

KG
11366
v.538

Zone.
Chronograph Record
Circle Readings
From March 14, 1872 to Oct. 2, 1872

a. g

C. W. Sever, University Bookseller, Cambridge.

	A.	C.
Runs.		
Sum		
Mean.		

187201ae.prj.1542R

Date.

First minute-break.

c, set at.

Mar 14 1872

Mar 18 1872

Sum

Mean.

N. Coll.

S. Coll.

s.

Mag.

REMARKS.

6 43 14 9.3 51 47
41 59.8 51 48.2

9.3
8.7
9.2
8.6

haze
v. h. R.

45 10 8.2 50 44
43 56.5 50 40.3

8.6
8.8

v. h. R.
haze

46 56 9.1 50 48
45 42.3 50 44.8

9.5
9.2

51 52 8.6 51 27
50 37.8 51 28.6

8.6
8.7

53 57 7.7 51 27
52 43.8 51 28.6

7.9
7.6

55 49 9.1 50 47
54 35.3 50 48.3

9.1
9.0

~~57 42 9.3~~

57 42 9.3 51 23
56 28.2 51 25.5

9.4
9.5

58 p2.

0 03 9.0 49 52
58 52.0 49 53.6

9.1
9.5

full # upper

2 06 7.0 50 00
0 52.3 50 1.0

6.8
6.4

4 30 9.4 51 07
3 17.3 51 1.3

9.5
9.7

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 1 49 374

2nd P. both

35 1 122 427

35 4 41.1 14.1

35 4 57.9 263

40 0 9.1 42.1

40 0 25.6 54.7

55 2 53.4 277

55 2 57.0 25.9

55 0 42.8 15.9

55 0 46.7 15.8

35 1 50.8 24.1

35 1 49.2 17.9

55 3 36.8 8.9

55 3 33.7 2.6

30 0 21.4 6.8

30 0 9.9 36.2

#?

20 3 54.8 29.6

20 4 11.1 38.7

20 4 6.3 88.4

20 4 4.0 82.2

18720hae.poj.1542R

Date.

File minute-break.

c, set at.

Mar 14 1872
Mar 18

Sum
Mean.

N. Coll.	S. Coll.

a.		s.		Mag.	REMARKS.
4	40	83	51 53	80	
6	26.5		51 54.3		
9	41	87	50 03	87	
8	27.1		50 46		
12	13	89	51 32	88	
10	59.6		51 33.3		
15	31	83	49 54	81	
14	17.1		49 56.1		
17	58	80	49 55	92	
19	52	86	51 00	86	
22	13	80	50 24	2885	
23	56	65	57 34	69	
27	17	89	50 53		
29	34	72	50 48		

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 1 17.5 50.8

30 1 19.0 47.3

20 0 56.3 28.2

20 0 58.5 25.0

50 2 53.2 26.2

50 2 59.3 27.3

25 4 43.1 14.2

25 4 43.0 10.1

25 3 16.8 47.9

25 3 15.8 42.4

30 0 1.6 33.3

25 4 61.5 29.8

55 3 50.9 21.6

55 3 55.3 21.6

45 3 46.6 18.9

45 3 47.6 15.4

30 0 22.3 -5.7

30 0 30.4 57.4

30 4 50.1 21.8

30 4 54.3 27.2

Double brk 2nd hr
selling good.

187201ae.proj.1542R

Date.

First minute-break.

c, set at.

Mar 24 1872 ✓
Mar 27

Sum
Mean.

N. Coll.	S. Coll.

α.		δ.	Mag.	REMARKS.
7	30 20	9.3 51 28	9.0 8.8	NR NR
32	37 87	51 34	8.9 8.8	NR NR
34	14 9.3	51 25	9.2 9.3	
36	44 9.2	51 05		2 seen? not seen
38	06 9.4	50 32	9.5 9.4	
41	30 8.6	50 00	8.9 8.7	
42	50 8.9	50 29	8.9 8.9	
45	31 9.0	50 06	8.8 8.8	
48	42 8.7	50 36	9.2, 9.2 9.3 9.1	mean double
50	11 8.0	49 51		not seen

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 1 70 333 ± 2

55 1 192 51.6

45 4 239 51.0

45 4 275 -0.2

55 4 12.2 40.1

55 3 58.5 -29.2

50 2 346 0.0

50 2 174 49.8

20 4 172 42.9

20 4 11.7 43.2

50 4 9.6 35.4

50 3 55.5 -26.3

15 1 48.1 14.2

15 1 53.6 24.6

45 3 03 29.7 don't double mean

45 2 250 56.1 false obs. for

wing # dis.

Date.

File minute-break.

c, set at.

Mar 21
Mar 27

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

7 52 28 92 51 39 90
92

53-02 85 50 44 84
86

57 52 89 49 56 92 2

8 59 21 82 57 41 95
84 94
83

both. 5 for 95 full.

3 03 87 50 23 75
79

6 33 84 50 18 88
89

9 39 80 49 51 82
84

13 27 80 51 22 80
85

90 m.

16 03 93 51 31 93
90

18 16 80 51 19

89

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

45 0 438 102

40 4 448 171

30 0 478 138

35 0 415 129

25 2 218 477

25 0 380 4.1

40 2 523 188

40 2 402 112

0 0 232 104

0 0 357 63

5 1 230 478

5 1 192 508

30 3 202 452

30 3 134 443

0 2 257 511

0 2 187 502

50 2 207 469

50 2 203 528

0 4 276 542

0 4 62 362

lower
m. 2 ~~10~~ 11

2nd m.

seeing pretty good

seeing good

18720hae.proj.1542R

Date.

First minute-break.

c, set at.

Mar 28

Am 4

Sum
Mean.

N. Coll.	S. Coll.

a.		s.		Mag.	REMARKS.
8 ^h 10 ^m 22 ^{sec}	50	59	40	92	many stars, not seen
13 02	91	50	21	91	not seen
15 27	92	50	43	90	clean.
17 38	75	49	55	82	
20 05	92	51	46	90 89	
20 10	90	51	46	90 90	
22 31	75	51	03	83 2	
24 03	88	51	27	89 2	
25 49	84	50	49	85 2	
27 27	73	49	50	75	seen

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

40 2 387 11.0

sum 40 6 375 11.2

EPR
2222

35 4 418 138

35 4 379 11.4

fence b off $\sqrt{\text{count}}$
reya

20 4 532 25.8

20 4 ~~548~~ 248

35 2 578 293

2nd $\sqrt{\text{pr.}}$

35 2 556 289

35 2 578 293

35 2 556 289

15 0 307 5.6

sum 20 0 247 56.6

55 1 339 65

55 1 315 5.3

30 4 343 61

25 3 450 18.2

sum (lost a (6?))

30 4 350 7.6

Date.

First minute-break.

c, set at.

