									5
52	HD 144579	16 01 30	39 24 00			d98	6.66	01 56 07		6
53	comp									7
54	HD 247827	17 56 49	19 15 00			FG	10	02 16 31		8
55	comp									9
56	comp									9
57	HD 229414	18 41 18	12 14 00			FG	10	02 59 50		10
58	comp									11
59	BIAS(4)							03 31		1
60	comp									11
61	HD 229680	18 45 54	15 19 00			FG	10.5	03 39 38		12
62	comp									13
63	comp									13
64	V383 Cyg	20 25 07	33 48 00			FG	10.9	04 18 38		14
65	comp									15

Dome Temp.

Focus

Dome Temp.

LST

End

278

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. 23.8 / 75.1

Focus 6.60

Transparency Conditions

OK - hazy

Dome Temp. / Hum.

395 0 50 1024 4 1 CCD/FMT

LST End	LMA End Counts	Exposure	Seeing	REMARKS
		0		
		4		source A (FeAr), ND 3
	3005	387	2-3"	std vel.
		4		
	650	1895		
		4		
		4		
	587	1799		OK -12 ^s , 08 +1 ^d
		4		
		0		
		4		
	321	1801		
		4		
		4		
	403	1803		
		4		

PG 2
27

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Jul 16/17

Observer Vnk/Blg/Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CL55766	BIAS(4)							04 50		1
67	comp									15
68	HD 186791	19 46 03	10 36 07			K3II	272	04 55:		16
69	comp									17
70	comp									17
71	HD 187691	19 50 49	10 24 15			F8V	5.11	05 02 49		18
72	comp									19
73	comp									19
74	IX Cas	00 04 51	50 14 06			F-G	11	06 00 45		20
75	comp									21
76	comp									21
77	BD +17 4572	21 19 21	17 51 00			F-G	9	06 26 27		22
78	comp									23
79	BIAS(4)							06 53		1
80	comp									23
81	BD +69 1251	22 13 25	70 15 05			F8V	9	07 00 41		24

Dome Temp. _____

Focus _____

Dome Temp. _____

LST

End

Dome Temp. / Hum.

21.7 / 75.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

280

Focus

6.60

Transparency Conditions

partly clear. - cloudy

Dome Temp. / Hum.

LST
EndLHA
End
counts

Exposure

Seeing

REMARKS

0

4

6060

166

4

4

10K

421

4

4

56

806 sec

clouds, exposure terminated

4

4

699

1503

4.5"

clouds come & go.

4

0

4

562

1371

Early Type star

PG 1
207

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Jul 17/18

Observer Vnk/Blg/Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Eiter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC 55797	BIAS(4)			CASS CCD	6600 1800/56/55			04 12		1
98	comp									1
99	HD154417	17 00 11	00 50 58			GOV	6.01	04 16 53		6
55800	comp									7
01	comp									7
02	HD229414	18 41 18	12 14 00			FG	10	04 29 31		8
03	comp									9
04	comp									9
05	HD229680	18 45 54	15 49 00			F-G	10.5	04 53 40		10
06	comp									11
07	BIAS(4)							05 32		1
08	comp									11
09	V572 Agl	19 57 27	00 25 00			F-G	11.2	05 37 00		12
10	comp									13
11	comp									13
12	HD347827	17 56 49	19 15 06			F-G	10,	06 18 47		14

Dome Temp.

Focus

Dome Temp.

LST
End

Dome Temp. / Hum.

18.4 / 61.7

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

289

Focus

6.63

Transparency Conditions

fine

Dome Temp. / Hum.

3950 50 1024 4 1.

LST End	LHA End counts	Exposure	Seeing	REMARKS
		0		
		4		ND 3 FeAr
	5006	506		08 +20s 08 12 ^m for normalization
		4		
		4		
	489	1204	3-4"	
		4		
		4		
	322	2182		
		4		
		4		
	261	1883		
		4		
		4		
	359	1804		

PG 2

UNIVERSITY OF TORONTO
 DAVID DUNLAP OBSERVATORY
 Date 1998 July 17/18 Observer Vnk/Blg/Lu Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Comp.	Starting Time UT	Ending Time UT	P.H.
CL55813	comp				b600					15
14	HD347827	17 56 49	19 15 00			F-G	10	06 51 02		16
15	comp									17
16	HD347827	17 56 49	19 15 00			"	"	07 23 55		18
17	comp									19
18	BIAS(4)							07 46		1
19	HD347827	17 56 49	19 15 00			"	"	07 47 06		20
20	comp									21
21	HD347827	"	"			"	"	08 09 16		22
22	comp									23
23	BIAS(4)							08 35		1
24	comp									23
25	BD+17 4572	21 19 21	17 51 00			F-G	9	08 37 57		24
26	comp									25
27/33	flats									2

Dome Temp. _____
 Focus _____
 Dome Temp. _____

LST
 End

Dome Temp. / Hum.

16.9/66.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

286

Focus

6.63

Transparency Conditions

clear

Dome Temp. / Hum.

