

KG
11366
v.547

Zone.
Chronograph Record
Circle Readings.

A. 18.
From 1875, March 31 to 1875, June 28

Charles W. Sever, University Bookstore, Cambridge.

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

18750hae.pro.1551R

Date. 1875, March 31

First minute-break. April 5

c, set at.

N. Coll.	S. Coll.
Obs. W.A.R.	W.A.R.
Rec. J.F.M.	J.F.M.
Sum	
Mean.	

α .		δ .	Mag.	REMARKS.
2 13 04	80	49 53	8.4	
11 53.3		49 53.0	8.0	
14 01	85	51 05		
12 50.4		76	8.5	
15 13	91	51 33	9.4	
13 56.3		36.4	9.2	
16 03	93	51 31	9.4	
14 52.4		33.9	9.1	
17 23	92	53 57	9.0	
16 6.4		54 0.5	8.6	
18 12	83	54 31	8.8	
17 1.5		34.6	8.5	
19 07	93	54 17	7.0	
17 50.5		54 20.5	7.5	
20 15	85	51 37	8.4	G. C.
19 4.5		51 39.6	9.2	
			9.1	
54 38	88	54 47	6.4	
53 22.7		54 51.2	6.0	
55 23	94	52 19	9.3	
54 10.2		22.6	9.3	

very close double mean R A

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 4 15.7 27.1

10 3 35.0 47.4

0 1 30.2 43.9

30 3 16.8 28.5

30 3 19.0 30.5

35 0 21.7 33.9

35 0 18.2 31.3

5 4 57.8 10.8

5 4 46.9 57.7

35 1 24.5 36.0

35 1 23.9 37.4

45 4 50.9 1.1

45 4 56.7 8.7

25 4 14.7 25.4

A.+S

25 4 25.3 36.9

15 4 43.3 54.4

15 4 33.9 44.9

45 3 20.3 31.5

45 3 17.7 30.2

Date.

1875, March 31
April 5

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

8
56 59 88 54 30 9.0
55 437 336

8.9

58 09 73 52 07 7.0
56 50.8 127

7.2

59 50 50 52 8 5.0 2
58 378 1.18

5.5

0 34 94 54 5 9.5
59 181 91

9.5

2 48 80 53 16 8.8
1 229 202

9.1

4 09 92 53 32 8.9 lower of pr. #
2 558 360

9.2

5 06 88 54 55 9.0 22
3 512 390

9.1

5 57 85 54 01 8.1
4 418 54

8.4

7 0 57 54 33 5.0
5 453 375

5.0

8 16 87 53 27 8.8
7 35 307

8.4

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 1 15.8 25.7

35 1 11.5 23.9

55 3 27.8 39.2

55 3 22.9 34.5

55 4 45.1 56.1

55 4 41.5 53.0

0 2 11.8 21.8

0 2 33.9 46.0

50 2 3.0 12.4

50 2 6.4 17.3

30 4 24.4 33.9

30 4 26.8 38.5

30 1 15.7 26.9

30 1 10.4 23.0

5 0 48.3 59.2

5 0 51.5 4.9

30 3 59.2 10.9

30 4 9.0 20.2

40 0 12.5 23.0

40 0 11.9 23.9

Date.

First minute-break.

c, set at.

1875, March 31
April 5

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

9 05 53
8 40.1

8.8 53 01
5.5

9.0 222
8.8

10 08 9.1 53 14

11 30
10 16.7

7.0 53 02
4.0

7.1
6.5

13 33
12 19.7

8.5 53 28
32.6

2.00
9.0
8.7

15 57
14 42.2

8.0 54 56
54 0.5

222

16 36
15 21.1

8.5 54 35
38.0

9.0
8.7
9.3
8.6

222 ^{med} 8 pr. 1st strike for each
2nd 8 pr. 1st strike for each

17 04
15 48.8

8.8 54 17
21.3

8.8
8.7

19 29
18 15.5

9.2 54 42
45.2

9.2
9.2

21 42
20 29.5

8.8 53 22
25.7

9.0
8.7

23 37
22 24.4

9.0 53 41
44.9

8.9
8.8

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

6⁻ 1 21.3 32.05⁻ 1 16.1 26.8

lost

5⁻ 2 35.0 45.25⁻ 2 34.1 45.235⁻ 4 12.4 22.535⁻ 4 10.9 21.4

not seen

30⁻ 2 56.9 7.530⁻ 2 58.4 9.450⁻ 0 43.1 53.150⁻ 0 55.0 6.925⁻ 1 13.3 24.025⁻ 1 6.7 19.245⁻ 1 2.4 14.545⁻ 1 3.0 14.725⁻ 1 58.4 7.9 seeing pretty good25⁻ 2 10.9 22.7 seeing very fine

Date. 1875, Apr. 10
 First minute-break. Apr. 14

c, set at.

Sum
 Mean.

N. Coll.	S. Coll.
Obs. W.A.R. W.A.R.	
Rec. J. Z. M. J. Z. M.	

a.		s.		Mag.	REMARKS.
9 26 09	80	51	59	8.9	222
24 550		52	82	9.0	pr. + upper #
26 36	91	50	33	9.1	
25 306			372		
28 07	84	51	11	9.3	
26 521			151	9.2	
29 25	89	49	58	8.8	*P
28 197		49	582	8.9	
31 10	90	54	6	7.0	
29 564			91	7.7	
32 15	84	54	31	8.5	
31 09			345	8.0	
33 33	90	54	5	9.2	222
32 186			79	8.8	
34 16	94	54	6	10.0	
33 18			96	9.5	
35 22	90	54	22		222 not seen
36 09	91	54	29	9.3	
34 547			820	9.4	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 2 49.3 2.7

5 2 39.2 51.4 Sure

30 2 56.8 12.4

lost

55 0 2.0 17.9

55 0 5.1 16.7

10 2 51.1 6.9

10 2 51.9 6.0

0 2 23.6 37.9

0 2 21.5 31.8

35 2 26.2 40.3

35 2 21.9 33.2

0 3 42.0 55.8

0 3 41.6 52.8

0 2 43.3 57.1

0 2 3.5 15.4

not seen

35 4 37.9 51.0

35 4 49.0 59.9

18750bae.proj.1551R

Date.

First minute-break.

C, set at.

April 10

April 14

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

9 37 46
36 36.3

93 58 23
276

9.3
9.2

38 59
37 55.1

85 51 33
374

8.4 2
8.4

39 47
88 376

74 54 52
559

7.7 2
7.3

40 51
35 47.2

82 57 13
~~176~~ 176

9.3 2 2 2
9.5

41 28
40 23.9

88 57 43
478

8.5
9.3

42 25
41 17.1

85 52 37
420

8.3
8.7

43 20
42 17.7

85 52 14
160

8.4 2
8.7

44 17
43 8.7

88 53 12
164

8.9
8.9

45 35
44 31.7

82 51 08
127

7.8
8.2

46 30
45 26.9

95 51 55
597

9.4
9.5

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

40 4 34.9 48.1

40 4 26.1 37.9

30 4 31.8 46.5

30 4 17.5 29.5

15 0 51.5 6.0

15 0 48.8 59.6

50 3 26.6 41.7

50 3 15.4 27.5

20 3 58.3 12.6

20 3 58.9 11.5

30 0 1.3 16.1

30 0 0.8 13.1

55 0 55.1 9.8

55 0 54.8 7.1

55 0 55.3 10.0

55 1 1.8 13.1

55 3 57.0 11.9

55 3 57.9 10.1

10 2 4.6 18.2

10 2 5.1 16.9

Date.

First minute-break.

C, set at.

N. Coll.

S. Coll.

Sum

Mean.

1875, April 10

April 14

a.

s.

Mag.

REMARKS.