Mar 28
1944

Sum
Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

8 29 25 87 51 07 87.2

88

31 12 93 50 17 92

33 50 84 50 28 85
85

37 07 87 50 49 89
88

39 44 79 51 36 90 sure
91 sure

41 35 82 49 50 84
85

43 38 89 50 51

45 31 91 50 23 92-93
my order for

48 40 87 51 39 86
1

50 50 85 51 25

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 2 18.5 500

15 2 1.0 33.9

5 1 27.7 59.3

55 2 7.1 38.0

55 1 56.5 28.2

35 2 28.2 0.3

35 2 21.3 55.1

45 4 16.1 48.2

45 4 9.1 42.2

30 4 35.5 7.1

30 4 43.1 15.6

0

0 0 27.8 58.9 mean

45 0 16.0 48.0 seeing good

55 3 14.9 46.7

De.

First minute-break.

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

a.

s.

Mag.

REMARKS.

8 44 40 86 51 39

86

8.6

50 50 90 51 40

85

85.8

54 05 93 51 55

93

9.4

56 27 85 50 51

22

83
83

57 33 85 51 09

59 53 80 51 15

85

8.4

2 01 91 51 50

90

9.3

4 33 91 50 00

90

9.2

7 9 86 51 12

86

8.6

11 45 65 51 49

68

6.4

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

W.A.R.
J.M.

not

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

45 0 8.0 48.6

45 0 17.5 56.9

40 3 16.7 56.8

40 3 26.9 7.1

25 3 45.6 25.6

25 3 0.2 39.8

35 0 34.8 13.6

35 0 36.7 15.6

~~35 0 36.7 15.6~~

15 0 13.7 52.9

02 4 50.6 30.1

sure ~~35 0 57.6 37.1~~ 5 0 57.6 37.1

30 4 7.1 46.4

30 4 23.1 1.3

20 4 45.0 24.8

20 4 49.6 26.5

10 1 5.7 45.0

10 1 14.6 53.1

35 0 49.3 28.0

35 0 23.3 1.8

Bother reg. order.
Same looking but

2nd pr.

2nd pr. both

Date.

First minute-break.

c, set at.

Apr. 10
Apr 11

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

9 13 05 Feb. 57 31

13 32 83 57 33

15 50 85 57 28

8.4

17 23 89 57 59

9.5

20 12 90 50 38

9.0

22 38 91 50 49

9.2

24 28 68 50 00

6.9

26 36 91 50 33

9.1

28 37 92 50 09

9.2

30 03 80 50 50

8.4

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

not seen sure
 not seen in 1871 sure
 not seen sure
~~not seen sure~~
 not seen sure

58- 1 70 40.9

55 1 11.9 50.4

25 3 24.8 5.1

m

not seen

45 1 49.5 28.1

45 1 58.9 35.2

35 0 17.1 56.8

35 0 17.9 54.3

20 3 23.4 2.0

20 3 45.8 23.1

45 4 19.9 58.9

45 4 39.3 15.5

10 8 40.3 18.4

10 3 51.0 26.9

30 4 5.8 44.7

30 4 31.8 8.0

18720hae.proj.1542R

Date.

First minute-break.

c, set at.

~~May 22~~
Sun 10
Apr 11

Sum
Mean.

N. Coll.	S. Coll.

a.	s.	Mag.	REMARKS.
9 32 21	90 49 51	9.3 9.2	
3 5 48	85 50 00	9.1 8.8	Amoza little
40 16	9.1 51 29	8.9 9.1	
42 32	9.0 51 37	8.8 8.9	
44 45	9.0 51 19	8.8 6.7	
46 30	9.5 51 55	9.7 9.6	
50 28	9.0 51 16	9.8 22 9.0	
51 54	8.6 51 19	8.7 8.6	
53 29	9.5 51 07	7.7 8.3	
56 53	9.0 51 10	8.1	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 3 20,558.9

30 3 30.0 5.9

20 3 10.3 48.9

20 3 2.9 40.4

55 0 50.1 29.3

55 0 50.9 28.0

45 1 28.3 8.7

45 1 37.9 16.0

20 0 14.8 54.0

sure 10 0 33.9 12.4

25 3 10.7 50.5

25 3 46.9 24.7

5 2 52.0 31.5

5 3 61.8 43.5

25 4 58.9⁴ 37.910 0 30.0⁴ 36.9

15 2 32.8 11.7

15 3 13.9 51.0

10 3 26.0 5.4

~~10 3 35.0 10.6~~

lost-a (h?)

(lost-a?)

Revised

lost-a

seeing good at first
 but unstable for
 about 5^h 20. Ammon trouble
 soon

Date.

Apr 20 1872

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

10^h 36^m 13^s 8.9 50° 06' 8.1

fol. # *WPR* false break before
JM

37 50 8.5 50 10 8.6

40 18 9.8 50 37 10.0

43 34 9.1 50 06 9.0

45 55 9.1 49 55 8.2

48 28 9.4 50 19

Not seen

57 27 9.2 50 04 9.1

58 27 9.3 50 16 9.3 *22* lost a

54 10 9.1 50 18 8.5 sure

58 53 9.3 50 47 9.1

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 2 11.8 52.5

10 4 33.9 16.8

45 2 22.0 3.1

15 2 49.8 29.2

25 4 13.9 55.3

15, 3 0.9 41.8

5 4 12.2 53.1

5 0 56.4 37.2

35 1 33.1 14.7

1872phae.proj.1542R

Date.

1872 Apr. 30

First minute-break.

c, Set at.

47.983

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

11 00 15 8.4 ~~48 53~~ 9.5
57 14

3 15 8.7 50 06 8.6

4-46 9.0 ~~50 48~~ 8.5

6 29 7.2 50 34 7.7

9 25 8.9 50 11 6.1 sure

~~13 58 8.5 50 15~~ 9.1
10 28 9.0 50 16

~~15 52 9.2 50 12~~ 9.8
12 20 9.4 50 40

~~17 07 9.0 50 17~~ 9.2 L
14 40 9.2 50 22

~~18 04 9.3 50 37~~ 8.9
16 57 8.5 50 06

~~19 24 8.4 50 36~~ 8.3
18 19 8.8 50 05

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 0 20.1⁴ 2.8

15 4 37.9 18.1

35 1 57.4 46.9

50 0 46.0 26.3

10 3 24.4 5.8

5 2 46.6 27.2

40 4 27.0 7.8

0 1 35.1 14.3

15 4 13.2 53.3

15 4 6.9 46.8

Date.

1872 Apr. 30

First minute-break.

c, set at.

Sum
Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

112208

8.5 50 00

10.0

fol # a?

2550

8.1 50 12

8.0

2645

8.5 50 31

8.8

2840

8.0 50 24

8.8

2959

8.5 50 31

too faint to observe.

