

KG  
11365  
221

K. 11

#11

No 11

Lones

Dec 8<sup>th</sup> 1854 to Feb. 3<sup>rd</sup>

1854 - 1855



KG 11365.221

2

22

22

h

h

h

h

h

h

h

h

h

h

h

h

h



















# KG-11365.221 Zone 83 continued Zone 84

50	50.5	54.3
51	35.3	
"	56.9	60.9
...	...	...
52	20.0	23.9
"	56.2	60.2
53	49.8	
"	53.0	
55	56.3	0.6
56		7.6
"	13.8	17.8
"	34.1	34.1
"	37.7	41.1
57	7.0	11.0

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57	35.7	39.7
58	21.6	25.4
59	13.3	17.0
	21.6	25.9
	26.9	30.5
59	41.7	45.9
	51.6	55.5

58	22.0	26.0
59	---	17.7
59	22.0	25.9
59	41.9	45.8
59	52.0	55.9

2 <sup>h</sup>	2	1.2	5.0
"	19.6	23.9	
"	37.6	41.3	
3	5.2	9.0	
"	48.3	52.3	
"	59.6	3.6	
4	28.9	32.8	

5	41.0	45.1
6	7.2	11.4
"	17.3	21.1
7	45.0	49.3
8	47.9	51.3
"	58.8	57.9
9	12.7	16.6
"	36.9	39.2
"	34.9	39.0

2 <sup>h</sup>	8	48.1	52.0
		54.0	58.0

9	35.3	39.7
---	------	------



April from book no 11 for two infils.

11 7.10  
 11 7.42  
 10-11 9.1  
 2.3  
 10 6.21  
 11 3.5 no sig.  
 11 3.11  
 10-11 0.15 no sig.  
 10 11 0.16 this is myself  
 10 9 34 1st lost no sig.  
 10 8 00 no sig.  
 10 0.29 1st lost  
 11 10 28 no sig.  
 10 5.28

B

10, 11 0.16  
 10. 11 6.33  
 9. 10 7.25  
 10 4.45 no sig.  
 11 8.10 no sig.  
 10, 11 1.45  
 10 6.46

D

11 7.18  
 11 6.50  
 10 11 6.4  
 11 3.20  
 10 11 4.32  
 10 3.22 2 wire  $\frac{1}{2}$  too soon

10 11 8 bag not observed  
 10 11 B.D. Star of 11<sup>mag</sup> not observed

9 10 6.37  
 10 11 2.20  
 10 10 10.35 no sig.  
 10 11 4.40 no sig.  
 10 10 6.38  
 10 6.37  
 10 10 7.40  
 10-11 0.26  
 10 10 0.29  
 10 2 B.

12 13.  
 8 51

7/10 6 18  
~~4 00~~ not obs.  
~~38 00~~  
 3

9 28 1st wire bad  
 7 51  
 6 18

5 14

D

0 08 wire 2 wire doubtful

12

6 28

7 14

4 38

1st wire bad 2 wire

1 35

6 55

wire.

7 18

1st wire bad

Long against old

Dots.

12 6 37

12 1 3 wire

2 wire bad

-032



2 10<sup>m</sup> 5.1 8.9  
 " 19.3 23.0  
 " 49.9 53.9  
 11 21.0 24.7

13<sup>m</sup> 6.3 10.3  
 18.2 21.9  
 30.1 34.2  
 14<sup>m</sup> 57.8 1.6  
 15 56.2 0.1  
 16 7.3 11.3  
 16 17.8 21.7

17 20.3 24.2  
 " 25.3 29.0  
 " 53.7 57.3  
 18 31.7 35.2  
 19 5.8 9.7

20 13.9 17.8  
 26.7 30.9  
 51.2 55.3  
 21 3.2 6.8  
 22 43.0 47.1

23<sup>m</sup> 55.7 59.7  
 56.4 0.2  
 24 48.0 52.0  
 25 8.5 12.4  
 48.0 52.2  
 56.0 0.0  
 26 35.0 39.0  
 27 4.4 8.5  
 37.2 41.2

28<sup>m</sup> 44.2 48.3  
 29 3.5 7.7  
 " 15.2 19.2  
 " 20.2 24.0  
 30 12.9 16.6  
 30 26.3 30.5  
 56.4 60.8

13. 6.8 10.7

13. 30.7 34.5

2. 16. 07.8 -----

17 54.2 58.0

18 32.2 ---

19 06.3 10.3

13.8

2. 20. 14.1 18.1



83

10 7. 8  
 10 3. 40  
 11 7. 59  
 10 0 45  
 B.  
 10 7. 25  
 11 5. 13  
 10 2. 4  
 11 6 49  
 10-11 0 8 10-11 not observed  
 10 8. 58  
 10 10. 30  
 D  
 10 10. 27  
 10 11 9. 29 no sig.  
 10 4. 26  
 10.11 4. 21 or 5. 21  
 10.11 3. 18  
 B.D.  
 11 1 50  
 11 1 42 *z.w. doubt.*  
 10-11 9 44  
 11 9. 14 no stars in the field  
 10.11 4. 41  
 D.B.  
 9.10 7. 24  
 9 7. 34  
 9.10 2. 42  
 8.9 4. 1  
 9.10 10. 14  
 10 3. 52  
 9 10 8. 23  
 10 1. 57  
 9.10 10. 39  
 B  
 10 0. 43  
 10 8. 48  
 10 10. 7  
 9.10 8. 28 n.s.  
 10.11 0. 31  
 10 5. 22  
 10 0. 32

84a

11 74  
 10/11 5 39  
 12 7 *Test film still off*  
 11 0 44  
 Doh.  
 11 7 29  
 12 5 08 *NR*  
 10 4 59  
 10 44 *check*  
 11/12 - 0 2 *NR*  
 10/11 8 40 *down look*  
 B.  
 10 20 } *comp. 3/4 up*  
 9 29 }  
 11/12 4 16  
 4 20 *down look*  
 11 3 10 *sub. ext.*  
 Br. D.  
 12 1 33 *comp. up*  
 11/12 9 28 *NR*  
 no star

*do see. 10. 2. 42 is then another star.*

*see right -  
 star missing*



30<sup>m</sup> 57<sup>v</sup> 8      1<sup>v</sup> 7

31<sup>m</sup> 42.7      46.2

32<sup>m</sup> 55.5      59.3

33<sup>m</sup> 24.9      28.9

" 58.8      63.0

34<sup>m</sup> 1.6      51.0

35<sup>m</sup> 7.4      11.3

" 18.2      22.2

" 36.2      40.0

" 37.2      41.2

" 50.7      54.9

36<sup>m</sup> 43.3      47.1

41<sup>m</sup> 45.9      50.8

" 49.8      53.6

37<sup>m</sup> 23.2      27.5

39<sup>m</sup> 14.0      18.0

" 53.7      57.2

40<sup>m</sup> 21.5      25.2

28.9      32.7

41<sup>m</sup> 17.0      20.8

22.6      26.1

42<sup>m</sup> 4.3      8.1

47.5      —

—      51.2



10, 11 0, 45 no sig.  
 9.  
 10 5, 9  
 10 8, 5  
 9, 10 - 0, 20  
 10, 11 3, 32  
 10 4, 20 no sig  
 B. 9  
 11 1, 40  
 10 11 5, 31  
 11 5, 41  
 10, 11 6, 25 no sig  
 10, 10 6, 28  
 9. B  
 10 9, 0  
 11 6, 7 no sig  
 10 4, 51 no sig  
 10 11 9, 59  
 11 4, 48  
 9, 10 8, 33  
 10 - 0, 33 no sig  
 10 5, 50  
 B  
 10, 11 1, 8  
 11 3, 38  
 9 0, 41  
 8, 9 2, 30 2<sup>nd</sup> lost  
 9, 10 7, 27 1<sup>st</sup> lost

any time she had :

Zone 85 ~~84~~ P.S.C. Same as Zone 83 and 84.

<del>12</del>	5 44	R. bit
<del>10/11</del>	4 46	
<del>12</del>	7	



846 - 5. 29<sup>5</sup>

12 5 44 R. lost.

10/11 4 46

12 3 34 ✓ 2<sup>nd</sup> wire lost~~12 10 40~~

11 4 06

11 3 39

Sag. B.

12 5 01

12 2 20

11 0 20

11 2 42

12 0 49

12 5 00

2<sup>nd</sup> wire lost.

12 1 21

11/12 9 50

1<sup>st</sup> wire lost

D.

12 3 12

12 5 39

R. lost.

11/12 0 18

12 5 16

10 10 18

D.D.

10 5 3 Star in wine

Star lost here Star in

No star in field above 13<sup>th</sup>. R. 1/18 40<sup>5</sup>

11/12 7 50

11/12 6 50

12 7 50

2<sup>nd</sup> wire lost

11 4 30

2<sup>nd</sup> wire lost.

10 7 40

D.D.

12 8

not to see. on scale

12 4 49

no R.

12 9 30

no R. too small.

10 2 53

12 5 00

first could not be seen

12 7 59

second went out.

11 6 34

B -

no stars in field





11	4 29	
11	6 54	2 <sup>d</sup> wire lost.
11	-0 10	
11	1 53	
11	2 08	
11	9 50	2 <sup>d</sup> wire lost
11	4 51	
12	6 18	1 <sup>st</sup> wire lost
12	2 45	
	Brook	
11	3 07	
12	1 46	
12	5 36	} AR lost. Misty.
12	5 50	

Zone 84c = 83

1<sup>st</sup> Star is x of Zone 75-76h m s  
R. 0.42.42.3

Dec + 0.24.45

Dec<sup>n</sup> 18<sup>th</sup> Dec Jan 23<sup>rd</sup> for 84d

Beg. 2C =

End 4 =

Time = 15.5

" = 11.4

T.H.S. observed

lost  
 42<sup>m</sup> 42.6  
 43<sup>m</sup> 5.9 9.4  
 " 5.9 56.9  
 45<sup>m</sup> 16.5  
 48.3 52.5  
 45<sup>m</sup> 37.2  
 46 0.9

48<sup>m</sup> 42.5 46.3  
 49<sup>m</sup> 18.0 22.1  
 49<sup>m</sup> 35.2 39.1  
 50<sup>m</sup> 30.0 34.0  
 51<sup>m</sup> 0.9 4.9

" 27.2 27.1  
 52<sup>m</sup> 29.5 33.3  
 48.1 52.2  
 53<sup>m</sup> 12.4 16.0  
 58.2 2.4

55<sup>m</sup> 32.4 36.1  
 X 56 42.5 46.3 (Corrected)  
 49<sup>m</sup> 7  
 57<sup>m</sup> 31.2 36.8  
 58.4 9 8.8  
 14.3 18.4

1<sup>st</sup> 1.56" 0.1  
 2 11.6 15.7

Reobservation

~~Zone 84~~

+ 20' to 30'

N.B. Zones 84c & 84d are  
 joined so as to make  
 83 & 84

Declinations

83	84a	84b	84d
5. 51 <sub>2</sub>	5. 51	5. 44	5. 51
4. 51 <sub>3</sub>	4. 52	5. 46	4. 52
3. 42 <sub>5</sub>	3. 40	<del>3. 39</del>	3. 40
4. 11 <sub>4</sub>	4. 10	4. 06	4. 10
5. 9	5. 10	5. 01	<del>5. 07</del> 4. 55
2. 15	2. 14	2. 20	2. 16
- 0. 13	- 0. 15	- 0. 20	- 0. 17
3. 00	3. 01	2. 42	2. 59
0. 54	0. 58	0. 49	0. 53
5. 03	5. 04	5. 00	5. 03
0. 28	0. 28		0. 26
3. 20	3. 19	3. 12	3. 18
0. 22*	0. 23	0. 18	0. 21
5. 23	5. 21	5. 16	5. 19
<del>7. 24</del>	7. 20		7. 20
10. 20		10. 18	10. 15
5. 15	5. 14	5. 03	5. 12
9. 37			9. 29

8. 00

6. 57



NB The Telescope having moved in Declination in Zones 83 84a 84b & 84c. The numbers in red ink have been deduced from all three & from 84b

84d afterwards observed is to be copied in Zone 84 & the red ink as 83-

Zone 83 Feb Dec. 19<sup>th</sup>

2.06  
42  
1.2

11 5.51  
10 4.52 2<sup>nd</sup>  
11-12 7.16 2<sup>nd</sup>  
11-12 9.49 2<sup>nd</sup> brown  
12 3.50 2<sup>nd</sup> lost

11-12 10.16  
10-11 67.42 2<sup>nd</sup> lost  
11-12 4.20 1<sup>st</sup> lost

Temporary prob.

4.20  
7.42

11 5.51  
10 4.52  
11-12 7.10  
11-12 9.40  
12 3.41  
11-12 10.07  
10-11 6.33  
11-12 4.10

Compound value of

Thermometer and is 15°

for 83. A.H.S.

Totals

10 5.16  
11 2.24  
10-11 -0.10  
10 3.8  
11 1.1

10 5.10  
11 2.15  
10-11 -0.14  
10 3.01  
11 0.53

Per.

10-11 5.10  
10-11 0.36  
10 10.14  
11-12 8.10  
10-11 3.27

10-11 5.03  
10-11 0.28  
10 10.07  
11-12 8.03  
10-11 3.19

T. Per.

10-11 0.30  
11 5.30 2<sup>nd</sup> 1/2 brown  
11 7.30 noisy 2<sup>nd</sup> lost  
10-11 10.26  
10 5.22  
10-11 9.44

10-11 0.23  
11 5.21  
11 7.22  
10-11 10.19  
10 5.14  
10-11 9.35

B. D. B.

11-12 8.11, 9 stars in the field > 13<sup>th</sup> mag  
10-11 7.10

8.03  
7.02



84c

83

84a

84b

84d

28.0 31.9  
53.9 57.9  
00 40

7 29.5 33.3  
30.7 34.9  
8.41.4 45.3

10. 3.1 7.1  
9.4 13.3

11 7.1 10.8  
11 7.1 10.8  
11 12.3 16.3

13.25.2 29.2  
" 33.3 37.2  
15 18.7 22.6  
" 29.8 33.4  
10 37.0 41.0  
15 37.0 41.0

18 10.7 14.7  
30.1 34.2  
42.8 46.8  
53.8 57.4  
53.4 58.1

55 57.60  
57.75

19 31.3 35.2  
32.6 36.1  
55.9 0.0  
20 20.8 24.9

21 58.2 62.4  
23 59.2 63.2  
26 29.2 33.1  
28 28.1 31.0  
" 48.0  
" 54.5 58.5

3. 10 3. 06

8. 00 \*  
3. 41 3. 40  
7. 52 7. 50  
8. 30 8. 30

9. 35 \*  
3. 02 3. 03

5. 10 \*  
5. 10  
8. 9 8. 9

6. 44 6. 43

4. 38 4. 38  
7. 06 \*

2. 01 2. 00  
2. 10  
10. 00  
4. 36 \*  
2. 01

6. 28 \* 6. 23  
1. 54 \*  
3. 14 3. 08  
1. 54 1. 54

6. 00 6. 00  
1. 40 1. 40  
6. 59 6. 58  
0. 43 \* 0. 44  
1. 14 \* 1. 12  
8. 48 \* 8. 48