9 47 46
46 37.3

7.0

54 52
56.6

6.2

6.5

49 51
48 42.3

9.3

54 38
41.7

9.2

9.5

2 2 2

50 38
49 30.9

8.8

52 35
33.9

8.6

2 2 2 H

H. J.

51 20
50 11.7

9.4

53 59
54 4.1

9.4

9.6

53 3
51 5.6

8.5

54 15
20.2

8.7

8.5

54 36
53 28.6

8.8

54 29
33.9

8.5

8.9

56 04
54 16.1

6.2

54 30
34.9

5.0

5.8

2 2 2

56 48
55 38.9

6.5

52 58
53 3.3

6.0

6.7

58 37
57 35.0

8.4

49 59
50 2.4

8.0

8.3

2

59 28
58 21.6

9.0

54 37
42.3

9.0

9.3

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 1 13.9 27.3

15 1 15.8 28.7

25 4 45.1 57.6

25 4 42.1 52.5

not seen

35 2 56.7 8.6

5 4 25.4 39.4

5 4 47.0 57.5

50 1 0.9 14.7

50 1 53.7 5.9

35 3 20.1 34.4

35 3 19.9 31.4

35 1 26.8 41.5

35 1 25.1 37.5

5 3 21.4 34.2

5 2 57.6 3.0

5 3 53.1 7.8

5 3 54.8 6.8

25 4 35.0 47.8

25 4 40.6 52.2

18750bae.pr6j.1551R

Date. 1875, April 10
14

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

10 0 35
9 5 386

80 53 40
452

8.2

8.6

2 10
1 35

91 53 40
452

9.2

9.4

3 36
2 291

92 54 7
123

9.2

9.2

4 33
3 266

85 54 7
123

8.5

8.0

5 54
4 470

94 54 47
516

9.2

9.3

7 41
6 396

86 51 20
299

8.8

89.4

9 17
8 101

80 52 55
53 08

8.4

10 24
9 196

90 54 08
128

8.8

11 57
10 521

70 54 26
309

6.5

13 15
12 104

94 54 46
522

9.1

9.4 ref. ind. wire

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 1 49.2 2.1

25 2 0.0 11.4

25 2 0.3 13.7

25 1 58.8 9.8

0 0 22.5 37.2

0 0 24.5 35.6

0 0 16.4 30.2

0 0 22.5 35.5

20 0 17.0 31.9

20 0 13.3 25.4

40 2 16.1 31.3

40 2 13.4 25.7

10 2 36.7 49.4

55 4 3.1 16.0

40 1 57.2 10.5

20 2 0.9 15.0 seeing bad

20 2 5.7 17.4 seeing horrible

Date. 1875, Apr. 15
 first minute-break. Apr. 20

C, set at.

Sum
 Mean.

N. Coll.	S. Coll.
Obs. W.A.R.	W.A.R.
Rec. J.F.M.	J.F.M.

α.		δ.	Mag.	REMARKS.
9 26 04 24 55.0	9.0	51 59 52 3.2	9.2 9.0	222
26 36 25 30.6	9.1	50 33 37.2	9.1 9.0	
27 40 26 26.3	9.5	54 43 46.3	7.9 7.9	22
28 31 27 16.8	8.8	54 53 56.4	9.0 8.8	
31 10 29 56.4	9.0	54 06 9.1	7.3 7.5	222
31 55 30 40.8	9.3	54 0 16	7.8 7.0	
32 58 31 44.4	8.8	54 07 10.5	8.5 8.8	
34 15 33 10.5	8.0	51 11 14.8	7.8	
35 22 34 7.9	8.0	54 22 23.6		
37 46 36 26.3	9.3	53 23 27.6	9.1 8.4 9.2	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 2 59.5 12.0

5 2 45.2 53.2

30 2 57.0 11.9

30 2 58.2 7.9

25 0 42.1 54.9

25 0 48.1 57.0

15 1 2.2 14.8

15 1 5.6 14.8

0 2 25.0 38.4

0 2 14.5 22.8

10 0 39.3 52.8

10 0 40.1 49.2

0 4 14.8 26.6

0 0 10.1 19.6

lost

55 1 48.6 55.9

not seen

40 4 46.3 58.6

40 4 25.7 34.0

40 4 25.7 34.0

1st #
~~40 4 25.7 34.0~~

date. 1875, Apr. 15
first minute-break. Apr. 20

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

9 40 07 83 54 34 8.0
38 570 878 8.3

41 31 80 52 00 7.8
40 23.5 50 8.0

rej. A-1

42 27 88 53 49 8.6
41 17.6 52.1 8.9

43 37 83 50 09 9.5
42 02.6 12.9 9.6

47 47 87 54 40 8.8
46 38.1 44.2 8.4

50 11 83 52 04 9.2 222
49 25 4.1 9.4

48 43 85 51 36 8.8
49 40.0 40.8 8.4

51 37 94 53 10 9.5 22
50 27.9 14.5 9.6

52 22 75 53 44 8.8 wave
51 13.1 49.2 7.0 wave

53 36 85 53 00 8.4
8.2

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 0 4.2 17.1

35 0 5.7 14.5

5 1 42.9 54.9

5 1 43.1 50.8

20 0 25.4 39.8

20 0 37.9 44.9

55 3 48.3 1.9

55 3 44.9 53.9

25 2 30.8 44.1

25 2 35.1 42.9

0 3 3.9 16.9

0 3 2.7 10.5

30 2 4.1 18.0

30 1 48.2 57.5

55 2 51.9 4.9

55 2 54.4 2.5

25 0 3.8 17.1

20 3 21.1 29.1

5 2 54.9 6.9

5 2 27.6 34.8

Date. 1875, Apr. 15

First minute-break.

Apr 20

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

9 55 12 91 53 51 9.0
54 26 56.5

9.2

56 28 93 50 50 9.1
55 250 54.3

9.4

59 28 90 54 37 8.7
58 21.6 42.3

8.9

0 52 94 5-8 29 9.3 4th w?
59 41.0 33.3

9.3

2 40 93 5-3 55 9.5 22
1. 33.3 54 0.5

9.3

3 28 68 50 07 6.8
2 25.5 11.4

7.0

5 01 92 50 40 9.0
3 59.9 44.0

9.2

6 12 89 50 24 8.9
5 11.3 29.1

8.8

10 24 90 54 8 8.5
9 19.6 12.8

8.6

12 08 92 57 46 9.2
11 6.8 51.2

9.1

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 0 57.0 10.8

15 1 4.9 12.4

20 0 23.4 36.6

avg
15 0 33.8 43.3

25 4 31.5 43.5

25 4 31.3 37.8

35 3 39.0 51.8

35 3 39.1 47.2

10 1 40.6 52.9

10 1 44.1 52.8

0 1 2.1 16.5

0 1 15.6 24.9

25 1 55.0 8.2

25 2 2.1 11.9

40 2 52.7 6.0

40 2 53.0 1.4

55 4 2.3 14.9

55 3 59.1 7.9

20 1 1.6 15.1 Seeing very fine.

20 1 1.8 10.5 Seeing very fine.

ate.

first minute-break.

set at.

1875, Apr. 21

Apr. 22

Sum

Mean.

N. Coll.

S. Coll.

Obs. W.A.R. W.A.R.

Rec. J.F.M. J.F.M.

a.

δ.

Mag.

REMARKS.

9 43 41 89 50 34
42 371 382

8.6

G.B.

8.8

80 21 80 52 41
49 137 456

8.0

8.2

50 38 88 52 39

51 87 94 53 10
50 279 145

9.3

9.3

52 34 82 52 32
51 278 368

8.2

8.0

53 36 82 53 0
52 271 52

8.4

8.5

54 58 82 53 59
53 506 42

7.2

7.8

56 32 90 52 09
55 258 144

8.9 2

9.0

57 15 87 52 01
56 83 64

8.0

8.1

58 40 92 52 47
54 333 524

9.0

9.0

Runs.

Sum.
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 2 38.9 48.2

30 2 37.1 47.8

25 1 20.6 28.3

25 1 18.9 29.0

not seen (sure)

" "

55 2 27.1 35.9

55 2 16.2 25.2

30 0 56.4 1.6

30 4 42.1 51.5

5 2 31.2 39.2

5 2 20.2 29.4

5 4 60.0 9.1

5 4 53.9 2.8

55 3 45.8 52.4

55 3 53.2 3.0

5 1 37.6 44.6

5 1 36.7 46.9

20 0 29.7 38.4

20 0 8.8 18.4

Date.

first minute-break

set at.

N. Coll.

S. Coll.

Sum

Mean.

a.		δ.		Mag.	REMARKS.
9 59 54	80	53 42		8.5	
58 44.8		44.2		8.8	
1 32	83	51 34			
3 20	88	50 03		8.7	
2 18.5		47.8		6.0	
5 03	90	51 27		9.1	
4 0.8		31.9		9.2	
6 07	94	51 12		8.3	
4.596		16.7			
7 44	82	50 59		8.3	
6 42.7		51 3.6			
9 17	80	52 55		8.4	
8 10		43.0.8			
10 24	90	54 08		8.7	2
9 19.6		12.8		8.	
11 16	85	54 10		8.4	
10 11.6		15.2		8.5	
12 08	92	51 46		9.2	
11 6.8		51.2		9.1	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 0 16.0 23.8

25 0 11.4 21.3

not seen. (sure)

1 11

0 4 11.1 18.8

0 0 57.5 9.1

40 0 19.7 27.9

40 0 18.8 31.2

55 0 27.2 35.1

55 0 28.1 —

5 4 17.5 26.2

10 2 42.4 49.1

25 4 9.5 17.7

55 1 39.6 47.5

55 1 37.7 48.7

20 1 4.9 14.1

20 1 7.1 18.4

Date. 1875, Apr. 21
Fast minute-break. Apr. 22

c, set at.