LST
EndLMA
End

Exposure

Seeing

REMARKS

4

379

1804

3"-5"

4

260

1203

4

0

232

1203

4

228

1203

4

0

4

609

903

4

8

ND 5 Max 12.5K

PG 1
26AUNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Jul 18/19

Observer VanK/Blg/Lu Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC 55834/35	in/out board			CASS CCD	6600 1800/56.35					3/4
36	BIAS(4)							03 51 40		1
37	comp									5
38	HD 347827	17 56 49	19 15 00			F-G	10	03 59 23		6
39	comp									7
40	comp									7
41	HD 229414	18 41 18	12 14 00			F-G	10	04 29 13		8
42	comp									9
43	BIAS(4)							04 51		1
44	comp									9
45	HD 229680	18 45 34	15 49 00			F-G	10.5	04 57 28		10
46	comp									11
47	comp									11
48	V733 Aq1	19 52 48	10 46 00			F-G	10.	05 41 40		12
49	comp									13
50	BIAS(4)							06 03		1

285

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp./Hum. 20.2/54.8

Focus 6.63

Transparency Conditions clear

Dome Temp./Hum. ccoT = -100.4

395 0 50 1024 4 1.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
1/4		4/6		ND 3 source FeAr
1		0		
5		4		
6	520	1503	1"-2"	
7		4		
7		4		
8	657	1205		
9		4		
1		0		
9		4		
10	345	1831		
11		4		
11		4		
12	586	1203		
13		4		
1		0		

PG 2
289

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 18/19

Observer Nnk/Blg/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC55851	comp				6600					13
52	K1 Aq1	19 56 35	15 31 00			F-G	10.2	06 11 20		14
53	comp									15
54	comp									16
55	V572 Aq1	19 57 27	00 25 00			F-G	11	06 47 22		17
56	comp									18
57	BIAS(4)							07 19		1
58	comp									18
59	BD+17 4572	21 19 21	17 51 00			F-G	9	07 26 00		19
60	comp.									20
61	comp									20
62	BD+72 1020	22 09 40	73 23 27			F-G A	8.3	07 51 59		21
63	comp.									22
64	comp.									22
65	Tycho 4471.2	22 09 08	72 53 05			?	9.8	08 07 15		23

Dome Temp.

Focus

Dome Temp.

LST
End

4500 sec

Dome Temp./Hum. 18.8/58.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

290

Focus 6.63

Transparency Conditions Clear

Dome Temp./Hum.

LST End	LHA LPO counts	Exposure	Seeing	REMARKS
13		4		
14	1500 sec	521	1.2"	
15		4		
16		4		
17	384	1804		
18		4		
19		0		
20		4		
21	923	900		
22		4		
23	1198	601		
24		4		
25		4		
26	504	927		

Dome Temp./Hum. 18.7 / 58.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

292

Focus 6.63

Transparency Conditions Clear

Dome Temp./Hum.

CCDT -10.1

LST End	LHA End Counts	Exposure	Seeing	REMARKS
24		4		
24		4		
25	1405	1405	1-2"	
26		4		
26		4		
27	10K	208		clouds coming,
28		4		
1		0		
2		8		ND 5 source T Max 12.7K

290941

Mon/Tues

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 20/21 Observer Vnk/Blg/Tn Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	CA Emission	MU Filter	SP Temp.	Starting Time UT ✓	Ending Time UT	P.H.
CC558 8/82	Ink/out BOARD		HARTMANN		6600A	ND3	FeAr			3/4
83	BIAS (A)					ND3				1
84	Comp		1900			ND4	"			5
85	HD 145001	16 03 34	+17 18 48					015057		5
86	Comp									6
87	Comp									6
88	HD 154417	17 00 11	+00 50 58					020328		7
89	Comp									8
90	Comp									8
91	HD 347827	17 56 49	+19 15 00					021747		9
92	Comp									10
93	HD 347827	"	"							11
94	Comp									12
95	HD 347827									13
96	Comp									14
97	BIAS (A)							03 26		1"

Dome Temp. _____
Focus 6
Dome Temp. _____

LST
Exp. _____

Dome Temp./Hum. $+21.6^{\circ}$ 58.38% UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

274

Focus 6.63 unchanged

Transparency Conditions mostly clear

Dome Temp./Hum.

LST End	LHA End 1000V	Exp meters	Exposure	Seeing	REMARKS
34			4/7		1800h Tegetary 56.35
1			0		
5			4s		15 K ADU max
5	87K	237	1"	std dev	12.7 K ADU max
6			4		
6			4		
7	48K	434	1.2"	std dev	5 K max
5			4		
8			4		
9	601	1200 587	2"		
10			4		
11	598	1200			
12			4		
13	580	1200			
14			4		
15			0		

988 p442

Mon/Tues

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 20/21

Observer Vnk / Bly / Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emission	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC55898	HD 347827	17 56 49	+19 15 00		Ca			03 27 54		15
99	Comp									16
900	Comp									17
01	BD+17 4572	21 19 21	+17 51 00					03 59 45		18
02	Comp									19
03	BIAS(4)							04 21 08		1
04/10	FLATS x7					ND5	Tungsten			2
11	Comp					ND4	FeAr			22
12	BD+17 4572	21 19 21	+17 51 00					06 00 48		23
13	Comp									24
14	Comp									24
15	HD 187691	10 09 55	+10 09 55					06 25 53		25
16	Comp									26
17	BIAS(4)									1

Dome Temp.

