

KG  
11365  
116

C. 11.



THOMAS GROOM & CO.  
STATIONERS,  
(82 State Street)  
BOSTON.

KG 11365.116

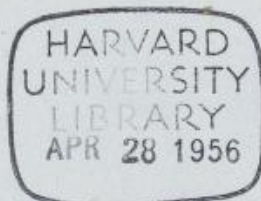








KG-11365.116





1861 June 5<sup>th</sup>

for Catalogue.

El. 12 36 0 first sheet

" 14 57 0 "

El. 15 11 0 second sheet.

" 15 54 0 "

1861. June 7<sup>th</sup>

Cl. 13 24 0.

Spr. Gov. Stopped

EC 14 19 00 (same sheet)

Too hazy. Losing many stars.

EC 15 1 00



1861 June 11<sup>th</sup> $\beta$  Virginis

El. 11 50 0

 $\gamma$  Ursae majoris

El. 11 55 -

El. 13 50 0

El. 16 9 0 Lone

El. ———

El. 18 24 0

1861 June 13. <sup>to</sup>

El 20 21 0

Stars for Radau

El 21 12 0



1861 June 15<sup>th</sup>

El 14 20

$\alpha$  Bootis to  $\rho$  Bootis

S.-

El. 14 35 0.

$\beta$  Ursae minoris

$\psi$  Bootis

$\epsilon$  Bootis

El. 15 45 0

Cloudy

1861 Jan 17.

U. 12 51

for Catalogue - Moon - Star from Lines  $\frac{117}{118}$

U. 14 51

U. 15 41

Serpentia

(64) ?

Urania



1861 June 18.

EC 13 58 0

Moon Cul.

EC 15 17 0

El. 20 43 0 }  
 44 0 }

Stars for Radon M. Cir

El 21 35 0

1.

1861 June 20<sup>th</sup>

El 13450

(Polaris R. Chron)

γ Bootis El

1 Virgins 2/3/4/5/

2 Centauri

Recl. 3157

2 Bootis

1 Bootis

0 Bootis

1 2 Librae

2 2 Librae

1 1 Ursa minoris

4 Bootis

1861 June 20 cont.

E 17 56 0

Wolnica

El. 19 0 0



1861 June 22.

U. 15 20 (63) (64) G. E.

El 17 16 0 - for Catalogue -

New sheet

B.H. 1662 S.P.

El 17 16 0

γ Draconis

γ<sup>1</sup> Sagittarii

70 ophiuchi preceding

μ<sup>1</sup> Sagittarii

ν Sagittarii

ν Arctae minor

51 Cephei (New)

α II.

6 Sagittarii

π Sagittarii

El 19 9 0

1861, June 23

New Sheet

C. C. = 15<sup>h</sup> 24<sup>m</sup>

⊥ Serpents

π "

γ "

β Scorpii

δ Ophiuchi

ε "

ζ " First mine lost

η Hercules

θ "

ι Scorpii

κ Hercules

β. A. C. 5780

ε Ophiuchi

α Hercules

40<sup>3</sup> Ophiuchi

β. A. C. 1662

β Draconis

1861. June 23

New Sheet

E. C. = 18<sup>h</sup> 7<sup>m</sup>

♄ Sagittarii

η Serpentis

B. A. C. 6281 G. First mine lost

2 Lynx

β "

σ Sagittarii

β' Serpentis

ν Sagittarii

ε Aquilae 1<sup>st</sup> mine lost

♄ "

6a Vulpeculae

β Cygni

h Sagittarii

σ Cygni

γ Aquilae

D first mine

B. A. C. 6999 G 4<sup>th</sup> mine lost

B. Capricorni

γ Cygni 1<sup>st</sup> mine



1861 June 24<sup>th</sup>

Zone

El. 17 6 0 Ext. Jhr 57.3

" 19 11 0 " 53.3

El. 4 21 0

$\alpha$  Aurigae

$\beta$  Orionis 4/5/

El. 5 15 0

1861. June 25<sup>th</sup>

$$\begin{array}{r} \text{EC } 14 \quad 7 \quad 0.9 \\ \quad \quad 10 \quad 0 \end{array}$$

Zone

$$\begin{array}{r} \text{EC } 15 \quad 44 \quad 00 \\ \text{Exther} \quad \quad \quad 66.8 \end{array} \left. \vphantom{\begin{array}{r} \text{EC } 15 \quad 44 \quad 00 \\ \text{Exther} \quad \quad \quad 66.8 \end{array}} \right\} \text{ at Bep.}$$

$$\begin{array}{r} \text{EC } 17 \quad 48 \quad 00 \\ \text{Exther} \quad \quad \quad 63.0 \end{array} \left. \vphantom{\begin{array}{r} \text{EC } 17 \quad 48 \quad 00 \\ \text{Exther} \quad \quad \quad 63.0 \end{array}} \right\} \text{ at End}$$

1861 June 29<sup>th</sup>

El. 15 26 0



1861 July 2,

El. 14 44 0

$\alpha^2$  Librae

EC 14 57 0

1861 July 3.

El. 7 34 0

Procyon

El. 7 50 0

El. 14 15 0

1x Librae

2x Librae 2nd?

Comet 1861 II G. G. G. G. G.

El. 15 35 0

El. 17 26 0

Comet 1861 II G. G. G. G. G.

El. 17 42 0

July 4. 1861

EC 15 29 00

Comet II. 1861 J.H.S. obs.

CG 16 54 00

EL 17 30 0

Comet II 1861 J.H.S.



July 5-

EC 15 14 0

Time Stars

EC 15 36 0

EC 16 35 0

Comet Prof Bond obs

EC 16 59 0 16 58 0 probably

Ec. 16 36 0

Comet. J.H.S.

Ec. 19 22 0

1861 July 6.

El. 1542 0

Print 1861 II

El. 1633 0

1861 July 8.

El. 16 49 0  
Orbit 1861 II.  
El. 17 57 0



1861 July 9.

El 12 30 0

Orbit 1861.I

El 16 21 0

1861 July 10,

El. 16 55 0

Count 1861. II.

El. 17 26 0

July 11. 1861

EC 16 5-8 00

Zone

Ex Ther. at Bz 74.3

EC 18 5-9 00

Ex Ther at End 68.0



July 12. 1861

EC 17 30 00

Either at By 64.5

Done

Im after Comet 60.7 Pen failed  
R

July 13. 1861

El. 16 58 0

Comet

El. 17 28 0

July 15<sup>th</sup> 1861  
 El. 12 56 0  
 20<sup>th</sup> Virginis 3.4.5  
 Placidus 2/3/4/5/

El. 16 5 0.

Zone

EC 18 31 00

Exther at By. 61.2

EC 20 22 00

Exther at End 59.1-

El. 20 50 0

Comet.



July 16, 1861.

EC 14 44 00

$\alpha$  Librae

$\beta$  Ues. Min.

Moon TO

$\beta$  Librae

$\gamma$  Librae

$\alpha$  Cor. Bvr.

EC 15 37 00

July 17. 1861

EC 15 29 00

α Cor Bor.

2 Serpentes

α Serpentes

λ Librae

ρ Scorpis

δ Scorpis

Moon I.

~ Scorpis

α Scorpis

ε Ursa Minoris

+ pro. δ Orionis

θ Ophiuchi

EC = 18 23 00

Comet 7.71.5

Occultation

19 12 00

Chro. 236.

19 9 19

9 15

9 20

July 18. 1861

Comet. M.H.

El. 17 49 0

at end 18 0 0

July 29. 1861.

El. 16 29 at end. Train Stars M.H.

El. 16 40 0 at beg.

Comet and Camp Run

El. 17 31 0.



July 20

EC 18 2 00 Ex Ther = 66.0  
 Zone

SnR getting faint pen was taken off - &  
 returned -

The 1<sup>st</sup> second after B.D.B.D.D.D.  
 is 19<sup>h</sup> 47<sup>m</sup> 50<sup>s</sup>

19 49 00 follows B

EC 19 54 00 Ex Ther 63.7

1861 July 24.

El. 18 45 0

Comet 1861 II

El. 19 38 0

July 25. 1861

EC 17 48 00 Ex Ther 60.2

Zone

19 58 01 57.2

Comet

20 20. 0



July 29. 1861.

E.C. ran down. The ~~Dir~~ rel it  
going and the following Comp  
was made

EC	6	22	0
236	6	24	29.2

EC fast about  $42^\circ$

July 30<sup>th</sup> 1861

U. 18 2 0

Comet  
 U. 18 29 0 ~~Th. 56.3~~

Aug 2, 1861

Zone

EC 18 53 00 Ex Ther 71.8

Clouded up

EC 19 54 00 Ex Ther 71.0



Aug. 4. 1861

EC 18 10 0

Ex Ther. 73.9

Zone

EC 20 21 0

Ex Ther 69.4

El. 20 44 0

Comed.

" 21 6 0

1861. Aug 10.

EC 19 16 0 Exther 73.1  
 Zone (Hazy) failure  
 Covered

u 21 4 0 end of line

1861. Aug. 15

EC 17 46 0  
Moon Cul.

El 19 5 0  
Comet

El. 19 54 0



Aug 17. 1861.

EC 18 42 0

Comet

Moon

20 24 0

Aug 20<sup>th</sup>

E. 18 8 0

Aug 21

EC 19 0 0 Comet

" 19 46 0

EC 19 52 0 Comet = Star

20 17 0

August 23<sup>d</sup> 1861.

El. 18 49 0

Camel 1861. II

Stars compared

A short time

El. 20 29 0.

Ther. at End 58.3

August 24<sup>th</sup> 1861

El. 18 17 0.8

Camel 1861. II,

El. 19 15 0

El. 19 55 0

Ther 64.0

Done

21 16 0

61.4

August 27<sup>th</sup> 1861.

El. 16 16 0

Comet

El 20 13 0

Aug. 29 1861

El. 20 12 0

Comet.

August 31.

El 21 0 0.

Star for Comet Aug 10<sup>th</sup>

El 22 8 0

Ex. Th. 55<sup>th</sup>



1861. Sept 4.

Zone

 $\Sigma C = 20 \quad 13 \quad 00 \quad \Sigma \times \text{ther } 59.1$  $\Sigma C = 21 \quad 32 \quad 00 \quad 57.6$ 

Sept 5-

 $\Sigma C = 21 \quad 3 \quad 0 \quad \Sigma \times \text{ther } 57.5$ 

Sept. 7.

El. 19 11 9

El. 19 42 0

Comet.

Sept 8.

El. 20 7 9

Comet

 $\epsilon$  Pegasi

El 21 47 0

Sept. 13. 1861

ΣC 19 26 00

h<sup>2</sup> Sagittarii

Moon

c<sup>2</sup> Sag.

g Sag.

Sept. 23 1861

EC 19 17 0

Comet 1861. II

EC. 20 45 0

EC 20 48 0

EC 21 42 00

Ex Ther 55°.0

Done

23 23 0

5.2.2

Sept 24. 1861

EC 21 31 0  $\Sigma$  Ther.  $53.2^{\circ}$

Oct 1. 1861

EC 22 4 0  $\Sigma$  Ther.  $51.5^{\circ}$

Too hazy

Oct 3.

EC 21 28 0  $\Sigma$  Ther.  $62.0^{\circ}$

Oct 9th

EC 20 30 0 } Comet  
" 21 20 0 }

21 38 0

22 0 0



1861. Oct 12.

 $\Sigma C$  20 35 00

Moon

21 51 00

1861 Oct 14<sup>th</sup> $\Sigma$  22 2 0 $\Sigma C$  22 43 0

Moon

 $\Sigma C$  23 12 0

Oct 23. 1861.

 $\Sigma C = 21$  38 00

Oct 24. 1861

 $\Sigma C = 21$  14 00

Nothing obs.

 $\Sigma C = 0$  9 00

1861 Oct. 24.

El. 12 48 0

Polaris S. S.

El 13 16 0

1861 Oct 25

El 17 52 0  
Cloudy1861 Oct. 27<sup>th</sup>El. 13 0 0  
Polaris S. S.

" 13 17 0

1861 Oct. 28<sup>th</sup>El. 14 48 0  
Polaris S. S.

El 14 53 0

El. 15 14 0  
Polaris S. S.

El. 15 23 0

El. 15 25 0

Oct 28, 1861.

EC = 21 34 00, Ex Ther 39.6  
clouded up.

Oct 29.

EC = 21 28 00 Ex Ther 48.0

Zone  
EC = 23 9 00 Ex Ther 44.2

Oct 29 EC = 23 18 00

Euck's Comet

El. 0 31 0

Oct 31. EC = 22 20 00 Ex Ther 44.0

Zone

0 2 0 44.3

El 0 30 0 }  
Euck's Comet  
El 1 12 0 }



Nov 5/6. 1861

$\alpha$  Leonis

$\Sigma C = 10 \quad 3 \quad 00$

Nov 7

El. 22 0

Comet II. 1861.

22 20

Nov. 11

$\Sigma C$  22 56 00

Stars for Comet

El 23 44 0

1861 Nov. 22

H.T.

famed

22 47 46

Nov 22

 $\Sigma C$  22 53 00 $\alpha$  Pegasi

Nov 26

 $\Sigma C$  23 27 00 $\alpha$  Androm. $\gamma$  Pegasi

0 10 00

} A.H.

Dec 3, 1861

 $\Sigma C = 22$  48 00 Ex Ther 19.7

Zone

 $\Sigma C = 0$  14 00 17.5

Dec 4, 1861.

 $\Sigma C = 0$  9 00 Ex Ther 22.0

0 47 00

Dec 5. 1861 El. 23<sup>h</sup> 48<sup>m</sup> at beg.  
 (Zone)  $\checkmark$   
 (End of Zone)  $\Sigma C$  1 25 00 Ex. This 34.2

1861 Dec. 5

El. 2 2 01



1861 December 7

C.C. = 23<sup>h</sup> 23<sup>m</sup>

Ex. Ther. = 43°

1861 Dec. 10<sup>th</sup>.

El. 17 50 0

El. 18 32 0

2 Lyrae

Twire two even.

El. 19 0 0

El. 22 16 0 minute double

3 Pegasus

3 Pegasus

3 Pegasus

2 Pegasus austrini

Cloudy

El. 23 22 0

γ Cephei

(δ Sculptoris & δ)

γ Ursae maj. S.P.

α Piscium 10h

α Andromedae

tremulous 2<sup>nd</sup> break of 1<sup>st</sup> w.

El. 0 17 00. (0 26 00)

Time Stars

2 5 00.

El. 4 30 0

1 Andromeda

2 Ursae minoris S.P.

2 Andromeda

2 Orionis

2 Orionis

1861 Dec 20 continued

$\beta$  Lasee

$\beta$  Lepori

$\delta$  Orion

Stars in Great Nebula

Probably  $C'''$  (difficult to see)

$\theta'$  Orion

$S'''$  (3 last stars)

$V'''$  1 mag. brighter than

Cast stars.

$\lambda$  Columbae.

$\kappa$  Orion

$\lambda$  Orion

$\nu$  Orion

$\eta$  Geminae

$\delta$  Vega minor

El G 26 0

1861 Dec 21

Tracing of 6 stars in Nebula of

Orion    R.A.    5 19 00  
              "    5 37 06

3 first stars in Southern part of Zone =  $C'''$  & others  
 3 last " " " "

Bad Illumination



Dec 21. 1861.

EC 0 50 00

Polaris 2 Piscium

 $\theta$  Ceti. 2 Arietis $\gamma$  Persei 67 Ceti $\gamma$  Piscium  $\delta^2$  Ceti $\beta$  Arietis Gr. 527 (a nice star)

EC 2 31 00

1861 Dec. 24.

EC 3 21 0

etc 1125 not very well.

 $\delta$  Eridani <sup>last</sup> 3 mins $\eta$  Tauri $\zeta$  Persei $\delta^3$  Eridani etc 1220 $\gamma$  Eridani

etc 1235

 $\delta$  Horologii

Int. failed

EC 4 21 0.

 $\delta$  Tauri $\delta^3$  Eridani /  $\delta^3$

1861 Dec Ey continued  
 u Eridani  
 u Aurigae  
 New Root Ep 540  
 u Orion  
 u Orion out of focus 2

J.H. B. Dec.

1861 Dec 24 Stars in Nebula of Orion

$\Theta^m$  ? set at  $217^\circ 55'$   $2\frac{1}{2}'$  north

\* " "  $2'$  "  $2^{nd}$  &  $5^{th}$  wing

\* "  $317$   $22$   $1\frac{1}{2}'$  South

$4^{th}$  &  $5^{th}$  wings ?

\*  $217$   $27\frac{1}{2}$   $0'$

$217$   $21$

faint \*

1861 Dec. 27<sup>th</sup>

El 4 9 0.

$\gamma$  Draconis S.P.

$\alpha$  Tauri

53 Eridani

$\mu$  Eridani  $\overline{345}$  ( $3 + 0\frac{1}{2}$ )

$\epsilon$  Aurigae

$\epsilon$  Tauri

$\alpha$  Aurigae

$\beta$  Cassiopei  $\overline{1235}$  Clouds.

Stars in nebula.

El. 5-43 0.



1861 Dec 26<sup>th</sup>

El h 20 0

2 Tauri

53 Eridani

54

55

"

Ly rami down

h 42 0

2 Eridani

Eridani 71° 2'

" 72 36

" 72 58

Wongas  
Ink faint

El h 58 0

2 Wta minor 1st break for 2d one

1861 Dec. 28.

Comet (Hart) El = 12 38 down  
" 13 30 up

1 1861 Dec. 30<sup>th</sup>

El 4 47 0

$\epsilon$  Ursa minor

$\alpha$  Aurigae

$\beta$  Orionis

Star in nebula

El 5 43 0

1861 Dec. 30

12<sup>h</sup> no sun down

13 26 up

Dec. 30/31

El 15 7 00

$\alpha$  Cor. Bore.

