

KG
11365
177

H. 23

Vol. VI
Equatorial
ONT Aug 23^d 1857 - October 22
1857

KG 11365, 177

Thet
Sept 27th R 23.28, 27^h 34
28^h R 23.28, 21
Sept 28^h R 23.28, 21
3-7.5, 34.8
R 23.28, 21
410

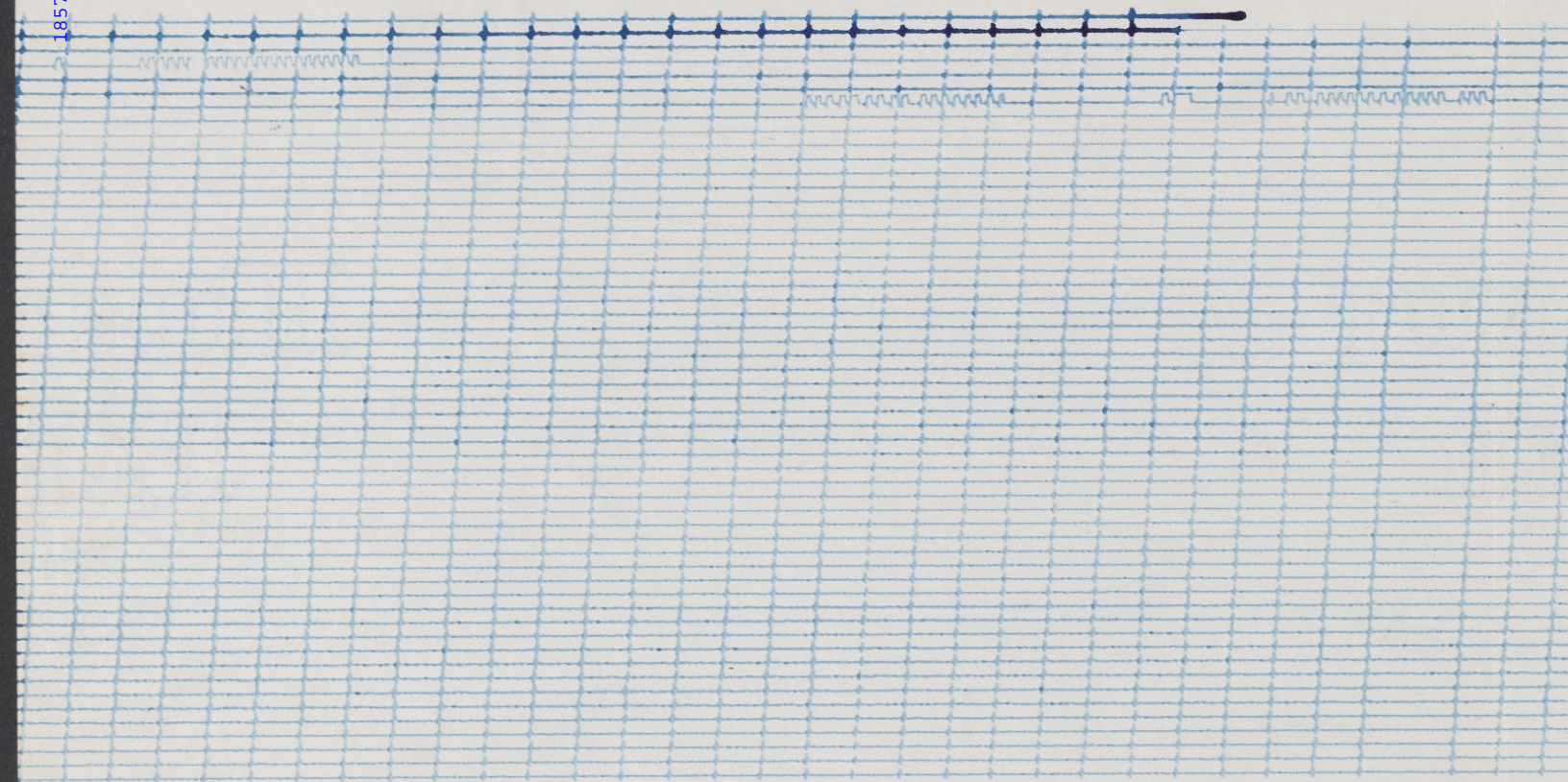
23.26, 34" 4, 55, 31
Sept 17th 23.33.8
23.5.10
Sept 25th 23.59.5
Neptune 23^h

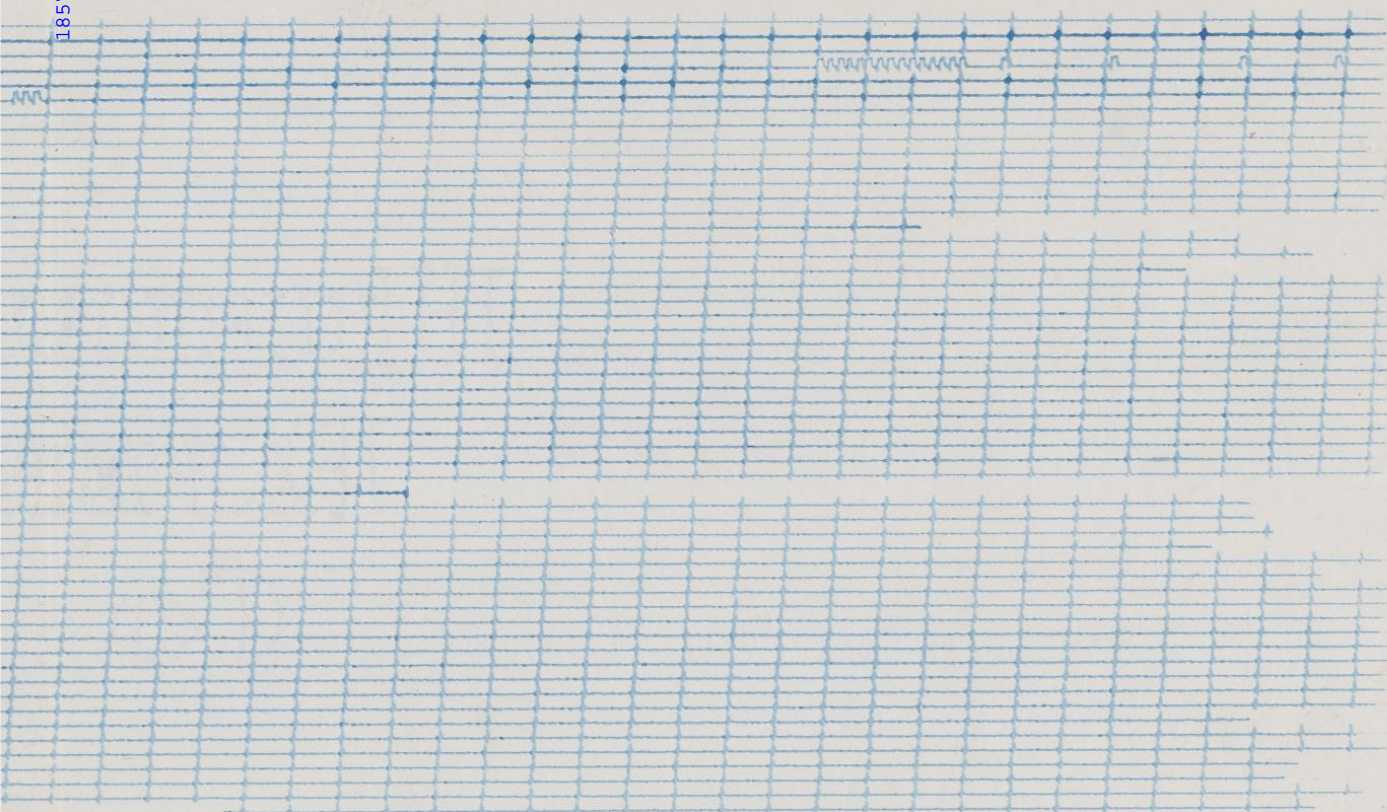
Off no

Stewart in

Lambdys. ☐

Lambdys. ☐





f. cur

[Handwritten signature]

480) 624 L

KG 11365.177





1857 Aug²³ H. P. Little -
 Observed from midnight to 2^h 30^m Am -
 comet seen near the head of Camelopardalus.

August 24 m.s. H. H. H. 8^h 20^m to 10^h Observed
 from Dec. N 45° to the horizon from West to NE.
 saw no meteor.

H.P.L.

1857 -
 Aug 25 Comet Vision good -
 nose of the Camelopardus

Comet -

27.B.

Apr 236

Time taken Comet was in center of field
 H m. G^h 21^m 55^s

Dec. N 25° 17^m 12^s Verner No 3

Dec. N 25° 17^m 12^s Verner No 3

This comet was first Aug 24 - 0^h 40^m

near the head of Camelopardus

H.P.L.

194

70 Sun. Computat. 1950 Aug. post.

25 Aug

Comet placed in center of the field.

Chas No 236.

R236-21, 13, 22. 9^h 52^m 40^s 9 52 215-1200 = 9, 55, 35

Dec 25 7° 14' 40" Vernier No 3

Dec 34 7° 13' 40" Vernier No 2

star of 12th mag

+ bright star

That the Comet at first showed an effusion of light towards the Sun.

R. G. B. has since told me vide p 220 & obs of Dr Förster A.N. 1124

Comet as it appeared 1/2 hr at 11 PM in S time in great refraction R.G.B.

Aug. 25th



+ bright star + star (8 mag)

Comet in center of field M.P.T.

Chas 236 h m s h m s R 23 15 39 11 54 10 Vernier No. 1

Circle of Dec. Vernier No 3

= 2.57° 1' 0"

Power of 140 (low)

(as the star of 8th mag "merits" at same time with Comet Comet 1 minute North of star 8th mag)

23 23.39.00 236 23.43.22.1

Chas 236 - fast of Cam. Sid. time - Rate on S Compⁿ 4.42.2 or 4.42.1

23 39.0
23 38.40
23 43.22.1
4 42.1

August 26th

1857

Comet

R. 19^h 12^m 42^s D7 19^h 59^sAug 26th Vision good

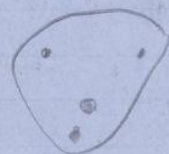
Kernier 3 Dec. 254° 56'

... 2

344° 51'

R.F.B.

Chromometer No 236

Second Ch. R. 21^h 6^m 14^s 9^h 12^m 19^s

Hercules

V No 3 Dec 254° 27' 0"

V No 2 344° 27' 0" R.F.B.



Observed from North Dec 45° to the horizon East and West Saw large numbers of meteors one of which appears seem to turn at right angles in its descent in the field of the Comet Seeker

No clouds

Vision good

These meteors appeared to descend toward the pole of the ⊕ none of them were very brilliant H.P.I.

The apparent diameter of the comet is about double that of a star of the first Mag.



236. fast sid. t. - 4.43.7

Aug 26th 11^h 30^m On S. t. Low in the Com. There a small nebular comet) not on the globe R.F.B. examined it with Equatorial [it] and reported it a nebular star. Clouds soon covered

857 - August 25th

Comet observations - Equatorial

236 - 20..38..40

0.3 - 257° 17' 12"

236 fast - 4..42

270

20..33..58

P.D. #

12..42..48

R circle read 9..21..55

R 11..12..03 at

236 - 21..13..22

0.3

257..14..40

4..42

270..

21..08..40

P.D. #

12..45..20

R circle 9..55..35

R 11..13..05

0.2

347..13..40

360

12..46..20

236 - 23..15..39

0.3

257..01..0

4..42

270..00..0

23..10..57

P.D. #

12..59..0

R circle 11..54..10

R 11..16..47

1857. August 26th236 — h m s
19 .. 12 .. 424 .. 42.5

C Sid. time 19 .. 07 .. 58.5

R Circle 7 .. 19 .. 59.0

R Comet 11 .. 47 .. 59.5

Dec

Q. 3 — 254° 57'

270

P.D. Comet 15.09

Q. 2 — 344° 57'

360 .. 0015.09236 — L m s
21 .. 06 .. 144 .. 43.7

Sid. time 21 .. 01 .. 30.3

R Circle 9 .. 12 .. 19.0

R Comet 11 .. 49 .. 11.3

Q. 3 — 254° 27.0"

270 .. 00 .. 015.33.0

236 fast 4.55.18

Comet Observations Micrometer

1857 Aug 31 Chronometer No 236
 (Chro 236) Comet h m s Star^(a) h m s Star^(b) m s
 20 11 27 20 12 57 20 13 32
 Comet m m s Star^(a) m s Star^(b) m s
 20 14 17 20 15 46 20 16 20
 15- 46
 34

Circle R. 6^m 59 22Dec. Per. No 4 $149^{\circ} 40' 20''$ No 3 $239^{\circ} 40' 48''$

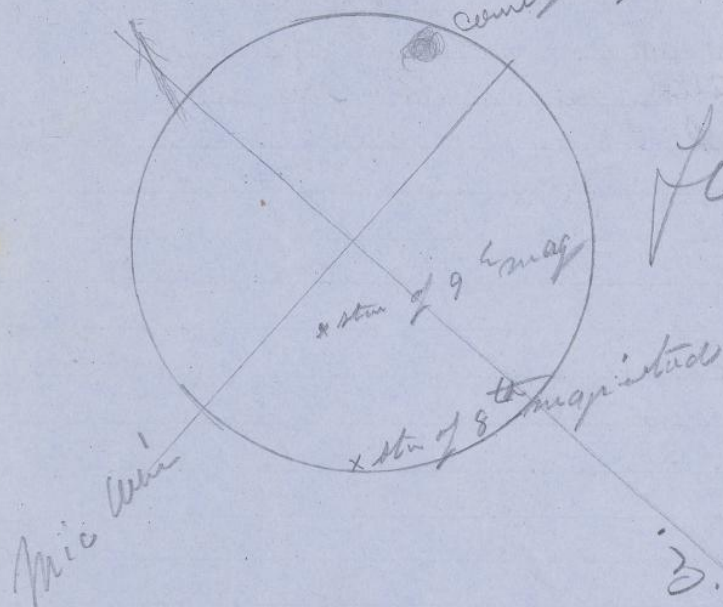
239. 40.48

270

P.D. 40 19.12

239

Diagram of preceding Obs



Field of Telescope

~~26 11 10~~

The Comet moved so fast in Dec that these stars could not be brought in the same field as the Comet for the next obs = but two other stars are taken on next page