Focus 6

Dome Temp.

LST

End

Dome Temp. / Hum. $+23.5^{\circ}\text{C}$ 60% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.63

Transparency Conditions *part cloudy \rightarrow completely so.*Dome Temp. / Hum. ~~$+23.2^{\circ}\text{C}$ 62% H~~

206

LST End	LHA End 1000 V	Exposure	Seeing	REMARKS
	492	1203	2"	cloud by 22:36
		4		Note capturing as seen in CCD5 was 20 secs behind
		4		both Astro clock & PRACO times
	1117	250		
		4		
		0		
		8		12K ADU max
		4		(After reopening, but spectrograph & CCD temperature
	827	1200	2"	(Topup @ 00:30) untouched.)
		4		
		4		
	6K	244		
		4		
		0		

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Pg. #1

Wed / Thurs

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 22/23

Observer Vak/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC55918	Comp			C455 ccd	8500A	ND #5	+12ND	Fene		7
19	HD 186791	19 41 30	+16 22 10			2.72	A3TT	05 35 55		8
20	Comp									6
21	BIHS(A)							5 43		1
22	Comp									6
23	HD 199681					B5TB	B5V			8
24	Comp									8
25	Comp									8
26	HD 19752	20 39 29	+35 13 38				G	06 06 36		9
27	Comp									10
28	Comp									11
29	BD+17 45B	21 19 21	+17 51 00					06 24 25		12
30	Comp									13
31	Comp									B
32	HD 187929	19 47 23						07 01 00		14
33	Comp									

Dome Temp. /
Focus 6
Dome Temp.

LST
End

ed

Dome Temp./Hum. 22.9°C 57.9%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

2918

Focus 663

Transparency Conditions

clearing late, partially

Dome Temp./Hum.

360 0.50 1024 & 1 CCD FWT

LST End	LHA End 1800V	Exposure	Seeing	REMARKS
4	ed'sd Can't see	15sec grating		No ORDER separation felt needed for stellar or comparison.
5	1K	330s	3"	in cloud Tgrating 39.8° 831h/min 3K
6		↑sec		5.8K
7		1		
8	4.8K	.	3.7"	5K max normalization STAR
9		1		
10	112K	639	.	
11		1		
12	420	.	3s	cloudy partly
13		1		
14		1		
15	1.6K	68		4.6K max
16		1		

pp42
297

wed 1 Thurs

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 Jul 22/23

Observer Vnk/Tn/Blg

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC55934	B175(4)							0704		1
35	Comp					Felie	ND5+12ND			15
36	HD 203156							071030		16
37	Comp									17
38	Comp									17
39	HD 213307							071926		18
40	Comp									19
41	Comp									19
42	HD 17463							073132		20
43	Comp									21
44	Comp									21
45	BD+174572							075819		22
46	Comp									23
47	B175(4)							082745		1
	GO									

Dome Temp.

Focus

Dome Temp.

LST

End

30

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. _____

Focus _____

Transparency Conditions _____

Dome Temp. / Hum. _____

24	LST End	LHA End	Exposure	Seeing	REMARKS
		2000	0		
1			15		
15			19/3		5K
16			15		
17			15		
18			62		
19			15		
20			15		
21		2780	424		
22			15		
23			15		
24		457	1400		
25			1		
1			0		

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pg#1

Thurs / Fri

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 23/24

Observer Vuk/Bly/Ta

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
655962	BIHS(4)			CHS CCO	8650A	NDHS + 1.2ND		01 23		1
62	Comp									3
63	HD147394									4
64	"							01 32 13		5
65	Comp									6
66	BIHS(4)							01 37		1
67	Comp									2
68	HD163506							01 49 16		8
69	Comp									9
70	Comp									9
71	HD157741							02		10
72	Comp									11
73	Comp									11
74	HD197433							02 23 12		12
75	HD197433							02 32 12		13

Dome Temp. #

Focus #

Dome Temp. #

LIST

End

Dome Temp./Hum. $+21.8^{\circ}\text{C}$ 56.7%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

F

304

Focus 6.63

Transparency Conditions Fine

Dome Temp./Hum.

