

KG
11366
v. 392

Page Fundamental Stars.

Circle Readings

from 20^h 13^m to 23^h 58^m

1877

A.2

Charles W. Sever, University Bookstore, Cambridge.

Ariadne Stars.

Mars' Stars.

and

Mars.

1877

Charles W. Sever, University Bookstore, Cambridge.

$\frac{x75}{n dd}$

κ Cephei
1877

$h^m s + 17^{\circ} 20' 3''$

$E_0 - Z_1 - G - H$

$E_0 Z_1 G$

Oct-18

5 2 47.9 58.9 53.0 58.2 5 3 31 14.5 9.0 14.9

27

5 3 8.4 19.5 14.5 18.9 $rej. 2^{nd} 8$
mid wire & fall.

28

5 2 53.9 6.5 57.1 4.9

30

5 ^{lost 1st wire} 3 11.9 12.1 58 14.2 5 3 9.5 18.9 13.4 20.0

Nov²/

5 ^{lost 1st 3 wires} 2 45.2 56.1 49.5 57.1 5 3 2.0 12.3 4.5 13.2

4

5 3 27 14.1 4.5 13.1 5 3 13.1 24.9 15.9 22.9
mid wire & fall

No More

γ Cygni
1877

$h^m s + 39^{\circ} 51' 2''$

E_0

Oct-18

35 0 22.5 37.1 34.7 34.4 35 1 11.0 24.4 22.8 23.2

27

35 0 11.9 25.1 19.9 22.1

28

35 0 16.0 28.4 22.1 24.6 35 1 8.6 20.6 15.4 18.2

30

35 1 8.7 21.8 18.7 21.3 35 1 19.0 32.3 28.1 31.4

Nov. 1

35 0 ^{lost 1st wire} 19.5 32.1 29.2 30.4 35 1 10.2 23.4 20.2 21.9

W Cygni $20^h 23^m 12^s +48^\circ 58' 8''$

1877

6-7 9-11

6-7-9 11

Oct 18	25	3	38.5	50.2	46.8	47.1	25	4	17.5	30.2	25.2	25.9
27	25	3	44.5	56.1	48.5	51.4						
28	25	3	41.1	51.9	43.4	47.8	25	4	34.9	44.2	35.8	39.0
	<i>false stroke pr. 26.8</i>											
30	25	3	34.5	45.5	40.2	44.4	25	4	20.1	32.9	27.1	30.4
Nov 1	25	3	54.1	5.2	55.2	2.9	Obs.? Clouds.					
4	25	3	33.7	47.1	39.5	43.8	25	4	31.1	43.8	34.6	40.5
	<i>lost 4.4</i>											
	No more											

ϵ Delphini $20^h 27^m 14^s +10^\circ 52' 46''$

1877

Oct 18	30	3	25.0	40.9	37.3	38.0	30	4	11.1	28.2	25.3	25.2
27	30	3	28.5	45.1	38.8	39.2	30	4	16.3	34.0	25.9	28.1
28	30	3	17.9	34.6	28.0	29.2	30	4	12.4	28.2	21.2	23.1
30	30	3	27.5	44.3	40.9	40.5	30	4	17.8	35.2	30.2	32.5
Nov. 1	30	3	30.2	47.9	43.1	44.3	30	4	20.1	36.8	31.8	33.6
4	30	3	25.1	43.2	35.6	38.4	30	4	19.9	38.3	30.9	33.6
	<i>lost 4.1 2.3 4.5</i>											
	No more											

β Delphini h m s $+14^{\circ} 9' 41''$
1877

Aug. 22 ~~15~~ 2 30.4 42.3 45.5 37.9
 27 15 1 42.5 54.1 58.6 50.1 15 Rej' 2^m 8
 28 15 1 33.8 46.4 49.9 41.6 15 2 26.2 38.8 41.0 33.9
 30 15 1 34.9 47.1 49.5 42.2 15 2 21.4 33.6 35.7 28.7
 Oct. 27 15 1 47.0 4.5 58.5 58.6 15 2 26.9 43.8 38.1 37.2
 28 15 1 31.9 48.3 43.3 42.1 15 2 27.1 42.9 34.8 34.8
 no more

α Delphini h m s $+15^{\circ} 28' 20''$
1877

Aug. 22 55 3 17.2 28.9 30.5 24.9 55 4 5.3 16.2 18.2 12.9
 27 55 3 14.0 26.1 26.9 21.7 55 3 58.4 9.2 10.9 6.8
 28 55 3 2.4 14.4 16.4 10.8 55 3 58.7 6.5 9.3 3.2
 30 55 3 10.0 21.8 22.7 16.9 55 3 47.7 59.2 0.0 58.0
 Oct. 6 55 2 54.7 11.8 7.2 5.1 55 4 0.5 16.1 12.9 10.9
 13 55 2 56.4 12.4 8.8 6.9 55 3 59.1 14.9 10.9 10.0
 no more

ϵ Cygni $20^h 41^m 9^s +33^\circ 30' 11''$

1877

Sept. 11	55-1	20.5	30.4	31.1	29.5	
15	55-1	40.0	48.1	50.4	48.0	
16	55-1	31.0	40.0	43.0	38.9	
Oct. 27	55-1	51.5	4.9	56.5	0.1	
28	55-1	39.9	33.4	48.1	52.1	
Nov. 4	55-1	27.3	40.8	35.8	36.9	
No more						

η Cephei $20^h 42^m 45^s +61^\circ 21' 13''$

1877

Sept. 11	5-0	30.1	57.9	56.6	55.3	5-1	30.0	37.8	36.5	35.8
15	5-0	59.9	5.6	5.6	3.8	5-1	21.2	27.2	27.2	25.1
16	5-0	48.9	54.9	56.0	54.2	5-1	29.4	34.9	35.8	34.0
22	5-1	0.4	8.2	3.8	4.7	5-1	29.8	37.2	33.8	34.9
Oct. 27	5-1	20.1	30.9	23.9	27.8	5-1	33.1	43.2	37.5	39.8
28	5-1	11.5	21.1	14.9	19.1	5-1	23.0	34.1	26.4	30.4
No more										

877phae.p
Agnarii
1877

h m s ° ' "

20 45 55 - 9 27 2

Date	Time	Lat	Long	Alt	Dist	Time	Lat	Long	Alt	Dist	Time	Lat	Long	Alt	Dist
Sept	11	50	2	36.6	48.9	51.4	46.1	50	3	32.2	44.1	46.0	40.6		
	15	50	2	42.0	52.3	56.6	37.1	50	3	37.0	48.2	53.0	46.0		
	16	50	2	46.1	57.2	2.0	55.7	50	3	44.4	54.8	59.5	52.9		
	22	50	2	54.1	8.2	7.8	4.3	50	3	39.1	53.3	52.8	48.1		
	23	50	2	43.9	56.1	57.9	53.2	50	3	33.2	47.1	49.1	43.8		
Oct.	13	50	2	37.9	53.1	54.5	57.1	50	3	25.8	42.4	41.4	38.7		

76 Draconis $\frac{h}{20} \frac{m}{51} \frac{s}{31} + 82^{\circ} 3' 59''$
1844

Day	Time	Temp	Wind	Dir	Speed	Pressure	Humidity	Clouds	Visibility	Remarks			
Sept.	11	20	3	62.5	2.0	55.2	59.9	20.4	6.5	15.3	9.5	13.9	
	15	20	3	39.5	46.2	42.1	43.9	20	3	67.4	57.9	53.4	57.8
	18	20	3	35.8	43.9	38.5	42.3	20	3	53.7	21.6	58.3	0.9
	19	20	3	42.2	50.5	43.1	49.1	20	3	47.9	56.4	49.9	53.7
Oct.	6	20	3	37.1	49.1	40.8	46.5	20	3	50.5	2.9	54.2	0.9
	7	20	3	37.8	48.8	40.9	46.3	20	3	45.1	56.7	48.9	53.1

4 strokes for 1st 8

No more

z Bygni $21^h 0^m 23^s +43^\circ 25' 4''$

1877

EO - F1 - G - H

EO - F1 - G - H

Sept. 11	0	0	47.3	53.1	54.8	53.3	0	1	39.9	48.9	49.0	47.3
12	0	0	54.9	2.6	2.8	2.0	0	1	50.0	57.9	57.9	57.6
13	0	0	53.8	1.9	1.6	0.8	0	1	44.8	52.8	53.1	52.2
18	0	1	2.3	10.4	11.5	8.1	0	1	48.0	57.2	56.9	54.4
19	0	0	46.1	53.4	53.8	53.9	0	1	45.3	53.2	53.5	53.0
26	0	1	3.8	15.0	16.1	12.9	0	1	47.9	58.7	58.7	56.8

no more

z Bygni $21^h 7^m 37^s +29^\circ 42' 55''$

1877

Alternate with next #

Sept. 11	40	3	31.2	42.9	39.4	39.7	40	4	27.7	29.1	34.7	35.2
12	40	3	35.3	45.5	43.0	42.8	40	4	29.4	39.3	36.1	36.6
13	40	3	33.9	44.1	43.0	41.1	40	4	30.2	39.8	37.5	36.0
19	40	3	34.9	47.2	42.7	42.9	40	4	30.6	42.4	37.5	38.4
22	40	3	35.4	48.1	42.1	43.3	40	4	29.9	42.2	35.1	37.1
26	40	3	30.6	44.1	42.1	40.4	40	4	18.9	31.4	28.8	26.7

no more

7 Draconis

 $21^h 7^m 58^s + 17^h 27^m 7^s$

1877

E-H-G-H

E H G H

Sept-18	50	0	20.7	28.0	24.6	27.1	50	0	36.1	42.8	39.9	41.4
24	50	0	19.1	26.3	23.1	25.3	50	0	29.1	36.3	34.2	35.9
27	50	0	17.3	27.9	24.4	27.7	50	0	27.4	37.4	33.1	36.6
Oct-13	50	0	26.9	38.0	32.0	36.9	50	0	50.0	1.9	55.6	1.9
17	50	0	12.3	23.7	18.1	21.9	50	0	24.8	35.0	29.5	34.9
18	50	0	5.1	17.5	11.9	15.5	50	0	22.4	34.2	28.1	33.4

no more

o Cygni

 $21^h 12^m 32^s + 38^h 52^m 19^s$

1877

Sept-12	30	4	23.3	31.8	30.8	31.6	35	0	4.5	13.8	12.9	12.1
13	30	4	19.1	27.9	26.7	26.9	35	0	14.6	23.2	23.0	22.2
18	30	4	21.5	30.9	29.2	27.5	35	0	14.9	23.2	24.9	23.3
19	30	4	13.8	23.8	21.0	21.6	35	0	11.4	23.0	19.0	20.6
22	30	4	22.9	33.4	28.8	29.7	35	0	14.2	24.8	21.9	22.9
26	30	4	18.5	30.1	29.3	27.4	35	0	8.9	20.4	21.1	19.1

no more

α Cephei $21^h 15^m 36^s +62^\circ 3' 22''$

1877

E - F1 - G - H

E F1 G H

Sept-12	20	3	42.8	48.1	47.6	48.9	20	3	59.0	3.7	21.4	3.4
13	20	3	41.3	47.1	46.5	46.6	20	4	23.9	29.9	28.4	28.9
18	20	3	45.6	37.8	57.3	50.4	20	4	20.9	26.8	24.9	24.9
19	20	3	43.9	51.5	48.1	50.2	20	4	29.1	36.1	32.2	33.4
22	20	3	46.9	54.5	50.8	52.6	20	4	23.8	31.1	26.3	29.9
26	20	3	40.1	47.4	48.9	47.8	20	4	13.3	21.5	20.5	20.4

no more

α Ursa Maj. $9^h 23^m 24^s +70^\circ 22' 40'' 109^\circ 38'$

1877

Sept-16	50	2	14.7	21.1	18.5	18.3						
24	50	2	32.0	39.0	33.3	34.5	50	2	8.6	16.3	10.1	10.5
30	50	2	31.5	42.1	36.4	38.9	50	1	54.9	5.1	59.9	2.1
Oct. 1	50	2	38.8	48.1	43.4	43.3	50	2	0.9	9.6	4.7	4.9
6	50	2	30.1	40.3	31.8	35.4	50	2	5.1	16.4	8.2	24.6
7	50	2	22.2	34.2	24.9	27.5	50	2	4.2	14.5	6.5	8.1

no more

3 Cephei

 $h^m s + 10^{\circ} 0' 43''$

1877

 $\delta \quad \eta \quad \epsilon \quad \theta$ $\delta \quad \eta \quad \epsilon \quad \theta$

