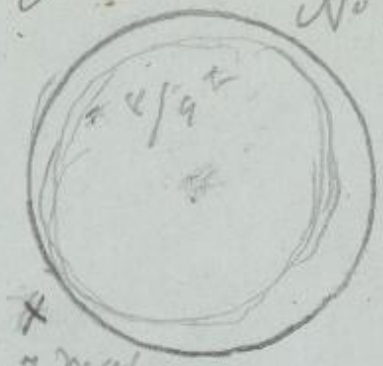
M.21

Sun 10h
No 1



7 May

720

× 5' [illegible]

16..42..58

16..39..45
7 56.27
0..36.12

New Comet Seeker
Presented by Ingersoll Bowditch

June 10th P.M. 1847

424 3m 0s slow of Z

424 14 56 45 −17 29 ? Telescope might have moved
Eh 2 17 56
AR 17 14

424 15 07 24 (Checked Nebula from 13th Cluster)
Eh 3 07 30 −24 56
AR 18 14

H 2010
AR 18h 14m
Dec −14° 57'

Clouds shut in the whole sky so as to prevent further observation

Both look alike – faint, roundish nebulous patches, neither probably are visible in the Smith comet seeker.

No 2

a & b 9th mag

There was a bright star of the 7th mag. apparently below as on the first leaf.

No 2 was near a star of the 2nd – 3rd mag. 1° up below α to the left.

2

June 15th 1847

424 = 2557

424 15h..16m..14 - 10 beats D = -29°.00

WH 1..44..13

1.4 27

Nebulous map faint with a star apparently in it.

424 15..40..26 - 10 N + 8°..58'

hW 3..14..40 H 1294 R 12h..21m + 8°..56'

faint roundish nebula.

Near ~~Cancer~~ Bernice

---

faintest visible H 1047 R 11h..51m + 51°..55'

15..59..00 + 51..56 double star

4..03..30

(checked June 18th) H 1175 R 12h..11m + 48°..14'

16..03..44 D + 48..15

hW 3..48..41

Rather faint - elongated with a star & tail.

There is by the side of the nebula in Ursa Major another to the left & 30' from it

Small & elongated

June 16th

At 6 P.M. it being nearly calm, with some high Cumuli moving slowly & apparently melting away. Sharpness very well with 75 & 240 but no spots or mountains. it appeared to be agitated at the approach of a cloud.

(1) 4.24 2s Slow of 2557 June 18th at 6h

18 52.00 + 48.10

W 5.24.50

double

H 1622 & 1623

R 13h.23m

+48°.07'

(2)

19.09.38 −32°.20'

W 0.33.05

R 18.32

(3) 19..22.29 −30.35

W 0 33.55

48.34

small round bright & pretty

From 18th (continued)

H 2015 AR 18h..26m −24°..01′

(4) 19..33..10 −24°..00
W 1..02..30

Splended map of Stars

(5) 19..39..46 −24..58
W 1..21

H 2010 AR 18..14 −24°..57′

round pretty bright

H 2125 AR 21h..25m −1°..34′

(6) 19..54..35 −1..30
E 1..34..20

round & bright
no motion in ½ hour

All except (1) have been examined from 3m to 2h after their first position & no motion seen

~~20..39..53~~
~~1..51..04~~
~~19..48..48~~

June 18th (Continued)

Began to observe at 1 A.M. with the Bowditch Comet Seeker. It was quite clear except near the horizon, a heavy dew & no meteors. A pretty thorough sweep.

The field of the instrument is 3° with very fine definition except in one corner. It takes somewhat longer to get over the ground with it than with the Night glass, but its superior light & especially its certain definition give it a great advantage than I was prepared to expect. (in 1848 field 4° or 5°

All the above except (1) were found in sweeping up to about 60° & from North to South, towards the East. It takes nearly two hours to give this zone a thorough search, to get the places of the objects found & afterwards to compare. & finally to carry the sweep to the day-dawn.

6

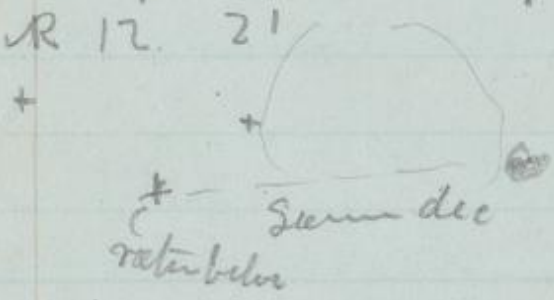
July 3rd

424 17..15..20 +2..43
Wh 2..05..43 Very bright & close cluster

H 1916
R 15h..09m
+2°..44

July 14th (checked) no motion in 40m

424 17..00..01 − 10 sec
WH 4..38..40 +9°..00'
R 12 21



very faint, round, pointed

17..16..41
WH 4..28..20
D 22..38 (checked)

no up mo. in 20m

H 1486
R 12h..48m
+22°..36'

July 14th Checked Aug 11 B R 16h 50m -29° 47'

17h 40m 30 -29° 48
W 0m 50

Bright round

17 44 23 -10 -26 00
W 0 52 00 H 1975 R 16h 52m -26° 00'

about 1m same brightness diffused

18 01 10 -3 48
W 1 13 00 H 1972 R 16h 48m -3° 50'

rich Cluster of small stars

18 08 44 -12 37 (Checked) 24
W 1 46 00
16 23 Diffused nebulosity faint

18 26 29 -23° 59 H 2015 R 18h 26m -24° 01'
0 00 00

rich splendid Cluster of small stars

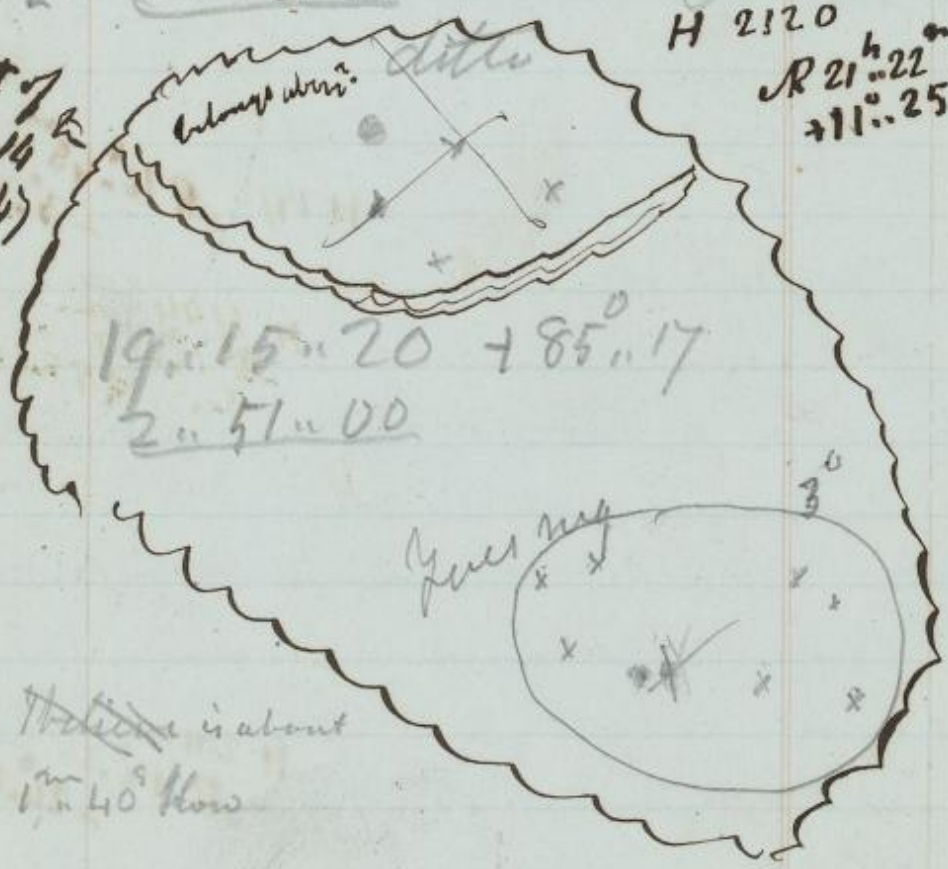
8

18..30..25 −24°..19'
4W 36..0' R 17..51
Coarse Cluster & nebulosity

18,38..03 −1°..30' (checked)
E 2..46 H 2125 See before
bright roundish

18..53..25 +11..30 (checked)
E 2..28..20
H 2120
R 21h..22m
+11°..25'

Comet of July 14th 1847
1st Obs.



424 ~~Helix~~ is about
1m..40s How

4h 24m 10s
7h 53m 10s
13h 55m 10s

78° 25′

4h 18m
17h 51m

4h 21
17h 52

Aug 11 1847

Error of 424 = 0m 3s

424 18h 38m 50s −29° 12′
W 1h 34m 40s
R 17 04
Quite faint

18h 44m 54s −29° 46′
1h 54m 00s

See before (Checked) 2 July 14

Bright

19h 19m 40s +55° 12′
5h 22m 10s

(Checked)

H 1744
R 13h 57m
Dec +55° 12′

not faint & very much defined with stars

From 9 to 10h 30 swept the western hemisphere near the horizon with and a review on the East as far as Zd = 50° or 60° on both sides to within 20° of the Zenith or as high as the instrument would point. Meteors unusually abundant several of 1st & 2nd mag. with streaks radiating in general from Perseus. Generally with rapid & moderately bright

Aug 11 All above the horizon at midnight has been pretty well searched.

Fri 13th Sept probably H 74 ?
AR 0h 44m
-27° 30'
0 16 12 -27 19
E 0 27 50

Very faint roundish
no motion in 30s
(Finished all the visible sky.)

Meteors are very numerous with streamers & radiating from near Perseus with some exceptions. I saw one through the Great Refractor power 180 its motion was not very rapid it might have occupied 0s.5 in passing 12°

Aug 15th Neptune

The brightest precedes by 1 breadth & 1/2 of the ring (including α & a little) & is ap. 3 or 4' N of it (really south) (there is a small star near it)

Clouds come up suddenly & prevented sweeping except East of the zenith

Aug 18th Fred (checked) (19)

+5 rd

2557 20.31.20 −25°.50' alt 17°

East −5.20

W h 3.32.41 Scratching faint

16 53

(checked) 19th

−5.20

H 1622
R 13.23
+48°.05'

2557 21.35.45 48°.03' double

W h 8.07.20

Swept from Moonsick to Lyra & East of Z. to Saturn.

20.26
3.33
16.53
18.55
2.0.4

424 18.01.08.0
2.07.40

Aug 18/19 16.53.28 (checked) 4, 2 hour

W 4 3h.20m -23.30
at 4.00 M.S.T.

R 0h.30m -26°.03'

H 61 on
0h.39.
-26°.13'

A most singular object. 20' across.