7. 50 7. 58  
3. 38  
7. 40 7. 47  
8. 26

9. 30 9. 29  
2. 53 2. 58

5. 00 5. 07  
7. 59 8. 04

6. 34 6. 42

4. 29 4. 35  
6. 54 7. 01

- 0. 09

1. 53 1. 57  
2. 06 2. 09  
9. 50 9. 52  
1. 57  
1. 51

6. 18 6. 23  
3. 46 3. 11  
1. 46 1. 51

5. 50  
1. 37  
6. 54  
0. 41  
8. 42



84c

12	0.18		12	0.08
11-12	3.17	noisy	11-12	3.07
<i>Solo</i>				
11-12	6.48	noisy	11-12	6.38
11	8.11	noisy 1 <sup>st</sup> bit	11	8.00
11-12	3.48		11-12	3.40
10	8.0	noisy	10	7.50
11-1	8.41		11	8.30

B

11	9.45		11	9.35
9-10	3.12		9-10	3.02

11-12	5.21		11-12	5.10
11	8.22		11	8.09

S. B

10	6.59		10	6.43
10	-0.36	noisy	10	-0.49
10	4.51		10	4.38
10	7.17		10	7.05
10-11	5.18			
10-11	0.7		10-11	-0.08
11	not observed			

B. D

10-11	2.12		10-11	2.00
10	2.23		10	2.09
10	10.10		10	<del>10.09</del> 9.56
11	4.50		11	4.35
10	2.14	noisy	10	2.00

B

10-11	6.41		10-11	6.27
10-11	2.04	noisy	10-11	1.51
10-11	3.34		10-11	3.14
10-11	2.11		11	1.54

D

10-11	6.20		11	6.00
10-11	2.00	other stars not seen	10-11	1.40
11	7.16		11	6.58
11	1.5		11	0.43
11	1.36	slow	11	1.13
10	9.08	noisy	10	8.42

B. D

84c

83

84a

84b

84d

37.4 41.3  
 38.6 42.7  
 39.9 49.6  
 41.2 18.4  
 42.0 26.9

7.51 \* 7.49  
 3.14 3.10  
 4.54 4.51  
 4.82  
 4.36

7.45  
 3.10  
 4.47  
 4.37  
 4.40

32.52.9 56.8  
 33.12.6 16.4  
 34.16.7 20.7  
 36.0 40.0

2.05 2.03  
 5.06 \* 5.04  
 1.29 x 1.26  
 3.06 + 4.06

2.00  
 5.02  
 1.24  
 3.03

34.58.5 62.6  
 35.11.2 12.3  
 36.28.7 32.8  
 37.25.6 29.5  
 38.7 39.3

0.36  
 8.35 8.39  
 2.20  
 10.18 10.21  
 3.21

8.31  
 2.13  
 10.11

41.56.0  
 42.1.7 5.0  
 45.0.0 54.4  
 44.9.2 13.1

2.22 2.14  
 9.18 9.10  
 6.00 5.54  
 10.09 10.01

9.10  
 5.53  
 9.57

45.7.5 11.3  
 46.57.2 61.5  
 47.58.0 62.0  
 48.11.5 15.1

9.45 9.34  
 10.01 9.57  
 3.24 3.23

9.32  
 9.52

50.5 0.5  
 51.57.0  
 52.20.3 24.4  
 56.3.9 7.8  
 57.14.1 17.9  
 58.21.0 24.9  
 59.34.6 38.2  
 57.2 11.0  
 58.39.9 39.8  
 58.25.8  
 59.13.3 17.2  
 59.41.6 45.5



10 8.14 double?

11 3.34

10 5.14

11 5.4

11 5.8 noisy

Tot

10 2.24

11 5.28

7-10 1.49

9-10 3.37

B

~~10 -0.30~~

10 8.57

10-11 2.40

10-11 10.40

11 3.44 noisy

D.B.

11 2.48 2<sup>nd</sup> lost10 9.42 noisy 3<sup>rd</sup> to 25"

11 6.22

10 10.28

D.D. B.D

10-11 10.03

10 10.22

11 3.11

10-11 3.48

B.

11-12 7.41 2<sup>nd</sup> lost11 9.20 2<sup>nd</sup> very faint?

10 6.41

10-11 9.52

10-11 8.21

Tot

8.8 noisy

10 0.48 may come after next set

R.M.

10-11 0.30

10-11 6.52 noisy 1<sup>st</sup> hand

9-10 7.41

10 7.49

11 3.12

10 4.53

11 4.41

11 4.45

10 2.04

11 5.06

10 1.28

9-10 3.08

~~10~~

10 0.34

10-11 8.34

10-11 2.19

10-11 10.17

11 3.20

D.B.

10 9.19

11 5.57

10 10.03

10-11 9.38

10 9.57

11 2.46

10-11 3.23

11-12 7.16

11 8.55

10 6.16

10-11 9.27

10-11 7.56

10 4.43

10 0.23

10-11 0.05

10-11 6.27

9-10 7.16

41.6	45.5	
51.2	55.4	
2 38.0	42.1	
3 48.6	52.7	
" 59.2	3.0	*
5 41.4	45.3	*
8 47.7	—	
" 53.8	57.4	
9 26.8	30.3	*
" 35.4	39.1	
10 5.5	9.4	*
19.5	23.4	
11 21.0	25.2	
13 6.8	10.7	*
30.4	34.5	
15 56.4	60.7	
16 7.8	11.9	+
" 18.3	22.4	*
17 20.7	24.7	+
" 25.6	29.6	
1 54.0	57.8	
18 32.2	35.9	+
19 6.2	10.1	+
20 14.2	18.2	
4 51.6	55.4	+
21 3.0	7.0	
23 57.0	60.0	*
" 57.7	60.4	*
24 48.3	52.4	
25 8.9	13.0	+
48.5	52.6	x
56.1	109.0	
26 35.0	39.1	



41 2.11

10-11  $\rho_2$  7.3

10-11 6.22

11 5.49

11 8.38 noisy

10 6.51

S. B. 9

10 7.50 6.50 see zones 83, 84

10-11 1.15 noisy

11 0.35

10 -0.17

10 7.49

10 3.51

B. 8.13

10-11 0.7 very prob. 0.57 see zones 83, 84

10 7.35

10 2.14

 $\rho_2$ 

11 0.14

10 9.01

10-11 10.34

10-11 10.38 noisy

10-11 9.38 noisy

10 4.32

9

11 4.30

10-11 3.25

11 1.51 noisy

11 9.43

10-11 9-13

B. 9

10 7.12 ~~at least double~~ ~~at least~~10 7.22 ~~at least~~ ~~noisy~~

10-11 2.32 noisy

9-10 3.49

10 10.0

10-11 4.32 noisy 3.32 see zone 83

S. B.

10 8.11

11 1.46

6.38

5.57

5.24

8.13

6.26

6.25

0.50

0.11

-0.42

6.54

3.26

+0.32

7.10

1.49

-0.11

8.36

10.09

10.13

9.13

4.07

4.05

3.00

1.26

9.18

8.48

6.47

6.57

2.07

3.24

9.35

3.07

7.46

84e

27	5.2	9.0	*
27	1	41.1	
28	44.9	48.5	+
29	3.8	7.9	
29	20.5	24.4	
30	12.9		
30	26.7	30.9	
30	57.0	60.8	*
30	58.0	61.7	+
31	42.9	46.8	
32	56.0	60.0	*
33	59.1	63.0	
34	1.6	5.5	
35	21.0		is this a variable? *
35	18.8	22.8	
35	36.6	40.6	x
35	37.3	41.7	
35	51.1	54.9	+
36	43.3	47.5	
36	50.1	53.8	
37	23.8	27.7	+
38	13.0	17.1	
39	47.0	50.7	*
39	53.8	57.8	
40	27.7	31.7	*
40	29.0	33.0	*
41	17.2	21.1	
41	22.7	26.1	
42	4.7	8.6	x
42	47.3	51.7	
43	13.7	14.7	
43	34.7	38.9	
45	2.5	6.4	



11 1.42 noisy  
9.10 10.32

B

11 1.17  
9.10 10.07

- 0.10

7.56

7.37

- 0.27

4.22

- 0.28

- 0.14

11 0.15

10.11 8.21

9.10 8.02

10-11 - 0.2 2<sup>nd</sup> lost

10 4.47

10 - 0.3

11 0.11 noisy

S

10-11 ? 4.25

10-11 7.18

11 2.36

10-11 6.19 noisy

S. B

11 6.38 2<sup>nd</sup> lost

10-11 2.27

10-11 4.38

10-11 5.17 noisy

10-11 - 0.35

B. S

10-11 7.45

10.11 2.38

11 8.43

11 1.10

B B B

10-11 10.5

9-10 7.15 noisy

10-11 4.23 noisy

10-11 0.48

10-11 2.20 noisy

9-10 - 0.35

9-10 2.10 2<sup>nd</sup> lost10 6.4 1<sup>st</sup> lost

S

10-11 - 0.15 2<sup>nd</sup> lost 1<sup>st</sup> 1<sup>st</sup> 2<sup>nd</sup> - 0.4010-11 1.38 2<sup>nd</sup> 1.13

10 7.30 9.05

# No Equinox of 1855.0 Zone Observations

Zone 85-

Zone 86

Jan 5<sup>th</sup> 1855-

Reg 2C  
Eng "

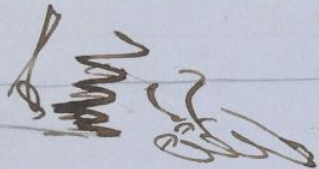
Ther 32.5  
" 32.0

Set by a star of 8<sup>th</sup> mag-1<sup>st</sup> star is A of Zone 81

88.03

Pos. C. Red. 178.03

P.S.C. observed and C.W.T recorded



Equinox of 1855.0

1<sup>st</sup> wire      2<sup>nd</sup> wire      Mean red. to 1<sup>st</sup> wire

2 <sup>h</sup>		
23.38.3	—	
50.7	54.7	
24.12.8	15.6	
86.2	40.2	
—		
25.46.1	50.15	
27.45.0	9.0	
28.26.2	30.1	
42.5	46.6	
+ + + + +		
29.24.7	28.4	
52.5	56.3	

33.13.3	17.5 to which declination?
33.13.3	17.3
—	
35.21.7	—

1855.0  
(A) of Zone 81 = 12<sup>th</sup> R 24.23.38  
~~10.41~~ Dec 0°. 30'. 42"  
40  
3<sup>h</sup> 19<sup>m</sup> = 24.27  
2 27  
52

On account of Clouds Zone  
85 was badly observed—  
and 85<sup>th</sup> will be found fur-  
ther on as a reobservations  
of 85



## Catalogue Stars

Dec  $0^{\circ}30'$  to  $0^{\circ}40'$ 

May 1855.0

-59 86

8 <sup>h</sup>	2..27..22.9	+0..36..24.6
9.10	2..51..48.7	39..46.0
8	2..53..57.5	34..45.0
8-9	2..57..26.1	38..30.1
8-9	3..1..30.2	33..27
7-8	3..12..18.5	40..07
9	3..13..23.6	38..23
9	3..13..33.6	33..31
9	3..15..18.3	38..23

9.10	3..43..21.1	+0..34..02"
8	43..42.5	29..30
9	51..45.3	32..23
9	4..09..43.2	33..25
8	13..45.1	30..48
8	18..28.1	31..50
7-8	24..56.1	49..02
9	29..13.5	36..13

N.B. Henceforth the Right Ascensions will be read off from the sheets so that the 1<sup>st</sup> wire shall correspond to the Mean Equinox - not the 2<sup>nd</sup> as before

Jan 5<sup>th</sup>Apr 10<sup>th</sup> 1855

12 0..41 2 wire lost

11 4..12

10 10..12

10.11 1..59

B

11 5..27

11.12.78 6..51

8 6..32

12 5..31

D

11 5..29

11.12 3..03

Mondschlein; kleine Sterne im Felde

13 1..23 R lost

12 4..07 ? This declination is a wrong reading of the following one p. 50

11 4..00

B B Mag. Zweifel

11 2..27

2 wire lost

85

86

$35.37.3$   $40.7$   
 $57.4$  —  
 $36.12.3$   $16.3$   
 $+$   $+$   $+$   $+$   $+$   
 $36.51.1$   $55.0$   
 $38.19.9$   $23.9$   
 $38.43.1$  —  
 $" 47.4$  —  
 $39.54.0$   $58.0$

$43.23.0$   $26.7$

$44.14.3$   $18.3$

$46.20.2$   $24.0$

$48.42.2$   $46.0$

$50.39.3$   $42.2$

$51.31.6$  —

$51.49.0$   $53.0$

$53.58.0$   $62.0$

$56.43.1$   $47.2$

$57.1.8$   $6.3$

$58.29.4$   $33.4$

$59.10.5$   $14.5$

$59.41.5$   $45.5$

$3.00$   $13.2$

$3.01.22.4$   $26.5$

$1.30.3$   $34.3$

$2.55.2$   $59.2$

$3.22.4$  —

$4.30.8$  —

$7.2.9$   $6.8$



11 10..20 \*  
 11 10..40 2 win lost  
 12 6...00  
 D B isoclyt  
 12 1..12 triangle of stars 14 mag  
 12 2..30  
 12 6..33 2 win lost  
 12 8..04 2 in lost - 8 Zweifel  
 12 5..01

B Vollmond  
 12 8..10 R head  
 12 0..46  
 12 7..14 1st R lost  
 11.12 9..38 Mondschein  
 12 6.. Invisible behind the mica  
 12 9..42

D  
 12 9..29 R lost  
 12 10..20  
 12 2..21  
 12 -0..09 2 win lost

11 9..58

B  
 x 9 4..58 Stars faint

12.13 9..50 ns  
 12 -0..00 1st win doubt

x 10 8..40

12 5..51

12 2..29

11 0..28 2 win lost

11.12 8..0 2 win lost

D

12 3..01

10 3..39

~~6..09~~

11.12 2..03

12 6..30 2 win lost

B B

12 9..50 2 win lost

12 4..43

85

86

07..34.0 —

8..11.0 14.9

11..30.9 34.8

12..17.1 20.9

13..3.0 7.0

13 — 24.7

13..31.7 —

13..33.7 37.8

D B

15..21.9 25.8

18 52.0 —

20..29.2 —

21..9.4 18.2

B

22..34.0 37.9

22..46.3 50.4

23..29.4 —

24..32.5 36.3

24..46.9 —

25..3.2 10.0

D

26..15.3 —

26.. — 20.0

28..23.5 27.3

30..10.8 14.8

30..19.0 23.0

30..56.3 0.2

31..20.2 —

B.B.

32..22.9 27.0

32..52.7 56.5

34..9.2 13.2

34..15.2 19.1

D

37..46.0 50.1

39..20.8 24.8



85

86

12 - 0..25 2 win lost

12 8..21

No stars visible in field

12 1..04

8 10..18

11 8..59

9 8..55 ms 1<sup>st</sup> m lost

9.10 4..19 ns 2 win lost

9.10 8..43 ns

D.B.

