KG
11366
v.415

Fundamental and Zone Stars
Circle Readings
From Oct 15 1884 to Feb. 18 1885
C in this book for this interval

A40

1884pnae.proj.1419R

Oct 15 1884

Level

Up		Down		
E	W	E	W	
128	58	15.0	04	
68	112	14.0	5.4	
196	170	13	61	
98	85	16.50	3.05	
	~~183~~		~~55~~	
	~~915~~		-1345	
	-1.3		~~-6.65~~	-6.72
	-0.65		~~1440~~	-.065
			~~7.05~~	53 27
				-3.67 8
72	34	13.9	5.7	
3.3	8.0	17.8	2.1	
105	11.4	120	78	
5.25	5.70	16.55	3.50	
	+.45	15.85	1245	11.95
	+.22		-622	-5.98
			+.22	+.22
			6.00	5.76
			3.00	2.88
			-3.67 8	-3.68
			3.00	-2.88
			3.3	-3.28

G = -0.6~~3~~ 2

Oct 16

N. S.

25 701 25 531
658 531
713 530

2112
25 704 53.07
7004
12311
25 61.5 Sec.

Oct 20 1884

87 - 117 S

R. S. Valentiner

						V	
						(R)	(B)
E	13.2	12.8	13.2	12.9		3.8	2.9
F	4.8	3.2	5.0	3.8		49.7	49.4
G	16.4	18.1	17.6	18.1		4.2	3.2
H	0.7	0.2	1.0	0.1	R	51.3	51.8
	35.4	34.3	36.8	35.5	57.25	229.0	227.3
	8.85	8.58	9.20	8.88	55.75	57.25	56.82
R					55.82		
8.85 9.20	13.2	13.4	13.0	13.1	56.12	1.8	1.9
9.08 8.95	4.9	4.0	4.8	4.1	224.94	49.6	48.0
9.08 8.75	17.0	18.6	18.2	18.3	56.23	2.3	2.3
8.95 9.48	1.2	1.0	0.8	0.3		49.5	49.0
35.96 36.38	36.3	37.0	35.8	35.8		223.1	221.2
8.99 9.09	9.08	9.25	8.95	8.95		55.75	55.30
9.04							
V	13.0	13.0	12.7	13.0		2.1	1.3
	4.6	4.1	4.4	3.2	56.82	48.6	47.8
8.58 8.88	17.3	18.3	17.5	17.3	55.30	2.8	2.9
9.25 8.95	1.4	0.3	0.4	-0.2	55.25	49.8	49.0
8.92 8.55					55.80		
9.00 9.20	36.3	35.7	35.0	33.5	223.17	223.3	221.0
35.75 35.98	9.08	8.92	8.75	8.35	55.79	55.82	55.25
8.94							
~~8.89~~	13.3	13.4	13.8	13.8		2.0	1.4
~~8.92~~	4.7	3.9	5.8	4.0		49.2	48.5
	16.9	18.0	17.5	18.7		3.6	3.0
34	0.9	0.7	0.8	0.3		49.7	50.3
	35.8	36.0	37.9	36.8		224.5	223.2
	8.95	9.00	9.48	9.20		56.12	55.80

Oct 21, 1884

Collimation

N	S
25 83.8	25 58.2
85.5	58.3
84.0	56.7
84.7	56.4
83.1	55.7
84.22	57.06

$2)\overline{141.28}$
70.64

set at 25′ 70.6″

W.A.R. & S.C.C. observe with Meridian Circle and Almucantar for personal equation between the two instruments.

Record for M.C.

W.A.R. on A_{+1} & A_{-1}

S.C.C. on A

γ Cephei
23 34 34
+70 58

R C
A_5^0 A_{-1}

~~ι Aquarii~~
~~ω² Aquarii~~
~~23 36 40~~
~~−15 12~~

41 H. Cephei
23 42 20
+67 10

η Pegasi	ο Andr.	4 Cass
22 40 52	22 52 33	23 15 35
+22 57 ✓	+41 42	+61 39
R	R C	R C
A	A A+1 A−1	A+1 A A−1

Collimation

	N	S
25′	79.5″	56.8
	82.3	58.4
	80.7	56.0
	80.2	56.8
	80.8	59.0
	80.70	57.00

)~~23.70~~

137.70

68.85

Set at 70.6

Oct $22^{d}.06$

Sid. T.
$15^{h}\ 25^{m}$

Up			Down			Mean
E	W		E	W		
4.3	6.7		14.6	9.8		
8.0	3.1		20.7	3.4		
6.15	4.9	− 0.625	17.65	6.60	− 5.525	− 3.075
3.8	7.2		14.7	9.9		
8.1	3.0		20.5	3.8		
5.95	5.10	− .425	17.60	6.85	− 5.375	− 2.900

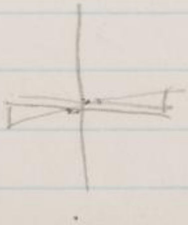
Up

$-2^{d}.987$
$.19$
$= -0^{s}.568$

Oct 22.2

Sid. T.
$18^{h}\ 30^{m}$

Up.			Down			
E	W		E	W		
4.0	2.4		10.0	8.0		
4.7	2 0		16.8	1.3		
4.35	2.20	−1.020	13 40	465	−4.375	− 2.696
2.3	4.7		10 9	7.0		
3. 8	2.9		17 0	0.9		
3.05	3.80	−.375	13.95	3.95	−5000	−2.687
3 3	3.2		10 8	7.3		
4.3	2.0		16 8	1.3		
3.80	2.60	−.600	16 80	4.30	−6.250	−3.425
3 0	3.9		10 9	7.1		
4 8	2 0		16 1	1.7		
3.90	2.95	−.475	13.5	4.4	−4550	−2.512
Gen. Mean		− .618				4) 11 320
						$-2^{d}.830$
						$= -0^{s}.538$



Oct 21, 2

Sid T. 18h 40m

Collimation

	N		S
25	79.7	25	55.8
	79.9		~~54~~ 54.0
	80.7		56.8
	80.0		54.0
	80.8		54.7
25	80.22		55.06

25 67.64

25 67.6 Col-er

Oct 23, 1884

Collimation

Sid Time 21h 35m

	N		S
25	93.0	25	37.5
	92.1		36.1
	91.6		34.0
	91.8		37.8
	94.0		38.8
	92.50		36.84

127.04
68.67

Lt at 25 68.7

π² Cygni
~~ξ Pegasi~~
21 42 30 + 48 46

R C
A A−1

16 Pegasi

R C
A+1 A
A −1

j Aquarii
22 19 0

R C
A A+1
A−1

9 H Dra S.P.
22 25 12

R C
A+1 A
A−1

Oct 23 1884 1

226 B Cephei 22 30 14

R	C
A	A+1
A	A-1

10 Lacertae 22 34 3

R	C
A+1	A
A-1	

4 Cass 23 19 41

R	C
A+1	A (rej. 1st wire obs'd by RC by mistake)
A-1	

λ Draco SP 23 24 30

R	C
A	A+1
~~[illegible] A~~	A-1

η Pegasi 22 37 34

R	C
A+1	A
A-1	

α Pisces

22 51 14 −3 0 14

R	C
A	A+1
	A-1

ζ Cephei
23 34 35

~~C~~ R	C
A	A+1
	A-1

Collimation

25	949	40.7
	93.4	41.1
	96.0	41,1
	96.6	44.1
	95,4	42.7
	95,26	41,94

137,20

25 68,60

Set at 25 68,7

Oct 24. 1

Sid Time 15^h 52^m

Level

~~Up~~ ~~Down~~

~~Down~~

Up			Down			
E	W					
16.6	1.3		12.1	7.8		
11.1	6.4		8.0	11.8		
13.85	3.85	−5.00	10.05	9.80	−0.125	− 2.562
168	1.2		121	77		
120	5.8		78	12.0		
144	35	−5.45	995	985	−.050	−2.750
						−2.656

$b = -0\overset{\circ}{.}504$

Oct 26 Cleaned reticule. New C

N S

26 12.7 25 48.2
12.7 48.2
13.2 48.0
8.6 26.4
12.90 25 48.80
26 12.9
11 61.8
25 80.8 Lat st.

~~Oct 26 1884~~
Nov 24 1884 $14^h 40^m$ S.T.

Set Clock 3 minutes forward and added 3 grams weight to pendulum

Nov 24 1884
$0^h 0^m$

C

Set on [illegible]

$2^h 0^m$

26 21.1	25 18.8	21.2	31.0
21.1	59.1	21.0	30.5
24.8	59.8	24.5	33.2
20.4	64.1	25.8	33.0
24.5	61.8	21.5	33.0
22.0	61.12	15.3	12.7
		23.86	25.4

Set at 21 78.0
21 91.0
13
3

Set at
25 78.20

26 23.86
25 32.57
11 56.40
25 78.20

C = +1.16 probably.

Nov 24 (1882)

γ Pegasi
0 7 15
−9 28

R	C.
A_{+1}	A
A_{-1}	Rij 15' W

ι Ceti
0 13 31.
−9 28

R	b
A	$A+1$
	$(A-1)$ Low; 2

π Androm.
0 30 46 +33 5

R	b
A_{+1}	A
A_{-1}	

32 H Camelop.
0 48 17 + 95 5

R	b
A	A_{-1}
Low; 1	

Nov 24

Polaris
1 12
88

ν Pegasi
h m
1 30 $+4\overset{o}{8}\overset{\Delta}{2}$

R C R
A_{1_0} to A_{3_0} A_{3_1} to A_{6_2} A_{7_0} to A_{9_0}

Definition bad

C R
A+1 A_0
A−1

φ Pegasi
1 36 +50 6

R C
A+1 A
A−1

ε Sculptoris
1 40 13
−25 38

C R
A+1 A
A−1

ν Ceti

1 54 32
−21 38

R   C
A−11
A−1   A

Nov 25.2

Sid Time $20^{h}\ 0^{m}$

Level

Up			Down			
E	W		E	W		
3.0	4.0		12.7	9.0		
6.0	1.4	d	19.3	2.4		
4.50	2.70	$\bar{*}$0.90	16.00	5.70	$\bar{*}$5.15	$\bar{*}$3.02
4.1	3.0		12.3	9.2		
5.0	1.9		19.9	1.7		
4.55	2.45	$\bar{*}$1.05	16.10	5.45	$\bar{*}$5.32	$\bar{*}$3.18
2.3	4.8		12.3	9.2		
6.1	1.2		19.3	2.3		
4.20	3.00	$\bar{*}$0.60	15.80	5.80	$\bar{*}$5.00	$\bar{*}$2.80
2.1	5.1		12.3	9.2		
5.7	1.3		19.2	2.1		
3.90	3.20	$\bar{*}$0.35	15.75	5.65	$\bar{*}$5.05	$\bar{*}$2.70
					Mean	$\bar{*}$2.92 =
					b =	$\bar{*}\,0^{s}.555$

Nov 26 1884

21^h C

N S

26 211
211
244
200
245
26 22.50

~~25 58.8~~
~~59.1~~
~~59.8~~
~~64.1~~
~~61.8~~
~~3036~~
~~25 60.72~~
~~26 22.50~~
~~11 38.2~~
~~25 91.8~~

21:30

26 19.3
18.0
19.0
18.0
17.8
421
26 18.42

25 36.1
35.8
37.0
35.4
36.3
306
25 36.12
26 18.42
11 54.54
25 57.3
Sel-ot 26 17.3

Nov ~~8~~29 1884

26 148 388
134 381
134 383
140 365
151 360
2207 357
~~1379~~ 3814
1419 1974
5128
25 75.6
Set of 26 15.6
140.0

Nov 29 1884

ω Pisc
23 53 25
+6 12
R
A

β Cass
0 2 53
+58 30
R
A_{+1} A A_{-1}

ι Ceti
0 13 34
−9 27
R
A A_{-1}

~~44 Piscium~~
12 Ceti
0 24 10
−4 36
R C
A_{+1} A_{-1} A

4 U6 Draco
0 6 40
101 44
R
A 2045

γ Pegasi
0 7 10
+14 32
R
A + R – A,

x Draco
0 28 26
+10 8 33
R
A R
20 to 50? A
2, to 10
Rij 81-2w

π Andm
0 30 45
+33 6
R?, A?

Nov 29 1884

α Cass

~~0 33 90~~

~~+55~~

55 53

β Ceti

0 37 49

→+18 37

R

A_5 α C A_{-1}

32 ~~Camelous~~ γ Cass

~~0 44 16~~ 0 49 36

~~95 57~~ +60 4

R C

$A_{11}A_{-1}$ A

43 H Ceph

0 52 51

+85 37

R C

A

10h 50 LA 5_2 h 90

~~υ Cass.~~
~~0 38 20~~
~~+47 39~~

ζ Andom.
0 41 15
+23 39
© R
$A_{+1} A_{-1}$ A

ι Piscium
0 56 49
+7 15
© R
$A_{+1} A_{-1}$ A

β Andr.
1 3 22
+35 1
R R
$A_{+1} A_{-1}$ A

Nov 28 (29th ~)

Polaris

b   R

A_{10} 6 50 $A_{5.1}$ 6 9.0

26 168   25 38.0
160   41.8
165   42.1
152   41.2
171   35.0

~~3~~ 0   203.1
1640   40.62
16.40
57.02

25 78.5
26 15.6

22.5
2.2 = 25 75.6
2 = 25 78.5

~~37.1~~
9.3
56.4

37.1
9.3
46.4

21 c = +.50
21 +.57
23 +.52
0 +.50
1 +.52
2 + .54

Nov 30.0

Sid. $17^h 20^m$

Level

	Up			Down E	Down W		
~~15.2~~	15.2	9.3		15.9	−0.3		
	9.7	14.1		10.2	5.2		
	12.45	11.70	−037	1305	+245	−5.30	−2.83
	15.3	9.2		15.2	0.1		
	11.0	13.8		9.8	5.8		
	13.15	11.50	−082	1250	295	−4.77	−2.80
	15.1	9.8		16.0	−0.4		
	9.7	14.0		9.9	5.6		
	12.40	11.90	−025	1295	.260	−5.17	−2.71

Mean −2.78

=

$b = -0.^s530$

Dec 1, 1884

Sid Time 0h 42m

26	11.8	25 46.0
	12.8	46.1
	13.0	44.1
	12.6	45.0
	13.2	44.0
26	12.68	25 45.04
		26 12.68
		25 78.86

Set at 25 78.9

ε Pisc
0 57 1
+7 16
R 6
A +1 A
A −1

β Androme
1 3 22
+35 1
R
A 6
2 C A −1

Dec 1

γ Cass
0 49 48
+60 6
R C
A_{+1} A
A_{-1}

43 H. Ceph
0 52 50
85 37
R C
A_{10} to 5.0 A_{51} to 8.0
Poor seeing

ε [illegible]

Polaris
1 15
R 88 41 C
$A_{3.0}$ to 5.0 $A_{5.1}$ to 7.2
Reg $\frac{5}{2}$
~~7.1~~ 7.2 taken 1/3 fr. 1st to 2d tapes

η Piscium
1 25 20 +14 45
R C
A_{+1} A
A_{-1}

Dr C1

40 Cass.
1 29 24 +72 21
b
A +1
A −1
Rig A +,1

R
A.