360 0.50 1029 21 CCD/FWT

No.	LST End	LHA End	Exposure	Seeing	REMARKS
1			0		831 h/min @ 39.8° Grating
3			1		
4		5.2k	60s		No 1 st order sep (Yes, second order blue shows up.)
5		1.7k	65		OG 560 ORDER separation, Left in All night
6			1s		
7			0		
8			1		
9		2.3k	333	4"	6.3k max
10			1		
11			1		
12		750	480		
13			480		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

205
199 #2

Thurs/Fri

Date 1998 July 23/24

Observer VnK/Tn/Bly

Julian Day

Dome Temp. /h
Focus 66
Dome Temp.

Plate No.	Object	R.A.	Declination	Inst.	Emission	Filter	Temp.	Starting Time		Ending Time	P.H.
								* UT	✓		
CC55976	HD 197433				86508			02	41 18		14
77	HD 197433										15
78	comp					ND#5 + 12ND					16
79	HD 197433							03	00 38		17
80	"							03	09 32		18
81	HD 197433							03	18 34		19
82	"							03	27 27		20
83	comp										21
84	bias (4)										1
85	HD 197433							03	39 29		22
86	"							03	52 03		23
87	"							04	00 38		24
88	"							04	08 53		24
89	comp										25
90	HD 197433							04	28 37		26

LST
Ecl

358

Dome Temp./Hum. $+18.9^{\circ}\text{C}$ 50% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.6.3

Transparency Conditions Fine

Dome Temp./Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
14	797	480		
15	803	480		
16	78	1s		
17	810	480	3.4	
18	850	480		
19	860	480		
20		480		
21		1		
1		0		
22		* > 700s		
23	820	480		
24		480	3.5	Repeat 480 OBS. BAT 2
24		480		
25		1s		
26	689	480		

*
 Note Times are 23 secs Behind current times
 From DRACO and Astro clocks

Dome Temp./Hum. 17.5°C 52.28/4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

388

Focus 6.63

Transparency Conditions Fine

Dome Temp./Hum.

No.	LST End	LHA End	Exposure	Seeing	REMARKS
26			480		
26			480		
26		613	480		
28			1		
1			0		
28			1		
29		580	480		
29		608	480		
29			525		
29		584	480		
30			1		
5		610	480	5"	
6		636	483		
7					
8					
9			4		

8924
3/

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

THURS FRI

Date 1998 July 23/24

Observer Vnk/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT ✓	Ending Time UT	P.H.
CC56007	BIHS(4)				8650B			06 11		1
08	HD197433							06 13 16		10
09	"							06 22 14		11
10	"							06 31 39		12
11	"							06 40 57		13
12	comp									14
13	HD197433							06 51 07		15
14	"							07 00 39		16
15	"							07 09 16		17
16	"							07 18 11		18
17	comp									19
18	bias (4)									1
19	HD197433							07 29 22		20
20	"							07 37 58		21
21	comp									22

Dome Temp. H

Focus 6

Dome Temp. H

LST

End

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

310

Dome Temp. / Hum.

Focus 663

Transparency Conditions

FINE → some cloud

Dome Temp. / Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
	700	0		831 in galaxy
	493	493		
		523	47"	
	548	480	3.5"	
	361	480		In cloud
		1		
	206	536		In cloud
	630	480	4.5"	
	710	480		
	732	480		
		1		
		0		
		480		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

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Thurs / Fri

Date 1998 Jun 23/24

Observer Van K / T₂

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC56022	Comp				9650A					23
23	HD 192433							07 51 47		24
24	- " -							08 00 52		25
25	Comp									26
26	Comp									26
27	HD 212943					KOIII		08 37 13		27
28	Comp									28
29	Comp									28
30	HD 222368	23 34 48	+5 05 03					08 43 36		29
31	Comp									30
32/40	FLATS x 9				06560 order			+ ND#5	Thyssen	2

Dome Temp./Hum. $+20.7^{\circ}\text{C}$ 5528H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

314

Focus 668

Transparency Conditions *Part cloudy*

Dome Temp./Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
	1800V			
24		7/7		
1		0		
5		4s	12s	telescoped re-observed $\Delta\alpha = 00 01 00$ $\Delta\delta = 00 00 39$
6	380	1824	1.2"	~ 180 ADU above sky
7		4s		
7		4s		
8	3127	1800	2"	~ 2 to 1104 max
9		4s		
10		0		
10	2675	1807	2"	
11		4s		
12	2280	1935	2.8"	
13		4s		
14		0		
14		4s		

Dome Temp./Hum. $+18.6^{\circ}\text{C}$ 65.66H UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

316

Focus 6.68

Transparency Conditions *Fine - cloudy*

Dome Temp./Hum.