Aug 31st Continued Obs on Comet
 hornet

Chart	h	m	s	Star (a)	Dec	h	m	s	Star (b)	h	m	s
236	20	41	10	20	44	0			20	44	36	

Passage over wire

Chart h m s 236 20 46 26 Comet passed the wire

in the middle of field

Star	h	m	s	h	m	s
	20	49	15	20	49	50
		46	26			
		2.2.9				

Circle R 7^h 38^m 413^s

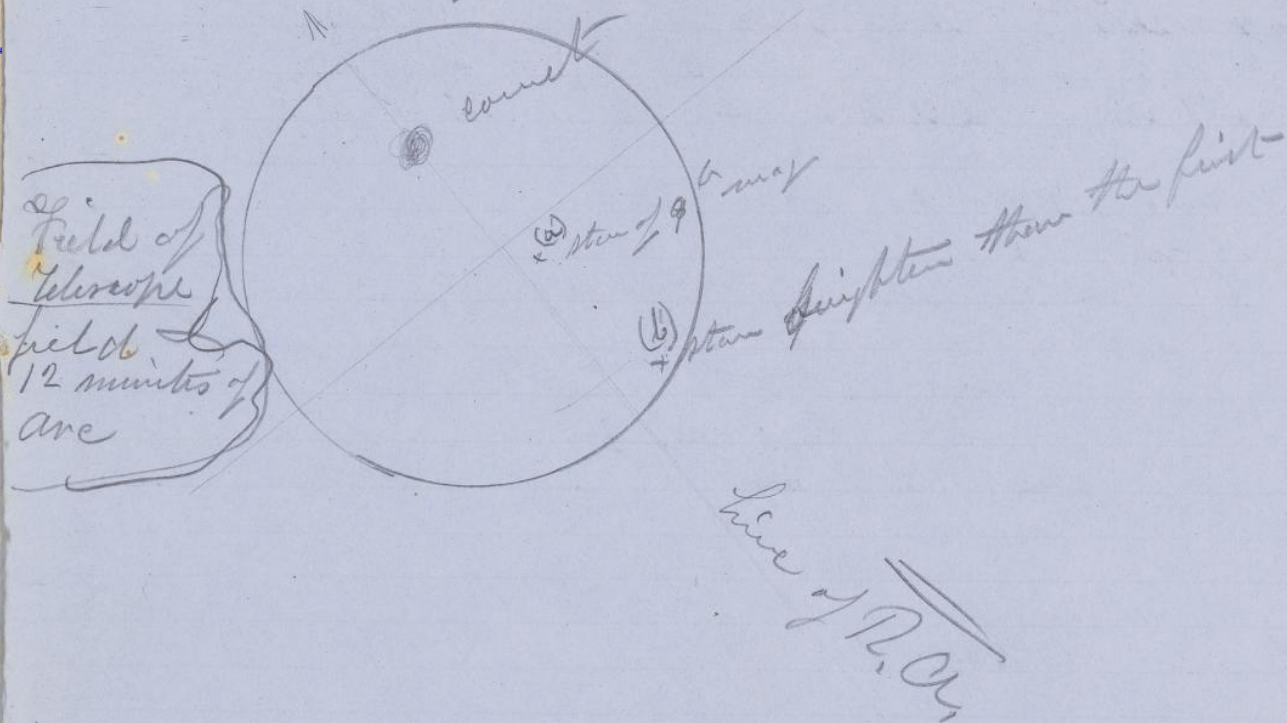
Dec. V. 24 149° 31' 56"

Dec. 3 289° 32' 8" (qu. run. No 3)

In the above Obs the Comet was almost exactly in the center of the field

H.P.C. Records

1857 Aug 31



Comet much brighter but with
no more appearance of tail

Sky Hazy Moon bright

Comet plainly seen in Tel with
some illumination

R. F. B.

Clock C.C. 21^h 27^m = 0

Chro. 236 21^h 31^m 31.6

Left 2nd Mean Time

The comet was near Alcor at $H^h 0^m 0^s$ AM

Law a large meteor which left a
stream of light nearly 20° in length
it passed through Luvus and Orion

Toward the \odot H P T.

Comet Observations
September 2^d Obs. 236. R. $19^h 30^m 5^s$ Equatorial

R. circle $6^h 3^m 45^s$ Vernier No. 1.

North Declination $233^\circ 47' 12''$ Vernier No. 3

... .. $143^\circ 47' 4''$ Vernier No. 4

(Obs. 236 is fast of Camb. sidereal time - $4^m 58^s.4$)

The comet seems brighter than last
night although the full moon is
shining brightly H P T

Comet in above obs was in the
center of field

Comet taken in center of field
1857. Sept 2nd Comet Observation

Second Observation
R. 19^h 50^m 1^s Chronometer 236

R. Cir. 6^h 23^m 32^s

N. Declination 233° 44' 16" Ver. No. 3

N. Decl. ~~143° 43' 52"~~
143, 43 52 Ver. No. 4

Third Observation
Comet in center of field

R. 20^h 3^m 18^s Chronometer 236

R. Cir. 6^h 36^m 43^s Vernier No. 1

North Declination 233° 41^m 2^s, 48^s, No. 3

143, 42, 28^s, No. 4

Observer R. F. B.

Recorder M. P. T.

1857 Comet Observations. No. 1
 Sept 3rd Comet in center of field

R 21^h 4^m 25^s Chronometer 236

R circle 7^h 33^m 5^s Vernier No. 1

North Declination $140^{\circ} 48' 4''$ Ver. No. 4

11 11111 $50^{\circ} 48' 24''$ Ver No. 1?

Sept 3rd Star Observations

Observation No 1 Mizal* in middle of field
 Chron. 236, fast of watch. sid. time - 5.00.1

236 R 21^h 28^m 18^s Chronometer 236

R circle 8^h 44^m 40^s

North Dec. $145^{\circ} 43' 0''$ Vernier No 1

Sept 3rd 11 11 $55^{\circ} 43' 20''$ Vernier No 1

*
 in centre of field Alcor R. 21^h 38^m 24^s Chron. 236

R circle 8^h 13^m 25^s

North Dec. $145^{\circ} 46' 52''$ Vernier No 4

111 11 $55^{\circ} 47' 16''$ Vernier No 1

Sept 3rd Comet Observations No. 2

Comet in centre of field
 R 21^h 16^m 45^s Chronometer 236

R. circle 7^h 43^m 26^s

North Declination

140° 46' 40" Vernier No. 4

150° 47' 4" Vernier No. 1

Sept 3rd

* in centre of field 9 km. maj.

Bennetnabdet R 21^h 54^m 24^s Observation No. 2
 Chronometer 236

R circle 8^h 6^m 5^s

North Declination Vernier No. 4

140° 41' 48"

(50°) 5' 8"

Vernier No. 1

Obtained one observation on each of the
 stars, Mizai Sheor^{and} Bennetnabdet

The vision was not good, the cirrus

was quite thick the former used was

the smallest belonging to M. Micrometer H.P.T.

R. F. B. Observer H. P. J. Recorder

Saturday Sept. 5 Sunset Observations
 Angle of Position $274^{\circ}30'$ $94^{\circ}30'$

(236) \odot $\begin{matrix} h & m & s \\ 21^{\circ}17'32.6 \end{matrix}$ Hour Circle $\begin{matrix} h & m & s \\ 7^{\circ}38'57 \end{matrix}$ R.F.B. Ver. No. 1 $\begin{matrix} 45^{\circ}30' \\ 135^{\circ}30' \end{matrix}$
 $39^{\circ}00$ C.M.S.

(236) \odot $\begin{matrix} h & m & s \\ 21^{\circ}26'02.3 \end{matrix}$ $\begin{matrix} 7^{\circ}47'28 \end{matrix}$ R.F.B. No. 45.29
 $47^{\circ}28$ C.M.S.

(236) \times $\begin{matrix} h & m & s \\ 21^{\circ}34'34.8 \end{matrix}$ $\begin{matrix} 7^{\circ}47'05 \end{matrix}$ R.F.B. No. 1 $50^{\circ}06'$
 $74^{\circ}04$ C.M.S.

(236) \times $\begin{matrix} h & m & s \\ 21^{\circ}41'10.8 \end{matrix}$ $\begin{matrix} 7^{\circ}53'41 \end{matrix}$ R.F.B. No. 1. $50^{\circ}06'$
 $7^{\circ}53'42$ C.M.S.

E.O. $\begin{matrix} h & m & s \\ 22^{\circ}51' \end{matrix}$
 236. $\begin{matrix} h & m & s \\ 22^{\circ}55'40.1 \end{matrix}$

The observations this evening were
 made by C.W.L. & R.F.B.

1857

Sept 6th

Observations, Equatorial

Mic. Read. 274.32'

in center of field

R 236-198.40^{h m s} Shro. 236R circle 5.26.43^{h m}

North Dec. Per. 4 133° 13' 40"

--- 111 Per. 1 43° 14' 04"

6 th 236 -	19.08.40
236 fact -	5.04.5
	19.03.35.5
R circle read,	5.26.43
	13.36.52.5
	- 30
	13.36.22.5

Dec. Per No. 4 -	133.13.40
	46.46.20
	- 18

46.46.02 Dec 43.13.58

No. 1 -	43.14.04
	46.45.56

Dec-43 14.04

19.03.35.5
11.02.52.5
8.00.43.0
1.18.7
7.59.24.3

Left 6^h counter

Michelson Measure

Content of Vials 89.93

Time of 236 H. m sec
20.05.37

~~27 22~~

Readings of Mic 28.22 Star & Comet

20^h Doubtful for these readings

Units of Count & Star
 in diff on ~~Star~~ R Observer Dr Peters

Sept. 6th

Count

H ~
 20 16, 5-1.0

17 26.0

H
 20, 18, 11.0

18, 46.0

20, 19, 33.5

20, 9.5

20 20, 5-4.5

21, 30.0

20, 22 33.0

23, 08.5

Star

16 5-1
 20 17, 14.0

" 17, 5-0.3

20, 18, 37.7

19, 10.0

20, 19, 57.0

, 20 32.5

20, 21, 18.2

21 5-3, 2

20 22, 5-6

22, 31.5

23.0

24.3

26.7

24.6

23.5

23.0

23.7

23.2

23.0

23.0

Mic measures from Sept. 6th

me by H, m sec
236 20.30.53

42.32 Micount

Doubtful for
Herm reading

readings
Cernet & Stan

Another Observation of contact of wires

236 20 47.24

50.81 Mic readings

64.67

Stan South from Cernet
(apparently north in telescope)

Another obs for declination

236 20 54.19.0

=

54.44

= Mic readings
wires brought together
& turning Mic Head

63.97

coincidence of wires

1857 Sept. 6
~~Star~~ Star in Center of field

236 = 21.00.5-8.0

Star observed on previous
 nights with comet

R. C. 7.19 24

Dec $\alpha^4 = 133^\circ 0' 8''$

$\alpha^1 = 43^\circ 0' 24''$

236 = 21.04.48.0

another star in ~~center~~ of field
 $\frac{1}{4}$ of field move to north
 telescope not moved

14.36

This star of same mag as
 comparison star

~~236 =~~

North Dec Ver α^4 $133^\circ 0' 8''$

" " Ver α^1 $43^\circ 0' 24''$

1857

Comet Observations

Sept 7th

Obs in Declination

 $236 = 20^{\text{h}} 55^{\text{m}} 2^{\text{s}}$

55.75 Mic reading
 Comet & Star
 bisected
 Comet North of Star

78.29 Coincidence reading

23.54 diff

H. m. s.
 $236 = 20^{\text{h}} 59^{\text{m}} 54^{\text{s}}$

57.96 Mic reading
 Comet & Star

Comet North of Star

77.36 Coincidence reading

20.40 diff

Carte

Sept. 7th

H, m, sec
 $\overline{236} \ 21 \ 04, 27.0$

5-9.87 Min reading
 Count + 865

76.55- coincidence reading

16.68 diff

20 40

3.72

3.14

Nucleus well defined & bright

Obs Sept 7

Star

21, 11, 36.0

12, 26

13, 13

14, 08

15, 58.7

16, 53.0

, 43.2

17, 54.0

46.2

19, 40.1

Star on annu^h
obs^d for Dec an

Comet

21, 12, 05.7 30.3

55.8 30.2

42.8 30.2

38.0 30.0

15, 28.5 29.2

, 22.5 30.5

, 12.8 , 4

18, 24.7

14.7

10.8

Sept 7th

H m h
21, 21.20 stn $\frac{1}{10}$ of field from south side of
field "not moved from obs
on previous pages

"
21 22.31.7 another stn near $\frac{3}{10}$ of field from
south ~~side~~ edge of field

H m h
21, 24.19.0 This is the stn of Comparison

21 .24.48.0 Comet

B. circle $7^h 40^m 46^s$ N Dec. Ver No 4
 $130^\circ 35' 20''$
V. No. 1. $40^\circ 35' 40''$

B. circ.
Star $21^h 35^m$

1857. Sept-7th~~21^h 35^m 24^s~~

of Under Majors

236 ^H 21. 37. 00.0 Entrance of the in field37. 37. 0 ³⁷⁰ Center of fieldMean. ^{h m s} 21. 37. 37 Exit of theR. circle ^{h m s} 7. 49. 32.