9.10 8..31

No stars in the field

12 7..05 2 win lost

12 4..39 2 win lost

11.12 3..58

B

11 10..31 2 win doubt

11 4..37

12.13 5..25 2 win lost

12 5..00

12 4..40 ms 2 win lost } faint

12 9..30

D

11.12 0..11 ms 2<sup>nd</sup> win lost11.12 6..07 1<sup>st</sup>

No stars in the field

12 8..08

10 8..44

12 7..30 8 doubt

12 6..39

12 6..50 ms 2 win lost

B B

12 7..40

12 2..18

11 8..50

11 9..11 ms

No stars above 15 mag in the field

D

12 3..24

12 2..08

85

86

3.. 43..01.9 5.9  
 43..21.9 25.7  
 43..43.1 47.0  
 43.. — 56.5  
 45..32.1 36.0  
 46..37.7 41.7  
 B

51..46.1 50.0  
 --- ---

58..25.1 29.0

3.. 59..19.5 23.3

4 1.. 6.5 10.5

1..42.3 46.0

2..39.0 43.0

2



85

86

Der Himmel scheint mit Wolken  
bedeckt zu sein

10.11 10.14

10 4.19

8 -0.20

11 7.38 1<sup>st</sup> win lost

12 5.24

11 4.14

B No stars in the field

11 2.38

No stars in field

11 1.33

12 9.21 ms

13 7.29

12 9.43 ms

13 2.10

D

Haze interrupted observations

85<sub>6</sub>86<sub>4</sub>

Reduced to Equinox of 1855.0  
 Mean of Wires reduced to 1<sup>st</sup> wire

Jan. 8<sup>th</sup> 1855

Beg. 2C =

End " =

Ther 29

" 27?

Jan 10<sup>th</sup> 1855

Beg 2C =

End " =

Ther 19.

" 16

1<sup>st</sup> Star is A of Zone 8112<sup>th</sup> mag.R 2<sup>h</sup>. 23<sup>m</sup>. 38

Pos. Cir. 178°. 00'

Dec. 0°. 30'. 31

Clear and calm

Clear and windy

G. H. Cookridge Obs.

W C B O L

1<sup>st</sup> wire 2<sup>d</sup> wire Mean reduced to 1<sup>st</sup> wire2<sup>h</sup>. 23<sup>m</sup>. 37.52<sup>h</sup>. 23<sup>m</sup>. 41.50

" 49.8 53.8

" 53.80

24. 10.6 14.7

24<sup>m</sup>. 14.65

" 35.1 39.1

2<sup>h</sup>. 23<sup>m</sup>. 49.4 53.5

24 11 0 14.7

" 35.1 39.0

25 45.1 49.0

25<sup>m</sup> 44.8 48.8

" 54.4 58.5

" 54.1 58.2

26. 41.2

26 41.2

26<sup>m</sup>. 44.0

27. 3.8 8.1

27 3.7 8.1

27<sup>m</sup>. 25.5 29.327<sup>m</sup> 25.0 28.9

" 39.0 42.0

" 43.5 47.4

" 43.7 47.6

28. 30.9

29. 23.7 27.5

29. 23.3 27.3

" 41.9

29 51.2 55.0

" 51.4 55.8

33<sup>m</sup>. 12.6 16.133<sup>m</sup> 12.0 16.035<sup>m</sup> 20.9 24.734<sup>m</sup> 20.1 24.335<sup>m</sup> 36.7 40.535<sup>m</sup> 20.3 24.6

35 11.4 15.4

" 36.5 40.1

" 50.0 54.1

36 11.0 15.3

37. 18.4

" 50.0 53.9

37<sup>m</sup> 17.9 22.0



856 30' to 40'

~~87866~~

55.54.3

56.22.3

28

12 0 58

12 4 31

11 10 30 no sig.

11 2 14

Dots.

11 5 41

11 -0 01

12 d 10 2<sup>nd</sup> wire yellow

11/12 7 50

8 6 48

14 4 23

10 0 28

B.

13 6 30 only 2<sup>nd</sup> wire lost

11 - 5 47

12 3 29

12 3 12

Bk. Ds.

no stars above 14<sup>th</sup> mag.10/11 4.14. du stars above 1<sup>st</sup> ch after.

12 2 41

11 10 35

12 6 18 Double - imp. 3<sup>rd</sup> Doupr.

12 1 30 Double - no folgy

12 8 20 2<sup>nd</sup> wire lost

10) 4.10

10) 10.8

10) 1.54

B

10) 5.17

11) -0.28 moving

12) 0.40 10) 6.42

10. 5.42

8 5.23 is brighter than 8<sup>th</sup> magn.

8 0.4 double or

D

10) 5.20

9) 2.58

B. D

8) 3.55

12) 1.80

10) 10.10

12) 5.57

12) 1.10

12) 8.0

(11) 2.20

9) 10.30

2.43

hours

86 856

87 86

38<sup>m</sup> 19.1 22.9

" 42.0 4

38" 42.0 —

" 46.7 50.7

39 16.8 20.9

39. 52.9 —

— 56.9

41. 30.9 —

" 48.4 52.3

43. 22.3 26.4

44. 14.0 17.7

" 24.0 28.0

" 49.8 —

46<sup>m</sup> 19.3 23.9

" 47.1 —

47. 48.4 —

48 7.0 —

" 11.2 15.2

" 41.9 45.7

50. 30.6 —

" 38.9 42.8

51. 31.2 35.0

" 39.9 —

" 48.7 52.7

" 59.0 3.0

52. 38.8 42.5

53<sup>m</sup> 57.8 1.7

54. 51.3 55.4

55<sup>m</sup> 42.8 46.7

56. 42.8 46.7

57 12.0 5.1

" 18.0 —

38. 18.8 22.8

38" 41.5 45.9

" 46.9 50.2

39 16.3 20.2

39. 52.9 56.9

41. 30.4 34.3

41 48.3 52.1

43 22.1 26.2

43. 45.7 49.7

44. 13.6 17.7

" 23.5 27.7

" 49. 53.1

" 58.7 58.7

46. 19.5 23.5

46<sup>m</sup> 24.9 28.7

47. 48.2 51.9

not neg.

48" 10.8 14.9

" 41.7 45.5

50<sup>m</sup> 38.5 42.651<sup>m</sup> 31.0 35.1

" 35.9 39.5

" 48.4 52.1

" 58.9 62.9

52-38.5 42.5

53 57.2 1.2

54 51.2 55.3

55 14.9 18.9

56 42.3 46.4

57 1.7 5.8

" 17.9 21.8

45.2 - 49.3

55-58.8 2.5



86.856

87.86

11.6  
30.19  
25.5

D. B.

11) 2.22

12) 6.28

11) 7.59

10) 1.18 good 10<sup>th</sup> magnitude.

B. D. B.

10) 5.58

did not observe

12/12 8.7

gray

11) 8.0

10) 0.40 very small star

D. B. D.

12) 7.8

10) 9.30

12) 5.10

12) 5.8

11-12) no sig 1<sup>st</sup> time lostB - a large star of 8<sup>th</sup> mag unnoticed

11) 9.38

12-13) 6.28 no sig

12) 5.12 several 12<sup>th</sup> passing  
5.22 2 fine stars 8/9 mag lost  
5.40

10) 2.20

10) 5.57

8/9 0.10

5/7 0.10

10.19

7.28

2.19<sup>th</sup> cent

- 0.10 cent

1.39

8/9 9.50

11) 0.30

12 1.52

(27) 8) 4.50

12) 7.18

12) 2.8 a b

8/9 10.50 \* 9.50 \* \*

10) - 0.6

12) 7.30

sum on line

11/12 2 48

12 6 11 R. lost.

11/12 6 40 2<sup>nd</sup> wire lost.

(11/12) 8 20 no sig.

11/12 1 39 good. many small stars

B.

12 5 17 2<sup>nd</sup> wire lost12 0 5 1<sup>st</sup> wire lost - no sig.12/13 8 29 2<sup>nd</sup> wire lost. king of gray.12 8 29 no stars above 13<sup>th</sup>.11/12 1 1 no stars above 13<sup>th</sup>.

D

12 7 30 R. lost

10 9 50

12 5 31 1<sup>st</sup> wire lost12 5 29 2<sup>nd</sup> wire lost

11/12 7 40 R. lost.

D. B.

12. 10 03 star 17<sup>th</sup> mag. 1" so.13 6 49 1<sup>st</sup> wire lost. 2<sup>nd</sup> wire lost.12 5 35 2<sup>nd</sup> wire lost11/12 6 02 2<sup>nd</sup> wire lost

12 5 41

10/11 10 40 no sig.

B. D. B. no star in f. above

12) 7 48 2<sup>nd</sup> lost.

12) 2 40

10 0 9

11 2 00 2<sup>nd</sup> wire lost { bright thin not to be1<sup>st</sup> wire lost (26)

x 9/10 10 12

12 0 55 no sig

v 2 13

D

x 8 8/9 5 13

12 7 39

12 2 30 1<sup>st</sup> wire lost no star above 13- or 14

11/12 10 10

11/12 0 16

11/12 7 51 2<sup>nd</sup> wire lost

2-3<sup>h</sup> 8<sup>h</sup> 55<sup>h</sup>

2 5 8<sup>m</sup> 29<sup>v</sup>.2 33<sup>v</sup>.2  
 " 48.6 ~~54~~  
 59 " 10.0 13.8

3<sup>h</sup> 0<sup>m</sup> 41.0 44.9  
 " 8.8  
 " 12.9 16.9

1<sup>m</sup> " 0.1  
 " 22.2 26.1  
 " 30.0 33.9

2 40.0 44.0  
 " 54.9 59.0  
 3 20.1 23.7  
 3<sup>m</sup> 28.8

4<sup>m</sup> 30.2 34.1  
 5. 25.8  
 " 28.8 32.8  
 7 2.4 6.3

7 33.8 37.6  
 7 44.0 48.1

8. 10.7 14.4

10. 30.5 34.5  
 11. 30.4 34.5  
 " — 54.1  
 12. 16.5 20.5

13. 2.8 6.7

" 24.0

" 27.2 30.9

" 33.2 37.2

14. 44.2 48.0

15. 18.0

" 21.3 25.3

57<sup>m</sup> 47<sup>v</sup>.8 52<sup>v</sup>.0

58<sup>m</sup> 28<sup>v</sup>.8 32<sup>v</sup>.8  
 " 48.2 52.1

59. 9.9 13.8

3<sup>h</sup> 0<sup>m</sup> 40.9 44.9  
 31<sup>m</sup> 0. 8.3 12.6

0<sup>m</sup> 12.6 16.4

1<sup>m</sup> 22.0

1<sup>m</sup> 22.0 25.8

1<sup>m</sup> 29.5 33.8

2. 39.9 43.7

" 54.9 58.9

" 19.5 23.4

4<sup>m</sup> 30.2 34.0

5 25.6 29.6

7. 2.1 6.1

7 33.4 37.3

7 44.0 48.0

8. 10.3 14.2

10. 30.6 34.7

11. 30.0 34.0

" 50.0 53.8

12. 16.1 20.0

13. 2.3 6.7

" 23.9 27.6

" 33.0 36.9

14. 43.8 48.0

15. 21.1 25.0

15. 21.1 25.0

3.12  
 4" 5.2  
 1 40



86856

8786

D.B.D.

$\times$  9/10 8 58  
~~89~~ 13 2 19 2<sup>nd</sup> wire doubt.  
 10/11 6 9  
 11 4 42  
 10 0 44 2<sup>nd</sup> wire lost  
 10 9 20 no sig.

B.

12 -0 4 2<sup>nd</sup> wire lost.

12 3 19

$\times$  10 3 57 no sig. (30)  
 11 1 00 ~~xxxx~~ lost fine stars.

12 6 29

11 2 20

11/12 6 49

12 6 30 2<sup>nd</sup> wire lost.

D.B.

11/12 10 08

12 0 37 2<sup>nd</sup> wire lost.

12 7 49 no sig.

11/12 5 00

~~11/12 3~~ star 1<sup>st</sup> 5  
 11/12 -0 9

11/12 6 57

B.

10/11 8 40

12 ~~8 50~~ Vacancy. 2 stars 14<sup>th</sup> exp. 2<sup>nd</sup> 3<sup>rd</sup>

12 1 20

12 4 19

12 3 49 1<sup>st</sup> w.l. 2<sup>nd</sup> 2

$\times$  7/8 10 25 short signal.

B.D.

$\times$  10/11 9 16

10/11 8 54 2<sup>nd</sup> lost.10/11 4 35 2 stars 14<sup>th</sup> exp. folly (31)

$\times$  10/11 4 0 no sig.

12 3 31

D

$\times$  11 -0 10

10/11 8 49 no sig.

2<sup>nd</sup> wire lost.

12/ 8.10

8 13.10

8) 8.75 full + 5

8.9) 2.0

10 5.46

11/ 4.21

8.8 0.22 2<sup>nd</sup> wire of this =8.7 9.02 1<sup>st</sup> of this

13.8

11 3.0

8.9 3.32 no sig. + 5

12) not observed

13 6.4

10) 1.59

12) 6.8

did not see it

8 13.8

10-11 9.54

11) 0.14

8.19 not observed since 8

10 4.37

10-11 -0.29

11) 6.32

8/9) 8.17 B. vacancy for 1 second

12/ 0.58

12/ 0.57

12/ 3.29

7.8 10.14 cert-

8

8.9 8.32

not observed. 4.15

8.9 3.40 \*

11 3.10

12 3.10

8 8.28

is this the same star.

+ 11

+ 9

hours

~~86~~ 856~~87~~ 86
 $18^m 23.5^s$ 
 $18^m 29.5^s$ 
 $33.6^s$ 
 $" 51.4^s$ 
 $18^m 53.4^s$ 
 $57.8^s$ 
 $20^m 28.8^s$ 
 $32.8^s$ 
 $21^m 9.0^s$ 
 $13.0^s$ 
 $22^m 33.5^s$ 
 $50.0^s$ 
 $" 46.1^s$ 
 $50.0^s$ 
 $23^m 29.4^s$ 
 $33.3^s$ 
 $24^m 31.9^s$ 
 $35.8^s$ 

opposite  
which  
declination

 $24^m 46.3^s$ 
 $—$ 
 $26^m 15.0^s$ 
 $19.8^s$ 
 $" 20.8^s$ 
 $24.8^s$ 
 $27^m 52.0^s$ 
 $56.0^s$ 
 $28^m 23.0^s$ 
 $27.0^s$ 
 $30^m —^s$ 
 $7.2^s$ 
 $" —^s$ 
 $11.2^s$ 
 $" 19.1^s$ 
 $14.2^s$ 
 $" 19.2^s$ 
 $22.6^s$ 
 $" 56.0^s$ 
 $59.9^s$ 
 $31^m 20.2^s$ 
 $24.0^s$ 
 $32^m 50.8^s$ 
 $—^s$ 
 $" —^s$ 
 $56.1^s$ 
 $33^m 21.8^s$ 
 $—^s$ 
 $" 51.3^s$ 
 $55.5^s$ 
 $34^m 9.0^s$ 
 $13.0^s$ 
 $" 14.9^s$ 
 $18.7^s$ 
 $35^m 3.0^s$ 
 $6.9^s$ 
 $" —^s$ 
 $23.7^s$ 
 $36^m 36.6^s$ 
 $40.5^s$ 
 $36^m 3.0^s$ 
 $5.5^s$ 
 $" 17.3^s$ 
 $21.2^s$ 
 $" 37.3^s$ 
 $—^s$ 
 $18^m 29.6^s$ 
 $33.4^s$ 
 $" 51.0^s$ 
 $55.0^s$ 
 $" 53.6^s$ 
 $57.0^s$ 
 $20^m 28.3^s$ 
 $32.8^s$ 
 $21^m 8.6^s$ 
 $12.9^s$ 
 $22^m 33.3^s$ 
 $37.3^s$ 
 $" 45.8^s$ 
 $49.9^s$ 
 $23^m 28.9^s$ 
 $33.0^s$ 
 $24^m 31.6^s$ 
 $35.7^s$ 
 $24^m 46.2^s$ 
 $50.1^s$ 
 $26^m 14.7^s$ 
 $19.0^s$ 
 $" 15.4^s$ 
 $19.3^s$ 
 $" 20.4^s$ 
 $24.3^s$ 
 $27^m 52.0^s$ 
 $55.8^s$ 
 $28^m 22.9^s$ 
 $27.0^s$ 
 $30^m 3.2^s$ 
 $—^s$ 
 $30^m 8.0^s$ 
 $11.3^s$ 
 $" 9.9^s$ 
 $13.2^s$ 
 $" 18.7^s$ 
 $22.4^s$ 
 $" 55.9^s$ 
 $59.8^s$ 
 $31^m 19.7^s$ 
 $23.8^s$ 
 $32^m 51.7^s$ 
 $55.8^s$ 
 $32^m 22.5^s$ 
 $26.5^s$ 
 $34^m 8.9^s$ 
 $12.7^s$ 
 $" 14.3^s$ 
 $18.9^s$ 
 $35^m 2.7^s$ 
 $6.6^s$ 
 $" 36.8^s$ 
 $41.0^s$ 
 $36^m 2.4^s$ 
 $6.6^s$ 
 $" 17.1^s$ 
 $21.0^s$ 
 $" 36.8^s$ 
 $41.0^s$



86 85<sub>6</sub> further work belong to the above it 87 86

a 46.14.7  
h 46.29.3

10/11 8 58  
12/13 6 59 Vacancy. no star above 14<sup>th</sup>  
17 7 20 2<sup>nd</sup> lost.  
12 8 16 no sig. no stars ab. 14

small stars  
12 6.30  
10/11 6.5-8  
7.00

B.

