

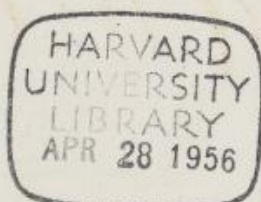
KG
11365
128

KG 11365.128 $\frac{UL}{2/3}$

22.23
3
22.20
24
44
22.44



KG 11365, 128



Transit Circle

1851-2-3

T. T. H. Lafforel jr.

All the Transit-observations
in this Book were made by
C. W. Tuttle

Dec. 6 P.m.

34.8 Chron. 202

49.0

02.7

16.4

00.0

48.7

2, 3, 5, 57.4

38.4

52.4

00.5

20.2

34.5

48.5

3, 23 03.0

180

11.15

3.15

191.18.15

29.5

43.5

57.4

11.3

25.0

38.7

2, 34, 52.3

Moon's 1st Limb

57.5

12.1

26.5

41.4

55.5

10.1

3, 40, 25.0

312-23

8-30

0 303.5

5 299.58

7 297.01

8² 295.17

47.5

01.5

13.4

29.4

43.3

57.1

3, 17, 11.0

4.6

4.4

4.9

4.1

4.6

4.9

Dec. 8 Pm 1851

202

~~60~~ 270
 56. 41.0
 02
 77.1
 32.5
 48.4
 00 01,, 04.0

Dec 10 Pm

—
 47
 02.5
 18.0
 34.0
 49.5
 00,, 01,, 05.0

Dec 8/9 Am 14.4
 28.3
 42.1
 56.0
 10.0
 24.0

13,, 17,, 37.9

9 Pm.
 —
 56.5
 11.0
 25.0
 39.0
 00 05,, 53.6

19
 43.279
 3 30.7
 2.4

Dec. 19 Am

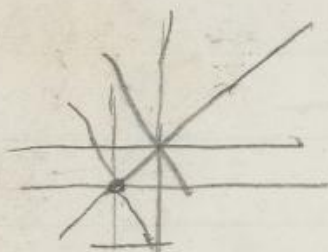
14/20 Am
Spicer

<i>a. Andromeda</i>	03.0		59.5		43.4
	18.3		13.4		59.5
	34.0		27.4		13.5
	49.7	<i>2 Pegasus</i>	41.9		27.4
	65.2		56.5		41.5
	21.0		10.4		55.5
00,, 00,, 36.5	00,, 05,,		24.5	13,, 17,,	09.4

a. Canispa

34.0

00,, 31,, 22.5



Dec 23 Pm

37.0

50.5

04.3

18.0

31.8

45.5

2 53 59.3

a betti

continues descending and will
go as far below it, as it had
gone above it, which is $23\frac{1}{2}$ degrees
equal to about $\frac{1}{4}$ the distance between
the horizon and zenith.

Now twilight does not cease till
the sun is 18° below the
horizon ~~H~~ as the line H.V. and it ^{continues}
is below this 6 months

Dec 23/24 Am

24/25 Am

35.8

50.4

05.0

19.3

26 34.0

E 48.5

03.0

196.0

6.0

7 136.0

19.43

2

13.45 17.43

13.47 30.55

1. 19.12

E Brat's

40.5

55.8

11.4

27.0

42.4

14, 37, 57.5

Dec. 26 Pm, 4' bet

3 bet	57.0	27.0
	11.5-	41.0
	26.0	54.9
	40.5-	09.00
	54.9	23.0
	05.5-	36.0

00, 85, 24.0 13, 15, 50.5-

Dec 26/27 Pm 9' bet

22.0

36.4

50.8

05.5-

19.8

34.5-

20~

38.0

57.4

07.3

21.8

36.5-

50.9

13, 46, 48.5- 14, 08, 05.5-

Nettun

Dec. 28/29 am

Star chim E. Burtis	01.4	ce. Librae	15.3
	15.9		30.0
	32.3		44.7
	48.0		38.5-
	03.4		12.8
	19.0		27.0
14 37.7	34.4	14.41.41.2	

Hermin	41.5-	52.4
	55.3-	
	69.4	
	23.8	
	38.0	
17.06	52.4	

De 29/30 Jan y Bureto

28
 42.0
 55.4
 09.5-
 13, 16, 23.5-15.46, 39.0

26.5-
 41.0
 55.5-
 10.0
 24.4

Jan. 8

08.5-
 24.0
 39.8
 0 55.4
 1 10.8
 1 26.5-15.7
 00, 01 42.0
 15.5-
 05.0
 19.4
 33.5-
 48.0
 02.1
 16.4
 00, 06 30.5-
 1, 1240.

Jan. 12/13 Am.

This morning endeavored to get a transit of η Tauri, γ Eridani, and α Tauri with the great Transit Circle, but failed to see any of them. It seems very strange!

There are no clouds intervening and the sky appears beautifully clear and blue. Ext. Therm. $+13^{\circ}$ Bar. 29.701 in.

I have been baffled in this way several times before, always remarking that at such times the temp. was very low.

α Aurigae was also invisible

N. B. The whole cause of the above phenomenon, was, that I C.W.T. was 12^h behind as before (I have not yet been able discover which), the true time.

19 Pm Jll 1901

2 Pignori

58.9

13.4

27.5

41.8

36.0

10.0

00,, 06,, 24.4

Friday June 16 Therm.

11^h Am

	Stand.	- 6	- 4	- 1	+ 12
Nos. 1		- 7	- 6	- 2	12
2		- 6	- 4	- 1	12
3		- 7	- 5	- 2.5	+ 12

Stand 4^h Pm +13°

No 1	-	-	-	12
2	-	-	-	13
3	-	-	-	12

Jun 16/19 - Ar

1552

8 Ophiuchi

48

02

15.8

29.5

43.5

57.0

10.8

Antares

28.1

43.4

14

29.5

44.8

60.0

16^h 2116^h 07

Pm. 17

59.0

14.0

29.0

43.5

58.0

13.4

28.0

1 59ⁿ

e. friet

Jan. 19		^{h m} 14 ^m 30 Am	^{h m} 2 ^m 30 Pm.
Stand	+05	Stand	6
J & Simons	+ 8	J & P	7
N ₆ 3 ²	5	N ₆ 3 ²	+ 6
3	5	3	- 5
1 ²	5	5	5
5	5	1 ²	4
2	5	2	6
1	5	1	5
6	6	6	6
4	5	4	4
2 ²	5	2 ²	6