3085

6.0 50 20

5.8

too faint

3227

8.4 50 04

not seen

3655

8.9 50 46

9.1

2

3751

9.1 50 40

9.2

3921

7.3 57 16

7.8

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

20 3 29.1 9.9

10 1 42.0 22.1

50 1 25.2 5.0

55 4 16.4 57.1

0 4 16.2 54.9

, 35 2 50.1 29.4

40 4 42.0 22.9

5 2 33.9 14.1

1872phae.proj.1542R

Date.

1872 May 20

First minute-break.

Set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

11 48 19 89 50 06

45 33 72 50 39

47 26 90 50 04

48 48 50 51 43

50 12 90 50 46

53 53 83 50 18

56 38 92 50 06

59 10 84 50 23

12 2 80 24 50 06

4 24 78 51 15

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

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

Date. 1872 May 20

First minute-break.

Set at.

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

12 05 - 83 50 57 46

9 25 - 89 50 30

12 09 94 50 21

13 59 85 50 03

15 52 92 50 12

17 07 80 50 17

2p

18 04 83 50 07

19 24 84 50 36 8.5

21 00 82 50 34 9.6

22 31 73 50 21 6.6

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

45 2 18.9 4.1

45 2 29.1 14.2 per #

6 2 34.2 18.1

Date.

1872 May 20

First minute-break.

Set at.

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

25 28 95 50 17 9.6

~~not~~ ~~can~~ probn m. late

27 13 97 49 59 8.2

29 12 90 50 50 8.9

31 12 90 50 47 9.0

32 48 94 50 18 9.8

35 31 65 50 00

37 03 90 49 57 9.0

40 04 90 50 31 9.2
9.0

2nd 8. pr.

41 26 90 50 50 9.1

43 03 90 50 47 6.5

Runs.

Sum
Mean.

A.		C.	

Pointer.	Stroke.	Rev.	A.	C.	REMARKS.
----------	---------	------	----	----	----------

5	1		7.1	53.1	
---	---	--	-----	------	--

20	2		32.1	18.0	
----	---	--	------	------	--

30	2		12.5	57.1	
----	---	--	------	------	--

35	1		9.8	56.3	
----	---	--	-----	------	--

0	3		52.1	36.2	
---	---	--	------	------	--

circuit failed

25	1		37.9	24.1	
----	---	--	------	------	--

50	1		49.0	35.3	
----	---	--	------	------	--

30	2		30.1	14.1	
----	---	--	------	------	--

30	1		17.9	2.8	
----	---	--	------	-----	--

1872phae.pro.1542R

Date.

1872 May 20

First minute-break.

c, Set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

12 45 28.70 49.58 8.0

46 39 21.80 50.04 9.2

48 54 20.50 01

50 42 29.45 02

52 08 20.50 29 9.2

55 03 27.50 19 9.0

58 39 28.50 45 8.8

00 00 28.50 09 9.0

2 08 28.50 11 8.9

3 26 28.50 08 8.3

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25

0

12.1

⁴59.9

20

0

9.3

54.0

50

3

21.1

6.1

0

4

18.3

3.8

35

2

~~35.1~~

20.1

10

3

59.9

45.0

10

2

10.1

56.1

15

0

5.8

⁴50.8

Date.

1872 May 20

First minute-break.

Set at.

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

13 05 02 9.4 50 12 9.6

17 52 8.4 51 48

L not seen

18 47 8.1 51 37 9.7

10 04 8.0 51 30 8.5

11 26 8.2 50 22 8.7

12 49 8.0 50 21 4.8

15 00 8.7 51 06 8.2
8.7

both stars same reading
not double,

18 06 9.0 51 45 8.5

20 54 9.4 51 33 9.5

seeing bad

22 58 7.5 51 14 7.3

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 2 39.8 24.8

~~45 1 14.1~~~~45 1 (11/4.1) 11.1~~

50 2 34.7 21.9

0 1 25.4 10.9

0 1 47.8 32.9

15 1 47.0 31.7

35 4 7.1 53.9

Sering bod,

45 4 54.2 39.9

5 3 11.7 58.0

1872phae.pro.1542R

Date.

First minute-break.

Set at.

Sum
Mean.

N. Coll.	S. Coll.

α .	δ .	Mag.	REMARKS.
13 41 58 6.5	50 57		
43 03 9.0	50 47		
45 28 7.5	49 58		
46 39 9.1	50 04		
48 54 9.0	50 01		
50 42 9.4	50 02		$\mathcal{P}$
07 38 9.0	50 15		$\mathcal{P}$
52 43 9.4	49 58		
55 03 8.7	50 19		
58 39 7.8	50 45		

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

Date.

1872 June 3

First minute-break.

Aug 9

Set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

13 0 53 88 51 41

Obs. W. A. R

Rec. J. L. M

4 21 90 51 22

W. A. R

Polaris J. L. M.

17 32 94 49 56

19 10 90 50 40

22 57 80 50 02 9.0 20

8.8

~~23 55 91 50 07~~

9.0

25 42 90 50 53 9.1

9.1

27 53 88 52 09 9.0

9.1

~~29 01 90 50 57~~

8.9

30 26 84 50 19

9.0 }
9.2 }

both mean R.A.

9.0 }
9.2 }

both 8 full reg. order

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

20 1 32.7 19.1

20 1 33.2 20.2

15 1 34.9 21.8

15 4 52.6 38.1

15 4 47.7 33.1

10 3 33.2 20.1

10 3 28.1 15.8

0

30 1 5.0 5.9

0 4 9.9 55.1

0 3 35.8 23.0

Date.

1872 June 3

first minute-break.

June 9

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

a.

δ.

Mag.

REMARKS.

~~13 31 26 6.5 50 08~~

32 55 94 50 41 9.8

bad observation

37 52 7.5 50 41 7.3

7.8

39 03 9.0 51 57

9.0 last stroke for C

42 10 9.0 50 26 8.9

not seen

46 56 8.5 51 35 8.7

not seen

50 26 8.5 50 41 8.8

8.7

52 44 8.6 50 19 8.8

8.6

56 28 8.4 50 46 8.3

8.3

58 15 6.0 51 35 5.0

6.2

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

~~40~~

40

1

37.8

24.7

40

2

29.1

15.4

40

2

29.1

15.9

~~60~~

30

2

46.0

31.1

55

2

23.9

11.1

45

2

36.9

22.9

40

2

32.5

18.9

40

2

39.8

27.1

0

3

46.1

31.2

0

3

39.9

25.1

35

2

26.9

13.4

35

2

24.1

12.0

~~45~~~~2~~~~35.9~~~~23.6~~

45

2

34.3

21.9

Date.

1672 June 3
June 9

First minute-break.

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

a.

s.

Mag.

REMARKS.

