

KG
11366
v. 536

Jove
Chronograph
Circle Readings Record
From Sept. 2, 1871 to Nov. 2, 1871 A-7.
Sever, Francis, & Co., University Booksellers, Cambridge.

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

Date.

First minute-break.

c, set at.

Sept 2 -

Sept 6 1821

Sept 7

Sum

Mean.

N. Coll.

S. Coll.

Sept 3

46.289
248
295
248
290
11

46.363
369
372
362
368
34

46.292

46.367

a.

δ.

Mag.

REMARKS.

19. 0. 17_{8.8} 50.41 8.7

8.7 8.5

~~Mr. Dr.~~

Mr. Dr.

1 48_{7.8} 52.34 8.2

8.0 8.4

Mr. Dr.

2 26_{9.3} 52.20

3 34_{8.8} 53.37 8.8

8.0 8.4
8.2

* late

4 26_{8.8} 50.45

5 15_{7.4} 50.10 9.2
7.5

6 44_{9.0} ~~50.13~~ 50.13

9.0 9.1

7 41_{8.6} 50.18 9.0

8.5-8.9

8 32_{8.5} 54.59

8.6 8.6

10 23_{8.3} 50.41 8.0

8.5-8.3

Runs.

Sum
Mean.

A.		C.	
76	5.5	19.5	20.2
72	6.3	19.0	21.1
75	6.0	18.4	21.2
71	6.6	19.4	21.4
80	6.7	18.4	20.9

Pointer.	Stroke.	Rev.	A.	C.	REMARKS.
Sept 2	40	1	57.0	56.0	Sept 2 Sept 7
	40	2	0.0	57.0	lake open
	45	4	15.3	14.2	
	45	4	27.5	25.4	45 4 18.7 16.0
					not seen
					not seen
	40	4	28.8	27.8	
	45	1	42.3	40.3	2x8 dva the same
					45 2 24.3 22.8
					not seen
	5	1	4.5	1.8	
	50				10 3 48.9 49.0
	10	0	3.2	1.1	10 0 7.3 6.0
	55	2	55.0	54.2	
	5	0	29.1	—	5 0 32.9 31.7
	20	3	52.1	53.3	20 3 59.5 60.0
	40	1	56.0	53.2	
	40	1	50.3	47.8	40 1 50.2 49.8

Date.

First minute-break.

c, set at.

Sept. 6

7871 Sept 6

46.343

Sum

Mean.

N. Coll.

S. Coll.

46.365
361
366
360
362

46.323
336
336
330
332

Sept. 5.

363

323

56

343

α .

δ .

Mag.

REMARKS.

19 11 32 9.0 50.55 8.9

8.8 8.7

1 star

12 34 8.7 50.34 8.5

9.0 8.8

13 30 8.8 50.33 8.7

8.8 8.7

14 25 8.9 50.15 8.8

8.9 8.8

15 16 8.0 50.38

8.3

2 stars - 1 ready -

8.4

8.3

8.4

8.4

8.6

16 27 8.8 50.28

8.5

of - f*

8.8

8.6

17 08 7.1 50.6

7.2

7.3

7.5

18 29 7.1 52.7

7.0

7.3

6.5

19 44 8.3 50.47

8.3

8.6

8.5

20 43 8.8 54.28

9.0

8.7

8.8

Runs.

A.		C.	
346	348	396	390
333	343	395	396
340	350	386	344
339	348	388	395
334	348	390	399
Sum			
Mean.			

Sept 6

Pointer.	Stroke.	Rev.	A.	C.	REMARKS.
Sept 2	315	2	57.5	55.9	Sept 7
Sum	25	2	58.0	55.2	25 2 58.2 57.9
	45	3	57.2	51.1	
	45	3	58.3	54.3	45 3 46.8 46.2
	45	4	41.0	40.5	
	45	4	41.0	39.1	45 4 38.7 42.3
	5	3	22.0	21.6	
	5	3	19.8	17.2	5 3 20.1 20.0
	40	4	58.5	57.8	
	40	4	58.2	58.3	45 full 2.1 59.8
	50		50.8	50.6	
	55	0	47.9	45.2	55 0 35.9 34.8
	15	2	30.2	29.2	
					16 2 35.6 35.3
	15	0	21.4	18.8	
	15	0	23.3	20.3	15 0 18.1 16.2
	35	1	3.2	0.8	
	35	1	3.4	0.8	35 1 4.4 2.3
	50	4	29.0	29.0	
	50	4	25.3	23.9	50 4 25.3 26.8

Date.

First minute-break.

c, set at.

1871 Sept 6
Sept 7

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

19. 21.59 54.8 8.9 up + fol X

8.4 8.6

23 3.50.44 8.6

7.8

23 56.50.8 8.6 setting wrong -

8.4

25 16.51.26 8.7

8.2

26 34.50.45 9.2

9.0 8.9

27 57.50.9 9.5

9.2 9.3

28 38.50.27 8.2

8.8 8.0

of

29 35.50.40 8.2 prob wrong star -

8.8 8.8

30 59.50.58 6.5

5.5 5.8

31. 44.50.56 9.5

fol X - of

9.8 10.0

Runs.

A.		C.	
17	2.1	97	99
20	2.0	90	99
18	2.3	94	96
20	2.8	98	94
21	2.0	92	93
Sum			
Mean.			

Sept. 7

Pointer.	Stroke.	Rev.	A.	C.	REMARKS.
Sept. 2	10	2	40.0	38.8	
	10	2	41.4	39.0	10 2 37.2 36.5
	35	4	35.8	35.5	
	35	4	31.8	30.0	
	10	4	48.7	48.7	
	10	4	51.2	49.2	
	55	2	220	19.4	
	55	2	122	14.0	
	35	4	1.7	0.7	
	35	3	58.2	54.1	35- 4 0.3 1.2
	10	3	57.0	56.9	
	10	3	51.8	49.2	10 3 51.1 50.3
	55	1	17.4	6.2	
	55	1	11.2	8.0	55- 1 0.8 0.0
	40	4	34.2	32.0	
	40	3	57.1	58.9	40 4 9.2 7.3
	25	0	26.0	26.2	
	25	0	27.0	24.2	25 0 26.1 24.3
	25	2	59.0	57.0	
	25	2	40.2	38.2	25 2 42.8 41.1

Date.

First minute-break.

c, set at.

Sept 7

Sum
Mean.

N. Coll.	S. Coll.

α .	δ .	Mag.	REMARKS.
19. 33. 1	50.18	9.0	
34.49	50.57	7.0	7.8
35. 40.	50.48	8.5	
36 41.	51.48	8.0	8.1 fol X
37.44	50.5	8.2	8.0
38 39.	50.29	9.0	7.8
40 19.	50.46	8.7	9.0 Clouds -
41 14.	50.53	9.5	7.8
41 59.	50.26	9.0	9.2 of -
42 54.	50.39	8.5	up X 8.8

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

not seen
not sum

25 1 31.2 29.9

25 1 31.3 30.2

30 4 45.8 45.1

30 4 40.8 40.0

35 0 26.0 22.3

35 0 38.2 38.2

15 3 34.7 33.1

15 3 27.1 36.2

50 4 44.5 42.8

50 4 42.8 42.2

35 2 40.0 40.7

35 2 40.2 39.3

30 0 10.0 8.0

obs bad -

30 0 42.2 41.6

55 2 0.5 - 0.8

3

40 1 1.7 0.8

40 0 43.0 42.7

Date.