19 Pm. 5-h

$$y = x^2$$

Stand. 00

$$x = 100$$

$$\begin{array}{r} 101 \\ 101 \\ \hline 10101 \\ 10201 \end{array}$$

y.d.g. + 1

$$y = 10000$$

$$dx = 1$$

No 92

0

$$(x+dx)^2 = 10201$$

5

0

$$x^2 = 10000$$

3

0

$$dz = 201$$

12

0

$$\frac{dz}{dx} = \frac{201}{100} = 2.01$$

2

0

$$\frac{dz}{dx} = 2.01$$

4

0

$$2x = 200$$

1

0

2²

0

5

0

$$\begin{aligned} (x+dx)^2 &= x^2 + 2x dx + (dx)^2 \\ x^2 &= x^2 \end{aligned}$$

$$dz = (x+dx)^2 - x^2 = 2x dx + (dx)^2$$

$$dz = 2x dx + (dx)^2$$

$$dx^2 = 0$$

$$dz = 2x dx$$

$$\frac{dz}{dx} = 2x$$

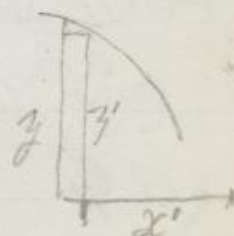
19 Pm.

a	38.5-	41.4
b	53.5-	57.4
c	08.3	13.0
d	23.3	28.8
e	38.0	44.4
f	53.0	59.4
g	08.0	15.5-

19/20 Am

48.8	05.4
02.1	21.5-
16.0	36.5-
29.9	57.8
44.0	07.3
57.6	22.5-
1509, 11.5-	15-28, 38.0

$$\frac{dx}{dy}$$



$$z = x^2$$

$$z' = (x+dx)^2$$

$$z' - z = (x+dx)^2 - x^2$$

$$22.5-$$

$$38.0$$

$$z' = (z+dz) = x^2 + (x+dx)^2$$

$$dz \text{ or } z' - z = dz = x^2 - (x+dx)^2$$

19/20

9^h Am

4. Pm

Stand + .01

Stand +9

T.S.P. + 1.5-

T.S.P. 10

No 4 0

No 3 10

2 0

1 10

1 0

4 9

3 0

2 9

12 0

12 9

22 1

22 10

32 0

32 9

6 1

6 10

5 0

5 9

20 Pm

 α Persei

07.5

28.5

49.4

10.4

31.8

52.5

3, 14, 13.5

Jan.

 α Orionis

—

34

4.8

62

15.6

5, 46, 29.4

21/22 Am

 β Persei

16.5

30.8

45.5

60.0

14.5

15, 56, 29.0

 δ Ophiuchi

03.9

17.8

31.5

45.4

58.8

12.8

16, 06, 26.5

Feb. 3 Pm

 α Antares

53.1

08.9

24.5

39.7

53.5

11.0

23, 59, 26.7

22 Pm

23/24 Am

0' Bet

03.0

17.4

31.0

45.0

59.0

13.0

1" 16" 26.9

afterwards

04.9

19.0

33.3

47.5

01.8

16.0

18" 07" 30.0

26/27 Am

$$\frac{18481}{1848}$$

40.9

56.0

10.2

24.5

39.3

53.5

15" 5-6" 08.2

23 Per.

No 207

2' Eridani
 25.5
 39.4
 53.4
 67.8
 72.0
 86.0
 3" 30" 50.0

Feb. 3 Per.

05.3
 19.5
 33.6
 47.8
 62.0
 16.3

00.07.86.5

Feb 4/5. Am.

202 11.9

25.8
 39.7
 53.5
 67.5

21.4

19" 36" 35.3

32.4
 46.3
 00.2
 14.2
 28.0
 42.0
 55.7

Jan. 23/24 9 Am

Wind +12°

J & S 13

No 3- 12

Bond 12

No 3² 12

12 12

4 13

1 13

3 13

Feb 5 Am
Feb 6 Am

45.4-

59.5-

13.2

27.0

40.8

54.5-

2, 33, 13.4

Feb. 9 Pm.

19.0

34.0

48.7

03.5-

18.4

33.5-

Feb 11 18.4

9 Pm

Feb 6.14.00

202 Feb 17.36.0

Mar 9.04.00

202 Feb 19.56.8

Feb 4/5 Am

E.C. 19.43.00 — 19.44.00
 202 19.43.58.7 194/8, 19.19.8

3.19.68

 19.47.18.38
 43.00

4.18.38

3.57.92

21.06

3.51

5 Pm

E.C. 2.33.00
 202 2.34.07.2

3.11.63—

 2.37.18.83—
 2.33.00

4.18.85—slow

Feb. 5/6 Am.

207

2 Draconis

1. 49.6

12.0

34.0

56.1

18.0

40.0

17. 54. 02.6

Feb 9/10 Am.

47.0

2 Draconis

09.4

81.5

53.8

15.6

37.5

17. 38. 59.5

15/1826 Val

15.2

30

2.6

1.5

1.1

17. 36. 20. 53. 00

207 17. 35. 51. 3

Feb. 9 Pm.

07.35 5.10

22.45-4.85

37.30 4.70

52.00 5.00

07.00 4.85

21.85 4.65

1. 58. 36.60

Capricornus

H. Germ.

00 4

30.9

46.0

00 4

Feb. 12 P.m.

53.8

69.9

23.2

37.1

51.2

046

5, 24, 18.2

5, 28, 33.7

11.0

25.0

39.0

52.8

66.5

80.2

93.7

207 12/13 Am

46.1

08.4

30.5

52.6

14.5

38.5

17 53, 58.2

$$C. \quad x = \frac{ae}{b^2} = \frac{a}{b}$$



Problema aliud, e corporis coelestis loco
geocentrico atque situ plani orbitae eius
locum heliocentricum in orbita derivare.

13^h Pm

207

88.5

53.0

07.0

21.7

35.8

98.1 50.0

14^h Pm 194

38.4

52.3

06.1

20.0

32.7

47.5

2, 37

01.2

33.3

47.0

00.7

15.5

28.2

42.0

2, 55, 53, 9

25.0

46.1

07.0

28.3

49.3

10.4

3, 15, 31.3

14 Pm

207

Sirius
 36.5-
 51.5-
 033-
 19.8
 34.0
 48.5-

6" 40" 02.0

Sll. East 16 Pm

a Persei

20.0

41.0

01.8

29.0

44.0

05.1

3" 15" 26.4

194

194 16/17 Am.