12 4 54 < 4 stars . . . .  
11/12 4 12  
10/11 10 49 no sig. 2<sup>nd</sup> lost.  
10/11 4 55.  
12 5 42 < 4 stars in form of I  
12 9 00 seen 13 mag  
12 5 18 right M. mag. D  
12 4 59 2<sup>nd</sup> lost.

12 4.30  
9-10 8.50  
11/ 10.32 10) 10.28  
10) 4.32  
a declination  
two mag. 11.12) 5.22

\*

a 12 4.57  
h 11-12) 4.33 10) 9.27

B.D.B.

10 0 29 2<sup>nd</sup> lost  
10 6 20 1<sup>st</sup> lost no sig.  
10 5 00 no sig.  
12 10 00

9-10 0.7  
9-10 5.58 June of 15 8 cent  
9-10 4.40  
12 9.40

D. 2 59 no R.

B. D

12 2 22  
12 3 05 1<sup>st</sup> lost  
12 7 08 a 1<sup>st</sup> lost  
11 6 00 h no sig.  
10/11 7 59 c  
10/11 6 58 wisp.

11/ 2.0 11-12 - 0.29<sup>x</sup>  
12/ 2.43 2<sup>nd</sup> lost  
12/ a (12) 6.48  
h (7.8) 8.42  
c (11) 7.33  
10/ 6.39  
12/ 6.50 11/12) 7.37<sup>o</sup>  
(12) 9.31  
(11) 2.14  
(12) 6.20  
(12) 4.34  
(10.11) 8.48 B  
(10) 9.09 r

13 2.8 2.8 2.8  
13 3.4  
12.8

B.

12 7 9 stars of 11<sup>th</sup> 12<sup>th</sup> passed.  
11/12 9 49 2<sup>nd</sup> lost.  
11/12 2 34 1<sup>st</sup> lost. no sig.  
12 6 40 2<sup>nd</sup> lost.  
12 4 54  
11 9 08 no such stars seen  
11 8 27 no sig. must be 9.27

12 3.42  
(12) 3.05  
3.50 no R.  
12 6.36 wisp  
12 8.22  
12 8.2  
9.10.85  
9.16.7 r  
8.9

D.

12 4 02  
12 3 29 1<sup>st</sup> lost.  
12 4 10 no sig.  
12 6 59  
12 8 42  
12 8 25 wisp. 1<sup>st</sup> lost

86 856

37<sup>m</sup> 45.9 49.6

39. 20.4 24.4

" 53.5

41. 7.2 11.1

" 28.2 32.1

" 52.7

42<sup>m</sup> 23.3

43. 1.5 5.6

43. 21.2 25.3

" 42.7 42.7 *prob. first win*

" 52.2 56.3

44. 2.4 6.5

45. 16.2 20.0

" 32.0 35.9

46. 46.0

" 37.3 41.2

48. 23.0

" 30.2 34.3

49. 29.3 33.2

50. 57.4 61.5

51. 45.5 49.5

54. 7.3 11.5

" 25.5 29.6

56. 4.4 8.2

58. 13.8 17.4

58. 24.5 28.6

59. 19.1 23.1

4<sup>h</sup> 1<sup>m</sup> 5.0 10.2

1 " 30.9 45.5

2 38.7 42.6

2 38.7 42.7

3<sup>m</sup> 28.0

87 86

37<sup>m</sup> 45.4 49.639<sup>m</sup> 20.1 24.1

49.3 53.5

41. 6.8 11.2

" 28.0 31.9

" 52.7 56.7

42. 23.7 27.3

43. 1.6 5.1

43. 21.1 25.2

" 42.5 46.5

" 51.9 55.9

45. 16.0 20.0

" 31.6 35.4

46. 15.9 19.9

" 36.9 41.0

48. 23.0 26.9

" 30.1 34.3

49<sup>m</sup> 29.0 33.350<sup>m</sup> 56.8 61.0

51. 45.3 49.6

54. 25.6 29.2

56<sup>m</sup> 4.0 8.4(57<sup>m</sup> 41.6 - 45.6

58. 24.3 28.6

59. 18.9 22.8

58. 24.3 28.6

59. 18.9 22.8

58. 24.3 28.6

59. 18.9 22.8

4<sup>h</sup> 1<sup>m</sup> 6.0 10.11<sup>m</sup> 41.4 45.42<sup>m</sup> 38.4 42.43<sup>m</sup> 24.0 27.838<sup>m</sup> 59.0 - 62.952<sup>m</sup> 40.8 0

Sun break is not intended

30.4 34.8 sec?

155.7 59.7 sec?



D.B.

11/12 3 41  
 12 7 28 *Vacancy.*  
 11/12 12 24 *stars of 11th magnitude*  
 12/13 9 58 *long star above 14th*  
 12 7 15 *1st wind lost.*  
 11 9 13  
 12 5 48. *Double for by 12th 2d lost.*

B.B.

12 9 11 *using 2d wind 6th*  
 9/10 10 2  
 9/10 4 34  
 8 + 0 1 *(1st lost) is this not 2d wind?*  
 10 7 52 *no sig*  
 12 7 6 12 *no sig*

D.

12 3 00  
 11/12 5 40  
 12/13 6 40 *using 2d lost.*  
 11/12 4 30 *Vacancy*  
 12 5 59 *2d wind 1.*  
 12 9 28? *(Signal?)*

B

13 6 13 *stars of 14th mag pass*  
 12/13 8 50 *2d wind?*  
 10/13 2 55 *mustars above 15th*  
 13 6 39  
 12/13 1 55 *no star above 14th!*

D.B.

13 4 16  
 13 5 38 *1st lost.*  
 12 10 37 *R 2*  
 12 1 50 *(Two stars passing.)*  
 12 9 37

B.D.B

12/13 7 45 *mustars above 14th.*  
 12/13 4 08 *2d lost.*  
 11/12 10 00  
 12 4 38

D.D.

13 0 10 *lost. pt.*

86856

S.B.S

10/ 3. 28  
 11/ 8 4 *not sure of 8!*  
 12/ 2. 3  
 1. not observed  
 12/ 6. 55 *very faint*  
 12/ 8. 55  
 13/ 18

12 8.50  
 9/10 10. 10 *certain.*  
 9/10 4. 79  
 8 - 0. 22  
 8 7. 30  
 not observed

12? 2.40

12/13 6. 20  
 10/ not a star to be seen  
 12/ 5. 30  
 12 9. 35 *had seen*  
 13. D.

12/ 5. 55 *almost a vacancy*  
 12/17 8. 28 *almost a vacancy*  
 9/ 2. 35  
 12-13 6. 18  
 12 1. 38  
 2. B

12-13 3. 56  
 12 0. 10 *(12-13) 5. 22*  
 (12) 10. 17

10 1. 26 1. 31  
 10 9. 15 9. 33  
 13. D. B  
 12 7. 25 *a double*  
 12/13 3. 50 12 3. 48  
 10/ 9. 42 9. 33  
 11 2. 50 2. 09  
 12 0. 10 12 0. 10



86 856

3<sup>m</sup> 38.9 42.8  
 4 38.8 —  
 " 50.0 54.2  
 7 5.5 9.6  
 " 15.2 19.1

54.7 58.6  
 9 22.2 26.1  
 " 44.8 48.5  
 10 9.0 13.0  
 " 32.1 36.0

11 8.7 12.4  
 " 36.8 —  
 — 42.2

" 55.4 59.5  
 12 1.6 5.8  
 12 — 28.9  
 12 32.8 — *prob 2 min*

12 59.5 3.7 a

13 45.1 49.1 h

15<sup>m</sup> 17.0 —  
 15<sup>m</sup> 59.9 3.8  
 17<sup>m</sup> 16.8 20.9

18 0.5 4.3  
 " 11.0 15.0  
 19 49.0 52.9  
 20 25.2 29.0  
 " 43.0 47.0  
 " 54.1 59.1

21 31.8 34.9  
 22 48.0 52.0  
 23 53.0 —  
 24 56.5 00.3  
 25 58.4 62.6

N.B. On Jan 22<sup>nd</sup>/55  
 looked at these stars  
 There was a 11<sup>th</sup> mag.  
 at 7<sup>h</sup> 25<sup>m</sup>  $R = 0^h 00^m 00^s$

12<sup>m</sup> 9.02 0.00 03.9  
 12<sup>m</sup> 5.28 0.00 41.4  
 12 8.15 *no diff* 0.01 16.6  
 11 10.20 0.1 27.4

See 4 pages on

15<sup>m</sup> 17.0 20.8  
 " 59.5 59.5  
 17 16.3 20.0

18<sup>m</sup> 0.0 4.1  
 18 10.8 14.6  
 19 49.0 53.0  
 20 24.8 28.8  
 " 42.5 46.4  
 " 58.1 62.2

21 30.6 34.8  
 22 48.0 52.8  
 23 53.0 57.0  
 24 56.1 60.0  
 25 58.5 62.3  
 25 59.9 63.7

87 866

3<sup>m</sup> 38.4 42.5  
 4 38.7 42.8  
 " 50.0 53.6  
 7 5.1 9.2  
 7 14.9 18.8

7 54.3 58.3  
 9 24.5 28.8  
 9 44.3 48.3  
 10 8.8 12.8  
 " 32.0 36.0  
 " 48.4 52.6  
 11 8.2 12.4  
 " 37.1 41.5

11 55.3 59.0  
 12 1.5 5.5  
 " 24.9 28.7  
 12 — 32.6

13 34.7 39.1  
 " 45.0 48.9

13 34.7 39.1  
 16<sup>m</sup> 13.7 7.2  
 17<sup>m</sup> 27.1 31.1  
 17<sup>m</sup> 51.4 55.7

19.1 4.4 5.3 19 27.5 31.4

58.1 2.2

25 24.2 28.2



87 86

87 86

12 1 30  
 12/13 4 52 2 wrong  
 12 5 32 under inf. above  
 12 8 15  
 12 7 28

B.

12 7 23 Vacancy.  
 13 1 25 no sig.  
 4/10 3 56  
 12 4 33  
 10 8 05 no sig.

D.

7.17.  
 10/11 7 36 2 lost  
 10/11 3 10 1st lost  
 10 5 09  
 12 2 8 00 no sig.  
 12/13 6 51 1st lost  
 11 9 41 no sig.

B.B.

12/13 3 30 a  
 8 1 22 h

12 7 40  
 12/13 1 38 Vacancy missing above 18th.  
 12/13 7.49. 2 lost.  
 12/13 9.28 (1st lost)?  
 13 8 38

B.B.

10/11 2 00

11 35

12/13 4 14

10/11 0 18

10/11 4 5

12 5 20 no sig. due to 2 min

B

11 9 39

12 10 15

13 8 10 no sig & doubtful.

7/8 10 30

13 7 18 dark sig.

D

10) 1.6  
 10) 10.40 6  
 11) 4.30  
 11) 5.7 vacancy  
 10) 7.57  
 10) 7.3  
 5.5

11. 8.10 certain

9.10 1.02

+ 3' 1 9.10 3.31

10) 4.10

9.10 7.28

12 5.37

9.10 6.50 6.57 5.25

8 11 7.10

P 10 2.40 50 1st wave lost

A 10 3.45-82 4.48

4 12 1.40 82

K 11 6.30

10) 9.20

28

10) 9.15 very good  
 when given this 40  
 The recorder being unable to  
 connect the 8 of 2.87 with 2.86 turned  
 to the end of this zone and continued  
 the record from which these have  
 been transcribed

- 0.70 1st wave lost

+ .7

+ 0.24 8) 0.59 h 12) 7.18 c

+ 9  
 c proceeds h 10

1 12) 1.10

2 11) 7.25

3 11) 9.2 (3rd wave lost)

4 12) 8.15

12) 10.30 10.20

5 6 12) 8.10

7 10) 1.48 2 lost

10) 7.10

11-13 3.53

8.9 - 0.8

9-10 3.42

11) 1.11

to be examined

9 9.18

10 9.49

12 7.42

8) 10.7

12) 6.55

12) 2.03

12) 1.36

Di. Ar a 6.3

4h

8855f

27	9.0	23.0
"	16.0	20.1
28	15.5	19.7
	21.8	25.8

		31.8
29	13.8	17.9
22	0	25.8

26	0.9	4.5	8756
26	37.1	41.2	26.571 - 41.2
27	09.0	13.8	
"	15.8	19.8	
"	15.5	19.3	
"	21.7	25.7	

not observed

29	13.8	17.9	18.8. 22.9
"	22.1	26.0	



8585

87 86

12/13	140
12	8 00
12	6 52
10	6 00
12	10 05
11	6 35
9 x 10	6 48
10	10 38

23.  
no. sig.  
first wire lost

1.18

12)	7.38
12)	6.30
11)	5.38
10	9.40
	6.10

no sig

some left  
others  
declination

(A)

226 1. 55.51 Mps 89° 30  
E 39.00  
2. 35

Comet

See zone 86, 87

x 14  
x 14

See zone 87

12)	- 0.10
10)	1. 6
10)	10.30
11)	4.30
11)	5.7
	vacuum
10/	7.57
10/	7.3
	8.9
11/	8-10
11	- 0.30 2 <sup>nd</sup> lost
9.10	1.02
9.10	+3.34
10/	4.10
	7.28
12	5.37
10	6.50
12	5.25
11	7.10
11	2.40 1 <sup>st</sup> lost
10	3.45
12	1.40

gran. 22, 1854-5

h m  
1 01

a 7.27  
h 3.49  
c 9.41  
may d 9.13  
13 e -0.08  
12 f 1.10  
g 10.40

3 30.19.2  
30.48.8  
30.54.7  
31.39.2  
22.37.3  
32.51.8  
33.37.7

double comp. ref. 12" 13 mag.