First minute-break.

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

Sept 7 1871

a.

s.

Mag.

REMARKS.

19 44.7 ^{51.1}
~~50.4~~
9.0

8.3

fol *

45 33 ^{51.43}
8.9

8.8

8.9

46 30 ^{51.43}
9.4

9.5

up *

9.5

48.2 ^{50.19}
7.2

7.8

8.0

49 11 ^{50.42}
8.1

8.8

8.5

50.11 ^{50.4}
8.9

8.8

51.24 ^{50.29}
7.3

8.0

7.7

52.57 ^{50.27}
8.9

8.5

8.9

54.11 ^{50.57}
7.9

8.5

8.2

55.33 ^{50.19}
7.2

7.4

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

not seen
lost aSept 7
20 2 15.2 14.0

Sept 2 40 0 12.8 10.2

40 0 6.7 6.0

35 3 19.4 18.2

Cloudy - mags.
doubtful -

0 3 47.2 45.8

35 3 18.8 17.8

40 1 20.1 17.6

0 3 45.8 45.4

40 1 17.2 16.1

not seen

15 4 29.3 29.2

50 4 19.0 18.0

50 4 11.2 10.8

55 1 2.5 0.2

55 1 3.0 2.1

25 1 4.5 1.7

25 1 9.1 6.7

0 4 24.4 24.5

Date.

Fast minute-break.

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

Sept 7 1871

a.

δ.

Mag.

REMARKS.

19. 56.27 50.18
87

9.0

57.13 50.38
9.2

9.4

58 26 50.12
7.8

7.8

59. 30 50.49
9.5

9.4 1 star

20. 0 43 50.55
7.4

7.5

5.5

1. 40 50.5
7.6

7.8

7.8

2 34 52.41
8.8

8.8

9.0

3 31 50.58
8.6

9.0

8.8

5 2 50.12
6.8

7.5

7.7

6 13 50.57
8.6

8.6

prx
8.8

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

~~Sept 12 to 1~~

lost a

Sept 7

0 4 51.9 52.0

~~10 1 33.0 34.0~~

10 1 33.0 34.0 45-0 22.1 50.2

10 1 42.3 40.2
cannot obs it -

3.5-0 13.2 11.1

25-2 48.5 46.9

25-2 58.2 57.1

15-3 22.7 22.6

15-3 22.8 21.9

40-2 24.0 23.4

40-2 18.3 17.0

25-0 18.9 16.1

25-0 3.8 2.2

10-0 41.3 39.5

10-0 48.0 47.2

25-1 19.0 16.4

25-1 15.3 14.5

1871bae.prnj.1540R

Date.

First minute-break.

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

Sept 7 1871

a.

s.

Mag.

REMARKS.

20 7 15_{7.5} 52.0 6.5

7.5

8 12 5_{8.2} 17 7.8

8.0

9 4 5_{9.2} 8

9.5

10 9 7_{7.1} 50.51 7.8

7.6

12 15 8_{8.8} 50.45 8.7

9.1

13 34 9_{9.3} 50.11

9.2

15 4 7_{7.8} 50.30 8.6

8.2

16 18 9_{9.1} 50.40 9.5

9.3

17 17 8_{8.8} 50.7 9.2

8.8

18 24 6_{6.7} 50.8 8.0

6.3

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

Sept 220 3 10.5 8.8

Sept 7

20 3 5.8 5.1

50 16.7 14.1

5 0 16.1 14.7

not seen

15 0 42.0 40.1

30 2 18.5 17.0

30 2 20.3 19.0

35 3 23.0 22.5

35 3 18.8 17.2

not seen -

10 2 33.8 33.0

50 3 41.2 39.5

50 3 29.8 29.1

40 3 120 109

40 3 2.0 1.3

15 1 45.7 42.9

15 1 29.2 28.2

15 0 23.5 21.8

15 0 21.2 20.3

1871phae.proj.1540R

Date.

First minute-break.

c, set at.

1871 Sept 7

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

20. 19.41_{8.0} 50.23 8.6

8.4

20. 59_{8.8} 50.56 9.1 up *

8.4

21 51_{9.0} 50.8

9.0

22 52_{7.3} 50.41 8.5

7.8

23 52_{8.6} 50.33

9.0

25. 3_{8.6} 50 46

9.0

26 12_{8.7} 50.7

8.7

26 59_{8.3} 50.24

8.7

29 25_{9.0} 51.0

9.0

30 13_{9.5} 51.2

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

Pointer.	Stroke.	Rev.	A.	C.	REMARKS.
Sept 20	0		32.2	31.7	Sept 7
					0 0 26.8 27.9
25	2		38.9	38.3	25
					25 2 39.9 39.1
					not seen Cloudy all we-
15	0		27.0	25.9	most of time obsd
40	2		8.0	6.9	thru thin clouds -
40	2		22.0	21.2	A.M. obs -
					not seen - H.S. - rec -
					45 4 67.5 56.2
					35 2 34.3 33.9
W.A.R. Obs					15 0 26.3 24.2
A.M. Rec					55 3 57.9 57.0
					20 2 23.8 22.5

date.

first minute-break.

set at.

Aug 9 1871
Sept 14

Sum
Mean.

N. Coll.	S. Coll.

α.

δ.

Mag.

REMARKS.

18 55 54 81 52 56

Am obs
NOR over

56 59 80 50 19 8.5
8.0

58 26 78 50 12 8.3

59 30 95 50 49 9.4

20 1 04 82 50 54 8.9

upper & fore br. H.M.

2 08 81 50 40 8.5

4 10 77 51 10 8.9

4 78 88 52 34 8.0 20
9.0

5 02 87 50 53 8.5
9.0

6 09 94 50 19 9.5
10.0

7 25 87 51 46 8.5
8.5
8.6

Runs.

	A.		C.	
	40.2	40.7	47.2	48.4
	40.2	40.3	47.3	48.6
	39.8	40.3	46.8	48.5
	39.9	40.8	47.1	48.9
	40.7	41.2	46.9	48.8
Sum				
Mean.				

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

Q 2 32.0 32.8
 5 0 40.2 38.5

10 1 31.5 31.2

35 0 0.4 - 0.9 m. #

30 0 24.4 23.2

40 3 29.6 30.3

40 3 24.7 34.5

50 2 39.8 39.2

50 2 39.9 50.6

30 0 48.0 48.7

30 1 2.3 9.6

0 4 18.3 18.3

0 4 23.5 35.1

25 1 38.2 37.2

~~35 3 19.7 29.5~~

35 1 41.7 52.1

Date.

Sept 19 1871

First minute-break.