43 Cass.
1 33 52 +67 28
R
A +1
A −1

b
A

β Arietis
1 48 21
+20 15
~~+4~~
C
A +1
A −1

R
A

50 Cass
1 58 47
+71 52
R
A
10th 50
b
A
51 and
71, 420
A −1

φ Persei
1 3622+507

C R
A+1
A-1 A

ζ Ceti
1 45 50 −10 54

R C
A+1 A
A-1

γ Andromedae
1 56 55
+41 47

R C C R
A+1 A+1 A
A A-1
7,E 90
~~10 50~~
~~A-1~~

α Draco
2 01 11
115 3

R R C
A+1 A
A-1

Dec 1 1884

55 Cass
2 5 35
+65 59

C R

A+1 A

(C'₁ lap wrong
at beg)

4 Ursae Min
25 20 101 54

R C

A 70 to 10 A +1

$A+1_3$ two exps
taken 1/4 for 1st to 2d

μ Fornacis
2 7 54
−31 16

R C
A+1 A
A−1

Sid Ti 2:45

26	21.0	25	40.8
	21.4		40.8
	21.8		38.0
	22.0		39.1
	23.0		38.7
26	21.84	25	49.40

26 21.84

25 85.64

Sel-25 7.69

6.7

1.7

34

Dec $1^{d}.9$

Sid Time $16^{h}\,30$

Level

Up			Down			
			~~17.8~~	~~+1.2~~		
			~~12.1~~	~~4.2~~		
			~~14.95~~	~~1.50~~	~~−6.72~~	
13.2	6.4		16.1	0.2		
7.0	12.7		10.8	6.1		
10.10	9.55	−0.27	13.45	3.15	−5.15	−2.71
13.2	6.3		16.1	0.3		
7.1	12.3		11.4	5.0		
10.15	9.90	−0.43	13.75	2.65	−5.55	−2.99
13.1	6.8		16.7	−0.3		
8.0	11.5		12.1	4.2		
10.55	9.15	−0.70	14.40	1.95	−6.22	−3.46

Mean −3.05

$l = -0^{s}.580$

Dec 1.9 contd

Repeated - after adjusting horizontal-ity of level tube.

Up	Down
~~8.0~~	~~2.3~~
10.0	0.0
6.7	3.6
10.2	0.0
6.3	3.7

Took level to Mr. Clarke to have a new set of adjusting screws

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Dec 3 1882

Clark

Value of one division of level

N S 9 0′ 13″ 8.2 N S
1.6 9.1 7 328 41.2 ~~4.2~~ ~~6.4~~
9 444 51.7 ~~1.8~~ ~~2.9~~
46 450 53.6 9.6 9.7
~~2.80~~) 9.80 (2.80
9.1835 2547 370
~~75~~ ~~30.88~~ ~~38.68~~ 9.15 ~~2.19~~
4588 53.68 2.65) 7.80 ~~1.40~~
6640 530 11 10 1 div = 2.94
20.52 250 / 2385 / 1150 / 11

16.9 19 93 20.52 28 14.70 / 5.82
9.1 1.9 / 75 72

~~2.8~~ ~~13.3~~ 21.8 57.6 11 10.0
~~1.9~~ ~~9.1~~ 13.3 30.2 9.1 1.9
9.1 1.9 4.2 41.2 8.0 18.1
4.2 6.4 Δ 1.3 5 6.3 41.8
9.9 4.5 26.56 1708
2.70 6640 4270 8.05) 23.70 (2.94
53.68 66.40 1610
4.70) 12.82 (2.71 23.70 4270 760 / 7245 / 3550
940 4
332 / 8290 / 300

1.3 10.0 5.76 26.2 10.1 1.2
10.1 1.2 31.6 59.0
8.8 8.8 40.7 9.8 8.8) 28.63 (3.25
41.8 11.2 264 / 223 / 176 / 1470 / 4
1717 2862
42.92 71.55
42.92
28.63

W S [illegible]

10.1 1.2
1.3 10.2
8.8 9.0

58.6
32.2
41.3
41.9
174.0
43.50
71.55
28.05

8.90) 28.05 (3.15″
2670
1350
890
460

1.3 10.2
11.0 0.8
9.7 8.4

27.8
0.5
11.2
11.9
51.4
72.85
43.50
29.30

9.55) 29.30 (3.07
2865
650

11.0 0.8
1.7 10.1
9.3 9.3

27.4
0.8
11.8
12.0
52.0
73.00
~~43~~

58.8
32.0
42.1
42.6
175.5
43.85
73.00
29.15

9.3) 29.15 (3.14
279
125
93
320

294
3.25
3.15
3.07
3.14
15.55
3.11

W. S.

10.3 1.7
-0.2 12.2
105 10.5

Σ 588 30.0
F 32.1 3.6
G 41.8 13.3
N 42.8 14.7
175.5 61.6
43.88 75.40
43.88
31.52

10.5) 31.52 (3.00
31.5
20

-0.2 12.2
11.8 0.2
12.0 .12.0

55.2
28.0
35.2
40.0
162.0
40.60
75.40
34.80

12) 34.80 (2.90
24
108

-0.3 12.3
11.8 0.2
12.1 12.10

31.6
4.9
15.2
17.1
68.8
17.20

77.20
40.60
36.60
12.1) 36.60 (3.02
36.3
300

N. S. G 308 54.7

121 0.1 [illegible] 5.0 27.2

~~0.2 11.8~~ G 14.2 38.1

0.2 11.9 M 15.0 38.6

119 11.8 65.0 158.6

76 25 39.68

76 25

36.57

11.85) 36.57 (3.09

35 55

10 20

0.2 11.9 32.8

12.4 − 03 4.8

12.2 12.2 17.0

17.0

71 6

17.50

77.50

39 68

38 22

12.2) 38.22 (3.13

36 6

1 62

1 22

4 00

11

2.94

3.25

3.15

3.07

3.14

3.00

2.80

3.02

3.09

3.01

177

3.018

12.5 − 03 12 56.1

0.2 11.9 28.8

12.3 122 38.7

40.6

164 2

41 05

77 50

36.85

~~12~~ 2 0) 36.85 (3.01

36 05

1 0

Shifted the inclination tubes slightly

Up S
0.2 11.8
11.0 1.2
10.8 10.6

5.11
23.8
33.2
34.4
142.5
35.62

24.7
58.2
7.2
8.4
27.80
69.50
35.62
33.88

10.7) 33.88 (3.17
3 21
178
107
710

11.0 1.2
0.2 11.8
10.8 10.6

50.3
23.6
34.0
35.3
143.2
35.80
69.50

10.7) 33.70 (3.15
3 21
160
107
53

0.2 11.8
11.7 0.3
11.5 11.5

26.8
0.4
9.8
10.8
47.8
71.95
35.80

11.5) 36.15 (3.15
34.5
165
115
500

0.8 114
10.8 1.3
100 10.1

252
5.48
8.3
8.2
2825
70.62

534
2.59
35.1
36.8
1572
3780
70.62

1005) 3282 (3.28
3015
2770
2010
760

---

08 113
108 13
100 100

249
5.81
7.9
9.0
2799
69.98
3780

10) 32.18
3.22

317
3.15
3.15
3.28
3.22
~~322~~
119
3.198

10.8 1.3
0.2 11.9
10.6 10.6

540
227
32.8
33.7
1432
3580
6958
34.18

106) 3418 (3.22
318
238
212
26

3.018
3.198
216
3.108

Bulb = ~~10~~ 1½ inches long

Buck same length as before.

N S
78 43 E 10.2 58.0
4.1 3.8 F 43.6 31.6
3.7 3.5 G 52.8 40.9
H 54.7 42.8
2208 1733
55.20 4332
5520
11.88

3.60) 11.88 (3.30
108
108

---

41 7.8
7.0 5.0
2.9 2.8

88
40.8
53.1
53.3
21.60
54.00
43.32

2.85) 11.068 (3.89
8.55
2.13
19.95
1.350

3.30
3.39
3.42
3.14
3.29
3.45
3.49
3.57
3.59
368
3.409

4.0 8.2
7.0 5.0
3.0 3.2

58.2
31.6
41.6
42.2
1736
4340
54.00

3.1) 10.60 (3.42
93
130
124
60

4.0 8.2
~~7.0 5.0~~
7.9 4.1

3.9 4.9

10.9
44.1
54.7
54.2

223.9
55.98
43.40

4)12.58
3.14

7.2 4.7
4.1 7.9

3.1 3.2

59.9
34.3
44.4
43.9

182.5
45.62
55.98

~~0.6~~
3.15)10.36(3.29
630
945
910
630
280

---

51 70
~~7.9 4.1~~
7.2 4.7

2.1 2.8

7.7
42.1
51.3
52.1

213.2
53.30
45.62

~~2.85)7.68(2.70~~
~~570~~
~~198~~
~~1995~~

22)7.68(3.49
66
108
88
200

38 8.2
7.0 5.7
32 3.1

571
30.1
40.3
41.8
1693
4232
5330

3.15) 1098 (3.49
945
153
1260
2700

135
46.1
55.9
56.4
2319
5795
4232
1563

38 82
8.1 38
43 44

435) 1563 (3.59
1305
258
2175
405

---

81 38
4.2 7.71
3.9 39
3.1

587
31.2
42.8
43.2
1759
4395
5795

3.5) 1400 (3.59
110
290
195
950

Changed direction N=8.

N S

3.9 80
8.5 32
4.6 4.8

11.0
45.9
55.8
57.0
229.7
57.45

57.2
29.9
40.0
40.1
167.2
41.80
57.45

470) 156.5 (3.33
1410
244
155
141
140
1

3.6 83
8.5 32
4.9 51

10.9
45.1
55.1
56.7
227.8
56.95
41.80

50) 151.5
3.03

8.0 35
3.6 83
4.4 44

57.2
31.0
42.3
42.1
172.6
43.15
56.95

44) 1380 (3.14
132
60
16

79 38
36 83
43 45

10.8
45.8
56.3
56.0
228.9
57.22
43.15

44.0) 1407 (3.19
132
87
44
43

57 68
~~29 38~~
~~15 1.8~~ 30
2.8

23
348
461
462
1894
4735
5722

29) 987 (3.30
~~87~~
117
117

3.14
3.33
3.03
3.19
3.30
3.31
~~116~~
130
3.27

80 38
57 68
00
2.5

11.6
45.7
55.2
55.6
228.5
57.12
47.35

25.5) 8477 (331
885
920
885
035

$$3.108'' = .207^{s} \begin{cases} 3.018 \\ 3.198 \end{cases}$$ T-com dir 1 to 10

$$3.313 = .223 \begin{cases} 3.409 \\ 3.217 \end{cases}$$ T-rev dir 2 to 8

~~842~~

3.210

107

~~.214~~

In all of the above observations the adjusting screws of level tube are South

Dec 4

Continuation of investigation of Clark level

Conditions same as on Dec 3
except bubble a little longer.

148 0,2 348 481
0,2 14,7 9,8 23,1
14,6 14,5 23,4 36,8
24,7 37,8

92,7 145,8
231,8 364,5
364,5 ~~231,8~~
46,73

~~14,5) 32,27~~ (
14,5) 46,73 (3,21
43 65
3 08 0
2 91 0
17 0 0

0,2 14,7 32,1
14,1 0,8 8,9
13,9 13,9 21,2
22,4
84,6
211,5
364,5

13,9) 44,70 (3,22
41,7
3 00
2 78
22 0

~~14,1 0,8~~ 47,8
0,2 14,7 25,0
14,9 0,2 36,8
14,7 14,5 38,1
147,7
368,2
211,5

14,6) 44,23 (3,03
43,8
43

0.2 14.7 350
15.1 0.1 10.8
240
145 14.6 25.0
94.8
2370
3652

14.71)46.78 (3.17
4425
2530
1475
1055

~~01 15.1~~
15.7 0.1 48.8
0.2 15.1 24.1
37.6
157 15.0 38.1
148.6
3710
2370

15.0)46.55 (3.09
4515
1400

34.4
0.2 15.1 10.9
15.0 0.2 23.7
24.9
14.8 14.5 93.9
2348
3715

14.5)46.33 (3.12
4455
1780
1485
2550

3.21
3.22
3.03
3.17
3.09
3.12
84
3.140

Reduced length of bubble to 10 div

From 10.0 to 0.0 & 0.0 to 10.0

~~1.3712~~ 5 5.6 5 17.0

10.2 02 32.5 13.2

11.8 119 44.8 6.1

46.1 6.9

179.0 763.2

447.5 65.80

5.80

11.80) ~~2105~~

11.80) 38.55 (3.30

3 54

3 55

3 54

10.2 0.2

101 -04 4 49.7

0.2 10.2 26.5

109 106 39.2

40.3

103.7

438.92

405.80

10.) ~~26.88~~

10.75) 33.12 (3.08

3 225

870

---

4 178

14.3

102 00.2 7.1

-0.4 ~~1.11~~ 8.2

90 95 2674

106 109 4 468.5

4389.2

10.75) 3207 (3.04

~~3215~~

~~4220~~

3 225

420

~~10.2 0.2~~
1.1 9.4
11.1 - 0.2
10.0 9.7

17.8
57.3
7.1
8.2
64.5

47.6
24.0
37.1
38.0
146.7
36.68
68.5

9.85) 29.83 3.03
29.55
280

11.1 - 0.3
0.3 10.3
10.8 10.6

15.2
51.8
4.2
5.6
25.68
64.20
36.68

10.2) 32.48 3.03
3.21
383

3.03
3.30
3.08
3.04
3.03
3.08
56

10.3 10.3
10.6 0.2
10.3 10.1

46.8
23.1
35.6
36.8
142.3
35.58
420

10.2) 31.38 3.08
30.6
780

3
3.093

From 7.0 to 4.0 & 4.0 to 7.0

7.4 3.1
3.4 7.2
4.0 4.1

378
138
27.0
27.0
105.6
26.40
11.68

225
55.7
11.8
12.7
56.7
71.68

405)14.72 (3.63
12.15
2.570
2.430
1.100

3.4 7.2
7.1 3.4
3.7 3.8

36.0
12.6
25.8
25.8
100.2
25.05
11.68

37.5)

13.37 (3.57
11.25
2.120
1.875
245

7.2 3.4
4.1 6.4
3.1 3.0

36.1
93.4
25.6
26.3
101.4
25.35
14.10

25.0
1.8
14.3
15.3
56.4
1.410

3.05)11.25 (3.69
9.15
2.100

4.16 4
8.8 20
48 44

400
167
294
29.8
1159
2891
1410

455) ~~985~~ 1485 (3.25
13 65
1200
1910
2100

8.8 2.0
2.8 8.0
6.0 6.0

217
58.7
11.7
11.9
283 5
~~21.88~~
1088
2895

600) 18.07 (3.01
18 15

28 80
7.9 3.1
57 49

373
13.4
27.0
27.6
1053
2632
1088

5) 1544 3.09

A trifling adjustment N & S.

