KG
11366
v.310

Feb. 14. 1881.

Bond 236.			Bond 394.		
4 54	40.1		7 14	0.0	
55	40.2		15	0.0	

Reap. Jup. II. Phot. R. S. Obs.

7 10 49.3
23 41.1
7 34 30.4 ~~approx. time eclipse.~~
7 15 0.0
19 30.4
4 55 40.2
5 15 10.6 approx. time eclipse.

Sat. used in comparison is the one most distant from Jupiter on preceding side.
Comp. with Sat. III.

Limit of Vis.

5 6 25 159.3
172.2 12.9
7 0 159.0 12.4
17 171.4 13
6619 12.65
33095
165.48

Feb. 14. 1881.

9	29	Ghost. probably	
	40		156.0
	53.0		180.2
10	1.5		153.4
	11.0		177.3
	21.5		156.3
	37.0		176.8

h m s				
7 33 27	5	14	26.0	
32			31.0	152.9
37			36.5	175.8
43			41.5	154.0
47			46.0	175.7
52			51.0	152.0
56			55.0	172.4
34 1			59.5	151.6
6		15	5.0	180.3
11			10.0	150.7
17			15.5	179.6
21			20.5	148.7
26			25.0	184.5
31			29.5	139.8
35			34.5	190.0
41			40.5	144.7
47			45.5	190.8

Feb. 14. 1881.

	51		50,5	139,1	
	57		56,0	194,7	
35	4	16	3,0	137,8	
	11		10,0	195,8	
	17		15,5	138,6	57.8
	23		22,5	196,4	
	29		28,0	134,7	61.6
	35		34,0	196,3	
	41		40,0	138,1	57.0
	47		46,5	195,1	
	55		54,0	129,0	79.4
36	4	17	3,0	208,4	
	11		10,5	131,7	68.9
	19		18,0	200,6	
	27		26,5	125,4	73.3
	35		34,0	198,7	
	43		41,5	134,2	75.6
	51		50,0	209,8	
37	7	18	6,5	133,2	77.8
	17		16,5	211,0	
	25		23,5	125,8	82.2
	34		33,0	208,0	
	42		41,0	134,8	67.0
	55		54,5	201,8	
	11	19	9,5	123,9	88.1
			20,0	212,0	

Feb. 14. 1881.

		5	19	30.5		121.2	
38	26		10 3 19 26	43.0		210.1	88.9 10 88.5
				57.5	6672 33360 166.80	129.3	85.8
			20	9.0		215.1	
			119 15	20.0		125.7	
39	15		20	32.5		210.9	85.2 10 85.5
				46.5	6810 340.50 170.25	123.2	
			15 4 138 3 4	59.5		211.8	88.6
40	08		21 08	16.0		126.1	
			21	31.5		211.9	85.8 14 87.2
				42.5	6730 3365 168.25	126.0	
			15 9 140 39	54.0		207.0	81.0
41	10		22 10	11.0		124.0	
				52.0		205.2	81.2 81.1
			23	42.5	6622 3311 165.55	127.2	80.8
			126	52.0		208.0	
43	02		24 02	6.0		130.4	71.8
				26.0	6678 3339 166.95	202.2	526 76.30

	Bond 236.			Bond 394.	
5	27	45.4	7	47	0.0
	28	45.5		48	0.0
	29	45.6		49	0.0
	30	45.7		50	0.0

Feb. 14. 1881.

W. 0. 507 + 530.

6 31 23 +2° 29′
5 42
+5 11

Pos. 0 345.4
45
390.4

$6^h\ 6^m\ 29^s$ star in northern half of square
$6^h\ 8^m\ 13^s$ ~~79~~ " " " " " "
6 10 5 W. No. 507 in southern half of square
W. No. 530
12 23 Faint star in northern " " "

One set of transits. Stars low - ~~see~~ Steeple interferes. Disks enlarged. W. obs.

#77 60 ft, − 67.73 and 85 ~~to~~ used,

~~H. C.~~ Double H. C. 82,

4 1 −16.2
6 23
+2 22

W. obs.

$t = 6^h\ 35^m\ 3.8^s$
Coarse hour circ = $2^h\ 32^m.5$
" decl " = −16.2
Fine hour " = $14^h\ 32^m$ + 1.4 div.
" decl. " = + 4.0 div.
~~Pos. Ang~~. Mags. 9.2 + 9.3 dist. 15″ Pos. Ang. 260

Feb. 14, 1881.

Setting on Rigel for Circle correction
$t = 6^h\ 39^m\ 49.2$ W. obs.
Coarse Hour = $1^h\ 35^m$
" Decl. = $-8.8°$
Fine " = + 0.8 app.
" Hour = $13^h\ 34^m$ + 2.9 div

Phot. S S Cancri Pols.
Comp. of 7 + 8 mag. Ver. a 90.0
Index a 1.7 Index B 2.5 Small
prism to north

$7^h\ 9^m$	100.6	52.0	
9	152.6	44.7	Pols
10	284.1	96.7	
10	328.8		
10	104.9	45.4	Pols
11	150.3	49.1	
12	279.3	94.5	
13	328.4		
15	103.6		
15	147.0	43.4	Pols.
16	279.1	50.8	
16	329.9	94.2	

Feb. 14, 1881.

~~7h 18m 102.7 W. obs~~
~~151.5 48.8~~
~~274.0 85.9~~ Reject.
~~20 359.9 134.7~~

ζ Cancri. & 9th Mag. Star.

(Sid. time) ~~7h 30m 57.2 P. obs.~~
~~185.4 128.2~~
~~6.2~~ Reject.
~~61~~

Sid. time 7 h " 37 m " 3.8 57.8 P. obs.
61.6
180.4 64.3
39 244.7 122.1

39 3.0 58.4 P. obs.
61.4
185.3 52.7
41 238.0 111.1

41 5.6 53.2 P obs.
58.8
183.8 58.2
43 242.0 111.4

9 50 β Urs. Min. 1 α Urs. Min. } S. obs.
α Urs. Min = ε Urs. Maj. } Full moon
α Urs. Min. 2 γ Cass. } in the east.

Feb. 14, 1881.

δ Cancri and 9th Mag. Star

Sid. time 7^h 45^m 5.3 S. obs.
57.0 51.7
186.0 52.0
48 238.0 103.7

48 6.2 S. obs.
58.2 52.0
186.0 44.9
50 230.9 96.9

51 10.0 S. obs.
57.6 47.6 < clock troublesome.

mean time
10 04 α is 1 β Urs. Min; ζ Urs. Maj
1 α Urs. Min. P. obs.

Feb. 15. 1881.

0^m	7.2 -	0^m $12^s.20$		n.
	17.2 -			
			1 43.10	
1	51.4 -	1 55.30		n.
	59.2 ·			
			3 36.15	
3	36.9 -	3 48.35		s.
	59.8 ·			
			5 13.50	
5	17.5 ·	5 25.70		s.
	33.9 ·			
	40.2 ·	5 46.05	5 33.85	n.
	51.9			

Diag. = 889.8

n.	10.00	5.00	75.00	~~16.5~~ 74.93
n.	7.80	3.90	58.50	58.45 + 16″.5
s	22.90	11.45	171.75	171.60 − 643″.3
s	16.40	8.20	123.00	122.90 − 692″.0
n	11.70	5.85	87.75	87.66 − 12″.7

Diff. R.A.

0	1^m 43.10	3^m $36^s.15$	5^m $13^s.50$	5^m $33^s.85$

Diff. Dec.

0	+0′ 16″.5	−10′ 43.3	−11′ 32″.0	− 0′ 12″.7

Feb. 15. 1881.

Bond 236.			Bond 394.		
3	4	10.5	5	20	0.0
	5	10.7		21	0.0

Reap. Jup. III. Phot. R. P. Obs.

5 9 52.0
27 41.1

---

5 33 33.1
5 21 0.0

---

12 33.1
3 5 10.7

---

3 17 43.8 approx. time eclipse.

Sat. III compared with most distant sat. fol. Jupiter.
Comp. with Sat. II.

3 15 55,4

Feb. 15. 1881.

~~3 15 55 4~~

5 32 22	16	50.5	217.0	66.0
46	17	14.5	283.0	
33 00		27.5	208.0	81.0
09		37.0	289.0	
17		45.0	209.9	79.1
24		52.5	289.0	
36	18	4.5	210.0	79.9
48		16.0	289.9	
54		21.5	205.3	85.9
34 02		30.5	291.2	
08		36.0	211.3	74.7
16		44.0	286.0	
25		53.0	208.0	84.9
30		58.0	292.9	
36	19	5.0	205.2	89.5
41		9.5	294.7	
51		20.0	205.0	88.0
00		29.0	293.0	
35 11		40.0	205.2	83.0
21		50.0	288.2	
34	20	3.0	209.3	80.9
44		13.0	290.2	
59		28.0	207.2	
	~~33~~ Clouds susp.			89.6
36 13		41.5	296.8	

Feb. 15. 1881.

	3	21	0.0	Sat not vis.		
37 04			33.0		201.1	
25			53.5		294.3	93.2
		22	4.5		201.1	
		94	17.0		294.0	92.9
37 54		24	26.0	9915	200.3	
		22	44.5	49575 247.88	296.1	95.8 87 94.35
			53.0		201.7	91.3
		23	3.0		293.0	
		88 28 67	12.0	9935 49675	200.6	
38 37		23	20.0	248.38	298.0	97.2 8 5 94.25
			30.0		201.8	95.2
		166	36.0	9968	297.0	
39 12		23 42	45.5	49840 249.20	204.7	
			54.5		293.3	88.6 183.8 91.9
		24	3.0		204.8	86.2
		66 16	12.0	9959	291.0	
39 46		24	19.0	49795 248.98	204.6	
			32.5		295.3	90.5 176.7 88.35
			41.5		200.8	91.2
		220 55	51.5		292.0	
40 25		24	58.5	9933 49665	201.5	
		25	8.0	248.32	299.0	97.5 87 94.35
			20.0		203.0	89.2
		160 40	32.0	9793	292.2	
41 10		25	47.0	48965	198.8	86.5 157 87.85
		26	1.0	244.82	285.3	

Feb. 15. 1881.

	3	26	12.0		202.0	
		147	31.0	9960	294.3	92.3
–		26 37	46.5	4980	206.3	
42 07			58.0	249.00	293.4	87.1 179.4 89.7
		27	11.0		201.8	
			19.0	9884	292.0	90.2
		10 0 27 25	31.0	4942 247.10	201.7	
42 55			39.5		292.9	91.2 14 90.7
			53.0		206.2	85.4
		28	5.5	9922	291.6	
		117 57	22.5	4961	199.4	
43 44		28 14	35.5	248.05	295.0	95.6 181.0 90.50

Limit of Vis. Jup. II.

3	30	43.0		233.1	
	31	0.0		263.8	30.7
		12.5		233.0	
		21.0	9914 49570 247.85	261.5	28.5 59.2 29.6

Obs. much interfered with by twilight during early part of series – sun setting during series – also interfered with by passing cirrus clouds.

Bond 236.			Bond 394.		
3	34	15.5	5	50	0.0
	35	15.5		51	0.0

Feb. 15. 1881.

Transits to identify two stars with relative proper motions.

4 58 31.5. viz W. 0h 507.

59 8.5 1370 W. 0 530.

7 24 281.0

~~280.8~~

7 27 ~~281.3~~

~~Set at 281.2~~ 281.2 = Mean

45

Set at 326.2 for transits.

2d set (see p. 15 for 1st set).

5 25 49.0 ~~11~~ 8 mag. N. half. of square.

26 44.5 9 " " " " "

27 58.5 10 " S. " " "

28 37.5 #507. S. " " "

30 14.5 #530.

30 24. (a) 11 mag. N.

30 36.5 (b) 9 mag. N.

Dis. 530 - dis. a. - 530 - b - b - a.

Set at 146.2 for transits.

3d set.

5 35 15.0 8 mag. N. half. of square.

36 4.0 10.5 " (c) " " " "

36 34.0 9 mag. (d) S. " " "

37 3.0 9 " (e) N. " " "

c - d - c - ~~d~~ e - d - e

5 38 51 #507 S. " " "

Two taps close together for 530 - a

- then 530 - b - b - a. - (first two taps close together.)

Feb. 15. 1881.

~~First set.~~

Three stars in north half of field - then one in south half before T 07 and T 30. - then T 07 and T 30.

The above is record of ~~the~~ first set.

Feb. 16. 1881.

Double H. C. 81.
3 55 −16.0
6 19
+2 24

This Double Found
t = 6 29 40.5
C. H. Circ. = 2h 32m
C. Dec. " = −16°.1
Fine H. Circ. = 14h 32m +0.4 div.
" Dec. " = +3.8 div.
Pos. Ang. 135 − dist. 6" } Wi. obs.
Mags. 9.1 and 9.3 }

Mags. 8.5 and 9.5 } S. Ob.
Pos. Ang. 125° − dist. 7" } Hazy; not seen well –

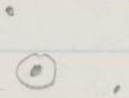
Setting on β Orionis.
6h 42m 19s = t
C. H. Circle 1h 32m.5
C. Decl. −8°.3
Fine Decl. +1.8 div.
Fine H. Circle 13h 32m +1.9 div.

Double H. C. 89.
6 48 5
5 23
+1 25 −22.7

Feb. 16, 1881

6 52
5 23
1 29

H.C. 89
Star suspected only



A 7 magn. star n f about 1½ fields.

---

t 7h 22m 41s H.C. 95 found W. obs.

C. H. Circ. 1h 50m Fine H. Circle 13h 50m + 1.5 div.
C. Decl. − 1°.05 Fine Decl. + 4.0 div.
p 340° s 35″ Magn. 9.0 & 9.2

Pos. ang. 340. − dist. 40.
Mags. 9.4 and 9.5 } S. Obs.

Double H. C. 100.
Several small pairs in this neighborhood, but none answering to description very well.
Star answering best. W. obs.
t 7h 51m 59s
C. H. Circle 1h 52m Fine H. Circle 13h 50m + 2.9 div.
C. Decl. + 4°.8 Fine Decl. + 2.4 div.
p 130° s 25″ Magn. 10.0 & 10.3

Mags. 10.5 + 10.7
Pos. Ang. 130 − dist. 35″ } S. obs.

After putting in scale of single minutes W. estimates distance 40″ instead of 25″.

Feb. 16 1881

H. C. 119

t 8^h 18^m 35^s

C. H. Circ. 1^h $29^m.5$ Fine H. Circle 13^h 32^m +0.2

C. Decl. — 5°.7 Fine Decl. +4.0 div.

Pos. Ang. 160° - dist 1" - ~~Mags. 7.5 + 7.6~~

Mags. 7.5 + 7.6 Power 401, also seen previously with power 316.

Pos. Ang. 160° (S. turned pos. circle and found elongation unchanged) not separated. - Star ~~at~~ about 6.8 mag. - Separate components not seen. Power 401. S. obs.

Feb. 17. 1881.

0m	56.8		1m 2.40	0m 0s	
~~1m~~ 1m	8.0				
	43.5		1m 50.95	0m 48.55	
	58.4				
2	40.2		2m 45.25	1m 42.85	
	50.3				
3	42.2		3m 58.45	2m 56.05	
4	14.7				
	27.4		4m 37.65	3m 35.25	
	47.9				
6	7.8		6m 14.95	5m 12.55	
	22.1				
7	46.0	8 mag.	7m 50.70	0m 0s	
	55.4				
8	33.0	11 mag.	8m 39.10	0m 48.40	
	45.2				
~~9~~	~~7.2~~				
9	30.0	9 mag.	9m 33.85	1m 43.15	
	37.7				
10	30.3	10 mag.	10m 47.15	2m 56.45	
11	4.0				
11	15.2	#507.	11m 26.25	3m 35.55	
	37.3				
12	55.1	#530	#530) 13m 3.25	5m 12.55	
	59.1		(a) 13m 17.15	5m 26.45	
13	11.4	a			
	18.6	b	(b) 13m 24.05	5m 33.35	
	29.5				
3	45.2				

Feb. 17. 1881.

17^{m} $59^{s}.2$ } 8 mag. 18^{m} $5^{s}.70$ 0^{m} 0^{s}
18 12.2
~~22.6~~

18 46.2
57.1 } c 18^{m} $54^{s}.30$ 0^{m} $48^{s}.60$
19 2.4 } d (d) 19^{m} 24.40 1^{m} $18^{s}.70$
43.2
51.7 } ε (ε) 19^{m} 49.00 1^{m} $43^{s}.30$
54.8

21 31.4 } * 507. = 21^{m} 40.85 3^{m} $35^{s}.15$
50.3

23 11.7
12.6 } * 530 = 23^{m} $18^{s}.15$ 5^{m} $12^{s}.45$
24.6 a = 23 32.10 5^{m} $26^{s}.40$
32.3 } a b = 23 39.25 5^{m} $33^{s}.55$
46.2 } b
51.6

Feb 17. 1881

Compar. R112 B 394

5 55 27. ~~5 58 0.0~~ 2m 33s

5 56 27.1 5 59 0.0

5 57 27.0 6 0 0.0

∴ R112 is 2m 17.5s slow.

Compar. Jupiter and Venus.

Phot. R. lenses mounted. P. obs

6 01 158.0 41.8

6 03 199.8

337.3 52.5

30.8 94.3 ✓ ~~1.80~~ 3.2 ✓

~~6 12 221.3~~

~~130.3~~

~~226.8~~

158.6 40.1

6 16 198.7

6 18 334.6 47.4 ~~1.98~~

22.0 87.5 ✓ 4.0 ✓ Mottled [illegible] to [illegible]

66.4 43.8

6 21 110.2

6 23 245.9 48.4 ~~1.86~~

294.3 92.2 3.9 ✓

22

c/

Feb. 17, 1881.

6 55 β Urs. Min. 1 α Urs. Min. S. obs.

α Urs. Min. 1 ε Urs. Maj.

α Urs. Min. 3 γ Cass.

Watch R112

DM. 81° 25, 26

7h 0m 138,6 P. obs.

165,0 26.4+^

6 ~~9~~ 03 7 1.0< 3.2<320.8

1 23.8+^

2 344.6 50.2+^ 3.26+^

25.10

7 1 0

2 14

4 44 31.

11 47 45.

7 2 141,6 P. obs.

20.8+^

~~00~~ 05 7 2.5<162.4

7 4.7<319,2 27.1+^

3 346.3 47.9+^ 3.3 ~~7~~ 6^+

23.95

7 2 30

2 14

4 44 31.

11 49 15.

7 4 139,0 P. obs.

7 4.5<166,2 27.2+^

~~2~~ 07 6.7<318.2 27.5+^

5 345.7 54.7+^ 3.07+^

27.35

① 7 4 30

2 14

4 44 31

11 51 15.

7 7 134.2 S. obs.

10 7 8.0<165. 2 31.0+^

7 ~~06~~ 10.2<314. 3

9 347. 3 33.0+^

64.0+^ 2.71+^

32.00

7 8 0

2 14

4 44 31.

11 54 45.

7 10 138. 1 S. obs.

24.4+^

13 7 11.0<162. 5

7 ~~09~~ 10.2<316. 9 34.0+^

12 350. 9 58.4+^ 2.92+^

29.20

7 11 0

2 14

4 44 31.

11 57 45.

Z 3.

23

⊙ February 17, 1881.

7h 13m   135.7   S. obs.
16 ~~12~~ 7   14.0< 172.0   36.3+^
7 ~~15~~   16.2< 314.6   34.1+^
15   348.7   70.4+^   2.49+^
35.20

(2)
7   14   0
2   14.
4   44   31.
12   0   45.

7h 16   140.1   W. obs.
19 ~~14~~ 7   16.5< 161.8   21.7+^
18.7< 315.2   29.0+^
17   344.2   50.7+^   3.24+^
25.33−

7   16   30.
2   14.
4   44   31.
12   3   15.

18   136.8   W. obs.
21 ~~16~~ 7   18.5< 166.8   30.0+^
20.7< 320.1   21.1+^
19   341.2   51.1+^   3.2~~2~~ 8+^
25.55−

3

7   14   30.
2   14.
4   44   31.
12   5   15.

20   140.8   W. obs
23 ~~18~~ 7   20.5< 162.1   21.3+^
22.7< 314.2   30.1+^
21   344.3   51.4+^   3.21+^
25.70

(3)
7   20   30.
2   14.
4   44   31.
12   7   15.

21   136.2   W. obs.
24 ~~19~~ 7   22.0< 166.1   29.9+^
24.2< 318.4   24.6+^
23   343.0   54.5+^   3.08+^
27.25

7   22   0
2   14
4   44   31.
12   4   45.

23   139.9   W. obs
28 ~~21~~ 7   23.5< 162.0   22.1+^
25.7< 316.2   30.0+^   3.18+^   C
24   346.2   52.1+^
26.05

7   23   30.
2   14
4   44   31
12   10   15.

c,

February 17, 1881.

7h 25m 136.1 W obs.

28 ~~23~~ 7 25.5< 165.3 29.2+^

27.7< 318.0 24.8+^

26 342.8 54.0+^ 3.10+^

27.00

(4) 7 | 25 | 30
4 | 46 | 45
| | 31.
12 | 12 | 15.

27 138.5 W. obs.

30 ~~25~~ 7 27.5< 164.0 25.5+^

29.7< 312.0 36.5+^

28 348.5 62.0+^ 2.7~~9~~ 8+^

31.00

7 | 27 | 30.
4 | 46 | 45.
| | 31.
12 | 14 | 15.

29 137.0 29.6+^ W. obs.

32 ~~27~~ 7 29.5< 166.8

31.7< 317.2 26.0+^

30 343.2 55.8+^ 3.0~~3~~ 2+^

27.90

7 | 29 | 30.
4 | 46 | 45.
| | 31.
12 | 16 | 16.

32 138.7 23.3+^ W. obs.

35 ~~30~~ 7 32.5< 162.0

34.7< 314.2 33.6+^

33 347.8 56.9+^ 2.98+^

28.45

(5) 7 | 32 | 30.
4 | 46 | 45.
| | 31.
12 | 19 | 15.

34 137.8 24.8+^ P. obs.

37 ~~32~~ 7 34.5< 162.6

36.7< 314.6 31.0+^

35 ~~34~~ 345.6 55.8+^ 3.0~~6~~ 2+^

~~136.2~~ 27.90

7 | 34 | 30
4 | 46 | 45
| | 31.
12 | 21 | 15.

35 136.2 27.5+^ P. obs.

38 ~~34~~ 7 36.0< 163.7

38.2< 315.4 29.3+^

37 344.7 56.8+^ 2.98+^

7 | 36 | 0
4 | 46 | 45
| | 31
12 22 45 28.40

5.

6″

c/ February 17. 1881.

7^h 37^m 137.0 26.3+^ P. obs.

40 ~~35~~ 7 37.5< 163.3

39.7< 315.6 $\frac{31.1+^}{57.4^}$ 2.96+^

38 346.7

28.70

7	37	30.
4	44	14.
		31.
12	24	15.

(6.)

39 138.2 23.6+^ W. obs.

42 ~~38~~ 7 40.0< 161.8

42.2< 314.8 $\frac{32.2+^}{55.8+^}$ 3.0~~3~~ 2+^

41 347.0

27.90

7	40	0.
4	44	14.
		31.
12	26	45.

41 135.4 31.6+^ W. obs.

44 ~~39~~ 7 41.5< 167.0

43.7< 316.1 $\frac{25.1+^}{56.7+^}$ 2.7~~9~~ 8+^

42 341.2

28.35

7	41	30
4	44	14.
		31.
12	26	15.

42 137.8 23.2+^ W. obs.

45 ~~41~~ 7 43.0< 161.0

45.2< 314.0 $\frac{31.4+^}{54.6+^}$ 3.0~~8~~ 7+^

44 345.4

27.30

7	43	0.
4	44	14.
		31.
12	29	45.

(7.)

44 135.1 30.2+^ W. obs

47 ~~42~~ 7 44.5< 165.3

46.7< 315.9 $\frac{24.6+^}{54.8+^}$ 3.07+^

45 340.5

27.40

7	44	30.
4	44	14.
		31.
12	31	15.

45 137.7 23.9+^ W. obs.

48 ~~44~~ 7 46.0< 161.6

48.2< 314.0 $\frac{31.7+^}{55.6+^}$ 3.03+^

47 345.7

27.80

7	46	0			
4	44	14.	12	32	45

7

d

c/

February ~~[illegible]~~ 17, 1881.

7h 47m 134.0 30.3+^ W. obs.
50 ~~45~~ 7 47.5 < 164.3
49.7 < 317.2 24.0+^
48 341.2 54.3+^ 3.0~~9~~8+^
27.15

(8.)
7 47 30
4 44 (2) 14.
31.
12 34 15.

48 136.9 23.7+^ W. obs
51 ~~46~~ 7 48.5 < 160.6
50.7 < 314.2 32.4+^
49 346.6 56.1+^ 3.0~~1~~2+^
28.05

7 42 30
4 44 (2) 14
31.
12 35 15.

50 134.0 30.6+^ W. obs
53 ~~48~~ 7 50.5 < 164.6
52.7 < 315.2 27.8+^
51 343.0 58.4+^ 2.92+^
29.20

7 50 30.
4 44 (2) 14.
31.
12 37 15.

51 136.6 25.3+^ W. obs.
54 ~~49~~ 7 51.5 < 161.9
53.7 < 313.3 30.2+^
52 343.5 55.5+^ 3.04+^
27.75

(9.)
7 51 30.
4 44 (2) 14.
31.
12 3[illegible] 15.

55 134.3 29.9+^ W. obs
58 ~~53~~ 7 55.5 < 164.2
57.7 < 314.0 27.2+^
56 341.2 57.1+^ 2.9~~7~~8+^
28.55

7 55 30.
4 44 (2) 14.
31.
12 42 15.

56 135.1 27.1+^ W. obs
59 ~~54~~ 7 56.5 < 16x2.2
58.7 < 312.9 32.3+^
57 345.2 59.4+^ 2.88+^
29.70

7 56 30.
4 44 (2) 14.
31.
12 43 15.

2

9

50

10

8

C

February 17, 1881.

7h 57m 132.5 W. obs.

31.2+^

8 00 ~~55~~ 7 57.5 < 163.7

59.7 < 315.2

27.3+^

58 342.5 58.5+^ 2.92+^

10. 7 57 30.
2 14.
4 44 31.
12 04 15.

29.25

59 134.4 P. obs.

29.3+^

8 02 ~~57~~ 7 59.5 < 163.7

8 1.7 < 314.6 28.7+^

8h 0m 343.3 58.0+^ 2.94+^

7 59 30.
2 14.
4 44 31.
12 46 15.

29.00

0 135.7 P. obs.

23.9+^

8 03 8 0.5 < 159.6

~~7 58~~

2.7 < 309.0

36.6+^

1 345.6 60.5+^ 2.84+^

8 0 30.
2 14.
4 44 31.
12 47 15.

30.25

2 132.9 P. obs.

32.4+^

05 8 2.5 < 165.3

8 ~~00~~ 4.7 < 312.2 33.4+^

3 345.6 65.8+^ 2.65+^

32.90

11. 8 2 30.
2 14.
4 44 31.
12 49 15.

3 131.2 W. obs.

32.4+^

06 8 4.0 < 163.6

8 ~~02~~ 6.2 < 314.1 28.8+^

5 342.9 61.2+^ 2.81+^

30.60

8 4 0
2 15
4 44 31
12 50 46.

5 132.3 W. obs.

29.9+^

08 8 5.5 < 162.2

8 ~~03~~ 7.7 < 311.8 32.3+^ 2.78+^

6 344.1 62.2+^

8 5 30
2 15
4 44 31 12 52 16.

31.10

11

12

C. February 17, 1881.

~~8 7 131.0~~ Reject – Clock stopped.

8h 9m 133.1 W. obs.

7 8 9.5< 161.7 28.6+^

8 12 ~~7~~ 11.7< 312.7 31.8+^

10 344.5 60.4+^ 2.8~~4~~5+^

30.20

(12.)
8 9 30.
2 15.
4 44 31.
12 56 16.

~~11 132.3 Clock Stopped. W. obs.~~

12 132.1 W. obs.

15 8 12.5< 163.8. 31.7+^

8 ~~10~~ 14.7< 309.6 36.1+^

13 345.7 67.8+^ 2.58+^

33.90

8 12 30.
2 15.
4 44 31.
12 59 16.

14 129.9 W. obs.

17 8 14.5< 165.0. 35.1+^

8 ~~12~~ 16.7< 308.5 38.6+^

15 347.1 73.7+^ 2.3~~9~~8+^

36.85

8 14 30.
2 15.
4 44 31.
13 1 16.

16 126.6 W. obs.

19 8 16.5< 162.5 35.9+^

~~14~~ 18.7< 303.5

17 343.9 40.4+^

76.3+^ 2.3~~1~~0+^

38.15

(13.)
8 16 30.
2 15.
4 44 31.
13 3 16.

18 128.9 S. obs.

21 8 19.0< 167.7 38.8+^

~~17~~ 21.2< 309.4

20 350.3 40.9+^

79.7+^ 2.2~~0~~ ~~1+~~ ^

39.85

8 18 0.
2 15.
4 44 31.
13 5 16.

21 123.5 ~~3~~4 6.5+^ S. obs.

170.0

24 8 21.5< 305.3 40.6+^ 2.00+^

22 23.7< 345.9 8~~7~~7.1+^ ~~1.99~~

4 3.55

8 21 30.
2 15.
4
13 8 16

13

14

C February 17, 1881.

8h 23m 125.0 S. obs.
39.5+ ^
8 23.5< 164.5
26
25.7< 309.0 34.3+ ^
24 343.3 73.8+ ^ 2.38+ ^
36.90

(14.) 8 23 30.
2 15.
4 44 31.
13 10 16.

25 128.8 S. obs.
8 25.5< 162.8 34.0+ ^
28
~~2~~ 27.7< 305.3
26 352.9 47.6+ ^
81.6+ ^ 2.15+ ^
40.80

8 25 30.
2 15.
4 44 31.
13 12 16.

27 125.8 S. obs.
38.4+ ^
8 27.5< 164.2
30 29.7< 306.2 37.5+ ^
28 340.7 75.9+ ^ 2.32+ ^
37.95

8 27 30.
2 15.
4 44 31.
13 14 16.

15

29 126.2 S. obs.
42.7+ ^
8 30.0< 168.9
32 32.2< 308.1 44.1+ ^
31 352.2 86.8+ ^ 2.00+ ^
43.40

(15.) 8 30 0
2 15
4 44 31.
13 16 46.

33 128.4 P. obs.
35.9+ ^
8 33.5< 164.5
8 36 35.7< 298.0 50.3+ ^
34 348.3 86.2+ ^ 2.02+ ^
43.10

8 33 30.
2 15.
4 44 31.
13 20 16.

35 124.3 P. obs.
45.2+ ^
8 35.5< 169.5
8 38 37.7< 303.8 37.8+ ^
36 341.6 83.0+ ^ 2.11+ ^
41.50

66

8 35 30.
2 15.
4 ~~3~~44 31.
13 22 16.

c/

February 17, 1881.

