





Inventory Statement

Name of Property: \_\_\_\_\_  
Quantity: \_\_\_\_\_

Item Description: \_\_\_\_\_  
Quantity: \_\_\_\_\_  
Remarks: \_\_\_\_\_

13

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. \_\_\_\_\_

Focus \_\_\_\_\_

Transparency Conditions \_\_\_\_\_

Dome Temp. / Hum. \_\_\_\_\_

LST End	LHA End	Exposure	Seeing	REMARKS
				DAVID DUNLAP OBSERVATORY
				74" LOGBOOK
				VOL 90
				PLATE NOS CE 15875 - CC 56392
				APRIL 1998 - AUG 1998

PG 5

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		
83/84	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							22:45:52		1

Dome Temp. H

Focus

Dome Temp. H

LST

End

Echelle

1.270

4

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

Fr	LST End	Time End Tilt	Exposure	Seeing	REMARKS
1/2	Echelle 1770	0600h 100h 4620 400h	4/3		source ThAr Max 12K
1			0		
2			45		
1/4	1.7	1.7K	120S		
3			45		
3			45	2"	
		0.45K	360s		
4			360s		BATCH job x5
3			45		
1			0		
5			360s		360 obs. bat x6
3			4		
6			360s		360 obs. bat x6
4			45		
0			0		
1			360s		360 obs. bat x6 (Batch job doesn't work again)





Dome Temp. / Hum.

2.6 / 45.5

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus

Transparency Conditions

Some thin clouds 8

Dome Temp. / Hum.

Pa	LST End	LHA End	Exposure	Seeing	REMARKS
2			360s		
3			4s		
4			360s		360 obs. but <sup>x6</sup> only did 4 times of repeat and then died.
3			4s		
1			0		
3			4s		
4		0.67K	180s		
5			180s		
6			210s		
3			4s		
3			4s		
4			360s		a little bit cloudy
5			360s		
6			360s		
7			360s		360 obs. bac x3
8			4s		

a  
PG 3

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 10/11

Observer Hlx/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	3.2V	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							<del>02 29 18</del>		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	"							04:41:25		
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

10

Focus

0.231

CCDT

Transparency Conditions

hazy

Dome Temp. / Hum.

-100.40

LST  
EndLHA  
End

Exposure

Seeing

REMARKS

0

360s

2-3"

360obs. bat x6

4s

note: saved later.

360s

360obs. bat x6

4s

0

360x6

4s

360x8

Batch job problem: only repeats 3 times.

4s

471s

361s

360s

360s

360s

370s



Dome Temp. / Hum.

1.0 / 56.7

UNIVERSITY OF TORONTO | DAVID DUNLAP OBSERVATORY

12

Focus 0.231

Transparency Conditions

OK

Dome Temp. / Hum.

LST  
End

LHA  
End

Exposure

Seeing

REMARKS

36s

4s

H  
500μm 215

25s

0

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	40V	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.  $8.8 / 37.9$ 

Focus .231 not changed

Dome Temp. / Hum.

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Transparency Conditions

clear

comp source <sup>14</sup>  
ThAr

flat source

Tung

CCDFMT 0 0 256 1024 4 1

LST End	LHA EPOCH COUNTS	Exposure	Seeing	REMARKS
		4/4		Echelle CCD cross-grating 17.70 x 0.600 in / 4620
		0		slit W 100 $\mu$ flat slit H = 0.215
		3		H 400 $\mu$ 225. 500 $\mu$
	3 K, 2.7K	150	1"-2"	Max 10.3K CCD Temp. -101.2
		3		
		3		
	600~650	360x6		
		3		
		0		
	1100.	360x6	1"	
		3		
		360x6		
		3		
		0		
		360		
		364		

need to revise header

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

15  
PG 2UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 11/12

Observer H<sub>2</sub>X/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

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Focus a. 231

Transparency Conditions

clear

Dome Temp. / Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
		260s		
		3s		
		0		
		3s		
	~1K	150s x 2	1"	150 obs
	~1K	120s x 20		120 obs
		3s		
		120s x 40		120 obs
		3s		
		0		
		120s x 20		120 obs. clouds coming. 93, 94, 95 low count
		3s		
		25s	'	slit H 500 = 0.215 source Tung
			1.2"	bad job problem, only repeat 7 times
		3s		
	420	180s		

MPG 3

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date

1998 April 11/12

Observer

HGx/Lu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CE16117	HD127762	9:43:53	39:30:33					04:48:59		3
18	"	"	"					04:49:59		2
19	"							04:54:38		3
20	s							04:59:30		4
21	comp									5
22	BIAS(4)							05:05		1

Dome Temp. / H

Focus

Dome Temp. / H

LST  
Era

305

340

420

335



15  
PG 1

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 13/13

Observer HJX/LC

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 <sub>b</sub>	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 clouds

Dome Temp. / Hum.

0 0 256 1024 4 1

LST End	LHA End	Exposure	Seeing	REMARKS
	Counts		4/4	cloudy
		3s		Echelle CCD T = -101.3
		3s		17.70x0.600ln/46.20
1180	240s	2-3"	std vel	slit H 400 $\mu$ .225 for stellar W 100 $\mu$ .262 comp
		3s		H 500 $\mu$ .215 for flats
		3s		3s comp Max 815K
373	600s			
270	600s			
313	600s			
	3s			
595	600s			getting better.
450	360s			
	360s x 3	1"-2"		3600bs. bal.
	3s			
	0			
	360s x 6			

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

PG 2  
21

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							00:53:02		4
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
		9s		
		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)
	560	(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

27

FA: 1SAT

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORYp9<sup>th</sup>

Date 1998 APR 17/18

Observer Gld/ATH/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	C <sub>D</sub> Emulsion	Filter	Temp SIT	Starting Time EST	Ending Time UT	P.H.
CC 53369	SKY			CASS CCD	5894A <sup>0</sup>		250 <sup>m</sup>	21 55 51		34
70/71	Inboard / outBOARD			Tgrating	51.58		1800 <sup>h</sup> grating			<del>46</del>
72	BIHS(A)							22 06		40
73	HD124752 companion of	1900						22 48 19		4
74	Comp	14 10 18	+68 03 00							5
75	Comp									6
76	Tyc 3443-521	2000						23 02 12		7
77	"	"	"					23 12 27		8
78	"	"	"					23 23 16		9
79	Comp									10
80	Comp									10
81	TYC 4385 152							23 41 03		11
82	"	"	"					23 58 08		12
83	Comp									13
84	Comp									13
85	TYC 4152 484							00 18 22		14



Dome Temp./Hum.  $+7.5^{\circ}\text{C}$  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	max End COUNTS	secs Exposure	Seeing	REMARKS
	1800V	401	3	Sky at Zenith - PART cloudy
		4/7		focus test
		0		
	<u>1320K</u> 490	<del>250</del> 500	3"	NORTH comparison. Part cloudy restored when clean.
		4s.		10.5K ADU
	6.6k	600s		
	5984	617s	3-4"	
	5.6K	600		
	3.9k	1000s		
	4.2K	1000s		
	<del>2640</del>	<del>1200</del>		
	2640	1200		

25 1998

Fr./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.	$\lambda$ Emission	Filter	Temp.	Starting Time EST UT	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 494	"	"							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 $\frac{3}{4}$	+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<sup>A</sup>

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

25

Focus

6.85

Transparency Conditions

Clear.

Dome Temp. / Hum.

13.20 V

+4.1°C 57.5<sup>A</sup>/H

LST End	<del>LST</del> Exp End Mete	(Secs) Exposure	Seeing	REMARKS
15	2683	1200	4"	
16				
17	2180	1200s		auto guider test, start @ 0, Conditions same as previous 2!
18		4s		
19		4s		
20	2050	1200s		<del>auto guid</del>
21	1816	1200s		auto guider test, start @ 0, 1471 cal. in 1000sec
22	2027	1200s		
23		4s		
24		0s		
25	121K!	500s		ND 1.2 in beam
26		4s		
27				
28	8.4K	600s	3-4"	
29	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.	Emulsion	Filter	Temp.	Starting Time EST	Ending Time UT	ci	LIST End
CC53402	TYC4194359	164649	<sup>2000</sup> +624757		5894R			031940		30	
03	Comp									31	
04	Comp									1	
05	TYC41385152	11 0332	+673420					040300		2	
06	"	"	"					041326		3	
07	Comp									4	
08	Comp									4	
09	TYC4152484	11 0454	654407					042807		6	
10	Comp									7	
11-13	BIA (A) X3							0439		1	
14-17	FLATS X 4					Tung ND4				5s	

Dome Temp. #

Focus 6

Dome Temp. #

## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

28

Dome Temp. / Hum. \_\_\_\_\_

Focus 6.85 - No change for 600s, ~~But should~~ Fine  
Transparency ConditionsDome Temp. / Hum. But focus should be ~7.0 or so.Exposure

LST End	<del>Start</del> End	SECS Exposure	Seeing	REMARKS
	15.20K	600s		
	8.6k	600s		
		7s		
		4s		370 050 1024 4 1 CCD FIT
	3.6K	600s		
	3.7K	600s.		
		4s		
		4s		11.5K
	3.2k	600s. 4"		slightly brighter at end.
		0s		
				8K MAX

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.	LST End
CC 53418/19	In/out board									3/4	
20	comp		2000							5	
21	HT Vir	13 46 07	05 06 57		5184	7.16 <sub>v</sub>	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		1	
27	HT Vir	"	"					22 35 41		11	
28	"	"	"					22 44 11		12	
29	"	"	"					22 55 17		13	
30	comp									14	
31	HT Vir	"	"					23 07 11		15	
32	"	"	"					23 17 37		16	
33	"	"	"					23 27 57		17	
34	"	"	"					23 38 17		18	

Dome Temp. / H

Focus

Dome Temp. / H

Dome Temp. / Hum. 10.9 / 43.8

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

30

Focus 6.82

CCD T = -100.2° Transparency Conditions

hazy

Dome Temp. / Hum.

400 0 50 1024 41 CCD FMT

LST End	LHA End	Exposure	Seeing	REMARKS
		4/7		c source FeAr cassccd grating tilt 47.06. 306 $\mu$ slit
	1080	420	2-3"	filter 2 for comp
	1190	420		
	1100	420		
	950	480		
		4		
		0		
	775	480		
	700	600		
	452	600		
		4		
	435	600		
	408	600		
	600	600		
	717	600		

PG 231

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	HD95660	10 57 24	30 58 00		5184	8.0 F3		23 57 04		20
39	comp									21
40	comp									21
41	HD124897	14 11 06	19 42 11			-0.04 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. °F

Focus

Dome Temp. °F

LST

End





PG 1 97 Mon/Tues

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 20/21

Observer [Vys] Lu/Tu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CA Emulsion	MAG Filter	SP Tempe	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	HD7735	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	03 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.

IST  
End

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

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

34

Focus  $682$  CCD T =  $-100.8^{\circ}\text{C}$  Transparency Conditions  $OK$

Dome Temp. / Hum.  $18.8^{\circ}\text{C} 44.6\% \text{RH}$  400 0 50 1024 41

LST End	TIME END COUNTS	Exposure	Seeing	REMARKS
	1000V	4/2		[ c source FeNe filter 5 grating 47.74, CASS CCD 306 $\mu$ slit.
		0		
		4		
	2600	437	2	MARcy STD
		4		
		4		
	245	1306		AC +69173 <span style="border: 1px solid black; padding: 2px;"><math>\Delta\alpha - 00 00 40</math> <math>\Delta\delta + 00 01 00</math></span> Tel East side SBiquorkey Both X & Y Reversed
		4		
		4		
<del>1320</del>	1320V	1606		<span style="border: 1px solid black; padding: 2px;">New Rly 1026356</span> $\Delta\alpha - 00 02 19$ $\Delta\delta + 00 01 00$ $\Delta\alpha - 00 02 00$ $\Delta\delta + 00 00 51$
	4.2K			
		4		
		4		
	4.1K	1826		
		4		
		0		



Dome Temp. / Hum. 9° / 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
	1330V	4 sec		
	3.5K	2053	2.3"	AC+41 537-54
		4		
		4		
	3.9K	1199	2.4"	AC+79 4347
		4		$\Delta\alpha - 00 00 37$ $\Delta\delta + 00 01 03$ $\odot$ OIE Reversed
		0		
		4		
	2.1K	1800	2.3"	<u>OK</u> $\Delta\alpha - 00 00 29$ $\Delta\delta - 00 01 30$
		4		
		4		
	2.1K	1400	2.4"	A&B not separated tonight <u>OK</u> $\Delta\alpha - 00 00 19$ $\Delta\delta - 00 01 18$ $\odot$ 0130W
		4		
		4		
	2K	1603		ACHF 478-60 $\Delta\alpha - 00 00 21$ $\Delta\delta - 00 00 09$
		4		

PG 3 37

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 UT	Ending Time UT	P.H.
CC53484	BIAS (4)				<del>2</del>			00 57		1
85	comp									23
86	HD 119850	13 40 36	15 27 00		5300	8.48	M1	01 02 44		24
87	comp									25
88/94	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 101000	13 29 47	01 05 48			6.7	A7V	01 54 39		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
CG81239/94	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.

Exposure

LST  
End

LHA

1320 V

Exposure

Seeing

REMARKS

✓ fixed

0

note Headers HI have a band  
Tilt noted. Should have been  
47.74

8.1K

440

Marsy std.

4

wavelength was OK

4

c source tung filter 3 Max 14K

4

c source FeAr filter 2, T grating ~ 47.06° 3080 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

3.9

Seeing Test, Dome 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.	ST End
cc 53507 13	flats x 7				5184					2	
cc 53514	comp				bs63					5	
15	SN 1998 ag	11 56 27	55 07 36			~12.7		02 53 25	a	6	
16	comp									7	
17	SN 1998 ag							03 38 41		8	
18	Comp									9	
19	comp									9	
20	CH Cyg	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

900 0 50 1024 4 1

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



Dome Temp./Hum. 11.8°C 70%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

42

Focus 6.78Transparency Conditions Fine

Dome Temp./Hum. \_\_\_\_\_

LST End	LHA End	<del>Exposure</del> Exposure	Seeing	REMARKS
	X <del>1000</del> 1000 V	<del>1000</del> 4/6	3'	Tyrating 90 59.93 3060 slit
		4	5'	
	350	<del>523</del>	6'	wrong star South of HD 30782 7.5 arcmin <sup>South</sup>
		4	7'	
	2650	<del>872</del>	8'	$\Delta \alpha$ 00 00 25 $\Delta \delta$ 00 00 42 13K
		4	"	
		0	"	
		4	"	
	4.3K	644		
		4		
		4		
			2'-3'	std vel 3K max 1404
		8 sec		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

CI

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	MV Filter	SP Type	Starting Time LIT EST	Ending Time UT	P.H.	IST 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	BIAB(4)									1	
72	Comp									3	
73	SN 1998 4g	11 51/4	+55 41 00		6000A	12-13		233 003		4	

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

approx

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

44

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 <u>1000V</u>	<u>45</u>		FeAr Tygrating % 4706 3064 Filter 2
	<u>1.3K</u>	<u>603</u>	<u>2.3"</u>	mki pjm 152 -00 00 25 @ 01 Hr W 158 -00 00 36
		<u>4</u>		
	<u>1.2K</u>	<u>544</u>		
		<u>4</u>		
		<u>0</u>		Telescope East side
	<u>3x 133ms</u>	Seeing test	<u>2.3"</u>	above on 306u class Dome SE, no wind Low Rel/H
		<u>4</u>		
	<u>5K</u>	<u>384</u>	<u>2"</u>	3.4K ADU max
		<u>4</u>		
		<u>7</u>		filter 4, coarse Tuning
		<u>4/7</u>		<u>150ln/min</u> 425 0 25 1024 8 1
				Grating tilt 23.29. filter R60 for comp
	<u>1320V</u>			2nd Order
	<u>560</u>	<u>1721</u>		158 -00 00 35 158 +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.	ST End
cc53574	comp			CASS ccd						5	
75	NGC 3982	11 51 14	<sup>2000</sup> 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	<sup>1900</sup> 14 10 18 comparison	+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			HD 124752 + 06 56 01 / KRS		2	
cc53590	<del>Int. Lat. Board</del>			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 changeTransparency Conditions clear

Dome Temp./Hum.

