

KG
11365
102

H. 9

There is no No. 9.

Vol. II 1-92

Magnetic, Fox Circle
and

Equatorial,

1849.

Feb. to June (nos)

KG-11365.162

π Aquila double p. 16 May 2 Em & Em of 5 Virginis
 Mar 1 Em 1517 B.A.C.
 Mar 11 Em 95 Virginis



1849.

Cambridge Observatory

Feb. $\frac{23}{24}$ 9^h 45 Bar. 30.366 H. 55. Est. Ther. 32.5

Lloyd apparatus

9.50 IF	138.8	Temp 24.5	Sec.	157.0
	138.2			140.7
	138.8			157.0
	138.0			140.7
	138.8			156.7

Observations upon the Fox Magnetic Dip Inst. by George. Feb. $\frac{23}{24}$

Reading of Az. Circle with		
Telescope - upon Meridian mark	28° 4'	2° 33'
- upon assumed meridian	28° - 8'	2° 37'
- West side of Field's barn	25° 31'	

Alt. Ther. 31.5 Hour 10.25"

Experiments upon needle B.

Face S. Needle B. at 90° azimuth circle reads 38° 0'	mean
Face N. Needle B. at 90° (vertical) az. circle reads 37.30	37° 45'
Needle B. with ground wheel in front	

Mag Dip

Face East	74.52	below	Bracket	Face West	74.35	below	Position of Bracket
"	74.45	above	1 st position	"	74.37	above	1 st
Do	74.37	below	2 ^d position	Do	74.27	below	2 ^d
"	74.45	above	2 ^d position	"	74.22	above	2 ^d
Do	74.35	below	3 ^d position	Do	74.45	below	3 ^d
"	74.32	above	3 ^d position	"	74.45	above	3 ^d
Mean 7.2.	74.41			Mean	74.35.2		

Mean Face West 74.35.2 Alt. Ther 35°
 { Needle B. with pivots reversed. Obs. continued. }
 { ground wheel behind } for mag dip

Face West	74.37	below	Bracket	Face East	74.30	below	1 st position
"	74.40	above	1 st position	"	74.30	above	2 ^d position
Do	74.30	below	2 ^d position	Do	74.25	below	2 ^d position
"	74.30	above	2 ^d position	"	74.27	above	3 ^d position
Do	74.35	below	3 ^d position	Do	74.15	below	3 ^d position
"	74.37	above	3 ^d position	"	74.20	above	3 ^d position
Mean 7. West	74.34.8				74.24.5		

Mean Face East 74.24.5 Alt. Ther 38

Mean ground wheel 74.29.65 11.15

Mean ground wheel front 74.38.1
 Mean ground wheel back 74.33.9 with needle B.

Station - Cambridge Observatory. Mass.

Observations with deflectors - - - for Intensity

Needle B. Lat Long

Time of commencing observations 12^h 5^m

Face of Circle	Def. N at App. Dip			Def. S at App. Dip		
	Def. toward the Vertical readings	Def. from the Vertical readings	Ther	Def. toward the Vertical readings	Def. from the Vertical readings	Ther
West	72° 47' 6"	41° 30' 6"	40°	71° 30' 6"	40° 28' 6"	41°
" 1 st position of bracket	72° 57' a	41° 30' a		71° 30' a	40° 28' a	
Do	72° 50' 6"	41° 30' 6"		71° 35' 6"	40° 20' 6"	
" 2 nd pos	72° 52' a	41° 35' a		71° 35' a	40° 22' a	
Do	72° 45' 6"	41° 40' 6"		71° 32' 6"	40° 22' 6"	
" 3 rd pos	72° 50' a	41° 40' a	41°	71° 32' a	40° 25' a	41°
Means	72° 50.2	41° 34.2		71° 32.2	40° 24.2	
Comp. and 90°	17° 09.8			18° 27.8		
Mean 1 =	107° 09.8			108° 27.8		
Mean 2	41° 34.2			40° 24.2		
Differences	65° 35.6			68° 03.6		
1/2 Differences or angles of deflection	32° 47.8			34° 01.8		

Face of Circle	Def. N at App. Dip			Def. S at Apparent Dip		
	Def. toward the Vertical readings	Def. from the Vertical readings	Ther	Def. toward the Vertical readings	Def. from the Vertical readings	Ther
East	72° 32' 6"	41° 35' 6"	42°	71° 30' 6"	40° 28' 6"	42°
" 1 st position	72° 30' a	41° 35' a		71° 30' a	40° 22' a	
Do	72° 35' 6"	41° 30' 6"		71° 35' 6"	40° 17' 6"	
" 2 nd pos	72° 35' a	41° 30' a		71° 33' a	40° 17' a	
Do	72° 45' 6"	41° 30' 6"		71° 30' 6"	40° 20' 6"	
" 3 rd pos	72° 45' a	41° 30' a	43°	71° 30' a	40° 20' a	42°
Means	72° 37	41° 31.7		71° 31.3	40° 20.7	
Supplement	107° 23			108° 28.7		
	41° 31.7			40° 20.7		
	2) 65° 51.3			2) 68° 08.0		
Angles of Def =	32° 55.6			34° 04.0		

Time of ending obs
1^h 05^m P.M.

74.34
32.92
41.42

Cambridge Observatory Feb $\frac{23}{24}$ 1849.
 With ^{for} Magnetic Instrument by George
 Observations upon Needle B., with weights, for Intensity
 Face East - Time $1^h 20^m$ P.M. to $1^h 40^m$ for
 with this inst. $2^h 40^m$ P.M. to $1^h 50^m$ for
 with weights such as were used by Mr Fox at Falmouth Eng.

Def. with wt. 2. grs		Ther.	Def. with 2. grs + 1. grm.		Ther.	Def. with 2. grs + 1. grm + .5 grm		Ther.
Deflection from the Vertical	Deflection toward the Vertical		Def. from the Vertical	Def. toward the Vertical		Def. from the Vertical	Def. toward the Vertical	
{ 50° - 45 b	{ 82 - 30 b	44.5	{ 37° - 45 b	{ 70 - 45 b	45	{ 30 - 15 b	{ 61 - 32 b	46
{ 50 - 45 a	{ 82 - 30 a		{ 37 - 43 a	{ 70 - 45 a		{ 30 - 15 a	{ 61 - 30 a	
{ 50 - 47 b	{ 82 - 30 b		{ 37 - 45 b	{ 70 - 40 b		{ 30 - 20 b	{ 61 - 32 b	
{ 50 - 45 a	{ 82 - 30 a		{ 37 - 40 a	{ 70 - 40 a		{ 30 - 20 a	{ 61 - 30 a	
{ 50 45 b	{ 82 - 30 b		{ 37 - 52 b	{ 70 - 45 b		{ 30 - 15 b	{ 61 - 35 b	
{ 50 - 45 a	{ 82 - 30 a	48	{ 37 - 50 a	{ 70 - 45 a	47	{ 30 - 15 a	{ 61 - 37 a	46.5
Mean 50 - 45.3	82 - 30		37 - 45.8	70 - 43.3		30 - 16.7	61 - 32.7	
Supplement 2	97 - 30			109 - 16.7			118 - 27.3	
1 - 50 - 45.3				37 - 45.8			30 - 16.7	
$\frac{1}{2}$ Sin = Dip =	74 - 07.6			78 - 31.2			74° - 22	
2/46 - 44.7			2/91 - 30.9			2/88 - 10.6		
23 - 22.35			35 - 45.45			44 - 05.3		
Angle of Defl.								

Cambridge Obs. Feb. 23rd
 Obs. with Fox Magnetic Inst. upon Needle C with weights for Intensity

Face East

Def. from the Vertical
 Def. towards the Vert.

Obs commenced at 3^h 7^m to

Ended at 3^h 35

weights

Def. with Wt 2. grs			Def. with Wt 2. grs + 1. gr			Def. with Wt 2. grs + 1. gr + .5 gr		
Deflection from the Vertical	Def. towards + part the Vertical	Ther.	Def. from the Vertical	Def. towards + part the Vertical	Ther.	Def. from the Vertical	Deflection towards + part the Vertical	Ther.
{ 53-37.6	85-03.6	50	{ 41-52.6	73-35.6	51	{ 35-45.6	72-38.6	50.5
{ 53-37 a	85-00 a		{ 41-55 a	73-32 a		{ 35-45 a	72-37 a	67-27
{ 53-35.6	85-00.6		{ 41-52.6	73-35.6		{ 35-50.6	72-35.6	?
{ 53-35 a	85-05 a		{ 41-60 a	73-35 a		{ 35-52 a	72-37 a	
{ 53-30.6	84-57.6		{ 41-63.6	73-40.6		{ 35-50.6	72-33.6	
{ 53-33 a	84-52 a	515	{ 41-63 a	73-37 a		{ 35-53 a	72-40 a	
mean 53-34.5	6/28 11.7		41-57.5	6/21.9		35 49.2	6/21.5	
	84-59.5			73-36.5			72-35.8	
	95-00.5			106-23.5			107-24.2	
	53-34.5			41-57.5				
	2) 41-26.0			2) 64-26.0				
				32-13.				

$\frac{1}{2}$ diff. = Def.
 angle of Def. } 20-43.0

1849 Feb $\frac{23}{24}$ Commencing at 3^h P.M.

Observation with Needle "C." for the Magnetic Inclination
Dip

Face East $74^{\circ} - 35' 6''$
 $74 - 37' a$

1849 February $\frac{25}{26}$

Lloyd Apparatus

h	FF	T_h	Sec.
9.05	139.6	32.5	153.7
	138.8		152.5
	139.5		153.7
	138.8		152.5
	139.7		153.6

Observation with Needle A upon Fox Dip Circle

Face East { $74^{\circ} - 35'$ below
 $74 - 35'$ above } At 9^h - 20^m A.M.

490^o az circle reads $37^{\circ} - 45'$
Observations with Needle A upon "Fox Dip Circle" with weights for Intensity
Commencing at 9^h - 30^m & ending at 9^h - 55^m
Face of East

Deflection with W ^t 2. grs.			Def. with W ^t 2. grs + 1 gm			Def. with W ^t 2. grs + 1.9 gm + .5 gm		
Def from the Vertical	Def toward & past the Vertical	T_h	Deflection from the Vertical	Def. toward & past the Vertical	T_h	Deflection from the Vertical	Def toward & past the Vertical	T_h
{ $50^{\circ} - 45' 6''$	{ $82^{\circ} - 12' 6''$	36	{ $37^{\circ} - 40'$	{ $69^{\circ} - 25' 6''$	36	{ $30^{\circ} - 30'$	{ $61 - 47' 6''$	36.5
{ $50 - 47' a$	{ $82 - 10' a$		{ $37 - 45' a$	{ $69 - 25' a$		{ $30 - 35' a$	{ $61 - 45' a$	
{ $50 - 45' 6''$	{ $82 - 30' 6''$		{ $37 - 45' 6''$	{ $69 - 25' 6''$		{ $30 - 30' 6''$	{ $61 - 40' 6''$	
{ $50 - 47' a$	{ $82 - 30' a$		{ $37 - 47' a$	{ $69 - 20' a$		{ $30 - 30' a$	{ $61 - 40' a$	
{ $50 - 50' 6''$	{ $82 - 15' 6''$		{ $37 - 45' 6''$	{ $69 - 25' 6''$		{ $30 - 15' 6''$	{ $61 - 45' 6''$	
{ $50 - 55' a$	{ $82 - 15' a$	37	{ $37 - 45' a$	{ $69 - 25' a$	36.5	{ $30 - 15' a$	{ $61 - 45' a$	37
Mean $50^{\circ} - 48.2$	$82^{\circ} - 18.7$		$37 - 44.5$	$69 - 24.2$		$30 - 25.8$	$61 - 43.7$	
Supplement	$97^{\circ} - 41.3$			$110 - 35.8$			$118 - 16.3$	
	$50 - 48.2$			$37 - 44.5$			$30 - 25.8$	
$\frac{1}{2}$ Sum = Dip	$74 - 14.7$			$74 - 10.1$			$74 - 21$	
	$46 - 53.3$			$72 - 51.3$			$87^{\circ} - 50.5$	
Diff = angle of Dip	$23 - 26.5$			$36 - 25.65$			$43 - 55.25$	

24 90°

7

Feb 25 Observations with Needle A. Continued, Face South,
 Dip Circle placed perpendicular to the Meridian
 Commenced at 10^h 0^m Ended at 10^h 37^m

Deflection with weights from the perpendicular Az circle 37°-45°

Def. with W ^t 2. gms			Def. with W ^t s 2.5gs + 1. gm			Def. with W ^t s 2.5gs + 1. gm + .5 gm		
Def from the North pole toward the West	Def from the Vertical North pole toward the East	Ther	Def from the Vertical North pole toward the West	Def from the Vertical North pole toward the East	Ther	Def from the Vertical North pole toward the West	North pole toward the East	Ther
65° 40' 6	65° 40' 6	37.5	51° 45' 6	51° 40' 6	38	44-05 6	43-30 6	38.5
{ 65-40 a	{ 65-40 a		{ 51-45 a	{ 51-43 a		{ 44-00 a	{ 43-37 a	
{ 65-40 6	{ 65-35 6		{ 51-45 6	{ 51-30 6		{ 43-52 6	{ 43-30 6	
{ 65-37 a	{ 65-37 a		{ 51-45 a	{ 51-30 a		{ 43-50 a	{ 43-30 a	
{ 65-50 6	{ 65-45 6		{ 51-55 6	{ 51-30 6		{ 43-45 6	{ 43-35 6	
{ 65-50 a	{ 65-45 a		{ 51-55 a	{ 51-30 a	39.5	{ 43-45 a	{ 43-35 a	39
Mean 65-42.8	65-40.3		51-48.3	51-33.8		43-52.8	43-32.8	
24-17.2	24-19.7		38-10.7	38-26.2		46-07.2	46-27.2	
	2/48-38.9			2/76-37.9			2/92-34.4	
1/2 am	24-18-45			38-18.95			46-17.7	

24 90° Observations with Needle B upon Fox Dip Circle, Face South.
 Circle placed perpendicular to the Magnetic meridian
 Needle Deflected with weights from the perpendicular Az circle 37°-45°
 commenced at 10^h 43^m ended at 11^h 9^m

Deflection with W ^t 2. gms from the Vertical, North Pole toward the			with W ^t s 2.5gs + 1. gm, Deflection from the Vertical toward the			With W ^t s 2.5gs + 1. gm + .5 gm, Deflection from the Vertical toward the		
West	East	Ther	West	East	Ther	West	East	Ther
65° 45' 6	65-45 6	40	51° 57' 6	51° 45' 6	40.5	44-15 6	43-50 below	41
{ 65-45 a	{ 65-45 a		{ 51-55 a	{ 51-45 a		{ 44-15 a	{ 43-55 above	
{ 65-45 6	{ 65-47 6		{ 51-57 6	{ 51-45 6		{ 44-07 6	{ 43-45 6	
{ 65-45 a	{ 65-55 a		{ 51-57 a	{ 51-47 a		{ 44-07 a	{ 43-45 a	
{ 65-50 6	{ 65-50 6		{ 51-67 6	{ 51-45 6		{ 44-00 6	{ 43-47 6	
{ 65-50 a	{ 65-52 a	41	{ 51-67 a	{ 51-45 a	41	{ 44-00 6	{ 43-50 a	41
Mean 65-46.7	65-49		52-00.	51-45.3		44-07.3	43-48.7	
24-13.3	24-10		38-00	38-14.7		45-52.7	46-11.3	
	24-13.3			2/76-14.7			2/92-04.	
	2/48-24.3			38-07.35			46-02	
	24-12.15							

292

849

February $\frac{25}{26}$ Observations with "Fox Dip. Inst." upon Middle C.
 Deflected with weights from the perpendicular for Intensity
 Commenced at 11^h 20^m Ended at 11^h 53^m

As circle reads 37° 45'

With Wt 2. grs. Deflected from the Vertical North pole toward the			With Wts 2. grs + 1. gr, Deflected from the Vertical, North pole toward the			With Wts 2. grs + 1. gr + .5 gr, Deflected from the Vertical, North pole toward the		
West	East	Ther	West	East	Ther	West	East	Ther
l 58-25	l 68-35	41°	{ 56-30 l	56-30 l	41°	{ 49-60 l	49-45 l	41
a 58-28	a 68-45		{ 56-28 a	56-35 a		{ 49-55 a	49-60 a	
l 58-30	l 68-40		{ 56-15 l	56-30 l		{ 49-70 l	49-45 l	
a 58-25	a 68-52		{ 56-15 a	56-37 a		{ 49-60 a	49-52 a	
l 58-30	l 68-30		{ 56-30 l	56-30 l		{ 49-55 l	49-47 l	
a 58-30	a 68-35	41.5	{ 56-30 a	56-40 a	41	{ 49-45	49-55 a	41
68-28.7	68-39.5		56-24.6	56-33.6		49-57.5	49-50.7	
21-31.3	21-20.5		33-35.4	33-26.4		40-02.5	40-09.3	6/304
	2/42.5 1.8			2/67 0 1.8			2/80 11-8	52.7
	21-28.9			33-30.9			40-55.9	33.8

Feb. 26. Lieut Whipple observes.

For dip Circle.

Face South Needle C at 90° - Az. Circle - reads $38^\circ 10''$

Needle C is not as accurately centred as A & B.

Needle B.

Face South 90° - az circle reads -

Leads Barn

$37^\circ 47'$

25.32

12.15

B East

-2.37

Magnetic declination 9.38

Lloyd apparatus

2. 35 Pile - H Then Lee

130.6	131.3	135.8	137.4
132.0	131.2	139.0	-137.1
130.5	131.1	136.6	-137.1
131.8	131.2	139.0	-137.4
130.6		135.8	-137.4
mean	-131.2		

1849 March 1st Jupiter at 7^h - Camb. m.s. t.
 atmosphere tolerable, there are many belts, tried to
 count them but there were so many faint ones that I could
 not be certain from 9 to 11 I think might be
 seen



order of brightness
 very little difference.

Emersion of 3^d Satellite by 239 Bow, at 6^h 50^m 30^s
 N.A. - 11^h 35^m 28^s
 6^h 50^m 30^s 22.3
 6^h 50^m 07.7 M.S.T. 4 44 58

The lower, right hand, or northern principal Belt is
 twice or three times broader than the principal southern, which
 is the reason of last years appearance,

2557 - 6^h 19^m 0^s
 239 - 7^h 37^m 31.5

March 1st

Immersion of B & C

2557 + 3^m 07.5

2557

8^h 37^m 36.2 - 4 beats W & B

G.R. perhaps a

slight projection

6^h 19.00

3^m 7.2

22.36.41.73

6^h 15.52.8

46.75
 22 37.28.48

22.37.28.48

7^h 38.24.32

1^m 15.09

7^h 37.09.23

7^h 37.31.5

239 fast 22.27

22.36.41.73

46.75

22.37 28.48

8^h 37.36.2

2.0

8^h 37.34.2

3^m 07.5

8^h 34.26.7

22 37.28.48

29.56.58.22

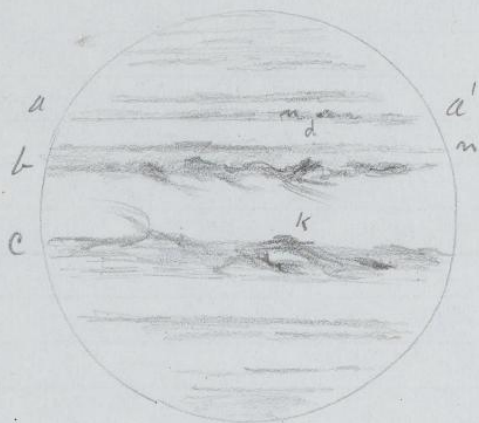
1^m 37.80

M.S.T. 9^h 55.20.42

Imm. of B & C. 1517?