36.5

54.5-

12.3

30.0

47.1

04.8

18" 33" 23.0

Jy
 a

194

32.0

46.5-

00.8

15.0-

29.4

43.5-

58.0

225.2

120

105.2

16 Pm

6" 39" 15.03

6" 39" 13.03

M7C, 8" 59" 25

194 6" 44" 31.5-

14, 58.30.58
46.74
14 59, 17.32

236 19, 27, 00
3 4, 24 44

17 Pm.

17 Pm
Print
unsteady

194
31.0
44.8
58.5
12.2
26.0
39.7

α Ceti
unsteady

25.8
39.4
39.0
06.8
20.6
34.9

2, 36, 53.5 2, 55, 48.2

00
29
19, 26, 31
14, 59, 17
4, 27, 14
49
26-31
24 44

3/2-23
4-45
3/2-08

.086
.108
8)194
.097

21, 46, 30.49
46.79

α Ceti Tab. A Feb. 14 2, 55, 12. 2 Ceti
Tab. A 2, 54, 32.04 2, 35, 37.21
Obs. A

194
18 Pm

2 Ceti
—
—
23.0
37.0
2, 36, 30.8

22.8
36.8
50.4
04.0
17.8
31.5
2, 50, 45.3

194
Omicron
very hot sunny
20.0
13.8
28.0
41.5
55.5
68.2
5, 48, 23.0

18/19 Am

2 Pygmaea
horrida sunny
20.4
34.3
48.9
02.1
16.0
29.8

19, 44, 43.9
"

19 Pm
194
2 Ceti
extremely faint
89.5
52.8
06.5
20.4
34.1
48.0
2, 36, 48.0

194 Pm
20.0
33.6
47.4
01.0
14.8
28.5
2, 55, 42.4

194
19/20 Am
3 Lyrae faint
12.4
28.8
45.0
01.3
18.0
34.3
18, 45, 51.0

194
20 Pm

194

faint

2 Cete

20.5-

34.7

48.4

62.5-

16.2

30.0

L, 96, 49.6

18, 33, 09.9

20/21 Am.

24.0

41.8

55.5-

17.0

34.5-

52.5

21 Pm.

Gland - 8°

Gland - 8 1/4°

- 2 1/2 - 2 2/2

- 4

- 4

- 2 - 2

Ext. 2h 45- - 25-

Feb. 22/23 Am.

194

40.9

60.2

19.4

38.9

58.3

17.5

20,, 37,, 37.0

23/24 Am.

194

39.2

58.5

17.9

37.2

36,, 56.5

clench

20,, 37,, 35.6 doubt.

3/2

Feb. 25 Am

Ill East

194
 44.5~
 58.9
 13.0
 27.3
 41.5-
 55.8

L, 97, 10.0

S, 96, 23.4

194

09.5

24.4

39.2

54.5-

69.4

24.5-

S, 39, 39.4

194
 64.3
 18.0
 31.9
 45.5-
 59.4
 13.1

L, 55, 27.0

r' Encl.

38.8

52.4

66.6

20.7-

84.9

49.0

S, 52, 03.0

194
 56.0
 17.10
 38.0
 59.1
 20.3
 41.5-

S, 15, 02.6

4.4

4.2

4.9

4.2

4.1

4

Feb. 26/26 Am

14.5
 32.0
 49.4
 07.2
 24.9
 42.5-

18,, 33,, 00.0

312-23
 12 4
 3.00.19

Feb. 26/27

12.9
 30.4
 48.0
 23.0
 40.5-

18,, 32,, 58.5-

312-23
 18-57
 293-32

312-23
 16-12
 296-11

E 7

Feb. 27 Pm

56.4
 10.4
 24.3
 38.2
 52.4
 06.5-

3,, 53,, 20.5-

01.3
 16.0
 30.8
 45.5-
 00.1
 14.8

4,, 15,, 29.5-

24.8
 39.0
 53.8
 08.0
 22.5-
 37.3
 51.8

4,, 20,,

Oct of 1941 Jan 68 Zuri
 4,, 23,, 20.3 good - 4 dz - instantly

Zuri
 52.5-
 06.8
 21.0
 35.3
 49.7
 64.0
 4,, 28,, 18.4

March 2nd

Moony / limb
 24.5-
 39.4
 54.5-
 09.8
 25.4
 44.0

7,, 07, 55.2

2nd Pm
 EC 8,, 15,, 00
 184 8,, 15-,, 15.2

2/3 Am.

very marked
 a Bygones
 21.5-
 40.5-
 00.5-
 19.5-
 39.0
 58.5-

20,, 37,, 18.0

March 3rd 1952

Im 83 Cameri

No 194

8. 32.25 - 20 beats

$$\begin{array}{r} 10 \\ 8. 32. 15 \end{array}$$

EC - 9.03.00

194. 9.03 12.7

$$\begin{array}{r} 91225 \\ 1926 \end{array}$$

$$\begin{array}{r} 8/4 \text{ Am } 9957 \end{array}$$

e Aquilae

46.5-

60.0

14.0

27.9

41.6

55.5-

19. 44.09.4

20. 37. 15.0

e Cygni
very misty

18.9

38.0

57.4

17.0

36.0

55.4

$$\begin{array}{r} EC 20. 38. 00 \\ 194 20. 38. 11.8 \end{array}$$

March 9 Pm

(194)

194
 38.
 52.3
 06.5-
 21.0
 35.0
 49.5-

gem 15.8
 30.5-
 43.5-
 00.2
 15.0
 30.0

—
 —
 3 f
 52.4

6, 39, 04.0

7, 11, 44.8

9, 25, 08.5-

9 Pm. 194

B Gem.

12.0
 27.4
 43.0
 58.5-
 14.5-
 30.0

7, 36, 45.5-

March 10 Pm.

gem

29
 439

58.5
 13.5
 28.3

gem 02.5-
 18.5-
 34.6
 51.0
 07.0
 23.3

7, 11, 43.5- 7, 23, 39.5-

From this moment we ~~have~~ registered

March 9/11 Am

04.