LST End	LHA End <i>1000V</i>	Exposure	Seeing	REMARKS
15	555	1867	1.2"	
16		45		
17	731	1749	1.2"	
18		45		
19		0		
19	4??	18??		
20		45		
21		45		FLATS x 8 at end <u>CC56073-81</u>
21	294	1871		4 secs, with ND 4, MAX = 12K AD4
22		45		
23	239		2.4"	
24		45		
25		0		
25		4		
26	8338	217		telluric std in cloud MAX 43K
27		4		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

217
Date ^{Tues/Wed} July 28/29

Observer Hnd/Tn/Rue [HI] Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC 5608	BIAS (A) Indoor/outdoor			Comp CCO	4.100A	47mm 600mm FeAt ND#5	B-V	02:08		1
83	Comp									3
CC 56084	TYC 30311020	13 22 45.	44 42 54	ND#5		8.335	-0.011	02 19 02		4
85	Comp									5
86	TYC 30311020							02 32 00		6
87	Comp									7
88	Bias (A)							3:15:55		1
89	Comp									8
90	TYC 386 22	16 56 43	52 33 46			10.279	-0.029	3:25:59		9
91	Comp									10
92	TYC 386 22							3 51 32		11
93	Comp									12
94	Bias (A)							4 19		
95/102	FLATS x 8					TUNG, ND#5				2

Dome Temp. _____
Focus 6
Dome Temp. _____

LST
End

Dome Temp./Hum. 23.6°/65%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

318

Focus 6.93

Transparency Conditions Cloudy (a bit), clear patches, gusty

Dome Temp./Hum.

Note - captures ~ 25 sec ahead of correct time

LST End	LHA End	Exposure	Seeing	REMARKS
				4:30 0 16 512 12 2200
				0600 In/min "C" grating @ targeting 25.2 Actual CD = 4130 Å
	45	4		10k max
	214K	1800	3-4"	Note encoder using new EAST mps gives 52 -00 00 40 45 00 00 18 9K ADU max
	45	4		10k max
	1:38K	1267	4"	~6k cloud at end guiding off hot pixel.
	45	4		* This Y origin put that hot pixel
		4		
		4		
		1124		mostly cloudy guiding off Y center to miss hot pixel
		4		
	3:58	998		112 -00 00 40 15 +00 01 21 1.7k max
		4		
		0		
		55		11 k max

29
Pg #1

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

+Pe = Paula

Wed/Thurs
Date July 29/30

Observer Hsu/Sac/CHJ/Tn Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	CX Emulsion	Filter	Temp	Starting Time UT	Ending Time UT	P.H.
CC 5610 ^{3/4}	Inboard / OUTBOARD		HARTMAN		4100A					1/2
05	BIAS (4)									1
06	Comp		2006							3
07	TIC 3886 22	16 56 43	+52 33 46			10.279	-0029	01 56 44		4
08	Comp									5
09	TIC 3886 22	16 56 43	+52 33 46					02 29 57		6
10	Comp									7
11	TIC 3886 22							02 59 14		8
12	Comp									9
13	TIC 3886 22							03 36		10
14	Comp									11
15	BIAS (4)									1
16/23	FLATS x 8							TUNG ND#5		17
24	Comp							05 27 52		13
25	TIC 3879 10H	16 48 07	+52 36 10			10.430	0.223	05 28 54		14
26	Comp							06 01 06		15

Dome Temp. H
Focus 69.9
Dome Temp. H

1ST
Exp

Dome Temp. / Hum.

20.0° / 55.5%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

320

Focus 6.93

Transparency Conditions

high Cirrus patchy

Dome Temp. / Hum.

LST End	LHA End 1000 V	Exposure	Seeing	REMARKS
112				four test, normal CCD 1-1 CCD FOT
1				430 0 16 512 12 2 CCD FOT
3				
4	579	1800 s		high cirrus coming in. 1.5% ADU max. Hot pixel / column error
5		4		
6	432	1565 s		really bad high cirrus (collecting cosmic rays)
7		4		
8	396	1800 s.		1% ADU max. strong sky line.
9		4		
10	390	1806		cloudy
11		4		
12		0		
13		55		12K
14	1370 Volts	4s		
15	2867	1800 s		
		4s		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date July 30-31/98 Observer mjs/Gmo/Ehl/Lu Julian Day _____

PG1
329

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	ci P.A.
CC56130	BIAS(4)			CASS CCD	5894 1800/51.58			01 32		1
31	comp									5
32	Tyc 303102	¹³ 30 22 45	+44 42 54		slit 250 micron	B-V -0.077	8.34	01 51		6
33	comp									7
34	Tyc 303102							02 24 21		8
35	comp.							02 55 32		9
36	bias (4)							02 57 26		1
37	Tyc 303102							03 00 31		10
38	comp									11
39	Tyc 303102	AB						03 34 18		12
40	comp									13
41	bias (4)							04 07 08		1
42	comp									14
43	HD 121409	13 50 10	+54 13 13			AOV -0.05	5.7	04 14 18		15
44	BIAS									16

Dome Temp. / H
Focus - 6.
Dome Temp. / H

LIST
End
N=1300 2

Dome Temp./Hum. 18.2/63.8

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

329

Focus 6.65

Transparency Conditions clear

Dome Temp./Hum.