7871 Sept 14

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

20 904 92 5008 8.9

9.5

10 33 91 5038 8.8

9.0

12 32 85 5041 8.7

8.6

13 54 73 5043 6.8

7.0

15 27 78 5029 8.0

2 fol #

16 28 85 5104 8.3

9.2

mid. #

17 46 87 5025 8.8

9.0

18 52 80 5014 8.0

19 51 84 5142 9.3

9.5

21 02 79 5012 7.5

8.5

5008

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 0 15.0 14.1

15 0 20.1 22.2

45 0 14.2 11.8

45 0 32.5 38.7

40 2 46.2 46.2

40 2 42.2 58.2

35 3 47 50

35 3 26.8 36.0

50 4 35.3 35.0

50 4 34.0 43.2

15 4 2.1 1.7

15 4 12.3 20.8

55 3 49.4 50.2

55 3 51.7 0.8

10 0 8.4 6.7

40 1 3.2 1.4

40 1 58.2 6.3

10 1 56.4 56.1

10 2 1.8 11.1

Date.

First minute-break.

set at.

Dec. 9 1871

1871 Sept 14

Sum

Mean.

N. Coll.	S. Coll.

a.

δ.

Mag.

REMARKS.

21 51 80 50 08 9.2

2 9.3

22 46 87 50 06 8.8

8.9

24 08 92 50 13 9.2

9.5

25 12 88 50 57 8.8

9.0

for #

26 12 87 50 07 8.7 22

9.0

26 59 83 50 24 8.2

8.6

~~28 14 91 52 23~~

28 05 90 51 52 6.0

~~29 25 90 51 40~~

30 13 95 51 02 9.5

9.2

false obs. Mr. Long Sings

31 48 85 50 10 8.5

8.7

50 26

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 0 19.2 19.3

15 1 35.0 40.2

15 3 14.1 14.1

15 3 29.1 36.9

10 0 24.6 24.0

10 0 23.9 34.0

25 1 38.3 38.3

25 1 37.3 46.2

15 0 27.7 27.1

15 0 28.2 34.2

55 3 53.1 53.1

55 3 47.0 58.3

30 1 20 5.9

20 1 19.9 19.7

25 0 3.0 8.8

10 2 52.3 52.6

10 2 46.9 55.3

Date.

First minute-break.

Set at.

Sept 9 1871

7871 Sept 14

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

203249 77 50 26 7.8

8.0

3348 85 51 08 8.2

8.4

3502 88 50 46 8.5

8.8

~~36 08~~ 9.4 52 40 9.2

9.2

37 08 9.0 52 40 8.7

8.8

br. # 3 1/2 faint comp.
" "

38 51 7.5 50 39 8.0

7.5

39 49 8.4 50 44 8.5

7.7

41 14 9.0 50 44 8.7

8.5

42 15 9.3 50 36 8.8

9.2

43 17 9.0 50 18 8.7

9.0

br. # fol

51 38

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 1 371 37.0

55 2 0.0 8.0

15 0 19.0 18.5

20 2 16.8 26.5

35 2 15.2 15.4

35 2 9.0 17.9

40 2 24.2 23.1

40 2 31.9 49.3

40 4 2.3 1.4

40 4 10.1 20.3

45 4 22.3 22.0

45 4 22.0 31.0

35 4 58.6 58.6

40 2 45.5 54.8 lost a

35 3 49.0 47.2

35 3 36.2 46.1

45 2 20.2 20.0

45 2 17.4 27.5

0 4 49.2 48.9

5 0 -0.8 7.3

Sept. 9 1871

Date.

First minute-break.

set at.

Sum
Mean.

N. Coll.	S. Coll.

α .	δ .	Mag.	REMARKS.
29 44 48	92 50 38	9.0 9.2	
45 34	88 50 04	8.5 8.5	m. H
47 07	72 50 56	6.8 7.0	
48 17	86 50 09	8.7 8.8	
49 50	88 50 46	8.8 9.2	22
50 30	90 51 04		
52 18	62 50 34	6.5 6.0	
53 19	93 50 34	9.0 9.2	
54 45	95 50 11	9.5	
56 54	87 50 57	8.5	lower m H
	50 22		

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

40 4 64.5 64.8

45 0 7.9 14.3

15 4 59.2 58.0

15 4 4.0 13.5

25 2 12.8 11.8

25 2 4.2 13.3

10 4 13.3 13.9

10 4 8.5 19.4

35 1 58.6 57.9

35 1 58.3 7.2

47

45 3 23.1 22.8

45 3 19.8 33.0

45 4 4.2 4.5

45 4 10.9 21.5

10 2 32.3 32.2

30 2 53.3 52.7

no 2 for
M Rec

l win plate

Bare up in disjunct
seems ~~normal~~
Circuit - but
Stays up - but

Date.

First minute-break.

Set at.

Sum
Mean.

N. Coll.	S. Coll.

Sept. 9 1871

a. s. Mag. REMARKS.

20
195 701 90 5022 85

5809 94 5022 92 four upper #1

5909 77 5018

~~20021 8~~

24021 81 5017 82 22

105 85 5038 83 5 between a & b

232 74 5054 78 22

~~316 80 5054~~ 85 Com #
407 80 5014

547 88 5101 87

739 92 5007 90
5007

817 87 5019 89
6019

~~5019~~

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

0 5- 30,4 31,2

0 4 28,0 27,3

5 2 2,3 0,5

45 0 15,3 18,7

35 3 37,7 37,8

5 4 38,0 38,0

20 2 26,0 25,0

15 1 14,1 12,6

0 4 10,9 10,9

Date.

Sep 9

First minute-break.

Set at.

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

18 59 05 6.3 5204 70

Observed by
J. R. R. R.

19 0 43 8.3 5256 88

2 26 9.3 5220 9.3

4 52 8.2 5247 8.2

5 33 7.9 5244 7.9

6 19 9.2 5205 8.6 9.2 fac.

8 21 8.8 5253 8.7 fac

10 58 9.0 5226 9.1

13 14 8.2 5711 8.8

14 19 7.4 5707 7.5

5746

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 3 373 364
1

25 2 420 399

0 8 228 204

35 1 30.4 28.1

35 4 29.0 25.1

15 2 53.5 52.0

25 4 53.5 52.9

55 2 8.2 6.3

10 2 18.1 16.1

15 1 22.3 20.2

Date.

first minute-break.

set at.

Sept 9
Sept 14 1871

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

19 15-18 89 51 46 84

8.5-

16 34 87 51 05 89

9.0

18 17 93 51 26 93.2

9.5

19 10 76 51 52 80

8.3

22 29 78 50 35 70

7.5-

23 52 86 50 30 85-

8.8

25 16 82 51 26

~~8.8~~ Not seen at 30^s before

8.4

26 16 90 51 53 8.8

9.0

28 25 89 50 48 8.7

Middle

9.0

30 14 86 51 45 9.0

8.8

51 03

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 2 11.90

35 2 11.2218

10 2 241 228

15 2 33.0 41.2

59 1 355 346

SWR 55 1 344 416

30 0 545 532

30 1 1.3 98

45 2 233 231

45 2 375 462

45 2 560 561

45 2 523 624

~~30 0 102 7.5~~

55 2 14.0 248

30 0 102 7.5

30 0 230 31.1

35 0 589 582

35 1 25.4 360

35 2 440 411

35 2 403 503 last a

~~l m b 1927~~

l m b 1929

Date.