c 9.42  
11 c<sub>2</sub> 2.09  
12 e~~2~~ -0.07  
1.10

36 7.1  
37 4.3  
37.49.8  
38 4.4

h m

4.11 11.12 6.57  
12 5.22  
12 7.11  
12 2.50  
A 10 4.48  
4 12 1.40

3. 54.01.3  
54.10.9  
54.29.8  
54.31.2  
54.48.2  
54 55.0

47.2  
52.8  
5.6

4.15 11 7.25

12 9.03

12.13 5.23

12 8.15

11 10.20

8.12

10 1.42

7.10

4.12 21.7

12 25.2

13 3.1

13.38.3

13.49.1

14.13.8

14.22.3

14.32.0

12 1.13 45.59.7

11 7.27 46.43.0

12 9.06 46.46.3

12.13 5.27 47.24.3

12 8.16 47.59.0

11 10.22 48.10.0

10.11 1.46 48.43.2

10.11 7.12 48.53.8

5.40 50.10.2

12 3.52 50.32.1

9 - 0.08 51.7.2

9 3.42 51.25.7

12 1.12 51.41.2



zone  
zone  
zone

to be examined

11/6.30  
10/9.20  
Bo

#12 7.18  
8 10.59

4<sup>h</sup> 5<sup>m</sup> 12.0<sup>v</sup>

12 1.10

11 7.25

4<sup>h</sup> 12<sup>m</sup> 19.2<sup>v</sup>

11 9.2 1<sup>st</sup> wire cut

12 8.15

12 10.00

12 8.10

10/ 1.48

10/ 7.10

82) 8.30 look 2 times .12 mag

102) 5.137

11-12) 3.53

4<sup>h</sup> 15<sup>m</sup> 31.5<sup>v</sup>

8-9) -0.48

9-10) 3.42

10) 1.11

10 13.0

9. 9.18

10 9.49

12 7.42

last wire double cut

4<sup>h</sup> 15<sup>m</sup> 59.0<sup>v</sup>

8) 10.7

12 1.13

12 1.35

12 5.53

12 2.03

11 1.18

8-10) 1.18

12 7.38

12 6.30

8/ 5.38

10 9.40

10 6.10

12 8.10

10 7.40

(A)

not used  
88

30' to 40'

None 89

1st Star is A of Zone 87  
1855 Jan 10<sup>th</sup>

J.H.S. obs.

Reg. 8C  
End 11

Th. 13<sup>th</sup> 7

Th. 11<sup>th</sup> 8

Mean Reduced to  
First Wire

1 <sup>st</sup> wire	2 <sup>nd</sup> wire	Mean
28 16.1	19.9	28 <sup>th</sup> 16.00
28 22.2	26.1	28 <sup>th</sup> 22.15
28 28.0	32.0	28 <sup>th</sup> 28.00

Break.

29 19.3	25.2
29 24.2	26.0
29 48.0	—

Dark. 11k.

30 32.5	36.4
31 33.1	37.0
32 14.4	17.9
32 28.2	32.0
32 34.1	—
32 46.8	—

32 53.0	57.1
33 6.9	10.5
33 22.2	25.8
33 28.6	32.5

Break. 11k.

34 0.3	4.4
34 7.0	11.0
34 36.5	40.3
34 49.0	—
35 18.8	22.8



88 1855.0

Jan. 10<sup>10</sup> 29 1855.0

8<sup>2</sup> 4<sup>h</sup> 33<sup>m</sup> 28<sup>s</sup> 10<sup>10</sup> +0<sup>h</sup> 40<sup>m</sup> 40<sup>s</sup>

9	34..00.2	31..27	8	5 <sup>h</sup> 41 <sup>m</sup> 18.3	0 <sup>h</sup> 40 <sup>m</sup> 24
8-9	41..05.8	33..18	9	47..29.7	32..52
9	43..05.3	36..42	6	51..22.4	32..07
8-9	50..39.8	38..16	8	57..55.2	37..11
9	4 <sup>h</sup> 52 <sup>m</sup> 40.6	34..44	9	6 <sup>h</sup> 05 <sup>m</sup> 46.8	37..26
7	54..22.8	30..26	9	10..39.6	32..20
9	5 <sup>h</sup> 00 <sup>m</sup> 54.5	34..22	8	19..16.4	32..08
9	19..27.6	30..54	8-9	19..19.0	31..10
8-9	20..8.0	34..32	9	25..16.6	32..09
9	20..42.2	39..49	8-9	27..31.2	36..54
9	25..58.6	30..58	8-9	28..03.2	37..08
9	37..37.5	29..57	9	29..13.3	39..24
			8	30..32.9	38..49
			8	31..43.0	31..35
			6-7	6 <sup>h</sup> 33 <sup>m</sup> 37.7	37..34

10.11 5..38 comp. s. f. dist 10"

10 9..42

11 9..11

B

9.10 6..21

10.11 8..11 ms

10 10..15 ms

11 7..40 2 wire lost

B

11 9..45

11 10..08

10 9..08

10.11 1..10

10..11 4..37 2 wire lost & doubt

10.11 7..35-2 wire lost

no Dec

10.11 2..51

10.11 10..34 ms

8 9 10..45 8 doubt

B B

9 10 2..24

10.11 7..48 ms

10 6..28

11 4..24 ms 2 wire lost

10 7..23

10.11 5..33

10.11 8..39

10.11 9..07

10.11 9..06 ms D

9.10 6..19

12 8..09 ms

10..11 10..08 ms cent

12 7..37

B

12 9..43 2 wire lost

12 10..01 cent

11 9..03

11.12 1..06

11.12 4..32 ms

7..32

12 0..11

11.12 2..50

10..31 10..33

9 10..43 double 12 ms 7 m/s

B

9 2..23

12 7..41 ms cent

11 6..26

12 4..16 cent

10..11 7..17

4	35	37.0	40.3
	35	43.3	47.1
	35	55.0	59.3
	36	10.2	14.3
	37	10.0	14.1
	<i>Dots.</i>		
	37	44.3	48.1
	37	53.0	57.0
	38	18.5	22.4
	38	23.3	27.3
	<i>Break.</i>		
	38	55.3	59.3
	39	52.8	56.4
	40	34.0	38.1
	40	37.1	40.8
	<i>Dots.</i>		
	41	1.7	5.3
	41	6.14	9.8
	41	—	16.4
	<i>Dots. Bk.</i>		
	42	16.4	21.2
	42	32.7	36.7
	42	42.0	45.6
	43	5.4	9.7
	<i>Bk.</i>		
	43	56.3	0.4
	44	11.0	15.2
	44	13.2	16.9
	44	28.8	32.8
	44	44.0	47.8
	44	57.0	1.2
	<i>Dots. Bk.</i>		
	47	2.4	6.4
	47	3.1	16.8
	47	35.9	<del>40.4</del>
	47	<del>44</del>	40.0
	47	56.0	0.7
	<i>Dots.</i>		
	48	31.3	—
	48		



~~88~~

91

11.12 3..10  
 11 4..27  
 11 5..09  
 11 0..20  
 11.12 9..50  
 D  
 11 9..39  
 11 8..12  
 11 4..10  
 10..11 1..25 ms  
 B  
 10 6..39  
 11 8..25  
 11.12 8..45  
 10.11 8..33  
 D B ?  
 9.10 1..33  
 x 8.9 3..32 1<sup>st</sup> win 0.5 too late  
 10 -0..25 1<sup>st</sup> win lost  
 D B  
 11 10..40  
 11 8..36  
 11 7..10  
 9x9 6..50  
 B  
 10 0..55  
 10 6..09  
 10 -0..40  
 10.11 9..32  
 9.10 0..24  
 10 10..28  
 D B No star greater than 14 mag.  
 9.10 7..00  
 11 10..37  
 10.11 4..51 2 win lost  
 10.11 3..29 1 win lost  
 11 7..40  
 D  
 9.10 2..39 2 win lost

12 3..10  
 12 4..23  
 seen but not obs  
 11 0..16  
 12 9..39 cert  
 B B  
 12 9..33  
 12 8..06  
 12 4..07  
 12 1..22  
 D  
 10 6..37  
 12 8..17  
 7..38 } cert  
 7..28 ms }  
 B  
 10 1..32  
 9 3..18 cert ms  
 10 -0..29 cert  
 B  
 12 10..39  
 12 8..32  
 12 7..07  
 9 6..46  
 B D  
 10.11 0..49  
 12 6..02  
 seen  
 11.12 9..17 cert  
 10 0..16  
 12 10..25  
 B  
 11 6..51  
 12.13 10..30  
 12 4..47  
 11.12 3..22 ms  
 12 7..37  
 B B B  
 9.10 2..28

88

4 <sup>m</sup> 49 <sup>s</sup> 38.1	42.2
49 <sup>s</sup> 39.4	43.5
50 <sup>s</sup> 39.9	43.8
51 <sup>s</sup> 8.4	12.4
51 <sup>s</sup> 15.1	19.2
DB	
51 <sup>s</sup> 57.5	1.3
52 <sup>s</sup> 10.0	13.7
53 <sup>s</sup> 34.0	38.1
53 <sup>s</sup> 41.0	44.8
B	
53 <sup>s</sup> 56.2	0.3
54 <sup>s</sup> 23.2	27.1
55 <sup>s</sup> 23.7	27.4
55 <sup>s</sup> 35.7	40.2
55 <sup>s</sup> 39.5	42.9
55 <sup>s</sup> 45.9	6.7
55 <sup>s</sup> 10.2	14.1
56 <sup>s</sup> 27.8	—
56 <sup>s</sup> 31.0	34.8
56 <sup>s</sup> 35.6	39.0
56 <sup>s</sup> 50.5	54.4
BD	
57 <sup>s</sup> 47.4	51.3
57 <sup>s</sup> 55.7	59.8
58 <sup>s</sup> 3.6	7.8
58 <sup>s</sup> 13.5	17.5
58 <sup>s</sup> 22	23.7
B	
58 <sup>s</sup> 50.6	54.4
58 <sup>s</sup> 51.9	55.6
4 <sup>m</sup> 59 <sup>s</sup> 0.9	4.4
J	
5 <sup>m</sup> 0 <sup>s</sup> 54.8	58.9
1 <sup>m</sup> 4.8	8.8
1 <sup>m</sup> 11.3	15.3
1 <sup>m</sup> 39.7	43.3
1 <sup>m</sup> 44.7	48.3
2 <sup>m</sup> 16.0	19.7



88

91

11 0..34 ms  
 11 2..28 ms  
 x 8.9 8.9 8..27  
 11 2..11 ms  
 10.11 1..33 ms

D B

11 7..57  
 11 9..12  
 19.10 7..55  
 x 8.9 4..50

B

11 8..25  
 x 7.87 0..31  
 10.11 6..06  
 10 7..21  
 10 -0..25 ms 8 doubt  
 11 8..37  
 10 7..37  
 11 0..32 2 win lost  
 10.11 8..06 ms  
 11 4..32 ms  
 11 9..07 ms

B D

10.11 4..57  
 10.11 8..10  
 10.11 9..29  
 10 7..00  
 10.11 9..30 1st win lost

B

10 9..39  
 10 1..33 ms  
 9.10 10..37

D

9.9 4..28  
 10 8..43  
 9.10 4..15  
 10.11 6..28  
 10 1..12 1 wine doubt  
 10.11 1..37

12 0..15 cent  
 12 3..19 ms  
 8.9 8..20  
 12 2..11  
 12 0..27  
 D

12 7..45  
clouds

11 7..49  
 9 4..43  
 D A  
 11 8..15  
 7 0..27  
 11 6..01  
 11 7..20 2 win lost  
 11 -0..26 ms

11.12 7..32  
 0..29  
 8..04

Clouds

5. 02. 43.5 47.0  
 2. 67.8 2.1  
 3. 10.7 14.5  
 3. 20.0 23.9

DB

3. 48.1 49.1  
 4. 2.0 5.9  
 4. 27.2 31.1  
 4. 30.0 34.1  
 4. 53.1 —  
 5. 9.5 13.2  
 5. 19.9 —

B

5. 39.8 43.8  
 5. 52.5 56.6  
 6. 8.8 12.5  
 6. 19.0 23.2  
 6. 23.8 27.7  
 6. 41.4 45.3

DB

7. 18.9 22.9  
 7. 21.4 25.2  
 8. 32.3 36.4  
 8. 35.3 39.7  
 8. 42.7 47.0  
 8. 48.5 52.5  
 8. 55.4 58.5  
 9. 24.1 28.0  
 9. 25.5 29.2

B

10. 29.5 33.7  
 10. — 37.5  
 11. 14.2 18.3  
 11. — 44.8

D

12. 24.9 28.8  
 12. 41.5 45.9  
 12. 59.1 3.0  
 13. 6.2 10.2



11 10..15

10 9..34

9.10 6..18

10 10..09

D B

11 3..38

11.12 3..14

10 6..05

10.11 4..33 ms

10 3..00 2 win lost

10 7..00

11 3..28 2 win lost

B

10.11 7..58

11 1..24

9.10 7..47

10.11 0..05

10 2..37 ms

11 4..05

D B

10 1..27 sig. after 1<sup>st</sup> win

9.10 2..52

10.11 10..20

10.11 7..50 ms

10.11 10..23 ms

10 7..28 ms

10 8..05 ms

11 4..22 ms

10.11 9..23 ms

B

11 0..20

10.11 4..58 1 win lost ms

10.11 10..25

12 3..35 1 win lost

D

10.11 1..50

10.11 2..05

10.11 0..00 2 win two late

10.11 9..42

13..07.2 10.8  
 13..30.1 34.0  
 13..51.9 56.2  
 13..52.8 57.0  
 14..56.2 0.0  
 — 1.2

14..14.9 18.9

B.B

15..1.2 5.0

15..18.6 22.4

15..28.5 —

15..32.0 36.1

16..2.0 5.9

16..2.5 6.3

B.B.B

16..39.2 43.2

17..9.1 13.0?