23.0

42.4

01.8

21.0

40.4

20 36, 59.8

March 15 Pm

37

51.

04.4

18.0

31.9

7, 31, 45.8

March 18/19 Am.

a Cygni unobscured
Circus

45.9

05.0

24.4

44.0

03.0

22.5

20, 36, 41.8

a Gem.

59.5

14.9

30.5

46.4

02.0

17.4

7, 36, 33.0

$$\begin{array}{r} 5 \\ 60 \\ \hline 300 \\ 10 \\ \hline 3006 \end{array}$$

1.58

16.07.0

$$\begin{array}{r} 2.47 \\ \hline 1.4 \end{array}$$

March 20 Am

a Lepni mistad

42.8

02.0

21.5

41.0

00.3

19.4

20, 36, 38.9

April 2/3 Am

49.5

35.0

50.8

06.0

21.05-17.7

21.06, 37.40

$$\begin{array}{r} 1.19.70 \end{array}$$

5.3 2

5.8

6.2

16.07.0

2.47

18.54

18.54

April 16 Pm

at

12 Bar denat

16.0

33.5

50.9

12, 48, 09.4

12, 48, 14.0

12, 48, 7

1.53

April 1st P.m.

2 Leons	51.0	Moris 1 st Lind	40.4	2 Leons	27.9	8 Leons	16.5
	06.0		54.5-		41.8		31.0
	20.5-		09.0		53.5-		45.4
	35.0		23.4		09.5-		00.5-
	49.5-		38.0		23.2		15.0
	04.5-		52.5-		37.0		30.0
10,, 11,,	19.0	10 40,,	07.0	10,, 56,,	51.0	11,, 05,,	45.0

April 1st

86.10,, 30.00

194 10,, 29 27.5

	01.0		17.0
8 Hydnet boat	15.0		31.0
	29.0		45.0
	43.3	Levin	54.0
	57.5-		13.1
	11.5-		27.0

11 11, 25.8 11, 15, 41.3

April 42 Am

	09.0
	28.2
a bygn	47.5-
	06.9
	26.3
	45.5-
	20 36, 04.6

April 4/3 Am

	45.4
	55.4
B. Dynamini	13.3
	27.0
	40.8
	54.6

2 1, 23, 68.4

April 6 am

E.C. 29, 56, 00 E.C. 00, 14, 00

194 21, 53, 49.8 194 12, 49, 2

h m s

E.C. 1, 06, 00 E.C. 4, 08, 00

194 1, 05, 05.2 194 4, 07, 05.1

E.C. 7, 18, 00

194 7, 17, 05.0

55

$$\begin{array}{r}
 1, 28, 04 \\
 \hline
 4, 08, 33.14 \\
 4, 08, 00
 \end{array}$$

April 7 am

E.C. 20, 12, 00 — 22, 14, 00

194 20, 10, 04.2 — 22, 12, 03.8

E.C. 5, 12, 00

194 5, 10, 03.4

05.4

5, 12, 00

5, 12, 03.4

$$\begin{array}{r}
 1, 30, 04 \\
 \hline
 5, 13, 33.8
 \end{array}$$

13 26.1

E.C. 7, 04, 00

194 7, 02, 03.4

2.5

7, 02, 03.9

7, 03

54.1

April 9/10 am

E.C. 21, 40, 00

194 21, 39, 57.6

1, 36.5

21, 41, 34.6

42

34.9

April 10th P.m.

06.5-

20.8

35.0

49.4

03.7

10.0

4. 26. 32.3

E.C. on 7th April lost in g^a - 0.30

From 9 to 11 Apr. lost $\frac{5}{2.9} = \text{daily} - \frac{8}{1.45}$

April 11/12th P.m.

E.C. 22,47.00 — 28.55.00 — 28.39.00

194 22,45.55.5 — 28.57.55.5 — 28.37.55.43

$\frac{1.41.55}{22.47.37.05}$

Apr. 12 E.C. 3.26.00

22 47.00

194 3.24.55.3

37.05-

April 12 Sun

E.C. 10.04.00

194 10.02.55.1

M.S. 8.42.00

194 10.05.58.8

8.42.00

error 11.78. 22.68

Rate M.S. 8.42.22.68
16

1.23.20.50

46.74

1.24.07.64

Camb. M.S. 8.42.06.68

1.23.77

8.43.32.45

1.24.07.64

10 07.40.09

10.05.58.8

194 slow 1.41.29

53.9

1.2

55.1

Ill East

April 13

April 16 Pm

05-
 19.
 33.1
 47.0
 01.0
 14.9
 2, 39, 29.3

01.0
 15.0
 28.8
 42.5-
 56.4
 10.0
 7, 30, 24.0
 5-3,
 68.5-
 24.4
 40.0
 55.4
 7, 35, 11.3