425 0 25 1024 81 CCD FMT

LST End	LHA End <i>x minutes</i>	Exposure	Seeing	REMARKS
	<u>1320V</u>	4		
	<u>396</u>	1800		
		4		
		0		
		4		
	1140	1551	1.2"	good separation between faint stars NNW ~5" from HD124752, <sup>max 2.8K</sup>
		4		@ 0030 W, <sup>5.2 -00 00 36</sup> <sup>4.5 +00 00 30</sup>
	3.6K	405		7.6K
		4		
		0		
		5		
400	@ 50 1024	4	1 CCD FMT	FeAr <sup>MAX 11.5K</sup> Tgrating 90 25.0
	1400	1200		
	2240	1800		
		4		
		0		

U7  
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	<del>Frag</del>	<del>Temp.</del>	Starting Time UT	Ending Time UT	P.H.
CC53595	HD 124752	14 10 18	68 03 00	CHSS CCD	4500	<del>K<sub>II</sub></del> <sup>9</sup>	<del>Temp.</del> <sup>sp</sup>	02 49 46		5
96	comp									6
97	BIAS(4)							03 01		7
98/ 602	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 probably be  $\approx 6.9$  but  
inaccessible at this angle) Transparency Conditions

clear

Dome Temp./Hum. 7.9°C 44.6% RH

LST End	LMA End	Exposure	Seeing	REMARKS
	1330V			
	11.5K	524	1"	2K MAX
		4		
		0		
		2		c source T filter ND = 1,
		4		c source 1, filter 4, grating 0600/27.1 Max comp 12K.
	2.5K	1950	1"	Faint comparison to NN/VU $\approx 5''$
		4		10.2K max
	10.4K	555	1"	
		4		
		0		
	1550	1200		fainter
		4		
		4		filter 5, c source T <sub>eq</sub> M6N 11.4K

PGI 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.
CC53617/18	In/out board			CASS CCO	5894 gratins					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	17	"			"	"	21 38 52		12
29	comp									13
30	BIAS(4)							22 10		1
31	USNO 0551498	7	"			"	"	22 11 21		14
32	comp									15
33	USNO 0551498	"	"			"	"	22 44 07		16

Dome Temp. H

Focus

Dome Temp. H

HV 1320

## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

50

Dome Temp. / Hum.

24.1 / 38.1

Focus

6.75

Transparency Conditions

clear

Dome Temp. / Hum.

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

LST End	LHA End counts 1320 V	Exposure	Seeing	REMARKS
		4/7		Csource FeAr. filter <del>4</del> Max 6K
		0		
		4		
HV 1320	1563	1800	1"	sky a little bright. sk +17 <sup>s</sup> sd 1'6"
		4		
	1112	1800		
		4		
		0		
	1095	1800		
		4		
	1050	1800		
		4		
		0		
	967	1800		
		4		
	910	1800	-2"	

51  
PG 2UNIVERSITY 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 H <sub>2</sub>	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  
Dome Temp. / HumJST  
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 - 130V End Counts	Exposure	Seeing	REMARKS
		4		source FeAr. Filter 3.
		0		
		4		
	4040	1800		
		4		
	3890	1800		
		4		
	3760	1800	2-3"	
		4		
	2860	1800	3-4"	
		4		
	<del>4280</del>	0		
		4		
	86.7K	420		Telluric std. ND 1.2 in stellar path
		4		
		4		

53  
PG 3UNIVERSITY 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.
CC53650	HD 177724	19 00 49	13 42 53		5894	AOV <sub>n</sub>	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. 14.0

Focus

Dome Temp. 14.0

LST  
GEO

Dome Temp./Hum. 9.°/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
	29K	600	3-4"	Telluric std. ND 1.2 in stellar path
		4		
		4		
	3310	1850		$\Delta\alpha + 8^s$ , $\Delta\delta + 40''$ — [no signal]
		4		
	3580	1814		$\Delta\alpha + 7^s$ , $\Delta\delta + 42''$
		4		
	3685	1800	3-4"	
		4		
	2670	1215	2"-3"	
		4		
		0		
		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	In/out board			CAS CCD	5894 89/51.58					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 7385 152	11 03 32	67 34 20			A0.5V	9.66	22 22 53		14
88	"	"	"					22 40 20		15

Dome Temp. Hu

Focus

Dome Temp. Hu

LST  
GEOHV  
1320



Dome Temp. / Hum.

14.6/38.7

Focus

6.73

Transparency Conditions

clear + hazy

Dome Temp. / Hum.

CCDT = -100.5

LST End	<del>LHA</del> End Counts	Exposure	Seeing	REMARKS
HV 1320		4 7		source FeAr, filter 3
		0		
		4		
1640		1800	2"	
		4		
1071		1800		
		4		
		0		
1085		1800		
		4		
1052		1800		
		4		
		0		
		4		
5300		1800		$\Delta\alpha - 43''$ , $\Delta\delta - 30''$
5250		1000		



Dome Temp. / Hum. 15.9 / 42%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

58

Focus 6.73

Transparency Conditions clear

Dome Temp. / Hum. \_\_\_\_\_

LST End	LHA End	counts	Exposure	Seeing	REMARKS
			4	2"	
		5600	1000		
			4		
			0		
			4		
		5282	1800		
			4		
		5000	1806		
			4		
		4155	1800		
			4		
			0		
			4		
		100 K	328		$\Delta\alpha = -30''$ $\Delta\delta = -33''$ ND1.2 in the stellar path. Telluric std.
			4		
			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 <del>2970</del>	Exposure	Seeing	REMARKS
	3390	1934	2.3"	$\Delta\alpha = -25^s$ $\Delta\delta = +36''$ HA -42"
		4		
	2970	1800		
		4		
		0		
	2820	1800		
		4		
	2820	1800		
		4		
	2970	1800	1.2"	
		4		
		0		
		3		<del>filter</del> filter 4. source Tung Max 11K



Dome Temp. / Hum.

10.6/59.8

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

62

Focus

6.82

CED 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
	HV <sub>2</sub> 1320	4/6		CSOURCE FeAr. Max 12k, filter 4
		0		
		4		
	2690	600	2"-3"	
	5510	1200		
		4		
	5900	1200		
		4		
		0		
		4		
	5500	1800		
		4		
	5270	1800		
		4		
	5370	1800		
		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)			CAS CCD	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		
		<del>7</del>		source Tung filter 4, Max 12K
		4		
	2950	1801		clear up.
		4		
	2850	1799		
		4		
	2900	1800		
		4		
		0		
		4		
	4800	1500		

89365

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	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC53769	comp			CASS CCD	4100					13
70	TYC 38871381	171057 <sup>2000</sup>	53 21 10		0600/25 <sup>20</sup>		10.9	03 26 32		14
71	comp									15
72	TYC 38871381	"	"				s			16
73	comp									17
74	BIAS (4)							04 20		1

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
	HV=1320V	4/7		C source FeAr. Filter 3.
		0		
		4	3	Max 6.3K
	25.5K	600	3"-4"	Through clouds. sometimes,
6.2)	72.2K	1200		$\Delta\alpha = -44^s$ , $\Delta\delta = -54''$ , HA = +2 <sup>h</sup> 28 <sup>s</sup> , Reverse Tel.
		4		
		4		
	24K	700	3"-4"	std Telluric 1.2ND in.
		4		
		4		
	Sk	1000s.		partly thru clouds.
		4		
		0		
		3		source Tung, filter 4, Max 11.5K



Dome Temp. / Hum.

41.8 / 47.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

70

Focus

6.94

Transparency Conditions

cloudy

Dome Temp. / Hum.

425 0 50 1024 41

LST End	LHA End	Exposure	Seeing	REMARKS
		4s		
	1.7k	300s		sky (reflected/clouds)
	1.6k	300s		"
	1.8k max	5s		
	1.45k	300s		sky (reflected/clouds)
	1.26k	300s		"
	1.16k max	3s		
	1.1k max	5s		
		4s		
	1.1k	326s		sky (reflected/clouds)
	2.1k	312s		"

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UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORYDate ~~1997~~ Apr 25/26 Observer G.E.J. Old / M. / 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	5400 600/27.6					4
15	sky									5
16	"									6
17/18	flats.							NDS		2
19/20	flats.				5400 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 End	LHA End	Exposure	Seeing	REMARKS
		4s		
	1.1k	300s		sky (reflected/clouds)
	1.3k	300s		"
		3s		<u>11k max</u>
		2s		<u>11k max</u>
	1.35k	300s		sky (reflected/clouds)
	.93k	300s		"
		1s		
		10s		
	<del>2.68</del>	<del>300s</del> <sup>100s</sup>		sky (reflected/clouds)
	9.12	300s		"
		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	<sup>34/35</sup> Inboard / outboard			CASS CCD	6570 ± 1A @ Row 572 center					3/4
36	BIAS(4)									1
37	Comp		1900			FeAr, Filter	#2			5
38	HD84441	9 40 11	+24 14 05			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	+17 24 36					20 11 31		8
42	"	"	"					20 31 08		8
43	Comp									9
44	BIAS(4)							20 43		1
45	Comp		1900							19
46	HD 87901	10 03 03	+22 27 22			ND1.2 Filter		20 47 53		10
47	Comp									11
48	Comp		1900			ND removed				11
49	Vys 250B	08 02 34	+33 06 25					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 6.86Transparency Conditions Fine

Dome Temp. / Hum. \_\_\_\_\_

395 0 50 1024 4 1 C-DFM7

LST End	IMA Ex End Counts	Exposure secs	Seeing	REMARKS
	1000 V	4/6		1800 h/mm @ 5610 Tegeting setup 3064 slit
		0		
	<del>4</del>	4		
	4K	359		Std vel 6K max
	<del>4</del>	4		
	<del>4</del>	4		
	<del>300</del> 466	<del>1080</del>	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		
	<u>1320V</u>	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 / Tn

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 Err
CC53851	Comp			CASS CCD	6570A					14ci	
62	Comp									14	
53	HD95660	10 5724	+30 5800			80	FD	212901		15	
54	n							213931		16	
55	Comp									17	
66	BIAS(4)							2152		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	G85p	220736		19	
66	Comp									28	
CC53867	Comp				5184A		ND #2 FeaR			28	
68	HD103095	n	n					221924		19	
69	Comp									21	
70	BIAS(4)							2229		1	

Dome Temp. / Hum. +5.4°C 44.6%

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 <sup>Pressure</sup> 10694 ↑ Rising

LST End	<del>Exp</del> Exp mkr COUNT 1000V	Exposure secs	Seeing	REMARKS
		4		
		4		
15	1350	600	3.4"	
16	1.1K	620	3.5"	
17		4		
18		0		
19		8		FILTER #5 MAX 15K ADU
20	2x133ms	ALT 84°		SEEING TEST Above 306u CHSS 5/1t
21		4		
22	3.4K	365	4"	std vel 2.6K ADU
23		4		
24		4		
25	33K		3.6"	T greating 70 47.06 5K MAX std vel 2K MAX
26		4		

XP903 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 $\lambda$ Emulsion	Filter	Temp.	Starting Time EST	Ending Time UT	P.H.
CC53871	Comp	1900		CBS CCD	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
<del>76</del>	HD109247	12 28 12	+55 21 00			8.2	F2	23 04 26		24
77	"	"	"					23 16 49		25
78	Comp									26
79	BIAS(4)							23 31		1
80	HD1169247	"	"					23 32 33		27
81	"	"	"					23 46 29		28
82	Comp									29
83	Comp									5
84	FO Vir	<sup>2000</sup> 13 29 47	61 05 48					00:10:16		6
85	"							00:18:34		7
86	"							00:24:47		8

Dome Temp./Hum.  $+4.3^{\circ}\text{C}$  46%  
78

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.86

Transparency Conditions Fine,

Dome Temp./Hum.

385 0 50 1024 4 1 CCDFAST

LST End	LHA Exp End 1200U	Exposure secs	Seeing	REMARKS
				TGRating 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 the
	2400.			

79 py24

sun/moon

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1999 Apr 26/27

Observer mks/Te

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Sp. Temp.	Starting Time UT EST	Ending Time UT	Cache P.H.	LST End
CC538 87	Comp.				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	2000 -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)							0234		1	



## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. \_\_\_\_\_

Focus 6.86Transparency Conditions Fine

Dome Temp. / Hum. \_\_\_\_\_

LST End	LHA Exp. End <i>in hrs</i>	Exposure (s)	Seeing	REMARKS
	1000V			
	2000	488		
	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 MKS/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time EST	Ending Time UT	P.H.
C53903	Comp				5184A					21
904	HD136924	15 1812	+16 3700			8.2	G5	02 46 57		22
905	"							02 55 46		23
906	"							03:04:40		24
907	Comp.									24
908	HD 136924							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. $\epsilon$ BIAS(A)									
21/28	FLATS x 8									TUNG, NDA 2

## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

82

Dome Temp. / Hum. \_\_\_\_\_

Focus 6.86Transparency Conditions FineDome Temp. / Hum. -00.5°C 53.52H

LST End	LHA End <i>Exp. mtr</i>	Exposure (s)	Seeing	REMARKS
		4		
	770.	483		$\Delta\alpha = 00\ 00\ 14$ $\Delta\delta = 00\ 00\ 24$ @ 01 30W <i>Should be -00 00 08?</i> <u>By new error chart</u>
		480.		
	740	472		
		4		
	~700	491		
	715	500		
	730	485		
	<del>7</del>	4		
	715	480		
	720	483	3.4"	
	700	491		
		4		
	700, <del>700</del>	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					3/4
31	BIAS(4)				(800/47.06)			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.

5.6 / 55.2

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

84

Focus

6.84

Transparency Conditions

clear

Dome Temp./Hum.