8h 36m 127.0 P. obs.
34.3+^
8 36.5 < 161.3
39
38.7 < 302.4
45.6+^
37 348.0
79.9+^ 2.20+^
39.95

(16.) 2 36 30.
4 44 15.
31.
13 23 16.

37 121.6 S. obs.
40.4+^
8 39.0 < 162.0
41
41.2 < 295.4
53.0+^
40 348.4
93.4+^ 1.82+^
46.70

2 39 0
4 44 15.
31.
13 25 46.

40 119.4 S. obs.
47.0+^
8 40.5 < 168.4
43
42.7 < 299.0
46.5+^
41 345.5
95.5+^ 1.77+^
47.75

2 40 30.
4 44 15.
31.
13 27 16.

42 117.2 S. obs.
58.8+^
8 42.5 < 176.0
45
44.7 < 298.3
49.7+^
43 348.0
108.6+^ 1.4~~5~~ 6+^
54.25

(17.) 2 42 30.
4 44 15.
31.
13 29 16.

44 121.2 P. obs.
42.4+^
8 44.5 < 163.6
47
46.7 < 297.7
51.5+^
45 349.2
93.9+^ 1.81+^
46.95

2 44 30.
4 44 15.
31.
13 31 16.

45 117.4 P. obs.
51.9+^
8 45.5 < 169.3
8 48
47.7 < 301.6
40.6+^
46 342.2
92.5+^ 1.85+^
46.25

2 45 30.
4 44 15.
31.
13 32 16.

17

1.83

C

February 17, 1881.

	8h 47m		121.8	41.2+^		P. obs	
	8	47.5<	163.0				
	50	49.7<	298.9	48.5+^			
	48		347.4	89.7+^	1.92+^		
				44.85			
(18.) 8	47	30.					
	2	15.					
4	44	31.					
13	34	16.					
	49		116.3	49.8+^		S. obs.	
	8	49.5<	166.1				
	52	51.7<	294.4	52.8+^			
	50		347.2	102.6+^	1.59+^		
				51.30			
	49	30.					
	2	15.					
4	44	31.					
13	36	16.					
	50		113.1	55.9+^		S. obs.	
	8	50.5<	169.0				
	53	52.7<	297.8	49.1+^			19
	51		346.9	105.0+^	1.54+^		
				52.50			
8	50	30.					
	2	15.					
4	44	31.					
13	37	16.					
	51		120.3	49.8+^		S. obs.	
	8	52.0<	170.1				
	54	54.2<	297.8	48.5+^			
	53		346.0	98.3+^	1.70+^		
				49.15			
(19.) 8	52	0					
	2	15.					
4	44	31.					
13	38	46.					
	53		119.7	48.7+^		P. obs.	
	8	54.0<	168.4				
	56	56.2<	293.0	55.4+^			
	55		348.4	104.1+^	1.56+^		
				52.05			
8	54	0					
	2	15					
4	44	31.					
13	40	46.					
	55		117.4	51.2+^		P. obs.	
	8	55.5<	168.6				20
	58	57.7<	297.2	47.6+^			
	56		344.8	98.8+^	1.69+^		
				49.40			
8	55	30.					
	2	15.					
4	44	31.					
13	42	16					

C,

February 17, 1881.

8h 57m 118.3 P. obs.

8 57.5 < 165.9 47.6^{+1}

9 00 59.7 < 289.6 58.0^{+1}

58 347.6 105.6^{+1} 1.52^{+1}

52.80

(20.) 8 57 30.
4 ²44 15:
31.
13 44 16.

59 114.0 S. obs.

8 59.5 < 161.5 47.5^{+1}

9 02 9 1.7 < 294.2 52.8^{+1}

9h 0m 347.0 100.3^{+1} 1.65^{+1}

50.15

8 59 30.
4 ²44 15:
31.
13 46 16.

0 119.0 47.9^{+1}

9 0.5 < 166.9 S. obs. 21

9 03 2.7 < 290.1 58.1^{+1}

1 348.2 106.0^{+1} 1.51^{+1}

53.00

9 0 30.
4 ²44 15:
31.
13 47 16.

2 114.7 S. obs.

9 2.5 < 166.1 51.4^{+1}

9 05 4.7 < 291.0

3 347.0 56.0^{+1} 107.4^{+1} 1.48^{+1}

53.70

(21.) 9 2 30.
4 ²44 15:
31.
13 49 16.

3 118.4 P. obs.

9 3.5 < 163.0 44.6^{+1}

9 06 5.7 < 293.8 49.8^{+1}

4 343.6 94.4^{+1} 1.80^{+1}

47.20

9 3 30.
4 ²44 15:
31.
13 50 16.

5 114.4 P. obs.

9 5.5 < 169.0 54.6^{+1} 22

9 08 7.7 < 294.6 50.1^{+1}

6 344.7 104.7^{+1} 1.54^{+1}

52.35

9 5 30.
4 ²44 15:
31.
13 52 16.

C

Feb. 17, 1881.

~~9h 6m 115.7 76.0~~ Reject.

Probably 162.0

9h 6m 9 7.0 115.7 54.0^{+1} P. obs.

9.2 169.7

9 09 292.7 52.4^{+1}

8 345.1 106.4^{+1} 1.508^{+1}

53.20

(22.) 9 7 0
2 15
4 44 31
13 53 46

9 111.7 51.5^{+1} S. obs

9 10.0 163.2

9 12 12.2 285.5 65.8^{+1} 1.28^{+1}

11 351.3 117.3^{+1}

58.65

9 10 0
2 15
4 44 31
13 56 46

12 107.0 64.0^{+1} S. obs.

clock troublesome 171.0

16 9 13.5 293.2 50.8^{+1} 1.31^{+1}

15.7 344.0 114.8^{+1}

15 57.40

9 13 30.
2 15.
4 44 31.
14 0 16.

15 113.9 57.1^{+1} S. obs.

9 16.6 171.0

18 18.2 279.3 67.9^{+1} 1.09^{8+1}

347.2 125.0^{+1}

17 62.50

(23.) 9 16 0
2 15
4 44 31
14 2 46.

19 114.2 47.6^{+1} P. obs.

9 19.5 161.8

9 22 21.7 287.0 58.6^{+1}

345.6 106.2^{+1} 1.51^{+1}

20 53.10

9 19 30.
2 15.
4 44 31.
15 6 16.

23

e/

February 17, 1881.

9^h 20^m 107.8 — P. obs.

9 20.5< 165.4 $57.6^{+\wedge}$

9 23 22.7< 289.3 $53.6^{+\wedge}$

21 342.9 $111.2^{+\wedge}$ $1.39^{+\wedge}$

55.60

9 20 30.

4 $\overset{2}{44}$ 15.

31.

14 7 16.

22 113.3 — P. obs. — 24

9 22.5< 162.0 $48.7^{+\wedge}$

25 24.7< 286.0 $59.8^{+\wedge}$

23 345.8 $108.5^{+\wedge}$ $1.4\overset{6+\wedge}{5}$

54.25

(24.) 9 22 30.

4 $\overset{2}{44}$ 15.

31.

14 9 16.

23 104.4 — S. obs

9 24.0< 164.2 $59.8^{+\wedge}$

26 26.2< 280.4 $63.1^{+\wedge}$

25 343.5 $122.9^{+\wedge}$ $1.13^{+\wedge}$

61.45

9 24 0

4 $\overset{2}{44}$ 15

31

14 10 46.

25 107.3 — S. obs.

9 25.5< 165.2 $57.9^{+\wedge}$ — 25

28 27.7< 287.0 $56.0^{+\wedge}$

26 243.0 $113.9^{+\wedge}$ $1.33^{+\wedge}$

56.95

9 25 30.

4 $\overset{2}{44}$ 15.

31.

14 12 16.

27 105.9 — S. obs.

9 27.5< 164.9 $59.0^{+\wedge}$

30 29.7< 280.6 $66.4^{+\wedge}$

28 347.0 $125.4^{+\wedge}$ $1.08^{+\wedge}$

62.70

(25.) 9 27 30.

4 $\overset{2}{44}$ 15.

31.

14 14 16.

29 107.6 $60.4^{+\wedge}$ — P. obs.

9 29.5< 168.0

32 31.7< 284.4 $63.9^{+\wedge}$

30 348.3 $124.3^{+\wedge}$ $1.10^{+\wedge}$

62.15

9 29 30.

4 $\overset{2}{44}$ 15.

31.

14 16 16.

©

February 17, 1881.

9h 30m 105.6 P. obs
9 30.5 < 167.0 61.4+
33 32.7 < 286.8 55.8+
342.6 117.2+ 1.2~~8~~5+
58.60
31
9 30 30.
2 15.
4 44 31.
14 17 16.

26

32 111.9 P. obs.
9 32.5 < 160.3 48.4+
35 34.7 < 281.5 60.7+
342.2 109.1+ 1.44+
54.55
33
(26.) 9 32 30.
2 15.
4 44 31.
14 19 16.

33 104.6 P. obs
9 33.5 < 166.6 62.0+
36 35.7 < 286.1 56.2+
342.3 118.2+ 1.23+
59.10
34
9 33 30.
2 15.
4 44 31.
14 20 16.

34 110.0 P. obs: 51.0+
–5 9 34.5 < 161.0
37 36.7 < 284.3 60.1+
344.4 111.1+ 1.39+
55.55
35
9 34 30.
2 15.
4 44 31.
14 21 16.

27

36 106.4 P. obs.
9 36.5 < 165.3 58.9+
39 38.7 < 285.6 57.7+
343.3 116.6+ 1.27+
58.30
37
(27.) 9 36 30.
2 15.
4 44 31.
14 23 16.

39 104.6 S. obs.
9 39.5 < 169.1 64.5+
42 41.7 < 283.5 58.7+
342.2 123.2+ 1.12+
61.60
40
9 39 30.
2 15.
4 44 31.
14 26 16.

C,

February 17, 1881.

9h 40m			106.1			S. obs.
	9.	40.5	166.5	60.4+1		
43		42.7	282.0	60.0+1	8+1	
41			342.0	120.4+1	1.1~~9~~	
				60.20		

9 40 30.
4 42 15. 31.
14 27 16.

43			100.9			S. obs.
46	9	44.0	160.9	60.0+1		
		46.2	280.0			
45 ~~44~~			346.0	66.0+1		
				126.0+1	1.06+1	
				63.00		

} 28

(28.) 9 44 0
4 42 15. 31.
14 30 46.

46			105.2			P. obs.
	9	46.5	166.9	61.7+1		
49		48.7	286.2			
47			340.4	54.2+1	~~9~~+	
				115.9+1	1.28+1	
				57.95		

9 46 30.
4 42 15. 31.
14 33 16.

47			109.2			P. obs
	9	47.5	162.7	53.5+1		
50		49.7	281.6	63.6+1		
48			345.2	117.1+1	1.26+1	
				58.55		

} 29

9 47 30.
4 42 15. 31.
14 34 16.

48			102.4			P. obs
51	9	48.5	166.6	64.2+1		
		50.7	285.4	55.8+1		
49			341.2	120.0+1	1.19+1	
				60.00		

(29.) 9 48 30.
4 42 15. 31.
14 35 16.

49			105.6			P obs
	9	49.5	159.9	54.3+1		
52		51.7	284.6	55.9+1		
50			340.5	110.2+1	1.41+1	
				55.10		

9 49 30.
4 42 15. 31.
14 36 16.

☾ February 17, 1881.

9h 51m — 101.7 — 57.6+
9 — 51.0s — 159.3
53 — 53.2s — 284.6 — 54.6+
339.2 — 112.2+ — 1.37+
56.10
51

9 51 0
2 15
4 44 31.
14 37 46.

P. obs

52 — 107.9 — 51.0+
9 — 52.5s — 158.9
55 — 54.7s — 278.4 — 65.3+
343.7 — 116.3+ — 1.28+
58.15
53

P. obs.

(30.)

9 52 30.
2 15.
4 44 31.
14 39 16.

30

57 — 101.5 — 58.5+
9 — 54.5s — 160.0
57 — 56.7s — 281.6 — 55.7+
337.3 — 114.2+ — 1.32+
57.10
55

9 54 30
2 15.
4 44 31.
14 41 16.

W. obs.

55 — 101.7 — 59.5+
9 — 56.0s — 161.2
9h 58 — 58.2s — 282.0 — 56.5+
338.5 — 116.0+ — 1.28+
58.00
57

9 56 0
2 15
4 44 31.
14 42 46.

W. obs.

57 — 100.9 — 57.1+
9 — 57.5s — 158.0
10 00 — 59.7s — 281.0 — 56.5+
337.5 — 113.6+ — 1.34+
56.80
58

W obs

(31.)

9 57 30.
2 15.
4 44 31.
14 44 16.

31

58 — 101.5 — 58.0+
9 — 58.5s — 159.5
10 01 — 10 0.7s — 282.7 — 56.8+
339.5 — 114.8+ — 1.31+
57.40
59

W obs

9 58 30.
2 15.
4 44 31.
14 45 16.

February 17, 1881.

c/

10h 0m			105.5	55.0+		W. obs.	
	10	0.5	160.5				
10/03		2.7	281.2	55.5+			32
1			336.7	110.5+	1.4X+		
				55.25			
10 2 30. 4 40 15 31. 14 47 16.							
1			100.9	60.3+		W. obs.	
	10	1.5	161.2				
10/04		3.7	283.2	56.7+			
2			339.9	117.0+	1.26+		
				58.50			
(32.) 10 4 30. 4 42 15 31. 14 42 16.							
3			95.6	67.7+		W. obs.	
	10	3.5	163.3				
10/06		5.7	273.2	64.7+			
4			337.9	132.4+	.93+		
				66.20			
10 3 30. 4 42 15 31. 14 50 16.							
5			98.6	60.9+		W obs.	
	10	5.5	159.5				
10/08		7.7	277.6	66.3+			33
6			343.9	127.2+	1.04+		
				63.60			
10 5 30. 4 44 15 31. 14 52 16.							
7			100.5	56.8+		W. obs.	
	10	7.5	157.3				
10/10		9.7	278.0	56.2+			
8			334.2	113.0+	1.35+		
				56.50			
(33.) 10 7 30. 4 44 15 31. 14 54 16.							
13			104.6	52.8+		P. obs.	
	10	14.0	157.4				
10/16		16.2	278.3	60.2+			
15			338.5	113.0+	1.35+		
				56.50			
10 14 0 4 40 16 31 15 0 08							

e/

February 17, 1881.

10ʰ 15ᵐ 102.5 — P. obs.

10 15.5 < 157.7 55.2^{+1}

10 18 — 17.7 < 283.7

16 — 336.9 53.2^{+1} / 108.4^{+1} — 1.46^{+1}

54.20

10 15 30.
5 55 16.
31.
15 2 18.

17 — 104.6 — P. obs. — 34

10 17.0 < 156.6 52.0^{+1}

10 19 — 19.2 < 280.2

17 — 338.3 58.1^{+1} / 110.1^{+1} — 1.42^{+1}

55.05

(34.) 10 17 0.
5 55 16.
31.
15 18 3 5 9.

97.7 — W. obs.

10 19.0 < 168.7 71.0^{+1}

10 21 — 21.2 < 274.1

20 — 342.8 68.7^{+1} / 139.7^{+1} — .78^{+1}

69.85

10 19 0.
5 55 16.
31.
15 20 5 9.

97.5 66.3^{+1} — W. obs. — 35

10 20.5 < 163.8

10 23 — 22.7 < 278.3

21 — 337.1 58.8^{+1} / 125.1^{+1} — 1.08^{+1}

62.55

10 20 30.
5 55 16.
31.
15 22 18.

97.9 61.2^{+1} — W. obs.

10 22.5 < 159.1

10 25 — 24.7 < 273.0

23 — 333.8 60.8^{+1} / 122.0^{+1} — 1.15^{+1}

61.00

(35.) 10 22 30.
5 55 16.
31.
15 9 19.

25 — 101.3 — P. obs.

10 25.5 < 153.4 52.1^{+1}

10 28 — 27.7 < 277.7

26 — 334.6 56.9^{+1} / 109.0^{+1} — 1.44^{+1}

54.50

10 25 30.
5 55 16.
31.
15 12 19.

Q/

February 17, 1881.

10^{h} 26 100.3 P. obs
10 26.5 < 154.4 54.1+^
10 / 29 / 28.7 < 279.8 53.2+^
27 333.0 107.3+^ 1.48+^
53.65
10 26 30.
4 ^{2}44 16.
31.
15 27^{3} 17.

104.6 P. obs
10 27.5 < 152.8 48.2+^
10 / 30 / 29.7 < 276.8 59.9+^
28 336.7 108.1+^ ~~1.49~~ 1.46+^
54.05
36. 10 27 30.
4 ^{2}44 16.
31.
15 14 17.

36

30 101.2 W. obs.
10 30.5 < 155.2 54.0+^
10 / 33 / 32.7 < 277.8 65.2+^
31 343.0 119.2+^ 1.21+^
59.60
10 30 30.
4 ^{2}44 16.
31.
15 17 17.

32 99.4 W. obs.
10 32.5 < 155.2 55.8+^
10 / 35 / 34.7 < 271.7 63.1+^
33 334.8 118.9+^ 1.22+^
59.45
10 32 30.
4 ^{2}44 16.
31.
15 19 17.

33 97.5 W. obs.
10 34.0 < 157.0 59.5+^
10 / 36 / 36.2 < 274.5 63.6+^
35 338.1 123.1+^ 1.1~~3~~2+^
61.55
37. 10 34 0
4 ^{2}44 16.
31.
15 20 47.

39

35 100.7 49.6+^ P. obs.
10 36.0 < 150.3
10 / 38 / 38.2 < 276.3
37 335.8 59.5+^ 109.1+^ 1.44+^
10 36 0 15 22 47.
54.55
4 ^{2}44 16
31

Feb. 17, 1881.

10 37 103.1 53.1 +^ P. obs
10 37.5 156.2
10 40 39.7 278.2 56.0 +^
38 334.2 109.1 +^ 1.44 +^
54.55
10 37 30.
2 16.
4 44 31.
15 24 17.

38
3 8

38 99.4 50.8 +^ P. obs.
10 41 10 38.5 150.2 ~~1.40~~
40.7 276.0 60.2 +^ ~~1.17~~ 1.39 +^
39 336.2 111.0 +^
55.50
(38) 10 38 30.
2 16.
4 44 31.
15 25 17.

10 41 93.2 63.7 +^ W obs
10 42.0 156.9
10 44 44.2 278.0 55.6 +^
43 333.6
119.3 +^ 1.21 +^
59.65
10 42 0
2 16.
4 44 31.
15 28 47.

43 98.1 54.3 +^ W obs
10 46 10 44.0 152.4
46.2 272.1 67.8 +^
45 339.9
122.1 +^ 1.14 +^
61.05
10 44 0.
2 16.
4 44 31.
15 30 47.

39

45 97.0 58.2 +^ W obs
10 45.5 155.2
10 48 47.7 274.9 56.7 +^
46 331.6 114.9 +^ 1.30 +^
57.45
10 45 30.
2 16.
4 44 31.
(39) 15 32 17.

C/

Feb. 17. 1881.

10 50 97.7 56.2^{+1} P. obs.
10 50.0<153.9
$\frac{10}{}$ $\frac{52}{}$ 52.2<273.6
50 337.8 64.2^{+1}
120.4^{+1} 1.1$\overset{8+1}{9}$
60.20

10 50 0.
2 16.
4 44 31.
15 36 47.

51 95.1 58.7^{+1} P. obs.
10 51.5<153.8
$\frac{10}{}$ $\frac{54}{}$ 53.7<277.0
52 332.2 55.2^{+1}
113.9^{+1} 1.33^{+1}
56.95

10 51 30.
2 16.
4 44 31.
15 38 17.

40

52 104.3 46.5^{+1} P. obs.
10 52.5<150.8
$\frac{10}{}$ $\frac{55}{}$ 54.7<272.3
53 337.9 65.6^{+1}
112.1^{+1} 1.37^{+1}
56.05

(40) 10 52 30.
2 16.
4 44 31.
15 39 17.

55 96.5 58.0^{+1} W. obs
10 55.5<154.5
$\frac{10}{}$ $\frac{58}{}$ 57.7<275.9
56 331.0 55.1^{+1}
113.1^{+1} 1.3$\overset{4}{5}$$^{+1}$
56.55

10 55 30.
2 16.
4 44 31.
15 42 17.

57 99.8 52.7^{+1} W. obs.
10 57.5<152.5
$\frac{11}{}$ $\frac{00}{}$ 59.7<274.0
58 331.0 57.0^{+1}
109.7^{+1} 1.4$\overset{2}{3}$$^{+1}$
54.85

41

10 57 30.
2 16.
4 44 31.
15 44 17.

C

Oct 17. 1881

10 59 . 94.7 60.3+^ W obs

10 59.5 < 155.0

10 02 11 1.7 < 375.1 56.8+^

3319 117.1+^ 1.26+^

58.55

10 59 0
2 16
4 44 31.
15 45 47.

11 (41) - 1 91.6 59.7+^ P. obs.

04 11 2.0 < 151.3

4.2 < 272.4 59.4+^

3 331.8 119.1+^ 1.21+^

59.55

11 2 0
2 16.
4 44 31.
15 42 47.

3 96.3 56.6+^ P. obs.

06 11 3.5 < 152.9

5.7 < 275.4 56.2+^

4 331.6 112.8+^ 1.35+^

56.40

11 3 30.
2 16.
4 44 31.
15 50 17.

5 96.5 53.7+^ P. obs. 42

11 5.5 < 150.2

08 7.7 < 274.8 57.4+^

6 332.2 111.1+^ 1.39+^

55.55

(42) 11 5 30.
2 16.
4 44 31.
15 52 17.

11 7 92.5 66.5+^ W obs

11 8.0 < 159.0

10 10.2 < 268.5 61.5+^

9 330.0 128.0+^ 1.02+^

64.00

11 9 0
2 16
4 44 31.
15 54 47.

C/

Feb. 17. 1881.

11 09 — 95.8 — 53.5 +^ — W. obs

" 10.0s 149.3

12 — 12.2s 271.4 — 64.4 +^

11 — 335.8

11 10 0
2 16
4 44 31
15 56 47.

117.9 +^ 1.24 +^
58.95

43

11 11 — 93.0 — 65.3 +^ — W. obs.

" 12.0s 158.3

14 — 14.2s 270.7 — 57.2 +^

13 — 327.9

11 12 0
2 16
4 44 31
(43) 15 52 47.

122.5 +^ 1.14 +^
61.25

15 — 97.1 — 53.2 +^ — S. obs.

" 15.5s 150.3

18 — 17.7s 272.4 — 64.9 +^

16 — 337.3

11 15 30.
2 16.
4 44 31.
16 2 17.

118.1 +^ 1.24 +^
59.05

17 — 91.3 — 64.6 +^ — S. obs.

" 17.5s 155.9

20 — 19.7s 271.5 — 59.3 +^

18 — 330.8

11 17 30.
2 16.
4 44 31.
16 4 17.

123.9 +^ 1.11 +^
61.95

44

19 — 93.2 — 60.6 +^ — S. obs.

" 19.5s 153.8

22 — 21.7s 271.6 — 62.3 +^

20 — 333.9

11 19 30.
2 16.
4 44 31.
(44) 16 6 17.

122.9 +^ 1.13 +^
61.45

@ Feb. 17, 1881

11 21 89.5 57.5+ W. obs.

11 21.5 147.0

24 23.7 272.0 58.0+

22 330.0

11 21 30. 115.5+ 1.29+

2 16.

4 44 31. 57.75

16 2 17.

11 23 90.0 56.8+ W. obs.

11 23.5 146.8 Kr

26 25.7 269.8 61.8+

24 331.6

11 23 30. 118.6+ 1.22+

2 16.

4 44 31. 59.30

11 16 25 0 17.

93.2 58.8+ W. obs.

152.0

28 11 25.5 272.6 Thin clouds.

27.7 53.2+

26 325.8

11 25 30. 112.0+ 1.37+

2 16.

4 44 31. 56.00

11 56 27 2 17. 95.2 54.7+ R. obs.

11 28.0 149.9

30 30.2 270.6 60.1+

29 330.7

11 28 0 16. 114.8+ 1.31+

4 44 31. 57.40

11 16 29 4 47. 93.6 60.6+ P. obs.

11 29.5 154.2

32 31.7 272.0 58.6+ 46

30 330.6

11 29 30. 119.2+ 1.21+

2 16.

4 44 31. 59.60

11 16 31 6 17. 90.3 59.2+ P. obs.

34 11 31.6 219.5

33.7 270.3 61.9+

32 332.7

11 31 30. 121.1+ ~~1.19~~

2 16.

4 44 31.

4 16 16 17. 60.55 1.17+

C,

Feb 17. 1881

11 34 89.1 60.8+^ S. obs.
149.9
37 11 35.0s
270.7 60.5+^
37.2s
36 331.2
121.3+^ 1.17+ 6^
60.65
11 35 06
4 44 31
16 21 47.

36 92.8 56.3+^ S. obs.
149.1
39 11 37.0s
270.0 Clear, 47
37.2s
38 329.2 59.2+^
115.5+^ 1.29+^
57.75
11 37 0
4 44 31
16 23 47.

38 92.8 56.7+^ S. obs.
149.5
41 11 38.5s
40.7s
272.0 59.8+^
39 331.8 116.5+^ 1.27+^
58.25
(47) 11 34 30.
4 44 16.
16 25 31.
17.

11 41 95.3 59.9+^ P. obs.
145.2
44 11 41.5s
43.7s
270.3
42 332.6 62.5+^
112.4+^ 1.36+^
56.20
11 46 30.
4 44 16.
16 28 31.
17.

11 42 90.0 57.2+^ P. obs.
147.2
45 11 42.5s
44.7s
271.1 56.6+^
43 327.7 113.8+^ 1.33+^ 42
56.90
11 42 30.
4 44 16.
16 29 31.
17.

11 43 93.3 52.3+^ P. obs.
145.6
46 11 43.5s
45.7s
269.7 61.9+^
44 331.6 114.2+^ 1.32+^
57.10
(48) 11 43 30.
4 44 16.
16 30 17.

C

Feb. 17. 1881.

S obs

11 45 92.8 55.1+^

147.9

48 11 46.0 <

48.2 < 271.5 55.5+^

47 327.0

11 46 0.

4 44 16.

16 48 31.

16 48 47.

110.6+^ 1.40+^

55.30

S. obs.

48 93.0 56.8+^

149.8

51 11 48.5 <

50.7 < 268.0 60.5+^

49 328.5

11 44 30.

4 44 16.

16 35 31.

16 35 17.

~~116.7~~ 117.3+^ ~~1.27~~

58.65 17 5+^

S obs.

50 90.3 56.9+^

147.2

52 11 50.0 <

52.2 < 271.2 56.4+^

50 328.1

11 50 0.

49 2 16.

4 44 31.

16 36 47.

113.8+^ 1.33+^

56.90

K9

R obs.

11 51 92.3 52.0+^

144.3

54 11 52.0 <

54.2 < 268.7 59.1+^

53 327.8

11 52 0.

4 44 16.

16 38 31.

16 38 47.

111.1+^ 1.39+^

55.55

P obs.

11 53 91.6 53.3+^

144.9

56 11 53.5 <

55.7 < 271.7 55.8+^

54 327.5

11 53 30.

4 44 16.

16 40 31.

16 40 17.

109.1+^ 1.44+^

54.55

P obs

50

11 54 94.0 50.0+^

144.0

57 11 54.5 <

56.7 < 273.3 50.9+^

55 324.2

11 54 30.

49 44 16.

31.

100.9+^ 1.63 4+^

50.45

O

Feb. 17. 1881

11 56 88.0 58.4+^ S obs

59 11 56.5< 146.4

58.7< 272.8

57 325.0 52.2+^

11 √6 30.
K 2 16
KK 31.
16 K3 17.

1106+^ 1,40+^

55.30

58 89.2 54.9+^ S obs.

11 58.5< 144.1

12 01 12 0.7< 268.2

59 328.2 60.0+^

11 √0 38.
K 2 16.
KK 31.
16 K5 17.

114.9+^ 1.31+ 0^

57.45

59 89.7 58.1+^ S obs.

02 11 59.5< 147.8

12 1.7< 269.2

12 0 322.2 53.0+^

11 √9 30.
K 2 16.
KK 31.
16 K6 17.

111.1+^ 1.39+^ √1

55.55

12 1 95.5 41.8+^ P. obs

04 12 2.0< 137.3

4.2< 271.7

3 321.2 49.5+^

12 2 0
K K2K 16
KK 31.
16 3K2 47.

91.3+^ 1.88+^

45.60

12 92.7 48.7+^ P. obs

12 3.5< 141.4

06 5.7< 273.3

4 319.4 46.1+^

12 3 30.
K 2KK 16.
31.
16 √0 17.

94.8+^ 1.79+^ √2

47.40

12 4 12 4.5< 95.4 42.5+^ P. obs

6.7< 137.9

07 272.1 50.7+^

5 322.8

12 4 30.
K 4K 16.
16 31.

93.2+^ 1.88 3+^

46.60

c

Feb 17 1881

12 06 93.2 46.8+ S. obs
140.0
09 1.2 6.5< 272.2 49.5+
8.7<
07 321.7
12 06 30.
4 44² 16.
31.
16 53 17.
96.3+ 1.75+
48.15

S. obs.
12 07 94.0 47.3+
141.3
12 10 1.2 8.0<
10.2< 269.5 49.9+
09 319.4
12 04 0.
4 44² 16.
31.
16 54 47.
97.2+ 1.73+
48.60

S. obs
12 10 91.7 53.1+
144.8
13 1.2 11.0< 269.0
13.2< 52.0+
12 321.0
12 11 0.
(54) 44² 16.
31.
16 57 47.
105.1+ 1.53 4+
52.55

P. obs.
12 13 95.3
139.5 44.2+
16 1.2 14.0< 270.8
16.2<
15 322.~~4~~2 51.4+
12 14 0.
4 44² 16.
31.
17 0 47.
95.6+ 1.77+
47.80

P. obs.
12 15 94.5 42.8+
18 1.2 15.5< 137.3
16 17.7< 273.7 41.3+
315.0
12 15 30.
4 44² 16.
31.
17 2 17.
84.1+ 2.08+
42.05

P. obs.
12 17 95.2 42.3+
137.5
20 1.2 17.5< 268.3
12 18 19.7< 319.1 50.8+
12 17 30.
(54) 44² 16.
31.
17 4 17.
93.1+ 1.83+
46.55

√ √4

@

Feb 17 1881

12 1.8 91.2 45.5+^ S. obs.

21 12 19.0 < 136.7

21.2 < 272.4 45.6+^

20 318.0

12 19 0. 91.1+^ 1.88 ~~7~~+^
K KK 16.
31. 45.55
17
12 21 47.

92.2 42.0+^ S. obs.

24 12 21.5 < 134.2

23.7 < 269.1 49.1+^

22 318.2

12 22 30. 91.1+^ 1.88 ~~7~~+^
K KK 19.
31. 45.53
17
12 22 17.

91.1 45.1+^ S. obs.