75.31
34.80
~~49.51~~
4.8 .49

261
2.6
16.1
16.2
6.10
~~20.25~~
15.25
26.30

~~)11.03~~

4.55) 14.05 (2.89
9.10
43.5
38.80
470

8.0 3.1
4.9 6.8
4.5 5.0
3.9 3.7

40.2 28.2
16.8 4.9
25.8 18.1
30.4 18.6
117.2
29.30 69.8
17.45 17.45

~~)14.05~~
~~11.85~~
~~(3~~

3.8) 11.85 (3.12
11.4
45
76

4.1 6.8
8.0 8.0
3.9 3.8

40.1
17.3
29.5
30.1
117.0
29.25
17.45

3.85) 11.80 (3.07
11.55
250

80 3.0
8.1 78
49 48

268
34
158
16.1
621
1552
2925

4.95

485) 1303 (2.83
~~1485~~
900
9030
4030
880
1500

* * *

31 78
80 80
9.9 48

409
174
298
301
1182
2955
1552

485) 1403 (2.89
970
433
4065

* * *

80 3.0
42 68
38 38

288
51
185
189
713
1782
2975

38) 1173 (3.09
114
33

Dec 7 1184

22 10

26 26,4 48,0
27,2 47,6
28,3 52,2
27,2 50,0
26,1 45,7
135,2 246,5

26 27,04 25 45,30
26 27,04
11 76,34
25 58,1
~~80 81 2,88~~ 25 88,1

3 Lacertae
22 19 2 +51 39

R C
A+1 RA
A-1

η Pegasi
22 07 36
+29 37

C R
A+1
A-1 A

7 Lacertae
22 26 33 + 47 41

R
A_{+1}
A_{-1}

226 B Cephei

C R
A_{+1} A_{40} to 50
A_{-1}

τ Erid
2 45 49 −21 29
R C
A_{+1} A
A_{-1}

47 H Cph
2 50 50 +78 57
C R
A_{+1} A
A_{-1}

Dec 7 1884

α Ceti		ρ Persei	
2 56 16	+3 38	2 57 48	+38 23
R	C	R	C
$+A_{+1}$	A (say A_{12})	A_{+1}	A
$-A_{-1}$		A_{-1}	

at 3^h 10 Sid Time

26 320	25 402
290	39,8
31.4	40,4
317	382
31.1	39.8
26 31.04	25 39.68
	26 31.04
	25 85.72

88.1
2,4

β Persei

3 04 +40 30

C	R
A(3 - 8)	A_{-1} (345)

Dec 8

26 234	25 428
259	451
24.0	431
222	430
248	430
26. 24.06	25 43.40
	26 24 06
	25 83.73

67⁴⁶

Set at 25 88.7

+.06

η Pisc
1 25 19 +14 45

C K
A+1 A
A-1

ν Persei
3 30 56 +48 3

K C
A+1 A
A-1

Seeing extremely good

β Androm		Polaris	
1 3 17 +35 0		1 16 36 +88 41	
R	C	R	C
A+1	A	A_{30} – A_{50}	A_{51} – A_{79}
A-1			

43 Cass		φ Persei	
1 33 50 +67 27		1 36 27 +50 6	
C	R	R	C
A+1	A	A+1	A ~~R~~
A-1		A-1	

Dec 8

τ Ceti
1 38 43 −16 32
C R
A+1 A
A−1

ε Sculptoris
1 40 15 − 25 37
R C
A+1 A_{3-9}
A−1

50 Cass
~~1 53~~
1 53 37 +71 52
R C
A_{+1} A
A_1

f Androm
1 56 50 +41 47
C R
A+1 A
A_1

ζ Ceti

1 45 47 −10 54

C R

A+1 A

A−1

β Arietis

1 48 17 +20 14

R C

A+1 A

A−1

α Draco

2 1 11 +115 4

R C

A+1 A (last A 12)

A−1

26 268

256

248

244

247

26 25.26

25 438

426

428

422

41.3

25 42.54

26 25.26

25 83.90

18 7

48

12

c = +.06

Dec. 9. Clock stopped
Cleaned by Mr. Aston and set
about.

Dec. 16 1884

Coll

[illegible]

η Draco Slo.

23 24,20

+110 1

R C

A+1 (234) A.

A−1

26 14.1 25 44.0
12.8 44.0
12.8 42.6
12.8 44.2
12.5 43.1
160 179
43.58

26 13.00
25 43.58
11 56.58
25 78.3 Sel [illegible]

ω² Aquarii

22 36 48 −15 11

~~R~~C R

A+1 A

A−1

δ Sculptoris

~~[illegible]~~

23 42 59 −28 46

R C

A+1 A

A−1

29 A8

ι Androm

23 32 32 +42 38

R	C
A+1	A-
A-1	

γ Cephei

23 34 40 +77 0

R	C
K_0 to 5.0	G_2 to 9.0

5 Pegasi

23 46 41 +18 29

C	R
A+1	A
A-1	

ω Piscium

23 53 27 +6 14

C	R
A+1	A
A-1	

36 H. Cam.
2 27 13
+72 19

R   C

A_{10} to 5.0 5_2 to E_0 [illegible]

20 Arietis
2 32 21
+21 28

R   C
A A_{-1}

41 Arietis
2 43 16
+26 47

R   C
$A+1$ A
A_{-1}

τ Persei
2 46 11
+52 18

C   R
$A+1$ A
$A-1$

θ Persei
2 36 25
+48 45
R   C
A+1   A
A-1

π Ceti
2 38 42
-14 20
C   R
A+1
A-1   A

β [illegible]
~~η Eridani~~
2 51 4
105 21
R   C
A+1   A
A-1

~~α Ceti~~   θ Persei
~~2 56 19~~   2 55 52
~~+3 38~~   ~~+38~~ 23
~~C~~   ~~R~~
A+1   A
A-1

Dec 16

26 10.0
10.9
10.0
11.0
11.1

26 10.60

25 47.0
46.2
44.8
44.0
46.0

25 45.60
26 10.60

25 78.10

Dec 17 1881 b = .21

about 19h Sid. Time

Adjusted level.

E. W Up.		E W Down		E W Up		E W Down	
6.8	4.3	10.3	-0.2				
9.2	2.1	1.4	8.4	15.1	6.8	9.8	0.2
7.3	4.0	9.9	0.8	12.2	13.4	1.3	8.8
9.3	2.0	1.3	8.9	1.3		1.3	8.0
32.6	12.4	22.9	17.6			18.1	0.2
8.15	3.10	5.75	4.40	6.72		4.52	
5.05		-1.32		2.81		-1.12	
-2.53		-.66				-.56	
		-2.53				2.81	
		3.18				3.83	
		1.50 b = .34				1.69 b = -.36	

~~From~~ another set –
adj. screw end always East on 1st reading

Up		Down	
~~11.8~~		~~11.8~~	~~14.1~~
		~~19.0~~	~~7.8~~
0.0	6.3	6.8	10.1
8.0	-1.5	14.0	3.0
-0.2	+6.8	7.0	9.8
7.8	-1.4	13.3	3.6
15.6	10.2	41.1	26.5
3.9	2.55	10.28	6.62
-1.35		~~-2.46~~	-1.73
-0.67		-1.35	-0.67
		-2.40	-1.20

Before this set observed that level took another adjustment

Dec 17, 1886

3^d Set

Up		Down	
0.2	6.0	12.3	6.0
7.9	−1.8	~~17.0~~	~~2.3~~
−0.2	6.4	12.2	3.8
8.0	−2.0	~~12.7~~	~~3.6~~
		7.2	9.0
		12.0	4.0
15.9	8.6	43.7	22.8
3.98	2.15		

−1.83

−5.22
−1.83
−3.52

All the above no good
on a/c of looseness of
level pivot

Pivot screws tightened

4^th Set

Up		Down	
4.1	7.1	13.3	3.0
9.0	2.5	12.9	3.2
3.8	7.6	12.3	3.7
9.0	2.4	13.4	3.0
		12.0	4.0
		13.3	3.0
6.48	4.90	77.2	19.9
		12.87	3.32

−1.58
−0.79

−9.55
−4.77
−0.79
−2.78

5th set

Up		Down	
3.5	8.0	14.8	8.3
9.0	2.3	17.6	5.4
3.9	7.3	143	8.9
8.7	2.7	179	5.8
25.1	20.3	64.0	28.4
6.26	5.08	16.00	7.10
−1.20		−8.90	
−0.60		−4.45	
		−0.60	
		−2.53	

6th Set

Up		Down	
3.4	5.3	146	8.8
7.8	1.3	17.3	5.7
4.0	5.9	14.3	8.9
7.4	1.5	174	5.6
22.6	14.0	63 6	29.00
5.65	3.50	15.90	7.25
−2.15		−8.65	
−1.08		−4.33	

6th set — 2.70
5th " — 2.53
4th " — 2.78
— 2.69

1 div = 0.21

$b = 0\overset{s}{.}564$

(~ Dec 22 – 23

Sid Time 18h ~~ 0

~~24~~ Up		Down	
5.4	9.9	9.0	1.4
10.9	4.3	10.9	−0.3
5.5	9.9	9.0	1.5
10.3	4.8	11.0	−0.5
32.1	28.9	40.9	2.1
8.02	7.22	10.22	0.52
−0.40		−4.85	
		−0.40	
		−2.62	

26.2
2.47
2.54

b = ~~.54~~ = Dec 22-3
.56 " 17
b = .56 adopt
178

~~b = 1.74~~

Up		Down	
5.6	9.9	13.0	7.0
10.9	4.3	15.7	4.3
5.7	9.6	12.1	7.0
10.0	4.2	15.8	4.2
~~[illegible]~~	~~[illegible]~~	13.1	7.0
5.3	9.9	15.8	4.2
11.2	4.0	13.3	6.8
4.4	9.6	15.8	4.3
10.9	4.2		
65.0	55.7	114.6	44.8
8.12	6.96	14.32	5.60
−0.58		−4.36	
		−0.58	
		−2.47	

Dec 23

11^h 30^m

25 960 25 526
961 541
968 548
988 520
988 545

25 97.30 25 53.60
25 97.30

25 75.45

Set at 25 75.4

4 H Draco Te C

12 6 50 +101 48

R C

A+1 A

A₁

ι Ceti

0 13 37 -9 27

R C Seeing very ~~Defin~~

A A-1 bad; door open

12 Ceti

0 24 13 -4 35

R C

A+1 A₀-9

A₁

Definition

very poor

κ ~~D~~ Draco

12 28 36 109 35

R C

A+1 A

A-1

Dec 23

π Androm
0 30 48 +33 6
R C
A+1 A
A−1

δ Androm
0 33 14 +30 14
b R
A+1 A
A−1

γ Cass
0 49 50 +60 6
R C
A+1 A
A11

43 H Ceph
0 53 19 +85 38
R C
A10-30 A31-62
70-90
rej. trap
before 82

Dec 23

β Ceti
0 37 52 −18 37

C R

A+1 A

A−1

ζ androm
0 41 17 +23 38

R

A_{1-5}

C

Apoor A−1

ε Piscium
0 57 1 +7 16

C R

A+1 A_{14} poor

A

A−1

reject A_2

25	3.0	25 54.6
	2.8	55.0
	1.8	53.0
	2.0	53.8
	2.1	52.0
	117	184
	2.34	53.68
		02.34
		15 60.2
		25 78.0

setting verified before collimating

Del − 75.4

5 26
c = − 0.032

γ Urs Min L C

3 20 55 107 45

R @

A+1 A

A−1

f Tauri

3 24 35 +12 32

R & R

A+1

A−1 A

Dec 23

~~α Persei~~

~~3 16 11 +49 27~~

o Tauri

3 18 44 +8 38

~~C R~~

R C

A+1

A-1 ~~R~~ A

ε Eridani

3 27 34 −9 55

R C

A+ A

A −1 2 3 4 5

~~δ Persei~~

3 ~~34 49~~ +47 25

~~ν Persei~~

~~3 37 27 +42 13~~

57 H. Camel

3 38 20 +70 59

R C

A+1 A

A-1

ζ Persei

3 46 58 +31 32

C R

~~A+1~~

A-1 ~~A~~

ε Persei

3 50 12

+39 41

R C

A+1 A

A-1

η Tauri
3 40 42 +23 45

R C
A+1 A
A±1

τ⁶ Eridani
3 41 56 −23 35

R C
A+1 A
A−1

ξ Persei
3 51 34
+35 28

R C
A+1 A
A+1

Sid Time 4^h 0^m

26	0.8	52.0
	1.0	52.0
	1.4	54.0
	2.0	53.1
	1.5	52.8
26	1.34	25 52.78
		26 1.34
		25 77.06

Setting 25 75.4 verified before collimating

Set at 25 75.4

−1.66

c = −0.021

Dec 29

on wire
below middle

25 93.4	25 35.2
94.1	34.3
91.3	36.0
91.7	33.6
93.0	34.8
25 92.78	25 34.78
	25 92.78
	25 63.78

34.8
27.1
61.9

25 61.9
25 92.8
1547
25 77.4
25 63.8
13.6
3.4
.17

Set at ~~25~~ 25 63.8

186
32
~~158~~
170

C = ~~.16~~ −.17

−.17

τ² Eridani

2 45 52 −21 28

R	C
A+1	A
A−1	

47 H Cephei

2 50 58 +78 58

C	R
A+1	A
A−1	

5 Ursae Min

2 27 47
10 34 7

R

A+1

A

A-1

41 Arietis

2 43 16 +26 47

R C

A+1 A

A-1

γ Persei

2 56 32 +53 4

R C

A+1 A

A-1

my A-1 2

ρ Persei

2 57 52 +38 24

R C

A+1 A

A-1

Dec 24

β Persei

~~3 0 45~~
3 0 45 +40 31

C	R
A+1	A
A-1	

48 H Cephei

3 5 53 +77 19

R	C
A+1	A
A-1	reject Hγ

~~γ² Urs Min~~

~~3 20 55 +10 45~~

~~ε Eridani~~

~~f Tauri~~

~~3 24 35 +12 33~~

$3^h 10^m$

25 92.8
92.4
91.2
90.5
90.5
25 91.48

25 64.8
66.4
66.1
65.8
67.0
25 65.96
25 91.48
25 78.72
63.8
1 4 9
3 7
C = -.18

ρ Persei
3 16 11 +4/9 27
C R
A+1 A
A-1

17
18
21
16
19

$3^h 35^m$

25 95.1
94.8
95.1
94.7
95.0
24.7
54.54

25 66.2
66.8
66.9
67.0
67.3
34.2
66.84

Set at 25 63.8

on wire below middle C = -.19

25 38.0
39.1
40.3
40.0
40.1
48.5
39.70
27.14

25 94.54
66.84
161.38
80.9

80.9
63.8
17.1
13

C = -.21

Dec 29

~~η Tauri~~ ε Persei

~~3 40 42 +23 45~~ 3 50 12 +39 41

Chronograph run down

Level sid. Time 4h : 10m

Down

~~– [illegible] 2.3~~
~~8.9 1.4~~
3.8 11.2 – 9.2 0.7
5.0 5.8
– 7.3 2.6
4.1 5.8
– 8.1 2.0
6.0 3.9
– 7.1 2.8
9.0 1.0
8)55.8 24.6
6.97 3.07

λ Tauri

3 54 21 +12 10

R C

A+1 A

A-1

Gr 750

4 1 4 +85 15

R C

A +1 A_{2-9}

Level at 4:20

Up ~~Down~~

~~9.8~~	~~5.2~~
~~15.8~~	~~-0.4~~
~~10.8~~	~~4.2~~
~~15.8~~	~~-0.6~~
~~52.2~~	~~8.4~~
~~13.05~~	~~2.10~~

~~Dec~~ Dec 30

W

26 96.0 65.6
94.2 64.0
95.5 64.0
94.3 65.0
94.8 64.5
232 221

29 94.64 64.40
94.64
159.04
25 79.5 – .01 – .01

Level.

Up.