395 0 50 1024 41

CCD T = -100.4°C

LST End	LHA End Counts	Exposure	Seeing	REMARKS
	4/2	4/2		source FeAr. filter 2
	2	0		
	4	4		
	107K	100		
	15K	150		
		4		
		4		
	201	1800		
		4		
	180	1800	2"-3"	
		4		
		0		
	183	1800		
		4		
	183	1800		
		4		



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 <sup>h</sup> 18 <sup>m</sup>
18		4s		
1		0s		
2		6		source Tung.
5	1320V.	4s		
6	5950	900		fast 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		

PG 367

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 1920315	13 43 36	49 48 45			B3V	1.86	02 06 44		19
78	"	"	"			"	"	02 09 56		20
79	comp									21
80	comp									4
81	TYC 3452 163	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.

-ST  
-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		
18	21,3k!	300s		double double.  identification?? too bright.
19				
20				
21	200K	134		NO 0.6
22	300 K	198		traced
23		4		
24		4		
25	1306	1200s	2-3"	
26	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.
C053 984	comp			CAS5 CCD	5894					24
85	tyc 2659 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			ABV	11.5	03 36 33		27
89	comp									28
90/96	Tung									2

Dome Temp. h

Focus

Dome Temp. h

ST  
End



cu  
pg#1

Tues / wed

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 28/29

Observer Gid ITu

Julian Day

CI

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	MV Filter	SP Type	Starting Time EST	Ending Time UT	P.H.	LST End
CC5397/98	Incl/out Board			CASS CCD	5184 Å	ND#2	FeAr			3/4	
99	Comp		3000							5/2	
CC54000	FF Cnc	082940	+171702			10i5	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	BIAS (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	BIAS (A)							23 35		1	

Dome Temp. / Hum.  $+10.5^{\circ}\text{C}$  38.8% UNIVERSITY OF TORONTO · DAVID DUNLAP OBSERVATORY

Focus 6.82 Transparency Conditions Fine - sl SW haze

Dome Temp. / Hum. 38.5 0.50 1029 4 1 CCD FMT

LST End	LMAX End COUNTS	Exposure SEC	Seeing	REMARKS
	1320V	4/6		
		4		
	5430	1800	1.3"	using 1.0 guiding SBIG guider Telescope East side
		4		
	5300	1800		partially occulted by dome!!
		4		
	5K	1916		still working on guider
		4		
	4.6K	1800	1"	Tel Focus 2709 2670 for I Acquisition, great seeing, focus on slit
		4		
		0		
	?	1851	1.2"	
		4		
	3K	1800		
		4		
		0		

93  
pg #2

Tues/Wed

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 28/29

Observer G/d/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	<sup>C2</sup> Emission	Filter	Temp.	Starting Time <u>EST</u>	Ending Time UT	P.H.
CC54014	Comp			CASS SCD	518A <del>B</del>					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
<del>24</del>	<del>BIAS (4)</del>									<del>1</del>
24	Comp				6600A					2
25	HD 120315									14
26	Comp									2
27	Comp									2
28	M <sub>h</sub> 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.

IST  
End

120

## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum.

Focus

6.87 for 1506m  
setup

Transparency Conditions

slightly hazy

Dome Temp. / Hum.

24

LST End	LHA x End <i>meta</i>	Exposure Sec	Seeing	REMARKS
17	1320V	4		
1	37K	400		std vel 2.6K ADU
2		4		
1		0		
3		2		14K ADU
1		0		
2		2		290 0 50 1024 41 CCD FWHM
4	4k			1506/max @ 23.7° + grating 11k max
2				
2				
7	347	900		
5	343	900		
9	341	900		
10	328	921		
11		2		
1		0		

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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.
CC540 <sup>39/42</sup>	FLATS x 6			CASS CCD	6600A	ND1.2 + Filter #5		06560		2
CC54043	Comp		2860		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					TUNG 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

6.82 for 1800h grating

Transparency Conditions

some thin cloud

Dome Temp. / Hum.

46.5°C 40.9%RH

LST End	LHA x End COMETS	Exposure	Seeing	REMARKS
	1320V	85s		
		4		385 0 50 1024 41
	3300	1962	1"	1800/5658 250u slit
		4		
	3092.	1801	1.2"	
		4		
	3081	1800		
		4.		
	4602	2700	2"	
		4		
		4		
	190K	440		Telluric std, trailed
		4		
		0		
		4s		1AK MAX



Dome Temp. / Hum.

713.5°C 47% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

98

Focus 0.231

Transparency Conditions Part Cloudy

Dome Temp. / Hum.

LST End	LHA X End meter	Exposure secs	Seeing	REMARKS
	1000V	1/1		$x = 0.3480$ Echelle = 19.20, <sup>Height</sup> slit 400 = .225 STAR 600 = .205 FLATS width <del>400</del> = <del>0.225</del> Height 1000 = .261
		0		
		1sec		MAX 8.8K
	650	425	1"	Telluric Std in cloud 3.6K max
		1sec		
		3sec		MAX 13.6 K ADU
	1320V	1	3	$\Delta \pm 100.0010$ $\Delta \pm 100.0030$ FOR HP153597 <del>5441</del> near TYC 4194 2188
	nothing	731	3	(1" But cloudy) Tel west SIDE @ 00 15 W
		0	1	Then TYC 4194 2188 @ 00 28 W $\Delta \pm 100.0007$ $\Delta \pm 100.0039$
		1	3	
		0	1	

pg 149 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	HD1020315	13 43 36	49 48 45			B3V	1.86	20 21 19		4
57	"	"	"					20 32 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	HD103498	11 55 06	46 28 40			B-V +0.03	7.0	21 58 30		5
65	comp									3
66	comp									3
67	HD1020315	13 43 36	49 48 45			B3V	1.86	22 25 10		6
68	Comp									3

Dome Temp. / H  
Focus  
Dome Temp. H

LST  
End

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

PG 2/101

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 Apr 30 / May 1 Observer Cas/Barr/Lu Julian Day \_\_\_\_\_

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp	Starting Time UT	Ending Time UT	P.H.
CE 16369/73	Platz			Echelle CCD	5888					2
74	BIAS(4)				1920x0600/3480			22 54		1
75	comp									2
76	HD 116405	13 18 24	45 14 00			AOV	8.2	23 09 55		4
77	comp									3
78	comp									3
79	HD 103498	11 49 59	47 01 34			B-V 0.53	7.0	23 46 31		5
80	comp									3
81	HD 103498	"	"			"	"	00 08 07		6
82	comp									3
83	BIAS(4)							00 30		1
84	HD 103498	"	"			"	"	00 31 58		4
85	comp									3
86	comp									3
87	HD 120315	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 / 78

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

cloudy

102

Focus ~~0.240~~ 0.240, CCD T Transparency Conditions

Dome Temp. / Hum.

-100.4°C

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





Dome Temp. / Hum.  $+14.5^{\circ}\text{C}$  73%  
100

## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 240

Transparency Conditions Clearing by 0:30 EST

Nice Aurora  
Tonight,

Dome Temp. / Hum. \_\_\_\_\_

0 0 256 1029 41 CCDPMT

LST End	LHA End 1000 V	Exposure	Seeing	REMARKS
		1/1		focus test $X = .3480$ Edelle 1920
		0		CCDT = $-101.4^{\circ}\text{C}$ SLIT H = $400\mu = .225$
		1		SLIT W = $100\mu = .261$
	2.8K	265	2.2"	Telluric Std Tel west SIDE $\Delta L$ $\begin{matrix} 00 & 00 & 11 \\ 35 & 00 & 00 & 18 \end{matrix}$ @ 02 14 W 7K MAX 8.7K max
	1.320V			
	35*	1800s	3-4	* exp. meter likely misbehaving
		1s		
		1s		SLIT H now .120 setting, orders just separated.
	93*	1800	3.4"	Image of "Left" of slit view
		1		
	2*	1800		Image of "Right" of slit view
		4s		
	1000V	1s		
	2.7K	503	4"	Telluric Std Inverted

105  
105 #2UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1498 MAY 3/4

Observer Gld/tn

Julian Day \_\_\_\_\_

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

Dome Temp.

Focus

Dome Temp.

LST

End



PG 107

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 <sub>m</sub> Temp.	Starting Time UT EST	Ending Time UT	P.H.	LST End
CC540 62/63	Inboard / Outboard			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	<sup>2000</sup> 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. Hum.

16.6°C 70% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

106

Focus

6.75

Transparency Conditions

PART Cloudy

Dome Temp. / Hum.

LST End	LHA End <i>x meter</i>	Exposure	Seeing	REMARKS	
1	1000V	4/6	1.2		
2		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			
10	1000	651	1.3"	some cloud	
11		4			
12		4	1		
13	1640	480	1.2"		
14	1585	480			
15		4			
16		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	<sup>2000</sup> 13 29 47	01 05 48		<sup>1500/47.06</sup>	A7V	6.7	22 00 16		14
81	"	"	"			"	"	22 08 36		15
82	comp									16
83	comp									16
84	HD 133640	15 00 29	48 02 36			GOV	4.76	22 23 29		17
85/90	"	"	"							18
91	comp									19
92	BIAS(4)							22 59		1
93/99	HD 133640	"	"			"	"	23 00 59		20
CC54100	comp									21
01/07	HD 133640	"	"			"	"	23 32 36		22
08	comp									23
09	BIAS(4)							00 03		1
10/16	HD 133640	"	"			"	"	00 05 03		24
17	Comp									25

Dome Temp. H

Focus

Dome Temp.

IST  
Exp

Dome Temp. / Hum. 15.9 / 74.0

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

110

Focus 6.75

Transparency Conditions fine

Dome Temp. / Hum.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
	1000V	4		
	2380	480	~1.2"	
	2250	480		
	4			
	4			
	5000 TOTALS	180	1.2"	well separated, mainly guided on brighter SW component.
	~32K	240x6	2"	not well separated guiding on NE fainter one. Repeat 2400RS.BAT 6
		4		
		0		
	~39K	240x7		
		4		
	~38K	240x7	2.3	
		4		
		0		
	~27K	240x7	2.3"	
		4		

0.2678

44 i B00

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.	<sup>CA</sup> Emission	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.	IST End
CC 54 113/24	HD 133640	15 00 29	<sup>1900</sup> +48 02 36	CASS CCD	5184A	GOV	4.76			26	
25	comp									27	
26	BIAS(4)							01 09		0	
<del>27</del> 33	HD 133640	"	"			"	"	01 12 11		28	
<del>41</del>	comp									29	
<del>34</del> 40	HD 133640	"	"			"	"	01 43 57		30	
42	comp									31	
43	BIAS(4)							02 16		1	
<del>44</del> 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	
<del>61</del> 67	HD 133640	"	"			"	"	03 22 34		10	
68	comp									11	

Dome Temp. H

Focus 6

Dome Temp. V



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
20	~ 30K	240x7	2-3	Trying to guide on fainter NE component
21		4		
22		1		
23	~ 32K	240x7		
24		4		* Saved it later!
25		240x7	3-4	
26		4		
27		0		
28		240x7		
29		4		
30	31K	240x7		
31		4		
32		0		
33		240x7		
34		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.
CC54169/71	HD 133640	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.LST  
End



PG 115

Wed/Thurs

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 06/07

Observer Ln/Tn

Julian Day

CT

Plate No.	Object	R.A.	Declination	Inst.	<del>CA</del> Emission	SP Filter	MV Temp.	Starting Time EST	Ending Time UT	P.H.
CC541 <sup>81/82</sup> <del>81</del>	In board Loui BOARD			CASS CCD	5184Å					3/4
83	B/H/S(A)							20 02		1
84	Comp		1400							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	FFCnc	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 80			F3	8.0	21 00 30		10
92	comp									11
93/94	<del>Comp</del> B/H/S $\leq$ Comp							21 19		11
95	HT Vir	13 46 07	2000 +05 06 07			G0	7.16	21 21 53		12
96	"	"	"			"	"	21 32 50		13
97	comp									14
98	comp									14

Dome Temp. Hu

Focus 6

Dome Temp. Hu

LST  
End

Dome Temp./Hum.  $+17.0^{\circ}\text{C}$  6532H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

116

Focus 672

Transparency Conditions Fine  $\rightarrow$  part cloudy

Dome Temp./Hum.

LST End	LHA End <i>Exp. meter</i> 1000 V	Exposure secs	Seeing	REMARKS
		4/6		
		0		
		4		
	2810	360		st. vel
		4		
		4		
	218	1892	1.5"	hazy here
		4		
		4		
	1100	893	3"	mk. pgm
		4		
		4		
	1400	600		
	1600	600		
		4		
		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	<del>2000</del> 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	<sup>1900</sup> 55 21 00			F2	8.2	22 06 28		17
03	comp									18
04	comp									18
05	FO Vrr	13 29 47	<sup>2000</sup> 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	<sup>1900</sup> 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	s	-					23 29 33		25

Dome Temp.

Focus

Dome Temp.

LST

End

Dome Temp. / Hum. 14.7 / 78.0

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

118

Focus 6.72

Transparency Conditions fine

Dome Temp. / Hum.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
	2410	600		
		4		
		4		
	723	900	3.5"	
		4		
		4		
	2410	600		
		4		
		0		
		4		
	3870	240		std vel
		4		
		4		
		240x7	2-4"	
		4		
	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)				5184A			00 01		26
29/35	HD 1 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	flats x 7									2
55	BIAS(4)							01 35		1



Dome Temp. / Hum.  $+138$   $83\%H$ 

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

120

Focus  $6.72$ Transparency Conditions  $Hazy$ 

Dome Temp. / Hum.

 $CCDT -100.4^{\circ}$  $400\ 0\ 50\ 1024\ 41$ 

LST End	<del>Start</del> End 1600V	Exposure	Seeing	REMARKS
			$5.0$	
		$240$	$2''$	
	$3980$	$242$		
		$4$		
		$4$		
	$1965$	$600$		
		$4$		
		$0$		
		$4$		
	$1110$	$600$		
		$4$		
		$4$		
	$700$	$900$		$\Delta Q -00\ 00\ 11$ $\Delta S +00\ 00\ 09$
		$4$		
		$7$		filter 4, Source Tung $M_{\lambda} 12.4\ K$
		$0$		

121  
pg 44

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 May 6/7

Observer Lu/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SD Filter	MU Temp.	Starting Time UT EST	Ending Time UT	P.H.
CG 81258/63	HD 144579	16 01 30	<sup>1920</sup> 13 42 40			Above 30μ slit			48	
CC 54256	Comp									9
57	HD 144579	"	"		5784A	G8V	6.66	01 52 05		10
58	comp									11
59	comp									11
60	HD 136924	15 18 12	16 37 00			G5	8.2	02 06 06		12
61	"	"	"			"	"	02 15 07		13
62	comp									14
63	BIAS (4)							02 24		1
64	HD 136924	"	"					02 27 34		15
65	comp									17

Dome Temp. 4

Focus 6

Dome Temp. 4

IST  
Enc





Dome Temp. / Hum. 1178E 57.8H 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 CLOFFMT

LST End	LHA End	Exposure	Seeing	REMARKS
	<del>Exp. 1060V</del>	4/6/0		
		4		
	104K	222	1.2"	8K MAX
		4		
		4		
	<u>1320V</u> 3700	1970	1.3"	
		4		
		0		
		4		
	9000	984	1.3"	
		4		
	7900	904		
		4		
		4		
	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.	.ST Exp.
CC54284	Comp									18	
85	FO Vrr	13 29 47	<sup>2000</sup> 01 05 48			A7V	6.7	201719		19	
86	comp									20	
87	O/A5 (A)							2229		1	
88	Comp									21	
89	HD109247	12 28 12	<sup>1900</sup> +55 31 00			F2	8.2	223528		22	
90	"	"	"					22 5046		23	
91	Comp									24	
92	HD109247	"	"					23 0854		25	
93	"							23 2414		26	
94	Comp									27	
95	HD 109 247							2342 59		28	
96	"							00 00 03.		29	
97	Comp.									30	
98	MD109247							00 19 20		31	
99	"							00 35 48		7	

125

Dome Temp./Hum.  $+16.7^{\circ}\text{C}$  5762H UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.72 CCDT = -100.4 Transparency Conditions South mainly cloudy

Dome Temp./Hum.  $+15.8^{\circ}\text{C}$  608H

LST End	LHA End 1330V	Exposure	Seeing	REMARKS
		4		
	8.1K	600s	2.3"	
		4		
		0		
		4		
	9.9K	900s	2"	P = 0.825 $\phi @ 23^{\text{EST}} = .71$ ~ 800ADU max
	7.9K	966s	2"	
		4		
	6.6K	900		
	7.5K	920		
	7.6K	950.		
	6.6K	950.		
	5.5K	958		
	7.9K	959	3"	

127 pg #3

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 EST	Ending Time UT	P.H.
CC54300/01	Comp & BIAS(4)			CASS CCD	5184A			00 53		8/1
02	Comp		1900							9
03	HD144579	16 01 30	+392400			G8V	646	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	B/AS(4)									
16/20	FLATS x 4 + B/AS(4)						ND 12+06560+Filter #5			2

Dome Temp.