North Dec. 141° 3' 48" Remin North

" " 50° 41' 08" " N 1

236 ^{9 hr mag} 21. 37. 37 No 140. 3. 485. 06. 8

21. 32. 30.2

7. 49. 32

13. 42. 58.2

N.A. 13. 41. 55.0

39. 56. 12 Su 50. 03. 48

18
50. 04. 06

No 1 - 50. 04. 08

39 55.52 50.04.08

1857 Sept 8th H. A. Tuttle's Comet
Comet Observations, Equatorial

Micrometer

274° 25' 0" first Zero reading 80.82 second Zero reading 80.80
94° 27'

Distance of star from the comet

39.85

Magnitude estimated 8 or 9 and nearly in the same R.

Chro. 236

h m s
20 30 44.43.32
20 33 05.44.25
20 35 29.45.25

Chro. 236. 20^h 29^m 30^s 41.71

Turned the Micrometer 90°
for RR Observations.

Star

h m s
20 " 42 " 30
20 " 43 " 09
20 " 43 " 37
20 " 44 " 08
20 " 44 " 34
20 " 45 " 13
20 " 45 " 51
20 " 46 " 19
20 " 47 " 07

Comet.

h m s
20 " 42 " 32
20 " 43 " 11
20 " 43 " 39
20 " 44 " 10
20 " 44 " 39
20 " 45 " 15
20 " 45 " 53
20 " 46 " 22
20 " 47 " 10

Sept 8th 1857.

Equatorial.

Comet in centre of field.

Chro. - 236, 20^h 49^m 18^s.AK Circle, 7^h 03^m 11^s.

North Dec.

Vernier No 4.

128° 21' 40"

Vernier No 1

38° 22' 00"

Comparison Star in centre
of field.Chro. 236, 20^h 57^m 05^s.AK Circle, 7^h 11^m 00^s.

North Dec.

Vernier No 4. m

128° 17' 36"

Vernier No 1.

38° 18' 00".

Passage of Star over Micrometer.

Star

Comet.

Chro. 236.

h	m	s
21	12	43.0
21	13	17.0
21	13	50.0
21	14	24.0
21	15	01.0

h	m	s
21	12	48.0
21	13	21.0
21	13	54.5
21	14	29.0
21	15	05.5

Micrometer Position Reading.

94° 27' 00"

Zero. 80° 80'

1857. Sept 8.thDifference of Declination of
Star and Comet,

Chro. 236.

Zero reading 80.79

h	m	s
21.	23	" 38
21.	26	" 11
21.	27	" 53
21.	29	" 22
21.	31	" 29

—	72.91
—	74.05
—	75.26
—	76.03
—	76.37

Star estimated to be of the 8th magnitude.Chro. 236. h m s
21. 37. 58.At this time the
Star and Comet have the same Dec-
-lination. The error in time of coincidence
cannot exceed half a minute. Star
precedes Comet about four and one
half seconds of time.

	E.C.	21.	46	" 00
No 236	=	21.	50	" 46.1
	E.C.	21.	46	" 00
No 236	=	21.	50	" 46.1

E.C. fast - 23.46
236 fast 55.29.56

B.A.C. 24595-6 1/2
4600 - "

Comparison star (a)

236 - 20. 57. 05
5.09.6
20. 51. 55.4
7. 11. 00
13. 40. 55.4

Venus No 4. 128. 17. 36

A.P.D. 51.42.24 Du 38. 17. 36

cor. 3.27

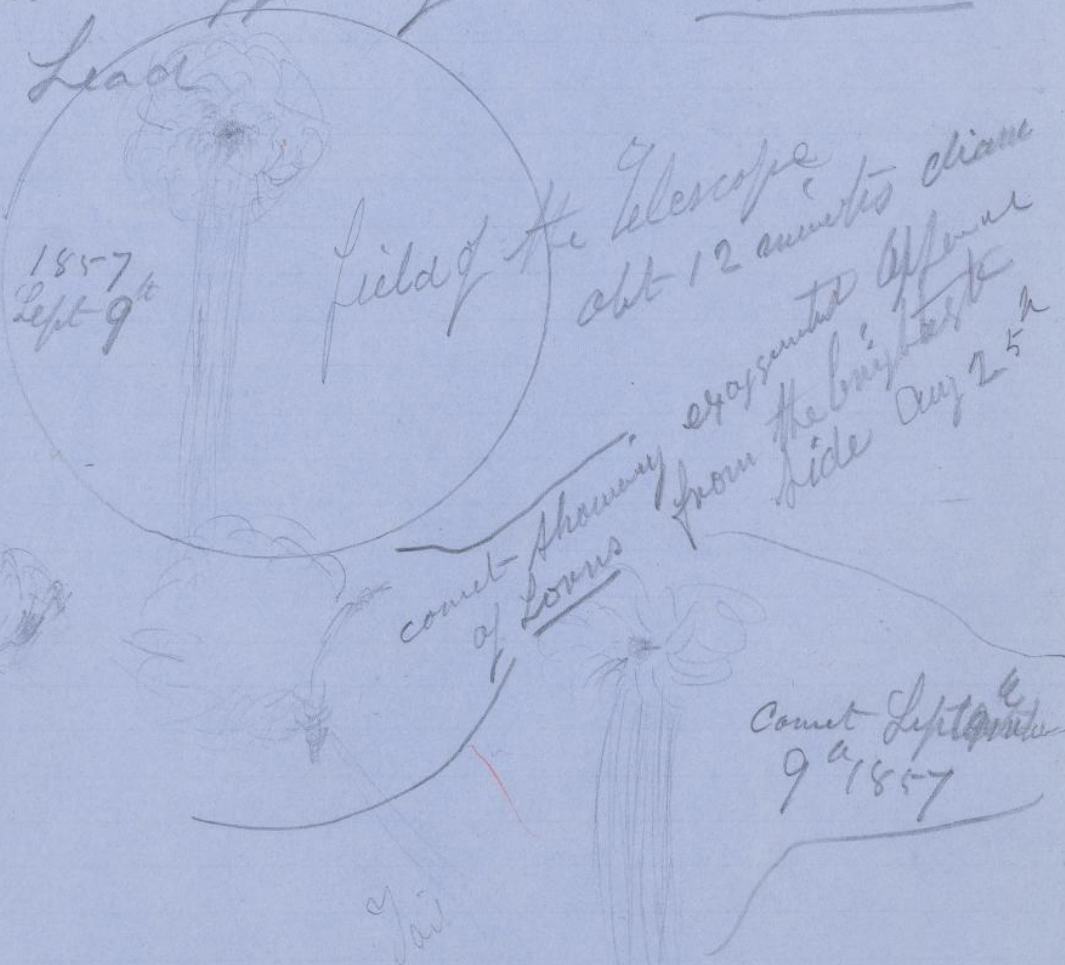
38. 14. 09

cor. 30
13. 40. 25.4
OK (a)

R.F.B. Obs at Telescope H. Tuttle & Mr Hall recording

1857 Sept 9thH. P. Tuttle's Comet

Comet plainly seen with naked eye
 though there is considerable haze
 In the comet seen a Tail of 1 degree
 about faintly apparent towards the sun
 In the great telescope the tail is
 seen for the first time & points
 directly down apparently = is narrower
than the head



Comet had the brightest nucleus on
the evening of the 7th I think & on the 8th
the tail appeared. & the nucleus did
not seem so bright or defined

RFB.

On the evenings of the 7th = 8th = & 9th I have
set the telescope (without looking through
it or the finder) on the comet by the
naked eye & each time it was near the
center of the field of the finder = showing
there could be no doubt of its being visible
to the naked eye.

1857

Comet

H.P.T.

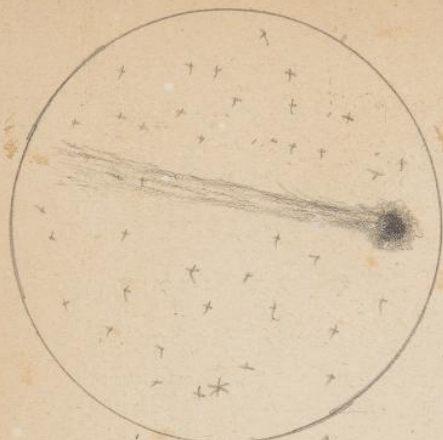
Sept 10th

The tail of this comet, suddenly made its appearance between the 7th and 8th of this month. It was plainly seen on the evening of the 8th with the five foot Equatorial, and appeared to be between 2 and 3° in length. On the evening of the 10th it had increased in length and brightness, and reached through $\frac{2}{3}$ of the field of comet Lecker. (between 3 and 4°) as will be seen in the figure on the opposite page.

Meteors

Saw this evening several very large meteors; their first appearance was near the zenith and went straight toward Arcturus and vanished in about the same altitude. the Aurora were also very brilliant, but did not reach a very great altitude.

H.P.T.



Comet Sept 10th 1857
The circle is the field of the
Comet Lecker H.P.T.

Sept 11th

8^h 0^m 0^s

Antares *

Supposed comet in Scorpio

Another *

* North of Antares

The "right angled equatorial" was used
this evening from the West balcony, from
north to south and AR 7^h

It was cloudy near the western horizon
both early and late in the evening

The only thing which looked like a comet
was in the constellation Scorpio, near
the place where L'Annet's comet is
supposed to appear H.P.T.

1857 Sept. 15 Right-Angled Equatorial
 Vision good

7^h 30^m Loggaterne under the dipper

below Arcturus

Observations on Comet H.P. 7

	H, m, s	mic reading	diff of Sec	
1 st Set	19.5-5.13	60.5-1	comet	
	19.5-6, 26.5	78.95-	Star	18.44
2 nd Set	19.5-7 2.4.0	61.00	comet	
	19 5-8.49.0	78.47	Star	17.47
3 rd Set	19.5-9.5-20	61.43	comet	
	20.01.18.0	78.13	Star	16.70
4 th Set	20.02.31.0	62.00	comet	
	20,03.33.0	77.67		15.67

Obs for Rt on next page

226 Obs continued Comet 1857 Lys 15

R.A. Diff comet & star
Comet Ineides star

Time by

N^o 236

Comet over 2 wires

~~42.5~~
20.08 39.8

I 46.3 6.5

20 10.17.0

20 10.23.7 6.7

12 01.0

20 12.07.3 6.3

14.01.7

20. 14.08.0 6.3

15. 39.8

20. 15. 46.5 6.7

~~16. 44.5~~

~~50~~

Star over 2 wires

20. 09. 43.8

09. 549.8 6.0

10. 20.5

10. 27.0 6.5

12. 04.5

13. 11.6 7.1

15. 05.7

15. 11.8 6.1

16. 44.5 Doubtful

16. 50.0 5.5

Sept 15th 1857

None Obs for Declination

Count	Mic readings	Star	Mic readings
20.23.12.5	= 62.80	20.24.08.5	= 69.82
20.25.25.5	= 63.03	20.26.22.0	= 69.17
20.27.11.5	63.13	10.05.0	= 68.71
20.28.53.0	63.32	30.01.0	68.12

Readings of RA Circle at this last obs

$$6^h 35^m 59^s = \text{Hour angle}$$

Dec. Ver. No. 1 $115^\circ 16''$ 00

Dec Ver No 1 $25^\circ 17''$ 00

Dec Circle compares Star 2 min north of centre.

3 Stars abt same mag as Comp Star

20.31.49 Star 3 west S of Comp Star

20.32.10.5 Star 1 min N of Comp Star

20.35.01.0 Star 3 min S of Comp Star

Sept 15. 1857.

7th mag. Comparison star 2 min South of centre of Gipe

20 " (56) " 45

51²

Star of 7th mag 2 min North of centre of 7-

20 " 57 " 03

Star through the centre of field.

20 " 57 " 58

Star 8th mag 3 min north.

20 " 58 " 26

Star 9th mag 5 min south.

21 " 00 " 46.5

another star a little preceding
and 2 minutes ^{north} from the centre.

Chron No 236. 21^h 8 56.8

Paddle Clock 21 4 0.0

Chron. fast of Paddle 4 56.8

Paddle fast 24.6

Chron. fast of S.D.T. - 5^m 21.4

Sept 15 1857

229

The Comet presents
a most beautiful
appearance this eve
being very much
brighter & in the Gr Tel a
well defined & bright nucleus
The tail is abt the length
of the diam of field of Comet
seeker ^(= 4 1/2°) very straight
that is of the same breadth
the whole length

✓ 15th comet 1857

230

Sept 15th

236 20.. 28.. 53

" fast 5 24

Sid time 20.. 23.. 32

H. West 6.. 35.. 59

13.. 47.. 38

Inst. cor. & ref. - 20[?]

13.. 47.. 18

1 08

= Inst. R of Comet at 20^h 23.32 Sid

Dec = 24° 16'

13.. 48.. 21

25.. 11

13.. 50 09

25.. 15

13.. 50.. 30

25.. 11

13.. 53.. 20

" Star of Comp. = a

" Star b

" Star c

" Star d

Sept

1857. Sept. 18th

Equatorial.

233

Comet Observations.

True Position. $94^{\circ} 28'$

Star a

Comet

Chron 236

19^h 38^m 19^s19^h 38^m 16^s19^h 38^m 25^s19^h 39^m 27^sStar L 19^h 39^m 52^s

234

Sept 18th 1857

Comet V

Star a = 10^h
 b = 9. ~~h~~

G P B. Obsd.
 Adolph Hall record.