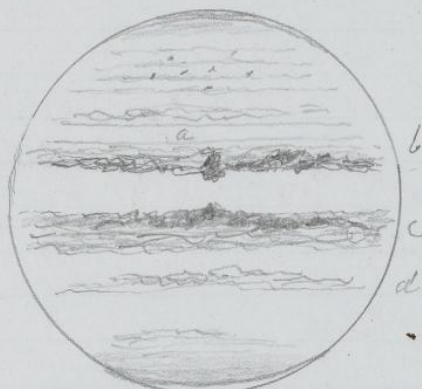
March 1st 9^h 55^m 20.4 M.S.T.

19.35 78.31

7h.45^m M.S.Y.

Jupiter was not very well seen but there were some features pretty plain. From *a* to *a'* is a bright belt at least brighter than the space between *b* & *c*; wider than represented & the upper edge quite straight above *d* are some inequalities. & below *d* on the belt *b* a prominent spot on the lower edge of *b* there is an appearance of wisps something as represented. *n* had I think a less decided connection with *b* than above shown. On the belt *c* there is a prominent feature below *k*.

Mag.

March 8th8th Carb. m. s. t.
Jupiter

The 3 Satellites visible
are nearly of the equal brightness

at a is a bright belt brighter than the equator, narrower with straight boundaries. Below, the northern regions from d are covered with a stratus cloud of pretty uniform density.

above them are numerous stripes with dark spots at 8.15
8.20 on close inspection the northern regions are striped
some of the spots on the principal belts and those above seem flitting
(much interrupted by clouds) short intervals of good seeing.

The lower belt is twice as broad as the upper one.

at 8.40 Looked at the Moon under eclipse, the strong copper colour very apparent on the Southern limb. this gradually fades into a bluish tinge. The radiations from Tycho are very distinct, the outlines perfect, better than I have ever seen them before the bright center of Tycho does not partake of the reddish tinge.

The lower or western eclipsed part is greyish, and the outline perfect. The boundary of the shadow seems confined to narrow limits, but so softly blended with the bright part on the one hand and the darker on the other that nothing like a definite outline can be made out.

The outlines^{coasts} of the parts called seas are very irregular and strongly marked.

at 9 - Tycho at the center is orange light red

a star^{or star} emerged at 8.57 from the dark part.

9.5 the center of Tycho is lighter than any of the other parts, the radiations from it are beautifully defined. The irregularities of the moons

border where the eclipses hold, are well marked, the mountains are seen projected on the sky, some sharp peaks and others rounded

The radiations from Tycho are innumerable, near the border of the bright center they run together

a & b are two strong rays curved downwards and nearly parallel at the termination of each is a crater of moderate size

c a bright ray, does not point to the center, but to the following ^{the} edge of Tycho, d points just within the ^{edge} or a tangent to it



at 9.20
Tycho was entirely
out of the shadow
and its penumbra

at 9.25 the edge of the moon only is red, then follows a grey slaty colour, which gives admirable definition with the whole aperture.

9.30 The red colour is narrowing down to the point where the eclipse ends, and I think may be as good a phase for time as any - at 9.31 last perceptible, the contrast is so strong with the bright part that it is soon caught

9.32.30 just a faint tinge of red, almost in a spot at the edge

9.34 no red is seen.

9.36 The boundary of the shadow is irregular, swelling out in some places, not nearly so regular as it was when it crossed near the middle of the moon

9.38 the shadow is one field from cusp to cusp. say 12'

9.40 the disk of the cusp is 8' estimate

9.41 with --- 5' ---

9.41.40 a train left

9.42.30 none seen

9.45 The ^{second} penumbra is alone seen & that is totally indefinite, extending now to nearly the middle of the moon.

There are ~~seven~~ ^{clearly} distinct kinds of shading, viz. red copper when orange, bluish-slate, grey, slight second penumbra and bright white.

1849 March 9

Jupiter

$$\begin{array}{r} 14 \\ 24 \\ \hline 38 \\ 28 \\ \hline 66 \end{array}$$

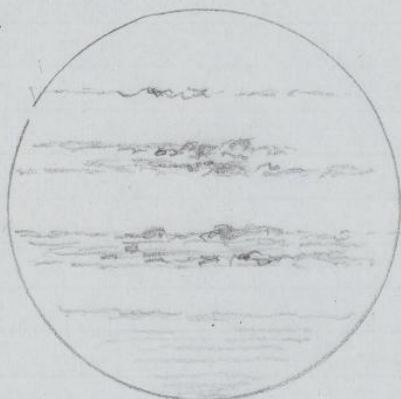
96

192

24)136"

8.00

2.9 2.



order of brightness of Sat.

1

3

It is very bad seeing, there is a small star curiously situated at 9, nearly perpendicular to the preceding of the satellites. George first noticed it, I saw it at 8.07 C.M.T. as in the diagram

at 8.22 no perceptible change in regard to the satellite.

8.40.20
42.15
43.20

with
59.58
59.70
59.53

g + preceding limb of Jupiter
Zero 50.10

8.54
951.30'

March 10th 23.12.10.70
46.74
23.12.57.44

93

14"

8.06.27

42.1

8.07.09.1

8.11.04 8.08.45

42.1 42.1

8.11.46.1 8.09.27.1

23.12.57.44

23.12.57.44 23.12.57.44

8.54.11.66

8.58.48.66 8.56.29.66

1.27.51

1.28.26 1.27.88

8.57.20.66 8.55.01.78

8.52.44.15 m.s.c.

15

$8^h 30^m$ 50.10
28.30
 21.80
96
 314
6
 308

5
 21.25
15
 10625
 2125
 31875

 $d\delta = 90''$

2653
17.8
 3031

303
 303
909
 909
91809
 8100
 99909

90
90
 8100
 6.99960
 2.49980
 316.1

Jupiter

$8^h 45^m$ 32.16
50.13
 27.60
50.12
 2252
96
 321

424 $8^h 08^m 00$
 Mar $8^h 54^m 53$

March 10th 1849

Very bad seeing

Now $8^h 53^m 20$ 1st Contact

46.53
 424 $8^h 52^m 44.16$ m.s.t.
 $8^h 56^m 01.78$ m.s.t.
 424 $8^h 57^m 20.6$ m.s.t.
 " $8^h 57^m 20.6$ m.s.t.

Contact 1st Satellite on Jupiter's disc

Half on

Total entrance midway between the belts
 quite bright

Daily rate of 2657 + 2.9
 2557 $8^h 26^m 00$
 424 $8^h 21^m 49.9$

424 - $8^h 55^m 30$ Shadow of the first satellite is just
42.1
 $8^h 56^m 12.1$ now entered entirely on the disc
 The satellite itself is not visible

I think I do see the sat. as a bright spot between
 the principal belts, but it had seeing the planet
 very unsteady.

$8^h 56^m 12.1$
 23..12..57.44
 $9^h 43^m 14.66$
1..35.55
 $9^h 41^m 39.11$ M.S.T.

$8^h 26^m 00$
3..28.0
 $8^h 22^m 32.0$
 $8^h 21^m 49.9$
 42.1

March 12th Del 18492nd below(π²)

χ aquila observed in daylight

δ is sfa 53.30'

dist 49.99

Zero

50.11

Zero of Pos 89°

.98

99



Third companion line of α

16. 31. 00

3. 35. 2

16. 27. 24.8

23 16. 54.0

17. 10. 30.8

2. 48. 83

17. 07. 41.97

17. 08. 39.50

7 57. 53

March 11
12th Am

Emergence of 95 Virginis

No 239 - 5. 2. 32.0 - 3 beats

-1.2

5. 02. 30.8

57. 53

U.S.G. 17. 01. 33.27

2557-16. 31.0

239-5. 08. 39.5

2557+3. 35.2 16^h

2557-17. 45.00

239-6. 22. 25.6

17. 23. 17
East 22. 22. 00
14. 45. 17

8 78. 31

Pos. 55. 0

55. 55. 10

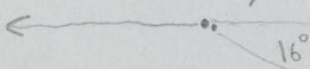
56. 15

This star was not Aquila by mistake
observed for χIt does not seem to have been
observed before as doubleMarch 14th Del

Images unsteady just tolerable

Looked at χ Aquila & am confident of a sep

dist 0.3 or 0.4 Perhaps.

aration
(largest?) preceds

was seen of the small companion

It was broad daylight & nothing

March 13th -

at 7.30 The 4th Satellite of Jupiter is seen as a perfectly black spot on the disc near the middle, between the two principal belts.

8.30 C.m.s.t



The polar regions are not in belts, but covered with a uniform clouded appearance the northern hemisphere is darkest the lower belt is twice as broad as the upper

2

order of brightness
The sun is only tolerable

near the lower edge of the upper belt

at a, is the 4th satellite, perfectly distinct and black

The impression is strong that the spot is elongated in the direction of the belts and irregular in this form (see). (I thought it elongated in same direction) & nearly black

at 8.40 yet black & distinct.

when last seen I think the spot is round.

Cumt

m.s.t.

8.53. Dist of a from pres^t limb of Jupiter 57.03

9 — still black

9.37 — doubtful if seen at all, there was something like a dark indentation on the preceding limb

9.48 a fair view nothing seen

9.52 — think I see it bright $\frac{1}{3}$ off the disc

9.53 certainly seen bright $\frac{2}{3}$ off

9.55 off the disc.

9.57 appears yet attached to the limb

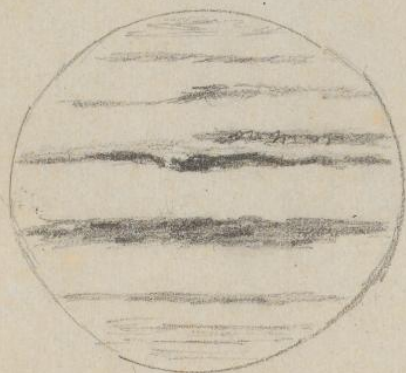
9.59 quite bright and quite clear of the limb. a little blueish under a cloud

10.05. It is not so bright as either of the others, it disappears soon

! 40^{3.2} order of brightness at 10.13

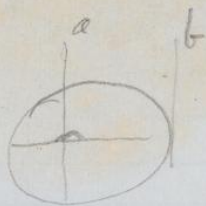
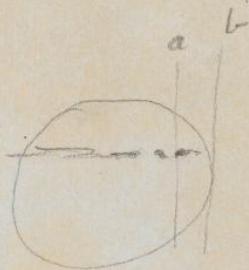
March 16th 18497^h Sid Lim = 7^h 24^m m.s.c.

not very good seeing

Limo
50.109^h sidereal
pretty bad seeing

424

7 ^h 27	49.38	} atob
7 ^h 29.20	50.90	
34"	50.90	
		0.76



8 ^h 48.30	52.79	} atob
	52.83	
8 ^h 54.30	53.04	2.71

a to a' a beautiful
straight white belt9^h 12 . 53.40

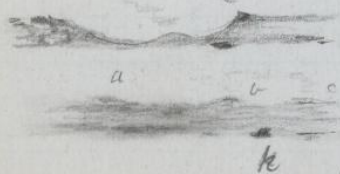
7 mole diameters	54.64
	54.55 belt
	54.58
	50.10
	4.48

9^h 30 53.73 } atob 3.63On March 23rd 1849 124.77^h 10^m

Jupiter was seen very much as shown on the preceding page

as seen on Mar 16th

For distances See Comet Seeker



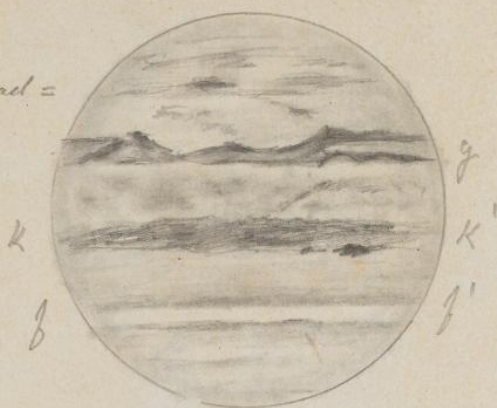
a vacancy to left of h?

perhaps a pretty certain c. certain b & well seen
indications of being double

March 16th9^h 45^m - 211 = 10.09 m.s.l.

Admirable definition

too broad =



Jupiter at intervals beautifully seen

The above is considerably like the upper belt

This is the first time I have seen Jupiter this year under the finest definition.

I think the above sketch of the upper belt quite a good one. But it is utterly impossible to put down all that can be seen.

The upper belt is in a manner double through most of its length. at $b-b'$ it has two dark but interrupted edges the space between being lighter if not entirely free from darkness. The upper part looks like a view of distant mountains at b' & c & d are summits at b' & b terminate in 1 or 2 dark spots & to the apparent left of them the belt is continued like a faint back ground & looks very beautifully. It is strongly marked & above it at e a dusky spot & traces of a connection with d & some thing in same appearance fancied at e but more diffused at a bright spots encroach upon the belt. The complete sketch is perhaps the best as to width. & the opening at g on

On the lower belt is a remarkably dark spot which when best seen is very small & almost black. The rest of the belt is not quite so uniform as represented.

& the Equatorial space is mottled with a streamer from i' between $k-k'$ & $f-f'$ is evenly dusky in view to $f-f'$ where it is suddenly interrupted by a fine narrow & straight bright belt which must extend nearly round the planet.

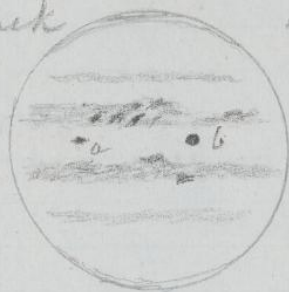
1849

March 19

Jupiter

At 6.50 Lamb. m. s.t. The shadow of the 1st Satellite and the satellite itself are both seen as dark spots on the disc of Jupiter. The former very black and rather elongated, the latter dark but round

shadow much larger than the dark part of the sat - perhaps 4 times the area



3 2 1
:
:
order of brightness

at 6.50 the satellite appears decidedly elongated

7. 2 - The satellite is seen rather faintly

7. 15 - I cannot see the sat steadily, there is at times an indistinct

7. 24 - The satellite is seen bright on the disc G P B

7. 26 - It is seen projected on the edge m.m.

7. 28.30 The sat entirely clear

7. 15

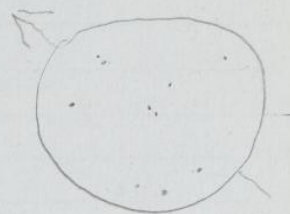


2 3 1
:
:
order of brightness

19⁺Orion

pair of mag. equal nearly white N of Orionis

Dist	Pos	Time
49.68	87°.0	49.32
49.64	86.40	49.33
49.60	87.30	49.34
49.61	86.30	
<u>49.59</u>	<u>85.30</u>	



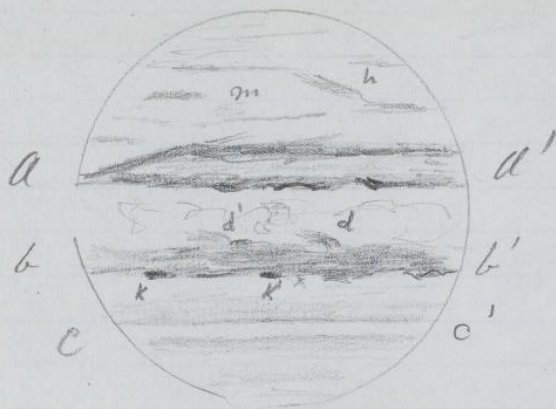
By 424
 Above Star 6.45.48 - 4.27
 W 3.19.00

Tried 860 on Orion's, brought it small & round
 but too misty to measure

March 19th 1849

9^h 10^m Sid = 9:20 m.s.t.

Line seen



$a a'$ is represented too broad but very distinctly double lower edge notched with brightish spots & pretty well defined edges

Some tending to duplicity in b, b' at d, d' are two flocculi disjunct & $k k'$ dark spots when best seen very small & quite black from c to c' is a bright belt evenly shaded from $b b'$ to $c c'$

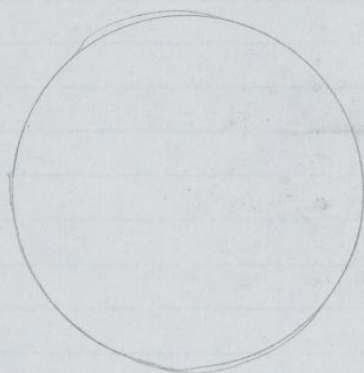
r 46.84
Sun 49.31

2.47 dist of k from true limb

Sun March 31st

March 22

Situation of the Satellites of Jupiter

6^h 16^m Comb. m. s. t.2
31
4

1 and 4 and 2 & 3 were in contact of limbs as nearly at the same time as I could determine, and in the position here given, but 4 was leaving 1 and 3 was approaching 2, but in neither case were they central at any moment - ~~4 & 3~~ to the centers of 4 & 3 passing apparently below ^{7.32} the centers of 1 & 2.

2
31
4

- 1 Is nearly white, not so bright as Jupiter, slightly orange tint.
- 2 Is nearly the same color as 1, but a little less dim.
- 3 - has more of the red
4. has a bluish tinge, and appears decidedly the smallest

March 23

Jupiter

Fine seeing

7.35 Comb. m. 16



The belts seem at times to be composed of cumulus clouds at 7.55 the sunmark above head band at a, is near the middle of its transit.

The great equatorial belts are not parallel, they are more separated on the following side.

The sat. are numbered in the order of their brightness. 2 & 3 are nearly equal - 1 is decidedly largest & 4 is certainly the smallest. 4 has a bluish tinge. 1-2 and 3 are a dull white not so bright as Jupiter.

8.20 a, is strongly past the middle. I have never seen any thing like it on the upper belts.

The belts seem certainly composed of heaps of clouds. They much resemble the clouds which we see over the ocean, on a very clear and cold morning in the winter.

There is no difference in the intensity of the N & S polar regions.

There are many bands, narrow & faint, on the north of the inner belt.

with 860 - #9 2 & 3 have a redish orange colour.

N1 pale orange, N4 contains the bluish tinge.

Each Sat. was brought to the mid field & comp'd with eye.

