

KG
11365
158

H. ~~4~~ 3.

Vol. I 169-256

1847
December to
1848
August-

(202)

KG 11365.158



No occultation in this book
Up to May.

J. C. Lauer Feb 12th 1843.

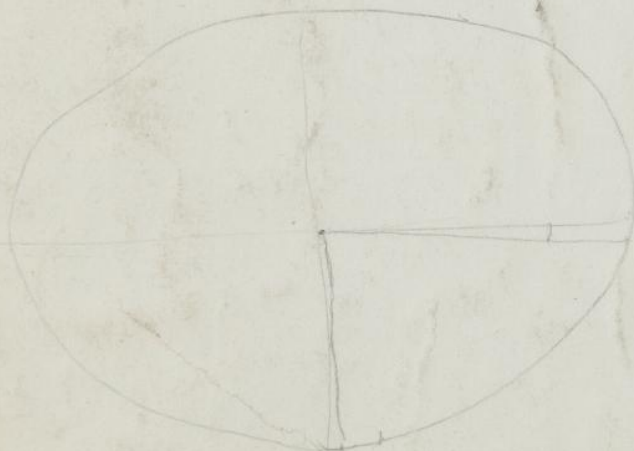
Dir of Merid Mark p 229

Cap stone weighs 13.4 tons
Pier 492.2
Pier & Cap. 505.6 tons
Block

Dimensions of Pier

From floor to Cap stone (top of it)	19.3 in
" floor of cellar	11.0
Depth of Granite below surface	5.0
Block for Instrument	11.0 46.3

Telegraph p 251c



Dec 27th 1847 Th. - 3 Left off, ^{next page} cut far + 4 169
 moved happen. Lowest power 140 12.6

14.39	30.4	21.1	Orig Polaris to	15-45-46.6	13.0
	51.5	27.9	determin value of screw	57.4	11.0
40	19.4	10.6		68.4	14.4
	30.0	13.5	W C B observes	22.8	12.6
x	43.5	12.0		35.4	12.0
	55.5	13.3		47.4	11.0
	08.8	13.6		58.4	13.6
	22.4	10.4		47. 12.0	12.8
	32.8	14.0		24.8	11.0
41	46.8	11.5		35.8	12.7
	58.3	13.7		48.5	13.9
	12.0	12.0		62.4	10.4
	24.0	13.4		48. 12.8	Left off at 41.00
	37.4	11.6			
	48.8	12.2			
	01.0	12.4			
	13.4	12.8			
	26.2	13.2			
	39.4	14.1			
	53.5	11.8			
	05.3	12.1			
	17.4	11.3			

Left off. moveable wire at left hand of screw
 Coincidence at 50.00

44	28.7	13.3
	42.0	11.5
	53.5	13.3
	06.8	11.7
	18.5	13.3
45	31.8	

15-40-19.4	15-40-43.5	15-48-12.8	15-48-12.8
15-48-12.8	15-48-12.8	15-48-12.8	15-48-12.8
7.53.4 = 19 rev.	7.29.3 = 18 rev.	7.45.2	7.44.1
19) 47.5.4 (24.93	3.45.2	3.44.1	3.44.1
38	3.44.1	3.44.1	3.44.1
22	18) 44.9.3 (24.96 = 1 rev	3.44.1	3.44.1
174	36	3.44.1	3.44.1
171	89	3.44.1	3.44.1
40	72	3.44.1	3.44.1
48.02.4	173	3.44.1	3.44.1
40.30.0	162	3.44.1	3.44.1
7.32.4	110	3.44.1	3.44.1
3.44.6 = 56.09 in	in 4" = 8.24146	3.44.1	3.44.1
88.30.15	8.21306	3.44.1	3.44.1
	8.41671	3.44.1	3.44.1
	6.62477	3.44.1	3.44.1
	9" 5.63982	3.44.1	3.44.1
	0.98995	3.44.1	3.44.1

15.40-43.5
15.44-28.7
3.45.2
15.48-12.8
3.44.1
1.77815
4.68557
6.46372
0.30103
6.78478

140a

Dec-27 Ther -2 to ± 0 by micrometer guide line
2557- $Q^{\circ}P$ observed16... 00... 31.5

16... 6... 16.7

6... 29.6

6... 42.3

6... 55.3

7... 07.4

higher power M

Beginning 45 $\uparrow$ *Separately given.*

16... 11... 17.3

11... 29.3

11... 43.2

11... 55.7

12... 06.8

12... 20.4

12... 32.5

12... 45.6

12... 57.5

13... 09.3

13... 20.8

13... 35.2

13... 47.6

14... 00.4

14... 14.0

14... 25.2

14... 38.8

14... 49.0

15... 02.8

12.0

13.9

12.5

11.1

13.6

12.1

13.1

11.9

11.8

11.5

14.4

12.4

12.8

13.6

11.2

13.6

10.2

13.8

16... 15... 16.0

15... 27.2

15... 40.7

15... 53.0

16... 05.8

16... 18

16... 30.8

16... 43.4

16... 55.2

17... 8.0

17... 20.5

17... 33.5

13.2

11.2

13.5

12.3

12.8

12.2

12.8

12.6

11.8

12.8

12.5

13.0

20

16... 11... 17.3

16... 17... 33.5

6... 16.2

15) 376.2 (2400

14... 14.0

14... 25.2

14... 38.8

14... 49.0

15... 02.8

15) 351.1 (25.08

28

71

15) 351.1 (24

30

24.96

12680

2496

37410

Dec 24th Dec

171.

Poor seeing. Looked over the Moon to see if the rays diverging from some principal Craters gave evidence of the Epoch of the formation. I think the best instance is a ray passing through 'Kies' which just before is cut off by a chasm or Moonquake.

1848 Jan. 10 th Obs - 424	neb	h m s	star	mag	Dec	178
424-1.58.17 +39.55	h-1.26.97	16	0.30.07	39.54'		
2.01.07.5 +40.04	1.30.01	8	0.29.33	40.03		
2.04.27.2 40.11	1.32.45	dbl star	9-12	2 proceeds		
2.06.50.5 39.53	1.31.36	7	0.33.41	39.52		
2.09.19.0 39.53	1.31.36	7	0.36.10	39.52		
2.10.11.2 40.09	1.34.29	10	0.34.09	40.08		
2.15.32.8 <i>Clump</i> 40.15	0.34.09	Dec 40.08	star, same as last			
2.15.40.2 " "	0.34.16	"	little neb, round,			
2.15.50.5 " "	0.34.26	"	for nebulae nucleus			
2.16.18 " "	0.34.54	"	4 mag. n.f., dist from round neb. 2 the first star			

plenty of small stars in this Dec. but none of magnitude sufficient
 2.23.46.2 - 40.34 - 1.49.07 - 10-9 mag. *h* 0.33.06
Dec 40.33

~~this is just 1/2 way~~ between the two canals
 is half way between this star and the nucleus, straight line

2.26.39	40.30	1.48.40	9 mag	0.36.26	40.29
28.06	40.23	1.49.14	9	0.37.19	40.22
36.15	40.55	2.02.03	10-11	0.32.39	40.54
38.27	40.54	2.02.40	10	0.34.14	40.53
40.51.7	40.46	2.02.52	8	0.35.41	40.45
41.58	40.44	2.07.56	9-10	0.32.29	40.43
43.59.7	41.09	2.03.47	7-8	0.38.40	41.08
46.26.2	40.27	2.10.28	nucleus & centre of Cy neb		

42.27
 2.27
 0.33.24
 34
 1
 34

corrected - 1st
 correct Dec - 1

Neb. Andromedae

Jan. 10th

There is more light preceding than following the nucleus — The canals are most distinct a little south of the parallel of the nucleus —

The part of the neb which goes out south is strongest — can be traced about as far as the parallel of the outer nebula

on the south where it borders the 1st canal, seems to strike the canal & shoot off brighter than between the canal — this edge of the canal would make the boundary in an inferior telescope —

where the light begins to be broken among large stars & unresolvable, has a different character from the opposite end — the other end is more milky —

The canal nearest the nucleus passes through the double

part which we now get, as follows

5. 50. 34.5 — Dec. 40. 37 — R. 5. 13. 58 group

The canal can be traced beyond this* star, by an irregular ridge of stars, "a feature"

5. 57. 27 — Dec. 40. 46 — R. 5. 20. 10 8 mag. *this Star

* R. 0. 35. 44 Dec. 40. 45

The canal passes by this group — no doubt — the canal changing its direction in its southern boundary passes very near the last star observed — it begins to bend a few minutes north of the point observed for the group —

That star has something very curious.

The light seems to terminate rather abruptly in the region following in R the above star distant about 15'.

Therm 0

176

Dec of canal & last star

6.22.44 1st canal of same Dec as star

6.23.27.2

The two canals seem
nearly parallel in the Dec of the starS 6.25.48.8 1st canal26 33.2 2nd Dec6.27.12.3 were they begin taken D, the
preceding C is interrupted

Reading of circles h 5.51.32

R on 34.07
Dec 40.35

Dec 40.37

Canal
beully

N

Nucleus

6.30.50.5	h 5.54.54	Dec + 40.28
5.54.56		40.26
0.35.56		-02
0.34.24		
-1.32		

The n.f. Part of nebula in the vicinity
of the nucleus is not so bright nor so even
as the opposite side. The canals are not
nearly so distinct. The illumination is however
or assisted by an irregular ridge of stars which
seem a continuation of the light between them.

There is no doubt of the canals changing
their direction in Dec 40.37 or thereabouts.

215 hours at Neb. of Orion for breadth of field.

6.55.33

215

 $\frac{215}{86.6} = 2.5 = \text{breadth of field.}$

ext. Yr - 3°

176

Jan 28th having noticed ^{that} the appearance of the axis of the nebula in Andromeda resembled with a power of 103 on the G.R. the milky way as it appears to the naked eye especially in the neighbourhood of Cygnus.

I thought it worth while to count the stars within a circle of 34° diameter having its centre at α Cygni. 34° being the apparent angle of the field of view with the above power. There are in Harding's Altan 209 stars including the 6th mag. In Andromeda within the same visual angle 200. in the richest portions

1848- Jan 7. 10⁺ Light Neb in Orion Th - 3 Orion 188

424	6.. 58.. 07	7	
	59.. 35	6	h 1.. 32.. 24 W -5.28'
	7.. 00 04	5	
	37	4	
	01.. 01	4	
	25	3	
	31	2	
	37	1	
	43	1	
	47	4	
	51	5 to 6	
	58	5	
	05	5	
	10	6	
	15	5	
02..	23	6	Star
	37	5	
	48	5	
03..	10	6	
	31	7	

11th Am

2557 - 16.. 22.. 0

424 - 16.. 12.. 48

178 Jan 19th CR 22^h 05^m 04^s ^{Nept.}
Dec - 12^h 24^m 35^s

Star 38 Aquarii 6th day, 40 Aquarii 7th
22^h 02^m 30^s 22^h 05^m 18^s
- 12^h 18^m 30^s - 12^h 39^m 20^s

10^h 50^m
1^h 40^m 40^s
3^h 20^m 56^s
1^h 30^m 10^s
22^h 09^m 14^s

24^h 52^m 00^s
22^h 02^m 30^s
49^m 30^s

24^h 55^m 00^s
10^m 30^s
25^h 44^m 30^s
22^h 02^m 30^s
3^h 42^m 00^s

55.24

2557 2^h 05.26 38 Aquarii - small star follows.
2^h 08 10.5 Neptune.
2^h 44
3^h 51.53
3

Dec 4 Dec 4 Dec 3rd

8 12

12 20

16

Nov 30 8^h 25.8

8^h 56.3

30.5

47.5

Dec 8 8^h 25.8

36.4

1^h 00.5

16 7^h 49.4

38.9

1^h 08.8

24 7^h 10.5

37.6

1^h 12.5

32 6^h 32.9

36

1^h 12.1

1848 Jan 9th 5^h 57.

34

1^h 10.

Jan 17th 5^h 23.

11^h 20

34

1^h 08.

299^h 58

311^h 18

Jan 7

36^h 20

38^h 38

51^h 22

Jan 17th R 311^h 18' Dec. 51^h 22'

now in 8 days + 4^h 50' now in 8 days 1^h 07'

Jan 25 316^h 08' 50^h 05'

8^h 19.20
2^h 25

8^h 18.66'
8.25

Collas Comet

1848. Jan. 17th R 20^h 45^m 10 Dec 51^m 22'.. 25th 21^h 04.30 Dec 50^m 15'Daily mov in R 2^m 25^s Daily mov in Dec 8^m 1/4

21

2.08.58 2.12.24

10.40

20.58.18

3.52.58

3.06.20

Sun

Nep.

2.13.12.3

22.3

16.31.8 + 0.2

41.8

3.19.7

3.19.5

Sun 2.17.40.4

50.4

Nep 2.20.59.8

10.4

Nep. 3.19.4

20.0

Thu 24th2.19.25^hSmall Sun seen dec
as Nep

Nep 52.295

64.73 57.61

Sun 63.65 63.69

61.98

113.8

4.37

180

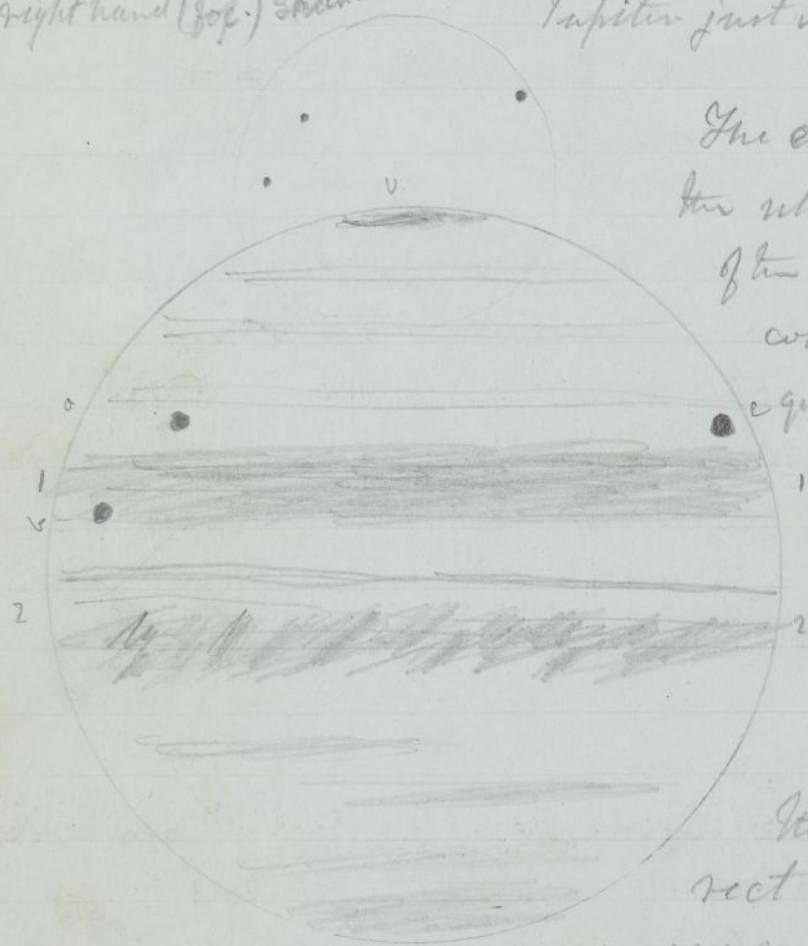
-12. 20. 35

(See note on the following day)

1848.

Jan 28th 10 PM looked at Jupiter splendid definition

Shadows of three satellites & Projector & Equator belts

Internal contact of
right hand (top) shadow.The most perfect definition imaginable
Jupiter just in the meridian

The edge of the planet defined with
the utmost perfection. The shadows
of the satellites very black. The planet
covered with belts ^{of fragments} the polar regions
quite dark. The belt marked 1
is the darkest & most even.
2 is next strongest to 1 &
gives curious structure. Jan 1 40

Lahure's book contains a draw-
ing of the belts of which

The figure ^{here} given is not a cor-
rect representation as the planet
was suddenly obscured by clouds.

a power of 1500 defined Castor very well.

The discs ^{of the stars} were not larger than they appear in transit with 300

The shadows were so well defined that their internal
& external contacts could be distinguished with a good deal of
certainty. Their relative magnitudes were very easily com-
parable. The right hand one ^(a) was much the largest perhaps twice the diameter of
(a) & (a) was to (b) as 3:2 c: a: b = 6:3:2 perhaps never.

Such a sight has seldom ^{of color} been seen before
under so favourable circumstances of optical power & atmospheric
condition. (See Note Feb 7th)

Feb. 2nd 1848

Looked at the two nebulae of Herschels Catagor which had the remarkable peculiarity figured in the Phil. Tr.

There is evidently a similarity between them & the canal in Andromeda. Herschels description & drawings are very good.

The northern is very much elongated & resembles the view of And. in the comet-seeker. but narrower. The southern is most distinct.

Feb 3rd. Looked at Jupiter again under a most superb definition. it happened to present almost exactly its opposite side to us from what it did on Feb 24th & the appearance was very different (Lalande's drawing with stencils is very good). Parts of those belts only were visible. & the rest of the body of the planet under a power of 375 was all covered with spots & flocculi. ~~some of which~~ resembled something like the Sun. The upper ~~whitish~~ belt was a deep concavity in the upper side & the lower belt was all broken up & diversified into most irregular spots & holes. seven or eight & perhaps many more could have.

(Note the Preceding ^{for Jan 28th & Feb 3rd} was written before knowing that (a) was a satellite ^{night} & (b) its shadow.)

Feb. 7th 1848 Found to day much to our astonishment that on the 28th according to the Nautical Almanac that the spot (a) in the diagram on the preceding day was really the third satellite. (c) its shadow. and (b) the shadow of (a).