17..16.7 20.6

17..22.9 26.7

B.D

18..17.2 21.1

18..23.2 27.3

18..37.2 41.2

18..37.9 41.6

18..52.9 56.8

18..55.1 58.9

19..12.5 16.4

19..13.6 17.4

19..28.1 32.0

19..36.5 40.3

19..41.1 44.1

19..46.4 50.3

20..8.7 12.5

20..26.4 30.6

20..43.0 46.5

21..6.9 10.8

21..23.8 27.6

21..31.5 35.6

B



88

10.11 - 0..20

10.11 5..38

10 8..45

10 8..25

10 5..22

10.11 9..24 1 win lost

10 1..00

BB

11 3..29

10 - 0..17

11 10..00 2 win lost

L 0..20 ms for 2 win lost

9.10 1..25

10.11 8..50

BBB

10.11 3..10

11 8..22

9..10 4..38

8.9 7..59

B 2

10.11 5..30

10. 10..05

9.10 5..52

10 3..10 ms

10.11 10..25

10 10..18

10.11 7..27

10.11 7..26 ms

9 10 1..00

10 6..42

10 10..06 ms

10 4..38

84 9.10 BB 4..39

10.11 1..36

9 9.10 9..56

10 8..45

11 5..50

11 5..45

BB

22.38.0 42.0  
 22.57.6 2.0  
 23. 2.0 6.1  
 23. 8.3 12.2  
 23.23.0 26.6  
 23.38.1 41.6  
 23.43.0 47.0  
 BB  
 24. 4.1 8.3  
 24. 9.8 13.5  
 B  
 25.59.1 3.1  
 26.27.1 30.9  
 26.54.8 58.8  
 27. 4.5 8.7  
 27.10.5 14.1  
 27.24.0 28.0  
 BB  
 28.12.9 16.7  
 28.17.0 20.8  
 29.15.8 19.9  
  
 29.48.0 52.0  
 30. 1.6 5.3  
 30.36.7 40.5  
 31. 2.7 6.8  
 31. 4.0 7.9  
 D  
 31.53.3 57.6  
 31.56.9 1.7  
 32.17.9 21.9  
 32.22.8 26.4  
 32.25.3 29.3  
 32.32.0  
 B  
 33.46.5 50.1  
 33.56.8 59.8  
 35.39.0 43.0  
 BB  
 36.58.3 12.2



~~88~~

10 4.28  
 10 - 0.27  
 9.10 10.15 ms  
 9.10 2.03 ms  
 10 10.28  
 10 4.46  
 10 0.32

OB OB

10.11 0.37  
 10.11 5.34

OB

9x 9 1.01

10.11 10.01

10.11 5.00

10.11 10.06

10.11 9.08

10 3.15

OB OB

11. 8.08

9.10 8.18 ms 1<sup>st</sup> twin pulled close

11 3.05

Meteor of 7 mag. passed through the field

10.11 5.40

10.11 10.35 ms

10.11 4.33

10 1.50 ms

10 7.56 ms

D

11 1.51

11 1.27 8 double - double comp. 13<sup>m</sup>

10.11 1.08

10.11 6.45

12.11 8 lost -

10.11 7.50

OB

10.11 5.20

10.11

10.11 8.50

OB OB

10.11 1.05

51. 36.27.4 31.4

36. 36.9 40.9

36. 48.1 51.9

37. 2.4 6.6

37. 27.7 31.8

B D B D

39. 3.6 7.3

39. 8.1 12.1

39. 32.1 36.3

39. 38.2 42.2

B

41. 13.3 17.4

41. 15.9 19.8

41. 18.7 22.7

B

42. 25.8 29.6

42. 27.6 31.5

D

43. 24.4 28.2

43. 39.9 44.0

43. 41.0 44.9

44. 2.0 5.8

B

44. 32.0 36.2

45. 1.9 5.8

45. 14.1 18.1

B B B

46. 26.3 30.1

47. 30.1 34.1

B

50. 29.6 33.2

51. 4.1 7.9

51. 17.8 21.1

51. 22.9 26.8

B B

51. 57.6 1.6

51. 58.1 2.3

52. 30.8 35.1



~~88~~

10.11 4.30

10 10.20

10 8.46

10.11 9.40

9x 9 0.01

B D B D

10.11 9.39

10 3.28 ms

10.11 9.09

10 4.58

10.11 D

9x 10.11 9.38

9.10 7.02

8x 8.0 10.32

B

11 2.44

11 8.59 ms

D

10 3.18

11 4.30

11 6.12 ms

10.11 5.35

B

10.11 -0.11

10 2.02

11 9.24

B B B

9 6.19

10 10. last

x 9 9 3.01

B

9.10 3.15

11 6.45

10.11 10.10

6 6 2.20 ms

B B

10.11 0.25 ms

11 -0.14 ms

10.11 5.00

52..37.7 41.6

53.. 8.2 12.2

53..22.5 —

25.0 29.0

BD

53..53.8 57.7

53..54.9 58.8

54..29.7 33.3

55..48.0 52.2

56..00.7 4.7

56..32.9 36.9

56..47.3 51.2

56..48.8 52.8

B

57..11.8 15.4

57..22.1 26.2

57..37.2 41.1

57..56.7 59.7

BB

58..13.9 17.9

58..26.8 —

58..29.6 33.0

B

58 — 58.8

59..13.4 17.7

59..15.7 19.2

59..44.9 48.9

59..46.2 50.2

59..47.5 51.4

59..52.2 55.4

BB

6 0 47.2 ~

0 48.2 ~

1 4.3 ~

1 7.5 11.7

1 30.4 34.2

1 45.5 49.5

Brk.

6 2 4.4 8.1



~~88~~

11.12 2.24 ns

11 5.29

11 9.48 2 wire lost

10 2.00 ns

B D

11 5.01

11.12 4.38

11 3.05

11 1.40

10.11 -0.10

11 6.26

9 7.03

11 4.32 ns

B

11 8.28

10.11 3.56 2 ns

9.10 9.23

8 8 7.19

B B

11 9.08

11 6.33 2 wire lost

10.11 0.06 ns

B

11 7.00 1 wire lost

11 0.38 ns

10.11 1.00

11 -0.35 ns

11 1.10 ns

10.11 -0.10 ns

10 -2.13 ns

B B

11.12 3.55 2 wire lost

11.12 2.00 2 wire lost

11 8.30 2 wire lost

11 5.04

11.12 4.00

10.11 0.32

B

10.11 4.51 ns

6	2	11.9	15.5	}
	2	45.7	49.9	
	3	12.5	16.4	
	3	21.3	24.9	
		26.6	30.2	mid. sig. $\rightarrow$
	<i>Break</i>			
	4	57.8	42.1	
	5	0.3	4.1	
	5	5.1	9.0	
	5	47.7	51.5	
	5	52.5	—	
	6	4.4	0.3	

7 24.5 —

7 — 35.8

7 45.9 49.9

*Break. D.K.*

10 7.0 11.2

10 20.4 24.8

10 40.6 44.4

*Break*

11 42.6 —

11 — 47.0

6 12 25.9 29.9



~~866~~

11 - 0..30 } 7ms

11 7..18

10 7..00

11 6..06 ms

B

11 4..38

11 8..38 ms

11.12 5..37 ms

9 7..35

10 8..00

10.11 1..30 ms

11 5..10

11 7..47 ms

11 2..06 ms

B B

10 10..42

10 8..41 ms

10.11 9..00 ms

10.11 6..43 2 in list

7..30

10.11 1st in list

10.11 0..42

B D

10.11 7..26

10 7..24

10.11 7..00

10.11 1..37

10.11 0..26

10 -0..40 8 doubt 2 in list

10 1..22 ms

10.11 18..00

10.11 18..01

10.11 10..30

10.11 6..01 ms

9 2..28

B

10 9..01 2 in list

11 3..42 1 in list

10.11 8..22

12 41.9 55.8

12 48.0 52.0

Dr. Dot.

13 26.7

13 27.1 31.1

Dot.

15 11.9 ✓

15 28.5 32.6

15 56.8 0.8

16 9.2 13.0

16 19.4 23.4

16 28.3 32.3

1

16 29.8 ✓

Break

16 59.0 2.8

17 2.0 6.6

17 4.5 8.4

17 2.4

Dot.

19 4.2 8.3

✓

✓

B.

19 50.3 54.2

✓

✓

✓

✓

✓

B. B.

21 46.1 49.7

22 43.5 47.4

22 45.7 49.7

22 51.7 55.4

23 55.4 59.2

24 11.8 15.2

24 30.3 34.7

24 37.5 41.5

24 46.5 50.6

24 56.2



10.11 8.40  
10 9.18 ms  
B D

10.11 2.16  
10 4.32 ms  
D

10.11 2.30  
11 1.54  
11 4.06  
11.12 4.55  
11.12 5.00  
11 1.02  
11 8.24  
11 8.13

B

10.11 9.17  
10.11 10 ms  
10.11 5.48 ms  
10.11 9.26 ms  
D

10.11 7.54  
10.11 3.07  
8 8 2.22  
8.9 8.9 1.22 ms  
B

10 9.00  
9.10 8.51 2 min lost  
9.10 3.30 1 min lost  
10.11 8.48  
10 8.51  
B B

10 9.34  
9.10 9.37  
11 7.01 ms  
10 3.16 ms  
10 10.28  
10.11 9.54  
11.12 3.46 ms  
11.12 4.36  
11 4.32  
11 4.51

6	25	17.8	21.6
	B.	21	
6	25	14.7	48.4
	26	6.0	10.0
	26	1.2	5.3
	27	4.8	8.7
	B.		
	27	28.1	—
	27	29.7	38.9
	27	31.5	35.6
	28	3.2	7.7
	28	50.1	54.8
	28	58.2	21.5
	28	59.9	3.5
	29	14.2	18.1
	29	—	23.1
	B.		
	30	5.9	9.4
	<del>30</del>	<del>24.0</del>	<del>28.0</del>
	30	25.1	29.0
	Sol.		
	31	3.4	7.5
	31	8.3	12.3
	31	36.9	40.6
	31	44.0	48.0
	32	4.1	8.2
	32	13.5	—
	32	15.7	19.9
	32	39.2	43.1
	32	55.2	59.1
	33	10.2	14.3
	B.		
	33	35.1	—
	33	38.7	42.9



x99 2.09 cur  
B D

10 9.22

11.12 3.54

9.10 6.07

10 1.32 ms

B

10 3.35 2 win lost

10 8.30 ms

x9.7#8.9 7.01 m

x8.9 8.9 7.18

10 2.51

10.1 6.26

10 6.29 ms

9x9 9.33

11 1.00 1<sup>st</sup> win lost

B

10 2.31

x8 8.58

10 2.28 ms

D

10.11 9.42

10.11 2.36 ms

10 0.18

8x8 1.46

9.10 9.35

11 0.40 2 win lost

9.10 5.36

10 5.45

10 3.38

10 4.18

B

9.10 9.33 2 win lost

6.7 6.6 7.48 ms

11 5.48

11 7.50 2 win lost

3.86

9.10 8.30

10 2.20

Zone 84d

Jan. 23, 1855

To go with W.C.B. observations in Dec.

Zero of P.B. 88.07

Beg EC  
EndFor  
For 19.0

Dec + 20' to 30'

N.B This Zone is to be referred to  
the Equinox of 1854.0 not 1855.0 & the  
Mean of wires is to be reduced to the  
2<sup>nd</sup> wire

h m s

0..42..31.9 35.9

42..37.9 41.9

43 5.0 9.0

B

43..52.8 56.8

45..16.0 20.0

45..47.9

45..56.5 0.4

45..56.5 0.4

D

46..24.0 28.0

48..41.9 45.9

49..17.6 —

49..34.7 38.6

BB

50..29.5 33.4

51..00.1 4.3

51..22.7 26.7

52..29.0 33.1

52..47.5 57.3

53 57.9 1.8

54..16.9 20.9

D B D B

55..31.5 35.5



# abstract 3. Zone 84d

mag	h m s	0 1 "	"
9 <sup>1</sup>	0..59..02.2	+0..25..28	- 1970
9	1..7..37.5	0..29..00	
8.9	1..10..16.8	0..23..11	
9	1..34..23.4	0..21..38	
8	2..24..3.3	0..27..03	
8	2..25..13.6	0..23..30	
9	2..27..44.0	0..30..02	
7	2..28..3.1	0..27..00	
8	2..39..57.7	0..26..51	
8	2..42..53.4	0..21..48	

Jan 23

good def. - color and class

G.P.B. observes with applause

C 779 rewards amidst shouts & bravos

12 5.51

9.10 4.52 ms

12 7.10

B

12 9.40 cert

12 3.40

12 10.05 2 win (ar?)

10.11 6.32 } same B

11.12 4.10 }

D

12 4.55 ms

10 5.07

11.12 2.16 2 win lost

9.10 - 0.17 cert

B B

9 2.59

11.12 0.53

11 5.03

11 0.26

9.10 10.00

11 3.18

12 5.41

D B D B

10.11 0.21

84d

<i>h m s</i>	<i>s</i>
0..56..41.8	46.0
56..48.8	52.7
57.. 2.7	6.7
58.. 4.4	8.4
58..14.0	18.0
58..36.1	40.1

*B*

1.. 00..41.2	45.3
1.. 55.5	59.5
2.. 11.0	15.1
4.. 27.3	31.3
4.. 53.2	57.1

*D*

5..35.1	39.2
6..59.4	3.4
7.. 5.2	9.2
7..29.0	33.0
7..30.2	34.2

*B B B*

8..41.1	45.1
10.. 2.5	6.6
10.. 8.8	12.9
11.. 6.4	10.4
11..11.9	15.9

*D B*

11..43.9	47.9
13.. —	29.0
15..18.1	22.1
15..29.0	33.0
15..43.2	47.2

*B*

16..36.7	40.8
18..10.2	14.1
18..30.0	34.1
18..42.5	—
18..53.5	57.5

*D B*

19..30.8	34.9
19..49.7	53.7
19..55.5	59.5



84d

11.12 5.19  
 12 7.20 ms  
 9.10 10.15  
 9 5.12  
 11.12 9.29  
 12 -0.13

B

12.13 8.06

12 8.00

9.10 6.57

12 0.06

12 3.07

group of stars of 13 mag.

D Moonlight-interferes <sup>with</sup> estimation of mag.  
 12.13 6.59 cent. - difficult

12.13 6.27 Moon in first-quarter and

12 7.58 ms within ten degrees

11 3.38

9 7.47 ms catalogue star

B B B

12 8.26

12 9.29

8.9 2.58 catalogue star

11.12 5.07

11 8.04 ms

D B

12 2.52

11 6.42

10 4.35

11 7.01

12 5.02

B

11 -0.09

11 1.57

10.11 2.09 2 win 0.2 late

10 9.52 2 win lost

10.11 1.57

D B

11 6.23

12 8.46

12 3.11 ms

64d

<i>h m s</i>	<i>s</i>
1..20..20.4	24.4
23..3.6	7.6
<i>DBD</i>	
23..58.7	2.7
24..37.2	41.3
24 —	45.6
26..6.3	10.5
26..29.0	33.0
<i>B</i>	
28..26.8	30.8
28..54.1	58.1
30..36.9	40.9
30..38.1	42.1
30..45.2	49.2
31..13.9	17.9
31..22.5	26.6
<i>DB</i>	
32..52.4	56.3
33..12.1	16.1
34..16.1	20.2
34..35.6	39.5
34..46.0	50.0
35..7.9	11.9
<i>B</i>	
36..28.4	32.5
37..25.4	29.3
39..12.4	16.6
<i>BD</i>	
41..33.6	37.7
42..1.1	5.1
42..50.0	54.0
44..7.1	11.1
44..8.9	12.9
44 —	16.3
<i>BBBB</i>	
45..7.2	11.2
46..57.2	1.2
47..57.7	1.7
48..11.2	15.1



84d

1.46  
3.124  
1.28

12 1.51 General other 12 mag. in field

12 8.39

DBD2

11.12 1.37

12 7.56

12.13 9.36 1<sup>st</sup> twin lost

12 6.59

12 6.54

B

8.10/2 0.41

9 8.42

9.10 7.45

11.12 3.10 ms

9.10 4.47 ~~ms~~

12 4.37

12.13 4.40 ms

DB long Dots

9 2.00

11.12 5.02

9 1.24

Catalogue star

10 3.03

12 10.37

10.11 8.51

B

11 2.13

11.12 10.11

12.13 4.49

BD

12.13 10.10

11 9.10

11.12 5.53

11.12 9.05

9.10 9.57 ms

12 6.42 ms 1<sup>st</sup> twin lost

B B B B

10 9.32

11 9.52

12 2.42

11 3.19

84d

h m s

1..	50..	50.3	54.1
	51..	56.7	0.5
	52..	20.1	24.1

B

53..49.8 53.5

54..59.2 3.0

55..35.3 39.3

56..3.5 7.4

56..13.7 17.6

56..20.4 24.5

56..34.0 38.0

57..7.0 11.0

57..35.4 39.4

D

58..3.0 7.2

58..21.5 25.5

59..13.2 17.0

59..21.3 25.5

59..41.3 45.3

1..59..51.1 55.1

BB

2..2..19.7 23.8

2..37.7 41.8

3..5.2 9.2

3..48.2 52.2

3..58.7 2.8

D

4..28.6 32.6

5..41.0 44.9

6..7.3 11.3

6..17.2 21.0

8..47.3 51.3

8..53.6 57.5

BD

9..12.6 16.6

9..26.1 30.1

10..5.0 9.0

10..19.0 23.0

10..49.7 53.9



84 d

12.13 7.13  
~~12.13~~ 8.49  
 10 6.12  
 B

12.13 3.00  
 12.13 7.17  
 12 10.48  
 11.2 9.20  
 10.11 7.49  
 12 4.38 ms  
 11 0.17  
 11 5.16  
 12.12 0.06  
 D

Atmosphere becoming  
 disturbed

12 8.27  
 12 6.24  
 9.10 7.15  
 12 4.33  
 12 1.32 very prob. 1.42  
 10.11 6.33

B B  
 12 6.36  
 12 5.53  
 12 3.10  
 12 4.19  
 12 8.09

D  
 12 8.16  
 9.10 6.25  
 12 2.09  
 12 10.22  
 11 6.24  
 12 0.50 ms

B D  
 12.13 6.23  
 12 0.10  
 10.11 6.48  
 11 3.23  
 12.13 7.40

Group of 12.13 mag.