Note near the side of the opening!! -

Diameter of Jupiter from 860 (no 6)

25

Clock unsteady

Scumy road

Polar

Equa

Zero

45.793
45.840
45.772
45.740
45.755
3900
45.780
49.997
42.17

45.595
575
650
600
540
12960
45.592
49.997
44.05

49.993
50.002
50.000
50.000
49.990
5/249.485
49.997

at g - a, has disappeared on the morning side

For G. P. B. - Observations on
Jupiter side Comet - Scumy Road
p 79 March 23 1849 'Good Observations'
& measurements of K

March 27th 1849Estimates by Mr Lommel for the
Plates for the Description of the Observatory

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25.87

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~~95.87~~

95.87

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123.00

Addition of titles

3.00

Estimate of Plate of Transit circle

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53.25

53.25

Jupiter & Saturn for lithographing

2 Plates

Estimate

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66.50

Total estimate

\$ 66.50
\$ 341.62

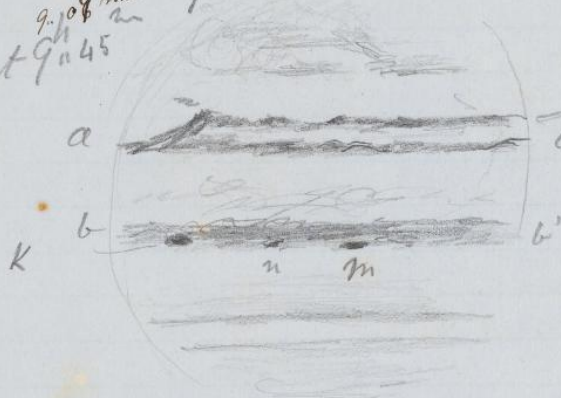
9.45	0.34.58.29
1.46	46.74
9.46.46	<u>0.35.45.03</u>
0.35.45	
9.17.01	9.20
1.30	1.46
9.08.36	9.21.46
	<u>0.35.45</u>
	8.46.01
	1.26
	<u>8.44.35</u>

9.25
~~0.35.45~~
~~8.44.15~~
~~1.26.9~~
~~8.42.49.1~~

10.05
1.46
<u>10.06.46</u>
0.35.45
<u>9.31.01</u>
1.33.5
<u>9.29.27.5</u>
11.35
1.46
<u>11.36.46</u>
0.35.45
<u>11.01.01</u>
1.48
<u>10.59.13</u>

March 31st 1849

K to pre limit
 424. 8" 44-35 m.s.t. 53.01 49.98 breadth of upper belt = 0.24
 9" 20 m 52.82 = 4.4
 9" 23 m.s.t.
 9" 108 m.s.t. at 9" 45
 good sunny



K when in the mid of disc very dark almost black & two
other spots on the lower J they grow black as they approach the
center
Can see the belts quite to the edge of the belt

At 10^h 05^m ^{9^h 29^m 27^s M. S. L.} Sidereal Time The belt a a' has now
double its whole length The planet moving not at all
sufficiently far away out The sudden depression on
the left at n is a dark place & at m another quite

At 11^h 35 by 424

2557 11^h 56^m 20^s
4241 11^h 49^m 45.8^s

at p a beautiful white spot or band
in the belt $h h'$
two or three curves

~~Re~~ 352 newly

double through post
perhaps curves at the
right edge of the
upper edge of the post

$$\begin{array}{r} 11.56.00 \\ 4.27.7 \\ \hline 11.51.32.3 \\ 11.49.45.8 \\ \hline 1.46.5 \end{array}$$

1 much the largest
is the 3rd Satellite

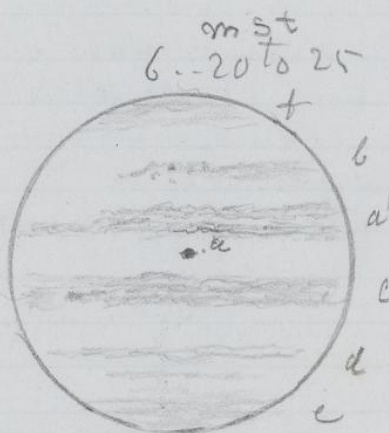
April 2nd

Third Satellite seen as a black spot as soon as the telescope was set on Jupiter

M.S.Z. 6^h00 Satellite quite black before sunset
 Black Sat. diam^{te} = 0".4 not less
 Jupiter looks of a reddish buff before sunset
 very dusky at the poles

at 6^h15^m 48.215 Sat. from Jol. limb
 zero 49.98
 1.76

a is the 3 satellite on the wire quite black



Two of the satellites were easily seen while the sun was shining bright

- a' is divided on the full part
- b is very strong with a well defined head and preceding
- c is nearly even, something of a projection or mountainous appearance the preceding appear above
- d a smoky belt
- e misty yet striated
- for even not so dark at e

m.s.z. 7.15 .3 Sat. quite black

April 22

Transit of 3rd Satellite2nd ap

Sidereal time

at 8.4 The 3rd Sat is just visible
large, and about as dark not black
as the lunar belt or lighter

3rd Sat goes off at 9.3
No shadow comes in 9.58
1st Sat comes on - 9.32
No shadow comes 10.38

8.10 - I cannot see it. It is tolerable rainy

8.18.30. Sat emerged from the limb Bright

8.12.20 - nearly half off.

8.13.00 full half off

8.15.30 contact of limbs

8.17 - The light of the 3rd Sat is as white and vivid as that
of the brightest parts of Jupiter, or the 1st Satellite which
is coming on. The 3rd is however, now, the smallest

8.21 It may be an optical illusion but the limb of Jupiter
on the part where the 3rd Sat came off appears flattened and
that at several repeated examinations. qu. has the Sat
an extremely atmosphere?

8.25. the 1st & 3rd Satellites are nearly equal.

8.30



3 brightest

4 next

1 & 2 nearly equal

3rd Sat was soon the
brightest or equal to the next.

By 239

8.34.40 - 1st & 3rd Satellites nearly equally distant from limb of Jupiter

8.37 - 3 Sat is larger & brighter than the 1st

Transit of First Satellite

8.46.20 1st contact of 1st limb of 1st Sat

8.48.27 1/2 on - yet the whole disc is seen whiter than any part of Jupiter

8.51.10 all on & brighter than Jupiter white

8.55.0 It is yet seen brighter than Jupiter, 1

9.00.0 faintly seen, yes.

April 2nd

L on S. 5.00 by 4 P.M.

9.0.50 } Shadow of 3rd sat comes on.
 9.3.0 } cannot see the first satellite } have seeing
 9.10.0 } Shadow of 3 sat. black & full

at 9.58 by 424 sid time the shadow is far ahead
 the first sat is not visible

9.23.0 The principal belts are not parallel (exactly)
 9.29 more open on the following side

9.48 During the last 20 minutes, when the planet has
 been quite still, I have seen a dusky spot in the
 place of the 1st satellite, it has increased its
 distance from the shadow of the 3rd.

9.56 Sid 10.39. the shadow of 1st sat is fully on
 424

9.57.30 I see the 1st sat. small & dark, the shadow
 of the 3 and of the 1st. this is certain

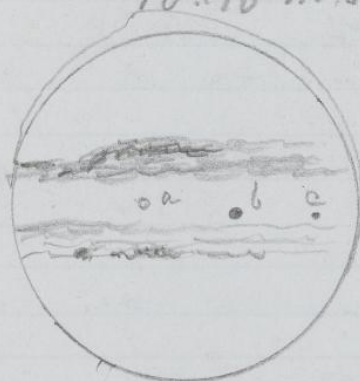
9.59.30 It is again seen again briefly

10.4. It is now seen steadily, but is rather larger

10.10 It is not very black, but yet dark

10.10 m.s.t

2 1 3
 order of brightness



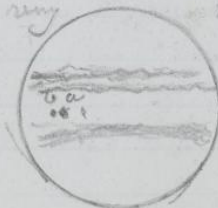
a first sat
 b shadow of 3rd sat
 c shadow of 1st sat

10.15 the shadow of the 3 sat is 3 times the size of the shadow of
 the first and is blacker.

10.17 the first sat is still steadily seen, it is a very dark
 and small object

11.40 m.s.t. 239 (Sat. next page)
 1st sat is small but has very nearly regained its brightness, it is

3 2 1 4
 order of brightness
 of satellites



The upper belt is double nearly
 way & straight, the lower
 seems curved upward & is
 more deepened in spots.

April 2

1st Sat comes off at 11.52 ^h 12

2557-11.19.00 2557-11.20.00
 424-11.12.33 239-10.30.29

11.19.00
 4.33
 11.14.23
 11.12.33
 1.50

239-11.2 The 1st sat is bright on the disc near the edge
 11.5 The projects bright
 11.5.30. It seems half off. Fine seeing
 11.7. Last external contact.

11.8 The shadow of the 1st sat has nearly overtaken the shadow of the 3rd.

11.9 - The sh of 1st is in contact with the sh of 3rd

11.10. They look like an elongated black spot

11.13 The 1st satellite is bluish & small



11.15 The eclipse is very nearly central

11.16.30 dist. of the two 48.767 shadowy from prec. limb
 here 49.980

11.18.30. the shadows, yet seem concentric. they are a little nearer the lower belt than the upper

11.22. The 1st is coming out brighter of pale bluish colour yet

11.22.30 The first sat totally disappeared! no doubt of this

11.23.40. I can just faint.

11.24.30. grows brighter

11.25.5. much brighter



see the 1st sat again it is very

The sky is perfectly clear & the finest seeing

11.27.30 contact of shadows of 1st & 3rd sat. (last contact)

11.31.25 The shadows are clear of each other the smaller precedes the larger

April 2^o

11.49. The 123 shadows are approaching the edge, the little one has got a considerable start of the big one, and if there is any deviation of the line of joining their centres, from being parallel to their motion, it is that the little one or shadow of 1st out is above, the diff cannot exceed two tenths of a second at conjunction

12.3 the 1st shadow is on or very near the edge

12.4.30 - It is yet seen

12.5.10 I see it yet very close to the edge

12.6.10 half off

12.7.5 has the same appearance as hanging on the edge

12.8.15 Jupiter's limb appears indented

12.10-0 all gone, no trace of it visible

12.12 The upper Equa. belt is more strongly divided than I recollect to have seen it before

Shadows of 3 Satellite passing off

12.19 order of 3. 2. 1. 4.0 brightness

12.27 within a second of the limb. the 3rd Sat

12.30 a close contact

12.32 partly off

12.34.10 half off.

12.36 J's limb indented.

12.37 can just get sight of the shadow

12.39.30 all gone

The first satellite is yet the smallest, not more than half the brightest size of the 3rd - but is just about as bright.

In regard to the disappearance & reappearance of the 1st satellite, I look'd to the some 2 shutters, all were clear, & as the wires they were out of the way. There was no suspicion of a cloud, and the 3 satellite was close by without being dimmed.

April 4th 1849 P.M.
 8^h 20 Sid

Jupiter



0.50.44.49
 46.74

0.51.31.23

8.20

0.51.31

7.28.29

1.13.4

7.27.15.6 m.s.c.

8.15

0.51.31

7.23.29

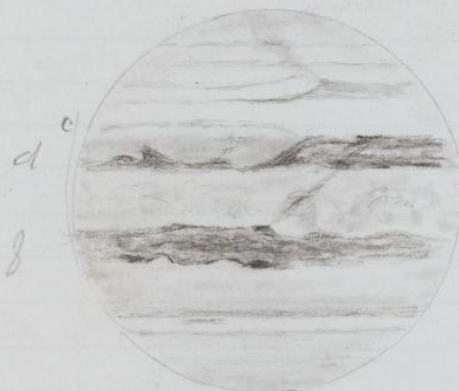
1.12

7.22.17

7.22 m.s.c.

8.15 Sidereal

pretty good vision



rather broad

There is a faint strip from a joining the great belt. & the background below it, seems to be shaded.

The region round the South pole is most inclined to ~~be~~ diversified with belts & is then the South between d & f beautifully clouded. The hollows on the lower left hand edge of f are conspicuous. The brighter belt below has a little dark place on the left hand.

The northern equatorial belt is darkest.

$$24 \overline{) 90} \begin{matrix} 3.8 \\ 12 \\ 18 \end{matrix}$$

$$\frac{9}{24} = \frac{3}{8}$$

$$\frac{3}{8} 91^S =$$

$$\begin{array}{r} 8 \overline{) 91} \\ 11.4 \\ 34.2 \end{array}$$

$$21..16..38.4$$

$$21 \ 17 \ 13$$

$$\begin{array}{r} 8 \overline{) 305} \\ 38.1 \\ 114.3 \end{array}$$

$$11.541$$

$$109..38..39$$

$$109 \ 36 \ 45$$

$$16.55.40$$

$$2..20$$

$$16 \ 58..00$$

$$21..22..56$$

$$4, \ 24 \ 56$$

$$17.01.07$$

$$17.02.28$$

$$1..21$$

$$17.04.12$$

$$05.37$$

$$1..25$$

$$+ 12^{\circ}$$

$$+ 11^{\circ}$$



$$*_{102}$$

$$= 33.5 \text{ beats}$$

$$17.29.50.2 \quad -10 \text{ beats}$$

$$17.30.48.3$$

$$17.30.04.7$$

$$17^h 22^m$$

$$30.15 = 33.5 \text{ beats}$$

$$\text{Star } 9^{\text{th}} \text{ below } 4^{\text{th}}$$

$$\text{Star } 8^{\text{th}}$$

$$\begin{array}{r} 17.49.04.5 \\ 18.6 \end{array}$$

$$\begin{array}{r} 17.51.10.0 \\ 23.8 \end{array}$$

$$17.56.30$$

neither star seemed to be Metis

The trouble is that the daylight comes on so soon that there is no chance to get a thorough sweep for the planet.

Then again there are few stars in this region which have been observed. So that there is little else about as soon as you recognise the known stars in the neighborhood it gets too light to see them.

April 6th 16th 16th

Metis R 21.18.43
Dec - 19.31.40

741

12.21

3.39

5^m 40^s
2^m 50^s

Lalande 41449

x 5^h 21.13.19
- 19.22.06"

Stn 6th 30 Cap

(mer 3^m 46^s
in N 45.40^s

30 Cap 21^h 09^m 32^s - 18.36.32 6^h
31 " 21.09.52 18.05.12 6^h 1/2

17.20^m 18^s
3.47
17.24.05

8.20.10 32.14

Tried for Metis again but
it clouded up just as I had found
a known star near it

H.C. 41606

8 1/2 9^h 21.17.19 - 19.14'

11 17.27.27
3.39.50
21.07.17

17.42
19.35
1.53

17.49.43.5 Stn 8th on spec
8 cor to mid field

h 17.49.35
3 25.20
21 14.55

Int cor 2.20

21 17.15 = H.C. 41606

a Stn 19th follow H.C. 41606 by dir = 4^m 32^s & is S. of it 2'.12"
b 9 " 2.46 " 6'.0
d 21.17.19 11 " 5.12 " 2.5
c 4.32 12 " 4.58 " 6.0
21.21.51

10 a R 21.21.51 Dec - 19.16'
9 b " 21.20.05 - 19.20
12 c " 21.22.17 - 19.20
11 d " 21.22.32 - 19.16

These places are in
some doubt

April $\frac{8^h}{9^h}$ for Metis

320° 29'

21^h 201^m 5221^h 21^m 58 - 19° 22'21^h 2221^h 13^m 20

.68.40

21^h 2221^h 17^m 20

04.40

21^h 22.0021^h 17.20

4 40

17.37

41 19. 21^h 00.0

424 19.10.40.3

16. 56.40

2.20

16. 57.00

21^h 13.20

4.16 20

17.00.47

4^m 10.0021^h 10.47

17 15. 34.8

16 16.0

21^h 8^m9^h 8^m9^h 10^m

Computell places

17.04.27 + 4

17. 08.27

17.13.07

88.30

9^h 10^m9^h 11^m9^h 12^m 4^s 5^s 1^s 8^sat 17.22 saw dec
tree a little South17 18 30.3
42.717 19 10.5
19 23.7

17 19.08

17 19.08.5

* Metis? 9^h mag 21^h 21^m 51^s
17.36.54 ~~21~~ Dec - 19° 22'17 32 11
32 25 } 8^h 17.37^s
49

17.37.37-10

63.89

17. 32.25

3 42.23

21. 14 48

H 8.34.40

40.20

41 00

17 43.16.7

9^h 8^m n p

17. 46.03.0

21^h 9^m 4^s 5^s 1^s

17. 48.48.0

10^h 62.9217. 57.48.0
17. 58.28.2H = 8.34.40
3 25.20

17. 49. 43.5

17 54. 15.7

4. 32.2

9^h 8^m
63.47 21^h 10^m 10^s in 5.827. 17.19
21.15.00

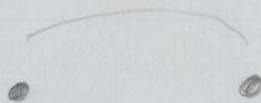
18.34.00

2.41.00

Probably the above were stars
asterisk which unfortunately was thought to be in too small CR
until it was too late to follow it. except that marked with an

April 9th 1849h m s
6.37.41 m.s.t.

424 7.50 Sec.

1 each
equal

Fair sun

h m s
7.27.33 m.s.t.

424 8.40

2 decidedly less
bright than 1
smaller

1.10.27.25

46.74

1.11.13.99

7.50

1.11.13

6.38.47

1.5.32

6.37.41.28

8.40

1.11.13

7.28.47

1.13.5

7.27.33.5

April 9th 1869424 slow 2^m 20^s

First contact
Half on
Bright on the disk

8^h 12^m 20.10 m.s.l.
9^h 22.35
8^h 18.44.1 m.s.l.
9^h 25.40 m.s.l.
9^h 33.

Got to be bad seeing very
suddenly

At 424 9^h 42^m
See the Satellite on the disc
as a bright spot brighter
than any part of the planet
9^h 52^m nothing visible
of the Sat.

At 10^h 40^m See the Satellite
seen as a dark spot perhaps elongated in the
direction of the belts. It is not quite black
but almost so. R.F.B.

9 ^h 22.35	9 ^h 29.00
2 ^m 20	2 ^m 20
9 ^h 24.55	9 ^h 31.20
1 ^m 11.13.99	1 ^m 11.14.0
8 ^h 13.41.01	8 ^h 20.06.0
1 ^m 20.87	1 ^m 21.9
6 ^h 12.20.14 m.s.l.	8 ^h 18.44.1 m.s.l.

For duties

88.11 April 9^h 10^m 1949

9.12.00

L

9.16.16

4.44

21.00

12

 $\frac{9}{24} = \frac{3}{8}$ AR 21.23.12
- 19.178^L 21.13.19
- 19.228.9 21.17.19
- 19.14320.37' = 21.22.28
- 19.19.40

16.16

5.30

21.46

12

9.46

 $\frac{2}{5}$

16.51.20

2.00

16.53.20

21.17.19

4.24.00

16.52.54

4.24

21.16.54

Lines not perpendicular
by 10.30'

16.58 24.5 H = 4.12.04

17.02.29. < 17.05.15

06.58

17.07.42

09.15

09.31

17.10.00

17.10.20

12.19.8

12.31.5

4'5

17.10.04.3

19.7

17.12.17.0

19.0

12.50.2

0'

10.24.0

12.36.0

13.02.2

13.15.0

20"n

10.47.8

23.8

13.00.0

24.0

13.35.1

5'5

11.08

20.2

13.20.5

20.5

Wires not perp by 1.30'

Wires perp night, adjusted
21.11^h (6) S.p. 21.27 (7)

41

17. 21. 17.4 0^h 3' S
23 02.0 10 0
23.41.7 11 0

25 19.0 18.3 11^h 3' S
25 37.3 24.7 9 2' N
26 02.0 20.2 9 2' N
26 22.2 11 3' S

17. 29. 04.0 18.4
22.4

30 57.3 17.4
30 15.2
30 30.8 18.2
30 49.0

07.0 18.0
25.0

Star 11^h = (5) S.p. Star 8.9^h = (6)

17. 34 74.00
17. 36 73.68
17. 37.40 73.71
17. 59 73.81

39. 29.1
39 47.2

40 " 19.2
37.2

55. 19.7
37.6

56 06.7
24.7

56 46.2
04.3

41 08.0 18.0
26.0 24.2
50.2 21.6

42 11.8

15.0
36.0

58.8

17.0

A (1)

H 3.28.20

(2)

Telescope fixed

above

17. 46 25.0 } Star 8^h
46 41.2 } 2.30^h N of center

17. 49 13.7 } Star 9^h
30.2 4.30^h S of center

(Metric) = (5) 12^h mag.
52 35 3' S star (6)

(3)

Center

(4)

Center

50 56.6 10^h
51 13.0

17. 51. 37.0
51 53.0

55 14.3
57 14.3

53. 32.3
53. 56.6

54. 18
21.4

B

18.0

24.3

21.4

A is 40" N of B (cp below)

(1)

A on the wire (2)

(7)

(8)

A 8^E9^E 5' S of A9^E

40" above

9^E

15" below

18 06 29.0

18.09.19.