Jan 1855 ^{Lab} Early on the evening of the 7th (Jan 1855) Daniel, it. & I went up into the dome to look through the telescope. we first looked at Jupiter. There was nothing remarkable on the Planet the seeing pretty good but there were two satellites near the Planet & as which I said would soon be occulted & pass over the body of Jupiter. We looked at Orion & Sirius but it suddenly clouded up however between the clouds we got a good view of Jupiter the nearest satellite (the lowest ^{I think} apparently) had passed was no longer visible but the upper one was just in contact we saw it projected like a mountain on the limb with a well defined disc. Neither

2 of them could have been plainly visible on the disc of Jupiter because at the time I was in doubt whether they had passed before or behind Jupiter. I said that they passed behind because I could not see them on the disc. The vision was good but not so good as much later in the evening

14.30.21 p.d. dtd 41.22 true 21.22³
 7.10.52
 21.41.13
 21.41.37¹¹
 +24⁵
 -2

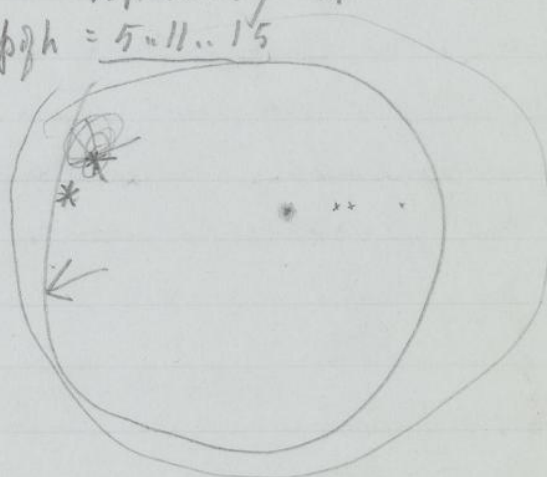
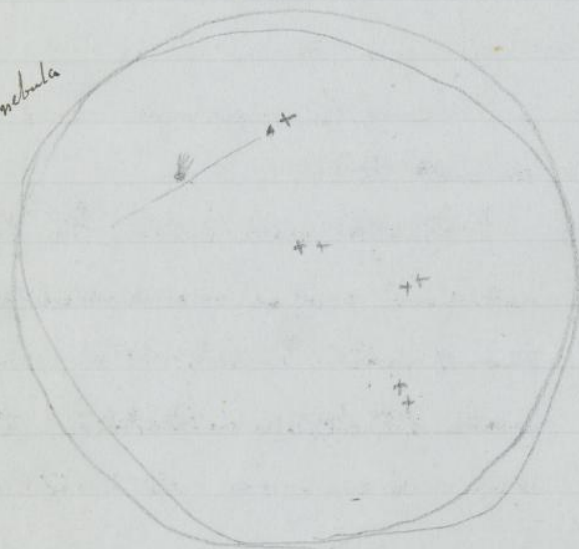
R² Cygn

Feb. 10¹⁰ 11¹¹ dtd.
 For Colla's Comet.

14.56.07 p.d. 40.55.28

comp h = 5.11.15

New nebula



14 56 07
 6 49 45
 21 44 52
 Cor = 2
 21 44 50
 42 sec 1 13.2
 21 43 37
 48 59 00
 12' x 4 = 48° 48 sec 49° = 75.2
 40 55 28
 + 1 32
 40 57 00
 49 3 00
 41.00 -1 2.194
 48 59 00 10.97

The double star which points just to the object suspected, is conspicuous & mid way between it & a very small star following dist 3 or 4 times dist of companions

There is a star of the seventh mag in the same field 4' above (south) & 12' west.

Arg Sternverzeichnis +49° 2631

Position of nebula

1855.0 21 43 44.1 +49° 00.6
 2.20 x 7
 / sec -15.0 -1.9
 21 43 29.1 48 58.7
 40 +1 13.2 +4.0
 1848.0 21 44 42.3 8 49 2.7

From corrected instr. reading 1848.0 α = 21° 44' 50" δ +49° 3'.0

From Comparison with Arg. " = 21 44 42 49 2.7

Star. +49° 2631 Adopt α = 21 44 46 49 2.9

1848,

Feb. 12th 1848 Jan of Aldebaran

183

2419 2' 33.58-13 Jan instantaneous. Dark limit not seen

2419 2' 33.51.5 ^{6.5} G.P.B. very steady & fine
 Calm slight haze of cirrus.
 5 ft Equatorial.

for M.S.G. see Hally's book

2419 2' 40.03.25

2457 2' 49.00.0
 8.56.75

3 06.04.5 -70 Jan instantaneous shot sudden

2557 fast - ^h 2' 49.00.0
 11.36.27
 2' 37.23.73
 2419 - 2' 40.03.25
 2419 fast + 2' 39.52
 2' 33.51.5
 Imm 2' 31.12.0

Imm 3' 06.04.5
 70 beats - 35
 3' 05.29.5
 2' 39.5
 Imm - 3' 02.50.0

Feb 16th Saw Jupiter very finely at 10^h 30^m
 in one of the southern belts are three
 circular holes like whirlwinds. The arctic regions are apparently
 covered by several narrow belts to Lat 60°.



With a power of 1100 the third
 Satellite was as round as Jupiter!!
 think that its diameter compared
 with the other satellites is larger
 than is usually attributed

184a

$$\begin{array}{r} 11.06.29 \\ 53.5 \\ \hline 11.07.22.5 \end{array}$$

$$+18^{\circ}55'34'' \text{ B.R. p.s.m. to M ss''}$$

$$+3.15$$

$$\frac{17}{22.05}$$

$$\frac{315}{5352}$$

$$5352$$

$$5352$$

$$\frac{19.50}{20}$$

$$\frac{390.00}{6.30}$$

$$6.30$$

$$\frac{70.57.56}{49.02.04}$$

$$\frac{6.30}{19.55.34}$$

$$19.55.34$$

$$19.55.34$$

The 3 neb

$$\begin{array}{r} 11.08.52.5 \text{ vB, R} \\ +18.57.28 \end{array}$$

$$11.08.37.5$$

$$18.48.24$$

P.F S.R. 12'

$$18^{\circ}57'18''$$

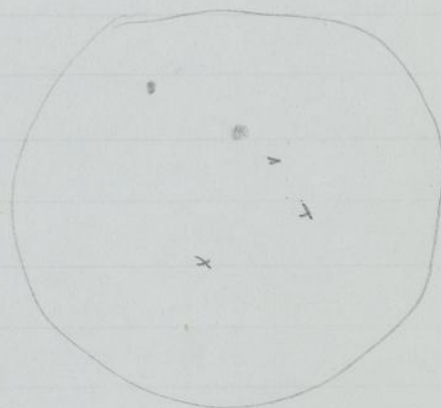
vB, R

$$11^{\circ}08'47.5$$

$$11.08$$

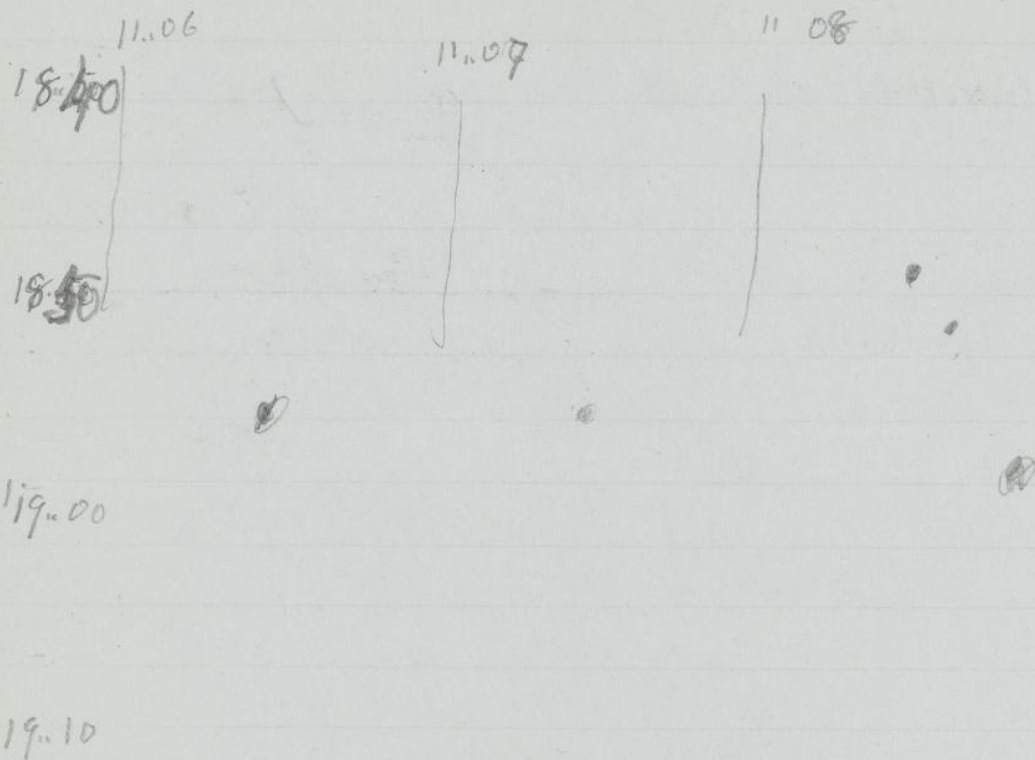
$$11.12.01$$

$$19^{\circ}10'24''$$



$$3^{\circ} 24' 20'' \div 192 = 8.3 \text{ daily motion hourly}$$

185a



186

Feb 25th 1848

04.24

19.3

Sun R 11.11.55

Sun 19.03.18

$$\begin{array}{r} 1.14 \\ 11.10.41 \end{array}$$

$$\begin{array}{r} 5.10 \\ 19.11.30 \end{array}$$
Hawaii Comet of July 4th 1847

Comet

$$\begin{array}{r} 255) 10. 37. 12.7 \\ 11. 18. 26.5 \\ 11. 19. 44.2 \\ 12. 10. 2 \\ \hline 11. 07. 34.0 \end{array}$$

$$\begin{array}{r} 250. 54. 40 \\ + 19. 05. 20 \\ - 3. 02 \\ \hline 19. 02. 18 = \text{Sec} \end{array}$$

$$10. 42. 37.8 \quad 250. 54. 44$$

$$\begin{array}{r} 2) 11. 24. 54.0 \\ 11. 19. 43.8 \end{array}$$

$$\begin{array}{r} 10. 49. 57.0 \\ 3) 11. 30. 14.0 \\ 11. 19. 43.0 \end{array}$$

$$11. 01. 07.8$$

$$\begin{array}{r} 250. 54. 48 \\ 250. 53. 40 \\ \hline \text{Comet 5 of Sun } 1. 08 \end{array}$$

$$\begin{array}{r} 11. 08. 52.4 \\ 11. 44. 48 \\ 11. 24. 04.4 \\ - 12. 10. 2 \\ \hline 11. 11. 54.2 \end{array}$$

$$\begin{array}{r} 250. 53. 40 \\ + 19. 06. 20 \\ - 3. 02 \\ \hline 19. 03. 18 \end{array}$$

S Leonis

$$\begin{array}{r} 11. 15. 58.3 \\ 11. 56. 17.0 \\ 11. 19. 41.3 \end{array}$$

$$10. 50. 4.208 \quad 11. 24. 04.5$$

$$4.21.4 \quad 11. 19. 42.7$$

$$-21.4 \quad 4.21.8$$

2457
at 10.56^h 1st Leonis of (2/3) 24

$$\text{Star } 11. 24. 04.5$$

$$\text{Comet } 11. 19. 42.7$$

$$\text{R Jani } 11. 06. 01.1 \quad \text{Cor } -3. 02$$

Comet precedes 4-21.8
5 of 8th 1. 08.0
Ch. 5.2 12. 23. 30

Mean of 3 circles with the
circles.

$$\begin{array}{r} 11. 21. 31.8 \\ 12. 03. 20.5 \\ 11. 18. 42.3 \end{array}$$

$$11. 25. 45.8 \quad 248. 35. 40$$

$$12. 07. 34.5 \quad 21. 24. 20$$

$$11. 19. 11.3 \quad 21. 21. 20 \text{ Feb Dec}$$

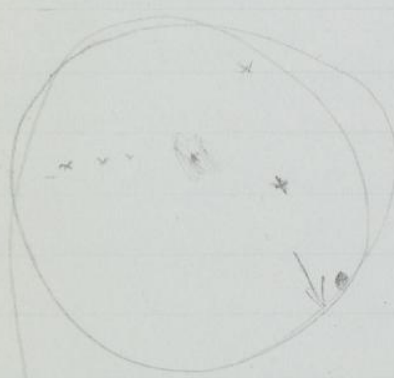
$$\text{Cor } -12. 10. 2$$

(New Nebulae?) below.

189.

The calculated place of the comet being near some of the nebulae of Sir J. Herschel's Catalogue. Four of them were taken from the Catalogue & the instrument being set on one of them there appeared to be five almost within one field. One of these was supposed to be the comet from the light surrounding it. It was m.p. h. 843. & when first seen evidently to the s.e. right of a line joining that nebula & a neighbouring star. Its motion was evident soon after taking a diagram.

It was a little brighter & larger than h. 843 & has a starlike nucleus but very faint. The comet is just visible in the field (3.3 in.).



Feb 29th ^{h.} ^{m.} ^{s.} ^{sec}
 Manwais R 10^h 54^m 00^s Dec 18[°] 59'
 Cloud Int. 11^h 06^m 14^s 250[°] 58'

Cliff Mitchell.
 R 15^h 40^m 50^s
 Dec 59[°] 14'

22^h 17^m 57^s
 22 16^m 44^s
 10^m 41^s 20^s
 12^h 25^m 36^s
 2^h 02^m
 12 23^m 34^s Dec 27

Feb. 29th

Looked for
 Cliff Mitchell's Comet
 There are two other nebulae
 in the same field with that
 above given. one small & round the other faint & elongated

Feb. 29th
 12^h 20^m
 12^h 54^m 52^s 210[°] 07' 10"
 9^h 05^m 27^s
 2^h 54^m 23^s
 12 42^m 22^s
 15^h 36^m 45^s

neb
 15^h 35^m 42^s + 30[°] 06'
 17^h 54^m

188.

Quest Feb. 29th
not Mauvais Comet
summed as the three obs.
on pre. page & sum of Mauvais

2557 10^h 05.0 166.00 s.p.
R mbs = 10^h 57^m 35^s
10^h 08.5 166.17
h 812?
probably 10^h 11.7 165.50

R 16^h 52 = 9.4478
18-50 to S 9.5328
46.06 20.05 0.3026
+ 1.90 = 0.2787
47.96 1.6509
1.1763
mean R 3.197 = 0.5048
200 15.27

10^h 43 48.73 Comet above X 8.9
10^h 47 48.22 Zero 49.84

The Comet can be seen without difficulty
when the wires are brought upon it. power 146.

Comet above

mo. in one minute
0.017

11^h 08.40 48.19 Zero 49.81

11^h 12.40 47.51

11^h 15.40 47.95

1 16.7 00 .03

mean of 11^h 01^m 35^s = 48.01

mean of 11^h 53^m 15^s = 47.11

54 40

mean of 11^h 27^m 20^s = 47.56

cor to 11.33 09

at 11.33 47.47

Zero 49.42

2557 - 11^h 33.00 2.35

Comet S. of Star

1^m 06.23

0^m 23.0

Comb. all S. L. V. Comets
12^h 43^m 55^s R 10^h 57^m 23.07
Dec + 18^h 42^m 48.5

mean Eq. Jan 1st 1848

Mauvais Comet

Feb 29th 1848

2557 10^h 25 1.07^m 8.9
11.29 7.0
33 6.3
35 7.9
37 6.1
39 6.0
18 5.9
11^h 33.00 1.06.23

Comet follows
Star for

Dif. of R at first not well taken, but after
because the wind made a great noise drowning
the beat of the chronometer.

14. 24. 05.5 25. 12.5 1^m 07.0

202 28.5 1^m 08.3

23.5
23.0

B. 2. 456

R 10^h 54 26.13

+ 37.20

+ 0.02

3.197

19.28

95.91

5784

6374

3856

73531

443.49

1825

R 10^h 55 03.31

1^m 13.53

10^h 56 16.84

Dec + 18^h 49^m 49.4
+ 44.3
+ 1.2

+ 18^h 50^m 34.9

- 7^m 23.6

18^h 43^m 11.5

23.0

mean of 11 obs

Distance of Comet about

1^m 06.23

60" then is light about

0^m 23.0

it for some minutes dist.

10^h 57^m 23.07

Star is B. 2 456.

No. of Comp 11

Star in Project Zone 456

Feb 27 1899

Star	Com	dif R	X.R	10.56.10	18.42.50	54.90.017
18.5	26.5	1.08.5	correc	1.14	8.10	$\frac{54}{360}$
11.27.34.0	28 41.0	1.07.0	1425 10.54.56	+18.51.00		.017 .085

Star	Com	dif R
11.31 37.5	43.8	44.4
53.2	32 50.5	11 34 00.0
		35 06.0

Star	Com	dif R
46.1	52.0	44.4
36 02.0	37.07.2	37.59.0
		39.03.8

11.46	47.27	Zero 49.80
11.48.20	47.57	49.84
11.50.40	47.11	49.81
11.53.30	47.00	49.81
11.59.30	46.79	
12 01.30	46.90	
19.30	64	
Mean 11.53.15	47.11	

Correct on dec wire 46.90

12.03.23-10
0.53.38
11.09.45
12.28
10 57.17.5

Comet
12.06.26-10
0.56.40
11.09.46
251.0
18.46.26

d. Lewis

dist on same wire as comet

12.13.52.5-10
0.55.26
11.18.26.5

12.16.12.10	248.34.44
0.57.40	21.25.16
11.18.32	21.21.20
	cor -4.00

R

11.06.06.0
cor -12.28.0

Comet Rep	10.57.17	68.39.18
		37
Dec +18.42.30		68.38.39
		21.21.20

Illuminated Wire. Used for the Comparison.