25 12 22.5 < 136.2

24.7 < 270.5 44.3+^

23 314.8

(55) 12 22 30. 89.4+^ 1.93+^
K KK 17.
31.
12 17 25 9 12. 44.70 P. obs.

92.3 41.8+^

28 12 25.5 < 134.1

27.7 < 290.0

26 314.1 44.1+^

12 25 30. 85.9+^ 2.0~~3~~2+^
K KK 17.
31.
12 17 26 12 12. 42.95 P. obs.

94.4 38.2+^

29 12 26.5 < 132.6

28.7 < 273.7 38.8+^ √6

27 312.5

12 26 30. 77.0+^ 2.28+^
K KK 18.
31. 38.50
17
12 28 13 12.

96.3 37.5+^ P. obs.

30 12 28.0 < 133.8

30.2 < 273.4 40.2+^

28 313.6

(56) 12 28 0. 77.7+^ 2.2~~6~~7+^
K KK 17.
31.
17 1K 48 38.85

√√

C

Feb. 17, 1881.

12 29 94.4 43.6+ S. obs
138.0
32 12 30.0' 32.2' 268.5 44.8+
31 313.3
12 30 0
4 44 17
31.
17 16 42.
88.4+ 1.96+
44.20
12 31 92.9 43.2+ S. obs
136.1
34 12 31.5' 33.7' 268.2 47.1+
32 315.3
12 31 30.
4 44 17.
31.
17 18 18.
90.3+ 1.97+
45.15
12 33 91.1 45.6+ S. obs
136.7
36 12 33.5' 35.9' 272.2 46.6+
34 308.8
12 33 30
4 44 17
31.
17 20 12.
92.2+ 1.86+
46.10
57

12 35 92.7 P. obs.
131.8 39.1+
38 12 35.5' 37.7' 272.2 38.2+
36 310.4
12 35 30.
4 44 17.
31.
17 22 12.
77.3+ 2.28+
38.65
12 36 95.6 P. obs.
131.7 36.1+
39 12 36.5' 38.7' 273.6 37.3+
37 310.9
12 36 30.
4 44 17.
31.
17 23 18.
73.4+ 2.40+
36.70
12 38 95.8 36.6+ P. obs.
132.4
40 12 38.0' 40.2' 270.7 41.2+
38 311.9
12 38 0
4 44 17
17 24 48
77.8+ 2.26+
58

C,

Feb. 17. 1881

12 39 96.0 35.2 +1 Schs
131.2
42 12 40.0 274.0
42.2 41.8 +1
41 315.8
12 40 0
4 44 17.31
17 26 42
77.0 +1 2.28 +1
38.50

12 41 94.4 38.6 +1 Schs
1330
44 12 41.5 271.7
43.7 42.5 +1
42 314.2
12 41 30.
4 44 17.31
17 22 16.
81.1 +1 2.18 +1
40.55

12 43 91.0 44.8 +1 Schs
135.8
46 12 43.5 272.9
45.7 42.3 +1
44 315.2
12 43 30.
(54) 44 17.31
17 30 16.
87.1 +1 2.00 +1
~~1.99~~
43.55

59

12 45 93.0 37.0 +1 P. obs
130.0
48 12 45.5 274.3
47.7 33.9 +1
46 308.2
12 45 30.
4 44 17.31
17 32 12.
70.9 +1 2.48 +1
35.45

12 49 96.1 33.6 +1 P. obs
129.7
52 12 49.5 272.9
51.7 35.4 +1
50 308.13
12 49 30.
4 44 31.
17 36 12.
69.0 +1 2.54 +1
34.50

60

12 50 97.7 31.3 +1 P. obs
129.0
53 12 50.5 274.2
52.7 34.7 +1
51 308.9
12 50 30.
(60) 44 17.31
17
66.0 +1 2.64 +1

70

c/

Feb. 17. 1881.

12 52 95.3 38.4 S. obs.

133.7

55 12 53.0 273.9 38.1

53.2

54 312.0 76.5 2.30

12 3 0

17

31.

17 39 12.

38.25

12 54 93.7 38.9 S. obs.

132.6

57 12 54.5 272.7 35.1

56.7

55 307.8 74.0 2.38

12 4 30.

17.

31.

17 1 18.

37.00

12 56 93.4 38.3 S. obs.

131.7

59 12 56.5 274.6 33.4

58.7

(61) 57 308.0 71.7 2.45

12 6 30.

17.

31.

17 3 12.

35.85

12 58 96.9 27.4 P. obs.

124.3

13 01 12 59.0 272.8

13 1.2 307.9 35.1

13 0

12 9 0

17

31.

17 18.

62.5 2.77 6

31.25

13 0 96.0 29.3 P. obs.

125.3

10 03 13 0.5 276.4

2.7 305.9 29.5

1

13 0 30

17

31

17 7 18.

58.8 2.91

29.40

13 2 97.2 27.9 P. obs.

125.1

05 13 2.5 275.8

4.7 305.8 30.0

3

13 2 30.

2 17.

31.

17 9 18.

57.9 2.94

28.95

61

62

C/

Feb 17.1881

13 04 96.8 30.2+1 S. obs.
127.0
07 13 4.5 274.0 32.0+1
6.7
05 306.0
13 0 5 30
K 2 KK 17 31
17 √1 14.
62.2+1 2.78+1
31.10

13 06 94.9 31.8+1 S. obs.
126.7
08 13 6.5 273.0 34.4+1
8.7
07 307.4
13 6 30
K 2 KK 17 31.
17 √3 14.
66.2+1 2.64 3+1
33.10

13 07 94.0 33.0+1 S. obs.
127.0
10 13 7.5 270.8 35.2+1
13 7 0 9.7
K 2 KK 17 31. 306.0
17 √3 KA.
68.2+1 2.57+1
34.10

63

13 9 95.8 28.8+1 P. obs.
124.6
12 13 10.0 275.4 29.6+1
12.2
11 305.0
13 10 0
K 2 KK 17 31
17 √6 KA.
58.4+1 2.92+1
29.20

13 11 95.6 26.6+1 P. obs.
122.2
14 13 11.5 275.4 29.0+1
13.7
12 304.4
13 11 2 30.
K KK 17. 31.
17 √2 14.
55.6+1 3.08+1
27.80

13 12 95.1 28.3+1 P. obs.
123.4
15 13 12.5 274.6 30.2+1
14.7
13 304.8
13 12 30.
K 2 KK 17. 31
17 √9 14.
58.5+1 2.92+1
29.25

64

C

Feb. 17, 1881.

13 14 95.4 27.4+ S obs.

122.8

17 13 15.0 271.0

36.3+

16 17.2 307.3

13 15 0

K 4K 31

12 16 K2

63.7+ 2.7 x 8+

31.85

13 16 92.4 31.6+ S obs.

19 13 17.0 124.0

19.2 273.9

18 303.9 30.0+ 2,80+

13 17 0

K KK 31.

12 3 K2.

61.6+ ~~S obs.~~

30.80

13 18 95.0 S obs.

28.3+

123.3

21 13 18.5 272.0

34.0+

19 20.7 306.0

13 12 30.

K 6 KK 17.

31.

62.3+ 2.78+

31.15

13 2 12 94.4 P. obs.

65

121.9 27.5+

24 13 21.5 275.6

23.7 302.2

26.6+

22

13 21 30.

K KK 17.

31.

54.1+ 3,10+

27.05

13 22 12 96.3 P. obs.

13 22.5 122.2 25.9+

25 24.7 275.3

66

23 302.5 27.2+

13 22 30.

K KK 17.

12 9 31.

53.1+ 3,14+

26.55

13 24 12 94.6 P. obs.

121.4 26.8+

26 13 24.0 275.3

26.2

24 302.2 26.9+

13 2K 0

K KK 17

12 10 31 K2

53.7+ 3.1x 2+

26.85

C

Feb 17, 1881

13 26 | 94.5 | 26.7+ | S obs
13 26.5 121.2
29 | 28.7 271.5 | 31.1+
27 | 302.6
13 26 30.
4 4² 17.
12 13 12.
| 57.8+ | 2.94+
| 28.90

13 28 | 92.8 | 29.2+ | S obs
13 28.5 122.0
31 | 30.7 273.0 | 28.0+
29 | 301.0
13 2 30.
4 4² 17.
12 15 12.
| 57.2+ | 2.97+
| 28.60

13 30 | 93.4 | 31.7+ | S obs
13 30.5 125.1
33 | 32.7 272.1 | 30.9+
31 | 303.6
67
13 30 30.
4 4² 17.
12 17 12.
| 62.6+ | 2.76+
| 31.30

67

13 32 | 96.4 | 23.2+ | P obs
13 33.0 119.6
35 | 35.2 276.0 | 23.7+
34 | 299.7
13 33 0
4 4² 17.
12 19 12.
| 46.9+ | 3.42+
| 23.45

13 34 | 96.4 | 21.6+ | P obs
13 34.5 118.0
37 | 36.7 275.6 | 24.0+
35 | 299.6
13 34 30.
4 4² 17.
12 21 12.
| 45.6+ | 3.48+
| 22.80

13 35 | 96.3 | 23.7+ | P obs
38 13 35.5 120.0
37.7 272.8 | 26.6+
36 | 299.4
13 35 30
4 4² 17.
12
| 50.3+ | 3.26+
| 25.15

62

Feb. 27. 1881.

2

13 37 92.4 39.6+ ^ S. obs.
122.0
40 13 37.5 <
275.1 25.1+ ^
39.7<
38 300.2

13 37 30.
4 44 31
12 24 12.

54.7+ ^ 3.07+ ^
27.35
13 39 93.6 27.6+ ^ S. obs.
121.2 69
41 13 39.0<
271.9 28.1+ ^
41.2<
40 300.0

13 39 30.
4 44 31.
12 26 12.

55.7+ ^ ~~3.03~~ 3.02+ ^
27.85
13 41 92.8 27.3+ ^ S. obs.
120.1
44 13 41.5<
272.4 28.1+ ^
43.7<
42 300.5

13 41 30.
4 44 31.
12 22 12.

55.4+ ^ 3.04+ ^
27.70
13 43 94.2 22.9+ ^ P. obs.
117.1
46 13 43.5<
273.0 26.0+ ^
45.7<
44 299.0

13 43 30.
4 44 31.
12 30 12.

48.9+ ^ 3.32+ ^
24.45
13 44 96.2 22.9+ ^ P. obs.
119.1 70
47 13 44.5<
274.3 24.0+ ^
46.7<
45 298.3

13 44 30.
4 44 31.
12 31 12.

46.9+ ^ 3.42+ ^
23.45
13 46 94.2 23.2+ ^ P. obs.
117.4
49 13 46.5<
274.3 23.1+ ^
48.7<
47 297.4

13 46 30.
4 44 31.
12 33 12.

46.3+ ^ ~~3.44~~ 3.44+ ^
23.15

C

Feb 17. 1881.

13 47 95.1 26.9 +1 S. obs

13 48.0 122.0

50 50.2 272.8 27.6 +1

49 300.4

13 48 0

4 44 37

18 34 44.

54.5 +1 3.08 +1

27.25

13 50 91.7 28.9 +1 S. obs

13 50.5 120.6

53 52.7 273.7

51 300.6 26.9 +1

13 50 30.

4 44 37.

18 37 14.

55.8 +1 3.0~~3~~2 +1

27.90

13 51 93.2 25.8 +1 S. obs

13 51.5 119.0

54 53.7 272.3 26.2 +1

52 298.5

(71)

13 51 30.

4 44 37.

18 37 14.

52.0 +1 3.1~~9~~8 +1

26.00

71

14 2 94.2 22.6 +1 P. obs

14 2.5 116.8

05 4.7 274.6 22.2 +1

3 296.8

14 2 30.

4 44 37.

18 49 14.

44.8 +1 3.52 +1

22.40

14 4 94.6 22.7 +1 P. obs

14 4.5 117.3

07 6.7 275.1 21.3 +1

5 296.4

14 4 30.

4 44 37.

18 54 14.

44.0 +1 3.56 +1

22.00

72

14 5 96.0 20.8 +1 P. obs

14 08 14 5.5 116.8

7.7 272.7 24.4 +1

6 297.1

14 5 30.

4 44 37.

18 52 14.

45.2 +1 3.50 +1

22.60

C

Feb 17, 1881.

14 07 94.7 3 2~~7~~3+ S. obs.

14 8.0' 118.0

14 10 10.2' 272.1 27.2+ 3.2~~5~~4+ ~~3.30~~

09 299.3 ~~49.5~~ 50.5+ 25.25−

14 2 0
k kk 17
31.
14 kk 12.

14 09 92.0 26.6+ S. obs.

14 9.5' 118.6

14 12 11.7' 271.3 24.9+ 3.2~~1~~0+

10 296.2 51.5+ 25.75

14 9 30.
k kk 17.
31.
14 kk 12.

~~10~~ 14 11.5' 93.2 26.8+ S. obs.

13.7' 120.0

14 14 270.7 25.1+

12 295.8 51.9+ 3.1~~9~~8+ 25.95

14 11 30.
k kk 17.
31.
14 kk 12.

} 73

14 13 93.9 22.4+ P. obs.

116.3

14 16 14 13.5' 15.7' 273.0 22.3+

14 295.3 44.7+ 3.5~~2~~1+ 22.35

14 13 30.
k kk 17.
31.
19 14 12.

14 14 93.7 22.3+ P. obs.

116.0

14 17 14 14.5' 274.9 19.8+

15 16.7' 294.7 42.1+ 3.66 21.05

14 14 30.
k kk 17.
31.
19 16 12.

} 74

14 16 91.7 22.5+ P. obs.

114.2

14 19 14 16.5' 272.2 23.4+

17 18.7' 295.6 45.9+ 3.4~~6~~7+ 22.95

14 16 30.
k kk 17.
31.
19 3 12.

Oct. 17. 1881

14 18 — 93.0 — 26.2 +1 — S. obs

14 18.5 129.2

14 21 — 20.7 269.9 — 26.7 +1

19 — 296.6 — 52.9 +1 — 3.15 +4 +1

1k 1f 30.
k kk 17
19 5 1f.

26.45

14 20 — 92.7 — 24.7 +1 — S. obs.

14 20.5 116.9

14 23 — 22.7 268.9 — ~~29.7~~ 28.7 +1

21 — 297.6 — ~~54.4~~ * 53.4 +1 — ~~3.08~~ 3.17 +2 +1

1k 20 30.
k kk 17
19 21 1f.

26.70

90.0 — 28.0 +1 — S. obs

14 21.5 118.0

14 24 — 23.7 271.3 — 26.3 +1

22 — 297.5 — 54.2 +1 — 3.09 +1

75

1k 21 30.
k kk 17
19 A 1f.

27.10

S. obs — 75

R 112 — B. 394

14 27 31 — 30 00. — ~~2m 29s~~

14 28 31.5 — 31 00

14 29 31.5 — 32 00

∴ R 112 is 2m 13.5s slow.

This evening 900 settings were made on Dh. 81°25 between 7 0 and 14 22 with no break of over five minutes except one of ten minutes at 14h

~~R. 112 2.5m slow~~.

29 44.5

27 31.5

-2 13.0 2.2 m slow

Feb. 18. 1881.

Reduction of obs. on chron. sheet of Feb. 15. con. (see page 19.)

8 mag.	$11.\overset{5}{2}$	5.60	83″.9	N.	
	14.9	7.45	111.8	"	− 27″.9
	10.1	5.05	75.8	"	+ 8.1
	32.5	16.25	243.0	S.	− 562.9
# 507.	20.5	10.25	153.0	"	− 652.9
# 530.	14.3	7.15	107.2	"	− 698.7

8 mag.	9.4	4.70	70″.5	N.	
11 "	12.2	6.10	91.5	"	− 21″.0
9 "	7.7	3.85	57.8	"	+ 12.7
10 "	33.7	16.85	252.0	S.	− 567.3
# 507	22.1	11.05	165.0	"	− 654.3
# 530	16.3	8.15	122.2	"	− 697.1
— a	36.1	18.05	270.0	N.	− 199.5
b	10.9	5.45	81.8	N.	− 11.3

8 mag.	13.0	6.50	97″.5	N.	
c	16.2	8.10	121.5	"	− 24.0
d	54.6	27.30	409.5	S.	− 382.8
e	11.6	5.80	87.0	N.	+ 10.5
# 507.	18.9	9.45	141.8	S.	− 650.5
# 530.	12.9	6.45	96.8	"	− 695.5
a	39.0	19.50	292.5		
b	13.9	6.95	104.2		

Feb. 18. 1881.

Results from Chron. sheets in tabular form.

W. 0^{h} 443. 8 mag.	B.Z. +2°73 9 mag.	W. 0^{h} 507 #507	W. 0^{h} 530 #530	B.Z. +2°.85 b
0^{m} 0^{s}	1^{m} 43.10	3^{m} 36.15	5^{m} 13.50	5^{m} 33.85
0 0	1 42.85	3 35.25	5 12.55	
0 0	1 43.55	3 35.55	5 12.55	5 33.35
0 0	1 43.30	3 35.15	5 12.45	5 33.55
	1 43.10	3 35.52	5 12.76	5 33.58
Cat. Pos.	1 43.07	3 35.09	5 9.72	5 33.30

11 mag.	10. mag.	a	d
0^{m} 48.55	2^{m} 56.05	5 26.45	
0 48.40	2 56.45		
0 48.60		5 26.40	1 18.70

Diff. Dec from 8.0 mag.

W. 0^{h} 443 8 mag.	B.Z. +2°73 9 mag.	W. 0^{h} 507. #507.	W. 0^{h} 530. #530.	B.Z. +2° 85 b	11 mag.
0' 0"	+16."5	−10' 43."3	−11' 32.0	−12."7	
	+ 8.1	−10 52.9	−11 38.7		−27."9
	+12.7	−10 54.3	−11 37.1	−11.3	−21.0
	+10.5	−10 56.5	−11 35.5		−24.0
	+12.0	−10 50.2	−11 34.8	−12.0	
	+12.0	−10 49.8	−11 56.6	−7.7	

10 mag.	a	d
−9' 22."9		
−9 27.3	−3' 19."5	
		−6' 22."8

W. 0^{h} 507 & 530 occur also in Lalande and in Lamont. The proper motion of No. 530 is presumed by Lamont and now apparently certain.

Feb. 19. 1881.

Pos. Ang. Vernier A. in obs. on Variable D m. 81° 25.
35.0

Examined ~~de~~ Mercury with double image prism and biquartz.
No difference perceptible in the two images, hence polarization imperceptible if
6 10± ang. P. Obs.
No polarization perceptible S. Obs.
No perceptible polarization. W. obs.

Next tried ~~pt~~ Phot. H. not attached to telescope.
6 20 No perceptible polarization. W. obs.
Jupiter and Venus Phot. R without lenses.
S obs

Milled head to left

121.2 45.6
166.8
6 48 398.7 46.0
344.7
91.6 ~~4.87~~ 3.9 ✓

Head to right

S. obs
30.7 42.3
6 50 73.0
214.0 36.9 ~~2.22~~ 4.2 ✓
250.9
79.2

7 0 Venus examined same way as Mercury and no polarization perceived. P. obs.
Following image shows a little more red than the preceding one; but no general difference of color. S. obs.

Feb. 19, 1881

6 52 30.8 P. obs
71.8 41.0 Button to right
207.5
252.6 45.1 ~~2.14~~
86.1 4.0 ✓

6 55 120.8 P. obs
165.4 44.6 Button to left
~~281.6~~ wrong images; reject
303.2
338.7 35.5 ~~2.19~~
80.1 4.2 ✓

Neb. G.C. 1565.
7 36 −14°.4
5 18
+2 18

5h 18m S.T. = 7h 19m M.T.

7 06
5 24
2 12

7 40 Star seen in centre of Neb. with low power ring micrometer eye piece Spec. Monoc. Neb. decidedly fainter in centre. A Ring Nebula | W. obs
The north fol. edge ~~brightest~~ a little

February 19, 1881.

brighter than the rest of the circumference. W. obs.

Comp. star λ Geminorum.

	Outside Focus	Inside Focus	
8 9	19.8	2.1	W. obs.
	20.9	2.8	
	20.5	2.1	
	61.2	7.0	
	20.40	2.33	

Nebula seen ~~to~~ plainly to be of a ring character, with a star also in centre, with first power ring micrometer eyepiece. W. obs.

Nebula Annular.

	Reading A	Reading B	
8 27 ±	2.3	18.2	P. obs.
	3.0	19.2	
	2.0	21.4	
	7.3 2.43	58.8 19.6	

Focus of λ Gem. at 9.4

Spectrum Gaseous

" of star in surrounding cluster — continuous. P. obs.

Star No. 7 pp. 101 Book R. 38.

Star U.A. 114

8 45 Color 2 Spec. not peculiar P. obs

Star No. 8 pp. 101 Book R. 33 U.A. 141

Color 2 Bands suspected. Perhaps ~~past~~ 3 P. obs

U.A. 142

Color 0 Spec. not peculiar P. obs

February 19, 1881.

6 57
6 9 29.6
48

U. A. 4 Canis Major
Focused ~~*~~ Spec. Trouvé on Sirius
Color 1 Spec not peculiar

Sweeping on East Balcony for Plan. Neb.
Pole Star Alt. 173.8 Az. 327.5 Set at 326 5

~~S.T. 7h 8m 55s First Sweep~~ P. ob.
S.T. 7h 9m 30s First sweep
10 50 11 3d Mag. 247.0 +17.0 16.8 λ
11 15 13 " " 241.6 +22.4 22.2 δ
13 0 2d mag. 173.8 07 α Ursæ Mi
13 40 Sweep
17 20 "
22 0 4th Mag. 293.1 -29.1
22 0 - Sweep
25 5 5th Mag 160.0 +76.0 dbl. Bands Suspected
50 Brighter star precedes.
28 5 28 4th Mag 236.7 +27.3 27.2 2
1 35 27 2d " 231.8 324+32.2 α Gem
30 0 Sweep
31 45 33 α Canis Min. 258.0 ~~+5.5~~ +5.7 α Can Mi.
33 45 4th Mag 153.9 +69.9 b C.
34 00 Sweep.
GC 1567 34 50 37. Planetary Nebula 282.0 -18.8 .17.9
35 20 Cluster 278.6 -14.6
37 15 37 1st Mag 235.6 283+28.4 β Gemini

Feb. 19, 1881.

U. A. 11 Canis Major, S. obs.

Color 2 Spec. not peculiar. Lines suspected

Sweeping continued. P. obs.

7^h 39^m 5^s Sweep

46 35 "

47 30 Cluster 279.2 Spec 15.2 ~~15.4~~ continuous

49 30 Sweep

52 30 Sweep Ends.

Star Type IV seen but record apparently omitted

blank below ?76°

limits 7 39 to 7 52

U. A. 16½ Canis Maj.

Color 2 Lines suspected. Spectrum not peculiar. W. obs.

Color 3 Spec. probably III P. obs.

8 62

6 18

1 ~~4~~ 4

U. A. 21 Canis Maj.

Color 2, Spec. not peculiar W. obs.

U. A. 23 Canis Major

8 6

6 18 11 27.8

1 48

Color 2; Spec. not peculiar W. obs.

Color 1; Spec. not peculiar P. obs

Feb. 19, 1881.

~~U.A. 16½ Canis Maj.~~

~~7 5 8~~ ~~11.7~~

~~6 15~~

~~137~~

U.A. 38 Canis Maj

10 14 Color 3 Spec III P. obs.

15 Color 1; Spec. not peculiar. W. obs.

16 Color 2 Possibly faint bands. W. obs.

U.A. 41 Canis Maj.

21 Color 1, Spec. not peculiar P. obs.

22 Color 2, lines suspected W. obs.

Very narrow bands suspected W. obs

U.A. 52 Canis Maj.

28 Color 0 Spec not peculiar P. obs.

30 " ½ " " " W. obs

U

~~29 Color 2 Spec not peculiar W obs~~

UA 54

29 Color 1 Fine lines seen. P. obs

32 Color 2 Spectrum not peculiar W. obs

UA 57

29 Color 1 Spectrum not peculiar P obs

39 Color 2 Spectrum not peculiar W obs

c

Feb 22, 1881.

B 236 — B 394

4^{h} 20 07 — 6^{h} 07^{m}

4^{h} 21 07 — 6^{h} 08^{m}

1 46 53

Richard

6^{h} 06 50 — 6 09 — 2^{m} 10^{s}

6 07 50 — 6 10

∴ R 112 is 1^{m} [illegible] slow.

R. 112 DM. +81° 25, 26; Photometer R.

6 30 — 43.6 — 241^{+} — P. obs.

6 30.5< 67.7

32 — 32.4< 223.6

31 — 246.2 — 22.6^{+} — 46.7^{+} — 23.35 — 3.43^{+} (2 above the 3)

6 30 30.

¥ +1 √K.

KK 31.

6 11 59 √√. — 42.3 — 23.9^{+} — P. obs.

6 31.5< 66.2

33 — 33.4< 223.8

32 — 245.9 — 22.1^{+} — 46.0^{+} — 23.00 — 3.46^{+}

6 31 30.

¥ 1 √¥.

KK 31.

6 11 17 √√.

32 — 43.7 — 20.8^{+} — P. obs.

6 32.5< 64.5

34 — 34.4< 222.9

33 — 245.9 — 23.0^{+} — 43.8^{+} — 21.90 — 3.57^{+}

6 32 30.

1 √K.

K KK 31.

11 10 √√.

Sweep for Planetary Nebulae on
East Balcony, 22 Feb 1881
P obs.

Pole Star at 175.3

1st sweep at $4^{h}\ 50^{m}$ S. T
51^{m}? 3^{mag} 257.8

Sweep 4^{h} 52
Sweep 4 55
$4^{h}\ 56^{m}$ 2^{mag} 231.7
Band susp 57^{m} 5^{mag} 222.8
5^{h} 2^{m} 3 221.0
3^{m} Band susp. 219.7

5^{h} 4^{m} Sweep
7^{m} Sweep
8 3^{mag} 287.2
9 Band susp 5^{m} 266.0
12 " " 5^{m} 213.0
$14^{m}\ 5^{s}$ 3d mag 150.2
14 50 Sweep
~~15~~ 3d Mag 276.4
5th " ~~Bands~~
17 1st Mag 272.6
17 20 Bands 265.2
18 45 1st Mag 218.6
20 Zone Ends

7   32.4

		True RA	Dec.			
	+7.2	43	6.7	8	+.5	
	+33.3	49	33.0	7	+.3	
	+42.2	(49)	(41.8)			
	+44.0	53	43.6	9	+.4	
✓	+47.3	(55	46.9)			?
	−22.2	0	−22.5	8	+.3	
✓	−1.0	(1	−1.4)			
	+52.0	(4	+51.6)			
	le. + 65.2					
	−11.4	~~(7~~	120 ~~11.6)~~			
✓	−7.6 −0.2 ~~−0.2~~	5 09 (5 12 ~~26~~	−8.3 −0.6 ~~0.4~~	8	+.7	1.0 β Orionis ~~2.0. δ Orionis~~
	+46.4	8	+45.9	11	+.5	1.0 α Aurigae

c/

Feb. 22, 1881

DM. +81° 25, 26; Photometer R.

6h 36m 42.2 21.0+1 S obs
6 36.5 63.2
6h 39 38.4 219.8 27.9+1
37 247.7 48.9+1 3.32+1
24.45
6 36 30.
κ κκ √κ.
κκ 31.
11 22 √√.

6h 38 38.2 32.4+1 S obs
6 39.0 70.6
6 40 40.9 222.7 23.3+1
40 246.0 55.7+1 3.0~~3~~2+1
27.85
6 39 0.
κ κκ √κ.
κκ 31.
11 2√ 2√.

6h 41 = 40.7 23.6+1 S obs
6 41.5 64.3
6 43 43.4 220.1 27.6+1
42 247.7 51.2+1 3.22+1
25.60
②
6 κ1 30.
κ κκ √κ.
κκ 31.
11 27 √√.

6h 43m 38.9 29.3+1 S obs
6 44.0 68.2
46 45.9 221.7 23.3+1
45 245.0 52.6+1 3.16+1
26.30
6 κκ 0.
κ κκ √κ.
κκ 31.
30 2√.

6h 45 36.3 29.7+1 S obs
6 45.5 66.0
47 47.4 214.8 35.9+1
46 250.7 65.6+1 2.66+1
32.80
6 κ√ 30.
κ κκ √κ.
κκ 31.
11 31 √√.

c

Feb 22, 1881.

6^h 47^m 33.5 39.3^{+1} S obs

6 47.5 72.8

49 49.4 213.0 36.9^{+1}

48 249.9 76.2^{+1} 2.31^{+1}

③ 6 42 30. 54.
4 44 35.
11h 33 ~~5~~5.

38.10

6^h 49 28.2 42.9^{+1} S obs

6 50.0 71.1

52 51.9 218.4 24.6^{+1}

51 243.0 67.5^{+1} 2.5~~9~~8^{+1}

6 50 0. 54.
4 44 31.
11h 36 25.

33.75

6 51 36.1 S obs

6 52.0 63.9 27.8^{+1}

54 53.9 217.7 31.2^{+1}

53 248.9 59.0^{+1} 2.90^{+1}

6 52 0. 54.
4 41 31.
11h 33m 25.

29.50

6^h 53 34.9 S obs

6 54.0 67.0 32.1^{+1}

56 55.9 219.5 24.3^{+1}

55 243.8 56.4^{+1} 3.00^{+1}

④ 6 54 0. 54.
4 41 31.
11h 44 25.

28.20

6^h 55 37.5 S obs

6 56.0 64.0 26.5^{+1}

6 58 57.9 213.3 30.3^{+1}

57 243.6 56.8^{+1} 2.98^{+1}

6 56 0. 54.
4 41 31.
11 42 25.

28.40

C/

Feb. 22, 1881.

7 1 32.4

7 1.5 67.8 35.4^{+1} S obs

7 03 3.4 220.0 21.2^{+1}

7 2 241.2 56.6^{+1} 2.99^{+1}

28.30

7	1	30.
4	1 44	54. 31.
11	47	55.

7 2 39.7

7 3.0 64.6 24.9^{+1} S obs

7 05 4.4 214.0 34.9^{+1}

7 4 248.9 59.8^{+1} 2.87^{+1}

29.90

7	3	0.
4	1 44	54. 31.
11	49	25.

7 5 39.0 23.7^{+1} P. obs

07 7 5.5 62.7

7 7.4 216.3 29.3^{+1}

7 6 245.6 53.0^{+1} 3.14^{+1}

26.50

7	5	30.
4	1 44	54. 31.
11	51	55.

7 6 36.4

08 7 6.5 62.6 26.2^{+1} P. obs.

8.4 217.6 24.5^{+1}

7 7 242.1 50.7^{+1} 3.24^{+1}

25.35

7	6	30.
4	1 44	54. 31.
11	52	55.

7 7 38.2

09 7 7.5 62.6 24.4^{+1} P. obs.

7 9.4 217.1 27.2^{+1}

8 244.3 51.6^{+1} 3.20^{+1}

25.80

7	7	30
4	1 44	54. 31.
11	53	55.