84d

h m s	s
2..11.20.9	24.8
13.. 6.2	10.2
13..30.2	34.2
16 7.6	11.5
16..18.0	22.0

B

17..20.5	24.6
17..25.4	29.1
17..53.6	57.7
18..31.8	35.7
19.. 5.9	9.8
20..13.8	17.9

DD

21 --	6.9
22..27.3	31.2
22..43.3	47.3
23..55.6	59.4
23..56.0	59.9

24..48.1	52.1
25.. 8.5	12.5
25..48.2	52.2
25..55.7	59.9

BDB

26..35.0	38.9
27.. 4.7	8.9
27..37.3	41.2
28..44.2	48.2
29.. 3.3	7.4
29..20.2	24.2
30..26.6	30.5
30..56.6	0.6
30..57.2	1.4
31..42.5	46.4

BD

32..55.5	59.5
33..58.9	2.7
34.. 1.2	5.1
35..18.4	22.4
35..36.1	40.0
35..37.3	41.2



84d

11 0..28  
 10 7..06  
 10 1..44  
 11 8..33  
 11.12 10..03  
 B  
 12 10..04  
 12 9..02 ms  
 10.11 4..01  
 12 3..58  
 12 2..55  
 12 1..19 comp 15 mag. 15" s.p.  
 DD  
 12 9..12  
 12 8..41  
 10 10..37  
 12.13 4..10  
 8 6..41 double both 8 mag dist. 12" s.p.  
 8 6..51 Beautiful! a fine double star  
 8.2 2..03 components equal  
 8 3..20  
 12 9..27  
 12 3..05  
 BDB  
 10 7..41 + 12 mag. in same R. 10..02  
 12 1..12  
 10 9..56  
 12 -0..13  
 12 7..49  
 10 7..29  
 11 4..17  
 11 -0..33  
 12 -0..16 ms  
 11 3..54 - Faint neb. in a group of  
 BDB 13 mag. stars 8" sep. 3..54  
 12 6..46 and 4" north  
 12 2..05  
 12 5..47 ms  
 12 3..56  
 12 4..08  
 12 4..47 ms

84d

2.. 36.. 43.0 47.1

36.. 45.9 —

36.. 49.3 53.3

B

37.. 23.3 27.3

39.. 14.1 18.0

39.. 46.3 50.4

39.. 53.4 57.4

40.. 28.7 32.7

D

42.. 05.8 9.9

42.. 46.8 50.8

42 — 57.1

43.. 15.9 20.0

44.. 39.3 43.5

45 2.1 6.2

DBD

46.. 54.1 58.0

48.. 23.0 27.0



84d

11 7.14  
12 4.26 2 win lost ms  
11 2.08 ~~ms~~

B

12.13 8.12

12.13 3.02

12 9.32 ~~2 win lost~~

7.8 6.46 ms Catalogue star

10.11 3.57

D

12 7.44

7.8 1.39 Catalogue star

~~7.8~~ 11 5.32 1 win lost

12 10.30

12.13 8.45

12 8.55

- 2 B D

12.13 7.05

12.13 9.41

11 3.07

11 4.42 ms

B. D. B.

Zone ~~89~~  
~~90~~ 20' to 30'

~~88~~  
~~90~~ 20' to 30'

G. P. B. obs C. W. Y. records

Saturday Feb 3<sup>rd</sup> 1855

1855  
Jan 29 G. P. Bordewes

Begin 3..40 " Yr 18<sup>th</sup>  
End " 5..42 " 16.0

Mem. To make the 1<sup>st</sup> wire  
read of to Eq. of 1855.0

Pos. Cr. 178..06

First star is A of Zone 84d

7-8. M 2<sup>h</sup> 42<sup>m</sup> 53.4  
Dr. +0° 21' 47.5

1 <sup>st</sup> wire	2 <sup>nd</sup>	Mean reduced to 1 <sup>st</sup> wire
2..42..53.6	57.6	
42..54.0	57.9	
43..22.7	26.7	
43..41.0	45.1	
B		
44..46.0	50.2	
45 9.0	13.0	
47..00.9	5.1	
48..29.8	—	
D		
49..57.1	1.1	
49..58.8	2.9	
51..31.6	35.5	
51..59.5	3.4	
52..1.3	5.3	
52..38.2	42.2	
52 50.1	54.1	
53..19.7	23.7	
B B		

2..42.. —	57.3
42 —	57.8
43..22.7	26.6
43..41.0	45.0
D	
44..46.0	50.0
45.. 8.8	12.8
47..00.8	4.8
48..29.6	33.6
B	
49..56.9	1.0
49..58.8	2.8
51..31.5	35.4
51..59.4	3.5
52..1.5	5.5
52..38.2	42.0
52..50.0	54.0
53..19.7	23.6
D B D	



20' to 30'

Dec - 20' to 30'		Dec +		Mag
1855	2	39 59.9	26 50.6	8
		42 53.4	21 47.5	8
		52 50.0	23 43.5	8
	3	16 09.1	23 41.4	7
		16 08.8	23 31.4	7
		43 42.6	29 30.5	8
		57 27.4	20 11.7	9
	4	1 14.7	23 52.2	8-9
		4 42.1	21 27.8	6-7
		5 08.1	23 31.7	9-10
		18 35.6	20 57.4	9
		21 07.6	26 25.8	9-10
		39 26.4	21 14.9	8-9
		40 39.4	24 52.7	8
		41 20.6	29 02.1	9
	4	54 22.8	30 25.6	6.7

Done 90

Jan 29 Mild and clear - high wind Feb. 3 J.P.B. observes

J.P.B. Observes and C.W.B. records

87

88

7.8 1.47 Catalogue Star  
 11 5.39 ms  
 12 10.38 cut  
 12 1.15  
 B  
 12.13 8.54 paint - 2 wire ~~object~~  
 12 9.02  
 12.13 7.13  
 12.13 9.50 2 wire lost  
 B  
 11 3.13  
 11 4.50 ms  
 10.11 9.46  
 12 10.37  
 12 2.24 ms  
 12 4.44  
 8 3.41 yellow  
 9 4.58  
 B B

8 1.47  
 11 5.39 ms  
 11.12 10.39  
 12.13 1.15  
 B  
 12.13 8.53 paint  
 12 9.01  
 12.13 7.12  
 12.13 9.51  
 B  
 11 3.13  
 11 4.49 ms  
 10 9.46  
 12 10.30 — same  
 12/13 2.25 ms.  
 12 4.44  
 7.8 3.41  
 9/10 4.58  
 D.B.B. Many small stars



~~89~~  
~~87~~

2..55..47.8 51.6  
 56..18.7 22.8  
 56..24.4 28.4  
 DB DB  
 57..02.3 6.3  
 57..35.0 39.1  
 57..43.4 47.3  
 57..57.9 1.9  
 B  
 58..21.7 25.5  
 58..26.1 30.1  
 59..29.9 —  
 59..41.2 45.2  
 2..59..48.2 52.2  
 3.. 0.. 9.0 12.9  
 0..20.4 24.5  
 1..00.4 4.3  
 1..12.7 16.6  
 DB  
 2..50.7 54.6  
 3.. 2.6 6.6  
 5..16.8 20.9  
 5..26.1 30.1  
 5..43.4 47.5  
 B  
 7..32.5 36.4  
 7..34.0 38.0  
 7..59.5 3.6  
 9..12.9 17.0  
 9..17.9 22.0  
 B  
 9..44.8 48.8  
 9..58.1 2.1  
 10..57.8 1.7  
 11..45.6 49.5  
 12..0.2 4.2  
 12..24.9 28.8  
 DD  
 13..45.0 48.9  
 13..7.8 11.6

~~90~~  
~~88~~

2..55..47.7 51.6  
 56..18.7 22.8  
 56..24.3 28.3  
 DB  
 57.. 2.3 6.3  
 57..35.0 39.1  
 57..43.3 47.3  
 57..57.9 1.9  
 B  
 58..21.6 25.5  
 58..26.1 30.0  
 59..29.8 33.8  
 59..41.2 45.1  
 2..59..48.1 52.1  
 3.. 0.. 8.9 12.9  
 0..20.2 24.2  
 1..0.8 4.1  
 1..12.6 16.5  
 D  
 2..50.6 54.4  
 3.. 2.4 6.4  
 5..16.7 20.8  
 5..26.0 30.0  
 5..43.4 47.4  
 BB  
 7..32.3 36.3  
 7..33.9 —  
 7..59.5 3.5  
 9..12.8 16.9  
 9..17.8 21.8  
 D  
 9..44.6 48.7  
 9..58.0 2.0  
 10..57.8 1.6  
 11..45.5 49.5  
 12..00.1 4.1  
 12..24.8 28.7  
 B  
 13..4.9 8.0  
 13..7.6 11.7



89

20 to 30'

90

9.10 8.42 ~~8.7~~  
 12 6.47  
 9 6.59 ms reddish  
 DB DB

11 9.51  
 12 1.54  
 12 2.20 ms  
 12 9.03  
 B

11 8.52  
 11.12 3.14 ms

10.11 3.19 2 win lost

11.12 5.36

11 0.26

9.10 10.19

12 4.49

12 9.29

10 7.47

DB

12 1.56

9.10 2.16

12 5.23

11 10.13

11 3.36

B Strong wind - telescope vibrates

8 1.36

9.12 9.28

9 -0.09

8.9 7.07

11 0.33 ms

B

Numbers of 12 may. in field

12 5.36

12 4.56

12.13 4.34

11 2.32

12 0.34

10 7.44

DB

12 9.19

12 7.32 ms

10 8.42 ~~8.8~~  
 12.13 6.37 cent.  
 9 6.58 ms  
 DB

10.11 9.51  
 12.13 1.58  
 12 2.17 ms  
 12 9.02  
 B

10.11 8.52  
 12 3.14 ms

11 3.19

12 5.37

11.12 0.26

9.10 10.19

12 4.49

12.13 9.30

10 7.47

DB

12 1.56

10 2.16

12 5.24

11 10.13

11 3.36

B B

8 1.36

9 9.28 ms 2 win lost

9 -0.09

9 7.07

11 0.31 ms

DB

12.13 5.34

12 4.55

13 4.34

11 2.32

12.13 0.34

10 7.43

B

12 9.17

12 7.30 ms

double



89 87

3.. 14.. 06.4 10.4  
 14.. 17.5 21.5  
 15.. 18.3 22.4  
 B  
 16.. 9.2 13.2  
 16.. 56.0 0.0  
 18.. 9.2 13.2  
 19.. 26.2 30.4  
 D  
 20.. 56.8 0.7  
 21.. 32.7 36.6  
 21 — 40.7  
 22.. 23.6 —  
 22.. 38.0 42.1  
 22.. 51.9 55.9  
 BBB  
 23.. 52.0 56.0  
 25.. 49.0 —  
 25.. 51.6 55.7  
 26.. 15.3 19.3  
 27.. 0.0 3.9  
 27.. 15.3 19.2  
 27.. 22.9 27.0  
 DDB  
 28.. 57.2 1.2  
 29.. 0.9 4.9  
 29.. 17.2 21.2  
 29.. 31.0 35.0  
 29.. 51.1 55.1  
 30.. 2.7 6.7  
 30.. 15.3 19.5  
 30.. 24.8 28.8  
 B  
 32.. 34.1 38.3  
 32.. 41.5 45.5  
 33.. 51.9 55.8  
 34.. 21.6 25.8  
 35.. 29.8 33.8  
 35.. 55.5 59.3  
 36.. 28.1 32.0  
 36.. 30.7 34.7

68

3.. 14.. 06.3 10.3  
 14.. 17.5 21.5  
 15.. 18.2 22.3  
 DB  
 16.. 9.2 13.2  
 16.. 56.0 0.0  
 18.. 9.2 13.2  
 19.. 26.1 30.2  
 B  
 20.. 56.7 0.8  
 21.. 32.6 36.6  
 21 — 40.6  
 22.. 23.4 27.4  
 22.. 38.0 42.0  
 22.. 51.7 55.7  
 DD  
 23.. 51.8 55.8  
 25.. 48.8 52.9  
 25.. 51.7 55.6  
 26.. 15.2 19.2  
 26.. 59.9 3.9  
 27.. 15.2 19.2  
 27.. 23.0 26.9  
 B  
 28.. 57.1 1.2  
 29.. 0.9 4.8  
 29.. 17.2 21.2  
 29.. 30.9 34.9  
 29.. 51.2 55.1  
 30.. 2.7 6.7  
 30.. 15.4 19.4  
 30.. 24.7 28.7  
 D  
 32.. 3 — 38.1  
 33.. 51.7 55.7  
 34.. 21.5 25.6  
 35.. 29 No marks on sheet  
 35.. 55.2 59.2  
 36.. 28.0 31.9  
 36.. 30.8 34.7



89 88

reddish

20' to 30'

90 88

10 4..13

11 4..49

11 9..27

B

7 3..42 cert-

12 0..42

12 1..28

12.13 4..30

D

12 1..41

11.12 6..21

12.13 6..20 1<sup>st</sup> wine lost

12.13 2..22 2 wine lost

11.12 - 0..15

12 9..21

B B B

11 1..25

12 3..48 2 wine lost

12 7..28

10 10..04

11 2..16

9.10 6..16

12.13 4..42

D D D

12 2..26

11 2..37 ms.