Star R	10.56.10
Dec +18.42.50	

190

March $\frac{1}{2}$ 1848. *Clauvion's Comet*13^h 36^m 30^s 87.38 Comet above13^h 40^m 52^s 87.3813^h 44^m 00^s 87.6713^h 46^m 30^s 87.6513^h 49^m 00^s13^h 43^m 24^s87.65²

23

87.55

Cont

2457 14^h 04^m 09.2
35.005.24 Same Star as last night def. R
46.8 1^h 37.6 Comet precedes
14^h 06^m 13.0 1^h 38.006^h 52.0 08^h 07.0 30.2 1^h 38.207^h 08.0 08^h 56.4 1^h 38.445.0 11^h 00.5 03.5 1^h 38.5
10^h 10.5 11 48.8 1^h 38.316.5 55.3 1^h 38.8
13^h 42.0 15^h 21.0² 1^h 39.021.0 00.0 1^h 39.0
16^h 47.0 18 26.3 1^h 39.314^h x 19^h 35.5 1^h 39.0
20^h 01.5² 21^h 40.5 1^h 39.0

Comet There are better than the last two or three sets of observations

22.4	0	02.0	1.39.6	262
24. 47.5		26. 28.0	1.40.5	26.2
				25.3
				25.7
				26.3
2	05.0	35.0	1.40.0	26.0
28. 20.5		30. 00.8	1.40.3	26.0
				25.8
				26.05
				1.41551
				15 1.17609
				18.43 9.97640
				370. 2.5883

Comet above

14.36.08	88.55
14.37.40	~~89.13~~ Isolate
14.39.36	88.74
14.42.10	88.74
43.20	88.38
44.40	88.17
~~47.2~~	~~88.33~~ Still off
48.30	88.58

$$14.56.20 = 88.51$$

$$14.44.40 = 88.56$$

$$18.43.24 = 87.55$$

$$488.1 \quad 14.14.14 = 88.03$$

$$478.3 \quad 14.15.30 = 88.07 \quad \text{Comet S. of star}$$

$$47.65 \quad \text{Star} \quad 49.81$$

$$49.81 \quad 38.26$$

$$49.81 \quad 38.26$$

$$\text{Comet S. of star} \quad 374.9 = 6.14.9$$

$$\text{Star Dec} \quad 18.43.11.5$$

$$\text{Comet Dec} \quad 18.36.56.6$$

Compared with illuminated wire, very good place of 12 Comp in Dec of 16 in Dec.

For some reason or other the Comet is not so easily observed as last night

It does not appear to have so much condensation.

2557	14.04	1.37.6	88.0
	07	38.2	38.4
	10	38.5	38.3
	13	38.8	39.0
	17	39.0	39.3
	20	39.0	39.0
	25	39.6	40.5
	28	40.0	40.3
	4	40.3	

22.37.39	14.15.30	1.39.03	88.03
47	12.30	10.56.16.84	88.84
22.38.26	14.03.20	10.54.37.81	88.81
	22.38.26	15.26.32	
	2.31	15.28.01	

dis. 2 March 1.1948 15.22.00

Maurice's Comet of March 1948 10.54.37.81

July 4th 1948 18.36.56.6

192a

March 1 1848

Star 6-7th Comet like

15.00.30 69.80

mid. field

Comet 15.05.27.0 69.58

15.09.55

88.50
69.50
18.71.27.0
4.10
2.81

mid. field

Com 15.13.51 69.93

15.17.59.5
4.04.5

10.58.40 18.33

Comet
15.12.7 22.7
47.10

Star 6.7

dR

31 32.8

4.10.1

57.5

4.10.5

69.75
69.81

Zero

49.00

83

86

Exp. 19.94

15.10 19.5.4

Cor to 15.30

15.30

3.15.4 Comet N of Star.

3.3

3.12.1 d

4.10.30 dR

38.19

42.32.5

Bright Star is 10.7.456

18.40.12.6

10.56.49.97

+ 44.5

+ 37.21

+ 1.0

- 0.02

1825 18.40.58.1

10.57.27.16

7.23.9

1.13.37

xir

1848 18.33.34.2

10.58.40.48

3.12.1

4.10.30

March 1st 16.37^m 46.5.2.

pDec 18.36.46.3

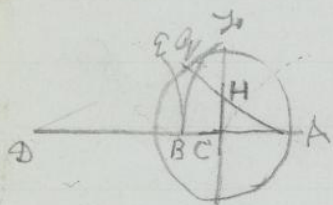
pR 10.54.30.23

Compared with Star from mag. 13.2.456

Mean of two Comp.

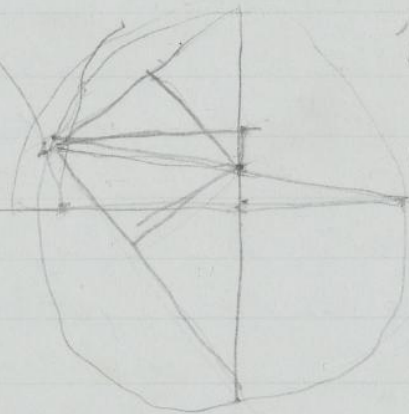
^{Date doubtful & P.M.}
 Meteor Feb 17. came in sight AR 13h 30m Dec 53° 193_n
 Vanished AR 15h 55m Dec 56° Magnitude double that
 of Venus. Broke into 4 or 5 pieces of varying colors about 5°
 before vanishing. ~~Mean time,~~

Came in sight from behind my house, in sight 2 or 3 seconds



Take $AB = DB$ draw arcs with A & D as
 centres. Bisect EH in G and $GH = BC$

$$x : x + a = R : R + y$$

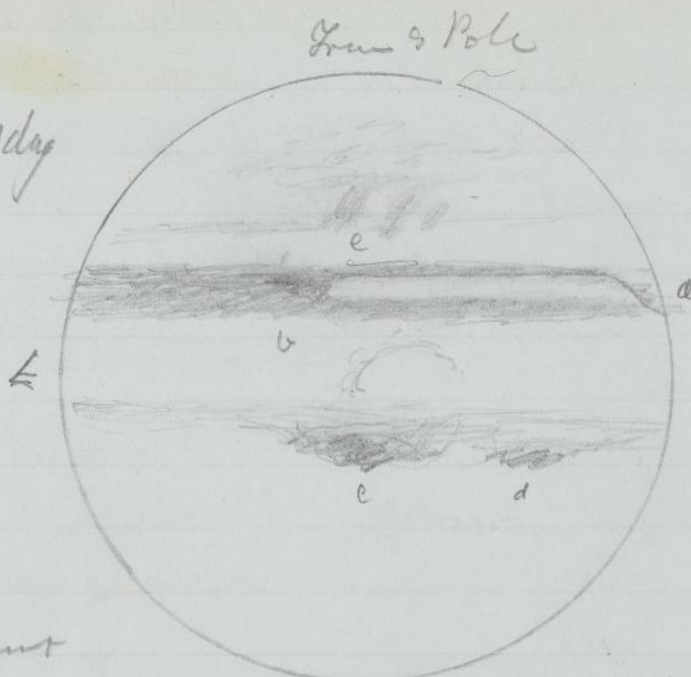


194.

Sid. Tim 9^h. 20
 Jupiter cleared Tuesday
 Sid. Tim 9^h. 30^m

9^h. 20 Sid. time = 10^h. 16^m. 13 M.S.T

9^h. 30 Sid. time = 10^h. 26^m. 12 M.S.T



At (a) is the commencement of the cavity which Leuten has somewhere drawn from (a) to (b). (c) is a strongly marked separation of the belt at (b) is a darkish place. c & d are elevations on the belt both apparently more distinct from it than represented. There is nothing at the S Pole & a horn between c & e.

March 11th Saw the 3rd Satellite on the disc of Jupiter as a black spot! it was not so large as its shadow which was afterwards seen. At the time we were a great many visitors we could not observe accurately nor did we know that the spot was ^{not} shadow, until after it had transited. It was half across the disc when seen. To night there are a great many belts.

March 7 Sid. time M. noon 23^h. 01^m. 18.70
 46.74
 23.02.05.44 23.02.05.44
 Sid. 9.20 Sid. 9.30
 10.17.54.56 10.27.54.56
 1.41.22 1.42.67
 10.16.13.34 M.S.T 10.26.11.69 M.S.T

Manova's Count

~~Feb 25th~~ 11^h 07^m 34^s
 Feb 25th R 11^h 07^m 34^s
 Jan 1 10^h 54^m 30^s
 Jan 6 10 41^m 00^s
 Jan 8 10^h 35^m 50^s

Dec. 19^h 02^m
 18^h 59^m 00^s obs
 18^h 12^m
 18^h 02^m

13' = 5 dms 195'

26' = 10

216 = 1 dms

29' = 5

50 = 10

March 16th

Zero of Coincidence

~~50.012~~ 2 49.997~~49.980~~~~49.970~~~~49.967~~~~50.007~~~~49.973~~ Set again

Zero

50.000

49.990

50.030

50.018

49.993

196

March 16th 1848

21.08.000
1851 21.827.7

7.0657860
6.7647561
0.3070299

949.1
1898.2

Polaris

Astronomical screw at 25.00

atmosphere clear but disturbed
Thermometer in the box attached
to the telescope +16° Ext +14°

(11)	25.00	21.51	12.4	51.4
(12)	29.00	52.03.8		
(13)	29.00	52.51.5	47.7	
(14)	31.28.00	53.41.8	50.3	
(15)	33.27.00	54.31.8	50.0	
(16)	35.25.00	55.23.4	51.6	
(17)	37.23.00	56.10.9	47.5	
(18)	39.21.00	57.02.8	51.9	
(19)	41.18.00	57.53.3	50.5	
(20)	43.17.00	58.41.0	47.8	
(21)	45.15.00	59.33.3	52.3	
(22)	47.13.00	22.00.1	20.8	
(23)	49.11.00	12.2	51.4	
(24)	Zero Zero	01.37.8	25.6	
(25)	1.00	02.02.4	24.6	
(26)	2.00	02.48.5	26.1	
(27)	4.00	03.17.0	28.5	
(28)	56.00	05.41	48.4	dir
(29)	58.00	05.54.4	49.0	insteady
(30)	60.00	46.2	51.9	
(31)	62.00	38.4	52.6	
(32)	64.00	27.0	48.6	
(33)	66.00	17.0	50.0	good
(34)	68.00	07.4	50.4	
(35)	70.00	56.8	49.4	
(36)	72.00	46.6	49.8	
(37)	74.00	38.4	51.9	
(38)	75.00	22.07	01.5	23.1

50.00 = 15.49.1 at the Polaris

22.26.0
1351- 22.26.27.2

(14)-(1) = 4

25. 21.51.12.4

22.12.01.5

2/20.49.1 = 50°

10.24.6

2° 30

06.09

25. = 2° 36' 09" 8.5379076

88.30.05 67 8.4175168

6.9550244

6.3747704

2.36.09 8.6571188 0.5796535

8.4175168 0.3010300

7.0746356 0.8806835

60835149 25

0.9911207 = 9.797

March 18

Chron 1351 fast 28.1

Lid. time Green. M. N. 23..44..40.77
 46.74
 23..45..27.51
 " " Camb. " "

h m

8..15 28.1 9..10 28.1
 8..14..31.9 9..09..31.9
 23..45..27.51 23..45..27.51
 8..29..04.39 9..24..04.39
 1..23.39 1..32.41
 8..27..41..00 M.S.T. 9..22..31.98 M.S.T.

9..30 28.1 9..40 28.1
 9..29..31.9 9..39..31.9
 23..45..27.51 23..45..27.51
 9..44..04.39 9..54..04.39
 1..35.68 1..37.32
 9..42..28.71 M.S.T. 9..52..27.07 M.S.T.

8..42 28.1 9..44 28.1
 8..41..31.9 9..43..31.9
 23..45..27.51 23..45..27.51
 8..56..04.39 9..58..04.39
 1..27.82 1..37.97
 8..54..36.57 M.S.T. 9..56..26.42 M.S.T.

8..47..28.1 9..55 28.1
 8..46..31.9 9..54..31.9
 23..45..27.51 23..45..27.51
 9..1..04.39 10..09..04.39
 1..28.64 1..39.78
 8..59..35.75 M.S.T. 10..07..24.61 M.S.T.

8..50..35 28.1 10..32 28.1
 8..50..06.9 10 31..31.9
 23..45..27.51 23..45..27.51
 9..04..39.39 10..46..04.39
 1..28.22 1..45.84
 9..03..10.17 M.S.T. 10..44..14.55 M.S.T.

8..55..45 28.1 11..17 28.1
 8..55..16.9 11..16..31.9
 23..45..27.51 23..45..27.51
 9..49..39 11..31..04.39
 1..30.07 1..53.21
 9..08..19..32 M.S.T. 11..29..11.18 M.S.T.

198 Y
Transit of 3rd Sat.

June 9

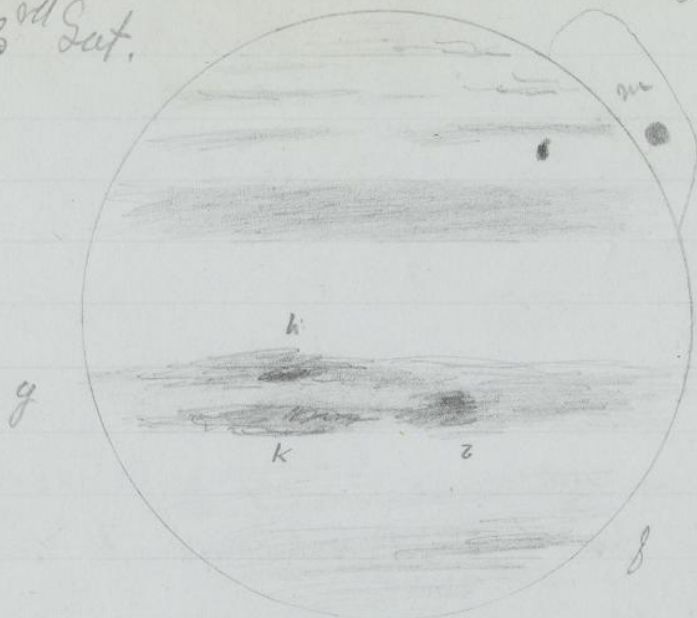
March 18th

8^h 27^m 46^s m.s.c.

8^h 15^m 5^s Sec. thin

9^h 42^m 28^s m.s.c.

Sat at 9^h 30 dark



upper edge is nearest straight

The satellites are numbered in the order of their brightness, ascending.
In the above sketch the two large belts are too broad. The lower one is more diversified than the upper & its edges are not so straight as those of the upper one. At (2) is a pretty dark spot which terminates a chain between h & k which are pretty dark here and so much so that (4) is a very faint spot & traces of two belts. The whole region is dark. The narrow belt at (1) is well defined at 8^h 54.36 m.s.c. 9.42 3rd Satellite near the limb of planet no diminution of brightness by 1351 Sec. Chron.

8^h 59.35.78 m.s.c.
9.47 " 00
9.03.10.17 m.s.c.
9.50 " 35
9.08.19.32 m.s.c.
8.55 " 45
9.22.32 m.s.c.
9.10
9.27.31 m.s.c.

at ext. contact.

from 146°

pretty near 1/2 on

internal contact

alittle dark above GPM 1351

(Not visible it is on the edge of belt.)

at 9.15 first saw the dark spot coming in sight & now with Sat it is on the right hand of it & perhaps above.

9.45.30 m.s.c.

9.33

9.52.29 m.s.c.

9.40

spot very distinct

Spot on satellite is now very distinct. it does not appear to be perfectly round but in ang of pos (190° upper app (h))

follows in it's diamet is 0.05 measured with power No 4. at transit very good seeing always much above the average

* By Smyth's diagram ang of pos 170°

For reduction of time See page 197

Zero 0.036

0.030

0.045

111

0.037 Mean

198

0.03.6
 $\frac{10.7}{0.071}$ diam of Spot at 9.44^m
^{h m s}
 9.56.26 m.s.t.

G.E.B.

0.12.3

0.120 at 9.47^m

0.037 = zero

0.085 = diam at 9.47^m^{h m s}
9.59.26 m.s.t.^{h m s}
9

When the Sat was wholly on it was seen as
 a round ~~upright~~ body faintly ~~contracted~~ brighter than
 Jupiter

^{h m s}
10.07.25 m.s.t.at 9.55^m

diam

0.120

0.110

G.P.B.

0.100

^{h m s}
10.12.24 m.s.t.

at 10.00

diam

0.100 G.E.B.

sady 936

64

3.5

0.09.9 diam

Think I can see the light of the satellite to the left
 of ~~the spot~~ of the spot

^{h m s}
10.44.18.5 m.s.t.at 10.32^mThe spot is still visible but the seeing
 is getting bad & the planet low (not so back W.E.B.)^{h m s}
11.29.11 m.s.t.11.17^m

more evident.