400 0 50 1024 4 1 CCD/FMT

Cl	LST End	LHA End Counts	Exposure	Seeing	REMARKS
1			0		
5			4		nd 3 source FeAr
6	HV=1320	26258	1742	2-3"	$\Delta \alpha = -53''$ sec. $\Delta \text{dec.} = 6''$
7			4		
8		25341	1803		
9			4		
10			0		
12		22769	1800		
11			4		
12		18777	1826		
13			4		
14			0		
14			4		
15		90 K	723		
16			4		

Dome Temp. / Hum. 16.5 / 68.5

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

326

Focus 6.65

Transparency Conditions *clear*

Dome Temp. / Hum.

LST End	LHA End <i>Counts</i>	Exposure	Seeing	REMARKS
16		4	2-8"	
17	2165 1800	1800	2-3"	
18		4		
6	2280	1802		
7		4		
1		0		
8	2134	1805		
9		4		
8	2019	1820		readout in cache ci 8 by mistake.
11		4		
1		0		
12	1873	1804		
13		4		
14	1713	1820		
15		4		

PG 1
329

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 31/Aug. 1

Observer Att/MB/Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC56175	BIAS(4)			CASS CCD	5894			01 33		1
76	comp				1800/5158					5
77	TYC 3466 730	13 42 03	48 31 30		25011 slit	15-V -117	10.7	01 48 58		6
78	comp									7
79	TYC 3466 730							02 22 22		8
80	comp									9
81	BIAS(4)							02 54		1
82	comp	13 4								9
83	TYC 3463 409	13 34 49	46 02 29			0.288	11.5	03 02 04		10
84	comp									11
85	TYC 3463 409							03 34 48		12
86	comp									13
87	BIAS(4)							04 06		1
88	comp									13
89	TYC 3886 22	16 56 44	52 33 46			-0.029	10.3	04 49 23		14
90	comp									15

Dome Temp. H

Focus

Dome Temp. H

LIST

End

Dome Temp./Hum. 19.5/54.5

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

330

Focus 6.65

Transparency Conditions clear

Dome Temp./Hum.

CCD T -1024

400 0 50 1024 4 1

LST End	LMA End counts	Exposure	Seeing	REMARKS
		0		
		4		ND=3 FeAr ₁
	4270	1804	1"-2"	1800 → 1804 ! Maybe something wrong
		4		
	3938	1804		1800 → 1804 !
		4		
		0		
		4		
	2205	1830		1800 → 1830 !
		4		
	2034	1806		
		4		
		0		
		4		
	4501	1804		
		4		

PG 2

B³UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date 1998 July 31 / Aug 1

Observer AH/MB/Lu

Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC56191	TYC 38871381 ^{Comp}	16 26 24	52 23 46		5894					15
92	TYC 3879928	16 43 13	53 04 17			B-V 0.189	B 11.7	05 29 26		16
93	Comp									17
94	TYC 3879928	"	"			"	"	06 02 43		18
95	Comp									19
96	BIAS(4)							06 34		1
97	TYC 3879928	"	"			"	"	06 38 50		20
98	Comp									21
99	TYC 3879928	"	"			"	"	07 10 25		22
CC56200	Comp									23
01	BIAS(4)							07 42		1
02	Comp									23
03	TYC 38871381	17 10 57	53 21 10			0.16	10.9	07 53 22		24
04	Comp									25
05	TYC 38871381							08 25 21		26
06	Comp							08 25 21		27

Dome Temp. / Hum. 16.2 / 59.9

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

332

Focus 6.65Transparency Conditions clear

Dome Temp. / Hum. _____

LST End	LHA End counts	Exposure	Seeing	REMARKS
15		4		
16	1657	1816		
17		4		
18	1654	1804		
19		4		
1		0		
20	1644	1830		1800 → 1830
21		4		
22	1567	1804		
23		4		
1		0		
24		4		
24	2657	1804		
25		4		
25	2600?	1804		
27		4		

235
291

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date Aug 1-2/98

Observer Brn/MB/Ehl/Lu Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag. Temp.	Starting Time UT	Ending Time UT	P.H.
CC 56220	bias (4)			CASS CCD	1800 grad / 51.58			01:23:18		1
21	comp				5894					5
22	tyc 3463242	13 34 08	47 13 00			B-V .357	V 11.4	02 05 07		6
23	comp									7
24	tyc 3463242							02 37 24		8
25	comp.									9
26	bias (4)							03 09 37		10
27	bias (4) comp.							03 18 31		11
28	comp									9
29	HD 177724	19 00 49	(1900) +13 42 53							10
30	comp									11
31-36	flats									2
37	bias (4)							03 20 19		1

Dome Temp. / Hu
Focus
Dome Temp. / Hu
LST
End
N=1320

137

Dome Temp./Hum. 26.7 / 39.7

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

336

Focus 6.65

Transparency Conditions Clear

Dome Temp./Hum.