Sept 23	25.1	58.9	41.8	1.5	3.7	25 2	18.1	24.5	21.9	23.6
24	25 1	24.4	30.3	29.1	29.9	25 1	44.5	49.3	48.9	49.1
27	25 1	27.9	38.2	36.1	36.5	25 P	56.0	5.9	3.3	4.0
30	25 1	40.1	49.1	48.8	50.2					
Oct. 1	25 1	27.4	35.4	34.2	35.4					
7	25 1	23.7	33.9	29.9	32.8	25 1	37.8	47.1	43.5	46.3

Perhaps omitted 3rd of the 1872 na 8
 Not more

122 Cephei = B.A.C. 1510 $h^m s + 80^{\circ} 0' 29''$

1877

Sept 16	25 4	11.5	17.1	13.1	18.1	25 4	20.2	26.1	22.0	27.1
24	25 4	2.7	9.3	2.2	8.1	25 4	16.1	22.4	17.1	22.1
30	25 3	53.1	4.6	56.9	3.2	25 4	13.9	24.4	17.3	24.9
Oct. 1	25 3	53.6	4.8	58.1	4.7	25 4	8.6	17.2	12.1	17.1
7	25 3	56.9	7.9	58.7	7.0	25 4	17.0	27.8	18.4	26.2
13	25 3	26.8	37.9	29.7	36.9	25 3	37.0	46.0	39.2	47.9

lost 1st wire

no more

S Capricorni $21^h 33^m 9^s - 17^\circ 12' 30''$

1877

			δ	α	δ	α		δ	α	δ	α	
1877												
Sept-24	35	4	26.6	41.4	40.5	35.8	35	4	57.8	12.8	11.9	6.6
Oct-1	35	4	8.7	25.7	24.4	20.4	35	4	37.6	54.5	54.5	50.8
14	35	3	^{Lost 1st wire} 42.4	2.8	56.6	56.9	35	4	29.2	49.2	43.3	43.5
28	35	3	27.9	47.1	40.1	39.6	ny. 2 nd S					
29	35	3	47.6	6.2	2.3	1.9	35	4	44.9	3.1	58.5	58.4
			^{Lost A-1}									

Lost A-1

10 Cephei $21^h 41^m 20^s +60^\circ 28'$

Alternate with next #

1877

Sept 16	5	1	37.2	42.1	42.6	41.0	5	2	16.8	21.5	22.5	20.8
22	5	2	11.7	18.4	15.5	16.1	5	2	37.2	43.6		
24	50	4	45.6	50.7	50.0	48.3	55	0	4.9	11.8	10.6	8.1
30	50	4	10.0	20.2	17.7	18.1	50	4	53.7	4.7	1.9	3.6
Oct 6	50	4	15.6	27.1	22.4	22.3	50	4	38.0	48.6	44.3	45.4
7	50	4	6.1	17.1	12.1	13.1	50	4	31.0	41.7	36.4	37.7
13	50	4	9.5	19.7	16.2	17.0	50	4	25.0	36.2	30.9	33.1
14	50	5 ^W	4.9	16.2	9.9	12.6	50	4	21.1	32.8	25.8	28.0

no more

2 Cygni
1877

$h^m s +48^{\circ} 43' 53''$

$\odot - \gamma - \delta - \epsilon$

$\odot - \gamma - \delta - \epsilon$

Sept 16	40	3	28.5	34.5	34.1	34.0						
25	40	2	58.5	4.8	3.3	2.1	40	3	41.6	47.4	46.4	45.9
Oct 1	40	2	49.7	58.4	57.4	56.1	40	3	38.1	47.0	45.8	45.7
17	40	2	39.9	50.1	45.9	47.4	40	3	23.2	35.8	29.9	32.9
18	40	2	48.0	58.7	54.6	56.1	40	3	28.7	39.1	34.7	36.9
23	40	3	5.2	15.3	9.1	12.1	40	3	32.9	44.2	37.0	41.4
No more												

μ Capricorni

$h^m s -14^{\circ} 8' 19''$

$\odot - \gamma - \delta - \epsilon$

Sept 24	30	3	45.7	59.8	0.4	53.8	30	4	32.7	46.7	48.1	40.9
30	30	3	31.5	49.9	49.9	45.7	30	4	34.1	51.2	51.2	46.6
Oct 1	30	3	37.2	53.9	54.4	48.9	30	4	26.7	42.1	44.1	36.5
13	30	3	25.9	46.1	43.5	39.1	30	4	22.8	41.9	38.2	34.5
14	30	3	35.1	54.6	50.2	48.5	30	4	22.1	41.7	37.8	35.9
17	30	3	31.4	51.1	48.3	44.4	30	4	20.1	39.1	35.9	32.2
No more												

μ Cephei $h^m s +56^{\circ} 0'$

1877

$\phi - \eta - \theta - \delta$

$\phi - \eta - \theta - \delta$

Aug. 28	25 0	41.1	47.2	50.1	45.5	25 1	22.1	29.0	29.2	28.3
Sept 24	25 0	58.6	54	35	29	25 1	32.2	39.9	36.1	37.9
25	25 0	34.8	40.4	39.6	38.1	25 1	22.2	28.2	27.0	25.4
30	25 0	31.6	42.1	40.9	40.5	25 1	19.1	30.1	27.2	28.0
Oct 1	25 0	34.1	42.7	42.6	40.9	25 1	20.8	30.6	28.9	28.1
14	25 0	32.9	45.6	39.8	41.9	25 1	16.6	29.7	23.4	25.6
no more										

20 Pegasi $h^m s +12^{\circ} 31' 19''$

1877

Aug 22	50	4	44.8	56.9	57.1	52.9	55	0	46.7	58.6	0.0	54.3
28	50	4	48.1	58.4	59.6	54.5	55	0	40.6	51.9	53.7	48.8
Sept 25	50	4	54.9	61.4	56	1.9	55	0	56.0	7.2	6.9	2.3
30	50	4	35.0	50.4	50.0	47.1	55	0	44.1	0.3	59.9	57.1
Oct 1	50	4	45.4	59.1	58.9	53.9	55	0	43.9	58.4	58.1	52.9
13	50	4	32.0	49.1	45.3	43.4	55	0	26.2	42.9	40.0	38.1
no more												

1877
Pegasi

$h^m s + s^{\circ} 35' 1''$

$\phi - \eta - \theta - \psi$

$\phi - \eta - \theta - \psi$

Sept 16	50	0	51.4	3.9	41.05	50	1	43.3	56.0	56.1	52.5	
22	50	0	47.9	3.3	58.7	56.9	50	1	41.1	57.0	52.1	49.9
25	50	0	53.9	8.9	6.9	3.9	50	1	46.0	0.1	57.8	54.9
30	50	0	41.1	58.8	55.6	53.8	50	1	51.4	8.6	4.9	4.0
Oct 6	50	0	38.5	56.2	51.7	49.5	50	1	48.6	7.1	0.8	0.6
13	50	0	44.1	2.4	57.4	56.9	50	1	31.1	49.9	44.2	43.0

no more

1877
z Cephei

$h^m s + s^{\circ} 35' 7''$

Sept 16	50	1	48.4	53.4	56.1	54.0	50	2	28.1	33.9	34.3	33.4
22	50	1	40.5	49.1	46.0	45.4	50	2	32.7	41.1	36.1	38.1
25	50	1	42.2	49.0	48.8	46.6	50	2	26.9	34.3	32.2	30.8
30	50	1	47.4	57.7	55.9	56.1	50	2	28.9	38.9	36.0	37.1
Oct 13	50	1	42.9	53.6	49.8	51.2	50	2	4.2	15.3	12.0	12.9
17	50	1	54.6	6.6	1.4	3.1	50	2	26.4	37.1	31.9	34.6

no more

221 Cephei $22^h 7^m +71^\circ 43'$

1877

C - H - G - H

C - H - G - H

Aug 16	40	3	58.9	55.1	3.7	4.1	40.4	22.9	28.1	26.9	27.3
Oct 1	40	3	42.4	50.8	49.1	50.0	40.4	5.5	14.0	11.5	13.8
14	40	3	31.3	43.0	34.9	41.9	40.4	44.5	58.1	51.6	54.9
18	40	3	38.5	49.1	45.7	48.2	40.4	5.8	16.6	11.1	16.3
27	40	3	34.0	43.9	35.8	41.7	40.3	47.4	52.2	48.0	54.1
Nov 4	40	3	27.5	39.2	29.3	37.1	40.3	48.2	0.2	51.7	57.1
No more											

ϵ Cephei $22^h 10^m 23^s +56^\circ 25' 14''$

1877

Aug. 16	0	1	51.1	57.8	57.9	54.9	0	2	25.6	32.6	32.8	30.3
Sept. 30	0	1	34.8	45.2	44.3	44.6	0	2	21.5	32.3	29.5	30.8
Oct 13	0	1	34.1	45.3	41.1	43.1	0	2	15.9	27.6	23.1	25.1
14	0	1	47.2	59.1	52.9	55.9	0	2	8.9	20.1	15.1	17.9
17	0	1	26.9	38.9	33.3	34.9	0	2	7.8	19.0	15.1	15.7
23	0	1	22.5	33.9	28.2	29.9	0	1	53.9	4.2	59.4	0.9
No more												

Aquarii $22^{\text{h}} 15^{\text{m}} 12^{\text{s}} - 2^{\circ} 0' 59''$

1877

Aug 16	25	1	37.0	50.2	52.5	45.1	25	2	33.5	47.2	49.7	42.0
Sept 11	25	1	30.8	44.4	45.9	40.9	25	2	34.2	48.4	49.3	44.0
Oct 6	25	1	43.8	15	57.9	55.6	25	2	22.7	41.1	38.5	34.8
14	25	1	30.3	47.9	43.8	42.2	25	2	28.9	46.6	42.6	41.4
Nov 15	25	1	56.3	14.9	9.9	9.8	25	2	49.0	7.6	1.9	2.1

3 Lacertae $22^{\text{h}} 18^{\text{m}} 39^{\text{s}} + 51^{\circ} 36' 11''$

1877

Aug 16	50	0	40.8	48.6	49.8	46.4	50	1	32.4	39.5	40.5	37.9
Sept 11	50	0	23.4	32.9	31.4	30.7	50	1	18.0	27.2	26.7	26.1
Oct 6	50	0	35.4	47.1	43.1	44.5	50	1	15.8	27.8	23.1	25.1
29	50	0	22.8	36.3	32.5	34.1	50	1	10.2	23.1	19.1	21.9
30	50	0	20.2	32.9	29.0	30.5	50	0	50.2	22	56.8	0.5
Nov 1	50	0	26.5	38.9	32.9	36.6	5					

no more

alternate with next #

17

8 Cephei $h^m s +57^{\circ} 46' 32''$

1877

E F G H

E F G H

2.0 Aug. 16	40	0	23.5	30.4	31.2	28.2	40	1	14.7	21.1	21.8	19.1
0 Sept. 11	40	0	13.9	22.6	22.4	20.2	40	1	10.4	17.9	18.0	16.8
Oct-6	40	0	20.2	31.9	27.8	27.5	40	0	48.9	55.9	53.4	57.9
Dec 1	40	0	11.6	11.0	2.8	6.1	40	0	41.9	51.6	44.8	46.0
2	40	0	5.8	14.9	5.4	6.1	40	0	42.0	50.1	40.7	43.2