Star a

Comet

Dif R- Star b

Star a

Comet

Star b

236 = 19 " 4.5 46.6aa
 44.43
 45.23

43.4. bad.
 54.5
 44.5

44. 29.0
 45. 19.0
 46. 09.5-

24.5
 25.0

236 =

Star a, 20. 1. 3.5 20. 1. 17.
 1 39.5- 2. 10.7
 2 48.5- 3. 00.

1. 41.5- 24.5
 2. 38.0 25.3
 3. 29.5- 24.5

γ Bort's centre of field

206

5. 53.5-

18th Sept
 aft of Vth comet
 S.C.

Sept 18th 1857

Sif Dec. Comet S of Star b

236 = 19 " 30 " 19.
 19 " 31 " 44.5
 19 " 53 " 28.5
 19 " 55 " 39.
 56 " 34

31 " 87
 31 " 35
 30 " 54
 29 " 94
 29 " 90

19 " 57 " 41
~~34 " 34.5~~
 58 " 39.5

42 " 57 Star a.

42 " 74

~~20~~ "

13 " 48 " 18.5 = inst. R. of Bootis

13 " 47 " 52.6 = R 1857.0

Cor. inst. R = -25.9

19 " 10 " 20 " = inst. Dec of Bootis ver. I. on 5. edge of scale (on edge of Allen scale) division 5

19 " 7 " 5 = Dec 1857.0 Bootis center of field

-3 15 = Cor inst Dec. including refraction

236 = 20 " 5 " 53.5

236 fast 5 " 27

Sif. time 20 " 0 " 26.5

h 6 " 12 " 8

13 " 48 " 18.5

H = 6 " 12 " 08.

Dec = 19 " 10 " 20 Ver No 1

236 = 20 " 10 " 17.

236 fast 5 " 27

20 " 4 " 50

h 6 " 16 " 34

Inst R star b 13 " 48 " 16 Dec = 20 " 54 " 16

Cor. inst R - 26 Cor - 3 " 15

R star b 13 " 47 " 50 Dec = 20 " 50 " 55

1857.0

1857.0

H = 6 " 16 " 34.

Dec = 20 " 54 " 10, ver No 1

54 " 703

54 " 727

54 " 723

Zero Readings.

Star $b = 9^{\text{h}}$ mag.

1857.0 R $13^{\text{h}} 47^{\text{m}} 50^{\text{s}}$
 free to 1825 $- 1^{\text{h}} 31^{\text{m}}$
 1825.0 $13^{\text{h}} 46^{\text{m}} 19^{\text{s}}$

Dec $20^{\circ} 50' 55''$
 $+ 9' 33''$
 $21^{\circ} 00' 28''$

$+ 2.86$	$- 17.9$
<u>32</u>	<u>32</u>
572	358
<u>858</u>	<u>537</u>
91.52	57.28
$1^{\text{h}} 31.5$	$9^{\text{h}} 32.8$

 R B. 2 460 $t = 13^{\text{h}} 45^{\text{m}} 33.20$ $k + 55.31$ $- .05$

1825.0 $13^{\text{h}} 46^{\text{m}} 28.46$
 free $+ 1^{\text{h}} 30.88$

 R 1857.0 $13^{\text{h}} 47^{\text{m}} 59.34$ Cor. to ap. eq $+ 1.16$ Ap. R $13^{\text{h}} 48^{\text{m}} 00.50$

Dec
 $20^{\circ} 59' 12.4$
 $+ 39.4$
 $- 1' 41''$

$20^{\circ} 59' 50.4$
 $- 9' 33.8$

$20^{\circ} 50' 16.6$
 $- 6.3$

 $+ 20^{\circ} 50' 10.3$ $= \text{Dec } 1825.0$

$\left[\begin{array}{l} m \\ n \end{array} \right] \begin{array}{l} 1841 \\ \text{free in } R = + 2^{\text{h}} 84.0 \\ \text{Dec} = - 17^{\text{h}} 93 \end{array}$

2.840	17.93
<u>32</u>	<u>32</u>
5680	3586
<u>8520</u>	<u>5379</u>
90.880	57.376
$1^{\text{h}} 30.88$	$9^{\text{h}} 33.76$

1857 Sept 21st 236 set back 5^m at

16^h 17^m Sid. Time.

Daily mo. of pin Dr. $-1^{\circ} 12'$ hly mo. = $3'.0$
mo in 1^m = $3''.0$

Sid. Dr.

Comet precedes star 6.

236 = 19.44.54.5	0 ^m 24.5
" 19.45.44.5	0 ^m 25.0
" 20.01.17.0	0 ^m 24.5
" 20.02.10.7	0 25.3
" 20.03.00.0	0 24.5
99.37.06.7	123.8
19.55.25.34	0 ^m 24.76

236 fur 25.20 ref

19.55.00.14 sid. time.

Sid. Dr.

Comet South of star 6

236 = 19.50.19	31.87
" 19.51.44.5	31.35
19.53.28.5	30.54
19.55.39	29.94
19.56.34	29.90
267.45.0	153.60
19.53.33.0	30.72

Zero

54.72
24.00
4.8
235.2
+ 3' 55".2

Cor ref
Cor to 19^h 55^m 25^s

+
+5.7

Zero readings.

54.705
54.727
54.723
215.5
54.718

1857, Sept 21st

Comet V.

Dr Peters. Obs.

Stan. a

Comet
 236. 20. 04. 47.5-
 .. 08. 12.5-
 11. " 6. 1st wire
 11. " 17.5- see wire

20. 06. 39,
 .. 10. 04.5-
 12. " 57. 1st wire
 13. " 09.5- see wire

Comet

20. 15. 56.5-
 20. 19. 33.5- 7

Stan. a

20. 22. 02.

13. 49

13. 49

3
37.46

50.95-

Comet

20. 24. 21.5-

16. 44

31. 20

Stan. a

20. 26. 42

47. 64

Comet

20. 28. 19

17. 73

25. 08

Stan. a

20. 30. 07.5-

42. 81

Comet

21. 31. 37

3. 64

37. 44

33. 50

240

1857. Sept 21. Comet V.

Observer. Dr Peters.

Star a.

236. 20 33. 31.5 37.44
 30 seconds After star a follows a bright star about six minutes south, of a.

Comet

31. 57.5 - 1st wave
 32. 9.0

Star a.

star too faint
 34. 00.05

Comet

20. 40.36
 40.43

Star b.

20. 44.20
 20. 44.31.5

Star b. 7 minutes north of comet.

Comet in centre of field.

236. 20. 43. 05

H. A. 6^h 58^m 24^s

Dec. 17° 09'

E.C. 20. 6. 20.0 = Chron. 20. 6. 28.5

20.0

8.5 Chron fast of E.C.

25.3 E.C. fast of Sid Time

33.8 Chron fast of Sid Time

Sept 23/264

241

1857. Sept. 23. Observations of the Comet - Encke. (IV. 1857) (Peter's Comet)

Observer: George G. Bond.

Chron. 236 +38.3 fast of Sid. Time

Position Circle 274° 45'

For Dial.

North of * (6)

* (a) W. VIII. 1013.

* (6) W. VIII. 1071.

* 7^m (6) 4 2 40.7 44.32 } 9.67
4 14 34.65

* (6) 4 5 4.6 43.36 } 9.31
6 42 34.05

* (6) 4 7 51.8 42.09 } 8.52
9 27.5 33.57

For AR
* (a) 4^h 12 36.1

(a) 49.6

13 13.3

26.7

* (6) 14 50.8

(6) 15 4.6

(a) 4 15 25.6

(a) 39.0

16 3.6

16.8

(6) 17 40.3

(6) 53.8

(a) 4 18 14.4

(a) 27.9

52.3

19 5.4

(6) 20 29.2

(6) 42.6

* (a) 4 12 42.85

13 20.00

* (6) 14 57.70

* (a) 4 15 32.30

16 10.20

* (6) 17 47.05

(6) - * (6)

9.67

9.31

8.52

27.50

9.17

18.3

8 9.87

5 9.88

14 9.75

4.87

AR

* (6) = - 1^m 37.70

" = 1 36.85

" = 1 37.05

101.60

- 1 37.20

74.87

- 1.70

Δδ = +73.57

at 4^h 16^m

9.68

38.30

At 4^h 15^m

31.38

Sid. Time

* (a) = +37.15

37.90

37.70

102.75

+37.58

at 4 16 9.68 (236)

4 2 40.7 by 236

5 4.6

7 51.8

15 37.1

5 12.37

4^h 5^m 12.37

4 25 10.73

30 23.10

4^h 15^m 11.55 by 236

4 13 20.00 by 236

16 10.20

18 58.85

48 29.05

4 16 9.68

4 15 11.55

58.13

motion in Dec in 58.13

Δα = -1^m 37.20

by 236.

38.30

31.38

Sid. Time

at 4 13 20.00

16 10.20

18 58.85

48 29.05

4 16 9.68 (236)

For Reduction:

$$\begin{array}{r} \ll 4^h 22^m 36.5 \\ * (6) \quad 24 \quad 12.0 \end{array} \quad \begin{array}{r} 41.09 \\ 34.65 \end{array} \quad \left. \begin{array}{l} \\ \end{array} \right\} 6.44$$

$$\begin{array}{r} \ll 4 \quad 25 \quad 7.2 \quad 40.30 \\ * (6) \quad 26 \quad 43.5 \quad 34.32 \end{array} \quad \left. \begin{array}{l} \\ \end{array} \right\} 5.98$$

$$\begin{array}{r} \ll 4 \quad 27 \quad 48.5 \quad 39.85 \\ * (6) \quad 29 \quad 24.8 \quad 33.93 \end{array} \quad \left. \begin{array}{l} \\ \end{array} \right\} 5.92$$

$$6.44$$

$$5.98$$

$$5.92$$

$$18.34$$

$$6.11$$

$$12.2$$

$$59.88$$

$$4 \quad 22 \quad 36.5 \quad 236$$

$$25 \quad 7.2$$

$$27 \quad 48.5$$

$$75 \quad 32.2$$

$$25 \quad 10.73$$

$$4 \quad 25 \quad 10.73$$

$$+4.5$$

$$+4.1$$

$$+1.16$$

$$1.62$$

$$7.8$$

For Diff. in Seal. of stars (a) & (6); Star (a) South of (6)

$$* (a) \quad 4 \quad 31 \quad 39.5 \quad 34.137 \quad \text{rev.} \quad 20.01$$

$$* (6) \quad 33 \quad 54.2 \quad 54.14 \quad 20.01$$

$$20.01$$

$$40.0$$

$$* (6) - * (a) = +196.10 = 3' 16.1''$$

$$(1013)W. * (a) AR = 8^h 37^m 38.85^s \text{ Dec} = 3^{\circ} 56' 19.9'' + (6) (1071)W. AR = 8^h 39^m 53.60^s \text{ Dec} = -3^{\circ} 52' 57.2''$$

$$Prec = +2.994$$

$$+12.73$$

$$+3.001$$

$$+12.58$$

$$Sec Var = -0.003$$

$$+0.329$$

$$12.73$$

$$-0.003$$

$$+0.326$$

$$2.994$$

$$16$$

$$0.33$$

$$3.001$$

$$1.6$$

$$32$$

$$1974$$

$$12.783$$

$$32$$

$$1956$$

$$5.588$$

$$229$$

$$25.566$$

$$6002$$

$$226$$

$$89.82$$

$$0.5264$$

$$38.349$$

$$90.02$$

$$12.84$$

$$+95.80$$

$$3 \quad 56 \quad 19.9$$

$$409.056 = 649.1$$

$$96.03$$

$$12.93$$

$$8 \quad 37 \quad 38.85$$

$$+6 \quad 49.1$$

$$8 \quad 39 \quad 53.60$$

$$+46.03$$

$$25.86$$

$$(1857) 8^h 39^m 14.66^s$$

$$-4 \quad 3 \quad 9.0$$

$$8^h 41^m 29.62^s$$

$$+6 \quad 53.8$$

$$-3.52 \quad 57.2$$

$$-3.59 \quad 51.0$$

$$d' = 130.22$$

$$d' = 130.22$$

$$\text{Sept } 23 \quad f = +34.49 \quad g = +17.85 \quad G = 327.12$$

$$h = +18.76 \quad H = 89.2 \quad i = +8.14$$

$$\alpha = 129.48$$

$$H + \alpha = 218.52$$

$$G + \alpha = 97.00$$

$$H + \alpha = 218.52$$

$$G + \alpha = 97.34$$

$$H + \alpha = 219.29$$

$$\log g = 1.25164$$

$$1.25164$$

$$\log g = 1.25164$$

$$1.25164$$

$$\sin(G + \alpha) = 9.99675$$

$$\cos 9.08589n$$

$$\sin(G + \alpha) = 9.99620$$

$$\cos 9.11932n$$

$$\tan \delta = 8.85032n$$

$$0.33753n - 2.18$$

$$8.84437n$$

$$0.37116n - 2.35$$

$$0.09871n - 1.255$$

$$0.01397n + 1.03$$

$$0.09221n - 1.24$$

$$0.00563 + 1.01$$

$$h = 1.27323$$

$$1.27323$$

$$h = 1.27323$$

$$1.27323$$

$$\sin(H + \alpha) = 9.79731n$$

$$9.89152n$$

$$\sin(H + \alpha) = 9.80259n$$

$$\cos 9.88803n$$

$$\sec \delta = 10.00109$$

$$8.84437n$$

$$0.00106n$$

$$0.00563 + 1.01$$

$$1.07163n - 11.79$$

$$0.01397n + 1.03$$

$$1.07688n - 11.79$$

$$0.00563 + 1.01$$

$$-13.03$$

$$0.91062$$

$$-13.17$$

$$0.91062$$

$$+34.49$$

$$9.99891$$

$$34.49$$

$$9.99894$$

$$21.43$$

$$0.90953$$

$$+2.132$$

$$0.90956 + 8.12$$

$$+1.43$$

$$+8.12$$

$$+6.97$$

$$+6.97$$

$$8 \quad 39 \quad 14.65$$

$$4 \quad 3 \quad 9.00$$

$$8 \quad 41 \quad 29.62$$

$$-3.59 \quad 51.00$$

$$(1857) 8 \quad 39 \quad 16.08$$

$$-4 \quad 3 \quad 2.03$$

$$\text{app Place } (6) \quad 8 \quad 41 \quad 31.04$$

$$-3.59 \quad 44.22$$

$$8 \quad 39 \quad 53.84$$

$$+1.13 \quad 57$$

At $4^h 15^m 31.4^s$ Sid Time

Peters Comet (Continued)

Sept 23/24 1857

Star a 9th = ϵ Crispi 1013.