11.12 9..27

9 6..25

12 4..29

11 4..25

12 9..22

10 9..41

B

12.13 0..03

12 5..05 ms

10 2..33

12.13 7..28

12.13 8..10

10 8..58

12 1..39

12 3..10 ms

Catalogue

chrom.  
3..37

10.11

4..03 cert-

11

4..48

11

9..26

D B

7

3..41

yellowish

12

0..42

12

1..27

12

4..29

B

12

1..40

11.12

6..20

12.13

6..20 1<sup>st</sup> wine lost

12.13

2..23

12

- 0..15

12

9..21

D D growing cold

10.11

1..23

12.13

3..48

12.13

7..28 ms

10

10..05

12

2..06 cert

9

6..15

12.13

4..41

B

12

2..27

11

2..38 ms

11.12

9..27

9

6..25

12

4..27

12

4..24

11

9..20

10

9..40

D

Wind rising

12.13

0..02 1<sup>st</sup> wine lost

12

5..05 10<sup>th</sup>

10

2..33

12.13

7..27

12.13

8..10

9.10

8..58

12

1..37

12.13

3..08 ms



89 87

90 88

D

3..36..58.9 3.1  
 37..49.7 53.8  
 39..57.3 1.4  
 41..55.2 59.2  
 42..11.5 15.4  
 42..32.9 36.8

B

43..43.1 47.0  
 43..54.3 58.4  
 47..15.6 19.8  
 47..51.2 55.2

D

50..00.0 4.0  
 51..28.1 32.1  
 51..31.4 35.1  
 52..26.1 30.1

B B D

53..58.8 —  
 54..20.3 24.3  
 55..10.5 14.5  
 57..41.1 45.0  
 58..16.3 20.3  
 58..36.3 40.4

B

3..59..41.9 46.0  
 4 1..15.1 19.1  
 1..41.3 45.2  
 1..44.3 48.1  
 2..9.5 13.6  
 2..17.3 21.4

D

3..24.5 28.5  
 4..0.1 4.1  
 4..42.0 46.0  
 4..42.6 46.6  
 5..9.1 13.1  
 5..12.1 16.0

B D

6..46.9 50.8

B..36..59.0 3.0

37..49.7 53.7

39..57.3 1.4

41..55.1 59.1

42..11.3 15.4

42 32.8 36.9

B B

43..43.1 47.0

43..54.2 58.2

47..15.7 19.6

47..51.1 55.2

B

50 — 3.9

51..28.1 32.1

51..31.3 35.2

52..26.0 30.1

D B

53..58.7 2.8

54..20.3 24.2

55..10.4 14.4

57..41.0 44.9

58..16.3 20.3

58..36.1 40.1

D B B

3..59..42.0 46.9

4 1..15.0 19.1

1..41.0 45.1

1..44.3 48.3

2..9.4 13.5

2..17.3 21.4

B

3..24.3 28.3

4..0.2 4.1

4..42.0 46.0

4..42.6 46.7

5..9.1<sup>B</sup> 13.1

5..12.0 16.0

D B

6..46.8 50.8



~~89 87~~ 20 to 30'

90 88

D  
 12 4.19  
 11 7.43  
 11.12 3.27  
 12 6.31  
 12 7.57  
 12 8.41  
 B  
 8 9.36  
 9.10 7.33  
 10 5.04  
 11 6.03

another 12 mag. near  
 and forms a neat triangle  
 preceded by a 12.13 mag.

Catalogue Star

12 4.18  
 11 7.42

11.12 3.27

12 6.29

12 7.57

12 8.40

B B

8 9.36

9.10 7.32

10.11 5.04

11 6.02

B

Starless field

12 0.31  
 9 0.12  
 11.12 4.09 ms  
 12 6.22  
 B B D

Catalogue Star

12 0.30 1 wine lost - Remarkably

9 0.11

12 4.09 ms

12.13 6.20

D B

13 1.42

12 0.40

12 5.55

12.13 0.27

12 0.24

9 5.02

D B B

12.13 8.14

8.9 3.52

12.13 2.51

12 3.27 ms

12.13 9.16

12 2.38

B

12 9.48

12 3.53

11 1.54 comes

6.7 1.27 ms comp. 11 mag 12 m.p.

10 3.33

11 8.59 ms

D B

12.1 - 0.24

D  
 12 0.31  
 9 0.12  
 11.12 4.09 ms  
 12 6.22  
 B B D  
 12.13 1.43 2 wine lost

12 0.41  
 12 5.56  
 12 0.27  
 12 0.25  
 9 5.01 cent  
 B

12 8.14  
 8.9 3.53  
 12.13 2.50  
 12 3.26 ms  
 12 9.15  
 11 2.38

Catalogue Star

D  
 12 9.49  
 11.12 3.52  
 10.11 1.34 comes  
 6.7 1.28 ms  
 10 3.33  
 11 8.59 ms  
 B D

12 - 0.25

double comp. 10.11 12 m.p.  
 Catalogue Star



8982

4.. 6.. 48.4 52.4  
 7.. 9.3 13.3  
 8.. 1.4 5.4  
 8.. 21.9 25.9  
 B  
 9.. 24.2 28.2  
 10.. 0.3 4.3  
 11.. 25.8 29.8  
 11.. 32.1 36.0  
 11.. 51.7 55.7  
 12.. 19.4 23.3  
 BB  
 12.. 53.0 57.0  
 14.. 0.6 4.6  
 14.. 31.7 35.7  
 15.. 30.5 34.4  
 B  
 17.. 8.1 12.1  
 17.. 27.5 31.4  
 18.. 17.8 21.6  
 18.. 24.0 —  
 18.. 31.9 35.9  
 18.. 36.3 40.1  
 DB  
 20.. 25.6 29.5  
 20.. 55.7 —  
 21.. 8.2 12.2  
 22 8.5 12.5  
 22.. 25.2 29.1  
 22.. 50.5 54.7  
 23.. 16.3 20.4  
 B  
 24.. 24.1 28.1  
 24.. 42.7 46.7  
 25.. 47.8 51.8  
 25.. 53.6 57.5  
 26.. 19.8 23.8  
 26.. 30.4 34.4  
 BB  
 26.. 56.2 0.2

88

4.. 6.. 48.4 52.4  
 7.. 9.2 13.2  
 8.. 1.4 5.4  
 8.. 21.7 25.8  
 D  
 9.. 24.1 28.2  
 10.. 0.3 4.3  
 11.. 25.8 29.8  
 11.. 32.0 36.0  
 11.. 51.7 55.7  
 12.. 19.4 23.5  
 B  
 12.. 53.0 57.0  
 14.. 0.4 4.3  
 14.. 31.8 35.7  
 15.. 30.3 34.3  
 DB DB  
 17.. 08.1 12.0  
 17.. 27.3 31.3  
 18.. 17.8 21.8  
 18.. 24.1 28.1  
 18.. 31.7 35.8  
 18 — 40.0  
 B  
 20.. 25.5 29.5  
 20.. 55.7 59.6  
 21.. 8.1 12.2  
 22.. 8.3 12.4  
 22.. 25.1 29.0  
 22.. 50.5 54.5  
 23.. 16.3 20.3  
 BB B  
 24.. 24.0 28.0  
 24.. 42.7 46.7  
 25.. 47.8 51.7  
 25 53.6 57.5  
 26 19.8 23.7  
 26.. 30.3 34.3  
 D  
 26.. 56.2 0.2



~~8987~~

20 to 30

~~9088~~

11.12	2.15	ns		11.12	2.14	ns	
11	4.38			11	4.38		
12	9.23			12	9.22		
9.10	8.53	A 10 <sup>th</sup> mag. at southern edge of field		9.10	8.53		
*	B				D		
12	1.30	A pair of 12.13 mag. between these two stars		12	1.30		
12	5.34			12	5.34		
11.12	4.46			11.12	4.48		
11	6.43	ns		11	6.43	ns	
12	0.02	Violent wind		12	0.02		
12	5.08			12	5.07		
	B B				B		
12	-0.10	A 9 mag. about 11' passed		12	-0.11	a 9 mag. in lower part of field	
12	2.24			12	2.26		
12	8.56			12	8.56		
11	2.06			10.11	2.06		
	B				D B D B		
11	4.22	Group of 13 mag. stars		11	4.23		
12	5.46			12	5.47		
11	6.16			12	6.15		
11.12	8.22	2 win lost		12	8.22		
10	3.56			10	3.56		
9	0.55	ns	Catalago star	8.9	0.55	ns	1 <sup>st</sup> win lost
	D D				B		
9.10	9.50			9.10	9.50		
12	5.49	2 win lost		12.13	5.48		
9.10	6.25	cent	Catalago star	9.10	6.25		
12	7.22			12	7.23		
9.10	3.43			9.10	3.44		
10	2.13			10	2.13		
12.13	3.39			12.13	3.38		
	B				B B B		
12	0.57			12	0.57		
10	6.46			10	6.16		
11	0.58			11	0.56		
12	3.32	ns		12	3.32		
12	4.50			12	4.50		
11	3.42			11	3.43		
	B B				D		
9.10	5.31			9	5.32		



8967

4.. 27..54.2 58.1  
28 3.3 7.3

B

30.. 15.1 19.0

30.. 17.1 21.1

30.. 29.2 33.2

31.. 14.1 18.1

31.. 15.0 19.0

31.. 29.3 33.3

31.. 30.4 34.3

32.. 5.0 8.8

BDB

32.. 53.1 57.1

33.. 4.5 8.8

34.. 17.5 21.2

34.. 18.3 22.2

34.. 30.2 34.2

35.. 14.0 18.0

35.. 28.1 32.1

B

36.. 10.4 14.2

37.. 12.8 16.8

37.. 13.5 17.5

37.. 30.1 34.1

38.. 3.7 7.7

38.. 42.1 46.1

38.. 44.9 48.9

39.. 13.3 17.2

39.. 27.2 31.2

39.. 55.0 59.0

40.. 20.8 24.8

B

40.. 39.5 43.5

40.. 49.3 53.3

40.. 53.0 57.0

41.. 12.9 16.9

41.. 21.0 25.0

41 — 21.8

DD

42.. 14.9 18.8

4.. 27..54.3 58.3  
28.. 3.3 7.3

DB

30.. 15.1 18.9

30.. 17.1 21.1

30.. 29.1 33.2

31.. 14.0 18.1

31.. 14.9 18.9

31.. 29.2 33.2

31.. 30.3 34.2

32.. 4.7 8.8

B

32.. 53.1 57.0

33.. 4.5 8.7

34.. 17.2 21.3

34.. 18.1 22.1

34.. 30.2 34.2

35.. 14.0 18.0

35.. 28.2 32.2

D

36.. 10.3 14.3

37.. 12.8 16.7

37.. 13.5 17.4

37.. 30.1 34.1

38.. 3.5 7.5

38.. 42.1 46.0

38.. 44.9 48.9

39.. 13.2 17.2

39.. 27.1 31.1

39.. 55.0 59.0

40.. 20.7 24.7

D

40.. 39.6 44.5

40.. 49.3 53.3

40.. 53.0 57.0

41.. 12.9 16.9

41 21.0 24.9

B

42.. 14.7 18.7



89 87

20' to 30'

88

12 10.42

Comp. 13 mag. 12" m.f.

12 10.42

Comp. 13" m.f.

12 9.50

12 9.50

12.13 83

Bright-moonlight-moon

12.13 83

12.13 3.07

nearly full

12.13 3.07

10.11 5.12

ns Many 13 mag. stars in

10.11 5.12

ns

12 7.16

field

12 7.17

11 7.37

11 7.37

11 4.46 ns

11 4.46

ns

10.11 1.08

10.11 1.08

12 1.40 ns

12 1.40

ns

12 7.49

12 7.50

B D B

B

11.12 10.15

12 10.19

12 6.53

12.13 6.55

12.13 5.18

12 5.19

10 6.24 ns

10 6.25

ns

10 2.38

9.10 2.34

11 0.05

11 0.05

12 3.25

12 3.26

B

D

12 10.20

12 10.21

12 0.44

12.13 0.44

11 -0.20 ns

11.12 -0.19

ns

10 0.38

10.11 0.38

12 7.08

12 7.09

11 4.49

11 4.48

12.13 2.47 ns

12 2.47

ns

12 6.55

12 6.55

8.9 1.16

Catalogue stars

8.9 1.16

12 1.30

12 0.30

cent

12 8.38

12 8.39

B

D

8 4.57

Catalogue star

7.8 4.57

11 6.48

11 6.48

zwin b

11.12 7.01 ns

11.12 7.02

ns

10.11 9.36

10 9.35

9 9.06

Catalogue star

9 9.06

10 0.40

twin lost

10 0.41

No R

D D

B

12 2.30

2 2.40

12

2.30 cent

87 87

4,, 42,, 52.1 55.9  
 43,, 8.2 12.1  
 43,, 19.4 28.6  
 43,, 29.0 33.0  
 44,, 10.9 14.8  
 44,, 13.1 17.1

B

44,, 44.1 48.0  
 45,, 19.1 23.1  
 46,, 44.1 48.1  
 46,, 55.1 59.1  
 48,, 5.2 9.1  
 48,, 11.1 15.0  
 49,, 11.6 15.6

D

50,, 15.2 19.2  
 51,, 28.2 32.2  
 51,, 41.6 45.6  
 51,, 43.0 47.0  
 52,, 22.0 26.0  
 52,, 58.8 —

53,, 2.4 6.5

D B

90 88

4,, 42,, 52.0 56.0  
 43,, 8.2 12.2  
 43,, 19.4 23.5  
 43,, 29.1 33.0  
 44,, 10.8 14.8  
 44,, 13.2 17.2

B

44,, 44.0 48.0  
 46,, 19.1 23.1  
 46,, 44.0 48.1  
 46,, 55.2 59.2  
 48,, 5.1 9.1  
 48,, 11.0 15.0  
 49,, 11.8 15.8

B B

50,, 14.8 18.7  
 51,, 28.3 32.4  
 51,, 41.8 45.8  
 51,, 43.1 47.1  
 52,, 22.0 26.0



~~8987~~

20 to 30

~~9088~~

12 6.36  
 11.12 4.58  
 11.12 6.08  
 11 -0.28  
 12 8.56  
 12 9.25 ms  
 B

9.10 10.21  
 11.12 6.35  
 12 2.32  
 11 8.08  
 12 2.51  
 10.11 3.16 ms  
 12 0.44

D Wind increases

12 5.52  
 12 7.54  
 11 3.17  
 11 5.06 ms  
 12 5.28  
 12 8.13 2<sup>nd</sup> part  
 12 -0.11

B B

12 3.44  
 6.7 10.32

Catalogue Star

12 6.36  
 11.12 4.58  
 11.12 6.08  
 11 -0.28 / stamp marks signal  
 12 8.56 by mistake  
 12 9.25 ms  
 B

9. 10.22  
 11 6.35  
 12 2.32  
 11 8.07  
 12 2.50  
 11 3.16 ms  
 12.13 0.44

B B

12 5.52  
 12 7.55  
 11 3.17  
 11 5.07  
 12 5.27  
 12 8.13  
 12 -0.11 ms

B

12 3.44  
 7 10.34  
 B B B B B  
 5.50

5



1855 91  
Feb 3<sup>d</sup>

11 5<sup>57</sup>  
11 9<sup>1138</sup>  
12 4<sup>1157</sup>  
11  
11





82





07