9 H. Draconis $h^m s +76^{\circ} 21' 20'' 103^{\circ} 39'$

1877

Sept 12	50	0	27.2	33.8	31.1	32.6	50	0	14.9	22.5	18.6	19.5
Nov 6	50	0	2.1	14.1	2.4	7.8	45	4	43.9	53.7	43.6	50.8
7	45	4	57.1	8.9	53.9	3.0	45	4	43.7	55.2	43.4	49.9

Lacertae $22^{\circ} 26' 9'' + 49^{\circ} 38' 24''$
1877

Aug 16	45	3	59.1	6.8	6.2	4.2	45	4	38.3	45.1	45.4	43.2
Sept-11	45	3	58.6	3.3	0.9	1.3	45	4	14.2	21.6	20.1	20.5
" 12	45	3	18.1	26.2	23.8	23.9	45	4	5.8	12.5	9.9	10.7
16	45	3	20.9	28.1	27.5	26.9	45	3	57.9	4.0	3.5	41.9
Oct-6	45	3	8.2	18.5	12.8	16.7	45	3	54.5	5.9	59.6	1.3
Nov 1	45	3	19.1	30.5	24.9	28.2	45	3	45.2	56.4	50.6	52.4
no more												

226β Cephei $22^{\circ} 30' 4'' + 75^{\circ} 34' 56''$
1877

Aug 16	50	3	1.3	7.5	6.1	6.9	50	3	9.6	15.4	15.1	15.2
Sept-11	50	2	18.9	27.1	23.5	26.1	50	2	32.1	40.4	37.9	39.9
" 12	50	2	10.9	17.8	15.9	17.0	50	2	25.2	32.0	29.4	31.8
16	50	2	11.4	17.0	17.9	18.7	50	2	31.4	37.0	36.9	38.4
Oct. 14	50	2	34.1	46.2	39.5	45.1	50	2	44.7	56.3	50.0	55.1
29	50	2	26.0	38.1	32.5	38.3	50	2	38.5	49.9	45.1	49.8
no more												

31 Cephei $22^h 32^m +72^\circ 59'$

1877

			Σ	Σ	Σ	Σ		Σ	Σ	Σ	Σ
Oct 29	25	2	18.1	29.3	24.2	29.1	25.2	28.7	39.7	35.1	39.4
30	25	2	18.2	28.7	23.8	28.5	25	2	32.2	41.1	36.1
Nov 4	25	2	14.9	25.5	17.4	23.2	25	2	24.6	35.3	27.1
15	25	2	14.7	22.1	20.4	26.2	25	2	25.4	37.2	29.2

 η Pegasi $22^h 37^m 9^s +29^\circ 34' 5''$

1877

Aug 16	50	2	20.5	30.9	29.2	27.1	50	3	20.2	30.6	28.7	26.9
Sept 11	50	2	10.8	22.9	19.2	18.7	50	3	10.5	22.0	18.5	17.9
22	50	2	21.9	35.3	27.9	30.4	50	3	6.9	19.1	12.9	14.3
Oct 7	50	2	18.2	33.1	24.6	28.2	50	3	1.9	15.9	9.7	11.9
Nov 15	50	2	40.6	56.9	47.9	52.2	50	3	9.1	24.4	16.1	20.8
Dec 1	50	2 ^{lost A+1}	3.8	16.4	5.6	10.2	50	2	48.9	2.1	52.1	56.1

no more

Pegasi
1877

h m s $+22^{\circ} 54' 30''$
22 40 31

Aug 28 30 1 44.9 33.2 34.9 53.3 30 2 43.4 54.1 53.3 57.9
30 30 1 53.3 4.8 1.5 0.9
Sept 11 30 1 39.9 32.1 48.9 48.9
16 30 1 36.6 46.4 46.5 44.8
Oct 7 30 1 25.9 41.4 35.2 36.1 30 2 8.0 22.9 17.5 18.1
Nov 15 30 1 31.2 47.1 38.5 43.1 30 2 30.3 47.2 38.0 43.1
no more

Cephei
1877

h m s $+65^{\circ} 32' 35''$
22 45 14

Aug 28 50 4 27.9 32.4 31.9 32.5 50 4 51.1 55.9 53.3 56.4
30 50 4 29.3 35.8 33.8 34.2 50 4 40.1 43.9 44.8 45.1
Oct 17 50 4 46.9 56.4 50.1 56.1 ~~50 4~~
29 50 4 19.4 29.2 24.1 29.7 50 4 27.9 37.8 32.6 38.7
30 50 4 23.0 33.1 27.4 33.4 50 4 53.8 5.1 59.2 6.3
Nov. 4 50 4 23.5 34.9 25.9 32.4 50 4 48.8 59.2 50.9 58.1
5th
no more

o Andromedae $22^{\text{h}} 56^{\text{m}} 10^{\text{s}} +41^{\circ} 39' 16''$

1877

E - Z - S H

E Z S H

Sept-23	45	2	7.1	17.1	16.4	13.9	45	3	3.5	13.9	11.9	10.9
(Oct-5) 29	45	2	40.9	52.7	50.9	52.6	45	3	2.9	14.2	12.1	15.0
Nov 4	45	2	7.2	21.9	14.1	19.5						
			<i>lost 1st 2 wires</i>									
13	45	2	3.1	14.7	9.4	13.9	45	2	53.9	9.8	1.6	5.0
14	45	1	57.7	11.9	35	7.9	45	2	31.9	44.7	37.9	42.6
Dec-1	45	2	6.5	17.8	9.9	14.1	45	3	0.4	12.2	35	4.9

no more

π Cephei $23^{\text{h}} 3^{\text{m}} 56^{\text{s}} +74^{\circ} 42' 42''$

1877

E Z S H

Oct-29	40	4	24.1	36.4	29.9	35.1	40	4	48.4	58.8	54.5	—
30	40	4	21.1	32.0	25.5	30.1	40	4	34.7	44.4	37.5	43.5
Nov 4	40	4	14.8	26.9	17.4	24.2	40	4	23.0	35.0	24.2	32.9
6	40	4	47.9	58.6	47.9	54.1						
7	40	4	24.5	35.4	25.6	32.8	40	4	47.7	57.1	47.6	54.5
			<i>lost 1st 3 wires</i>									
15	40	4	16.2	28.9	21.2	27.6	40	4	48.2	1.2	53.0	0.1
			<i>lost the last wire</i>									

no more

Br. 3077

1877

Oct-29

30

Nov 6

7

13

14

h m s ° 23 7 16 +56 28' 41"

30 - 71 - 9 41

55- 2 56.9 66 19 6.9 55- 3 29.6 40.6 35.6 39.1

55- 2 57.7 8.4 3.4 65- 55- 3 32.6 43.4 39.1 41.9

55- 3 8.9 20.9 10.9 16.2 55- 3 44.9 57.0 47.1 52.0

55- 3 23.1 34.4 25.1 30.2 55- 3 50.0 0.1 51.8 56.4

55- 2 57.4 8.2 0.1 4.7 55- 3 41.1 51.4 42.9 47.2

55- 2 53.2 4.4 54.5 0.5 55- 3 41.2 52.2 43.5 48.9

lost 1st wire

lost 1st 3 wires

lost A+1

no more

γ Piscium

1877

Oct-29

30

Nov. 4

15

Dec 1

2

12

h m s ° 23 10 41 +2° 35' 59"

45 4 39.1 55.1 49.9 52.4

45 4 32.4 50.4 44.5 45.9 50 0 28.1 46.3 41.8 42.1

45 4 37.1 57.1 49.6 50.2 50 0 29.1 49.1 41.5 42.9

45 4 30.1 49.9 41.9 44.5 50 0 40.1 58.9 51.1 54.9

45 4 28.6 45.2 34.9 37.6 50 0 43.1 0.2 57.3 57.3

45 4 30.1 45.7 34.4 35.9 50 0 35.7 51.6 41.8 41.1

50 0

no more

λ Pegasi $23^h 14^m 27^s +23^\circ 3' 23''$

1877	$\phi - \delta - \theta - \psi$						$\phi \quad \delta \quad \theta \quad \psi$					
Oct 30	20	2	57.6	14.8	8.7	11.2	20	3	47.0	2.5	53.3	57.4
Nov 4	20	2	40.4	56.5	47.1	51.2	20	3	37.5	54.7	43.9	49.1
6	20	2	36.6	51.9	40.8	46.4	20	3	39.1	54.1	42.1	48.9
7	20	2	47.0	46	52.1	56.1	20	3	38.8	53.4	44.1	48.9
13	20	2	53.5	8.1	57.4	3.9	20	3	45.9	2.0	51.2	56.1
14	20	2	42.3	58.4	47.8	53.5	20	3	44.1	59.4	49.2	54.8
no more												

ν Pegasi $23^h 19^m 9^s +22^\circ 42' 58''$

1877	ϕ	δ	θ	ψ	ϕ	δ	θ	ψ				
Oct 23	40	2	57.8	13.2	4.0	8.4	40	3	54.1	10.3	0.9	5.4
Nov 6	40	3	0.9	17.0	4.0	9.3	40	4	3.1	19.4	6.5	18.9
7	40	3	28.8	43.5	34.0	39.1	40	4	17.2	32.9	22.9	28.5
13	40	3	14.2	30.5	19.8	24.0	40	4	7.2	23.2	11.0	18.4
14	40	3	3.6	19.2	8.2	15.3	40	3	59.6	16.7	3.0	10.2
Dec 1	40	3	20.2	34.7	22.3	28.9	40.4	0.1	12.9	1.4	8.5	
no more												

λ Praecium $h^m s +5^{\circ} 40'$

1877	E	F_1	G	H	E_0	F_1	G	H
Oct-17	40	4	9.9	27.9	21.5	21.9	45.0	3.2 21.1 15.4 14.1
Dec 3	40	4	8.9	25.1	13.4	13.9	45 0	12.5 27.5 16.8 17.9
9	40	4	11.5	29.1	16.9	19.2	45 0	19.5 37.6 25.7 27.1
12	40	4	4.5	~~21.7~~ 10.1	13.2			

λ Draconis $h^m s +70^{\circ} 1' 14'' 109^{\circ} 59'$

1877

Oct-13	30	0	44.9	56.3	48.2	50.7	30.0	22.6	33.9	25.4	28.3
17	30	0	46.1	57.1	49.5	51.9	30 0	30.9	41.9	32.9	36.9
Dec 9	30	0	39.1	48.1	33.3	38.5	A-1, 49.8, 7.6, 5-				
12	30	0	50.7	1.3	48.6	52.3	30 0	31.2	41.4	28.1	33.0

12 Pegasi $23^h 27^m 32^s +30^\circ 36'$

1877				δ	Z_1	θ	ϕ		δ	Z_1	θ	ϕ
Oct-13	45	3	1.4	15.9	9.8	12.9	45	3	55.5	10.3	14.2	7.1
17	45	3	1.4	16.1	9.0	11.1	45	3	55.9	10.9	3.6	6.4
27	45	3	1.6	16.2	6.7	10.9	45	3	47.6	2.2	53.4	57.2
28	45	2	55.1	10.1	1.6	6.4	45	2	48.2	2.9	54.8	59.3
Dec 1	45	3	29.9	43.1	32.5	38.1						
2	45	2	58.8	11.1	58.3	4.0						
no more												