0

18.13.37

18.14.01

A = 9^E

In bright star near

19.05.08
 18.02.03 18.19.55.2
 18.50.00 254.52
 2.57.57 21.14.47

18.16.56 - 19.13.40
 2.57.57 1.25
 21.14.47 - 19.12.15
 + 2.24 further
 21.17.11

observed

	Star A = (1)	R	Dec
8 ^E	(1)	21.17.14.6	-19.14.03"
9	(2)	21.20.03.5	-19.20
9.10	(3)	21.21.46.3	-19.16.15
11	(4)	21.22.26.3	-19.16.10
12.4	(5)	21.23.47.6	-19.18.40
11	(6)	21.23.47.6	-19.18.40
8.9	(7)	21.24.05.6	-19.14.45
8.9	(8)	21.24.29.8	-19.13.45
11	(9)	21.24.50.0	-19.21.30

at 16.16^m
320.37.22

21.20

2.24.5

21.22.30

at 16.16^m Camb

Gould's Eph.

data R 21.22.30^S

Dec -19.19.48"

Graham R 21.23.12
 -19.16.50

21.58.00

18.35.44

3.22.20

8.40.41

18.36.18

3.19.19

21.55.37

21.58.01

+ 2.24 cor inst R

18.33.20

2.20

18.35.44

a square on the wire

-1.04.30"

-1.03.05"

+1.25 cor inst R

R from N.A. Jan 1849

+ 2.24 cor inst R

3.38.20

169.100

338

2.45.72

21.14.28.89

Star A R 21.17.14.61

15.052

50

752600

15.05

737.5

12.17.5

19.26.18.5

19.14.01.0

obsd in H.C.

Star A Jan 1849

R 21.17.14.61 Dec -19.14.01.0

21.17.14.71 -19.14.04.3

R 21.17.14.66 -19.14.02.6

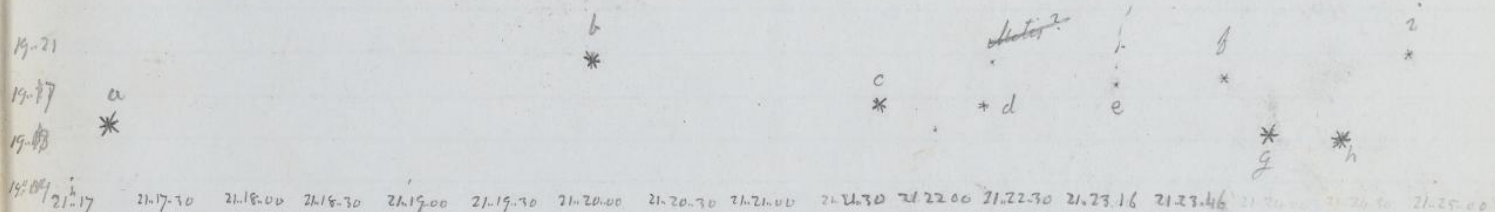
47.08

April 9th - 10th 1849

Stars observed in searching for Metis

	mag.	R	Dec	
a	8 th	21 ^h 17 ^m 14.7	-19° 14' 03"	Hist. Cat 41606
b	9 th	20 ^h 03.5	19 ^h 20	Star obs'd on the morning of the 8 th 9 th
c	9 th 10 th	21 ^h 46.3	19 ^h 16 ^m 15	"
d	11 th	22 ^h 26.3	19 ^h 16 ^m 10	"
(Metis) e	12 th	23 ^h 08.5	19 ^h 18 ^m	
f	11 th	24 ^h 07.8	19 ^h 18 ^m 40	No motion in 25 ^m
g	8 th 9 th	24 ^h 21.8	19 ^h 14 ^m 45	
h	8 th 9 th	24 ^h 46.0	19 ^h 13 ^m 45	
i	11 th	21 ^h 21.5	19 ^h 21	

This was Metis



It seems that the reason of my not finding Metis before was on account of its being so very small only the 12th mag. & I did not expect it to be less than the 11th & let 12th mag stars pass.

Metis April 9th - 10th 424 17^h 52^m 35^s = Sid time 17^h 54^m 55^s
 Did not recognise it until the 12th
 R 21^h 23^m 08^s } April 9th 16^h 40^m
 Dec -19° 18'

17^h 52^m 35^s

April $\frac{11}{12}$ 1849observed at 16^h 16^m

Graham R 21^h 26^m 10^s Dec - 19° 06' 43"
 Gould 21^h 25^m 28^s - 19° 09' 41"

Star 8.9^h R 21^h 24^m 21^s Dec - 19° 14' 45"
 21^h 24^m 46^s - 19° 13' 45"

New Comet April 11th

h m s - 4 beats

comp 40" S p 45°

2557 11^h 11^m 44^s Star 8.9^h S. p the comet Star is double that n/ is used
14^m 43^s Comet is n/ Star 74.17

Star	Comet	d/R
11 ^h 16 ^m 33.8	11 ^h 19 ^m 32.5	2.58.7
51.8	50.5	2.58.7

11 ^h 20 ^m 36.7	11 ^h 23 ^m 34.7	2.58.0
55.0	52.3	2.57.3 ?

Comet was first seen at about 9^h 30^m It was near
 3 or 4 stars of the 10th & 12th magnitudes which with its diffused
 light made it look like a coarse cluster in the Comet seeker
 & it would have been so regarded had it been in the Milky
 way

April 11th P.M. New Comet.

15^h 04.24
+28 40

61.20

45

29.8

Star of Comp on a dot on the wire

$$\begin{array}{r} 11.30.08.7 \\ 8.48.05 \\ \hline 15.71.13.7 \end{array} \quad \begin{array}{r} 18.15.55 \\ 61.27.50 \\ \hline 28.32.10 \end{array} \quad \text{Dec}$$

Star of Comp in H.C. 27761
obs'd. R 15^h 06^m 24.0
" Dec +28° 30' 01"

$$\begin{array}{r} 11.34.22.5 \\ 3.36.51.0 \\ \hline 15.11.13.5 \end{array} \quad \begin{array}{r} 18.23.09 \\ 61.27.48 \\ \hline 28.32.12 \end{array} \quad \begin{array}{r} 15.06.23.02 \\ 4.49.58 \\ \hline 15.06.23.02 \end{array}$$

$$\begin{array}{r} 2.543 \\ 127.150 \\ \hline 124.61 = 2.04.61 \end{array} \quad \begin{array}{r} 15.04.17.23 \\ 15.06.21.84 \end{array}$$

$$\begin{array}{r} 11.41.52.5 \\ 3.51.15 \\ \hline 15.33.07.5 \end{array} \quad \begin{array}{r} 18.08.45 \\ 62.44.15 \\ \hline 27.15.45 \end{array} \quad \begin{array}{r} 15.06.23.02 \\ 4.49.58 \\ \hline 15.06.23.02 \end{array}$$

$$\begin{array}{r} 13.916 \\ 60 \\ \hline 13.856 \\ 50 \\ \hline 692800 \\ 15.86 \\ \hline 1678.94 \\ 61.18.24.4 \\ \hline 61.18.24.4 \\ 261.29.43.3 \\ \hline 28.30.16.7 \end{array} \quad \begin{array}{r} 13.783 \\ 50 \\ \hline 68.650 \\ 13.73 \\ \hline 572.8 \\ 11.12.8 \\ \hline 61.18.24.4 \\ 61.29.37.2 \\ \hline 28.30.22.8 \end{array}$$

$$\begin{array}{r} 11.45.40.0 \\ 3.47.27 \\ \hline 15.33.07 \end{array} \quad \begin{array}{r} 18.12.33 \\ 62.44.18 \end{array}$$

Star of Comp. in H.C. 27761

$$\begin{array}{r} 15.28.17.67 \\ 4.49.58 \\ \hline 15.28.17.67 \end{array}$$

$$\begin{array}{r} 15.06.21.84 \\ 4.49.58 \\ \hline 15.06.21.84 \end{array}$$

$$\begin{array}{r} 15.06.21.84 \\ 4.49.58 \\ \hline 15.06.21.84 \end{array}$$

$$\begin{array}{r} 15.04.34.00 \\ + 48.21 \\ + .01 \\ \hline 15.05.22.22 \\ 1.01.03 \\ \hline 15.06.23.25 \end{array} \quad \begin{array}{r} 28.35.43.3 \\ - 10.4 \\ + 0.6 \\ \hline 28.35.33.5 \\ 5.31.8 \\ \hline 28.30.05.3 \end{array}$$

$$\begin{array}{r} 2.545.002 \\ 24 \\ \hline 10180 \\ 5090 \\ \hline 61.082 \\ 48 \\ \hline 61.034 \end{array} \quad \begin{array}{r} 13.81+.025 \\ 24 \\ \hline 55.24 \\ 276.2 \\ \hline 331.44 \\ +0.4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 15.06.21.84 \\ 23.25.366 \\ \hline 24.00 \end{array} \quad \begin{array}{r} 15.06.21.84 \\ 23.25.366 \\ \hline 24.00 \end{array}$$

The Star of Comp. seems to have a proper motion.

April 11th 1849 Web Comet
Comet N of Star 10th 11th mag = a

10^h 58^m 29 53.59

11^h 00^m 05 53.44

11^h 01^m 33 53.56

11 02^m 54 53.61

Sum at as 3rd

Comet's Nly. mo in R = -14.7^s diam.

" Ecl = 32.4 South

1.68) 58.4 (32.4

54
44
36
80

49.5
1.68) 24.7 (14.7

790
672
1180
1176

54
38
92

24.57

at 12^h 03^m { 29.5 beats Comet proceeds a
31.0

12^h 05^m { 30.0
31.0

50 beats Comet proceeds
49 at 12^h 42^m

Comet 5080

47.61 at 12^h 41^m
2^h 50.01
2 40
3^h 36
5 96 = 58.4

14.7
83
44
1176
1720
2^h 58.7 cal
2^h 46.5
2^h 45.6

Star 8th = A
12^h 07^m 00.5
18.3

Comet
12^h 09^m 46.2
10 04.4

dR
2^h 45.7
2^h 46.1

A is double brighter

mid

dR

12^h 09.8

10.0

13.8

14.0

31.0

36.3

34.6

34.8

12.2
2^h 57.7
2^h 45.9
2^h 45.0
24.44
24.9
24.15
147
2805
1680
415
6085

12^h 11^m 01.8
" 19.5

12 13 46.8
14 04.5

2^h 45.0
2^h 45.0

Comet N of Star 70th 50

12^h 21^m 20
12^h 26^m 55

70.71
70.30

} Comet N of Star Zero 50.01

12^h 28^m 21.5
36.7

12^h 31^m 02.0
17.2

2^h 40.5
2^h 40.5

12^h 31^m 54.2
32 09.4

12^h 34^m 34.2
49.5

2^h 40.0
2 40.1

For Meets April 11th

17^h 48^m
2 20
17^h 42^m 20
21^m 24^s 46
3 42 26

20^m 05
1^m 25
1^m 18^m 40
1 2^m 22^s 25
11^m 03^s 45
7^m 37
10 56 08

14.7
22
294
294
323.4
5^m 23^s
2^m 43
2^m 40

17 41.37
42 14
42^m 43
X 43^m 06

17 49 34.4 3' S
50 39.2 4' W

17 51. 23.2 105.1 52. 33.2 105.0
52 28.3 53 45.0 55 38.2 105.0
105.1 38

18^h 01^m 30^s
or
01.45

18^h 06 04.0

20.48
40
2008

18^h 04 43
2.26

18^h 07 51.8
09^m 59.8

50.8
54.2

Times by 2557

d.R. p follows *

d S p N of Star

12^h 09^m 8

2^m 45.7

12^h 21^m 20^s

20^m 70

10.0

46.1

26.55

20.29

13.8

45.0

15

21

14.0

45.0

12^h 24^m 07^s

20^m 48 = 3^m 20^s 8

31.0

40.5

- 1.42

cor

+ 0.9

31.3

40.5

2557 12^h 22^m 25^s

dif Dec 3^m 21^s 7

34.6

40.0

28^m 30^s 05.3 Jan 1st 1849 B.Z. 366

34.8

40.1

p Dec = 28^m 33^s 27.0

of 179.3

229

22.41

22^m 42.86

12^h 22^m 25^s

15^m 06^s 23.25

2557 + 5 00

15^m 09^s 06.11 = p.R.

12^h 17^m 25^s

Red. by Y. G. S.

1^m 18^m 08

Jan 213^m 58^s 37.1

10^m 58^m 17

Lat 44^m 03^s 31.8

1^m 48

10^m 56^m 29 = M.S.Y.

Apr. 11^h 55^m 48^s Jan 213

1849 April 11^h 10^m 56^m 29^s Camb m.s.t.

Comets R 15^h 09^m 06.11 } Mean Eq.

Dec 28^m 33^s 27.0 Jan 1st 1849

8^m 30^s 05.3

Star of Comp B.Z. 366 Seems to have a proper motion

* R 15^h 06^m 23.25

Dec + 28^m 30^s 05.3

April 12th

8^h p R free the double star 2^m 40^s
Dec is S of " 7' or 8'

~~Star 8th~~15^m 06^s 23.25 28^m 30^s 05.3 Double Star 8.9

7.31.81

12.20.5

AR 15^m 13^s 55.06 & 28^m 17^s 44.8 Star 8th

By 2557

Comet follows * 9th = (1)

9 ^m 21 ^m 30	9 beats
22 ^m 10	9.5
22 ^m 43	9.5
23 ^m 10	9.0
23 ^m 30	8.8
18 ^s	9.16
9 ^m 22 ^m 36	diff 4.58

9 ^m 25.00
26.00
27.00
28.06
28.52
9 ^m 27 ^m 00

18.62 Comet S of Star
18.85
18.68
18.73
18.57
18.69

18.69
50.01
31.32
63
306.9 = 5^m 06.9

Comet

follows * 9^m 31^m 07 5.5 beats
31^m 30 5.0
32^m 00 4.8
32^m 45 5.0
33 15 4.0
37 24.3 4.86
9^m 32^m 07 diff 2.43

9^m 34^m 48.8 } Star of Comp 9th (1)
35^m 12.6 }
37 39.4 } Star of 8th 9th double (2)
38 02.8 } Same as did last night
2^m 50.6
29.13 2^m 50.2

20^m 29^m (1) S of (2)
50.01
29 72
5.9
29 1.3
20 67
50.01
d 8^m 49.3

2557 diff AR Comet follows (1)
9^m 22.6 4.58
9^m 32.1 2.43
9^m 27.24 = 3.50 p follows * (1)
5.02 5^m 06.9 p S of "

diff AR
(1) free (2) 2^m 50.47
(2) 15^m 06^s 23.25
AR (1) = 15^m 03^s 32.78
p diff AR 3.50
p AR 15^m 03^s 36.28
15^m 03^s 36.40

(1) S of (2) 4^m 49.3
(2) 28^m 30^s 05.3
Dec (1) 28^m 25^s 16.0
p d 8 5^m 06.9
p Dec 28^m 20^s 09.1
28^m 20^s 09.2

9^m 22^m 19
1^m 23 03
7^m 59^s 16
1^m 18

7^m 57^s 58 d 57

Comparison with
from the 182766

By comparison indirectly
with Star of last night.

April 12th 7^m 57^s 58^s Comb m. s. t. 1849p AR 15^m 03^s 36.28 } Mean Eq.Dec 28^m 20^s 09.1 } from 1849

April 12th Rk 1849

Zun 50.02

Sta 14th Sof (1)

K

$$\begin{array}{r}
 31.34 \\
 31.34 \\
 \hline
 31.34 \\
 50.00 \\
 \hline
 18.66 \\
 37.0 \\
 \hline
 182.9
 \end{array}$$

3.02.9

K

 10" 45 13.0
 32.2

 10" 46 " 11.2
 30.0

dR

58.2

57.8

The star is wanted
for the morning sky.

Star (1) B2 366

$$\begin{array}{r}
 2.546 \\
 24 \\
 \hline
 10184 \\
 5092 \\
 \hline
 6180
 \end{array}$$

15.01.43.58

+ 48.21

+ .01

28.31.01.5

- 10.0

+ 0.6

 10" 47" 13.8
 47" 33.0

 48" 12.0
 31.0

58.2

58.0

K prec (1)

58.05

l prec K

7.90

l prec. (1)

1.05.95

K prec (1)

1.05.50

16 beats

16

15.5

15.5

16.0

15.5

Time star of the 9th 10th

K

 11" 02. 14.0
 02 40.0

(1)

 11 03. 11.8
 03 " 38.1
(2) double star 9th WJ K
$$\begin{array}{r}
 11 06 02.5 \\
 06 28.6 \\
 \hline
 2.50.7 \\
 2.50.5 \\
 \hline
 3.48.5 \\
 3.48.6
 \end{array}$$

K preceds (2)

2 prec K

3.48.55

7.95

3.56.50

dR

l preceds (1)

1.05.78

(1) R 15.03.32.78

* l R 15.02.27.00

l. s of 11 9.54.6

dR 28.25.16.0

l. s of 28.15.21.4

my star is of the 10th mag

7.88 l s of K

8.16

8.13

8.09

50.00

41.91

41.84

41.07 = 6.50.7

K s of (1) = 3.02.9

l s of (1)

dR

l s of (1)

9.53.650.02

9.55.7

9.54.2

24) 88 (3.7
2760x Cap. fol 6^m = 26'another sp 1^o 30'
7 1/2 d 8 47'

April 12/13 1849

dictor Graham
GouldR^m 21^h 27^m 38^s
21^h 26^m 56^sDec 19^o 01' 40"
19^o 04' 38"

No. 7507

Sta 7thR 21^h 28^m 55.5^s
Dec - 19^o 06' 37"

April 12-13

After six trials, on the seventh found Metis it is
very faint, luckily this time it was close to a bright star17^h 35.00
5.0017^h 30.0021^h 29.003^h 59.00

Observed with 2557

1^h 22.16.4
46.7
1^h 23 03.6Metis compared with
a star of the 8th mag.5^h 05

2557

Metis prec. a star 8th17^h 42^m 14.0

25.3

17 45^m 10

25.0

17^h 58^m 56

24.5

18^h 01^m 40

24.1

18 06^m 27

23.5

18 08^m 41

23.0

48 43 08

6 25 4

17^h 57^m 45

diff. 24.23

5^h 03

0.02 correct

17^h 52^m 081^h 23 0416^h 29 0416^h 26 22 = 11.5%12.5 beats at 17^h 5017 41 39.8 10.4 12^h 2' N
49.4 24.6 11.12 2' S
Metis 42 14 0 12 2' S
42 39.3 25.3 8^h 2' S
43 37.3 58.0 744 34.8 10.7 12^h 3' N
45.5 24.5 12 1' S
Metis 45 10.0 12^h 4' N
45 35.0 25.0 8^h 3' N
46 32.7 57.7 7^h 7^h 22^h17^h 52^m 32.5 Sta 11.12 4' S
48.3 12 4' NSta 7th R 21^h 28^m 55.49 Dec - 19^o 06' 37".4
58.27 2^h 49.0Jan 1849 8th R 21^h 27^m 57.22 Dec - 19^o 03' 48.4Metis diff. - 24.25 d dec 1^h 25.5Metis R 21^h 27^m 32.97 - 19^o 02' 22.9April 12th 16^h 26^m 22^s M.S.T.Metis R 21^h 27^m 32.97 Mean Eq.Dec - 19^o 02' 22.9 Mean 1849Mean Eq. Jan 1st 1849April 12th 16^h 26^m 22^s Camb m.s.t.The planet was equal to a star of the 12th magnitude.