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

10 12 59
11.575

92 51 11
160

9.3

9.2

14 37
13.365

92 50 47
1519

9.2

9.4

15 53
14 52.2

92 50 15
(should be 47 45)

8.4

8.5

Wrong #?

" "

17 29
16 28.4

90 50 03
81

9.2

9.3

18 32
17 28.8

82 54 38
48.0

8.2

8.2

19 34
18 28.7

80 54 20
287

7.5

8.0

20 43
19 38.2

93 53 34
389

9.4

9.3

21 54
20 49.1

94 53 18
23.6

9.4

9.5

23 05
22 1.7

83 52 28
335

8.4

8.5

24 50
23 48.8

92 50 00
47

9.3

9.6

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 2 8.2 15.3

55 2 7.0 18.6

20 1 1.6 9.4

20 0 53.3 5.2

50 2 55.6 8.5

50 2 45.9 57.5

0 3 33.3 42.1

0 3 34.0 46.6

25 3 40.5 47.1

25 3 34.1 43.9

45 2 0.7 38.5

45 2 25.6 35.8

30 4 24.0 29.7

30 4 24.5 35.9

45 3 53.2 58.9

45 3 55.1 5.4

35 4 23.5 30.0

35 4 15.6 24.9

5 2 12.9 20.1

5 2 13.6 24.1

Date. 1875, Apr. 21

First minute-break.

22

c, set at.

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

10 25 57
24 57.1

80

10 59
54.

9.0
8.8

2 2 2

26 39
25 39.2

93

10 59
51 48

9.4
9.4

2

27 29
26 24.1

82

54 26
31.2

~~8.7~~ ind. wire + foll
8.0

28 21
27 18.0

69

52 46
51.6

7.7
7.0

29 22
28 23.0

84

57 15
19.5

8.9
8.5

30 19
29 15.0

86

53 19
24.5

8.6
8.4

2

31 10
30 4.8

60

54 20
24.5

5.7
5.5

33 11
32 6.7

80

54 18
23.3

7.8
7.5

34 30
33 27.8

82

54 47
51.9

8.9
8.9

2 2 2

35 10
34 8.4

85

54 37
41.4

8.9
8.5

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 0 6.2 14.8

5 0 0.8 13.0

5 3 23.1 30.9

5 3 8.4 20.0

40 1 45.1 52.9

40 1 27.9 38.6

20 1 29.7 37.5

20 1 4.5 14.9

20 4 27.9 36.4

20 4 21.7 33.1

45 3 6.0 13.9

45 2 59.1 9.4

45 2 18.8 27.5

45 2 11.0 21.0

45 4 39.8 47.2

45 4 26.8 37.1

20 2 0.5 7.8

20 2 0.9 11.5

30 1 32.5 40.4 seeing very fine

30 1 29.1 39.9 seeing very fine

Date. 1875, Apr. 24
 first minute-break. Apr. 25
 c, set at.

Sum
 Mean.

N. Coll.	S. Coll.
Obs. M.A.R.	Obs. M.A.R.
Rec. J. F. Mc.	Rec. J. F. Mc.

Obs. M.A.R.
 Rec. J. F. Mc.

a.		s.		Mag.	REMARKS.
10 5 30	6 5 51	8	6.8	222	
4 284		~~65~~ 127	6.6		
6 16	80 54 21		8.0		
5 107		291	8.0		
7 41	86 51 25		9.0		
6 396		299	9.0		
9 17	80 52 55		8.6		
8 101		53 08	8.5		
10 30	85 54 26		8.2		
9 357		31.0	8.6		
12 13	95 53 32		9.6		
11 74		369	9.2		
13 15	94 54 46		9.0		
12 104		506	9.0		
14 25	82 54 39		9.3		
13 298		438	9.2		
15 53	82 49 45		8.5		
14 522		49 022	8.0		
17 55	75 53 18		8.8		
16 492		220	9.0		
			8.8		
			9.0		

reg. order, mean R.A. Fetroke for ea
 both A.R.'s. ditto the rest

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 4 22.4 40.1

55 4 20.4 37.3

40 3 7.1 24.4

40 3 8.2 22.9

40 2 11.1 29.5

40 2 9.1 26.1

10 2 36.4 53.8

10 2 41.9 56.7

40 2 57.9 15.1

40 2 55.7 11.1

35 0 19.9 36.7

35 0 15.8 30.8

20 2 3.1 19.4

20 2 2.7 18.2

25 3 39.8 55.4

25 3 33.1 47.7

20 2 21.3 39.8

20 2 23.5 41.0

each 8 50 0 53.5 10.9

50 0 53.1 8.1

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 0 57.6 14.0

50 0 57.2 13.4

50 0 55.0 11.8

50 0 47.0 2.9

50 3 38.7 54.9

50 3 43.1 59.9

35 4 24.2 40.4

35 4 31.4 46.1

50 2 32.7 49.3

50 2 34.9 50.1

55 2 44.6 0.9

55 2 44.7 59.8

15 3 9.2 24.8

15 3 7.9 23.2

5 3 53.4 10.2

5 3 48.5 3.0

50 4 20.8 39.0

50 4 18.4 34.9

55 2 3.8 19.9

55 2 12.4 27.9

Date. 1875, Apr. 24
 First minute-break. Apr. 25
 Set at.

Sum
 Mean.

N. Coll.	S. Coll.

a.	s.	Mag.	REMARKS.
10.82 06 31.76	93 50 17 215	9.6 9.5	
30.24 32.198	70.53 38 435	7.0 6.5	
35.21 34.176	92 52 59 53.35	9.2 9.0	
36.44 35.454	92 50 50 54.9	9.3 9.2	
37.55 36.562	85 50 10 14.6	8.8 9.0	2 2
38.30 37.270	85 54 29 33.6	8.4 8.6	
40.15 39.166	95 50 37 41.7	9.7 9.6	
41.20 40.188	94 54 34 39.4	9.3 9.1	
42.41 41.373	97 52 58 2.9	8.2 8.0	
43.34 42.368	91 50 06 11.1	8.8 9.0	2 2 2
		50.49	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 0 51.1 9.0

50 0 49.5 6.7

25 3 48.2 4.0

25 3 55.2 9.5

5 3 3.4 18.4

5 2 48.6 2.4

15 2 36.9 53.1

15 2 35.0 50.7

55 3 7.9 24.7

55 2 56.0 12.8

35 4 59.3 15.3

35 4 57.2 12.9

30 0 58.3 16.1

30 0 52.5 10.1

30 3 12.0 26.9

30 3 12.9 27.8

10 0 33.9 49.9

10 0 26.7 42.4

0 1 14.0 30.9

0 1 6.0 22.1

Date.

First minute-break.

set at.

1875, Apr. 24

Apr. 25

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

10 4416
43 185

85

50

49

9.0

543

8.7

45 55
44 578

75

49

55

7.5

50

02

7.0

false obs. pr.

47 00
45 549

88

53

04

8.7

94

8.7

48 28
47 306

94

50

19

9.4

245

9.4

49 36
48 044

80

53

35

9.2

2

406

9.0

50 27
49 258

84

53

07

8.0

118

8.4

51 27
50 298

92

50

04

9.3

2 2 2 2

91

8.9

52 19
51 220

94

50

56

9.7

pr. + upper #

07

08

9.6

53 27
52 301

93

50

16

9.5

2 2 2 2

210

9.1

54 10
53 139

91

50

18

8.6

235

8.6

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 2 21.2 39.3

15 2 21.4 39.0

10 2 38.0 54.0

10 2 36.2 52.2

0 3 50.0 5.2

0 3 41.8 55.6

45 3 3.9 21.0

45 3 0.2 16.8

30 1 56.1 12.4

30 1 46.8 6.1

0 0 14.6 31.2

0 0 6.3 21.9

0 2 16.7 33.9

0 2 13.2 28.7

10 0 48.1 4.9

10 0 42.0 57.7

50 2 38.1 54.2

50 2 37.1 52.9

45 4 32.7 48.8

45 4 30.9 46.9

Date.

first minute-break.

set at.

N. Coll.

S. Coll.

Sum

Mean.

a.

s.