Aug 19th A.M.

At this date I examined all but a zone of 15° by 90 between the horizon & infinite d'Formalhaut. ∨ a triangular space lying between the Galaxy & the N. meridian the apex at the zenith.

About Aug 30th?

(Checked Aug 31st)

H 1558
R 13h..05m
19°.05'

18h 49m 19 − 19° 19' 10"
W 5h 45m 40

Comet of July 14

19h 15m 43 + 50m 13
6h 22m 20

(Checked Aug 31st)

H 1456
R 12h..43
+42°..05'

19h 23m 49 42° 05'
6h 42

Swept from the
Milky way to the
N merid. as high as 5° above the
Great Bear

(Aug 31st (Checked July 74)

2557 20.31..00 11.31
E 0 57.13

H 2120 α 21h..22m
δ +11°.26

Sept 7th PM Saw a meteor 15' in diameter near E of & with a train in the direction of the tail of Scorpio. Color blue & it exploded with reddish fragments

From the middle of Aug to the middle of Sept. There has scarcely been a favourable hour for Comet seeking I think it has been about the worst state of atmosphere we have experienced for some years past for that purpose. On Sept 14th I had just a chance to save the western hemisphere from the coming moon but the work was not thorough.

From the Balcony

Sept. 14th Comet seeker Equatorial

H 20..02..00
424 19..53..20

424 20..38..00 D − 23..52
h W 2..13

H − 24°.01'
H 2015 h m
R 18..26
− 24°.01'

a little group of bright stars a Lone & to the left of this very bright object

H 2036
R 19h..10m
+ 29°..54'

21h..42m + 29..56 =
W 2 34
19 ..08

Very small & faint with a very small star close to it.

α Lyrae 21..51..30 + 38°..50

22..27..00 43..20 Comet?
W 5..19..
17 ..08

92 ll R 17h..12m
dec +43°..18'

bright, round.

Observed all from the Moon to the R of Saturn both above & below pole to the S horizon left off at 11..30

Observed also East of Sat. for 10h 0m 15m

16

Sept 7
Aug 15/16 Alb.

H.74

424 0..39..25 - 27..23
E 3..20

1..10..00.5 + 30°..00'
W 0 14m

Very large a difference

Dec -24°38' if so this is
M.79

no change in 1 hr

2..07..00 335..22
E 3..11..00 24..38

no change very small in 1/2 hr

2..17..50 ±0..00.2m
E 3 24..00

H 368
R 5..38
0°.00'

Aug. 16th 1847 21h 21m Sidl

29.29 42.98

42

Coincidence

29.75
42.98
13.23 = dist. fr. Nep.

line of coincidence
353° =

dist. measured on 83°

Sat. ap. below

Sept 29th 1847

Night pretty clear but the sweeping was uncertain especially to the North, on account of a very brilliant Aurora. Swept the R from the Milky way to near the R of the Great Bear. where it was of little use. after 9 o'clock moved the instrument to the East Balcony & swept in Dec from about 1h E, 84° to 40° N. & to Milky way in the NE

Sept 30 Cleared off about 9h 30m Swept till Moonrise. & went over most of the ground pretty well West of the R of Saturn.

There are a few spots wanting & near the twilight

20

/

9d

20 31 40 ** rather faint

Sept. 29

1 424 19 39 50 − 30 00

LVII 2 46 50

h 3661 Same before

~~Sept~~ Oct 1st

424 East 30° alt.

424 20 h 31 m 40 s +36°
W 7 m 25 s

probably the Comet of July 14th

H 2128
R 21 h 31 m
-23° 55'

21 h 10 m 10 s -23° 50'
E 0 30 m 15 s

* x 40'

Small pretty bright

21 h 20 m 30 s -21° 20' H 2186 R 22 h 43 m
-21° 30'
E 1 m 10 s

like a cluster
Large & much diffused

1 22.. 25.. 00 + 38.. 55'
E 3.. 05.. 30

very large & very cl

1 23.. 10.. 30 + 23.. 35
E 6.. 22

very small
near 70' W. from ~~Aleique~~

have swept over all west of Aldebaran
most of the time under favourable
circumstances.

Oct 6th? Thursday Dell.

Finished to the Merid. of Orion not clear

There is a small nebulous body about 20' n. f. μ Leporis.

AR 5h.07m -16°
from Globe

Oct 12th Dell have swept carefully from AR of Orion to daylight. I have hunted carefully for the above Nebula & cannot find it. I feel a good deal of confidence that μ Leporis was the star. There is certainly nothing of the kind near it now.

On the night I set two or three times on it & could recognize no motion. There is a small nebula below it 6° or so which I have frequently seen before. I therefore do not think that this was the one in question.

Oct. 14th Clouded up when the moon set. unless it is clear to morrow I shall lose the western sky. Swept East of Zenith from Merid to RA of neb. in Andr. Polaris to Decl 20°.

There is a nebula about 2° x perp. from the lowest Star of neb in Orion. One near a prominent Star N of Orion

Oct 16th Adl. Swept from the Moon to near the East horizon at 1 Adl. Air very clear. Moisture condenses on the object glass. The Eastern hemisphere was ~~[illegible]~~ negligently examined near the Zenith & merid. some portion were omitted.

Oct 15th Friday

23..53..00

almost very faint

100

Oct 21st Thy

6h..33..20 +21°..25'

E 2m..53

9..26..20

γ Leonis just enters in Dec. ap. N.

not in R

no mo. in 30m ap.

very bright star up right hand in field

Comet of July

7..01..41 28..53'

L 6..33

14th

Swept from Leo to down

Oct 26th

H2010

20..55 −25..05
W 2..41
18..14

21h..08m..40s −1..40
W 4..31
16..37

H 1971
R 16..38s
−1..38

Swept after to Jupiter
from Galaxy to N. Crown.

Oct 28th 7h.

H 2126 $21^h.31^m$
AR $23^\circ.55'$

21..12..25 −23..50
E 0..20
21..32

21..23..40 +11..38
W 7 50

H 2120
AR $21^h.22^m$
$+11^\circ.26'$

I have now swept over all above the horizon at 9 PM. from the AR of Cygnus pretty well and thoroughly.

July Comet Nov. 6th. 10 PM
6..34..40 $+29^\circ.05'$
16..52..50
13..41..50

Nov 5/6 Swept from Capella to horizon at 3h AM.

2557 5.09 31942 Small & faint
12.05 −40°.18'
5h.17m

Nov. 12th
Swept from Lyra to Polaris
Clouds & moon to S & SW.
Swept a little while to East.

Cannot be found in Catalogue

Suspected Comet

Nov. 26
22.37.30 21.45 right
4.25 in horizon
18 12

22.52 −0.45 ~~Suspected Comet~~
1 35
21.17

Swept W of 23h

Nov. 29

0..29. −22.30
2..46
21..21

3..14..00 − 70 beauty +21.38
2..13 Small & round.

× 80' s.f. a very bright star 3rd mag

Nov 30
0..00 332..15
E 0..48 −27..45

rather large & diffused 2° S.f.

Dec 6th

6h 18m 40
W 4m 54
1m 16

149.35
+30.25
Dec Oct, 1st

Dec 6th
~~Poly Comet~~
~~18h 39~~ 18h 35
~~6m 27~~

Sweep way between Arcturus & Cor Caroli?

Have swept without much success from Sunset through Leo. at different times within the last two days. Have swept more or less on almost every clear night since Sept, 1st

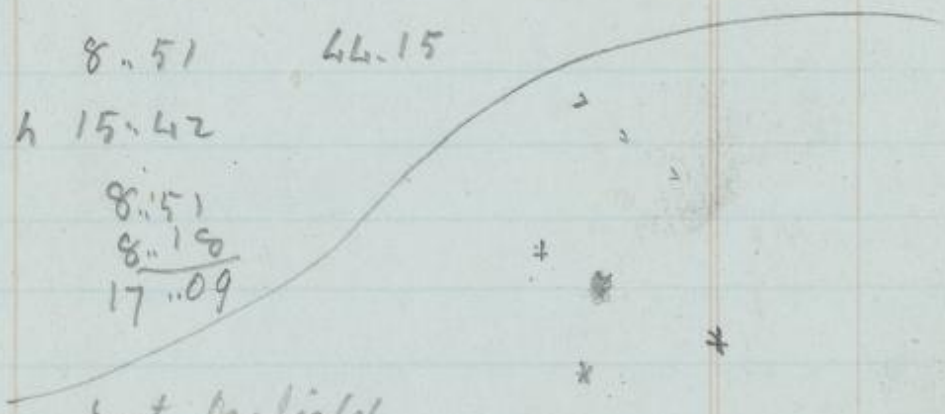
Dec 27th Mon. Swept pretty well from Sunset to 0h

Dec 28 & 29th Limited to R of Jupiter. often interrupted by clouds & haze but near the zenith.

8.51 44.15

h 15.42

8.51
8.18
17.09



Just one field
north of Cor. Carolii

June 4th 5th den
Limited to rising of Scorpio
Except 4 or 5 nights this week
always cloudy in the morning

13.38 −3.04.24

13 h 39 m 18 s - 30 -3 ° 04 ′ 26 ″
h 8 h 08 m 00 s
17 h 31 m 18 s

13 h 54 m 53.3 s -3 ° 05 ′ 28 ″
h 8 h 23 m 38 s
17 h 31 m 15 s

* 6th mag. or 5th
14 h 05 m 08.0 s -3 ° 04 ′ 34 ″
h 8 h 08 m 59 s

Jan. 13th All have finished this
Moon to R of Orion & then from
R of Jupiter to circle of perp. aps
& to 13h R.

34 [illegible] 18 Aeh.

Gould positions Dumbell. 40' S of η Lyrae
the 5th mag.
same in R ascn.

13h 28m 00s +22.27
17.32
19.56

13.35.00 +29.58
18.14
19.21 small dust?

13.40.00
20.27 43.20
17.13 bright

13.53.35 341.40 South H 3677
20.41. -18.20 faint
17.12.35

Limited tolerably Ra 17
Cloudy 18.20
5.40
19.57

Sun rise
short of time.

Jan 24th

Began sweeping after twilight
clouded suddenly. recommenced
at 7.30 & swept well from the pre-
ceding region of the square in Pegasus
to α R of 55 Orionis.

Have looked over Pegasus &c
once or twice before through clouds.

Feb. 1st 1848

Feb. 1st

4..16..45 +12..55 very faint
22..11..50 cluster?
6..05

α Orionis
4..20..30 +7..32
22..33..15
5 47

36 Feb. 2nd Inst adjusted in az. by Castor.

3..42..05 +21..50 small

22..17

5 ..25..05

5' n.p. a bright star
fifty

4..50..10 349..50 pretty large
20..56 -10..10 (cluster?)