El

15 59 00

Jan 2. 1862 Low

ΣC 1 24 00 E+Ther 16.9

1862 Jan 3. 0 52 00 E+Ther 12.3

Zone

2 6 0

.. 11.3

1862 Jan 4<sup>th</sup>

7

El. 12 46 0

13 44 0

Comet.

1862 Jan 5<sup>th</sup>

El. 2 47 0

α Ceti

True Stars

El. 3 14 0

α Persei

El. 3 25 0



1862 Jan 7.

El 547 0

Jan 7 EC = 12<sup>h</sup> 1<sup>m</sup>

EC = 141

Jan 7/8 EC 15 23 00

α Cor Bore.

α Serpentes

15 39 00

1862 Jan 10

EC = 12<sup>h</sup> 0<sup>m</sup>

1862 Jan 12

EC = 13<sup>m</sup> 12<sup>m</sup>

1862 Jan. 13

El 45<sup>h</sup> 0 Cloudy: tremulous. - (2) $\alpha$  Aurigae $\beta$  Orionis $\gamma$  Orionis $\beta$  Tauri $\delta$  Orionis $\epsilon$  Orionis $\alpha$  Orionis $\delta$  Aurigae $\gamma$  Geminorum $\nu$  Orionis $\eta$  Geminorum $\delta$  Ursa min s.p. 3 wires Cloudy: $\gamma$  Geminorum

(51 Cephei was too faint)

 $\epsilon$  Geminorum $\alpha$  Canis majoris

very good.

El 648 a.

1862 Jan 14.

$$\begin{array}{r} \text{h} \text{ m} \text{ s} \\ \text{El} \ 0 \ 44 \ 0 \end{array}$$

Polaris

El. 1 59 11

1862 Jan. 16.

$$\begin{array}{r} \text{h} \text{ m} \text{ s} \\ \text{El.} \ 0 \ 56 \ 0 \end{array}$$

Polaris

" 2 30 0

1862 Jan 27<sup>th</sup>

$$\begin{array}{r} \text{h} \text{ m} \text{ s} \\ \text{El.} \ 0 \ 27 \ 0 \end{array}$$

1862. Jan. 27

$$\text{EC} = 2 \ 24 \ 00 \quad \text{Ex Ther} + 22.2$$

1862 Jan. 30

$$\begin{array}{r} \text{h} \text{ m} \text{ s} \\ \text{El} \ 22 \ 47 \ 05 \end{array}$$

Polaris

$$\begin{array}{r} \text{h} \text{ m} \text{ s} \\ \text{EC} \ 1 \ 15 \ 00 \end{array}$$

to Celi

2 Arietes 3 wins (best obs)

$$\begin{array}{r} \text{h} \text{ m} \text{ s} \\ 2 \ 2 \ 00 \end{array}$$



1862 Jan. 31. E.C. 2 40 00

Ex Mar 23, 0

Zone

E.C. —

Comet III

E.C. 6 0 00

51 Cephei Nov.

\* Proc. K. Lania

K. Lania major

\* Lania major

E Lania maj

\* foll. Lania maj

5 Geminorum &amp; preceding no. (twins)

1 Lania maj

25 Lania. Nov.

Procyon  
Pollux

q. Lewis

Two observing book

8 35 0.

Σ C 8 4 2<sup>m</sup> up

Cornel III

11 7 0

1662 ~~Jan.~~ Feb. 2.

Σ C. 19 37 0

Feb. 5 Σ C 3 47 00

δ Eridani  
Pen failed

Σ C. 4 18 0

ε Tau

α Tau

63 Eridani

μ Eridani

ι Anigae

ε Tau

ε Urs. Min.

α Anigae

β Orionis

γ Orionis

B. A. C. 1662

β Leporis

δ Orionis

α Leporis

ε Orionis

α Columbae (tumulous)

κ Orionis

α Orionis

θ Anigae

1 Geminorum

5 58 00

changed sheet

E.C. 6 3 0

γ Geminorum

δ Urs. Min. L B Colum bar

ν Geminorum

γ Geminorum

ε Geminorum

α Can. Maj.

13 κ Can. Maj.

θ Can. Maj.

ε Can. Maj.

γ Can. Maj. fine wire lost, others good

25 Can. H.

1 Geminorum

δ Geminorum

η Can. Maj. fine only obs. (hazy)

α Geminorum (mean of two obs.)

α Can. Min.

β Geminorum

E.C. 7 40 00



1862. Feb 7. Ec 3 45 00

$\gamma$ Eridani	$\kappa$ Orionis	25 Camel H.
$\delta$ Eridani	$\alpha$ Orionis	
$\gamma$ Tauri	$\theta$ Aurigae	$\lambda$ Geminorum
$\epsilon$ Tauri	$\iota$ Geminorum	$\delta$ Geminorum
$\alpha$ Tauri	$\nu$ Orionis	$\eta$ Can. Maj.
53 Eridani	Ec. 6 4 00	$\alpha$ Geminorum
$\epsilon$ Aurigae	changed three	$\alpha$ Can. Min.
$\delta$ Tauri	6 7 00	$\beta$ Geminorum
$\epsilon$ Urs. Min.		156 Camels. Bode
$\alpha$ Aurigae	$\kappa$ Columbae P.C.	7 48 00
$\beta$ Orionis	$\delta$ Urs. Min.	
$\gamma$ Orionis	$\gamma$ Geminorum	
B. H.C. 1662 (faint)	$\epsilon$ Geminorum	
$\beta$ Leporis	$\alpha$ Can. Maj.	
$\delta$ Orionis	13 $\kappa$ Can. Maj.	
$\alpha$ Leporis	$\theta$ Can. Maj.	
$\epsilon$ Orionis	$\epsilon$ Can. Maj.	
$\alpha$ Columbae	5 Geminorum	

1862 Feb. 8 Ec. 1 0 0  
 Potaris 1.2.3.4 (Cloudy at 5<sup>th</sup>)  
 El. 1 15 0

El. 1 55 0

 $\alpha$  Arctis

El. 2 2 0

El. 3 30 0

 $\beta$  Persi $\gamma$  Eridani

1235 faint

G. 2315 SP very faint } Cloudy

 $\delta$  Eridani $\gamma$  Tauri $\delta$  — $\epsilon$  — $\alpha$  —

53 Eridani faint

El. 4 47 0

growing cloudy.



1861 Feb 8. continued

El 5 33 0

 $\alpha$  Orionis $\alpha$  $\delta$  Aurigae

Cloudy again,

 $\nu$  Orionis

1861 Feb. 10

El. 5 25 0

1861 Feb. 18.

El 1 48 0

 $\alpha$  Arietis

2 3 0

El 2 51 0

 $\alpha$  Ceti

" 2 58 0

1862. Feb. 18.

El 5 48 0 Exther 33.5-

Zone

7 58 0

1862 Feb. 20 5 59 0 Exther 24.2

Zone

7 46 0

23.9

1862 Feb. 20 EC 19 37 0

1862 Feb. 21 EC 5 53 00

✓ Orionis

u Geminorum

EC 6 18 0

Feb. 25 EC 6 8 0

Sus Min

γ Can Maj

γ Geminorum

α Geminor

α Can. Maj

α Can Min

θ Can Maj

β Geminor

ε Can Maj

Stars very unsteady tonight

δ Geminor

A.H.

EC 7 41 0

EC 7 57 0

1862 Mar 1. EC 6 " 28 " 00 Exther 26.0

Zone

8 " 44 " 00 Exther 23.0



1862 Mch 1 cont.

El 9 27 0

Mar. 7 EC 7 50 0  
                   8 6 Cancer  
                           12 0

Mar 11 EC 0 53 0  
                   Polaris  
                   1 21 0

Mar. 11 EC 6 40 0

$\alpha$ Can. Maj.	$\beta$ Geminus.
13 $\alpha$ Can. Maj.	156 Can. B.
$\theta$ Can. Maj.	6 Cancer
$\varepsilon$ Can. Maj.	$\sigma$ Urs. Maj.
$\delta$ Geminus.	
25 Can. H.	
$\delta$ Geminus.	
$\eta$ Can. Maj.	
$\alpha$ Geminus.	

 $\alpha$  Can. Min.

March 12. El. 8 20 0  
                   4 m 5

74 Draconis S. P.  
 $\varepsilon$  Hydra Zwies  
 11 Cancer  
 1 Argus



1462 Nov 19.  
El 6 22 0

El 9 46 0

1462 Nov. 24

El. 0 54 0

Polaris 2.3.4

quite undulating

El 1 14 0

El 4 32 0

$\beta$  Orionis

$\beta$  Tauri

$\delta$  Orionis

$\alpha$  Leporis

$\epsilon$  Orionis

$\alpha$  Columbae

~~$\alpha$  Orionis~~

~~$\delta$  Tauri~~

El 6 45 0

$\epsilon$  Canis majoris

$\gamma$  Geminorum

$\gamma$  Canis majoris

25 Camelop. Hec 3)

$\delta$  Geminorum

$\delta$

$\alpha$  Geminorum m 2/4/. Definition very good

seq 1/3/5.

$\alpha$  Canis minoris

$\beta$  Geminorum

El 2 36 0 Cloudy

1862 March 24 cont.

El 21 4 0

$\gamma$  Cygni

El. 21 16 0

1862 March 26

El 1 2 0

Polaris 2.3.4.5

El 1 13 0

El 5 14 0

$\beta$  Tauri

$\delta$  Orionis

$\kappa$  Leonis

$\epsilon$  Orionis

$\alpha$

$\delta$  Aurigae

El 6 2 0

$\eta$  Geminorum

$\delta$  Ursae min S.P.

$\nu$  Geminorum.

$\delta$  Cephei Herber

$\epsilon$  Canis majoris

El 10 27 0

see Mr. Hall's paper.

$\kappa$  Leonis

$\phi$  Ursa majoris

$\delta$  Leonis

$\delta$  Crateris

$\gamma$  —

Saturn







1862 Mch 26 continued

El 22 43 0

$\alpha$  Ursa major SP

El 22 59 0

1862 Mar. 27. E.C. 8 " 1 " 00

A. Ursa. Maj. Clouded up.

$\gamma$  Cancri

$\delta$  Cancri

mag.

7.5

Anonyma

8

Anonyma

7.5

Anonyma

4

$\alpha$  Hydrae

$\theta$  Ursa. Maj.

$\circ$  Leonis

$\epsilon$  Leonis

$\mu$  Leonis

$\beta$  Camel. H.

$\alpha$  Hydrae

$\rho$  Leonis

E.C. 10, 30, 0

1862 Mch. 28 El. 0 44 0

Polaris 1/ reject last break

$\frac{3}{4}$   
 $\frac{4}{5}$

El. 1 23 0

El 4 1 0  
3 0  
8 0

$\alpha$  Tauri

El. 4 47 0

$\alpha$  Aurigae

$\rho$  Orionis

1862 Oct 28. El. 5 16 0

2 Tauri  
2 Leporis  
2 Orionis  
2 Orionis  
1 Antares

El. 5 51 0

New sheet

El. 5 55 0

7 Gemini  
2 Ursa min. S. P.  
7 Gemini  
54 Cephei Nov. 1/2/3/4.  
El. 6 40 0

El. 7 27 0

Procyon  
Pollux

15th Canlop. Bode.

(1) Ursa minoris. 1<sup>st</sup> wire - 3 laps. The <sup>baking</sup> ~~sheet~~ made a break abt 10<sup>5</sup> after.  
2<sup>nd</sup> " 4 —  
3<sup>rd</sup> " 5 or 6.  
4<sup>th</sup> " 3.  
5<sup>th</sup> " 4.

13 Cancri

The battery having got feeble, I put in some hot water,  
2nd failed

El. 8 40 0

2 Ursa maj 2/3/4/5/

13 Cancri

1 Argus

El. 9 4 0  
new sheet

El. 9 17 0

12 Hydrae

Oct. 28 22.



1862. Mar. 29 EC 8 17 00

A. M. Maj.

New Sheet EC. 10 36 00

γ Cancri  
 { 74 Draconis  
 Anon. 3 last wires  
 Anon.  
 Anon.  
 Anon.  
 6<sup>th</sup> Mrs Maj 1st wire lost  
 κ Cancri  
 λ Argus  
 θ Hydrae  
 α Hydrae  
 θ Mrs Maj.  
 o Leonis  
 ε Leonis  
 υ Mrs Maj.  
 u Leonis 1st wire lost  
 m Leonis  
 α Leonis  
 λ Hydrae  
 30 Can. H.  
 η Hydrae  
 ρ Leonis

EC. 10 30 00

β Leonis  
 34 Cephei H.  
 β Mrs Maj.  
 α Mrs Maj.  
 κ Leonis  
 ψ Mrs Maj.  
 δ Leonis  
 δ Crateris (wire broke)  
 γ Crateris  
 τ Leonis  
 202 Cam. B.  
 39 Cephei H.  
 υ Leonis  
 x Mrs Maj.  
 β Leonis  
 β Virginis  
 γ Mrs Maj.  
 Cr. 4193  
 γ Corvi  
 η Virginis

E.C. 12 14 00

Apr. 4 EC 7 56 00

λ Mrs Min. 3 last wires  
 β Cancri  
 o Mrs Maj.  
 δ Mrs Maj.  
 γ Cancri  
 74 Draconis  
 ε Hydrae  
 2 Mrs Maj.  
 6<sup>th</sup> Mrs Maj.  
 κ Cancri  
 λ Argus  
 θ Hydrae  
 83 Cancri  
 α Hydrae  
 θ Mrs Maj.  
 o Leonis  
 ε Leonis

υ Mrs Maj.  
 u Leonis  
 9 46 00 New Sheet  
 9 51 00  
 π Leonis  
 α Leonis  
 λ Hydrae  
 λ Mrs Maj.  
 30 Camel H.  
 u Hydrae  
 ρ Leonis  
 34 Cephei H.  
 β Mrs Maj.  
 α Mrs Maj.  
 x Leonis  
 ψ Mrs Maj.  
 δ Leonis

EC 11 8 00



16th Apr 7

21 1 1 0

Planet 1235 very tremulous and badly visible.  
 Last 4<sup>th</sup> were while endeavoring to substitute a lower power,  
 which was not an improvement.

El 1 14 0

El. 8 5 0

• *Ursae majoris*  
 A

• *Cancri*

74 *Draconis* S.P.

• *Hydrae*

• *Ursae majoris*

• *Ursae*

• *Cancri*

(<sup>Argut</sup> ~~Hydrae~~ too faint to see)

A *Hydrae*

83 *Cancri*

• *Cephei* S.P.

• *Hydrae*

Br. 2832 S.P.

• *Leonis*

• *Leonis*

• *Ursae majoris*

• *Leonis*

• *Hydrae*

• *Cephei* S.P.

• *Ursae majoris*

• *Leonis* pr. 1.3.5

fol. 2.4.

30 *Camelopard. Revelii* false break before 1<sup>st</sup> wire.

El 10 21 0

New Sheet.

El 10 38 0 ph.

• *Leonis* w. lost.

34 *Cephei Revelii*

• *Ursae majoris*

• *Ursae majoris*

Continued on next page

1861 Apr. 7 continued

X Leonis

8 Crateris

γ Crateris

τ Leonis

202 Camelp; Rode 2.3.4

39 Cephei Newell S.P.

El 11 41 a same sheet

β Leonis 2 last wires

β Virginis

γ Urae majoris

gr. 4193 S. P.

γ Corvi 1st last

Being very good in this region

Alt 4165 1.2.3.4.5

4150 2.4.

β Corvi

Spring Governor stopped. Cause unknown.

El 12 29 a

2 Castorpeje S. P.

γ Virginis m. 2.4

fol. 1.3.5

In 10 root.

El 12 41 a

γ Urae majoris

43 Cephei New. S. P.

Polaris S. P.

El. 13 14 a



1862, Apr. 7. E.C. 16 0 0

New Planet by H.P.T.

16 52 0

1862 Apr. 9

El 6 27 0

Living

Battery acting badly, (25 Camels. H. fairly seen)

7 Camels maj: false break aff. 2 wire

Frogman

El 7 33 0

Wood work on sheet

El 7 25 0

Pollut

April 12, 1862.

E.C. 9 50 00

 $\alpha$  Leonis $\lambda$  Hydrae $\lambda$  Urs Maj.

30 Cam. H.

 $\mu$  Hydrae $\beta$  Leonis $\epsilon$  Leonis

34 Cephei H.

 $\beta$  Urs Maj. $\alpha$  Urs Maj. $\chi$  Leonis $\psi$  Urs Maj. $\delta$  Leonis $\delta$  Clavier $\gamma$  Crateris $\epsilon$  Leonis $\beta$  Leonis $\gamma$  Urs Maj.

Gr. 4193

E.C. 12 4 0

E.C. 11, 28.0 Apr. 12, 1862

39 Cephei



Apr. 16.

E.C. 9 58 0

$\alpha$  Leonis  
 $\lambda$  Hydrae  
 $\lambda$  Urs Maj  
 30 Cam. H.  
 $\mu$  Hydrae  
 $\rho$  Leonis  
 $\epsilon$  Leonis  
 34 Cephei H.  
 $\beta$  Urs Maj  
 $\alpha$  Urs Maj  
 $\chi$  Leonis  
 $\psi$  Urs Maj  
 (  $\delta$  Leonis )  
 $\delta$  Crateris  
 $\gamma$  Crateris  
 $\pi$  Leonis  
 39 Cephei H.  
 $\chi$  Urs Maj  
 $\beta$  Leonis  
 $\delta$  Virginis  
 $\gamma$  Urs Maj

EC 11 49 0

New Sheet EC. 11 55 0

B.A.C. 4150

Spr. Gov. Stopper in

12 21 0

 $\delta$  Corvi $\eta$  Corvi $\gamma$  Virginis $\epsilon$  Urs Maj

12 Canum Venal.

 $\epsilon$  Virginis $\alpha$  Urs Min (mid w. 1 too soon) $\alpha$  Virginis

B.A.C. 4498 (first wire lost)

 $\delta$  Virginis

EC. 13 31 0

Apr. 18

EC. 9 57 0

$\alpha$  Leonis  
 $\lambda$  Hydrae  
 $\lambda$  Urs Maj  
 30 Cam. H.  
 $\mu$  Hydrae  
 $\rho$  Leonis  
 $\epsilon$  Leonis

third wire double  
 fourth lost, clouds } 34 Cephei H. s.p.  
 $\beta$  Urs Maj  
 $\alpha$  Urs Maj  
 $\chi$  Leonis

clouded up.