λ Androm. $23^h 31^m 27^s +45^\circ 46' 51''$

1877

Oct-13	35	4	36.0	48.7	42.7	45.5	40	0	19.3	32.4	27.7	27.4
17	35	4	46.6	58.1	52.7	54.8	40	0	28.9	41.9	36.1	37.9
27	35	4	32.5	45.1	34.9	39.8	35	4	49.7	2.7	52.5	53.9
28	35	4	29.8	42.7	34.9	38.6	40	0	18.4	30.4	24.2	27.9
Dec 15	35	4	51.9	5.1	53.8	25.6	40	0	26.5	38.9	28.4	31.9
16	35	4	53.1	6.7	56.8	1.9	40	0	33.1	46.8	38.5	42.1
no more												

		h	m	s	$\circ$	$'$	$''$	$\circ$	$'$	$''$	$\circ$	$'$	$''$
y Cephei		23	34	31	+76	55							
1877													
Aug 30		30	1	33.1	41.3	39.6	42.4	30	1	44.4	54.8	49.9	53.1
Sept 12		30	1	33.9	40.4	47.3	41.6	30	1	48.2	54.9	51.4	53.9
23		30	1	44.7	51.9	48.3	52.9	30	1	59.2	6.2	2.1	6.7
Oct. 13		30	1	15.7	27.6	20.2	26.0	30	1	33.6	44.1	37.3	43.9
17		30	1	12.6	23.6	16.9	22.8	30	1	36.2	47.1	40.0	46.9
27		30	1	2.7	18.5	3.2	10.6	30	1	36.3	46.2	36.0	43.9
		no more											

		h	m	s	$\circ$	$'$	$''$	$\circ$	$'$	$''$	$\circ$	$'$	$''$
41 B. Cephei		23	41	57	+67	6	44						
1877													
Oct 18		15	4	59.4	9.1	3.4	9.0	20	0	23.1	33.8	28.5	32.9
23		20	0	0.1	10.1	3.3	9.1	20	0	40.7	49.8	43.8	48.9
27		20	0	0.1	9.2	0.1	5.8	20	0	17.9	27.8	17.8	23.2
28		20	0	10.2	19.9	12.5	20.2	20	0	41.5	51.1	43.6	50.5
Dec 15		15	4	48.8	59.1	47.1	54.1	20	0	15.6	25.8	15.2	21.9
16		15	4	49.0	58.9	49.1	57.1	20	0	16.9	27.3	19.0	25.1
		no more											

ϕ Pegasi $23^h 46^m 8^s +18^\circ 25' 34''$

ϕ γ_1 γ_2 γ_3 γ_4

1877	ϕ	γ_1	γ_2	γ_3	γ_4	ϕ	γ_1	γ_2	γ_3	γ_4		
Aug 28	0	0	42.5	54.9	67.9	57.3	0	1	23.4	36.1	37.9	37.9
Sept-23	0	0	33.3	46.5	43.8	40.7	0	1	23.4	37.2	34.9	31.4
Oct-18	0	0	25.3	42.6	39.2	37.1	0	1	15.4	32.1	27.9	27.9
23	0	0	29.9	45.6	41.2	40.0	0	1	14.2	30.4	24.8	25.4
27	0	0	15.4	32.3	24.8	25.4	0	1	9.5	26.2	19.0	19.9
28	0	0	13.9	30.2	24.7	25.5	0	1	12.2	30.1	22.8	24.1

No more

ω Piscium $23^h 52^m 54^s +6^\circ 10' 16''$

1877?												
Sept. (23)	15-0	21.4	46.4	44.5	39.7	15-1	17.1	32.9	29.7	25.6		
Oct-18	15-0	21.9	40.7	35.6	34.4	15-1	17.8	37.1	31.5	29.0		
23	15-0	15.1	33.6	27.1	26.1	15-1	13.8	32.2	25.2	25.6		
27	15-0	17.0	37.1	24.6	26.7	15-1	13.5	32.7	23.1	23.0		
28	15-0	12.3	31.3	23.8	25.1	15-1	14.0	33.6	25.4	25.7		
Dec. 1	15-0	11.4	28.7	19.5	19.8							

No more

1877 *Piscium* $h^m s^o - 23^h 55^m 31^s - 6^o 42' 31''$

1877 $\phi - \lambda - \rho - \delta$

Oct 18	5 ⁻	2	57.1	14.8	12.9	9.1	5 ⁻	3	52.0	9.4	6.9	3.9
23	5	2	43.4	0.1	56.9	54.6	5 ⁻	3	43.1	0.7	56.9	54.4
27	5	2	41.8	59.2	53.3	57.8	5 ⁻	3	40.4	57.1	50.9	49.9
28	5	2	42.1	58.3	54.9	53.7	5 ⁻	3	37.2	53.7	49.5	48.2
Nov 14	5	2	48.6	6.8	59.4	0.1	5 ⁻	3	45.4	3.4	55.6	57.4
Dec 9	5 ⁻	2	58.0	14.3	5.8	5.0	5	3	59.5	16.0	6.1	6.4

no more

Gr. 1852 $h^m s^o + 11^h 58^m 52^s + 77^o 36' 16'' 102^o 24'$

1877

Oct 18	55 ⁻	1	25.6	38.1	29.7	33.5	55 ⁻	1	0.3	12.2	3.9	7.2
23	^{sure} 5 ⁻	0	11.8	23.8	15.0	18.6	^{sure} 5 ⁻	4	56.9	8.1	57.4	4.7
27	55 ⁻	1	8.0	19.1	6.9	12.1	55 ⁻	0	59.1	9.7	57.8	2.8
28	^{lost 1st min} 55 ⁻	1	28.2	39.4	28.9	33.9	55 ⁻	1	12.5	23.2	13.5	18.4
Dec 1	55 ⁻	1	32.7	4.1	27.1	33.3	55 ⁻	1	21.5	30.9	16.3	22.0
2	55 ⁻	1	37.3	46.3	31.1	36.2	55 ⁻	1	24.6	34.9	18.9	23.8

no more

Stars observed for the Opposition of Mars.

Oelz. $20^{\circ} 8' 28'' - 15^{\circ} 8' +$

20345 $8\frac{1}{2}$

1877

Aug-16	35	0	29.2	214.0	417.1	39.1					
28	35	0	17.1	32.1	34.8	26.5	35.1	4.1	18.9	22.0	13.4
Sept-12	35	0	6.2	21.4	22.7	16.4	35.1	8.1	22.9	22.9	17.0
13	35	0	11.2	26.1	26.5	21.1	35.1	12.2	27.4	27.9	21.9
15	35	0	6.1	21.1	22.1	15.0	35.0	57.4	11.9	13.9	5.8
16	35	0	9.2	24.5	26.4	20.4	35.0	58.6	11.8	14.4	7.4
~~20 11 14 - 12 55 +~~ no more											

Oelz. $20^{\circ} 12' 9'' - 14^{\circ} 39' +$

20392 $7\frac{1}{2}$

1877

Sept-13	5	1	31.8	46.4	48.5	42.1	5-2	8.9	22.9	23.4	16.7
16	5	1	35.1	49.6	52.1	46.3	5-2	10.7	26.0	27.9	21.9
19	5	1	48.2	5.8	31.6	59.1	5-2	28.7	45.8	44.2	38.8
23	5	1	18.1	34.2	33.4	29.1	5-2	10.7	26.1	25.1	20.9
24	5	1	11.8	27.5	27.5	21.4	5-2	12.4	28.1	27.9	22.0
25	5	1	36.9	51.4	52.7	46.9	5-2	13.8	28.9	28.8	22.2
no more											

Delt.

20407

 $\begin{matrix} h & m & s & - & ^\circ & ' \\ 20 & 12 & 57 & - & 15 & 23 \end{matrix}$

8

1877

Aug 22	45	4	39.1	13.4	15.7	8.2	50	1	13.7	27.9	29.5	22.1
27	45	4	57.0	12.4	14.0	7.9	50	0	54.8	8.1	11.4	4.2
28	45	4	50.9	41.1	51.8	0.1	50	0	45.9	59.2	2.1	54.9
30	50	0	30.8	45.5	48.1	41.3	50	1	2.2	16.1	19.2	11.2
Sept 11	45	4	57.1	13.1	11.1	6.6	50	0	56.5	12.2	12.1	7.2
12	50	0	3.9	18.9	19.9	14.9	50	0	58.1	14.5	14.5	9.8

no more

Lal.

20 16 34 -14 39 x

39140

7 1/2

1877

Aug 16	0	4	55.7	10.2	11.4	41.5	5	0	57.9	13.2	14.9	17.8
22	0	4	39.2	53.5	57.0	48.2	5	0	47.9	3.0	41.8	37.4
27	0	4	41.9	55.4	57.5	52.4	5	0	41.1	56.4	58.9	51.7
28	0	4	46.2	50.2	2.6	55.1	5	0	52.9	7.8	11.0	4.0
30	0	4	41.6	57.2	57.9	50.9	5	0	39.8	55.3	57.8	49.8
Sept. 11	0	4	43.1	58.6	58.5	52.9	5	0	44.1	0.6	0.6	55.3

no more

Lal.

20 18 24 -15 13 7 22

39210

8 1/2

1877

Aug 16	35	3	49.8	5.0	4.9	59.1	35	4	53.5	8.1	7.7	2.1
22	35	4	16.9	32.2	33.4	25.6						
27	35	3	44.9	59.1	0.9	55.0	35	4	40.8	55.1	56.4	50.1
28	35	3	50.5	41.4	6.6	59.2	35	4	46.7	59.5	59.8	54.2
30	35	3	57.4	6.4	7.9	0.9	35	4	49.1	3.3	3.5	57.5
Sept 11	35	3	52.1	7.2	6.6	1.9	35	4	43.1	58.9	58.0	52.8

no more

Lal. $20^{\circ} 19' 10'' - 15^{\circ} 22' \times$

39247 8

1877

E - J - G - H

Sept 22 45 3 48.9 6.1 15 38.9 45 4 28.9 46.8 42.9 37.2
 23 45 3 38.1 52.9 57.0 48.7 45 4 36.1 46.1 46.2 37.9
 25 45 4 17.5 32.4 32.0 26.2 45 4 48.5 32. 26 57.9
 Oct 7 ^{mid wire & fog} 45 3 25.3 43.1 42.1 39.1 45 4 27.9 47.1 44.9 40.9

WBxx 20 19 27 -14 16

445 8

1877

Sept 13 40 1 34.8 48.9 50.5 44.6 40 2 37.1 49.4 51.4 45.1
 15 40 1 34.0 49.1 50.9 43.0 40 2 33.0 47.7 49.6 43.0
 16 40 1 43.9 57.4 61 53.8 40 2 33.9 46.4 49.5 42.6
 19 40 1 34.5 50.7 51.1 43.7 40 2 32.2 49.1 48.1 43.1
 Oct 13 40 1 42.1 1.4 59.1 53.6 40 2 29.1 48.6 46.6 42.4

Oeltz.