17 Pm

a. Aquarii
 36.5
 50.4
 03.9
 18.0
 31.6
 45.4
 21, 58, 59.0

7, 34, 22.4
 7, 36, 14
 1, 52

a. Hydra
 44
 57.5-
 11.5-
 25.4
 39.3
 53.0
 9, 18, 07.0

17 Pm

19.5

14 Can Vir 37.5-
 55.4
 13.0
 80.4
 48.5-

12, 48, 66.0

April 22 Pm

a Leonis
 41.0
 55.0
 08.9
 28.0
 37.0
 51.2

5, 59, 65.4

Apr 27 Pm

clouds
 47.5
 51.4
 65.3
 19.1

5, 45, 33.0

a Gem 18.5
 34.5
 51.0

7 28, 07.5
 clouds

312-23

9
 312-14

312-23

38
 312-01

312-23

11-21
 301-02 a Leonis
 303-18 3 Virgin

April 30 Bar

Cinch. over
3/12-20

35.5

62.5

16.3

30.0

43.8

10.53, 57.5

3/12-29

45-

58.5

12.0

25.5

38.5

53.0

10.59, 07.0

06.0

20.4

33.0

50.0

04.4

19.5

11.04, 34.3

8 Hyd. of Gnat.

50.4

4.5

18.5

32.8

47.0

01.0

11.10, 15.2

Leonis

06.4

20.4

34.5

48.5

02.5

16.5

30.4

11.14

Virginis

34.0

47.5

01.5

15.5

29.4

43.5

11.35, 57.4

Leonis

23.9

38.0

52.3

6.5

21.0

33.0

11.39, 49.4

Mons I link

10.5

24.8

39.0

53.0

07.0

21.3

12.07

Virginis

15.0

29.0

42.7

56.5

10.4

24.2

12.10, 38.0

Booris

29.0

44.0

58.5

13.3

28.5

43.5

12.24, 58.4

April 30th PM

Gen. 7.0

12 Cam. 24.5

42.5

00.0

17.4

12 47. 35.8

May 27 5-

43.5-

59.0

14.5-

30.4

46.1

6. 51. 02.0

54.5-

5.5

10.0

5.8

25.8

5.5

41.3

5.7

57.0

5.5

5.8

12.5-

35. 28.3

03.0

17.0

31.3

45.5-

55.6

13.7

22. 55. 28.0

194
06.3
 20.0
 33.9
 47.9
 61.5

9, 18, 15.5

May 11
 12 am out
 26.8
44.4
 6.19.5-
 6 37.5-
 6 55.0
 12 47 13.0

19.26.59
 4, 44, 30
8, 42, 29

42.0
 56.0
 16.3~
 24.3~
 39.0
 53.4
 4, 25, 8.5

May 17/18 km

a Pogesi
 cinnus; faint—
 39.4
 53.3
 7.4
 21.5
 36.0
 50.0
 22,, 55,, 4.3

18 Pm

194 set forward 5^{mm}

18 Pm

34.4
 48.3
 02.0
 16.0
a Hydrus
 29.8
 43.5⁻

9,, 22,, 59.5⁻*a Lemnis*

44.0
 58.3
 12.0
 26.3
 40.4
 54.5⁻

38.4
 53.5⁻
 8.5⁻
 29.5⁻
 38.8
 54.0

9,, 40,, 09.0

10,, 03,, 8.5⁻

84

18 Pm.

86

<i>a Hydra</i>	31.8	<i>a Leo</i>	35.9	<i>a Leo</i>	41.5
	45.5		51.0		55.5
	55.5		6.0		09.8
	13.2		21.0		23.8
	27.3		36.3		37.9
	41.1		51.0		52.0
9. 22. 55.0		9. 40. 06.3		10. 3. 06.0	

19/20 Pm.

<i>a Andromeda</i>	50.5	<i>a Pegasus</i>	47.0
	6.3		01.0
	21.5		15.4
	37.3		29.5
	53.0		43.5
	8.5		58.1
00. 03. 24.0		00. 08. 12.4	

81225

2837

E 88.46

20 Pm

<i>a Hydra</i>	29.3
	43.0
	56.8
	10.5
	24.5
	38.4
9. 22. 52.4	

7.05.15

9.35.00

H 2.29.45 De + 25.44

—

—

2.5

16.5

30.4

44.7

10,02,59.0

M2B, 00.40.00

2 00.39.19.8

00.40.49

39.19.8

29.2

00.52.29.2

30.8

10,02,29.2

3.29.2

53.30.8

24 Jan
 a Leonis
 30.5
 44.5
 58.5
 12.7
 27.0
 41.0
 10" 02" 55.0

Moons 1 limb
 24 Pm
 33.5
 48.0
 2.9
 17.5
 32.0
 47.0
 9" 58" 01.5

25 Pm Chron 194

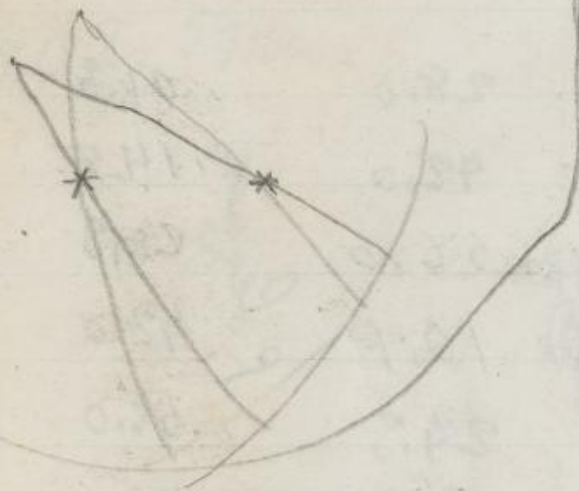
a Leonis
 23.5 312.29
 37.5 16.4
 52.4 302.19
 7.4
 22.5
 37.5
 9" 59 52.7

a Leonis
 28.0 00.3
 42.0 14.5
 56.0 28.3
 10.1 42.0
 24.3 56.0
 38.4 10.0
 10" 02" 52.5 10" 27" 24.0

25 Pm

δ Leonis	11.0	δ Hydor et Boot.	55.5
	25.8		9.8
	40.4		24.0
	55.4		38.0
	10.0		52.3
	25.0		06.4

11.08, 39.5 11, 14, 20.5



26 Pm

α Leonis	25.8
	39.8
	53.9
	8.0
	22.0
	36.0

10, 02, 56.0

$$\begin{array}{r}
 312.23 \\
 8 8 \\
 \hline
 304-15 \\
 312.23 \\
 4-25 \\
 \hline
 307-58
 \end{array}$$

μ Leonis 1	45.0
	59.4
	14.0
	28.0
	42.3
	57.0

10, 54, 11.4

End 2.00.00

25 Jan

8 Leo
 8.9
 23.5
 38.0
 53.0
 8.0
 22.5

11.08 " 37.3

8 Mydrus et. G. 6.0

53.4

812-23

7.5

9-33

0 302-50

21.5

812-23

35.8

4 8

50.0

C 308-15

4.0

11.14 18.4

New 28 Jan.

8 Leo
 22.5
 36.7
 51.0
 05.2
 19.5
 33.8
 48.0

11.43 " 48.0

8 Virgo

33.5

43.5

49.4

57.4

01.0

11.4

15.0

0. 25.0

29.0

39.0

43.0

52.6

12.150 6.5

11.59 " 57.0

312-23

4.12

308-11

May 28 P.m.