Focus

Dome Temp.

LST  
End

30% slit

30% slit



## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

128

Dome Temp. / Hum. \_\_\_\_\_

Focus 672Transparency Conditions part cloudy ~ increasing cloud

Dome Temp. / Hum. \_\_\_\_\_

LST End	LHA End	Exposure	Seeing	REMARKS
306.514	1320V	4/0		
		4		
	18K	380	2"	std vel 1.4 K ADU
		4		
		55		14K
				Rome SW Seeing test Light East wind
	Ad -00 0016 AS+00 0021			much fainter than two field stars ~ 3' 55W
306.514		15		150 ln/mm @ 2329 tgrating 455 0 25 1024 81 COOPMT Bright narrow 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 $\mu$ m 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
<del>35</del>	<del>comp</del>									<del>13</del>
35	comp									13
36	HD 120315	13 43 36	49 48 45			B3V	1.68	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 0.50 1024 4 1

LST End	LHP Exp. counts	Exposure	Seeing	REMARKS
		2/4		filter 3.
		0		
	1000 HV	4		
	901	600	2"-5"	
		4		
		4		
	708	600		
		4		
		4		
	1320 HV 2120	1200		
	228	4		
		0		
	2300?	1205		through clouds. [lost image]
		4		
	100 K	122		Telluric std.

PG 2131

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.
CC54337	comp flats			LASS CCD	5894 1800/41.58					15
38/48 49	BIAS(4)							2234		2
										1

Dome Temp./H  
Focus  
Dome Temp.

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

ST

Enc

## 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 (counts 1000 volts)	Exposure	Seeing	REMARKS
		4/2		filter 2 FeAr
		0		
	6.95K	<del>400</del>		Max 6.5K
	<del>6.95K</del>	2604		
		4		
	366	720	2"	
		4		
		4		
	735	1000		
		4		
		4		
	950	600		
		4		
		4		
	828	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		19
74	comp									19
75	HD133640A	15 00 29	48 02 36			G0	4.76	22 55 50		20
76	HD133640B+A	"	"					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
<del>83</del>	comp									<del>26</del>
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

135

Focus 6.67

Transparency Conditions hazy

Dome Temp. / Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
	Counts	0		
	891	1200	2"	
		4		
	790	1200	2"-3"	
		4		
		0		
		4		
	4420	180		
	4000	240		
		4		
		4		
	565	600		
	430	600		
	408	600		
		4		
		<del>480</del>		

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. Insp.	Starting Time UT EST	Ending Time UT	Cache P.H.
CC 54384	Bras (4)							23 52		<del>37</del>
85	Comp.									1
86	MD141990	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	B1A5(4)							00 37		1
91/99	flats x9									2

Dome Temp.

Focus 2

Dome Temp.

LST

End

Dome Temp. / Hum.

18.5 / 72.4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

138

Focus

2686 667

Transparency Conditions

fine.

Dome Temp. / Hum.

18.3 / 72.4%

2  
3  
4  
5  
6  
1  
2LST  
End

LMA

Counts

Exposure

Seeing

REMARKS

0

Reset after crash.

4

~380

600

Re-focused.

460

660

303

525

clouds coming up.

4

0

7

Max 12.5K. after 4.

PG 1139

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					3/16
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
		4/8		filter 2
		0		
		4		
	10,8K	150	1.2"	std Vel
		4		
		4		
	577	600		
	410	600		
		4		
		4		
	1630	600		
		4		
		0		
		4		
	3215	600		
	3256	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  
EndLMA  
End  
counts

Exposure

Seeing

REMARKS

3400

610

1"-2"

4

3120

600

3250

600

3400

610

4

0

4

455

600

445

600

409

653

4

4

5800

~~240~~

4820

240

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	<sup>2000</sup> 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-V	5.06	00 45 05		10
46	comp									11
47	comp									11
48	HD 136924	15 18 12	16 37 00			G5	8.2	00 59 39		12



Dome Temp. / Hum.

20.4 / 60.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

144

Focus

6.64

Transparency Conditions

fine - slightly hazy.

Dome Temp. / Hum.

LST End	LHA End Counts	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 4 105

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 08 12	16 37 00		5184	G5	812	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 6,64Transparency Conditions clear

Dome Temp. / Hum. \_\_\_\_\_

LST End	LHA End Counts	Exposure	Seeing	REMARKS
	547	480		
	604	500	1-2"	
	648	480		
		4		
		0		
	645	480		
	630	480		
	648	480		
	690	480		
		4		
	661	480		
	690	480		
	723	480		
		4		
	670	480		
	680	480		

995 147 Fri/Sat,  
1998 May 15/16

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date

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.
ce54465	HD 136924 15 18 12	16 37 00		CASS CCD	5184	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
	684	480	1-2"	
		4		
		0		
		4		
	2130	300		std Vel
		4		
		4		
	1111	600	1-2"	
1320 HV	2000	900	1"	fainter companion 3"4" SSE
		4		
	1080	480		sky getting bright.
		4		
		0		
		7		filter 4 Max 13.3 K

ADS 1483 SAB

PG 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 120	5184 1800/47.06					3/4
89	BIAS(4)							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	FO Vir	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	FO Vir							21 15 11		12
54500								21 25 29		13
01								21 36 02		14
02	comp									15
03	FO Vir							21 47 48		16

Dome Temp. / Hum.

20.9/40.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

1-150

Focus

664

Transparency Conditions

fine

Dome Temp. Hum.

CCDT = -100.4°C

390 0 50 1024 4 1

LST End	LHA End Counts	Exposure	Seeing	REMARKS
		4/8		filter 2.
		0		
		4	2-4	
	15K	150		trailed
		4		
		4		
	3660	600	2-4	
	3650	600		
	3650	600		
		4		
		0		
	3460	600		
	3470	610		
	3470	600		
		4		
	3240	600	2-5	

PG 2/51

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 May 07/18

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	<del>21</del> 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	<del>22</del> 27 59		20
10	comp									21
11	comp									21
12	HIT 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

152

Focus

6.64

Transparency Conditions

clear

Dome Temp. / Hum.

LST  
End~~LHA~~  
End  
counts

Exposure

Seeing

REMARKS

3730

724

2-5"

3035

600

4

0

4

713

600

4

4

1620

600

4

4

510.

600.

"

490

610

500

600

4

0

PG 3 153

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 May 17/18

Observer MKO/Lu

Julian Day \_\_\_\_\_

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC54520	HD 141 990	154654	38 09 00		5184	G5	8.7	23 32 34		28
21	"							23 47 59		29
22	comp									30
23/31	flats x9									2
32	BIAS(4)							0016		1

Dome Temp.

Focus

Dome Temp.

LST  
End





Dome Temp./Hum. 22.6/53.9  
 Focus 669  
 Dome Temp./Hum. 20.9/62.5

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Transparency Conditions Clear, bit o' haze

CCOT - 99.8°C

390 0 50 1024 4 1 CCOFMT

LST End	LHA End <i>Exp. meta</i>	Exposure <i>secs</i>	Seeing	REMARKS
		3/4		
1	1000V			
	1015K	355	1"	Telluric Std. <u>MAX ADU 8K</u>
	1320V			
	7880	1261	1.5"	8d -0000 45 8s -00 0027 <u>MAX ADU 1.1K</u>
	7643	1200		<u>MAX ADU ~ 1K ADU</u>
		9s		
	7410	1200s		<u>MAX ADU ~ 1K</u>
		4s		
		4s		
	7180	1200s	2"	



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 <i>Exp. rate</i>	Exposure	Seeing	REMARKS
	1320V	9s		
	<del>7.6K</del>	1809	1-3"	
	7.3K	1800 9s		~900 max adu
	4.9K	1818.5 4s		seeing is good → $\frac{1}{2}$ in $\frac{1}{2}$ max ~4000 ADU
		4s		
	4.5K	1805 7s 0		some cloud
		4		
	10K	1120s 4 4		running out of film - dousing up

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UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date May 18/19

Observer Hnl/Cas/Th

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time MEST	Ending Time UT	P.H.
CC 4566	HD 17729	19 00 49	13 42 53	Cass CCD	584 1800/min 2star			0129 08		
67	comp									
68	Bias(H)							0135 59		
69/78	Flats x10									



Dome Temp. / Hum.

20.2/62.1

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

150

Focus

Transparency Conditions

Cloudy up

Dome Temp. / Hum.

LST  
End

LHA

End

Exp. meter

Exposure

Seeing

REMARKS

124.84

300s

4s

4s

Telluric std - clouds "as Neutral density filter",  
guiding to spread it at  
GKmer

filter 4, 13.1K ADU max tungsten

Note - Both  $\lambda$  and Grating Header fields are incorrect.  
 Should be 5894 Å = 1800/51.58



Dome Temp./Hum.  $\pm 20.0^{\circ}\text{C}$  67%  
67%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

162

Focus 6.64

Transparency Conditions Part Clear - Hazy

Dome Temp./Hum. \_\_\_\_\_

390 0 50 1024 4 1 CCD FWT

LST End	LHA End Exp. rate 1000V	Exposure SECS	Seeing	REMARKS
		4/6		
		4		
	6.7K	801	4.6"	3.8K ADU MAX
		4		
		0		
		0		Cloudy gap ~ 1 hr
	1320V	4		
	13.7K	1364	3.9"	1.2K MAX ADU IS 2 -00 00 43 25 00 0 @ 3W Tel reversal
		4		
	16.5K	1239		
		4		
		4		
	3.5K	1800	2.4"	
		4		
	2.8K	1826		~ 350 ADU above Background
		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 51.7					1
97	TYC41523701	11 0717	+6521 09					002753		23
98	Comp					#3				24
99	Comp									25
600	TYC415122	10 5859	+6703 30					010302		26
601	Comp									27
602	TYC415122	"	"					014201		28
603	Comp									29
604	TYC415122	"	"					022508		30
605/06	Comp = BIAS(4)							0258		5/1
07	Comp									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°C +75.6%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 669

Transparency Conditions some cloud & haze

Dome Temp. / Hum. \_\_\_\_\_

LST End	LHA End <i>Exposure</i>	Exposure	Seeing	REMARKS
	13.10V	0		
	2.8K	1827	2.3"	
		4		
		4		
	3.3K	2226		$\Delta t = 00 00 45$ $\Delta \alpha = 00 00 21 @ 05 48W$
		4		
	3K	2		
		4		
	2.3K	1850		
		4		
	1020V	4		
	12.7K	3	4"	Telluric std.
		4		
		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.	CX Emulsion	SP Filter	MV Temp.	Starting Time UT EST	Ending Time UT	C.I. B.H.
CC54820/21	Tapboard / on Tapboard				CASSCO 250u slit					3/4
22	BIAS (4)									1
23	Comp									5
24	HD 120 315	13 43 36	19 <sup>00</sup> +49 48 45							6
25	Comp									7
26	Comp									8
27	TYC 4152 1341	11 09 40	20 <sup>00</sup> 67 12 37							8
28	Comp									9
29	TYC 4152 1341	"	"							10
30	Comp									11
31	BIAS (4)									1
32	Comp									12
33	TYC 415 176	10 58 43	20 <sup>00</sup> 67 08 29							13
34	Comp									14
35	TYC 415 176	"	"							15
36	Comp									16
37	BIAS (4) TYC 415 176									17

Dome Temp.

Focus 6

Dome Temp.

LST

Etc

186

Dome Temp. / Hum. 19.8°C

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.64

Transparency Conditions Part cloudy & gusty NW wind

Dome Temp. / Hum. \_\_\_\_\_

390 0 50 1024 41 CCFMT

LST End	LHA End	Exposure sec	Seeing	REMARKS
				Focus test
	<u>1002V</u>			6 K ADU max
	103K	336	4"	5.2K ADU max
	<u>1320V</u>			
	49K	1723	3.6"	5 K max
		<u>1799</u>		
	~6.3K	~ <del>6.3K</del> 1799 sec		
	2068	2000		
	2K	2185		
	2989	2460		

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Pg #2

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

WED / THUR

Date 1998 MAY 20/21

Observer Rue / A++ / Tn

Julian Day \_\_\_\_\_

Plate No.	Object	R.A.	Declination	Inst.	$\lambda$ Emulsion	SP Filter	MV Temp.	Starting Time UT EST	Ending Time UT	CI P.H.
CC54638	COMP			CASS 250u	5894A					19
39	BIAS (4)									1
40	TYC 415 176	10 58 43 <sup>20 00</sup>	67 08 29			B-V 0.282	10.69	00 05 24		19
41	COMP									20
42	Comp									21
43	TYC A148239	10 54 35 <sup>2000</sup>	+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 <sup>10100</sup>	13 42 53			1		03 21 37		30

Dome Temp.

Focus

Dome Temp.

LST

End



Dome Temp./Hum. +14°C 50% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

158

Focus 664Transparency Conditions Fine → part cloudy

Dome Temp./Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
	1320V			
	2600	2262	4.2"	
		4		
		4		
	<del>2086</del> 1650	2086	4.6"	
	<del>1600</del>	<del>2046</del>		
	1600	2046		
		4		
		0		
	1602	2023		
		4		
	1290	1694		
	1000V			
	12K	414		Telescope west side now





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Page #1

THURS / FRI

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 MAY 21/22 Observer Roe/Hml/Tm Julian Day \_\_\_\_\_

Plate No.	Object	R.A.	Declination	Inst.	EX Emission	Filter	MV Temp.	Starting Time UT EST	Ending Time UT	CI PH.
CC54666/67	INBOARD / OUTBOARD			CASS-CCD	4100 Å					
68	BIAS (4)			4100 Å slit	4100 Å			20:15:34		1
69	COMP	<del>10 48 50</del>	<del>65 07 57</del>		FeAr	FILTER # A		<del>20:24:28</del>		5
70	TYC 41511452	10 48 50	65 07 57				6.4	20:24:28		6
71	TYC 41511452	"	"					20:30:35		7
<del>72</del>	<del>TYC 41511452</del>	<del>"</del>	<del>"</del>					<del>20:37:49</del>		<del>8</del>
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									15

Dome Temp.  
Focus  
Dome Temp.