1877 Aug 16
 20541

20 22 8 -15 27 +

9 50 4 0.0 13.9 15.5 8.9 50 4 67.6 5.9 6.0 59.8
 22 50 4 14.5 29.3 30.1 23.9 55 0 2.8 16.3 20.1 12.1
 41 5 - 2 - 2

27 50 4 6.9 21.1 23.0 16.5 55 0 7.0 22.3 25.4 17.5
 28 50 3 46.5 0.1 2.4 53.1 50 4 43.9 57.8 58.9 52.1
 30 50 3 49.9 4.2 5.5 58.0 50 4 40.2 54.1 56.3 48.1

Sept 11 50 4 35.6 50.9 50.1 45.8 mid wire & foll.
 no more

Lal. 1577 Aug 16 19486

	h	m	s	-14	i							
8	35	2	9.9	25.8	26.4	18.5	35	3	1.0	14.1	18.1	8.7
22	35	2	12.9	28.2	30.1	22.1	35	3	10.6	25.6	26.9	19.6
27	35	2	9.4	24.4	25.6	18.3	35	2	5.9	14.0	17.1	8.5
28	35	2	8.9	22.4	25.5	17.4	35	3	4.1	18.2	20.9	12.5
30	35	2	27.3	42.3	45.2	36.0	35	3	18.9	30.4	32.1	24.3
Sept. 11	35	2	28.6	43.9	44.8	37.8	35	3	25.4	40.9	40.4	35.1

no more

Lal. Aug 16 39579

	h	m	s	-14	9	22	1	Reckling				
7	30	4	24.5	39.2	41.1	34.2	35	0	21.1	35.9	39.3	29.9
22	30	4	20.0	34.1	36.0	30.0	35	0	5.1	20.0	22.4	14.0
27	30	4	16.0	30.5	33.0	25.9	35	0	19.6	34.2	36.7	28.5
28	30	4	20.0	33.4	36.2	28.6	35	0	24.1	38.9	42.8	33.2
30	30	4	18.5	33.3	35.2	26.9	35	0	23.7	38.3	38.2	29.8
Sept. 11	30	4	20.4	35.2	36.0	29.9	35	0	15.8	30.6	31.2	25.0

no more

WBXX 664 1877 9

	h	m	s	-14	52	One recording						
Sept 15	15	2	32.1	46.4	48.6	43.0	15	3	14.9	29.3	31.0	(22.9)
16	15	2	29.8	44.8	47.9	41.1	15	3	32.6	45.1	48.0	40.9
22	15	2	31.5	48.4	46.1	40.9	15	3	26.2	42.2	40.1	34.4
23	15	2	31.3	47.1	47.4	40.9	15	3	33.5	50.9	49.9	45.4
Oct 7	15	2	26.1	45.5	43.8	38.9	15	3	22.4	40.9	38.1	34.8
13	15	2	38.6	58.7	53.8	52.1	15	3	25.6	44.9	42.1	38.6

no more

Lal. 60 29 23 15° 44'
 1877 Aug 16
 39671 9 5- 4 48.5 2.9 2.7 57.8 10 0 52.8 7.0 8.9 2.2
 22 5 4 48.5 2.8 3.4 58.1 10 0 40.9 56.4 57.3 50.1
 27 5 4 42.9 56.9 57.4 52.1 10 0 50.1 4.1 6.0 59.1
 28 5- 4 49.4 2.9 3.7 27.9 10 0 43.0 58.0 0.1 67.5-
 suspected double
 30 5- 4 38.1 52.3 53.0 46.2 10 0 49.1 3.2 3.4 53.9
 Sept 11 5- 4 44.8 0.4 58.2 54.2 10 0 53.2 8.6 7.9 3.0
 no more

50 Aquarii 22 17 52 -14 9

σ

WBXXII 22 ^h 46 ^m 57 ^s - 12° 16' # 74 Aquasie

956

7

Aug. 16

Aug 22

27

28

30

Sept 11

no more

WBXXII 22 47 37 - 12 50

966/877 8

Sept-18 15-1 9.2 24.2 25.3 18.4 15-2 6.5 21.4 23.3 14.4

22 15-1 14.2 29.6 28.5 22.2 15-2 7.9 24.0 23.6 17.0

23 15-1 21.1 35.8 36.9 28.9 15-2 14.7 29.1 29.9 22.2

24 15-1 18.1 32.8 33.1 25.9 15-2 10.4 25.3 27.1 18.8

25 15-1 21.1 35.0 37.0 28.1 15-2 4.8 18.7 20.5 12.1

Oct-7 15-1 52.6 9.9 9.6 3.2 15-2 22.2 40.4 38.8 33.5

font 1 102 out 1 1

no more

WBXXII 22 50 51 - 30 16 X

1047

9

NBXXII

22 51 37 11 47 X

1047 1877 9

E, F, G, H

E - F - G - H

Oct 1

10 3 30.2 45.4 47.1 41.1 10 4 20.8 36.1 37.5 30.5

7

10 3 52.1 9.2 6.1 2.3 10 4 15.8 33.2 30.6 27.7

15

10 4 10.0 17.1 11.9 11.5 10 4 24.0 45.5 44.0 39.4

18 10 4 10.0 17.1 11.9 11.5 10 4 24.0 45.5 44.0 39.4

WBXXII

22 53 4 - 1343 T

1079

Aug 16

6 5 4 26.9 42.1 43.5 35.9 10 0 21.3 36.1 39.2 29.9

22

5 4 53.0 7.5 8.6 1.8 10 0 50.1 4.8 7.1 59.1

Aug 27

5 4 28.9 43.0 45.8 38.0 10.0 30.7 45.1 49.4 39.8

28

5 4 20.1 34.1 36.9 29.0 10 0 26.3 40.8 45.5 35.0

30

Sept 11

12

no more

WBXXII

22 56 4 - 11 55 X

1156

Aug 22

20 1 16.6 30.9 34.0 26.5 20 2 6.9 19.4 23.3 14.5

Aug 27

20 1 33.7 46.9 51.9 43.4 20 2 17.4 30.2 34.6 26.8

28

20 1 16.1 29.9 34.1 24.3 20 2 17.7 31.4 35.2 26.4

30

20 1 23.3 37.9 40.9 32.3 20 2 17.9 31.2 34.8 26.0

Sept 11

20 1 21.1 36.3 37.4 30.8 20 2 7.8 22.1 24.4 17.0

12

20 1 19.6 33.8 35.7 28.7 20 2 16.3 29.7 34.5 24.4

no more

WB XX11 22 59 27 - 11 6 X

1232 1877 8

Sept-22 30 1 38.7 12.8 13.1 6.9 30 2 41.9 33.6 68.4 48.9
 24 30 2 30.4 42.9 46.6 37.4 30 2 33.6 6.1 8.2 0.1
 Oct-1 30 2 9.8 24.4 26.9 19.9 30 2 49.9 5.0 7.9 1.1
 7 30 2 5.8 22.1 20.9 13.9 30 2 50.2 7.1 5.8 2.1
 13 30 2 15.0 32.1 31.6 27.0 30 2 48.1 6.9 5.5 1.3

WB XX11 28 0 30 - 13 23 X

1249 Aug 16 8

45 4 28.1 41.7 44.8 35.5 50 0 22.9 36.7 29.8 29.4
 22 50 0 7.7 22.1 25.1 16.3 50 0 28.5 43.1 47.4 37.9
 27 45 4 28.9 31.8 24.5 50 0 23.1 38.1 42.3 32.2
 28 45 4 6.1 19.2 22.9 14.7 45 4 57.4 9.9 13.1 3.0
 30 45 4 7.5 21.4 23.3 15.7 45 4 52.2 6.5 8.1 0.9
 Sept-16 45 4 17.4 31.1 32.9 26.5 50 0 8.0 20.2 24.3 16.2

no more

XX 11 28 0 56 12 28 X

1261 1877 8

Sept-16 45 4 27.4 31.1 32.9 26.5 50 0 8.0
 Sept-18 50 4 36.2 50.8 51.6 44.5 55 0 2.5 17.0 19.2 11.1
 22 50 3 58.9 11.9 9.1 4.1 50 4 53.3 8.4 5.1 1.6
 24 50 4 47.8 1.8 3.2 57.0 55 0 22.9 1.7 3.2 5.70
 25 50 4 13.9 27.9 28.2 22.2 50 4 60.1 12.6 14.5 6.5
 Oct-1 50 3 58.2 13.6 15.3 8.8 50 4 53.6 9.1 14.7 3.3
 7 50 4 2.8 20.1 18.3 13.9 50 4 50.5 7.4 5.1 0.6

no more

XX III

23 5 3 - 11 10

~~One reading~~

1877 Sept 28	9	35	1	21.1	33.0	38.5	29.6	35	2	3.3	34.9	20.8	11.5
30		35	1	31.9	45.1	49.9	40.2	35	2	32.1	44.0	48.9	39.9
Sept 11		35	1	33.1	46.5	48.9	42.1	35	2	15.6	29.7	31.7	24.4
12		35	1	16.7	29.4	32.4	25.2	35	2	24.3	37.1	39.3	32.8
16		35	1	26.7	38.2	43.7	35.2	35	2	27.2	38.1	44.1	36.3
18		35	1	17.3	29.4	32.3	24.2	35	2	16.3	29.1	29.6	21.7

no more

XX III

23 5 32 - 12 36

57 1877 8

E - 71 - 9 - 21

E

Sept 23	0	1	44.9	55.6	0.5	54.5	0	2	17.2	32.6	32.5	26.1
24	0	1	48.2	20	34	56.6	0	2	25.2	39.3	41.1	33.1
25	0	1	35.1	48.0	51.4	42.0	0	2	29.1	42.4	44.9	37.5
Oct 1	0	1	47.1	3.1	51	57.6	0	2	28.9	44.6	47.4	40.1
7	0	1	42.8	1.4	59.1	54.1	0	2	35.9	53.7	52.9	47.7
13	0	1	48.0	6.5	5.6	1.3	0	2	33.1	52.2	57.0	45.8

WB XX III

23 8 15 - 11 21

123

7

1877

Sept 12	45	2	9.2	22.8	24.4	18.4	45	2	36.6	49.2	52.8	45.2
16	45	2	11.8	23.1	27.9	20.4	45	2	56.9	8.4	13.1	4.9
18	45	2	14.0	28.4	30.6	22.5	45	3	7.9	21.9	23.1	15.4
23	45	2	11.3	25.8	26.5	19.5	45	3	2.5	15.4	15.9	10.0
24	45	2	13.9	26.8	29.4	20.7	45	3	1.1	13.8	16.1	7.8
25	45	2	11.1	24.1	26.4	18.5	45	2	50.5	3.4	5.5	57.4

no more

Lal. 23 8 55 12 14 X

Aug 16 45504 7 1/2 35 4 47.9 0.9 2.6 55.6 410 0 43.9 57.1 0.3 51.5

22 35 4 44.8 57.7 0.5 53.9 410 0 47.6 1.9 41.4 56.4

Aug. 27 33 4 51.9 4.9 9.6 0.3 40 0 56.5 9.8 14.1 4.9

28 35 4 48.4 0.7 4.1 56.1 40 0 41.4 52.9 58.0 49.5

30 35 4 45.5 59.1 0.7 53.9 40 0 57.0 51.4 8.8 0.8

Sept 11 35 4 48.2 2.4 2.4 57.6 40 1 1.0 13.9 17.8 11.1

no more

Mr. Agnani 23 9 27 9 45 X

1877 1/2

Sept 72 10 1 9.4 21.8 24.5 17.3 10 1 56.4 8.6 10.9 3.9

16 10 1 12.7 23.3 28.2 21.9 10 2 19.4 30.1 33.7 27.9

18 10 1 27.8 40.9 44.4 35.7 10 2 16.9 30.8 33.6 26.5

22 10 1 12.2 25.8 26.4 20.9 10 2 57.1 19.1 19.1 13.1

23 10 1 25.5 38.4 40.3 33.2 10 2 13.2 28.1 28.1 21.9

24 10 1 19.7 32.1 34.6 27.4 10 2 11.5 24.0 25.5 19.0

no more

WB X111 23 11 14-12 23

185 18777

Aug 30

Sept 12 45 3 44.1 56.9 58.6 52.3 45 4 42.4 56.2 57.0 51.8

16 45 3 50.9 3.0 6.9 59.9 45 4 32.4 44.1 48.7 40.9

25 45 3 47.1 0.5 0.8 54.7 45 4 24.8 38.1 39.2 32.6

Oct 13 45 3 46.6 4.4 2.1 58.5 45 4 37.4 53.6 54.2 49.3

17 45 3 39.1 57.1 54.9 51.1 45 4 44.6 3.0 59.3 53.9

WBXXIII

23 12 33 -10 18

226	1877	Aug 30	5	40	2	44.1	57.1	0.5	52.1	40	3	38.6	51.3	54.7	46.4
		Sept 11		40	2	47.0	59.8	1.9	54.0	40	3	43.5	56.0	57.4	57.9
		16		40	2	47.0	58.1	2.6	53.5	40	3	39.9	49.8	54.3	47.2
		18		40	2	52.2	59	7.7	12	40	3	39.9	52.2	54.4	46.8
		22		40	2	54.1	8.9	7.1	2.3	40	3	49.4	3.7	2.3	58.5
		25		40	2	56.0	7.9	10.1	2.9	40	3	46.1	57.9	59.7	52.2

no more

WBXXIII

23 12 36 -12 51

228	1877	8												
Sept	24	15	1	27.5	42.4	44.8	35.8	13.2	13.9	27.8	28.5	20.1		
Oct	1	15	1	4.8	20.9	22.7	14.9	15	2	2.9	18.2	20.9	12.4	
	7	15	1	16.0	34.3	32.2	28.0	15	2	5.4	22.9	21.5	17.1	
	13	15	1	17.9	35.9	35.0	29.5	15	2	10.4	29.1	26.7	22.1	
	17	15	1	20.1	38.2	36.2	31.8	15	2	12.4	31.7	29.7	23.1	
	18	15	1	35.1	53.2	52.9	47.3	15	2	18.4	37.1	35.6	31.8	