19 ..54..10

Gr. Refractor.

424 5..15..15 - 40 beats -6..45..50
HE 11..45..51 4..47

5 ..29..08 -6..49..57

a curious nebulous star
apparently in a ring neb.
diameter 1' difficult
Star is 10 or 12th mag.

5..29..08
6

AR 5..29..02
Dec -6..50.

H. IV-33.

× 8..36..20 48..30
20..26
12..10..20

× 9..04..30 42..30
20..21
12..43

at 9..08..45 Sid
sky being perfectly clear a sudden double flash like lightning of a bright red hue. Doubtless a great Meteor it illuminated brightly surrounding objects on the west side.

× Cluster.

9..12..45 43..45
15..57
17..15

bright, round.
like cluster in Hercules

9..21..30 29..32
19..45
13..36..30

Feb 2nd 1848.

+

9.30 19..10
20..24
13..06

9..36..50 9..05 +
21..13 faint - comet like
12..23..50

a fine cluster equal to Hyades

G.R.

10..30 55 240°..49'..00"
8..55..33
13..35..22

By moving the diaphragm in the eyepiece of the micrometer I found that injuring materially the distinctness the field of view could be increased from a little short of 3° which has hitherto been used, to over 4° thereby doubling the area

I think the advantage was more than

were detected with it. By filing away a part of the setting of the Objectglass ~~the~~ ~~was~~ its effective aperture was enlarged by between 1 & 2 of an inch adding something like an inch to its area

On the evening of Feb 2nd & morg. of 3rd swept over the circumpolar regions to near Lyra & the other portions above the Horizon at 1 Aell. that is beyond track of Arcturus. The night was clear but not dark owing to the snow.

+62.34

12h 56.00 −6.40
20.12
18.44

15.06 930.00
22.07

2..16

14..32
21..44
18..48

355..35
-4..25 - 15′ ?

Feb. 21 1848

5..58..30
4..35
1..23

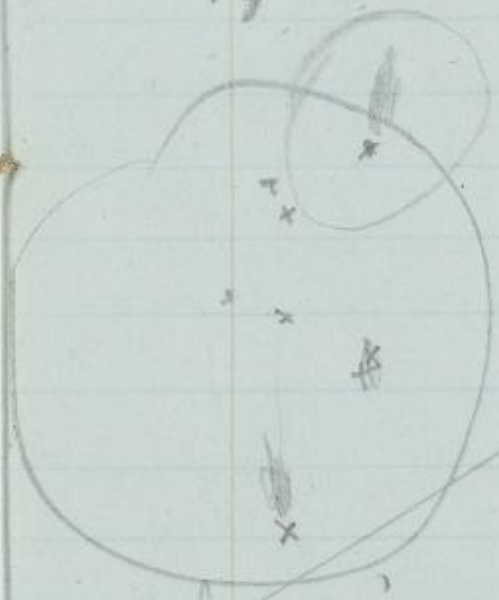
149..55 + 30°..05

Map of nebulous light.
30′

Swept over West & Cleveland at Moon-rise but imperfectly bright Aurora & very bright zodiacal light up to the Pleiades

6h 56 +49.00
18h 45
5h 15
12h 11

7h 07m 30 43.45
17h 57
6h 03
13h 10 a singular object



7h 24m 30 +23.20
18h 33
12h 51

7h 31 19h 45
18h 25
13h 06

7h 44 +9h 35
19h 22
4h 38
12h 22

4h 51 +1h 30
20h 50
3h 10
11h 61

8h 11h 00
21h 11
2h 49
11h 00 +1h 20

8..29..03 227°..04'
4..39..50
13..08..53

A good sweep from α of Ophiuchus to Deneb. (α Lyra)

8..46..47 – 40 back 231°..45'
4..08.
12..54.

Mar. 1st–2nd 1848

2557 11..38..30
21..57
2..03
13..41

331..20
–28..40

11..58..20 –1..30
× 14..18
4..42..20
16..40

12..03 30 +2..45
20..42
3..18
15..21

a fine nebula or cluster

March 8th 1848

9h 30m 40s – 100 hours
21m 07s +9h 00
2 53
12 23

9h 40m 30s +22m 50s
20m 50s
3m 10s
12m 50s

10h 06m 00s 55° 30′
20m 07s
3m 53s
14m 00s (3 Telescopic Meteors)

10m 28s +29° 30
20m 53s
3 07
13 35

Flame swept to right from
R 9h to horizon East.
Last night swept from
Polaris to Cassiopeia interval
by Chronom.

March 15th Dec

	15.37.30	322.45
XVk	0 4	-37.15
	15.33	
	15.42	330.0
+	22.51	-30.00
	1.09	
	16.51	
	15.45	very high
	21.20	334.50
	2.40	-25.10 -24.00?
	18.25	
×	15.48	341.33
	22.43	
	17.05	
	15.57.30	-3.55 PM
⊥	23.06	
	16.46	
	16.01.30	+11.05
⊥	18.41	From S horizon to
	5.20	zenith & daylight
	21.21	east of Venus

March 21st Pile 1848

424 8..27..12 130..27..12
7..52..22
0..34..50

Neb in Andr.

Smith

8.. 33.. 52 130°..03'..00"
7..59..03
0..34..49

49..44

Sm 7th diag.

8.. 40 10 130°..16'..12"
7.. 58.. 20 40..16..12
0..4 ..50

8..47..46.5 130..28..30
8..12..54
0..34..52.5

H + 11s

H. 8.. 59.. 00

424 8.. 59.. 00.8

8.. 59.. 00
11
8.. 58.. 49
8.. 59.. 00.8
11.8

No 424

Em 7.. 37.. 34

Belt on Jupiter

April 5th

have been rather behind hand with Comet seeking of late. Have swept over in Twilight, to head of Leo & East of Leo to horizon all South of parallel of Leo.

4h

May 1 have looked over the morg. & evening sky, to this date from 10h to 17h 30m but not been rewarded

Inst. not accurately adjusted

May 1st 1847

17..17	322..45
22..30	-37..15
1..30	
18 47	

17..21	
21..52	328..20
2..08	-31..40
19..29	

large pocket br.

Did not sweep below pole.

May 29th & 31st Have swept over from Sunset to E horizon at 11 o'clock. Dark not thoroughly

May 29th I think there was a nebula about 40m preceding α Lyræ & about 2° N or S of it I ~~think~~ N.

50

June 1st

2557 15h 50m 30s
10h 30m
1 30
17h 20

342.00
− 18.00

faint round

h 3683?

Swept E of Uranid

June 2nd d.M

Finished pretty much to dawn.

216.26
15)216.5(14.44
15
66
60
65

14h 26m
10

Yes

June 3rd 12h 30m ch
There is a faint nebula
3° S α 1° prec (G? Optimil)

The brightest star nearest above
Hinds new star

June 2

*

+ 15h 45 + 8.45
15h 24
3 24
12 21

+ 15.55 + 19.00
14.47
13 08

52

June 22nd 1848

16h 35m 30 Bright object

Bright enough to

illuminate surrounding of

jets & throughout a flash of lightning

red light & trunk [illegible]

Cassiopeia flash drew

attention though

I was looking

through the Comet

seeker in an opposite direction

M 10?

16h 36 ~~43h 40~~

0h 27

17 03

M 2?

16.47 +1h 15

19.07

4h 53

24h 40

July 21 200# 1848

17.46.00 +18.47
4.41
13.05

18.10 −18.15
1.00
17.10

July 24 1848

21.40 −31.16
17.40
20.00

This probably in error

17.31 +11.40
3.55
21.26

17.37 −1.40
3.55
21.32

Swept last week & to day pretty well from Sunset to 2 hours on at 10 PM

Aug 22

5..54 +21..10
18..50
12..56

+50

5..46
19..04
13..18

Have swept over west sky but hazy & cloud

21 65 22.14
22.18
1 13

Sept 18th Have swept to night with clear sky from W horizon to α R of Cygnus & from E horizon circumpolar regions to Pleiades

Something bright in Sagittarius? 5° to East of the bright trapezium

Small stars.

no mo in 20m

Oct 5th swept East of Aquila from Aries to Sirius & Cancer saw Encke's Comet

82.25 20°.30'
.55.

8h 69.44 67°.30
69.33

Nov 1st 1848

Have swept from
AR of Cluster in Perseus
to line joining Procyon &
Ursa Major. Also some
West of Merid.

15) 205 (13.. 54
15
58
45
130
15

57
13.. 54
9.. 20
41 34

−4°

41.. 54
21.. 46
16.. 52

−32

2.. 51
22.. 27
19.. 36

22.. 45 −32
3.. 12
19 33

2° S of bright star 1st force

Nov 25th swept from
twilight to Orion

{ Found a comet in the Milky way near Cygnus }

Comet of Nov 25 1848.

Discovered by
Dr Peterson Oct 26th 1848.

58

1848 Dec 18th

Neb nebula 2° S of Vrgo
1h fol.

— 23° 40'

4° S of Delphin

Dec 18th Clear & fine
swept from Eng twilight
up to ☌ of Neb in Aquila.
Peterson's Comet has a fine
tail of 2° or 3° & looks well.

1848

Dec 19th

14 to mag.

Gr. Ref.

no motion in 30"

Swept East of Meridian from where I left off last night to AR of Procyon & Circumpolar regions to 20° N PD all round. Saw the new nebula. A thorough sweep where clear.

Dec 23rd Clear Very cold Swept for Relisens Comet some time — Saw a diffused ~~nebulous~~ light 10° SSW of Fomalhaut — in Dec of a pair of Stars 5° N of Z.

Swept East of Meridian from AR of Gemini to Just AR of Pupis Omitted Circumpolar

1848

Dec 28 E

Not clear but swept carefully from a little after Moon-set to 2h AM or West of Merid. at 9h 20m PM. Found nothing suspicious

The Zodiacal light reaches to the Pleiades & has for a week or two it is there very narrow. Dist from Sun 150°

Dec 30

5..11. +43°

7..38 16..22

12..49

5..18

Dec 30 Fine clear night

Swept East of Meridian from Orion to horizon Except a region Sub pole South carefully —

Swept West from Orion 1h or 2h in RA to connect with sweep on 28th

Jan 1st All 1849

11..51 — 30°
10..25 — 29°..00'
1..36
13..27

12..23..23 = 2557
10..53..58
1..06..02
13..29..25

Eyr ref.
* 5th mean

12..14..30 — 2..30
~~8..24~~
~~21..24~~
16 38

diffuser light with a rapid condensation

Same Dec as η Boötis small 2 fields & 1/3 prec

~~Swept S of Arcturus & E of Mercury~~
& NE Horizon

62

Jan 11th

424 1h 57m.00 +18°.30
4 6.08
19.48

*

Cluster of stars or nebula

20

Stars G. Refractor

*

Jan 11 Pole

swept from twilight upto 0h.30m = neb in Andr.
a very cold wind prevented a careful sweep Thm +5°

Saw Petersen's Comet bright as ever with a tail of 2°

Jan 12th 1849

Clear & Fine Thr +14°

Swept East of Pleiades to Leo & the Circumpolar regions. An object near the Twins proved to be a coarse cluster of Stars. In Petersens Comet

Jan 16th

Swept over 1 or 2 hours of RA West of Pleiades to connect sweeps of 11 & 12

Nebula in a line from top of the cycle in Leo to β Leonis (δ of it) 12h. 20m Dec +9°

Between Arcturus & Deneb (near Arct.)