LST  
End

HV

Dome Temp./Hum. 10.5°C 60%

UNIVERSITY OF TORONTO | DAVID DUNLAP OBSERVATORY

172

Focus 6.85Transparency Conditions clearing

Dome Temp./Hum. \_\_\_\_\_

405 0 50 1029 41 CCDPORT

LST End	LMA <sup>2</sup> METER End	Exposure SECS	Seeing	REMARKS
	1000V			focus TEST
		4s		
	1500	311	5"	~ 2K MAX ADU
	1550	352		
	<del>2430</del>	<del>654</del>		
	2000	604		BAD GUIDING
		4s		
		4s		
	HV 1320V 2.2K	1800	5"	Bad seeing (S/M L50/i)
	<del>#2</del>	4s		
	2370	1540		
		4s		
		4s		

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UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1958 MAY 21/22 Observer Haml/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	TYC 4385152	11 03 32	67 34 20	EASS CO 470m slit T <sub>grating</sub> 25.2°	4100 Å		9.66	22:22:39		16
82	Comp									17
83	TYC 4385152	"	"				"	22:54:27		18
84	Comp							23:25		19
85	BIAS(4)							23:26		1
86	COMP							23:30:00		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				7.68	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

174

Focus 6.85

Transparency Conditions mostly clear

Dome Temp./Hum.

905 0 50 1024 4 1 CCD/FMT

LST End	LHA End	Exposure	Seeing	REMARKS
	Exp meter HU 1320V 4200	1800	3.7"	
		4s		
	4200	1900		
		4s		
		4s		
	2700	1824		
		4s		
	1800	2250	3"	
		4s		
		4s		
	3256	1800s		
		4s		
	2775	1984s		clouded out
		4s		
	Then CC 54697-	706fts	10 FLATS @ 7sec, NDS3	MAX 14K ADU

PG 1 175

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	T/E 4485506 44451284	11 <sup>01 07</sup> 22 22	62 24 16 <del>67 40 23</del>			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	T/E 44451284	"	"			"	"	00 04 59		11
19	"	"	"			"	"	00 25 18		12
20	comp									13
21	comp									13
22	T/E 4448754	10 47 39	67 27 25			B-V 0.286	10.09	00 25 10		14
23	"	"	"			"	"	01 13 09		15

Dome Temp.

Focus

Dome Temp.

EST  
End

1320 HV



Dome Temp./Hum. 12.1/53.7

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

176

Focus 6.75

Transparency Conditions clear

Dome Temp./Hum. CCDT = -100.5c

395 0 50 1024 4 1

LST End	LHA End Count	Exposure	Seeing	REMARKS
1320	HV	4 1/2		filter 3 Max 5.5K
		0		
		4		
107K		300		1.2 ND filter. Max 5K, trailed, Telluric STD.
		4		
		4		
3120		1200	2"-3"	
3030		1200		
		4		
		0		
2630		1200	3"-5"	
2150		1200		
		4		
		4		
2926		1200		
2777		1200		

PG 2 177

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

FRI / SAT

→ Att/Tec

Date 1998 MAY 22/23

Observer

[HI] / L4

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 4148754	10 47 39	+63 37 35			B-V 0.286	10.09	01 36 54		17
27	"	"	"			"	"	01 57 22		19
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 <sub>n</sub>	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

178

Focus 675

Transparency Conditions CLEAR

Dome Temp./Hum. CDT =

LST End	LHA End CUMULATIVE	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		cc54741 flats x 10 filter # 4 sec. 13.1K
		4		NO 12 in beam
		4		cc54751 BIAS (4) @ 03:55

PG 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	flats 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	Exposure	Seeing	REMARKS
	1320 HV	4/2		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 (8)

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.

Focus

Dome Temp.

LST

Epd

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
		4		
	2035	1800	4.6"	
		4		
		0		
		4		
	2238	1260		
		4		
	2071	1200		
		4		
	2015	1200		
		4		
		0		
		4		
	2210	1200		
		4		
	2730	1200		

PG 3  
87

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 May 23/24

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.
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



Dome Temp. / Hum.

12.3 / 46.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus

Transparency Conditions

clear

Dome Temp. / Hum.

LST  
End

LHA  
~~End~~  
Counts

Exposure

Seeing

REMARKS

4

4

180K

300

ND 0.6

4

0

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 May 25/26 Observer Gld/Ky Julian Day \_\_\_\_\_

185  
1091

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 3x7									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

183

Focus 6.75

Transparency Conditions

cloudy

Dome Temp. / Hum.

395 0 50 1024 41

LST End	LHA End	Exposure	Seeing	REMARKS
		1200s		
		1200		Dark tests.
		1800		
		1800		
		☺		
	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
	4800	600		

187  
Pg 2

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 198 May 29/26 Observer 6A/LU. Julian Day

EST

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
cc54823	comp								NDS	<del>20</del> 19
24	Tyc 4151-22	10 58 59	67 03 29					044 48		10
25	"	"	"					05 04		11
26	comp									12
27	comp									13
28	Tyc 4148-239	10 54 34	64 33 58					1 25 18		14
29	"							1 10 34		15
30	comp									16
31	comp									16
32	B1A3/4									1
33	Tyc 4151-76	10 58 43	67 08 29					2 04 18		17
34	"	"	"					2 19 33		18
35	comp									19
36	comp									19
37	Tyc 4145-1284	11 01 07	62 24 16					02 37 51		20
38	"									21

Dome Temp.  
Focus  
Dome Temp.

LST  
End

Dome Temp. / Hum. 14.4 / 80.7

UNIVERSITY OF TORONTO DAVID DUNLAP OBSERVATORY

1878

Focus 6-75Transparency Conditions clear

Dome Temp. Hum.

415 16 512 122

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		

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

189P & 3  
Date 1998 May 25/26 Observer Gld / Lu Julian Day \_\_\_\_\_

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54839	comp				400					22
40	comp									22
41	TYC 448-754	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. 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 1624 81 CCD FMT

LST End	LHA End <i>Exposure</i>	Exposure	Seeing	REMARKS
		4		
	1000V M350	29	3"	$\Delta\alpha = 00 00 04$ $\Delta\delta = 00 00 06$ @ 0 43W
	110V 1320V	4		
	860	1990		$\Delta\alpha = 00 00 06$ @ 01 09W $\Delta\delta = 00 00 15$ Galaxy core seen to ESE in 8"
		4		
		4		
	1050	1203		$\Delta\alpha = 00 00 07$ $\Delta\delta = 00 00 42$
	3000	426		Max 5.2K
		4		
		0		
		5 = 0.55		OG 560 filter. tscale = 1000



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<sub>n</sub>

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
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		18
CC54886	Comp		1900							18
87	HD109247	12 28 12	755 21 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 45 30		24
95	"	"	"			"	"	01 26 52		25
96	comp									26

Dome Temp. H  
Focus  
Dome Temp.

1ST End

Dome Temp./Hum. 12.1/49.8

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

196

FOCUS 6.75

Transparency Conditions

fine - Huzy

Dome Temp./Hum.

CCDT = -100.4°C

LST End	LHA End Count	Exposure	Seeing	REMARKS
	1000V	0		
		4		
	2640	360	3"-2"	Vel std
		4		
		4x67ms 2x133ms +	2'-3'	Seeing test ALT 85° Dome SW, light N wind
	1890	1204	2'-4"	
		4		
	1822	1200		
		4		
		0		
		4		
	490	680		
	490	660		
	496	600		
		4		

PPG 4

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 May 26/27 Observer Lu/Tn Julian Day \_\_\_\_\_

Plate No.	Object	R.A. <sup>1900</sup>	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC54897	HD141990	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	HD141990							02 12 13		6
03	"							02 22 34		7
04	"							02 32 55		8
05	comp									9
06	HD141990							02 44 31		10
07	"							02 54 49		11
08	"							03 05 10		12
09	comp									13
10	HD141990							03 16 48		14
11	comp									15
12	BIAS(4)							03 28		1
13/21	flat3x7									2

Dome Temp. /

Focus \_\_\_\_\_

Dome Temp. \_\_\_\_\_

LST

Exp. \_\_\_\_\_

Dome Temp./Hum. 11.1/45.3

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

98

Focus 6.75Transparency Conditions clear - hazy

Dome Temp./Hum.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
	545	600	2"-4"	
	571	610		
	630	601		
		4		
		0		
	670	600		
	660	600		
	715	600		
		4		
	700	600		
	730	600		
	738	600		
		4		
	695	600		
		4		
		0		
		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 CCO	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	<del>HD</del> SX CRV	"	"					20 58 50		9
30	SX CRV	"	"							9
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

UT  
Est



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  
EndLMA  
End Count

Exposure

Seeing

REMARKS

4/3

↑

0

filter 2

4

1000V

23 K

200

1.2"

trailed

4

530

721

475

773

2"

4

4

1030

600X3

1.2"

4/0

1230

600X3

3x

4

1230

600X3

1"

~~3x~~

4

600x2

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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				5194A					19
49	BIAS(4)							23 18	<del>22</del>	19/1
50	Comp									19
51/53	HT Vir	13 46 07	05 06 57			G0	7.6	23 22 21		20
54	comp									21
55/57	HT Vir							23 55 33		22
58/59	comp/BIAS(4)							00 27		23/1
60/62	HT Vir							00 28 54		24
63	comp									25
64/65	HT Vir							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 6.1

Dome Temp.

JST

End

Dome Temp./Hum. +18.3°C 57.5%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

702

Focus 6.70

Transparency Conditions

clear

Dome Temp./Hum. \_\_\_\_\_

LST End	LHA End <u>counts</u>	Exposure	Seeing	REMARKS
		4		
		0		
		4		
	2350 <sup>23</sup>	600x3	1.7"	
		4		
	2270	600x3		
		4/0		
	2100	600x3		
		4		
	1860	600x2		
		4		
		0		
		4		
		600x3	1"	
		4		

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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. 1900	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT EST	Ending Time UT	P.H.	IST End
CC549 73/75	HD 141990	15 46 54	+38 09 00		5184A	G5	8.7	02 01 53		6	
76	Comp									7	
77	BIAS(4)							02 34		1	
78/80	HD 141990							02 35 36		8	
81	comp									9	
82	Comp									9	
83	HD 144579	16 01 30	39 24 00			dG8	6.66	03 13 33		10	
84	Comp									11	
85	Comp									11	
86	HD 154417	17 00 11	00 50 58			G0V	6.01	03 25 11		12	
87	Comp									13	
88	Comp									13	
89	HD 187691	19 50 49	10 24 15			F8V	5.11	03 34 51		14	
90	Comp									15	
91	BIAS(4)							03 41		1	
CC54992/55000	flats x 9									2	

Dome Temp.

Focus

Dome Temp.

Dome Temp./Hum.  $+17.2^{\circ}\text{C}$  5752H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

254

Focus 6.70

Transparency Conditions Hazy - wind NW increasing

Dome Temp./Hum.  $+17.0^{\circ}\text{C}$  5532H

LST End	<del>LST</del> Exp End <del>Time</del> 1000 V 900 1000	Exposure	Seeing	REMARKS
		600x3	1.3"	
		4s		
		0		
	900	600x3		
		4		
		4		
	3310	360		Max 3K std Vel
		4		
		4		
	3280	300		std Vel
		4		
		4		
	9.8 K	300		trailed. Max 7 K
		4		
		0		
		7		filter 7 13.2 K $\rightarrow$ 12.9 K



Dome Temp. / Hum. 23.3°C 57.5%

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Focus 665

Transparency Conditions

Hazy

Dome Temp. / Hum. \_\_\_\_\_

*Encoders carefully re-normalized after long previous normalizing*

LST End	LWR End Exp. meta	Exposure	Seeing	REMARKS
		3/7		focus Test
		0		
	<u>1000V</u>	4 sec		
	10K	786	1.3"	Telluric Std - Tel East side 608K max
		4s		
		4s		
	1578	600	2-3	
	1594	606		
	<u>1V</u> <u>1320V</u>			
	3.2K	1800	2"	
	3.3K	1889		
		4		
	2.9K	1805		
		4		

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UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Thurs/Fri

Date 1998 MAY 28/29

Observer Kap/Bra/To

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	C $\lambda$ 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.

ST

Exp



Dome Temp. / Hum.  $+21.6^{\circ} \text{C}$  61% RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 665

Transparency Conditions Hazy - part cloudy

Dome Temp. / Hum. \_\_\_\_\_

LST End	CMR Exp V	Exposure	Seeing	REMARKS
	1320 V			
	4K	1800	2-3"	
	4.8K	1846		
	<del>4.8K</del>	<del>1846</del>		
		0		
		4		
	2.8K	1573		cloud at end Eastward of pair; sep 2.1' $\Delta \alpha - 00 00 40$ $\Delta \delta - 00 01 00 @ 5.22 W$
		4		
		4		
	4.9K	696	2-3"	Telluric std in cloud. 1.178 Air mass
		4		
	1060V	4		Tel west side now; Telluric std
	10K	992	3"	6K MAX
		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 (4)				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					Fitted 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

[HIJ/Gld/Jac]

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	C <sub>2</sub> Emission	Filter	mV Temp.	Starting Time UT EST	Ending Time UT	P.H.
CC55049	B1AS(4)			250u	5894Å			2016		1
50/51	Inbound/out			tegrating	51.58°					3/4
52	Comp		1900							5
53	HD 120315	13 43 36	+9 48 45			0.6ND		20 34 03		6
57	"	"	"							6
59	"	"	"					20 38 30		7
55/56	Comp									8
56	Comp		2000			NO removed				9
58	Tyc 3816-150	10 33 44	+53 29 51				6.5	20 53 03		10
59	Comp									11
60	Comp		2000							12
61	TYC 3816-999	10 30 42	+53 08 03				11	20 09 32		13
62	Comp									14
63	TYC 3816-999	"	"					21 41 22		15
64	Comp									16
65	B1AS(4)							22 20		1

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UNIVERSITY OF TORONTO · DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum.  $+21.0^{\circ}\text{C}$  68.4%

Focus \_\_\_\_\_

Transparency Conditions *Fine*

Dome Temp. / Hum. \_\_\_\_\_

LST End	<del>Exp</del> End Exp meter	Exposure	Seeing	REMARKS
		0		
		3/7		
	1000V	4		
	18K	96		7.8K max
	23K	122		7K written later.
	35K	188		16K max.
		4		
	1320V	4		
	63K	618		3.8K max
		4		
		4		
	3822	1800	2-3"	
		4		
	7K	2059		

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

917  
p42

Date 1998 May 29/30

Observer [HI] T<sub>9</sub>

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	MV Temp.	Starting Time <del>UT</del> 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
<del>68</del>	"	10 50 50	66 32 9					22 31 58	edit ✓	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		22
74	→ B17314)									23
75	Comp									23
76	Comp		2000							24
77	TYC 4149-325	11 03 37	+62 57 12				9.8	00 01 56		25
78	"	✓	1					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. h

Focus 6

Dome Temp.