14 01 30 8.5 51 07 9.7 lost 1st wire
9.9 rej. d

4 07 8.6 49 58 8.8
8.7

5 51 8.5 50 03 8.6
8.5

8 14 8.8 50 09 22
8.3 second #

9 03 8.3 51 53 8.2 lost 1st wire

10 48 8.5 51 03 L
8.1 8 full

11 44 8.0 51 07 8.1
lost

12 48 6.8 51 54 5.7
6.2

14 56 9.0 51 53 9.1 second # prob. wrong
8.8

16 02 8.3 50 26 8.5
8.7

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 0 4.0 50.0

15 0 59.0 45.1

20 3 1.5 46.7

20 3 58.1 46.1

15 4 19.8 5.1

15 4 15.8 2.5

20 4 57.7 45.0

25 3 41.7 30.1

15 4 59.2 46.1

15 0 41.1 25.1

25 3 35.8 42.1

25 3 47.1 36.1

25 4 29.7 15.2

25 4 28.9 16.3

~~55 1 0.2 45.1~~

55 2 22.1 11.1

18720hae.pr.6j.1542R

Dec.

1872 June 3

First minute-break.

June 9

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

14 19 21 87 50 28 8.8 2

8.7

20 43 80 51 41 9.0

9.1

23 10 70 49 58 7.8

9.6

25 01 80 50 47 8.9

27 27 78 51 16

not seen

31 32 87 51 26 8.8

8.9

32 55 92 50 33 9.1

9.3

34 25 89 51 53 ~~8.8~~

9.1

39 03 80 49 59 9.1

9.2

41 37 93 50 50 9.2

9.6 ref. a

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 0 2.0 4515

55 0 42.8 297

~~40 1 54.2 39.5~~

40 1 30.2 209

~~20 4 42.9 28.5~~

20 4 30.7 1818

~~35 0 57.7 42.0~~~~55 0 56.7 41.0~~

55 0 58.9 45.2

~~50 0 57.2 41.2~~

45 4 55.9 39.9

~~30 0 31.0 17.1~~

30 0 29.0 169

~~20 1 28.9 12.5~~

20 0 51.8 40.1

~~30 2 11.4 55.9~~

Circuit failed

30 2 18 48.4

Date.

1872 June 19

First minute-break.

1872

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

14 31 52 89 53 46 9.0

2nd wire bad

Obs. W.A.R.

Rec. J.H.M.

34 50 88 53 49 9.1

3

39 23 80 54 20 8.1

43 58 80 53 45 9.3 2

44 45 87 53 35 8.5

46 42 80 54 27 9.0

47 46 83 54 17 8.3

49 04 85 54 03

too faint to obs.

51 36 83 53 59 9.5

very bad observation

53 14 82 54 07 9.1

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

40

1

22.8

12.9

35

3

39.1

29.7

5

2

54.9

44.1

40

2

58.2

48.0

50

2

21.0

11.9

0

0

6.1⁴

57.8

10

1

35.8

26.1

25

4

46.4

37.0

25

1

26.4

16.9

Date.

June 19

First minute-break.

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

a.

s.

Mag.

REMARKS.

14 55 47 7.5 5421 8.7
7.9

lost a for 2nd #
both #'s reg. order

58 07 9.1 5406 9.6

loss
kazy

02 13 8.9 5412 9.2

last wire late

3 32 7.3 5314 8.8

4 50 7.1 5345 7.8 2p

5 49 8.9 5256

lost

8 01 9.1 5402 9.5

9 01 8.9 5430 8.5

10 21 9.1 5422

too faint to obs.

11 54 8.5 5414 8.9

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5

0

40.0

31.3

20

1

51.8

22.6

15

1

31.1

19.9

10

3

51.8

42.2

40

3

20.5

11.6

30

4

15.9

25

1

26.8

17.5

55

3

6.0

56.7

1

10

4

44.0

34.1

Date.

June 19

First minute-break.

c, set at.

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

15 16 10 88 53 13 9.2 1st wire had 3rd & 4th lost

17 53 8.2 53 31 8.5 2

18 02 9.0 54 26 8.9

21 09 6.5 54 40 6.8

23 48 8.7 58 41 8.8

27 23 9.3 53 27 9.6 8 3 sec. to soon

30 07 8.3 53 30 8.0

31 07 8.7 51 57 9.1

34 57 9.3 52 59 9.3

~~36 25 8.0 53 30~~
37 24 9.0 52 19 9.1

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 0 2110 10.9

55 1 450 35.0

0 3 7.9 56.9

45 3 3.9 52.9

45 2 21.8 9.9

0 1 23.9 13.5

55 2 22.1 13.0

30 1 12.8 2.0

30 1 8.9 56.0

5 3 47.9 38.2

Date.

June 19

First minute-break.

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

α .

δ .

Mag.

REMARKS.

15 56 25 8.0 53 30 8.5

58 53 6.0 53 16 6.0

00 06 8.2 53 34 7.7

3 11 8.9 ~~58 57~~ 8.4

5 16 8.2 54 52 8.8

8 12 8.8 54 39 8.8

12 52 8.0 54 45-9.0

15 51 8.8 53 50 9.0

18 29 8.0 53 49 9.0

~~21 46 6.9 52 07 7.2~~

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 2 24.0 15.5

10 1 50.0 40.2

50 4 7.8 58.1

35 1 27.1 17.8

35 1 15.9 4.1

45 3 56.2 46.2

40 3 56.9 46.0

35 2 39.9 30.9

35 2 39.9 30.0

25 2 39.4 30.0

seeing very bad, the
first part of the evening
a little better towards the
East. Quite hazy till
about 15^h 50^m

Date.

1872 June 11

Fast minute-break.

c, set at.

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

13 16 05.21 54.02

Obs. W.A.R

Rec. J.F.M.

17 30 7.7 52.18

Obs. W.A.R

Rec. J.F.M.

20 54 9.45 133

22 58 7.5 57.20

7.7

Obs'd on lower set of lines

25 07 8.0 52.13

9.0

27 30 8.3 52.41

8.5 2

28 39 8.1 57.36

8.1

31 30 7.3 57.56

8.1

Observed on upper set of lines

32 57 8.0 57.37

7.8

35 14 7.6 58.46

7.8 2

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

1

55

4

45.7

35.2

5

4

23.1

12.7

40

0

50.0

40.1

45

1

19.1

7.8

30

1

9.1

56.0

50

1

19.0

7.1

40

2

26.5

15.1

Date.

1872 June 11

First minute-break.

1872 June 17

Sum

c, set at.

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

13 36 11 9.0 54 01 9.0

3 8 15-9.3 57 13 9.5

39 37 8.3 52 26 9.1

41 31 8.6 52 38 8.5

43 48 8.5 53 58 202 not seen

44 53 8.6 54 59 not seen

46 06 8.5 54 12 8.8

47 27 9.4 52 47 9.7

48 42 7.2 52 45 7.6

7.9

~~lost several W. Accidents~~

51 26 8.9 57 05 9.0

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 1 14.9 3.0

10 4 29.6 17.8

0 2 11.3 58.9

50 0 59.2 ⁴49.5~~30 3 59.9 48.8~~~~20 3 59.9 48.8~~

15 1 18.0 6.3

40 0 56.1 45.2

40 3 25.4 14.1

~~40 3 22.6 13.1~~

20 3 57.7 45.1

Date.