(Inc) " Corona Berenices & Deneb

" Cor. Carol. & root of tail of Ursa Major

Another prec. 1h in RA same Dec

One 3° S.f. of Ursa Maj

" N.f. two last of tail 5°

Jan. 18th 11 Pk Swept

from Meridian to E Horizon as far as Circumpolar regions near the Zenith passing a little beyond the R of Leo

A bright object half way between Arcturus & Cor Caroli

A faint neb. in the end of the sickle of Leo also most of the other nebulæ of that region were recognised. very cold 47°

1849

Jan. 22nd All Monday

33.30
4.10 = 31.30
17.40

Swept this morning from East horizon to Lyra & Scorpio. and also in South Declinations up to the meridian.

Sec of Opth.
R of Aquila (Pr.)
and Dec + 5°
T. 4h
4 or 5 conspicuous stars up. below it 30' to 2°
looks like stars in milky way
think I know it.

Jan 23rd 1849

Swept from W horizon up to near < R of Pleiades

There was a faint object 10° more or less North of (β Ceti?) say R 1h Dec near the Equator

looked after it afterward, some time to get a place but could not find it again

Jan 26th ~~Observe~~
Swept East of Pleiades Dec of Capella to Orion as far as R of ~~Pollux~~ Twins.
Visitors interrupted and afterwards clouded thick

Jan 27th hastily or lazily
Swept East of Orion & Pleiades
(with Capt. [illegible] Navigation [illegible])

There are two nebula in
Sagittarius near the AR of α Lyrae
$\Delta\delta = 1^\circ$ $\Delta AR = 12^m$
One follows δ Scorpii 1^h & 1° N of it

Feb 3 Ale

30 Ophiuchi
4° S p star in cph 3rd mag
14.44 −12.30 pretty faint
1.46
16.32

67
$4^\circ 30'$ S of * oph 3rd mag
14.49 −18.30 (γ Serpentis
2.27
17.18
Small pretty faint
saw it afterwards in daylight.

AR 19.40 Dec 18° 1 field S of same AR Dumbell.
pretty faint stars round it

One in S.E. looked a little cometic

Feb 3 Sat 1849

Swept at first between the clouds as they would let me cleared up just before day break & I swept hurriedly from R of Corona Bor. to 2 hor. up to Dec 45°. Had no time to get the places of what I saw until it got light

Feb 9

Swept W. of Merid. from horizon to R of Orion omitting circumpolar regions partly from moonlight the sweep not very satisfactory.

Major J. D. G. at the Observatory

Feb 10 1849

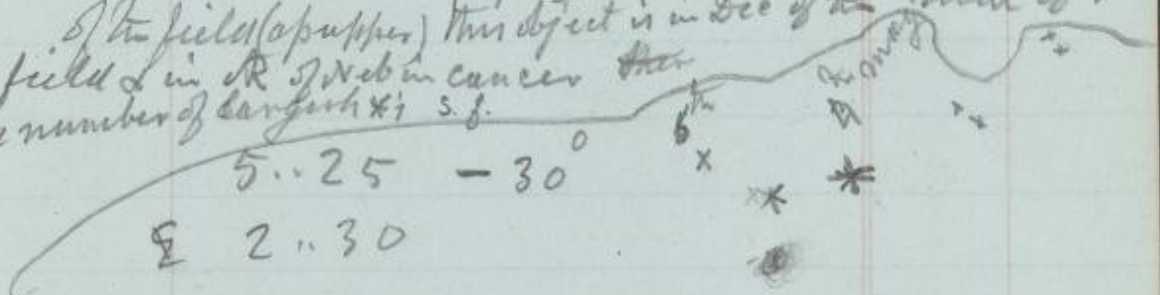
very faint elongated S.p.

(no motion 13th)

5.09 +34°.40'

h Σ 3.35

when the North star of the Twins is near the S edge of the field (a pupper) this object is in Dec of the small of field & in R of Neb in cancer there a number of large & ⁎ s.f.



5.25 −30°

Σ 2.30

round not faint perhaps a cluster

Feb 10th swept, this e'g. from R. of Orion to R. of Jupiter & from S. Dec −30° to S. star of Great Bear.

Swept this space carefully, but it clouded very suddenly.

Feb 13th 7 Pm Swept East of Meridian but was baffled by haze gathering from the S.W. also swept a little West of Merid. with similar success. In next page

70 Feb 13th 12 P.M.

3 very faint Nebulæ
in same field

9.00 +12°
Ξ 3.20

9.20 +44°
3.00

Small pretty faint

9.40
Ξ h 2.43 +8° not very faint nor
nor small

Just time of the two last stars
in Leo & Eqhi dist.

easily found

9.44 + 18 near a star 4th mag
3.20

9.47 + 22 also easily seen
3.00 α near a ✗ 4th

Feb 13 continued
Cleared up about 10 P.M. and had a good sweep from Leo to E Horizon at 12 except ~~two~~ in E & S.E. Much troubled by the number of Nebulæ

One following Antares two or three degrees S of it & dif. RA 45m

two a few degrees N of Antares & 2h following δ D 56' dif RA 12m

There are 4 or five Nebulæ between Scorpio & Lyra in South Dec from 3° to 30° n. of Antares

There is one nearly in a line with β & γ Lyræ & 5° from γ.

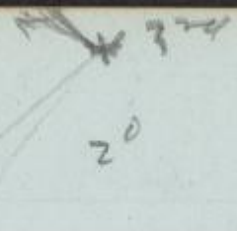
There is a nebulæ in a line with the lower stars of the square in Pegasus & 1½ length from nearest corner

Tuesday Feb. 20th AM

Swept from R of Arcturus towards East horizon at 4 AM Clouds gathered rapidly & I had to omit the circumpolar region & near the horizon for the same reason the sweep elsewhere was hurried & unsatisfactory. There is not much to encourage one to get up with the Thr. below zero, with the perfectly clear sky, & then just as he has got to work to have it cloud up. as has happened nearly as often as I have tried the experiment this winter.

Very cold Thr -7

Feb 23rd 1849



very faint

(A) 5..38 +15°
Wh 4..10

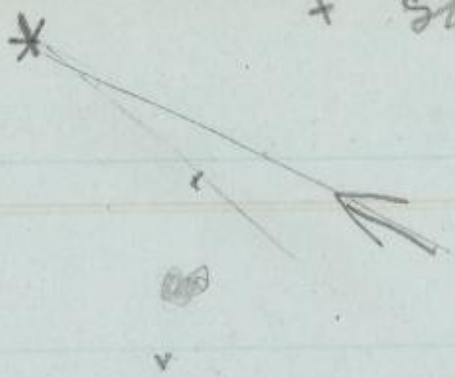
Cluster

5..55 -40° small but sharp
W 0..49 & easily seen

6..14 0° Exceed. small
3..42 doubtful if star
2.32 * 3rd 2° from it

(A) This object was sought for but could not be seen in the finder of the G.R. it was too low.

It is about 2° n of a star conspicuous to the naked eye which also is 4° n of Zeeman



Feb no mo.

Feb 23rd

H 8..25

424 8.18.10

Swept from eve twilight to near AR of the Twins up to AR of Orion well. circumpolar regions & zenith negligently.

March 5th 1849 Thr +12

All swept from AR of Corona Borealis or rather of Scorpio to E horizon omitting circumpolar regions SE Horizon to Milky way interrupted by day break

76 March 10 Z

6.47 0
4.15

7.08 −11°
hW 4.24

6th

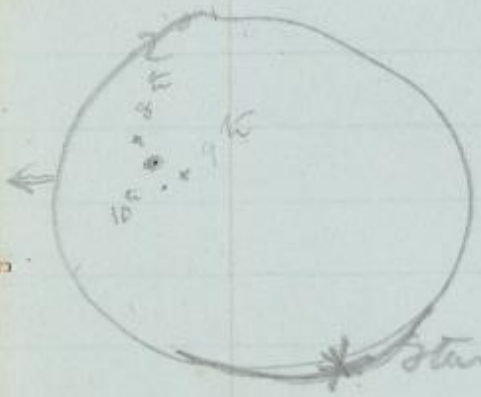
faint same dec as a parallelogram of bright stars which makes it nearly equilateral being with the Pleiades & the belt of Orion

Star 4th in same field 2° nearly N of object

March 16th 1849 P.M.

Swept from Sunset to Jupiter.

A nebulous object in 12h R & 12° S. dec. ~~about~~



Star 3rd mag. left of Sirius same field

Also a nebulous object in the milky way half way betwn α Orionis & γ Geminor perhaps stars.

78

March 19th 1849

$$\begin{array}{rr} & 7''.45 \quad +1^\circ \\ \varepsilon & 3\ 20 \\ \hline & 11''.05 \end{array}$$

$$\begin{array}{r} 8''.40 \quad +55''.30 \\ 5''.20 \\ \hline 14''.00 \end{array}$$

? ? o ! . ?

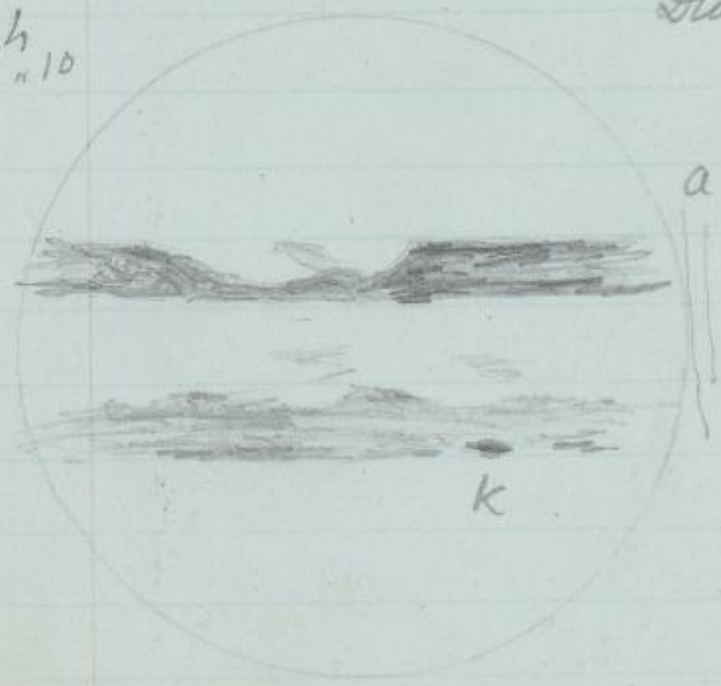
March 23 1849

424

10..43..30	50.92	Zero 49.99
10..46..00	50.97 = ak	
11..01..45	48.73 ak	
11..06..50	51..30	
11..10..20	51..40	
11..21..45	51..73	

Diameter
54.23 in
54.28 out

11^h .10



Mar 22

Swept negligently
2 observd. Mad. at the Ditory

April 3rd Mde

$$\begin{array}{r} 16.41 \\ \Sigma \quad 0.11 \\ \hline 16.52 \end{array} \quad -26.40$$

$$\begin{array}{r} 16.47 \\ \Sigma \quad 2.40 \\ \hline 19.27 \end{array} \quad -32^\circ$$

Swept from Milky way
to Twilight in a hurry,
as soon as the Moon set,
left off early to search for
Metis

April 9th

Swept W of Milky Way
α in S Dec. to W horizon.