9 9e
9.8 9.8
16.8 2.8
10.1 9.6
17.2 2.3
134.8 6.12
1.36 ∧ 3.69

Down

6.8 +0.1
2.8 +4.1
8.3 −1.8
2.7 +1.1
5.15 16.2 −1.96
3.53 5.65
2.82
6 = −.59

Dec 30

h m
Sid 23 58

ω Piscium

23 53 27 +6 14

R L
A -11
A -1 A

25 96.5	25 63.5
958	640
954	642
956	63 8
957	64 8
9580	63.90
	95.80
	79.75

Set at 75 79.5

α Andm

L 0 2 30 R +28 28

A +1 A 1
A -1

β Cass

0 3 ~~3~~5 5

~~+58 8~~ 8 +58 31

R L
A 789 A 1

Dec 30

~~γ Pegasi~~
21 M6 Phoen.
~~0 7 22 +14 33~~
0 6 39
+10 44

R C
A_{90} to 70 $A_{6.8}$ to $3_{,1}$ x
A_{3_2} to 10 A_{-1}

ι Ceti

0 13 37 (−9 27)
R (C)
A+1 A
A−1

δ Androm
0 33 14 +30 14

α Cass
0 34 2 +55 54

R C
A_1 to 80 A_{-1}

Dec 30

12 Ceti

0 24 13 -4 35

C R

A+1 A

A-1

ζ Cass

0 30 37 +53 16

~~A~~ R C

A+1 A

A-1 reject A_1

21 Cassiop

0 38 8 +74 22

C R

A_{+1} A_{10} to 7_0

A_{8} 9

~~ζ Androm~~

~~0 41 18 +23 39~~

Polaris

1 16 59 +88 41

R C

$A_{1_0}-3_0$ $A_{3_1}-A_{5_2}$

(A_{3_1} only one line)

$A_{6_0}-9_0$

Oct 30

ν Persei
3 37 27 +42 13

R	C
A+1	A
A−1	

η Tauri
3 40 42 +23 45

R	C
A+1	A
A−1	

second? a little motion

ξ Persei
3 51 34 +35 27

γ Eri
3 52 42 −13 50

R	C
A5989	A−1

Dec 30

~~τ^6 Eridani~~
~~3 41 57 −23 35~~

ζ Urs min Ze C
3 48 18 +101 50

R	C
A+1	A
A-1	

χ Tauri
3 54 21 +12 10

R	C
A+1	A
A-1	

ν Tauri
3 57 5 +5 40

R	C
A+1	A
A11	

Dec 30

Sr 750 o¹ Eridani

4 1 4 +85 15 4 6 18 −7 8

R C R C

$A_{1_0} - 3_0$ $A_{3_1} - 6_1$ A_{+1} A

$A_{6_2} - 9_0$ A_{-1}

obj $A_{-1,}$

1st Leveling

Down

11.6 −0.3
4.0 7.2
12.2 −1.3
4.0 7.1
11.2 −0.1
4.2 7.7
47.2 20.3
7.87 3.38

− 2.20

Up

~~15.4 1.2~~
~~7.8 9.0~~
~~14.7 1.9~~
~~7.1 9.2~~

~~15.4~~
7.8 9.0
15.4 1.2
7.1 9.2
14.7 1.9
7.7 8.9
14.2 2.2
67.2 32.4
11.20 5.40

−2.90
−2.20
−2.55

$b = -0.\overset{5}{5}35$

Dec 30

26	1.0	25	57.0
	1.1		58.8
	0.4		59.3
	0.7		59.0
	0.5		59.8
26	1.85	25	58.28
		26	+1.85
		25	80.63

Set at 25 79.5

−1.13

c = 0.^{s}0~~44~~

~~δ Tauri~~

4 ~~16 21~~ +17 16

~~A C~~ K

~~A41~~ A41 A

SA-1

Lost on chronograph

2^{d} Leveling

Up	
7.6	9.1
14.2	2.2
8.2	8.2
14.2	2.2
7.6	9.1
14.3	2.1
66.1	32.9
11.02	5.48

−2.77

~~Down~~	
~~11.0~~	~~3.9~~
~~7.8~~	~~7.1~~
~~[illegible]~~	~~14.1~~
~~17.8~~	~~2.1~~
~~7.8~~	~~2.4~~

Down	
11.0	3.9
7.8	7.1
11.2	3.7
7.8	2.1
13.0	2.0
7.0	7.9
57.8	26.7
9.63	4.45

−2.59

−2.77

−2.68

b = −0.^{s}562

Dec 30 – 31

Sid T. 18h 0

1st set

Up

9.4 5.3
~~10.8 4.3~~
10.8 4.3
~~9.4 5.3~~
9.4 5.6
10.2 4.8
9.7 5.2
8.7 6.4
9.7 5.2
9.8 5.2
77.7 42.0
9.71 5.25
−2.23

Down

~~10.8 9.2~~
~~3.1 8.6~~
~~12.2 −1.2~~
5.0 5.9
7.8 2.2
7.1 3.6
7.8 2.0
6.2 4.7
8.8 2.0
5.8 5.1
8.8 2.0
57.3 27.5
7.16 3.44
− 1.86
− 2.23
~~− 2.09~~
− 2.05

$b = -0.\overset{8}{4}30$

2d set

Up

10.1 5.0
8.8 6.2
9.1 5.8
9.7 5.3
9.7 5.3
8.7 6.2
56.1 33.8
9.35 5.63
− 1.86

Down

13.0 10.0
13.3 9.6
14.6 8.3
13.9 9.2
15.3 7.6
13.8 9.2
83.9 53.9
13.98 8.98
− 2.50
− 1.86
− 2.18

$b = -0.\overset{5}{4}58$

Level line adjusted slightly before leveling

Dec 30 – 31

3d Set

~~Down~~ Up		Down	
~~17.8~~	~~7.3~~	13.6	9.6
~~19.9~~	~~5.3~~	13.8	9.2
16.8	8.3	13.0	10.2
13.2	12.0	13.3	9.6
16.9	8.2	53.7	38.6
		13.42	9.65
		−1.88	

Stopped this series; because position of bubble changed during reading about 10 div. —
Tightened end screw

~~4th Set~~

~~Up~~	~~Down~~
~~18.8~~	~~6.1~~

adjusted reference plate a little

~~Up~~	~~Down~~
~~14.2~~	~~10.6~~
~~18.5~~	~~6.3~~

Dec 30 – 31

Up		Down	
		~~11.8~~	~~11.1~~
19.3	4.1	11.8	16.3
13.0	10.7	16.4	11.1
16.15	7.4	14.1	13.7
−4.37		−0.20	
		−4.37	
		−2.18	

$\delta = -0^{s}.458$

Up		Down	
19.8	4.0	2.0	5.1
13.2	10.2	6.2	0.8
19.2	4.3	1.7	5.8
13.3	10.2	6.0	1.2
19.2	4.3	2.1	5.1
13.2	10.1	6.2	1.0
19.0	4.6	1.8	5.2
13.2	10.2	6.0	1.2
130.1	57.9	32.0	25.4
16.26	7.24	4.00	3.18
−4.52		−0.41	
		−4.52	
		−2.46	

$\delta = -0^{s}.516$

Dec 30 – 31

Up		Down	
18.1	5.0	0.8	5.3
13.0	10.0	6.3	0.8
18.5	4.3	0.7	5.6
13.2	9.8	6.0	1.3
18.6	4.3	2.0	5.2
13.2	9.9	6.1	0.0
94.6	43.3	21.9	18.2
15.77 ~~11.8~~	7.22 ~~5.41~~	3.65	3.03

~~−1.71~~
~~−3.21~~
−4.27

−0.31
−4.27
−~~2.29~~
~~1.76~~

$b = -0^s.481$

				Wts =
1st set	2 readings	−0.458		1
2 "	8 "	−0.516		4
3 "	6 "	−0.481		3

Mean by wts $b = -0^s.496$

~~b =~~

8
54
46 5
78
96

Jan 5 1884

	N	S
25	91.2	2560.7
	91.7	58.7
	91.7	59.2
	90.6	59.2
	91.1	59.0
	63	468
	91.26	59.36
		91.26
		150.62
	25	75.3

Level

Up

16.9	−0.1
5.1	11.6
15.3	1.2
10.0	6.8
17.8	−1.1
8.3	8.0
73.4	26.4
12.2	4.4

− 3.90

Down

10.4	7.9
7.4	10.1
10.9	7.0
7.0	10.9
35.7	35.3
8.92	8.82

d

− 0.05

− 3.90

− 1.98

$k = -0^{s}.406$

Jan 5, 1884

Mp Down

Jan. 8 1885

2 H Camelop

3 19 51 +59 33

A 5,0 +9,0

A -1

f Tauri

3 21 35

+12 33

F G H less than E
F G H nearly alike

El Lin	ν	ζ Persei
3 41 22 +26 14	3 52 13	3 46 58
	+23 18	+31 33

A A₋₁

50 0	17.0	17.1	45 2	19.9	20.7
	52.0	52.2		55.4	55.0
	50.0	49.6		54.7	54.7
	53.4	53.1		58.1	58.6
49	58.10	58.00	47	2.02	2.28

3 stones for S

~~After the~~

Jan. 9 1885

Mr. Lundin cleaned the object glasses of the telescope and of the glasses of the collimators. In taking ~~down~~ apart the telescope object glass from the cell he found two things which may possibly explain the variation in the collimation which has given so much trouble.

First that the three abutting screws which hold the cell firmly in position against the frame were not screwed home.

Second, that the ring which holds the outer glass against the inner ~~ma~~ did not bear at three points as it should have done. Some brass filings were found under the ring.

Jan 10 1885

π_1 Ceti

2 38 41
−14 21

20 9 37.3 38.2
54 57
52 46
14.6 14.2
24 ~~[illegible]~~ ~~0.52~~
15.62 15.52

τ_2 Eridani.

2 45 52
−21 28

30 2 17.9 16.8
7 45.7 45.8
45.3 45.0
53.7 52.6
~~32.2~~ ~~3.15~~ 2.55
31 55.65 55.05

48 H Cephei

3 5 53
+77 19

45 2 7.2 24.2 25.0
44.0 31 22
39.7 56.9 57.4
38.7 54.7 54.3
46 47.40 47 4.72 4.72
4.72
~~42.68~~
97.32

α Persei

3 16 11
+49 27

35 3 10.7 11.2
45.0 45.6
45.3 45.2
43.6 43.4
37 51.15 51.35

✓ ✓

h Eridani
2 52 51
−9 21

25 0 47.8 47.8
13.3 11.0
15.2 15.3
21.1 20.9
25 24.35 24.50

Q Persei 2 57 52
+38 24

40 1 42.8 43.2
19.7 20.1
16.8 15.7
16.6 17.1
41 23.78 24.02

✓ ✓

γ Ursae Mi
3 20 55
+10 42

20 1 48.1 2 16.2
27.3 51.7
25.3 53.2
20.4 47.7
21 30.35 21 58.70

Az: ti. 30

f Tauri
3 24 35
+12 33

Jan 10

El Kui

3 30 29

+24 14

50 1 41.6 41.8
16.4 16.6
12.2 12.8
18.0 17.2
51 22.05 22.10

aurigae ✓
~~17 Tau~~

3 37 56

+23 45

15 4 47.8
21.9
18.2
23.3
19 27.80

✓

~~17 4 3 2~~ δ Persei
– ~~26 41~~ 13 46 58
+31 33

4
45 2 4.36
1.6.7
1.3
1.6.6
47 23.05

El Kui

3 5.2 13

+23 18

Cantor soon?

2 Tauri

~~2 Tauri~~ (3)

~~+7~~ 40 32

+2 34 5

154 51 8 ~~8~~

~~28~~

23.8

28.0

19 33.10

27 Tauri

17 41 46

−25 13

20 3.7 6

39.5

35.1

41.2

22 46.95

γ Tauri

3 37 6 +15 40

20 3 29.6

0.2

0.0

7.8

~~23~~ 9.40

c Persei

400 ~~23~~

+47 24

40 0.28

20

59.8

59.2

40 7.32

2nd

Jan 10 1885

λ 40 — δ Tauri

4 16 22 +17 17

2.07
30.12
30.54

45 3 506 505
182 178
186 196
23.2 23.0
48 27.65 27.72

ε Tauri

4 21 58
+18 56

5 4 41.6
11.8
10.2
15.2
9 19.70

α Tauri
4 29 23
+16 17

45 B 173
46.0
44.9
51.0
47 54.80

C
25 64.0 87.9
63.0 87.8
64.3 89.0
62.9 88.6
63.4 88.8
42
25 88.2
25 65.~~34~~ 42
153.6 48
25 75.9 7

Sel ol 25 74.0

C = −.02

Jan 13 1885

W S.

25 67.6 25 84.0
68.1 83.0
68.1 83.1
68.7 83.8
69.0 80.7
409 190
68.18 83.80
83.80
152.38
25 ~~76.19~~ set at 76.2
75.99
c = 00

μ Ceti
2 38 47 +9 38

25 1 6.0
36.4
34.8
39.6
25 44.22

β Persei
3 04
+40 31

A
A −1 Reg A −1 1
30 3 37.6
10.8
9.6
7.8
33 16.45

τ Persei
2 46 11
+52 18

Blume Mi
2 5 14
+105 2

AR
Reg δ

40 4 44 4 56,3
35,8 84,4
39,3 32,8
33,3 2,3
43 44,20 44 37,20
5,300

Jan 14 1883 ✓

✓

τ Persei
2 46 11
+52 18

[illegible]
2 51 4
105 22

452 0.6
338
312
369
46 3912

40 4 76   4 57 9
431   348
388   314
376   267
43 4677   43 37 ~~70~~
62

✓

✓

o Tauri
3 18 41
+8 38

[illegible]
3 20 15
+107 42

W 1 56,1
33,0
29,9
25,9
21 3622
A ?
+1

ρ Persei
2 57 52
+38 21

40 1 44.9 45.0
17.4 18.3
12.6 13.1
16.0 15.5
41 22.72 22.98

48 Hev Cephei
3 5 13
+77 19

40 2 ~~15.8~~ 1 24.8
~~18.7~~ ~~18.2~~
~~12.8~~ 12.6
~~52.8~~ 52.8
Rej. 41 2.10

f Tauri
3 24 37
+12 33

30 2 29.8
0.4
56.1
9.2
32 7.72

Electrae
3 [illegible] 30 29
+24 19

50 1 23.0 22.8
16.2 57.0
50.0 50.4
55.8 55.7
54 12.5 14.8

~~14~~50
~~4623~~
6.1[illegible]

~~24~~59
~~4~~
61.48

~~17 Tauri~~
Jan 14 ✓

~~17 Tauri~~ aurrns

3 07 56
+23 45

15 4 55.8 56.1
28.2 28.2
24.2 24.2
30.2 30.2
19 34.60 34.67

✓

η Tauri

3 40 32
+23 45

15 4 55.9 40.9
28.2 41.3
24.2 37.4
30.2 42.0
19 34.62 18 47.52

A ~~B~~ C

✓

ζ Tauri
3 37 6
+5 40
20 4 26.4
54.2
53.2
34
24 4.30
49.9 8 2
49
25 72
6400

✓

c Persei
4 0 23
+47 24
40 0 28.2 27.8
59.7 59.2
52.8 54.8
56.8 56.1
40 4.88 4.48

27 Tauri

3 4 2 12
+23 4

ℓ 2 27.2 26.5
54.6 54.6
52.12 55.2
59.9 59.8
~~22~~ 52.2 52.7

+13 &c

Elkui

3 5 2 13
+23 18

45 2 25.0 24.7
59.1 58.5
52.2 52.8
57.8 57.0
47 35.2 32.0

δ Tauri

4 16 22
+17 17

45 2 54.7
22.2
21.0
27.6
47 31.38

ε Tauri

4 21 58
+18 56

5 4 45.6
14.8
11.2
17.3
9 22.22

ι Tauri

4 25 23
+16 17

45 3 33.4
0.0
57.1
4.6
48 5.78

Jan. 17

DM
1 55 6
+54 6

DM 2 ~~2 5 31~~ 2 16
~~+52 32~~
+50 31

8.2 DM 2 6 27
no. 9.0 +55 13

55 2 16 1.3
3.40 3.38
3.12 3.00
~~2.9.4~~ 2.9.0
56 39.05 38.52

30 1 13.8
4.78
4.56
4.58
30 53.25

~~[illegible]~~
8.2 mg
no 9.0 in field

52 2 50.8
2.30
2.12
2.26
52 29.40

8.2 mg
st. 11 st
star 8.3 mg in st
in R.A.
-1 only

DM 2 35 44
+55 12

50 0 14.7
45.6
44.2
43.6
49 54.02
8.4

DM
2 37 44
+53 32

25 4 26
58.2
54.0
53.8
28 2.15
7.0

DM
2 40 56
+54 58

0 4 28.8
4.1
59.8
59.6
4 8.07 7.5

Dm 211 1
+49 56

5 0 29
35,1
35,6
35,1
4 42,18

Fine # 9,0 on A_1 to A_9
pencil # 8,3 on A_3 to 9,0
One stroke for each 5

Dm 228 ~~6~~34
+55 ~~4~~ 7

55 3 48,1
19,7
18,6
29,0
58 28,85
8,6 avg

A pair of stars 3' above.