EC. 11 7 0

1862 Apr. 19. M. East.

El. 9 9 0

1 Draconis Hec.

2 Hydrae

Pr 2832 S.P.

El 9 30 0

0 Leonis

~~10 10 1~~~~10 10 1~~ (where it for perhaps no star)

9 49 58.7 16 13.9 (4 wires following are nonsense)

9 45 0.9 16 14.5 R rather faint

9 46 0.7 16 8.3 B

9 47 1.6 16 14.1 K

26 Leonis

Before the next star was observed, the micrometer vertex  
 was moved. This again moved seems ~~partially~~ <sup>fibre</sup> of unknown  
 origin, and ~~these~~ wires 4 and 5, in the order of wires above  
 pole. The intervals of course are to be recomputed from  
 this point, and the collimation also. The mid-wire and  
 wires 1 and 2 above pole were not altered, so far as I  
 could see.

P.H.S.

II Leonis [reject]

The damaging fibre was dislodged from its connexion  
 with the fixed wires by the aid of the horizontal  
 micrometer wire

$$\gamma \text{ Leonis } \mu = \frac{1.35}{.24}$$

30 famel. 14. 2.3.4 false pr. after 2.

cloudy in the south.



1862 Apr. 19 continued

Leonis  
B. Wras majoris S. G. stopped nixia Kuehn wasen fur  
El 10 56 0

4 Wras majoris Cloudy at intervals.  
Leonis  
Clouded.

El 11 45 0

1862 Apr 20.

At End El 14 32 0.

Apr. 23 El. 10 32 0 Ex. thes. 37.0

ly. window - zone for Planet - Starj

El " " 0 (see obs book. Transit)

ly. note down again

1862 Apr. 24<sup>th</sup>

El 9 53 0 [middle of street]

zone for Planet

Leonis  
Ita on curves. for Planet 2 } W.S.

El 11 25 11



1862 Apr. 24.

New Sheet. El 11 28 0

Stars for Zone. Planet 73

$\gamma$  Leonis 2w.  
 $\gamma$  Virginis

El. 12 0 0

10 Virginis 7145

$\gamma$  Virginis  
 12 Can. Ven.  
 Polaris  
 spica  
 6 Virginis

Equatorial

Planet (73)  
 Comparison - stars for same  
 7145

E.C. 13. 31. 00

El 14 1 0 0

1862 Apr. 25<sup>th</sup>

El 9 6 0

A Hydrae 3 wires

1 Draconis Hencke:  $\alpha$  decidedly red

Br 2832 S.P.

$\alpha$  Leonis  
 $\epsilon$  Leonis

R 2979

The following 2<sup>nd</sup> same decl. [M 2] } for Calypso.  
 [with decl.]

$\pi$  Leonis  
 $\alpha$  Leonis 3 wires

1 Hydrae

1 Ursae mai. 4 wires

30 Canis M.

El 10 19 0 [same sheet]

[other side]

1862 Apr 25<sup>th</sup> continued

u Hydrae 2nd failed

El 10 40 0

Circuit broken in dome  
wik failed again

El 10 49 0

Burys major 4 wire

X Leonis

2p Leonis [at decl]

2 Leonis

2 Crateris

Star X for (23)

39 Cephei Mer. mid wire

Star B for (73)

— Y " "

— J " "

2 Virginis Dec. - Signal

El 11 45 0

New Sheet

El 11 54 0

Y Corvi

4150 12th

2 Corvi

Y —

Y Virginis

43 Cephei Hurd's

2 Virginis

Polaris S.P. 1.2. 5.

2 Virginis

2007 Greenbridge

El. 13 44 0

El 14 55 0

Polaris: reject, 1st break of 4<sup>th</sup> wire

El. 1 14 0



1862. Apr. 26. E.C. 10 31 0

L Leonis  
 34 Cephei H s. p.  
 $\beta$  Urs. Maj.  
 $\alpha$  Urs. Maj.  
 X Leonis  
 $\psi$  Urs. Maj.  
 $\delta$  Leonis  
 $\delta$  Crataeis  
 $\gamma$  Crataeis  
 39 Cephei s. p.  
 X Urs. Maj.  
 $\beta$  Virginis  
 $\gamma$  Urs. Maj.  
 $\pi$  Virginis

$\eta$  Virginis  
 157 Cor. Bore  
 $\delta$  Corvi  
 $\eta$  Corvi  
 $\gamma$  Virginis  
 12 37 0  
 New Sheet  
 12 40 0  
 $\epsilon$  Urs. Maj.  
 12 Cor. Bore. 3 last wires only  
 $\epsilon$  Virginis  
 Polaris  
 $\alpha$  Virginis  
 E.C. 13 21 0

Apr. 29. E.C. 11 15 00

Gr 4193 s. p. middle wire  
 [11° 53' 55" G]

10 Virginis  
 $\eta$  —  
 6 Ursae minoris 3, 4, 5  
 $\gamma$  Comae 2 wires  
 $\delta$  Corvi  
 5th proc.  $\delta$  Corvi 50.3 last wire  
 $\eta$  Corvi  
 $\gamma$  Virginis med: et des.  
 43 Cephei Havelii  
 Polaris T. P.  
 $\alpha$  Virginis  
 2007 Groombr.  
 $\gamma$  Virginis

E.C. 13 50 0.



1862. Apr. 30. E.C. 10 34 0

Equal. and Transit obs.

New Sheet E.C. 12 41 0

Transit obs.

E.C. 13 45 0

1862 May 2.

El. ———

Polaris 1. several breaks

2. 1 long break. 1 short.

Clouds

U. ~~2 12 9~~  
1 12 9

1862 May 6. El. 13 17 0

[Observed with Cassin]

1862 May 7. El. 10 41 0

1 Leonis

34 Cephei Hec.

 $\beta$  Ursae maj. $\alpha$  ———

X Leonis

 $\delta$  Leonis $\delta$  Crateris $\gamma$  ———

202 Cassell. B.

39 Cephei H. 2p

X Ursae maj.

 $\beta$  Leonis $\beta$  Virginis $\gamma$  Ursae maj. $\pi$  Virginis

E Corvi

 $\delta$  Ursae maj. B.

El 12 20 0

 $\delta$  Corvi $\eta$  ——— $\rho$  ———

ink faded

1862 May 7 continued  
 El. 12 36 0

43 Cephei Hw. sp. h<sup>th</sup> v. lost. Cloudy.  
 Polaris sp.  
 El. 13 14 0

El. 13 28 0

$\eta$  Uvae majoris lost two wires  
 $\eta$  Bootis, lost wire  
 $\epsilon$  Virginis  
 $\delta$  Centauri  
 El. 14 6 0

~~1862 May 9~~

1862 May 11

El 1 10  
 3 0

Polaris State of Atmosphere -  $N^{\circ} 3$  Very Bad

El 1 16 0

1862 May 13

El 1 3 "  
 Polaris 2. - 3 beats - 4 false State of Atmosphere  
 3.  
 4.  
 5.  
 El 1 16 0  $N^{\circ} 2$   
 (not very good)

May 14 El 7 23 0

$\alpha^2$  Geminor

$\alpha$  Can Min

$\beta$  Geminor



1862. May 14.  $\Sigma C. 12 15 0$ 15  $\gamma$  Cor. Per. $\delta$  Corvi $\gamma$  Corvi $\gamma$  Virginis12 Can. Venat<sup>z</sup>  
and comp. } $\epsilon$  Virginis

Polaris

 $\alpha$  Virginis

B. A. C. 44 98

 $\delta$  Virginis $\mu$  us Maj $\gamma$  Bootis $\tau$  Virginis $\theta$  Centauri $\alpha$  Draconis

Anonyma

 $\alpha$  Bootis $\lambda$  Virginis

14 16 0

New Star

14 22 0

 $\rho$  Bootis

784 B. A. C. fine wire 0.3 to 2000

 $\mu$  Virginis $\alpha$  1 Librae 1 fine wire only $\alpha$  2 Librae $\beta$  us Min

20 Librae

 $\psi$  Bootis $\epsilon$  Bootis $\beta$  Librae $\mu$  Bootis

5140 B. A. C.

 $\alpha$  Cor. Per. $\epsilon$  Lepentis $\alpha$  Lepentis $\lambda$  Lepentis $\mu$  Lepentis $\epsilon$  Lepentis

At End of Observation

 $\Sigma C. 15 48 0$ 

1862 May 14

El. 16 30

M. Polaris 23 45 - state of Atmosphere No 2  
not very good.

El. 1 15 0

1862 May 15

~~El. 8 45 0~~

El. 11 45 0

 $\delta$  Crateris $\gamma$  Crateris

202 Canulop. B

39 (Hv) Cephei v. p.

 $\lambda$  Urae majoris $\rho$  Leonis $\beta$  Virginis $\gamma$  Urae majoris



1862 May 15 continued

New Sheet  
no beginning

309 Cephei B. sep

El 11 56 9

6 Urae min. B 2/3/4/5/

19y Comae Berenices

5 Corvi } Battery meat.

7

El 12 34 0 Clouded up.

May 15 contin

El. 0 55 0

Polaris

State of Atmos. N<sup>o</sup> 2.

El. 1 14 0

1862 May 17<sup>th</sup> Ill. West.

El 4 Corvi

El 12 7 0

5 Procyonis B

int. failed

El 12 22 0

2 Corvi

7

B —

2 Capricornae ST

γ Virginis pr 1 3 5 }  
seq 2 4 }

ε Urae majoris

43 Cephei Nov. 14.5

El. 12 53 0

ε Virginis

7

{ Polaris 11 3/4/1 signal to each.

43/4 Comae Ber

1 Centauri

862 May 17  
cont.EC 13 16 0 }  
17 0 }

2 Virginis

214 Camelopard. B.

5 Virginis

7 Urae majoris CBA

7 Bootis

4 Virginis

4 Centauri

8 Draconis

20 Urae minoris B.

1 Virginis

EC 14 13 0 End of Sheet

New Sheet

EC 14 16 a

2 Cassiopeiae sp. [This star is in the Coma constellation Temp.]

4 Bootis

Gr 527 sp

12 Librae 3 wires EBC

24 Librae " CBA

13 Urae minoris " CBA Circuit broken by wire

Dipping

EC 15 30 [not the end of the sheet]

862 May 23. EC. 9 18 0

EC 9 58 0

2 Leonis

EC. 10 7 0

EC 11 56 0

2 Corvi

7 Corvi

6 Urae minor B. 1. without illumination

2.

3.

4.

5.

15 4 Comae Berenices

5 Corvi

7 —

7 —



12 May  
3.60

43 Cephei Hw. s. b. interlarded with Mr. Hall's signal  
& Virginis in wires

changed Pen

El 13 1 0

Polaris 1

Seeing very good.

2

3

4

5

after Mr. Hall's signal

mixed up with Mr. Hall's signal?

& Virginis 1 wire lost from key slipping

214 Camelopard. Bode.

7 Virginis

7 Librae unicolor

7 Bootis

7 Virginis

El 13 7 0

New Sheet

El. 14 1 0

20 Ursa minoris B. } not very good: the meteorological lantern  
was shining in my eye during part of  
the observation, and the ill. lamp flickered.

& Bootis 4<sup>th</sup> wire wrong. The micrometer wire was observed  
by mistake.

& Virginis

& Bootis

Sp. 522 sp. Inserted up to this in Index.

& Virginis

& Bootis

12 Librae 5<sup>th</sup> wire lost }

22 — 1<sup>st</sup> wire lost }

13 Librae minoris

7 Scorp.

7 Bootis

El 15 1 0 filled row.

El. 15 3 0

13 Librae

323 Cephei B

57 Ursa mi B

1 Scorp

2 —

3 —

4 —

5 —

6 —

7 —

8 —



1861 May 23 continued

El. 15 49 0 after filling pen

2 Scorpii

Circuit broken - wire came loose (No 784 lost)

12 wires in wires B. A. P. (200 lost? M.)

2 Ophiurtes

— 2 Ophiurtes

2 Scorpii

El. 16 25 0

May. 28. E.C. 13 43 0.

2 Bootis

2 Virginis

0 Centauri

2 Draconis

2 Bootis

1 Virginis

0 Bootis

0 Bootis

B. A. C. 784

2 Virginis

2 Bootis (lost by Pen)

June 5 E.C. 13 27 0

2 Bootis

2 Virginis

1862. June 11 E.C. 14 7 0

$\alpha$  Bootis

$\epsilon$  Bootis

$\rho$  Bootis

$\beta$  Librae

B.A.C. 784 s.p.

1061 B.A.C. s.p.  
(trouble with wires)

$\mu$  Virginis

$\epsilon$  Serpentis

$\epsilon$  Bootis

$\alpha$  Serpentis

12 Librae 3 fine wires only

$\lambda$  Serpentis

22 Librae

$\mu$  Serpentis

$\delta$  Urs. Min.

$\epsilon$  Serpentis

20 Librae

$\delta$  Urs. Min.

$\psi$  Bootis

1235 B.A.C.

E.C. 15 57 0

1461 June 16<sup>th</sup> El 15 3 0

Polaris 2, 3, 4, 5.

$\alpha$  Virginis

$\delta$  Virginis

$\eta$  Ursae majoris

$\eta$  Bootis

Wires illuminated.

$\tau$  Virginis

$\theta$  Cephei

$\alpha$  Draconis

20 Ursa minoris Boes.

$\alpha$  Bootis

$\alpha$  Virginis

$\delta$  Bootis 3/4/5/

$\rho$  Bootis 2/3/4/5

Sp 527 sp.

$\mu$  Virginis

$\epsilon$  Bootis

El 15 4 0



1862 Jan 16<sup>th</sup> New Sheet E 15<sup>h</sup> 70<sup>m</sup> 5<sup>s</sup>

3 Librae

57 Virg. minoris B. 2/3/4/5

+ Coronae borealis

1 Serpenti

2 \_\_\_\_\_

1 \_\_\_\_\_

1 \_\_\_\_\_

1 \_\_\_\_\_

3 Scorpii

B \_\_\_\_\_

at Ham. Coll. [1861]

Star 340<sup>h</sup> 9' [Cor + 10'] prob. a for Aglaja

c' Scorpii 340 13 " " " "

3 Opticis

Star a [340 26 + 10']

for Aglaja

2 Scorpii/216 or 0 fides

Jan 17. E.C. 13 13 0

2 Virginis

5 Virginis

7 Virg. Maj.

7 Bootis

6 Virginis

8 Centauri

2 Draconis

57 Librae

2 Cor. Bore.

2 Cor. Bore.

2 Serpenti

1 Serpenti

13 41 0

New Sheet

Anonymous

2 Bootis

1 Virginis

1 Cassiopea s. p.

8 Bootis

9 Bootis

B. A. C. 784 s. p.

11 Virginis

8 Bootis

12 Librae 3 fides wires only

22 Librae

20 Librae 2 fides wires

4 Bootis

1061 B. A. C.



1862. July 3. E.C. 15 26 0.

 $\alpha$  Cor. Bor. $\alpha$  Scorpii $\epsilon$  Cor. Bor. $\delta$  Herculis $\alpha$  Serpentis

E.C. 16 38 00

 $\lambda$  Serpentis $\epsilon$  Serpentis $\delta$  Urs. min.

Spr. Gov. came near clopping

several times tonight.

a little boy }  
 and 2, 3, 4. very }  
 faint. }  
 1. }  
 2. last wire lost } Done  
 3. } Stars.  
 4. last wire lost }

1862 July 18<sup>th</sup>

E.C. 12 44 0

Polaris 1234 (5<sup>th</sup> lost by fault of circuit) $\alpha$  Urs. min.