2.53
160

22

51

2557

1.4

5.6

24) 300 (12.5
26
60
120250
250
250

Matis

hly mo 12.5 in dec

58.56

50.06

85.6

17

83.9 = 1.23.9

at 18^h 10^m 30^s Matis NG Sta 8th 1.23.9

Cor

17.57

ref d8

- 2.7

1.21.2

+ 1.3

1.22.5

18 01.04.0 10.5 12

14.5 12

Matis 01 40.3 25.8 12

02 04.4 24.1 8

03 02.5 15.1 8

Matis 06 27.5 12th

07 51.0 23.5 8

Matis 08 41.0 23.0

09 04.0

12 21.0 Matis

12 38.4 17.4
5.4
22.8

75 10.8

175

28.3

5.4

22.9

d Cor = 5.9 - 0.5

13. 30.5

48.0

17.5

5.4

22.9

Sta 8th NG Sta 7th

32.85

32.76

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

32.40

18^h 34^m 43.0 H 9^h 00^m 39^s - 19^h 02^m

21 34 03 - 5.03 = 21.29.00

Sta 8th proc Sta 7thSta 8th n p Sta 7th

18 31 02.7

d.R 0^m 58.25

d8 2.48.6

14.8

or ref + .02

0.4

Sta 7thd.R 0^m 58.27

d.R 2.49.0

18 32 01.6

13.0

58.3

58.2

58.2

Star L April 12. 13 ^h ^m ^s ^{dec}
(1)

l. prec. (1)

16 " 07. 52.0
08 11.8

16 " 9 50.0
10 09.4

~~1. 58.0~~
~~1. 57.6~~

~~1. 58.0~~
~~2. 50.4~~
~~3. 48.4~~

16 " 08 57.8
09 16.8
1 " 05.8
1 " 05.0

16 10 55.8
11 14.8
1 " 05.8
1 " 05.1

~~1. 58.0~~
~~1. 58.0~~

Wrong star?
likely 3 minutes

1. 58.0
1. 05.0
52

(1) prec (2)

16. 12. 22.2
12 41.9

2. 50.3

15 12.5 2 50.5
32.4

(1)

16. 27. 18.0
38.0

(2) n of (1)

79.47
79.56

(1) n of K

68.76
68.93
68.84
50
18.84
38
1846
1
= 3.04.6

K n of l

91.73
91.87
92.09
92.11
780
91.95
50
41.95
94
51.11

(2)

16. 30 08.4
27.6

l. prec K
15.7 beats

l. s of K 6. 51.1
K s of (1) 3. 04.6
l. s of (1) 9. 55.2

Count	Star	dir
16 57 43.2	16 58 40.5	57.3
58 03.0	59 01.2	58.2
16 59 53.0	17 00 51.0	58.0
17 00 13.0	01 11.0	58.0
2 09.8	2 10.5	
2 10.0	2 09.8	

dir
5

dir 85.9
53.32
53.38
53.31

Pos
130° 10' Zero 87.30'

Zero 50.01

Zero 50.00

Count price

Count 3 of 1
632.4(0.6)

17 04.40

Count 3 of 1

2557

16 58.7

0 57.3

17 05 40

53.42

16 59.0

0 58.2

17 07 28

53.63

17 00.9

0 58.0

17 09 12

53.35

17 01.2

0 58.0

17 07 27

53.47

17 12.9

1 01.5

d8 0 34.0

17 13.2

1 01.4

17 14.7

1 01.4

17 15.0

1 02.2

Count 17 12 54.0

13 12.0

556

17 07.00

0 59.75 = dir Count price

0 33.7

d8 5

17 13 55.5

1 01.5

5.02

17 14 13.4

1 01.4

17 01 58

dir 1 01.5

1 01.4

was compared indirectly with
the double & 1st used

* 1 R 15 02 27.00

Dec + 28 15 21.4

dir 0 59.75

d8

0 33.7

Count 17 14 43.0

15 00.5

R R = 15 01 27.25

Dec = 28 14 47.7

17 15 44.4

1 01.4

16 02.7

1 2.2

17 17 00.4

17 01 58

1 23 03

15 38 55

2 34 55

15 36 21

April 12 15 36 21 Count m.s.t.

R R 15 01 27.25

Dec 28 14 47.7

$$\begin{array}{r}
 15.06.24 \\
 15.04.32 \\
 \hline
 1.58 \\
 14.51.31 \\
 \hline
 14.53.21 \\
 4.17 \\
 \hline
 14.49.04
 \end{array}$$

$$\begin{array}{r}
 15.06.24 \\
 8.15 \\
 \hline
 6.51
 \end{array}
 + 28.30$$

$$\begin{array}{r}
 \text{Comp AR } 14.49. \\
 \text{Dec } 27.34
 \end{array}$$

(2)

(1)

Comet above? $8^{\text{h}} 4^{\text{m}} 4^{\text{s}}$ below $8^{\text{h}} 7^{\text{m}} 13^{\text{s}}$ $14.51.32$
 $9.40.24.3$ $9.44.41.8$ $9.48.39.5$ (366)
 38.8 56.5 54.5

$$\begin{array}{r}
 14.51.32 \\
 4.17 \\
 \hline
 14.47.25 \\
 14.46.51 \\
 \hline
 34
 \end{array}$$

$10^{\text{h}} 22^{\text{m}} 30^{\text{s}}$ Comet 5 of (1) 37.49
 $10.24.20$ 36.65
 rough Tel. moved.
 2.06 -12

2557 $9.56.20^{\text{s}}$

Comet same AR as a
 Star of the 11th mag.
 & 4" N of it

$10.01.50$ Comet same
 dec as Star

1849 $15.06.23.25$
 Zone 1826 $15.04.34.00$

$28.30.05.3$
 $28.35.43.3$
 $-5.38''$

Cor of Zone (366) $+1.49.25$

to Jan 1849

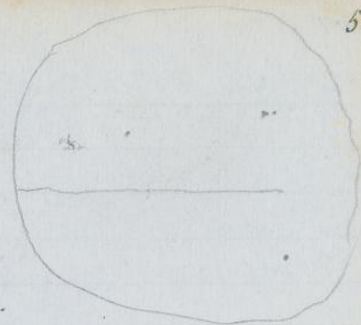
ar $+1.49.2$

	$14.46.16.9$	$27.31.16.$	} 1825
9^{h}	$14.49.49.4$	$27.31.28$	
8^{h}	$14.51.31.6$	$27.51.39$	
8^{h}	$14.55.29.4$	$27.46.21$	
7^{h}	$14.56.08.6$	$27.38.13$	} 1849
6^{h}	$14.48.06.1$	$27.25.38$	
	$51.38.3$	25.56	
	$53.20.8$	46.01	
	$57.18.6$	40.43	
	$57.57.8$	32.35	

27343



April 14th Saturday



Comet misfield

Comet $10^h 29^m 14.8^s$
 Comet $10^h 30^m 19.8^s$
 Star $7^h 10^m 36.39.0$
 rough $8^h 19.2$

Comet S of Star 7^h

39.36
 50.00
 20.34
 4.1

$20.23 = 3^h 22^m 3$ Comet S of Star 7^h
 rough $8^h 19.2$ " preceds Star 7^h

$14^h 57^m 18.6^s$
 $8^h 19.2$
 $14^h 48^m 59.4$ approximate R of comet

$27^h 40^m 43^s$
 $3^h 22$
 $27^h 37^m 21^s$

$10^h 30^m 20^s$ $1^h 30^m 18^s$
 $5^h 06$ 47
 $10^h 25^m 14^s$ $1^h 30^m 57^s$
 $1^h 30^m 57^s$
 $8^h 54^m 17^s$
 $1^h 27$
 $8^h 52^m 50^s$ d.s.?

Approximate Place

$14^h 48^m 59^s$
 April 14th Dec + $27^h 37^m 21^s$
 Compared with a star of $13^h 36^m$

April 14th 1849 New Comet

Comet proceeds Star a 13th mag

Comet N of Star a

2557
12^h 05^m 00 38.5 beats
05^m 57 39.0
06^m 46 40.5
07^m 40 40.5
08^m 24 41.3
207
12^h 08^m 45 40.0 = 20.00

12^h 11^m 45 83.57
12^h 12^m 44 82.88
14^m 00 82.86
15^m 40 82.72
16^m 54 82.76
21^m 03 14479
12^h 14^m 13 82.96
50.00
32.96
3230 = 5^m 23.0

12^h 18^m 54 48.0 beats
19^m 52 49.0
20^m 55 50.5
21^m 49 50.6
22^m 47 51.2
267
12^h 20^m 56 49.86 = 24.93

Comet has much diffused light & a pretty good concentration almost a point.

It is sensibly larger & brighter than when last seen most of its light is on the preceding side.

Its orbit to day predicts a near approach to the Earth.

2557
12^h 13^m 48
5^m 08
12 08 40
1^m 30^m 57
10^m 37^m 43
1^m 44
16 35^m 59

Comet prec. a
22.46
14^m 48 34.60 R_a
14.48 12.14 R_B

Comet N of a
5^m 23.0
27^m 31^m 10.7 Sec a
27^m 36^m 33.7 Sec Comet

Apr. 14th 10^h 35^m 59^s } Mean Eq.
Camb m. s. t. } Apr 1st 1849
R 14^h 48^m 12.14 }
Sec 27^m 36^m 33.7 }

3^h 13^m 1^{sec}April 14th 1849

5.5) 114 (213.32

38.00

27.37 57
62 23Star b 9th preceds star a10th27.16.0
32.3c = 8th12 26. 05.5
22.026. 32.5
49.012 29 37.5
53.8

a is the star of Comps.

b a star in B.2

c " b *

←

v a

5th 0
Star b 8th 50aa = 13th

c

12 34 28.8
43.235 55.6
10.538 01.5
15.7a follows b 26.8 ~~44.2~~ s

27.3

27.0

26.8

27.00

39. 16.0
30.039. 43.0
56.812 43 48.0
02.2a preceds c 3th 05.93th 05.23th 05.03th 05.43th 05.30

a No of b

86.85
86.92
86.79
87.05
37.1

a No of c

85.912

50

85.12

50

35.12

344.2

51.44.2

b No of c

51.92

18.4

Zero c =

50.00

avR

14.49.49.14

7 48.15

14.50.37.33

1.02.44

14.51.39.77

3.05.23

14.48.34.50

27.31.28.1

- 9.2

27.31.18.9

5.53.2

c = 27.25.25.7

5.44.2

a 27.31.09.9

Comet S of S

13.08.40

29.78

Comet preceds the star S

13.12 47.5

13 02.0

13.14. 40.0

55.0

13.15 47.3

16. 02.0

S is the star of the 11th magwhich it so nearly approached at
9^h 56

720
140+26°.05^hTuesday April 17th 1849
New Comet 6* enters 90.21.45.2 - 2^h 8^h.00.20^sleaves 90 22.21.0
10^h 22^m 03.1-1^sComet enters 10 26 11. 10^h 26^m 36^s Comet S of Star of 7th 4^h.04

leaves 26 53

10^h 26^m 334^h 30
$$\begin{array}{r} 10.22 \\ 5 \\ \hline 10.17 \\ 4.00 \\ \hline 14.17 \end{array}$$

$$\begin{array}{r} 4.04 \\ 50.00 \\ \hline 41.66 \end{array}$$
Star of 7th

Star below

Comet above

10^h 30^m 14.8

10 30 38.4

10^h 35^m 04.44^h 26.0

Star

10^h 36.01.2
36 25.310^h 40 24.5
40 48.84^h 23.3
4^h 23.5
$$\begin{array}{r} 10.45.42 \\ 5.10 \\ \hline 10.40.32 \\ 9.36.00 \\ \hline 14.16.32 \end{array}$$

mid field

10^h 45^m 42.5

10 50 00.4

Star on fixed wire

H 8^h 23^m 58 +26°.04

Comet S of Star

4.11

50.00
45.89Star R 14^h 16^m 32

Dec +26°.04

Comet begins to be visible to the naked eye. It shows no tail in the Comet. sucker (it is nearly in opposition). In the great Equatorial it has a good condensation of light at its centre. & may be well observed.

BZ. 462

14" 14" 19.37
+ 56.35
- 0.01
14" 15" 15.73
1.00.60
14" 16" 16.33

26" 07" 30.1
+ 39.1
+ .1
26" 08" 09.3
6" 39.4
26" 01" 29.9

4) 16.68.6
16.68.6
24
667.24
33372
4004
400.464
6" 41.0

16.68.6
24
667.24
33372
4004
400.464
6" 41.0

1025
24
100
500
600
2.56
1016
508

16.64 57
24
66.56
3328
31936
21525
24
10100
5050
6060

x 66.55 12" 10²
x
x

21.5
5.1
12.2

Star of the 6th mag above or South of the comet & preceding it
Comet

11" 56" 33.5
" 52.0
1" 50" 40

1" 42.00
46.7
467

BZ 462 2nd 6th

14" 01" 28.84 25" 54" 45.8

10" 26" 38
10" 50" 00
10" 76 38
10" 38" 19
5" 14
10" 33" 05
1" 42" 46
8" 50" 19
1" 27
8 48" 52

Comet S of Star

9" 04
4.11
13.15
6.57
50.00
43.43
42.56 = 7" 05.6

Cor to Star 0.9
of obs. in R 7" 06.5

Comet S of Star

7" 06.5
26" 01" 29.9
25" 54" 23.4

Comet follows Star

4" 24.27
14" 16" 16.33
14" 20" 40.60

10" 35" 04.4
40.24
4049
137
10" 38" 46

differ 5
4" 26.0
4" 23.3
4" 23.5
128
4" 24.27

Star 7th BZ 462

April 17. 56486
Lon 202° 17' 08".6
Lat 32° 22' 34".7

April 17th 8" 48" 52" Comb. m. s. t
14" 20" 40.60 } clear in
Dec + 25° 54' 23".4 } Jan 1st 1849

14^h
24^o

April

19.01.20
5.19
9.56.15
4.03.18
13.59.33

Comet
9^h 59 04.5
54.26.4
01.47.4

Star 8^h
19^h 01 05
25

clouds

H 7^h 56^m 42^s
65^o 54' 20"

Comet
10^h 18 38.5

Star 9^h 19.26.2

66^m 43^s
Comet nearly S of Star

Star 8^h
18 20^h 25.4 entire
48.8 mid.
21 14.8 out

71.78

Comet
10^h 23 14.8

Star 9^h
10^h 24 10.8

Star 8^h 10^m 40^s limits

10 25 07.4 entire
25 30.2 mid

25 52.4 73.21

Comet
10^h 27 23.8
27 46.5
28 10.5

Star 8^h
10^h 24 42.8
30 06.4
29.9

10^h 66^m 43^s

4^h 8^m

60) 16.80 (.27)
120
460

273
1.4
1092
273
382

10.24

April 19. 57874
Sun 197^o 09' 30.8
Lat 33^o 24' 16.7

April 19th 1849

see, var.

9.10⁶10 35 42.3
59.5

Comet

Star 8th

d.R

10 34 39.4
34 56.410 37 02.4
37 19.82 23.0
2 23.4Some Doubt of the perpendicularity of
the lines10 38 07.8
38 25.510 40 33.4
40 50.72 25.6
2 25.210 41 31.4
41 48.843 58.4
44 15.92 27.0
2 27.1

2.7745 11.22.55 61.473
 2.7725 5.95 17.417
 109900 11.17.40 17.424
 55450 2.41.55 69.694
 664500 13.54.35 34.848
 2th 8 418.176

R 13.59.20 } 1849
 Dec +24° 06'

13.2 412
 13.58.47.96 24.13.19.0
 - 34.60 + 25.3
 + 0.01 + 12
 13.58.13.37 24.13.44.5
 1.06.44 6.58.2
 13.59.19.81 +24.06.46.3
 Star of Comp.

2557 Comet 5 of Star

10 48 15.4

80.16

51 58.0

80.92

55 52.4

82.22

6 06
 10 52 02

81.10

Comet

Star

d.R

2557

11 02 38.4
03 00.811 05 17.5
05 39.82 39.1
2 39.011 02.6
03.0

Star on wire 6.30" below
 H = 9.18.05
 D 24.02.04
 Cor for wire 6.36

24 08 34

11 06 05.5

11 08 45.8

2 40.3

06.1

2557
 10 52.02
 11 17.46
 09 48

81.10

88.91

01

26.8 Clouds 09 08.8

11 09 47.4

11 12 30.3

2 42.9

09.8

Mean 11 04.54 85.01
 corr to 6.20 38

11 10 09.8

11 12 53.3

2 43.5

10.2

85.39

Comet

Star is 2nd of 8

54.8 31.7
 d.R 2 40.96 11 06.20
 87.92
 89.90
 13 59 19.81
 13 56 38.85 = R

11 15 24

87.92

11 20 08

89.90

11 17 46

88.91

50.00

35.39

71

34.68

5.46.8

24.06.46.3
 = 24.00.59.5

April 19th 9^h 08^m 51^s Camb. m. s. t

R 13.58.38.85

Dec 24.00.59.5

dist

11 01 00
 11 01 00
 11 01 00
 11 01 00
 11 01 00

240
107
2030
240
4930



April 21st Saturday 1849

480.0
80

160
24) 80' (3.333
72
80
1.999

2557 8th 8^h

Comet
8^h 8^h

Comet

dR

10 " 21 12.8
23.3

21. 48.8
1 59.4

10 " 22. 06.7
16.8

0^m 53.9
53.5

high mo = 200"
60) 200 (3.33
180
20

10 " 22 " 42.4
52.8

23. 18.5
3 29.2

23. 35.4
45.4

53.0
52.6

in 1^m = 3.33
1.98

24. 07.5
17.8

24. 43.4
4 53.8

24 59.9
25 10.2

52.4
52.4

10 " 23. 22.2

Comet 3 of 8th 8^h

0^m 59.97
+ .33
1 " 00.30

cor for wires
not being perfect
dR

Zero 50.0

10 29. 23
30. 52
32. 27
10 " 16.2
10 " 31. 54

18.36
17.95
17.34
26.5
17.88
50.00
32. 1.2

32 17
64
3148
51.14.8
5.3 cor to dR
5.09 5

8th 8^h

10 " 34 38.5
34 56.5

10 35 " 23.8
35 " 41.8

45.3
45.3

10 " 35 57.4
36 15.8

10 36 42.4
37 00.2

45.0
44.4

10 " 37 " 15.4
33.8

10 " 37 " 59.4
38 " 17.8
65.4

44.0
44.0

10 " 37 " 10.9
10 " 23 " 22.2

44.67
1 " 00.30

33.1
10 " 30 " 16.5

44.97
0^m 52.48

dR 5.09.3
Comet 3

5.25
10 " 24 " 51
1 " 58 " 32
8 " 26 " 19
1 " 23
8 " 24.56 = 44.5.2

Comet follows

April 21st

Comet visible to the naked eye

Star ϵ^k is NG St 9^k 35.22

Star is B. 2. 460

Star ϵ^k

$$\begin{array}{r}
 10^{\circ} 44' 01.5'' \\
 H \quad 9^{\circ} 10' 59'' \\
 = \quad 2^{\circ} 49' 01'' \\
 \hline
 13^{\circ} 33' 02.5'' \\
 \quad 5.22 \\
 \hline
 13^{\circ} 27' 40''
 \end{array}$$

68⁰ 32' 56"