Ref A-1

no more

WBXXIII

23 14 28 -11 12

265	Aug 16	8	35	3	4.3	15.7	19.9	11.5	35	3	55.4	7.2	11.4	2.4
		22	35	3	5.6	17.9	22.3	13.9	35	4	9.6	21.5	25.4	17.3
	Aug.	27	35	3	10.9	22.3	26.8	19.3	35	4	0.4	11.5	17.1	8.2
		28	35	3	0.8	11.9	17.4	9.1	35	3	57.7	9.1	13.9	6.2
	Sept	11	35	3	9.8	23.1	25.0	18.0	35	3	57.3	10.1	12.9	6.8
		12	35	3	5.4	17.1	20.5	14.0	35	3	58.9	10.4	13.6	6.1

no more

WB XXIII 23 16 36 -11 27 X

309 Aug 16 8 50 2 33.7 46.2 51.0 42.2 50 3 27.1 39.9 43.9 35.1

22 50 2 39.4 52.5 56.9 47.8 50 3 33.2 46.1 49.9 42.1

Sept 11 50 2 57.3 5.2 6.7 69.8 50 3 39.7 54.1 55.1 48.9

12 50 2 39.5 52.8 54.6 49.3 50 3 23.1 35.1 37.4 31.2

16 50 2 38.5 49.8 54.9 47.0 50 3 25.8 36.5 40.1 32.7

2 Oct 17 50 2 31.7 50.1 48.6 44.4 50 3 4.1 21.2 19.1 14.9

no more

WB 23 16 55 -10 4 X

315 Aug 18 308 25 4 27.9 40.5 44.3 36.3 45 0 12.9 26.1 34.5 26.5

Sept 24 25 4 59.4 11.3 13.8 6.6 30 0 41.6 54.2 58.0 48.7

Oct 1 25 4 33.1 47.2 50.3 43.4 30 0 16.3 31.3 33.9 26.8

7 30 0 1.9 18.8 18.5 12.9 30 0 40.8 57.0 56.6 51.0

13 25 4 59.3 15.9 14.4 10.5 30 0 30.4 47.0 47.9 42.2

18 25 4 32.2 49.3 48.6 43.8 30 0 21.1 38.1 38.1 32.9

no more

WB 23 20 14 -10 43 X

377 Aug 16 9 5 3 49.1 1.2 4.1 56.9 5 4 23.8 36.0 39.9 31.1

22 5 3 31.1 42.8 48.7 38.8 5 4 2.4 13.9 18.4 9.7

28 5 3 26.5 38.4 43.8 34.1 5 4 23.5 34.9 40.0 30.3

Sept 18 5 3 27.7 39.9 42.9 34.4 5 3 54.4 7.1 8.1 1.3

23 5 3 36.0 48.4 56.8 43.6 5 4 30.3 42.9 44.5 37.1

25 5 3 28.9 40.9 43.5 34.9 5 4 13.1 24.9 26.1 19.3

no more

WB XXIII

23 21 41 - 12 8 +

402 Aug 27 7 30.3 14.1 27.3 31.6 23.1 30 4 5.1 17.9 22.4 14.8
 28 30 3 32.9 45.9 50.9 42.4 30 4 12.4 24.9 29.2 21.6
 Sept 18 30 3 18.2 32.4 33.1 26.4 30 4 4.4 18.1 17.5 10.2
 23 30 3 13.0 26.5 27.1 20.2 30 4 19.2 32.9 32.8 26.8
 25 30 3 16.9 29.9 31.5 24.4 30 4 7.9 20.2 22.5 14.3
 Oct 13 30 3 14.9 33.8 32.5 26.9 30 4 3.5 20.5 19.1 24.9
 no more

WB XXIII

23 22 40 - 9 57 +

427 Aug 16 7 20 2 27.7 29.1 215.1 35.1 20 3 29.4 410.1 44.1 38.4
 Sept 11 20 2 22.1 35.4 37.9 31.9 20 3 13.4 27.9 30.3 24.1
 12 20 2 22.9 34.6 37.9 30.4 20 3 13.1 25.1 26.7 21.8
 16 20 2 28.9 40.1 44.3 37.0 20 3 9.9 19.9 24.6 17.1
 18 20 2 56.6 8.4 11.1 3.8 20 3 16.5 28.2 30.5 23.9
 25 20 3 2.4 13.8 16.1 9.9 20 3 26.4 37.2 40.2 33.2
 last A+1
 no more

WB XXIII

23 26 4 - 11 41

497 Aug 22 7 5 1 34.8 47.9 52.2 43.5 5 2 35.2 48.7 53.0 43.9
 27 5 1 22.4 35.6 40.4 31.7 5 2 46.2 59.1 3.1 54.9
 28 5 1 24.7 37.5 42.2 33.3 5 2 14.0 26.1 30.5 22.9
 Sept 18 5 1 28.9 42.8 45.7 37.5 5 2 28.5 41.9 44.5 36.2
 23 5 1 35.7 49.1 51.5 44.1 5 2 42.4 56.3 57.3 50.9
 25 5 1 34.1 47.1 49.1 41.9 5 2 15.9 28.9 30.6 23.8
 no more

WB XXIII 23 29 6 - 11 14 X

1877
57 Aug 308 33- 4 48.3 0.6 3.8 56.2 40 0 46.1 59.7 3.4 54.9
Sept-11 33- 4 49.6 2.8 3.7 57.5 40 0 44.9 58.7 0.5 53.0
" 12 35- 4 46.4 58.2 0.1 53.1 40 0 34.2 46.3 49.9 42.3
18 35- 4 49.8 2.9 4.9 57.1 40 0 53.1 6.4 8.8 1.1
23 35- 4 56.6 10.9 11.0 8.9 40 1 4.9 17.9 19.5 12.3
25 35- 4 46.0 58.4 59.4 53.4 40 0 51.1 3.1 51.5 58.4

no more

WB XXIII 23 29 40 - 9 27 X

586 Aug 16 7 50 2 31.4 43.4 48.4 39.1 50 3 27.5 39.3 43.9 35.8
22 50 2 31.7 44.1 49.1 41.4 50 3 27.8 40.1 44.4 36.9
27 50 2 28.4 40.3 45.9 37.9 50 3 28.1 39.8 45.3 37.0
28 50 2 32.4 42.8 49.5 40.8 50 3 27.0 38.9 43.8 35.8
Sept-16 50 2 32.8 43.2 48.6 41.4 50 3 26.9 37.0 40.2 33.9
Oct-13 50 2 26.7 43.2 42.3 38.0 50 3 22.7 39.2 38.0 34.8

No more

WB XXIII 23 31 52 - 9 19 X

629 Aug 16 7 40 4 21.9 33.9 37.5 29.4 45 0 15.0 27.8 31.9 23.9
22 40 4 15.6 26.8 30.0 23.7 45 0 16.3 29.1 34.7 25.3
27 40 4 15.9 27.5 32.9 25.3 45 0 17.1 29.4 34.6 26.8
28 40 4 16.8 28.2 31.9 26.1 45 0 19.8 31.9 36.9 28.7
Sept-18 40 4 25.4 37.8 40.4 33.6 45 0 29.5 41.7 44.7 37.3
23 40 4 22.1 35.0 36.3 29.5 45 0 28.4 41.2 43.9 36.0

no more

50 Aquarii	22	17	52	-	14	9.2	6.0
o Aquarii	22	24	8	-	11	18.4	5.0
64 "	22	32	48	-	10	40.0	6.5
70 "	22	42	2	-	11	12.3	6.0
74 "	22	47	0	-	12	16.2	6.0
B.A.C. 8004	22	53	8	-	13	43.7	7.0
L' Aquarii	22	58	45	-	8	21.4	6.0
Weisse 1241	22	59	51	-	10	15.1	7.0
Weisse 76	23	6	34	-	10	14.4	7.0
v ² Aquarii	23	11	31	-	9	51.3	5.0
97 Aquarii	23	16	12	-	15	42.8	6.0
Weisse 394	23	21	2	-	13	36.2	7.0
B.A.C. 8199	23	25	50	-	12	13.2	7.0
B.A.C. 8221	23	31	17	-	13	44.5	6.0
B.A.C. 8266	23	40	56	-	12	35.4	6.0
B.A.C. 8285	23	43	54	-	10	39.8	6.0
Weisse 988	23	49	37	-	14	32.7	7.0

Date					R. A.					S Places of Mars.					Date					R. A.					S				
					h	m	s	°	'						h	m	s	°	'						h	m	s	°	'
Aug 12					23	27	52	-	10 14	Sept. 11					23	2	48	-	12 32	Oct. 11					22	47	2	-	11 43
13					27	34	-	10 18		12						1	45	-	12 35	12						47	14	-	11 37
14					27	13	-	10 22		13					23	0	43	-	12 37	13						47	29	-	11 30
15					26	49	-	10 26		14					22	59	43	-	12 40	14						47	47	-	11 23
16					26	22	-	10 30		15						58	44	-	12 42	15						48	8	-	11 16
17					25	52	-	10 35		16						57	46	-	12 43	16						48	31	-	11 9
18					25	19	-	10 39		17						56	51	-	12 45	17						48	57	-	11 1
19					24	43	-	10 44		18						56	57	-	12 46	18						49	27	-	10 54
20					24	5	-	10 49		19						55	5	-	12 47	19						49	58	-	10 46
21					23	24	-	10 54		20						54	15	-	12 47	20						50	33	-	10 37
22					22	40	-	10 59		21						53	27	-	12 47	21						51	10	-	10 29
23					21	55	-	11 4		22						52	42	-	12 47	22						51	49	-	10 26
24					21	7	-	11 9		23						51	59	-	12 46	23					22	52	31	-	10 11
25					20	16	-	11 14		24						51	18	-	12 46										
26					19	24	-	11 19		25						50	40	-	12 44										
27					18	30	-	11 25		26						50	5	-	12 43										
28					17	33	-	11 30		27						49	32	-	12 41										
29					16	36	-	11 35		28						49	2	-	12 39										
30					15	36	-	11 40		29						48	35	-	12 37										
31					14	36	-	11 46		30						48	11	-	12 34										
Sept. 1					13	34	-	11 51		Oct. 1						47	50	-	12 31										
2					12	31	-	11 55		2						47	31	-	12 27										
3					11	27	-	12 0		3						47	16	-	12 24										
4					10	22	-	12 5		4						47	4	-	12 19										
5					9	17	-	12 9		5						46	54	-	12 15										
6					8	12	-	12 14		6						46	48	-	12 11										
7					7	6	-	12 18		7						46	45	-	12 6										
8					6	1	-	12 22		8						46	46	-	12 0										
9					4	56	-	12 25		9						46	47	-	11 55										
10					23	3	-	12 29		10					22	46	53	-	11 49										

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Aug 16 1877

$$\begin{array}{r} 22 \ 1752 \\ - 149 \\ \hline \end{array}$$
$$\begin{array}{r} 22 \ 248 \\ - 1918 \\ \hline \end{array}$$
$$\begin{array}{r} 22 \ 3248 \\ - 10210 \\ \hline \end{array}$$
$$\begin{array}{r} 22 \ 5222 \\ - 2242 \\ \hline \end{array}$$

Aug 16 1877

2 47 5-12 16 40.1 57.4 11.4 14.9 5.4 40.2 52.4 5.8 8.8 0.6
 22 58 45-8 21 45 2 29.5 42.1 46.9 36.9 45 3 13.3 25.1 29.1 19.5
 23 1 34-10 14 40 0 8.6 19.9 26.1 15.9 40 0 58.4 9.2 14.9 5.1
 23 11 31-9 57 15 2 0.9 13.1 18.1 8.8 15 3 3.2 14.5 19.1 10.7
 23 26 22-10 30 0 0 40.9 53.0 58.0 49.0 0 1 42.6 54.9 59.4 50.3
 23 34 48-12 22 45 2 22.8 36.0 39.4 30.2 45 3 23.9 37.5 41.6 32.1
 23 40 56-12 35 0 1 1.5 14.9 18.9 9.6 0 2 4.5 16.3 19.5 10.6
 23 43 54-10 40 5 0 18.0 30.8 35.5 26.2 5 1 23.9 36.1 40.1 31.1
 23 49 37-14 33 not seen.