Dm 2 327
+15 9

50 2 41,0
13,8
13,8
14,8
52 20,85
9,0

B [illegible]
2 ~~17~~51 4
+10 22

48 3 46,8
22,8
22,1
15,8
43 26,88
A_{-1} A

Q Persei
2 57 52
+38 24

40 1 41,4
16,2
11,3
13,6
41 20,62

48 U Ceph
3 55 53
+77 19

45 2 27,0 1 23,2
16 59,0
57,2 52,0
4,0 51,6
47 7,45 46 1,45

Jan 17

8 ζ Tauri
3 1841+8 38

25 8² 36.4
6.2
4.7
10.1
28 14.35
7

γ Urs mi
3 20 55
+107 42

20 1 32.8
9.3
0.8
3.1
21 13.10
Δ 7.0 4.10

7 Tauri
17 40 32
+23 45

20 0 24.2
56.8
52.4
56.1
~~20~~ ~~4.58~~
29 2.38

27 Tauri
3 42 12
+23 42

20 3 13.7
41.6
34.2
41.8
22 49.08

1803
43.42
47.58

γ Tauri
3 27 35
+12 33
30 1 57.3
30.8
24.9
31.2
31 36.05
Rej A

Elektrae
3 30 29
+24 14
50 1 33.0 33.0
5.0 5.6
1.3 1.1
6.1 6.6
51 11.35 11.58

17 Tauri
~~3 3? 56~~
~~+23 4 15~~
~~50 2 30.2~~
~~2 .4.9~~
~~7.0~~
~~2.8~~
[illegible] #

ζ Persei
3 46 58
+31 33
30 2 35.5
11.2
9.1
11.2
32 17.85

El Kri
3 52 13
+23 18
No ∫
cond.

c Persei
4 0 43
+47 24
40 1 12.8
44.2
35.6
41.8
40 49.60

Jan 17

α Tauri C = 2576.0

4 29 33

+16 17

45 8 31.2

0.8

55.2

2.3

48 7.38

Jan 18 1885

C

	N	S
25	56.3	88.9
	53.0	90.1
	55.0	90.7

New adjustmt

since this

N	S
57.1	89.5
60.5	91.5
60.5	91.5
~~57.8~~	91.6
59.0	91.0
296.5	91.0
59.30	~~55~~
	~~91.0~~
	455.5
	91.10
	59.30
	150.40
	75.2

Set at 75.2

Jan 14 1885

DM.
1 27 41
+53 28

Not seen
Same
Glimpse of a
very faint star
in front came piece

2 Persei
1 30 59
+48 4

0 23 3.9
7.7
4.1
3.6
2 12.32

43 Cass
1 33 54
+67 28

37 2 36.3
12.2
6.4
7.1
37 15.50

DM.
1 55 6
+54 6 (7.5)

55 2 10.0 10.0
(8.0) 48.9 43.8
38.4 35.0
38.6 35.2
56 47.72 48.00

DM
2 2 11
+53 31 (8.7)

30 1 31.5
(8.4) 5.6
59.7
0.7
31 9.38

DM
2 $\overset{5}{3}$31 +
+52 32 (9.0)

30 0 12.8
(9.0) 46.2
40.8
41.5
29 50.40

φ Persei
1 36 31
+50 7

55 3 49.6
19.8
19.0
20.0
58 27.10

ε Cass
1 46 12
+63 6

55 4 29.2
1.0
59.7
57.8
59 6.92

DM. 2 8 57
+55 11
(8.7)

- 2 3.5
35.8
33.8
32.9
41.50
A+1
A

DM
2 11 1
+49 56 ?²

5 0 30.1
(8.6) 3.4
59.7
0.2
5 8.35
A 9.0 follows
star 20s and
2' below.

DM
2 28 8
+55 12
(8.8)
50 0 50.6
(8.7) 21.8
18.0
20.0
50 27.60

Jan 18 1885

DM
2 32 7
5.3 +53 9

50 2 27.2
(9.2)
2.5
54.8
58.0
52 56.2

DM
2 35 44
+55 12

50 0 11.4
(8.8)
42.8
38.8
38.3
49 47.82

DM
2 37 44
+53 32

25 4 53.1 52.8
24.2 25.0
22.8 23.0
(8.2)
24.0 23.6
29 31.02 31.10

28 Persei
2 56 23 +53 4

0 2 15.7
47.6
44.7
43.2
1 52.80

48 76 Cephei
3 5 53
+77 19

45 2 12.3 1 24.8
48.0 0.8
41.6 56.0
40.2 53.1
46 50.52 36.8

46.84

2 46 56 τ Persei
+5428
2 46 11
AR +52 18

Mi. 45 3 8,4
Observd. 42,1
38,6
38,2
47 46,82

B Ursae Min
2 51 4
+10 5 2.2

10 3 57.6 4 49,5
32,3 25,4
30,4 23,2
25,8 17,4
43 36,52 44 28,87
52,35

o Tauri
3 18 41
+8 38

2
25.12 20 8
4,6
58,7
7,8
27 10,40

γ Ursae Min
3 20 5 5
+107 42

35,1 20 2 26,7
17,0 4,5
12,0 58,2
8,6 56,2
19,10 22 6,45

Jan 18 1885

Elkin	Anvers 17 Tauri	2 Tauri
3 30 29	3 37 56	340 32
+24 14	+23 45	+23 45

50	1 42.2	42.3	20 0 8.8	20 0	18.8
	14.0	15.7	33.9		51.0
	9.44	9.4	34.7		44.9
	15.9	15.8	35.7		50.0
57	20.30	20.65	19 45.28	19	56.18

27 Tauri	τ Persei	Elkin
3 42 12	3 46 58	3 52 13
+23 42	+31 33	+23 18
2 3 44	3 0 2 55.2	45 2 33.3 2.2
39.4	29.0	36.5 38.4
34.5	23.4	25.4 25.2
40.0	26.6	35.2 34.8
22 45.32	32 33.55	41 41.20 41.15
		Lost time winding it

Seeing horrible all the evening

Jan 19 1885

N	S
2 57.8	53.3
57.6	54.6
56.0	55.4
55.8	55.2
57.2	55.0
344	235
57.88	5470
	56.88
	111.58
	55.7 sel ot.

DM.

2 28 8

55 12

50 4 26.1

(9.2) 57.4

51.4

53.0

5.4 1.98

A. 580 = First star 9.2 mg

A'1 ad. = second star in R.A. only = 9.4 mag.

B[illegible]

2 51

+105 22

40 4 15.2

50.3

45.9

42.1

43 5338

DM

2 58 55

+55 9

50 4 14.4

(8.7) 44.1

42.8

42.0

5.3 50.82

48 N Cephei

3 5 13

+77 19

45 2 13.9

46.8

40.2

40.0

46 5022

[illegible] 8.7 mg M.

about 10s nearly

same [illegible]

DM
2 37 20
+55 24.2
20 03 6.4
6.4
(80) 1.3
1.6
20 11.42
A+1

DM
2 39 14
+85 14
25 2 3 58.5
29.6
(80) 24.0
23.8
28 34.48
A+1

DM
~~2~~ 40 56
+54 58
0 4 14.4
46.6
(78 ~~80~~) 43.0
43.2
3 51.80

o Tauri
3 18 41
+8 38
25 2 30.7
0.3
55.0
4.6
27 7.65

DM
3 23 56
+55 8
55 0 37.5
6.1
(78) 1.1
5.0
55 12.50

DM.
3 28 25
+54 45
15 4 1.84
49.9
45.0
46.3
18 54.90

Jan 19
Elkin

3 30 29
+24 14
50 0 48.6
19.3
14.1
19.0
50 25.25

A_9. A_{-1}

Assumes.
17 Tau

17^3 37 56
+23 45
20 0 81 86
38.7 37.8
32.2 32.6
37.3 37.3
19 44.32 44.08

2 Tau
Elkin

17^3 40 32
+23 48

Same

DM
3 54 21
+51 33

30 3 9.2
41.8
43.8
44.0
32 49.70

(80)

DM
~~3 56 39~~
~~+52 48~~

DM
3 59 5
+50 36

25 2 33.8
6.1
0.8
0.7
27 10.35

(7.7)

[illegible]

3~~17~~ 41 22
~~7~~ +26 14

50 0 4~~8~~2 1
15.6
9.4
16.2
50 22.08

A A −1
~~26.83~~
~~67.08~~
8.83
22.08
1.25
20.83

[illegible]

34 6 58
+31 33

30 25 1.4
20.7
14.9
19.2
32 26.55

[illegible]

35 2 13
+23 18

45 2 20.2
55.1
46.4
53.4
46 59.52

DM
4 5 52
+50 32
(8.4) 30 0 33.3
(9.3)
3.1
58.8
59.8
30 8.75

A+1
Reg ordin

~~DM~~
~~4 11 18~~ (9.0)
~~+49 57~~

[illegible]

DM
4 11 29 (8.5)
+49 58
5 0 14.9
(8.8) 45.3
33.8
41.6
4 48.75

A

Jan 19

δ Tauri

4 16 22
+17 17

45 3 5 57
?
— — 58.8
25.0
17.3
25.2
32.57

DM
4 18 47
+53 38

25 1 31.3
2.4
54.2
59.0
26 6.72

DM
~~4 2 38 9~~
~~+55 12~~

~~50 2 3 9.7~~
~~9.2~~
0.8
0.7
52 13.67

Ok

~~DM~~
~~4 39 54~~
~~+54 50~~

DM
4 42 40
(86) +51 10
(90) 203 48 53
34.8 34.2
26.3 27.6
31.8 32.6
22 39.42 39.92

Ok

86 m.

A
2nd δ m.

~~DM~~
~~4 45 21~~
~~+52 50~~

Ok

α Tauri

4 45 33

+16 17

15 2 21

2.7

14.8

2.8

16 3385 Ok

DM

4 33 46

55 2

Torfl.

Ok

DM

4 37 8

+49 55

5 4 8.2

37.3

25.3

34.7

8 4238 Ok

ι Aurigae

4 49

+32 59

5 1 23.8

54.6

34.7

56.0

5 55 57.8 Ok

DM

4 53 35

(90) +53 22

40 44.8

(50) 15.2

10.3

24.7

44 23.05

25.60 Ok

A +1

4 56 17

+55 11

50 4 11.8

(88) 42.8

35.0

(80) 36.0

53 45.40 Ok

A +1

Jan 19

β Aurigae	α Aurigae
5 5	5 8 16
+38 21	+45 52
40 4 442	10 2 366
130	6.1
1.0	5.2
11.1	1.2
44 17.32 ok	12 8.78

✓

Jan. 20 1885

Lately the microscopes, especially F and G have been a good deal out of focus. F G and H have ~~been~~ read less than E for some time

Adjusted all the microscopes for focus and adjusted them ~~for~~ position so that F G and H shall read greater than E.

Jan 30 1885 —

1h 9m

5

536	883
578	889
528	800
498	915
520	907
72	488
5744	8976
	5744
	14120
	40.6 set of —

Jan. 20 1885

~~ξ2 Ceti~~
~~2 22 6~~
~~+7 57~~

~~41 Arietis~~
~~2 43 16~~
~~+26 48~~

~~κ Persei~~
~~2 46 11~~
~~+52 18~~

ο Tauri
3 18 41
+8 38
25 2 16.4
2'23
2'24
2'7.3
27 22.10

f Tauri
3 24 37
+12 30
30 1 53.2
5'9.7
5'8.0
1'.8
31 58.18

47 [illegible] Cephei	[illegible] Persei	β Persei
2 50 58	2 57 32	3 0 46
+71 58	~~+38~~ 24	+40 31

17 Tauri	2 Tauri	27 Tauri
20 0 18.0	18.0	20 3 79 87
28.3	28.3	186 187
23.6	23.6	140 146
27.7	27.7	178 177
20 24.65	24.65	23 1455 1492

Jan 21 1885

12^h 20

N	S
51.5	90.8
50.0	91.4
52.1	91.8
53.0	91.1
51.8	92.1
	72
87	
51.74	91.64
	51.74
	143.18
	71.6 sel-ot

DM

2 37 20 + 52 4 2

20 0 22.2

84 33.0

23.7

25.3

20 27.05

A +1

Q Persei

2 57 52

+38 24

—— 43.4

33.6

48.7

50.8

44.12

A A+1

47 H6 Cephei

3 5 13

+77 1 9

45 2 12.5 | 21.0

25.2 38.4

20.2 33.2

18.0 30.5

19.05 46 31.78

47

A+1 A

47.2

Dm

2 39 14 +55 14

45 2 46.1

(78) 56.3

48.6

52.8

47 50.95

A

Dm

2 40 56

+54 58

0 3 42.5

(80) 54.1

45.8

50.0

3 48.10

A −1

Dm

2 58 55

+55 9

50 3 54.7

5.1

2.9

1.8

54 1.12

~~[illegible]~~ A +1

A A+ A −1

0 Tauri

3 18 41

+8 38

25 1 58.5

6.2

2.2

8.6

~~A+~~ A 27 3.88

2 [illegible]

3 20 55

+10 7 42

20 1 32.7

48.0

45.1

40.2

~~[illegible]~~ 21 41.50

Dm

3 ~~4 31~~

3 23 56

~~+55~~ 1 50

55 8

55 0 23.5

34.0

32.2

29.5

55 29.95

Jan 21

Dm

3 28 25 +54 45 Elkin

3 30 29

+24 14

— — 17.0

80) 27.8

26.6

22.6

2355

50 1 ~~54.4~~ 17.3

27.3 Cand.

34.3 [illegible]

27.2

51 24.05 1061

26.52

A_{10} B_{60} A_{-1} 345

Dm

3 45 44

+52 2

0 0 30.8

84) 41.3

39.9

36.4

0 3710

3 stars follow in a group 1m

Elkin

3 52 13

+23 18

45 2 21.8

3 ~~2~~30

25.7

31.0

47 2625

Dm

3 57 21

+57 30

30 0 50.1

86) 1.8

0.4

56.1

~~30~~ 57.10

A +1

17 Tauri

3 37 56
+23 45

20 0 11.9 1
22.2
18.4
21.0
20 18.38

2 Tauri

3 40 32
+23 45

20 ✓ 11.6
21.8
18.6
21.0
20 18.30

Ω Tauri

3 41 22
+26 14

50 0 28.8 25.9
40.7 40.8
36.2 36.4
A_{50} A_{-1} 35.0 38.8
50 3642 3648

Per

3 56 30
+52 48

10 0 48.0
59.1
(5.3) 57.6
53.0
10 54.42

A_{60} to 90 A_{-1}

Dm

4 05 46
+50 32

30 1 36.8
(8.0 8.7 8.7) 48.8
48.6
43.4
31 44.40

A_{+1}
Reg order
Sort A_{+1} 45 pa N (90) #

Dm

4 11 16
+49 57

5 0 4.0
(9.1 9.2) 14.8
12.4
9.5
5 10.18

Reg order
1st # on A
2nd # on A_{-1}

Jan 24 1

DM
4 18 47
+53 38

25 1 29.2
(85) 35.6
35.2
34.7
26 35.68

Σ1 Aur
4 21 58
+18 56

5 4 44.5
53.0
51.4
52.6
9 50.38

DM
4 33 46

+55 2
(9.0) 0 2 25.3
36.2
36.1
30.6

A 23 45
A_{10} w 170 w 90

Chk

DM
4 45 21
+52 50

10 3 50.7
(8.4) 0.2
1.3
55.0

Chk

DM
4 52 20
+54 40

25 1 10.9
(8.7) 19.2
18.7
15.0

A +1

Chk

DM
4 55 25
+53 12

50 2 39.7
50.2
52.4
45.0

Chk

Dm

4 37 19

+51 41

20 3 19.8

93) 30.8

31.6

24.5

Δ +1 123 Δ 789

Chk

Dm

4 35 54

+54 52

5 11 29.0

93) 35.6

34.7

33.8

Δ

Chk

Dm

4 42 35

+50 36

Too flt.