Seeing at times not very bad Spot is as dark as ever if not

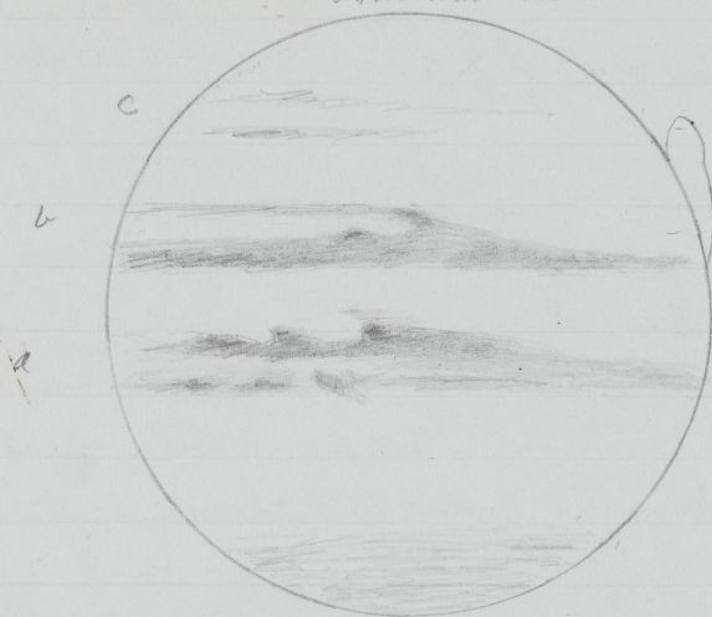
I think the spot is ~~more~~ s.f. the light of sat

as the planet got lower the seeing became bad
 but at times good for the altitude when the sat came off it was
 very evidently less than in size & brightness than either of the two left
 hand ones. which before it equalled or surpassed it was about
 1/2 as large as the faintest of them & its light was not so bright its light
 was dull or greyish. Its ~~size~~ as well as its brilliance was affected

200

Wed. March 22 1848 Jupiter $7^h 55^m$ N 57° N
From South Pole

08.0
23.2
37.7
52.2
27 06.7

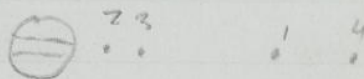


The belt *a* is remarkably diversified particularly above where there are two or three distinct hollowings & there is to the right hand a falling off similar but not so marked as in (*b*)

(*b*) is divided at *c* are two faint portions of belts. But the belt (*a*) was the chief object of attention. The vision was very good but clouds soon intervened (*a*) was darker above & (*b*) below.

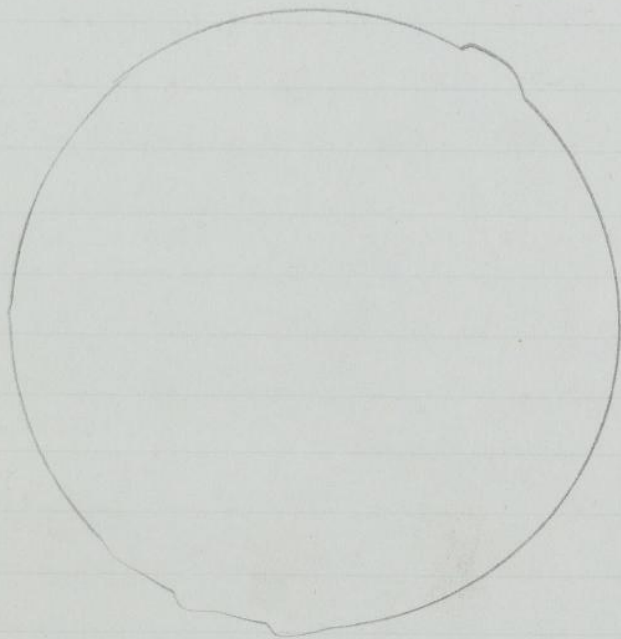
Friday March 24th

Sketch 24th
about 8th or 9th P.M.



order of brightness at dusk

Seeing not very good
If the same order is preserved
as on the 2nd this appears to be some change
the lower belt is very much diversified



March 26th (Continued)

Def Sec

Const up above the sun

10.15 83.31

10.18 83.52

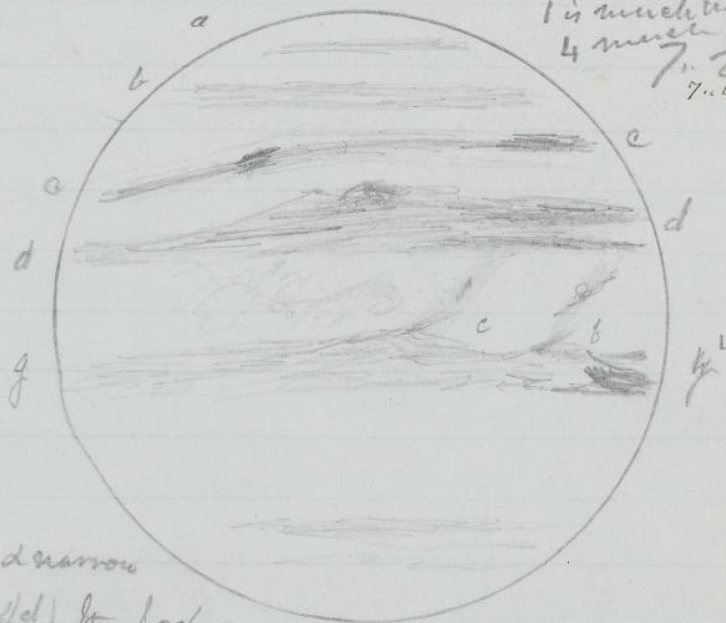
10.21 83.40

10.23 83.29

10.25 83.10 Smok

Mean 10.20 83.32

Zero 49.94

94
95
97March 25th Saturday
7.16.45 m.s.t.
4 at 7.301 is much the brightest
4 much the faintest
7.20 Dec
7.05.47 m.s.t.Very good seeing
& observed long

a is faint (b) is broad & distinct

from c to c is a very faint & narrow

belt or else between (c) & (d) the body

of the planet is outstandingly bright it bends with (d)

(d) is double at the following side but the opening is very narrow g shows signs of being much double at g

The space between g & d is certainly diversified. At 7.30.45 m.s.t. the belt is hollowed & from the elevations on each side thus appears to be a connection with the belt (d), but it is difficult to say whether this appearance is not occasioned by two spots above c & f. There is something there certainly. There appear to be spots brighter than the surrounding country at 8.00.38 m.s.t. the hollow c is quite part the center of the plan

204a

March 25th Continued8^h 10^m 56^s M.S.G.

At 8.25 the order of the satellites is now the one on the extreme right hand is least than the two on the left hand nearly equal the inner perhaps the brightest. The one nearest to the right is now but little brighter than the two to the left.

I have two or three times thought that from the elevations of the lower belt there was an appearance of light as like smoke driven by the wind from the (right hand towards the left)? or like snow blowing over the edge of a drift or the surface of a wave. ^{blowing off} That is the same ^{good seeing}

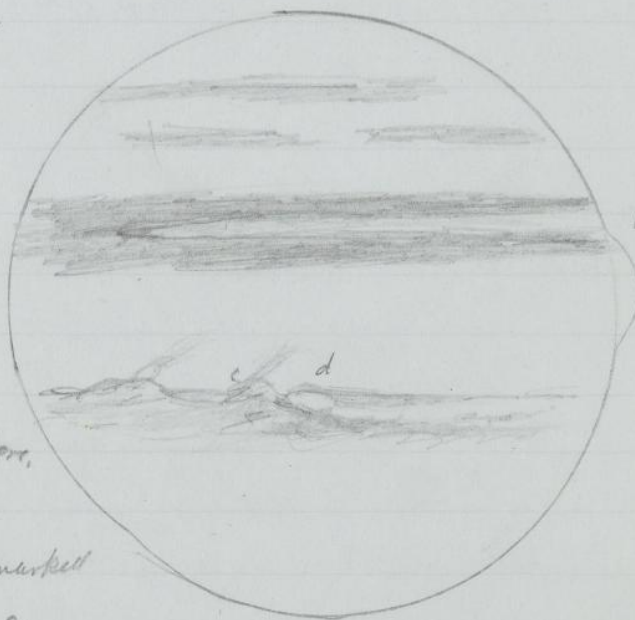
(Permanent during obs.)

1, 2 2, 3 1 3, 4

8^h 35^m 32^s M.S.G.
8^h 50^mtapers off
darkest below

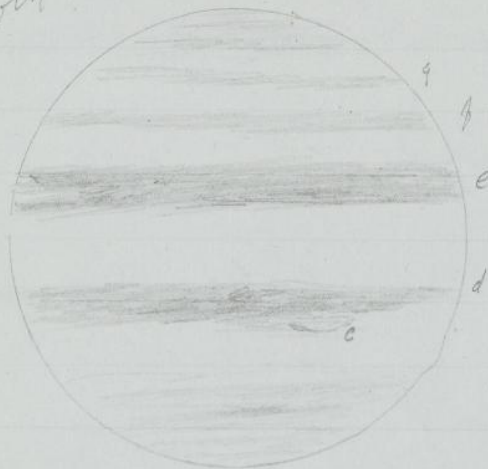
1 is almost equal to 1, 2
2 3, 4 is brighter than heretofore.

a & d is a strongly marked
bridge or connection with c.



March 25th Continued

205

10.46.11 m.s.t. 11.00^m Sid.1.2 1.2 $\ominus$! 2Planet low &
not very good

The right hand one is nearly equal to the left
hand one & they are all pretty nearly equal

figured distinct & regular & is pretty
even d is least regular it is
darkest below and tapering to the right
hand at c is an apparently bright
spot.

March 25 sid. time m.m. 0.12.16.63
46.74
0.13.03.37

h m
7.20 11.00
0.13.03 0.13.03
7.06.57 10.46.57
1.09.9 1.45.9

M.S.T. 7.05.47.1 m.s.t. 10.45.11.1

h m
7.45
0.13.03
7.31.57
1.14

M.S.T. 7.30.43

8.15
0.13.03
8.01.57
1.18.9

M.S.T. 8.00.38.1

8.50
0.13.03
8.36.57
1.24.6

M.S.T. 8.35.32.4

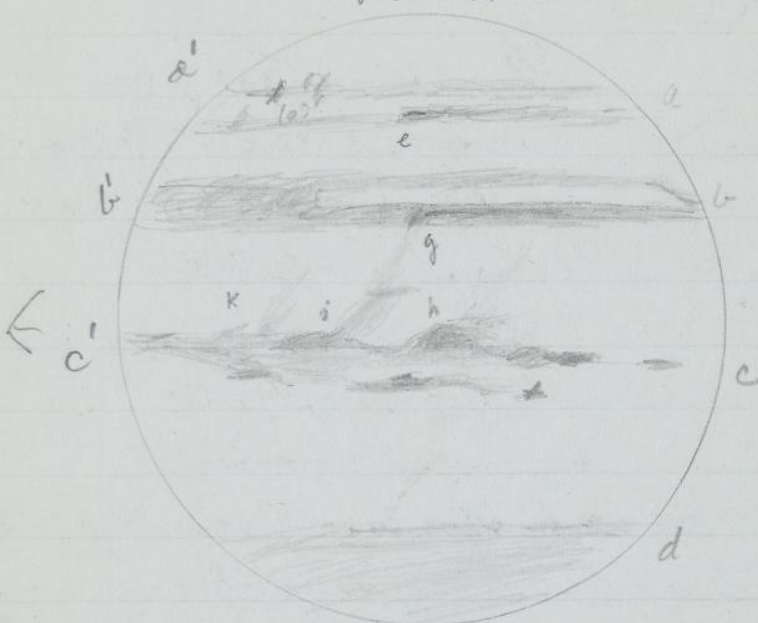
206

March 29th
Sun S.

Order of brilliancy

7.29.58 m.s.l.

8.00 = 424

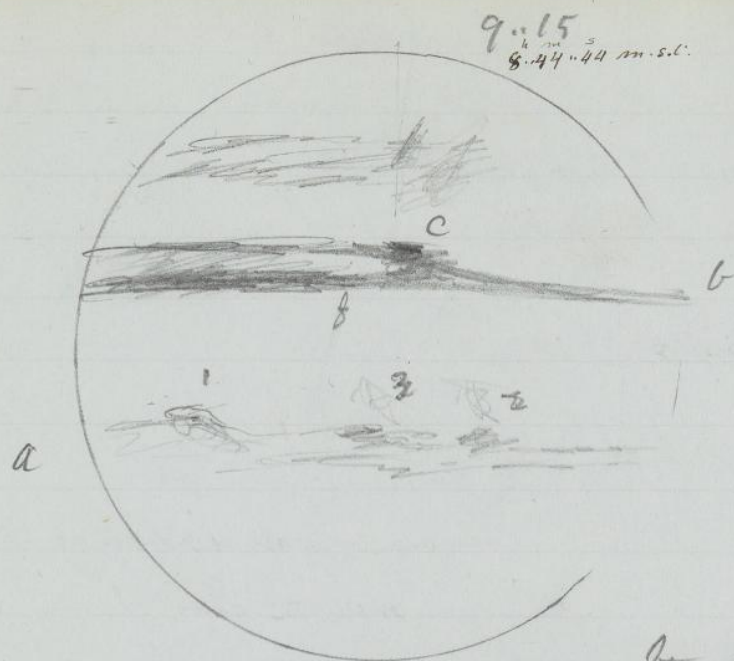


The space between ea
and bb' appears brighter
than the rest of the disc

Seeing not good lately

at a are two of the belts somewhat broken at a' as indicated, but not accurately, above. at e the lower of these small belts is suddenly darker. The belt b is divided as shown above from the division to b' it is uniform in structure to all appearance at g is a suddenly darker spot where apparently a connection from the lower belt touches b, b' . at (h) the belt begins suddenly to fade away on the upper side.

c, c' is a belt strongly marked & diversified at k is a faint wisp of cloud extending by glimpses diagonally across to b, b' . at i is a knob with a wisp of cloud seen easily extending towards g where the belt b, b' seems to receive it & become darker at the point of intersection at (h) is a very prominent elevation with a wispy appendage seen by glimpses



The seeing became so
very bad that it was
not possible to make
a good sketch.

(b) was darkest at c

(u) is at 1, 2, 3 in
the order of visibility

The dark spot before seen at (f) all
clear — could not be seen

though watched for the upper belt with this exception
resembles the former drawing but the lower
one as far as can now be seen must have con-
siderably altered.

424 fast 39.4

March 29

0.28.02.84
46.74
0.28.49.58 sid. time m.m. Camb
8.00 8.00 39.4
7.31.77 7.59.20.6
7.29.58 m.s.t. 0.28.50
0.28.90 7.30.30
9.15 1.13
8.46.10 7.29.17 m.s.t.
1.26
M.S.T. 8.44.44 9.15 29.4
9.14.20.8
0.28.50
8.45.31
1.26
8.44.06 m.s.t.

March 30

sid. time m.m. Camb. 0.32.46.13

6.40 39 10.36 39
6.39.21 10.34.21
0.32.46 0.32.46
0.32.46 10.01.36
6.06.35 1.38
6.03.35 m.s.t. 9.59.57 m.s.t.
6.34
0.32
6.02
9.00 39
8.59.21
0.32.46
8.26.35
1.23
8.25.12 m.s.t.

208

March 29th Comet von Maecaris Dec 4th July

obsd.

by Ephem R 10^h 00^m 00^s
Dec +15[°] 24'

424 9^h 47^m 54^s +15[°] 28'
0^h 12^m 40^s
10^h 00^m 34^s

Comet is not very faint.
6^h 05^m 35^s m.c. 2.
6^h 40^m Sid.



March 30th 6^h 36^m Sid

Seeing is most admirable
& the views of the structure of
the belts are such as cannot
be transferred to the paper
Order of brightness



(1) is twice as bright as (2).
2 not very much brighter
than 3

The figures on b on the left hand represent
bright openings in the belt c is a discontinuous belt with a con-
nection from e with d. f is (d) is darker below. There is
a branch well marked at h (d) is inclined to be double on
the left hand. Between f, & d is a discontinuous belt with
most curious structure. f is very much diversified
has a distant resemblance to (k) at k at g are one or
two very faint & very narrow belts from (f) to the pole is
dusky commencing strongly at l

8 belts can be counted

We see the satellites
with ease before sunset. The 1st Sat. was seen on the dis-
tremely 7^h 40^m before sunset. & the belts & the structure
at the same time with the utmost beauty. We have
perhaps never seen Jupiter better.

with a power of (1200?) No 7 the discs of the satellites were beautifully shown. ~~It~~ the third is two or three times as large as the 2nd but I should judge not quite ⁱⁿ the same degree bright. its light appears somewhat dusky. I think we could ^{have seen} a spot on it of $\frac{1}{4}$ of its diameter if it had been there.

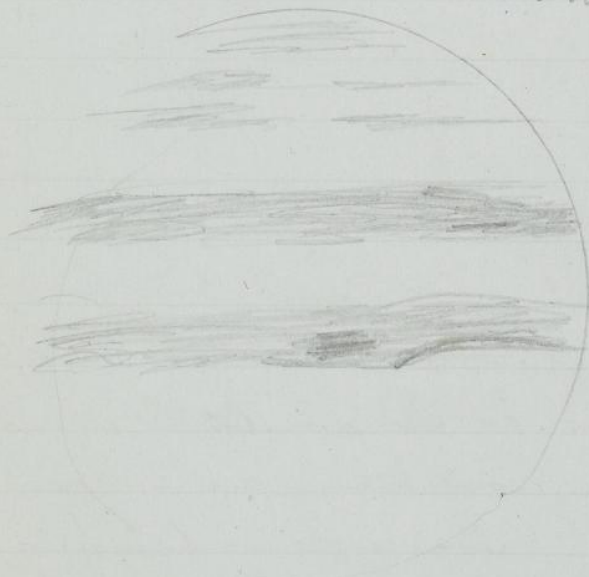
$\frac{4}{8} \frac{m}{26} \frac{s}{12}$ m.s.t.

At 9^h 00

3 4 2 1

Nothing of any note appears on the belt.

but the seeing is not now very good though a full average.



two or three spots on the lower belt & the two upper belts interrupted in the mid. of disc

9^h 59^m 57^s m.s.t.

At 10^h 35^m Satellites are in the same order of brightness as before.

When the satellites were seen

Before Sunset the right hand one (the third) did not seem ~~as much~~ as bright as that nearest to the planet on the right.

2/0

April 5th

9.15

Soil 8.17.14
9.15

1

2.3

⊙

2

⊙

0.55.35.70 sid. time m. m. Camb.