21 27.04

$$\begin{array}{r}
 + 2.877 \\
 - 2.876 \\
 \hline
 11504 \\
 5752 \\
 \hline
 69024
 \end{array}$$

$$\begin{array}{r}
 18.692 \\
 - 18.638 \\
 \hline
 54 \\
 74548 \\
 \hline
 37274 \\
 4472852
 \end{array}$$

$$\begin{array}{r}
 255710.54.00 \\
 \text{Now } 9.48.34 \\
 \hline
 2.05.26
 \end{array}$$

$$\begin{array}{r}
 18.655 \\
 932.7 \\
 18.6 \\
 \hline
 914.1
 \end{array}$$

$$\begin{array}{r}
 2) 2.876 \\
 143.80 \\
 \hline
 288 \\
 14092
 \end{array}$$

B. 2. 460

Dist. Cel 25118

$$\begin{array}{r}
 13^{\circ} 25' 23.99'' \\
 + 55.14 \\
 - 03 \\
 \hline
 13^{\circ} 26' 19.00'' \\
 1.09.02 \\
 \hline
 13^{\circ} 27' 28.02'' \\
 H.C. 13^{\circ} 27' 28.04'' \\
 C.R. 13^{\circ} 27' 28.03'' \\
 \quad 0.52.48 \\
 \hline
 B.R. 13^{\circ} 28' 20.51''
 \end{array}$$

$$\begin{array}{r}
 + 21^{\circ} 32' 02.2'' \\
 + 42.4 \\
 - 8 \\
 \hline
 21^{\circ} 32' 43.9'' \\
 7.27.13 \\
 \hline
 21^{\circ} 25' 16.6'' \\
 21^{\circ} 25' 20.3'' \\
 21^{\circ} 25' 18.4'' \\
 - 5.09.3 \\
 \hline
 21^{\circ} 20' 09.1'' = \beta \text{ Dec}
 \end{array}$$

$$\begin{array}{r}
 13^{\circ} 25' 07.12'' \\
 2.20.92 \\
 \hline
 13^{\circ} 27' 28.04''
 \end{array}$$

$$\begin{array}{r}
 68^{\circ} 19' 25.6'' \\
 15.14.1 \\
 \hline
 68^{\circ} 34' 39.7'' \\
 21^{\circ} 25' 20.3''
 \end{array}$$

April 21st 8^h 24^m 56^s

$$\begin{array}{l}
 \beta \text{ R } 13^{\circ} 28' 20.51'' \\
 \text{Dec } 21^{\circ} 20' 09.1''
 \end{array}
 \left. \begin{array}{l} \\ \end{array} \right\} \begin{array}{l} \text{Mean Eq.} \\ \text{Jan 1st 1849} \end{array}$$

64
Tuesday April 24th 1849

76
95

12.35.40

4.7) 3.00 (64
282
180

2.40
38 20
33

Comet preceds Star of the 7th 8th with in Star (2)

2557 Comet Star 7th double price & 5 That s.p. used.
10. 54 32.4 10. 57 00.6 2^m 28.2 Comet has quite
41.8 10.4 2. 28.6 a good condensa-
tion & is
10. 57. 43.3 00. 13.8 2. 30.5
52.8 23.6 2. 30.8

11. 04. 01 H 10. 23. 00

1. 37. 00
12. 41. 01 74. 53. 14
15. 06. 46

Comet S of Star 8th 11. 05. 50 Star 9th same dec as Comet exerts

11. 04. 01 88. 72 40. 22
08. 45 91. 73 80
11. 06. 23 90. 23 39. 42
50. 01 6. 34. 2
40. 22

Zero 50. 02

Dec Star 74. 47. 20

Comet Star
11. 15. 45.9 11. 18. 31.8 2^m 45.9
16. 05.3 18. 51.4 2. 46.1
11. 19. 17.4 22. 06.8 11. 21. 13.8
19. 36.8 25.3 21. 33.4

10. 54. 5 2^m 28.2 11. 06. 23 diff Dec 6. 34. 2
54.7 28.6 34. 00 3. 5
57.7 30.5 11. 06. 57 6. 37. 7
57.9 30.8
11. 15. 8 45.9
16. 1 46.1
19. 3 48.4
19. 6 48.5
55.6 30.70
11. 06. 57 2. 38. 39
5. 33
11. 01. 24
2. 10. 22
8. 51. 02
1. 27
8. 49. 35 M.S. 2

diff Dec double star
52. 49. 5
53. 00. 7
diff & 1. 6

April 24th 8^h 49^m 33^s M.S. 2

12^h 35^m 11^s 40 } Mean Eq
Dec + 15. 04. 57. 8 } Sun 1st 1849

0. 54. 58
8. 49. 33
9. 47. 33

April 24th 9^h 44^m 33^s
12^h 34^m 26. 48
Dec 14. 59. 01. 3

12.02.21

2.38
7.47

25

60/300(5')

65

April 24thCannb. m. h. t.
at 9.30 ←

The coma extends farther north & south of the nucleus.

The central part is white, and almost star like, not quite so bright as a star of 9 mag. The parts of the coma most distant have the appearance of radiations, near the nucleus it is soft & evenly diffused.

Comet South of *
6 1/2 Dec

12.2.4 Same R as * 8.9 mag (1)

53.07 - at 12.4.20

Zone 360 Star (2)

$$\begin{array}{r} 12.32.40.78 \\ + 34.24 \\ - 01 \end{array}$$

$$\begin{array}{r} 15.07.31.5 \\ - 13.0 \\ + 1.2 \end{array}$$

$$\begin{array}{r} 19.841 \\ 24 \\ 79364 \\ 39682 \\ 476184 \\ 7.56.2 \end{array}$$

$$\begin{array}{r} 2.978 \\ 24 \\ 11912 \\ 5956 \\ 71472 \end{array}$$

$$\begin{array}{r} 53.73 - 12.5.41 \\ 54.49 - 6.31 \\ 55.02 \\ 54.08 \text{ dec} \end{array}$$

Reading Dec 74.59.30

$$\begin{array}{r} 12.33.15.01 \\ 1.11.47 \\ 12.34.26.48 \end{array}$$

$$\begin{array}{r} 15.07.17.3 \\ 7.56.2 \\ 14.59.21.1 \\ 19.8 \text{ Comet's} \\ 14.59.01.3 \end{array}$$

Zone 360 Star (1)

$$\begin{array}{r} 12.36.04.33 \\ + 34.23 \end{array}$$

$$\begin{array}{r} 15.19.44.8 \\ - 13.2 \\ - 1.0 \end{array}$$

$$\begin{array}{r} 12.36.38.56 \\ 1.11.23 \end{array}$$

$$\begin{array}{r} 15.19.30.6 \\ 7.55.1 \end{array}$$

$$\begin{array}{r} 12.37.49.79 \\ 2.38.39 \end{array}$$

$$\begin{array}{r} 15.11.35.5 \\ 6.37.7 \end{array}$$

$$12.35.11.40$$

$$15.04.57.8$$

= Position of the s.p. component of the Pair of stars

= Position of Comet from (1)

$$\begin{array}{r} 4.06 \\ 39.8 \\ 20 \end{array}$$

At 12.02.04 dR = 0.00.00

5.33 dδ = 0.19.8 s of star

$$\begin{array}{r} 11.56.31 \\ 2.10.22 \\ 9.46.09 \\ 1.36.0 \\ 9.44.33.0 = \text{U.S. Y.} \end{array}$$

165

42.2
40.568.44
82.7

13.47

2.45.0
2.41.7

325.57.40

21.40.48

21.41.06

2.45.8
1.49.19.8
1.52.04April 24^h 1849

for Metis

21.40.48
2.45.8
1.49.19.8
1.52.04

7665

Metis R Gould's Eph
 $21^h 43^m 48^s$
 Dec $-18^{\circ} 06' 30''$

Bote 7639 h m s
 R $21^h 48^m 27^s$
 Dec $-18^{\circ} 36' 47''$

h m s
 $21^h 53^m 53^s$
 $18^{\circ} 37' 28''$

$21^h 49^m 19.79$
 $2^h 42^m 20$
 $21^h 52^m 01.99$

3.31
165.50
162.20

$-18^{\circ} 20' 08''$
 13.44
 $-18^{\circ} 06' 24''$

J Capricorni

$21^h 38^m 42.1$ $-16^{\circ} 48' 33''$

$18^h 22^m 00^s$
 5.30

$18.16.30$
 $2.10.23$
 $16.06.08$
 2.38
 $16.03.30$

Star $8^{\frac{1}{2}}$ J.C. 42865R $21^h 52^m 04.5$ - $18^{\circ} 06' 20''$ $8^{\frac{1}{2}}$

42899

 $21^h 53^m 01.5$ $-18^{\circ} 14' 22''$ $17^h 35^m 20$ 5.30 $17^h 30^m 00$ $21^h 52^m 01$ h-12^m $17^h 31^m 49.5$

35.28

22

 $17^h 38^m 52$ $17^h 39^m 49.9$

$17^h 49^m 50.5$
 $12..$

 $21^h 40^m 00$ $17^h 54^m 37.8$ 56. 15.0 3' below 11th56. 46.0 0.30" above 10th

1.13.0 triangle 2

57 59.0 5' below 12th

58 18. 49.0 ab

58 28.0 6' above

12.00

8.13

1.37.2

 $12..06$

31.0 2.082

3.47

1.13.0

19.0

(A) R = $21^h 42^m 10.5$

10.0

Dec $-18^{\circ} 06' 30''$

10.22.8

9.51.8

 $21^h 42^m 10.5$ $-18^{\circ} 06' 30''$

8.38.8

2.18.15

2.50

8.19.8

R $21^h 44^m 28.7$ Dec $-18^{\circ} 03' 40''$

8.09.8

of Metis

 $21^h 52^m 01.5$ April 24^h 16^h 03^m 30^s M.S.3. $21^h 41^m 38.7$ Planet is of 13th mag.

8.09.7

Metis R $21^h 44^m 28.7$ } Mean Eq.

43.22.7

Dec $-18^{\circ} 03' 30''$ } Error

43.41.7

I suppose the R is best deter-

 $21^h 49^m 51.7$ mined $\pm 1^{\circ}$ Dec $\pm 30''$ perhaps

Metis follows A

Metis N of A

25.57

 $18^h 10^m 2^m 17.0$ 18.18 $2^m 17.8$ 18.25 $2^m 18.3$ 18.30 $2^m 19.5$ 18.22 $2^m 18.15$

2' 50" estimated

For Meters

18 05.47.5
05.59.3

18.30 30.1

10th 20" above

32.12.8

4' above

33 58.2

1st above

18 07 25 7 5' below
07 32 25 0
(A) 07. 57. 27 cent 10th 11th
09 24 12.7
09. 36.7 33.4 above 11th
09. 40 34 5' 3
Meters = 10 14 12 14th
26. 3' above

12th - 1. 37.5 = x 10. 22.5
1. 44.5 10. 15.5
2. 09.5 9. 50.5
3. 36.7 8. 23.5
3. 49.2 8. 10.8
3. 52.5 x 8. 07.5
4. 26.5 7. 33.5
4. 38.5 7. 21.5

10 12 01.5
18. 13 16.0

(A) 18. 14. 50. ?
15. 22 cent 10th
16. 37 1. 15 14th 4' below
17. 01.5 12 } 3' above
17. 05.0 43 } 2' above
Meters = 17 39.8 13 3' below
17 50 10 4' above

4. 5
1. 34 10. 26 10. 10. 22
2. 06 9. 54 9. 25.0
3. 21 8. 39 8. 35
3. 45.5 8. 14.5 8. 10.5
3. 49 8. 11 8. 07
4. 23.8 7. 36.2 7. 32
4. 34.0 7. 26.0 7. 22

18. 20 20.8

(A) 23 12.5 10th cent 2. 51.7 18. 27. 21.3 15. 10th 20" above
24 26.5 1. 40 4' below 4. 05.7 28. 38.0 part
52.2 25.7 4' above 4. 31.4 00.5 23.5 4' above 12th
24 56.0 3' 4. 35.2 04.17 36.1 10. 11
Meters = 25 30.8 12 2' below 5 10.0 29 = 40.8 9.6
25 41.0 11th 2' above 5. 20.2 Meters = 50.4

April 24th - 25th All Place of stars observed with aliter on
the 12th - 13th of April

18" 46 50.8 18" 47" 38.5 47.7
47 02.0 48" 00.4 58.4

48" 30.8 18" 49" 29.3 ? 58.5
48" 42.4 40.8 58.4

18" 50 49.8
51" 01.0

18" 51 47.8 58.0
59.4 58.4

32.87
50.00
17 13
34
1679
2' 47.9"

A
18" 8 19" 04" 01.2 H 9" 29" 32" - 19" 02" 30
2 30.28 3" 43
21" 34" 29 19" 06" 13
5" 33
21 28" 56

♂ Capricorni

19" 14" 19 - 46" 19" 30" 02 - 16" 44" 50
16" 48" 33
3.43
19" 14" 17
2 29" 58
21" 44" 15
21" 38" 42
5" 33

Star ♂ in p Star 7th dR 58.3 dδ 2' 48"

An instrumental comparison gives with ♂ Capricorni
gives Star 7th R 21" 28" 56³
Dec - 19" 06" 13

Star 3rd = 0 Virginis

69

-4 beats

April 26th ThursdayComet is S. p. a star of the 10th 11th mag.

Comet 10^h 59 01.5
 Star 10^h 11 00 03.8
 1^m 02.3

57.00

4/29.6
 7.24"
 14.4
 7.38.8

Star of comp 3 of Star 3rd mag

97.08
 96.88
 96.95

96.97
 50.00
 46.97
 1.92
 48.89
 7.40.3

11^h 00 56.3
 11 02 01.5
 1^m 05.2

57.88

Star 10^h
 11^h 22, 00.3
 22 31.3

Star 8th mag.
 22.5 1.22.2
 23^h 53.5 1.22.2

11^h 03. 18.5 60.32
 04 25.5
 1^m 07.0

11^h 24^h 44.0
 25^h 15.0

26^h 06.0 1.22.0
 37.0 1.22.0

11^h 06^h 01.3 62.47
 11 07 10.3 23.7 67

27^h 18.3 26^h 40.5 7.22.2
 27^h 49.4 29 11.5 1.22.1

9^h 176
 Mean 23.5

2 33
 58
 59.42

11^h 02^h 19.4 1^m 05.88
 -4 beats

50
 9.42
 1.9
 9.23

a small star 8th is 3's.p. the Star of 3rdStar 3rd 80° 23' 40"11^h 40^h 45.6 - 4 beats

Zero 50.00

2557 p p r e c x 10 A S x 10^h
 11^h 02^h 17.4 1^m 05.88 1^m 32.3
 5^m 39.0

22.36 H 11^h 37^h 24^h

49.90
 99.88

10^h 56^h 38.4
 2^h 18 15.4

12^h 03^h 22^h8^h 38^h 23.011^h 57^h 0 Virginis B A C 40721^m 24.9Jan 1st 184980^h 25^h 42.38^h 36^h 58.1 = Dec 2VR 11^h 57^h 31.10+ 9^h 34^h 17.7 = Dec1^m 22.127^h 40.311^h 56^h 08.989^h 26^h 37.14

Star of Comet

1^m 05.881^m 32.3p r 11^h 55 03.10+ 9^h 25 05.1 = p DecApril 26th 1849 8^h 36^h 58^h

p r 11^h 55^h 03.10 } Mean Eq
 Dec + 9^h 25^h 05.1 } Jan 1st 1849

$$\begin{array}{r} 8.30 \\ 16.30 \\ 8.00 \end{array}$$

$$\begin{array}{r} 21.47.09 \\ -17.54.20 \end{array}$$

$$\begin{array}{r} 20.00 \\ 10.00 \end{array}$$

16.20

11.27

5.8

$$\begin{array}{r} 844 \\ 16 \\ 828 \end{array}$$

$$\begin{array}{r} 2/3.31 \\ 164 \\ 1622 \end{array}$$

$$\begin{array}{r} 21.44.26 \\ 18.08.06 \end{array}$$

$$\begin{array}{r} 21.49.19.79 \\ 2.472 \end{array}$$

$$\begin{array}{r} 18.20.08 \\ 13.48 \end{array}$$

$$\begin{array}{r} 2/3.09 \\ 154.5 \\ 151.4 = 2.31.4 \end{array}$$

UR 21.52.02.0

Dec 18.06.20

2c 42865

Friday April 27 Comet

2557 11. 11. 43 - 4 beats H 11. 31. 50 83° 45' 36"

$$\begin{array}{r} 28.10 \\ 11. 39. 57 - 5.53 = 11.34 \end{array}$$

Star 7.8 sp comet

Star is Hint. Cel 22110.

Weipr H 573

11. 20. 44.5 - 4 beats H 11. 42. 06

83. 59. 30

0 17. 54.0

2. 00 comet

11. 38. 38.5

$$\begin{array}{r} 3.087 \\ 24 \\ 12348 \\ 6174 \\ 74088 \end{array}$$

84. 01. 30

Part car 5. 53

11. 32. 45.5

Weipr H 573

- 2

11. 31. 29.16

6. 06. 34.0

11. 32. 43.5

1. 14.09

7. 57.8

UR = 11. 32. 43.25

5. 58. 36.2 = Dec

$$\begin{array}{r} 2/3.088 \\ 21 \\ 1.544 \\ 309 \\ 151.31 \end{array}$$

2. 31.31

$$\begin{array}{r} 2/19.902 \\ 995.1 \\ 19.9 \\ 975.2 \end{array}$$

16. 15.2

Hint. Cel 22110

11. 30. 11.55

83. 45. 06.7

2. 31.31

16. 15.2

11. 32. 42.86

84. 01. 21.9

5. 58. 38.1

R 1849.0

Dec 1849.0

11. 32. 43.25

+ 5. 58. 36.2

32. 42.86

38.1

11. 32. 43.05

+ 5. 58. 37.1

0. 10.45

0. 25.7

R = 11. 32. 32.60

Dec + 5. 59. 02.8

Comet's hly mo = 52.5 in R
8' in Dec

1.45.173

60)480

$$\begin{array}{r} 1.7)14 \\ 136 \\ 4 \end{array}$$

$$\begin{array}{r} 8)24 \\ 24 \\ 106 \end{array}$$

April 27th

A sparkling nucleus but
very small

6.8/6.85 (93)

Comet 30' base of tail

Comet N of star

12 41 " 36.4

39.5

Comet

Star 6.7th

12 42 " 17.2

42 " 20.7

3.5

12 " 46.06

56.30

42 " 50.8

42 " 54.9

4.1

48 " 46

53.70

43 " 18.4

43 " 23.0

4.6

50 " 02

52.56

43 " 46.4

43 " 51.0

4.6

51.14

51.61

44 " 12.4

43 " 17.7

5.3

52 " 10

50.84

84.8

Mean

2.1

52 " 53.5

50.00

same dec.

12 " 43 " 17.0

4.42

1.71

15.01

12 " 50.12

52.50

12 " 55 " 30.8

12 " 55 " 46.0

15.2

56 " 15.0

56 " 30.8

15.8

56 " 50.8

57 " 07.4

16.6

57 " 28.8

57 " 46.0

17.2

58 " 05.8

58 " 23.4

17.6

24.2512

32.4

16.48

Mean 12 " 56 " 50.2

Mean

2090

0 07.2

12 " 50 " 03.6

diff R

10.45

Comet preceds star

2557 5 " 42.0

diff Dec

0' 25.7

" N of star

12 " 44 " 22.0

2 " 22 " 12

10 " 22 " 10

1 " 42

ch 53 10 " 20 " 28

April 27th 10^h 20^m 28^s Camb. m. 3.5.

AR 11^h 32^m 32^s 60 } Mean Eq
Dec +5° 59' 02" 8 } Jan. 1st 1849.