PH	LST End	LHA End Counts	Exposure	Seeing	REMARKS
1	HV=1320		0		n.d. 3 $\Delta Ra = -40s.$ $\Delta Dec = -18.$
5			4		
6	2930		1805		
7			4		
8	2857		1825		
9			4		
10			0		
11			4		
12			4		
13	137069		84		
14			4		
15			4		nd 4 max 12.3K
16			0		

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

237
Pg 2

Date Aug 1-2/98

Observer Brn/MB/EW/Lu Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP, Filter	Mag, Temp.	Starting Time UT	Ending Time UT	P.H.
CC56238	bias (4)			CAAS CCD	4100 600/25.2			04 03 43		1
39	comp									5
40	tyc 3031 1020	13 22 45	44 42 54			B-V -0.7	V 8.3	04 35 53		6
41	bias (4) comp									7
42	comp									7
43	tyc 3466 730	13 42 03	48 31 30			0.1	10.7	05 02 08		8
44	comp									9
45	tyc 3466 730							05 34 36		10
46	comp									11
47	bias (4)							06 06 08		1
48	comp									12
49	tyc 3879 1064	16 48 07	52 36 10			0.22	11.4	06 12 00		13
50	comp									14
51	tyc 3879 1064							06 45 20		15
52	comp									16

Dome Temp. Hum

Focus 6.1

Dome Temp. Hum

LST
End

RN=1320

15

32

36

35

338

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp./Hum. 18.7 / 42.7

Focus 6.80

Transparency Conditions Clear

Dome Temp./Hum.

ccd format ³⁴⁰~~420~~ 0 16 512 12 2

LST End	LHA End counts	Exposure	Seeing	REMARKS
1	HV=1320	0		nd 5 max. 12.6 K
5		4		
6	15396	1204		
7		4		
7		4		
8	4233	1805		
9		4		
	3393	1810		
		4		
		0		
		4		
	3689	1824		
		4		
	3508	1811		
		4		

339
Pg 3

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date Aug 1-2/98 Observer Brn/MB/EH/Lu Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag. Temp.	Starting Time UT	Ending Time UT	P.H.
CC56252	comp				4100					17
54	tyc 35072431	17 00 39	+50 21 23			B-V 0.18	V 11.5	07 25 02		18
55	comp									19
56	tyc 35072431							07 58 11		20
57	comp									21
58	bias (4)							08 30 58		1
59	comp									22
60	tyc 388622	16 56 44	+52 33 46			-1.03	10.3	08 39 37		23
61	"	"	"			"	"	09 00 27		24
62	comp									25
63	BIAS(4)							09 15		1
64/70	flats									2

Dome Temp.: Hu
Focus 62.5
Dome Temp.: Hu

LST
End

'540

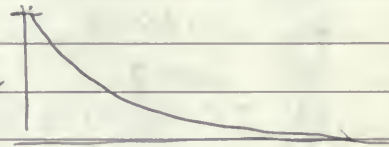
UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. 18.0 / 59.9

Focus 6.80

Transparency Conditions Clear

Dome Temp. / Hum.

No.	LST End	LHA End counts	Exposure	Seeing	REMARKS
17			4		
18		2718	1805		
19			4		
20		2834	1871		
21			4		
22			0		
23		4025	1217		Well done
24		4060	735		
25			4		
26			0		
27			5		NDS Max 11 K 

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DAVID DUNLAP OBSERVATORY

PG 1
741

Date 1998 Aug 2/3

Observer Brn/Jac/Lu Julian Day _____

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
cc56271	BIAS(4)			CASS CCD	4100			01 21		1
72	comp				600/25.4					5
73	TYC3463242	13 34 09	47 13 01	514	470μ	B-V 0.357	11.4	01 38 51		6
74	comp									7
75	comp									8
76	TYC388622	16 56 44	52 33 46			-0.03	10.3	02 28 26		9
77	comp									10
78	comp									10
78	TYC3463242	13 34 09	47 13 01			0.357	11.4	02 56 43		11
84	flats									2
85	BIAS(4)							03 09		1
86	comp									5
87	TYC 3463 242	13 34 09	47 13 01			B-V 0.357	11.4	03:26		11
88	comp									12
89	comp									13
90	BD+482229	14 40 55	48 05 30			B-V 0.145	11.09	04 03 48		14

Dome Temp. Hum

Focus 6.

Dome Temp. Hum

LST

End

HV=1920

39

4

Dome Temp. / Hum.

21.6 / 48.4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

342

Focus

6.80

Transparency Conditions

partly cloudy

Dome Temp. / Hum.