Aug 22 1877

22 47 0-12 16 40 2 4.9 17.8 21.4 13.5 40 2 53.3 8.8 12.2 3.8
 22 58 45-8 21 45 2 14.7 26.6 30.2 23.2 45 3 17.8 29.6 33.6 24.9
 23 6 34-10 14 40 0 6.1 19.0 24.4 14.8 40 1 2.9 15.0 20.0 11.5
 23 11 31-9 57 15 2 2.8 14.5 20.2 11.2 15 2 58.0 9.5 14.7 5.3
 23 22 40-10 59 25 4 35.2 47.8 57.4 43.0 30 0 28.2 40.7 46.9 36.6
 23 34 48-12 22 45 2 25.8 40.1 43.9 35.3 45 3 20.0 33.6 37.1 28.5
 23 40 56-12 35 0 1 2.3 16.3 20.1 12.0 0.2 2 1 15.4 19.4 11.0
 23 43 54-10 40 5 0 20.5 33.2 38.8 28.9 5 1 19.8 32.9 37.0 29.1
 23 49 37-14 33 5 0 8.3 24.0 26.4 19.1 5 0 53.7 9.1 10.2 3.9

Remarks

Observation not good at all. Planet appeared much larger than anticipated. For 1st I got 1st & last limb but am not certain whether on the 1st or 2nd wire for 2nd limb. 1st limb on upper wire. For 2nd I got 1st limb at center of limb and same for 2nd limb. (Got also the estimated position of planet. Very?)

Pr. limb 5 wires for R.A. In transit each limb for seeing very bad.

1877 Aug 27

E - F - G - H

E - F - G - H

22	47	0	12	16	40	1	57.0	9.0	14.6	6.5	40	2	57.3	9.4	6.8	59.6
22	58	45	8	21	45	2	23.4	35.1	39.5	31.4	45	3	13.9	25.6	29.9	22.8
23	6	34	0	14	40	0	11.2	23.4	28.9	20.1	40	1	14.6	26.4	31.0	23.7
23	11	31	9	51	15	2	11.1	12.9	18.9	9.6	15	2	58.1	9.2	15.4	6.7
23	18	30	-11	25	Red to see map											
23	34	45	12	22												
23	40	56	12	35												
23	43	54	10	40												
23	49	37	14	33												

1877 Aug 28

22	47	0	12	16	40	1	53.7	5.8	11.2	2.1	40	2	46.4	58.5	2.4	55.4
22	58	45	8	21	45	2	21.4	32.2	37.4	28.9	45	3	16.7	28.7	33.4	24.5
23	6	34	0	14	40	0	14.9	25.9	31.6	22.9	40	1	3.9	15.2	20.4	11.7
23	11	31	9	51	15	2	2.5	13.2	19.6	9.9	15	3	2.4	12.5	17.9	9.4
23	17	20	-11	31	0	0	57.0	3.9	8.9	0.1	0	1	46.9	58.4	3.9	53.1
23	34	45	12	22	45	2	23.1	36.1	40.9	31.4	45	3	18.6	31.4	33.6	26.1
23	40	56	12	35	0	1	2.8	15.2	20.1	11.0	0	2	4.8	15.9	20.5	0.0
23	43	54	10	40	5	0	22.9	34.7	40.9	30.0	5	1	21.4	32.9	38.1	30.1
23	49	37	14	33	0	4	53.9	9.5	11.8	4.6	5	1	1.7	16.0	18.7	11.2

Both limbs of Fall limb in R.A. lost.
Limbs not very well defined.

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1877 Aug 30

1877phae.

	E - F - G - H										E - F - G - H									
22 32 48 - 10 40	5	0	45.9	59.1	3.9	54.9	5	1	47.0	59.1	3.1	54.3								
22 42 2 - 11 12	35	2	58.3	11.6	15.4	6.9	35	3	57.9	10.1	13.3	5.2								
22 47 0 - 12 16	40	1	57.5	4.8	8.2	59.9	40	2	49.9	3.6	5.9	58.2								
22 53 8 - 13 43	5	4	20.2	35.2	36.5	28.3	10	0	16.9	32.3	33.9	25.1								
23 15 36 - 11 40	10	0	58.4	11.9	15.4	7.8	10	1	54.8	7.9	11.1	3.8								
23 21 2 - 13 36	0	2	4.7	19.5	21.1	13.6	0	3	10.2	29.2	31.2	23.2								
23 25 50 - 12 13	35	3	58.1	11.4	14.0	25.9	35	4	54.0	7.5	8.8	2.6								
23 31 17 - 13 44	10	0	6.9	22.9	23.4	16.9	10	1	47.4	22.2	24.3	16.8								
23 40 56 - 12 35	0	0	58.6	12.9	15.9	8.0	0	1	53.6	8.1	10.2	2.1								

1877, Sept. 11

22	32	48	-10	40	5	0	47.9	1.4	4.3	56.5	5	1	47.1	59.3	3.0	56.1
22	42	2	-11	12	35	2	58.8	9.7	12.3	6.3	35	4	0.5	14.9	16.7	10.1
22	47	0	-12	16	40	1	55.6	9.3	11.1	4.8	40	2	52.7	6.8	7.1	1.5
22	53	8	-13	43	5	4	21.4	37.9	36.8	31.0	10	0	19.2	36.1	37.2	29.1
23	2	48	-12	32	0	0	31.9	46.7	48.9	43.1	0	1	32.9	47.2	49.8	43.2
23	21	2	-13	35	0	1	57.0	6.2	6.8	4.8	0	2	49.3	4.9	4.1	0.1
23	25	50	-12	13	35	4	3.4	17.1	17.9	12.4	40	0	1.1	15.4	18.5	11.1
23	31	17	-13	44	10	0	3.9	19.4	21.1	13.9	10	1	4.9	21.6	21.8	15.2
23	40	56	-12	35	0	1	10.1	24.9	26.3	21.1	0	2	3.2	16.9	19.0	13.0

Fall limb 5 w. Seeing very good.

Fall limb 5 w. Seeing tolerable.

1877, Sept. 12

E - F - G - H

E - F - G - H

22	32	48	10	40	5	0	46.3	59.4	2.7	53.7	5	1	48.7	0.9	4.0	57.4	
22	42	2	-	11	12	35	3	6.7	18.1	21.0	14.7	35	4	0.3	12.0	14.2	8.4
22	47	0	-	12	16	40	1	58.2	11.4	14.8	8.0	40	2	54.5	8.2	9.0	3.6
22	53	8	-	13	43	5	4	25.1	40.4	39.9	35.4	10	0	19.6	34.9	35.1	28.9
23	1	45	-	12	35	0	3	3.4	17.6	19.0	12.9	0	4	1.4	14.8	16.2	10.8
23	21	2	-	13	36	0	2	1.3	15.9	16.9	9.9	0	2	54.5	8.9	9.0	4.1
23	25	50	-	12	13	35	4	2.4	15.2	16.4	10.1	35	4	46.6	0.1	0.1	53.3
23	31	17	-	13	44	10	0	22.1	37.4	38.2	34.8	10	1	5.0	18.9	19.9	12.9
23	40	36	-	12	35												

clouds

clouds

Sept. 16 1877

22	32	48	10	40	5	0	50.8	2.2	8.0	59.2	5	1	51.5	2.9	8.8	59.9	
22	42	2	-	11	12	35	3	8.1	18.9	23.6	17.0	35	3	57.7	9.8	13.2	5.9
22	47	0	-	12	16	40	1	54.9	7.2	11.5	3.5	40	2	52.8	5.2	8.5	2.4
22	53	8	-	13	43	5	4	30.9	44.1	47.1	39.3	10	0	27.3	41.9	45.7	36.4
22	57	46	-	12	43	10	0	56.0	8.6	13.1	6.2	10	1	44.8	57.1	0.1	52.9
23	21	2	-	13	36	0	1	59.0	13.1	16.5	9.0	0	2	49.8	3.1	5.1	58.4
23	25	50	-	12	13	35	4	4.7	17.1	20.8	13.3	40	0	1.3	14.1	18.9	10.9
23	31	17	-	13	44	10	0	12.9	27.1	30.5	22.4	10	1	21.1	35.6	37.9	30.1
23	40	36	-	12	35	0	1	2.6	15.8	19.7	12.2	0	2	4.9	15.9	19.5	11.5

~~Pr. limb 5 m.~~

Pr. limb 5 m. Seeing pretty good.

Pr. limb 5 m. Seeing pretty good

1877 Sept. 18

E - F - G - H

E - F - G - H

22	17	52	-14	9	30	4	46.5	2.6	1.8	53.7	35	0	42.4	57.2	57.8	50.1
	24	8	-11	18	40	4	12.5	23.7	26.8	19.4	45	0	2.9	16.8	19.9	11.8
	32	48	-10	40	5	0	44.6	57.7	0.9	52.8	5	1	58.4	12.1	14.4	5.3
	42	2	-11	12	35	3	48.1	2.1	2.4	55.8	35	4	2.4	34.2	36.2	28.6
	<u>56</u>	<u>57</u>	-12	<u>46</u>	<u>10</u>	3	<u>2.9</u>	<u>36.0</u>	<u>36.2</u>	<u>29.5</u>	10	3	59.9	14.1	14.8	7.8
22	59	51	-10	15	40	1	51.4	3.4	5.9	57.9	40	2	33.2	47.0	50.6	42.2
23	6	34	-10	14	40	0	11.6	24.5	26.0	19.1	40	1	6.9	19.4	22.9	14.2
	11	31	-9	51												
	16	12	-15	43												

not seen

not seen. Clouds.

1877 Sept 22

L - S

22	17	52	-14	9	30	4	38.9	56.1	53.1	47.8	35	0	33.6	51.1	48.9	33.7
	24	8	-11	18	45	0	8.2	16.4	15.8	9.4	45	0	32.5	47.5	47.9	40.4
	32	48	-10	40	5	0	52.3	6.6	6.2	1.4	5	1	53.2	7.3	6.6	2.3
	42	2	-11	12	35	2	57.9	11.5	11.5	5.1	35	3	30.1	3.9	2.4	57.4
	<u>52</u>	<u>42</u>	-12	<u>47</u>	<u>10</u>	3	<u>5.9</u>	<u>22.1</u>	<u>19.5</u>	<u>14.9</u>	10	3	59.4	14.9	12.9	7.9
22	59	51	-10	15												
23	6	34	-10	14	40	0	7.0	20.1	21.2	15.4	40	1	8.9	17.1	17.7	11.4
	11	31	-9	51	15	2	30	16.2	16.6	9.9	15	2	50.7	4.5	35	57.6
	16	12	-15	43												

Ref. 1st 8
 Seeing very bad. Pr limb 54.

lost end. wire
 Lost some of the ^{1st} wires

Seeing pretty fair 5w Pr limb.