46.74

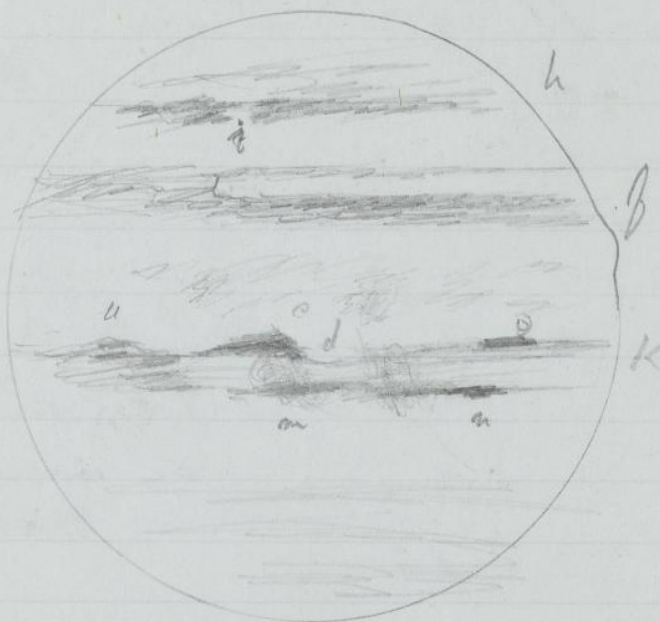
0.56.25.44

9.15

8.18.35

1.21

8.17.14 m.s.l.



the hour before
I had thought the same
left hand one brighter
than the right hand one

Seeing is not very good but yet
not very bad. If this side be the same as that
seen on March 25th there can be no doubt of a change
especially between c & d. when now there is no bridge mark
at d it appears a brightish spot & the interval between
k & j appears to be diversified & of unequal brightness
but nothing can be seen of the appendages before
seen. from a & c. c is now not so prominent
as above represented the preceding side nearly
straight & fall off suddenly at d. at m n & o are
dark places. j is divided as usual the upper portion
quite narrow. h appears to be divided at i.
the distance is greater than represented I think but
not distinct. Seeing is not good enough
to allow of micrometry.

9.51.30 + 14.30

 δ + δ of Comp 211
 x x

 April 5th 1848 Comets Count
 (Can not make out this)
 (Observations)

x bright

 Dec Comet, ap above night not favourable
 from haze & aurora
16.01^h

34.17

 Dist of 12th way
 By 2557

 $\frac{1}{2} \frac{7}{5}$
 $\frac{8}{5}$
 $\frac{34}{5}$
 60/4.25 (7.05)

34.16

1A 02

34.01

Count 06.. 55.4

Count

9m d.R

08.. 04 08 20.4 = 15.4

33.98

 9m 11.5
 12 1

14.4

29.9 = 15.5

1A.04

34.02

34.07

49.86

15.79

157.4

154.7

Count

9m

Count

9m

08.. 50.3

09.. 06.2

09.. 30.3 09.. 46.4

04.0

15.8

39.4

55.8

Count

9m

Count

9m

10.. 13.3

28.9

10.. 56.3

11.. 12.5?

22.3

38.8

05.8

21.8

11.. 39.4

11.. 55.2

Count

9m

48.7

12 04.4

12.. 21.4

12.. 37.3

30.4

46.4

Dec

at 11.35 Comet near same dec as 9m

11 19

52.13

2.29

52.28

22.9

11.. 22

52.16

22.5 =

52.16

11.. 23

52.00

52.73

52.15

Dec 49.86

2.29

April 5th (Continued)

There is a star of 9th mag. follows

Star observed is ap. above & precedes

65.75

Zero 49.86

87

85

used before

Star 12th (above)

Star 9th

11^h 41^m 00.8

43^m 07.4

2.066

10.5

17.7

2.072

11^h 44^m 37.4

46^m 13.8 = 2.064

48.3

54.6 = 2.063

11^h 47^m 20.3

49 26.8

30.8

49^m 37.7

Star obsd with Comet

11^h 53^m 51^s + 14^m 31^s 54^s

2^m 02^m 39^s

14^m 31^s 16^s

9^m 51^m 12^s

9^m 51^m 14^s

Bright Star in Leo

11^h 59^m 45.8 + 12^m 43^m 04^s

1^m 59^m 32.0

12^m 42^m 36^s

10 20^m 13.8

Star R

10^m 00^m 16.3

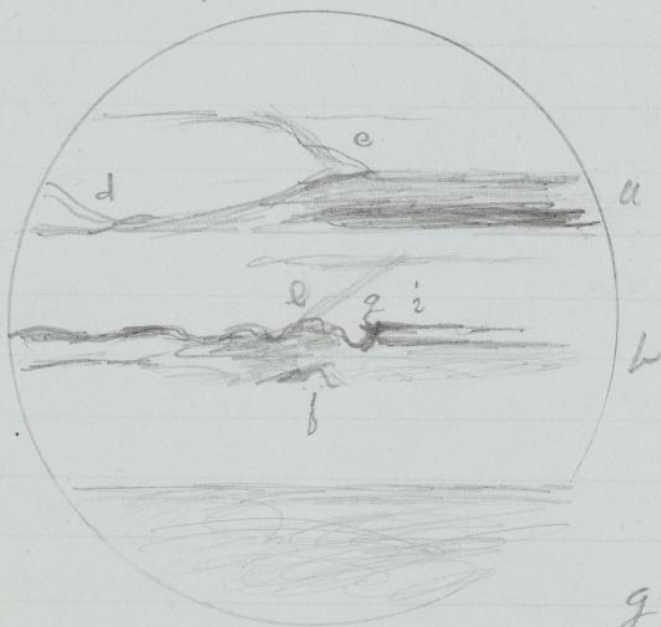
Star R

an + 2.5

Do not find the Star in Keiper

medium vision

213

April 6th at 4^h 30^m Solar Lim or 5^h 30^m Sid.Saw 1st, 3rd & 4th Satellites of Jupiter seeing quite bad
order of brightness $\odot \cdot 2 \cdot 1 \cdot 3$ the 4th was very faint, the air being disturbedJupiter at 6^h 35^m M.S.T. alt.at 7^h 00

Order of brightness

 $\odot \cdot 3 \cdot 2 \cdot 1 \cdot 4$ at c is a wisp apparently
connecting with a faint belt
above at d is a strongly
marked feature belowg is a deep indentation & very
bright from e extends a wispEvidently the remains of one seen of Mar. 30. There
can be no doubt of change here from g to e goes off
a very narrow stream or belt but dark at f is a very
conspicuous indentation21.31.55
7.10.45
21.10

2/4

April 7th The wires having been accidentally broken
 out new ones were put in from the Cocoon of the
 spider & prove better than the originals. They
 subtend an angle of about 0.3 of a second.

April 9th medium vision
 6.55.37 m.s.t.
 8.05 Sid

Upper part is too dark but the outline is sufficiently seen

7.30.31 m.s.t.

at 8.40 order of

brightness

2 3 1 4

(3 & 4 not very different)
 added after



If this be the same side
 as on March 29th there has been
 a great change in the appearance

at 11.30.02 m.s.t.
 11.40 Sid

3 2 1 4

2 & 3 very nearly equal
 2 seems to have changed

There seems at e a sort of faint
 connection of c with b. Between b & d
 is a much diversified region but very
 faint. g, h, i & k are dark places

April 10th 4 P.M. Equatorial Diameter power No 4

53.72

pos 355°

.67

73

74

70

73

70

53.72

53.49

0.23

Flying clouds air not ^{quite} steady 21.5

Polar diameter

53.50

53.46

51

Bad seeing & clouds

April 10th about 9 P.M. de.S.E.
order of brightness

1

2,3

⊙

2

4

G.P.M.

2,3 & 2 very nearly alike, bad seeing

April 11th about 9 P.M. de.S.E. order of brightness

1

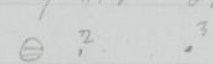
⊙

3

1,2

4

1,2 & 1 are ^{pretty} nearly equal but the seeing is bad & the light much diffused.

At 9^h 15^m Sid. or 8^h de.S.E. the satellites visible.  one is invisible on the disc but the seeing is remarkably bad.

216a

W.C.B.
Polar Diameters

53.502

Power No 4 .513

Position .502

Circle 85° .460

.487

21.64

Mean 53.493

Pos. 35°

Equatorial Diameter

53.637

.672

.682

.680

.670

341

53.668

53.493

Diff. Brimley .175

Pole Wm. Mitchell.

53.64

53.642

53.70

53.84

53.84

53.87

53.75

6/84

53.740

53.640

53.64

53.60

53.62

53.59

53.64

53.74

23

W.C.B.

Polar Diameters

53.57

.67

69

67

67

1044

53.640

Mean 100s Each

W.C.B.

36.6 + 0.2

G.P.B.

36.1 + 0.2

W.C.B.

1.9 + 0.2

G.P.B.

1.8 + 0.2

W.C.B.

34.7 + 0.0

G.P.B.

34.3 + 0.0

Final Mean

36.6

2.1

34.5

Eq

Diff

Polar

= 37.6

= 1.9

= 33.7

Reduced to Mean Dist

not Correct

for Phase

= 0.2

April 15th 1848 Saturday
Measures for the Polar & Equatorial
Diameters of Jupiter

S. P. B.

Polar Diam.

53.490

.490

.450

.500

.490

53.484

Equat. Diam.

53.630

53.49

.630

.660

.650

.630

53.640

484

156

Zero coincidences

49.985

.975

.990

980

977

407

49.981

latterly good seeing

53.668

49.981

36.87

36.15

1.72

34.43

37.1

2.1

35.0

35.9

1.5

33.4

36.3

2.0

34.3

36.6

36.1

1.9

1.8

34.7

34.3

36.6

2.1

34.5

36.6

2.1

34.5

36.6

2.1

34.5

mean 9 each

W.C.B. Eq. Diam. power No 4

Diff "

Polar "

W.C.B. Eq. Diam. power No 6

Diff "

Polar "

G.P.B. Eq. Power No 4

Diff "

Polar "

G.P.B. Eq. No 9

Diff "

Polar "

W.C.B. 36.6 + 0.2

G.P.B. 36.1 + 0.2

W.C.B. 1.9 + 0.2

G.P.B. 1.8 + 0.2

W.C.B. 34.7 + 0.0

G.P.B. 34.3 + 0.0

36.6 Eq

2.1 Diff

34.5 Polar

= 37.6

= 1.9

= 33.7

Apr 15th

4 mean dist 0.71624
 Apr 15th 0.73070
 0.01446
 36".4 1.56116
 37".6 = 1.57556

217

424
 1st Sat 1/2 off 7th 54.30 XCB 55
 last contact .. 55.10

W.C. No 6
 Power Polar
 53.545
 53.550
 49.98
 3 5.70
 71
 35.0

530
 530
 545
 202
 53.550

Equat.
 53.762
 .760
 771
 750
 772
 315
 53.763

very steady

~~probably complement of the dia in
 here. Just off & should have been~~

dy 0.213

definition of the

fine vision The limb of
 the planet is ^{surely} not affected
 by atmospheric disturbance

To correct the Equatorial
 diameter of 4 for phase multiply
 the obsd diameter by 1.007 from
 April 12th to 22nd

About sunset the seeing was
 exceedingly fine Mr Mitchell
 had a very fine view of Jupiter

The foregoing give for the ratio of the diameters $\frac{\text{Polar}}{\text{Eq.}} = \frac{345}{366}$ not corrected for phase viz

The value usually adopted is See Smyth
 as determined by Struve $\frac{345}{372}$

$\frac{\text{Polar}}{\text{Eq.}} = \frac{345.1}{365.8}$ nearly

218

h m s
7.07.59 a.m.s.

424 8.45

April 14th Sat,
at 9.00h m s
7.21.37 p.m.s.1.35.42.22
1.36.50.36
8.45
7.07.09.1
7.07.59 a.m.s.1.36.50.96
9.00
7.23.09.1
7.21.37

very good seeing
 about the vicinity of a, the belts
 of d_2 are double & broken up
 and towards d_3 bends away from
 a at d_4 commences a portion
 of a belt. a b is divided
 as usual but then seems
 to be a change like c from which

point a wispy seems to creep over to the lower part of
 the belt & joins an evident projection above c_2 . Note
 that from c_1 to c_2 the belt is narrow line c_4 suddenly increases
 its breadth. at d_2 there was a suspicion of a partial in-
 terruption between h & h' there are traces of a faint belt
 or perhaps rather disconnected snapes arranged in a
 line. but very faint. The belt d c it is impossible
 for me to draw so as to give a correct idea of its struc-
 ture at d, there is an elevation at d_2 there is a sudden
 interruption of the continuity between d_1 & d_2 from d_2 to d_4
 the belt is darker, rises suddenly, if it does not project over d_2
 the lower division seems to follow the curvatures of the
 upper as at c_1, c_2, c_3 the amt. of flexure between c_1 & c_2 is
 hardly exaggerated. The great defect of the
 above drawing is that all the principal belts are too
 wide. & the upper division of c d too broad
 the darkest part is the upper edge which is very narrow in most
 places. There is no idea of a vacancy between the
 divisions. Between c d & k are several sus-

pieces of belts & it was thought traces of a
 greenish ^(sea green) cast to the light in some strata very
 popily imagination definition splendid

April 17th 1899 7.15

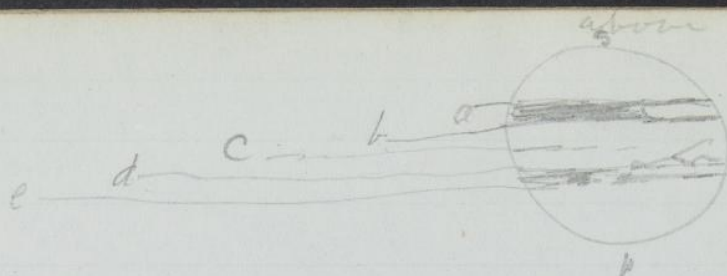
not good seeing



223 are nearly equal
 at 9^{h.45} it was
 thought that the
 right hand part had
 increased

To the right hand of c the
 district marked by a fine
 line runs in glimpses brighter than at its boundaries
 above d are some evident markings yet so faint that
 it is difficult to make out their nature. Just under
 d the faint ~~dark~~ narrow band grows darker & wider
 before connecting with the main belt. From k
 to k' is an evident belt or row of disconnected
 anaps from k to u is a very narrow & scarcely dis-
 cernible with rising from a tumulus at u
 at i, o, & l are prominent features. The
 At s is part of a belt

220



April 17th 1948
 bad sunny
 rain 1840 ✓

52.42

52.42

Upper side of upper belt or from a to b

51.95 = pb

52.01

the lower side of forked belt

51.74 = cp

51.81

51.77

the little dotted belt

(This is precisely on Jupiter's Equator)

51.60

pd Upper side of lower belt

51.67

mean 51.635

51.34

51.24

51.38

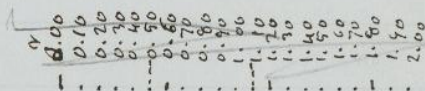
mean 51.32

pe lower side of upper belt

right hand end is so much wider than the left that it was not easy to set the wire.

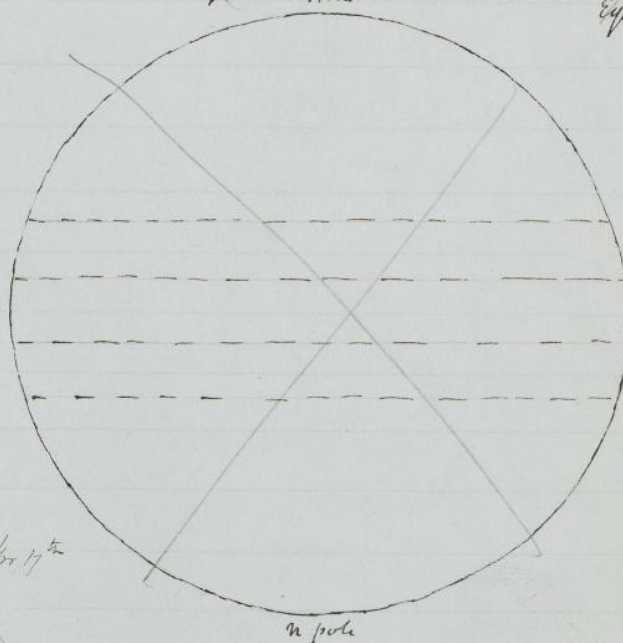
357

1,98 48.04 = dg
60 as



April 20th

upper belt ~~at dusk~~ 18^h or 7^h o'clock
Jupiter's ^{5th} ~~aphelion~~ ^{perihelion} $\frac{\text{Polar}}{\text{Equat.}} = \frac{\sqrt{17}}{18}$

$$\frac{\text{Polar}}{\text{Expt.}} = \frac{17}{18}$$


upper below

down belt

n / prole



Jupiter's belts Apr 17th

222

April 20th alymum

B. S. h.

198
18
93.78
76

Dist
 49.486
 531
 475
 480
 480
 483
 50.013
 011
 003
 013
 007
 5.47
 50.009

6) 2939
 49.489
 50.009
 5.20
 5.1

291.23 - 111.25
 289.30 - 109.30
 289.50 - 109.50
 290.55 - 110.50
 289.40 - 109.40
 290.16

Castor

1/113

41.2

49.530
 500
 530
 530
 486
 1916
 49.514
 50.840
 5.26
 5.16
 50.030
 50.049
 .041
 042
 162
 .040

111.50

111.30

111.30

110.50

110.55

111.20

110.16

B 3

sp. 4

Castor 1848.30 Power 860?

Dist { 5.10^{up} } = 5.2 Pos { 249.45
 5.46^{up} } = 5.2 Pos { 248.40

Castor

Dist = 5.1 10 obs.