E.C. 13 20 0

E.C. 15 23 0

 $\beta$  Librae $\alpha$  Coronae $\alpha$  Serpentis $\lambda$  — $\mu$  — $\epsilon$  — $\beta$  Scorpii pro $\delta$  Draconisfor Argia  $\alpha$  Scorpii duplici pro. $\delta$  Ophiuchi $\alpha$  Scorpiifor Argia  $\epsilon$  Ophiuchi $\gamma$  Herculis $\alpha$  Scorpii $\beta$  Herculis $\epsilon$  Scorpii $\delta$  Ophiuchi

E.C. 16 32 0

New Sheet

E.C. 16 36 0

 $\delta$  Herculis $\eta$  — $\epsilon$  Scorpii

1862 July 18 continued

51 Scorpii

52 ~~Scorpii~~ *Ophiuchi*53 *Herens* 1 154 *Ursae minoris*

Start for revision of Harvard Zones

		1861.0 $\delta$	
1		17 29 18	+ 120.2
2		30 44	1 19.5
3	directly after sig. of G.P.P.	36 28	1 8.2
4	with sig. before none after G.P.P. starting	39 21	1 6.2
5		44 57	1 8.2
6		45 3	1 8.9
7		45 53	1 14.9
8	faint	52 24	1 16.4
9	<del>faint</del> 1 <sup>st</sup> w. lost. Mg. ca. 92	56 11	1 8.0
10		57 29	1 14.0
11	<i>Ophiuchi</i> pr. 1 <sup>st</sup> w. lost.	18 4 26	1 9.5
12	[blotted]	14 44	1 3.2
13	[2.6.5] m. this bar.	20 9	1 2.3
14		26 57	1 11.2
51	<i>Cephei</i> <i>Novellii</i>	46 57	1 15.0
15		47 47	1 1.5
16	brighter than I expected. say 8 <sup>m</sup> 8	57 36	1 6.2
17	* f. 7.5 3.1 N.	19 0 3	1 13.3
18	rather faint (9 <sup>m</sup> 2)	1 10	1 9.1
19		6 21	1 20.7
20	very faint. 1 <sup>st</sup> w. wrong. 3.4.5 right	8 4	1 10.3
21			

E 1913 0

New Sheet

A. 1917 0

h *Sagittarius*

22

23

y *Aquilae*L *Aquilae*B *Aquilae*

24 rather bright (8.2)

25 3.4.5 9.2

19 30 50 + 1 16.5

35 25 1 16.0

19 51 50 + 1 9.3

54 22 1 10.6



1862 July 18 continued

Zone star 26

 $\alpha$  Capricorni

27 x

 $\beta$  Capricorni

28

 $\alpha$  1861.9 $\delta$  1861.0

20 1 58

+1 14.8

14 34

1 14.0

24 34

1 16.2

El. 28 29 0

1862 July 22,

El. 15 22 0

 $\alpha$  Coronae

1 Serpentis

 $\alpha$  ———

1 ———

 $\mu$  ——— $\epsilon$  ——— $\gamma$  750 sp.62 *Myae minoris* Bode $\delta$  Optimistii $\epsilon$  ——— $\gamma$  Herculis $\delta$  Scorpii

—————

 $\alpha$  Herculis

60 Optimistii

64 Canis m. Bode sp.

 $\alpha$  OphiuchiConst. 1875 last 2 years. not very good CR  $201^{\circ} 28.6$   
+ 9.5

El 12 39 0

new sheet

El 18 23 0

Comp. star for Const. Equat.

El 18 49 0



1862 July 26.

El. 17 20 0

$\alpha$  optimus Juvens (Corvus in  $\beta$  Draconis)

$\beta$  Horulis  
 $\gamma$  Draconis 2nd

$\delta$  Sagittarii 1st

$\epsilon$  Notae minores

$\zeta$  Cephei Hordii S.P.

$\eta$  Lyrae (et Comae)

$\theta$  Sagittarii

$\iota$  Serpentis proco.

$\kappa$  reg.

$\lambda$  Aquilae

$\mu$  Sagittarii

$\nu$  Aquilae

25 Canul. H. sp. false break before H. sp.

4 W. sp. B. sp. 17.

W. Aquilae

W. sp. and B. sp. 4.

$\rho$  Aquilae

$\sigma$  Supercilae

$\tau$  Lyrae repeat edw. 8th lost by fault of circuit

$\upsilon$  Sagittarii

$\phi$  Lyrae

$\chi$  Aquilae

$\psi$  —

$\omega$  —

El 19 50 0

1862 July 28.

El. 12 55 0

Polaris sp. Hazy

El. 13 29 0

El 14 7 0

2 Proctis

El 14 13 0

1862 Aug 1. 4.28

El 15 50 0

51 0

✓  $\beta$  Scorpii pr. 11/23/4, 5th lost 4th doubtful. Clouds.

2 Ophiurini

4 Hercules

 $\beta$  Hercules

1 Scorpii

3 Ophiurini

✓ 5 Hercules

7 Hercules

4th last cloudy.

Chas 16 41 0

" " 5

" " 10

" " 15

" " 20

✓ 1 Ophiurini

2 Hercules

Clouded up.

Pen ran out before 17 17 0

1862 Aug 2.

El 17 38 0

 $\mu$  Hercules

El 17 56 0



1862 Aug 4.

El 16 54 0

2 Wires min Wire 4.5

 $\alpha$  Herculis  
11

Ophiuchus

Ophiuchus

by Camel R. Tomwires seen as they badly

Change sheet (at end El. 17 24 0

1862 Aug 6.

El. 16 7 0

x Bootis

Chow 236

14 " 0

5

10

15

20

The last two are right: The rest wrong.

El 14 36 0

x Bootis

[It was thought that the companion was visible by glimpses, and that it was not confused with the brighter following - which was observed as usual.

p. H. H. H. H. H.

El. 14 53 0

El 16 37 0

x Procyon

4/5/

x — 11/2/5/4/ ? El. was down

El 16 47 0

x Ophiuchus [x procyon &amp; H. H. H. H. H.]

x Herculis [x procyon &amp; H. H. H. H. H.] Lamp too faint

x W. H. H. H. H.



1862 Aug 6<sup>th</sup> continued

E Uvae ursinae

2 *Heurichii*11 *Horvathi*40 *Ophiuchus*42 *Ophiuchus*64 *Camel. R. sp.*3 *Draconis*Q *Ophiuchus*14 *Sagittarii*

S

4 *Scorpius*8 *Uvae ursinae* L.P. 2/3/4/5/51 *Cepheus* 1/2/4/5/

El 18 38 0

El 18 47 0

8 *Scorpius* pro

seq

2 *Aquila*0 *Sagittarii*5 *Aquila*25 *Camel. Hor. L.P.*10 *Aquila*3 *Sagittarii*(2 *Sagittarii*)

El 19 24 0

1862 Aug. 7<sup>th</sup>

El. 19 28 0.

15h Camel. 13 sp.

*B. Aquilar*

Count

During Equatorial Obs. Spring Gov. ran down

Wound up & began again at  $17^h 20^m 17^s$  of E.C.

El 21 0 0

1862 Aug. 8<sup>th</sup>

Polaris 3.4 in. [Cloudy at times]

El 13 19 0

1862 Aug. 11<sup>th</sup>

El. 16 49 0?

*E. Herulis*

El 16 59 0

*E. Uvae umoris*

*a. Herulis*

*π Herulis*

40 *Optinotii*

42 *Optinotii*

[4 wire test (and perhaps others by touching connection of tel. wire)]

64 *Camelop. Bode sp.*

*B. Brownii*

*a. Optinotii*

El. 17 44 0

New sheet

El 17 49 0

*E. Uvae umoris*



1862 Aug 11<sup>th</sup> continued

§ 4 Cephus Heroldii S.P.

B. Lygae

♂ Sagittarii

♂ Serpentina pr.

♂ Aquilae seq.

♂ Sagittarii

♂ Aquilae

25 Camelop B. sp.

4 not in B. sp. 1/2/3/4/5/ examine 3<sup>rd</sup> w.

B. Lygae

Comes p. Lygae

♂ Sagittarii

+ prec. B. Lygae

B. Lygae

El 19 35 0

Filled Pan

El. 19 37 0

♂ Aquilae

156 Camelop B. sp.

B. Aquilae

Comet s.p. rare to observe

Lygae min. B. 3/4/

♂ Capricorni } reject. Lamp went out.

♂ Capricorni } Probably too late.

El 20 13 0

New Sheet

El 20 19 0

♂ Capricorni false break after wire II.

74 Draconis n. 3. 4. 5

1 Lygae

71 Cephei

32 Vulpecula

The following 32 V. 2' n.

61 Cygni pr.

— fol. 3/4/5

} The wires of the circuit touched.

1 Draconis H

El 21 19 0



1862 Aug. 16<sup>th</sup>

El. 17 22 0

 $\alpha$  Ophiuchi  
 $\beta$  Ophiuchi

 Chro. 17 59 30 (236 had run down. Let nearly  $\pm 2^s$   
 35  
 40 with El.]

1862 Aug 18

El 20 28 0  
9.6 30 0

Count. 979.

El 22 50

1862 Aug 19.

El. 17 58 0

" 19 56 0

Start with / Comet 21

1862 Aug 20

 Chro 14 9 15-20-25-30  
 $\alpha$  Boötis  
 El 14 11 0

El 17 39 0

 Cloudy etc  
 51 Cephei Hw. sp.  
 110 Herculis  
 $\beta$  Lyrae  
 $\alpha$  Sagittarii  
 $\delta$  Serpens pro  
 0 Sagittarii full  
 $\delta$  Aquilae  
 25 Cassiopeia H. sp.  
 4 not with 10 sp  
 1 Acrida  
 156 Cassiopeia B sp.

/ over

*B. Aquilae*

El 19 51 0

-0.12  
-0.40  
+0.65

El 20 31 0

Magnitude

El 21 1 0  
1 Dear. Hw. S.  
119 Cepheid B.

1862 Aug 21.

*Polaris* sp. 2345  
2 *Virginis*

El 13 20 0

Chro	13	27	40
236.			45
			50
			55
	28		0

Chro.	13	37	35
236.			40
			45
			50

*η Ursae majoris* 2 1/5  
*η Bootis*  
 2 *Booti*

El. 14 12 0

El. 16 53 0

*ε Herculis**ε hor ar min**η Ophiuchae*2 *Herculis*

11

40 Ophiuchae 3 1/5 Behind wire at first

42



13

25

1862 Aug 21. continued

64 *Camelus* B.  
B *Scadonis*70 *optinistri*  
μ *Sagittarii*  
El. 18 10 0

New Sheet

El. 18 14 0  
*Strepes minoris*  
57 *Cephus* H sp.

24 very min B sp 2/3/4/

Map of Comet

a *Tolaris* & H  
b *Blagum* 1 HEl. 19 14 0  
19 06 *Vulpeculae*  
β *Cygni* pr  
γ *Apiculae*  
β  
γ *Sagittae*  
A *Ursae* min B.  
100 *Capricorni*  
200

El. — —

1862 Aug 24.

16.68

El.  
*Ursae minoris*Chro. 7 36 30  
35  
40  
45

+1.55 a part of Chro.

Al 21 27 19  
236 7 39 52Chro 7 44 55  
15 0  
15 5

+1.58



1862 Aug. 26<sup>th</sup>

El. 14 53 0

No communication with Jones.

1862 Aug 29<sup>th</sup>

El. 13 16 0

7 *Ursae majoris*  
+ *Bootis*

Chca. 14 14 24  
 25  
 30  
 35  
 40

14 19 45  
 50  
 55  
 20 0

El. 15 16 0

El. 18 -

7 *Ursae minoris*

El. 18 18 0

19 0

71 *Cephei* H. 3.4.5<sup>51</sup>710 *Heroules*7 *Lyrae*

El. 18 43 0

1862 Sept 2,

El. 17 15 0

 $\beta$  Draconis  
& Optiarctus

{	Scho	{	236	17	35	5	45.25
						19	50.25
						15	
						20	

15

20

25

Battery bad

18 27 25

11 20

" 35

40

20 Canis M. sp

20 Aquilae

[10' Lyttorini not visible]

20 Aquilae

6 Vulpeculae

\* full 6 V. 6 N. 3.4.5. = P. XH 150.

20 Lygni

El. 19 33 0

El. 19 32 0

7 Aquilae

15 Canis M. sp.

20 Capricorni

20 Capricorni

El. 20 17 0

1862 Sept 4.

El. 16 57 0

Circle 229° 50' El. 16 57 0 2/3/4/5 of Sun above horizon

20 Heraldi

El. 17 10 0

El. 18 4 0.

20 Lyttorini

20 Lyttorini

20 Lyttorini 234.5



1862 Sept. 4. weather

51 Cephei 14 1.2 4.5

10 Cygnae

5 Sagittarii

6 Serpenti pr.

poll.

a Sagittarii

7 Aquilae

25 Cassiopei 14 sp.

4 nov. min. Bsp. 1.

3.

4

5

14/14" Sagitt. not to be seen

6 Vulpeculae

Plygma pr.

neg.

6 Sagittarii

Eb. 19 31 0

Eb. 19 35 0

8 Aquilae

15th Cass. B. sp.

13 Aquilae

L. nov. min. B. 2.3.4.5

6 Cygnae pr.

poll.

5 Cygnae

filled pen

El. 21 14 0

1 Draconis 14 sp.

119 Cephei 13

14 Cephei major 14 2.3.4.5

praeo. 3.4.5

4 Capricorni

8 Pygmi

8 Capricorni

16 Pygmi

4 Aquarii

El. 22 0 0.

0.5 too late

For some stars near the eq. in third batch the mid. air is high



1862 Sept 4 cont.

El 22 4 0.

4 Aquarii  
30 Aug 1862 sp.

5 Aquarii  
17 Aquarii lost. Error in Working Catalogue.

7 Pegasi (23 broke for wire 3)

7 Pegasi

5 Pegasi

34 Cephei H.

15 Viri austr.

13 Pegasi

12 Pegasi

El 23 0 0

1862 Sept 8 M.E

El 16 46 0

11 Ophiuchi - 14'

2 Hercules - 14'

2 Urae minoris 3.4.5 started work to find it.

1 Hercules

El 17 9 0

El 17 55 0

20 Ophiuchi major precedant.

11 Sagittarii

5 Urae minoris

6 Sagittarii

4 Serpens

2 Aquilae

Chro 236 18 58 10

15

20

25

Observed Comet (Chro 236)

30

New Sheet

El 20 16 0

5 Capricorni

11 Cephei

1862 Spt 8 cont.

\* prec & Delph. 4' 5. = Br. 2667?

2 Delphinii

74 Draconis

8 Cygni

7 Cephei

4 ran down

El 24 56 0

61 Cygni prec. 2 1.2.5. Clouds.  
foll. }

El 21 12 0

1862 Spt 9

El. 16 5- ?

2 Horuli

8 Urae minoris

El 2 50

2 Horuli

7 Horuli

42 & Ophiuchi

Catastrophe. The screw for the paper is much worn, a piece of paper was inserted to hold the sheet, and fell out. See the record for the result.

44(3) Ophiuchi was observed ~~in full~~ while the sun was yet above

the horizon. At its altitude 23" it seemed much fainter than 42 & Ophiuchi (3-4) and fainter than 2 Urae minoris, but it was lower down. Vide A.N. 1376.



1862 Sept 10

El 13 6 0

Polaris 2345 very beautiful

El 13 15 0

x Boethi

El. 14 12 0

El 16 54 0

x Urnae min

50.8

x Opticatus

19.0

x Sterculis

20.8 42.7

x Sterculis

1.2

x Opticatus

30.8

El 17 7 0

After obs. of Comet (29)

El 20 1 0

x Urn and B 3.4.5.

x Capricorni

x Capricorni

El 20 12 0

New Sheet.

El 20 21 0

32 Vulperulae

61 Cygni now

fill.

5 Cygni

filler pen

El 21 11 0

1 Draconis H sp

Hylephes B 24.5

B Cephe 2345

4 Capricorni

gr 1575 sp.

C Cygni

8 Capricorni

x Urn and B sp

Circ. List

Circ. List



1862 Sept. 10 continued

16 Pegasi  
 gr 1494 S.P. C.L.  
~~gr 1494~~ S.P. C.L.  
 2 Aquarii  
 1 Pegasi  
 3 Cephei  
 8 Aquarii  
 30 Lamelet sp.  
 gr 3756 2.7.4.5 C.L.  
 - 3777 C.L.  
 6 Aquarii  
 7 — C.L.  
 gr 3842  
 Filled Pan  
 El 22 34 0  
 7 Pegasi  
 3 —  
 19 3904, 4 comes not very good C.L.  
 34 Cephei  
 2 Pionis austr.  
 El 22 51 0

1862 Sept 11

El 13 4 0  
 Polaris sp.  
 The mid (3) wire has 3 beads the last of which is included in a clock-break much longer than usual.

El 13 1 0

7 Ophiuchi

2 Hercules

7 Hercules

42 (B) Ophiuchi

44 (B) Ophiuchi variabilis newcomb. Mg. a little brighter than 2 Ursa min. as I recollect it from yesterday.

I could not find 57 Ophiuchi afterward  
 looked for it at the wrong time probably: according to my best recollection

13 Draconis

2 Ophiuchi

1862 Sept 14. continued  
[Sep to comet Eq]

4 Draconis

70 Ophiuchi pr.

EC 18 0 0

New Sheet

EC 18 4 0 Nothing done with Lg. Obj. E.

EC 19 21 0

13 Sagittarii

4 Cygni

19 Camelopard. sp. C. L.

4 Aquilae

13 Camelopard 13 2.3.4 C. L.

52 Camelopard sp.

13 Aquilae

4 Sagittarii

13 Camelopard 13 1.2.3.4 [inter.]

11 Capricorni

4 ———

EC 20 13 0

1862 Sept 15<sup>th</sup>

EC 17 5 0

4 Hercules

4 ———

42 Ophiuchi

42 Ophiuchi not seen

13 Draconis

4 Ophiuchi

1862 Sept 16<sup>th</sup>

EC 16 1 0

2 Ophiuchi

2 ——— 1345

4 Hercules

4 Corpi

13 Hercules

2 Ophiuchi

5 Hercules

47.4 57.4 55.6 18.9 3.2  
15.78



Sept 14 continued

71 Hercules

Chen 14 38 45  
50  
55  
60

Chen. 14 48 15  
20  
25  
30

10 Ophiuchi 23.4.5.

8 Hercules

8 Arcturus minor excellently well seen.

11 Ophiuchi

11 Hercules

11 Hercules

12 Ophiuchi 4.5 faint  
(44) — v. Newcomb) not to be seen.

13 Draconis

14 Ophiuchi

26 17 70 0

searched for Comet 1861 III no success.

26. 18 40 0

4 Serpens. pr  
— folle

\* folle 4 Serp. 12 -

24. 11. 12

0 Sagittarii

2. 11. 12

25. 11. 12

26. 19 9 0

1. 11. 12 B 2. 7. 4.

6. 11. 12

13. 11. 12

13. 11. 12

13. 11. 12

13. 11. 12

13. 11. 12

13. 11. 12

13. 11. 12

13. 11. 12



1862 Sept 16 continued

y Aquilae

158 Camelopard B. Sp.

y Sagittae

L. Ursa minoris B. 3. 4. 5.

El. 20 26 0.