Chk

Dm

4 56 54

+51 34

30 14.6

13.9

15.3

9.0

Chk

μ Aurigae

5 5 38

+38 21

ι Aurigae

5 8 16

+45 52

10 2 28.8

38.2

30.2

33.2

12 34.35 Chk.

Jan 22 1885

C = 25 71,6

10 Cam
1 33 54
+64 28
35 2 40,7
49,9
45,6
42,2
37 45.60

Dm
2 5 37
+55 13
50 0 14,6
(8,2) free 21,2
(5,5) h 22,8
16,1
50 18.68

dm
~~2 8 05~~ 2 9 5
~~+55~~ 16
(8,4/h)
(9,0)
45 0 38,1
45,1
45,6
39,2
45 42.00

Tint # on A_{-2}
2nd # on A_{+1} & A

8.4 on A_{10} to A_{60} in R A mag
9.0 on A_{-1}

T Persei
2 4 6 11
+52 18
45 2 24,5
32,2
30,8
25,7
47 28.38

B Umkin
2 5 1
+10 5 22
450 J

48 No Cephei
3 5 5 3
+77 19
45 2 17,9
21,3
20,0
13,8
47 16.75

Au 89 A_{-1}

DM
2 28 34
+55 4

Not seen same

θ Persei
2 36 25
+48 44

20 0 42.0
50.7
49.6
44.1
20 46.48

DM
2 38 59
+53 21

40 0 57.3
(8.5) 59.1
59.1
53.8
25 55.82
7.0 m. 3' above

δ Persei
~~Ekeri~~
~~3 30 27~~
~~+24 14~~
3 33 49
+47 25
40 0 30.6
36.2
34.6
30.8
40 33.05

17 Tauri
3 37 56
+23 45
15 4 47.0
54.7
54.8
52.0
19 52.00

2 Tauri
3 40 32
+23 45

Do

Jan 22

Elkin
3 41 55
+21 34

25 45 49
A 2.3
20
the 1.1
30 0.08

Insulat 2
Stones for V

DM
3 45 44
+52 2 (free #)

A only

A 89 A−1

Elkin
3 52 13
+23 18

45 1 53.2
1.2
58.8
57.3
46 57.62

DM
4 5 19
+54 40

25 0 10.5
16.1
(84) lm 13.8
(9.0 10.1
25 13.70

84 on A+1
90 on A12 8.9

Dm
3 55 53
+52 57

~~Dm
3 58 37
+49 54~~

Dm
3 59 5
+50 36

5 134.8
42.1
40.7
33.9
6 378.8

25 2 121
20.0
20.2
13.7
27 165.0

Jan 28 1885

Note with regard to position of the telescope.

From Jan 8 1877 to Aug 16 1881 the fixed circle was E. and the three levels headed screws were W.

From Aug 17 1881 to 1885 the fixed circle was W

The Measures made in the investigation of the errors of the circle recorded in Books A_1 A_2 A_3 and A_4 relate to the East circle

Jan 26 1885

@

25 46.6 52.0
46.0 52.5
45.0 53.5
17.6 8.3
45.83 7 92.77
45.83 7
138.60 4
25 69.3
set of 71.6 c = +.03

↑ Persei
2 46 11
+52 17
45 2 4.82
5.88
1.4
5.47
47 55.78

β Persei
3 0 45
+40 31
30 4 43.2
52.6
14.3
10.8
34 50.22

48 Cassiopeiae
3 5 13
+77 19
45 2 25.8 1 26.3 1
38.1 35.2
38.2 35.8
30.0 31.0
47 33.02 46 34.07
58.95

[illegible]
14 51
10 52 2

40 9 1.40
2.58
3.07
2.02
44 2.367

A ~ A
-.045 +1.123

γ Persei
2 56 30
+53 3

0 2 10.2
20.8
21.6
16.1
2 17.18

β Persei
3 0

2 U Cancri
3 19 51
+59 33

30 3 2.27
3.16
3.53
2.78
33 2.935

Dm
3 24 01
+51 50

10 3 5.80
9.4 8.4
8.7 [illegible] 12.3
4.6
14 5.82

[illegible]
3 3 0 29
+24 14

50 1 21.5
31.6
36.8
31.3
51 ~~30~~ 30.30

Perhaps one 1st of [illegible] for U
[illegible]
[illegible]

Jan 26

[20 0, 12]

17 T a.m. ~~[illegible]~~ 2 2 T a.m.

3 37 56 ~~3 41 22~~ 3 41 55

340 32

+23 45 ~~+26 14~~ +23 45 ~~+21 34~~

20 1 10.3	10.5	52.6
15.3	20.0	3.1
22.2	22.6	4.8
19.0	18.8	1.8
21 17.70	17.98	~~0.57~~ 0.57

~~A+1 [illegible]~~

δ no stokes?

Dm	Dm	Dm
3 58 37	4 05 52	4 11 18
+49 521	+10 32	+49 57
10 0 16.6	30 1 13.8	5 2 25.6
27.0	(8.7) 13.3	(8.6) 34.8
(8.8) 37.0	26.3	49.0
21.6	9.2	30.5
10 25.55	31 13.15	7 34.98
A+1 & A-1	2d # A-1 one. Rej all stokes previous to A~~+1~~	A+1?

Dm
3 45 44
+52 2

~~9.1~~0 2 17.0
23.2
(9.1) 34.0
23.1
2 25.32

A +1

Elkin
3 52 13
+23 18

45 2 24.5
31.2
38.8
33.0
47 ~~31.88~~
32.62
A +1
A

Dm
3 55 52
+52 31

~~41~~ 30 2 7.7
17.6
24.7
12.0
32 15.50

A +1

Perhaps plate neg # in pencil
except 1 in upper part
and 1 in corner.

4 23 9
+55 12

50 2 45.1
54.2
(7.8) 6.2
49.7
52 53.80

A +1

4 25 51
+55 11

50 4 47.4
(8.6) 56.1
9.8
52.0
54 56.32

A +1

Jan 26

DM
4 33 46
+55 2
(9.2)

0 24 27
5 12
4 7
46 7
2 51.20

DM
4 55 19
+51 41

Not seen

DM
43 9 46
+53 50

10 3 55 0
(9.2) 46 1
5 57
41 0
1.3 45.82
A +1
Prs. too late

4 55 25
+53 12

Not seen

~~4 57 4~~
4 56 461
+53 20

Not seen

Dm
44248
+50 34

25 3 25.0
35.0
(90) 49.7
40.0
28 37.42

S +1

Dm
44521
+52 50

10 4 36.6
(9.0) 46.0
54.8
46.1
14 47.12

A+1

Dm
45044
+54 39

25 2 26.8
35.0
48.2
38.0
27 35.00
Pm?
S ?
A+1

Dm
45244
+50 18

20 2lm

α Aurigae
5 5 35
+38 20

κ Aurigae
5 8 16
+45 13

18 2 51.2
55.3
12.3
55.2
12 59.60

Jan 26

ν Aurigae

5 50 8

+39 16

Rej ν

β Aurigae

5 51 p

+44 56 f

5 3 42.6

50.2

3.6

45.2

8 50.40

Jan 27

c = 25 69.3

B Ursae Mi

2 5 1
+10 5 22

No 5
A A
10 +1

γ Persei

25632
+53 3

0 2 16.9
25.3
38.2
19.3
2 24.92

B Persei

h m s
3 0 45
+40 31

~~0 2 16.9~~

30 4 43.0
52.2
44
47.5
34 51.78

48 76 Cephei

3 5 53
+77 1 9

45 2 24.7
35.2
45.6
27.0
47 33.12

1 22.3
33.0
42.6
25.2
46 30.78
62.34

2 U Cancri

3 15 51
+15 9 32

Jan 29 1885

DM
2 28 34 +55 7

55 25 7,4
5,70

10,1
52,0
57 57.62

Part of A+1
Part of A
A−1

DM
2 38 59
+53 21

A.R.
only!

Brightness of double
m A+1
2 38 59
m A.

DM
2 35 38
+55 1

0 0,55,2
9.2 1,4
9.3 14,7
56,8
2.02

2nd δ pr.
A −1 pr tone

13 Persei
3 0 45
+40 31

30 0 47,1
~~52~~5
5,4
48,3
30 53.40

48 H Cephei
3 5 53
+77 19

45 2 30.4
38,7
48.8
29.0
47 36.72

1 28,7 ~~35,3~~
36,3
45,6
26,7
46 34.32
.6240

Elkin
3 30 29
+24 14

50 1 44,1
49,8
0,8
49,4
51 51.02

τ Persei
2 46 11
+52 16
45 3 8,6
15,9
28,8
9,6
48 15.72

B [illegible]
2 51
+14 52 2
AR

γ Persei
3 56 33
+53 4
0 2 15,0
20,2
34,0
14,8
2 21.00

Elkin
3 41 22
+41 55
50 0 29,2 25.2
34,5 35.2
45,8 45.8
32,6 32.9
50 35.60 35.78

Elkin
3 41 55
+21 34
30 0 12,1
18,2
28,4
15,2
30 18.48

Elkin
3 52 13
+23 18
45 2 3,8
11,0
21,6
8,8
47 11.30

A 2345
3 Stokesford

Jan 29

DM
3 55 53
+52 57
5 – 2 14.8
8.7
21.0
33.9
14.0
7 20.68
A +1

DM
3 58 15 +50 28
3 50 55.8
88
2.9
15.7
56.1
36 2.48
A+1

DM
4 33 46
+55 2
0 24.8
54.8
9.1
6.9
48.6
2 54.78

DM
4 42 40
+51 10
10 3 21.0
26.3
8.4
40.9
22.0
53 27.55

DM
4 44 52
+55 3
0 1 23.4
28.8
6.3
41.4
22.9
1 29.12

Post some mins of [illegible]

2nd S m.

aug 8.8 may mean

DM

4 5 52

+50 32

30 1 7,9

14,8

90)
8,7)

28,2

9,0

31 14 98

15 # on A+1

2nd on A-1

Reg ordin'

1 stroke 2nd # for S

DM

4 25 31

+55 11

50 4 46,7

(83) 52,4

6,0

47,2

54 53 07

#2.

D.5 very nearly,

same RA. 4' above

~~DM~~

~~4 33 46~~

~~+55 2~~

DM

4 50 44

+54 39

-2 45,9

51,1

40

45.2

2 51 5 5

DM

4 52 20

+54 40

25 1 5.0

8,7

21,6

2,8

26 9.52

DM

4 58 17

+55 11

10 4 2,2

8,5 7,0

22,4

d+1 3,1

A 14 8.68

[illegible]

Oct 29
DM
41 5 7 12
+53 2

0 1 29.2
35.7
48.1
25.4
1 35.60

A_{-1}?

DM
~~5 3~~
~~4 53 41~~
5 9 27
+58 42

20 2 35.0
(86) 40.9
93) 54.7
35.1
22 41.42
8.6 on A_{+1}, i.e. A
9.3 on A_{-1}
S = last stitches

DM
5 11 56
+51 21

40 3 7.8
7.9) 15.0
29.0
8.0
~~A_{+1}~~ 43 1520
A_{-1}

DM
5 29 49
52 50

15 0 3.0
83) 8.6
21.8
22
15 8.90

0 Aurigae
5 37 4
+49 46

15 4 3.7
5.6
23.5
4.3
19 10.42

δ Aurigae
5 50 8
+54 16
A.R.

D M

5 13 55
12 32

30 2 1.17
1.71
87 3.24
1.28
32 18.50

5 18
~~3 2 1.22~~

D M

5 28 49
+45 54

10 1 1.11
857 1.77
3.12
1.12
11 17.92

A-1

~~A-1~~

β Aurigae
5-51 10
~~47~~ 44 56

~~δ Orionis~~
ν Orionis
6 1 3
+14 46
AR

Jan 31, 1886

τ₂ Eridani
2 45 52
−21 28

30 1 50.2 50.3
52.2 53.1
6.7 7.1
58.2 58.7
31 56.82 57.30

η Eridani
2 50 51
−9 21

25 0 55.6 55.6
55.7 56.1
10.6 10.2
0.2 0.6
26 0.52 0.62

γ Persei
2 56 33
+53 4

0 2 12.8
22.0
35.5
16.8
2 21.85

ε Eridani
3 27 34
−9 51

55 0 9.9
8.9
34.7
16.6
55 17.52

q Tau
3 30 29
+24 14

50 1 34.8 34.6
41.9 41.2
53.2 53.0
42.0 42.0
51 42.98 42.95

[illegible]
34 49
−23 36

35 9

57.2
0.0
14.7
~~2~~5.6
39 ~~9~~38
4

B Persei   48 Cassiop   Du

3 0 4 5   3 5 53   3 24 31
+10 31   +77 19   51 12

30 4 42.6 42.5   45 2 13.0 1 20.2   90 δ 15 0 0
~~1~~3.8 34   23.5 31.5   9.6
51.3 51.1   35.0 41.8
4.8 47.0   11.6 23.4   A +1 12
34 ~~48.28~~ 51.00   47 21.85 46 29.22
50.88

Anonymous

3 4 3 5   ~~Du~~ Elkin   Dun   Dun
−26 41   3 5 ~~35.8~~   3 5 5 52   3 55 37
8.8 mag.   3 52 13   52 31   +49 57
+23 18

40 3 32.8   45 2 21.7   35 0 30.8   10 0 6.0
35.8   30.3   38.1   14.2
57.5   42.1   57.7   27.2
42.6   29.1   34.2   9.9
43 40.68   47 30.80   35 38.70   10 14.32

A +1   A +1 12.35

Jan 1

DM
4 5 46
+50 32

30 0 48.6
(88) 57.8
11.2
53.8
30 57.85

DM 4 11 29 + 52 47

55 4 41.9
(83) 51.2
4.6
47.1
59 51.20

Pr. # = 9.4 on t, and it 5.6 y 2nd δ
Foll # = 6.8 on t+1
Unwhat stoke [illegible] δ ~~52~~ 2nd #

DM
4 42 48
+50 34

DM
4 44 52
+55 3

DM
4 52 20
+54 40

35 ~~#~~ 1 53.2
(91) 1.5
15.7
57.6
37 20.0

0 1 26.2
(67) 44.8
57.4
39.1
1 41.88

not seen
same

t−1

D.M.