Pos. = 249.10'

224

Diameter of 3rd Sat.April 20th 1948

50.133

131

127

130

132Diameter of 1st Sat. (right hand on)

50.170

160

163

160a grain of light of the ~~satellite~~ each side of main
axis

50.038

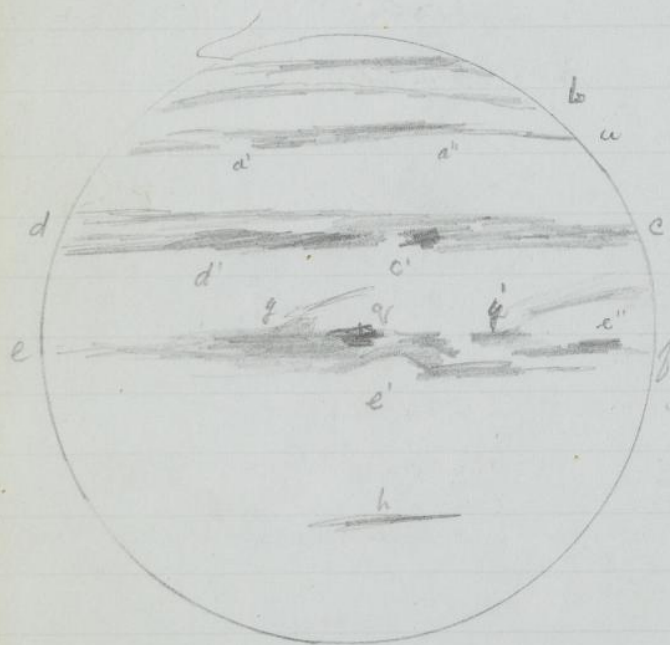
035

044

043

043at 7^h 00 M.S.T.April 21st 1948

at Sunrise



a is a very conspicuous narrow belt interrupted at a' & perhaps bending at a'' b is certainly seen & appears best then is ~~per~~ thought to be a third belt above b all very narrow

c d appears to have changed & to have assumed indications of breaking up or mottling as in e f.

at c' is a certain indentation & there is

a dark spot to the right from c' to d

the belt has a channel but narrower I think & much less regular than heretofore. at d' there is thought to be an elevation at g an elevation with a streamer at g a very small & very dark spot at e' a conspicuous indentation at e'' a dark place (at g a faint streamer?)

~~swelling upward~~

dg 37.46
Dec +12.27

daily mo. 450^h

19^h hourly South

α Leonis
10^h 16^m 39.8
0^h 15^m 57

Star in 18 Leonis
1848 X R

9^h 38^m 18.18
6.48
9^h 38^m 11.70
29.89
9^h 37^m 41.81

77^h 30^m 03.3
32.7
77^h 29^m 30.6
+12^h 30^m 29.4
1.22.0
12 29^m 07.4

0.546
9.953
2.534

April 21st 1948

Mauvais Comet of July 4th

(Comet is now pretty faint.
Still has a star like scintillation)

Dip the Comet precedes a star of the 7th mag. & is S of it

10^h 53^m

42.05 April log but 0 0.546 July 14 0.25

Zero

42.24 E 0.480

50.020
50.035
50.010
50.023

10^h 56^m

42.02
42.01

30.1
31.1
30.6
30.2

41.88
42.04
50.02
7.98

Comet

9th 7th

Ref

77.8
78.2
1^h 18^m 2
3.8 = cor to 14^h 10^m
1.22.0

11 06^m 07.4
15.7

06^m 37.5
46.8

30.1
31.1

30.0
29.3
29.9
28.8
29.4
29.0
30.3
30.0
30.0
28.8
29.5
29.89

Comet Star Ref
11^h 07^m 39.4 08^m 10.0 38.6
48.5 18.7 30.2

Comet Star
08 44.5 14.5 30.0
54.0 23.3 29.3

09^m 14.5
54.0

14.4 29.9
22.8³ 28.14

10^m 44.0
52.5

11^m 13.4 29.4
21.5 29.0

11^m 13.5
52.5

13.8 30.3
22.5 30.0

Ref

11^m 13 06.0
16.0

36.0 30.0
44.8 28.8

Mauvais Comet of July 4th
M.S. 7 Apr 21st 9^h 09^m

1st 9^h 37^m 41.81
1948 { Dec +12.27 07.4

5 Comp with 18 Leonis.

1848

226

h m s
6.37.49.3 m.s.c.April 23rd Sunday 1848
2557 6.46.42 - 110 beats = time of seeing 1st light of Em. of 1st Sat

about. Sunset pretty steady & observation thought to be good.

The time noted without any subtraction was that at which the light of 1st & 2nd satellites was thought to be equal. after a short interval the 1st Sat was thought to be a little brighter than the 2nd.h m s
5.37 m.s.c.

Sat.

At 7.45 Looked at Jupiter the sky was pretty clear with reddish haze 3rd Sat was not visible though we could see the Polar belts. There was however too much Sun light to be sure it was not there but at about 8^h 53^m 53^s it was plainly seen. It seemed rather very near the edge to be less evident & finally disappeared but the vision was restored when it came 2557 9.00 50.075off it certainly looked smaller than the 4th Sat
if it was certainly clear of the limb~~from preceding limb~~

Dist. of Spot

from South pole

.057

.070

.072

.080

.085

Zero

30.015

012

012

013

h m s
7.00 m.s.c.

9.08

51.057

51.060

51.057

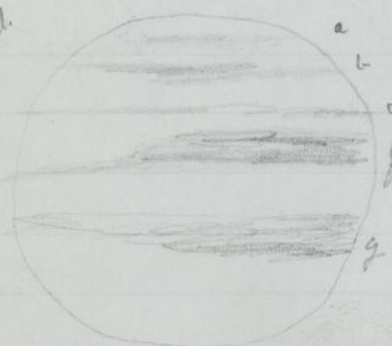
51.065

51.060

51.056

but cloudy prevented further observations.

Sun set



There are now three Polar belts on the S pole very distinct b conspicuous & with a narrow c narrow & plainly seen a pretty faint. on the left side g is with some what thin f.

April 23rd Transit of 3rd Sat as a black spot.

2579.20.20	51.58 = Dist of Spot from pre limb	looks ragged but may not be so
22 00	.56	
23 30	.55	
25.00	.55	
26.	.51	

April 25th 1848

Sat 10^h 13^m

7.57 m.s.c

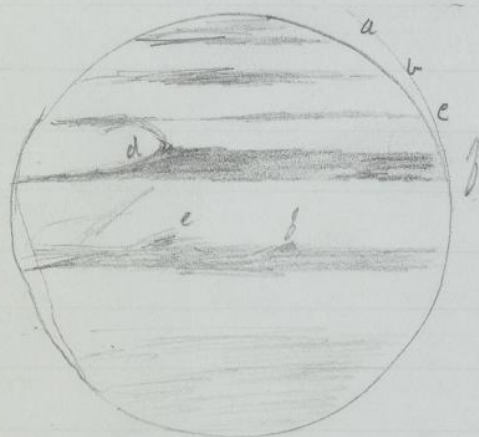
order of brightness

1 3.4 2 3

There is certainly a change in order of brightness magnitudes as indicated by the figure.

25th at 10^h 20^m Sat

h m
8.04 m.s.c



The belts c, b & a (the latter is rather a dark shading) are probably in the present condition new formations as they are now seen without difficulty. b is the most distinct & is conspicuous. c is narrow & seems to be a continuation with f at d near the following side of may be split.

23rd 8.00

9.57
49.45
2.01.45
2.09.45
6/40.18.18
48
20
7.08

2280

Singer 11^h 47^m + 56^s.01

nebula like a cluster

It has no planetary look about it but is a roundish

12^h 01^m 16^sTwo faint nebulae proceed in same Dec & def in R = 5^m0^h 12^m 06^s11^h 49^m 10^sApril 28th Friday

23

4

2

1

YPB

2

4

3

1

WEB

first

fourth second third

first & second near of a wire

April 30th 1848

There can now be no doubt that the upper belt has greatly changed. In seeing very good there is a canal entering at c which separates from the main body of the belt the portion above it seen without difficulty. The belt is no longer Y shaped of com structure.



Log. Dist. in ^{metres} feet of diurnal mark N of hall on dome 3.7297048
0.5159678

log. Dist. in feet 4.2456726
 " " 4.6855749
8.9312475

$12^{\text{in}} = 1.0791812$

Space subtending 1" at Mer. mark = $1.0242 = 0.0104287$

May 4th at about 8^h 50^m ^{6.00 m.s.c.} Sid time
 A very bright, narrow ($\frac{1}{2}$ of large belt) separates the upper large
 belt from the dusky hood which completely
 covers the antarctic regions of Jupiter



The belt is darker below & appears
 by E in some sort double in color
 of its length but most so on the fol. side
 the arm & appears off range point

This side looks a good deal
 like some of the old views especially
 the steamer.

2. 49. 58.74
 46.74
 2. 50. 45.48
8. 50

230

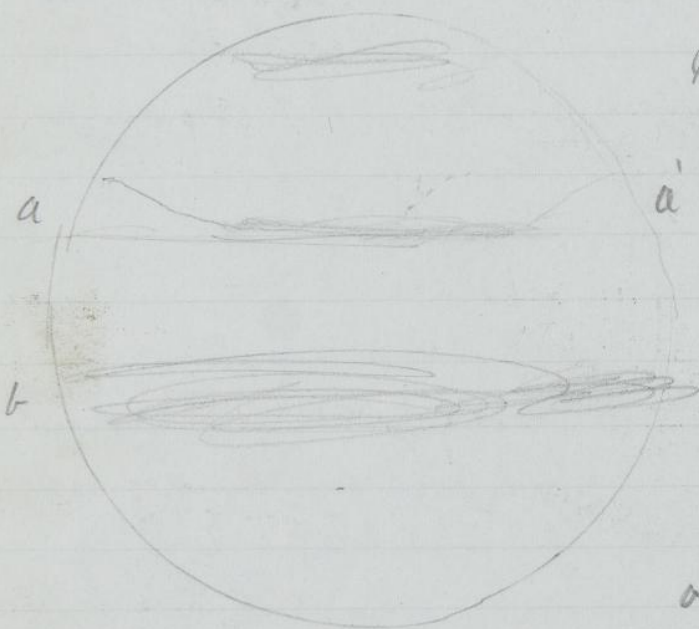
[1847]

o Aug R 22^h 22^m 42^sDec - 11^h 26^m 35^sNep 22^h 17- 11^h 12

Sid. time m.m.	h m s
3 ^h 38 ^m 16 ^s .06	
	46.74
3 ^h 39 ^m 01 ^s .80	
8 ^h 25 ^m	
<u>4^h 46^m</u>	
3 ^h 39 ^m .02	
8 ^h 30 ^m	
<u>4^h 51^m</u>	
3 ^h 39 ^m .02	
9 ^h 15 ^m	
<u>5^h 36^m</u>	

h 8^h 26^m.003^h 34^m.0018^h 45^m 30^s3^h 34^m

..19

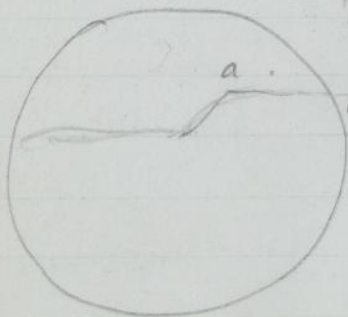
- 11^h 07^m(May 8^h 2^m 1^s)Neptun obs. Dec - 11^h 07^m (not cor. for ref. alt 14°)Wed. May 17th Sid. timeat 8^h 25^m 46^s m.s.t. Jupiter very faint

Could see readily that the belt a was very much narrower than b

a' at could only guess that from a to a' was the hollow in the upper belt

Looked particularly at 8^h 30^m for the 'rising' towards a' which was expected but there was only a suspicion of its being close to a' at about 8^h 40^m

at 9^h 15^m looked again and saw the summit of the rising a little way to the left hand of the center of Jupiter perhaps $\frac{1}{3}$ of the dist or $\frac{1}{3}$ from the center to a'



Sul ~~at 9^h 23^m~~

48.86 = ac

May 17th Wed.

231

Pon 140

times
bad seeing at first afterward
better

measured from the following limb

9.24 48.65 = ac

9.30 63

9.32 58

9.33 53

36 52

$$\begin{array}{r} 48.62 \\ 49.97 \\ \hline 35 \end{array}$$

prec limb reads 46.70

9.39. left of center

$$\begin{array}{r} 48.06 \\ 49.97 \\ \hline 191 \end{array}$$

$$\begin{array}{r} 49.97 \\ 47.76 \\ \hline 221 \end{array}$$

9.39 48.29 GPB

9.43 - 08

.44 06

45 05

46 05

Very difficult to discern from tremor in the
atmosphere, clouds
& faintness, etc

Drawing at 10^h 10^m sid

WCB

9.48 48.19

49 48.23

49.40 48.18

50 48.10

51 48.8

52 48.10

9.53 48.07

56 48.00

56.30 47.88

57 47.96

57.30 47.91

58.00 47.80

59.00 47.75

10.00.30 47.73

82.3

47.84

49.97

-2.08

9.58

Can't see

$$\begin{array}{r} 48.16 \\ 49.47 \\ \hline 1.83 \end{array}$$

to 'seeing' so well

GPB from fol
dome

10.2.15 - 47.79

5. 72

5.30 78

from prec. limb

Equal diam 10.8

46.69

75

66

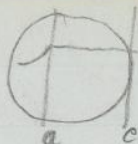
fol. limb spot 10.10

47.71

$$\begin{array}{r} 46.70 \\ 49.97 \\ \hline 37 \end{array}$$

232a

424 Soil Line



10.15 47.45 = a c
 10.17 47.55 $\frac{47.50}{49.97}$
 $\frac{2.47}{49.97}$

May 17th (Continued)

Zero
 49.98
 49.98
 98
 96
 97
 97

sid. time on m. 3.39.01.8
 11.20
 7.41

10 22.30 47.40 $\frac{49.97}{47.37}$
 $\frac{2.60}{47.37}$
 24.00 47.45

10.28 47.37

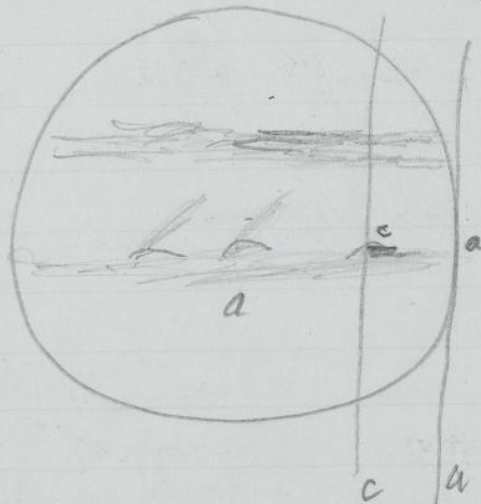
46. 46.56
 63
 46.64
 $\frac{46.61}{49.97}$
 $\frac{3.36}{49.97}$

Summit is now fully $\frac{2}{3}$ of the dist. from
 center to prec. limb

prec limb from fol limb
 large perhaps a little but very near

1
 at 11^h 20. $\frac{7.41 \text{ m.s.t.}}{11.20}$

The deviation above (a) in the middle
 deviation of the planet



at 11^h 22 49.18 ac

4/57
1.7

11. 30 49.08 ac

11. 31 48.90

34.26 48.85 } large
32 48.95 } small

48.91
49.97
1.06

32.30 48.92 mid

11.39.30 48.67 ac

41.30 .68 48.67

42.00 .63 49.97
1.30

43.45 .70

11.49.50 48.62

50.56 .51

48.52
49.97
1.45

51.30 .47

52.40 .46 spot now a little short of the middle

53.30 .55

11. 57. 00 48.40

spot. on the center nearly

12.13.03 48.11 part centre

15.00 48.06

16.00 48.05

14.7

48.07
49.97
1.90

12.17.10 48.10 rate large

18. " 48.01

20 47.94

12.22 47.88

43.93
47.98
47.98

12.42 47.48

12.44.40 47.34

12.45.30 47.30

47.37
49.97
2.60

Zero
49.96

234a

1st Series

Calculation of Measures May 17th 1848

Sid. Time Dist of spot from prec. limb of 2

$$(1) \text{ at } 9^h 30^m = 1.35 \frac{1}{2} \text{ WCB} + 0.31 \text{ Right } 9.45 = 1.91 \text{ G.M. (13)}$$

$$(2) \quad 9.50 = 1.83 \quad - 0.17 \text{ Left } 10.04 = 2.21 \quad (14)$$

$$(3) \quad 9.58 = 2.08 \quad - 0.42 \text{ Equatorial Diam} = 3.27 \text{ G.P.B. } \left. \begin{array}{l} \\ \end{array} \right\} \text{Mean } 3.32$$

$$(4) \quad 10.16 = 2.47 \quad - 0.81 \text{ Equatorial } = 3.36 \text{ WCB } \left. \begin{array}{l} \\ \end{array} \right\} \text{rad} = 1.66$$

$$(5) \quad 10.28 = 2.60 \quad - 0.94 \text{ Equatorial}$$

$$\log \frac{1}{1.66} = 9.7800$$

$$9.7800$$

$$.31 \quad 9.4914 \quad .87 \quad 9.9395$$

$$.17 \quad 9.2304 \quad .60 \quad 9.7781$$

$$.42 \quad 9.6232 \quad .36 \quad 9.5563$$

$$.81 \quad 9.9085 \quad .21 \quad 9.3222$$

$$.94 \quad 9.9731 \quad .24 \quad 9.3802$$

$$(1) + 11^\circ 57' \sin 9.2713 \quad .34 \quad 9.5315$$

$$(2) - 6^\circ \sin 9.0104 \quad .94 \quad 9.9731$$

$$(3) - 15^\circ \sin 9.4632 + 32^\circ \sin 9.7195 \quad (6)$$

$$(4) - 29^\circ \sin 9.6885 + 21^\circ \sin 9.5581 \quad (7)$$

$$(5) - 34^\circ \sin 9.7531 + 12^\circ \sin 9.3363 \quad (8)$$

$$+ 7^\circ \sin 9.1022 \quad (9)$$

$$- 8^\circ \sin 9.1602 \quad (10)$$

$$- 12^\circ \sin 9.3115 \quad (11)$$

$$- 35^\circ \sin 9.7531 \quad (12)$$

2nd Series Dist of spot from prec. limb

$$(6) \quad 11.22 = 0.79 \quad + 0.87 \text{ Right}$$

$$(7) \quad 11.32 = 1.06 \quad + 0.60 \text{ R}$$

$$(8) \quad 11.42 = 1.30 \quad + 0.36 \text{ R}$$

$$(9) \quad 11.51 = 1.45 \quad + 0.21 \text{ R}$$

$$(10) \quad 12.15 = 1.90 \quad - 0.24 \text{ Left}$$

$$(11) \quad 12.19 = 2.00 \quad - 0.34 \text{ L}$$

$$(12) \quad 12.44 = 2.60 \quad - 0.94 \text{ L}$$

angle of spot from center

$$(1) + 11^\circ 57' \sin 9.2713$$

$$(2) - 6^\circ \sin 9.0104$$

$$(3) - 15^\circ \sin 9.4632 + 32^\circ \sin 9.7195$$

$$(4) - 29^\circ \sin 9.6885 + 21^\circ \sin 9.5581$$

$$(5) - 34^\circ \sin 9.7531 + 12^\circ \sin 9.3363$$

$$+ 7^\circ \sin 9.1022$$

$$- 8^\circ \sin 9.1602$$

$$- 12^\circ \sin 9.3115$$

$$- 35^\circ \sin 9.7531$$

at 9^h 30^m Time of rev.