C

Feb. 22, 1881.

$7^h\ 9^m$ 36.2 28.7^{+1} S. obs.
7 10.0° 64.9
12 11.9° 217.1 25.3^{+1}
11 242.4 54.0^{+1} 3.10^{+1}
27.00

7	10	0.
	1	54.
4	44	31.
11	56	25.

12 32.4
7 12.5° 65.8 33.4^{+1} S. obs.
14 14.4° 218.6 24.5^{+1}
13 243.1 57.9^{+1} 2.94^{+1}
28.95

7	12	30.
	1	54.
4	44	31.
11	58	55.

13 36.0
7 14.0° 60.0 24.0^{+1} S. obs.
16 15.9° 209.9 31.9^{+1}
15. 241.8 55.9^{+1} 3.02^{+1}
27.95

7

7	14	0.
	1	54.
4	44	31.
12	0	25.

February 22, 1881

Ver. B about 280

Eclipse Jupiter III Compared

1 46 41 by phot H with [illegible] (IV) S. obs Disappearance.

5 39 35 175.6

57 284.8 109.2

7 26 ~~51~~ 46 40 19 5.5 273.9

33 284.0 110.1 19 3 109.65 9183 40915 204.58

47 177.5 102.5

41 6 280.0

27 54 15.5 27 38.5

23 13.0 178.0 101.0 9145 45725 228.62

36 279.0 20 35 101.75

53 183.5

42 10 13.8 279.8 97.3

19 181.0 9209 46045 230.22

33 277.6 96.6 13 9 96.95 refocussed and moved

43 49 185.5 $7^h\ 30^m\ 12^s$ images in field.

44 6 279.2 93.7 29

19 182.0 42

31 276.0 94.0 54

40 182.8 31 03

49 277.0 94.2 12

58 185.0 21

45 12 273.8 88.8 35

19 183.8 42

42.5 270.8 87.0 32 05

54.5 184.3 92.7 07

Feb. 22. 1881.

32 24	46	1.0	277.0	
31		8.0	186.5	
39		16.0	274.3	87.8
47		24.0	187.6	
55		31.5	275.7	88.1
33 01		38.0	185.3	
09		45.5	273.1	87.8
15		51.5	186.7	
19		56.5	272.5	85.8
25	47	2.0	187.4	
31		8.0	270.3	82.9
37		14.0	186.7	
45		21.5	270.2	83.5
52		29.0	187.8	
34 01		38.5	269.6	81.8
08		45.0	193.5	
15		51.5	266.7	73.2
21		58.0	192.8	
29	48	5.5	265.8	73.0
35		11.5	192.4	
42		19.0	267.5	75.1
49		26.5	190.8	
56		33.0	260.7	70.3
35 01		38.5	188.5	
07		44.5	265.6	77.1
15		51.5	194.7	71.7

Feb. 22, 1881,

36	21	49	58,5	266,4	
	29		6,0	189,3	
	34		11,0	265,3	76.0
	41		18,5	195,5	
	49		25,5	268,3	72,8
	55		32,0	198,0	
37	01		38,0	265,4	67,4
	08		45,0	196,8	
	14		51,0	262,0	65,2
	19		56,0	198,1	
	23	50	0,5	265,3	67,2
	29		5,5	199,3	
	33		10,0	264,8	65,1
	39		15,5	199,4	
	45		22,0	260,5	61,1
	51		28,5	199,3	58,3
	57		33,5	257,6	
38	03		39,5	205,4	
	7		44,5	253,9	48,5
	15		51,5	208,6	
	25	51	2,5	250,4	41,8
	37		14,5	207,0	
	45		22,5	253,5	36,5
	52		29.0 seen	5.	
39	03		39,5	210,3	
	11		47,5	246,3	36,0
	15		52,5 Seen		
	28	52	5,0 Suspected		

c

Feb. 22, 1881.

Limit of Visibility

5 53 5 200.6
20 259.0 58.4
40 32 207.0 46.9
54 2 253.9

10 58
5 2.65

D. M. +81° 25, 26 Phot. R.

Richard

7 48 28.0
7 48.5< 70.5 42.5+^
7 50 50.4< 215.8 S. obs.
49 242.8 27.0+^

7 48 30
4 1 54
44 31
12 34 55

69.5+^ 2.5~~2~~3+^
34.75

50 38.1 26.9+^
7 50.5< 65.0 S. obs.
52 52.4< 211.0 37.0+^
51 249.0 64.9+^ 2.68+^

7 50 30
4 1 54
44 31
12 36 55

32.45

52 25.3 44.7+^ S. obs
7 52.5< 70.0
54 54.4< 215.0 25.5+^
53 240.5 70.2+^ 2.50+^

7 52 30
4 1 54
44 31
12 38 55

35.10

o/

~~[illegible]~~ February 22, 1881.

7h 55m 31.3
7 55.5 66.5 35.2+1 P. obs.
7 57 57.4 211.7 32.8+1
56 244.5 68.0+1 2.57+1
34.00
7 55 30.
4 44 54.
31.
12 41 55.

56 29.9
7 56.5 64.8 34.9+1 P. obs.
58 58.4 207.6 39.3+1
57 246.9 74.2+1 2.37+1
37.10
7 56 30.
4 44 54.
31.
12 42 55.

7 29.3
7 57.5 63.4 34.1+1 P. obs.
7 59 59.4 210.3 32.7+1
58 243.0 66.8+1 2.61+1
33.40
9 7 57 30.
4 44 54.
31.
12 43 55.

59 29.8
7 59.5 63.9 34.1+1 P. obs.
8 01 8 1.4 208.6 35.2+1
8 0 243.8 69.3+1 2.53+1
34.65
7 59 30.
4 44 54.
31.
12 45 55.

0 28.7
8 0.5 63.4 34.7+1 P. obs.
8 02 2.4 210.8 34.1+1
1 244.9 68.8+1 2.55+1
34.40
8 0 30.
4 44 54.
31.
12 46 55.

1 27.0
8 1.5 64.1 37.1+1 P. obs.
8 03 3.4 209.9 34.8+1
2 244.7 71.9+1 2.4~~4~~5+1
35.95
8 1 30.
4 44 54.
31. 12 47 55.

C/

February 22, 1881.

8 3 — 27.4

8 3.5< 63.8 36.4+ ^ — P. obs.

8 05 — 5.4< 209.8

4 — 242.8 — 33.0+ ^ / 69.4+ ^ — 2.53+ ^

8 3 30.
4 44 54.
31.
12 49 55.

34.70

4 — 31.2

8 4.5< 61.1 29.9+ ^

8 06 — 6.4< 208.2 — 35.1+ ^ / 65.0+ ^ — 2.68+ ^ — P obs

5 — 243.3

8 4 30.
4 44 54.
31.
12 50 55.

32.50

5 — 26.5

8 5.5< 63.8 37.3+ ^ — P obs.

8 07 — 7.4< 207.0

6 — 243.8 — 36.8+ ^ / 74.1+ ^ — 2.37 8+ ^

(11) 8 5 30.
4 44 54.
31.
12 51 55.

37.05

7 — 24.8

8 7.5< 65.6 40.8+ ^ — P. obs.

8 09 — 9.4< 208.3

8 — 243.7 — 35.4+ ^ / 76.2+ ^ — 2.31+ ^

8 7 30.
4 44 54.
31.
12 53 55.

38.10

8 — 25.7

8 8.5< 63.0 37.3+ ^ — P. obs

8 10 — 10.4< 207.8

9 — 242.0 — 34.2+ ^ / 71.5+ ^ — 2.46+ ^

8 8 30.
4 44 54.
31.
12 54 55.

35.75

9 — 24.6

8 9.5< 61.8 37.2+ ^ — P obs

8 11 — 11.4< 207.2

10 — 243.2 — 36.0+ ^ / 73.2+ ^ — 2.40+ ^

(12) 8 9 30.
4 54. 12 55 55

36.60

c/

February 22, 1881.

8 11 25.9
8 11.5 62.3 36.4+1 P. obs.
8 13 13.4 206.0
12 244.2 $\frac{38.2^{+1}}{74.6^{+1}}$ 2.36+1
37.30
f 11 30
k kk 5k.
37.
12 59 55.
13 22.8
8 13.5 62.6 39.5+1 P. obs.
15 15.4 205.1 38.7+1 2.24+1
14 243.8 $\frac{38.7^{+1}}{78.5^{+1}}$ ~~2.27~~
39.25
f 13 30.
k kk 5k.
37.
12 59 55.
14 22.2
8 14.0 64.8 42.6+1 P. obs.
16 15.9 204.3 38.0+1
14 242.3 $\frac{38.0^{+1}}{80.6^{+1}}$ 2.18+1
40.30
f 1k 30
13. k kk 5k.
37.
13 0 55.
21 21.0
8 22.0 68.3 47.5+1 W. obs
24 23.9 201.5 1.94+1
~~23~~ 242.9 $\frac{41.4^{+1}}{88.7^{+1}}$
f 22 0
k kk 5k 37.
13 ~~23~~ 55.

At 8 23 clock off 44.35 set ~~sextant~~ sector back &c.

20.4
26 20.9 44.5+1
8 27.0 65.2
29 28.9 204.1 2.01+1 2+1 W. obs
28 246.1 $\frac{42.0^{+1}}{86.3^{+1}}$
43.15
f 27 30.
k kk 5k
37.
13 ~~29~~ 55.
15.3 50.5+1
65.8
8 31 8 29.5 203.8 W. obs.
30 31.4 242.8 $\frac{39.0^{+1}}{89.5^{+1}}$ 1.92+1
14. f 29 30
k kk 5k.
13 15 55.
44.75

c) Feb. 22, 1881.

8h 32m 20.9
8 32.5 62.2 41.3+
34 34.4 201.0 W obs
33 246.3 45.3+ / 86.6+ 2.01+
2 32 30.
4 46 54.
31.
13 12 55. 43.30

34 16.3 46.2+
8 34.5 62.5
36 36.4 200.2 W. obs.
35 244.2 44.0+ / 90.2+ 1.91+
2 34 30.
4 44 54.
31.
13 20 55. 45.10

35 19.7 46.3+
38 8 36.0 66.0 W. obs.
37.9 199.1 48.1+
37 247.2 94.4+ 1.80+
2 36 0.
(15.4) 44 54.
31.
13 22 25. 47.20

40 17.0 51.1+
8 40.5 68.1 W obs.
42 42.4 196.5
41 243.5 47.0+ / 98.1+ 1.7~~8~~7+
2 40 30.
4 44 54.
31.
13 26 55. 49.05

41 17.8 47.9+
8 42.0 65.7 W. obs.
44 43.9 192.6 55.5+
43 248.1 103.4+ 1.57+
2 42 0
4 44 54
31.
13 22 25. 51.70

43 12.2 54.9+
45 8 43.5 67.1 W. obs.
45.4 195.5 55.0+
44 250.5 109.9+ 1.42+
2 43 30
(16.4) 44 54.
31. 13 29 55 54.95

C,

Feb. 22, 1881.

~~8 46 15.9~~
~~65.1~~ Clock stopped.

8 48 10.3
8 48.5 65.3 55.0^{+1} W. obs.
50 50.4 194.0 52.6^{+1}
49 246.6 107.6^{+1} 1.47^{+1}
53.80

8 48 30.
1 54.
4 44 31.
13 34 55.

50 15.2
8 50.5 65.0 49.8^{+1} W. obs.
52 52.4 198.9 46.6^{+1}
51 245.5 96.4^{+1} 1.75^{+1}
48.20

8 50 30.
1 54.
4 44 31.
13 36 55.

52 11.3
8 52.5 71.2 59.9^{+1} W. obs.
54 54.4 193.2 52.4^{+1}
53 245.6 112.3^{+1} 1.3~~7~~6^{+1}
56.15

17
8 52 30.
1 54.
4 44 31.
13 38 55.

---

54 12.5
8 55.0 64.3 51.8^{+1} W. obs
57 56.9 194.0 53.1^{+1}
56 247.1 104.9^{+1} 1.54^{+1}
52.45

8 55 0.
1 54.
4 44 31.
13 41 25.

56 9.8
8 57.0 66.1 56.3^{+1} W. obs.
59 58.9 190.0 55.2^{+1}
58 245.2 111.5^{+1} 1.3~~9~~8^{+1}
55.75

8 59 0.
1 54.
4 44 31.
13 43 25.

e/ Feb. 22, 1881

8h 58m

11.3
8 59.0< 67.0 55.7+1 W. obs.
9 01 9 0.9< 195.0 52.0+1
9 0 247.0 107.7+1 1.47+1
53.85

9 59 0.
(18.) 4 11 44 54. 31.
13 45 25.

1 7.2 64.9+1
9 11.5< 72.1 S. obs.
9 03 3.4< 189.5 54.7+1
2 244.2 119.6+1 1.20+1
59.80

9 1 30.
4 1 44 54. 31.
13 43 55.

3 358.0 ~~6~~ 98.0+1
9 3.5< 66.0 S. obs
9 05 5.4< 194.0 51.5+1
4 245.5 119.5+1 1.20+1
59.75

9 3 30.
4 1 44 58. 31.
13 49 5 ~~4~~.

15.1
5 5.5< 66.8 51.7+1 S. obs.
9 9 07 7.4< 178.8 77.3+1
6 256.1 129.0+1 1.00+1
64.50

(19) 9 5 30.
4 1 44 58. 31.
13 51 5 ~~4~~.

8.2 60.6+1
7 9 7.5< 68.8 W. obs.
9 09 9.4< 188.2 57.8+1
8 246.0 118.4+1 1.23+1
59.20

9 7 30.
4 1 44 58. 31.
13 53 5 ~~4~~.

9 9.4 57.4+1
9 9.5< 66.8 W. obs.
9 11 11.4< 188.4 60.7+1
10 249.1 118.1+1 1.24+1
59.05

9 9 30.
4 1 44 58. 31.
13 55 5 ~~4~~.

℣

Feb. 22, 1881.

9 10 7.7
9 10.5 67.2 59.5+^ W. obs.
9 12 12.4 190.0
55.0+^
11 245.0 114.5+^ 1.32+^
57.25

9 10 30.
24 44 53.
31.
13 56 54.

12 9.9
9 13.0 63.9 54.0+^ S. obs.
15 14.9 183.4 69.7+^
14 253.1

9 13 0.
4 44 53.
31.
13 59 24.

123.7+^ 1.11+^
61.85

14 356.0
9 15.0 73.9 77.9+^ S. obs.
17 16.9 189.0
16 248.6 59.6+^
137.5+^ .82+^
68.75

16 Dome cuts off part of object-glass.

9 15 0.
4 44 53.
31.
14 15 24.

6.3
9 18.5 70.1 63.8+^ S. obs.
20 20.4 186.2 66.4+^
19 252.6 130.2+^ .97+^
65.10

9 18 30.
24 44 53.
31.
14 5 54.

19 5.3
9 20.0 65.2 59.9+^ W. obs.
22 21.9 187.9
21 244.3 56.4+^
116.3+^ 1.28+^
58.15

9 20 0.
4 44 53.
31.
14 6 24.

21 5.0
9 21.5 66.0 61.0+^ W. obs.
23 23.4 186.8
22 246.2 59.4+^
120.4+^ 1.1~~9~~ 8+^
60.20

9 21 30.
4 44 53.
31.
14 7 54

☾ Feb. 22, 1881.

9 23 7.0
9 23.5< 67.4 60.4+1 W. obs.
25 25.4< 187.5 58.5+1
24 246.0 118.9+1 1.22+1
59.45

(22.) 9 23 30.
4 44 53.
31.
14 9 54.

25 9.0 55.0+1
9 26.0< 64.0 S. obs.
28 27.9< 185.8 56.4+1
27 242.2 111.4+1 1.39+1
55.70

9 26 0.
4 44 53.
31.
14 12 24.

28 3.0 68.0+1 S. obs.
9 28.5< 71.0
30 30.4< 189.3 56.9+1
29 246.2 124.9+1 1.0~~9~~8+1
62.45

9 24 30.
4 44 53.
31.
14 4 54.

30 8.0 60.1+1 S. obs.
9 30.5< 68.1
32 32.4< 186.7 56.3+1
31 243.0 116.4+1 1.27+1
58.20

(23) 9 30 30.
4 44 53.
31.
14 16 54.

~~35 2.8~~ ~~star out of centre of field.~~

35 3.0 ~~S obs~~
66.2+1 W. obs.
37 9 35.5< 69.2
37.4< 186.2 58.6+1
36 244.8 124.8+1 1.09+1
62.40

9 35 30.
4 44 53.
31.
14 21 54.

37 8.1 53.9+1 W. obs.
40 9 38.0< 62.0
39.9< 183.9 59.~~0~~3+1
39 243.2 ~~112.X~~ 113.2+1 1.3~~0~~4+1

9 34 0.
4 44 53.
14 24 24

C/

Feb. 22, 1881.

9 39 4.8 59.3^{+1}
9 37.5< 64.1 W. obs.
9 41 41.4 186.2 62.7^{+1}
40 248.9 122.0^{+1} 1.15^{+1}
61.00

24
9 39 30.
4 44 53.
1 31.
14 25 54.

Much haze inclining to cloudiness

41 1.6 64.7^{+1}
9 42.0< 66.3 S. obs.
44 43.9 187.0 63.8^{+1} thick haze.
43 250.8 128.5^{+1} 1.01^{+1}
64.25

9 42 0.
4 44 53.
1 31.
14 28 24.

44 5.1 59.8^{+1}
9 44.5< 64.9 S. obs.
46 46.4 188.2 52.8^{+1}
45 241.0 112.6^{+1} 1.36^{+1}
56.30

9 44 30.
4 44 53.
1 31.
14 30 54.

46 8.1 53.9^{+1}
9 46.5< 62.0 S. obs.
48 48.4 182.3 58.7^{+1}
47 241.0 112.6^{+1} 1.36^{+1}
56.30

25
9 46 30.
4 44 53.
1 31.
14 32 54.

48 2.9 60.7^{+1}
9 49.0< 63.6 W. obs.
51 50.9 181.7 65.6^{+1}
50 247.3 126.3^{+1} 1.06^{+1}
63.15

9 49 0.
4 44 53.
1 31.
14 35 24.

50 1.8 70.2^{+1}
9 50.5< 72.0 W. obs.
52 52.4 182.5 62.7^{+1}
51 245.2 132.9^{+1} .9~~3~~2^{+1}
66.45

9 50 30.
4 44 53.
1 31.
14 36 54.

Feb. 22, 1881.

9h 52m 356.0 66.3+1 W. obs.

56 9 57.0' 62.3

55.9' 186.8 55.4+1

56 242.2 Cloudy.

~~26 9 54 0 53' 14 54 54 31' 40 24~~

121.7+1 1.16+1

60.85

9 57 Too cloudy to continue. 5 obs.

Bond 394.			R. 112.		
10	~~14~~ 13	0.0 44.5	10	11	51.4
	15	0.0		12	51.4

∴ R. 112 is 1m 53.7 slow. 2m 9s 8.6

Bond 236.			Bond 394.		
10	36	7.5	12	22	0.0
	37	7.5		23	0.0
	38	7.6		24	0.0
	39	7.8		25	0.0

1 45 53.2

13 44.5s

11 51.4s

-1 53.1s err of R 112

Feb. 23, 1881.

Photometer R without lenses.

6 33 Jupiter & Venus; button above & to right
S. obs.

9.8 41.5
51.3

192.0 40.2 ~~2.14~~ 4.1 ✓
232.2
81.7

Button below & to left
Y. obs.

99.0 44.0
6 38 143.0

278.0 47.0 ~~4.89~~ 3.9 ✓
325.0
91.0

Saturn & Venus; button to left & below.
Y. obs.

106.2 27.2
6 43 133.4

293.6 15.8 ~~3.61~~ 5.6 ✓
309.4
43.0

22.3 18.7 button to r and below.
41.0

6 48 202.8 17.7 ~~3.9~~ 6.0 ✓
220.5
36.4

7 42 342.9 68.1 Jupiter & Saturn
52.0
button to right
S. obs.

174.0 84.0 ~~10.5~~
258.0
152.1 2.5 ✓

Feb. 23. 1881.

G. C. 706.

3 19 −37°.1
5 35
+2 16

5 39
5 19
0 20

7 27 Examined carefully for nebula - Neb too low + seeing too bad - Telescope ~~horizontal~~ horizontal W. obs.

5 49
3 19
2 30

---

7 46
113.2 20.8
134.0
286.0 34.1 S. obs.
320.1 54.9 3.1

Jupiter & Saturn button to left.

Observations unsatisfactory from distance of images and false images in field;

Feb. 23, 1881.

Sweeping for Planetary Nebulae 15 to 20° south
East Equatorial P. Ms.
Telescope clamped 15' west

Bond 236

	7^{h}	39^{m}	35^{s}	Sweep up ~~Begun~~.				
		40	20	" down.				
			45	7th Mag.	14.7	25	23	14.9
		41	30	Sweep up.				
		42	12	" down.				
			44	" up.				
		43	35	" down.				
		44	12	" up.				
		45	5	" down.				
			20	6th Mag.	14.0	29	28	14.3
		46	10	Sweep up.				
✓			42	Suspected neb.	16.0	large.		
		47	5	Sweep down.				
			45	" up.				
		48	17	" down.				
			29	Several bright stars	14.1	32	30	14.2
		50	15	Sweep up.				
			43	" down.				
		51	14	" up.				
			46	" down.				
		52	9	5th Mag.	14.7	36	34	14.9
✓			58	Cluster	18.0			
		53	18	Sweep up				
✓			30	Bright plan. neb.	17.27	37		17.9
		54	19	Sweep down.				

February 23, 1881.

sweeping continued

th

	7h	54m	49s	Sweep up.				
		55	50	" down.				
		56	19	" up.				
		57	4	" down.				
			58	" up.				
		58	30	" down				
		59	3	" up.				
			28	Two bright stars.	15.8	43	40	14.3
			49	Sweep down				
	8h	0	20	" up.				
			53	" down.				
		1	23	" up.				
			57	" down.				
		2	19	" up.				
		3	20	" down.				
			20	Bright star	13.6	47	43	13.0
		4	15	Sweep down.				
		5	0	" up.				
			40	" down.				
		6	19	" up.				
			50	" down.				
✓		7	7	4th type	13.0		51	(49)
		9	29	Sweep up				
		10	19	" down.				
			42	" up.				
		12	5	Bright star	18.0	56	54	18.0

~~Limit of Zone -13.5 to 18.5~~

Limit of Zone -13.5 to -18.5

18 2 Star Noted as 4th type Color III

February 23, 1881.

Transits of Stars

				Δδ	Mag	
8	25	13.0 ^{32}	a	9	6	7 56
		45.0	b	9	6	
	26	0.0	a	27	7	
		31.1	b	27	7	
	27	44.5	a	29	7	
	28	16.3	b	29	7	
		59.2	a	23	6	
	29	31 0	b	23	7	
		57	a 3 stars	34		
	30	4	a Red star	22		
	30	39	a		7	
	31	10	d	19		
		20		19	7	Over wire a
		25		23 4 upper		
		52.0				over wire b
		56.5				

Hour Ang. 32m
decl 12.5

Red star about equal to first star following it.

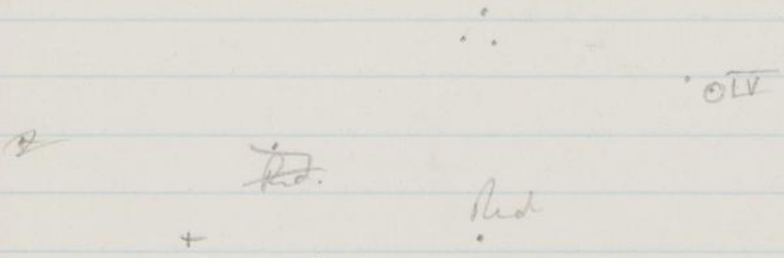
t = 8h 37m 32s
Set on 4th Mag. star fm
Hour Circ 57m 7 39 7 35
Decl. 9.2 -9.2 -9.3

Feb. 23, 1881.

Set on α Canis Min.
t = 8h 33m 32s

					true	
Hour Circ	1h	3m	7	30	7	33
Decl.		+ 5.7				+ 5.5

Estimated number of stars in field during sweep.
9, 10, 6, 5, 11.
Cloud at 10 30



10 38 Spectrum of red star apparently banded color 3
not IV.1. Perhaps var II.

RA			Dec		Mag				
7	55	13	-12°	9'	6		50	23	18
	56	0		27	7		51	10	36
	57	44		29	7		52	54	38
	58	59		23	6		54	09	32
	59	54		34	3 stars		55	04	43
8	80	4 ~~58~~		22	Red Star.	7	~~55~~	14	31
		39		19	7.	Wg 7h.16	32	49	28
	81	20		19	7		56	30	28
		25		23	IVa			35	32

See p 121

Over

Feb. 23, 1881.

Copy from book R 67

10 45 β Urs. Min. 2 α Urs. Min. S. obs.

ε Urs. Min. 1 α Urs. Min.

α Urs. Min. 2 γ Cass.

Feb. 24. 1881

6 16 Venus Jup Button ~~to left~~ right above [illegible]

13.7
46.8 33.1
194.0
227.5 33.5 21.6
66.6

282.6 below
19 317.8 35.2
102.4
139.7 37.3 21.4
72.5

Ven. Sat. Button to left.
295.8
22 307.6 11.8
113.6 12.5 4.9
126.1 24.3

202.1
25 217.8 15.7
25.6 13.0 4.5
38.6 28.7

159.0 } copied on next page
205.2
344.6

Feb. 24, 1881.
Jup Saturn. eyestop moved

6 30 159.0 Button to right P. obs.
208.2 49.2
344.6
32.4 47.8 ~~[illegible]~~
97.0 1.7

6 32 70.6 Button to left P. obs.
119.5 48.9
250.2
299.9 49.7
98.6 1.7

Jupiter & Saturn
81.0 Button to left & above. S. obs.
114.7 33.7
6 40 253.4 55.7 1.9
89.4
309.1

Button to right & below S. obs.
168.2
32.1
200.3
6 45 345.1 51.7 2.1
83.8
36.8

Venus & Saturn Button to right & above S. obs.
7 5 2.0
13.5
155.5
178.8 12.9 4.7
26.4
191.7

Feb. 24, 1881.

Venus & Saturn Button to left.

7 8 89.0 S. obs.

103.0 14.0

267.9 14.9 4.5

282.8 28.9

Venus & Jupiter Button below

7 10 71.5 S. obs.

45.5

117.0

250.0 1.7

303.0 53.0

98.5

7 12 165.0 Button above.

204.0 39.0 S. obs.

346.0 2.2

27.8 41.8

80.8

Venus & Jupiter

7 16 345.4 Button above

28.0 42.6 W. obs.

163.8

508.2 44.4 2.0

87.0

7 19 298.9 Button below & to left

79.7 W. obs.

114.7 35.0

254.2

44.7 2.2

79.7

Feb. 24, 1881

Venus & ~~Saturn~~

7 26 157.0 W. obs.

259.0 ~~Button below and to left~~,

Reject had to move Photometer.

Venus & Saturn W. obs.

7 35 172.0

200.5 28.5 Button below & to left.

339.0

13.8 34.8 / 63.3

7 39 84.3 Button above & to right

116.0 31.7 W. obs.

259.0

294.0 35.0 / 66.7

Jupiter and Saturn.

7 41 63.1 Button above & to right.

110.9 47.8 W. obs.

245.8

305.0 59.2 / 107.0

Reject for better pos. of images.

~~Venus and Saturn.~~

Jupiter and Saturn

~~331~~ Jupiter too close to edge.} Button below & to right.

~~7 53 342.3~~ W. obs.

Reject 7

34.0

7 55 348.5

31.5 2.4

20.0

162.8 43.1

205.9 74.6

February 24, 1881.

Jupiter and Saturn.

7 ~~57~~ 58 ~~237.2~~ too close to wy } Button above and to left.
68.9 W. obs.
118.4 49.5
253.5 1.9
296.0 42.5
92.0

8 0 65.4 Saturn went out at right B edge

Venus & Saturn.

8 1 88.1 Button to left
101.9 13.8 W. obs
265.0 4.25
283.9 18.9
32.7

Button to right

8 3 358.4
17.9 19.5 W. obs
177.7 4.1
192.1 -14.4
33.9

9 10 β Urs. Min. 2 α Urs. Min. S. obs.
α Urs. Min. 3 γ Cass.
ε Urs. Maj. 1 α Urs. Min.

9 30 Looked for stars found Feb. 23.
Several spectra examined; some
suspected to be irregular, but
none very marked. S. obs.

Feb. 24, 1881,

~~8~~

~~8 10~~

Red Star found Feb. 23,

8 0

8 10

+0 10 −12.4

Feb. 25, 1881.

Photometer R without lenses.

Venus & Jupiter

6 15 257.4 P. obs.
293.0 35.6 Button below
75.2
114.5 39.3 2.3
74.9

6 18 164.0 P. obs. Button above
207.3 43.3
343.8
28.7 44.9 2.0
88.2

Jupiter & Saturn

6 23 135.4 P. obs. Button above.
188.7 53.3 Planets rather distant
323.4 40.0 1.8
3.4 93.3

6 25 57.0 P. obs. Button below.
90.8 33.8
228.7 42.6 2.3
271.3 76.4

Venus & Saturn

6 27 332.8 P. obs. Button to left.
348.4 15.6
155.3 13.7 4.4
169.0 29.3

Feb. 25, 1881.

Venus & Saturn

6 30 244.3 12.6 P. obs. Button to right
256.9
64.6 14.0 4.7
78.6 26.6

Jupiter & Saturn

6 38 224.3 60.2 S. obs. Button below
284.5
55.0
93.7 38.7 1.7
98.9

143.0 50.0 S. obs. Button above
6 45 193.0
320.0
7.2 47.2 1.7
97.2

Venus & Jupiter

6 52 315.8 47.2 S. obs. Button to left.
3.0
140.9 44.0 1.9
184.9 91.2

230.5 S. obs. Button to right & above
6 57 273.9 43.4
50.3
93.2 42.9 2.0
86.3

Feb 25, 1881.

Venus & Saturn

64.2 S. obs. Button to right & below

7 0 81.0 16.8

244.8 15.5 4.2

260.3 32.3

330.0 Button above & to left.

7 5 351.7 21.7 S. obs.

152.0

170.0 18.0 / 39.7 3.8

7 20 β Urs. Min. 1 α Urs. Min. S. obs.

ε Urs. Maj. 1 α Urs. Min.

α Urs. Min. 3 γ Cass.

Jupiter & Venus

8 18 ~~8 11~~ 307.1 Button below & to left

Jupiter gone behind steeple

W. obs.

Venus and Saturn

8 19 333.2 Button above & to left

349.2 16.0 W. obs

154.5 4.5

167.5 13.0 / 29.0 Button below & to right

22 64.5

77.9 13.4

245.0 12.0 4.8

257.0 25.4

Bond 236.

~~7 9 21.5~~

7	11	50.0
	12	50.1
	13	50.2
	14	50.4

Bond 394.