April 11th

9..26..30 −26°..20′
W 1..47

A double star 4th mag 2° n.p

10h..02m +36..30
E 2..05
12..07

very faint

+

+ +

no notes

~~Comet of April 11th 1849~~

~~April 11th~~ (Continued)

Wind was so high on the West balcony that I was obliged much against my inclination after sweeping about half an hour to cross over to the East side. It was cold & had a great deal of trouble from the wind blowing the instrument which was out of counter poise swept from N Pole to Coma Berenices. finding many small nebulae.

I had just looked at the cluster near Arcturus & was passing down towards the N E when I came acrs an object which in another place I should have called a coarse cluster but it

was Close W of the N. Crown & knowing nothing like it in the vicinity I was pretty confident that it might prove to be a Comet in spite of the small star.

So I went & called Richards (Father had gone to Washington) & we got the great Refractor to bear upon it which settled the object at a glance to be a comet. Very faint but with some concentration & a brush towards the West.

It moved in Dec only 32" in hour so that it wont a moments hesitation on measuring in Dec from a small star near it when we found no motion but it soon went off in RA at the rate of 15s an hour.

Jupiter

Tuesday April 24th 1849

		a to k
424	10h..08m..50	47.82
	10..10..20	52..19
	10..12..20	51.68 b to k

Inspition Great Refractor Zero 50.00

Diameter

b 53.92 a

53.95

not specimen seeing

air fold. limb b in prec -

2557 10..44..00
424 10..34..52

Aspects 24/25 Oct

h 16h 19m 00 + 29°
0 10
16h 09m 00

16h 19
1h 40 − 25 very bad
17 59

16h 37m 30 − 3° 20′
8m 33
17h 10

Friday Jan 7th 1849

14h 44m 40 − 29
W 1h 20
13h 14m 40

(120° Max. Jan 14)

14h 58
34
33
33

14h 56 210 bright
(Since then 5th number rich)

Swept a little
near W horizon

June 11th
14h 17m 290° = 70° N Dec
W 7h 05

Very small
in a line with corners
of Great beam (perhaps
elongated towards Sun)
not sure whether it was not Star
(Looked for on the 14th but not
found The two nebulæ near its place
I am very familiar with α should not
be deceived by them

11h Cont 16h 06m n of 80 beats

Gonjon's Comet

Jun 14E

14h 53 +10°
W 2h 40
12h 13

15h 20 − 4°
E 1h 34
16h 54 bright

16h 38 − 2
4h 53
21 31

Swept E of
Merid from
7h to hor. at 11

Harry

June 14th 1849 (continued)

A nebulae 1h following Orionis & many stars about that neighbourhood Swept rather carelessly & was not clear beyond of 15°

June 21

16h 10m Sid

16.22
8.37
7.30

66° 10'

16h 53 +19° 20′
3 42
13 11

17h 23 +43° 30′
4 08

near 3 brighter stars
5° from cor caroli

16h

Saturday Jan 23rd

16h 30m +40m 20
E 3h 10
19h 40

Swept to Milky way
There is a faint spot of
nebulous light between
Castor & the upper star in the Bow

Monday Jan 25th

Swept from Milky way
to horizon at 18h 30m Sid

July 18th 1849

2557 17h 08 −36h 30

W 1h 30

15 38 −9m

ato of comet in lower part of field

18h 02 −29 30

1h 07

16 55

17h 12 −29° 30′

W 0h 20

16 52

3 fields & 1/4 prec the double star

45′ N of the two (double) lowest stars in the tail of Scorpio

10′ N of north easternmost star (Antares 3rd) left of Scorpius

17.. 22.. 12
2.. 22
19.. 44

July 10th & 11th 1849

9.. 30 to 11 Pleiades
Swept down East
& west of clouds
but it is not clear

July 17th

17h 31m 20s +11m 20s
4m 57s
1234

Looked carefully over from meridian to the west horizon

There were one or two nebulæ south of Coma Berenices. which I did not recognise

Also one in the R of arcturus & 30° N Dec.

94 2419 fast $6^m 48^s$?

Cmo 424

1849 July

object in the 8r Telescope

$18^h.44^m.54^s$

18	44	54
	6	20
18	51	14
4	14	56
14	36	18
+29	24'	

= AR {h 1870}
= Dec

$H\ 4^h.14..56$

$\delta\ -209..23..40$

$= +29..23..40$

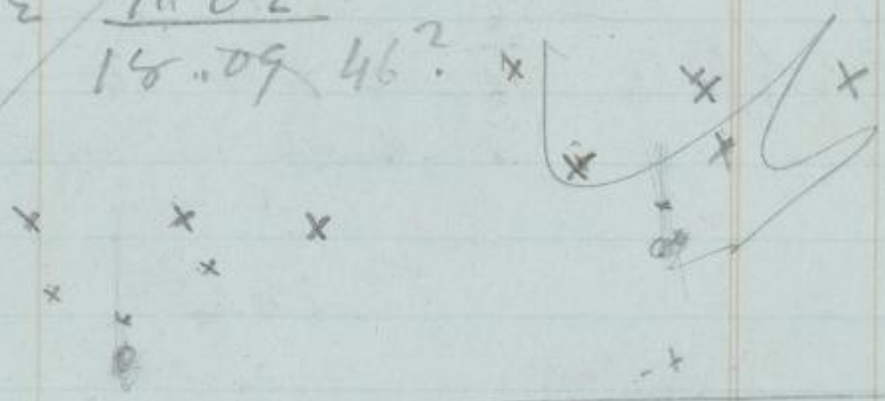
2419 – 19..25–0 $6^m\ 48^s$ 2419 fast
424 – 19..11..52
19 18 12

follows a star 11th mag.
by 50 beats = $20^s.0$
& is 40" north of that star
there is a double star below
in the field.

424 30s slow

July 23rd

424 17.07 −37°.
E 1.02
18.09 46?



19.21 − 25
W 1.10 nebula
18.11

Same as previous Ob.
19.28 −36°30'
W 0.42 Nebula
18 46

Swept from R of 17h to horizon at 2 o'clock AM (Taurus was up)
Air clear but there was a great annoyance in the condensation of moisture

96 July 24th

Nebulous object in Ursa Major

424	18 h 28 m 12	145 h 51 m 12
W	7 h 22 m 36	= 55° 51' 12"
	11 h 05 m 36	

Aug 7th Swept in evg West of R of Antinous & B of Dec of Corona in Hercules stopped by the moon

Aug 8th Swept over the rest of the Western sky up to RA to about 17h 30m

Aug 8th

10..04
1..39
10..05..39
9..08..17
19..13..56

9..07..30
47
9..08..17

M S ♃ 239 10h..04 Dec +46°..30'
Wh 7..00

In a line between Cor. Caroli & the nearest corner star in the Great Bear

Sidt 19h..14m Dec 46°..30'
Wh 7..00
12..14 = AR

Rough Moon too bright
This was quite faint & near the Dec of a Star 3mag (.4) below Dreamilig. The Point in Pater was using G.R & I left it & continued sweeping meeting the two Nebulæ in Dec 48° in the next sweep. 1/4 & 3/4 of an hour afterwards returned to it & found it easily. But the day rose & it could not be found in the G.R It was almost within a field (I think) of our new cor Caroli

I doubt if this Sty is in AR

48

Aug 8th (Continued)

Position of a nebulous object near a star 9th

GR 239 10.30.38 Dec + 42°.51'.30"
W H 6.31.02

10.30.38 Sid 19.40.38
1.42 6.31.02
10.32.21 R 13.09.36
9.08.17 Dec 42.51.30
19.40.38

Following Star of 9th 18.8s
is South of " 45"

There is another nebula near this one near Cor Caroli which I think I have seen

See obs Book

Pontefract

Aug 13th 1849

424 18..14 – 37
Σ 0..38
18 52

very large & bright

18..33..30 – 31..10
Σ 1 01
19..34 30

18..37..40 – 1
Σ 2 52
21 30

20..21 – 21..40
2 03
22..24

Swept East of Meridian.
to rising of Pleiades.
Triangular star were 3 West of
Dilphinus but the 3rd could not well be seen (Sunset)

100 2°.30

2,7

1

108
54
27
378
108
146 2°.26
112

15.14
5
15.19
18.12
2.17

75.02
2.26
77.28

5.08
1.52
$\alpha R = 5^h.09^m.52^s$
$-27°.02'$

Aug 15/16 Ach

424 23.10 + 65.30
ξ 8.04
7.14
Smaller fmt

H 2359

0.01 $-38°.50'$
ξ 0.43
0.44

(Diffused cluster?)

Aug 15/16 Am 1849

0..07 - 40°30'
V 0..05
0..02

H 2315

Clear
Swept from 8½ to
morning dawn
Clear

Aug 20 to PM

Sid Time
19..11 → 17..40
W 2 02
17..09 a faintish one (L)
is n of Dist 75'

a
<
b

Swept in the West
from Merid. to the Equator
and as far North as Cor
Caroli. interrupted by Clouds
near the horizon

Aug 21st Pill 1849

Swept West of Merid-
from Cluster in Hercules
to N Pole ~~Cluster~~
Also East of Merid.
from Cygnus to E horizon at 10 o'clock Pleiades
just rising.
Dew forming on the
object glass must have
made some of the sweeps
uncertain

Sept 5th 1849

$19^h 20^m$ $+19^\circ 20'$
$6 \quad 15$

in Sum Dec with 2d
star price Arcturus
& in a line with con Corona
& the Bef corner of great Bear

Sept 7th have swept West
of denied on two nights the
Cirrus & Clouds interfering
Tolerably West of Galaxy & S
of Cluster in Hercules

Sat Sept 8 1849

424 21.. 23 +60° (pEy (59°.42')
VV 0.. 51 100 beats fat
20.. 32 Same AR as α Cygni

Have swept East of Meridian from Aquila to near the Pleiades & also West of Meridian but though I have swept that on these nights it has not been wholly clear the East side is better
Clear & Fine

Sept 10 1849

22.09 −12 At 12 $0^h 25^m$
ε 2.37 Sun R at
0.46 Saturn

near Pisces
h 142?