Mag.

REMARKS.

10 55 31 80 52 59 8.3
 54 29.6 53 42 8.5

56 36 91 53 03 9.0
 55 35.1 47 9.0

58 22 80 52 33 9.0 222
 57 22.2 382 9.0

58 58 86 52 04 8.8
 57 58.7 9.1 8.0

11
 0 12 84 49 53 ~~8.0~~
 59 15.6 49 58.8 8.1

1 78 90 54 15 9.0
 0 18.1 20.8 9.0

2 20 71 54 48 6.5
 1 19.6 53.3 6.4

3 15 87 50 6 8.6
 2 19.5 10.9 8.3

4 46 90 51 47 9.4 *?
 3 50.8 52.6 9.4

5 50 88 50 09 8.5 faint comp. foll's. above
 4 15.0 4.5 8.7

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 4 0.2 14.8

5 4 1.8 15.7

5 0 53.0 8.7

5 0 47.1 1.0

30 4 26.1 41.8

30 4 38.0 53.0

0 4 3.1 18.4

0 3 42.9 57.7

15 0 1.1 20.0

15 0 2.9 21.1

50 2 19.4 34.8

50 2 13.3 26.8

15 4 22.7 39.1

15 4 19.0 33.8

0 3 0.1 16.5

0 2 54.2 10.4

20 2 40.7 56.4

20 2 29.5 45.8

55 2 53.3 10.9

55 2 47.6 3.1

seeing moderately good
except for faint stars

seeing very good

N. Coll.

S. Coll.

Date. 1875, Apr. 27

First minute-break.

May 3

c, set at.

Sum

Mean.

Obs. W.A.R.

W.A.R.

Rec. J. F. M.

J. F. M.

a.		s.		Mag.	REMARKS.
10	12.12	6.5	54 51	6.2	
11	77		56.3	6.0	
13	15	94	54 46	9.4	
12	104		50.6	9.4	
14	25	92	54 39	9.2	
13	298		43.8	9.4	
15	39	93	58 42	9.3	
14	334		47.4	9.5	
17	55	8.5	58 18	8.8	very close double, 1 stroke for each S reg.
16	492		22.0	9.0	
				8.7	
19	52	94	58 27	9.3	
18	472		31.9	9.2	
21	18	91	58 10	9.2	
20	137		14.7	9.2	
22	14	90	54 22	8.7	2
21	89		27.2	9.0	
23	05	83	52 28	8.2	
22	17		33.5	8.3	
24	55	92	54 20	9.5	~~9.2 9.2 9.2~~
23	502		28.2	9.0	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 0 47.7 2.8

15 0 34.9 50.4

20 2 12.8 27.1

20 2 6.7 21.1

25 3 38.3 53.1

25 3 38.0 52.3

25 1 5.7 19.9

25 1 3.2 17.2

50 0 46.9 1.4

50 0 48.0 2.7

40 0 23.5 36.7

40 0 24.0 38.0

55 2 24.3 39.1

55 2 32.1 46.4

45 0 49.7 4.0

45 0 50.2 5.6

35 4 26.6 41.1

35 4 22.7 36.2

45 1 41.1 56.5

45 1 39.4 53.4

Date.

first minute-break.

set at.

N. Coll.

S. Coll.

Sum

Mean.

1875, Apr. 27
May 3

a.		s.		Mag.	REMARKS.
16					
26	30	49	49 45	7.0	2 2 2
25	30.4		49 ~~50.2~~	6.6	
27	19	51	54 28	8.6	very faint companion pr. below
26	14.2		27 42.8	8.7	
28	21	69	52 46	6.6	
27	18.0		57.6	7.4	
30	01	88	53 53	8.5	
28	57.8		57.7	8.7	
31	10	60	54 20	5.5	
30	4.8		24.5	5.8	
33	11	80	54 18	8.0	
32	6.7		23.8	7.4	
34	30	82	54 44	9.1	
33	27.8		57.9	9.1	
35	52	94	53 49	9.2	2 2 2
34	48.8		53.9	9.2	
36	36	75	53 00	7.8	
35	32.5		10.3		
38	09	86	50 06	2.0	
37	10.8		11.1	9.0	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15

1

42.8

59.0

20

1

1.8

17.1

30

0

27.1

43.5

30

0

33.0

47.9

20

1

2.8

17.0

20

0

54.9

9.6

10

4

45.1

59.4

10

4

37.5

51.1

45

2

3.6

18.0

45

2

1.7

16.0

45

4

37.9

52.7

45

4

29.3

43.0

20

2

3.7

18.6

20

1

50.1

4.8

15

3

28.1

42.1

15

3

27.0

41.1

0

2

29.5

44.2

lost

55

3

5.0

20.0

55

3

8.5

21.7

Date. 1875, Apr. 27

First minute-break.

May. 3

set at.

Sum
Mean.

N. Coll.

S. Coll.

α.

δ.

Mag.

REMARKS.

10 40 11	94	54	40	9.6	
39 8.3			45.7	9.2	

41 20	94	54	34	9.4	
40 18.1			39.4	9.2	

42 41	77	52	58	8.0	2 2 2
41 37.3			53 2.9	8.2	

43 22	89	54	33	8.7	
42 19.8			38.5	8.4	

44 22	89	51	54		
43 25.0			63.6	9.0	#? - -

46 18	90	58	30	8.8	2 2 2
45 15.4			34.8	8.7	

46 58	85	54	16	8.0	
-------	----	----	----	-----	--

45 57.1			20.9	8.4	
---------	--	--	------	-----	--

49 00	85	53	50	8.5	
47 58.2			55.2	8.0	

50 23	78	52	9	8.0	2 2 2
49 22.0			14.8	8.0	

53 44	91	50	11	8.8	
52 12			76	9.0	
51 14.9			41.1	9.0	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 1 51.3 5.4

25 1 47.3 1.8

30 3 10.6 24.8

30 3 9.8 23.0

10 0 32.8 48.2

10 0 27.1 41.7

30 4 51.4 7.2

30 4 46.2 59.2

not seen.

15 3 26.0 40.1

35 2 11.8 26.0

35 2 2.9 16.4

50 1 57.7 6.9

50 1 48.5 2.1

15 2 25.9 41.2

15 2 33.9 47.1

55 3 49.0 4.3

55 3 34.1 47.5

25 2 4.5 19.5

25 2 58.6 12.5

Date. 1875, Apr. 27

First minute-break.

May 3

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

5-3 44 8.1 50 11 9.5
 52 46.8 16.2 9.3

54 55 80 53 54 7.5 222
 53 53.9 59.2 8.0

55 81 80 52 59 8.3
 54 29.6 53 42 8.4

56 36 9.1 58 03 8.9
 55 35.1 7.7 9.1

58 20 7.2 53 01 7.0 false obs. pr.
 57 24.3 6.5 7.0

0 15 9.4 51 14 9.4 222
 59 18.8 18.9 9.5

1 6 8.9 56 19 8.8
 0 6.1 24.8 8.7

2 58 9.5 49 46 9.8 upper #
 2 2.4 49 51.6 10.0

3 54 9.4 50 47 9.1
 2 59.4 51.8 8.9

5 14 9.3 50 43 9.2
 4 18.8 47.8 9.0

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 2 29.0 44.5

50 2 26.5 42.3

10 3 30.0 44.4

10 3 26.8 40.4

5 4 17.1 31.2

5 4 12.4 25.5

5 0 58.1 12.2

5 0 47.9 1.7

5 1 13.2 27.5

5 1 14.1 27.0

50 3 43.8 59.8

50 3 35.9 49.9

45 3 16.5 30.9

45 3 10.0 23.4

20 0 55.2 11.8

20 0 44.7 58.9

20 2 1.0 16.5

20 2 1.5 15.9

20 4 54.7 10.6

20 4 55.7 10.9

Date.

1875, Apr. 27

First minute-break.

May 3

Sum

Mean.

N. Coll.

S. Coll.

c, set at.

a.	δ.		Mag.	REMARKS.
11				
6 14	77	58 34	8.0	
5 143		38.2	7.8	
7 11	72	53 38	7.4	
6 129		43.7	7.8	
8 41	65	53 28	8.8	bott. 2 nd 8 pr.
7 427		33.6	6.8	
			8.8	bott. 2 nd 8 pr.
			7.0	
9 40	87	50 40	9.0	222
8 453		44.8	8.9	
10 28	80	50 16	9.0	
9 226		21.4	9.2	
11 43	84	52 00	8.4	222 faint comp. pr. below
10 446		58	8.5	
12 24	86	50 11	8.4	
11 286		16.5	8.5	
19 46	72	52 28	7.0	
12 476		33.4	7.2	
14 45	90	51 24	9.0	
13 499		29.3	9.0	
16 48	73	52 45	7.0	
15 395		10.1	8.0	

Runs.