June 11

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

13 52 49 84 5237 8.0

53 37.20 5159 9.4

54 43 26 5445 8.6

56 00 8.7 5422 8.1

57 14 8.5 5204 8.7 False break after a

¹⁴ 1 30 8.5 5107 not seen

2 53 8.0 5322 8.5

5 05 8.8 5430 not seen

6 10 8.0 5359 7.9

8 46 8.5 5450 8.7 Prob. minute wrong

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 1 571 53.9

25 3 22.2 11.0

40 2 37.5 25.3

0 4 43.2 31.0

20 3 45.4 36.9

5 1 21.1 10.0

~~25 4 36.1 24.0~~

25 4 36.1 24.0

35 2 39.1 27.5

1872phae.proj.1542R

Date.

June 11,

First minute-break.

Sum

Mean.

N. Coll.	S. Coll.

α .	δ .	Mag.	REMARKS.
14 11 32	88 53 30	8.5	
12 48	68 57 54	6.6	
14 56	80 57 53	9.2	
16 02	83 50 26		not seen
17 42	75 54 06		not seen, hazy.
20 59	68 54 09	7.8	
22 50	85 54 32	9.8	
24 50	85 53 15	8.4	
26 26	89 54 01	9.1	
28 09	84 57 23	9.1	hazy seeing good

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 1 8.1 56.1

30 4 51.0 51.9

30 4 39.8 26.9

15 3 12.1 59.1

55 0 24.3 12.1

10 2 57.8 45.1

25 2 29.1 17.5

0 4 29.7 16.2

I Date. *Jan 30. 1872*
 I first minute-break. *July 6, 1872*
 C set at.

N. Coll.	S. Coll.
Sum	
Mean.	

α .	δ .	Mag.	REMARKS.
15 9 00 84 54 30			<i>2 K.R</i> <i>2.4 R</i>
11 54 85 54 14			1 Rev. 10 min 15 13 + 670 50' <i>N.A.R</i>
16 10 88 53 13 89		9.1	5741 100 min 15 19 + 87 43 <i>J.F.M</i>
15 23 48 87 53 41 8.6		8.8	82 Rev May 15 21 + 742 18
27 23 93 53 27			Too faint
30 07 83 53 30 8.2		8.5	15 Rev Min 15 35 + 77 46
~~37 29 90 52 19~~ 6.3		9.1	15 ^h 37 ^m + 109 04
~~32 54 80 54 18~~			
40 44 75 53 19		8.2	12 Rev. Dalph. 15 44 42 + 63 00
48 52 65 53 18 87		7.5	
		9.0	
		7.0	one stroke each for 8
49 34 83 53 42 9.6		9.8	Obs.?

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 0 20.9 13.2

~~15 0~~~~12.5 - 4.9~~

Chronograph stopped

45 2

17.3 9.6

~~45 2~~~~18.8 10.5~~

Chronograph stopped

55 2 17.8 10.8

~~55 2~~~~5.3 57.1~~

5 2

4.7 - 2.8

~~10 0~~~~18.4 10.9~~~~5 4~~~~26.0 18.4~~~~5 4~~~~39.8 32.5~~

10 0

30.1 23.1

Both by ordin. 8th Eoch
all mins by accident~~10 0~~~~32.1 24.0~~

45 0

53.2 46.0

some mins? J?

~~45 0~~~~56.3 46.9~~

1 Date.

Jun 30 1872

1 first minute-break.

1872 July 6

set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

15 52 15 80 84 24 8.1
8.3

h₁ 750 15 57 + 94 47

16 00 06 82 53 34 7.9
7.9

3 11 84 53 57 8.4
8.5

5 16 92 54 52 8.8
9.0

8 12 88 54 39 8.8
9.0

12 52 90 54 45 8.7
8.8

15 57 88 53 50 8.7
8.7

19 2 9 90 53 49 8.6
8.6

h₂ 2200 16 22 + 61 48

23 45 85 50 15 8.5
8.8

28 46 95 50 03 8.8
8.8

Too faint to obs.

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

0 3 58.2 50.2

0 3 52.1 42.8

50 2 56.2 48.9

50 3 54.1 46.0

35 1 22.2 14.0

35 1 19.2 12.5

35 1 ~~10.2~~ 2.0

35 1 13.1 4.5

45 3 58.6 50.5

45 3 51.9 43.5

40 3 51.7 43.1

40 3 54.2 46.5

35 2 84.6 28.3

35 2 34.5 26.9

35 2 43.9 34.0

35 2 40.3 33.0

10 3 41.5 32.7

10 3 52.8 45.4

25 1 77.2 8.2 Obs.?

1872phae.proj.1542R

Date.

June 30 1872

First minute-break.

1872 July 6

c, Set at.

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

16 32 07 72 50 15 9.1

8.9

36 44 94 50 58 9.5

9.4 rej. b

39 05 65 50 12 6.5

6.1

41 13 73 50 08 6.8

6.5

43 02 93 50 58 9.5

9.7

Mr. 2391 16 4843 77 44
Obs. not very good. L

45 22 90 50 57 9.1

8.9

50 57 91 50 42 9.3

9.3

ful. 77

53 12 88 50 11 8.6 L

6.5

54 37 92 50 05 9.4

9.2

E. Max Min
16 59 16 + 82 15

2 58 84 52 11 8.2

8.5

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 2 7.9 -0.2

10 3 5.7 1.5

30 0 9.2 1.8

30 0 19.8 11.0

15 2 11.8 2.0

15 2 6.0 57.8

20 2 0.5 51.6

20 2 0.1 51.2

25 4 58.4 50.7

30 0 59.0 51.9

30 2 7.5 -0.4

30 3 13.1 4.5

45 1 43.4 34.3

45 2 3.5 54.8

15 1 47.8 38.8

10 3 36.7 29.1

20 1 57.0 43.2

20 2 25.3 17.9

15 0 46.4 39.1

15 0 47.0 38.9

seeing good

Date.
First minute-break.
c, set at.

1872 July 9

1872 July 9

Sum
Mean.