Means / kind

0 8.4
 22.5
 36.5
 50.7
 4.8
 18.9

12.44

33.0

a Virginis

3.0
 17.0
 30.8
 44.0
 58.0
 11.5

12.50, 25.1

312-23

4-45

307-38

17 08

a Virginis

18.0

31.5

45.4

59.4

13.5

27.5

13.19, 41.5

May 30/81 Am

*a Andromedae**unsteady*

26.5

42.3

57.7

13.3

29.0

44.5

00.03 11.00.00 - 00.07 48.4

23.0

97.3

51.5

3.8

20.0

34.0

20.05.10

21.13.40

1.10.30

.11

24 11 9 .54

25 Pm 12.44

34 Am 14.9

6)2.56

.44

21 13.40

1.52.34.61

19.21.05.39

11.5

19.21.54.89

43

a Andromedae

33.5

48.5

03.0

18.0

33.0

48.0

2.01.03.0

γ Pegasi

52.47

.07

52.54

.44

7

Lyons

And this quantity

3 Litine

43.0
57.0
11.0
25.0
38.7
52.5

15,, 10,, 06.5-

June 4 Pm.

22.5-
37.5-
53.5-
08.9

14 40 24.4

June 5 Pm.

14.6
39.0
3.4
27.8
52.2
16.5
0434,, 41.0

a Leonis

05.4
19.5
33.5-
47.4
1.4
15.8

10,, 02,, 30.0

June 5 Pm.

a Leonis

48.4
3.0
17.8
32.5-
47.3
2.0

11,, 08,, 17.0

C.W. 2x
C.C. + 10,, 04,, 00

194-10,, 05,, 33.80

2.7
3) 1.5 (6) 43) 11 36

~~33.759~~

June 6/7 Am

h m. s
 10^h 55^m 52.0
 6 21.8
 51.5
 10^h 57^m 21.5

C. W. W. W.

Mag.

8 Hyd. Croutons

33.0
 47.0
 1.4
 13.5
 29.5
 43.5

11^h 13^m 58.0

G. O. B.

26 10. 18. 00

194 10. 19 33.75 -

a Andromeda

13.0
 28.4
 44.0
 59.5
 15.0
 30.7

00 02. 46.5

6
 6 " 23.5
 6 " 37.9
 6 " 52.0
 7 " 6.0
 7 " 20.3

00 07. 34.5

14.7
 18.1
 3.4

48
 8 45

9 Pm.

M.L. 23.27.00 53.13

J. 23.26.42

11.13

Leonis

25.4

39.5

53.5

E.C. 4.46.00

J 23.28 45.5

23.28.56 63

25.31 03.4

14.9

1.31.18.5

4.46.00

6.17.18.5

29.02.22.0

June 15 Pm.

Leonis

46.3

06.3

14.6

29.0

43.3

57.5

11.43.11.8

14 Pm

Leonis

44.9

59.0

13.2

27.5

41.7

56.0

11.43.10.3

812.23

6.30

305.33

812.23

7-26

304-57 77

302.50 0

9 33

30 2 50

June 20/21 Am.

A

Carnifera

45.9

9.5

5.8

5.5

34.0

5.7

58.3

5.9

22.4

5.2

47.2

5.0

60,34, 12.0

312-23

7-26

304-57 77

302, 50 0

July 20 Am.

Sivins

194

7 59.9 - 2

8 14.5

1 28.8

4 43.2

8 57.5

9 11.7

6 39, 26.0

7/301.6

43.09

6 38 41.09

36.88

2 C - 6, 41, 0

194 - 6, 41, 32.5

Hl. West

July $\frac{20}{21}$

Lorius

194 - 7 59.0 - 4 heat E C - 6. 40. 0

r 13.3 194 - 6. 40. 32.3

r 27.5

r 42.0

MTC - 22. 42. 55

r 56.0

194 - 6. 41. 59.5

r 10.5

6. 39. 25.0

233.3

60

7) 293.3

6. 38. 41. 90

MTC - 0. 17. 0

6. 38. 39. 90

194 - 8. 16. 20

3690

Ill. Mass.

July $\frac{21}{22}$

Exp. M. 89

Ant. Ther 83

Irms

57.4

12.0

25.8

40.6

55.0

9.4

6.39 .. 24.0

224.2

60

7/284.2

40.60

-2

6.38 .. 38.60

36.91

E.C. - 6.45.0

194 - 6.45.32.0

Sept. 8/9 Ann

194

44.3

58.0

12.0

25.8

39.8

53.6

5.07. 7.5

Orionis

July 27th Sea work
194 Sirius

57.6 - 4 beats EE - 6.40. - 0

5.9

194 - 6.40. 29.75

20.4

34.7

ME - 22. 22 ..35

49.2

194 - 6. 45. 11

3.4

6 ..39 ..17.4

182.6

60
77242.6

34.66

-2

6 ..38 ..32.66

1852

Aug 8/9 Am.

Chron. 194

a Lamm

28.6

4.8

40.2

5.7

34.5

5.8

5.0

6.2

28.0

5.7

37.3

5.4

4" 27" 51.4

Aug 23/24 Am

a Lamm

34

14.3

48.8

14.2

02.5

16.5

14.4

4" 27" 31.0

14.1

Sept. 1/2 Am

(194)

a Lamm

7.7

22.0

36.0

50.0

04.4

4" 27" 18.7

~~Sept. 1 Pm.~~Sept 1/2 Am
194194 27.3
41.2

29.0

45.4

1.5

17.5

34.0

30.0

7" 25" 66.4

a *Scorpius*
55.0
9.0
22.9
36.6

15" 36" 50.4

62 *Gem.**Procyon*
00.5
14.4
28.3
42.0
56.0
9.7

7" 31" 23.3

Sept. 2/3 Am

52.0

66.0

19.9

34.0

48.1

01.9

5" 07" 15.6

Orionis

Sept. 7/8 Am

27.0

194

Orionis

45.4

59.2

13.0

27.0

40.9

54.8

5, 07, 8.6

Jupiter

11.0

26.5

42.3

38.2

13.5

29.2

5, 16, 45.0

Sept 8/9 Am

Orionis

01.0

15.0

26.7

42.5

56.0

9.8

5, 28 23.50

54.0

8.5

22.9

37.0

51.5

5.8

6, 38, 20.0

Jupiter

Sept. 9/10 hr.