First minute-break.

set at.

Sept 9 1871

1871 Sept 14

Sum
Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

19 31 49 81 51 03 8.2
8.0

32 47 84 51 47 8.9
8.3

33 47 89 51 40 8.8
9.0

35 10 90 51 53 9.1 Double 4a = 1^s 45²
9.1 9.2 min for a
4a *

36 30 89 51 45 9.0
8.9

38 23 89 51 39 8.9 Double 4a = 2^s 47⁴
9.0 9.0 min for a
9.5

40 16 90 51 41 8.7 2a #
9.0

42 45 82 51 21 7.8 fol #
8.5

44 10 88 51 45 9.0

45 37 90 51 59 8.9 fol #
8.5
50 27

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15- 4 47.6 47.8

15- 4 39.3 50.8

35 0 38.1 36.2

35 1 45.8 54.1

40 2 42.1 40.3

40 2 42.2 57.1

25 4 42.7 42.1

30 4 39.9 52.2

35 3 10.2 9.1

35 3 24.3 34.2

45 4 18.1 17.8

45 4 35.6 48.1

40 2 4.4 2.8

40 2 2.8 9.6

~~0~~ 1 52.3 48.9

0 1 44.8 53.8

35 3 52.5 50.3

20 4 6.7 6.4

20 4 16.0 25.6

5 for bottom 2 back

25th. even p

New Sheet -
1 m G = 1892

Date.

Aug 9 1871

First minute-break.

c, set at.

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

1948 03 73 5037

8.0

Not seen

49 45 81 5044

8.6 2

9.0

50 33 78 5054

9.0

9.2

51 46 87 5038

8.7

9.0

53 12 62 5034

7.2

6.0

54 39 88 5044

8.7

8.8

Over W

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

1 mb * = 194

55 1 36.4 438

35 4 34.5 348

40 1 162 —

30 0 50.8 492

30 0 58.0 3.8

40 4 46.5 425

45 0 5.9 —

45 4 38.6 377

45 4 38.2 477

35 3 45.7 416

40 2 48.3 572

Date.

1871 Sept 18th

Fast minute-break.

19th 16^m -

c, set at.

46,291

Sum 21

Sum

Mean.

N. Coll.	S. Coll.
46,240	46,304
81	287
285	296
280	296
291	293
411	497
46,2862	46,2954

a.

δ.

Mag.

REMARKS.

19 19 10 76 51 52 7.8

Circle 9

22 29 78 50 05 7.5

23 52 86 50 35 9.2

25 16 82 51 26 8.8

8.8

26 16 80 51 53 9.0

9.0

28 25 85 50 48 9.5

9.2

30 14 88 51 45 9.2

9.2

31 49 81 51 03 8.4

8.5

32 47 84 51 47 8.2

8.2

33 47 88 51 40 8.8

9.5

51 53

Runs.

	28	437	43.0
320	283	437	43.0
300	289	442	43.9
310	288	440	43.2
300	291	438	43.7
316	283	439	43.2
Sum			
Mean.			

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 1 38.8 48.9

~~AM. Os~~
~~W.R. Os~~

45 3 103 19.0

W.R. Os.

45 3 39.2 52.7

AM. rec.

W.R. Os.

AM. rec.

55 3 12.2 22.3

55 2 20.2 15.4

30 0 19.3 28.7

30 0 36.3 33.0

30 4 42.8 52.9

35 1 2.6 2.2

30 3 25.2 38.4

35 2 50.0 46.3

15 0 34.9 44.2

15 4 54.1 49.7

30 1 33.4 46.3

35 0 56.1 52.8

25 3 37.1 49.3

40 3 12.4 57.0

N. Coll.	S. Coll.
46321	46240
329	246
320	255
329	256
320	249
119	246
46,324	46,299

324
245
573
287

Date. 7871 Sept 18th
" 21
First minute-break.
c, set at. 46.287

Sum
Mean.

a.	s.	Mag.	REMARKS.
19 35 10	80 51 53	9.2 9.5	9.5 upper * full
36 30	88 57 45	9.0 9.0	lower part
38 23	88 51 34	9.2 9.2	
40 16	80 51 41	8.8 9.0	
42 45	82 51 21	8.0 7.8	
44 10	88 51 45	9.2 9.0	
45 37	80 51 59	9.1	
48 03	73 50 37	9.0	
49 45	81 50 44	8.4 8.4	1st *
50 33	78 50 54	9.0 9.0	
	5038		

Runs.

	A.		C.	
	204	225	148	146
	220	210	156	151
	218	211	152	149
	224	221	152	140
	226	222	149	145
Sum				
Mean.				

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 0 34.2 47.4

25 4 50.7 48.8

30 4 6.8 19.2

35 3 35.8 33.4

45 0 14.9 27.2

45 4 38.8 36.2

35 2 50.7 3.9

40 2 13.7 10.8

55 2 32.7 45.0

0 2 0.7 58.9

35 4 36.8 47.3

35 4 40.9 1.3

1

30 3 10.2 7.1

40 2 57.2 15.2

40 1 26.2 23.9

30 1 32.5 41.7

30 4 46.9 44.2

Date.

7871 Sept 18th

First minute-break.

Set at.

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

19 51 46 8.7 5038 8.7
8.4

58 12 6.2 5084 6.5-
6.5-
~~7.4~~

54 39 8.8 5044 9.1 lower x
8.9

56 59 8.0 50 19 8.2
8.4

58 26 7.8 50 12 7.8
8.1

59 30 8.5 50 49 16.0
9.6

²⁰
1 04 9.2 50 54 9.2
9.0

2 08 8.1 50 40 8.8
8.4

4 0 8.8 5231 9.0
8.3

5 2 8.7 5053 8.9
8.8

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

45- 1 34.0 44.3

40 4 53.2 53.5

50 0 24.2 34.3

45- 4 47.9 45.8

40 3 30.4 42.5

40 2 49.8 45.7

5 0 44.9 55.9

0 5 9.9 7.8

10 2 13.4 24.8

10 1 40.3 39.0

~~35~~ 1 15.8 24.0

35 0 18.0 15.3 lost (a) faint comp

30 1 24.7 34.1

30 0 28.0 25.5

40 4 21.8 36.3

40 3 41.0 49.7

50 3 22.1 34.1

50 2 48.5 45.4

30 1 48.8 56.6

30 0 55.9 52.8

I. Date.

1871 Sept 18

F. First minute-break.

c. set at.