N. Coll.	S. Coll.

a.	δ.	Mag.	REMARKS.
15 31 07	87 51 57	9.0	15 Leo Min 15-35 + 77 46
		9.1	Obs. W.A.R.
32 41	60 55 03	7.3	Rec. J.F.M.
		6.3	
39 27	87 54 58	8.9	~~15 Serpens 15-48 - 30 2~~
		8.8	
43 26	94 52 20	8.8	12 N. Del. 15-44 + 63 00
		8.5	3 Leo Min 15-48 + 78 11
51 20	83 50 14	8.8	E Cor Bn 15-52 + 27 15
		8.6	
55 03	50 37	9.7	~~lower star~~ En. 710 15-56 50 + 94 47
		9.4	~~8 Dec 15 58 28 + 58 54~~
16 01 01	87 52 28	9.0	
		8.7	
2 48	94 52 26	9.6	
		9.3	
5 42	85 50 07	9.1	hazy
		8.7	
7 28	85 52 28	8.6	
		8.5	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 1 13.5 5.8

30 1 6.2 58.8

20 4 47.9 40.8

20 4 42.8 37.1

30 1 35.1 26.9

30 1 31.9 24.7

5 0 37.3 29.9

5 0 41.5 34.5

10 3 1.1 53.1

10 3 4.0 56.5

50 0 11.1⁴ 4.1

50 0 12.1 32.7

55 3 32.8 25.1

55 3 28.5 22.0

0 1 39.8 31.7

0 1 32.9 25.8

20 1 7.2 58.3

20 1 8.0 59.8

55 4 52.8 45.9

55 4 56.8 55.0

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

187207ae.prj.1542R

Date.

1872 July 7

First minute-break.

1872 July 9

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

16 9 17 8.9 52 05 8.9

8.9

10 56 8.0 52 17 9.0

8.8

13 23 8.0 52 55 8.9 22

8.8

14 04 8.5 52 41 8.8

8.8

16 24 8.4 51 56 8.5

8.5

17 58 8.4 51 38 8.9

8.8

18 59 9.3 51 17 9.6

9.7

21 36 7.6 50 45 8.0

8.0

23 07 9.2 51 42 9.1

9.4

25 30 7.2 52 03 7.8

8.1

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

20 2 35.9 27.8

20 2 39.1 33.1

10 0 37.9 29.3

10 0 33.8 26.0

30 3 11.4 2.9

30 3 12.9 6.1

45 1 24.9 17.1

45 1 43.9 36.1

30 1 22.1 13.1

30 1 19.5 13.1

50 0 2.5⁴ 55.9

50 0 3.1 57.8

10 0 0.1 53.1

10 1 15.9 9.3 nej. 1st " 8

40 3 24.3 16.2

40 3 23.2 16.9

45 1 30.5 23.0

45 1 28.0 21.9 nej 2nd stroke 2nd " W.O. ad

25 1 12.9 4.8

25 1 8.0 1.3

Date.

1872 July 7

First minute-break.

1872 July 9

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

16 28 34 6.8 50 24

7.0

A Proc 16 28²⁰ + 69 03

6.9

ln. 2372 16 32 48 + 79 10

35 48 8.9 51 19

8.8

9.0

87 40 9.3 50 33

9.6

9.8

85 02 9.3 51 27

9.4

9.8

40 45 9.0 50 57

9.3

22p

9.6

41 26 9.5 51 23

too faint to observe

not seen

~~45 10 7.7 51 00~~

50 13

8.3

ln. 2371 16 48 40 + 77 44

52 48 8.7 51 19

9.1

22p

9.1

53 23 8.5 51 39

9.1

8.7

8.7

(E Merc both. 22 16 55 24 31 07 not seen)
2nd star

57 10 7.0 53 14

6.5

7.0

E Merc 16 59 16 + 82 15

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

0 3 27.1 19.0

0 3 22.9 15.7

5 4 27.0 19.8

5 4 23.1 16.1

55 0 18.0 10.1

55 0 9.9 -1.3

0 0 54.5 47.1

0 0 53.9 47.1

35 2 29.0 21.0

35 2 25.8 18.9

~~10 3 6.8 57.1~~

5 4 19.9 11.7

5 4 19.8 13.1

45 3 39.7 31.8

45 3 12.2 35.9

10 4 18.7 10.1

10 4 7.8 59.9

full star

1 stroke each for 8 reg. order
lost 2nd wire for 8th set starSemi very good except
a little long towards
the last.

Date.

1872 July 11

First minute-break.

1872 July 14

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

15 43 42 85 51 59

9.0

12 Nov. Del 15 44 42 + 63 00

3 hrs Mini 15 48 38 + 88 11

3 Serpens 15 50 80 + 16 04

2 Cor. 15 52 18 + 27 15

15 53 53 85 52 05

9.1

2 Dec 15 55 28 + 58 54

8.9

16 04 35 88 51 03

8.8

Obs. W. A. R.

8.8

Rec. J. F. M.

5 39 72 50 30

6.9

6.5

Obs. W. A. R.

10 42 89 50 09

9.3

Rec. J. F. M.

9.0

13 49 90 50 56

9.1

9.1

16 24 84 57 56

8.4

8.3

17 20 89 57 24

lost

En 8 28 16 18 40 + 10 7 45

9.3

21 46 68 52 01

7.3

DD

7.0

22 28 93 49 59

9.2

9.4

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 3 2.1 55.2

~~25 4 9.2 3.1~~

20 2 50.2 44.1

~~20 2 48.0 42.0~~

20 4 25.5 18.9

20 4 31.8 24.2

55 2 7.1 0.1

55 1 58.2 50.9

15 4 34.9 26.8

15 4 35.2 28.2

30 2 32.0 24.8

30 2 30.0 22.9

30 1 24.2 16.2

30 1 23.1 14.8

~~25 2 36.1 29.5~~

0 3 14.5 6.5

25 2 36.1 29.5

25 2 31.1 24.0

25 3 54.7 48.1

25 3 55.5 47.2

Date.

First minute-break.

c, set at.

1872 July 11

1872 July 14

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

16 28 46 9.5 ~~5.0~~ 5

22 not seen

9.8 bad observation

29 28 9.5 52 19

hazy. too faint to observe

9.3

30 51 7.0 52 30

6.7

6.6

31 52 8.8 52 01

8.9

8.8

33 39 7.8 52 31

8.2

ln. 227316 3614+7742

7.8

38 56 9.4 52 17

9.3

9.2

40 33 8.8 52 45

8.5

8.3

41 40 8.5 57 02

8.6

8.4

46 34 8.9 52 52

8.7

ln. 239, 164843+7744

8.9

51 52 8.0 52 10

8.1

8.0

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

20

"

20

2

54.2 46.8

5

2

43.2 36.4

55

2

45.2 41.6

55

2

34.5 26.9

25

1

46.0 39.0

25

1

37.1 30.0

55

2

15.2 9.8

55

2

17.2 10.2

10

1

11.0 4.9

10

1

9.0 1.8

40

3

33.9 27.5

40

3

37.0 29.9

25

0

21.2 13.7

25

0

16.0 9.5

35

0

38.0 31.2

35

0

49.9 43.9

15

2

53.0 45.8

15

2

54.2 46.1

Sung good

Date. 1872 July 16

First minute-break. 1872 July 22

c, set at.

Sum
Mean.

N. Coll.	S. Coll.

a. δ. Mag. REMARKS.