1877 Sept. 23

E - F - G - H

E - F - G - H

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22	17	52	-14	9	30	4	52.8	29	6.9	1.1	35	0	59.8	14.5	14.5	7.8	
24	8	-	11	18	40	4	10.3	23.5	24.4	17.9	45	0	7.9	21.1	23.1	15.4	
32	48	-	10	40	5	0	49.4	2.4	3.7	56.9	5	1	50.2	2.2	4.8	57.3	
42	2	-	11	12	35	3	7.4	21.1	22.8	15.6	35	4	0.4	12.9	14.8	8.9	
(51	59	-	12	46)	10	2	23.0	38.5	38.9	30.9	10	3	22.4	37.6	37.5	30.6	
22	59	51	-	10	15	40	2	4.1	17.0	19.5	11.9	40	2	58.6	12.1	14.6	7.2
23	6	34	-	10	14	40	0	17.4	30.5	32.5	23.5	40	1	13.0	25.8	27.1	20.3
11	31	-	9	51	15	2	7.9	21.4	23.0	16.4	15	2	57.9	9.9	11.4	4.5	
16	12	-	15	43	5	3	22.9	38.3	36.9	31.7	5	4	23.4	39.0	36.8	31.4	

Sept 24 1877

22	17	52	-	14	9	30	4	43.3	59.1	58.4	32.0	35	0	46.0	0.4	0.8	53.4
24	8	-	11	18	40	4	18.6	31.8	33.7	26.1	45	0	18.6	31.1	34.0	25.4	
32	48	-	10	40	5	0	52.2	5.2	7.9	59.2	5	1	51.2	4.0	6.8	57.7	
42	2	-	11	12	35	3	10.1	22.4	24.2	16.4	35	3	57.9	9.9	11.5	4.0	
[5-1	18	-	12	46]	10	1	21.3	35.6	37.4	29.9	10	2	9.4	23.2	24.4	15.8	
59	51	-	10	15	~~40~~	~~0~~	~~12.1~~	~~24.1~~									
23	6	34	-	10	14	40	0	12.1	24.1	27.1	18.9	40	1	7.0	18.9	21.9	13.2
11	31	-	9	51	15	2	4.0	16.1	19.5	11.0	15	2	48.8	11.5	3.1	56.1	
16	12	-	15	43	5	3	26.8	42.4	40.7	34.8	5	4	5.9	21.3	19.0	13.5	

5-2 Pr limb. Seeing tolerable.

Pr limb 5-2. Seeing very good.

1877phae. p.

1877 Sept. 25					E - F - G - H					E - F - G - H					
22	17	52	- 14	9	30	4	38.8	52.8	53.1	47.4	35-0	48.1	2.4	1.9	53.3
	24	8	- 11	18	40	4	17.5	29.2	31.1	24.1	45-0	12.9	24.8	28.1	21.7
	32	48	- 10	40	5	0	53.4	4.6	8.0	0.1	5-1	44.6	56.3	58.9	51.6
	42	2	- 11	12	35	3	3.1	14.2	17.4	10.2	35-3	58.5	10.1	12.6	6.1
(	50	40	- 12	44)	5	4	58.9	12.2	12.9	6.4	10-0	52.0	6.0	7.4	0.9
22	59	51	- 10	15	40	1	51.1	2.1	4.3	57.4	40-2	35.1	46.4	50.2	41.5
23	6	34	- 10	14	40	0	25.5	38.1	41.1	33.1	40-1	9.7	21.5	25.0	17.1
	11	31	- 9	51											
	16	12	- 15	43	5	3	23.8	38.4	37.4	31.4	5-4	21.8	35.8	33.8	26.7

1877 Sept. 30

22	17	52	- 14	9	30	4	42.2	0.8	59.9	54.9	35-0	50.2	9.9	9.9	4.1
	24	8	- 11	18	40	4	19.5	35.3	36.9	31.9	~~45-0~~	Reg 2nd			
	32	48	- 10	40	5	0	50.0	6.1	7.9	3.1	5-1	52.9	8.5	10.1	4.6
	42	2	- 11	12	35	2	57.9	13.5	15.8	10.2	35-4	1.9	19.1	20.5	14.1
(	48	11	- 12	34)	55	3	10.1	27.6	28.5	21.6	55-4	7.9	25.0	25.8	21.1
22	59	51	- 10	15	40	1	48.8	4.3	6.1	1.1	40-2	49.9	5.2	7.1	1.8
23	6	34	- 10	14	40	0	6.0	21.4	24.7	17.8	40-1	13.1	29.4	31.4	25.3
	11	31	- 9	51	15	1	57.9	15.2	16.3	9.9	15-3	6.4	22.4	24.9	18.9
	16	12	- 15	43	5	3	18.6	38.4	35.9	31.0	5-4	13.2	32.2	29.3	25.8

False stroke after S
6-10 m. limb. Very fine seeing

5 m Pr limb. Seeing good.

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1877 Oct. 1

E - F - G - H

E - F - G - H

22	17	52	14	9	30	4	40.2	57.9	58.3	57.6	35	0	39.6	56.2	57.9	50.6
	24	8	11	18	40	4	11.9	26.9	28.2	22.4	45	0	9.3	25.1	28.7	20.9
	32	48	10	40	5	0	48.1	2.3	5.8	57.1	5	1	52.2	7.0	10.0	2.4
	42	2	11	12	35	3	3.2	18.0	21.4	18.6	35	4	0.2	14.3	16.9	9.6
(	47	50	12	31	53	0	7.1	23.7	25.3	18.1	53	0	51.5	7.9	10.6	3.1
222	59	51	10	15												
223	6	34	10	14	40	0	7.5	22.3	25.7	17.1	40	0	53.5	9.9	13.3	4.9
	11	31	9	51	15	1	54.8	8.8	13.0	5.0	15	2	34.9	49.0	51.9	44.9
	16	12	15	43	5	3	20.2	38.2	36.2	31.4	5	3	52.1	9.6	8.1	3.2

1877 Oct. 7 NH

22	17	52	14	9	30	4	49.0	8.1	4.3	59.9	35	0	52.9	12.2	10.0	5.7
	24	8	11	18	Lost											
	32	48	10	40	5	0	50.8	7.8	7.1	3.2	5	1	59.5	15.8	15.5	10.0
	42	2	11	12	35	3	3.3	15.8	19.6	15.9	35	3	45.9	2.6	1.1	56.9
(	46	45	12	6	25	3	47.6	4.9	3.8	59.9	25	4	34.9	53.4	51.8	46.5
22	59	51	10	15												
23	6	34	10	14	40	0	11.2	28.1	27.7	22.9	40	1	13.6	29.1	28.9	23.4
	11	31	9	51	15	1	52.8	9.3	8.4	4.8	15	2	48.2	4.3	3.9	57.1
	16	12	15	43	5	3	23.3	42.1	37.2	34.2	5	4	2.1	22.0	17.3	13.1

Lost-1st wire

Pr Curve of A_{123} Roll Curve of A_3 (2) Limit
Metric Roll.

5 W Palms. Sunnybrook.

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1877 Oct-13

22 17 52-14 9
 24 8-11 18
 32 48-10 40
 42 2-11 12
 (47 29-11 30)
 22 59 51-10 15
 23 6 34-10 14
 11 31-9 51
 16 12-15 43

E - F - G - H

E F G H

30 4 52.1 11.2 7.1 4.5 35 0 56.3 16.5 18.8 9.8
 40 4 19.9 37.5 35.5 32.4 45 0 12.7 30.0 29.7 24.9
 5 0 48.9 5.1 5.4 0.5 5 1 43.6 1.3 0.1 52.0
 35 3 9.3 25.2 24.4 20.1 35 3 57.4 13.6 12.9 9.7
 50 2 29.8 48.1 47.1 41.9 50 3 18.5 36.2 33.8 29.9
 40 0 16.4 33.1 33.7 28.8 40 1 5.1 22.2 22.1 17.0
 5 3 21.4 41.5 36.5 34.9 5 3 58.8 19.4 14.5 14.8

1877 Oct-15

22 17 52-14 9
 24 8-11 18
 32 48-10 40
 42 2-11 12
 (47 47-11 23)
 22 59 51-10 15
 23 6 34-10 14
 11 31-9 51
 16 12-15 43

30 4 59.9 18.1 14.1 12.9 35 0 2.4 20.9 17.0 14.8
 40 4 20.9 38.1 34.6 33.1 45 0 11.9 29.2 28.1 25.1
 5 1 0.3 17.5 16.9 12.2 5 1 51.1 7.9 6.1 3.2
 35 3 15.9 33.7 30.9 28.9 35 4 15.1 31.3 29.6 27.1
 45 0 36.8 54.2 52.9 49.2 60 1 17.9 36.1 33.5 30.4
lost some of the wind 1/4 and also 1/4

$A_{+1,2,3} + A_{-1,3}$

5 w pr limb Sunny good

5 w pr limb. Clouds, not very good obs.

1877 Oct-17

E - F - G - H

E F G H

22 17 52-14 9	30	4	59.6	18.8	15.8	12.4	35	1	2.9	22.2	20.3	15.6
24 8-11 18	40	4	16.9	34.2	32.4	29.1	45	0	17.2	34.8	34.1	30.4
32 48-10 40	5	0	54.1	11.1	10.9	5.9	5	1	50.9	7.9	6.6	2.8
42 2-11 12	35	3	11.4	30.1	28.5	23.9	35	4	11.9	29.1	27.4	23.9
(48 57-11 1)	20	3	19.9	37.1	35.1	31.2	20	4	4.2	21.2	20.1	15.5
22 59 51-10 15												
23 6 34-10 14	40	0	18.9	36.3	35.9	31.0	40	1	1.4	17.1	17.5	12.2
11 31-9 51												
16 12-15 43												

1877 Oct-18

22 17 52-14 9

24 8-11 18	40	4	8.2	25.3	23.9	20.4	45	0	16.5	33.9	33.8	29.0
32 48-10 40	5	1	3.7	19.4	21.1	15.0	5	1	5.8	8.1	9.0	3.0
42 2-11 12	35	3	0.8	17.0	17.5	12.1	35	4	3.1	19.5	18.9	14.9
(49 27-10 54)	15	0	20.4	37.9	38.0	33.2	15	1	6.4	23.4	24.8	16.8
22 59 51-10 15	40	1	47.7	51	51	0.5						
23 6 34-10 14	40	0	19.4	36.5	37.4	31.7	40	1	24.3	40.8	41.5	35.9
11 31-9 51	15	2	2.9	19.2	20.4	13.9	15	2	56.2	12.6	11.4	7.1
16 12-15 43	5	3	29.4	48.2	45.5	41.9						

Ref. wires after A-1

Seeing good Full limb 5-N.

5-N Pr limb, Seeing good.
 A 1,2,3 & A 4 &
 Lost A-1 2nd & 3rd

1877 Oct. 23

				E - F - G - H								I - J - K - L			
22	17	52-14	9	30	4	47.3	6.1	1.2	59.9	35	0	42.4	2.5	57.7	5.1
	24	8-11	18	40	4	22.1	38.4	36.3	32.2	45	0	24.8	41.6	41.1	36.8
	32	48-10	40	5	0	51.1	7.2	6.5	2.7	5	1	53.0	11.1	9.9	6.3
	42	2-11	12	35	3	24.6	42.1	40.0	37.1	35	4	18.8	35.9	32.1	31.6
	<u>52</u>	<u>31-10</u>	<u>11</u>	30	2	31.7	48.7	46.9	43.6	30	3	28.7	46.1	44.0	41.2
22	59	51-10	15	40	1	58.0	14.8	13.6	9.1	40	2	53.5	12.7	9.9	6.8
23	6	34-10	14	40	0	11.5	28.2	26.1	23.2	40	1	9.9	26.4	25.5	21.8
	11	31-9	51	15	2	18.9	36.1	34.2	30.9	15	3	11.5	27.9	26.2	22.9
	16	12-15	43	5	3	16.1	36.0	30.1	28.9	5	4	18.5	37.9	32.1	31.1

Saturday May 4th, 5 W. pr. Circle.

1877phae.proj.1396R