Sum
Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

1 20 6 08 84 50 19 9.6
10.0

7 25 87 57 46 8.7
8.3

9 04 82 50 08 9.5
9.4

10 33 81 50 38 9.1
9.5

12 32 85 50 41 8.8
8.5

13 54 73 50 43 7.8
7.5

15 27 75 50 29 7.7 2x
8.1

16 23 85 51 04 9.0

17 46 87 50 25 9.0
8.9

18 52 90 50 14 9.0
9.0

51 42

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 0 17.3 28.6

0 4 38.7 36.7

35 2 38.8 51.2

35 7 50.2 47.4

15 1 18.4 29.3

15 0 24.0 21.3

45 1 2.8 12.1

50 1 22.3 19.8

40 3 26.9 38.1

40 2 48.1 47.7

35 4 54.2 5.0

35 3 16.2 14.8

55 0 42.3 53.0

50 4 42.0 39.9

1 20 2 5.3 4.7

55 4 36.3 47.2

55 3 57.9 59.0

10 1 12.8 22.8

10 0 22.0 22.5

Pen failed Dec 21/29

Date.

1871 Sept 18

First minute-break.

set at.

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

20 19 51 94 51 42

21 02 79 50 12 8.3 20
8.5

21 51 90 50 08 9.2 reject A
9.3

22 46 87 50 06 8.5
9.0

24 08 92 50 13 9.1
9.0

25 12 88 50 57 ~~8.8~~
8.8

26 12 87 50 07
8.8

26 59 83 50 24
8.5

28 05 90 51 52
8.2

30 13 95 51 02
9.4
50 10

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

~~10 2 39.8 52.8~~

10 2 3.2 25

~~15 1 14.5 23.7~~

15 0 33.3 32.2

~~15 4 5.3 15.9~~

15 3 33.9 32.5

~~5 1 1.2 13.5~~

10 0 22.9 21.7

~~25 0 19.8 31.8~~

25 1 48.7 46.9

Chw down

15 0 34.0 32.1

55 4 57.1 4.2

30 1 9.0 6.2

20 1 39.1 35.5 reject last wire

Date.

1871 Sept 18

First minute-break.

1871 Sept 21

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

29 31 48 8.5 50 10

8.2

32 49 77 50 26

7.3

7.7

33 48 85 57 08

8.6

8.3

35 02 88 50 46

9.0

8.8

36 08 89 52 40

37 08 90 52 40

9.1

8.7 85 4 30 35 40 35

38 51 75 50 30

7.9

8.0

39 49 84 50 44

8.8

8.7

41 14 90 50 41

8.9

9.1

42 15 93 50 36

9.0

9.0

50 18

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 2 57.3 53.3

35 2 18.2 30.7 Rem OK

55 1 57.2 49.8

15 1 12.2 23.7

15 0 25.1 24.1

35 2 51.8 59.8

35 2 17.1 15.0

40 4 41.2 55.0

40 4 10.2 6.0

50 0 8.0 18.8

45 4 30.2 29.1

40 0 58.0 7.8

35 3 4.8 3.5

35 4 19.0 33.2

35 3 45.4 44.1

45 2 56.9 8.1

15 2 29.0 29.0

Date.

7871 Sept 18

First minute-break.

set at.

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

204317 9.0 50 18 9.0
8.8

44 48 82 50 38 9.2

45 34 88 50 04

Wrong * OLS

47 07 72 50 56 6.2
6.8

48 17 86 50 09 8.8
8.8

49 50 88 50 46 9.4
9.0

52 18 62 50 34 6.5

53 19 53 50 34 9.4

54 45 95 50 11 9.8 ~~not seen~~
9.6

56 34 87 50 51 8.7 lower *
8.8

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 0 38.5 48.9

0 4 57.1 —

45 0 48.0 57.2

25 2 53.3 6.3

25 2 12.8 12.0

15 0 -1.3 10.3

10 4 12.3 16.7

35 2 46.5 57.7

20 2 9.0 6.8

45 4 0.8 11.7

50 0 8.7 18.6

10 3 23.2 34.4

10 2 49.1 48.3

30 2 38.0 49.5

30 2 32.8 55.3

Date.

First minute-break.

set at.

1871 Sept 18

1871 Sept 21

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

20 57 01 80 20 22

58 09 54 50 22

9.5

avg bad

9.4

59 09 77 50 18

8.5

8.2

0 21 81 50 17

7.8

8.0

1 05 81 50 38

~~7.8~~

lost

8.5

2 32 84 50 54

7.8

8.2

4 07 80 50 14

9.2

9.2

5 47 88 51 01

9.2

8.9

7 39 82 50 07

9.6

9.3

9 17 87 50 19

9.0

8.8

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

0 2 31.3 44.0

0 1 43.8 41.7

5 1 30.2 42.3

5 0 48.2 48.2

5 2 29.4 38.7

5 1 58.2 57.2

5 4 43.1

45 0 25.3 24.1

25 4 18.2 31.8

25 3 42.2 42.5

10 0 17.3 27.8

5 4 ~~48.0~~ 45.0

20 3 20.4 24.1

20 2 37.3 35.5

15 1 55.8 7.2

15 1 24.0 23.8

0 4 48.5 59.3

0 4 19.2 20.5

1871photo. proc. 1540R

Date.

First minute-break.

Set at.

1871 Sept 23^d

1871 Sept 28th

Sum
Mean

N. Coll.	S. Coll.
46325	46186
315	187
317	182
323	205
320	188
100	570
320	194

96320
154
544
257

a.	δ.	Mag.	REMARKS.
194557	71 53 26	8.1	W. S. R. Obs. L. M. Rec.
4659	89 53 58	9.2	W. S. R. Obs. L. M. Rec.
4750	90 53 29	9.2	
4840	90 53 27	9.1	
5705	80 53 57	8.4	
		8.3	
5220	81 54 02	8.	
		8.2	
5321	80 53 26	8.3	
		7.5	
5454	85 53 39	9.1	F Comp. Proc
		8.8	
5557	87 53 13	8.8	
		8.0	
5739	90 53 57	9.0	
		8.7	
	53 40		

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 2 21.8 45.9

25 0 40.4 4.2

55 0 4.5 28.7

55 3 39.4 2.8

25 1 37.8 0.8

20 1 57.8 2.0

55 2 31.8 54.3

55 2 44.4 7.6

45 4 27.2 50.1

45 4 23.3 45.9

10 1 39.0 2.9

10 1 36.2 59.1

30 2 38.1 0.3

30 2 40.7 5.0

Date.

first minute-break.

set at.

1871 Sep 23

1871 Sept 28

~~1871 Oct 4~~

Sum

Mean.

N. Coll.

S. Coll.

1871 Oct 5

a.

δ.

Mag.

REMARKS.

1958 30 9.0 53 40

8.9

Atmosphere smoke

8.5

Reg obs of oct-4

59 31 8.3 53 34

8.5

20

8.4

0 31 8.0 53 09

8.5

The oct-4 obs are crowded

8.0

3 00 8.6 53 34

9.2

8.8

4 42 9.0 53 37

9.5

8.9

6 02 8.3 54 37

8.1

28.6

8.2

6 55 8.3 54 34

8.5

8.4

8.2

7 59 8.6 53 57

9.0

9.1

8.9

9.0

9 09 8.0 53 31

8.4

8.5

8.3

8.0

10 17 6.6 53 16

8.0

8.3

7.5

7.8

53 45

Runs.