22.26 +15°40′ * 4E 4 1.30 m p
3.15
1 .41

from 11^h to 12^h P.M.
Swept East of Meridian up to 40° Dec. & to almost the rising of Orion. very clear & mostly swept with care

Monday Sept 17th 1849

4.15 + 22°
E 3.24
7.39

R = Polaris ± 0
Dec = − 6°

roughly

4.22 +9° S of Cancer
E 4.13
8 35

conspicuous

Swept from Twins to dawn
Very much interrupted
by clouds this morning
Warm S W wind
I seldom get up in the
morning to observe without
being greatly incommoded by
clouds. ~~I frequently find nothing~~

Sept 18th 1849

21.01 − 24
W 2.48
18.13

Bright net in f mi

21.08 − 29.30
1.42
19.26

bright & large

Swept West of Meridian & East to the Pleiades with some interruptions from Clouds.

Sept 24th Orl 1849

Got the start of the Clouds this morning. Had just finished a good sweep from Capella to S & E horizon with a very clear sky when it suddenly clouded

1849 Oct. 13th Saturday night
After having my patience greatly tried by two weeks of cloudy weather got a fine night; tho' it was quite cloudy for an hour or more after sunset. Set to work as soon as it cleared off & swept from Polaris to Lyra & from S horizon to Lyra; then left off for an hour; returned & swept in S Dec up to Meridian changed the Comet sweeper to East balcony & swept nearly to Orion; then returned to the West side & filled up the last time except a very narrow zone ~~near Polaris~~ north of Zenith
Night mostly clear

Thursday Aft. Oct. 25th 1849

$6^h\ 43^m$ + 24° 30'
17° 07'
6 53
13° 36'

150 beats = 1m in AR following * 5 : 6 h & h
15' in Dec N "
probably star near α Bootes

110

Nov 2

21..15..30 −36°..10′

W 2..32

18..43 ~~large~~

not faint

21..23..30 −30..45

1..57..30

19..26..00 very bright

21..27..30 −24..30 small bright

3..17 00

18..10..30

21..29..45 −23..15

3..07

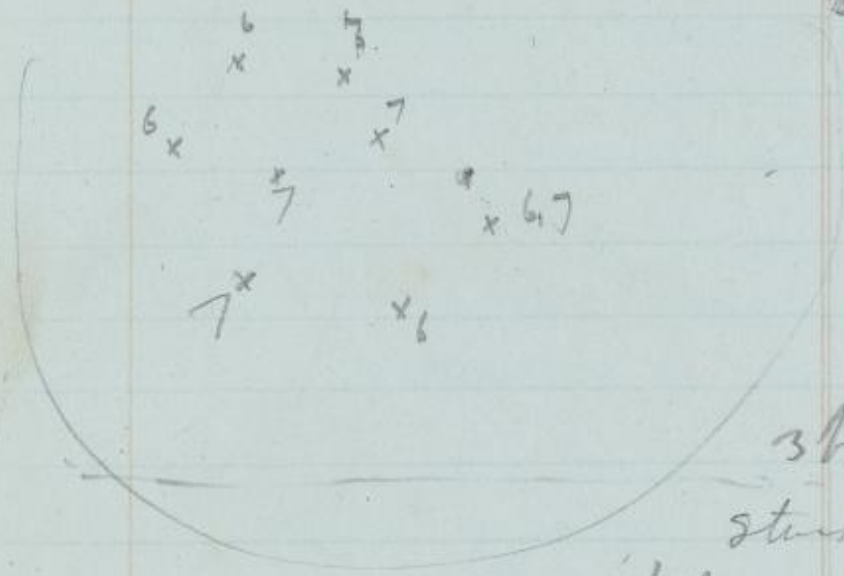
18..22 very bright

Sff α^2 Cap

21.. 33.. 45 − 22°
1.. 39
19.. 54

very small

bright star $8^h.30^m$ prec
2° S



3 bright
stars in Sagit
1^h prec 2° N

22.. 24.. 45 − 21.. 50
2.. 32
19.. 52

I thought this to be a comet but did not waste any time on it as the following obs. were made after Moon Rise

112 73.2 Friday Nov 2nd

21h.38.

183

Cents 43 21..38

to 2064 22.. 43..55 -22..14..30

2.. 46..46 cor -3 21

19 57 09 -22 17 51

See next page } Cor. +4.6

19 57 13.6

* 10h

22 53.36.5 54..50. 44h.48

53..59.. 55..12 50.06 Zero

54..25.5 55 .38.5 508

1.. 13.5

1.. 13.0

1.. 13.0

nebula III h 2064

~~comet~~ S of Star

~~57. 21.7~~

22.. 58. 38.7	59.. 52.8	44.98
59.. 01.8		
59.. 28.4	00 41.6	
	23h.03m =	45.27

23h.12m	54.72	Zero
23.. 20	54.50	50.07
		05
		06
		50.06

3 x 3 nearly in a line
One field apart. The following
one is star of comp x brighter 9m
The middle one 11m a little
above 50"

114 3. 36 = 107

Nov 2nd 1849

23.40 54.79

~~Column 23.46.59~~ α² Cep.

23 47.22 −12°.57'.00"

3.37.43 −13 00 21

20 09 39 −3 21 = Cor.

1850.0 AR 20 09 43.6

Concluded no motion though at first there was some evidence. it being low & faint for very exact measurement

Clear swept S of α² Cep. to Horizon stopped by ☾ Moon rising

Nov 3rd 1849

Very hazy Swept between α Aquilæ & merid. (1h following) to Polaris by α Lyræ (taking in the zenith being the only clear space)

a nebula 1° S p a star 4th equidistant from Altair α Delphinus

α another 4° S p β Lyrae in direction of the two stars.

Also swept in clouds East of Meridian.

Nov 10th 1849

have swept West of merid at different times but always plagued by clouds.

Also East of merid α S of Zenith to α of Capella with Aldebaran. but not so far in the S. E.

Have been unusually troubled with cloudy weather this Autumn & can scarcely get a chance to sweep.

Nov 12th

Have swept big patches up to Orion

Clear & fine to night

swept also near W Horizon after Sunset.

7.33.30 +1
3.34
11.07

7.54 + 19
4.42
12.36

another same date 1st pot.

Nov 28 Have swept about 10 days ago up to the morning twilight pretty well in most regions.

Sat. Dec 1st 1849
The rough wind compelled me to night to sweep East of the Meridian. Swept South of Saturn till Moon rose. not a favourable night.

Dec 5th P.M. swept West of M. to twilight, clear & favourable night — A neb. near Delphinus but probably often seen before.
Also East of Meridian up to Head of Leo.
A nebulous body R 7h Dec 60°
Leaving a strip of 1h from Saturn to N Pole unswept.
East of M in patches

118

Dec 6th 1847

2.13
1.18
3.31

− 26.45 (H 2555?)

This is pretty complete
wrong & may not be for
above a star 7th is 30' n.p.
Blustering cloudy
N Wester. Flight off Sodio

Dec 7 Pill Swept again
East of Mercury. Clear & cold
wind. Have not filled up last time between E & W
sweeps on account of the
strong N W wind at the West
Balcony

Somewhere between
Algenib & Aries saw last night
a nebulous body of which I
neglected to take a place

Dec 12 AM 1849

10h 32 → 24 x[s]
4 05
13h 37 Conspicuous

10h 42 → 25h 45
1h 58
12h 40

Dec 15th Have sought with the last fortnight very often East of the merid. from 7 to 9 PM Also in the neighbourhood of Zenith once. Leaving a vacancy between Sirius and Leo. which I have prepared to go over but while observing Mars in Aqr it clouded & the sky has since been unfavourable

Dec 17th

Swept this evg before a set over most of West Quadrant much disturbed by Clouds & high Wind. so that I had often to break off & begin in a new place by which means I left some spots vacant. especially N W of zenith.

A pretty bright nebula. 3° (in same field) s p. the N star of Cygnus & within 10' of a star 5th

Also a nebula in R 20h 30m Dec + 59° or 60 (Near 1/3 from α Cygni to pole star & 2° s p η Cephei (I suppose)]

Stury

Dec 18 dec 1849

h(3106)

424	11h 05	−25° 26′	rather faint
☆Y	3h 27 / 7h 38		f

Coarse double ✱ 2 stars 2″ N p in
dist of stars 16″ and (2″ S 60E) up

Looked again & saw that the star preceding same dec above mentioned was dist 1° 30′ & S 75E

These stars seem to be

BDC			
2594	7h 41m 51	−25 34	5th
2599	7h 42m 44	−24 32	6th
2602	7h 42m 59	−24 29	3

Left off to obs Mars.

Swept this dec West of Meridian S of Zenith

Dec 18 Swept dec East of Zen
Clouds prevented seeing the above object 3 or 4 near Comp Bar

1850 Jan 1st

Swept in clouds west of meridian. S of zenith

the object 2° in Dec N of Pomelhant & perhaps 40m preec. in R. 74 precedes in same dec within it * 5th

Saturn not Eqy

Could do nothing from the Clouds cold & worried

The 2 Nebulae are 1°.30' S of β Ceti as that star was so much below in Dec apparently

Jan 4th 1850 R < Saturn's

	1.37	-18
W	1.50	
	23.47	

Clouded so that I could only guess in R.

2 Neb in same Dec most diffuse preec. 8m ~~only~~

	23.47	-18
Inst Cor	+6	-1 30
R	23.53	-19.30 Dec

-20° from β Ceti

3rd

η Eridani?

	AR	Dec.
	3.40	−8
h	0.58	
	2 42	

	AR	Dec.
Obs	2.42	−8
BAC	2.49	−9.30
		−1.30

h	3.37	+1°.10
424	3.43	
	0.06	

Saturn

		Dec.
AR obs	0.06	−1.20
Nol	0.11	+1.10
cor	+5	−2°.30′

	3.45	+4.30
h	0.56	
AR	2.49	

α Leti ♃

	AR	Dec.
Obs	2.49	+4.30
BAC	2.54	+3 30
	+5	−1.00

Found to be stars

Jan 5th 1856

Cleared up at 8 PM
commenced immediately
& swept E & W up to
Jupiter or beyond Leo
Fine Cloudy favourable
nights

1850 Jan 1st Pld
6.17 -6 nebula
E23.50
10.07

Sat Jan. 12th Pld
Cleared up abt 8 o'clk very fine swept carefully from Pleiades' R to W horizon. (Losing 2 borders from twilight)
When I left off Jan 2d time was 4h 35m
Jan 14th Pld from Pleiades to Sirius swept near zenith & about M Major
Jan 15th AM
Swept East to Dawn from R of Arcturus & Spica & S of Lyra
Near zenith could not sweep the being 3 boxes of Chronos on the balcony.

same R with spica ← Nel

$13^h..12^m - 29..20 = 330^\circ..40$

0..09

13..21

3523

R spica	13 17
obs	13 21
diff	13 19

π Hydra?