16 00 36 89 52 30

Obs. W. A. R.

Rec. J. F. M.

1 36 91 52 24

Obs. W. A. R.

Rec. J. F. M.

5 06 85 50 30

ln. 232w 16 06 00 + 65 09
20 pm. 16 11 31 - 4 23
19 W. m. 16 14 32 + 76 12

17 10 68 52 21 6.0

ln. 828 16 14 40 + 107 45

2 Merc. 16 19 30 + 14 20

7.2

ln. 2343 16 21 40 + 55 30

29 08 88 50 28 8.5

2 Dec. 16 22 16 + 61 48
3 Mercuris 16 24 41 + 21 46

3

~~not~~ lost

31 25 92 50 42 9.0

9.4

32 20 80 52 34 8.8

ln. 2373 16 36 14 + 77 42

8.9

41 26 95 51 21 9.7

9.7

rej. 2 and more

45 10 77 57 00 not seen

ln. 2391 16 48 43 + 77 44

20 pm 16 57 36 + 9 34

not seen

53 21 68 52 54 6.8

6.8

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 2 24.9 19.1

5 2 18.9 13.2

0 0 32.9 26.2

45 1 27.1 20.8

45 1 21.1 15.0

50 4 27.2 20.2

50 4 7.8 2.9

5 2 10.8 4.8 rej. next to the last stroke

5 2 12.8 6.8

30 4 9.1 6.2

30 4 7.2 1.9

Date.

1872 July 16

First minute-break.

1872 July 22

Sum

Mean.

N. Coll.

S. Coll.

c, c, set at.

a.

s.

Mag.

REMARKS.

16 16 55 01 8.6 51 59 8.8 2 hrs hi 16 59 15 + 82 15
16 56 50 + 83 45

8.9.1

17 2 20 8.0 52 21 8.2 Time?
not seen

3 32 8.6 51 42 8.8

9.0

5 59 8.3 52 47 9.4

9.2

7 36 6.0 52 33 6.1 a Nachels
17 08 46 + 14 32

6.0

9 08 9.0 52 11 8.9

9.0 lost 2.1st wires

10 40 8.9 52 03 9.2

9.2 1st wire dbt.

12 58 7.9 51 57 8.2

7.0

15 34 8.0 51 03 8.3

lost

16 56 7.9 52 00 7.0

7.9

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 3 39.2 32.3

25 3 38.2 31.2

15 2 51.3 44.0

40 4 24.5 18.1

40 4 17.8 11.2

40 0 21.0 14.0

30 3 48.9 43.0

50 3 59.0 52.7

53 3 45.2 40.0

15 1 34.0 28.5

15 0 1.2 54.0

25 1 57.8 50.9

20 3⁴ 4.2 58.0

30 1 13.8 6.9

30 1 7.2 1.0

25 0 44.9 37.5

~~2~~

25 2 22.9 17.8

25 2 17.0 18.2

Date.

1872 July 24

First minute-break.

1872 July 27

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

16 31 37 92 52 46

not seen (sure)

58 39 78 52 31

62 28 73 not seen
16 36 14 + 77 42

38 46 83 53 20

20 not seen

39 39 84 53 06 8.0

8.5

40 54 80 52 09 7.7

8.0

43 04 85 53 02 8.1

8.6

prop. wrong star.

46 36 92 52 37 9.2 20

8.5

47 34 88 52 23 8.7

8.8

fol. #

49 34 85 53 09 8.4

8.5

52 32 88 54 38 8.7

8.8

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

Obs. W. A. R.

Rec. J. F. M.

Obs. W. A. R.

Rec. J. F. M.

20 1 35.0 29.9

20 1 38.0 30.2

15 3 13.2 7.0

15 3 25.1 18.1

24⁵ 0 56.8 50.8

25 0 3.1 46.8

50 0 37.2 30.9

50 0 41.1 34.0

0 4 22.9 16.1

0 4 10.1 2.2

15 4 30.0 23.2

15 4 29.8 21.2

45 4 50.0 42.0

45 4 52.1 43.1

Date.

1872 July 24

First minute-break.

July 27

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

165406

77 52 04

8.0

E. W. Min
1659 W 82 15

7.8

1702 25 85 52 31

8.6

8.7

5 02 88 52 28

8.4

rej. 2 false breaks after W a

8.4

6 21 93 52 53

9.4

9.2

8 19 90 52 06

9.4

9.5

10 40 89 52 03

8.9

9.0

11 50 92 53 58

9.7

false break before 14th wire

9.5

14 08 86 53 31

8.6

8.2

15 43 93 53 12

9.4

9.3

17 15 90 52 12

9.0

9.0

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

20 2 22.0 15.9

20 2 13.7 16.1

55 1 9.2 2.9

55 1 29.3 20.9

55 3 54.0 48.0

55 3 0.2 52.9

30 3 51.4 45.1

30 4 17.9 9.9

20 0 37.1 31.2

20 0 35.0 26.9

20 4 13.0 5.9

25 2 12.3 4.0

25 4 23.5 17.8

25 4 30.1 27.2

55 1 21.9 14.8

55 1 20.1 11.9

15 1 5.0 57.9

15 0 ^{sure} 0.2 51.6

10 4 28.1 20.9

10 4 14.9 6.0

Being found

Date.

1872 Aug. 1

First minute-break.

1872 Aug. 5

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

16 55 59 83 52 29

8.3

8.0

d Hercules 16 56 48 33 45
E. h. Min 16 59 13 + F2 15

Obs. W. A. R.

17 2 20 80 52 21

8.17

8.13

Rec. J. F. M.

3 10 9.3 53 21

not seen

not seen

Obs. W. A. R.

5 59 83 52 47

9.4

9.3

Rec. J. F. M.

7 36 60 52 33

6.0

6.5

10 40 89 52 23

9.4

9.0

12 43 90 53 47

9.2

9.0

L

13 45 75 52 54

7.3

6.8

14 55 78 52 35

8.2

8.0

15 46 88 53 53

8.8

8.9

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 2 52.8 44.7

55 2 47.9 40.8

5 0 53.3 45.0

51 0 54.3 48.5

40 0 14.0 5.4

40 0 20.1 12.0

50 34 2.0 53.9

50 34 1.9 53.5

25 2 7.9 59.0

20 4 18.0 9.9 full star

40 0 41.8 33.8

40 0 36.1 27.8

30 2 31.0 22.4

30 2 31.3 23.1

50 2 43.9 35.0

50 2 41.2 32.9

30 3 59.5 50.0

30 3 57.1 47.8

Date. 1872, Aug. 1
 First minute-break. 1872 Aug. 5
 c, set at.

Sum
 Mean.