Sum
Mean.

No		Rev	
1.5	1.1	32.8	34.8
1.3	1.7	32.5	31.9
1.6	1.5	31.7	31.8
2.2	1.8	32.4	32.0
2.1	1.1	31.8	31.4
Sum			
Mean			

Sept 20

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

40 3 57.8 20.3

40 3 57.0 18.3

50 2 2.2 25.0

50 1 58.3 17.8

15 4 40.3 1.8

15 4 39.6 1.0

50 0 22.3 44.8

50 0 26.1 47.2

45 2 2.7 25.3

45 2 0.3 22.1

~~45 1 39.4 34.0~~

45 2 5.8 25.9

~~45 1 41.3 38.2~~

45 2 4.7 25.2

50 0 28.0 49.3

~~50 0 1.7 0.8~~

50 0 27.4 48.8

30 3 49.1 11.1

~~30 3 15.9 15.0~~

30 3 52.1 13.2

50 2 50.8 13.0

~~50 2 19.7 15.2~~

50 2 54.0 15.0

5 2 47.3 8.8

~~5 2 47.3 8.8~~

5 2 47.2 7.9

WARRDS
WARRDS

101-5

101-5

45 1 35.2 34.8

45 4 52.8 51.9

30 3 26.1 25.8

50 2 16.7 16.8

5 2 13.2 13.0

Date.

1871 Sept 23

First minute-break.

1871 Sept 28

set at.

1871 Oct 4

Sum

Mean.

N. Coll.

S. Coll.

1871 Oct 5

α.

δ.

Mag.

REMARKS.

20 11 58 7.0 53 45 7.2 8.2
~~7.8~~
 7.0

14 29 8.6 53 06 8.8 9.0
 8.8

17 07 6.5 53 11 6.2 6.0
 5.5

18 55 8.0 53 13 9.2 9.5
 9.2
 9.0 2d *

20 33 8.5 53 55 8.8 8.8
 8.7
 8.8

21 46 9.2 53 01 not seen

22 57 8.5 53 35 8.1 2d 8.5
 8.5
 8.0

23 45 9.0 53 25 8.6 8.9
 8.5

25 47 8.5 53 07 8.8 8.9
 8.7
 8.5

26 42 9.4 53 40 8.4 9.8 5 foll lost 1st wire
 9.5
 8.3 mid & fol
 53 48

Runs.

A.		C.	
202	205	267	265
200	198	285	268
201	199	275	269
208	208	272	271
200	200	272	270
Sum		269	
Mean.			

oct-5

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35	35	39.1	1.1	35	3	7.1	6.4
35	3	39.1	5.7	<i>Pen farther</i>			
35	3	39.4					
15	2	39.1	0.2	15	2	5.1	4.2
15	2	30.3	52.8				
10	2	39.3	1.1	10	2	10.3	11.8
10	2	35.0	57.1				
10	0	37.2	59.4	10	0	7.8	7.2
10	0	4.3	3.9				
10	0	35.8	58.2				
25	3	49.0	11.2	25	3	9.8	10.1
25	3	11.3	10.8				
25	3	45.3	5.3				
45	3	1.2	21.9	45	2	8.3	8.0
45	2	2.1	7.0				
45	2	43.8	4.0				
55	4	21.1	43.9	55	3	40.1	39.3
55	4	14.0	35.8				
15	1	46.9	9.0	15	1	10.7	10.2
15	1	15.7	15.1				
15	1	34.2	3.8				
40	3	57.8	19.2	40	3	38.3	37.7
40	3	42.3	41.8				
40	2	42.8	9.0				

N. Coll.	S. Coll.

Date.

1871 Sept 23

First minute-break.

1871 Sept 28

Sum

Mean.

1871 Oct 5

a.

δ.

Mag.

REMARKS.

2-20 28 00 83 53 48 9.6 2

9.4
9.5

28 51 70 53 43 7.5 2 8.0

7.0
7.5

29 45 84 53 41

9.6
9.3
9.4

seen faintly

31 10 88 53 23

8.8
9.0
9.1

9.3

32 16 85 53 54

9.0
8.5
8.7

9.2

33 58 90 54 04

9.0
9.4
9.3

1st *
9.5

35 48 90 53 22

9.0
9.1

2 9.2

36 43 90 54 02

9.0
9.0

37 52 78 53 45

8.5 8.5
8.3

39 01 87 53 37

9.0 9.5
9.0

The magnitudes of Oct 5 are bold
it being very hazy. Stars of 8.6 mag. and
and fainter and not well observed.

Runs.

Sum
Mean.

A.

C.

001-5

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 1 11.7 32.5 35 0 39.2 40.8
~~35 0 36.7 36.0~~

35 1 65.2 27.2

40 0 56.2 18.0 40 0 32.4 30.9
~~40 0 31.0 30.3~~

40 1 1.0 22.8

40 1 11.5
~~40 1 11.5~~

40 2 36.1 58.9
~~40 1 58.8 0.2~~

40 2 30.0 51.3

0 0 50.2 12.5 0 0 9.1 8.8

0 0 7.9 8.9
~~0 0 7.9 8.9~~

0 0 42.6 3.8

25 4 45.0 5.0 25 3 55.7 55.1

25 4 58.2 58.2
~~25 4 58.2 58.2~~

25 4 43.3 3.2

20 0 40.1 3.0 20 0 1.4 2.2

20 0 1.2 1.2
~~20 0 1.2 1.2~~

20 0 40.7 1.1

0 1 43.0 4.2 0 1 2.8 3.0

0 1 43.1 3.2

20 4 13.5 36.8

20 4 18.8 39.8

35 4 0.0 21.3 35 3 18.7 18.8

35 4 34.8 19.5

45 1 36.0 57.8 45 1 2.0 2.0

45 1 34.5 56.0

Date.

First minute-break.

c, set at.

Sept 28 1871

Sept 28

Sept 28

Oct 9

Sum

Mean.

N. Coll.

S. Coll.

a.

b.

Mag.

REMARKS.

21 27 52 75 53 27

75

28 52 85 53 33

85

80

29 53 94 53 20

92

90

31 16 80 53 06

82

80

32 46 75 54 04

78

80

34 14 68 53 09

93

80

35 14 88 54 03

89

85

36 20 86 53 44

85

77

37 51 88 53 29

90

90

38 38 68 53 59

76

90

53 42

W M dy

W M dy

~~W M dy~~

~~W M dy~~

~~W M dy~~

W M dy

W M dy

W M dy

W M dy

Runs.

A.		C.	
2.4	1.7	27.9	28.2
0.4	1.7	28.4	28.6
1.8	2.1	28.3	28.0
1.1	1.7	28.2	28.3
2.4	1.7	28.0	28.3
Sum			
Mean.			

Sept 28

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

~~55 1 30.1 28.5~~

clouded up

55 1 30.1 28.5

50 1 31.0 28.9

50 0 42.8 46.1

0 3 55.3 16.2

0 3 21.1 19.0

15 2 54.6 16.8

15 2 15.1 12.2

20 0 20.5 40.9

15 4 45.6 43.0

15 0 26.2 47.9

15 0 -7.2 -15.0

20 1 26.8 47.4

20 0 52.9 50.9

35 4 84.0 58.2

35 3 58.9 57.2

55 0 4.9 25.2

50 4 28.7 26.9

25 0 48.2 3.3

25 0 4.6 1.7

Date.