11 " 20 " 37

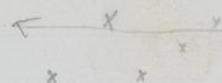
13 " 50 " 00

2 " 29 " 23

12 " 50 " 04

10 " 20 " 46

Comet May 1st PM 1849



Count

12₁ 40₂ 20₁₄ - 8 beats to 2₁ 22₂ 14₁ 353₁ 05₂ 04₁

B N

B. Price

25 beat 12, 47, 18

53.55 61.88
55.21 61.07

50.10	26
50.44	26.5
51.47	28.0
52.25	29.0

12.. 59.. 04 57.91

$$\begin{array}{r} 17.924 \\ 50 \\ \hline 17.974 \\ 80 \\ \hline 898700 \\ 1797 \\ \hline 880.63 \end{array}$$

John 10

$$\begin{array}{r} 13 \text{ } ^{00} \text{ } ^{14} \\ \underline{2 \text{ } ^{42} \text{ } ^{03}} \\ 10 \text{ } ^{18} \text{ } ^{11} \\ \underline{8 \text{ } ^{20}} \\ 10 \text{ } ^{11} \text{ } ^{51} \end{array} \quad \begin{array}{r} 2 \text{ } ^{42} \text{ } ^{03} \\ \underline{3 \text{ } ^{53} \text{ } ^{01} \text{ } ^{56}} \\ 6 \text{ } ^{58} \text{ } ^{04} \\ \underline{2 \text{ } ^{11}} \\ 7 \text{ } ^{00} \text{ } ^{15} \end{array}$$

Approx place of Stn of Comp

AK 10" 11" 51"

Gre - 7⁰⁰ vñ 15

HC 20153

$10^h 13^m 17^s$ $96^0 46' 05''$
2.26.95 14.40.1

$$\begin{array}{r} 13'' 05'' 34 \\ 2'' 49'' 06 \\ \hline 10'' 16'' 28 \\ 10'' 10'' \end{array}$$

$$\begin{array}{r} 352'' 43'' 12 \\ - 7'' 16'' 48 \\ \hline \end{array}$$

$$\begin{array}{r} 13 \dots 10 \dots 34.8 \\ 2 \dots 54.08 \\ \hline 10 \dots 16.27 \end{array} \quad \begin{array}{r} 2 \dots 54.08 \\ 352.43.10 \\ \hline 7 \dots 16.50 \end{array}$$

$$\begin{array}{r} 10,1544.05 \\ 3,51.05 \\ \hline 10,1553.00 \end{array}$$

$$\begin{array}{r} 97,00.45.6 \\ 0,33.3 \\ \hline 97,00.12.3 \end{array}$$

10" 16" 27.5-4hr

Dec 1849 - 7.19.00
current 2.11

CR 1849 $\frac{10 \cdot 10 \cdot 07.7}{- 6 \cdot 19.8 - 4 \text{ hnt}}$

Star (a) $9^h 10^m$

R	10.11.53.00	Sec - 7.00.12.3
	<u>0.37.38</u>	<u>1.36.0</u>
p R	10.11.15.62	p Sec - 7.01.48.3

13^m 9.5 (7.9)

73

Correct 9 of sta a

13..14..26	53.90
16.00	55.06
13..15..13	54.48

13	18	57.5	19	32.0
	19	08.5		44.0

Corry		9 th (a) 9 th	
13	20	32.0	21..08.3
		45.5	22.0
			0..36.3
			0..36.5

13..26..16	62.63
27..50	64.02
13..30..17	65.50
13..28..08	64..15
Sta 9 th	64..05

13.	21..	43.5	22..	20.5	0..37.0
		57.0		34.2	0..37..2

13	22	58.5	23..	36.8	0..38.3
	23	11.5		50.5	0..39.0
		128.0			23

Sta 9th S.J.

13	31	02.5	65.50
	34	54	62.06
	3..	51.5	3..44
			3 3.7 = 0..33.7

Mean 13..22..21.3

0..37.38

9 th 9 th (a)	9 th 9 th (b)
13 40 48.8	13..44 40.0
41..15.5	45 06.4
	3..51.2
	3 50.9

46.62
49.98
3 36
0..32.9

2557

13..22..21.3

Correct price (a)

0..37.38

Correct 9 of 4

1..36.0

13..22	21
2557	5..52
13..16	29
2..37..58	
10..38..31	
1..45	
10..36..46	= 1152

Zero 49.99
49.97

13..15..13	54.48
13..28..08	64.05
3 21	118.53
13..21..40	59.27
Corr 41 ^s	= 51
	59.78
	49.98
	9.80
1..36.0	= 96.0

May 1st 10^h 36^m 46^s Comb m.s.t.
 Oct 10^h 11^m 15.62 } Mean Eq.
 Dec - 7^h 01^m 48.3 } Jan. 1st 1849

19.20
9.40
26.60
327.56.26
-17.41
21.51

10.39 15.6

4.36
2.36

April 29 1849

29 Aquara

21.54.10.3

-17.41.20

17.44.00 327.36.26

3.00
17.41

21.20

28

2.24

21.50.25.7

18.03.30

22.43

* -17.40.47

8.17.40.47

R 21.51.05

21.44.29

6.36

21.51.05

Metis proe * A

0.58.0

59.5

57.0

56.0

56.0

55.5

A proe B

2.46

13.5

14.0

14.4

14.0

14.5

Metis follow (e)

25.57

17.41 0.27.0

17.54 26

17.33.45 18.05 28.0

5.45 18.13 29.0

17.28.00 18.19 28.9

4.26.00 18.27 28.5

21.54.00

Metis proceed * B 6th mag. double B. & C.

3.14.0

17.41

13.0

17.54

11.0

18.05

10.4

18.13

10.0

18.19

10.0

18.27

9.4

39

3.11.40

18.06.30

2.39.00

15.28.30

M.S.7.

40 07 Roughly Taken

(e) 17 40.34 Center 14^h below 10'

Metis 41.01 Out 13.14

41 37.4 5' below 13

41 49.0 4'

A 41 59.0 3' above 12^h

42 27.8 4' below

43 39.0 42.40

1' below

17.44.15. double 6^h

B 44.39.

53.4 nph 126

57 13

48.03 25

49.17 25

41 41

17.50 23

26.5 3' above 14

51.37.0 4' above 13

(a) 44.5 4' below 13

(b) 31.5 3.4' below 13

(c) 52 45.5 Center

(d) 45.5

(e) 1d

(e) 17.53.25

(f) 53.31.5

Metis = { 50.5

51

53.57

54.08.5

A = 56.50.5

57.0

55.19.0

56.03.5

12.3

28.0

30

56.04.0

center 3.6"

above

1.2 above 12^h

1' " 14

5' above 13

14.3' above

13' above

1' above

48^s

192

$$\begin{array}{r} 19.5 \\ 24) \overline{78} \overline{3.25} \\ \underline{72} \\ 60 \end{array}$$

75

17" 58 08 } Diameter of field 48"
58 56

det'n h/mo 3.25

2557 20.33.00

row 17" 54" 47" + 10"
2" 38" 00

(a) 18" 03" 12.5 } 13th 2.3' above
(b) 18.8
(c) 04 20.4 } 13th center above
(d) 27.0 below
(e) 05. 00.0 center
det'n 05" 28.0 1' above 3" 11.0
A 06" 25 13th 4' above
06" 32 13th "
18 08" 39 6th

(c) 18 11" 33 } 13th Center
(d) 11" 40.0
12.13
(e) 12 " 13 14th 1' above
(f) 19 14th 3' above
det'n 12 " 39 14.15 1' below
" 42 12th 30" above 3" 10.4
A 13" 38 12.13th } 4' above
13 45 13th "
15" 52.4 6th

(c) 18" 17" 56.8 center
(d) 18 03.7 below

(e) 18" 36.5
19" 03 14th below
det'n " 05.4 13th above
A 18" 20" 01.4 } 4' above 3" 10
07.8
22" 15.4 6th

Apr 29 declin

1.035

(e) 26" 26 10.5 ah 2
 (d) 17.2 behu

(e) 18" 26" 50.0 entire
 Metis 27 18.5 30" above
 3^m 10.0

A 18" 28" 14 } above
 28" 22 }
 18" 30 28.5 6" double

4' below

18" 38" 06.0 entire 28.67
 29.0 cent
 51.0 exph

40" 30.5 brighten

May 2? occ. of 5 rings

11. 32. 42.0
 23 beats - 11.5
 11. 32. 30.5
 2. 41. 54.7
 8. 50. 35.8
 - 8. 54.1
 8. 64. 41.7
 7. 58. 41.36
 43. 52.79
 40.89
 7
 7. 43. 15.74

g.p.B.

11. 32. 42.0
 11.5
 11. 32. 30.5
 2. 41. 54.7
 8. 43. 46.6

May 2nd11^h 32^m 42.0

11.5

11^h 32^m 30.52^h 48^m 43.682^h 49^m 14.7911^h 32^m 30.512^h 21^m 47.798^h 43^m 15.71

at 3 P.M.

2557

fast

m s

5^h 53^m 5at obs - 5^h 54^m 1

Imm. of 5 Virginis

G.R.

2557

11^h 34^m 0.0

then

8^h 45^m 16.12^h 48^m 43.9

WCB 8^h 43^m 50.3 - 10 beats to Paroditch

157 GPRB Im

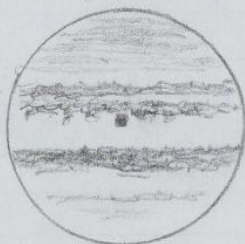
8^h 43^m 46.3

2557 = 11^h 32^m 42.0 - 23 beats G.P.B

Both observations good Finden

Transit of the 4th Satellite
of Jupiter

9^h Lamb mst



The southern region are darker
than the northern, and more
evenly diffused

The 4th Sat. was seen steadily on the disc black, large and round,
much company prevented continuous observation.

Emergence of 5 Virginis

WCB Em 10^h 07^m 55.2 - 7 beats (doubtful i)

10^h 07^m 52.2

2557

13^h 14^m 00.0

then

10^h 25^m 00.0

2^h 49^m 00.0

2557 fast - at obs 5^h 54.3

2557 - 11^h 34^m 0.0

5^h 54^m 1

11^h 28^m 05.9

2^h 41^m 54.7

8^h 46^m 11.2

7^h 58^m 41.36

45^m 52.46

10^h 07^m 52.2

8^h 44^m 44.99

8^h 45^m 16.1

+ 31.11

W - 2^h 41^m 07.94

46^m 73

2^h 41^m 54.71

Imm. 5^h 54.7

239

8^h 43^m 46.3

31.1

8^h 43^m 15.2

20.2

Emergence

10^h 07^m 52.2

- 31.6

10^h 07^m 20.6

19.6

10^h 07^m 01.1

19.6

13^h 14^m 00.0

5^h 54.3

13^h 08^m 05.7

2^h 41^m 54.7

10^h 26^m 11.0

9^h 58^m 21.70

25^m 55.74

10.97

10^h 24^m 28.41

10^h 25^m 00.0

+ 31.59

239

at Emergence

Imm. & Em. of 5 Virginis

Imm May 2nd 8^h 43^m 15.2 WCB good

Em " 2nd 10^h 07^m 20.6 WCB doubtful G.R.

Imm. May 2nd 8^h 43^m 15.7 G.P.B good Finden

Wednesday

May 2nd 184957 2.8 (61)
32
50

Comet S of Sma

12. 19. 42	58.98
12. 21. 17	59.99
54	
12. 20. 27	59.46

Chm

12. 30. 20	66.42
32 22	67.72

Chm 12. 31. 21 67.07

Chm 12. 25. 54 63.26

cur - 22^s

63.62
49.99
13.63
26

Star of comp. 8^h (a)

12. 35. 18
2. 34. 12
10. 01. 06
6. 23
19. 54. 44

h 2. 34. 12

350. 19. 52
9 40. 08
-9 42. 19

a Star 9. 10^h 30 m p (a)

prec. 19 beats

60.00

Zero 49.98

12. 25. 30. 0
5. 55. 0

dir

0. 50. 47

dδ

2. 07. 8

(a) Approx

R 9. 54. 44

Dec - 9. 42. 20

2. 95. 2	17. 48
24	24
11808	6848
5904	3422
70548	41084

12. 19. 35. 0
2. 41. 54
9. 37. 41
1. 35

9. 36. 06 ch. 5.3.

Star is Weigh H X. 1180

9. 53. 33. 97	- 9. 35. 29. 2
1. 10. 85	6. 50. 6

9. 54. 44. 82	Dec - 9. 42. 19. 8
0. 50. 47	2. 07. 8
9. 53. 54. 35	- 9. 44. 27. 6

May 2nd 9. 36. 06^s M.S.T

9. 53. 54. 35	} Mean
Dec - 9. 44. 27. 6	

Eq Sun 1st 1849

13.2-217

132.9

79

$$\begin{array}{r} 9^h 54^m 01.60 \\ - 27.63 \\ \hline \end{array}$$

$$\begin{array}{r} -9^h 33^m 18.9 \\ - 2^m 12.9 \\ \hline \end{array}$$

$$9^h 53^m 33.97$$

$$\begin{array}{r} + 3.2 \\ -9^h 35^m 28.6 \\ \hline \end{array}$$

1st

$$10^h 11^m 16$$

$$-7^h 01.8$$

2nd

$$9^h 53^m 54$$

$$-9^h 44.4$$

$$17^m 22$$

$$2.42$$

$$23/ 17^m 37 (75 73) 2^m 12 (1.12)$$

$$16^m 17$$

$$4$$

$$17.37$$

$$2.52$$

$$75$$

$$22.56$$

daily mo

$$18^m 12$$

$$9^h 46$$

$$8$$

$$22.40$$

$$144 96$$

$$9^h 46$$

$$2^h 25^m$$

$$-32^m 26$$

2nd

$$9^h 54$$

10²

$$7^h 29 = R$$

R 8^h 13^m Dec-23.16 Comet place for May 10.5 yr

Comet May 10thSeen in Clouds here too in S.W.
Wind East12^h 02^m 21.5^{sec} ^{late} H 3^h 44^m 17^s336^h 40^m 40^s

38.5

58.8

12^h 02^m 39.6Star S of Comet (double) ^{used} Star 6th mag.12^h 09^m 30^s
9 49.5
10^h 16.5

6.08

50.00

43.92

8.8

43 0 4 = 7^h 10.4

156.0

12^h 09^m 52.0

Comet

12^h 14^m 56.8
15^h 20.8
15 47.53^h 56^m 56^s336^h 42^m 15^s12^h 15^m 21.7023^h 17^m 45^s

Corr -16

-23^h 33^s12^h 22^m 40^s

6.10

12^h 16^m 30^s

3.58

8 19

Star (6th)12^h 22^m 17^s
22^h 38.0
23 05.5

8.92

50.00

41.08

8.2

3926 = 6.32.6

12^h 22^m 40.1712^h 22^m 38^s

3.56.56

8.25.42

Corr -7.13

8^h 18^m 29^s

	d.R.	cor ref	d.R.	cor ref
12 ^h 02 ^m 40 ^s	7 ^h 12.4	-0.26	7 ^h 10.4	+4.6
12 ^h 15 ^m 22 ^s	7 ^h 18.5	-0.43	6 ^h 32.6	+7.0
Mean 12 ^h 09 ^m 01 ^s	7 ^h 15.45	-0.35	6 ^h 57.5	+5.8
	6 ^h 18 ^m	ref -0.35		ref +5.8
Sid. Time 12 ^h 02 ^m 43 ^s	d.R. 7 ^h 15.10		d.R. 6 ^h 57.3	
	3 ^h 13 ^m 27 ^s	8 ^h 15 ^m 33.01	-23 ^h 33 ^m 31.2	
	8 ^h 49 ^m 16 ^s	8 ^h 11 ^m 17.91	-23 ^h 26 ^m 33.9	
	1 ^h 27 ^m	Comets d.R.	Comets d.R.	

U.S.T. 8^h 47^m 49^sStar of Comp
d.R. 8^h 18^m 30^s
d.R. -23^h 33^s
M.A.C. 2827
preceding used
& brightest

Alt of the comet 5°. Very fortunate in having a good star so near. There was not another like it for a long interval I suppose that this is our last place unless we can find it after the perihelion. Clouds before & after obs. (A lucky chance to have got this)

$$\begin{array}{r} 12.50 \\ 5.6 \\ 12.44 \\ 9.56 \\ \hline 3.48 \end{array}$$

Star 6^h B.A.L. 3096)

$$\begin{array}{r} 12.54.40 \\ 55.04.4 \\ \hline 55.30.14 \end{array} \quad H \quad 3.51.19$$

$$\begin{array}{r} 12.55.04 \\ 3.51.14 \\ \hline 9.03.45 \\ \text{OK } 8.56.32 \\ \hline -7.13 \end{array}$$

$$15) 39 \quad (20)$$

$$15) 64 \quad (43)$$

$$\begin{array}{r} 335.21.30 \\ -24.38.30 \\ \hline 24.54.38 \\ \hline -16 \end{array}$$

$$d\delta = \frac{7.1}{6.5}$$

	h	m	alt	ν	diff ref dalt = 10"	dalt = dconv	diff ref	ref. in d.	ref. in R.
h	3.44		6.40	38°	10.5	5.6	5.8	4.6	0.26
	3.57		4.40	40°	18.5	5.0	9.2	7.0	0.43

Star of Comp

B.A.L. 2827

$$\begin{array}{r} 8.18.35.62 \quad 113.33.42.6 \\ -2.61 \quad \hline -11.4 \end{array}$$

$$1849 \text{ OK } 8.18.33.01 \quad \text{Dec} -23.33.31.2$$

$$9 \text{ h}$$

$$3.08.43.86$$

$$46.73$$

$$3.09.30.59$$

$$3.55.9$$

$$\text{Correct } 10^{\text{h}} \quad 3.13.26.6$$

$$\begin{array}{l} \text{May } 10^{\text{h}} \quad 8^{\text{h}} \quad 47^{\text{m}} \quad 49^{\text{s}} \\ \text{of } \text{B.A.L.} \quad 8^{\text{h}} \quad 11^{\text{m}} \quad 17^{\text{s}} \quad 91 \\ \text{Dec} \quad -23^{\circ} \quad 26' \quad 33.9 \end{array} \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} \begin{array}{l} \text{Mean Eq} \\ \text{Jan. } 1849 \end{array}$$

Compared with B.A.L. 2827

$$\begin{array}{r} 10^{\text{h}} \quad 12^{\text{h}} \quad 00^{\text{m}} \\ \hline 4.44 \\ \hline 7.15 \end{array}$$

May 18th

Stars for Secret Galaxy Opp. of Mars

Inst Dec +25° 00' H 6^h 44^m 40

2587 fast. 6.38.6

2557

8h 9.10

13. 14. 24

30"

n. ~~8~~another 3' ~~8~~ ⁵ prec 1'10^h 11^m8^h17 28
17 41

45"

1.30" S

No stars fit in field of GR

H 6^h 52^m 00 24^m 55'

13. 27. 32

28. 2'

Stars in the field

S. of center of field
1/6 of field13. 29. 35

H 7.07

24.45

13.35
6.28
7.076.14
7.47
14.05
12.11.3

13. 41. 31

6. 59. 30

6. 42. 01

6. 34. 39

7.22

Star 3rd L

13. 41. 31

6.38.3

13. 34. 52.7

6. 59. 30

6. 35. 22.7

6. 34. 39.6

45.1

H 6^h 59^m 30

Dec +25° 22'

6. 38

Sub 64. 43. 39

25. 16. 21

25. 22. 0

25. 16. 21

- 5. 89

13. 17. 41

6. 44. 40

6. 33. 01

7.22

6. 25. 39

25. 01. 20

Cor. Inst. by E. Gen

in R - 7.22 in Dec - 5.30"

Friday May 19th

Stars for Lieut. Gilles

H 6^h 08^m 00^sDec 25^o 44'

$$\begin{array}{r} 25^{\circ} 44' \\ - 3^{\circ} 17' \\ \hline 22^{\circ} 27' \end{array}$$

$$\begin{array}{r} 34 + 2 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 6 \dots 38.6 \\ 6 \dots 8 \dots 0 \\ \hline 6 \dots 15 \dots 14.6 \\ \text{Dec} - 3^{\circ} 17' \end{array}$$

10 ^h 11 ^m	13	54	18 (18)	5' N
12 ^h	13	56	18 (19)	1' N
10 ^h		59	40 (20)	center = No stars but 12-15 th mag
10 ^h	13	59	46 (21)	N 2'
9 ^h 10 ^m	14	00	39 (22)	5' S of center
9 ^h 10 ^m		01	08 (24)	

H 6^h 18^m 04^s Dec 24^o 44'

10 ^h	14	04	57 (23)	1' N	Seconde stars round it 11
9 ^h 8 ^m	11	49	(25)	5' 30" N	Correction
9 ^h 10 ^m	11	57.5	(26)	4' N	6...18...04
8 ^h	12	02	(27)	4' S	6...38...6
					40.0
					- 6.25...22.6
8 ^h	20	58	(28)	3' 1/2 N	24...44
9 ^h	21	42	(29)	5' S	- 3.41
					- 24...40...19

Dec 23^o 57'H 6^h 00^m 00^s

$$\begin{array}{r} 6 \dots 00 \dots 0 \\ 6 \dots 34 \\ \hline 6 \dots 38.6 \\ \text{Dec} - 6^{\circ} 07' 13.8 \end{array}$$

2557 path 6^h 38.3

8 ^h	14	29	06 (30)	4' 15" N 1/3
9 ^h 10	31	01	(31)	5' S
10	31	18	(32)	5' 30" N
10	31	18	33	2' N

$$\begin{array}{r} \text{Dec } 23^{\circ} 57' 2.30 \\ 23^{\circ} 54' 3.0 \end{array}$$

8 Cancri 4th magStar 4th H 5^h 52^m 40^s+ 22^o 03'2557 14^h 34^m 25^s14^h 34^m 25^s5^h 52^m 40^s8^h 41^m 45^s22^h 03^m 40^s8^h 34^m 32^s22^h 00^m 30^s7^h 13^m- 2^h 30^m

By 7 Cancri

Corr R - 7^h 13^m Cor Dec - 2^h 30^mBAG - 18 mag 8^h 34^m 32^sXPD - 6^h 59^m 30^s22^h 00^m 30^sReading 22^h 03^m 40^s2^h 30^m

Friday May 18thComet supposed to be M. Guajon's
found rather by accident

Star 8th Comet 8 of 8th to W 150" hly
15^h 02^m 41.0 15^h 09^m 16.2 52.12
wer 7^m in R

dR

Star 8th Comet
15 10 30.8 15 17 05.0
dR = 6.35.2 212
dR = 6.34.2 15 13 10.6
6.34.70 6"

Dec 53° 46' 30"

H 3^h 57^m 35^s

50.00

10.6 p 5 of 8

Star of Comp is the
middle of three in R &
the furthest of them N.
the Sole is double.