Stars to -26..10

13..16

0..34

13 50

13.35 -19..50

3 3.1

17..06

13..44 } -31°. ΣΣ of Centaurus

Σ 2..5 } p. Bright

16.44

Centaurus 13..55 -27

2..17

16..12

Grist 1° or 2° out of adjusts

Jan 29th 1850 RJ

Last Moon was much employed in comet seeking

Swept this evg. rather hastily till Moon rise, West of Meridn. to an alt of 15° as for N as Lyguus & completely South of Aries. Clear but cold wind

Jan 30th Fine clear night cold but calm

Swept East of M to Leo as well as usual.

Also completed sweep West between Pleiades & Pegasus There may be a vacant place beyond Pegasus

Feb

Swept West on Pegasus

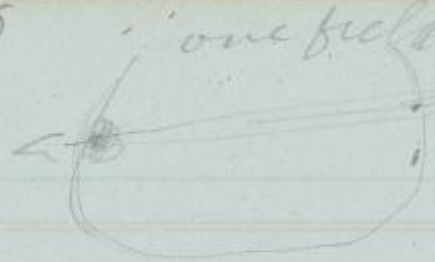
424 3 45 +3.40°
W 5 18.

low & faint 2m if a Comet.

Feb 4th Swept East in Leo

Have this Moon swept from Sundown to 2h past Jupiter = ~~Rains~~ Stars.
5° high. & pretty well.

True 128 one field in D.



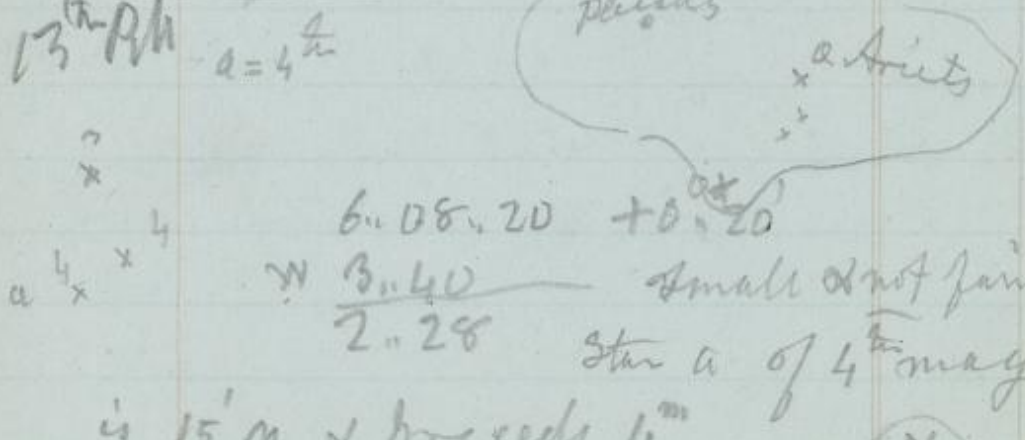
stars 2nd 4th

6h 57 -41 30
East 0 03

1 24 -46 30
W 6 05 Very large

Feb 13 All except both East & West of merid at 14 0 M. also Lasting some near sunset. Now after dark.

13th AM a = 4th



6 08 20 +0 20
W 3 40 Small & not faint
2 28 Star a of 4th mag

is 15' n & precedes 4m
a is S most of 3

Feb 13th 1850 Pm

Swept West of meri to
Last Pleiades. wch was
fine sky.

b. 5 W of Pleiades 20°

Feb 18th Am

424 15.03 - 28
W 1.47
13.18

15.19 - 57.00
E 0.04
15.23

Swept in my. West of mer.
South of Jupiter.

Feb 22/23 Am Swept East from
NPD = 30° to horizon E & S
& from R 15h to dawn. - Clear.

Feb 27th Swept near West horizon & in δ dec to 2h or 3h of R.
Clear but twilight & a-light.

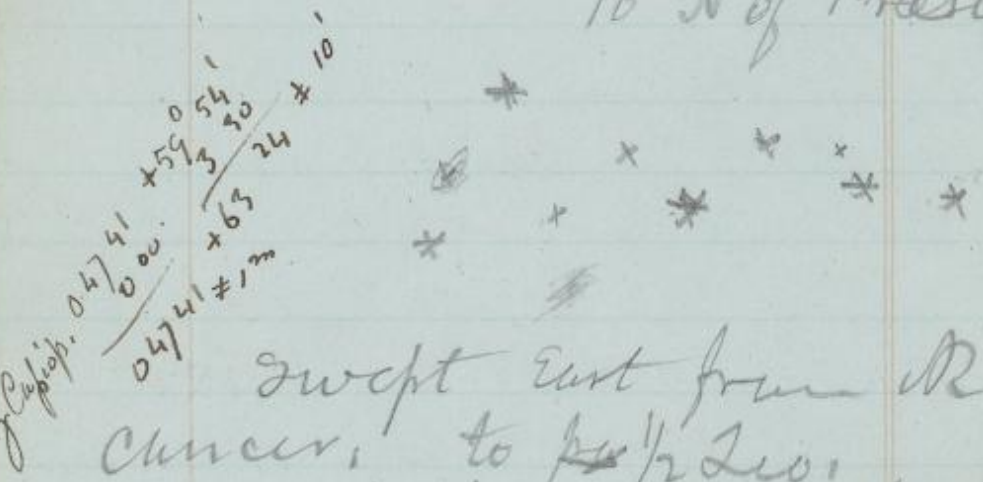
March 1st Pitt

7..16 +33°
1 30
8..46

small

h 532

10° N of Praesepe



Swept East from R of Cancer, to ½ Leo.
Much annoyed by Cloudy high wind &c There is a neb. object 3°.30' N of γ Cassiopeia & same R it is quite faint (in star field)

Sat March 2nd
Swept to Moon rise
both E & W Sidereal.

Monday March 11th 4h 20m Aft
Swept from Ophiuchus to
down a nb. 1° 30' S p mid-stm
of Oph. A fine Aurora
& No Zodiacal Light at E.

March 12th
Swept after Sun Set
West among oozing
clouds.
Found a conve-
nient way of moving the
Telescope in R & Dec which
promises to be of advantage
Zodiacal light ~~through~~ the
winter points to Pleiades

March 15 Pill 1850

Swept East of Mer from N Pole to Coma Berenices when it clouded.

Mar 20 Pill

Swept a little E from Galaxy to E hor.

A neb? 1° S p SW corner of SW chimney ~~stack~~ of house

A nebulosity suspected in Dec of N apex of roof of house

& more than 30m prec

too Cold & windy to sweep West. Thr 16 N N W 2

~~May~~ 29th Swept West near horizon in Bright twilight also from N of Lyra S of Dec of b Tauri

Mar. 30th Pill swept Both E & W of Meridian west Completed last night. East to Coma Berenices

A Nebula near 2° prec & same dec with Bright star S of Perseus

April 6th

H h 3435 & 1437

11h 44 - 7h 40 quite small
E 1h 03 but certain

April 12th Swept from near the end of evening twilight to R of Leo & net S of Regulus & seen R, d in same dec with a bright star (α Hydrae?) Zodiacal light strong for the season far beyond the Pleiades through which it nearly passes I should say it never runs North of them

April 17th & 18th 1850 After trying as usual several mornings at last had a fine one - I finished the sweep to Morningdawn - The latter part was hurriedly At nebula in Ophiuchus wh I did not recognise

April 29th P.M. 1850

Swept to West commencing about 9 P.M. just after it cleared off. two nebulæ in the square of the Great bear
one near 3° fol 5 ⁴2° which I looked at with the Gr. Ref. doubtful & of unequal light—
The other near γ
20' S of * in dec & 3° prec, it could not find this in the G.R.

April 30th P.M.

* Swept West near Pole & East to Aquila & the chasses 2 neb. or clusters ~~in the head of Draco~~ between Cygnus & Pole one seen in GR is a cluster
A large nebula in R 13h 20m or 30m
Dec −20° or 30°

Comet

* That one which I did not look at with the GR. refractor was no doubt the Comet discovered on the next day by Dr. Petersen at Altona — It was unfor-

May (8th 2 Dble)

Swept to May twilight

May 11th Saturday
Swept Polar to part Leo. except near twilight & close to Polar to N. Pole

May 13th Monday eve
Finished sweep west of Merid. clouding sometimes a neb cometary 10° S of Capella

---

May 29th Pole

13 h 35 m 30
4 h 15
17 h 50 m 30
By Great Refraction

The new Comet
By Dr Peterson May 1st
74° 00'
GR PD 15° 48' 08"
2419 13 h 45 m 35
7 h 59 m 23
4 h 00 m 37
CR 17 h 46 m 12 Dec 74° 11' 52"

Fortunate that I did not – but I believe the Moon rose before I could overhaul it in the GR = (The correction in pencil was made by me on the day or two after the record was made. I had taken Y Z & &c. Decimals for the Head Brass)

May 29th

(δ Cygni)

4° fol 7th in Cygnus α 1h 30' S of it

14h 06h 30 +43h 45

ε 6h 000

The cluster in Draco

14h 15h 30 68° 20'

ε 6h 34

Below Great Bear

Comet?

14h 33h 40 +68h 20 PD = 21h 40

N 7h 30 0 = 7h 29m 40s

Same in GR Faint patch of light

2419 – 15h 0m 9s – 7h 38m 06s A

7h 38m 06

R 7h 22m 03

(Comet nuclei)

Two or three stars 9th, 10th near it. Recognoiced easily in the finder

G. Refr.

a bright 7th star follows in same dec by 5m or 10m

Clouds & cannot be certain of its character

May 29 ☆ in G.R. 2557 16..45..00.37
2419 16..42..31.7

Same Object

	h m s	h m s
2419 –	15..15..33	– 7..53..32

H.V.44.