4 26 29
+52 ~~47~~
3

(26) 25 2 18.6
26.6
40.0
21.8
27 26.75

#?
10' ~~[illegible]~~ in
certainly not in place
as above

53 Eridani
4 32 58
−14 32

35 1 08
1.2
16.6
10.1
36 7.18

D.M.
4 37 19
+51 41

20 03 ~~4~~ 28.0

Too faint to obs.

Chf.

D.M.
4 56 45
+52 48

10 4 27.2
89) 36.8
58.2
30.6
14 36.20

ε Leporis
4 ~~55 44~~ 5 0 38
+ ~~52 3~~4 − 22 31

35 0 15.9
15.8
28.2
22.8
35 20.68

D.M.
5 3 44
+49 54

10 0 11.5
94) 19.8
36.0
15.1
10 19.10

41

Jan 31

DM	DM	DM
5- ~~7~~ 7	5- 11 8	5- 14 50
+53 26	+50 30	+51 31
3 5 3 41,2	35 0 5 78	30 3 427
9,4) 49,7	(.7) 5,7	9,2) 51,5
0,8	19,7	5,6
44,5	0,8	46,2
38 49.05	36 60.0	33 51.57
A +1	A +1	A +1

DM	σ Aurigae	~~Dm~~ σ Aurigae
5 29 40	5- 57 4	5 50 0
51 16	+49 46	+54 16
45 4 13,8	15 3 45,8	45 4 6,2
8,4) 33,6	54,7	15,0
38,0	9,6	21,8
11,1	50,0	8,8
49 25.88	18 55.02	49 14.70

Dm

5 18 35
+50 25

35 0 5 74
5.8
(9.0) 2.06
1.0
36 6.20

A +1

Dm

5 21 7
+53 45

45 4 52.6
3.8
(8.4) 18.2
15.8
51 3.85

A +1
Rej 1st 2 stations for ∫

Dm

5 28 42
+50 54

9.2) ~~Ao~~
Rej ∫

A +1

25 64.8	25 92.0
60.3	94.8
62.0	94.1
62.0	93.0
61.8	92.0
310.9	465.9
62.18	25 93.18
	25 62.18
	25 77.68

Set on 64.8

c = −.16

Jan 31 1885

22 He Caml
6 6 17
+69 2 2

η Gem
6 7 59
+22 32

No. 5

30 2 56.8
3.8
16.6
3.4
33 5.15

Feb 2 1884 C = 64.8

Q Persei
3 57 52
+38 44
40 1 13.6
20.7
32.2
17.0
41 20.88

B Persei
3 04 5
+40 31
30 4 47.8
55.0
8.7
50.1
34 55.40

48 76 Capella
3 58 53
+37 19
45 2 30.5 12.86
30.0 37.7
45.6 47.6
30.3 28.7
47 35.18 46 35.65
59.53

ν Eridani
3 37 16
-10 12
~~1 013~~ ~~10.3~~
10 3 30.6
28.7
44.8
34.7
13 34.70

A +1

Aurigae
34 14 9
35 4.0
-23 36

No δ

A +1

Arietis
3 41 46
~~-28 36~~
~~-23 36~~
-25 13
10 4 0.2
2.0
17.2
9.37.2 ?
4.65
7.15
14
A -1

γ [illegible]
3 21
−10 7 45

AR

A 8 to 10

ε Eridani
3 27 34
−9 51

55 0 19,8
18,4
33,2
22,7
55 235,0

δ ~~Persei~~
3 3~~4 49~~
+47 ~~25~~

Anony
3 43 5
−26 41

40 2 5 9,3 59,8
0 9 16
16 3 17,0
7,8 6,7
43 60,7 67,8

A 8789 A −1

τ Eridani
35 2 12
−13 52

50 4 31,4
31,6
46,1
37,0
54 36,52

c Persei
40 23
+47 24

40 0 56,7
1,4
13,3
55,8
41 1,80

Feb. 21 1885

DM
4 26 29
+52 $\overset{3}{\cancel{4}}$7

25 1 5.91
5.6
81) 17.4
5.9.9
27 5.550

53 Eridani
4 32 58
−14 32

35 1 8.9
8.2
23.2
14.3
36 13.65

DM
4 37 19
31 41

15 1 4.43
9.6) wrong #
Rej

DM
4 57 52
+53 2

0 1 4.74
5.26
8.3) 5.8
4.68
1 5.315

A_{50}te 90

B Eridani
5 2 14
−5 14

15 2 5.99
5.7
15.7
3.4
18 4.68

other
5 7 7
+53 26

~~35~~3 5.28
5.77
11.6
5.36
38 5.892

A −11

DM	DM	DM
4 45 21	4 52 20	~~4 56~~ 4 56 27
+52 50	+54 40	+54 10
10 4 33.8	2 50 58.0	5 5 1 .05
9.0) 41.0	5.6) 1.8	9.1) 4.8
54.1	14.6	17.2
34.6	56.1	58.7
14 40.88	26 2.62	56 5.30?
A+1	A+1	A+1

17 Caml
~~β Tauri~~

5 18 24
+62 58

5 21 38
11.3
31.2
12.3
7 18.90

Feb. 3 1885

N S
453 870
450 888
460 850
452 888
452 876
267 372
4534 8744
4534
13278
664
Set 664

664
648
16
14

c = −.02

π Ceti
2 38 41
−14 21

20 44.8 3 478
48.2 477
47 46
56 4 56.1
24 54.40 54.05

τ₂ Eridani
2 45 52
−21 29

30 2 327
325
490
372
32 3785

48 H Cephei
3 55 53
+77 19

~~270~~ 270 255
45 2 ~~34~~ 46 328
470 443
268 240
47 33.85 3165

~~ε Eridani~~
~~3 20 34~~
~~10 40~~

ε Eridani
3 27 34
−9 57

55 0 273
252
~~421~~ 421
314
55 3075

η Eridani	o Persei	B Persei
−25 0 51	2 57 52	8 0 45
−9 21	+28 24	+40 31
250 588 589	40 1 468	30 4 484
579 587	534	558
130 131	53	52
1.7 1.6	49.2	520
26 285 308	41 5367	34 56.35

[illegible]	[illegible]	[illegible]
3 41 49	3 41 44	3 43 5
−23 36	−25 43	−26 41
35 4 32 35	4 50 228	40 3 25.4
30 38	230	26.8
200 208	403	43.6
98 102	303	33.0
39 980 9.58	45 29.10	43 32.20
~~2~~		
A_{+1}	A_{-1}	A A_{-1}

Feb 3

DM
3 52 12
−13 52

50 4 26.3
2.59
4.24
3.42
54 32.20

DM
3 56 30
+52 48
8.9)

25 0 41.3
46.7
1.6
41.3
#?
+A +1

DM
3 58 19
+50 28
9.8)

30 0 10
6.7
2.4
1.7
A −1
wrong star?
Rej previous notes

DM
# 4 56 45
+52 48

10 4 20.8
2.59
8.7)
4.16
2.12
14 27.17
A

DM
4 59 41
52 34

Too faint

DM
5 3 44
+49 54

~~9.1~~
10 0 2.1
9.1)
7.0
2.29
3.1
A +1

DM
4 37 19
+51 41
9 Camelobds
4 42 45
+66 9

50 0 24.3
32.4
44.6
24.0
50 31.32
A +1

DM
4 39 46
+53 50
ι Aurigae
~~not seen~~ 4 49 34
4 48 34
~~Stone~~
+32 59

5 1 31.8
38.0
50.1
34.2
6 38.52

chf

DM
4 52 44
+50 18

45 15.48
(8.8) 15.9
15.8
56.3
47 1.70
A +

DM
4 55 20
+53 12

55 0 22.0
(9.1) 27.2
42.7
23.0
55 28.60
A +1

chf

DM
5 7 4
+54 51
~~9.4~~

10 4 6.8
(9.0) 12.1
28.3
8.6
14 13.90
A 10 6.0
A -1 12.34

DM
5 11 8
+50 30

35 105.0
(8.7) 10.4
26.2
5.8
36 11.85
A +1

DM
5 14 50
+51 31

30 34.22
(9.2) 47.8
3.3
43.6
33 49.22
A +1

chf

DM.
5 16 39
+50 29

Feb 3.

Dm	Dm	Dm
5- 21 7	5- 23 22	5- 28 42
+53 15	+51 30	+50 54

DM

5 29 40
+5 1 16

Feb. 5 1885

Dolle

W	S
45.1	964
43.9	970
43.4	968
45.2	968
43.5	960
211	330
44.22	9660
	4422
	4082

Sol dist 40.4″

17 Cam

3 37 56

+25 45

20 0 4.8 5.0

14.0 13.2

26.6 26.5

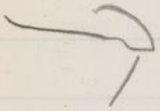
13.0 12.9

20 14.60 14.40

η Tauri

3 41 32

+23 45



27 Tauri

3 4 2 12

+23 42

20	3 13.0	13.0
	21.7	22.5
	35.3	36.1
	21.8	21.8
23	23.20	23.35

Feb. 7 1885 C = 70.4

4 + 76 B Cephei

3 5 53 +77 15

45 1 42.0

52.7

1.8

42.2

46 49.55

~~α Persei~~

~~3 16 11~~

~~+48 27~~

2 46 Camel

3 18 51

+59 32

30 3 10.2

12.7

20.7

17.0

33 14.57

A_{50} to 90

3 42 38

−24 14

(7.0)

3 43 5

−26 41

15 × 1 114

13.0 ~~13.0~~

29.9

18.9 ~~18.9~~

16 18.30

~~A40. se~~

A6. se

Aurvus 35 4 0

ε Eridani
3 27 34
−9 51

δ Persei
3 ~~34~~ 45
+47 25

3 41 49
−23 36

55 0 26,8
30,2
46,1
33,9
55 35.00

35 4 0.1 0.3
2.2 2.6
18.6 18.7
7.9 7.7
39 7.20 7.32

A+1

γ Eridani
3 52 12
−13 52
50 4 24.6
26.5
42.3
31.8
54 31.30

Dln
3 56 30
+52 45
53 34.8
~~9.4~~ 43.2
8.9 58.0
37.4
18 43.35

c Persei
4 02 3
+47 24
40 02 4.3
30.5
44.1
26.1
40 31.25

Rej order
9.4 = A+, 123
8.9 = A
One setting for

A−1

Feb 7 1885

ο Eridani
4 6 18 — 7 8

10 2 57.0
58.6
14.6
1.4
1 3 29.0

53 Eridani
4 32 58
−14 32

30 2 42.6
43.5
59.3
50.1
32 48.87
43

DM
4 37 19
+17 41

15 1 41.1
(8.4) 48.2
2.6
43.2
16 48.77
#2

c Aurigae
4 45 31 +32 59
~~DM~~
~~4 39 16~~
~~+13 50~~

51 26.1
33.8
46.4
29.9
6 34.05

DM
5 7 4
+54 51

10 4 38.8
(9.0) 41.8
1.0
42.0
14 46.90

A+1

DM
5 11 8
+50 30

35 0 38.0
(7.8) 47.0
1.0
42.1
35 47.28

A+1
A_{50} to 90

DM
5 14 52
+57 31

30 3 41.9
(9.6) 49.0
4.1
44.1
33 49.78
A+1

Dm

4 52 44
+50 18

45 1 40.8
47.8
3.4
43.8
46 48.95

A_{+1}

Dm

4 55 25
53 12

50 0 24.1
92 55.2
9.0 8.0
50.2
2 55.38

~~[illegible]~~
S. for [illegible]
2nd II on A_{+1}
1st II on $A_{1\,2\,3-7\,8\,9}$

Dm

4 59 41
+5 23 4

30 0 15.4
95) 22.0
36.2
17.2
30 22.70

Perhaps and A_{-1}
Use 2nd [illegible]

Dm

5 03 44
+49 57

5 4 48.9
91) 57.4
11.0
52.7
9 57.50

A_{+1}

Dm

5 18 35
+50 29

Not seen

Dm

5 21 7
+53 15

45 4 58.8
78) 5.2
22.2
2.7
49 7.98

A_{+1}

Dm

5 23 22
+51 30

30 4 52.2
89 0.6
15.9
15.0
35 0.92

A ([illegible] A2)
Rej[illegible] A_{+1}

~~Dm~~

Feb 7 1885

Dhr
5 28 42
+50 54

1.0 0 38.0
9.2 45.2
0.0
40.1
10 4583

Dhw
5 29 40
+51 16

45 4 21.0
86 28.9
44.6
24.3
49 2970

γ Leporis
5 39 15
−22 30

30 2 36.1
35.6
53.9
43.0
32 4265

δ Aurigae
5 50 8
+54 16
AR

β Aurigae
5 51 10
+44 56

ν Orionis
6 0 24
+14 46

15 3 11.6
23.1
37.0
25.2
18 2598

Leporis
5-4 11D
-14 52

~~S Leporis~~
~~5-~~4~~5 36~~
~~~~A~~ -20 53~~

~~Du~~
~~5-52 54~~
~~+14 83~~

55 0 24.4
25.6
41.6
31.9
5.5 30.88
A-1

22 76 Camel
~~2~~6 6 1D
~~+65~~ 22

40 ~~6~~ 37.8 3 32.2
48.3 42.7
1.1 56.2
39.9 35.2
44 46.77 43 41.58
65.19
~~~~

Feb 8 1885

☉ = 70.4

B Persei
2 ~ s
3 0 45
+40 30
30 44.0
54.2
7.2
50.0
34 54.85

48 H Cephei
3 5 53
~~+77~~ ~~19~~
45 1 43.2
52.0
3.6
43.9
46 54.67

A_{40} to 50
Rej last 4 w.