Sum
Mean.

A.

C.

Pointer.	Stroke.	Rev.	A.	C.	REMARKS.
	0	4	26.9	40.3	
	30	4	33.3	48.0	
	25	3	39.2	53.5	
	25	3	40.2	53.1	
	35	3	57.0	11.2	
	35	3	56.9	10.5	
	25	3	2.1	17.9	
	25	2	57.0	12.1	
	50	1	35.3	51.3	
	50	1	30.8	46.8	
	5	2	14.0	28.9	
	5	2	2.8	16.3	
	50	4	59.1	15.9	
	50	4	54.5	10.9	
	35	4	21.5	36.4	
	35	4	20.4	32.9	
	40	3	58.3	13.9	
	40	3	55.1	9.9	
	20	2	30.7	45.5	seeing very good
	20	2	40.6	53.9	seeing very good

Date. 1875, May 5
May 4

First minute-break.

c, set at.

Sum
Mean.

N. Coll.	S. Coll.
N. Coll.	S. Coll.
May 4	May 5
Obs. W.A.R.	W.A.R.
Rec'd F. M. J. F. M.	

mags for
May 5

a.	δ.	Mag.	REMARKS.	
10 25 35 24 30.3	86 53 53 583	9.0		8.8
26 32 25 29.8	90 58 48 533	9.0	222	9.0
27 8 26 3.8	91 53 04 91	9.2	gb.	
36 36 35 32.5	75 53 05 103	8.0	gb.	8.4
43 22 42 19.8	89 54 33 385	8.8	222	9.0
44 00 42 50.0	80 52 45 607	9.4		
44 52 43 49.0	60 53 12 16.7	6.8	lower ^{+foll.} #	6.5
46 09 45 11.5	88 50 37 420	9.0	L	8.9
47 00 45 57.9	88 53 04 94	8.8		8.8
48 58 47 57.5	88 54 23 282	9.0		8.7

Runs.

Sum
Mean.

A.

C.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

May 5	10	4	46.2	0.6	for May 5
May 4	10	4	46.8	58.1	

May 5	15	4	16.0	29.5
May 4	15	4	9.5	21.6

May 5		lost		
May 4	0	3	36.6	47.9

May 5	0	2	20.1	35.1
May 4	0	2	21.4	34.0

May 5	35	0	5.7	20.4
May 4	30	4	46.2	56.8

May 5		lost		
May 4	20	1	23.1	35.9

May 5	55	1	39.0	54.2
May 4	55	1	44.9	55.7

May 5	0	0	12.5	29.5
May 4	0	0	17.0	30.7

May 5	0	3	53.4	7.1
May 4	0	3	49.9	59.8

May 5	40	4	27.0	40.9
May 4	40	4	56.1	37.9

lit

lost some of the wires

lit

May 5
 Date. 1875, May. 4
 First minute-break.
 c, set at.
 May 13

Sum
 Mean.

N. Coll.	S. Coll.

mags for
 May 5

a.	s.	Mag.	REMARKS.
50 27 49 25.8	84 53 07 118	8.0	8.5
52 12 51 14.9	84 52 57 91.1	8.4	9.2
53 35 52 34.8	89 54 34 39.5	9.0	9.1
54 55 53 53.9	80 53 54 58.2	8.3	8.1
56 36	91 53 03		
58 56 57 55.2	88 53 54 59.2	9.3	
0 12 59 11.5	86 53 45 50.4	9.2	8.5
1 32 0 31.9	82 54 06 54 50 53.6	9.0 8.8 8.5	May 13 com here 2.2 a little hazy
2 20 1 19.6	91 54 48 53.3	7.0 7.5	7.0
3 57 2 57.3	85 53 44 49.9	9.0 9.0	8.4

Runs.

Sum

Mean.

A.

C.

Pointer.	Stroke.	Rev.	A.	C.	REMARKS.
May 5	0	0	2.2	16.8	for May 5
May 4	0	0	0.8	14.4	chf.
May 5	10	0	46.9	0.2	ch. f.
May 4	10	0	49.5	1.5	chf.
May 5	30	3	36.3	49.7	
May 4	30	3	34.6	47.1	chf.
May 5	10	3	23.0	35.9	ch. f.
May 4	10	3	26.3	39.3	chf.
May 5	~~10~~				
May 4	lost				
May 5	too faint to obs.				
May 4	10	3	1.8	13.4	
May 5	20	2	37.4	50.1	
May 4	20	2	49.1	0.7	
May 5	20	2	34.9	57.7	
May 5	15	1	32.8	47.2	
May 4	15	1	37.0	50.1	
May 5	15	1	36.0	52.8	
May 5	15	4	20.2	33.1	
May 4	15	4	27.9	40.3	
May 5	15	4	19.8	36.8	
May 5	20	1	54.7	8.8	
May 4	20	1	54.7	7.1	
May 5	20	1	55.6	12.3	

May 5
 Date. 1875, May 4
 First minute-break. May. 13
 set at.

Sum
 Mean.

N. Coll.	S. Coll.

a.		δ.		Mag.	REMARKS.	May 5
4 50 3 50.0	94	54 37 12.1		9.5	2.3	9.2
5 40 4 40.3	80	54 04 10.0		8.3 8.8		8.3
6 14 5 14.3	77	53 34 39.2		7.2 8.5		7.0
7 11 6 12.9	7.2	53 38 43.7		8.9 8.3		7.5
8 41 7 42.7	6.5	53 28 33.6		7.0 7.0	2.2.2 Companion pr. above.	6.8
9 25 8 30.5	6.0	52 11 16.0		6.0 6.0		
10 28 9 22.6	90	52 46 2.4		9.1 9.4	lost 1 st wire	
12 20 11 21.7	94	52 40 44.9		9.5 8.0	l.b.	
22 03 21 8.4	87	52 58 51 3.6		9.0 8.5	2.2.2.2	
22 39 21 41.4	88	54 57 56.7		9.0 8.5	haze mostly gone	

Runs.

Sum
Mean.

A.

C.

Pointer.	Stroke.	Rev.	A.	C.	REMARKS.
May 5	25	4	51.0	3.6	
May 4	25	4	54.1	7.4	
May 5	0	3	23.1	36.9	
May 4	0	3	25.7	37.5	
May 5	0	3	16.3	32.0	
May 5	30	4	59.4	13.2	lost 1 st wire
May 4	30	4	58.8	11.9	
May 5	30	4	38.5	55.1	
May 5	25	4	7.2	20.3	Ind. wire & foll
May 4	25	3	51.9	3.2	
May 5	25	3	48.8	6.0	
May 5	35	3	57.2	10.4	
May 4	35	4	3.9	15.9	Clouded up May 4
	35	3	3.1	19.7	May 4 ends here
May 5	55	1	50.1	5.2	
	55	1	44.5	4.1	
May 5	50	1	22.8	38.9	
	50	1	54.5	13.8	
May 5	25	2	57.0	11.5	
	25	1	48.3	7.2	
May 5	5	4	9.5	23.2	
	5	4	4.2	22.8	
May 5	15	1	12.5	26.2	
	15	1	13.5	31.4	

Date.

first minute-break.

set at.

May 5

May 13

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

23 23
22 250

88 53 20
251

8.8

8.5

24 06
21

88 53 16

27 05
26 7.5

83 54 29
349

8.5

6.5

28 37
27 409

84 54 36
420

8.8

8.0

29 50
28 54.3

92 58 07
12.8

9.2

9.0

32 22
31 269

94 53 28
333

10.0

9.3

34 40
33 44.3

95 54 52
574

22

9.4

35 30

90 54 20

38 11
37 16.0

92 54 46
510

22 22

8.8 #?

38 46
37 50.6

83 54 29
352

9.2

8.0

ref. ind. wire

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

45 3 6.3 19.2

45 3 12.1 28.9

not seen

not seen

35 3 18.0 30.0

35 3 20.9 38.2

30 1 23.4 37.0

30 1 22.1 40.2

0 0 57.2 11.0

0 0 46.6 4.9

35 4 35.9 48.4

35 3 5.9 22.3

not seen

15 0 22.4 47.2

not seen

not seen

no

20 3 10.5 27.4

35 2 32.5 45.8

35 3 3.1 19.9

Became hazy.
except towards the last when it
seeing moderately good
seeing very good but
a little hazy at first

Date. 1875, May 17.