Star b is $7\frac{1}{8}$ mag. = ϵ Crispi 1071.

Observer Dr Peters.

Dif. Sec

Dif. Sec.

236	4	38.54	Comet	62.51
			Star b	59.70
			Dif.	2.81

236	=	5.00	5.0	59.99
				58.30
				1.69

4	43	42	Comet	62.31
			Star b	59.39
			Dif.	2.92

Doubtful - too much daylight

5	4	10	57.83
			57.83

Observations interrupted
by daylight

4	46	23	Comet	61.35
			Star b	59.31
			Dif.	2.04

Comet	4	51	35.8
"		51	45.3
Star b		53	10.5
"		53	18.5

Star b - $7\frac{1}{8}$ mag. in end of field

5	7	10.6	Chron.	-38.3 = 5 6 32.3
			Home angle	3 34 54

-3° 55' 20" ϵ Crispi circle

Comet	4	53	49.2
"		53	57.0
Star b		55	22.8
"		55	30.8

5 10 23 Chron. -38.3

53 53.10 12 + 8 28 17 Home angle

Dr Peters finds for Sept. 23rd

4^h 30^m 53.6 Sid. time Comet R 8^h 39^m 53.71 (12)

" 5-3^h 59^m 2.0 (10)

Comet	4	56	7.5
"			15.8
Star b		57	41.7
"			49.5

Apparent place of Star b 1 W VIII 1071

56 11 65 R 5 41 31.01 -3° 59' 58"

236	4	38	54.0	2.81
	43	42.0	2.92	
	416	23	2.04	
	128	59	2.77	
	4	42	59.66	2.55
	5	00	5.00	1.69
	9	43	4.66	4.24
	4	51	32.33	2.12

42
20.78

$$\begin{array}{r} 4/189.04 \\ 4.47.16 \end{array} \quad \begin{array}{r} 4/9.46 \\ 2.365 \end{array}$$

$$0' 23.18$$

$$\begin{array}{r} 1.13 \\ 227 \\ 791 \\ 226 \\ 226 \\ 25651 \end{array}$$

$$4.21$$

$$17.08$$

$$18.380.5$$

$$85$$

$$9.3$$

$$6.5$$

8- * (b)	-1"	33.95	at 4	51	40.55	by 236
	1	33.70		53	33.10	
	1	33.95		56	11.65	
	4	41.60		160	85.30	
-1"	33.87	at 4	53	48.43	by 236	
	4	47	86.80			
	8	32.40				

8's mot = -9.3 in Dec

$$23.2$$

$$\Delta \delta = +13.9$$

$$-3.59.44.2$$

$$8's Dec = -3.59.30.3$$

$$38.20.4$$

$$5.6.4$$

$$-3.58.58.2$$

$$236 = 4.53.48.43 \quad \Delta \alpha = -1" 33.87$$

$$\text{app place of } 161 \text{ AR } 8.41.31.04$$

$$\text{At } 4.53.10.1 \text{ Sid time } 8.39.57.17$$

$$57.84$$

$$111.01$$

$$4.53.48.43 \quad 8.39.55.50$$

$$38.7$$

$$\text{At } 4.53.10.13 \text{ Sid time } \text{Ap. R} = 8.39.57.67$$

$$4.15.31.4 \quad " = 8.39.53.84$$

$$\text{In } 37.38.73 \text{ Sid time } \text{Ap. motion} = +3.33$$

$$\text{Sid } 4.34.20.76 \text{ Computed } " = +4.51$$

$$\text{At } 4.34.20.7 \text{ Sid time } \text{Ap. R} = 8.39.55.50$$

$$12.9.53.9$$

$$16.24.26.8$$

$$-2.41.3$$

$$16.21.45.5$$

$$1887 \text{ Sept } 23^{\text{rd}} 16^{\text{h}} 21^{\text{m}} 45.5 \text{ m.s.t.}$$

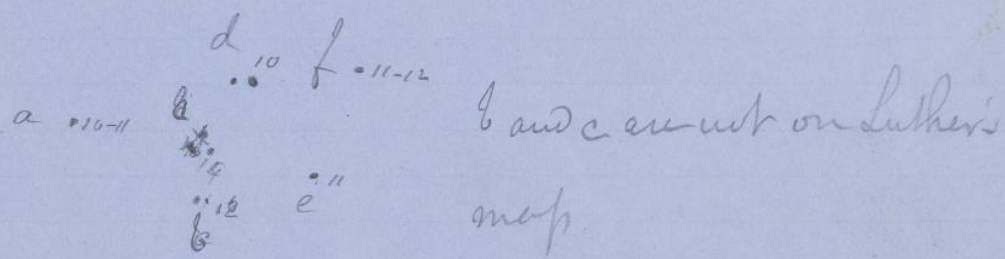
Sept 24th D'Arrest's comet. About 3° square of the place where the comet is expected was carefully searched without success

S.C.

Search after Leucothoe

24th Sept.

AR 3.1	BR 20	P. 183.2
217	120	
155	100	
+ 176.7 = +3 ^m	1140 = +19 ^s	



23 ^h 13 ^m +	
a-b 25.5	b-d 17.7
a-c 27.7	a-d 14.3
b-c 3.1	

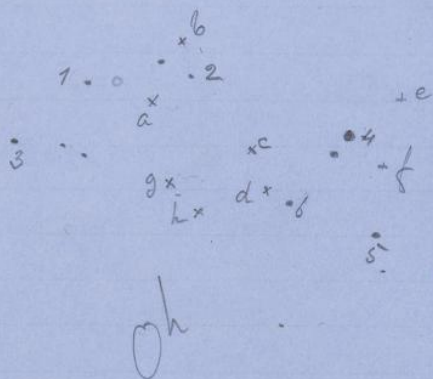
23 ^h 43	b-d 17.5
a-b 25.2	a-d 14.7
a-c 27.2	
b-c 3	

1 ^h 15	
a-b 25	b-d 17.7
a-c 27.0	c-d 14.7
b-c 27	

Note 25th Sept. b & c on both on Chacornae's map.

6th Sept 1857

Search after Leucothea

1st 30 (236)

Position Circle 183, 300 ±

1 - a	16.5	- 38.0
a - b	15.25	
1 - b	37.00	
g - h	3.75	
g - c	29.50	
h - c	25.25	
g - h	4.50	
c - d	2.00	
e - f	16.00	
d - f	14.25	
f - g	6.00	
f - e	11.00	
b - e	5.50	

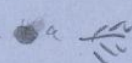
1 - a	22.50
a - b	15.00
g - h	5.00
h - d	2.00
f - e	5.50

Unsuccessful

26th Sept. 1857

Neptune

Planetary disc $0.3''$. Companion
at time quite clear & steady about
 $20'' \pm$ South following as well as could
be estimated. It is the position as recorded
by Mr Hale & C. by myself

There was something  of a tail to the
planet as represented at a but I could
not satisfy myself about it.

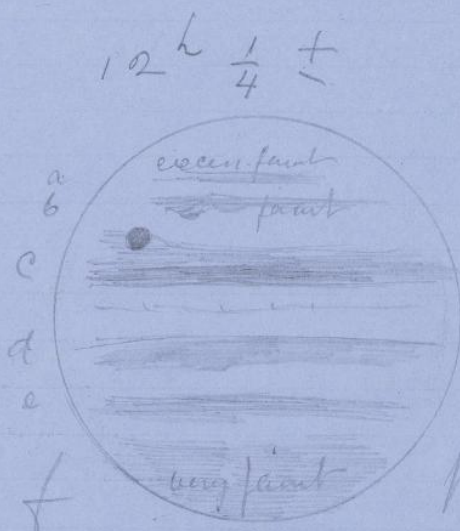
Neptune seen by G P B
x very faint

←

S. C.

26th Sept. 1857

Jupiter

0^h 30^m sid. time chr 236

The northern hemisphere is shaded while the southern is quite bright.

The general belts are parallel one to the other

c is the darkest. Planet will not bear any power above 141. None of the belts could be followed up to the limb of the planet. a. $\frac{8}{c}$ 0

a and c are of nearly the same brightness b is smaller c has a planetary disc b also though not so evident as does it appear round. a has no shape to its disc

(●) Ist cont

The first contact of sat & limb
 $0^h.47^m.26.^s.5$ Chr 326 3^d fast^d on E. G

The vision was so bad that I could not make use
 of last contact between $0^h.50^m.29.^s.8$ and
 $0^h.57^m.01.^s.8$ mean = $50^m.45.^s.8$
 $32.^s.0$

250

7th Sept. 1857

Search after Leucothea Moon light

No 5 = no 5 of 26th Sept.0^h 15^m

b-a 16.5
a-b 28.5
a-c 39.75
a-s 2.5
b-c 11.75

0^h 35^m

d-4 5.5
d-f 8.25
f-g 19.5
e-4 given up e is too small to hear ill
d-g 27

0^h 0

g-10 2.75+
g-h 2.50+
h-k 5.50
k-l 16.25
l-m 4
m-n 2.50
n-o 2.1±

8 a₁₅ - x b₁₅
5 - 7 - e₁₄

I

16 f₁₉
16 d₁₈
14 e₁₇
• 4 of 26th

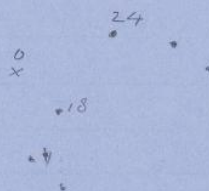
159 10 11
h 7 15
16
14 x m
12 16
13 14
14 16

• 1 26th p

1^h.30
16-nr



1^h.45
0-24 21.5



2^h.0
I a-b

*Group up from
latitude*

27th Sept. 1856

11 o'clock \pm Neptune

With 141 the planet seemed to have a very south following but with 315 it was not seen. The planet under the power however did not show a circular planetary disc, the figure appearing distorted owing perhaps to bad vision.

Following the planet was a star rather bright for the satellite & rather too far off. I thought I saw the satellite very near the planet north preceding this but observation is very doubtful. The later part of the time I could not distinguish any vestige of it.

S.B.

1857. Sept 27th

5814 BAC? ^{9th} Mercury Occultation of Sagitt 21st " 02^m " 29.50. E.C.
 " " " 38 Sagittari 21 " 04 " 27.00. "
 A " " 60 Sag - 22 " 55 " 40.25. "

Observed by S.C.

6230. 1st of a faint spot. 11.45. South of 50 Sag.

Photography-

Saturday October 3rd 1857

Resummed photography
of the Moon - Moon about 12° past
full & in a few degrees of North Declination

Attempted to get images on an
enlarged scale by interposing a camera
lens (compound) magnifying the focal
image to 6^{in} ($5^{\text{in}} \frac{7}{8}$). The time re-
quired was 12^{s} or 15^{s} . The focus was
found from first adjusting the camera
to throw an image at its optical focus on
the (plate?) and then moving it 1^{in} away
from the object glass without altering the
plate. The impressions procured
were the best we have obtained on a mag-
nified scale as yet but not as good as
the small ones taken at primitive focus.

Photography

Monday (Tuesday mg) Oct 5/8

Commenced on the moon magnified to 6^{in} diam - of disc. No satisfactory results obtained for two hours although the apparatus ~~now~~ for the first time used for moving the telescope in Dec worked well.

The difficulty was perhaps to be ascribed to a dense smoke & gas brought over the Observatory from the brick-yards on the Rail Road.

Oct 7/8 Photography

Moon again attempted on same magnified scale as on 3rd and 5/6 (diameter of disc = 6^{in}) & with little success. Although the air was clear the time required for exposure before action took place ~~was~~ two or three times longer than with the full Moon.

Photography

1857 Oct. 8/9

Fine & clear vision inferior

Commenced at $16^h 16^m 30^s$ m. s. t. The

obtained only tolerable images on the enlarged scale. With pretty good definition. The Moon at $28^{\circ} 40'$ N. Dec. & close to the meridian. The Clock going perfectly well. no appreciable motion in Declination and other circumstances favouring, we are still successful. and the time of exposure is now from 60 to 80 counts. to give images as intense as those obtained at full moon, under circumstances less favourable, in 10 counts.

We next took several plates at the primitive focus in $30, 20, 3$ & 6 counts. ^{In May & June 1 count = $1\frac{1}{2}$ second. In. is so here} Moon at last image only about 10° or 15° East of merid. That in 20 counts was a very fine negative ^{???} probably the best we have yet obtained & the chemical action much more intense than that of the large plates in 80 counts. using same collodion & process. Mr Black thought that it would require 8 or 10 times as long

to get an intense picture negative with large plate as with small.

Jupiter in 6 counts will about equal the average of eleven in 6 counts in strength a good comparison but only about $\frac{4}{5}$ of diameter of planet developed.

Those in 3 & 6 counts gave good outlines - (Plates I and II)

The 6 count is as intense as brightest spots on Jupiter in 3 counts. It is stronger than average of 20.

Next took Jupiter in 30 6 3 counts

and some others 4 in all, on same plate. The

faintest being in 3 counts. That in 3 counts did not better.

Three took All took

I am surprised that Jupiter should take so quick as in 3 counts. considering the intrinsic fullness of its light. Planet was only about 30° high & daylight was coming on.