Sept 28
Oct 9

First minute-break.

c, set at.

46.235

Sum

Mean.

N. Coll.

S. Coll.

46.302	46.182
250	165
304	175
309	162
300	161

Oct 4

α .

δ .

Mag.

REMARKS.

213943 8.2 5342 7.0

7.8

4052 8.6 5355 8.9

8.7

4203 9.4 5331 9.5

9.2

4310 9.4 5401 9.3

9.0

changed focus

4459 9.1 5359 9.2

9.2

4658 8.6 5341 8.0

8.3

4756 9.0 5306 8.8

8.8

4851 6.5 5323 6.8

6.5

5023 9.2 5332 9.0

9.0

m. #

5200 8.9 5400 9.0

8.6

5352

Runs.

	A.	C.
152	152	230
158	158	221
160	158	229
162	158	230
160	158	230
		229
Sum		
Mean.		

001-4

Pointer.	Stroke.	Rev.	A.	C.	REMARKS.
	40	2	256	461	
	40	1	451	432	
	25	4	50	252	
	25	3	211	190	
	50	2	885	524	
	50	1	572	489	
	20	2	423	23	
	20	2	10	592	
	25	0	423	22	
	25	0	39	17	Cont
	40	0	489	97	
Sum	410	1	578	568	
	15	2	240	480	
	15	2	10	581	
	0	0	364	-30	
	0	0	-60	-121	
	50	1	06	210	
	50	0	185	156	
	20	3	577	175	
	20	3	188	168	

Date.

First minute-break.

C, set at.

Sept 28
001-9
46.256

N. Coll.	S. Coll.
46331	46180
321	183
322	181
330	183
327	182
335	427
Mean. 46327	46185-

0019
44185
327
572
256

Sum
Mean.

a.

δ.

Mag.

REMARKS.

21 53 57 88 53 52 88

89

55 07 92 53 34 90

90

56 21 90 53 32 90

90

57 00 79 53 10 82

87

58 46 72 54 15 75

75

22 00 05 85 53 18 88

88

1 59 90 53 53 90

85

3 28 90 54 03 90

88

4 39 90 53 32 90

88

6 07 93 54 04 91

90

53 14

ful #

22 ful # of all

lower #

m. # of 3

Runs.

Sum
Mean.

A.		C.	
15.4	15.5	19.9	20.0
15.0	14.8	20.3	20.2
15.0	15.1	19.8	20.1
15.8	15.5	20.1	19.5
15.5	15.9	20.0	20.0

2017

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 1 442 4.2

30 1 9.3 7.2

50 0 102 28.7

45 4 369 34.1

50 1 292 49.9

50 0 48.3 46.6

10 3 318 52.7

10 2 58.7 55.6

5 3 330 53.0

5 2 54.6 50.8

5 0 28.8 50.0

0 4 56.6 53.8

30 0 31.9 52.5

25 4 57.3 55.8

20 1 2.7 22.1

20 0 22.1 20.0

50 1 20.8 42.1

50 0 46.9 44.3

15 4 31.1 50.5

15 4 0.7 59.1

Date.

First minute-break.

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

a.	b.	Mag.	REMARKS.
22 7 33 90 53 14	90		
8 33 91 53 16	94	8.9	ex. trip sharp.
9 33 92 53 05	87	188	fol. # of 4
10 33 99 53 39	85		lower # of 3
11 28 90 53 24	91	2	Not seen
12 19 85 53 52	90		Not seen
13 34 82 53 51	85		
15 41 83 53 10	87		
17 04 88 53 30	82	4	in #
18 31 85 53 40	88		obs a, by mistake

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 4 280 467

5 3 53.1 51.2

5 2 410 10

5 2 8.9 5.8

20 1 407 56

15 4 61.0 57.2

~~0 0 21.7 42.0~~

0 0 21.7 42.0

55 4 473 449

30 2 122 330

30 1 362 336

30 3 137 306

30 2 388 354

10 3 587 189

10 3 16.6 14.0

50 4 340 533

50 3 537 513

40 3 26.1 46.8

50 2 545 514

AM dr.
WHR ec.done done~~Superficial done.~~

1871phi.e.pro.1.1540R

Date.

First minute-break.

Set at.

46.265

N. Coll.	S. Coll.
46.282	46.240
287	250
287	253
287	245
283	247
410	235
46.282	46.248

rot-12
46.282
245
530
46.265

Sum
Mean.

a.

δ.

Mag.

REMARKS.

20 47 09 72 54 32

2

SM obs,
MAR 20

47 53 88 54 41

2

48 46 68 54 33

49 55 80 54 58

51 01 81 54 06

2

51 52 85 54 27

53 57 88 55 19

54 13 68 54 59

56 07 90 55 01

57 25 88 54 36

9.2

5402

7871 Oct 17

Runs.

Sum
Mean.

A.		C.	

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

45 2 31.1 30.0

Date.

1871 Oct 16th

First minute-break.

set at.

25,254

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

20	59	12	90	58	02	9.2	2	WAR DO.
						8.8		Am rec.
59	57	71	53	49		7.8		
						7.8		
1	22	88	58	43		9.2		
						9.2		
2	26	83	58	30		8.6		
						8.7		
3	31	78	54	29		7.7		
						8.7		
4	36	85	53	16		8.7		
						8.2		
5	44	90	54	44		8.8		1st 3 mins by mistake
						8.4		
7	17	83	54	45		8.6		
						7.7		
8	25	90	54	48		8.8	2	
						9.0		
9	16	83	54	02		8.1		
						8.0		
						54 08		

Runs.

Sum
Mean.

A.

C.

7871 Oct 17th

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

20 2 42.0 42.5

20 2 40.1 38.1

30 3 34.0 33.6

30 3 4.2 38.3

35 4 45.8 46.3

35 4 48.4 47.2

50 2 57.2 58.7

50 3 1.2 0.0

50 4 12.0 11.9

50 4 21.0 18.8

5 3 56.7 57.7

5 3 42.1 41.2

35 1 4.9 3.8

35 1 25.2 22.2

35 3 32.6 32.0

35 0 6.2 5.4 ?

35 0 ~~57.2~~ ^{2.8} ~~57.0~~ ^{-3.0}

35 0 20.0 18.0

30 1 20.6 19.7

30 1 21.2 19.3

7 str after 5
 W & R obs
 SM rec

S fol

Date.

first minute-break.

set at.

7871 Oct 16

Sum
Mean.

N. Coll.	S. Coll.

α. δ. Mag. REMARKS.