340 0 16 512 12 2

LST End	LMA End Counts	Exposure	Seeing	REMARKS
1	HV=1320V	0		
5		4	4	ND 5
6	5436:	1804	1-2"	through clouds
7		4		
8		4		
9	4825	1204		
10		4		
11		4		too cloudy aborted.
2		5		ND 5 Max 11.5K
1		0		
5		4		
11	3989	1809		
12		4		
13		4		
14	4257	1805		

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DAVID DUNLAP OBSERVATORY

PG 2
247

Date 1998 Aug. 2/3

Observer Brn/Sac/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CLS6291	comp			CASS CCD	4100					15
92	BD+482229	14 40 35	48 05 30			B-V .145	11.09	04 35 40		16
93	comp									17
94	BIAS(4)							05 07		1
95	comp	14 35 45	49 12 03							17
96	TYC 3476 1316	14 35 45	49 10 03			B-V 0.293	11.67	05 14 29		18
97	comp.					"	"			19
98	TYC 3476 1316	"	"			"	"	05:52:47		20
99	comp									21
CLS6300	BIAS(4)							06 24		1
CLS6301	BIAS(4)				5894			06 41		1
02	comp				1800/5158					3
03	TYC 35072431	17 00 39	50 21 24		250u	B-V 0.178	11.6	06 47 56		4
04	comp									5
05	TYC 35072431	"	"			"	"	07 20 40		6

Dome Temp. / Hum.

19.8 / 53.0

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

343

Focus

6.80

Transparency Conditions

fairly cloudy - hazy

Dome Temp. / Hum.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
		4		
	4580	1804		
		4		
		0		
		4		
	2575	1550		Through clouds.
		4		
	2852	1810		
		4		
		0		
		0		
		4		
	1793	1807		ND 3. 400 0 50 1024 41 CCD/FMT
		4		focus 6.67, @ 18.8° / 54.5%
	1717	1805		

Dome Temp./Hum. 18.2/56.8%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

346

Focus 6.67

Transparency Conditions partly clear

Dome Temp./Hum.

400 0 56 1024 41

LST End	LHA End counts	Exposure	Seeing	REMARKS
------------	----------------------	----------	--------	---------

4

1472

1823

4

1710

1804

4

0

4

(ND 0.6 in the beam.
↓

1515K

331

4

4

20K

348

sky getting bright.

4

0

4

NO = 4.

PG 1
247

1998 Aug 10/11

UNIVERSITY OF TORONTO
DAVID DUNLAP OBSERVATORY

Date Aug 3/8/98

Observer Eht/Lu ^{Jac/Lu}

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	B-V Filter	Mag. Temp.	Starting Time UT	Ending Time UT	P.H.
CC56326	bias (4)			Cass ccd	6600 1800/5635			01 53 34		1
27	comp				slit: 306μ					5
28	BD+17 4572	21 24 00	18 16 45				9.2	02 07 05		6
				CASS CCD	4100 600/25,20					
CC56326	BIAS(4) ✓				470μ slit,			02 56		1
27	comp ✓		2000							5
28	TYC 3466 730 X	13 42 03	48 31 30			0.117 B-V	10.67	04 25 12		6
29	TYC 3466 730 ✓ comp									7
30	comp ✓									8
31	TYC 3887 1381 X	17 10 57	+53 21 10			0.116	10.9	05 10 36		9
32	comp ✓									10
33	BIAS(4) ✓							05 43		1
34	comp ✓									11
35	TYC 3887 1381 X	"	17					05 58 28		12
36	comp ✓									13

Dome Temp: Hu
Focus: 616
Dome Temp: Hu

LST
End

Dome Temp./Hum. 21.6/81.2
22.6/88.4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

348

Focus 6.62

Transparency Conditions

cloudy (clear patches)
(small)
fairly cloudy

Dome Temp./Hum.

450 0 50 1024 4 1,

LST End	LHA End counts	Exposure	Seeing	REMARKS
		0		
		4		
				too cloudy
		0		
		4		NO 4. source FeAr ₁
	5013	1805	5"	very hazy
		4		
		4		
	4415	1805		
		4		
		0		
		4		
	4581	1812		
		4		

Dome Temp./Hum. 19.3/74.0

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

380

Focus 6.62

Transparency Conditions hazy. (Very)

Dome Temp./Hum.

LST End	COAST End	Exposure	Seeing	REMARKS
	4754	1836		exp 1800 ^s → 1836 ^s ?
		4		
		4		
	4337	1804		
		4		
		0		
	4533	1804		
		4		
	4981	1811		
		4		
		4		
	4303	1203		
		4		
		0		
		4		ND 2 Max 13.4 K

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

352

Dome Temp./Hum. 17.5/68.4

Focus _____

Transparency Conditions Intermittently Cloudy (Patches)

Dome Temp./Hum. _____

395 0 50 1024 41

LST End	LHA - End Counts	Exposure	Seeing	REMARKS
		0		
		4		
		4		
		4		
985	829	985		HV changed from 1320 to 1000 at ~347 counts.
		4		
		4		
		4		Clouds.
	280	1864		
		4		
		4		Cloudy patches.
	288	1975		
		4		
	248	1914		
		4		

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

354

Dome Temp./Hum. 16.6/66.4

Focus _____ Transparency Conditions Cloudy patches


Dome Temp./Hum. _____

LST End	LHA End <i>counts</i>	Exposure	Seeing	REMARKS
		4		
	187	1825		
		4		
		4		
	928	404		Standard velocity
		4		
		4		
	500	1561		
		4		
		4		
	584	303		dawn - telluric
		4		
		0		
		4		

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