Σ Herc. -11.79 + 0.29

0.90

α Opti 11.81 + 0.19

-11.56

1862 Sept. 17

El. 16 26 0

El. 16 41 0

Chra 16 42 45

50

55

43 0

L. Ursa minoris

y Opticorae

Chra 17 3 05

50

55

60

L. Herculis

π

42 Opticorae 1.2 very faint.

α Opticorae

El. 17 30 0

18.6

22.0

25.9

28.8

32.7

122

25.60

11.13

6

El. 18 20 0

5.7 Sept. 17

El. 5 43 0

L. Orionis

A Aurigae

1862 Sept 17 continued.

1 Guiniorum  
✓ Orionis

7 Guiniorum

8 Mrae minoris sp. faint.

The breaks were taken at contact, from necessity. Rejected last break of 3<sup>rd</sup> wire  
Wire probably irregular

4 Guiniorum

51 Cephei 1.2 extremely faint: reject.

2 Lacus majoris

El. 6 40 0

1862 Sept 18.

El 16 41 0

✓ Optimisti

✓ Herculis

2 Mrae minoris

7 Optimisti

✓ Herculis

✓ —

Cloudy in the south

42 Optimisti

3 Deneb

3 Optimisti

✓ Herculis

—

8 Mrae minoris

El 18 23 0

1862 Sept 21.

El 4 13 0

2 Mrae minoris not to be seen. Although.

1 Guiniorum very uncertain. 3.

✓ — " " 3.

2 Lacus majoris

El 9 55 0

2 Lacus

1 — poor Comp. visible.

2 Lacus majoris 1<sup>st</sup> w. lat.

El 11 80



1862 Sept 22

El 13 6 0

Potenti 2 3.4 Atmosphere 2.

El 13 12 0

El. 16 33 0

3 Hercules

El 16 42 0

1862 Sept 23

El 13 0 0

Potenti 1.3.4.5 cloudy atmosphere 3

El 13 16 0

El. 16 55 0

Lost

~~strengthened battery with hot water.~~

Strengthened battery with hot water.

1 Hercules

42 optimus

El 17 15 0 New sheet

4 17 24 0

3 Draconis

2 optimus

3 Draconis

2 optimus

2 optimus

1862 Sept 23 cont

 $\mu$  *Sagittarii* $\nearrow$  *Ursae minoris*

El 18 21 0.

[Eclipses 2]

El 21 6 0

Atmosphere 2.

1 *Draconis* H sp. e.h.

4m 34.62

119 *Cephei* B $\beta$  *Cephei* 2.3.4.5  $\nearrow$  *Capricorni*

5. 3528

3. 4.5

5. 3536

3. 4.5

2 *Pegasi*8 *Capricorni*12 *Cephei*

4-5 Ch

16 *Pegasi*

5 3612 }

Ch

— 3613 }

Ch

— 3614 }

1 *Aquarii*2 *Pegasi*3 *Cephei*4 *Aquarii*30 *Pavani* H sp.5 *Aquarii*

El 22 23 0

New Sheet

El 22 28 0

22 32 0

5 *Pegasi*

7 —

4 —

34 *Cephei* H2 *Pegasi* ant.12 *Ursae maj* 3.4.5 9/12 *Pegasi*



1862 Sept 23 continued

1 Picium  
 2 Aquarii  
 1 Picium  
 202 Camelopardalis sp.  
 39 Cephei  
 1 Cephei  
 1 Urae maj. sp.  
 309 Cephei  
 2 Ceti  
 1 Andromedae  
 1 Pegasi  
 6 Urae min. B sp.  
 2 Phoenicis

El 0 20 0

1862 Sept 24

El 13 1 0

Polaris 76. repeat 3 wire

El 17 1 0

Sept 26 rest

El 18 32 0

1862 Sept 25

El 16 36 0

5 Ophiuchi  
 2 Herculis  
 1 Urae minor  
 1 Ophiuchi  
 1 Herculis

1 Draconis ~~Sept 26~~  
 1 Ophiuchi

El. 17 29 0

best sheet

El 17 35 0

1 Ophiuchi 2/3/4/5

1862 Sept. 25

 $\mu$  Hermin

Nictus

 $\mu$  Sagittarii $\delta$  Ursae minoris $\delta$  Cygni

51 Cephei H. m. 2345

110 Hermin

E. 1841 0.

E 20 19 0  
Cephei

20 21 0

Cephei last wire only

S. 3241

9  $\delta$  Delphini 345 $\delta$  Cygni 345

74 Draconis 45

E Cygni

7 Cephei 2345

32 Vulpeculae

\* m. 32 V. + 2'

Eyl 1879

~~Hermin~~  
6<sup>+</sup> Hermin sp.

11 Cygni sp.

for

3 Cygni last wire only

2 Cephei

1 Draconis sp.

E 21 18 0



1862 Sept 27

El 13 7 0

Polaris 2.3.5

El. 13 15 0

Instrument Reversed

Circ

El 18 3 0

♄ Sagittarii faint 2.3.4.5

♄ more ruinous 2.3.4.5.

-2!

El 18 20 0

♄ Capricorn 17 1/2 p.

El 18 38 0

El 20 46 0 Int. Th 56° 6

None - 4 P 10 obs.

22 32 0 " 54.5

1862 Sept 29

El 12 47 0

Polaris sp 1.3.4.5 (Cloudy prevented E)

El 13 15 0

El 17 21 0

♄ Draconis

♄ Ophiuchus

♄ Hercules

♄ Draconis

4 —

♄ Sagitt.

♄ deep.

♄ more ruin 2.3.4.5

El. 18 20 0

In consequence of wet weather,  
the top south shutter sticks.

1862 Sept 27 continued

El 19 56 0

1 Ursa minor B. 2.3.

2' Capricorni

2'

1 Cygnus cloudy in the south.

2 Delphinus 4.5

2 Cygnus

74 Draconis 5.

2 Cygnus

7 Capell

32 Vulpecula

El 20 58 0

New Sheet.

El 20 55 0

61 Cygnus proc. and fall.

2 Cygnus

2 Delphinus

1 Draconis H. sp.

119 Capell B.

El 21 29 0

El 22 3 0 Lat. 70. 66"

Zone 212 9 P.B.

" 23 22 0 — 67.4

Annals

39 Capell H 4.5

1 Perseus

4 Capell 3.4.5

El 23 35 0

309 Capell B 1.2 Clouds.

2 Andromeda

4 Cygnus

El 24 10 0



1862 Oct 5<sup>th</sup>

El 4 16 0

2 Tauri  
 53 Eridani  
 11 Eridani  
 1 Aurigae  
 1 Tauri

New Sheet

El 4 56 0

E Aurigae sp atur. 3.

2 Aurigae

3 Orionis

6 1/2 Cass B atur. 3. Slight improvement.

3 Leporis

E Orionis 3 4 5

3 Draconis not to be used

E Orionis

2 Columbae

11 Orionis

8 Orionis

E Draco 16

Brilliant across localities.

El 5 53 0

54 0

1 Geminiorum 2 3 4 5.

11 Orionis

7 Geminiorum

E Columbae

5 Virgo minor sp

5 Geminiorum

Atmosphere 2.

57 Capricornus

Atm. 2. red 1 1/2

2 Cori major

11

E

5 Geminiorum

4 Geminiorum

5

El 7 5 0

El 7 9 0

1 Geminiorum

5

5

1861 oct 5 cont.

El. 7 22 0 (New Sheet)

$\alpha$  Gemmae pro. 1.3.5  
poll 2.4

$\beta$  Lavinia

$\gamma$  Gemma

El 7 38 0

El 9 55 0

$\alpha$  Lavinia

$\gamma$  Lavinia pr.

Following beautifully seen.

$\beta$  Noxae majoris

$\delta$  Lavinia

found that  $\gamma$  Noxae majoris could not be obs. without exposing  
~~the~~ the ~~instrument~~ prior to the O.

El 11 46 0

El 12 58 0 (New Sheet) 5<sup>th</sup> Octobri  
explicit dies medius  
incipit dies medius 6.

Oct. 6

Totum

El 13 15 0

El 14 9 0

$\alpha$  Draconis

$\beta$  ophiuchi faint 4<sup>th</sup> or last.

$\gamma$  Draconis 2.3.4.5

$\delta$  ophiuchi



1862 Oct 7<sup>16</sup>

El (71958) 17 20 0

Chro. 17 22 15 (wrong)  
 " 20  
 " 25  
 " 30

21 13.2  
 14.2  
 53.25

Ch. fact.

+ 36.48

B. Haurani

α Ophiuchi

γ Draconis

} Clouze.

Chro. 7 56 0

" 5

" 10

" 15

55 23.2

28.2

33.2

38.15

+ 36.81

El 18 15 0

El 19 53 0

no sig. - L. Ury min B. 1.2.3.4.5

g Aquilae

α Capricorni

α Capricorni

γ Cygni

α Urae maj sp

g Capricorni

δ Urae maj sp 2.3.4.5 faint

α Cephei

\* 9.5 s.p. α Delphini

α Delphini

α Cygni

γ Draconis 4.5

g Cygni 2.3.4.5 Some confusion in record. wires touched.

η Cephei

32 Vulpeculae

El 20 49 0

El 20 52 0

α Urae maj sp

α Cygni

1861 Oct 7 continued

3 Cygni  
 1 Draconis Hyg. 2. 3. 4. 5.  
 1 Canis B. Cephei  
 3 Cephei  
 2 Pegasi  
 2 Ursa maj. sp.  
 16 Pegasi  
 29 Draconis AR. 21 51 8 P.D. + 16 52.3 (1861.9)  
 2 Aquarii 4<sup>th</sup> lat.  
 5 Pegasi  
 3 Cephei  
 2 Aquarii  
 30 Camel St. sp.

El 22 23 0

(cont. notes)

3 Ursa minoris sp. 2. 3. 4. 5. Atm. 1  
 1 Geminorum  
 El 6 23 0  
 1 Geminorum  
 51 Cephei At. Apul.  
 2 Canis majoris  
 \* 3/4 sp. 2 Canis maj = P.D. 258.  
 10 Canis maj. Antistate 2 too early: perhaps compensating  
 2 ———  
 5 Geminorum  
 1 Canis maj  
 25 Camel St.  
~~El 7 4 0~~  
 El 7 4 0  
 New York  
 El 7 7 0  
 1 Geminorum  
 2 Canis maj 2 3 4 5  
 2 Geminorum 2. 4  
 20 1. 3. 5.  
 2 Canis min. 2. 3. 4. 5.  
 3 Geminorum.  
 El 7 38 0



1962 Oct 7<sup>th</sup> and.

El 10 10 0

4 Lwn. pr 1.3.4.5 rather faint. Con. seen.

1962 Oct 8<sup>th</sup>

El. 18 11 0

2 Tyrae

57 Cephus H. sp. 2.3.4.5. Atm 2. faint

110 Hercules

β Tyrae

α Sagittarii

α Eupentis pr.

— toll.

ε Aquilae

α Sagittarii

ε Aquilae

29 Cassiopeia H. sp. Atm. 2.

El 19 4 0

El 19 55 0

1 Not seen B 2.3.4.5 Atm 1.

8 Aquilae 2.3.4.5

21 Capricorni

21 Capricorni

4 Cygni 3.4.5

9 Capricorni

Atmospheric majoris sp 2 break for 1 wire

5 Cephei

20 31 0

α Delphini

2 Cygni

2 Cygni

7 Capri

32 Vulpeculae

2nd 1879

in imp. mag. sp.

11 Cygni pr  
toll

Stroke with with head This seems to have  
changed the collimation. No mark-trunk

1862 Oct 8 continued

$\gamma$  Lygni  
 1 Draconis H.

El. 21 21 0

El 13 0 0

Polaris

El 13 15 11 (Oct 9)

1862 Oct. 9

El. 17 48 0

$\gamma$  Draconis

~~$\gamma$  Capri~~

70 optimis pr.

$\delta$  Sagittarii

$\alpha$  Lyran

57 Capri Hsp.

1862 Oct 10.

El 12 57 23  
51 03

1862 Oct. 11.

El 11 32 0?

" 11 40 0

$\beta$  Leonis

$\gamma$  20140 mag

El 11 54 0



1862 Oct. 16

El. 17 0 0

El. 17 15 0  
 $\beta$  Draconis  
 $\alpha$  Optiv. v. v.  
~~4~~ —~~4.9 faint. below v. v.~~El. 17 56 0 }  
 17 0 0 }  
 $\gamma$  Draconis

El 17 58 0

1862 Oct. 17

El 11 2 0

●  $\delta$  Leonis

	46.0
	59.6
Read off	52.8
dist. to v. v.	54.6
in motion	60.4

53.08

El 4.9 fast. H

El 13 4 0

Plum	1.2.3.4.5	Atm.	3. for 1 <sup>st</sup> w.
			2. — rest.

El 13 18 0

1862 Oct 18

El 16 56 0

 $\epsilon$  Ursae minoris faint.  $\frac{Atm}{3}$  (2<sup>nd</sup> and 3<sup>rd</sup> w. v. v. of all.

 $\beta$  Draconis  
 $\alpha$  Optiv. v. v.  
~~4~~ —  
 $\gamma$  Draconis  
 $\delta$  —  
 $\epsilon$  —  
 $\zeta$  —  
 $\eta$  —  
 $\theta$  —  
 $\iota$  —  
 $\kappa$  —  
 $\lambda$  —  
 $\mu$  —  
 $\nu$  —  
 $\xi$  —  
 $\o$  —  
 $\pi$  —  
 $\rho$  —  
 $\sigma$  —  
 $\tau$  —  
 $\upsilon$  —  
 $\phi$  —  
 $\chi$  —  
 $\psi$  —  
 $\omega$  —

/an

1862 Oct 18<sup>th</sup>

El 18 50

$\delta$  Ursae minoris

El 18 23 0

$\alpha$  Lyrae

116 Hercules

$\beta$  Lyrae

$\alpha$  Sagittarii

$\alpha$  Serpentin<sup>is</sup> <sup>per</sup> fall.

$\epsilon$  Aquilae

25 Camel H.

El 19 50

New Sheet

El. 19 9 0

$\delta$  Aquilae

$\epsilon$  Vulpoulae

$\alpha$  Cygni

comes

$\alpha$  Sagittarii

$\alpha$  Aquilae

$\beta$  —

El. 19 53 0

El 23 50 0

$\omega$  Tauri

309 Camel. B 3.4.5.

Same Sheet

1862 Oct. 19<sup>th</sup>

El 10 49 0

$\delta$  Ursae majoris

$\alpha$  Ursae majoris

$\delta$  Leonis



1862 Oct. 20<sup>th</sup>

El. 22 7 0 Ent. Ins. 38.1 <sup>219</sup> Zone ~~219~~ 4 R13  
 El. 23 58 0 " " 35.7

1862 Oct. 22<sup>d</sup>

El. 17 2 0

El. 22 6 0 Ent. Ins. 46.1 <sup>219</sup> Zone ~~219~~ 4 R13  
 At. 1<sup>h</sup> 2<sup>m</sup> 44.2

1862 Oct. 23<sup>d</sup>

El. 21 57 0 Ent. Ins. 36.1 <sup>219</sup> Zone 217 THS.  
 " 0 4 0 — 33.0

El. 12 0 0

Polaris sp. 1. 2. 3. 4 Atm. M. 2.  
 El. 13 16 0

1862 Oct 30.

El. 22 14 0

o Aquarii

+

1855.0  
 22 25 1.2 + 1 50.6 L

+

26 22.5 + 1 7.3 K

γ Aquarii

+

31 5.5 + 1 32.5 L

γ Pegasi

+ 2<sup>a</sup> - - - ?

δ Aquarii

39 Lepus 4.5  
 α Pictis austrini  
 α UMa maj. sp  
 γ Pegasi  
 δ Pegasi

1862 Oct 30 <sup>th</sup> continued

1855.0

Low + 23 1 16.9 + 19 16.0 = A Picard  
 23 1 59.4 + 1 22.0 = B.H. 8065 Pic.  
 23 4 52.9 + 1 14.4  
 23 6 16.3 + 1 24.2  
 1 Picard  
 23 13 47.2 + 1 23.5  
 6 Aquarii  
 12 Picard  
 23 20 17.9 + 1 4.7 ✓

El 23 27 0.

1862 Nov. 1. M.L. W. Cony adopts for signal  
 El. 19 43 0 previous to observation

2 Aquilae } M.L. ————— Break Dots  
 1 Capricornii on B. }

8 Aquilae H.C. That of M.L. is as for some

2 Capricornii } H.C. years back

α ————— } Some wires lost ————— D. B. D before  
 ————— B. D. B. after

El. 20 24 0

1862 Nov. 2

El 13 30

Polacia sp.

El. 13 16 0

El 14 50 0

Nov 3 El 14 55 0 [Transit perhaps Nov. 3]



1862 Nov. 3 continued

El. 19 34 0

1 Aquilae

2 — 23.5

3 — 45 Clouds

El. 19 58 0

El. 21 45 0 (W. Long into the circle)

Nov. \* 21 55 47.8 + 2<sup>d</sup> 28.6 (w. 1855.0)

2 Aquarii

22 2 36.2 + 1 26.1

4 56.0 2 0.9

~~3 Aquarii~~

4 Aquarii

39 Camelopard H.

22 19 20 + 1 13.7

19 46.5 1 20.0

3 wire about 1 too loose? Minor lo.