~~8 45 0.0~~

8	47	0.0
	48	0.0
	49	0.0
	50	0.0

Reap. Sup. I. Phot. H. P. obs.

8	30	12.5
	23	41.1
8	53	53.6
8	50	0.0
	3	53.6
7	14	50.4
7	18	44.0

Feb 25 1881

Spec with Comet Seeker, W. Balcony,
P. obs.

Pole star at 174 R

Began at 5h 15

	5h 20m				226.8	{ 1? 1? 1 +37.2
	22m	45s	3d Mag.		257.0	+6.0
	23	55	Susp. bands		250.2	+13.8
✓2	24m	25s	Large cluster		228.4	+35.6
	25	25	Bands Susp. in several stars		189.3	+74.7
	26	35	Sweep			
	28	40	6th Mag. Bands Susp.		238.1	+25.9
	30	30	Sweeps.			
	31	25	Nebula in Orion		268.7	-4.7 ~~2m past~~
	32	45	Large Nebula		230.2	+33.8
	35	24	Neb. in Orion		268.9	-4.9
	37	10	Sweep			
	39	5	4th type		238.7	+25.3
	40	50	Sweep			
	41	10	3d Mag.	35	298.3	-34.3 -34.1
✓	43	5	4th type or Neb. Bright stars north + south little prec.		243.6	!! +20.9 || |
	46	20	Sweep			
	47	0	IV		288.0	-24.0
	48	20	Cluster		231.6	+32.4
	50	0	Sweep			
	51	10	α Orionis	49	256.8	+7.2 +7.4
	53	30	Sweep			
	56	0	"			
	52	50	3d Mag.	51	219.3	2m past ~~44.7~~ 44.9
	58	40	Sweep			

February 25, 1881.

Sweeping continued. P. obs.

6 0m	50s	Sweep		
1	55	Bands Suspected	256.6	+7.4
3	40	Sweep		
4	45	Coarse Cluster	239.6	+24.4
5	50	Sweep		
8	45	Sweep		
10	30	Sweep		
12	45	Sweep Ends.		

Many stars in second quarter of this circle brighter than bands. 5h 11m to 6h 9m also

Reap. sup. I. See p. 107.

7	19	21.0	This set rejected owing	
	20	56.0	to difficulty in seeing	
	22	21.0	Satellite.	
		30.5	205.5	
		50.5	23.5	
		57.0	83.0	59.5
	23	4.0	26.0	
		11.5	80.6	54.6
		20.0	18.4	
		24.0	89.0	70.6
		31.0	20.8	
		35.5	82.5	61.7

Feb. 25. 1881.

23	49.0	17.0	
	58.0	83.0	66.0
24	4.5	20.8	
	13.0	82.8	62.0
	29.5	18.8	
	37.0	83.1	64.3
25	9.0	Sat not seen.	
	22.0	23.2	66.0
	38.5	89.2	

Sat seen with great difficulty - hence obs. abandoned.

Bond 236.			Bond 394.		
7	28	52.5	9	4	0.0
	29	52.6		5	0.0

Nebula of Orion Phot. 2 W. obs.

Focus on ζ Orionis

9.0
9.5
9.5

Region a	Region b	Region c
15.8	15.0	14.0
16.7	15.5	14.5

Region d

24.2
24.2

Region a b

Feb. 25, 1881.

Setting on Red Star disc. Feb 23

$t = 8^h\ 48^m\ 32^s.0$

Coarse Hour = 0 5-2
" Decl = -12.5
Fine Hour = $12^h\ 52^m$ + 0.1 div
" Decl = + 5.3 div.

Northern of two stars [and brighter]
$t = 8^h\ 51^m\ 36^s$
Coarse Hour 0 45
" Decl -12.5
Fine " +4.9
" Hour 13 44 +1.1 divs

Red star is 2' north of bright star
Br. Star is U. G. 263 Rpps.

8	5	24	-12	33.4	1875
	3	4		24.5	1825
7	55	8.3		24.6	"
	56	6.0		27.3	"

Oct. 26. 1884

Jupiter, Saturn S. obs

and above
~~[illegible]~~ Slit to left.

Photometer R

without lenses.

6 37 63.2
106.0 42.8
246.7 36.0 2.2
282.7
788

Before beginning these observations the tube carrying the prisms was removed thus enlarging the field of view.
Instrument held in hand.

335.4 36.8 Slit to r. and below.
12.2
6 40 157.0
194.7 37.7 2.3
74.5

Jupiter and Venus Slit below.
237.9 53.3 Other image of Venus out of field
291.2
6 42 56.5
108.0 51.5 1.5
104.8

150.3 45.2
6 44 195.5
331.0
16.1 45.1 1.9
90.3

Feb. 26, 1881.

Venus Saturn.
Slit to right

167.3 17.9
185.2
6 46 345.6 15.6
1.2 4.21
33.5

Slit to left.

75.3 18.5
93.8
6 48 258.0 15.5 4.1
273.5 34.0

Jupiter & Venus P. obs. Slit above

326.4 49.8
16.2
6 50 148.7 2.0
196.6 47.9
97.7

P. obs. Slit below

242.2
285.4 43.2
6 52 65.3
104.9 39.6 2.1
82.8

Venus & Saturn P. obs.
Slit below

257.4
271.2 13.8
6 54 73.3 4.4
89.6 16.3
30.1

Feb. 26, 1881

Venus & Saturn

169.1
185.0   15.9   P. obs. Slit above.
6 58   347.3   Edge of thin cloud
2.2   14.9   4.13   near Venus.
30.8

Jupiter & Saturn

148.0   P. obs. Slit below & to right
195.5   47.5   Jupiter near clouds.
7 0   330.4
7.3   36.9   2'.4
74.4

63.7   P. obs.
103.4   39.7   Jupiter perhaps in cloud.
7 2   244.4
277.8   33.4   2'.4   (Both objects much fainter
73.1   at last setting).

March 5, 1881.

7 5 β Urs. Min. 2 α Urs. Min. { S. obs.
ε Urs. Maj. = α Urs. Min. { Much haze.
α Urs. Min. 3 γ Cass.

Looked for star with singular spectrum; interrupted by clouds at $7^h\ 15^m$.

March 7, 1881

6 55 β Urs. Min, 2 α Urs. Min. S. obs.
ε Urs. Maj. 1 α Urs. Min.
α Urs. Min. 2 γ Cass.

α Urs. Min. ~~2~~ = β Urs. Min. W. obs,
7^h 7^m α " " 2 γ Cass.
β Urs. Min. looks reddish.

~~H. C. 36~~ α Tauri
$t = 6^h\ 23^m\ 41^s$

S. obs.

Hour Circ = $1^h\ 53^m$
Decl " = 16.4 north.

H. C. 36

7 24 Several stars in this region examined
No singular spectrum found. S. obs.

Caelum #12,

4	38	− 31.°
6	27	
+1	49	

7 29 Color III Spec. not peculiar ~~S obs.~~
but probably showing faint bands. S obs.
7 31 Color II faint bands suspected W. obs

March 7, 1881.

Columbae U. A. No. 4

5 7 — 37.5~~8~~
6 37
1 30

7 40 Color 2 Spectrum faint, not peculiar S. obs
44 Color 1 Spec. not peculiar. W. obs.

Columbae U A #13

5 16 — 34.8
6 49
1 33

5 13
6 58
1 45

7 59 Color 1 Spec. not peculiar. W. obs 55
~~5~~6

Columbae U.A. #25

5 29 — 35.2
7 3
1 34

8 5 Color 2 Spec not peculiar W. obs

Columbae U A #66

5 55 — 42.8
7 9

8 10 Color 3 Spec not peculiar W. obs

March 7, 1881.

Columbae U.A. 67

5 57 30.4
7 14
1 17

7 15
5 53
1 22

8 29 Color 3. Spec. not peculiar W. obs

Columbae U.A. # 110

6 33 −38.0
7 22
49

8 22 Color 1 Spec. not peculiar. W. obs.

Lepus U.A. # 12

5 0 −22.5
7 25
2 25

8 26 Color 3 Spec. not peculiar W. obs.

Orion U.A. 23

4 54 +30.4
7 30
2 36

8 45 Color 2, Spec. not peculiar W. obs.
49 Color 1, Spec. not peculiar S. obs.

March 7, 1881.

Orion U.A. # 100

√ 28 −4.9

7 √−3

2 2 √.

√ 29

9 02 Color 1, Spec. not peculiar. S. obs.

√ Color 1 Spec not peculiar W. obs.

Orion U.A. 102 (Var.)

9 10 Color 1 6th Mag Spec. not peculiar W. obs.

13 " 0 6.8 " " " " ~~S. obs.~~

blue rather faint Violet strong S. obs.

~~Columba~~ Orionis U.A. # 113

√ 30 +9.2

8 17

2 47

9 18 Color 2 Spec. not peculiar S. obs.

21 Color 2 " " " W. obs.

Orionis U.A. # 119

√ 32 −2.7

8 26

2 54

9 27 Color 2 Spec not peculiar W. obs.

29 " 0 Spec not peculiar S. obs.

March 7, 1881.

Orion. U. A. 127

5 34   6 36   −1.2
8 31   5 34
2 57   1 2

9 33 Color 0, Spec. not peculiar. S obs.
39 Color 1, " " " . W. obs.

Orion U. A. 131

5 35   5 56   + 2.3
8 44   48
3 9   3 12

9 50 Color 1, Spec not peculiar W. obs.
50 " 0 " " "

Orion U. A.# 132

9 51 Color 1 Spec. not peculiar P. obs.
53 " " " " " . W. obs.

Orion U. A. 144

5 43   + 4.4
8 58   8 61
3 15   5 46
3 15

10 1 Color 1, Spec. not peculiar W. obs.
2 " 2 Bands Suspected P. obs.

Mar. 7. 1881.

~~Orion U. A.~~

Transits to locate two red stars described in Book 96, p. 94.

					Dec			
	54	9 10	3 1	√9.5		15	33	8 mag. wire A.
	54	08	3 2	$\underset{2}{4}\underset{6}{2}$.0				" " " B,
	55	15	3 3	√7.0		13	31	Red. star wire A,
	54	50	3 ?	40.0		10	28	8 mag. wire A.
	55	14		$\underset{2}{4}\underset{6}{7}$.6				Red. wire B.
		4	9	√5.2	24	6	18	9 mag (W) " A,
		30	9 34	21.4	28	10.5	18	8 mag (W) A.
		43	11	33.6	28	11.	17	9 mag. (W) wire A,
W. 7h 1618	56	4	25	29.0				9 mag. (W) " B,
1632		30	27 35	3.4				8 mag. (W) " B.
1638		43	27	16.8				9 " (W) " B.

~~24~~

8 mag. W. wire B,

0 49.0 ~~24~~ 4th type " "

7 56 34 0 √3.3 — 24 14 9 mag. (W) " "

1 2.4

10 40m Red Star = W 7 1618 P in brightness
10 40 .3 mag. fainter ~~bright~~ the W 7. 1618 W.

R.A. = 7h 55m 14s Dec −12° 31′ = 1880, Red Star bands H.C. 19
= 7 56 34 −12° 42′ " " IV a " 20

Several bright stars not on Wash. [illegible]

Mar. 14. 1881.

7 12 + Urs. Min. 2 β Urs. Min. W. obs.
" " " 2 γ Cass.

D.M. + 81° 25 * 26

Ver. a, 269°

Time piece was 3 seconds slow of B.M.T.

∴ Corr. to "Time Piece" was −0m 12.5s

7h 33 49.9 — 49.5 + × ∧ < — S. obs.
7 34.0 99.4
7h m 34 33.8 232.1 — 5−2.4 + ∧ × <
35 284.5 — 101.9 + × ∧ < 1.61 + ∧ <
50.95

7 34 0.
4 44 −12 31.
12 18 19.

35 49.3 — S. obs.
4.4 + × ∧ <
7 35.5 103.7
35 35.3 232.3 — 49.7 + × ∧ <
36 282.0 — 104.1 + × ∧ < 1.56 + ∧ <
52.05

7 35 30.
4 44 −12. 31.
12 19 49.

36 5−0.4 — S. obs.
5−1.1 + × ∧ <
7 36.5 101.5
36 36.3 231.3 — 50.4 + × ∧ <
37 281.7 — 101.5 + × ∧ < 1.62 + ∧ <
50.75

(1.) 7 36 30.
4 44 −12. 31.
12 20 49.

39 50.7
50.8 + × ∧ <
7 39.5 101.5
39 39.3 235.5 — W. obs.
40 276.0 — 40.5 + × ∧ <
91.3 + × ∧ < 1.88 + ∧ <
45.65

7 39 30.
4 44 −12. 31.
12 23 49.

March 14, 1881

c

7 40 β Urs. Min. 2 α Urs. Min. } L. obs.
ε Urs. Maj = α Urs. Min. } Moon in
α Urs. Min. 2 γ Cass. } the east.

7 41			55.2			W. obs.
	7	42.0 c	95.9	40.7 ± ^ <		
42		41.8 c	227.5	54.8 + ^ <		
43			282.3	95.5 + ^ <	1.77 + ^ <	
7 42 0. 4 44 -12. 31. 12 26 19.				47.75		2
43			50.4			W. obs.
	7	44.0 c	100.0	49.6 + ^ <		
44		43.8 c	235.1	41.9 ± ^ <		
45			277.0	91.5 + ^ <	1.8~~7~~ 8 + ^	
2. 7 44 0. 4 44 -12. 37. 12 28 19.				45.75		
47			55.9	39.3 + ^		W. obs.
	7	47.5 c	95.2			
47		47.3 c	229.1	54.1 + ^		
48			283.2	93.4 + ^	1.82 ± ^	
7 47 30. 4 44 -12. 31. 12 31 49.				46.70		
48			48.1	54.5 + ^		W. obs.
	7	49.5 c	102.6			
49		49.3 c	233.2	42.8 ± ^		
51			276.0	97.3 ± ^	1.7~~2~~ 8 + ^	3
7 49 30. 4 44 -12. 31. 12 33 49.				48.65		
			54.0	41.7 + ^ +		W. obs.
		51.5 c	95.7			
51	7	51.3 c	230.8	51.7 + ^ +		
52			282.5	93.4 ± ^	1.82 ± ^	
3. 7 51 30. 4 44 -12. 31. 12 35 49.				46.70		

c/

March 14, 1881.

7 53 46.6 W. obs.
53.4 +^
7 53.5<100.0
53 53.3<233.2 41.3 +^
54 274.5 94.7 +^ 1.79 +*
47.35

7	53	30.
4	44	-12.
		31.
12	37	49.

55 54.7 W. obs.
41.7 +*
55.5<96.4
55 7 55.3<228.3 52.9 +^+
56 281.2 94.6 +^ 1.79 +^*
47.30

7	55	30.
4	44	-12.
		31.
12	39	49.

56 46.0 W. obs.
54.1 +^
57 7 57.0<100.1
56.8<232.2 44.8 +^
58 277.0 98.9 +^ 1.68 + 9+^

4

7	57	0.
4	44	-12.
		31.
12	41	19.

49.45

59 54.6 W. obs.
40.1 +^
7 59.5<94.7
59 59.3<227.3 53.4 +^
8 0 280.7 93.5 +^ 1.82 +^
46.75

7	59	30.
4	44	-12.
		31.
12	43	49.

1 45.8 W. obs.
55.0 +^+
8 1.5<100.8
01 1.3<233.2 41.2 +^
2 274.4 96.2 +^ 1.75 +^
48.10

8	1	30.
4	44	-12.
		31.
12	45	49.

3 52.7 W. obs.
41.9 +^
8 3.5<94.6
03 3.3<228.8 50.8 +^
4 279.6 92.7 +^ 1.8~~4~~ 5 +^

5.

8	3	30:
4	44	-12:
		31.
12	47	49.

46.35

4
5

C

March 14, 1881.

8 6 47.7 54.3^{+} W. obs.
8 7.0 102.0
07
7 6.8 230.6 44.8^{+}
8 275.4 99.1^{+} 1.68^{+}
49.55

8 7 0.
4 44 −12.
31.
12 54 19.

8 53.1 42.9^{+} W. obs.
8 8.5 96.0
08
8.3 229.0 44.4^{+}
9 277.4 91.3^{+} 1.88^{+}
45.65

8 8 30.
4 44 −12.
31.
12 52 49.

10 47.7 52.7^{+} W. obs.
8 10.5 100.4
10
10.3 231.2
11 274.5 43.3^{+} 1.76^{+}
96.0
48.00

6. 8 10 30.
4 44 −12.
31.
12 54 49.

6

12 54.0 W. obs.
~~91.5~~ ~~37.5~~
228.8 ~~50.7~~ Reject.
13 279.5 88.2

Observer thought there was something wrong when taking first two settings. W. obs.

8 15 47.0 50.0^{+} W. obs.
8 15.5 97.0
15
15.3 231.0 41.7^{+}
16 272.7 91.7^{+} 1.87^{+}
45.85

8 15 30.
4 44 −12.
31.
12 59 49.

C

March 14, 1881.

8 17 51.2 43.5 W. obs.

17 8 17.5 94.7

17 17.3 227.6 53.2

18 280.8 96.7 1.74

48.35

2 17 30.
4 44 -12.
31.
13 1 49.

18 46.2 W. obs.

8 19.0 98.1 51.9

19 18.8 230.9 40.7

20 271.6 92.6 1.84 (5) 1.84

46.30

7. 2 19 0.
4 44 -12.
31.
13 3 19.

} 7

21 51.9 41.4 W. obs.

8 21.5 93.3

21 21.3 225.3 54.9

22 280.2 96.3 1.75

48.15

2 21 30.
4 44 -12.
31.
13 25 49.

22 45.3 W. obs.

8 23.0 98.3 53.0

23 22.8 231.7 43.3

24 275.0 96.3 1.75

48.15

2 23 0.
4 44 -12.
31.
13 27 19.

26 49.1 44.3 W. obs.

8 26.5 93.4

26 26.3 224.9 53.4

27 278.3 97.7 1.7 (2)

48.85

8. 2 26 30.
4 44 -12.
31.
13 10 49.

} 8

28 48.0 W. obs.

8 28.5 97.9 49.9

28 28.3 228.3 43.9

29 272.2 93.8 1.81

2 24 30.
4 44 -12.
31.
13 12 49. 46.90

c/

March 14, 1881.

8 30 50.9 43.6 W. obs.
8 30.5 94.5
30 30.2 224.0 53.9
31 277.9 97.5 1.72
2 30 30.
4 44 –12.
31.
13 14 49.
48.75
31 44.0 55.1 W. obs.
8 31.5 99.1
31 31.3 228.7 42.0
32 270.7 97.1 1.73
(9.) 2 31 30.
4 44 –12.
31.
13 15 49.
48.55
9
33 49.9 42.8 W. obs.
8 34.0 92.7
34 33.8 222.1 55.2
35 277.3 98.0 1.71
2 34 0.
4 44 –12.
31.
13 18 19.
49.00
36 44.0 55.1 W. obs.
8 36.5 99.1
36 36.3 230.3 39.3
37 269.6 94.4 1.80
2 36 30.
4 44 –12.
31.
13 20 49.
47.20
38 49.0 42.8 W. obs.
39 8 39.0 91.8
38.8 223.4 52.8
40 276.2 95.6 1.77
(10.) 2 39 0.
4 44 –12.
31.
13 23 19.
47.80
10
48 42.1 54.5 S. obs.
8 49.0 96.6
49 48.8 226.2 52.0
50 278.2 106.5 1.50
53.25
2 49 0.
4 44 –12.
31. 13 33 19.

c

March 14, 1881.

8h 50 45.0 51.7 S. obs.

8 51.0 96.7

51 50.8 223.2 54.5

52 277.7 106.2 1.51

2 51 0.

4 44 -12. 31.

13 35 19.

53.10

52 39.1 57.9 S. obs.

8 52.5 97.0

52 52.3 221.0 55.4

53 276.4 113.3 1.34

(11.) 2 52 30.

4 44 -12. 31.

13 36 49.

56.65

11

54 46.7 48.3 P. obs.

8 54.5 95.0

54 54.3 223.6 50.2

55 273.8 98.5 ~~1.70~~ 1.69

2 54 30.

4 44 -12. 31.

13 38 49.

49.25

55 44.3 48.8 P. obs.

8 56.0 93.1

56 55.8 224.8 50.0

57 274.8 98.8 1.69

2 56 0.

4 44 -12. 31.

13 40 19.

49.40

57 45.2 49.1 P. obs.

8 57.5 94.3

57 57.3 223.6 50.8

58 274.4 99.9 1.66

(12.) 2 57 30.

4 44 -12. 31.

13 41 49.

49.95

12

59 45.2 50.0 W. obs.

9 0.0 95.2

00 8 59.8 227.7 44.3

9 1 272.0 94.3 1.80

9 0 0

4 44 -12 31

13 44 19. 47.15

C.

March 14, 1881.

9h 2 48.3 W. obs.

9 2.5' 89.5 41.2+^

2 2.3' 222.2

3 272.6 50.4+^ / 91.6+^ 1.87+^

45.80

9 2 30.
4 44 -12.
31.
13 46 49.

4 43.8 W. obs.

9 4.5' 96.1 52.3+^

4 4.3' 220.4

5 269.4 49.0+^ / 101.3+^ 1.6~~2~~3+^

50.65

(13) 9 5 30.
4 44 -12.
31.
13 49 49.

6 43.9 S. obs.

7 9 7.0' 89.0 45.1+^

7 6.8' 222.1

8 276.5 54.4+^ / 99.5+^ 1.67+^

49.75

9 8 0.
4 44 -12.
31.
13 52 19.

8 41.7 S. obs.

9 9 9.0' 95.0 53.3+^

9 8.8' 219.0 58.3+^ / 111.6+^ 1.38+^

10 277.3

55.80

9 9 0.
4 44 -12.
31.
13 53 19.

10 41.3 S. obs.

9 11.0' 90.0 48.7+^ Images very faint.

11 10.8' 219.0 54.3+^

12 273.3 103.0+^ 1.58+^

51.50

(14.) 9 11 0.
4 44 -12.
31.
13 55 19.

13 37.8 W. obs.

9 14.0' 92.8 55.0+^

14 13.8' 225.1

15 268.0 42.9+^ / 97.9+^ 1.71+^

48.95

9 14 0.
4 44 -12.
31.
13 58 19.

13

14

C)

March 14, 1881.

9h	15		45.0			W. obs.
	16 9	16.0 <	89.1	44.1+^		
		15.8 <	219.3	52.5+^		
	17		271.8	96.6+^	1.74+^ <	
				48.30		
9 k 1 k	16 kk 18		0. −12. 31. 19.			
	18		40.1	51.5+^		W. obs.
	19 9	19.0 <	91.6			
		18.8 <	224.5	41.3+^	1.84+^ <	
	20		265.8	92.8+^		
				46.40		
(15) 9 k 1 k	19 kk 21		0. −12. 31. 19.			15
	21		42.8	46.1+^		S. obs.
	22 9	22.5 <	88.9			
		22.3 <	219.8	52.7+^		
	24		272.5	98.8+^	1.69+^ <	
				49.40		
9 k 1 k	22 kk 25 6		30. −12. 31. 49.			
	25		38.2	55.8+^		S. obs.
	26 9	26.0 <	94.0			16.
		25.8 <	219.5	52.5+^		Images very faint.
	27		272.0	108.3+^	1.46+^ <	
				54.15		
9 k 1 k	26 kk 10		0. −12. 31. 19.			
	29		41.0	49.0+^		S. obs.
	29 9	29.5 <	90.0			
		29.3 <	216.3	62.7+^		Images scarcely seen.
	30		279.0	111.7+^	1.38+^ <	
				55.85		
(16) 9 k 1 k	29 kk 13		30. −12. 31. 49.			

Interrupted by clouds.

C

March 15, 1881.

6h 41m S. T. = 7h 6m M. T.
0 52
5 49   +81.2

~~D. M. +81° 25 and 26~~
~~Ver α 279~~

7 13 δ Urs. Min. 2 β Urs. Min. W. obs.
" " " 3 γ Cass.

D. M. +81° 25 & 26
Ver. A 279°

~~7 44 8.6.~~

~~7 36 93.2~~ 21.9 Reject W. obs.
~~115.1~~ Images did not reverse well.

No time correction

7 38 94.6 18.8+^ W. obs.
38.5 113.4
38 274.0 21.1+^ 3.77
39 295.1 39.9+^ ~~3.78+~~ ^
19.95

7	38	30.
4	44	31.
12	23	1.

39 93.0 20.3+^ W. obs.
40.0 116.3
40 275.1 21.1+^
41 296.2 44.4+^ 3.54+^
22.20

7	40	0
4	44	31
12	24	31.

c

March 15, 1881.

7h 41m 92.2 23.9^{+} ^ W. obs.

41 7 41.5 < 116.1

273.9 20.6^{+} ^

42 294.5 44.5^{+} ^ 3.53 4^{+} ^

① 7 41 30.
4 44 31.
12 26 1.

22.25

43 93.8 22.4^{+} ^ W. obs.

43 7 43.5 < 116.2

273.7 23.0^{+} ^

44 296.7 45.4^{+} ^ 3.49^{+} ^

7 43 30.
4 44 31.
12 28 1.

22.70

45 92.7 20.0^{+} ^ W. obs.

45 7 45.5 < 116.0

273.7 23.6^{+} ^

46 297.3 46.9^{+} ^ 3.42^{+} ^

7 45 30.
4 44 31.
12 30 1.

23.45

47 92.1 24.9^{+} ^ W. obs.

47 7 47.5 < 117.0

272.8 23.1^{+} ^

48 295.9 48.0^{+} ^ 3.36^{+} ^

② 7 47 30.
4 44 31.
12 32 1.

24.00

50 91.5 24.7^{+} ^ W. obs.

50 7 50.5 < 116.2

274.3 21.5^{+} ^

51 295.8 46.2^{+} ^ 3.45^{+} ^

7 50 30.
4 44 31.
12 35 1.

23.10

52 91.8 24.5^{+} ^ W. obs.

52 7 52.5 < 116.3

272.9 23.4^{+} ^

53 296.3 47.9^{+} ^ $3.3\overset{6}{7}^{+}$ ^

7 52 30.
4 44 31.
12

23.95

C

March ~~16~~ 15, 1881.

7h 53m 94.2 20.8+ ^ W. obs.
7 53.5 115.0
53 273.7 21.1+ ^
~~54~~ 294.8 41.9+ ^ 3.6~~7~~6+ ^
20.95

③ 7 53 30.
4 44 31.
12 38 1.

8 4 94.1 18.9+ ^ P. obs.
8 4.5 113.0
04 272.6 21.5+ ^
5 295.1 40.4+ ^ 3.75+ ^
20.20

8 4 30.
4 44 31.
12 49 1.

6 94.2 P. obs.
8 6.5 112.8 18.6+ ^ Clouds.
06 274.2
7 294.1 19.9+ ^
38.5+ ^ 3.86+ ^
19.25

7 6 30.
4 44 31.
11 51 1.

7 92.1 20.7+ ^ P. obs.
8 7.5 112.8
07 272.2 22.4+ ^
8 294.6 43.1+ ^ 3.6~~1~~0+ ^
21.55

④ 7 7 30.
4 44 31.
11 52 1.

9 92.8 22.1+ ^ P. obs.
8 9.0 114.9
09 274.8 17.9+ ^
9 292.7 40.0+ ^ 3.77+ ^
20.00

7 9 0
4 44 31.
11 53 31.

10 92.6 22.2+ ^ P. obs.
8 10.0 114.8
10
~~10~~ 275.0 18.3+ ^
10 293.3 40.5+ ^ 3.7~~4~~5+ ^
20.25

7 10 0
4 44 31

@

March 15, 1881.

8 11 92.4 20.7+^ P. obs.

8 11.5 113.1

11 272.1 21.9+^ 3+^

12 294.0 42.6+^ 3.64

21.30

4 11 30.
4 44 31.
12 56 1.

Double H. C. # 89.

5 23 −22.7
7 50
+2 27

Elgin 474,578 t = 8h 27m 28s

~~Elgin 474,578~~ Coarse Hour = 2h 42.5
" dec. = −22.5
Fine hour. = 14h 42m + 1.8 div
" dec. = + 0.6 div. ±
Pos. ang. 285 dist. 9" Mags 8½ & 11 W. obs.
" " 290 " 15" " 7 & 10.5 S. obs.

8 35 β Urs. Min, 2 α Urs. Min.
ε Urs. Maj. = α Urs. Min,
γ Cass. among clouds.

Mar. 15. 1881.

H. C. 109.
6 37
8 12 −21.6
~~2 5~~

+1 3.5

A double in the neighborhood of H. C. 109.
t = 8 55 49 (Elgin 474578)
Coarse Hour circle = 1h 47.5
" dec. = ~~+5.7 probably~~ −22.1
Fine " = +5.7 probably
" hour = 13h 46 +2.8

p = 40° s = 5" Mags. 8, 11.5 S. obs.
Pos. ang. = 50° d = 7" " 8, 11.2 W. obs.

Another double. W. obs.
t 9h 16m 32s by watch Sid Time 8h 31½m
h 1 57½ δ −21°.8 α 6 34
13 58 +0.8 div. +2.8 div.

p = 40° s = 1".5 W. obs.
Mags 9.8, 10.5

9 12 6
6 37
2 36

14
2 18
8 32
6 37
1 55

2 27
9 16 6 41
6 37 8 68
3 99 8

9 8
6 37
2 31

March 15, 1881.

A double found

Pos ang. 190 - dist. 18"

$t = 9^h\ 45^m\ 5^s$

Coarse Hour $2^h\ 45^m$ W. obs

" decl -20.5

Fine hour $14^h\ 44^m + 1.9$

" decl + 5.9

H. C. 118

$$\begin{array}{rr} 9 & 22 \\ 6 & 46 \\ \hline 2 & 36 \end{array} \qquad -19.0$$

$$\begin{array}{rr} 9 & 35 \\ 6 & 46 \\ \hline 2 & 49 \end{array}$$

t = 9 53 55

Coarse Hour = $2^h\ 46^m$ W. obs.

" decl = -19.1

Fine Hour = $14^h\ 46^m + 1.7$

" decl = ± 5.5 div.

Pos ang 280 - dist. 8" Mags 9.8 & 10.8

Another double precedes 1^m & 6^s & is 1' south Pos ang. 125 dist 10 mags 9.7 & 10.8 W. obs.

March 15, 1881.

9 35 9 43
6 46 6 51 −19.6
2 49 2 52

9 47 9 55 9 59
6 51 6 51 6 55
2 56 3 04 3 4

Sirius α Canis Majoris

$t = 10^h\ 29^m\ 7^s$

Coarse Hour = $3^h\ 23^m$ W. obs.
" dec. = −16.3
Fine " = + 5.6 div.
" Hour = $15^h\ 22^m + 2.8$

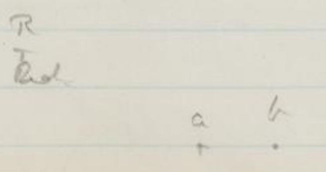
10 6
8 3 −12.5
2 3

10 35 Examined H.C. 19; rather more than ½ mag. fainter than star following. P. obs.