Star of Comp
15 19 15.8 + 53 46 32
H 4 06 20.0 - 23
11 12 41
7 86
X R 11 05 50
53 46 69

+3.516 +19.440
sec. var - 011 +.025

Star 2nd in Great Bear 2nd in May!
15 23 10.5 Dec 54° 32' 23"
X H 3 30 13 54 32 09 Dec 1849
11 52 57.5
11 45 51.8
Cor - 7 05.7
Star is
from bridge 1750
11 03 33.38
2 16.70
1849 11 05 50.68 = X R 36 01 05.5
6 34.70 12 39.1
1849 + 53 46 15.6 = X Dec
10.6
+ 53 46 05.0 = Dec Comet

Star R 11^h 05^m 50^s
Dec 53° 46' 10"

AR Comet = 11.12 24.78

15 13 11
6 39
15 06 32
3 44 13
1 22 19
10 58 12
21 56
11 20 27

Guajon's Comet
Comb. m.s.t. May 18th 11^h 20^m 27^s

Comet R 11^h 12^m 24.78
Mean of 1849 Dec 53° 46' 05.0

May 18th

85

h m h m

15.32 33

32 31

34 - 32

min 15.33 32

15.38 - 30

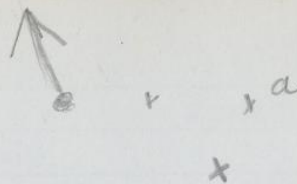
39 - 31

40 - 31

15.39 30.7

15.53' 29

of procedure *a



used
 H 7^h 06^m 0^s
 257 fast - 6^m 41^s
 Tab Cor - 50
 - 7^h 13^m 31^s

H 7^h 06^m
 5^m 05^s
 12^m 11^s
 6^m 40^s
 12^m 17^s 40

Stars for Lieut Gellips
 May 19th

(2557)

Set in Dec + 26° 32' 20" H 7^h 06^m 00^s 12^m 15.30
 Watched from CR 5^h 03 to 5^h 07^m 20 12^m 21
 26^m 32^m 20 7^m 06 12^m 15.30 to 12.21 No large star

Dec 26^m 23^m H 7^h 06^m 00^s 12^m 23^m to 12^m 26^m } Clear
 but can
 see no
 stars in
 this zone

26^m 14 H 7^h 06^m 00^s 12^m 26 to 12^m 29

26^m 04 (1) H 7^h 06^m 00^s 12^m 29 to

8^h * 26^m 04 (1) H 7^h 06^m 00^s 12^m 31 51 1^m 50 N of center

26^m 14 (2) H 7^h 06 12^m 35 to 12^m 37

9^h * 26^m 14 (2) ~~7^h 06 31~~ 12 35 31 4' N of center

9^h * 26^m 14 (3) 7^h 06 12 36 41 4' N

(26^m 23 7^h 06 12^m 38^m to 12^m 41)

9^h 10² * 26^m 23 (4) 7^h 06^m 00^s 12 39^m 20 3' S

8^h 26^m 23 (5) 12 40 20 2' S

9^h * 26^m 34 (6) 12^m 41^m 17 2' S

9^h * 26^m 34 (7) 41 35 5' N

9^h * 26^m 34 (8) 7^h 06^m 12 42^m 59 3' N one piece in 2/3 part

8^h * 26^m 34 12 45^m 42 4' N

> (x) 7^h 12^m 48.55 1/2 5 part

Instrument clamped at 7^h 06^m of hour angle
 And not moved except in Dec from 12^m 15^m to 13^m 40^m

$17.22.40$
 $13.18.20$
 7.06
 12.48
 6.40
 $12.36.20$
 7.06
 $12.30.00$
 6.40
 $12.28.20$
 7.06
 $12.14.00$
 6.40
 $12.11.20$
 7.06
 $6.05.20$
 $12.10.20 + 26.34$
 7.06

Places to set on
to 12.58 sec to set

12.58 26.20
 13.12 26.10
 13.18 26.00
 13.22 25.50
 13.25 25.40
 13.28 25.30
 13.30 25.20
 13.37 25.10

$H = 7.06$

25.57 13.20 is AR 6.07

12.45
 $12.38.20$
 7.06

87

quite a dearth of stars in
 AR 5.32 to 5.50 Dec $26.30'$

12.45 to 12.58 nothing stars

26.24

7.06

from 12.58 to 13.12

no 11108 H₀
must have passed
at this time
8/1 May

($13.02.04$ Finder 9 of field South)

26.24

H 7.06

nothing papers

from 12.58 to 13.12

$10.11 * 26.24$ (10)

7.06

$13.12.05$ $4' N$ of center

26.14

7.06

from 13.13 to 13.18 No stars

26.03

7.06

from 13.18 to 13.22

$10 * 26.03$ (12)

7.06

$13.21.26$ Centre of field

$10 * 25.54$ (13)

7.06

$13.22.43$ $6' N$

25.54

from 13.22 to 13.25

25.4

$8.1 * 25.45$

$13.25.00$ about

$2' S$ of center

Clear of field

25.35

7.06

13.28 to 13.30

25.22

7.06

13.30 to

May 19th

Stars for Lieut Gillis

$$\begin{array}{r}
 6.24 \\
 7.06 \\
 \hline
 13.30 \\
 6.40 \\
 \hline
 13.36.40
 \end{array}$$

$$\begin{array}{r}
 13.42 \\
 6.40 \\
 \hline
 13.35.26 \\
 7.06 \\
 \hline
 6.29
 \end{array}$$

13.37
38
39
40
41
42

25.05
24.55
24.45
24.35
24.25
24.15

W+25.13 H 7^h 06^m 00^sfrom 13^h 34^m to 13.37

+25.10

" 13.37

Stopped As the Telescope is directed too near the horizon

(X Aurigae 4 May)

2.2557-

(11)

Star of the 7th May

13.45.07 +29° 38'

H = 7.31.45

$$\begin{array}{r}
 \text{ref.} -6.5 \\
 +29 \quad 31.5 \\
 29 \quad 22.5 \\
 \hline
 \text{Ap. D.} \quad \text{C-0} \quad +1.3
 \end{array}$$

Star 4th Close to place of obs

See plenty of 13-14 mag stars but scarcely one above the 10th

3 May & Gemini 13.50.13

7^h 08^m 04^s

25.20.30

(0) 7.08.04

25.16.30

Dec

6.42.09 = from inst

-4.00

Cor inst.

1849 R 6.34.38 & Gemini

ref -6.0

Cor of inst & C-7.31

$$\begin{array}{r}
 25 \quad 14.5 \\
 25 \quad 16.4 \\
 \hline
 \text{Ap. D.} \quad \text{C-0} \quad +1.9
 \end{array}$$

for 7 May *

$$\begin{array}{r}
 7.31.45 \\
 6.41 \\
 \hline
 7.39.17
 \end{array}$$

Star of comparison
May 19 - B.A.G. 2 Gemini - 1849 July 1. Δ 6. 34. 38.47

2557 fast - 6. 47. 0

APD - $\frac{64. 43. 30}{25. 16. 30}$
Fast - $\frac{25. 16. 30}{25. 20. 30}$
Reading - $\frac{25. 20. 30}{-4. 00}$

13. 50. 13
6. 47. 0
13. 43. 22.0
Reading - $\frac{2. 08. 04}{6. 35. 28.0}$
Tab - $\frac{6. 34. 38.5}{49.5}$

The Field is = 12

* 7 mag - $\sqrt{6. 05. 51.5}$	29. 34. 0	
Extinguish - $\sqrt{6. 20. 30}$	25. 09. 0	many stars of 13-14 mag. & under, but scarcely one above the 10 th mag.
to - $\sqrt{6. 23. 30}$	25. 06. 0	
Ex - $\sqrt{5. 44. 30}$	26. 20. 0	
to - $\sqrt{5. 58. 30}$		
* 10-11 mag - $\sqrt{5. 58. 34.5}$	26. 24. 0	
Ex - $\sqrt{5. 59. 40}$	26. 10. 0	no stars, clouds?
to - $\sqrt{6. 04. 10}$		
Ex - $\sqrt{6. 04. 10}$	25. 19	very small stars
to - $\sqrt{6. 08. 10}$		
* 10 mag - $\sqrt{6. 07. 55.5}$	25. 19	
* 10 mag - $\sqrt{6. 09. 12.5}$	25. 56	
Ex - $\sqrt{6. 08. 30}$	25. 50	
to - $\sqrt{6. 11. 30}$		
* 8 th mag - $\sqrt{6. 11. 30.5}$	25. 42	Clear and fine
Ex - $\sqrt{6. 14. 30}$	25. 31	no star so bright as the 10 th mag.
to - $\sqrt{6. 16. 30}$		
to - $\sqrt{6. 16. 30}$	25. 20	
at		
* 9-10 mag - $\sqrt{5. 49. 33.5}$	26. 20	In the Finder 9/10 of the Field south of center.
Ex - $\sqrt{5. 31. 30}$	26. 30	no 9 th mag. star visible.
to - $\sqrt{5. 44. 30}$		
Ex - $\sqrt{5. 44. 10}$	26. 20	no 9 th mag. visible.
to - $\sqrt{5. 58. 30}$		
8 mag* - $\sqrt{5. 32. 12}$	26. 34	
7 mag* - $\sqrt{5. 29. 29}$	26. 33	
9 mag* - $\sqrt{5. 28. 05}$	26. 35	
9 mag* - $\sqrt{5. 27. 47}$	26. 28	
8 mag* - $\sqrt{5. 26. 50}$	26. 17	
9-10 mag* - $\sqrt{5. 25. 50}$	26. 16	

29
 $\frac{64. 43. 30}{25. 16. 30}$

May 19th Examination for Lint Gillips.

Exp	AR	dec +	
to	v5..24..30	26° 19	no stars so bright as 19 th may.
	v5..27..30		
9 mag *	v5..23..01	26.14	
9 mag *	v5..22..01	26.14	
	v5..21..30	26..10	no stars 7 19 may
	v5..23..30		
8 mag *	v5..18..21	26..01..50	
Ex.	v5..15..10	26..00	
to	v5..17..10		
Ex	v5..12..10	26..10	no bright stars
to	v5..15..30		
Ex	v5..09..30	25..19	no large stars
to	v5..12..30		
Ex	v5..02..00	26..28..20	no large stars
to	v5..07..30		

May 18th 2557 fast.

	AR	Dec +
10 mag *	v8..24..05	23° 54' 30"
10 mag *	v8..24..05	24..00..00
9-10 mag *	v8..23..49	23..50..00
8 mag *	v8..21..54	23..58..45
9 mag *	v7..56..26	24..36..30
8 mag *	v7..55..42	24..47..30
8 mag *	v7..46..46	24..37..30
9-10 mag *	v7..46..41	24..45..30
8 mag *	v7..46..32.5	24..47..00
10 mag *	v7..44..40.5	24..42..30
9-10 mag *	v7..45..55.8	25..36..15
9-10 mag *	v7..45..26.8	25..36..15
10 mag *	v7..44..34.0	25..43..30
10 mag *	v7..44..27.8	25..41..30
12 mag *	v7..41..05.8	25..42..30
10-11 mag *	v7..39..06.0	25..46..30
9-10 mag *	v6..22..21.8	25..02..00
10-11 mag *	v6..25..26.0	25..02..15
8 mag *	v6..25..29.0	25..00..00

Several stars near of the 11th may.

another star 3.30" south & preceding 1st

Hyperbolic Elements by J.H.S.
 Longitude of Perihelion ω $261^{\circ} 17' 43''$
 " " " Node Ω $29^{\circ} 53' 57''$
 Inclination i $71^{\circ} 18' 54''$
 Log Per dist D 9.9657793
 Per. Pass. T June 3^d 5443
 Angle of Eccentricity φ $36^{\circ} 46' 06''$

-1.08
 $.022$
 20.044
 100.22
 20.04
 982.16
 3.195
 -22 Sec van $16.22.2$
 3.173
 158.50
 3.173
 $155.477 = 2^m 35.48$

Mr Sourelle moves to
 Boston No 2 Acorn St

Goujon's Comet.

June 11th 1849

Comet n.p Star	Star γ^{th} mag.	Comet γ^{th} mag.	Star γ^{th} mag.	diff	Comet price star
424 =	$16^h 28^m 37.5$	$16^h 31^m 15.0$	$2^m 37.5$		
	$29^m 05.0$	$31^m 42.0$	$2^m 37.0$		
	$16^h 59^m 25.5$	$17^h 01^m 59.0$	$2^m 33.5$		
	$17^h 00^m 07.5$	$17^h 02^m 42.0$	$2^m 34.5$		
	$177 15.5$		22.5		
424 =	$16^h 44^m 18.9$		$2^m 35.62 = \text{diff Comet price star.}$		
424 Slow	$2^m 0$				

diff. Dec.

424	$16^h 34^m$	$75.07 - 50.00 = 25.07$	} = $25.23 = 252.3 - 0.5 = 252.3$	
	$16^h 41^m$	75.03		
	$16^h 44^m$	75.57		
424	$16^h 39.40$	Comet n.p Star $4^m 12.3$		$16^h 39^m 40 = 4^m 12.3$
	$17^h 08^m$	" $4^m 30.9$		$424 16^h 44^m 20^s = 4^m 15.4$

Star	Salade 22600	3.195	424 Star	2.00
424 $16^h 49^m 27$	$66^h 58^m 40$	$11^h 50^m 58.41$	$16^h 46^m 20^s$	
$4^m 57.18$	price $2^m 35.48$			
$11^h 52^m 09$	Star R 1849 $11^h 53^m 33.89$	$2^m 35.62$		
$2^m 0$				
$11^h 54^m 09 = \text{Star R}$	R p $11^h 50^m 58.27$	$22^h 45^m 51.6$		
$66^h 59' = \text{Dec}$		$16.22.2$		
		$23^h 02^m 13.8$		
		$66^h 57^m 46.12$		
		$4^m 15.4$		
		$67^h 02^m 01.6$		

1849 diff $11^h 50^m 58.27$
 R p $67^h 02^m 01.6$

James Curley

1849 May 11. AR 118° 30' 17"
D - 24° 39' 13".. 21 AR 105° 33' 35"
D - 30° 02' 36".. 31 AR 97° 43' 44"
D - 31° 12' 18"Jun 10. AR 92° 35' 20"
D - 31° 06' 59".. 20 AR 88° 53' 16"
D - 30° 25' 00".. 30 AR 79° 11' 07"
D - 28° 55' 11"July 10 AR 83° 46' 51"
D - 28° 13' 57".. 20. AR 81° 41' 30"
D - 27° 21' 29"

Aug 7 ..

D = -1627'. 22"

Summers of the Comet of April 11 1849

" 30 AR 79° 29' 51"
D - 26° 46' 27"

" 9 AR 76° 52' 01"
D - 26° 30' 50"

" 19 AR 73° 28' 26"
D - 26° 32' 26"

" 29 AR 68° 59' 58"
D - 26° 46' 10"

" 48 AR 63° 13' 32"
D - 27° 00' 16"

" 18 AR 56° 05' 31"
D - 26° 50' 41"

" 28 AR 52° 12' 17"
D - 23° 42' 22"

" 7 AR 19° 13' 05"
D - 16° 27' 22"

Other
Bumpley

For midday *ditto*

1849 Apr 3 rd	21.. 13.. 34.92	+ 1.. 31.95	109.. 49.. 09.9	1 "
4.5	15.. 06.87	1.. 31.50	44.. 04.4	- 5.. 05.5
5.5	16.. 38.37	1.. 31.03	38.. 59.0	5.. 05.4
6.5	18.. 09.40	1.. 30.. 55	33.. 53.9	5.. 05.1
7.5	19.. 39.95	1.. 30.09	28.. 49.1	5.. 04.8
8.5	21.. 10.04	1.. 29.58	23.. 44.8	5.. 04.3
9.5	22.. 39.62	1.. 29.12	18.. 41.6	5.. 03.2
10.5	24.. 08.74	1.. 28.62	13.. 38.0	5.. 03.6
11.5	25.. 37.36	1.. 28.12	08.. 35.6	5.. 02.4
12.5	27.. 05.40		109,03.. 34.1	5.. 01.5

1849	B.A.G. Eph	New Comet	6 th Feb
April 20	13 ^h 50 ^m	Dec	Dist
21	13.. 36	N + 22° 00	0.271
22	13.. 21	20.. 00,	.260
23	13.. 05	17.45	.249
24	12.. 48	15.30	.239
25	12.. 30	13.. 15	.230
26	12.. 10	10.. 30	.222
		+ 7.45	.216

B.A.G.
Per Pap 1849 June 8, 1746 Berlin
Arc. Node 30° 32' 08"
Long. Per. 267° 01' 38" } Mean Eq
Incl. 66° 55' 11" } 1849.0
Log. Per. Dist. 9.951734

J.H.S. 11th 14th 17th uncorrected.
Per Pap June 3.046
Arc Node 30° 17' 23"}
Long Per. 265° 11' 06"}
Incl. 69° 00' 12"
Log Per Dist. 9.964567

J.D.P. 17th 19th 21st Cor. for parallax
June 9.75624
30° 01' 00"
274° 06' 15.2
70° 31' 35.7
9.95152

April 14th Grakarn
AR 14^h 49^m 50^s
Dec. +27° 40'

Goujon 15th (Sunday)
10^h 55^m Paris m.s.t.
AR 11^h 08^m 31^s
Dec - 25° 31' South d.R. - 1^m
motion in Dec 3° 01' towards North.