5 Aquarii 6<sup>th</sup> w. ~~5<sup>th</sup>~~

7 — 22 29 53.8 1 10.3

31 10.0 2 42.3

31 56.4 2 48.6 fainter than prev. (9.0)

6 Pegasi

7 Pegasi

8 Pegasi

22 41 30.6 1 8.2

43 19.8 1 6.5

44 18.6 1 0.9

5 Aquarii

Cloudy

New Sheet

El. 23 27 0

1 Pictoris

23 33 52.9 1 39.4

~~37 39.6 1 17.0~~

43 42.2 1 25.9

45 39.7 1 16.1

46 44.7 1 34.6

47 41.8 1 40.2

49 4.7 1 6.7

End of Page 1 of Reducing

1.3.4 not very good  
1<sup>st</sup> rejected

1862 Nov 3 cont.

3<sup>h</sup> 9 Ceph B 2.3.4.5 repeat 2

23 59 1.0 + 1<sup>h</sup> 6<sup>m</sup> 1

59 26.3 1 2.9

α Androm 5<sup>h</sup> 14<sup>m</sup> 10<sup>s</sup> lost

0 3 14.8 + 1 15.3

γ Pegasi

0 9 14.1 + 1 3.0

11 53.5 + 2 15.2

12 44.3 + 2 14.5

16 11.2 + 1 56.1

17 58.5 + 1 7.7

18 32.4 + 1 4.3

12 Ceti

24 1.7 + 1 19.9

25 15.9 + 1 21.1

δ Cameripae

α

El 0 34 0 Battery gave out. Cloudy!

1862 Nov 4

El 19 0 0

6 Vulpes

β Cygni (M. Allard's camera)

El 20 39 0

Star 20<sup>h</sup> 42<sup>m</sup> + 33<sup>s</sup> 57<sup>s</sup> for α Cygni

20 46 34.9 + 1 2.0

32 Vulpes

20 57 57.7 + 1 3.0

53 7.2 + 1 2.5

53 28.9 + 1 3.2

El 20 57 0

58 0

β Cygni



$\begin{array}{r} 21 \quad 1 \quad 30.8 + 1 \quad 12.5 \\ \quad 2 \quad 37.9 \quad 1 \quad 12.8 \\ \quad 3 \quad 23.9 \quad 1 \quad 9.3 \\ \quad 4 \quad 57.4 \quad 1 \quad 13.1 \\ \quad 5 \quad 11.9 \quad 1 \quad 13.8 \\ \} \text{Cygni} - 2.3.4.5 \\ 21 \quad 11 \quad 8.3 \quad 1 \quad 3.3 \\ \quad 12 \quad 36.4 \quad 1 \quad 46.8 \\ \quad 14 \quad 26.6 \quad 1 \quad 26.0 \end{array}$

{ Full break bef. Meris for  
one star.

with comp 25" n. fall.

1 Draught sp. 2.3.4.5

2 Aquarii

3 Cephei Coma Full Break before Meris

2 Cephei

21 29 34.7 + 1 38.9

2 Capricorni

??

El 21 42 0

21 44 48.2 + 1 14.3

16 Pyra

21 53 20.5 + 1 9.0

21 55 45.9 + 1 30.2 1.3.4.5

2 Aquarii

6 Pyra

22 337.9 + 1 9.5

6 Aquarii Lg. ran over without apparent cause

El. - - 0

6 Aquarii

22 32 26.4 + 2 29.6

33 5.4 + 2 23.3

5 Pyra

7 Pyra

(\* betw. ?)

22 37 4.2 + 0 55.8? perhaps fall.

38 0.9 0 58.6

39 Cephei Lt.

2 Triani austr.

2 Pyra

El 23 0 9

1861 Nov 10

El 11 20

 $6^h 21.9 + 1^a 29.4.$ 

4 Pegasus

 $8^h 25.0 + 1^a 53.6$ 
 $9^h 22.1 + 1^a 1.1$ 

6 Ursa minor B. 34.5

 $17^h 42.3 + 1^a 17.1$ 

2 Thracian

 $20^h 31.7 + 1^a 15.0$ 

12 Cephei

 $24^h 24.8 + 1^a 39.5$ 
 $27^h 14.4 + 1^a 52.6$ 

3 Cassiopeiae

 $34^h 20.7 + 1^a 39.6$ 

1 Cephei

 $37^h 38.7 + 1^a 0.3$ 

8 Triangulum

 $43^h 37.6 + 1^a 57.0$ 
 $46^h 11.0 + 1^a 7.0$ 
 $46^h 32.8 + 1^a 15.0$ 
 $x + 1^a 17.1$ 
 $55^h 15.6 + 1^a 27.2$ 

? 5

 $59^h 54.7 + 1^a 16.3$ 
 $1^h 0^m 9.2 + 1^a 16.9$ 
 $1^h 0^m 74.0 + 1^a 14.2$ 

3.4.5 bad reject

Tolares

El 1 17

El 13 20

Tolares sp

El 14 30

Chr. 14 2 20

2 25

2 30

2 35

d. Bootes

El 14 12 &amp; 3

1/2  
(one star here 1<sup>st</sup> w 1.

2.3.4.5

53 Cephei 14.

End of Page 2



1862 Nov 11

El 18 29 0

α Lyrae 4.5. Clouds.

1862 Nov. 13

El 19 44 0

✓ Aquilae

✓ Capricorni

El. 20 13 0

1862 Dec 6<sup>th</sup>

El 21 21 0

✓ Cephei being No 3

✓ Capricorni

✓ Pegasi

✓ Capricorni

10 Pegasi

Nothing broke down

Observed some polar stars and

fundamental stars with 236.

1862 Dec 7<sup>th</sup>

El. 14 22 0

Nothing done.

1862 Dec 8.

El. 0 23 0 NEW BATTERY

✓ Canis Major

/over

1862 Nov 23

E 13 3 0

Matter weeks

1862 Nov. 25

E 23 48 0 Cat. Tur. 31.0

Done. L.S.

E 1 40 0 Cat. Tur. 31.6

Some times for Dec 6, 7, 8 were inserted as previous, <sup>page</sup>1862 Dec 8<sup>th</sup> cont. see last page

E 0 35 0

P Ceti

S Perseus

— Tur α Dec + 82° 53' 4.5: Sun breaks for 5<sup>th</sup> w. give no.  
1 weight 2.

V Capricorn

43 Cepheus H

S Perseus

— 44 Cepheus H

P Andromedae

Polaris

Atmosphere N<sup>o</sup> 2Atmosphere N<sup>o</sup> 3,

New Sheet

E 1 22 0 (21<sup>st</sup> Camel B too faint to observe)

V Perseus

Chas 236 1 31 56.3

V Perseus

E 1 32 30.0

P Ceti

\* Tur. X Ceti 1.5. &amp; P I 182.

X Ceti

X Ceti

44 Gr. 1. 2. 3. 4. faint

X Andromedae Preceding

Spun and B 4

E 2 7 0



1862 Dec 8 continued

El 2 80

Cloudy.

1862 Dec 10

El 0 33 0

8 Piccium  
Bradley St.

4 Capricorn

43 Cephus St. Air N<sup>o</sup> 1.

2 Piccium

44 Cephus St.

Andromeda 3.4.5

Totius 1.2.3.4.5 Air N<sup>o</sup> 1

false heat between 3 and 4.

4 Ceti Clark heard the stroke 8 & 9<sup>th</sup> wire 1<sup>st</sup> wire

214 Canulop 2.3.4 [Cloud. these wires good]

7 Piccium

2 Persi

1 Piccium

2 Ceti

4 pro X Ceti

X Ceti

41.1 Air Read: Dec 1.

( 1 42.1 Com 3 54.2 X  
2 54.8 X 4 40.2 Com )

The diff<sup>y</sup> between the star pro X Ceti and Com X

itself was measured with the circle-micrometer

The times were

1. for Com	1 42 52	41.4
2 — X	43 47	1 43 45 Com
3 — X	44 11	43 50 X
4 — Com	44 24	

The diff<sup>y</sup> is nearly  $1^{\circ} 87' = 64''.1$

There is great prob. that the two are physically connected

424 fr. Air N<sup>o</sup> 3. Cloudy

2 Piccium rather close for good observation

2 Andromeda

Cloudy in the North.

424 fr

40 Ceti rather faint

1 over





$\eta$  Regan  
 $\frac{3}{4}$  —  
 34 Lepus H  
 2 Tiscus australis  
 3 Uranium sp  
 2 Peppin

El. 3 0 0

El. 0 —

6 Urtica minor B. sp.

El. 0 20 0

El. 1 9 0 Ent. No. 39°

Stone

El. 3 14 0 Ent. No. 38.4 *hatched*

El. 3 21 0

~~3 Penn~~ 1855.0

$\eta$  Tauri  
 1 3 43 15.1 + 1° 7.3

3 Penn 24.5  
 3 49 52.1 + 155.0?

$\gamma$  Eridani

Gr 750

62 Urtica minor B. sp. 2345

4 6 53.8 + 12.1° No. 2.17'?

4 8 55.0 142.7

4 9 58.5 147.2

$\gamma$  Tauri

44 —

ε —

• —

El. 4 30 0

1862 Dec 12.

El. 22 10 0

30 Cepheus 14 sp. Apr. 1.

0 Aquarii

4. Poppi

7 —

8 —

34 Cepheus 14

2 Pictis austrini

0 un. mag. sp.

3. Pegasus

2. Pegasus

El. 23 0 0

El. 0 20 0

East. 100.6.

1862 Dec. 16.

El. 0 32 0

34 0

3 Ceti

8 Pictis

43 Cepheus 14

2 Pictis

Totals 1.2.3.5 Six N<sup>o</sup> 3.

4 Ceti

El. 1 24 0

7 Pictis

2. Pictis 4.5.

7 Ceti

\* pr X Ceti

X Ceti

\* N<sup>o</sup> 10 10 3.4.5

7. Andromeda pr. 4.5.

2. Andromeda

454 Groombridge

20 un. un. 13 345. Six 2. rather faint

rest pr.



Laraille - Henderson

Laraille - Hunt

2 Phoenix - 1.33 Laraille 78

+ 0.015

18612 Dec 16<sup>th</sup> continued2 944.8 + 1° 11.8  
1 Ori very faint [8 mag]

2 15 52.6 112.4

2 19 35.9 149.3

2 Ori

2 21 30.1 139.1 mag.

22 0.6 133.2 very faint 9.3

25 79.1 11.2

Gr 527

2 35 50.6 17.6

38 57.2 18.1 0.45 very bad reject

40 10.4 15.7 probably

43 40.8 14.8 1.2 rather faint

43 47.7 15.7

46 7.1 117.4

47 22.0 16.2

η Eridani

ε Arietis

Sun about 6<sup>h</sup> + 20<sup>h</sup> Dec.

El 2 58 0

new Sheet

El 3 1 0

3 6 0

- 7 Eridani 1.2 (3 rej) 5 - lamp going out.

2 Term

6 Tauri 345

312.25 200  
 171.35

1862 Dec 18<sup>th</sup>

El 1 22 2 Eat Star 17<sup>th</sup>.  
 J.H.S. Organ Tone. Seeing very bad.

Not Finished

1862 Dec. 20<sup>th</sup>

El. 22 22 0 [wrong?]

BAL 2888 4<sup>th</sup> min and Dec. = 9 Lacertae  
 B. Dejan 34 Capri H. Seeing very bad indeed No 3.  
 & Pepini  
 El 23 1 0  
 23 2 0

R11033 1<sup>st</sup> min. Dec. [wrong].

R. 1262 314.5 1 Dec.

Di Lxm. 171 Dec.

309 Capri B. Dec. 1. 2. 3. 5 Seeing No 3.

El 0 5 0

El 1 32 0

R 422 (?) 1<sup>st</sup> Dec.  
 4<sup>th</sup> min 4.5 but rejected  
 BAL 645 at Dec.

New Sheet

~~El 1 17 0~~

El 2 17 0  
 Gr 527 Atm. 3.





1862 Dec 20<sup>th</sup> continued

The atmosphere is exceedingly unstable.  
The obs. of polar stars are very bad, and are  
made only to furnish a distant approxi-  
mation to the value of  $\alpha$

$\alpha$  Persei at Dist.  
41 stichich Dist.  
 $\alpha$  Cass  
 $\alpha$  Arctis  
 $\alpha$  Persei Dist.  
37 not in B Dist. (4.5 in AR)  
El 340 0.

Wound Chronometer 236 and set it nearly right

1862 Dec 24

Polaris 3 wire being N<sup>o</sup> 2.

21<sup>st</sup> Camelopard  
 $\eta$  Piscium

1862 Dec. 27<sup>th</sup>

El. 1 50

Polaris wire 2. Being N<sup>o</sup> 1 but cloudy.  
 $\alpha$  Piscium

$\beta$  Arctis

$\alpha$  ——— 1<sup>st</sup> w. lost by circuit

El 2 12 0 - too cloudy to do much.

1862 Dec 28<sup>th</sup> (Sunday: very clear and quiet air)

El 23 11 0  
18 0

1861 Dec. 28<sup>th</sup> continued

10 Picium  
 Air No. 1. 202 Canulop. B sp. 3 4 5 Trouble with circuit  
 39 Ceph. H 1.2.3.4.5.  
 4 Ceph.  
 [5 Simuloin] Piciis austrini  
 309 Ceph. B 1.2.3.4.5 reject 1<sup>st</sup> break of 4 wire  
 2 Ceph.  
 2 Andromedae  
 4 Defari  
 6 un. mis B 1  
 5 — — — 2 4 5 no sig.  
 6 — — — 4 5  
 2 Phoenix 15 wire — Circuit wire broken  
 12 Ceph.

El a 23 0

El 10 59 0

4 Ceph. 3.4.5.

202 Canulop Boda } Air No. 2: [Steady but hazy.]

39 Ceph. H sp

Xmas majoris

B Leonis

B Virginis

309 Ceph. Boda sp. 3.4.5 faint. Air 2.

2 Corvi

6 un. mis B 1.2

5 — — — 3.4.5

6 — — — 4.5

4 Corvi } Air 1

4 Corvi } Air 2 faint

4 Corvi } Air 2 faint

4 Corvi } Air 2 faint

4 Corvi } Air 2 faint

4 Corvi

4 Corvi

4 Corvi } Air 2 faint

4 Corvi

4 Corvi

4 Corvi

4 Corvi

4 Corvi } Air 2 faint

4 Corvi

214 Canulop B 1.2.3.4. Air No. 2. Wire faint.

2 Virginis false break before 1<sup>st</sup> wire

El 13 29 0



1862 ~~Jan~~ 29.

El 22 54 0

2 Pizari  
 1 Pizium

} Cloudy in the south  
 about 23° 10'

202 lamulops B sp

29 Cephus Thos.

1 Cephus

1 Pizari 3.4.5 } Cloud again [partially]

6 un min B sp 1.2 } Henry No. 1.

5 — — — 4.5

1 — — — 4.5

} if more than one break for 4 miles, the first was  
 [accidental]

2 Capriopijae

2 Mnae majoris sp

43 Cephus Thos. } Henry No. 2

Pizari 1.2.4.5. } No. 2.

El. 1 14 0

1863 Jan 1.

El 22 28 0

3 Pizari Thos.

1 Pizari

El 22 30 0

30 Cephus Thos.

2 Pizid austrini

2 Mnae maj sp

Pizium

2 Pizari

61 Apicari

39 Cephus Thos 2.3.4.5. } Henry No. 1

R. 11498 at 841

" 11756 "

6 un min B AR lost

Mnae AR at 15 12 20. 5 10 0

2 Capriopijae (with 10)

R 210

El 0 56 0

535 47.67  
0.68  
3 49.47

535 57.22  
0 22 36.481 det

1863 Jan continued

Q 0 59 0  
B. Andromedae

\* for Count 1862 II (1862 by 18) sp.

\* 1 1418 + 42° 51'

214 Cancl B. sp.

B. Parni

El 130 0

1863 Jan

El 23 31 0

γ Cephei 3.4.5

R 11498 with det.

" 11672 " " 2.3.4.5

" 11796 [faint] w. det. 2.3.4.5

α Andromedae

γ Pegasi

6 am mir B. w. det

Monoceros [α 620] } w. det.

B. H. 120

α Capripiscinae

Runk 210. bright & following (γ Capripiscinae) det

det 1633.

~~For~~ β Andromedae no det.

Sta for Count (Fed Supp 159) w. det

Polaris 4.5 rej 5: w. det.

214 Cancl B. sp.

1863 Jan 3,

El 23 49 0

R 11796 w. det 4.5 with det

α Andromedae 2.3.4.5 not very good

γ Pegasi

6 am mir B. sp. with det.

LD 620

B. H. 120

α Capripiscinae



1863 Jan 3 continued

R 210

W. Dul. { 1 Capripesae  
43 Cephei 14 345 rej. 1<sup>st</sup> Male (occident) of 3 w.  
B. Anomadae  
P. latus  
+ Ceti  
214 Envelop B 14

El 1 22 0

1863 Jan 5

El 23 20 0

4 Cephei 23 45 with dul.  
R 11881

El 23 47 0

El 0 6 0

6 m m B. p. 12 45. with dul.  
Lat. 613 044.

B. Ceti

2 Perseus

R 210 w. scrl 3 Jan Ceti Reading

4 Capripesae 3.4.5

43 Cephei 14 3.4.5

P. latus 12 45

El 1 15 0

El 3 0 0

2 Perseus

5 Tauri

323 Cephei B.

5 Perseus

5 Eridani

7 Tauri

4 Perseus

4 Eridani

Sp 750

62 m m B. p. 3.4.5

5 Eridani

7 Tauri

5 —

14 —

5 —

4 —

14 k ran out just at last wire

1863 Jan 8 El. 2 — S. Th. 18.5 } Zone.  
 " 4 23 0 15.3

1863 Jan 9. El. 20.0 } Zone.  
 — 4 15 0 18.6 }

1863 Jan 16 cleared up after a long spell  
 of cloudy weather.

El 18 30 0

$\alpha$  Lyrae

1863 Jan 17.

El 22 50 0

$\alpha$  Pegasi

El. —

$\gamma$  Cephei

El 23 35 0

El 23 55 0

$\alpha$  Andromedae

$\gamma$  Pegasi

$\gamma$  Ceti

43 Cephei 14.5. Long N. 2.

Zone.