2 Tauri

3 40 32

+23 45

4 40.8

47.5

4.8

50.8

4 50.98

27 Tauri

3 42 12

+23 42

20 2 37.4 36.8

43.6 43.8

51.8 52.0

43.0 43.1

22 45.20 45.17

2.5

42.7

Feb 12 1885

C,

W S
446 5.16
441 5.52
43.4 5.40
44.0 5.40
45.1 5.40
21.2 22.8
44.24 54.52
44.24
128.80
69.4 Sel ot – 69.4

η Eridani
2 50 41
−9 21
25 0 58
4.8
15.7
9.2
25 9.84

A A_{-1}

ε Eridani
3 27 34
−9 57
55 0 16.6 16.6
15.3 15.2
30.8 31.1
19.7 19.7
55 20.60 20.65

DM

4 52 44
+50 18

4 56 45
+52 48

4 59 41
+52 34

30 3 10
6.8
22.8
3.0
33 8.40

9.1
8.6

9.1 Pz.
9.1 on A_{+1}
Sbor Ar A_{-1} no δ

10 4 35.2
41.3
57.4
37.3
14 42.55

8.9

A_{+1}

Hb

25 3 21.8
28.0
42.4
23.6
28 28.95

Comes too late

Auren
3 41 49
−~~2~~3 36
35 4 18.1 16
28 2.2
19.0 19.4
8.9 8.7
39 81.2 79.8

A+1

Auren
3 41 49
−25 43
45 0 22.8
24.0
41.2
30.2
45 29.55

A −1

Auren
3 43 5
−26 41
40 2 30.6 30.1
31.6 32.0
48.6 45.1
37.8 37.8
42 37.15 37.25

A 6&C A −1

5 3 20
+13 29

Not seen

5 7 7
+53 26

35 3 29.9
(89) 35.7
30.9
32.0
38 36.95

A+1

5 12 16
+51 37

Feb 12

DM

5 13 55
+13 57

5 2 15,2
(9.4) 24,7
35,1
20,3
7 25.82

δ after t–1
t–1, 3, 4, 5
Dial of t [illegible]
Rej obs on t+1

γ Leporis
5 39 15
–22 30
30 2 54,2
54,1
12,0
59,1
32 59.85

DM

5 18 39
+52 29

35 0 50,0
(8.8) 54,1
10,8
51,0
35 56.48

t+1
Rej 1st star.

ζ Lep
5 41 17
–14 52

55 0 35,1
34,6
50,8
41,2
55 40.45
A 22 C

DM

5 21 23
5 1 12

50 2 13,7
(9.1) 14,9
36,2
13,8
52 21,15

A +,?
fall II

δ Leporis
5 45 56
–20 53

54 2 15,8
19,4
36,7
25,4
57 25.32

DM

5 23 22
+51 30

30 4 11.8
9.6)
21.2
35.8
17.2
34 23.00

$A_{-,2345}$

DM

5 28 42
+50 54

10 0 58.0
9.5) 3.1
18.6
59.0
1 4.68

A+1

DM

5 25 49
+52 50

10 4 53.0
8.5) 0.0
14.1
52.3
15 0.35

A

5 37 5
+51 24

A 9.6 mag
in Rut.!
mean
$A_2 = A_9$

No. 86
in field
6.0 Allen

22 H Camel

6 16 16 +69 21

40 21.0 3 33.2
30.1 42.2
42.0 54.3
21.6 33.6
40 28.67 43 40.82

A_{+1} A

47.85

DM

5 ~~7~~49 45
+54 23

40 2 50.0
56.1
8.2) 10.9
50.6
42 56.90

A+1?

Feb 12

ψ₁ Aurigae	β Canis Maj	δ Lyncis
6 16 7	6 17 41	6 27 16
+49 21	−17 54	+61 35
40		
− 4 44.0	55 2 28.0	30 0 44.4
49.7	28.4	48.8
55	44.1	3.8
44.8	34.0	43.7
44 5.088	57 3370	30 5.018
A_{+1} A_{10} 5.0	A_2 ∠ e	

51 Aurigae			ε Gem		
6 30 46			6 36 55		
+39 29			+25 15		
35	0	35.0	50	0	45.6
		41.0			41.0
		53.2			53.2
		36.0			36.0
35		4130	50		4395

T-Sb 15

C

25 45.6 94.0
46.1 93.8
46.5 94.5
45.8 96.1
47.1 95.0
344 23 7
46.88 94.74
46.88
141.62
70.8 Sel-ot

ε Eridani

3 27 34

−9 51

55 0 27.1 26.7
28.8 27.6
43.3 43.6
32.8 32.9
55 33.00~~48~~ 32.70

~~[illegible]~~

DM

45 2 44
+52 18

45 + 35.8
45.8
1.3
41.8
46 46.18

A+1

DM

4 53 39
+53 22

40 4 8.7
19.1
35.8
14.2
44 19.45

1st # A+1?

Agg A−1

2nd # in shady.

DM

4 56 45
+52 48

10 4 13.3
24.1
35.6
18.6
14 23.95

A+1
2345

DM

4 59 22
~~+52 34~~
+57 58

50 57.2
6.3
21.8
1.3
6 6.65

A12 to 9.0

Sumner	Sumner	Sumner
34 14 9	34 1 46	34 3 5
−23 36	−25 13	−26 41
35 4 0.5 0.8	15 0 23.7	40 3 44.9
3.4 3.2		4.88
19.3 19.5	37.8	5.1
9.7 9.4		
39 8.22 8.22		
Chf	Chr	Chf

DM	DM	DM	
5 3 20	5 6 24	5 12 16	5 13 55
+53 29	50 27	+51 33	+50 32
35 1 2.8	35 0 20.6	.9.6	not seen
(9.4) 10.8	9.4 36.7	no √	
25.8	51.4		
7.0	52.2		
36 11.60	35 41.48		
A +1	A +1 A −1	A 789	

and √

Rig 1st √

Feb 15

5 14 50
+1 31

30 3 41.1
9.5)
45.6
4.0
44.8
33 49.87

A +1

5 18 39
+50 29

35 0 12.2
9.4)
21.2
35.6
16.9
35 21.48

A +1

5 21 23
+51 12

50 1 33.8
5.3)
3.4
17.4
58.1
52 3.25

A 10 680

δ Aurigæ

5 25 40

+45 59

5 0 24.8
34.2
45.0
29.9
5 34.48

A +1 A 2

5 50 8 +54 16

45 4 8.8
18.8
32.3
13.0
49 18.22

A +1 A 1 2 3

Feb. 17 C = ~~70.7~~ 69.9

Auwers
34 1 49
-23 36

34 1 46
-25 13

34 3 5
-26 41

35 4 2.0 27
4.8 4.6
22.7 21.7
11.1 11.4
39 10.02 10.10
A +1

not seen not seen

DM 9.0
5 7 27
+13 42

20
40 2 13.9
8.9)
20.2
34.2
15.1
22 20.85
A_{+1} A A_{-1}

DM 8.5
5 11 8
+50 30

35 0 38.0
44.8
8.8)
58.2
39.8
35 45.20
~~A H right S~~
~~comes short 1m~~ fr.

DM 8.8
5 13 55
+50 32

30 3 16.8
FD) 24.7
38.3
18.3
33 24.52
A H

DM

4 56 41
+53 20

No. 5 observed
Star 9.0 mag.
too far north
two other # inferred
A+1 in AR

DM (8.5)

4 57 22
+51 58

5 1 21.1
(8.6) 29.3
41.8
22.4
6 28.65

A+1, A A-1

DM (5.4

5 3 44
+49 54

5 4 12.8 52.2
(9.0) 18.9
58.4
10 35.8

A+1

Bright # more below

DM 8.4

5 16 59
+30 10

5 5 0 9.0
8.6 16.2
31.0
11.1
5.5 16.82

A+1

DM 8.2

5 21 7
+33 15

5 0 0 14.9
(8.1) 20.9
34.9
16.1
5 0 21.70

α Leporis

5 27 13
−17 55

5 5 3 34.2
34.4
50.2
40.6
5.8 39.85

~~Fa~~ Feb. 17 / 5m

5 2940
+51 16

45 4 18.2
24.8
(8.1) 41.0
20.1
49 26.82

[illegible]

A A A
+1 * −1

5 37 5
+51 24

40 0 21.2
(9.2) 28.3
41.6
22.6
40 28.42

20 64 falls.

5 42 29 (90)
+50 ~~26~~ 23

40 1 43.2
57.0
4.2
44.8
41 50.55

ψ1 Aurigae
6 16 0
+49 20

40 4 12.4
18.1
34.0
13.8
44 19.57

23 16 Camelopard
6 − 2666
+79 41

20 4 28.8
38.2
50.9
29.8
24 36.92

Rej 1.55

51 Aurigae
6 30 46
+39 29

35 1 7.7
12.3
26.3
8.6
36 13.72

δ Leporis
5 45 56
−20 53
55 2 120
11.2
29.6
18.6
57 17.60

Dra
5 45 45
+59 22
40 2 54.2
58.8
13.6
54.2
43 0.20

Constant rate?

22 H Camelop
6 6 17
+69 21
40 3 36.9
55.2
57.7
30.2
A −1 43 46.75
44.25

ε Gem
6 36 55
+25 14
50 0 42.8
42.1
1.8
47.1
50 49.95

θ Gem
6 45 16
+34 6
50 4 40.8
46.4
1.3
42.8
54 47.82

15 Lyncis
64724
+58 34
30 0 52.8
56.8
10.6
51.8
30 58.00

AJC

Feb 18

C

Answer

25 398 958
350 ~~95~~6
350 96.1
390 95.1
359 96.8
457 306
3914 9612
35.14
135 26
67.6 Set [illegible]

3 41 49
−23 36

34 ~~1~~ ~~4~~ 6
−25 13

35 4 31 28
37 4.2
19.7 20.0
59.2 59.4
39 8.92 9.10
2.5
6.4
+1

Not [illegible]

DM
43 7 15
+51 41.

i Aurigae DM
43 5 46 44 5 34 45 5 25 9.2
+53 50 +32 59 +53 12

20 3 53.8
9.4 0.0
14.8
53.2
24 0.95

10 4 20.4
9.5 26.6
9.4 42.0
22.3
14 27.82

50 55.7
4.2
17.3
1.8
6 5.50

50 2 19.7
9.4 25.8
35.6
20.2
52 26.33

A_{+1} A_{30} to 7_0?

A 9.4 may on A_1
in A Ring

3 42 ~~47~~ 38
~~23 36~~
-24 14

343 5
-26 41

m ∫ Not clear

A_{+1} A_{10} 450

4 56 51
+51 34

30 0 29.1
9.4) 34.6
47.8
30

A_2 w̄ 9_0

4 59 41
+52 34

30 0 7.0
9.6) 12.8
26.8
8.0
30 136.5

A_{-1}

5 3 20
+53 29

35 0 26.1
9.4 31.0
44.7
26.2
35 32.00

A_{+1}

Feb 15

DM (m. 5,2)

5 6 24
+50 27

— 2 3,5,0
(9,4) 4,1,3
5,7,1
3,7,0
4260

5 7 27 (42 = 5)
+53 42

20 1 43,5
9,3 49,4
4,3
4,5,0
21 5062

A_{5-9} A_{-1}
not double

5 11 8
+~~50~~ 30 30

30 4 53,1
(8,8) 1,3
1,8,3
5,7,6
35 257

A_{-1}

DM

5 29 27
+49 59

Toofi.

DM

5 36 ~~15~~
~~+54 36~~
+53 44

15 4 59,1
(9,6) 6,3
2,1
1,8
20 707

Some mins of A_{+1}
and A_{-1}, 4 5
5 after A_{-1}

ϑ Lep

5 41 17
−14 52

5 5 0 18,8
18,2
33,6
24,7
5 5 13,82

2 Sep

5 16 57 5 18 23 5 21 17 5 27 13
+50 10 +50 22 +53 15 +47 55

55 0 14.8 45 4 24.4 55 3 21.2
8.3 19.8 29.3 4.3
30.8 8.6) 45.0 37.8
10.9 25.3 27.7
55 21.57 49 31.00 58 27.00

A −1.25
no S

A +1

A+1 2345 A A−1 A+1 A

5 Sep Dec

5 45 58 5 49 45 5 50 54
−20 53 +54 25 + 1 54 33

55 2 14.3 40 2 57.0 30 2 52.2
13.4 8.0) 1.1 9.0) 58.8
30.4 16.8 12.3
19.8 56.4 53.3
57 19.48 43 28.2 32 59.15

Feb 18

~~λ Aurigae~~ 22 H Camelop λ Gem

~~4 18 31~~ ~~B~~ 6 6 17 6 7 59

~~+41 15~~ +65 21 +22 32

no S

#?

30 2 59'9
69
1'92
5'7
33 7'92

ζ Gem ζ Gem θ Gem

6 36 55 6 38 53 6 45 16

+25 14 +13 1 +34 6

50 0 178 0 3 266 55 4 16.4
221 292 208
36'2 44'6 360
21'8 32'8 178
50 2447 3 3330 59 2275

ψ Aurigae
6 16 7
+49 20

40 4 35.0
4.3
5.72
3.7.6
44 4278

23 H Camelopardalis
6 26 46
+79 41

20 4 53.0
4.1
15.8
55.2
25 20.2

4 12.1
23.8
35.1
15.0
24 21.50
40.52

51 ~~Aurigae~~
~~6 30 46~~
~~+39 29~~

15 Lyncis
6 47 24
+58 34

30 0 38
8.8
21.6
3.2
30 9.35

1884phae.proj..141OR

240-270	270-300	300-330	330-360
-.23	-.13	-.85	-.58
-.95	-2.55	+.38	-.06
~~-1.10~~	-1.87	+.07	-.43
-1.00	-1.53	+.62	-.63
-.50	-1.72	-.19	+.21
-.76	-1.74	-.08	+.40
-.10	-.76	+.30	-.13
-.28	-1.90	+.07	+.26

July Aug

		Δ		Oct	Σ	
0-30	-0.60		-60	-.48	-.48	-.48
30-60	+1.77	+2.37	+1.77	+2.13	+1.65	+1.65
60	+1.60	-.17	+2.77	+1.77	+3.42	+3.42
90	-.68	-2.38	+2.09	-.48	+2.94	+2.94
120	+.53	+1.21	+2.62	+.39	+3.33	+3.33
150	-.14	-.60	+2.48	-.23	+3.10	+3.10
180	-.78	-.64	+1.70	-1.38	+1.82	+1.82
210	+.53	+1.71	+2.63	-.20	+2.52	+1.62
240	-.68	-1.61	+1.95	-1.10		+.52
270	-1.70	-1.02	+.25	-1.42		-.90
300	-.08	+.62	+.17	+.40		-.50
330	-.17	-.09	+.00	+.50		.00

Σ

July Aug	Oct -2-25	
-.60	-.48	-1.26
+1.77	+1.65	+.87
+2.77	+3.42	+.6
+2.09	+2.94	
+2.62	+3.33	
+2.48	+3.10	
+1.70	+1.82	
+2.63	+1.62	
+1.95	+.52	
+0.25	-.90	
+0.17	-.50	
+0.00	+.00	

-.43	-1.69	+1.05	+.65
+.03	-1.06	+.61	+1.67
-2.16	-1.23	+1.40	+.48
-1.26	-1.60	-.78	-.08
-1.69	-1.51	-.29	-.23
-1.10	-1.42	+.40	+.50

I	II	III	mean	Σ
-0.60	-.48	-1.26	-0.78	-.78
+1.77	+2.13	+.87	+1.59	+.81
+1.60	+1.77	+.67	+1.35	+2.16
-.68	-.48	-.12	-0.43	+1.78
+.53	+.39	+1.09	+0.67	+2.45
-.14	-.23	+.63	+0.08	+2.53
-.78	-1.38	+.30	-0.63	+1.90
+.53	-.20	-.30	+0.14	2.04
-.68	-1.10	-.50	-0.76	+1.28
-1.70	-1.42	-1.68	-1.60	-.32
-.08	+.40	+.00	+.11	+.21
-.17	+.50	+.33	+.22	+.00