The Equatorial dark belt* took well ⁱⁿ together with two white bands* on either side of it & two other dark belts faintly traced.

* NB The photograph is a negative & the dark belts in the picture must represent white bands.

I think that the faintest of the three discs exhibiting the belts & zones was taken in 10° .

Oct 9/10 1857

Photography

Clear but vision not good.

Moisture on Abigist. glass?

Jupiter Exp 10, 15, 20, 2, 4, 6, 30

10 counts

Took strong belts & the best picture

15

"

"

20

"

"

2

"

No trace of chemical action

4

"

Took but only a trace of belts center strong

6

"

belts & zones two ? of each - a good image

30

"

Too intense

No doubt would have taken in 3 counts at center

Pleiades

1st 75 counts2nd 75 "

centre of field

The whole group could not be taken in one field

3 stars are found on the plate.

Centre of field was the triangle below A. in the N. p part of group

Note Feb 1860
Oct 4 1857
5 or 6 times longer to act
than Jupiter

Saturn

This took well & shows the ball & ring.

30 counts

Took strong

30

Ball took & ring faintly

10

Took

* This image of Saturn shows the ball evidently more intense than the ring. The arcs are a little stronger than the rest of the ring.

Venus

10 count

1
2
3
10

All took. Each with a
peculiar nebulous halo
with remarks below.

The diam. of this image is not more than $\frac{1}{3}$ that of
the 10 count exposure.

N.B. On examining the object glass
on Oct 11th a quantity of moisture was found
between the lenses sufficient to give a strong
nebulous halo ^{of irregular form} about the brighter stars - There
can be little doubt but that the above
photograph of Venus exhibits this halo. &
that the pictures of Oct 9/10 and most likely
of 8/9th also are all affected by this deposit of mois-
ture which may have collected Oct 5/6 when
the glass was exposed to a dense fog which
gathered rapidly when we were at work.

Programme
for
Observation of Stars
in the
Nebula of Orion.

1st) The star θ' Orionis which is
the S. most star of the Trapezium to be the
centre of reference.

2nd) The region to be examined
extends in R from $1^m 30^s$ prec. θ' to
 $1^m 30^s$ following it. And in declination
from $25'$ South of θ' to $17'$ North of it.

This includes Herschel's limits in R
& extends them in Dec by $1'$ on either side

3rd) The whole region to be divided into zones of 3^m in R and 10" of Micrometer in Declination which are to be examined separately as follows.

4th) The wires are to be adjusted to the direction of diurnal motion. & the fixed wire set to the southern or northern limit of the zone to be observed. & the movable wire to be set at the other limit.

5th) Within these limits the stars are first to be numbered, with corresponding magnitudes. the numbers to commence with the northernmost star & to be reckoned in the order of declination - In case two have nearly the same declination the smallest numbers are to be given to those in the least declination, right ascension.

To the numbers & magnitudes some general description of the relative position of ~~neighb~~ the stars should be added for the

The Programme Orion

The purpose of identification

6th) The zero wire not to be employed

7th) The movable wire to be placed in succession on the stars favourably situated as they transit. & the readings recorded with number of star & mag. etc.

8th) The passage of each star so measured to be noted by chronometer as it transits a bright spot on the wire.

9th) The stars very near each other in groups are to be observed with the clock on ~~in the~~ if too near to be properly observed otherwise.

10th) The zero of position to be carefully determined & the wires set perpendicular to the apparent diurnal motion & the right ascensions determined by transits and spring governor

11?
10² In observing each zone a connection
with that next to it should be preserved
by observing one or two stars outside
of its limits

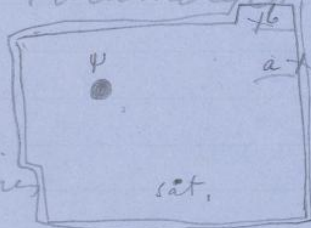
N.B. The foregoing programme was considerably modified
in the actual execution of the plan.

October 11th 1857.

Neptune Good vision

Examined it from $23^h 30^m$ Sid Time to $24^h 15^m$

It is perfectly round. With 688 there was no sign of a wing or any ring to the planet. It was circular throughout. There is a satellite plainly immediately seen with 688 plainly with 401 and with some difficulty with 141. It is north following about 5 diameters of the planet from it ~~forming about~~

thus:  With the 688 and 401 I thought a dozen times that I saw something either at a

or at b by indirect vision without being able to make sure of which place. The distance would be $\frac{1}{2}$ as far as ψ from the satellite. I was between glasses put a sudden stop to observation. The outer part seems less decided than interior. The limbs were not well brought out, but sufficiently so however to show the circular form of the disc.

October $\frac{11}{12^{\text{th}}}$ 1857

G.P.B. - 64-


See the $49\frac{3}{4}$ (shall use 48° for mean obs.)

Barom not corr. 30.219 at the 62

Good views - but some moisture between lenses
of object glass - (removed next morning) $85^{\circ}05'$ angle of position
carefully found

Zone I.

No 1 11-12th mag. in zone there are only 1 or 2 ^{very} faint than preceding
it in the zone

No 2 10-11 mag. is the last bright star in zone

3 10-11

3 10-11

is in the middle of the zone perhaps a very

little brighter than No 2

Movable wire alone used.

No 1	5 ^h 10 ^m 10 ^s -	68 ^m 75	67 ^m 84	Mean Δ	68 ^m 295
3 2	53 53.5 52.5	64 ^m 64 4.11	63 86	3.98 4.045	64 ^m 25
2 41	2 47.5	67 ^m 47 2.83	66 57	2.81 2.82	67 ^m 09

No 4 12 mag in ~~preceding~~ ^{following} part of zone middle

5 3 11 rather brighter than 4 in the ~~preceding~~ ^{following} part of zone

6 2 12 mag in preceding middle about 40" south following 5

7 12

8 10 little following middle of zone

266
11 October 1857

Mems

6	20 ^m 11.9	61.28	61.34	Mean Δ	61.31
5	21 38.5	62.45	62.51	1.17	62.48
7	(22 ^m) about after 5	59.19	59.28	3.23	59.235
8	21 11.6	55.66	55.81	3.47	55.735
4	3 32.0	—	63 89	8.08	63 8.9

Spring Governor
6
Long D before 2^o set.

Nov. 5 & 7 have ~~been~~ B D.
before them
no 4 has B after it.

Observations commenced

18' North of θ' and extending 1^m 30^s on
each side of it in R.

Not. ① Red to θ' = -6' 36" 44.30

These are not original
demonstrations of approximately
but have been copied from
the above.

Not.	Δ m	Δ m	Δ m	Δ m
6 to 1	6 ^h 35 ^m 00 ^s 95	61.28	7.45	73.2
1 ?	36 1 20	68.75	6.30	61.7
	B D	0.26.30		
5 g	36 27.50	62.45	3.26	31.90
7 36	30 30	59.19	5.45	53.4
3 21	45 00	64.64	8.98	88.0
8 2	37 1.30	55.66	6.34	62.1
4 v	19.65	63 00	4.47	43.8
	B	18.15		

Red to θ' = +30' 00"

② Long D. Red to θ' = -6' 41" 34.40

39	57.05	61.34	6.50	63.7
40	51 40	67.84	5.33	52.2
41	17 70	62.51	3.23	31.7
20	20 40	59.28	4.58	44.8
35	05	63.86		

end of zone D
Red to θ' = +30' 00"

6 ^h	41 ^m	57 ^s	25	16.20	55.81	8.05	78.9	7' 10"
42	42	97		51.72				
	27	90		34.93				
Long D. Red to $\theta' = -6$ ^{+ end of zone ②} 41 34.47 - 6 45 01.38								
43	18,15			1.0.10				
44	18,25			26.45				
44	44.70			270				
44	44.40			1480				
45 ^m	22.20			16.10				
	18,30			18.45				
	36,75			18 10				
	54,85							
+ end of zone ③								

cloudy from the 11^h/₁₂ to the 16th
 and then clouds passing continually on to
 prevent any observations being taken
 opened the dome twice on the evening
 of the 16th 17th

Dr Peters Comet (Olcott Comet)

(For Ephemeris see End of Book)

Placed for Oct 16/17 - 17^h m s t

Clouded up

16th Oct 1857

In blowing dust from mica
scale unhappily blew
both wires away S.G.

Cleaned mica scale slightly with brush

17th Oct Afterwards cleaned it thoroughly with alcohol.

Mr Coolidge put in new wires

Dr Peters' (Olcott Comet)

1857 Oct 17^h 18^m 17^h 12^m Place computed from Ephemeris

W. 685	Comet R	9 ^h 28 ^m 25 ^s	Loc - 14° 57' 20"
695	Star 7/8 th mag.	9 ^h 30 ^m 54.3 ^s	- 15 ^h 03 ^m 31 ^s 4' 8"
	9 ^h 31 ^m 35.0 ^s	- 15 ^h 7 ^m 39 ^s	
	9 ^h 33 ^m 37.0 ^s	- 14 ^h 54 ^m 56 ^s	

685	7/8 th	9 ^h 29 ^m 23.06 ^s	- 14 ^h 55 ^m 2 ^s
		1 31.20	- 8 29
		9 ^h 30 ^m 54.26 ^s	- 15 ^h 03 ^m 31 ^s
		40.67	
2.85		15.9	
32		32	
570		318	
855		477	
9120		508.8	
299			
7			
1395			

Lalande HC 18947

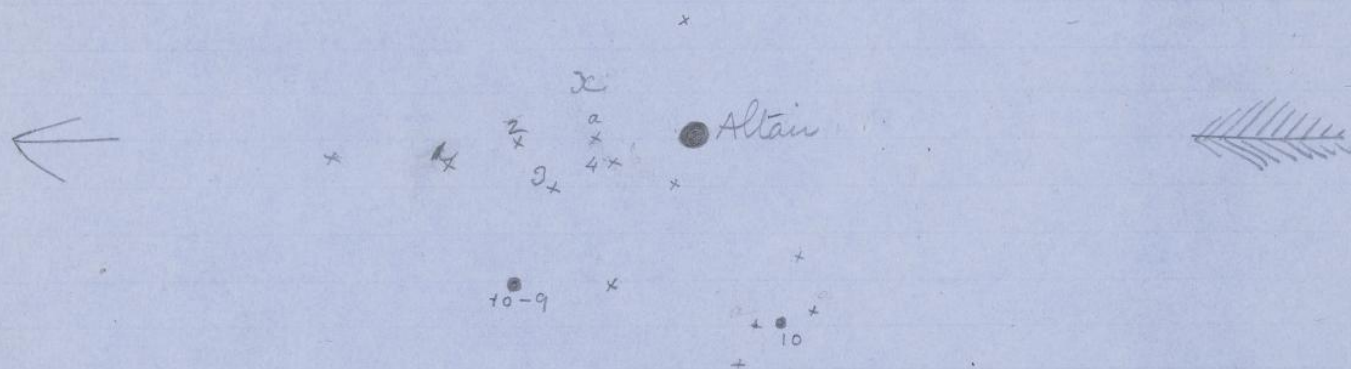
9^h 28^m 11.4^s - 14^h 48^m 18^s

Clouded up

9 ^h	9 ^h 33 ^m 46.0 ^s	- 14 ^h 53 ^m 26 ^s
	- 29.0	+ 14
	+ 0	+ 7
2.85	9 ^h 33 ^m 17.0 ^s	- 14 ^h 53 ^m 05 ^s
7	+ 20.0	- 1 51
1395	9 ^h 33 ^m 37.0 ^s	- 14 ^h 54 ^m 56 ^s
15.9		
2		
111.3		

270

10th October 1857
 4 1/8 h Wind Altair & neighbours.
Very bad vision

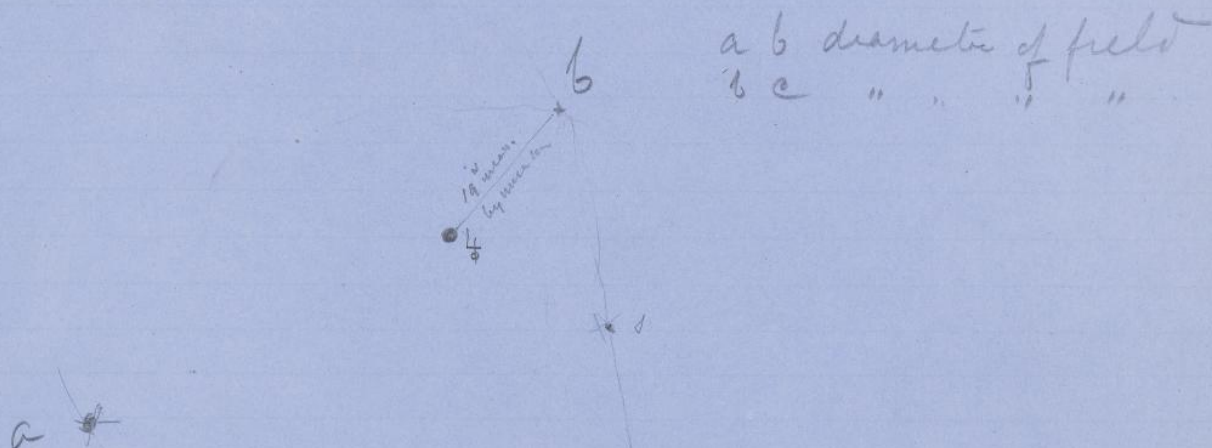


a very hard to make out. this is the star diffidence of Dawes
 who puts in at x - vision is atrocious - affect even
 comet seeker, according to Roman. None of the small
 stars were seen with Altair in the field with 141.
 Power 401 shows 1, 2, 3, & 4 with Δ Apuleia in view

Kepl

17th October 1857

Neptune



with 401 is circular. Perhaps the brightest part of the planet is towards the south following the north preceding direction as b a but observation is rather guess work. There is a small star about 15 diameter south following represented at m I suppose it is too far to be the satellite. I do not see anything near.