First minute-break.

May 22

c, set at.

Sum
Mean.

N. Coll.

S. Coll.

a.		δ.		Mag.	REMARKS.
11	51 06 52 11.9	90	50 46 57.3	9.5 9.6	both, 2 nd 8 per.
	53 16 52 22.7	89	52 19 24.3	8.8 8.5	
	55 23 54 29.8	82	54 39 43.5	9.1 9.1	
	58 00 57 7.0	85	51 47 82.3	9.6	too faint to obs
	59 17 58 25.2	90	54 37 43.0	8.8 8.7	
3	0 22 59 30.0	90	52 27 33.2	8.8 8.8	
6	1 53 1 0.3	90	51 59 4.7	8.6 8.7	
	20 59 2 7.2	99	51 44 52.1	9.4 9.4	2 2 2
	3 45 2 53.4	91	54 10 15.5	9.2 9.3	2 2 2
0	4 33 3 41.4	83	54 38 43.7	8.8 8.0	2 2 2 2
				54 3	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

20 1 5.7 23.8

45 2 39.2 55.9

45 2 36.1 57.9

30 0 8.0 25.9

25 4 0.4 22.1

20 0 33.2 50.7

~~20 0 1.5 24.9~~

25 4 29.0 45.7

25 4 40.4 2.4

40 0 21.7 40.0

40 0 29.9 52.6

5 3 12.4 29.9

5 3 7.0 27.9

20 2 50.4 8.5

20 2 50.9 12.4

55 4 3.7 20.4

55 3 57.7 19.0

30 0 31.9 49.8

30 0 32.7 54.0

ate. 1875, May 17
 first minute-break. May 22

Sum
 Mean.

N. Coll.	S. Coll.

a.	δ.	Mag.	REMARKS.
12 5 16 4 40 ⁻	9.2 54 03 80 ⁻	9.3 9.0	
6 22 5 30.5 ⁻	80 52 40 449	7.7 7.0	2 2 2
7 12 6 20.2	90 53 56 54 2.2	9.0 9.0	
8 42 7 50.9	80 54 03 87	9.1 9.2	2 2 2
9 29 8 38.0	90 54 34 39.6	8.9 9.0	
11 07 10 16.4	93 54 08 134	9.2 9.5	
12 23 11 32.4	95 53 40 46.0	9.6 9.7	
13 22 12 31.2	99 52 18 233	9.4 9.5	2 2 2
14 00 13 88	83 54 37 42.5	8.0 8.0	
15 21 14 30.4	91 54 34 39.2	9.0 9.1	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

0 3 8.1 24.0

0 ^{over}4 11.0 30.2

25 3 7.5 24.6

25 3 10.1 29.9

10 0 46.0 3.0

10 0 52.0 13.8

5 0 18.8 37.9

5 0 22.5 45.4

30 3 29.3 47.1

30 3 31.9 52.9

0 0 1.4 18.9

55 4 59.2 20.8

25 1 59.8 17.1

25 1 53.0 12.9

45 4 44.9 0.8

45 4 41.7 3.0

30 2 15.5 32.5

30 2 6.4 27.5

30 4 37.1 53.0

30 4 36.0 56.0

Date.

First minute-break.

set at.

N. Coll.

S. Coll.

Sum

Mean.

a.		s.		Mag.	REMARKS.
12 16 35	88	50 45		9.0	
12 44.9	87	50.5		8.8	
17 27	94	52 58		9.4	2 2 2
16 36.9		53 3.1		9.2	
18 09	92	54 25		9.2	
17 18.9		53 30.2		9.0	
19 25	90	53 35		9.0	
18 34.9		46.1		9.0	
20 45	73	51 54		7.5	2 2
19 57.1		54.5		7.5	
21 34	95	54 32		9.7	
20 45.2		37.9		9.6	
23 01	88	53 58		9.5	both, 2 nd 8 pr.
22 12.0		54 37		8.5	
				9.53	
24 05	90	52 44		9.2	
23 15.2		49.8		9.4	
25 28	85	50 17		9.6	
24 40.7		24.6		9.5	
27 13	77	49 19		8.4	
26 24.8		50 59		8.0	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

20 1 54.1 12.9

20 1 51.0 12.9

10 0 40.4 57.9

10 0 35.9 57.1

40 3 31.3 48.3

40 3 31.4 52.2

30 2 12.0 28.0

30 2 9.9 30.2

10 2 21.3 38.9

10 2 22.0 44.3

35 0 13.0 30.7

35 0 7.7 29.4

5 4 6.9 23.5

5 3 49.7 10.8

20 3 3.5 19.3

20 2 53.6 14.9

50 0 19.0 38.2

50 0 16.5 40.0

5 1 39.1 57.6 seeing moderately good.

5 1 34.1 56.0 seeing good

Date. 1875, May 23
first minute-break. May 26
set at.

Sum
Mean.

N. Coll.	S. Coll.
Obs. W.A.R.	W.A.R.
Rec. J.F.M.	J.F.M.

α .	δ .	Mag.	REMARKS.
~~12 3 57~~ 24	53 35	8.0	
11 59 06	57	409	
58 12			
12 0 22	50	52 27	9.0
59 300		332	
~~1 53~~ 2			9.2
1 53	9.0	57 59	9.0
1 0.3		50 47	
			9.0
2 52	70	54 07	8.0
2 04		125	8.0
3 07	94	53 48	
3 57		54.1	
6 00	50	53 31	9.0 22
5 94		319	
			9.0
6 54	87	52 01	9.0
6 22		70	
			9.0
8 10	83	52 42	8.5 222
7 190		480	
			8.3
9 07	83	53 26	9.1
8 58	94	84 15	
8 69		205	9.5
11 07	93	54 08	9.3
10 164		134	
			9.5

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 1 57.4 20.5

30 1 58.8 23.4

40 0 15.7 40.8

40 0 35.9 1.1

5 3 9.1 31.4

5 3 14.4 39.4

0 0 41.1 4.8

0 0 38.2 4.9

not seen

not seen

35 1 53.7 16.0

35 1 43.0 8.0

5 0 50.8 14.5

5 0 55.1 21.7

25 0 36.5 0.0

25 0 38.2 3.7

50 2 32.0 54.8

50 2 32.1 56.8

55 4 54.5 18.5

0 0 10.2 36.7

Date. 1875, May 23
First minute-break. May 26
c, set at.

Sum
Mean.

N. Coll.	S. Coll.

a.		δ.		Mag.	REMARKS.
12 12 56	85 58 16	7.9			
12 56	21.2	8.7			
13 59	95 50 03	9.4	22		
13 67	87				
14 47	83 54 3	8.3	222		
13 55.8	58	8.0			
15 21	91 54 34	9.5			
14 30.4	39.2	9.3			
16 30	92 54 09	9.0	upper + foll. #		
15 40.4	101	9.2			
17 27	94 52 58	9.4			
16 36.9	03 31	9.1			
18 44	95 53 34	9.4			
17 54.0	39.5	9.6			
20 08	99 52 04	9.3	sl.		
19 17.2	87	9.0			
30 26	94 50 51	9.4			
29 37.4	56.6	9.3			
31 39	94 50 56	9.4			
30 51.0	51 32	9.1			

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 2 30.0 52.8

50 2 22.8 47.1

0 4 9.7 33.9

not seen

5 0 50.0 13.9

5 0 35.2 1.1

30 4 45.2 8.9

30 4 43.6 11.0

0 3 45.6 9.0

0 3 45.9 10.9

10 0 33.7 56.8

10 0 36.0 1.5

30 3 25.2 47.9

30 3 38.1 2.1

5 0 32.6 56.4

5 0 42.5 8.9

15 0 8.2 34.0

15 0 21.4 48.9

5 3 3.3 26.9

5 3 6.4 33.0

Date. 1875, May 23

First minute-break. May 26

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

12 32 39
31 511

84 51 35
402

9.0

upper + foll. #

~~7.0~~ 8.8

32 53
33 59

78 52 26
315

7.5

2 2 2

7.0

34 36
33 481

83 52 11
165

8.6

8.7

35 38
34 436

65 50 00
55

7.0

7.0

36 58

93 53 56

9.6

ref. 1st stroke for A1

9.3

38 26
37 392

88 52 28
336

6.8

6.7

39 17
38 301

90 52 27
322

8.4

8.8

40 41
39 527

80 54 30
353

7.9

2

8.5

41 34
40 472

73 53 34
391

8.0

2 2

7.0

42 26
41 381

65 53 09
144

6.7

6.5

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 2 41.0 4.8

30 2 38.8 4.9

40 1 36.9 59.9

40 1 29.5 55.1

55 1 17.0 40.1

55 1 18.1 44.1

5 2 46.1 10.9

5 3 7.5 33.4

10 1 23.5 46.9

10 1 24.9 50.4

35 4 12.2 34.6

35 4 14.7 40.2

40 1 56.9 19.5

40 1 52.8 17.3

35 2 53.0 16.1

35 2 ~~8.3~~ 34.6

30 3 52.7 13.7

30 3 45.7 11.5

55 3 18.1 41.8

55 3 18.0 43.4

18750bae.pro.1551R

Date.