$$(1) \times (5) \text{ give } 7^h 44^m$$

$$(6) \times (12) \quad 7.20$$

$$(2) \times (4) \quad 6.48$$

$$(7) \times (11) \quad 8.40$$

$$(3) \times (1) \quad 6.28$$

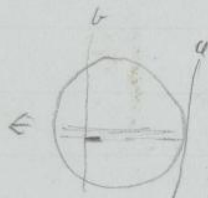
$$(8) \times (10) \quad 9^h 54^m$$

Note these are not corrected for phase = 0.10

30

$$\begin{array}{r}
 9.45.00 \\
 9.56.50 \\
 \hline
 19.41.50 \\
 29.38.40 \\
 \hline
 24 \\
 5.38.40 \\
 \hline
 15.35.30
 \end{array}$$

$$\begin{array}{r}
 9.56.50 \\
 29.50.30 \\
 \hline
 26 \\
 5.50.30 \\
 9.45.00 \\
 \hline
 15.35.30
 \end{array}$$

May 18that 10^h 30^m Sid

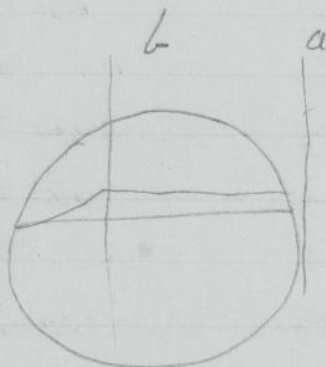
The (a') point a' measured

yesterday is not now presented to us.

According to the time of 4's revolution
 9^h 56^m 50^s The summit a' ought
 to appear on the centre of the disc presented
 to us at May 18th 15^h 35^m Sid. Time

26 (at 11^h 08^m 47.30 = ab = dist from free limb of spot supposed
 to be the same as obs'd in the 2nd Series last
 night) ??

$$\begin{array}{r}
 424 \quad 11.24 \quad 48.60 \\
 \hline
 11.30 \quad 48.56
 \end{array}$$



$$\begin{array}{r}
 39 \\
 19 \\
 \hline
 58 \\
 4 \\
 \hline
 232 \\
 56 \quad 3.52 \\
 5) 49.83 \quad 9.965 \\
 \hline
 45 \\
 483 \\
 \hline
 45 \\
 330
 \end{array}$$

May 19th Mean Solar time

48.75

$$\begin{array}{r}
 8.03 \\
 3.52 \\
 \hline
 11.55
 \end{array}$$

8.03

47.77

G.P.B.

$$\begin{array}{r}
 11.55 \text{ Sid May 19th} \\
 10.05 \\
 \hline
 21.01.50
 \end{array}$$

8.04

47.71

W.C.B.

$$\begin{array}{r}
 21.01.50 \\
 \hline
 21.01.50
 \end{array}$$

06

47.60

W.C.B.

Diameter

46.43 small

46.13 outside

$$\begin{array}{r}
 46.44 \\
 46.46 \\
 \hline
 \end{array}$$

Zero = 49.97

$$n^{\circ}d = 49.83$$

236a

May 18-

424 — 11..24- 48..60
 11..44.20- 48..25

spot on the under side of
 the lower belt

r Serpenti 17..12..23.66

8.66
 17..12..17.0

12..41..20.26

8.2

12..41..12.2

May 25th Hind's New Star

H * Red 6th mag

* 2nd 3rd white

13..24..32.5 Dec-12..34..24
 h 8..32..06.0 ar 5.10
 3..27..56
 16..52..26.5
 1..25.6
 16 51..00.9

13..32..53.4 -12..36..08
 h 8..19..12.0
 3..40..48.0
 17..13..41.4

13..46..05.8 -12..36.02
 8..32..22
 3..27..38
 17..13..43.8

8..17..12..17.0
 obs 17..13..42.6
 ar -1..25.6

8..12..36..02
 obs 41..12
 ar +5..10

The colour of the new star
 is striking compared with that
 of r Serpenti

r is of a brilliant white inclining to blueish
 & hardly shows any red when brought to the edge of the
 field while the new star is as red as the ^{old} stars near the cluster
 in Perseus. & when brought to the edge of the field gives a vivid
 red or ruby spectrum with faint blue on the side next the edge of the field
 It is much fainter than r. if r is of the 4th mag the
 new star must be of the 5th or 6th mag as it is but just visible to the naked eye

Note the sky was not clear.

May 25th
 New Star with " Star 15th mag South preceding it
 pos 329° 20'

Dist 62.18

x

62.48

x

dim 62.33

See Gating Book for
 further obj.

x

x

x

x

x

May 31st

Mauvais Comet at 9^h

at 9^h 33^m 30 Dec + 7° 47'

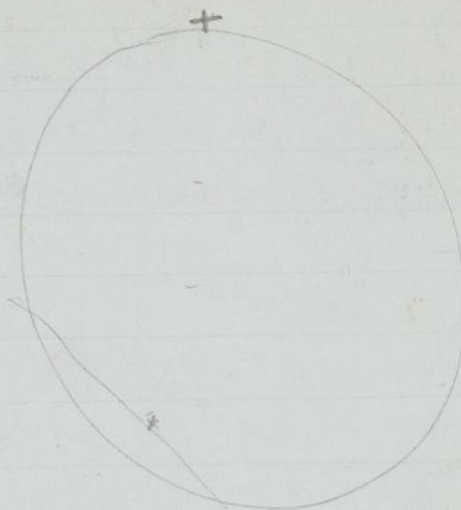
Looked at the new star sky clear & night fine
 We were

13.48
 9.33
 8

2380 Mauvais Comet June 1st 1848

$$\begin{array}{r}
 14 \ 24'' \ 35.3 \\
 4'' \ 48'' \ 84 \\
 4'' \ 49'' \ 24 \\
 \hline
 9 \ 35'' \ 11 \\
 - 2'' \ 09.6 \\
 \hline
 9'' \ 33'' \ 01.4 \\
 \hline
 14'' \ 28'' \ 37.4
 \end{array}$$

Sun



$$\begin{array}{r}
 14'' \ 29'' \ 59.3 \\
 4 \ 54'' \ 59.0 \\
 \hline
 9 \ 35'' \ 00.3 \\
 - 2'' \ 09.6 \\
 \hline
 9'' \ 33'' \ 00.7 + 10''
 \end{array}$$

$$\begin{array}{r}
 7 \ 39'' \ 36 \\
 - 1'' \ 38 \\
 \hline
 7'' \ 37'' \ 58
 \end{array}$$

$$\begin{array}{r}
 7'' \ 38'' \ 22 \\
 7'' \ 37'' \ 58 \\
 7'' \ 37'' \ 52 \\
 \hline
 7'' \ 38'' \ 04
 \end{array}$$

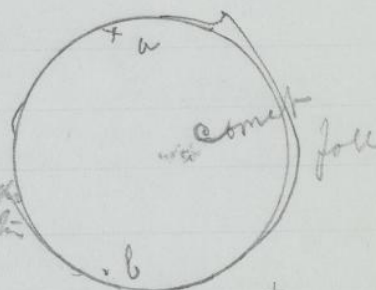
This Proved not to be the Comet.
as we think, but it would be well
to examine further

$$\begin{array}{r}
 14'' \ 36'' \ 28.4 \\
 5 \ 1 \ 18
 \end{array}$$

$$\begin{array}{r}
 7 \ 39'' \ 30 \\
 - 1'' \ 38 \\
 \hline
 7'' \ 37'' \ 52
 \end{array}$$

$$\begin{array}{r}
 9 \ 35'' \ 10.4 \\
 - 2'' \ 09.6 \\
 \hline
 9'' \ 33'' \ 00.8
 \end{array}$$

From
p.R. 9'' 33'' 00.6 } Subsequent to
obs. it was thought
that this was not the
Comet



a. star 10th mag
b. 12th mag

Ti Leonis

Star 5 mag -

$$\begin{array}{r}
 14'' \ 48'' \ 10.6 \\
 4'' \ 53'' \ 50
 \end{array}$$

$$\begin{array}{r}
 + 8 \ 41 \ 47'' \ 50 \\
 8'' \ 46'' \ 17 \\
 \hline
 \text{Cor} - 1'' \ 33
 \end{array}$$

$$\begin{array}{r}
 81.14.16.9 \\
 34 \\
 \hline
 81.13.42.9 \\
 8.46.17
 \end{array}$$

$$\begin{array}{r}
 9'' \ 35'' \ 10 \\
 13'' \ 55'' \ 00
 \end{array}$$

$$\begin{array}{r}
 9'' \ 54'' \ 20.6 \\
 \text{p.R. } 9'' \ 32'' \ 10.7 \\
 - 2'' \ 09.9 \\
 \hline
 \text{Cor}
 \end{array}$$

$$\begin{array}{r}
 14'' \ 52'' \ 58 \\
 4'' \ 58'' \ 38 \\
 \hline
 9'' \ 54'' \ 20 \\
 9'' \ 52'' \ 10.7 \\
 - 2'' \ 09.3 \\
 \hline
 \text{Cor}
 \end{array}$$

$$\begin{array}{r}
 8'' \ 48'' \ 00 \\
 \text{p.R. } 8'' \ 46'' \ 17 \\
 - 1'' \ 43 \\
 \hline
 \text{Cor}
 \end{array}$$

Tel West of Pier

239

	Less	Pos	Pos Zero
50.090	50.017	325-05	
<u>49.915</u> other side	018	323.00	271.5
50.110	<u>007</u>	326.20	
50.100		327-15	
50.100		325-40	

✓
Cannot tell what star this is.

Telescope West of Pier

	GPH	
49.91	151° 00' = 331	
<u>49.90</u>	333	
	330	
	333	
	<u>330</u>	one taken = 340 but looked too large

240a

June 2^d 5 Arona

50.225 Zero

223 50.008

245 50.012

227 015

240 015

50.23

50.01

2.2 - Dist WEB

Pos

10.18

9.00

7.30

6.25

4.45

11.45 8.45

1848.42

Corona Dist 2.2 WEB 5

2.2 9 PB 5

Comp's f. Pos 171.15 WEB 506

172.30 9 PB 307

Mean 171.50'

Power 860?

187.15 = 7.15

7.30

7.50

7.30

49.74

49.81

78

81

79

49.74

50.01

2.2 9 PB

← *

Small star is S.P.B

Zero

49.99

50.01

Not Light enough

June 12th ζ Ursa Majoris $11^h 09^m + 32^\circ 26'$ $2''$

ϵ Bootis $14^h 38^m$

$+ 27^s.45^t$

$16^h 36^m$

Dec $+36^\circ 46'$

Power No 6

ϵ Bootis June 12th

unsteady with clouds

Zero

had seeing
a golden blue or greenish

3rd & 7th mag.

49.68 217.00

49.72 217.00

49.71 218.30

49.68 218.30

49.72 217.00

49.709 217.30

50.023 217.55

32

dist = 3.2

50.025

50.025

50.023

50.018

50.023

smaller one is n.p.

1848.42

ϵ Bootis Dist 3.1 } 5 Oct

Pos. $322^\circ 05'$ } G.P.B.

Pos

48.996

.930

.927

.960

.955

141.35 321.35 Small star is n.p.

The companion of ζ Ursa. ven (Cus. Canoli) is red

242a

to home (st)

From Mr. Dent S. C. Walk No 633, 634, 635, 636, 637 (638)
of the Astr. Nach. & Dec 1847 March & April 1848 Nov of the
Astr. Soc. Proc. (Returned)

July 11th Sent Count Portalis Naut. Al for 1841

We have recently seen symptoms of resolution in the nebula called the Ω . The faint loop spoken of by Sir H. D. W. is composed of very small stars. The following parts are apparently resolved. The light of this nebula as seen in the G.R. is vastly more extensive than has hitherto been ascribed and extends over one or two fields. The same is remarked of almost every large nebula which we examine.

July 4th Dell Sat of Neptune Power No 7

	Sat s.p	Zero		
Sid. 20 ^h 10 ^m	51.73	50.14	143 ⁰	
	51.82	50.14	141	
	51.84		134	
	51.82		137	
	51.802		139	angle of position not carefully taken
	50.144			
	16.58			
	16.2			

	48.56	Zero
	48.42	50.14
20 ^h 45 ^m	48.52	50.15
	48.45	

These are trials of putting the sketched between the wire outside of the wire on, Neph.

Satellite is not seen well the air is disturbed & the observer sleepy.

53.88
53.97
54.10
53.40
53.80
50.14
46.6

July 4th Am. Sat. Neptune Power No 7213^a
21.25
20.32
53

Dist. Thro Pos

Zero

51.942 50.163 322.00

270.25

.820 50.157 322.30

.888 140 323.25

-700 147 321.55

.700 122 322.45

.712 223 324.30

74762 551.44 322.50

517.94

501.44

16.50

16.2

Mean

Dist 16.2

Pos 219°

Sat is s.p. Dist = 16.2 } 6 obs

16.40^m Pos. 217.10 } G.P.B.

Pos 37° from parallel.

Sat is s.p. Dist 16.2 } G.P.B. 8 obs

15.47^m Pos. 221°

Saturn - power 140 - Pos 49° from par.

Examined carefully - not special seeing.
 The Ring, when seen on the disc appears as a black line
 I thought it a little broader than when last seen.
 off the Planet to the left, it is seen as if feebly illuminated
 for a considerable distance and then broken into bright
 points resembling satellites - then is a very small
 satellite just beyond the extremity of the ring on this
 side so near that it may be one of the inner ones.
 on the following side the ring is not so distinctly
 seen, neither has it the same broken appearance.

on closer examination I find
 2 small satellites very near
 together on the preceding ext. of
 the ring - giving altogether
 the appearance



244a
 July 4th Evr
 Mr. Booth.

Yacchedagair
 proc. comp'n north

← ..

Mr
 50.082 - 50.220 well separated.
 50.15
 0.7

236
 230
 50.224
 50.149
 0.8
 0.8
 0.8
 0.7
 0.6

Zero
 50.150
 50.150
 50.148

Gr^o
 50.21
 50.15
 0.6

Pos 91013

255.26

257.00

258.30

257.20

257.30

257.08'

Dist = 0.74 W.C.B.

Y Corone

Bⁱ

Zero

Pos

50.096

50.148

242.00

.090

.158

243.45

.093

.164

246.30

.088

.160

247.00

.086

.164

247.16

50.091

50.451

247.16

50.151

0.60

245.15

Mr Booth

Y.P.B. Dist 0.6

Pos 282.52

Mr Booth's

Dist 0.7 W.C.B.

50.6

Pos 283.00

Y Corone

Dist 0.6 W.C.B.

Pos 294.45

50.6

Power 1240?

getting unsteady a little

July 8th Still looked for Encke's Comet
 when first the instrument was adjusted the sky
 was clear & small stars seen. But after a few
 minutes search it clouded suddenly from the eastward

μ^2 Bootis tolerable using July 8

216

Smallest is n.p.
power No 7

254.30

← ..

50.21

Zero

50.16

253.15

20

50.16

252.0

21

50.15

253.0

21

50.15

258.0

20

50.206

~~258.0~~

50.145

257.0

051

Dist = 0".50 G.P.B.

1848.52

Power 1240

μ^2 Bootis Dist = 0".5 } G.P.B. 5 obj.
Pos. = 289°.00

746a 1848

July-10 Sor.
W.C.B. μ^2 Bootis -
DirTel East of Pier
W.C.B.

Power No 8

Dir	Zero
50.148	50.203
.157	.204
.156	.212
.150	.207
.155	.207
<u>16</u>	<u>33</u>
50.153.	50.206
	<u>153</u>
	<u>.53</u>

Pos
76.20
78.45
79.45
79.15
<u>77.00</u>
78.12
<u>90.10</u>
11.58

 μ^2 Bootis comp n.p

Dist. 0.5 } 5.0 W.C.B.

Pos. 281.58'

70 Ophiuchi

W.C.B. Bright Star preced.