LST

Exc

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

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Focus 6.65

Transparency Conditions *Fine*

Dome Temp. / Hum.

LST End	<del>LST</del> End	Exposure	Seeing	REMARKS
	1320V	4s		
	7190	600s		
	9.8K	799	3.4"	
		4		
		4		
	3371	1900s		
		4		
	2703	1805s		
		4		
		4		
		1200	3.4"	SE one of close pair
	404K	1200		
		4		
		4		
	4082	1800		

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 May 29/30 Observer \_\_\_\_\_ Julian Day \_\_\_\_\_

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time <del>21</del>	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 12724	19 00 49	13 42 53					03 35 55		20



Dome Temp. / Hum. 16.1 C / 40.5H

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Focus 6.65Transparency Conditions Fine

Dome Temp. / Hum.

LST End	LMA End	Exposure	Seeing	REMARKS
		4		100 bias (4)
7	4.11k	18005	4"	101-106 flats x 6 filter + 4s exp.
		4		107-112 bias
		4		
	3987	18005		
		4		
	3254	17065	10"	
		4		
		4		
8	2525	1200	8"	
		4		
	1020V	4		
	9.8K	213		
		4		
		4		
	17K	146		H = 51.8

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.
C55 17/18	In board / out board				5184A					3/4
19	Comp	1900				F 2 NO FOAT				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. / Hum. 15.5°C 63.2%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 6.70Transparency Conditions Fine but gusty

Dome Temp. / Hum.

390 0 50 1024 41 CCDENT

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

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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.	LST End
CC55 7 3A	HD 95 660	10 57 24	1900 +30 58 00		5184A					18	
35	"	"	"					22 02 30		18	
36	Comp									19	
37	Comp		1900							19	
38	HD 10 30 95	11 47 13	+38 26 10			G82p	645	22 17 16		20	
39	Comp									21	
40/47	FLATS x 8					<del>ND 5</del>	<del>Tungsten</del>			21	
48	BINS(4)							22 57		1	
	Comp					ND 4		FeAr		22	

Dome Temp.

Focus 6

Dome Temp.

Dome Temp./Hum.  $+12.8^{\circ}\text{C}$  84.5% H UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

220

Focus 6.70

Transparency Conditions Fine

Dome Temp./Hum. \_\_\_\_\_

CCD T  $-100.4^{\circ}\text{C}$

LST End	LHA Exp End <del>6.00</del> 1000 V	Exposure	Seeing	REMARKS
------------	--	----------	--------	---------

		621	3-5"	
--	--	-----	------	--

	860	600	"	
--	-----	-----	---	--

		4		
--	--	---	--	--

		4		
--	--	---	--	--

	51K	773	3-5"	std vel
--	-----	-----	------	---------

		4		
--	--	---	--	--

		7		12.8K max
--	--	---	--	-----------

		0		
--	--	---	--	--

		4		<del>After Keoporing</del>
--	--	---	--	----------------------------

M  
Pg 11

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					5/84A					1/2
51	Comp									3c
52	S92	19 41 03	40 11 00						04:14:30	4c
53	S92							04:16:15		5c
54	Comp									5c
55	B/A5 x1									1
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 6  
Dome Temp. \_\_\_\_\_

LST  
Ext

222

Dome Temp. / Hum. 23°

## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.65Transparency Conditions SI HAZE

Dome Temp. / Hum. \_\_\_\_\_

1st CCD5 use engineering

LST End	LHA End <i>Exposure</i>	Exposure	Seeing	REMARKS
		<u>905s</u>		<u>GAIB's so Readout error</u>
	<u>HV 1320V</u>			
	<u>1454</u>	<u>2141</u>		
	<u>1375</u>	<u>2254</u>	<u>2"</u>	
		<u>7s</u>		
	<u>1600</u>	<u>2279</u>		
		<u>4s</u>		
		<u>0s</u>		
		<u>4s</u>		

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UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 July 2/3 Observer *wki/Sc/Ta* Julian Day \_\_\_\_\_

Plate No.	Object	R.A.	Declination	Inst.	<sup>ca</sup> Emission	Filter	Temp.	Starting Time UT <sup>Yes</sup>	Ending Time UT	P.H.
CC55165 ✓	HD 187691	19 46 14	<sup>2000</sup> 40 09 55	CAS CCD	5184			07 04 10		14
66	comp									15
67	comp									16
68	HD 22268	<sup>1980</sup> 23 34 48	+05 05 03					07 21 28		16
69	comp									17
70	comp									18
71	HD 1280	<sup>1900</sup> 00 11 52	7 38 07 35					07 34 03		19
72	comp									20
73	comp									<del>21</del>
74	PUVul	<sup>1989.2</sup> 20 26 46	121 32 16					08 01 42		23
75	comp									24
76	BIAS (4)									21
77	comp									25
78	HD 14252	<sup>1900</sup> 02 13 09	+28 10 52					08 20 20		26
79	comp									27

Dome Temp. / h

Focus

Dome Temp.

LST  
End

2.6



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 100.0V 7.8K	241		
		4		
		4		
	135K	198		10K ADU max
		4		
		4		
		183		
	1320V	45		
	874			
		45		
		0		
		45		
	26800	402		3.4 K max
		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.
CC55/80	Comp		1400							28
↗ 81	HD 15385		note switch					083419		29
↘ 81	Comp									30
83	Comp									31
84	HD 225451	23 354	+36 0957					084402		31
85	Comp									31
<del>86</del>	<del>FLATS</del>	<del>X</del>	<del>repeat flat. lat.?</del>					<del>ND4</del>		
86	BIAS(4)									
87/96	FLATS x 10									
96										

Dome Temp. \_\_\_\_\_

Focus \_\_\_\_\_

Dome Temp. \_\_\_\_\_

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.

22.0 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 Van/Blg/Lu Julian Day \_\_\_\_\_

29  
PG 2

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CL55214	comp			CASS CCD	bb00					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	<sup>2000</sup> 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



PG 1  
27

UNIVERSITY 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 CCO	6000 1800/50.35					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.

395 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		
	478	1205		
		4		
		0		
		4		
	7000	320		
		4		
		4		

237 p&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.
055249	HD229680	18 45 54	15 49 00	CASS CCD	6600 1800/56,55	FG	11	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	HD356404	19 52 48	10 46 00			FG	10	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

End

Dome Temp. / Hum. 19.3 / 52.2

UNIVERSITY OF TORONTO | DAVID DUNLAP OBSERVATORY

236

Focus 6.65

Transparency Conditions hazy

Dome Temp. / Hum.

39.5 0 50 1024 4 1

LST End	LHA End Counts	Exposure	Seeing	REMARKS
	197	1804	2-3"	
		4		
		4		
	7000	513		
		4		
		0		
		4		
	725	1800		
		4		
		4		
	470	1799		
		4		
		0		
		4		
		2498		
		4		

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 July 05/06

Observer Vnk/Blg/Lu

Julian Day \_\_\_\_\_

237  
RGS

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT EST	Ending Time UT	P.H.
cc55265	comp				6600					23
66	HD187691	19 46 14	16 09 55			F8V	5.11	01 10 22		24
67	comp									25
68	comp									25
69	BD+3 4437	20 50 13	<sup>2000</sup> 03 39 08			F-G	8.8	01 21 04		26
70	comp									27
71	comp									28
72	BD+17 4572	21 19 21	17 51 00			F-G	9.2	01 54 20		29
73	comp									30
74	BIAS(4)							02 26		1
75/81	flat X7									2
1-										

Dome Temp.

Focus

Dome Temp.

UT

Est



232

Mon/Tues

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 July 6/7

Observer In / 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		
CC55325 → 75	BIAS(4), 1, 2, 4, 8, 16, 32, 48, 96, 128 sec, BIAS(4)					3 x 128 sec DARK	02 01			
CC55376-426	SAME Repeat of Gain. BAT x 3 But @ 400 0 200 1024 1 1 CCD FMT.									
CC55427	Running of Noise. BAT @ 400 0 200 1024 1 1 CCD FMT									

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 $-100^{\circ}\text{C}$	using Batch noise.bat
	Typhoid	$466^{\circ}$	1800 h/min	using gain.bat Topup Done before this series started
	CCDT $-100.5^{\circ}\text{C}$	(Dome T $+18^{\circ}\text{C}$ H=92%)		Had GPIB errors, so restarted capture. Reset HOUAICON
				Repeat GAIN, BAT 3 should be <del>48</del> <sup>51</sup> frames
	ND 0.6 + regular ND #3	for FLATS	max at 3.5k ADU for 32 sec	Dome T = $-100.5^{\circ}\text{C}$ @ 23:44 EST
	slit removed, gratim covered	CCDT @ $-100.4^{\circ}\text{C}$	@ 0 EST	Dome 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

CI<sub>2</sub>

Plate No.	Object	R.A.	Declination	Inst.	<sup>CJ</sup> Emulsion	<sup>MV</sup> Filter	<sup>SD</sup> Temp.	Starting Time UT <u>Yes</u>	Ending Time UT	P.H.
CC554 10/41	Inboard/outBOARD				4A28 <sup>B</sup> I PA					3/4
42	BIAS(A)							0147		1
43	Comp					ND4	FeAr			5
44	HD 161868			1500		3.74	AD	015338		6
45	Comp									7
46	Comp			1500						8
47	HD 17549							020437		9
48	Comp									10
49	<del>Comp</del> BIAS(A)									11
50/56	BIAS(A) FLHIS x 7							ND 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. / Hum.  $+21^{\circ}\text{C}$  87.96/11

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

240

Focus 6.80

Transparency Conditions

Dome Temp. / Hum. \_\_\_\_\_

 $+50$  0 50 1024 4 1 CCPFMT

LST End	LHA End Exp. (minutes)	Exposure	Seeing	REMARKS
T 30.6	6.80 set 1000V			Temperature 25.85
		4		
	9.2K	1235	3.4"	14.8k max
	1418	800s	5"	fainter stars @ 7 col #
			7.8C	
				Re booted capthens and Houricom before starting again.
	2050	592	5"	2.6K ADU max
	6.4K			6.8K max



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UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. \_\_\_\_\_

Focus \_\_\_\_\_

Transparency Conditions \_\_\_\_\_

Dome Temp. / Hum. \_\_\_\_\_

EST End	<del>EST</del> End <i>Ex meter</i>	Exposure	Seeing	REMARKS
	<u>1320V</u>	4s		
	~2000			[#14 Bly system]
		1170		#20 Bly system
				#7 Bly system
		1800		#12
	~2000	600	4"	

249 #3

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 July 7/10

Observer Vnk/Big/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				44289	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 (h))									31
90	bias (h)									1

Dome Temp.

Focus

Dome Temp.

LST

End

244

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. \_\_\_\_\_

Focus \_\_\_\_\_

Transparency Conditions \_\_\_\_\_

Dome Temp. / Hum. \_\_\_\_\_

	LST End	LHA End	Exposure	Seeing	REMARKS
24		<u>1300</u>			
25		~2300	250		
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37		2100	510		
38					
39					
40		3100	<u>80</u> Sec		
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Big Fri Tour 1st half

245  
Pg#1  
Fri / SAT

Date 1998 July 10/11 Observer VanK / Big / 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				66008	ND5	FeAr			3
95	HD 161868							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	BIBS (4)							0449		1

Dome Temp./Hum. +17.1°C 52% UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

246

Focus 6.80

Transparency Conditions S/ haze

Dome Temp./Hum.

	LST End	LHA End <i>Exp. depth</i>	Exposure	Seeing	REMARKS
10		1000V			42.4° Targeting 1200 km/hr
1					
3			4		
4		5.9K			10K ADU max
9			4		
8			4		
6		3K	500 sec	2"	19.145 RHA, $\chi_{in} -15.5458$ 7 RAA -186 3.8 ADU max
7			4		4 RA 19.1445
7			4		RA 19.1443
8		2.2K	614	2-3"	3.6K ADU max
9					
9					
10					
10					
10					

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1958 July 10/11

Observer VnK/Blg/Tn

Julian Day \_\_\_\_\_

247  
pg 1/2

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		7
17	Comp									19
18	NGC 7128 # 14							V <sub>12</sub> B0	05 51 59	20
19	Comp									21
20	NGC 7108 # 20							V <sub>10</sub>	06 2857	22
21	Comp									23
22	BIHS (4)								07 01	1

edit →  
Approx →

Dome Temp. \_\_\_\_\_  
Focus \_\_\_\_\_  
Dome Temp. \_\_\_\_\_

LST  
End



## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

248

Dome Temp. / Hum.

Focus 680

Transparency Conditions

OK

Dome Temp. / Hum.

LST End	<del>LST</del> End 1000V	Exposure	Seeing	REMARKS
	1679	620		
		4		
		4		
	1890	600		2.5K ADU max note Did not use order separation filters so far tonight
		4		" " " " " "
		4		OG 560 For comparison, GG 385 for stellar Bar
	1546	600		" "
		4		" "
		0		Both order separation filters removed, Peered not needed AT ALL.
		4		
	265	1875	3"	CCDT = -10013 (still ok) <u>Strong H<math>\alpha</math> em</u>
		4		
	1450	1800		5.2 K ADU max



Dome Temp./Hum.  $+16^{\circ}\text{C}$  57.18H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

250

Focus 6.80

Transparency Conditions Fine

Dome Temp./Hum.  $+15.32^{\circ}\text{C}$  58.64H

365 0 50 1029 91 CCDFAST

LST End	LHA End	Exposure	Seeing	REMARKS
	1000V			1200h/42.4 <sup>0</sup> (-100.3 <sup>0</sup> C CCD Temp)
		4s		
		4s		
	650		3.4 <sup>0</sup>	CCD T still -100.3 <sup>0</sup> C
		4s		
		4s		
				B at 700 00 28 Large Oct ?? L at -00 00 36
		4s		
		0		
		4s		1418K max
				Dewar just starting to warm up -99.9 <sup>0</sup> 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 VAK/Blg/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	MV Filter	Temp.	Starting Time UT ✓	Ending Time UT	P.H.	LST End
cc55540/41	Inboard				6600A					34	
42	B/H5(4)							0348		1	
43	Comp					ND5	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	

252

Dome Temp. / Hum.  $+18.2^{\circ}\text{C}$  50% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.76

Transparency Conditions Fine

Dome Temp. / Hum. \_\_\_\_\_

365 0 50 1024 4 1 CCD FWH

LST End	LHA End 1822V	Exposure	Seeing	REMARKS
				1200h / 42.4° Focus test
		45		
	169	1805	2.3"	
		45		
	180	2014	2.3"	
		45		
		0		
	160	1840		
		4		
			3"	
		4		
		0		
	290	1804		
		45		
	170	2400		

5m  
Py#2

SAT / Sun

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 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	B1A5(A)							0750		1
59	Comp									16
60	HD 209481	21 58 43	+57 31 04					0758 02		17
61	Comp									18
62	Comp									18
63	HD 214923	22 36 28	+10 18 33					08 05 47		19
<del>64</del>	<del>Comp</del>	<del>Comp</del>								21
<del>65</del>	<del>Comp</del>	<del>T. A. 10 10 10</del>								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

Enc

Dome Temp./Hum. +17.3°C 50% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Fine

254

Focus 676

Transparency Conditions

Dome Temp./Hum.