N. Coll.	S. Coll.

a.	δ.	Mag.	REMARKS.
17 17 56	80 52 15	9.0	
		9.0	
19 00	60 53 32	5.8	
		5.0	
20 52	8.1 53 28	8.4	
		8.4	
22 23	7.5 53 10	8.0	22
		8.0	
23 07	81 51 58		not seen.
			not seen
25 07	89 52 06	8.8	
		8.5	
26 29	9.4 52 10	9.2	
		9.4	
27 34	30 52 22	3.0	
		3.5	
29 24	81 52 40	8.2	2
		8.0	
30 18	93 52 29	9.6	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 2 30.4 21.5

10 4 11.8 3.6

55 0 23.0 14.9

55 0 27.9 19.4

0 0 2.3 53.3

0 0 0.7⁴ 51.9

10 3 29.7 20.4

10 3 26.6 17.9

20 0 45.0 36.1

20 0 39.2 30.7

15 1 44.0 35.7

15 1 53.7 43.9

0 3 5.2 57.1

0 4 7.1 59.0

45 1 57.9 49.8

45 1 59.0 50.2

55 3 3.1 55.6 seeing moderate

55 2 52.2 43.9

Dec.

First minute-break.

c, set at.

1872 Sept. 28

Oct, 2 1872

Sum
Mean.

N. Coll. S. Coll.

a.

δ.

Mag.

REMARKS.

20^h 29^m 07^s 74 52 35'

7.5

Obs. W. A. R

8.0

f. J. M. Rec.

30 30 7.6 52 09

6.6

Obs. W. A. R

7.5

Red f. J. M

31 51 88 52 54

9.1

9.0

33 00 92 52 53

8.8

Pr. star

8.8

35 12 93 52 32

6.0 sure

6.8

36 13 90 52 54

9.3

Obs. ?

9.1

38 10 90 52 49

9.2

8.9

39 10 90 52 42

9.5

~~A₋₂~~ Obs. ?

9.5

A_{1, 2, 3} Obs. ?

42 00 91 52 29

9.0

Upper # A₊₂

9.0

43 21 73 52 08

7.7

7.4

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 4 48.9 38.2

X 50 4 47.1 37.1 red

20 0 36.2 26.2

X 20 0 36.0 26.6 red

35 0 37.5 27.9

X 35 0 42.1 31.4 red

35 3 2.6 52.8

X 35 3 1.1 50.1 red

53 3 41.8 31.9

X 55 3 35.0 25.0 red

25 1 10.0 0.0

X 35 0 51.2 42.0 red

40 0 35.0 22.9

40 0 20.8 10.0

45 3 33.9 23.2

45 2 1.0 49.0

0 0 50.6 41.0

0 1 4.8 53.8

20 1 0.3 50.9

20 1 53.8 37.0

Date.

1872 Sept. 28

First minute-break.

1872 Oct. 2

c, Set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

h m s mag.	h m s	Mag.	REMARKS.
20 44 47 6.0	51 25	7.0	fair comp. foll's
		6.7	Comp. 9.0 foll. 5 sec.
46 11	50 52 14	9.0	A ₊₂
		9.0	
48 29	52 30	9.1	A ₊₂ rej' 2
		9.3	
50 11	52 58	8.9	A ₊₂
		8.9	
52 12	52 43	9.3	A ₂ 8 foll.
		9.5	~~A₂~~
54 11	52 01	8.9	
		9.2	
55 31	52 09		rej. Obs.
		9.4	1 st 2 W. d. l. t
56 40	52 27		not seen.
		9.3	2 nd 11 #
58 29	52 04	8.6	
		8.7	
59 49	52 46	6.2	
		5.8	

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

0 3 58.8 48.8

~~10~~ 3 ~~53.8~~ 42.4

15 0 35.7 26.2

~~15~~ 1 ~~17.1~~ 5.9

55 4 26.9 17.8

~~55~~ 4 ~~44.9~~ 33.1

30 2 16.8 7.0

~~30~~ 2 ~~9.5~~ 58.9

45 2 57.2 47.9

~~45~~ 2 ~~25.1~~ 13.7

25 3 38.0 27.9

~~25~~ 3 ~~28.2~~ 17.4~~20~~ 1 ~~40.3~~~~20~~ 1 ~~30.8~~ 20.0

0 3 9.9 58.9

25 1 10.0 59.7

~~25~~ 0 ~~48.1~~ 37.5

40 3 29.9 19.2

~~40~~ 3 ~~30.5~~ 19.1

Date. 1872 Sept. 28

First minute-break. Oct. 2

c, set at.

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

20 01 40 80 52 06 8.5

8.4

~~2 44 84 52 28~~ 9.0

3 14 90 51 31 9.1

4 28 9.5 52 47

not seen
too faint to observe

6 00 8.6 52 33 8.5

9.0 false obs. pr.

8 48 9.0 52 12 8.4

8.9

9 55 9.1 52 11 6.9

6.2

11 35 9.1 52 32 9.1 A foll. #

8.9

foll. #

12 41 8.2 52 38 8.5

8.0

13 42 7.9 51 55 8.0

8.1

15 10 8.8 53 03

sheet run out

9.2

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

20 3 38.3 27.9

20 3 40.0 27.9

55 3 18.0 8.8

55 3 5.1 54.1

55 1 36.2

55 1 36.2 25.1

55 1 34.9 24.3

15 3 9.9 58.2

15 2 57.0 45.5

15 4 20.8 9.8

15 4 10.9 59.9

55 3 23.9 14.8

55 3 15.8 4.5

50 1 55.4 46.0

50 1 1.0 50.8

30 3 52.6 40.8

30 3 51.2 38.8

25 3 38.0 26.1

Date.

1872 Sep. 28

First minute-break.

Oct. 2

set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

h m s mag
21 16 40 85 52 50 8.9
8.8

18 12 85 57 44 8.5 both ## Obs.? some W. a lost
8.8
8.5 ~~pa. + ##~~ reg. order.
8.8

20 28 80 52 40 8.0
8.2

22 33 75 52 18 7.7
7.8

22 58 90 52 33 9.2
9.3

24 32 90 52 14 9.3 A₂
9.1

25 46 88 52 16 8.9
8.8

27 56 83 52 11 8.5

2 8.6

29 27 88 52 07 8.4
8.6

30 46 90 52 55 8.7
8.9

Close double Comp. be. 9

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

40 0 42.2 31.0

40 0 0.1 50.1

45 0 1.1 50.2

40 4 46.9 36.4

40 1 25.1 14.2

40 1 21.2 10.1

10 1 47.2 35.3

10 1 38.0 27.7

55 2 22.2 11.9

55 2 9.0 55.9

15 0 58.2 47.1

15 0 2.6 50.2

10 4 37.8 26.9

10 4 26.0 15.3

15 3 56.2 44.2

15 3 57.7 45.8

20 2 54.2 44.0

20 2 46.2 35.0

30 4 54.9 44.1

30 4 38.2 27.8

Seeing very good

Date.

First minute-break.

, set at.

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

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.

1872phae.proj.1542R

1872plae,proj.1542R