Zero

Power No 8

W.C.B.	Bright Star preced.	Zero
62.27	50.895	50.220
61.10	50.903	217
62.00	50.947	217
63.00	.402	215
61.40	<u>.887</u>	<u>213</u>
Mean 62.03	51.34	50.217
	50.907	
	Zero 50.217	
	<u>6.90</u>	

W.C.B.

Power 1108

297/47

July - 10th
70 Ophtinechi
birt.

50.900

893
57.93

50.8965

changed to the
other side of the fixed wire

49.570

.498

.492

.499

.502

12501

49.500

50.212

7.12

reversed

50.940

.898

.919

.896

.910

163

50.913

50.212

7.0

9 P B

50.210

.214

50.212 9 P B

50.896

6.84

2.00

6.82

6.8

7.12

7.04

A=4^h B=6^h

B is red or brownish.

70 Ophtinechi comp. S. f

Dist { 6.87 W.C.M. } = 6.85 15 St.
6.80 G.P.B.

Pos 117° 45' 50 St. 118.07 W.C.M. 50 St.

Dist 6.8 100 St.

Pos. 117° 56'

70 Ophtinechi A 4^h B 6^h B is red or brownish

Zero

50.207

.216

210

216

50.215

9 P B

Position

Smaller S. f

61.58

62.58

62.00

62.10

63.00

5/1206

62.25

90.10

27.45

Zero of pos

90.00

90.15

90.05

90.10

Zero 90.10

2.02.22 + 20.19

21.20

26.02

4.2

22.18

26.02

3.49

22.04

26.02

3.58

21.54.30

21.52.30

4.07.20

59.50

21.25

26.02.20

4.39

21.34

26.02

2.28

21.33

4.30

26.03

21.46.30

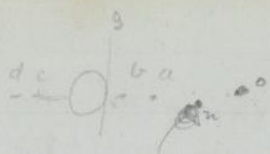
21.44.30

14.17.30

26.02.00

248a

looked for smoke no chance)



Section & inequalities or satellites on
this ring

Taken July 10th at 22^h.40^m Sid

sa 49.44

49.40

clm 49.42

zero 50.21

7.9

7.7

sb 49.94

49.96

49.95

50.21

26

sc (52.56)

52.42

52.57

52.41

clm 52.49 = 49.93

Good seeing

sd 52.90

53.01

53.06

52.99

50.21

27.8

27.2

Satellites

m

n

o

p

q

r

s

t

u

v

w

x

y

z

aa

ab

ac

ad

ae

af

ag

ah

ai

aj

ak

al

am

an

ao

ap

aq

ar

as

at

au

av

aw

ax

ay

az

ba

bb

bc

bd

be

bf

bg

bh

bi

l, m, n & o are satellites

at a, b, c & d are

either projection from

the ring or the satellites

all of them seen without

difficulty at c there seems to be

a sudden stopping of the ring which

is not visible between c & d except

near these points from c to the limit the ring is conspicuous but at

c' there seems to be a satellite or spot besides the sudden break of the

ring to the left of it - at d is a bright place in the ring at b, & a are

stars. The order of brightness a c d b but a c & d are nearly

equal

Where the belt crosses Saturn it is like an
even narrow, dusky band not quite black but quite uniform
I should think twice the thickness of ring.

The spots on the ring seemed to me to be all on
the (apparent) upper side of the ring & to be brighter than the other
parts of the ring.

The ring was not to my eye visible
between c & d & barely if at all between b & a

There are belts, ^{kip} or dusky regions below the ring & one
above but neither of them is strongly shown. Begun to look at Sat-
urn just as day was breaking. 1/11/11. Thought Saturn's S pole dusky.

July 10th 11 Am

29/2

Bright point on right - $53.804 = 25' - 53.728$
 a, from preceding limb



b 52.95
 c 52.45
 a = G.P.B. & Sat m 52.307

The Ring appears broken into masses of the magnitude of Satellites only brighter [Some difference of opinion between W.P.B. & G.P.B. (after it was too late to verify) as to the above spot d. But not as to c or b (d was probably G.P.B.'s c)]
 Edge of wires on the limb

W.P.B.

51.063 Dark stripes to Saturn's n pole

50.985

51.01

51.003

51.030

51.018

48.362

48.388

.352

.410

.412

51.930

48.386

49.345

Transp'd to S. Spole

.376

.360

.340

.348

49.354

NO B

Diameter of Planet
 Path to South Pole

48.410

48.430

.430

.450

.410

51.130

48.426

G.P.B.

not good

Zero

50.220

.207

.205

.213

.208

51.53

50.211

52.95

50.21

274

55

26.85

52.45

50.21

224

45

21.95

250a

July 11th 22^h 30^m Sid

pos Sat m

22^h 30^m
7^m 20^s
15^m 10^sNep.
Sat.

49.03

48.95

48.99

50.21

12.2

12.0

153.15

158.30

155.50

Neptunus

no ring - fine definition.

One of the nights.

July 11th 15^h 15^m Sid

Dist 12.0

Pos 24.20

= 65.60 from pos

(from day light)

July 11th 22^h 30^m Sid
Saw Saturn from 11^h 30^m to day. The best view we ever had definition exceedingly good. Saw the same phenomena on the ring as on yesterday.

23^h Sid.

Sc

49.43

Line 50.21

49.23

49.33

49.30

49.28

49.29

Sa = 90

Sc

Sc

difficult

49.94

50.02

49.98

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

50.21

at K is a strong terminator from which to p Saturn looks of a blueish or slate colour & different from the region about which looks as though it might be like a great snow cap like that of Venus but very doubtful. The appearance of the ring is very similar to what it was yesterday morning & the breaks & prominences on the ring are seen with certainty & under the finest definition five satellites are seen. That nearest to ring is faintest. Their motions were very evident while we observed but the spots on the ring did not sensibly change position. Both the poles of Saturn are brighter than the equatorial regions. It was doubtful whether the ring was seen through its whole length but the interruptions between c & d & b & a were not to be mistaken. The drawing of the ring yesterday appears to represent its appearance to day as well as the above especially a & b. As day light increased the vision remained admirable. The spots appeared just as if they were satellites strung on the ring we both agreed that the ring was seen between

Saturn looks as though it

was flattened below.

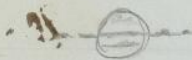
m = thickening from = 0.5

but not = 2mm

a & b

As day light increased the vision remained admirable. The spots appeared just as if they were satellites strung on the ring we both agreed that the ring was seen between

July ¹⁴ 15th 40th Poor seeing but the breaks in the ring still seen
Too light to look for satellites



Saturn above has whitish regions from lat $+30^\circ$ to -30°
yellow or light buff. Below bluish or slate

Telegraph line from Observatory battery to
N. Brighton junction 2 miles & 66 feet

July ¹⁶ 17th del Looked at Neptune very bad vision no Sat full moon
Saw Saturn nothing to add to former appearances from
the unfavourable state of the atmosphere could not notice any difference
since 15th in spots. Looked for Encke moon too bright.

July ¹⁷ 18th Saturn with ~~spots~~ breaks in ring as before but bad vision
a satellite on the left hand close to the ring distracts

the eye so that the break in the ring is not then seen with certainty

July ¹⁸ 19th Saturn ~~as before~~ bad vision see the break in the ring
now but on the left hand on the right could not say
with certainty what was the aspect of the ring but thought it broken
a satellite here interfered as it did last night on the opposite side
with a similar effect. Have sometimes thought that the
dark band across Saturn was darker close on the following limb.

252a

July 15th Sent to Prof. S. C. Walker

Last No of Astr. Nach. & Naut. Al for 1840 he already has Uranus
 (Returned ~~Flouide~~ Portals N. N. for 1841.

Sat of Nep. pos 234° Dist 16.2

July 21st 15th Camb. inst.

Sat is s.p. Nep 36° from parallel.

July 22nd Sat. 5p
 Nep

Pos of ring of Saturn
 266° 15' W.C.P.

51.60

Pos

Kero 50.00

51.70

128 }
124 }Sat only by
glances

51.75

51.60

51.63

51.655

16.55

33

16.2

measured very difficult
 from haze & all low light
 & interrupted by clouds
 doubtful on
 account of the nearness of the satellite

July
 Saturn

cloudy
 sd

8a

47.25

47.20

sd

47.09

47.22

47.16

47.20

40.00

28.0

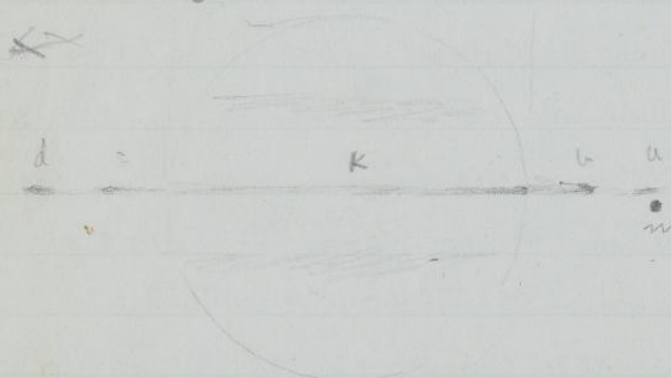
s el 47.69
 47.77

8c 47.75

47.73

50.00

22.7



From all I can see &
 measure the distances of
 a & d are ^{estimated nearly} equal and of b & c
 ae = 27.4 be = 22.7

Measure of sd & sc are too brief
 dis bright enough for a satellite
 neither a b c nor d app
 to have motion though m has
 sensibly approached Saturn

I was thought to be perhaps farther
 off than u K looks darkest at
 the time following

47/19

1/4

26 23.30

20.50.06

5.33.30

20 22.80

20.51.30

2/358

179 3.00

2/1384
667
11'

4.00

Eneke
~~47.54.51~~ 3.11.40
~~1.26~~
 Aug 20 ~~3.13.00~~
 Dec

30.43.19

12.32

30.55.50

3/18.49

6.16

12.32

30.56

59.04

11

59.15

3.10.00

0.00.48

46.20

14.28

Eneke

Aug 24th 11^h 15^m CR 3^h 13^m 00^s hly mo + 4.9

Dec + 30^h 55^m 50^s .. + 47^h 0

Lalande 6173

* 8th mag 3' S. of J

1800

2^s same CRX₁ CR 3.09.34.3* 8th mag 28^s precX₂ 3.10.02.3

11' n

28.10

n.p.d.

* 1 59.04.26

* 2 59.18.59

14.53

5 Persei 3.4^h 30^m
 W 30'

Have often looked for
 Eneke but seldom if ever under
 favourable circumstances

Aug 24th A. & P. looked for Eneke. Clouds &
 bad seeing. On Aug 24th the comet by Ephemeris
 was close to a star of the 8th mag. The star was found
 in the proper place but the Comet was not seen. The
 sky was not favourable.

Have recently in looking at Saturn thought
 the black belt in the plane of the ring to grow narrower also that
 Saturn is brighter at its edges than at its centre the reverse being the
 case with Jupiter. But there has not been any ^{very} favourable nights since
 I have been home.

264a

11.58.16

Ep
25 58.14
21.10
4.48.16

21.10
2.50
1.38
4.48

21.16
2.44
1.42
4.42

Aug 24th 1848

above

below

Opposition of Neptune comparison
with a star of the 8th mag
Neptune is s.p. the star

20.17 79.76

20.19 .73

20.21 .89

20.25 88

20.34 84

22.07th Sid

20.24 85

22.20

Star & Neptune faint

Zero

49.95

98

99

97

98

Nep s.p.

Star s.p.

25.7 22. 24. 32.1
44.6

54.5 22.4
25. 06.0 22.0

38.6

53.2

25 53.0

15.0 22.0

04.7

26. 27.0 22.3

52.9

15.0

04.5

23. 27.0

26. 52.5

15.0 22.5

04.2

27. 26.5 22.3

Nep

Star

29. 18.0
29.5 29. 42.0 22.2
29. 42.0 22.5

27. 53.0
04.6

28. 15.2 22.2
26.8 22.2

31. 02.0

24.5 22.5

32. 01.5

24.0 22.5

13.5

31. 36.2 22.7

13.0

32. 35.5 22.5

Ephemeris of Encke's Comet for 1848 Computed by Prof. Peirce.
 Mean Eq. Nov. 26 1848

255a

Gr. Mean Noon	R. arc	in time	hly. mo.	Dec	hly. mo.	δ	$\odot$
June 21.0	24° 01' 22.1	1 ^h 36 ^m 15.5	3.24	+ 16° 43' 06.6	+ 26.13	2.7022	2.3989
22	20° 48.3	37. 23.2		53. 33.7			
23	40. 17.3	38. 41.2		17. 04. 03.4			
24	59. 49.1	39. 59.2		14. 35.7			
25	25. 19. 23.6	41. 17.6		25. 10.5		2.6174	2.3026 ⁶
26	39. 01.9	42. 36.1		35. 48.0			
27	58. 41.9	43. 54.8		46. 28.2			
28	26. 18. 24.7	45. 13.6		57. 11.3			
29	38. 10.5	46. 32.7		18. 07. 57.2		2.5313	2.3256
30	57. 59.7	47. 52.0		18. 45.9			
July 1	27. 17. 52.1	49. 11.5	3.33	29. 37.7	26.33		
2	37. 47.7	50. 31.2		40. 32.5			
3	57. 45.9	51. 51.0		51. 30.6		2.4442	2.2881
4	28. 17. 47.6	53. 18.2		19. 02. 31.8			
5	37. 52.9	54. 31.5		13. 36.2			
6	58. 01.7	55. 52.1		24. 44.1			
7	29. 18. 14.2	57. 12.9		35. 55.8		2.3562	2.2698
8	38. 30.5	58. 34.0		47. 10.9			
9	58. 50.7	59. 55.4		58. 29.9			
10	30. 19. 14.9	2. 01. 17.0		20. 09. 52.7			
11	39. 43.3	02. 38.9		21. 19.5		2.2676	2.2109
12	31. 00. 15.9	04. 01.0		32. 50.3			
13	20. 53.0	05. 23.5		44. 25.3			
14	41. 34.8	06. 46.3		56. 04.8			
15	32. 02. 21.5	08. 09.4	3.46	21. 07. 49.0	30.59	2.1783	2.1713

256a

8

1750

20.00

at Mr Chamberling of Bridgewater wants much to see the G.R. & to be informed when he can do so.

Ephemeris of Colla's Comet (from P. von Sitrow)

	Ap. R	Ap Polar. Dist	Sol Dist	δ	
1848 Feb 2	21..23..23	40° 08.7	0.5368	0.5688	3.54 46 150
" 6	31..53	27.8	5410	.5761	49
10	40..02	44.7	5450	.5832	
14	47..52	59.1	5490	.5901	0
18	55..23	41..11.4	5531	.5968	
22	22..02..36	21.6	5571	.6034	
26	09..32	29.6	5610	.6097	
March 1	16..12	35.6	5649	.6157	

14.24
71.41
6.57

Cliff Clitchell's Comet.

	Ap. R	Dec.
1848 Feb 26.5	15..28..30	+56° 36.03"
28.5	15..36..17	+58..14.03

Mauvais Comet of July 1847

Feb. 26th 1848 from midnight

Dist from Earth 2.0
from Sun 3.0

	Ap. R	Dec. W
Mar 22..18	10..10..16	+51° 16.14.5
Apr 1..18	9..55..30	+74 57.7
11..18	9..44..46	+34 13.40.4
21..18	9..37..36	+32 24.8
May 1..18	9..33..20	+11 11.5
May 11..18	9..31..34	+0 00.5
May 21..18	9..31..48	+8 51.8
May 31..18	9..33..33	+7 45.4

Feb 26.5 R 11° 05' 38" Dec 119° 08' 12"
28.5 10..58..54 +19.06..33
6..44

For New Star Rapp. Apr. 24

2061 16..51..01.24 Dec -12° 39' 12.2
3..26.1
7..45.4
11..11.5

made up (not computed)

10.08
2

@ Persei

April 25th 1948
Pallas R 10^h 33^m Dec +13.50'

X Cluster R 13^h 35^m Dec +29.11'

May 10th 1948
Nep. R 22^h 17^m
Dec -15.12'

Ceres 11^h 30^m +19.20'

♄ Bootis 14^h 44^m +19.46'
period > 100

♌ Leonis
12 Can. Ven.

Mizar
♄ Leonis 8^h 03^m +18.07
♄ Leonis 11^h 09^m +32.26 period 60

♄ Serpens very close
♄ Corona 15^h 33^m +37.60

♄ Lani 5^h 25^m +21.54 Res Neb

♄ Libra Triple 15.55 -10.56
♄ Hercules 16.35 +31.54

♄ Cancri 8^h 42^m +12.23 Loose Cluster
♄ Leonis 9.20 +9.45 Close Double

♄ Hercules 16.37 +39.12
A 0.3

Planetary Neb. 10.17 -17.51
X 11.12 +13.52

♄ Virginis 12.37 +0.34
Orion belt Nebula R 19.52 +22.17

Planetary Neb 11.47 +56.01
X Neb with parallel 12.28 +26.52
12.31 -16.42

1830 yr near R 11^h 51^m
npd 50.16'

X bright Neb 12.43 +42.00
X 12.49 +22.43 'black eye'
XX 13.23 +48.02 'halo neb.'

R Orion

10.08
2

Ephemeris of Great Orbits of Satellites of Uranus

Second Satellite Dist. 32"

South		North
1847 Dec. 13 ^d 21 ^h	Comb. a. s. t.	1847 Dec. 18 ^d 6 ^h
22 14		26 23
31 9		1848 Jan 4 18
1848 Jan 9 3		13 12

Fourth Satellite Dist. 41"

1847 Dec 23 ^d 8 ^h	1847 Dec. 16 ^d 15 ^h
1848 Jan 5 20	20 2
	1848 Jan 12 13.

10.7
37
749
321
396

77
37
539
231
285

Comb. Dec 13 1847

B. B. B.

@ Persei

44.19

45.50

@ 2^d Jan

32.13