335°..54'..04" = Dec 65°..57'..04"
65..57..08 = ~~to~~ without glass another version

R 7h..22m..01s Dec 65°..57'

25c

I cannot now remember why I did not get a place of the Comet on Apr. 30th unless the rising of the ☾ prevented. Tonight I recognized the stars which I had noted with more than usual care near where I saw it – and the cluster – but not that supposed to be the Comet – I am convinced that this must have been the Comet. The night I remember well. Father & Mother & Lizzie has just set off for Washington – One of the belly of the dome was out of order & it went hard – I think I returned & looked twice or three times at it

What makes my not having got this Comet more singular is, that during the middle of May ~~and~~ I neglected to sweep on the East of the Meridian over that quarter of the sky in which the Comet then was - (I do not recollect having omitted to do so before for 13 mos.) after the Moon had left the western hemisphere. Had I followed my almost constant practice I should undoubtedly have seen it about the middle of May & should have claimed to have seen it first on the 30th of April.

It is well that all this is nothing worse than provoking it is all of that.

June 6th 1850

An object supposed to be star ~~[illegible]~~ 40' North of 30th degree following it

Sem H 1397 a fine cleft nebula conspicuous in C.S

H 1306 & 1308

Swept S of Cor. Caroli imperfectly

June 7th Rln
Swept W of Libra

Dec	R
$-29^{\circ}..47'$	$= 16^{h}..50^{m}$
$-27..30$	$= 0..44$
$-26..13$	$= 0..39$
$-24..57$	$= 18..14$
$-24..01$	$= 18..26$
$-23..55$	$= 21..31$
$-21..30$	$= 22..43$
$-18..20$	$17..09$
$-14..57$	$= 18..14$
-8	$17..40$
$-3..50$	$= 16..48$
-3	
$-1..38$	$= 16..38$
$-1..34$	$= 21..25$

Dec	R
0°..00'	5h..38m
+8..56	12..21
+2..44	15..09
+11..25	21..22
+19..05	13..05
+22..36	12..48
+ 28	6..
+29..54	19..10
+42..03	12..43
+48..06	13..23
+48..14	12..11
+51..55	11..57
+55..12	13..57

h 1047

α Ursae Majoris +62°.34'

h m	° '
18..14	−14°57'
12..21	+8..56
11..51	+51..55
12..11	+48..14
13..23	+48..07
18..26	−24..01
18..14	−24..57
21..25	−1..34
15..09	+2..44
12..48	+22..36
16..50	−29..47
16..52	−26..00
16..48	−3..50
~~18..26~~	~~−24..01~~
21..22	+11..25
13..57	+55..12
0..44	−27..30
~~13..23~~	~~+48..05~~
0..39	−26..13
13..05	+19..05
12..43	+42..03
~~21..22~~	~~+11..26~~

h m	° '
19..10	+29°54'
5..38	0..00
21..31	−23..55
22..43	−21..30
16..38	−1..38
~~21..31~~	~~−23..55~~

A & Dic of the Objects noted in this Book

BUSINESS

ported Gardner's proposal. Capt. Cass wrote the governor: "In consequence of what we consider a grievous insult to Company B, 5th Regiment of Artillery . . . at a meeting held in said company's armory . . . it was voted to surrender the charter of the company forthwith." The Columbians kept their organization intact, nevertheless, as a voluntary company – without pay, arms or other help from the state.

When the Civil War began, Cass approached Gov. John A. Andrew (an entirely different type from the bigoted Gardner) and offered to form an Irish regiment. Andrew heartily approved. Because he was so

R & Dec of the
Objects noted in
this Book

All have been com-
pared with the Nebulæ
& Clusters in Herschell's
Catalogue —
Excepting ten or
twenty which I do not
find —

R	Dec	page		
~~17.11~~	~~-17.29~~	~~1~~	(June 10 1847)	
14.26	-29.00	2	faint - star in it	Do not guide this in Catalogue (June 15 1847) H 3752 18.26 -24.02
~~16.32~~	~~32.20~~	~~3~~	H. 3756	H 3752 18h.25m -33.07
~~18.44~~	~~-30.35~~	~~3~~	sm. ro. bri.	H 3763 18.44 -30.41
~~12.21~~	~~+9.00~~	~~6~~		H 3763
~~16.23~~	~~-12.37~~	~~7~~	dif. & diffused	R=16.23 H 3637 -12.40
~~17.51~~	~~24.15~~	~~8~~	Star & nebula	H 3713 R 17.49 Dec -24°.38'
~~17.04~~	~~-29.12~~	~~9~~	f.f	H 3670 R 17h.04m -29°.15'
~~16.53~~	~~-25.58~~	~~11~~	f	
~~8.30?~~	~~-26.03~~	~~12~~		
~~17.12~~	~~+43.18~~	~~15~~	br. round	92 Messier not in Cat.
~~0.56~~	~~+30.00~~	~~16~~	very large & diffuse	(Large nebula Herig neb here If dec -24° 38' then this is M.79.)
5.18	-? +24.38	16	drawing given	
13.07	+36	22	Comet?	Comet probably H 131
~~1.32~~	~~+30.55~~	~~(p 23)~~	~~Very large & dif~~	
~~5.32+~~	~~+23.35~~	~~23~~	~~Pyrale~~	~~new~~ (71 Wolf) 4 br. x
5.07?	-16	from Globe	nebulosity	20' n of { Could not be found on next evg. of obs.
~~9.26~~	~~+21.25~~	~~28~~	pretty faint	
~~5.17~~	~~-40.16~~	~~29~~	sm. & f	
18.12	+21.45	29	suspected Comet	Not found
~~21.17~~	~~-6.45~~	~~29~~		
~~21.21~~	~~-22.30~~	~~30~~		
(~~1.01~~ or 5.27)	~~+21.38~~	~~30~~	~~sm. d ro.~~	80' n. of a very br. x 3rd mag
~~0.48~~	~~-27.45~~	~~30~~	~~b & dif.~~	
~~1.16~~	~~+30.25~~	~~31~~		
~~17.09~~	~~+44.15~~	~~32~~		
~~17.31~~	~~-3.05~~			H 1983 4° n of cor Caroli
~~17.56~~	~~+22.27~~	~~34~~	~~double~~	
~~19.21~~	~~+29.58~~	~~34~~	~~star dust?~~	
~~17.13~~	~~+43.20~~	~~34~~	~~bright~~	
~~17.13~~	~~-18.20~~	~~34~~	~~faint~~	~~Star~~ Sir W. Herschel Answers
~~6.03~~	~~+12.55~~	~~35~~	~~f & diff~~	
~~5.47~~	~~+17.32~~	~~35~~		
~~6.03~~	~~+12.55~~		~~f.f~~	

5h 25
~~4h 25 +21.50 sm. 50 sp. bx~~
7h 54 −10.10 p36 pretty large
5 29 −6 50 ring nebula. in Auwers
~~12h 10 +48.30 37~~
~~12h 43 +42.30 37~~
~~17h 15 +43.45 8'~~ M. 92
~~13h 36 +29.32~~ h 1663
~~13h 06 +19.10 38~~
~~12h 24 +19.05~~ 8'
~~18h 44 −6.40~~ h 2019
~~16h 48 −4.20~~
~~1h 23 +39.05 sm. chf~~
~~12h 11 +49.00~~
~~13h 10 +45.45~~ h 1570
~~12h 51 +23.20~~ 41
~~13h 06 +19.45~~
~~12h 22 +19.35~~
~~11h 01 +11.25~~ h 818
~~13h 08 22°.04' nebly~~ Don't find it h 1570?
~~12h 54 23h 45~~ Don't find h 1514?
~~13h 41 28.40~~ Don't find ~~Dunlop 318~~ h 3523
~~16h 41 −1.30~~ p43 fine neb or cluster
(15h 14) ~~15h 21~~ (correction) (+2 37) ~~+2.45~~ M. 5
~~17h 20 18.00~~ p50 h 3683
A neb 3°.6 of α 1° pr c 5? Ophiuchi
~~12h 21 +8.45~~
~~13h 08 +19.00~~
17h 03 −3.40
21h 40 +1.15
~~13h 05 +18.47~~
~~17h 10 −18.15~~
20h 00 −31.16 Don't find
~~21h 26 +11.40~~ h 2120
~~21h 32 +1.40~~ h 2125
~~12h 56? +21.10~~ p54
~~13h 18 +50~~ ?
13h 13 ~~+1.15~~ +22.12 Don't find
~~16h 33 −32~~ M. 55

neb. 10° N.N.E. of Pomelhaut

~~12.49 +43~~

~~18.29 = 29 + dif. & easily rapidly~~

~~16.38 = 2.30~~

Cat = ~~19.48 +18.30~~

coarse Cluster in Gemini

~~12.20 +9~~

neb. 3° S of γ Ur.

n of 5° two last of tail of Gr Bear

½ from Arct. to Cor. Caroli

a faint neb. in end of Sickle

17.. p 64

a faint neb 10° n of Bekh? dec = 0°

Cat = 16.32 −12.30 pretty f. 4° sp * 3rd

* = ~~17.16 −18.30 p 67 sm. f.~~

Cat = ~~19.40 +18°~~ 1 fills s of Lambkll. f pretty

Cat = ~~8.44 +34.40 p 69 See Note Book~~

Cat? ~~7.55 −30 br.~~

Cat = ~~12.20 +12 f with 3 others f f~~

Cat ~~12.20 +44 sm. f~~

~~12.23 +8 b~~

~~13.04 +18 b sm.~~

~~12.47 +22 b~~

Cat ~~1.26 +15 f f p~~

~~5.06 −40 sm. but well & easily seen~~

Cat ~~2.32 0° f f.~~

Look again ~~2.44 −11 p 76 f.~~

Sup page 77

~~14.05 +1~~

* ~~14.00 +55.30~~

~~16.52 −26.4~~

Look again ~~19.27 −32~~

Look again ~~7.39 −26.20 f.s.~~

Look again ~~12.07 +36.0 f f~~

Look again 16.09 −29 wont find M 4?

Cat ~~17.59 −25~~

Look again ~~17.16 −3.30~~ M 40?

Cambridge. 1849.

April 21st W. C. Bond (B¹) and R. F. Bond (B³) observed for Personal Equation. Instrument – 23 feet Refractor. Star – Procyon. List of wires 15. Half seconds. Sidereal Chronometer. No 2657. –

* ½ four past the meridian.

B¹ leads.

h. m. s.		
8 " 00 " 4.8		
	14.4 – 9.6	
	28.0	
	37.5 – 9.5	
	43.4	
	53.0 – 9.6	
	21.6	
	31.4 – 9.8	
	4.8	
	27.9 – 9.5	
	49.3	
	59.0 – 9.7	
*	7.7	
	17.3 – 9.6	
	20.4	
	29.7 – 9.3	
	45.3	
	55.0 – 9.7	
	2.7	
	16.9 – 9.9	
	28.8 – 9.7	
	40.5	
	38.0 – 9.0	
	13.0	
	22.5 – 9.5	
	25.4	

β. Cephei +69°.54′ AR 21h.26m.30s
α Regni 14.23 22.57