First minute-break.

C, set at.

1875, May 23
May 26

Sum

Mean.

N. Coll.

S. Coll.

a.

b.

Mag.

REMARKS.

43 49
43 12

8.0

54 41
465

9.0

8.7

44 56
44 98

8.2

51 04
94

9.4

9.2

47 01
46 14

8.8

57 57
~~58~~
590

9.0

2 2 2

9.0

upper + pr. #

47 45
46 59

8.4

53 18
238

8.2

8.3

48 53
48 67

8.5

53 11
167

9.6

9.6

50 02
49 16

8.5

53 26
318

8.5

2 2 2

8.3

suspected very close double

50 48
50 16

8.7

51 46
520

9.0

9.3

52 08
51 22

8.0

50 30
350

9.1

2 2 2

9.2

52 52
52 63

8.3

49 58
50 32

9.4

upper + foll. #

9.3

55 02
54

8.0

52 17

not seen

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 2 20.0 43.9

25 2 20.2 46.0

0 3 28.0 51.0

0 3 28.5 55.0

10 3 19.7 43.4

10 3 20.9 47.0

45 4 18.4 42.1

45 4 13.0 38.8

50 1 8.6 30.7

sure
55 1 12.0 38.7

40 1 0.5 23.8

40 1 0.6 25.8

20 1 0.8 24.9

20 1 9.1 35.3

35 2 28.0 52.8

35 2 24.1 50.8

5 4 42.9 6.8

5 4 47.8 15.3

not seen (sure) seeing, moderately good.
seeing, very fine indeed

date.

first minute-break.

set at.

N. Coll.

S. Coll.

Obs W.A.R.
Rec'd F.M.

Sum

Mean.

α.

δ.

Mag.

REMARKS.

12 31 59
31 10.8

9.0

49 56
~~49 56~~
50 12

9.2

222

32 32
31 43.7

9.2

51 33
38.4

9.0

upper & foll. #

33 46
32 58.5

9.2

57 42
47.3

9.2

35 41
34 54.0

9.4

50 23
28.5

9.3

36 58
36 10.5

9.3

53 56
54 16

9.3

38 05
37 17.3

8.8

54 30
36.7

9.0

lib.

50 02
49 16.3

9.5

53 26
31.8sure
8.852 03
51 18.2

8.8

53 05
10.4

9.0

222

52 50
52 4.6

9.4

50 32
37.3

9.4

53 56
53 10.8

8.8

53 35
40.4

8.5

1765

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 2 16.1 43.2

30 2 54.0 19.9

25 0 10.5 38.9

40 4 40.0 7.2

10 1 16.7 43.1

35 1 41.3 6.9

40 1 1.1 25.2

0 2 53.5 18.9

30 4 58.9 25.1

30 3 13.5 38.0

date.

first minute-break.

Sum

Mean.

N. Coll.

S. Coll.

1875, May 27

set at.

a.		δ.		Mag.	REMARKS.
55 26	70 53 19	7.8	suspected double		
54 406	193	~~6.0~~			
54 33	83 52 24	8.7			
56 477	293				
58 39	78 50 46	8.0			
57 542	510				
0 15	85 53 10	8.8			
59 303	~~153~~ 153				
1 19	90 52 42	9.2			
0 337	470				
2 14	70 52 29	7.0			
1 292	341				
4 04	81 52 05	9.2 2 #?			
3 188	560				
4 55	91 52 19	9.4			
4 101	243				
7 23	71 52 35	6.9	2 2 2		
6 387	402				
8 00	89 53 33	9.2	Polaris		
7 161	383				

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 3 35.1 59.9

~~50 3 35.5 58.0~~

40 3 34.7 59.5

20 1 41.6 7.5

55 2 32.9 57.4

25 1 58.8 23.5

35 3 54.8 18.7

5 0 5.7 30.5

45 3 50.9 15.1

30 2 37.9 2.8

35 0 4.6 29.2

Date.

1875, May 27

first minute-break.

set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

13 9 01 88 52 17 9.1 2
 8 16.9 22.7

9 53 83 52 54 8.6 Palanis.
 9 86 53 29

16 05 91 54 02 9.2
 15 21.0 7.7

17 32 94 49 56 9.2
 16 49.5 50 1.8

19 15 90 50 40 9.0 222
 18 31.9 45.0

18 50 85 54 00 8.4
 19 77 47

21 53 63 53 24
~~21 10.1~~ 29.8

23 16 93 49 59 8.5 lost ind. wire of 1st #
 22 33.2 50 48 9.2

24 22 88 50 51 8.4 rej. A-1 + foll. 8
 23 39.9 56.4

26 21 93 53 36 9.4
 25 38.5 41.0

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 0 22.2 49.2

5 4 50.1 15.1

5 0 28.4 53.2

10 0 45.3 12.3

25 2 49.8 15.6

5 4 22.7 47.2

not seen

5 1 20.8 47.0

5 1 54.0 19.0

15 1 28.9 56.1

30 1 30.6 55.3 swing, moderately good.

Date. 1875, June 14

First minute-break.

c, set at.

N. Coll.	S. Coll.
Obs. W.A.R.	Rec. J.F.W.
Sum	
Mean.	

a.	S.	Mag.	REMARKS.
13 17 30	77 52 18		
19 15 50	50 40		
21 53 63	53 24		
22 57 90	50 2		
23 50 91	50 7		
25 42 93	50 34		
26 57 93	54 22		
29 04 81	54 23		
31 26 60	50 8		
32 57 80	51 37		222

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

ate. 1875, June 14
first minute-break. June 15

Sum
Mean.

N. Coll.	S. Coll.
Obs. W.A.R.	W.A.R.
Rec. J.F.M.	J.F.M.

W.A.R.
J.F.M.

a.	s.	Mag.	REMARKS.
13 34 18 33 31.6	68 52 27 32.1	6.2 7.0	
35 26 39 17.2	71 53 52 57.8	6.8 7.2	22 2 wrong #
36 11 35 29.0	80 54 41 67	9.0 9.2	
38 30 37 49.0	86 54 23 28.4	8.8 8.8	2 2
39 23 38 43.3	85 54 18 22.8	8.4 8.5	
41 00	95 49 58		
42 30 41 49.8	20 49 58 503.1	2.0 2.0	2 2 2 2
42 54 42 15.9	75 50 52 50 57.2	8.0 7.8	
43 47 43 9.6	85 53 53 57.9	8.4 8.4	
46 59 46 21.5	88 52 14 19.7	8.9 9.0	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 4 50.0 14.5

35 4 53.0 16.9

10 1 43.0 6.0

sure
15 1 38.7 2.9

5 1 3.4 27.1

5 1 11.5 35.9

40 3 6.8 28.7

40 3 8.2 30.9

45 4 22.7 45.9

45 4 18.1 42.5

not seen

5 4 47.5 14.0

5 4 49.7 15.3

10 4 58.1 22.6

10 4 56.9 21.9

10 3 23.1 46.0

10 3 19.0 43.5

50 2 21.5 45.9

50 2 23.2 48.1

date.

1875, June 14

first minute-break.

June 15

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

13 ~~47 45 84 54 18~~ 8.3
~~48 10 83 14 22~~
 47 315 273 7.9

~~48 32 13 54 21~~ 6.0
~~49 10 60 54 21~~
 48 315 263 6.0

50 14 80 53 14 9.2
 49 358 190 9.0

51 26 82 53 3 9.0
 50 480 83 8.9

53 05 68 54 33 8.0
 52 263 346 7.0
 8.0
 7.0

53 58 77 54 12 7.7 2 2 2
 53 188 170 7.4

54 43 90 54 45 8.2
 54 40 503 8.7

56 00 87 54 22 8.0
 55 200 273 7.9

57 17 91 52 32 9.4
 56 399 368 9.5

59 52 89 51 57 9.0
 9.0

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

40 4 18.8 41.7

40 4 16.6 40.2

45 0 35.1 58.1

45 0 37.5 2.0

50 3 19.0 42.1

50 3 29.0 51.9

0 3 35.0 58.0

0 3 31.0 54.9

35 1 10.2 33.1

35 0 4.5 28.1

35 1 11.8 36.1

35 0 6.7 32.0

55 0 12.0 36.9

55 0 6.9 32.5

20 2 8.6 31.9

20 2 4.9 28.6

40 3 45.0 8.9

40 3 38.0 0.9

35 0 28.5 52.1

35 0 29.9 55.5

5 4 9.7 31.2 seeing, very good.