10 36 = 1 mag. fainter. W. obs.

38 = 5 or .6 fainter. S. obs.

11 40 R = a 4 b P. obs. R = a 4 b S obs.



That is a 0.5 or 0.6 brighter b about 0.7 fainter than the red star

March 16, 1881

9 30 β Urs. Min. 1 α Urs. Min. } S. obs.
α Urs. Min. 1 ε Urs. Maj. } Moon in southeast.
α Urs. Min. 4 γ Cass.

Double H. C. 138.

7^h 30ᵐ −23°.5
9 23
1 53

7 30
9 27
1 57

$t = 9^h 48^m 6^s$

Coarse Hour = 2^h 18^m
" decl = −23°15' W. obs.
Fine " = + 2.8 div ±
" Hour = 14^h 18^m + 0.2
Pos. ang. 110 dist 15 Mags. 7.4 & 7.5

Double H. C. 142

W. obs.

7 45 −23.8
9 55
2 10

This star quite certainly found.

~~Star probably found - possibly a companion - not certainly seen~~

W. obs.

Companion suspected at 100 dist 1.5" Mags 8 + 10.5

March 16, 1881.

$t = 10^h\ 6^m\ 26^s$

Coarse hour Circ = $2^h\ 20.5^m$ W. obs.
" decl " = −23.2
Fine " " = +5.8
" hour " = $14^h\ 20^m$ +1.2
α Canis Majoris for circle corrections
$t = 10^h\ 11^m\ 3^s$

Coarse hour Circ $3^h\ 30^m$
" decl. " $-16^\circ.45'$
Fine " " + 5.2
" hour " $15^h\ 30^m$ + 0.7

Double H.C. 180

13 17 −20.3
10 13

3 4

Mar. 21. 1881.

U. A. Canis Major #59

7 23
6 33   − 32 2
50

7 33 Color 2. Faint bands suspected ~~toward~~ in the more refrangible end of spectrum. W. obs

U. A. Canis Maj. #61

6 33
7 35   14.0
1 2

7 41 Color 3. Spec. not peculiar. W. obs.

U. A. Can. Maj. #71

6 40   14.7
7 42
1 2

~~Color 3 Spec not peculi~~

7 44 Color 2 Spec not peculiar. W. obs.

" —— "

March 21, 1881.

U. A. Canis Maj. # 72

6 41
7 51
1 10 31.5

7 58 Color 1. Spec. not peculiar. W. obs

U. A. Canis Maj. # 73

6 40
7 58
1 18 20.6

8 05 One quite red star in cluster. Color 2. Spec. not peculiar W. obs

U. A. Canis Maj. # 78

6 44 23.9
8 7
1 23 Group of 4 small stars

8 28 Color 0 Spec. not peculiar S obs.
" of 8.6 mag 0 Spec prob. peculiar W. obs

8 41

4
6 49 U. A. Canis Maj. # 92

8 19 Color 3 Spec not peculiar W. obs.

25 " 3 " " " S

March 21, 1881.

U.A. Can. Maj. #89

6 48 — 11.9
8 42
1 54

8 45 Color 2 Spec. not peculiar m ob
" " " " " S "

U.A. Canis Maj. #117

6 59 21.8
8 49 clouds
1 50

U.A. Canis Maj. 125

7 4 16.0
8 52
1 48 Hazy. Star rather faint.

9 0 Color 1, Spec. not peculiar m. ob
0 " " " " " . S "

U.A. #79

6 45 —16.9
9 0
2 15

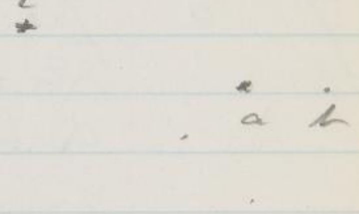
March 21, 1881

Suspected var in Monoc. H.C., 19

10 R = a 4 b P. means brighter. a

R = a 6 b W. " fainter b.

R a 5 b S.



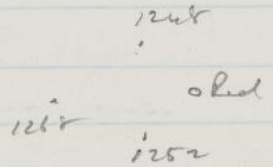
March 22, 1881.

7 0 β Urs. Min. 2 α Urs. Min. Sebs.
ε Urs. Maj. = α Urs. Min.
α Urs. Min. 3 γ Cass.

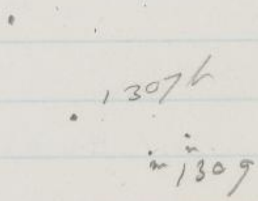
U. A. Can. Maj.

7^h 17^m

Star No. 1249 not seen
Doubled star noticed.



Star 1309 not seen
m 0.4 brighter than m.
m prob. star marked
in Merid Phot.



~~Star No. 1176 0.5 brighter 1176 0.5 brighter. Pcks.~~
~~0.5~~ Wds.

Star left and above brighter by 0.5 mag
∴ 1164 0.5 mag brighter than 1176 Pcks.
" " " " " Wds

March 22, 1881.

U. A. Canis Maj 125

7 4 -16.0
7 42 Previously observed.
38

U. A. Canis Maj #79.

6 45 16.9
7 42
58

Star seen but clouds closed over before estimate could be made. W. obs.

U. A. Canis Maj. # 141
7 10 -26.8
46
36

7 49 Color 2 Spec. not peculiar W. obs

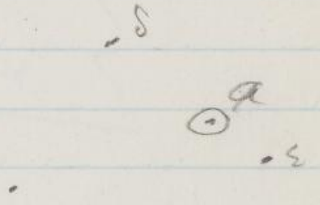
U. A. Can. Maj. # 142
7 00 30.5

Color 1 Spec not peculiar W. obs.

Clouds.

March 24 1881

Stars in Canis Major examined through clouds a very red.



7 26
0 51
6 35

D.M. 81° 25

Sid time.
8h 3m
4 30
7 54 34

~~119.4~~
~~177.6 56.2~~

8 6

~~1309 not seen~~
~~being " .~~

P. obs.

P. obs

8 7 ~~120.3~~
7 30 ~~56.3~~
10.9 57 34 8 7.54 ~~176.6~~
7 56.65 ~~301.4~~ ~~51.0~~
8 ~~352.4~~ ~~107.3~~

P. obs.

Wrong Star.

9 ~~121.0~~
9 30 8 9.54 ~~173.4~~ ~~52.4~~
59 34 7 58.65 ~~307.3~~ ~~49.8~~
10 ~~354.1~~ ~~102.2~~

P. obs.

" "

11 ~~124.6~~
11 30 8 11.55 ~~173.8~~ 48.2
8 01 34 8 0.65 ~~300.8~~ 49.6
12 ~~350.4~~ 97.8

P. obs.

" "

d
March 24, 1881.

~~8 15 115.0 W. obs.~~
~~16 00 8 16.04 177.0 62.0 Wrong star.~~
~~06 00 8 5.15 304.7 46.4~~
~~17 351.1 108.4~~

~~17 115.8 W. obs.~~
~~17 30 176.3 60.5 Wrong stars~~
~~07 34 304.2 46.5~~
~~18 350.7 107.0~~

~~19 120.2 W. obs.~~
~~19 30 170.2 0.0 Wrong stars,~~
~~09 34 297.3 60.0~~
~~20 357.3 110.0~~

(2.) 22 Clouds

Preceding two sets on wrong stars.

8 15± Star 1488 a .3 b P. obs. .a .b

9 23 97.8 64.6+ P. obs.
23 30 162.4
13 9 23.54 278.7
11.1 9 12.44 338.2 59.5+
24 1241+ 1.10+ Focus poor
9 23 30.
-11 8
4 44 35.
13 256 53. 62.05

97.8 60.8+ P. obs.
24 30 158.6
14 9 24.54 279.8 60.5+
9 13.44 340.3 121.3+ 1.16+
25
9 24 30.
-11 8.
4 44 31.
13 57 453. 60.65

ch

March 24, 1881.

9 25+ ~~31~~ 95.2 68.4+^ P. obs.
21 30
16 9 25.5 163.6
9 14.4 278.8 57.1+^
26 +
22 335.9 125.5+1 1.08+^
62.75
1. 9 25 30.
4 -11 8.
44 31.
13 58 27 53. 98.2 W. obs.
28 30 60.4+^
9 28.5 158.6
19
9 17.4 276.9 60.5+^ 8+^
30 337.4 120.9+1 1.17
60.45
9 21 30.
-11 9
4 44 31
14 32 1. Companion to 1236 not seen. G.B. P. obs.

30 97.0 W. obs.
31 00 67.0+^
~~112~~ ~~30~~ 20 9 31.0 164.0
9 14.9 279.0 55.9+^
22 334.9 122.9+1 1.13+^
61.45
9 31 0.
4 -11 9.
44 31.
14 32 22. ~~Companion to~~ 1585 not seen. P. obs.

32 102.1 W. obs.
33 00 50.7+1
~~34~~ 22 9 33.0 152.8
9 21.9 278.9 58.3+^
34 337.2 109.0+1 1.44+^
54.50
2. 9 33 0.
4 -11 9.
44 31.
14 36 22. 92.3 P. obs.
36 30 70.9+^
~~112~~ 104 ~~112~~ 9 36.5 163.2
~~35~~ 26 9 25.4 279.4 55.8+1
37 335.2 126.7+1 1.05+^
63.35
9 36 30.
4 11 10.
44 31. 2 Probably 26 and 27
14 9 51

ch

March 24 1881

Sid time

9h 37 98.4 59.8 +^ P. obs.

37 30 158.2

37 9 37.5

9 26.4 270.9 66.9 +^

38 337.8 126.7 +^ 1.05 +^

63.35

9 37 30.

4 -11 10.

44 31.

14 10 51.

38 95.3 62.0 +^ P. obs.

38 30 157.3

28 9 38.5

9 27.4 277.2 56.9 +^

39 334.1 118.9 +^ 1.22 +^

59.45

(3.) 9 38 30.

4 -11 10.

44 31.

14 11 51. Index B ~~in~~ reads 130.6

41 97.9 W. obs.

11.2 42 00 9 42.0 157.1 59.2 +^

31 9 30.8 275.2 60.8 +^

43 336.0 120.0 +^ 1.19 +^

60.00

9 42 0.

-11 11.

4 44 31.

14 15 20.

43 95.9 61.5 +^ W. obs.

43 30 9 43.5 157.4

32 9 32.3 276.3 56.9 +^

44 333.2 118.4 +^ 1.23 +^

59.20

9 43 30.

4 -11 11

44 31.

14 16 50.

44 98.3 55.9 +^ W. obs.

45 00 9 45.0 154.2

44 34 9 33.8 275.9 60.3 +^

46 336.2 116.2 +^ 1.28 +^

58.10

9 45 0.

-11 11.

(4) 44 31.

14 18 20.

ch
March 24, 1881.

9 46 93.7 P. obs.
46 30 64.5
35 9 46.5 158.2
9 38.3 278.9 51.5
330.4 116.0 1.28
47 58.00
9 46 30.
4 -11 12. Focus 371.6 - Set at 77.
4 44 31.
14 19 49. ~~149.7~~ Reject
50 98.6 54.8 P. obs.
50 00
39 9 50.0 153.4
9 38.8 274.0 61.6
50 335.6 116.4 1.~~50~~ 27
58.20
9 50 0.
4 -11 12.
4 44 31.
14 23 19. 98.4 56.2 P. obs.
51 00
40 9 51.0 154.6
9 39.8 279.3 51.1
51 330.4 107.3 1.48
53.65
9 51 0.
(5.) 4 -11 12.
44 31.
14 24 19.
54 104.9 46.1 W. obs.
54 30 9 54.5 151.0
43 9 43.3 278.0 53.2
55 331.2 99.3 1.6~~7~~ 8
49.65
9 54 30.
4 11 13.
44 31.
14 27 44. 98.4 54.1 W. obs.
57 00 9 57.0 152.5
46 9 45.8 282.5 47.9
58 330.4 102.0 1.61
51.00
9 57 0.
4 11 13.
44 31.
14 30 58 12. 99.6 55.3 W. obs.
58 00 58.5 154.9
47 9 279.3 48.6
9 47.3 327.9 103.9 1.56
51.95
(6) 9 58 30.
4

March 24, 1881.

10h 00m 98.3 P. obs.
00 30 51.0+^
49 10 0.5 <149.3
9 49.3 <279.9 47.7+^
01 327.6 98.7+^ 1.69+^
49.35

10 0 30.
4 11 14.
44 31.
14 ~~44~~ 33 49.

01 100.2 P. obs.
01 30 48.1+^
50 10 1.5 <148.2
9 50.3 <280.6 50.1+^
02 330.7 98.2+^ 1.70+^
49.10

10 1 30.
4 11 14.
44 31.
14 34 47.

03 99.2 P. obs.
03 30 52.1+^
52 10 3.5 <151.3
9 52.3 <280.6 43.8+^
04 324.4 95.9+^ 1.7~~7~~6+^
47.95

(7.)
10 3 30.
4 11 14.
44 31.
14 36 47.

04 97.0 W. obs.
05 00 53.7+^
54 10 5.0 <150.7
9 59.8 <277.2 50.0+^ 6^
06 327.2 103.7+^ 1.5~~7~~+
51.85

10 51 0.
4 15.
44 31.
14 38 16.

06 97.8 W. obs.
06 30 51.2+^
55 10 6.5 <149.0
9 55.3 <281.4 43.8+^
07 325.2 95.0+^ 1.78+^
47.50

10 6 30.
4 -11 15.
44 31.
14 39 46.

07 102.2 W. obs.
07 30 43.0+^
56 10 7.5 <145.2
9 56.3 <279.2 47.0+^
08 326.2 90.0+^ 1.91+^
45.00

(8.)
10 7 30.
4 -11 15.
44 31.
14 40 46

ch.

March 24, 1881.

10 09 97.8 48.8+^ P. obs.
09 30 146.6
~~11.3~~ 58 10 9.5 ‐ 2
9 58.7 279.8 42.3+^ 1.88^ ~~9+~~
10 322.1 91.1+^ ~~1.73~~
10 9 30.
11 15.
K KK 31.
1K K12 K6.
45.55

103.9 38.5+^ P. obs.
12 00 142.4
10 01 10 12.0
10 0.8 279.2 43.1+^ Clouds.
12 322.3 81.6+^ 2.15+^
10 12 0.
11 16.
K KK 31.
1K K13 15.
40.80

96.0 47.4+^ P. obs.
13 30 143.4
02 10 13.5
10 2.7 281.2 40.4+^
14 321.6 87.8+^ 1.97+^
9. 10 13 30.
K 11 16.
KK 31.
1K K6 15 KV.
43.90

102.1 41.0+^ W. obs.
15 30 143.1
04 10 15.5
4.7 278.0 43.3+^ ✓
16 321.3 84.3+^ 2.07+^
10 15 30.
K 11 16.
44 31.
1K 16 KV.
42.15

101.0 43.7+^ W. obs.
11.3 16 30 144.7
05 10 16.5
5.2 282.2 41.1+^
17 322.3 83.8+^ 2.08+^
10 16 30.
K 11 17.
KK 31.
1K K8 18 KK.
41.90

102.5 38.8+^ W. obs.
18 30 141.3
07 10 18.5
7.2 279.9 43.2+^ 2.14+^
19 323.1 82.0+^
10 18 30.
10. K 11 17.
41.00

Ch.

March 24, 1881.

10 20 98.1 P. obs.
20 30 20.5 143.2 45.1+^
09 10
9.2 280.4 39.8+^
21 320.2 84.9+^ 2.0~~5~~6+ ^ Eye-piece pushed in, to focus.
10 20 30.
4 11 17. 42.45
4 44 31.
14 53 44.
22 103.4 P. obs.
22 30 22.5 143.3 39.9+^
11 10
11.2 280.1 43.2+^ 2.10 ^
23 323.3 83.1+^ ~~2.11~~
10 22 30.
11 18. 41.55
4 44 31.
14 55 43.
23 101.2 P. obs.
23 30 23.5 143.4 42.2+^
12 10
12.2 281.2 41.4+^
24 322.6 83.6+^ 2.09+ ^
(11.) 10 23 30.
11 18. 41.80
4 44 31.
14 56 43.
25 96.1 S. obs.
25 30 25.5 140.3 44.2+^
14 10
14.2 282.0 37.2+^
26 319.2 81.4+^ 2.15+ ^
10 25 30.
-11 18. 40.70
4 44 31.
14 58 43.
27 101.5 38.3+^ S. obs.
27 00 27.0 139.8
16 10
15.7 277.8 43.2+^
27 321.0 81.5+^ 2.15+ ^
10 27 0.
11 18. 40.75
4 44 31.
15 0 13
28 100.0 41.0+^ S. obs.
28 30 28.5 141.0
10 17 10
17.2 282.2 36.8+^
29 319.0 77.8+^ 2.26+ ^
(12.) 10 29 30. 38.90
11 19.

ch

March 24, 1881.

10 29 103.4 35.7+^ P. obs.
29 30 29.5< 39.1
18 10 18.2< 279.8 39.9+^
30 319.7 75.6+^ 2.33+^
37.80

10 29 30.
4 11 19.
44 31.
15 231 42.

99.4 40.0+^ P. obs.
31 30 31.5< 39.4
20 10 20.2< 283.4 32.9+^
32 316.3 72.9+^ 2.4~~2~~ 2+^
36.45

10 31 30.
4 11 19.
44 31.
15 432 42.

103.6 34.1+^ P. obs.
32 30 32.5< 37.7
21 10 21.2< 277.1 41.3+^
33 318.4 75.4+^ 2.33+^
37.70

(13.) 10 32 30.
4 -11 19.
44 31.
15 34 42.

99.5 39.2+^ S. obs.
34 30 34.5< 38.7
23 10 23.2< 284.9 29.2+^
35 314.1 68.4+^ 2.56+^
34.20

10 34 30.
4 -11 20.
44. 31.
15 35 41.

104.0 32.3+^ S. obs.
35 30 35.5< 36.3
24 10 24.2< 282.0 36.7+^
36 318.7 69.0+^ 2.54+^
34.50

10 35 30.
4 -11 20.
44 31.
15 37 41.

101.0 39.9+^ S. obs.
37 00 37.0< 140.9
26 10 25.7< 281.2 34.4+^
37 315.6 74.3+^ 2.37+^
37.15

(14.) 10 37 0.
4 -11 20.
15 18 11

Ch

March 24 1881

10 39 104.6 30.0+^ P. obs.
39 30 39.5< 134.6
28 10 28.2< 281.2 34.9+^
40 316.1 64.9+^ 2.68+^
32.45
10 39 30.
4 −11 20.
4 44 31
15 12 41.

10 40 100.0 36.6+^ P. obs.
41 00 41.0< 136.6
30 10 29.7 277.4 40.0+^
42 317.4 76.6+^ 2.30^
38.30
10. 41 0.
4 −11 21
4 44 31.
15 14 10.

10 42 98.3 35.9+^ P. obs.
42 30 42.5< 134.2
31 10 31.2< 280.0 32.3+^
43 312.3 68.2+^ 2.57+^
34.10
10 42 30.
11 21.
4 44 31.
15 15 40.

10 45 102.5 31.1+^ S. obs.
45 30 45.5< 133.6
34 10 34.2< 276.0 39.0+^
46 315.0 70.1+^ 2.58^ 7+
35.05
10 45 30.
11 21.
4 44 31.
15 18 40.

10 47 99.0 36.3+^ S. obs
47 30 47.5< 135.3
36 10 36.7< 280.3 31.7+^
48 312.0 68.0+^ 2.57+^
34.00
10 47 30.
4 −11 22.
4 44 31.
15 20 39

Ch

March 24. 1881.

10 48 100.2 34.0+^ S obs
48 30 48.5 134.2
37 10
37.2 279.7 37.9+^
49 317.6
71.9+^ ~~5+^~~ ~~2.44~~
35.95 2.44
10 44 30.
14 11 22.
44 31.
15 21 39.

10 50 99.8 32.5+^ P. obs
50 30 50.5 132.3
39 10
39.2 280.4 31.8+^
51 312.2
64.3+^ 2.72+^
32.15
10 50 30.
4 -11 22.
44 31.
15 23 39.

10 52 100.9 32.2+^ P. obs
52 30
11.4 41 10 52.5 133.1
41.1 280.6 31.4+^
53 312.0
63.6+^ 2.73+^
31.80
10 52 30.
-11 23.
4 44 31.
15 25 36.

10 53 97.8 35.6+^ P. obs
53 30
42 10 53.5 133.4
42.1 281.3 29.7+^
54 311.0
65.3+^ 2.6~~7~~6+^
32.65
10 53 30.
17 -11 23.
44 31.
15 26 36.

10 55 104.8 253+^ S obs
55 30
44 10 55.5 130.1
44.1 279.0 34.0+^
56 313.0
593+^ 2.8~~9~~8+^
29.65
10 55 30.
4 -11 23.
444 31.
15 22 32.

ch
March 24. 1881.

10 56 100.0 33.3+1 S obs
56 30
45 10 56.5 < 133.3
45.1 < 281.0 29.0+1 8+1
57 310.0 2.77
62.3+1
31.15

10 56 30.
-11 23.
4 44 31.
15 29 38.

10 58 103.2 30.7+1 S. obs.
58 30
47 10 58.5 < 133.9
47.1 < 277.8 31.9+1
59 309.7 2.76+1
62.6+1
31.30

10 (18) 58 30.
-11 24.
4 44 31.
15 31 37.

11 0 100.2 31.1+1 P. obs.
00 00
49 11 00.0 < 131.3
10 48.6 < 280.1 30.4+1 ~~8~~ 4+
0 310.5 2.88 1
61.5+1
30.75

11 0 0.
4 -11 24.
44 31.
15 33 7.

11 1 101.3 30.1+1 P. obs.
1 00
50 11 1.0 < 131.4
10 49.6 < 279.8 31.0+1
1 310.8 2.82+1
61.1 1
30.55

11 1 0.
4 -11 24.
44 31.

11 2 98.3 32.9+1 P. obs.
2 30
51 11 2.5 < 131.2
10 51.1 < 278.7
3 308.6 29.9+1 2.76
~~2.76~~+1
62.8+1
31.40

11 2 30.
4 (19) -11 24.
44 31.
15 3

Ch

March 24 1881.

11 04 102,0 26,4+ S. obs.
04 30 128,4
53 11 4.5 280,0
10 53.1 29.0+
05 309,0
55,4+ 3.04+

11 4 30.
4 -11 25.
4 44 31.
15 37 36.

27.70

11 05 99.1 31.7+ S. obs.
05 30 130,8
54 11 5.5 278,9
10 54.1 30.8+
06 309,7
~~6~~2,5+ 2.7~~7~~6+

11 5 30.
4 -11 25.
4 44 31.
15 38 36.

31.25

11 07 102,3 27.0+ S. obs.
07 30 129.3
56 11 7.5 278.8
10 56.~~x~~1 32.2+
8 311.0
59.2+ 2.89+

11 7 30.
4 (20) -11 25.
44 31.
15 40 36.

29.60

11 11 98.6 30.2+ P. obs.
11 30 128.8
11 00 11 11.5 279.6
11 0.1 27.7+ 2.94+ Images apparently to left of field
12 307.3 Light thrown in
57.9+ & images moved.

11 11 30
4 -11 26.
44 31.
15 44 41.

28.95

11 12 101.3 26.1+ P. obs.
12 30 127.4
01 11 12.5 280.4
1.1 27.7+
13 308,1
53.8+ 3.11+

11 12 30.
4 -11 26.
4 44 31.
15 45 35.

26.90

March 24^th^, 1881.

11 13 | 98.3 | 31.1+ | P. obs.
13 30
02 11 | 13.5 < 129.4
2.1 < 280.7 | 27.6+
308.3
14
| 58.7+ | 2.91+
| 29.35

11 13 30.
(21) -11 26.
4 44 31.
15 46 35.

11 15 | 102.9 | 21.1+ | S. obs.
16 00
05 11 | 16.5 < 124.0
4.6 < 282.8 | 24.0+
306.8 | 3.50+
17
| 45.1+
| 22.55

11 16 0.
-11 26.
4 44 31.
15 49 5.

11 17 | 99.2 | 27.8+ | S. obs.
17 30
06 11 | 17.5 < 127.0
6.1 < 280.6 | 27.2+
307.8 | 3.06+
18
| 55.0+
| 27.50

11 17 30.
-11 27.
4 44 31.
15 50 34.

11 18 | 99.7 | 26.4+ | S. obs
18 30
17 11 | 18.5 < 126.1
7.1 < 278.9 | 27.3+
306.2 | 3.12+
19
| 53.7+
| 26.85

11 (22) 18 30.
-11 27.
4 44 31.
15 51 34.

11 21 | 100.3 | 26.1+ | P. obs.
21 30
10 11 | 21.5 < 126.4
10.1 < 279.1 | 27.1+
306.2 | 3.13+
22
| 53.2+
| 26.60

11 21 30.
-11 27.
4 44 31.
15 54 34.

March 24, 1881.

11 22 100.0 25.8+^ P. obs.
22 30 125.8
~~11.5~~ 11 11 22.5 280.1
11.8 26.2+^ 8+^
23 306.3 520+^ 3.1~~9~~
26.00
11 22 30.
-11 28.
31.
15 5 33.

11 24 99.6 25.1+^ P. obs
24 00 124.7
12 11 24.0 278.3
12.6 26.8+^ 8^
24 305.1 519+^ 3.1~~9~~+
25.95
11 24 0.
(23) -11 28.
31.
15 7 3.

11 25 101.7 25.4+^ S. obs.
26 00 127.1
14 11 26.0 277.0
14.6
27 306.3 29.3+^
547+^ 3.07+^
27.35
11 26 0.
-11 28.
31.
15 9 3.

S. obs

11 27 98.1
28 00 28.0 127.0 28.9+^
11.5 16 11
16.5 280.2 25.8+^
29 306.0
54.7+^ 3.07+^
27.35
11 28 0.
-11 28.
31.
16 1 3.

S. obs.

11 29 97.8 26.2+^
29 30
18 11 29.5 124.0
18.0 277.0 29.0+^
30 306.0 552+^ 3.05+^
27.60
11 (29) 29 30.
-11 29.
31.
16 2 32.

ch
March 24, 1881,

11 31 99.3 25.3+^ P.ots.
31 30
20 11 31.5< 124.6
20.0< 279.1 23.6+^
32 302.7
48.9+^ 3.32+^
24.45
11 31 30.
-11 29.
4 44 31.
16 4 32.

11 32 100.4 22.9+^ P.ots
32 30 123.3
21 11 32.5<
21.0< 280.2 24.9+^
33 305.1
47.8+^ 3.37+^
23.90
11 32 30.
-11 29.
4 44 31.
16 √ 32.

11 34 99.4 24.9+^ P.ots
34 30
23 11 34.5< 124.3
23.0< 279.4 24.0+^
35 303.4
48.9+^ 3.32+^
24.45
11 34 30.
25 -11 30.
44 31.
16 7 31.

11 36 99.2 23.0+^ S.des
36 30
25 11 36.5< 122.2
25.0< 279.1 26.1+^
37 305.2
49.1+^ 3.32+^
24.55
11 36 30.
4 -11 30.
44 31.
16 9 31.

11 37 96.4 27.5+^ S.des.
37 30
26 11 37.5< 123.9
26.0< 278.0 24.1+^
38 302.1
51.6+^ 3.20+^
25.80
11 37 30.
-11 30.
4 44 31.
16 10 31.

ch

March 24, 1881.

11 39 99.4 230+^ S. obs.
39 30 39.5 < 122.4
28 11 28.0 < 277.2 26.8+^ 3.28+^
40 304.0 49.8+^
11 39 30.
-11 30
4 44 31.
16 (26) 12 31.
24.90

11 42 97.0 32.9+^ W. obs.
42 30 42.5 < 129.9
31 11 31.0 < 276.9 26.9+^
[43] 303.8 59.8+^ 2.87+^
11 42 30.
-11 31.
4 44 31.
16 15 30.
29.90

11 45 98.0 28.0+^ W. obs.
45 30 1126. ①
34 11 45.5 < 277.0 28.1+^
11 46 34.0 < 305.1 56.1+^ 3.12+^
11 45 30.
-11 31
4 44 31.
16 18 30.
28.05

11 47 95.3 29.7+^ W. obs.
47 30 125.0
36 11 47.5 < 278.9 23.0+^
48 36.0 < 301.9 52.7+^ 3.16+^
11 47 30.
(27) -11 32
4 44 31.
16 20 29.
26.35

11 49 99.0 23.0+^ P. obs.
49 30 122.0
38 11 49.5 < 279.4 22.5+^
50 38.0 < 301.9 45.5+^ 3.49+^
11 49 30.
11 32.
4 44 31.
16 22 29.
22.75

Ch

March 24, 1881.

11 50 98.4 23.8+^ P.obs.
50 30 122.2
39 〃 50.5<
278.3 22.9+^
39.0<
51 301.2
46.7+^ 3.4~~4~~2+^
11 50 30.
4 -11 32.
44 31.
16 23 29.
23.35

11 51 98.3 23.5^+ P.obs.
51 30 121.8
40 〃 51.5<
276.3
40.0< 25.3+^
52 301.6 3.3~~3~~2+^
48.8+^
11 (28) 51 30.
4 11 32.
44 31.
16 24 29.
24.40

S.obs.

11 53 97.0 24.2+^
53 30 121.2
42 〃 53.5<
42.0<
278.9 2~~1~~0.2+^
54 299.1
44.4+^ 3.54+^ ~~3.49~~
11 53 30.
-11 33.
4 44 31.
16 26 28.
22.20

11 54 97.9 24.4+^ S.obs
54 30 122.3
43 〃 54.5<
277.0
43.0< 23.3+^
55 300.3
47.7+^ 3.38+^
11 54 30.
11 33.
4 44 31.
16 27 28.
23.85

11 56 97.9 22.2+^ S.obs
56 30 120.1
45 〃 56.5<
277.8 21.1+^
45.0<
57 298.9
43.3+^ 3.5~~9~~60+^
11 (29) 56 30.
4 11 33.
44 31.
16 29 28.
21.65

March 24, 1881.

11 58 97.9 24.9+^ W. obs.
58 30 122.8
47
~~11.6~~ 11 58.5
276.7 26.5+^
~~46.9~~
59 47.0 303.2 51.4+^ 3.21+^
25.70

11 58 30.
4 −11 34.
4 44 31.
16 31 27.

11 59 94.2 29.3+^ W. obs.
59 30 123.5
48 11 59.5
278.4 21.6+^
~~47.9~~
12 0 48.05 300.0 50.9+^ 3.24+^
25.45

11 59 30.
4 −11 34.
4 44 31.
16 32 27.

12 1 98.2 21.9+^ W. obs.
1 30 120.1
50 12 1.5
275.0
~~11 49.9~~
2 300.4 50.0 25.4+^ 3.40+^
47.3+^
23.65

12 1 30.
4 11 34.
4 44 31.
16 34 27.

12 2 96.2 25.5+^ P. obs.
2 30 121.7
51 12 2.5
277.6
~~11 50.9~~
3 300.6 51.0 23.0+^ 3.34+^
48.5+^
24.25

12 2 30.
−11 34.
4 44 31.
16 35 27.