When about to give the planet up I perceived a very faint star at l which might answer to the satellite. I had not time to try higher power.

J. C.

272

17th October 1857.

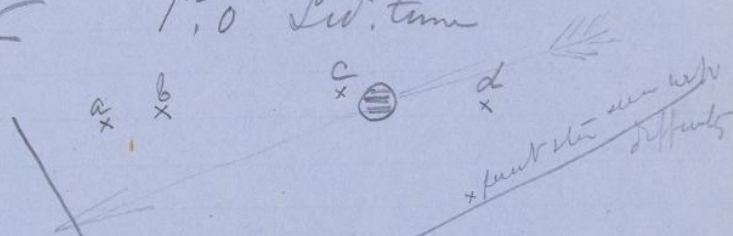
each after Lencatter

S.C. no
E.H. noAngle of position $270^{\circ}.00'$, see Circle, $6^{\circ}.26'.50''$ at end of obs.

11 m	7.26	
5 th m	8.55	companion following A
13 m		
12 m	4.00	} All lost
13 m	8.19	
12 m	5.08	
12 m	lost	
12 m	2.30	(third star) -
13 m	6.08	1 st m lost
13 m	7.50	lost
12 m	10.10	2 nd m lost
11 m	1.53	
11 m	9.45	
12 m	2.10	lost
10 m	8.50	
10 m	9.30	n.s.
11 m	3.21	
11 m	5.50	
10 m	8.33	
9 m	0.41	Dots.

5m	0.00	A
13	0.45	
11-12	9.33	
12	lost	
10	10.40	B
10	4.20	
12	lost	
12	8.18	
11	8.38	
11	10.35	
10	3.10	
12	1.9	
	Sub. Break.	
12	4.39	
12	0.40 n.s.	
11	5.00	
11	-0.10	
12	5.50 AM 1st Let on 2 nd min	
11	10.00	
11	-0.22 n.s.	
12	7.50 on 2 nd min	
12	5.46	
	Break.	
11	3.55	
11	4.30	
12	10.12	
12	7.35	
12	7.19	
12	7.31	
11	1.32	
11	0.20 Break lost.	B
12	10.20	
9	1.52	
10	8.28 com with per, 8.00. n.s.	
11	7.05	
11	0.18 n.s.	
12	2.41	
4-10	3.9	
12	2.28	
11	9.50	

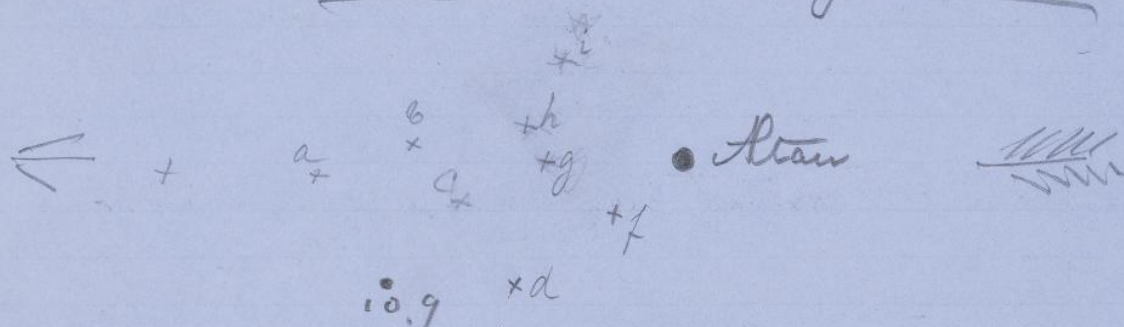
m		
11-12	9.52	
12	5.26	n.s.
13	0.58	
12	8.56	
11	0.28	
11	2.22	on 2 ^o wire
10	8.33	
12	8.40	
12	9.25	
	b. 13. b	

17th October 1857Jupiter1^h 0^m Sid. time

Vision is too bad to make a sketch
 of the planet. As well as could be dis-
 tinguished the belts are all parallel
b is the largest but is not brighter than d. The apparent
 disc of b is nearly 6". The disc of a is also quite apparent which
d appears more irregular. When compared with the bright star
 north of them the satellites have a decided yellowish
 tint. The atmospheric tremors affect the satellites a and b
 in the same way as the star. The apparent disc of this
 bright star is not much over that one of c.
 When the eye piece power 141. is pulled out of focus the, the purple in
 the centre of the star is a much bluish purple. For the satellites it is of a
 reddish colour. Moreover the star's borders are of a much purer green than the satellites
 which have a great deal of yellow in them. The eye piece could not be
 pushed in sufficiently far to make any great change in the shape
 of the object.
 The green borders of b contain more yellow than the others except perhaps
d. a has more of a dirty greenish border which c shows the greenest
 colour. I suspect d shows a less reddish purple centre than a, b and c
 but I am not certain of it. All the difference between the observation
 of the satellites are very minute. Despite borders are very yellow-green
 1^h 40^m d is brighter than b but is not brighter than the star
 1^h 43 c brighter than at 1^h 0^m. I incline to think that d is
 rather brighter than the star

2nd October 1857

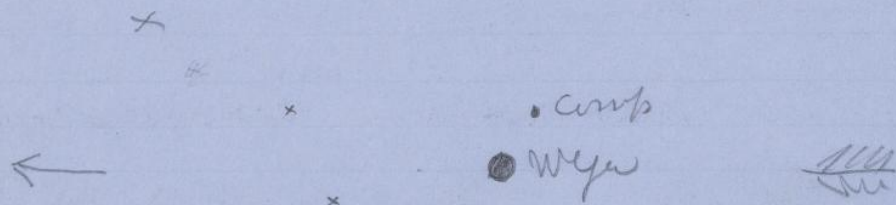
Good vision

Altair & neighbours

The stars a b c & d seen easily with 140 Altair being
 out of the field f g h & e with more difficulty, especially
e f seemed rather farther from Altair to night than on the
 17th very probably to vision

18th Oct 57 2 Lyrae

Admirable vision Tonight it is a beautiful object



Here are 3 stars preceding it of about the 19 - 20th mag.
 not seen while Weyne remain in the field

18th Oct 57 Neptune

examined with 141 x 401 Vision not remarkable
 in the way. Could see no trace of a satellite. The
 planet itself appears round without ring or tail.
 The two stars of the 17th instant were recognized and have
 not ~~been~~ moved. C.

20th October 1857

Vision is disgusting

21st October 1857 Bad vision. With power No. 5
 all the stars of the 18th instant were seen Altair being out of the field
 moreover there is a star not noticed there north of δ than 10^{-9} +d

+

Remarks on estimating
magnitudes of stars
Astr. Soc. Notices p 188 March 1858

Astronomy in 1857 July to Oct.

Unusual No of Comets. - Returns of Expected
Comets - the 13 Year Comet of Dr. Peters. Long visibility
of Peters Comet of July - Comet of Aug & Sept - Tail traced
10° in Comet seeker - plainly visible to Naked Eye

4 D Planets discovered within between Sept 15th and
Oct. 4th Vide Astr. Nach No 1110. Two (48) and (49) by Gold-
schmidt on Sept 19th and by Luther Sept 15th & one by
Ferguson Oct 4th ^{Oct 19th by Luther A.N. 1115} all in same quarter of heavens.

For return of L'Averest's expected Comet vide Astr. Nach No 1102

Photographs of Saturn Jupiter & Venus.

Occultation of Pleiades Nov. 2nd 1857 - Observed well
at Camb. Moon's S.D. = 17' 1". At nearly its least dist from Earth
& most favourable for occultation being on Merid-
at Camb during Occultations & very high north Dec
3 conditions rendering the phenomenon the best possible
for longitude. Search for Leucothoe (lost) 2nd year.

Comet VI discovered about 7^h 30^m P.M. Nov 11th by H.P.V

Great Eclipse in England. Seen only at one point where were no
astronomers vide letter of Mr. Carrington. Railway adv.

For. Dr Peters (Olcott) Comet.

Oct 20/21 Comets R 9.. 32.. 57
 " Dec -16.. 02.. 30

$$\begin{array}{r} 16.0 \\ 7 \\ \hline 1120 \\ -1.52 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 2.85 \\ 7 \\ \hline 19.95 \end{array}$$

Arg. 1049 8^h/9^h 9.. 31.. 25.5
 -16.. 4.. 29"

$$\begin{array}{r} 1.38 \\ 2.51 \\ \hline 4.89 \end{array}$$

$$\begin{array}{r} 58.59 \\ 1.38 \\ \hline 37 \end{array}$$

" 1050 9^h 9.. 31 19.3
 -16.. 00 37

Oct 21/22 R 9.. 34.. 25 an 8/9
 Dec -16.. 23.. 53

Arg No 63 8/9 R 9.. 38.. 00.3 An 8/9 follows by 1.0
 Dec -16.. 21.. 29 and is 10' 7" north

$$\begin{array}{r} 64 \quad 9 \quad 9.. 38.. 19.2 \\ -16.. 18.. 54 \end{array}$$

$$\begin{array}{r} D = -16.. 20 \\ D = -16.. 00 \\ \hline D = -20 \end{array}$$

$$\begin{array}{r} 20.57 \\ 24 \overline{) 1257} \quad (52.4 \\ \underline{120} \\ 57 \\ \underline{48} \\ 90 \end{array}$$

$$\begin{array}{r} 24 \overline{) 85.2} \quad (3.55 \\ \underline{72} \\ 132 \\ \underline{120} \\ 120 \end{array}$$

$$\begin{array}{r} -16.. 19.. 51.4 \\ +13.9 \\ \hline -2.2 \end{array}$$

$$\begin{array}{r} 9.. 38.. 9.34 \\ -29.02 \\ \hline -.. 01 \end{array}$$

$$\begin{array}{r} 6 \quad 40.. 00 \\ \quad 1 \quad 50 \end{array}$$

$$\begin{array}{r} 6.. 38 \quad 10 \\ 9 \quad 38 \quad 00 \end{array}$$

$$\text{prec} \quad -1.. 54.3$$

$$\text{prec} \quad +19.95$$

$$-1.. 56.4$$

$$-29.03$$

$$-1.. 42.5$$

$$-9.08$$

$$-16.. 21 \quad 33.9$$

$$9.. 38.. 00.. 26$$

$$-1 \quad 32.6$$

$$3 \quad 33.4$$

$$-16.. 23 \quad 06.5$$

$$9.. 34 \quad 26.9$$

$$\begin{array}{r} 2.85 \\ 7 \\ \hline 19.95 \end{array}$$

$$\begin{array}{r} 16.33 \\ 7 \\ \hline 114.31 \end{array}$$

Comet

$$1'' 54.3$$

$$b = * \text{Arg No } 63, 18570 -16.. 21.. 33.9$$

$$9.. 38.. 00.. 26$$

$$\text{Comets hly me in R} + 3.55 \text{ Red. ap. Eq. } + 3.9$$

$$+1.66 \text{ tested}$$

$$\text{Dec} -52.4 -16.. 21.. 30.0$$

$$9.. 38.. 1.92$$

$$R - * -1.. 37.1$$

$$-3 \quad 33.40$$

$$\text{Oct. 21/22 Arg } 7^h \quad 9^m \quad 10^s \text{ Sid. time } R \text{ Dec} = -16 \quad 23 \quad 07.1$$

$$R \quad 9^h \quad 34^m \quad 28^s \quad 52$$

$$\begin{array}{r} 14 \quad 0 \quad 17.4 \\ 17 \quad 8 \quad 52.6 \\ \hline 2 \quad 48.6 \end{array}$$

$$\begin{array}{r} 17 \quad 6 \quad 04.0 \end{array}$$

MST

1857 Oct 21/22

Not clear - Comet could scarcely be seen - 36.1
discerned - & obs made with greatest difficulty

$$\text{Comet n. of } * 11^{\text{th}} = a$$

$$236 = 7.. 5.. 50$$

$$\begin{array}{r} 17.11 \\ \text{Zero } 35.09 \\ \hline 17.98 \\ 3.6 \\ \hline 176.2 \end{array} = 2 \times \text{diff Dec}$$

$$\begin{array}{r} 2 \\ \overline{) 21.56.2} \\ 42.1 \\ \hline 11.28.1 \end{array}$$

7.. 11..