(194)		50.0	26.4	59.
^a Gem.	34.9	4.0	42.3	57
	51.0		58.0	57
	7.1	17.7	15.7	57
	23.5	31.5	29.0	53
	39.9	45.3	44.8	58
7. 24	56.0	59.0	35	
		7. 31. 12.9		

Sept 21/22 hr. (194)

^a Leo	28.3
	37.3
	51.4
	5.5
	19.5
	33.8
9. 59	47.6

Sept. 22/23 hr.

(194)	21.5
	36.0
	49.8
	14.0
	18.0
	32.0
9. 59	46.3

Oct. 2 Pm.

a Serpens (194)
 45.5
 58.9
 13.0
 27.0
 40.9
 15" 35" 54.6

2 Pm

a Lyral
 17.0
 35.0
 52.5
 10.0
 27.5
 45.0

18" 31" 2.5

Oct. 16 Pm (194)

Tremulow; blurring
a Aquarii
 14.5
 28.1
 52.0
 35.8
 9.5
 29.0

21" 58" 37.0

Oct. 6/7 Am. (194)

a Wrsae Maj
 6.5
 37.0
 10" 52" 6.5
 36.0
 6.9
 53 36.0

10" 54" 05.8

Oct. 18 Am. 47.0
2.5-

1944
Arcturus

35.0

51.0

06.5-

22.0

37.8

53.5-

00 " 01 " 9.0

1944
Oct. 19 Am
Pegasi

16.5-

30.5-

44.8

59.0

13.0

27.5-

22.57, 41.5-

$22.09.13$
 $\quad \quad 28$
 $22.09.41$
 $8.31.48$
 $13.87.53$

$22.03.02$
 $\quad \quad 28$
 $22.03.30$
 $8.11.9$

$22.28.84$
 $8.46.06$
 $13.42.28$

Oct. 24/25 - pm (194)

B Leonis
 10.5
 24.5
 88.9
 53.0
 7.2
 24.5
 $11.41.35.5$

1615
 Nov 9/14 pm
 35.23
 59.0
 22.5
 46.3
 $45.10.0$
 $45.33.5$

1852
 SE East
 Nov. 12 pm

1615
 a truel
 88.5
 54.2
 10.0
 25.5
 $00.00.41.0$

2 Pegasus
 04.0
 18.3
 32.5
 46.5
 00.8
 15.0
 $00.05.29.3$

Nov. 2nd Pm.

M.T.B. 4, 52, 40

1615 19, 12, 20

14, 49

4, 52

19, 41

Nov. 2 Pm,
α Capricorn

23.5

39.9

51.9

5.8

20, 8

20.0

β Pegasi

21.8

35.5

49.5

22, 8 3, 03.5

α

α

α

α α α

α α β γ δ

α

α

α

α

Nov. 21/22 am

1615

43.5

57.8

11.9

26.0

410.3

34.5

11, 42, 89

Q 1, 00, 00

y 1, 01, 47.3

22.5

1, 24.8

1863

Jan. 26/27 am

43.9

1.4

19.0

36.4

54.0

11.3

18, 33 29.6

Chiron. 286

star trembles

Observatoire de Cambridge
le 18 Decembre 1852

Il est une long tem
depuis je —

Feb 1 st Am, 286 a Ophiuchi	286	16.0	
		30.5	
		44.6	43
		58.9	41
		13.0	
		27.0	
19.25	41.0		

1852

Dec. 18 Pm

authenat. p.

4.5 13.5
 18.1 4.0
 32.0 9.5
 45.5 4.0
 23.33.55.5

312-25

4-22

316-45 27 Rise.

6-32

318-55 33 Rise.

5-26

317-49 B. A. G. 205

1-57

314.20 20 Ceti

1853 Jan. 27/28 Pm.

Chiron. 236

J. H. G. 236

42.6 7.9
 1.5 8.1
 18.6 7.0
 36.6 7.6
 54.2 7.8
 12.0 7.7

18 33 29.7 7.7

Chiron. 236
a Lyrae 23/24

5.4 7.6
 23.0 7.4
 41.4 7.6
 58.0 7.7
 15.7 7.8
 33.5 7.4
 18.34. 50.9 7.4

1853
Aug. 28/29 Am
Chron. 236 C. W. J.

8.1
22.0 3.9
35.9 3.9
49.7 3.8
3.6 3.9
17.5 3.9
13.8

5.45 31.3

1833
Sept. 19 Pm
Chron 236

54.0
8.0
22.3
36.4
50.5
4.6

17.31, 18.5

Sept. 29 Pm
236 r Dineen's

38.5
20.8
43.9
5.0
27.0
49.0

17.57, 11.3

Sept. 29/30 Am
236

Bum.
27.3
43.0
58.4
14.2
29.8
45.13
1.2

7 210

K83

Oct 2/3 Am

236 C.M.S.

 α Hydor

41.2

55.5

9.4

23.2

37.0

51.0

9.24. 4.8

236
a Leonis

51.2

5.5

19.5

33.5

47.7

1.8

10 04. 15.9

19 1.37.28

25 1.43.32

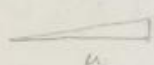
6.04

1.00

29 1.46.27

3

Voraussetzung - supposition - presumption

 Angabe - statement

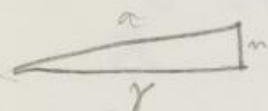
$$\tan A = \frac{h}{u}$$

$$h = u \tan A$$

$$0.000000$$

$$4.685575$$

$$\hline 5.314425$$



$$\tan A = \frac{m}{r}$$

$$206261.$$

$$0.0000$$

$$4.68557$$

$$\hline 5.31443$$

$$\frac{r}{a}$$

$$\sin A = \frac{m}{a}$$

D J

Oct. 10/11 Am

 α Hydron

59.0

13.0

26.9

40.9

54.7

8.5

9, 24, 22.3

Oct. 11 Pm

32.5

46.8

1.0

15.0

29.0

42.9

20, 13, 57.0

Oct. 11 Pm

312-23

18-39

331-02 = v Cap.

25-48

338-11 = γ Cap.

16-47

329-10 = δ Cap.

14-14

326-37 = μ Cap.

38.0

.4

274.22

18.5

32.9

Moon

m
29

47.3

2.0

16.5

31.0

2035, 45.3

Oct. 11 P.M.