4 97.8 22.1+^ P. obs.
4 00 119.9
11.6 52 12 4.0
276.8
11 ~~52.9~~ 54
300.2 23.4+^ 3.48+^
45.5+^
22.75

12 4 0.
4 −11 34.
4 44 31.
16 36 57.

March 24, 1881

12 4 97.1 23.2+^ P. obs.
5 00 12 5.0< 120.3
53
11. 53.52< 276.9 21.5+^
6 298.4 44.7+^ 3.5~~2~~ 8+^
22.35
12 5 0.
(31) −11 35.
4 44 31.
16 37 56.

12 7 99.8 19.3+^ S. obs.
7 30 12 7.5< 119.1
56
11 55.9< 278.2 22.9+^
8 301.1 3.65+^
42.2+^
21.10
12 7 30.
−11 35.
4 44 31.
16 40 26.

12 9 96.0 25.6+^ S. obs.
9 30 12 9.5< 121.6
58
11 57.9< 277.2 21.5+^
10 298.7 47.1+^ 3.4~~1~~ 0+^
23.55
12 9 30.
4 −11 35.
44 31.
16 42 26.

12 10 97.6 20.9+^ S. obs
10 30 12 11.0< 118.5
59
11 59.4< 275.4 24.9+^
11 300.3
45.8+^ 3.47+^
22.90
12 10 30.
(32) −11 36.
4 44 31.
16 43 25.

12 12 94.5 26.5+^ W. obs.
13 00 13.4
12 01 12 ~~3.44~~ 121.0
12 14.2< 275.9 22.1+^
14 298.0 48.6+^ 3.3~~4~~ 3+^
24.30
12 13 0.
−11 36.
4 44 31.
16 45 55.

166

d

March 24, 1881

12 14 94.5 25.8+^ W. obs.
15 00 120.3
03 12 15.0<
274.3
16 12 3.4< 299.1 24.8+^
50.6+^ 3.2~~5~~4+^
25.30

12 15 0.
-11 36.
4 44 31.
16 47 55.

12 16 95.2 26.7+^ W. obs.
16 30 121.9
05 12 16.5<
277.0
12 4.9< 20.3+^
17 297.3 47.0+^ 3.41+^
23.50

12 16 30.
-11 37.
4 44 31.
16 49 24.

18 97.7 23.0+^ P. obs.
18 30 120.7
07 12 18.5<
275.4
12 6.9< 22.2+^
19 299.6 45.2+^ 3.50+^
22.60

12 18 30.
-11 37.
4 44 31.
16 51 24.

20 95.3 24.9+^ P. obs.
20 30 120.2
09 12 20.5<
274.2
12 8.9< 24.4+^
21 298.6 49.3+^ 3.3~~1~~0+^
24.65

12 20 30.
-11 37.
4 44 31.
16 53 24.

21 96.3 22.1+^ P. obs.
21 30 118.4
10 12 21.5<
276.3
12 9.9< 21.2+^
22 297.5 43.3+^ 3.5~~9~~60+^
21.65

12 21 30.
-11 37.
4 44 31.
16 54 24.

ch

March 24, 1881

12 23 98.4 S. obs.

23 30 20.6+^
12 12 23.5 119.0

12 11.9 273.0

24 298.1 25.1+^ 3.4~~7~~ 8+^

12 23 30.
-11 38.
K KK 31.
16 6 23.

45.7+^
22.85

24 (90.1) night too light S. obs.

12 26 97.1 clock stopped S. obs.

27 00 22.7+^
15 12 27.0 119.6

15.4 277.7 16.3+^

28 294.0

12 27 0.
11 38.
K KK 31.
17 28 23.

39.0+^ 3.82^
19.50

98.8 17.4+^ S. obs.

28 30
17 12 28.5 116.2

16.9 275.8 23.2+^

29 299.0 3.74+^

12 28 30.
-11 39.
~~34~~ 35 KK 31.
17 1 23.

40.6+^
20.30

12 30 94.0 24.8+^ W. obs.

31 00
19 12 31.0 118.8

19.4 276.5 20.3+^

32 296.8

12 31 0.
-11 39.
K KK 31.
17 3 22.

45.1+^ 3.5~~1~~ 0^+
22.55

12 32 94.6 22.2+^ W. obs.

32. 30
21 12 32.5 116.8

20.9 273.7 23.3+^ 3.4~~8~~ 9±^

33 297.0

12 32 30.
11 39.
K KK 31.
17 5 22.

45.5+^
22.75

March 24th 1881.
W. obs.

12 33 9 3.3 25.1+^
33 30 11 8.4
22 12 33.5
=
276.3
12 21.9 19.0+^ $6^{+\wedge}$
34 12 295.3 3.5~~5~~
44.1+^
22.05
12 33 30.
-11 39.
4 ~~44~~ (36) 31.

At 12 30 * ~~1236~~ 1488 .3 brighter than b * in Peters

B 236			B 394		
12	40	25.5	12	29	00
	41	25.6	12	30	02

Centre of [illegible] [illegible] at RA $12^h\ 20^m$
Dec. 0° Peters

12 40 25.5
12 28 44.5
$~~8~~\ 11^m\ 41^s.0$ at $12^h\ 30^m$
+ 11
11

∴ B 236. is $27^s.9$ fast.

Sid. Chronom. assumed from Mar 24.
to be 14.^{m}4 fast.

ch

March 25 1881

D.M. +81° 25 + 26

Sid time Chron.

7 26 94.2 S. obs.
26 30 22.3+ ^
7h 12 7 26.5 116.5
11.7 276.4 21.7+ ^
298.1 44.0+ ^ 3.56+ ^
22.00

7 26 30.
-14 46.
4 44 31.
11 56 15.

27 96.0 S. obs.
27 30 19.9+ ^
13 7 27.5 115.9
12.7 276.6 20.3+ ^
28 296.9 40.2+ ^ 3.76+ ^
20.10

7 27 30.
-14 46.
4 44 31.
11 57 15.

28 95.0 S. obs.
28 30 23.0+ ^
14 7 28.5 118.0
13.7 275.8 19.7+ ^ 3.6~~3~~2+ ^
29 295.5 42.7+ ^
21.35

7 28 30.
-14 46.
4 44 31.
11 58 15.

29 96.9 S. obs.
29 30 20.2+ ^
7 29.5 117.1
15 14.7 274.3 21.9+ ^ 3.66+ ^
30 296.2 42.1+ ^
21.05

7 29 30.
-14 46.
4 44 31.
11 59 15.

31 93.4 S. obs.
31 00 27.3+ ^
16 7 31.0 120.7
16.2 277.7 16.1+ ^
31 293.8 43.4+ ^ 3.59+ ^
21.70

7 31 0.
-14 46.
4 44 31.
12 0 45.

Ch,
March 25, 1881.

7 18 α Urs Min 1 brighter than β Urs Min
" " " 3 γ Cassiop. W. obs

32
32 30 96.0 18.3+^
18 7 32.5 114.3 S. obs.
17.7 274.0 21.8+^
33 295.8 40.1+^ 3.7~~7~~+ 6^
20.05

③ 7	32	30.
4	-14	47.
	44	31.
12	34	14.

93.7 W. obs.
34 30 20.3+^
20 7 34.5 114.0
19.7 275.2 19.8+^
35 295.0 40.1+^ 3.7~~7~~+ 6^
20.05

7	34	30.
4	-14	47.
	44	31.
12	35	14.

92.7 W. obs.
35 30 23.7+^
21 7 35.5 416.4
20.7 274.1 22.1+^ 3.47+^
36 296.2 45.8+^
22.90

7	35	30.
4	-14	47.
	44	31.
12	35	14.

92.7 W. obs
37 30 23.5+^
7 37.5 416.2
23 22.7 272.9 21.8+^ 3.4~~9~~ 50+^
38 294.7 45.3+^
22.65

③ 7	37	30.
4	-14	47.
	44	31.
12	38	14.

94.7 W. obs.
38 30 20.9+^
24 7 38.5 415.6
23.7 271.4 24.9+^ 3.47+^
39 296.3 45.8+^
22.90

7	38	30.
-14	44	.
4	44	31.
12	8	13.

ds March 25, 1881.

7ʰ 40ᵐ 91.7 M. obs.
40 00
7 40.0⁴ 119.2 27.5+^
25
25.2 274.6 20.3+^
40 294.7 47.8+^ 3.37+^
23.90

7 40 0.
-14 48.
4 44 31.
12 10 43.

41 95.0 19.0+^ M. obs.
41 30
7 41.5⁴ 114.0
27
26.7 274.4 22.2+^
42 296.6 41.2+^ 3.70+^
20.60

⑭7 41 30.
14 48.
4 44 31.
12 11 13.

96.2 P. obs.
48 30 18.7+^
34 7 48.5⁴ 114.9
33.7 273.2 21.2+^
49 294.4 39.9+^ 3.78+^
19.95

7 49 30.
-14 49.
4 44 31.
12 19 12.

49 94.6 19.0+^ P. obs.
50 00
7 50.0⁴ 113.6
35
35.2 275.4 18.5+^
51 293.9 37.5+^ 3.92+^
18.75

7 50 0.
-14 50.
4 44 31.
12 19 41.

96.0 P. obs.
51 30 17.4+^
7 51.5⁴ 113.4
37
36.7 274.2 21.6+^
52 295.8 39.0+^ 3.82+^
19.50

7 51 30.
-14 50.
54 44 31.
12 21 11.

Ch

March 25, 1881.

53

53 30 | 95.3 | 18.0⁺^ | P obs.

39 7 | 53.5⁴ 113.3

=

38.7² 275.1 | 19.3⁺^

294.4 | 37.3⁺^ | $3.9\overset{2}{3}^{+}$^

18.65

54

7	53	30.
4	−14	50.
	44	31.
12	23	11.

54 30 | 95.8 | 17.5⁺^ | P obs.

40 7. | 54.5⁴ 113.3

=

39.7² 274.1 | 21.9⁺^

296.0 | 39.4⁺^ | 3.80⁺^

19.70

55

7	54	30.
4	−14	50.
	44	31.
12	24	11.

55

55 30 | 92.7 | 22.0⁺^ | P. obs.

41 7 | 55.5⁴ 114.7

=

40.7² 273.7 | 20.8⁺^

294.5 | 42.8⁺^ | 3.62⁺^

21.40

56

6. 7	55	30.
4	−14	50
	44	31.
12	25	11.

March 25, 1881.

1164 ½ brtr than 1176
1249 not seen
1309 not seen
1488 a = Star a
Comp. to 1236 not seen
1585 not seen

Comparison of following of three stars in Nebula Orion for Dr. Draper. ζ Orion

Prism to left. ~~Second star~~ Second Star

8 27 0.62 0.86 P. obs.
0.68 1.96 0.84 2.48
0.66 0.65 0.78 0.83

Preceding three stars.

29 0.84
0.86 2.61
0.91 0.87

Following compared with ζ Orion.

8 36 0.44 Reject-seemed to be wrong.

Fol. star, Second Star

37 0.49 0.78 W. obs.
0.53 1.55 0.79
0.53 0.52 0.79

Preceding star
0.74
0.75
0.77
2.26

Second Star
2.36
~~0.78~~
0.79

March 25 1881.

Sigma & following

8 48 1.09 W. obs

1.13 3.27

1.05 1.09

Middle W. obs

1.65

1.62 4.92

1.65 1.64

Preceding W. obs.

1.35

1.27 4.02

1.40 1.34

Sigma and following.

9 1 0.74 S. obs.

0.73 2.17

0.70 0.72 Prism to left

Middle. S. obs.

0.97

1.04 2.86

0.85 0.95

Preceding S. obs.

1.10

1.17 3.25

0.98 1.08

March 25, 1881.

ζ and following.

9 9 0.28 S. obs.
0.42 0.99
0.29 0.33

σ & foll. P. obs. P. on looking in afterwards
~~1.27~~ found ε Orionis in prism
9 16 1.43 & ζ behind edge.
1.36
1.26 4.05
1.35

9 0 β Urs. Min. 2 α Urs. Min. S. obs.
ε Urs. Maj. 1 α Urs. Min.
α Urs. Min. 3 γ Cass.

9 17 σ & middle P. obs.
1.55
1.60 4.70
1.55 ~~1.567~~
1.57

9 19 σ & prec. P. obs.
1.69
1.71 5.31
1.91 1.77

1881phae.proj.1312W

March 25, 1881.

ζ and following

9 24 0.48 S. obs.

0.41 1.31

0.42 ~~0.44~~ 0.44 Prism to left.

middle

~~0.40~~

~~0.42~~ Reject – dome interferes S. obs.

0.39

0.40 1.31 S. obs

0.42 0.40

Preceding

0.46 1.33 S. obs.

0.42 0.44 No error in whole number

0.45 of revolutions. S. obs.

U. a. Monoc. No 52

Spec. not peculiar

10 7 Color 1 Brightest star of a cluster. S. obs.

13 Color 1 Spec not peculiar P. obs.

U. a. Monoc. # 53

10 15 Color 1 Spec. not peculiar. P. obs

16 Color 1 Spec. not peculiar. S. "

U. a. Monoc.

1.8

6 3 2

.46

See page 178

March 25, 1881.

Sweep for Planetary Nebula with Comet Seeker on East Balcony. P. obs.

Pole star. Alt. 175.4 Az. 292 Set at 291

					Obs	Com
9h	25m	45s	Sweep			
21	27	15	α Hydrae	272.4	-8.4	-8.1
	29	40	Sweep			
21	30	37	α Hydrae	272.4	-8.4	-8.1 Nearly out of field.
	32	6	2 3d Mags.	211.8	+52.2	
	33	15	Sweep			
	38	0	"			
38	39	10	4th Mag.	264.8	-0.8	-0.6
35	39	40	4th "	253.7	+10.3	+10.5
	41	20	Sweep			
39	42	35	4th Mag.	239.9	+24.1	+24.5
	44	0	Sweep.			
	46	10	"			
42	48	0	4th Mag.	204.4	+59.6	+59.6
30	48	30	Cluster	194.5	+69.5	+69.8?
	51	35	Sweep.			
	52	40	Susp. 4th type	286.8	-22.8	
49.2	53	10	5th Mag.	282.6	-18.4	-18.6 4m following.
	55	0	Sweep			
	57	0	"			
	59	0	"			
10	0	50	"			
	3		"			

March 25, 1881.

Sweeping on East Balcony, continued. P. obs.

10h 3m 45s 4th Mag 253.6 +9.6
20 4 10 2nd " 251.6 +12.4 +12.6
55 3d Mag 346.7
6 0 Sweep
6 50 2nd Mag. 251.7 +12.3 α Leonis
No singular objects found.
8 15 Sweep ends.
9 20 to 10 5
W. A. Monoc. 63
10 19 29
10 21 Color 1 Spec. not peculiar S. ob
23 Color 1 Spec. not peculiar. P. ob.

X Hydrae

R.A. 10 31 22 −12.7

Very fine specimen of IV type a, Color 3 P. obs. two bands in yellow and dark lines separating them from red-end of green band well marked also that of blue band. P. obs.

Color 4 W. obs.

Antliae

R.A. 10h 29m 40s −38.9

Color 4 Very fine ~~spe~~ specimen of IV type Space between green + yellow thought to be yellow darker than in previous star P. obs.

Color 3 IV type W. obs.

March 26. 1881

7 0 Can. Maj. U.A. 114 Col. 3 probably Type III P. obs.

7 10 β Urs. Min. 3 α Urs. Min. { S. obs.
ε Urs. Maj. 2 α Urs. Min. { Twilight }
α Urs. Min. 2 γ Cass.

δ Urs. Min. ± = β Urs. Min.
7 12 δ " " 3 γ Cass. W. obs.

Orion U.A. 147.
5 46 +1.8
7 35
+1 49

Color. 1. Spec. not peculiar P. obs.
" 2. " " " W. obs.

Orion U.A. 152, α Orionis
5 48 +7.4
7 43
+1 55

Several bands seen. – one in red – one in orange – one in green – 3 in blue W. obs.

March 26, 1881

Sweep for Planetary Nebulae with Comet Seeker on East Balcony. P obs.
M rec

Pole Star. alt. 173.6 az 57.2 Set at 56

	7h 54m	Sweep			
	56	Sweep			
	58	Sweep			
	8h 1m	Sweep			
	3	Sweep			
59	4	5 mag	211.9	+52.1	57.9
	5	Sweep			
2	6	3 mag	288.0	-24.0	24.0
	7	4 mag	212.2	+51.8	57.9
	~~8~~	~~3 mag~~	~~303.6~~		
		Sweep			
	8	3 mag	303.6	-39.6	
	11	Sweep			
	12	Cluster Spectrum continuous	269.3	-5.3	
10	12	3 mag	254.2	+9.8	+9.6
	14	5 "	195.2	+68.8	
	14	Sweep			
	15	5 mag	264.4	-0.4	
	18	Sweep			
14	20	4 mag	220.3	+43.7	+43.6
	21	4	146.6 Le.	±62.6	
	21	Sweep	ended at about 8 24		

7h 50m to 8 20 Twilight interferes somewhat at beginning but not much. Cloud in extreme south in early part of sweep.

Mar. 26. 1881.

Dr. Drapers. stars. — Comp. with ζ Orionis. Phot. I.

Fol. star.

	~~0.39~~	
8 10	~~0.46~~	Reject. Obj. glass. partly covrd. W. obs.
	~~0.44~~	

Comp. with ζ Orionis.

	Fol. *	Mid. *	Pr. *
8 14	0.54	0.68	0.65
	0.52	0.70	0.62
	0.52	0.71	0.64
	.53^{8}	.70	64

Comp. with σ Orionis. W. obs.

	Fol. *	Middle		Prec.	
	1.24	1.57		1.41	reject, dome interferes.
8 25	1.27	1.70		1.44	
	1.29	1.50		1.29	rej.; star ill seen.
	1.27	1.77		1.52	
		1.59	1.54	1.54	
				1.56	

8 30 β Urs. Min. 3 α Urs. Min. S. obs.
ε Urs. Maj. 2 α Urs. Min. (or 1½)
α Urs. Min. 2 γ Cass.

Observation to confirm
previous comparison made
in twilight (p. 179)

Fol. star faintest of three. S. obs.
Mid. star very slightly brighter than
the preceding. S. obs.

Mar. 26.
Neb. in Orion.
Comp. with ζ Orionis. S. obs.

Region A.
2.5 11.3
9 4 3.0 13.7
5 5 5 0
2.8+ 12.5+

Region b. ζ
4.2 12.2
4.2 11.5
4.2+ 3 7
11.8+

Region c. ζ
4.0 11.9
3.8 11.4
3.9+ +5 13
~~11.8~~ 11.6+ ✓

Region ~~a~~ a d σ
3.5 11.7
3.6 12.9
3.6+ 12.3+

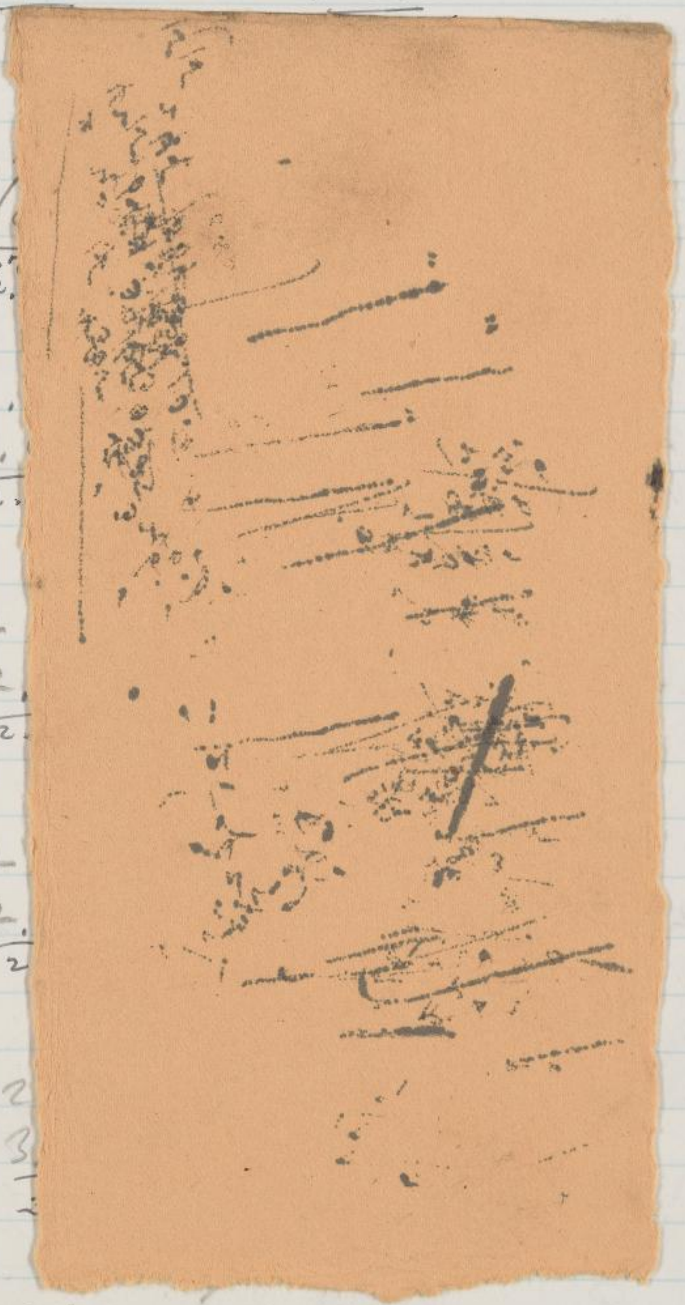
Region d ζ
Focus on ζ
9.0
9 23 9.3
9.3
9.2+

Region d ζ.
outside focus.
20.7
9 24 20.6
20.3 –
16
20.5+

Mar. 26.

Region b f. σ.

3.5 13.2
4.1 13.6



4.
5.
9.
4.

2.
3.
2.

2
2.
2.

2
2.
2.

2
3

9 50

2.3 15.0
2.4 15.7
2.4+.. 15.4+..

Mar. 26.

Region bf. σ.

3.5 13.2
4.1 13.6
7.6
3.8+ 13.4+

Region p. σ

4.7 12.8
5.0 12.8
9.7
4.8+ 12.8+

Region be σ

2.0 16.0
3.0 13.8
2.5+ 29.8
14.9+

Region ~~f~~ G.

2.2 15.5
2.2 15.8
2.2+ 15.6+

Region e G

2.2 17.3
2.2 17.8
2.2+ 17.6+

Region g σ

2.2 13.8
3.8 15.2
90
3.0+ 14.5+

9 50 Region h σ

2.3 15.0
2.4 15.7
2.4+ 15.4+

March 26, 1880

Shutter interferes.

~~2.0~~

a z

2.0 17.6
2.0 18.2
2.0+ 35.8
17.9+

ka σ

10 0 2.2 16.0
3.0 18.6
2.6+· 34.6
17.3+·

1 q σ
10 7 Focus. B.
9.1 17.7
9.3 17.0
9.2+· 18.0
17
17.6+·

10 9 B oq σ
19.4
19.0
17.8
56.2
18.7+·

10 11 a z
2.0 19.2
2.0 19.0
2.0+ 19.1+

Nebula low during preceding observations; details indistinct; identifications somewhat doubtful.

10 15 1488 at usual brightness &
1585 not seen.

0
7
+ 6

43 Sent s

Comet m sid. time.

uppe alcony,

Sid west!

~~7~~ 58½ 39 Si 8 −16.2 −16.5
~~6~~ 58½ Swee
~~8~~ 0 Pola 3 +90.3
8 0½ Sw
3 /
3½ 49 Sing −23.1 24.0
~~Af t north of~~
a bright
4 Another 8 −22.2
4½ 2 6m 2 −19.8 20.0
~~4¾~~ 1 6m 7 −16.3
5 48 5 7 −12.3 −13.9
5½ 48 6 1 +14.1 +13.3
6 44 4 m 7 +35.7 +34.0
6¾ Anoth /
7½ 54 4 m 6 −28.4 −28.8
8½ Band 8 −8.2
9½ 1 +7.1
11½ Anoth
14½ Sweep
15 4 4th Mag. 15 6.3 −25.7 −26.3

050*136

SEARCHING REPORT

Heading (Check **one** box only)

☐ Identification guaranteed
☐ Identification **not** guaranteed
☐ Conflict
☐ No conflict

Other headings searched and Comments:

Edition Report

Latest Widener edition

Year
Call number
☐ Only edition

☐ No edition

☐ Earlier
☐ Later
☐ 5 or more
} editions in Widener

☐ Earlier
☐ Later
} editions in K

Author number (unless shown above)

Mar. 28. 1881.

0 51
7 42
+ 6 51

43 Swept from. $6^h 50^m$ to $7^h 08$
$8^h 5^m$ to $8^h 23^m$ sid. time.
Comet seeker on west balcony,
tipped about 1^h to the west.

Sid

~~7~~ 58 1/2	39	Sirius nearly out of field	165.8	-16.2	-16.5
~~7~~ 58 1/2		Sweep begun			
~~8~~ 0		Polaris	272.3	+90.3	
8 0 1/2		Sweep			
3		"			
3 1/2	49	Sing. spectrum	158.9	-23.1	24.0

of the Cygnus type, just north of a brighter star of 6 magn.

4		Another 6 magn.	159.8	-22.2	
4 1/2	2	6 mags & 9, 7 magn.	162.2	-19.8	20.0
~~4 3/4~~	1	6 magn.	165.7	-16.3	
5	48	5 "	170.7	-12.3	-13.9
5 1/2	48	6 magn.	196.1	+14.1	+13.3
6	44	4 magn	217.7	+35.7	+34.0
6 3/4		Another sweep			
7 1/2	54	4 magn.	153.6	-28.4	-28.8
8 1/2		Bands suspected	173.8	-8.2	
9 1/2		" "	189.1	+7.1	
11 1/2		Another sweep			
14 1/2		Sweep			
15	4	4th Mag.	156.3	-25.7	-26.3

March 28, 1881.

Sid. time

Sweeping continued P. obs.

8 17 Sweep

18 4 3d Mag 156.2 −25.8 −26.2

20 Sweep

22 Sweep

23 5th mag 138.3 Spec. −43.7 short.

Ended about 8 26

6 45 to 7 15

7 50 β Urs. Min. 2 α Ursa Min. J. obs.

ε Urs. Maj. 1 α Urs. Min.

α Urs. Min. 3 γ Cass.

Sid. time

9 27 Star 1488 at usual brightness

1249 not seen

1309 " "

1585 " "

Ob

March 28, 1881.

Sid time DM, 81° 25, 26.

~~8 17 74.9~~
~~91.1 16.2~~ W. obs.
~~254.9 14.1~~ Reject
~~18 270.0 30.3~~ Eye-piece — —

Ver. A, at 310° 52'

Error = +26.5m

8 44 59.8 20.7+1 W. obs.
44 30
8 44.5 80.5
8 18 18.0 241.0
260 0 19.0+1 3.79 8+1
39.7+1 ~~3.78+~~
45
19.85

8 44 30.
−26 30.
4 44 31.
13 2 31.

~~8 44 30.~~
~~−26.~~
~~4 44 31.~~
~~13 28 35.~~

45 61.4 19.1+1 W. obs.
45 30
8 45.5 80.5
8 19 19.0 240.3 21.1+1 3.76+1
261.4 40.2+1
20.10

8 45 30.
−26 30.
4 44 31.
13 3 31.

46

~~8 45 30.~~
~~−26.~~
~~4 44 31.~~
~~13 29 35.~~

47 60.0 W. obs.
47 30
8 47.5 79.8 19.8+1
8 21 21.0 240.0
259.8 19.8+1
39.6+1 3.79+1
19.80

8 47 30.
−26 30.
4 44 31.
13 5 31.

48

~~8 47 30.~~
~~1. 4 −26.~~
~~4 44 31.~~
~~13 31 35.~~

49 61.0 20.7+1 W. obs.
49 00
8 49.0 81.7
8 22 22.5 241.0 20.1+1 3.72+1
261.1 40.8+1
20.40

8 49 0.
−26 30.
4 44 31.
13 7 1.

49

~~8 49 0.~~
~~−26.~~
~~4 44 31.~~
~~13 33 5.~~

cb

March 28, 1881.

Sid time
8 50
50 30
8h 24

60.1
50.5 < 80.5 20.4+
24.0 < 240.6 20.0+
260.6 40.4+ 3.75+
20.20

W. obs.
8 50 30.
−26 30.
7 77 31.
13 4 31.

~~5 1~~
~~8 50 30.~~
~~7 77 −26.~~
~~31.~~
~~13 3 7 3 5.~~
~~5 1~~
51 30
8h 25

60.4 199+
51.5 < 80.3
25.0 < 240.8 19.4+
260.2 39.3+ 3.8+
19.65

W. obs.
8 51 30.
−26 30.
7 77 31.
13 9 31.

5 2
2.0 51 30.
−26.
7 77 31.
13 3 5 35.

Measurement of Nebula in Orion Phot. Q
Region A Comp. star 3

Sid. time
9 7 30 4.6 16.4 W. obs.
8 41 4.2 16.3
4.4+ 16.4+

~~Region~~ K R σ

Focus
21.9 10.9 W. obs.
9 15 22.3 10.3
48 23.6 9.9
7 8 1 1
22.6+ 10.4+

Region R σ

18 15.1 5.7 W. obs.
51 15.2 5.8
15.2+ 5.8+

~~Region O Q σ~~

wrong region Reject

8h 25 ~~6.6 14.7~~ W. obs.
58 ~~5.6 15.6~~

March 28, 1881.

Region Q σ W. obs.

9 31 5.0 15.9
9h 04 4.2 15.8
9 2
4.6+· 15.8+·

Region OQ σ Dome possibly cut off before.

34 3.5 15.8
07 5.4 15.2 W. obs.
8 9
4.4+· 15.5+·

Region O σ

28 6.1 16.2
11 5.7 17.6
11 8 13 8
5.9+· 16.9+·

Region M σ W. obs.

43 2.8 21.2
16 2.5 21.6
13 8
2.6+· 21.4+·

Region L σ W. obs.

46 5.1 17.2
19 3.0 17.8
8 1 10
4.0+· 17.5+·

Region H σ W. obs.

50 5.2 16.3
23 3.6 18.2
8 8 14 5
4.4+· 17.2+·

Region K σ W. obs.

53 3.9 16.1
26 4.8 17.8
7 13 9
4.4+· 17.0+·

March 28, 1881.

sid time		Region A		S	W. obs.
9h	56	5.7	15.8		
9h	29	4.7	16.4		
		5.2+	2 16.1+		
		Region G		σ	W. obs.
	59	4.0	16.6		
		3.2	17.4		
	32	7.2 3.6+.	14 0 17.0+.		
		Region F		S	W. obs.
10	2	3.8	16.4		
		3.3	16.5		
	35	3.6+.	9 16.4+.		
		Region E		S	W. obs.
	4	2.1	19.8		
	37	2.1	18.9		
		2.1+.	7 19.4+.		
		Region B E		σ	W. obs.
	6	3.2	18.6		
	39	2.5	17.7		
		5 7 2.8+.	3 18.2+.		
		Region I		σ	W. obs.
	8	5.5	14.7		
	41	6.2	14.1		
		11 7 5.8+.	14.4+.		
		Region B F		σ	W. obs.
	10	2.1	18.1		
	43	3.5	17.8		
		5 6 2.8+.	15 9 18.0+.		