LST End	CFIA Exp 10500	Exposure	Seeing	REMARKS
16		4		
1		0		
4	4	4		
5	5K	'		8 K ADU max
8	5K	4		
8		4		
17	5K	51		6 K max
2		4		
2		4		
2	5.2K	17		7.1 MAX
2		*		
31		4		
2		4		
2		4		

5  
1993UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORYDate 1998 JUL 11/12 Observer Vok/Bly/Tn Julian Day \_\_\_\_\_

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT ✓	Ending Time UT	P.H.
CC55572	HP 21071							08 47 38		27
73	Comp									28
74	BIA S(4)							08 55		1
75/81	FLATS x 7					JUNG ND5				2

Dome Temp.

Focus 62

Dome Temp.

.ST  
Exp





PG 1  
5X

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 <sup>82/83</sup>	Inp/out Board			306u slit	6000A					1/2
84	Comp									3
85	HD 123782					5.25	M210ab			4
86	Comp									5
87	BIAS(4)									1
88	Comp									6
89	HD 121409					5.7	A0V	020554		7
90	Comp	At pos'n of SN 9807			770u slit			Not done		8
<del>91</del>										
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.

Focus

Dome Temp.

ST  
End

29°C 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	TRA End Exposure	Exposure	Seeing	REMARKS
	1000V	4/7		
		75		
	700			std vel 14K ADU
		4		
		0		
		4		
			1"	Telluric std 10K max
		4		
22.9°C	6.62 Set for focus			1800ln / 58.35 Tgrating ND=3
		4		
	1170	900		
		4		
		4		
	1299	360		
		4		

PG 2  
 25

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.
<del>CC55599</del>	comp								041624	9cs
99	HD187691	19 46 14	10 09 55			5.1 APRO	F8 Time	04:17	<del>041624</del> 041624	10cs
600	Comp									11cs
01	BIAS(4)							0429		1
02	comp									11
03	HD187921	19 47 24	27 12 00			7.2	G2	043309		12
04	comp									13
05	comp									13
06	HD227463	20 00 36	33 50 00			8.9	F8	044807		14
07	comp									15
08	comp									15
09	HD196028	20 29 36	46 16 00			9.4	F8	050902		16
10	comp									17
11	comp									17
12	AD+39 4379					10	F5	054940		18
13	comp									19

20572000  
 054940  
 054940 + 40 1039

Dome Temp. / H  
 Focus  
 Dome Temp. / H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. 22.3/61.9

Focus 162

Transparency Conditions fine, some cloud in south

Dome Temp. / Hum. \_\_\_\_\_

LST End	LHA End	Exposure	Seeing	REMARKS
		75		
	786	262		CC05 glitch caused loss of most header info
		4		
		0		
		4		
	2703	362		
		4		
		4		
	1002	914		
		4		
		4		
	830	1678	2"	
		4		
		7		
	609	1662		
		4		

pg#3  
26

Mon/Tues

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1978 July 13/14

Observer WxL/In/Pe

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	mag Filter	SP Temp.	Starting Time UT	Ending Time UT	P.H.
<del>15</del>	<del>comp bias(4)</del>							0620		19
15	comp									19
16	BD+42 2935	21 00 06	42 35 51			8.8 +0	F5	062518		20
17	comp									21
18	comp									21
19	HD 204867	21 21 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	F7V	07:01:25 OK! (check header)		24
23	comp									25
24	BIAS(4)							0707		1
25	flats comp									25
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. \_\_\_\_\_

IST  
Exp

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
	1000V	0		
		4		
	1007	1362	1.2"	
		4		
		4		
	8530	60		std vel
		4		
		4		
	9389	192		std vel
		4		
		0		
		4		
	990	192		
	1004	202		
		4		
		8		NO 5 $\approx 5$ ke T, 12.5 K max

pg #2 Mon / Tues  
203

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

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

Plate No.	Object	R.A.	Declination	Inst.	CX 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									12
56	BIAS (4)							08 53		1

Dome Temp.  
Focus  
Dome Temp.  
LST  
End



Dome Temp./Hum.  $+20.3^{\circ}C$  61.5%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

264

Focus 6.62

Transparency Conditions Hazy

Dome Temp./Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
	1000 V	4		1800 $\mu$ /mm Tyroling 54.93 306 $\mu$ slit. ND 4
	5452	387	1.2"	
		4		
		4		
	10480	183		
		4		
		0		
		8		ND 5 Max 12.5K
		4		
	900	704	2.4	@ 0610E $\Delta d$ -00 00 07 -00 01 32
		4		
		4		
	1547	482		@ 04 44E $\Delta d$ -00 00 13 -00 01 45
		4		
		0		

26 PG 1

Tues/Wed  
1998 Jul 14/15

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date

Observer

Lu/Tu

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Sr Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC55657	BIAS(4)							01 47		1
58	comp									5
59	HD95660	10 57 24	30 58 00			F3	8.6	01 58 13		6
60	comp									7
61	comp									8
62	FD Vrr	13 29 47	01 05 48			A7V	6.7	02 03 15		8
63	comp							02		9
64	comp									9
65	HTVrr	13 46 07	05 06 57			G0	7.16	02 19 48		10
66	comp									11
67	comp									11
68	HD136202	15 19 05	<sup>1445.5</sup> 01 46 56			F8IV-D	5.06	02 36 42		12
69	comp									13
70	BIAS(4)							02 44		1
71/72	flats x 7									2

Dome Temp.

Focus

Dome Temp.

IST

End

Dome Temp. / Hum.

25.6/55.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

266

Focus

6.60

Transparency Conditions

Some clouds

Dome Temp. / Hum.

3950 56 1024 41

LST End	LHA End	Exposure	Seeing	REMARKS
		0		
		4		ND 2
	536	301		
		4		
		4		
	2635	602		
		4		
		4		
	1500	670		
		4		
		4		
	7009	307		std vel
		4		
		0		
		8		ND 4 Max 12.6K

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

267  
268

Tues / wed

Date 1998 July 14/15

Observer WxL/Tn (Service)

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	mv Filter	SP Temp.	Starting Time UT	Ending Time UT	CI P.H.
CC556 <del>7180</del>	Inboard / outboard		AurTaurus	CHSS CCD	6600A	ND#3	FeAr			
78	Comp		1900							
81	HD136202	15 14 12	+02 08 37			5.06	F8IV-V	03 04 29		6ci
82	Comp									7ci
83	Comp		1900							7ci
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 UNIT

LST End	LMA End <del>Exp. No.</del>	Exposure	Seeing	REMARKS
				focus test
		45		transparency 56.35 1800 lu/man
	6920	319	1.2'	std vel
		45		
		45		
	1210	903	1'	SW one of PAIR
		4		
		4		
	1483	483		
		4		
		0		
		4		
	2606	479		
		4		
		4		
	2343	2574	1.2'	

pg#3

Tues/Wed.

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 July 14/15

Observer WXL/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	CD Emulsion	MV Filter	SD Temp.	Starting Time UT	Ending Time UT	P.H.
CC55695	Comp				6600B					15
96	BIAS(4)							04 51		1
97	Comp									16
98	HD196018	20 29 36	<sup>1900</sup> +46 16 00			894 -9.82	F8	05 00 37		17
99	Comp									18
700	Comp									18
01	CH Cyg	19 28 12	<sup>1986</sup> 50 13 00			74-91	M6	05 32 36		19
02	Comp									20
03	Comp									20
04	BD+39/4379	20 57 21	<del>1900</del> <sup>2006</sup> +40 10 39			9.57 -10.54	F5	05 44 02		21
05	Comp									22
06	BIAS (4)							06 18		1
07	Comp									22
08	BD+42 3935	21 00 06	<sup>2002</sup> +42 35 51			8182 -10.00	F5	06 23 53		23
09	Comp									24
10	comp									24

Dome Temp.

Focus

Dome Temp.

LST

End

## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

770

Dome Temp. / Hum.

Focus 662

Transparency Conditions Hazy to part Cloudy

Dome Temp. / Hum.

LST End	LHA End 1000 V	Exposure	Seeing	REMARKS
5		4		
1		0		
6		4		
17	1 K	1589	1.5"	
8		4		
8		4		
14	1258	149		<u>Almost saturated @ HD</u>
0		4		
0		4		
21	848	1894	2"	
2		4		
1		0		
0		4		
03	1001	1204	1"	
2		4		
4		4		







273 #1

Wed/Thurs

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 July 15/16

Observer Vnk/Big/Tm

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	MV Filter	SP Temp.	Starting Time UT ✓	Ending Time UT	P.H.
CC 557 <sup>21</sup> / <sub>25</sub>	Inboard (low board)				6608	ND3	FeAr			3/4
26	BIAS(4)									1
27	Comp					ND4	"			8
28	HD 176202	151412	+020837			5.06	FB <sup>IV</sup>	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 stack (other lost)									11
37	HD 229680							052257		12
38	Comp									12
39	Comp									13
40	HD 22943	22 27 1900 0550 46	+1139					055359		14

Dome Temp./Hum. +25.6 ° 63%

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

274

Focus 062Transparency Conditions Hazy - increasing cloud

Dome Temp./Hum. \_\_\_\_\_

395 0 50 1024 4 1 CCD FWT

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

LST End	LHA End 1000 V	Exposure	Seeing	REMARKS
		4/6		focus test
		0		C455 Focus 2628
		4s		1800 h/umx 56.35°
	4.4K	3/9s	2"	5.4K APV umax
		4s		
		4s		
	590	1807		
		4s		
		0		
		4s		
	455		1.2"	
		4s		
	250			

276 1946

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 Jul 15/16

Observer \_\_\_\_\_

Julian Day \_\_\_\_\_

Dome Temp. H  
Focus  
Dome Temp. H

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT ✓	Ending Time UT	P.H.
CC 55741	Comp									
42	BILLS(a)							01 05		1
43/49	FLATS x 7				Jung	ND <sup>#</sup> 5				2

1ST  
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	1893		
		4		
		4		
	587	1799		ax -12°, 05 +1°
		4		
		0		
		4		
	321	1801		
		4		
		4		
	403	1803		
		4		

PG 2  
277

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			F8V	9	06 26 27		22
78	comp									23
79	BIAS(4)							06 53		1
80	comp									23
81	BD +19 1251	22 13 25	70 15 05			<del>F8V</del>	9	07 00 41		24

Dome Temp.

Focus

Dome Temp.

IST

End



Dome Temp. / Hum.

21.7 / 75.1

## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

28

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 &amp; 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 Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC 55797	BIAS(4)			CASS CCD	6600 18mm/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.

EST

Exp

Dome Temp. / Hum.

18.4 / 61.7

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

289

Focus

6.63

Transparency Conditions

fine

Dome Temp. / Hum.

395 0 50 1024 4 1.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
		0		
		4		ND 3 FeAr
	5006	506		<del>08</del> +20s 08 12 <sup>min</sup> for normalization
		4		
		4		
	489	1204	3-4"	
		4		
		4		
	322	2182		
		4		
		0		
		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. \_\_\_\_\_

IST  
 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  
EndLHA  
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 Vok/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	V233 Aq1	19 52 48	10 46 00			F-G	10.	05 41 40		12
49	comp									13
50	BIAS(4)							06 03		1



289

## 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	LMA End Counts	Exposure	Seeing	REMARKS
		4/6		ND 3 source FeAr
		0		
		4		
	520	1503	1"-2"	
		4		
		4		
	657	1205		
		4		
		0		
		4		
	345	1831		
		4		
		4		
	586	1203		
		4		
		0		

PG 2  
209

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 Agl	19 56 35	15 31 00			F-G	10.2	06 11 20		14
53	comp									15
54	comp									16
55	V572 Agl	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	<sup>2000</sup> 22 09 40	73 23 27			<del>F-G</del> 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

400 sec

Dome Temp. / Hum. 18.8 / 58.6

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 6.63Transparency Conditions clear

Dome Temp. / Hum. \_\_\_\_\_

LST End	LHA <del>Count</del>	Exposure	Seeing	REMARKS
		4		
1500 sec	521	1500	1.2	
		4		
		4		
	384	1804		
		4		
		0		
		4		
	923	900		
		4		
		4		
	1198	601		
		4		
		4		
	504	927		





29 pgs 1

Mon/Tues

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 July 20/21 Observer Vuk/Blg/Tn Julian Day \_\_\_\_\_

Plate No.	Object	R.A.	Declination	Inst.	<del>Emulsion</del> CX	MU Filter	SP Temp.	Starting Time UT ✓	Ending Time UT	P.H.
cc558 81/82	Ink/out BOARD		HARTmann		6600A	ND3	FeAr			3/4
83	BIAS (A)					<del>#</del>				1
84	Comp					ND4	"			5
85	HD 145001	1900	16 03 34 +17 18 48					015057		5
86	Comp									6
87	Comp									6
88	HD 154417	1700 11	+09 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. / H  
Focus 6  
Dome Temp.

ST  
Exp.

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

294

Focus 6.63 unchanged

Transparency Conditions mostly clear

Dome Temp. / Hum.