5 4 13.1 37.1 seeing, very good.

date.

first minute-break.

set at.

1875, June 20
June 21

Sum

Mean.

N. Coll.

S. Coll.

Obs. W.A.R.
Rec. J.F.M.W.A.R.
J.F.M.

a.

s.

Mag.

REMARKS.

14	2 53	80	53 20	8.6
	2 150		269	8.8

4	47	90	50 14	9.0
4	90		189	9.0

5	58	90	52 37	
---	----	----	-------	--

6	54	88	53 21	9.0
6	160		258	8.8

lost 1st wire

8	18	90	51 19	8.0
4	408		243	7.8

9	08	83	51 58	8.5
8	265		583	8.0

10	49	88	58 05	2 2
----	----	----	-------	-----

11	35	90	53 23	5.0
11	40	23	51 57	9.0
11	3.5		52 23	5.0

reg. order

reg. order

13	13	90	54 27	7.0
12	48	6.8	51 54	6.2
12	123		588	

15	04	89	52 59	9.0
14	272		03 39	8.9

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

45 0 21.0 47.5

45 0 24.9 50.3

50 3 7.2 34.2

50 3 8.3 35.2

not seen

not seen

45 1 29.1 53.1

45 1 31.4 56.2

45 3 13.9 40.5

45 3 17.1 43.6

10 3 30.6 55.2

10 3 29.9 55.8

not seen

x not seen

5 4 36.1 0.7
5 4 36.1 0.75 4 18.0 43.2
5 4 18.0 43.2

10 3 0.5 24.9

10 3 2.9 27.9

5 2 36.5 0.6

5 2 34.0 0.1

Date. 1875, June 20
First minute-break. June 21

c, set at.

Sum
Mean.

N. Coll. S. Coll.

a.

s.

Mag.

REMARKS.

14 17 12
16 36.2

80 54 30
33.5

8.5
8.8
8.5
8.8

reg. order, 1 stroke for each 8
ditto

18 37
18 14

80 54 24
28.3

20 30
19 53.8

89 52 43
47.6

8.9 2
9.2

21 23

85 54 33

22 53
22 28.1

85 54 30
34.9

8.2
8.3

24 03
23 27.9

91 58 21
25.7

9.0
9.1

26 24
25 48.8

85 51 22
26.5

9.3
9.4

27 24
26 57.3

89 50 52
56.5

8.8 2 2 2
8.6

28 09
27 33.8

84 51 23
27.9

9.0
8.7

29 45
29 11.5

94 50 46
50.5

9.5
9.5

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 3 1.7 25.0

35 3 5.9 30.7

not seen (sure)

not seen (sure)

20 4 3.9 26.9

20 4 4.8 28.9

not seen

~~5 2 8.9 33.9~~

not seen

35 2 8.9 33.9

35 2 11.1 37.1

45 1 27.1 50.9

45 1 18.9 44.9

45 0 11.4 37.7

45 0 7.2 33.8

10 3 50.5 15.2

10 3 53.0 18.9

40 3 35.1 0.3

40 3 33.5 59.9

20 1 1.4 26.8

20 1 2.8 28.3

1875phae.p00j.1551R

Date. 1875 June 20
First minute-break. June 21

N. Coll.	S. Coll.
Sum	
Mean.	

c, set at.

a.		s.		Mag.	REMARKS.
14	30 49 90 30 65	53 56 54 05		8.9 8.9	2222
	31 01 92 30 271	54 00 40		8.9	
	31 52 89 81 182	53 46 507		8.7 8.7	
	33 51 84 38 171	53 36 404		8.0 8.4	
	34 50 88 34 161	53 49 532		8.7 8.7	22
	35 31 94 94	50 27			
	37 13 82 36 388	53 12 161		8.4 8.2	
	39 23 70 38 493	54 20 246		7.0 7.0	
	40 22 88 39 480	54 52 569		9.0 8.9	
	43 47 90 113 132	54 15 191		9.0 9.1	

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 1 17.8 43.8

10 1 19.4 45.9

lost

5 2 42.0 6.9

20 0 45.6 11.0

20 1 10.7 37.6

30 1 11.5 35.8

30 1 12.0 37.0

15 2 43.1 7.4

15 2 43.1 8.1

not seen (sure)

not seen

55 0 24.0 49.1

55 0 24.0 50.0

45 1 46.9 11.6

45 1 53.5 18.1

15 0 8.2 34.4

15 0 6.0 31.8

50 2 30.5 53.9 seeing good

50 2 2.5 26.4 seeing moderately good

Date. 1875, June 24
 June 28
 First minute-break.
 c, set at.

Sum
 Mean.

N. Coll.	S. Coll.
Obs. W.A.R.	W.A.R.
Rec. J.F.M.	J.F.M.

a.		s.		Mag.	REMARKS.
14 11 31		25 50 46			h.b.
20 59 20 23.1		68 54 9 13.8		7.5 7.8	false stroke after A1
23 04 22 29.4		78 53 32 56.6		8.0 9.0	h.b.
31 01 30 27.1		92 54 0 4.0		9.2	Q
31 52 31 18.2		89 53 46 50.7		8.8 8.8	
32 50 32 20.9		92 50 33 37.4		9.4	lower + pr. #
34 08 33 34.6		85 52 21 25.4		9.0 8.7	2222
34 36 34 17		88 54 37 41.8		8.9 8.6	h.b.
43 58 43 23.6		90 53 40 49.7		9.1 9.3	
45 16		93 04 45		7.5 7.0	h.b.

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 2 4.7 31.1

55 2 6.2 2.1

10 4 8.9 35.2

10 4 25.2 50.9

5 2 5.3 30.5

not seen

20 0 41.7 9.7

20 1 1.2 26.8

30 4 9.4 35.8

not seen

45 0 48.5 15.0

45 1 1.9 28.3

30 1 5.9 32.3

30 0 54.7 21.3

20 1 53.4 19.9

20 1 56.1 20.9

20 1 12.5 40.1

20 1 12.0 39.1

Date.

1875, June 24

First minute-break.

June 25

Set at.

Sum
Mean.

N. Coll.

S. Coll.

a.

S.

Mag.

REMARKS.

14 51 36 93 53 58
51 34 54 28

9.0

53 19 92 54 02
52 41.9 5.7

9.4

9.1

55 28 94 52 23
54 54.6 27.3

9.3

8.8

hb.
false stroke after wires

15
6 38 90 50 34
6 7.2 38.0

9.0

9.0

7 31 94 50 23
7 0.5 27.0

7.9

7.5

8 57 92 50 16
8 26.8 19.1

7.0

7.0

false breaks after S

10 01 91 50 44
9 30.5 48.1

8.0

7.9

11 76 85 50 12
10 44.9 16.1

8.8

8.9

12 29 85 51 35

14 20 94 51 53

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

not seen

5 3 20.0 45.5

0 2 54.8 19.3

0 3 1.2 26.0

40 3 42.4 8.5

40 3 56.1 21.5

30 1 50.5 18.0

30 1 51.5 19.4

40 3 53.0 19.1

40 3 59.9 26.0

50 1 38.9 6.0

50 1 29.1 56.9

20 2 38.7 0.0

20 2 45.4 12.9

50 3 21.5 48.4

50 3 26.7 53.1

not seen (sure)

not seen (sure)

not seen

not seen

seeing very good
seeing good

ate.

first minute-break.

set at.

Sum
Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

14 44 14 81 53 9

45 16 73 14 40

46 13 73 52 56

47 46 83 54 16

49 04 90 54 3

50 08 89 53 54

51 57 88 53 10

53 14 92 54 1

55 31 94 50 27

57 63 8 90 50 34

46.

Date.

first minute-break.

set at.

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

15 8 1 8.1 54 2

9 1 8.4 54 30

10 21 8.5 54 22

11 54 8.5 54 14

16 19 8.5 52 27

17 53 8.2 53 31

19 2 8.0 54 26

20.18 8.0 54 9

21 9 6.5 54 40

23 05 6.5 54 27

Runs.

Sum
Mean.

A.		C.	

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

Date.

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