March 28. 1881.

Region D S W. obs.

Sid. time		Focus	
10	12	10.0	19.1
	45	10.6	19.1
		10.3+	19.1+

Region A D o W. obs.

	14	5.8	14.8
	47	6.3	13.8
		1 6.0+	14.3+

Region C S W. obs

	15	4.6	16.9
	48	3.2	18.4
		7 8 3.9+	15 3 17.6+

Region B S W. obs.

	17	4.4	15.7
	50	5.2	16.7
		9 6 4.8+	2 4 16.2+

Region A S W. obs.

	20	4.5	16.1
9h	53	4.5	16.6
		4.5+	16.4+

Focus on S

	21	10.2
	54	10.2
		10.2
		10.2+

March 28, 1881.

sid time 10 25 Star follows 01 Canis Majoris by about 2^s and about 18′ north.
Band in blue well seen – that in yellow less marked. P. obs.

Looked at star H.C. 19

M.T. 10 13 Light ~~[illegible]~~ unchanged. P. obs.

Variable = a 8 = b

Looked at various stars near
5 25 +26.1 } Stars suspected to
5 35 25.5 } have banded spectra
No bands seen.

Apr. 2. 1881.

L_2 Puppis.

Col. 4 making no allowance for absorbtion

7 7 ~~Bands~~ Spectrum banded – bright band in orange with dark band between it and red. – Broad band in yellowish green. ~~more~~ blue and more refrangible portion of spectrum wanting. P. obs.

Record for color same as P's.

7 12 Bands suspected but twilight strong. } W. obs

7 59 5. 5.

Telescope 49m West – Dec. – 44.°1

Checked by L, Puppis.

Color 1 – Spectrum faint and flickering P. obs.

U. A. 81 Puppis.

7 13 – 46.6

8

+48

Color. 1. Spectrum faint + flickering – green part brighter + more persistent than rest. W. obs.

U. A. Puppis. 31.

6 43

8 6

1 23 – 37.8

7 ~~9~~ 24 Color 0 Spectrum not peculiar. P. obs

26 Color 1 Spectrum not peculiar. W. obs

April 2, 1881.

U. A. 37 (Puppis)

−34.2

7 28 Color 2 Spec. not peculiar. P. ob.
" Color 2 Spec. not peculiar. W. ob.

U. A. Puppis.

8h 17m

1h 24 −
−34.2
8h 18m
1 31
−34.3

7 U. A. Puppis 63.

−38.2

7 35 Color 2 Spec. not peculiar P. ob
37 Color 1 " " " W. obs.

7 41 Looked at star with singular spec which is 15′ north of o′ Canis Majoris & 4s prec. transits = finder Shows a bright band in blue another in green and another a less marked one in yellow. P. ob.
= Lal 13412
Same as above. W. ob.

April 2, 1881.

Sweep with Comet Seeker on East Balcony
P. obs.

Pole Star = Alt. 174.0 Az. 188.2 Set at 187.0

Sid. time.
8h 30m Sweep
32 "
35 "
37 36 5th Mag. 261.0 +3.0 +3.8
40 36 Another 5th " 258.3 +5.7 6.9
38 36 Coarse Cluster 244.1 +19.9 Praesepe.
38 Sweep
39 5th Mag 280.1 −16.1
37 40 4th Mag 260.6 +3.4 3.8
42 Sweep
Comp. = 8h 43m 18s S.T. 7h 58m M.T.
Elgin 474,578
7h 39 58m 3d Mag 2354 +28.6 +29.2
~~59~~ ~~Sweep~~
8h 0m Sweep
45 2 2 3d Mags. 238.0 +26.0 +28.6
2 Large Neb. 252.3 +12.7 GC 1712
3m 25s Sweep
44 4 33 Large Neb. 252.1 +11.9 +12.3
6 0 Sweep
49 7 30 3d Mag. 258.1 +5.9 +6.6
9 30 Sweep
11 0 Bands Suspected 251.2 +12.8
49 10 4th Mag. 252.2 +11.8 +12.1
40 Bands Susp. 243.0 +21.0 5th Mag
See next

April 2, 1881.

O' R (Canis Maj) prec. star with sing. spec.
6^s and is 16.5' ± south of it W. obs

~~Phot~~

Meantime Sweeping continued — P. obs.

8^h	12^m	15^s	3d Mag.	222.1+41.9	
	13	10	Sweep		
	15	30	Sweep		
	17	50	Sweep		
9 3	20	55	4th Mag	307.5	-43.5 -42.9 λ Vela
	23	30	3d Mag	146.7	
		33	Sweep		
	28	10	Sweep		
	29	20	3d mag	227.1	+36.9.
	30	0	Sweep		
	32	5	Sweep		
	34	20	Sweep		
17	34	40	6th mag	306.2	-42.2 -41.6? Bands suspected
	35	10	5th Mag	293.0	+71.0
	36	35	Stopped by thin clouds-last sweep made through thin clouds.		

8^h30^m to 9^h40^m

April 2, 1881.

Phot. Q Neb. of Orion S. obs.
Focus of small telescape ~~10.3 10.2~~

10.3
10.2
10.1
10.2+

Region A Compared with ϑ

8 9 6.1 13.8 S. obs.
4.7 13.0
10 8
5.4+ 13.4+

Region R σ
13 4.8 15.0 S. obs.
4.7 15.0
1.5
4.8+ 15.0+

Region O σ
19 4.3 14.3 S. obs.
4.7 16.5
108
4.5+ 15.4+

Region M σ
23 5.2 15.2 S. obs.
5.4 15.4
5.3+ 15.3+ Thin clouds - perhaps affecting last set.

Region L. σ

8 30 β Urs. Min. 2 α Urs. Min. S. obs. S. obs. Clouds
ε Urs. Maj. 1 α Urs. Min.
γ Cass. in clouds.

ch

April 2, 1881.

~~Ⓓ Mo. 81° 25'~~

8 47 ~~[illegible] 13~~

8 53 * 1585 not seen
9 57 1488 a at usual brightness

Ⓓ Mo. 81° 25', 26

No time correction

Elgin M.T.

9 0 60.4 P. obs.

0 9 0.5^s 81.6 21.2^{+1}

244.4 19.9^{+1}

1 261.3 41.1^{+1} 3.7$\overset{0\,1}{\cancel{4}}^{+}$

20.55

9 0 30.
14 44 31.
13 45 1.

2 59.8 P. obs.

2 9 2.5^s 82.2 22.4^{+1}

239.4 22.6^{+1} Clouds getting thick.

3 262.0 45.0^{+1} 3.5$\overset{0\,1}{\cancel{4}}^{+}$

22.50

9 2 30.
14 44 31.
13 47 1.

3 59.3 P obs.

3 9 3.5^s 80.0 20.7^{+1}

241.7

4 262.0 20.3^{+1} 41.0^{+1} 3.7$\overset{1+1}{\cancel{2}}$

20.50

9 3 30.
14 44 31.
① 13 48 1.

1

d
April 2, 1881.

9 5 59.0 19.8+1 S. obs.
5 9 5.5 78.8
240.5 20.7+1
6 261.2 40.5+1 3.7~~4~~5+1
20.25

9 5 30.
~~14~~ ~~44~~ 31.
13 50 1.

7 59.8 S. obs.
7 9 7.5 78.2 18.4+1
240.7 19.8+1
8 260.5 38.2+1 3.87+1
19.10

9 7 30.
~~14~~ ~~44~~ 31.
13 52 1.

8 59.2 S. obs.
8 9 8.5 77.0 17.8+1
240.2 20.7+1
9 260.9 38.5+1 3.86+1 Clouds quite thick.
19.25

9 8 30.
2~~14~~ ~~44~~ 31.
13 53 1.

28 56.2 25.0+1 W. obs.
29 9 29.0 81.2
236.4 26.3+1 Clouds quite thick.
30 262.7 51.3+1 3.22+1 Images faint.
25.65

9 29 0.
~~14~~ ~~44~~ 31.
14 13 31.

30 56.3 22.8+1 W. obs.
31 9 31.0 79.1
236.7 22.2+1
32 258.9 45.0+1 3.51+1
22.50

9 31 0.
~~14~~ ~~40~~ 31.
14 15 31.

32 58.4 23.3+1 W. obs.
33 9 33.0 81.7
~~3~~ 240.5 19.4+1
34 259.9 42.7+1 3.6~~3~~2+1
21.35.

9 33 0.
3~~14~~ ~~44~~ 31.

ch

April 2, 1881.

9 34 59.2 19.7+1 S. obs.

34 9 34.5 78.9

240.5 18.7+1

35 259.2 38.4+1 3.86+1

9 34 30.

14 44 31.

14 19 1.

19.20

36 58.9 19.5+1 S. obs.

36 9 36.5 78.4

242.0 15.2+1

37 257.2 34.7+1 4.0~~7~~8+1 Clouds pretty thick

9 36 30.

14 44 31.

14 21 1.

17.35

~~57.9~~

38 55.0 24.0+1 S. obs.

38 9 38.5 79.0

239.9 18.3+1

39 258.2 42.3+1 3.6~~5~~4+1

4 9 38 30.

14 44 31.

14 23 1.

21.15

40 55.7 25.1+1 P. obs.

40 9 40.5 80.8

240.0 19.8+1

41 259.8 44.9+1 3.5~~7~~2+1

9 40 30.

14 44 31.

14 25 1.

22.45

41 59.8 19.4+1 P. obs.

41 9 41.5 79.2

237.4 22.4+1

42 259.8 41.8+1 3.67+1

9 41 30.

14 44 31.

14 26 1.

20.90

43 9 43.5 59.2 20.4+1 P. obs.

43 79.6

239.3 20.4+1

44 259.7 40.8+1 3.7~~3~~2+1

5. 9 43 30.

14 44 31.

14

20.40

ch

April 2, 1881.

9 47 59.3 W. obs.
18.0+1
47 9 47.5 77.3
238.0
23.5−+1
48 261.5 41.5−+ 3.69+ 6+1
20.75

9 47 30.
4 44 31.
14 32 1.

49 57.5
23.5−+1 Images faint. W. obs
50 9 50.5 81.0
9 49 15 ~~238~~ Images gone.
50 40 228.8 24.5+1 Images faint.
51 30 263.3 48.0+1 3.36+1
24.00

9 50 23.
4 44 31.
14 34 54.

52 58.8 W. obs.
~~73~~
9 54.5 ~~56.1~~ 25.7+1
54 84.5
231.1 30.4+1 3.02+1
57 261.5 56.1+1
28.05

9 54 30.
4 44 31.
14 39 1.

Observations very difficult on account of Clouds. W. obs.

Considerable delay was occasioned by clouds as the images were entirely invisible at intervals, ~~and were~~ poorly seen throughout. W.

Ch

April 3, 1881

DM. +81° 25, 26. Photometer R.
Image of 81° 25 to right and below.
Very faint on account of twilight.

7 4 34.2 66.2+1 P. Obs.
4 100.4
4.5< 7
7 ~~3~~ 220.3
7.1<
5 283.6 63.3+1
129.5+1 .99+1
64.75

7 4 30
4 +2 32.
44 31.
11 √1 33.

6 36.5 68.0+1 P. obs.
~~6~~ 104.5
9 ~~7~~ 7 6.5<
217.2
9.1<
7 286.0 68.8+1
136.8+1 .84+1
68.40

7 6 30.
+2 32.
4 44 31.
11 √3 33.

8 34.3 P. obs.
8 103.4 -69.1+1
8.5<
11 ~~9~~ 7 216.6
11.1<
9 281.2 64.6+1
133.7+1 .90+1
66.815-

7 4 30.
4 ① 2 32.
44 31.
11 √5 33.

7 9 36.7 60.0+1 S. Obs
9 7 9.5< 96.7
12 ~~7~~ 218.7 64.2+1
12.1<
10 282.9
124.2+1 1,10+1
62.10

7 9 30.
2 32.
4 44 31.
11 √6 33.

T 1 5

ch April 3, 1881.

7 11 35.2 64.3+ ^ S. obs.

7 11.5' 99.5

14 ~~9~~ 14.1' 217.0 66.0+ ^

12 283.0 ———

7 11 30.

+2 32.

4 44 31.

11 ✓6 33. 130.3+ ^ .97+ ^

65.15

7 13 38.9 62.9+ ^ S. obs.

7 13.6' 101.8

16 ~~11~~ 16.1' 219.2 66.3+ ^

14 285.5 ———

7 ② 13 30.

2 32.

4 44 31. 129.2+ ^ 1.00+ ^

12 0 33. 64.60

7 15 36.6 62.9+ ^ W. obs.

~~14~~ 7 16.0' 99.5

18 18.6' 216.6 63.4+ ^

17 280.0 ———

7 16 0 126.3+ ^ 1.06+ ^

2 32.

4 44 31. 63.15

7 12 3 17 3. 41.1 59.1+ ^ W. obs.

20 ~~16~~ 7 18.0' 100.2

20.6' 218.4 61.8+ ^

19 280.2 ——— 8+ ^

7 16 0 120.9+ ^ 1.1~~7~~

2 32.

4 44 31. 60.45

7 12 5 19 3. 38.7 61.9+ ^ W. obs.

22 ~~17~~ 7 19.5' 100.6

22.1' 218.7 58.1+ ^

20 276.8 ——— 1.19+ ^

7 19 30. 120.0+ ^

2 32.

4 44 31.

12 5 6 33. 60.00

ch.

April 3d, 1881.

7 21 41.2 56.2+1 P.obs.

24 ~~19~~ 7 21.5 97.4

24.1 214.6

68.3+1

22 282.9 124.5+1 1.10+1

62.25

7 21 30.
+2 32.
4 44 31.
12 2 33.

22 40.2 62.4+1 P. obs.

25 ~~20~~ 7 22.5 102.6

25.1 200.6

77.6+1

23 278.2 140.0+1 .77+1

70.00

7 22 30.
2 32.
4 40 31.
12 9 33.

23 42.2 53.4+1 P. obs.

26 ~~21~~ 7 23.5 95.6

26.1 217.5

63.1+1

24 280.6 116.5+1 1.27+1

58.25

7 23 30.
2 32.
4 ④ 44 31.
12 10 33.

7 25 39.9 58.1+1 Wds.

29 ~~24~~ 7 26.0 98.0

28.6 220.9

56.6+1

27 277.5 114.7+1 1.31+1

57.35

7 26 0.
2 32.
4 40 31.
12 13 3.

27 41.8 58.3+1 Wds

30 ~~25~~ 7 27.5 100.1

30.1 216.2

63.2+1

28 279.4 121.5+1 1.16+1

60.75

7 27 30.
2 32.
4 40 31.
12 14 33

ch

April 3. 1881.

W. obs

7 28 39.6 61.4+ ^

31 ~~26~~ 7 28.5 401.0

31.1 220.0

29 278.9 58.9+ ^

120.3+ ^ 1.1~~9~~ 8 + ^

60.15

7 ⑤ 2~~4~~ 30.
2 32.
4 ~~44~~ 31.
12 15 33.

P. obs.

30 40.3 59.1+ ^

33 ~~28~~ 7 30.5 99.4

33.1 218.8

31 280.0 61.2+ ^

120.3+ ^ 1.1~~9~~ 8 + ^

60.15

7 30 30.
2 32.
4 ~~44~~ 31.
12 17 33.

P. obs.

32 36.6 64.6+ ^

35 ~~30~~ 7 32.5 401.2

35.1 223.5

33 272.4 48.9+ ^

113.5+ ^ 1.34+ ^

56.75

7 32 30.
2 32.
4 ~~44~~ 31.
12 19 33.

P. obs.

33 45.2 49.4+ ^

36 ~~31~~ 7 33.5 94.6

36.1 220.6

34 277.5 56.9+ ^

106.3+ ^ 1.5~~0~~ ** ^

53.15

7 ⑥ 33 30.
2 32.
4 ~~44~~ 31.
12 20 33.

W. obs.

7 35 41.3 58.4+ ^

38 ~~33~~ 7 35.5 99.7

38.1 218.3

36 276.8 58.5+ ^

116.9+ ^ 1.26+ ^

58.45

7 35 30.
2 32.
4 ~~44~~ 31.
12 22 33.

ch

April 3, 1881

7 36 41.5 54.5+1 U. obs
40 ~~34~~ 7 37.0 96.0
49.62 17.5 64.5+1
38 282.0
7 37 0. 1190+1 1.21+1
2 32.
4 44 31. 59.50
12 24 3.

W. obs

38 38.2 62.0+1
41 ~~36~~ 7 38.5 100.2
41.1 220.7
39 277.3 56.6+1
7 38 30. 118.6+1 1.22+1
2 32. 59.30
④ 46 31.
12 25 33.

40 42.0 P. obs.
55.4+1
44 ~~38~~ 7 41.0 97.4
44.32 ~~46~~ 217.2 61.2+1
42 278.4
7 41 0. 116.6+1 1.27+1
2 32. 58.30
4 44 31.
12 24 3.

42 37.0 P. obs.
62.3+1
45 ~~42~~ 7 42.5 99.3
221.4
45.1 276.4 55.0+1
43
7 42 30. 117.3+1 1.25+1
2 32. 58.65
4 44 31.
12 29 33.

43 43.0 P. obs.
53.2+1
46 ~~41~~ 7 43.5 96.2
46.2 219.5
44 279.2 59.7+1
7 43 30. 1129+1 1.35+1
2 32.
4 44 31. 56.45
⑧ 12 30 33.

ch
April 3, 1881

7 46 43.9 52.0+1 W. obs. Images blurred
49 ~~44~~ 7 46.5 < 95.9
220.7 56.2+1
49.1 <
47 276.9 108.2+1 1.46+1
7 46 30.
2 32.
4 44 31.
12 33 33.
54.10

7 47 41.5 58.5+1 W obs.
50 ~~48~~ 7 48.5 < 96.0
215.6 72.7+1 < clock stopped
50.6 <
49 288.3 127.2+1 1.0~~8~~ 4+1 sector put back.
7 49 0.
2 32.
4 44 31.
12 35 3.
63.60

7 50 35.1 66.0+1 W obs.
53 ~~48~~ 7 50.5 < 101.1
218.2
53.1 <
51 229.0 60.8+1
7 ⑨ 50 30.
2 32.
4 44 31.
12 37 33.
126.8+1 1.05+1
63.40

52 37.8 57.8+1 P. obs.
55 ~~54~~ 7 52.5 < 95.6
55.1 <
218.1
53 283.4 65.3+1
7 52 30.
2 32.
4 44 31.
12 39 33.
123.1+1 1.1~~3~~ 2+1
61.55

53 40.0 P. obs.
56.0+1
7 54.5 < 96.0
56 ~~55~~ 219.3
56.6 <
55 277.6 58.3+1
7 54 0.
2 32.
4 44 31.
12 41 3.
114.~~8~~ 3+1 1.3~~3~~ 2+1
57.15

d No.

Apr. 3. 1881.

7 55 41.4 56.2^{+1} P. obs.

58/~~53~~ 7 55.5<97.6

58.1<222.6 54.1^{+1}

56 276.7 110.3^{+1} 1.41^{+1}

(10) 55 30.

2 32.

44 31.

12 42 33.

55.15

Cross at 409.1 Limb of W ~~Set~~ at 384.5

Set at 400.0

8 00 38.6 65.2^{+1} W. obs.

04/~~58~~ 8 1.0<103.8

3.6<223.5 50.8^{+1}

02 274.3 116.0^{+1} 1.28^{+1}

8 1 30.

2 32.

4 40 31.

12 4 3.

58.00

8 03 37.1 57.9^{+1} W. obs.

06/~~01~~ 8 3.5<95.0

6.1<217.2 62.0^{+1}

04 279.2 119.9^{+1} 1.20^{+1}

8 3 30

2 32.

4 40 31.

12 50 33.

57.95

05 38.3 60.6^{+1} W. obs.

08/~~03~~ 8 5.5<98.9

8.1<222.7

06 276.3 53.6^{+1} 114.2^{+1} 1.32^{+1}

(11) 8 5 30.

2 32.

4 40 31.

12 52 33.

57.10

7 39.4 55.2^{+1} P. obs.

10/~~5~~ 8 7.5<94.6

10.1<218.5

8 277.7 59.2^{+1} 114.4^{+1} 1.32^{+1}

8 7 30.

2 32.

4 44 31.

12 56 33

57.20

Oh

Apr. 3. 1881.

8h 9 40.0 58.4+1 P. obs.
8 9.0< 98.4
08 5 11.6 218.6 55.7+1
12 9 274.3 114.1+1 1.3~~3~~2+1
57.05
8 9 0
12 32;
4 44 31.
12 56 3.

10 41.4 53.8+1 P. obs.
8 10.5< 95.2
13 08 13.1< 217.6 58.0+1
11 275.6 111.8+1 1.38+1
55.90
8 10 30
12 2 32;
4 44 31.
12 57 33.

8 12 38.3 58.5+1 W. obs.
8 12.5< 96.8
15 12 15.1< 220.8 55.0+1
13 275.8 113.5+1 1.34+1
56.75
8 12 30
2 32;
4 44 31.
12 14 59 33.

38.2 58.3+1 W. obs.
17 13 8 14.5< 94.5
218.4 59.9+1
15 17.1< 278.3 116.2+1 1.2~~3~~8+1
58.10
8 14 30.
2 32.
4 44 31.
13 1 33.

16 35.6 62.2+1 W. obs.
19 14 8 16.5< 97.8
19.1 219.4
17 278.9 59.5+1 121.7+1 1.1~~7~~6+1
60.85
8 13 16 30.
2 32.
4 44 31.
13 3 33.

ch

Apr. 3. 1881.

8 18 39.4 P. obs.
56.0 +1
2¹ ~~16~~ 8 18.5 < 95.4
215.6
21.1 < 63.8 +1
19 279.4 1.20 +1
119.8 +1
59.90
8 18 30.
2 32.
4 44 31.
13 5 33.

19 40.3 P. obs.
55.9 +1
2² ~~17~~ 8 19.5 < 96.2
218.6
22.1 < 62.6 +1
20 281.2 1.2~~1~~2 +1
118.5 +1
59.25
8 19 30.
2 32.
4 44 31.
13 6 33.

21 38.1 P. obs.
58.1 +1
2⁴ ~~19~~ 8 21.5 < 96.2
219.4
24.1 < 56.0 +1
22 275.4 1.3~~3~~2 +1
114.1 +1
57.05
8 21 30.
2 32.
4 44 31.
13 (14) 8 33.

22 39.3 S. obs
51.7 +1
2⁶ ~~20~~ 8 23.0 < 91.0
~~220.4~~
25.6 < 216.8
51.2 +1
24 268.0 1.05~~9~~8 +1
102.9 +1
51.45
8 23 0.
2 32.
4 44 31.
13 10 3.

25 39.0 S. obs
52.3 +1
2⁸ 25 8 25.5 < 91.3
28.1 < 222.0
50.0 +1
26 272.0 1.60 +1
102.3 +1
51.15
8 25 30.
2 32.
4 44 31.
13 12 33

April 3, 1881 Cb

8 26 43.0 50.0+ ^ L. obs.

29 ~~[illegible]~~ 8 26.5 93.0

29.1 223.3 48.5+ ^

27 271.8 98.5+ ^ 1.~~69~~ 70+ ^

49.25

α (15) 26 30.
κ 2 κκ 32.
31.
13 13 33.

~~8~~ 29 40.1 53.2+ ^ W. obs.

32 ~~27~~ 8 29.5 93.3

220.7 58.9+ ^

30 32.1 279.6 112.1+ ^ 1.37+ ^

56.05

α 29 30.
κ 2 κκ 32.
31.
13 16 33.

8 30 [35.1] Clock [illegible] reset

8 33 36.8 62.0+ ^ W. obs.

36 ~~30~~ 8 33.0 98.8

35.6 220.7 53.1+ ^

33 273.8 115.1+ ^ 1.30+ ^

57.55

α 33 0.
κ 2 κκ 32.
31.
13 20 3.

8 34 41.7 52.6+ ^ W. obs.

37 ~~32~~ 8 34.5 94.3

37.1 218.4 58.7+ ^

35 277.1 111.3+ ^ 1.39+ ^

55.65

α (16) 35 30.
κ 2 κκ 32.
31.
13 21 33.

35 32.1 67.2+ ^ P. obs.

38 ~~32~~ 8 35.5 99.3

38.1 219.0 57.1+ ^

36 276.1 124.3+ ^ 1.10+ ^

62.15

α 35 30.
κ 2 κκ 32.
31.
13 22 33.

d₁

Apr. 3. 1881.

8 37 38.7 √8.0+^ P. obs.
8 37.5< 96.7
40 ~~35~~ 216.6
40.1< 279.√ 629+^ 8+^ 1.17
38 120.9+^
8 37 30.
4 12 32.
44 31.
13 24 33.
60.45

~~38~~ 39 36.6 61.7+^ P. obs.
42 ~~36~~ 8 39.0< 98.3
217.7
41.6< 277.7 60.0+^
39 1.16+^
8 31 30. 121.7+^
4 (17) 42 32.
44 31.
13 2√ 33.
60.85

8 39 39.5 52.8+^ S. obs.
8 40.0< 92.3
42 ~~38~~ 216.5
42.6< 59.2+^
= 41 275.7 1.37+^
8 40 0. 112.0+^
4 2 32.
44 31.
13 27 3.
56.00

41 39.9 55.5+^ S. obs.
8 41.5< 95.4
44 ~~39~~ 214.0 62.0+^
44.1< 276.0
42 1.25+^
8 41 30. 117.5+^
4 2 32.
44 31.
13 30 33.
58.75

7.12

44 34.0 57.5+^ S. obs
47 ~~42~~ 8 44.5< 91.5
218.3 58.5+^
12
47.1< 276.8 1.28+^
45
8 (18) 44 30. 11~~8~~6.0+^
4 2 32.
44 31.
13 31 33.
58.00

ch

April 3, 1881,

8 46 34.8 Wobs.
8 46.5' 98.8 64.0+^
49 ~~44~~ 218.3 56.7+^
49.1' 47 275.0 1.18+^
120.7+^
60.35

8 46 30.
2 32.
4 44 31.
13 33 33.

8 48 39.6 53.9+^ Wobs.
8 48.5' 93.5
51 ~~46~~ 215.7 ~~57.3~~ 61.3^
51.1' 49 277.0 1.30+^
~~1.53~~
~~111.2~~
~~105.2~~
115.2+^
57.60

8 48 30.
2 32.
4 44 31.
13 35 33.

8 50 36.1 60.8+^ Wobs.
8 50.5' 96.9
53 ~~48~~ 220.7
53.1' 57 272.5 51.8+^ 1.36+^
112.6+^
56.30

8 50 30.
2 32.
4 (19) 44 31.
13 37 33.

52 40.0 53.0+^ P.obs
8 52.5' 93.0
55 ~~50~~ 216.4
55.1' 53 276.7 60.3+^ 1.34+^
113.3+^
56.65

8 52 30.
2 32.
4 44 31.
13 41 33.

53 36.7 59.1+^ P.obs.
8 53.5' 95.8
56 ~~51~~ 220.6
56.1' 54 274.3 53.7+^ 1.35+^
112.8+^
56.40

8 53 30.
2 32.
4 44 31.
13 40 33.

ch

Apr. 3, 1881.

8 55 41.7 48.6+1 P. obs.

58 ~~53~~ 8 55.5 < 90.3

214.8

58.1 <

56 276.3 61.5+1 1.42+1

8 55 30.

⑳ 2 32.

~~44~~ 31.

13 ~~4~~2 33.

110.1+1

55.05

8 57 39.1 60.9+1 S. obs.

8 57.5 < 100.0

60 ~~55~~ 223.0

~~6.01~~

58 9 0.1 < 272.2 49.2+1 1.42+1

8 57 30.

2 32.

~~44~~ 31.

13 ~~44~~ 33.

1101+1

55.05

8 58 42.0 46.8+1 S. obs.

8 59.0 < 88.8

02 ~~56~~ 218.0

9 1.6 < 55.8+1

9 0 273.8 1.59+1

8 9 0.

2 32.

~~44~~ 31.

13 ~~4~~6 3.

102.6+1

51.30

9 00 36.0 52.0+1 S. obs.

03 ~~58~~ 9 0.5 < 88.0

3.1 < 221.8 47.4+1

01 269.2 1.67+1

9 ㉑ 0 30.

2 32.

~~44~~ 31.

13 ~~4~~7 33.

99.4+1

49.70

9 2 [43.9] clock reset W. obs.

9 4 42.8 W. obs.

9 5.0 < 85.5 42.7+1

08 ~~05~~ 7.6 < 220.0 50.9+1

9 6 270.9 1.82+1

9 5 0.

~~4~~ 2 32.

~~44~~ 31.

13

93.6+1

46.80

ch April 3, 1881.

9 6 39.8 W. obs.
9 6.5 89.5 49.7+^
09 223.7
9.1 268.3 44.6+^
7 94.3+^ 1.80+^
47.15

9 6 30.
2 32.
4 44 31.
13 53 33.

9 7 42.5 W. obs.
9 8.0 88.5 46.0+^
10 219.7
10.6 271.5 51.8+^
9 97.8+^ 1.71+^
48.90

9 8 0.
2 32.
4 44 31.
13 (22) 55 3.

9 38.4 P. obs.
9 9.5 90.0 51.6+^
12 220.7
12.1 270.1 49.4+^
10 101.0+^ 1.63+^
50.50

9 9 30.
2 32.
4 44 31.
13 56 33.

10 41.6 P. obs.
9 10.5 88.7 47.1+^
13 221.6
13.1 271.0 49.4+^
11 96.5+^ 1.7~~4~~5+^
48.25

9 10 30.
2 32.
4 44 31.
13 57 33.

11 39.6 P. obs.
9 11.5 89.9 50.3+^
14 223.7
14.1 267.0 43.3+^
12 93.6+^ 1.8~~3~~2+^
46.80

9 (23) 11 30.
2 32.
4 44 31.
13 58 33.

ch

April 3, 1881

9	13		47.0	40.0+^		S. obs
		9	13.5 87.0			
	16		16.1 223.8	46.8+^		
	14		270.6		2.10+^	
9	13	30.		86.8+^		
4	2	32.		43.40		
	44	31.				
14	0	33.				
9	15		41.0	45.2+^		S. obs.
		9	15.5 86.2			
	18		18.1 222.0	41.9+^	2.00+^ ~~1.99~~	
	16		263.9			
9	15	30.		87.1+^		
4	2	32.		43.55		
	44	31.				
14	2	33.				
9	16		41.0	40.3+^		S obs
		9	16.5 81.3			
	19		19.1 220.6			
	17		268.9	48.3+^	1.95+^	
9	16	30.		88.6+^		
4	2	32.		44.30		
~~24~~	44	31.				Clock stopped
14	3	33.				

Continued in Book R.97