61' Byrne 3 Byrne

	58.8	47.4	14.5
	14.4	5.0	29.8
4 Byrne	29.4	22.3	45.9
6 W	45.7	39.7	2.0
	00.0	57.0	17.8
	15.3	14.7	33.3

20. 41. 30.5 £1.04. 32.2 £1.10.49.4

40.7.3	34.5	34.3	54.4
34.5	50.0	48.5	8.0
	5.0	3.0	21.7
	20.0	17.4	35.5
	35.0	31.5	44.5
	50.0	46.0	3.0
	5.0	22.0	16.7
21 35 5.0	21 43.00.3		

Oct. 11 P.M.

Oct. 11 P.M.
 11.8 6.5
 28.3 6.2
 44.5 6.5
 1.0 6.5
 17.5 6.6
 34.1
 18.44.50.5 - 16.4

Oct. 12 P.M.

Oct. 12 P.M.
 11.8 6.5
 28.3 6.2
 44.5 6.5
 1.0 6.5
 17.5 6.6
 34.1
 18.44.50.5 - 16.4

Oct. 12 P.M.

Oct. 12 P.M.
 11.8 6.5
 28.3 6.2
 44.5 6.5
 1.0 6.5
 17.5 6.6
 34.1
 18.44.50.5 - 16.4

61' Cygnus

49.5

46.9

29.6

41.8

59.6

17.6

21.00.34.2

312.23

14.22

326.45.7

16.36

328.59 8 Aug.

Cygnus

16.5

13.9

32.4

13.3

45.7

48.7

04.0

16.3

20.0

16.0

35.6

15.6

51.5

5.9

8.3

8.1

21.06

Oct-13/14

16.0
 30.3
 44.4
 58.5-
 12.5-
 20.6
 1000.40.8

C.M.
 a Lewis

Oct. 19/20 A.M.

a Lewis C.M.

33.4

217.6

1.7

15.8

30.0

44 ✓

10. 00, 58.0

1.58693

1.62634

3.21327

60) 163.41 (27
 120
 434
 420

0.01073

1.62634

1.61561

1.58693

3,20254

1594
 1204

394

360

34

26-34

Nov 2/3 Am

8 hrs mag

236-11-45-14.8+0

38.8

2.7

26.4

50.1

13.7

47-37.4

$$\begin{array}{cccc} a & a & a & a \\ a & d & a & a + \beta \end{array}$$

Nov. 2/3 Am

~~20-18.00~~

ML 20-58.35

236 11-51-30

3-21.37

8

16.29

4-21

W.B. old Am
C.W.D. acc.

Nov. 3/4 A.M.

34.9

4.7

34.5

4.4

34.4

3.5

33.8

a Wrs. Myoris
C.W.D.

Nov. 4/5 A.M.

38.0

8.4

38.0

7.8

55-37.5

7.4

10-56-37.4

Tw. 5 Pm.

C.W.S. 194

Moon's limb
faint

34.8 6.1

10.9 5.6

26.5

42.5 6.0

58.3 5.8

14.0 5.7

19 09,, 29.8 5.8

6.8

21.0

34.8

48.7

2.7

16.8

19,, 40,, 30.6

a Aquile

27.4

41.5

33.3

9.3

23.0

36.9

19,, 44,, 30.9

C.W.S.

B Aquila

56.4

10.3 3.9

3.7

24.0

37.5 3.5

57.4 3.9

5.0 3.8

19,, 19,, 19.0 4.0

C.W.S.
B Aquila

56.5

10.5

24.3

38.2

52.0

5.8

19,, 49,, 19.5



6.32.12 13 north

Nov. 7 Pm.

6m. 2
a Apurilau

34.2

48.3

2.1

16.3

80.0

43.8

19.44 57.49 49.26.4

Apurilau

3

3.5

17.5

31.3

45.0

58.8

12.5

26.4

312-23

18-18

330-41 9 Cap. 20.20

25-48

338-11 4 Cap 20.37

16-47

329-10 = 8 Cap. 21.38

14-14

326-37 1 Cap. 21.48

51.4

5.4

19.6

27.0

48.0

2.0

20/1, 16.0

25.0

39.5

53.9

8.5

23.0

37.4

20.21.51.9 20.38 49.4

17.5

33.0

48.3

13.5

18.9

34.0

Nov. 7 Pm.

Lycopodium	33.0	Capricorn	5.2.5-
	48.7		7.1
	4.5-		21.5-
	20.8		36.0
	36.5-		50.0
	52.3		4.8

21,08, 7.9 21,40, 18.9

Mars	34.7	Jupiter	14.6
	50.0		29.0
	5.0		43.0
	20.8		58.4
	35.5-		11.21
	50.4		25.5-
21,15, 5.5-		27,45, 39.9	

(236)

Oct. 17/18 Am.

312-23

6 50

23.06 319-13 4 Apr

10 25

23-11 322 48 = 4³ Apr

4 22

23-51 316-45 27 Pisc.

6-32

23-57 318-53-33 Pisc.

6-50

23-54 319-13-30 Pisc

6 May.

a Lem

27.9

42.0

56.0

18.9

24.3

38.4

52.5

10, 00

Nov 10
a Capric
stan

34.5

48.5

3.0

17.0

31.5

45.8

22, 59 00 10

Q Aynanin
Memoranda

52.0

6.4

20.0

33.5

47.4

0.9

23, 08, 15.0

Q Aynanin

28.0

42.3

56.0

10.0

24.0

38.0

23, 12 52.0

Nov 11
a Capric

2.9

17.3

31.0

45.4

59.4

13.9

23, 52, 27.9

35.3

49.3

3.0

17.0

30.4

44.5

23, 55, 58.5 23, 59 22.0

58.8

12.5

26.0

40.4

54.0

8.0

Nov 10
a. *Arctura*
52.5-
8.0
23.5-
39.0
55.0
10.4
00, 02, 26.0

2 *Regor*
49.0
3.0
17.5-
31.8
45.9
00.0
00, 07, 14.3

812-23
7 48
304-35- ⁴² *Ceti*
9-29

302-54 846845-
19-10

293-13 8 *Arctis*
20-37
29146

Nov 18/19 *Arcturus*

235
31.4
46.5-
1.0
15.5-
30.3
45.0
14, 10, 59.5-

Nov. 22/23 *Ar*

Arcturus
23.4
37.7
51.2
5.9
20.0
34.0

10, 02 48.0

27
17
57

90



Chronograph Record

June 1861 to July 1863.

1287

1651phae, proj..1287

E.7