El at end 3 46 0 2 Th 14.4



1863 Jan 19

8 Pinn  
 44 Cephei  
 9 Antares  
 Polaris  
 El 1 19 0

{ El 1 46 0  
 { Jan 22.7

{ El 3 27 0 / Jan 21  
 { Jan 21

El 3 35 0

3 43 36.2 + 1 17.5 (1855.0) for Jan 21

5 Gama minor  
 9 Eridani

Gr 750

62 Umi B 4.5. 14.5 secans no 2.  
 0 Draconis 34.5 ap

779 Gamma Lep

01 Eridani

4 6 53.8 + 1 17.1

8 Tauri

8 Tauri

14 —

8 —

7 Draconis sp.

2 Tauri

53 Eridani

4 35 56 + 1 10.0 ?

4 Eridani

9 Canis Major

4 42 58.8 + 1 16.6

4 44 41.8 + 1 16.2

4 45 51.4 + 1 17.2

1 Tauri

Eridani sp.

2 Aurigae

4 Canis Major

3 Stars for Orion - see Declination - book

El 6 0 0

1863 Jan. 30.

El 1 20 0 wound 236 and set it going.

2 Arietis  
2 DraconisChro 2 27 0  
+ 10  
- 20

Gr 527

El 2 34 0

(This sheet was put on the previous day  
on the visit <sup>major</sup> of General M. C. Callan U.S.A.

1863 Jan 31.

El 4 57 0

8 Ursae minor

2 Bullae

Regist: Comp. proc. for 30 min

2 Orionis

1863 Feb. 2

El 2 24 0

35 Capricorn H

Gr 527 1.2

24 Jan 2000

Air 2

Gr. 527 4.5

El 2 31 0

2 Arietis

1 Ceti

41 Arietis

30 min wait up.

2 Ceti

El 2 52 0

El 5 7 0

3 Orionis

64 Camelopardalis

Air 2

Gr 527

8 Orionis

2 Leporis

5 Orionis 3 away 4.5

10 Orionis



1863 Feb 2 cont.

4<sup>1</sup> Draconis pr.  
Feb.

2 Orionis

4 Aurigae 4.5.

7 Gemini

El 690

New Sheet.

El 6120

Polaris 2345.

Aur 2

\* m. v. Gemini 135

v. Gemini

23 Canis m. v.

by Gemini

51 Cepheus 1.2.3.

Aur 2

4 Canis m. v.

\* m. v. Canis m. v.

Canis m. v.

El 6480

1863 Feb 7

El 2410

2410

El 3460 31.3 Feb 7

~~El 6480~~

El. 6470

El 740

4 m. v. B. 1-5 Aur 2 faint at w. 3.5.

El. 7330

Dollus

15% Canis m. v.

4 m. v. B. 2.5 Aur 2. 5 not good f.

4 Gemini

4 m. v.

3 Canes  
 a mrae maj  
 A mrae maj.  
 3 Canes  
 74 Draconis El. 8 30 0  
 74 Draconis El. 8  
 74 Capricorn  
 6 mrae maj

74 Draconis  
 El. 8 55 4

o mrae maj

x Canes

h Argus 1 2 3 4.

h Argus 2 3 4 5.

83 Canes

alaphu

1 Draconis

119 Capricorn

3 Capricorn

(F 453) mrae maj

o Loris

El. 9 44 0

1863 Feb. 10.

21 1 53 0

2 Arctis

2 Capricorn near 3. clouds.

57 mrae B 2. 3. 4. 5. ref 4 mrae maj too late

6 Canis

EC 3 33 0

El 3 43 0 Sub-Mr 34.5

El 5 39 0 " 31.7

Zonal



1863 Feb 13

El 7 53 0

1863 Feb 14

El 3 32 0

41 Tauri

3 Persei

3 Ursae minoris 2 3 4 5

1 Eridani

750 Cy.

42 Ursae min B. faint } Air No 2.

Cy 779

11 Eridani

El 4 10 0

1863 Feb. 16

El 1 2 0

Polaris 1. 2. 3. 4. 5. Air No 2.

3 Arctici

Chor 236 1 53 15

20

25

30

1 Andromedae

El 2 5 0

" 2 4 0

1 Capripiae faint

4 Ceti

41 Arctici

(6) Erid. invisible

3 Ursae minoris 4. 5.

2 Ceti

3 Persei 3 4 5 bright

323 Cephei B

57 Ursae min B 5 rather faint

El 3 29 0

~~El 3 29 0~~~~41 Tauri~~

El 3 43 0

3 Persei

3 Ursae min

1 Eridani

Cy 750

1. 2. 3.

Polaris 13

1863 Feb. 16.

El 6 25 0

51 Caput 14 1245. Air NW. cloudy.

Sirius not-trouble with Lo. shutters,

Cloudy

a Canis minoris

1863 Feb. 17

x 323 Caput 13

El 3 39 0

4 Uridani

Gr 750 1.2.3.5

Altitude 13 ref 2<sup>d</sup>

} Air NW.

El 4 1 0

4 16 0 Dir: 24.0

Zone 19.8

1863 Feb. 18

El 1 7 0

Caloris 2.3.4.5

El 1 58 0

2 Arcturi

1863 Feb. 20.

El. 5 29 0

2 Columbae

4 Draconis pr.

----- full.

2 Orionis

5 Draconis

1 Gemini. cum

2 Orionis

7 Gemini. cum

2 Urae minoris Ser. NW.

El 6 21 0



1863 Feb. 20 continued

E 6 25 0

51 Cephei 4<sup>th</sup> 3<sup>rd</sup> wire wrong - accidental break.  
1. 2. 3. being No. 1.25 Canis maj. 4<sup>th</sup>  
S Gemini

E 7 16 0

E 15 20 0

52 Ursae min. B 2 3 4 5 Air No. 2. (Auror. misty)

S Coronae

S Serpentis

S ———

M ——— 2. 3. 4. 5

E ———

S Praesepe

Gr 750 Air No. 2

Orion min B 7. 3. too faint and unsteady. Refr. 1.

Gr 779.

S Opusculi

E 16 15 0

1863 Feb. 21. 24

E 6 32 0

51 Cephei 4<sup>th</sup>

S Canis maj

S ———

50 Draconis sp.

S Gemini

S Canis maj

25 Canis maj 4<sup>th</sup>

Ursae min B 1. 3. 4. 5 being No. 3.

S Gemini pr 242  
fol 135

S Gemini.

15 Canis maj B

Ursae min B

E 8 9 0

being No. 3.

1863 Feb. 23.

El 1 7 0  
 Orion 2.3.4.5.  
 el 1 067 0

El 1 46 0  
 β Andromedae  
 γ Andromedae

El 2 49 0  
 β Andromedae

~ Levi  
 El 4 17 0 When taken by same person  
 by Camel. 13 1.2.3. 4. 2.

El 5 26 0  
 ε Orionis  
 λ Columbae  
 ρ Orionis  
 ψ Draconis pr.  
 ————— fall.

α Orionis  
 ζ Draconis

El 6 3 0

El 6 7 0  
 40 Draconis

51 ———  
 δ Muscae leedy No. 1.

51 Cephei  
 Head of dragon came in contact with sharp corner  
 of diaphragm.

White Pig Bird. λ Canis majoris  
 25 Camelopard. Leidy No. 2  
 4 hrs. min 13 10 1. but - can faintly reject.

El 7 39 0

1863 Feb. 24

El 5 45 0 7 Cloud.  
 " 5 51 0



1863 Feb. 25

El 9 12 0

1 Uranus H.

2 Hydrae

119 Cepheid B sp.

0 Luminos.

2 Luminos.

Star 3' for Calypso.

Note.

" 0 " " 2.3.4 faint

Equatorial - Star<sup>a</sup> for Echo.

El 10 34 0

35 Cepheid H

El 10 52 0

1863 Feb 27

Polaris 4.5 Air No 2.

El 1 16 0

1863 Nov. 2

El 0 42 0

Polaris Air No 2.

El 1 14 0

El 4 58 0

2 Urse minoris Air No 2 just

2 Aurigae } circuit broken pres. to Aurigae by  
1 Orion } faint passing over wire - both stars obs'd.  
(2 Aurigae by holding wires together)

2 Orion

64 Camelopard Air No 2.

First Lesson

from Prof Bond about

variable in Orion

five 0. Stars of

altos

2 Urse minoris

23 Camelopard

El 6 25 0

El 6 25 0

El 6 34 0

51 Cepheid 2.3.4.5.

Air No 1.

1863 Nov 2 continued,

\* proc 5 *Canis maj.* 2, 3, 4

10 *Canis maj*

2 " "

50 *Draconis*

2 *Canis maj*

5 *Geminorum*

9 *Canis* reflect. eye-piece pushed out of focus,

25 *Camelopardalis* 1

4 *Ursae min* 13 " 1

2 *Geminorum* Prod 1, 3, 5

Fill. 2, 4.

3 *Geminorum*

150 *Camelopardalis* 13

2 *Ursae min* 13, *Levin* var. for wire 1

[wires 1, 2, 3] false break before 3<sup>rd</sup>. 2 2.3.

Determined Scale-Zero of Equatorial

74 *Draconis*

2 *Hydrae*

6 *Ursae majoris*

1 " "

76 *Draconis*

El. 8 54 0

El 8 57 0

0<sup>th</sup> *Ursae majoris*

2 *Canis*

El 9 2 0

2 *Cephei*

1 *Draconis* Hersch

2 *Hydrae*

119 *Cephei* 13

Determined Zero of wires for Equat.

El 10 4 0



1863 Nov 5

El 6 12 0

Alnus sp 345 Sir No. 2

23 Canis H

1 Gemini

51 Cephei H

Sir No. 2

K Lani maj

A Cani maj

50 Draconis

E Canis major

7 Gemini

7 Lani maj

25 Canis H

(false break just before 2d w.)

4 Ursae B

1. 2. 3. 4.

Sir 2 - faint

(3d w. 6<sup>th</sup> or 8<sup>th</sup> for date)

[This obs may be considered as 1863]

Compared stars in Nebula of Orion

A Ursae min B sp. 3. 4. 5 Sir No. 2

B Canis

G. 1418 Sir No. 2, rather faint

A Ursae majoris

11 Canis

El 8 26 0

1863 Nov 6

El <sup>10</sup> 20  
30

30 Canis H 1. 2. 4. 5 Sir No. 2.

14 Hydra

12 Leo's

B. 1458

12 Leo's

24 Cephei H

B Ursae maj

3. mic. 4. 5

8 Lani

False break with head.

8 Crateri false break before 4<sup>th</sup> w.

202 Canis H.

39 Cephei H.

11 Ursae majoris

3 Rattus head & breath  
on eye piece

over

18613 Mch 6 cont.

B Leonis

B Virginis

Craz Polif.

309 Cephei B 1.3.4.5. Air No 2.

El 71 58 0

12 0 0

2 Com behind window, which is wrongly adjusted.

y Com

6 UMi um B

1.

5 ———

2.3.4

6. ———

3.4.1

} Air No 2.

18613 March 9<sup>th</sup>

Palmeri air 7.

El. 1 7 0

Palmeri wires 3.4.5

(Four breaks only for Palmeri)

} Air No 2.

2 Musae umivis

El 5 2 0

Capella

Right.

y Orionis

156 Canis B 4.5.

y Orionis

2 Leporis

Smirk in nebula bright star 1.2.3.4

5 May 2.

3.4.5 follows South

El 5 31 0

El 6 24 0

Observing with Ry Bond on Orion - nebula

4 UMi um B 2.3.4 Air No 1

Castor for 2 4

Poll 1 3 5

Procyon

Pollux

156 Canis B wire

El 7 51 0

New Sheet

El. 7 53 0

1 55 0

y UMi um B 1.2.3.4.

Air No 1.



1863 March 9<sup>th</sup> cont.

7 Cephei  
6 Ursae majoris  
76 Draconis  
83 Canis  
1 Draconis H  
119 Cephei 12  
Pleides 234 S.  
Ursae majoris  
Zosma H

U 10 26 2

U 10 38 0

U 10 38 0  
34 Cephei 3.4.5  
U 10 38 0

39 Cephei H  
U 11 31 0

Observations much disturbed by some computation made this evening

1863 March 11

U 6 27 0 Tallyweak

57 Cephei 4.5 Air No. 2  
U 6 27 0

U 6 27 0

U 6 27 0

U 6 27 0

U 6 27 0

25 Canis H

4 Urs. min. H

U 6 27 0

Procyon  
Pollux

U 6 27 0

Mars in Nebula 2 set 1 over

1863. March 11.

Mercury B 3.4.5 Air No 2,  
 β Cassi

9.1418  
 α Ursae majoris

α "Cassio"  
 α Cephei

XX 257

74 Draconis

η Cephei

6 Ursae majoris El. 8490 - 8510 Red Sheet

76 Draconis

1 Draconis

α Hydrae

119 Cephei B 2.3.4.5 Air 2.

El 9 30 0

El 9 40 0 Same sheet.

Comp. of stars Eject.

34 Cephei Sp

Stars again

El 11 29 0

1863. March 12.

El 1 12 0 2  
 14 0 3

Polaris 2.3.4.5 heavy (Air 1 No 3 "very bad")

For 2.3.4 time before 1120 : 5 between  
 1120 and 1140 - both of which times are  
 times of taking up the pen

1863. March 13.

Polaris could not be safely observed.



1863 March. 18<sup>th</sup>

Zone - E. In 20<sup>th</sup> at end

1863 March 19<sup>th</sup>

E 7 26 0 In 17<sup>th</sup> 3  
" 9 12 0 - 13 9 Zone

1863 March 20

E 7 5 0 In 20  
" 8 58 0 " 15.5 Zone

1863 March 23

E 7 48 0

Cloudy in the North  
& Humid

1863 March 26

Cloudy

Obtain 6.5 in Nov

E 1 14 0

1863 March 26

El 7 50

Tw. 41.0

Zone.

El 9 10 0

" 37.9

1863 March 27

El 7 42 0

Mars in B 1.2.3.  
Via Star

α Hydrea

119 Cepheid B

El. 9 36 0

TW

1863 March 30

El 7 47 0

Attempted Zone - too cloudy

Mars majoris 2.3.4.5

El 8 24 0

α Cephei

74 Draconis 1st N. 2

α Hydrea

7 Cepheid

6 Mars majoris

1

Wires caught in chain and broken.

76 Draconis 3.4.5

α Hydrea majoris

battery weak - too much current on.

Klauser 2.3.4.5

1 Draconis 1st. Seeing 1st.

α Hydrea

119 Cepheid B

"

"

El 9 26 0



1863. April.

El 737 0 *2 Down*

" 80 0

*Murex* 13 3.4.5. *Sin No 2.**B. Cameri*

Gr 1418

*O. Murex majoris*

7.4 8 21 6.2 + 1 44.2

*A. unanymus* 2.3.4.5.*C. Lepus*

2.3 8 30 53.5 + 1 11.7

+ 8 32 46.8 + 2 26.3

8.0 8 33 48.0 + 1 28.6

74 *Dracopis**E. Hydras*7 *Cephus*8 47 22.8 2 34.1 [3 unv] 4.5 *Murex sin Takus*

8 48 29.0 1 26.1

1 *Murex* 2.3.4.574 *Dracopis* 2.3.4.5

8 55 36.0 2 38.2

*O. Murex majoris*12 *Camari**A. Argus* faint 4<sup>th</sup> unv perhaps largely wrong; if not, right.

7 9 12.6 1 20.5

9 10 6.6 1 9.8

83 *Camari*

9 12 2.2 1 30.3

9 13 20.4 1 29.0 4.5 faint

1 *Dracopis* 14*E. Hydras*

(119 open B invisible)

Cloudy

El. 925 0

1863 Apr 6.

El 0 55 0

Polaris  
El. 1 14 0

El 7 32 0

Dallua. Cloudy in South. and partly  
211 everywhere.1863 Apr. 7<sup>th</sup> (Apr 8<sup>th</sup> at beginning)

El. 1 1 0

Polaris <sup>quite</sup> in N. 2 foot unsteady }

El. 1 15 0

Cloudy in afternoon

El 6 32 0

Sirius

El. ---

El 8 35 0

74 Draconis m.

♂ Hydorae

♂ Urae majoris

♂ Urae majoris

76 Draconis

♂ Urae majoris

♂ Cancri

♂ ~~Hydora~~ Argus

♂ Hydorae

♂ 9 10 6.6

+1 9.8

83 Cancri

♂ 4<sup>th</sup> 5<sup>th</sup> 6<sup>th</sup> 7<sup>th</sup> 8<sup>th</sup> 9<sup>th</sup> 10<sup>th</sup> 11<sup>th</sup>

1 Draconis m

♂ Hydorae

119 Cygnus B 1 p

Apr 1564

♂ Leonis

♂ Leonis

♂ Leonis

El 9 40 0

New sheet - not kept

Dec 1 9'

9 36 11.8 +1 9.5



1863 Apr 9 continued

El: 9 46 0

1 54 1° 395 9 49 49.2 + 1 54.9  
1 10 2388 51 31.0 1 10.6

Titani

1 50 2392 54 13.3 1 50.3  
2 30 + 2° 229 55 2.0 2 30.9 Cap. 2nd  
1 41 1° 2395 56 12.4 1 41.3  
2 44 2. 2288 58 54.9 2 44.1  
1 38 1. 2401 59 38.8 1 38.1  
1 37 2403 10 0 6.4 1 37.3

Regulus

2 56 2. 2300

Marsae uniois

Magnificent auroral arch passing from  
The horizon directly through Arcturus; through  
The meridian at zenith dist. about 8° south (middle)  
out to the west nearly through Capella (I believe)  
to the W.