LST End	LHA End <i>Exp End 1000V</i>	Exposure	Seeing	REMARKS
		4/7		1800h Teigrating 56.35
		0		
		4s		15 K ADU max
	87K	237	1"	std dev 12.1 K ADU max
		4		
		4		
	48K	434	1.2"	std dev 5 K max
		4		
		4		
	601	<del>547</del> 1200	2"	
		4		
	598	1200		
		4		
	580	1200		
		4		
		0		





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

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%RH~~

206

LST End	LHA End 1800 V	Exposure	Seeing	REMARKS
	492	1203	2"	cloud by 22:36
		4		Note Cepheid as seen in CCD5 was 20 secs behind both Astro clock & PRACO times
		4		
	1117	250		
		4		
		0		
		8		12K ADU max
		4		(After Reopening, but spectrograph & CCD Temperature untouched.)
	827	1200	2"	(Topup @ 00:30)
		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 / To

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	+1.2 ND	Fene		7
19	HD 186791	19 41 30	+16 22 10			2.72	A3T	05 35 55		8
20	Comp									6
21	B/H S(A)							5 43		1
22	Comp									6
23	HD 199681					<del>B5V</del>	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									13
32	HD 187929	19 47 23						07 01 00		14
33	Comp									

Dome Temp. \_\_\_\_\_  
Focus 6  
Dome Temp. \_\_\_\_\_

IST  
Exp. \_\_\_\_\_

edit

Dome Temp./Hum. 22.9°C 57.9%RH

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 6.63

Transparency Conditions

clearing Late, partially

Dome Temp./Hum. \_\_\_\_\_

360 0.50 1024 4 1 CCD/FWT

LST End	LHA End 1800V	Exposure	Seeing	REMARKS
	edit Ca. then	15sec grating		No ORDER separation felt needed for stellar or comparison.
	1K	330s	3"	in cloud Tgrating 39.8° 831h/min 3K
		1sec		5.8K
		1		
	48K		3.4"	5K max Normalization STAR
		1		
		1		
	112K	639		
		1		
		1		
	420		3s	cloudy partly
		1		
		1		
	1.6K	68		4.6K max
		1		



30

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Dome Temp. / Hum. \_\_\_\_\_

Focus \_\_\_\_\_

Transparency Conditions \_\_\_\_\_

Dome Temp. / Hum. \_\_\_\_\_

No	LST End	LHA End	Exposure	Seeing	REMARKS
1		2000	0		
5			15		
16		2016K	19/3		5K
17			15		
17			15		
18			62		
19			15		
19			15		
20		2780	424		
21			15		
21			15		
25		577	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 Vnk/Bly/Tn

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
<del>C55962</del>	<del>BIHS(4)</del>			<del>CAS</del> <del>CEO</del>	8650A	ND <sup>H5</sup> + 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	HD1517741							02 ✓		10
72	Comp									11
73	Comp									11
74	HD197433							02 23 12		12
75	HD197433							02 32 12		13



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 CCDFAST

LST End	LHA End	Exposure	Seeing	REMARKS
		0		8316/min @ $39.8^{\circ}$ Grating
		1		
	5.2K	60s		No order sep (yes, second order blue shows up.)
	1.7K	65		OG 560 ORDER separation, Left in All night
		1s		
		0		
		1		
	2.3K	333	4"	6.3K max
		1		
		1		
	750	480		
		480		

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

205  
199#2

Thurs/Fri

Date 1998 July 23/24

Observer VnK/Tn/Blg

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time		Ending Time UT	P.H.
								* UT	✓		
CC55976	HD 197433				8650B			* 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

Dome Temp. H  
Focus 66  
Dome Temp

IST  
Eto

356

Dome Temp. / Hum. 48.7°C 50% H

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Focus 6.63Transparency Conditions Fine

Dome Temp. / Hum. \_\_\_\_\_

LST End	LHA End	Exposure	Seeing	REMARKS
	797	480		
	803	480		
	<del>78</del>	1s		
	810	480	3.4	
	850	480		
	860	480		
		480		
		1		
		0		
		X > 70s		
	820	480		
		480	3.5"	Repeat 480 OBS. BAT 2
		480		
		1s		
	689	480		

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

Pg#3  
SFX

THURS / FRI

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1996 July 23/24

Observer VnK/Tu

Julian Day \_\_\_\_\_

Plate No.	Object	R.A.	Declination	Inst.	$\epsilon$ Emission	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
cc 55991	HD 197433	20 38 36	<sup>17008</sup> +75400		8650Å					26
cc 55992	- " -									26
93	- " -									26
94	comp									27
95	bias (4)									1
96	comp									28
97	HD 197433							04 58 00		29
98	"							05 06 31		29
99	"							05 15 25		29
cc 56000	"							05 24 44		29
01	comp									30
02	HD 197433							05 35 06		5
03	"							05 43 54		6
04	"							05 52 48		7
05	"							06 01 33		8
06	comp									9

Dome Temp. H

Focus 6.6

Dome Temp. H

LST

End

Dome Temp./Hum. 17.5°C 52.28/4

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

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Focus 6.63

Transparency Conditions Fine

Dome Temp./Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
		480		
		480		
	613	480		
		1		
		0		
		1		
	580	480		
	608	480		
		525		
	584	480		
		1		
	610	480	5"	
	636	483		
		4		

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UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

THURS FRI

Date 1998 July 23/24

Observer Vnk/Tm

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT ✓	Ending Time UT	P.H.
0056007	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

ST

End



UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

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Thurs / Fri

Date 1998 Jun 23/24

Observer Vuk / T<sub>2</sub>

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp.	Starting Time UT	Ending Time UT	P.H.
CC56022	Comp				8650A					23
23	HD 197433							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
36	HD 222368	23 34 48	+5 05 03					08 43 36		29
31	Comp									30
32/40	FLATS x 9				06560 order			+ ND#5	Thynged	2







Dome Temp. Hum.  $+20.7^{\circ}\text{C}$  55.23H

UNIVERSITY OF TORONTO | DAVID DUNLAP OBSERVATORY

314

Focus 668

Transparency Conditions Poor cloudy

Dome Temp. / Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
	1800V			
4		4/7		
5		0		
5		4s	<del>12"</del>	telescoped ReGenrad $\Delta\alpha -00 01 00$ $\delta 5+00 00 39$
6	380	1824	12"	$\sim 180$ ADU above sky
7		4s		
7		4s		
8	3127	1800	2"	$\sim 2$ to ADU max
9		4s		
10		0		
10	2675	1807	2"	
11		4s		
12	2280	1935	18"	
13		4s		
14		0		
14		4s		



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

316

Focus 6.68

Transparency Conditions *Fine - cloudy*

Dome Temp. / Hum.

LST End	LHA End	Exposure	Seeing	REMARKS
	<del>10000</del> 555	1867	1.2"	
		45		
	431	1749	1.2"	
		45		
		0		
	4??	18??		
		45		
		45		
	294	1871		FLATS x 8 at end <u>CC56073-81</u> 4 secs, with ND 4, MAX = 12K AD4
		45		
	239		2.4"	
		45		
		0		
		4		
	8338	217		telluric std in cloud MAX 43K
		4		

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

217  
Date <sup>Tues/Wed</sup> 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 56084	<del>Imboard/outboard</del> BIAS (A)			Comp CCO	4100A	93mm 600mm FeAt	B-V	02:08		1
83	Comp					ND45				3
CC 56084	TYC 30311020	13 22 45.	44 42 54	ND45		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 3866 22	16 56 43	52 33 46			10.279	-0.029	3:25:59		9
91	Comp									10
92	TYC 3866 22							3 51 32		11
93	Comp									12
94	BIAS (A)							4 19		
95/102	FLATS x 8					TUNG, ND <sup>#</sup> 5				2

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
				430 0 16 512 12 2200
				0600 In/min "C" grating @ targeting 25.2 Actual CD = 4130 Å
	45	4		10k max
	2.4K	1800	3-4"	Note encoder using new EAST maps gives 52 -00 00 40 25 00 00 18 9K ADU max
	45	4		10k max
	1.38K	1267	4"	~6k cloud at end
	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		D 2 -00 00 70 25 +00 01 21 1.7k max
		4		
		0		
		55		1.1k max

guiding off  
hot pixel!

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Pg #1UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

+Pe = Paula

Wed/Thurs  
Date July 29/30

Observer Hm/Sac/CHJ/Tn Julian Day

Plate No.	Object	R.A.	Declination	Inst.	C $\lambda$ Emulsion	Filter	Temp P $\lambda$ V	Starting Time UT	Ending Time UT	P.H.
CC 5610 <sup>3</sup> / <sub>4</sub>	Inboard / OUTBOARD		HARTMAN		4100A					1/2
05	BIAS (4)									1
06	Comp		2006							3
07	TIC 3886 22	16 56 43	+52 33 46			10.299	-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		12
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 11 06		15



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 1000V	Exposure	Seeing	REMARKS
				Faug test, normal CCD 1-1 CCD FOT
				430 0 16 512 12 2 CCD FOT
	579	1800s 4		high cirrus coming in. 1.5K ADU max. Hot pixel / column over
	432	1565s 4		really bad high cirrus (collecting cosmic rays)
	396	1800s 4		1K ADU max. Strong sky line.
	390	1806 4		cloudy
		0		
		5s		12K
	1370 Volts	4s		
	2867	1800s 4s		

34  
Pg #2

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

+Te -Kula

Date Wed/Thurs  
July 29/30

Observer Hml/Jac/EHS/Tr Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	Filter	Temp	Starting Time UT	Ending Time UT	P.H.
CC56127	TTC 3879 1064	16 48 07	52 36 10	CAS CCD	4100 Å	11.43	0.223	06 02 33		16
28	comp							06 17 39		17
29	BAS(4)							06 18 35		1

Dome Temp. /h  
Focus  
Dome Temp.

IST  
Exp



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.T.
CC56130	BIAS(4)			CASS CCD	5894 1800/51.58			01 32		1
31	comp									5
32	Tyc 303102	<sup>13</sup> <del>30</del> 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	<del>23</del>						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  
Dome Temp/H

IST  
End

11/1300

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

LST End	LMA End Counts	Exposure	Seeing	REMARKS
		0		
		4		nd 3 source FeAr
HV=1320	26258	1742	2-3"	$\Delta \alpha = -53^{\circ} \text{sec.}$ $\Delta \text{dec.} = 6''$
		4		
	25341	1803		
		4		
		0		
	22769	1800		
		4		
	18777	1826		
		4		
		0		
		4		
	90 K	723		
		4		



Dome Temp./Hum. 16.5/68.5

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Focus 6.65

Transparency Conditions

clear

Dome Temp./Hum.

LST End	LHA End <i>Counts</i>	Exposure	Seeing	REMARKS
		4	2-8"	
	2165 <del>1800</del>	1800	2-3"	
		4		
	2280	1802		
		4		
		0		
	2134	1805		
		4		
	2019	1820		readout in cache ci 8 by mistake.
		4		
		0		
	1873	1804		
		4		
	1713	1820		
		4		









Dome Temp. / Hum.

19.5/54.5

Focus

6.65

Transparency Conditions

clear

Dome Temp. / Hum.

CCD T -1024

400 0 50 1024 4 1

LST End	LHA End <del>counts</del>	Exposure	Seeing	REMARKS
		0		
		4		ND=3 FeAn
	4270	1804	1"-2"	1800 → 1804 ! Max 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

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UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date 1998 July 31 / Aug. 1

Observer AH/MB/Luc

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	SP Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC56191	<del>TYC 3879928</del> <sup>Comp</sup>	<del>16 56 24</del>	<del>52 23 46</del>		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							<del>08 25 21</del>		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 <i>counts</i>	Exposure	Seeing	REMARKS
		4		
	1659	1816		
		4		
	1654	1804		
		4		
		0		
	1644	1830		1800 → 1830
		4		
	1567	1804		
		4		
		0		
		4		
	2657	1804		
		4		
	2600?	1804		
		4		



Dome Temp. / Hum.

157 2/67.2

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

334

Focus

665

Transparency Conditions

clear

Dome Temp. / Hum.

LST  
EndLHA  
End

Exposure

Seeing

REMARKS

4

120 K

241

4

4

ND 4 CSRT Max 12.6 K

0

335  
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.

LST End	LHA End Counts	Exposure	Seeing	REMARKS
HV=1320		0		n.d. 3 $\Delta R_a = -40s.$ $\Delta Dec = -18.$
		4		
	2930	1805		
		4		
	2857	1825		
		4		
		0		
		<del>4</del>		
		4		
	137069	84		
		4		
		4		nd 4 max 12.3K
		0		

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

337  
Pg 2

Date Aug 1-2/98

Observer Ben/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)			CASS 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	<del>bias (4)</del> 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 6.5

Dome Temp./Hum

LST

End

HW=1320

15

4

33

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 <sup>340</sup>~~420~~ 0 16 512 12 2

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

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Pg 3

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date Aug 1-2/98

Observer Ben/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	✓ 11.6	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 62.8  
Dome Temp.: Hu

LST  
End

'540

UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

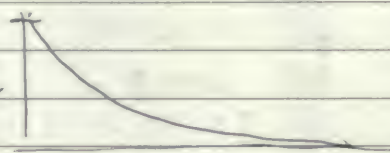
Dome Temp. / Hum. 18.0 / 59.9

Focus 6.80

Transparency Conditions Clear

Dome Temp. / Hum.

LST End	LHA End counts	Exposure	Seeing	REMARKS
		4		
	2718	1805		
		4		
	2834	1871		
		4		
		0		
		4		
	4025	1217		Well done
	4060	735		
		4		
		0		
		5		NDS Max 11K



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DAVID DUNLAP OBSERVATORY

199 PG  
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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				600/25.0					5
73	TYC3463242	13 34 09	47 13 01	51k	4100M	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
<del>78</del>	<del>comp</del>									<del>10</del>
78/84	flats	15 34 09	47 13 01			0.357	11.4	02 56 43		11
85	BIAS(4)							03 09		1
86	comp									5
87	TYC 3463242	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

H1/2/3/20

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 Exp Camm3	Exposure	Seeing	REMARKS
HV=1320V		0		
		4	4	ND 5
5436		1804	1-2"	through clouds
		4		
		4		
4825		1204		
		4		
		<del>4</del>		too cloudy aborted.
		5		ND 5 Max 11.5K
		0		
		4		
3989		1809		
		4		
		4		
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	44 35 45	99 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
CCS6300	BIAS(4)							06 24		1
CCS6301	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

6.50

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 CCDTMT
		4		focus 6.67, @ 18.8°C / 54.5%
	1717	1805		



Dome Temp. / Hum. 18.2 / 56.8 %

Focus 6.67

Dome Temp. / Hum. \_\_\_\_\_

## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

Transparency Conditions

partly clear.

346

400 0 50 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		ND = 4.



Dome Temp./Hum. 21.6/81.2  
 22.6/82.4

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		
5013		1805	5"	NO 4. source FeAr very hazy
		4		
		4		
4415		1805		
		4		
		0		
		4		
4581		1812		
		4		



## UNIVERSITY OF TORONTO / DAVID DUNLAP OBSERVATORY

380

Dome Temp. / Hum. 19.3 / 74.0

Focus 6.62

Transparency Conditions hazy. (Very)

Dome Temp. / Hum.

LST End	Count End	Exposure	Seeing	REMARKS
	4754	1836		exp 1800 <sup>s</sup> → 1836 <sup>s</sup> ?
		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 (Variable)

Dome Temp. / Hum. \_\_\_\_\_

345 0 50 1024 41

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

EM  
3/7  
Pg 2.

UNIVERSITY OF TORONTO  
DAVID DUNLAP OBSERVATORY

Date Aug 12/98

Observer Ehl/mki

Julian Day

Plate No.	Object	R.A.	Declination	Inst.	Emulsion	B-V Filter	Mag Temp.	Starting Time UT	Ending Time UT	P.H.
CC56373	comp									13
74	DQ And	005935	452422				11.6	080616		14
75	comp									15
76	bias (4) <del>comp</del>							084018		<del>14</del>
77	comp									16
78	HD 3765	003518	394000				7.36	084807		17
79	comp									18
80	comp									19
81	V383 Cyg	202842	34827				10.9	090509		19
82	comp									20
83	comp									22
84	HD 209833	220103	282841				5.63	093655		22
85	comp									23
86	bias (4)							094423		1
87-92	flats									24

Dome Temp./Hum

Focus

Dome Temp./Hum

LST  
Ecl

## 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	Exposure	Seeing	REMARKS
		4		
	187	1325		
		4		
		4		
	828	404		Standard velocity
		4		
		4		
	500	1561		
		4		
		4		
	584	303		dawn - telluric
		4		
		0		
		4		



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357

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