Comet follows a by 10 beats

11

12

12

$$\frac{12}{11.3} = 5.65$$

Comet north of a $1.. 28.. 1$
" follows a $0.. 5.. 65$

$$\begin{array}{r} 6) 52.4 \\ 8.7 \\ \hline 43.6 \\ 43.6 \\ \hline 41.6 \end{array}$$

a is South of b $3.. 00.. 7$
a precedes " $3.. 39.. 05$

Hence

Comet South of b $1.. 32.. 6$ } at 7.. 4.. 00 Sill. line
" precedes " $3.. 39.. 40$ } 7 9 10 "

Motion in Dec

-4".5

In

5 10

On Feb 6th 1858 the position of a was verified and also that of the Comet which on Oct 21/22 was very near ($\pm 10''$ or $15''$) to a star of 15th mag. $1.. 5.. \pm$ n of a & following it by 55. This was identified on Feb 6th

$$a = 11 \quad b = 8 \frac{4}{9} \quad c = 9$$

Aug 63 Aug. 64

$$\begin{array}{r} *a \\ *b \end{array} \quad \begin{array}{r} 7. \\ 23 \end{array} \quad \begin{array}{r} 19. \\ 20 \end{array} \quad \begin{array}{r} 40.5 \\ 20 \end{array}$$

$$\begin{array}{r} 16.65 \text{ is } n/a \\ 35.09 \\ 18.44 \\ 3.7 \\ 180.7 = 3.00.7 \end{array}$$

**
Double

Star A

Star B

Diff R

$$\begin{array}{r} 1st \\ 2nd \end{array} \quad \begin{array}{r} 7 \\ 28 \end{array} \quad \begin{array}{r} 40.5 \\ 52.5 \end{array}$$

$$\begin{array}{r} 32 \\ 12.5 \end{array}$$

$$\begin{array}{r} 7 \\ 35 \end{array} \quad \begin{array}{r} 24.0 \\ 36.5 \end{array}$$

$$\begin{array}{r} 39. \\ 15.7 \end{array}$$

$$\begin{array}{r} 3. 39.2 \\ 39.2 \end{array}$$

$$\begin{array}{r} 4.1 \\ 43.7 \end{array}$$

$$\begin{array}{r} 45 \\ 22.5 \end{array}$$

$$\begin{array}{r} 3. 39.0 \\ 38.8 \end{array}$$

$$\text{Mean} \quad 3. 39.05$$

Diff R
b/c

b/c Arc

$$\begin{array}{r} 19.23 \\ 35.04 \\ 15.86 \\ 3.2 \\ 15.54 \\ 2.35.4 \end{array}$$

$$\begin{array}{r} 52.5 \\ 11.5 \end{array} \quad \begin{array}{r} 19.0 \\ 19.0 \end{array}$$

$$\begin{array}{r} 47.6 \\ 6.7 \end{array} \quad \begin{array}{r} 19.1 \\ 19.1 \end{array}$$

Zero

$$\begin{array}{r} 35.07 \\ 12 \\ 07 \\ 35.09 \end{array}$$

Oct 22/22 Dr Peters Comet

Place for 16^h 24^mComets R 9^h 35^m 46^s.7
Dec -16^h 44^m 05^s

$$\begin{array}{r} 235 \\ 53 \\ \hline 705 \\ 1175 \\ \hline 125 \end{array}$$

$$\begin{array}{r} .235 \\ 7 \\ \hline 25 \overline{) 1646} \\ 4 \\ \hline .06580 \end{array}$$

1

+ 2.842

568.4

see v. 28

$$\begin{array}{r} 1000 \\ 2.842 \\ \hline 57 \\ 19894 \\ 14210 \\ \hline 161994 \end{array}$$

= 2^m 42.00

see v. 28 years

+ 16.318

32766

+ 065

16.383

$$\begin{array}{r} 57 \\ 174681 \\ 81915 \\ \hline 933831 \end{array}$$

15^m 33^s.8Star of 7th

H.C. 19223

9^h 37^m 45.23

+ 2 42.00

1857.0

9^h 40^m 27.23106^h 17^m 11.315^m 33.8106^h 32^m 45.1

Aug 65

9^h 40^m 36.28

- 29.02

- 02

+ 19.90

- 29.04

- 9.14

9^h 40^m 27.14- 16^h 31^m 0.4

+ 13.8

- 3.2

- 1 55.1

32 58 7

- 16^h 32^m 44.9

2.842

$$\begin{array}{r} 7 \\ 19894 \end{array}$$

16.318

see v. 125

16.443

$$\begin{array}{r} 57 \\ 115101 \end{array}$$

1^m 55^s.1This star is 11^m 9^s South of 6 of 21/22
follows 6.2^m 27.0

Arg page 130 No 151

$$* 9^h \quad R \quad 9^h 35^m 59.7^s \quad \text{Zone}$$

$$\text{Dec} -16^\circ 49' 56''$$

$$* 7/8 \quad R \quad 9^h 36^m 52.7^s \quad \text{Zone 402}$$

$$\text{Dec} -16^\circ 46' 46''$$

$$\begin{array}{r} 12.8 \\ 7.2 \\ \hline 25.6 \\ 89.6 \\ \hline 92.16 \end{array}$$

$$\begin{array}{r} 9^h 36^m 9.91^s \\ - 30.29 \\ + 0.04 \\ \hline 18520.0 \quad 9^h 35^m 39.66^s \end{array}$$

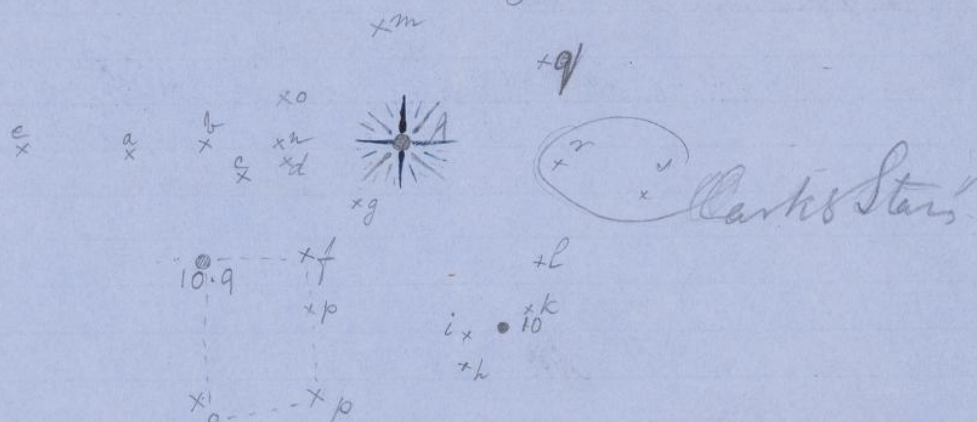
$$\begin{array}{r} -16^\circ 48' 22.0'' \\ + 11.8'' \\ + 9.2'' \\ \hline -16^\circ 48' 01.0'' \end{array}$$

$$\begin{array}{r} 13.2 \\ 3 \\ \hline 4) 39.2 \\ 9.8 \end{array}$$

$$\begin{array}{r} \text{Zone 402} \\ 9^h 36^m 47.10^s \\ - 14.42 \\ - .02 \\ \hline 1850.0 \quad 9^h 36^m 32.66^s \end{array}$$

$$\begin{array}{r} -16^\circ 45' 42.2'' \\ + 41.0'' \\ + 9.8'' \\ \hline -16^\circ 44' 51.4'' \end{array}$$

22^d October 1857 Altair & neighbours
 no vision



Stars a b c d e f g h k l m ^{r and s} are easily seen as soon as Altair is out of the field. The stars 10.9 f o and p form a rough parallelogram. I did not look after g yet I think I noticed it. n is a difficult object but now & then comes out bright and distinct. o is a very difficult object as well as p. As for g it is the "minimum visible" I can distinguish. I am however sure of its existence. I saw it once or twice by direct vision.

S. C.

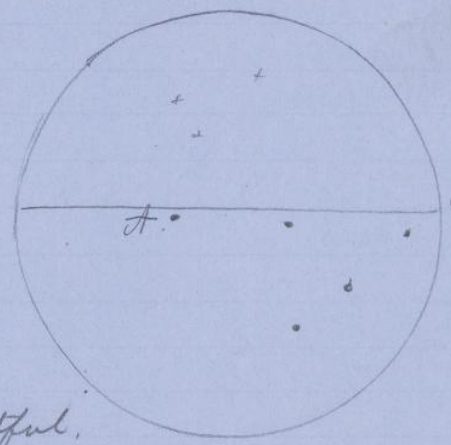
1857. Oct 22^d

Angle of Position 181°.4'

Search after Luciothea.

Mag.

a	8	8.55	
	13	2.32	follows first by 2 ^d AR not obs.
b	9	8.16	ns
	12	3.38	ns
	11	6.40	
c	12	9.33	12 ³ comp. n.p. AR doubtful.
	13	10.10	ns. s.
d	10	6.27	
	13		
	12	8.36	nosy?
	12	2.5	
	11	3.36	
	12	1.22	} taken after 10. stars follow <u>d</u>
	12	0.22	
	13	-0.	not obs.
	12		
	13		on second wire. star lost
	12	7.18	
		long J.	



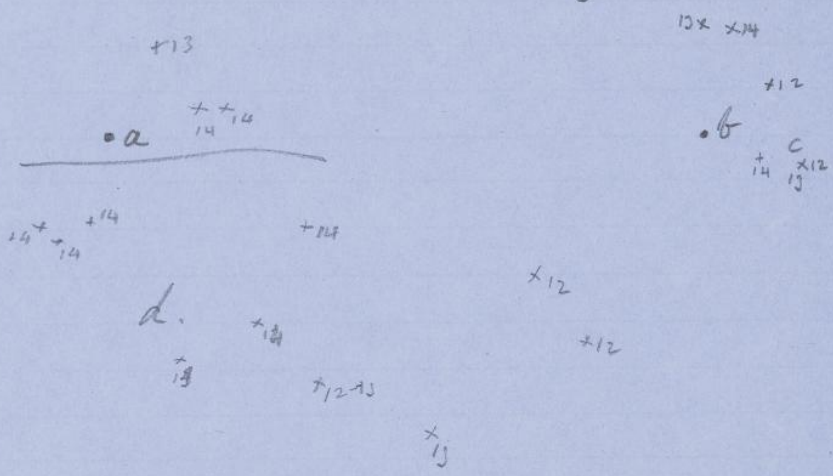
0.25^m.48.8
 5.2.7
 27^m 0.6
 5.2
 11.3
 20.5
 27 32.6
 28 7.6
 11.3

28 31.8
 30 0.0

31.38.5
 32^m.48.9

1857. Oct 22nd

Search after Luciothea.



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$$\begin{array}{r} 24 \overline{) 34} \quad (1.42 \\ \underline{24} \\ 100 \\ \underline{96} \\ 4 \end{array}$$

$$\begin{array}{r} 42.5 \\ 85 \\ 1 \end{array}$$

$$1 \frac{5}{12}$$

$$\begin{array}{r} 3 \overline{) 85} \text{ hly} \\ \underline{28} \end{array}$$

$$1.4$$

$$2.27$$

$$\begin{array}{r} 24 \overline{) 147} \quad (6.12 \\ \underline{144} \\ 30 \\ \underline{24} \\ 60 \end{array}$$

$$60 \overline{) 612} \quad (0.102$$

$$\begin{array}{r} 37.6 \\ 102 \\ \underline{752} \\ 376 \\ \underline{4512} \end{array}$$

$$\begin{array}{r} 42 \\ 6 \\ \underline{252} \\ 60 \\ \underline{60} \\ 0 \end{array} \quad (1.42$$

$$84$$

$$\begin{array}{r} 1.42 \\ 376 \\ \underline{852} \\ 4994 \\ \underline{426} \\ 53392 \end{array}$$

$$2.27$$

$$\begin{array}{r} 147 \\ 2 \\ \underline{15} \overline{) 294} \quad (19.6 \\ \underline{144} \\ 150 \\ \underline{132} \\ 18 \end{array}$$

$$\begin{array}{r} 38.50 \\ 19.6 \\ \underline{8.39} \overline{) 692} \end{array}$$

$$\begin{array}{r} 3.2 \\ 24 \end{array}$$

$$\frac{8}{6} \quad \frac{4}{30} \quad \frac{2}{15}$$

Ephemeris of the Ross Comet

(Washington Mean Solar Time)

1857	Re.	Lat.	Long.	GA
Sep. 19	28	38	-1	30.7
20	31	15	2	7.9
21	33	49	2	44.2
22	36	21	3	19.8
23	38	50	3	54.6
24	41	17	4	28.6
25	43	41	5	1.9
26	46	3	5	34.5
27	48	22	6	6.4
28	50	39	6	37.4
29	52	54	7	8.4
30	55	6	7	38.5
Oct. 1	57	16	8	8.0
2	59	23	-8	36.9

0.0582

0.0766

0.0947

0.1093

4-36

8 15

500

= 0.06 ms

5.35 ms 1st

$$\frac{12}{4} = 3$$

$$\frac{4.8}{2} = 2.4$$

0.2

$$\begin{array}{r} 85.2 \\ 2 \\ \hline 170.4 \\ 7.70 \\ \hline 247.4 \end{array}$$

$$\begin{array}{r} 2\frac{1}{2} \\ 42 \\ \hline 41.12 \\ 19.41 \\ \hline 23.53 \end{array}$$

Ephemeris of the Olcott Comet.

Wash. M. T.	α	δ	Δ	Time of Aberration
1857. October 16.5	9 ^h 26 ^m 29.75	-14° 30' 23.8	0.151684	0.00817 W 602
17.5	28 5.58	14 52 53.2	0.154352	822 11 685-
18.5	29 39.30	15 15 3.1	0.156954	827 719
19.5	31 10.89	15 36 54.0	0.159491	832
20.5	32 40.36	15 58 26.4	0.161964	836
21.5	34 7.70	16 19 40.9	0.164375	841
22.5	35 32.93	16 40 37.7	0.166724	846
23.5	36 56.06	17 1 17.3	0.169013	850 -
24.5	38 17.10	17 21 40.1	0.171242	855
25.5	39 36.03	17 41 46.5	0.173413	859
26.5	40 52.87	18 1 36.9	0.175527	863
27.5	42 7.64	18 21 11.7	0.177585	867
28.5	43 20.33	18 40 31.1	0.179588	871
29.5	44 30.95	18 59 35.6	0.181538	875
30.5	45 39.50	19 18 25.4	0.183433	879
31.5	9 46 45.98	-19 37 0.8	0.185277	0.00883

Argument: Observed time minus Aberration.

Nov 1.5	9 ^h 47 ^m 50.39	-19° 55' 22	18 07
2.5	9 ^h 48 ^m 52.74	20 ^h 13 ^m 29	17.54
3.5	9 ^h 49 ^m 53.03	20 ^h 31 ^m 23	

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" 43-44 "

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32,5-0

ngaurrr

22,10

18.47.37

3.22.23