Hydra

1 16 + 1° 2446 10 21 4.7 + 1 16.1 8.8  
2 15 2. 2223 22 17.5 2 14.6 7.9  
2 54 4. 542225 23 2.2 2 54.2 7.5

Polaris

193 Canis Major

L. Leonis

Comp. stars with Equal

39 ~~Cap~~ 123. fu 2.

\* Dec + 2° 49' L. for Cytic } 2 24.68 11 35.31 2 24.68  
\* Dec + 2° 23 " " } 2 24.74 11 37.39 2 24.74

Polaris

B Virginis

El 11 46 0

El 11 48 0

309 Capricorn B. sp.

1 \* 11 56 31 - 0° 31' for Cytic. A. only

Setting Equatorial

11 56 31 - 0° 31'

1863 Apr 9<sup>th</sup> continued

El 12 22 0

Equatorial Star-Comps

Plan. sp. 2.3.4.5

& Virginis

24 Condor B

~~El 12 22 0~~

El 13 29 0

1863 Apr 13<sup>th</sup>

El 8 40 - Set. Tow 39<sup>a</sup>

El 10 55 Zone " 35.6

El 11 18 0

Star. Comps with Equat.

43 Cephei H sp.

& Virginis

44 Cephei H

& Virginis

Plan. sp. long tracks beginning

El 13 16 0.

1863 Apr 14<sup>th</sup>

El — 49.9

El 10 57 a 45.5



1863 Apr. 16<sup>th</sup>

El 947 0

7° 1'

Mag +1.2386

150? [wrong 2.3.5] Hazy, and damp, +1 2392

4 pred. & Leonis and 2 Leonis

2 Cephei

1 Ursa majoris

1 Leonis pr.

30 Camelopardalis

Cloudy in L. & H. pr. & visible  
Cloudy

1863 Apr 20<sup>th</sup>

Hazy.

Polaris 4.5 Air N. 2.

El 1 13 0

— Apr 21

El 6 37 0

Levin

El 7 2 0

El 8 43 0

1 Ursa majoris

76 Draconis pr.

1 Ursa majoris

1 Cancri

opened down

83 Cancri

2 Cephei

1 Draconis pr.

2 Hydræ

El 9 21 0

El 9 24 0 Ext. hor 40.3

Low.

El 11 45 0

Polaris Equatorial

Polaris 3.4.5 Air N. 2.

24 van Loun

Sur. 36.° at 13.17

1863 Apr 21<sup>st</sup>.

Mars in 2. Air No 1.

El 1 7 0  
Polaris 3.4.5 Last break for 4 accidental  
El 1 13 0

1862 Apr 22

El 9 1 0

83 Lacus

2 Cepheus

1 Draconis 14

2 Hydrus

119 Capri 13

El. 9 32 0.

El —

In 45° S

El 11 12 0

Zone

El 11 43 0

Saturn and Satellites. Equat.

A Virginis

2 Air in 1.2.3.4.5 Air No 1

El 13 16 0

Polaris 2 3 4 5 Air No 2.

El 1 13 0

~~El 4 32 0~~

El 7 33 0

El 9 19 0

2 Hydrus

119 Capri 13

Saturn Equat

El 11 12 0



1863 Apr 23<sup>d</sup> cont

El 11 16 0

1863 Apr. 26<sup>th</sup>

El 10 17 0.

4 10 36 0

Saturn

El 11 17 0

El 0 54 0

Jupiter

El 1 14 0

1863 Apr 27

El 6 37 0

Sirius

El 12 43 0

Saturn See No 2

~~El 13 24 0~~

1863 Apr 30

El 1 0 0

Palmy 1.2.3.5. See No. 2.

1 break only for 3<sup>d</sup> - the others were made in replacing  
wire in circuit. The <sup>right</sup> break is longer than the others

Now quite faint - hazy.

El 1 14 0

1863 May 1.

El 12 12 0

Saturn Equatnias

12570

Saturn

Polars sp. 345.

Spica

254 Canell B 2.3.4.5

} Seeing No. 2  
" "

It was not found practicable to observe more  
Satellites than Titan; the seeing was bad for 1/2.

1863 May 2

El 10 20

Hydra

Cloudy in the N.

X Uranus

y Leonis

30 Canell.

cloudy

th

1863 May 9. 1 day.

El 10 46 0

34 Cephei Id seeing nox.

Barraening

x — —

X Leonis

y urae majoris

Preparing for 1/2

2021 Canell B 2.3.4.5

El 11 22 0

New sheet

El 11 29 0

Saturn. Ink failed somewhat

El 11 58 0.

Saturn again

Search for Whiskers 'Comet

Polars 2.3.4.5. See No 2.

X Virginis

254 Canell B



1863 May <sup>Th</sup> 15 -

El 13 14 0

Conet, int with Chronogr.

4 Boots

El 15 2 0

El 1 10 0

Palani 4.5 in N. 2,

El 1 15 0

Saw that at last observation, but before it,

1863 May 18

El ?

Conet 1863 II

El 14 30 0

El 14 37 0

Saturn

& Serpens

Chra 15 39 0

5

10

El. 15 53 0

Set for Polaris in the morning - ~~to~~ <sup>let it</sup> wrong

1863 May 19

El 10 43 0

13 Ursa major

& ~~Ursa~~

& Leonis

& Ursa maj





1863 May 23<sup>d</sup> cont.

El 13 54 0.

\* + 2" 58' 8".  
 20 hrs min B.  
 2 Root  
 2 Vojuin  
 + 1" 54' 10".  
 1 Caprip sp  
 8 Root  
 0: 21 26 + 1" 27' 10".  
 36 Caprip 14.  
 50 527 10.  
 El 14 32 0

1863 May 25.

El 12 23 0

Saturn

Air No. 2

12 58 0

Saturn cont.

Planet 2, 3, 4, 5 Air No. 2 & 4 Caprip & 10

Saturn cont.

El 14 7 0

Const. with Chronograph

El 15 16 0

323 Cepheid B. 3, 4, 5

57 Wren B. 3.

2 Coronae

1 Serpenti

2 ————— 2 3 4 5

5 Wren

50 750

22 Wren B. 2 3 4 5

El 16 1 0

1863 May 26

Polaris wire 57

El 16 0

May 27

El 12 56 0.

Polaris

El 18 42 2 -

El 18 56 0

Trouble with circuit

x 4 not in B. 2. 3. 4

BM 6651 and ~~BM~~? (Chronog stopped after this)

El 19 34 0

Ly keeps stopping

Continued observations without Chronographs  
(Delicacies for Lake Survey)

<sup>the</sup>  
1863 May 28

El 0 55 0

Chronographs stopped while observing Saturn  
Needs cleaning and oiling  
Abandoned after this.

1863 June 1

El 12 15 0.

El 12 20 0

Comp. Cassio.

Search for  $\beta$ . too bright twilight

49 Ceph

2 Virgo



1863 June 1 cont

form changed } Paris 1. 2. 4. 5.      Air No. 2.  
 Saturn 4 complete transits with Titan  
 A 5<sup>th</sup> was interrupted by clouds  
 clouded up

CB 13 40 0

It seemed to-night as if Saturn was exactly  
 situated in the ring - by eye - estimate at least.  
 It <sup>has</sup> ~~was~~ not seemed so before.

1863 June 2. Cleared off about half past 8. ~~Mid.~~E h m s  
CB 13 36 0

219 Camelo B

2 Brown

20 urnae min B

2 Bootis

Saturn with Equatorial.

57 HT min B 1. 4. 5

~~4 Camelo B~~323 Capri B 2. 3. 4 between 1<sup>st</sup> and 4<sup>th</sup> wires of

proceeding.

Air No. 2 for polar star

2 Coronae

CB 15 30 0

Clear at intervals.

1863 June 3

EB 12 39 0

Students - a small part of 3<sup>d</sup> division

Saturn (G. Equat) being bad (No. 3)

&amp; Bootin

a. detrac

1863 June 4.

Opened doors for Saturn

Potavin 2.3

EB 13 10 0

Potavin 4.

Let in Saturn

Air Camel 13

Saturn.

Let G. Equat. in locust - no good star

B. Libral Transit,

322 Cephei 13 2.3.4

Let in 57 ann 13. trouble with circuit

EB 15 24 58

1863 June 5

EB 19 0 0

4 hrs in B 1.2.3. Air No. 1

346 6657 Dec

4. Cygni Dec

Lat 37486 Dec.

Pi. XII 243 Dec

4507 R. Dec. Dec.

4 hrs in B 1.2. Air No. 2.

The second view is too late by 2<sup>h</sup>; there was  
some trouble with circuit.

R. 7945. Dec.

24 Dec in 3.4.5. Air No. 1.

5 Cygni Dec.

32 v. pulchellae

76 Draconis Air No. 1

61 Cygni pro. talk.

3 Cygni



1863 June 6

Polaris 1 Air No. 1.  
El 13 50Polaris 2. 3. 4. 5.  
214 Cass B. 2. 3. 4. 5. This star begins to interfere with  
Spica.

1863 June 11.

X. 214 Cass B h. 5 Air No. 2.  
El 13 23 0  
S. VirginisVisitors - Prof. — of  
Harvard University

Saturn Air No. 3.

El. 16 8 0.

1863 June 15<sup>th</sup>Saturn Air No. 3 (at last)  
El 15 19 0

1863 June 16

El 12 59 0

Air No. 2 Polaris 2. 3. 4. 5. The minute hand (probably) of  
Equal. Air No. 3 Saturn El was disturbed on Monday  
213 Cep B 1w. 2w wrong Cloudy so that it is now 7<sup>th</sup> slow.It was quite cloudy ~~at times~~ this evening, partially  
clear at best. The seeing grew unbecomingly bad  
before finishing Saturn.

El 15 20 0

1863 June 17<sup>th</sup>

El. 13 48 0

Saturn An No. 3

El 14 30 0

Return continued. Equal

El 16 1 0

Comet 1863 II Equal

14 Cassio B An n. 2

P Draconi

Sphinx

El. 17 23 0

\* Comet 1863 II also attempted but in vain with  
Ray line - Stars too far off in Dec. for accurate  
obs.

1863 June 18<sup>th</sup>

El 14 36 0

Saturn An No. 2 Sublime faint

El 15 33 0

1863 June 27<sup>th</sup>

El 13 57 0

Saturn & Feb of RA of Titan  
Victors again

+



1863 June 22<sup>d</sup>  
 d. Lippensin Chw 15 37 13.7 20.5 2 battm  
 23.5  $\sqrt{20.5}$  3 battm  
 Al Chw 9 42 25  
 Chw 15 43 50.5 15 37 16.95 New to m  
 " 34.74  
 17.79 Chr. Chw  
 app.

1863 June 23<sup>d</sup>

El. 14 17 0 Saturn in cr 2.  
 ? 15 45 0

It cleared off fairly about 11<sup>h</sup> 40<sup>m</sup>; it was  
 very cloudy at sunset.

El 19 25 0

Ship for Lake Survey

XIX 263

L 37253 Dec only

- 38094

G 2984

R 2985 " "

Br 2618

4 Cygni " "

G 3215

" 3242

32 Vulpeculae All only

~~XX~~ 401.

61 Cygni

Nov 5132

1 Deneb All only

119 Cephei 3.4.5.

\* 45010' Dec. All only. 55 faint to 100. Dec.

E Pegasi

1863 June 24<sup>th</sup>.

4 34 30 + 10.9 9 2.9 - 0.12

El 13 48 0

Saturn

1863 June 25<sup>th</sup> (Vide sheet)1863 June 27<sup>th</sup>

El 13 58 0

$\beta$  Mrae min Vintrop & Bone  
 4 Proctis

$\beta$  Mrae min 1. 4. 5

3rd Cepheus B 2. 3. 4.

El 16 12 0

El 16 14 0

 $\gamma$  Hercules $\beta$  Scorpi $\gamma$  Ophiuchi1863 June 28<sup>th</sup>

1 Perseus

Chor 3 16 0

5

10

5

El 3 18 0



1863 June 29<sup>th</sup>

El 21 40

2 Cephei  
1 near star.

See Dir. book

El 22 30 a.

1863 July 30

El 21 43 0

+ 54° 62' 37" Lat. in Am only

3 Ephem with Dir.

Abc 23902

G 3779

- 3786

9 Lacerta

Abc 24759

34 Cephei B.

2 Ephem

El 22 59 0

1863 July 11<sup>th</sup>

El 15 51 0

112 750 Groenbridge } Air 2.  
 2200 m 13 345 }  
 5 Ophiuchi

\* Dir +1 19.5 +132.08 16 13 2.1 +1 19.5  
 " +1 22.0 Bright 14 44.9 +1 22.0

2" +1 6.

Antares

R. Hercules

5 Ophiuchi

Di XVI. 182.

5 Hercules

4 Hercules

R. Ophiuchi

E Hercules

E. Ursa minoris

4 Ophiuchi

El 17 6 0

New Shield

2 Hercules

El 17 11 0

El 17 14 0

64 Camelopard. B.

1863 July 20<sup>th</sup>

El 15 14 0

323 Cepheus B. 20.

37 Librae 3. 4. 5

1 Serpenti

2 ———

1 ———

Like Thick

E. Ursa minoris no

Gr 750 m.

62 Ursa m. B.

2.3.4.5 } Air 2  
 260 300 }  
 Gr 779 m.

Ophiuchi

El 16 11 0



1863 July 21<sup>st</sup> M.E.

El 21 57 0.

See Dist. book lit 44750 L.

34 Ceph. H. sp. 2, 3, 4, 5

Dist. book again

9 Capiopajae AR only

2 Anströmianae

4 Pajani

5 unum B

El 0 18 0

1863 July 22<sup>nd</sup> M.E.

El 15 4 0

β Librae

u Lupa 1000 miles

9 unum 2, 3, 4, 5

gr 250 sp.

6 unum B false break? before 1<sup>st</sup> w.

0 Ophiuchi 3 into Dist.

2 —

u Lupa

7 Dracon 3, 4, 5

β Herculis

u Lupa

3 Ophiuchi ?

XVI. 182 3, 4, 5

50 Ceph. H. 2, 3, 4, 5

η Herculis

9 Comae

Procyon 11th C ✓

κ Ophiuchi

El unum

El 17 4 0

next page

Stewart came

1863 Apr 27 1 Div L unions

30 4 " " part

May 19 2 Div —

1863 July 24<sup>th</sup> continued

El 21 40 0

In Oct book.

El 22 12 0

Dist book to late 44750

34 Cephei 14

Dist book

(L. 6603 3-6.1 only)

4 Cephei

Dist book again

& Andromedae

4 Pegasi

5 stars in B 1.2.4.5

6 —

4.5

4.5 1/2 mag. bar, or nearly so

El 0 21 0



Stars near the Pole observed (not a lat.)

Dec 8<sup>th</sup> Brady 74      1865.0  
 54 Ceph. H      Dr. Schw. Arg. - Dec 10  
 424 Groombr.      Dec 10

Dec 16

Observations of AR have been made  
between  $+1''$  and  $+3''$  of Dec. as follows

(Star however between $2''$ and $3''$ Dec)			$\alpha$	$\delta$
July 18	$17^h 29^m - 20^h 24^m$	28 —		
1862 Oct. 30	$22^h 25^m - 23^h 20^m$	9 stars	0.293	-0.075
Nov 3	$21^h 55^m - 0^h 25^m$	29 —	0.189	+0.065
— 4	$20^h 46^m - 22^h 38^m$	21 —	0.274	+0.065
— 10	$0^h 2^m - 1^h 0^m$	15 —	0.736	+0.065
Dec 11	$3^h 47^m - 4^h 9^m$	5 —		
1863 Apr 1	$8^h 21^m - 9^h 22^m$	9 —		

79 1/2 days

Sept 11 - 2400 - 2200

112

1826

1938 24 rev + 1540

1904 E. 86°

Earth 170 rev

Stars are not to be observed twice.



1861phae.proj..116B

(79)

1862 Sept. 29.5 wash.

$\delta$	22°	7'	0".7
$\pi$	336	31	35.6
$\Omega$	0	22	23.0
$i$	5	8	46.0

$\varphi$	16	30	40.6
-----------	----	----	------

$\mu$	13	45.590
-------	----	--------

$\gamma$	0.422	1613
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(72)

Haul

1862 Oct. 12 10 459

 $\alpha^h u^u 28.9 + \delta^a 19' 24''$





9 20 48 }  
23 41 4 }





Cora

Nov

39 Ceph	+ 22	241
43 —	+ 62	291
44 Ceph	- 139	381
6 m B	+ 9	306
		252
		381

1863

- (33) May 28  
 (35) Nov 17  
 ? (36) May 25 14.2  
 (41) ?  
 (42) Mch. 13  
 (43) Nov 30  
 (45) Nov 13  
 (46) Jan 5  
 (47) Dec 31 !  
 (48) Oct. 18  
 (49) Dec 2 9.5  
 (50) Jan 28 12.2 !  
 (51) Sept. 24  
 (52) Jan 10  
 (53) June 1 12.4 !  
 (54) Oct. 26  
 (55) Nov. 29  
 (57) May 24 !  
 (58) Apr. 21 !  
 (60) July 3 !  
 (61) Feb. 24 ?  
 (62) Apr. 2 ?  
 (63) Dec. 20 !  
 (64) Sept. 24 !  
 (65) Sept. 13  
 (66) Oct. 16 !

(19) July 30

(22) —

(23) Clytie

onto

(50) Jan 28

(59) Apr. 21

(52) May 24

(53) June 1

(60) July 3

(69) July 30

(64) Sept. 26

(66) Oct. 16

(47) Dec 31

(73) ?

(72) (78) Oct.