21 10 29	70 54 08	7.8	2
		7.5	
11 21	78 54 09	8.5	
		7.7	
12 37	92 54 57	9.3	
		9.2	
14 09	77 54 44	8.4	
		8.3	
15 42	90 54 22	9.2	
		9.4	
17 00	90 54 58	9.2	
		9.2	
18 16	90 54 20	8.9	2d *
		9.0	
19 11	78 54 44	8.5	1st *
		8.1	
20 26	87 55 03	8.9	2
		8.8	
21 11	78 54 48	7.8	

Runs.

Sum
Mean.

A.

C.

7871 Oct 17

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 0 12.7 13.4

15 0 12.7 15.8

20 4 57.6 56.0

25 0 -0.7 -2.1

30 2 31.1 30.9

30 2 28.1 26.3

35 4 28.6 28.5

35 4 44.9 32.8

0 1 4.7 4.6

0 1 1.1 59.0

20 4 57.3 50.9

25 0 6.7 4.5

0 3 24.1 23.8

0 3 27.4 24.7

35 4 21.2 21.2

35 4 23.2 21.3 reject A

15 3 44.4 44.8

20 0 14.9 12.2 wrong *

35 1 57.2 50.2

Date.

7871 Oct 16

First minute-break.

0

set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

212309 81 5502 7.5

7.5

2452 61 5451 6.5

6.4

2552 77 5405 7.5 2

7.7

2646 77 5450 7.8 2

7.5

2725 87 5426 8.9

8.7

2836 85 5407 9.2 2 1/2 -

9.0

2956 95 5427 9.2 2

9.0

3043 83 5407 8.5 2

8.3

3135 91 5429 9.3

8.8

3245 87 5500 8.7

8.9

Runs.

A.		C.	
33.1	32.0	32.5	32.2
33.0	33.1	37.4	32.2
33.6	32.3	37.8	36.8
33.0	32.8	37.9	36.9
33.0	32.0	37.5	37.0
Sum			
Mean.			

7871 Oct 16

Pointer.	Stroke.	Rev.	A.	C.	REMARKS.
	20	1	8.4	8.3	
	20	1	3.2	1.1	
	30	1	53.0	51.3	
	30	1	53.1	53.1	
	15	3	4.6	3.9	
	15	3	8.2	7.2	
	30	2	38.0	36.9	
	30	2	35.2	32.5	
	55	2	58.9	58.2	
	55	2	6.8	3.8	
	15	1	9.0	8.8	
	15	1	11.7	10.0	
	55	1	28.3	28.2	
	55	1	27.1	25.8	
	15	2	4.7	4.2	
	15	2	57.4	55.8	
	55	0	2.0	1.3	
	55	0	3.2	2.2	
	20	3	37.2	36.9	
	20	3	39.6	36.7	

seeing not very good at 17
 seeing good at 17
 may be bad at
 first it being a
 little noisy

Date.

First minute-break.

set at.

001-16 1871

00177

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

22 28 54 73 53 25 75

80

A.M. Obs.
NAK rec.

31 00 92 54 23 90

90

lower H = m.

32 16 91 54 28 91.2

89

A.M. Obs.
NAK rec.

33 10 94 54 20 95

95

34 18 80 54 23

85

2 not seen

35 11 80 54 57 80

80

36 17 90 54 44 90

90

38 30 89 54 40 91

92

39 56 90 54 18 88

89

40 51 88 54 29 89

88

54 17

Runs.

Sum
Mean.

A.	C.
515	572
514	502
510	512
516	513
513	510
569	569
569	560
571	560
569	563
570	562

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

~~55-8 11.8 2.0~~

55-8 9.6 6.1

~~0-0 26.3 24.2~~

0-0 31.1 27.7

~~5-0 55.6 53.2~~

5-1 5.2 6.5

~~0-4 12.9 9.7~~

0-4 16.1 13.0

2

0-0 45.6 43.0

~~25-1 22.7 19.2~~

25-1 21.7 18.0

~~35-4 34.9 31.9~~

35-4 38.8 35.0

40-3 19.5 16.7 Chromograph OK

40-3 24.0 20.3

5-0 58.7 55.5 for slower

5-0 54.2 50.2

50-4 23.9 22.1

50-4 23.8 20.3

N. Coll.	S. Coll.
Sum	
Mean.	

Date.

First minute-break.

c, set at.

001-161871
001-17

Sum

Mean.

a.

s.

Mag.

REMARKS.

22 43 07 90 54 17 90
9.0

44 30 80 54 09 88
76

46 43 86 54 49 90
89

48 05 92 54 57 85.2
88

48 55 85 54 44 85
8.3

51 25 90 54 32 90
9.0

52 44 87 54 21 86
8.3

54 37 89 54 48 88
88

55 39 88 54 19 87
85

56 34 88 54 13 88
89

54 50

pre #

2f

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 1 14.1 10.9

5 1 10.5 7.0

10 3 24.2 21.5

10 3 20.2 19.4

30 4 16.4 14.3

30 4 14.9 11.9

25 2 1.0 59.1

25 2 3.2 59.8

40 0 10.3 6.7

40 0 19.0 16.4

50 2 24.2 20.8

50 2 39.2 36.2

0 2 57.3 54.3

0 2 51.0 47.2

35 0 7.8 4.8

35 0 18.2 9.2

5 1 15.8 13.8

5 1 14.0 10.2

10 0 19.5 16.9

10 0 10.8 6.0

for. #

Date.

001-161861

First minute-break.

001-17

Set at.

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

225725 87 54 50 88

8.5

58 33 90 54 35 87

9.0

59 49 90 54 43 89

8.8

1 49 86 54 10 90

8.7

3 40 92 58 48 90

9.1

6 06 89 54 36 92

9.0

8 48 89 54 45 88

8.9

10 45 89 54 29 85

8.5

11 44 88 54 23 76

8.0

12 42 90 54 31

8.9

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 3 502 463

30 3 580 540

45 4 191 158

45 4 112 6.7

40 0 5.9 2.8

40 0 10.5 6.7

10 4 3.2 5.90

10 4 1.2 580

30 4 428 392

30 4 417 390

45 2 31.5 382

45 2 278 244

35 4 506 472

40 0 23.1 18.4

50 4 80 49

50 4 7.7 3.6

0 0 218 187

0 0 20.2 17.0

50 2 31.5 282

50 2 27.5 23.4

Low & far

very not very small
being tolerable

Date.

First minute-break.

c, set at.

1871 Oct 21

1871 Nov 2

Sum
Mean.

N. Coll.	S. Coll.
46.350	46.088
355	80
405	62
400	83
352	77
1584	410
46.357	46.0820

46.357
082
480
46.240

a.

δ.

Mag.

REMARKS.

21 32 57 7.5 54°32' 8.0

=

NR R Jb,

Am ve

33 41 8.5 54 26

8.7

NR R

Am ve

34 47 8.8 54 29

9.0
8.8

35-49 8.8 54 34

8.72
8.8

36 41 8.5 54 29

8.8

38 42 7.7 54 56

8.2
8.2

39 57 8.9 54 37

9.0
8.7

41 42 9.4 54 56

9.14
9.6

42 42 8.8 54 16

9.1
8.6

43 44 8.8 53 31

8.8
8.6

53 55

Runs.

A.		C.	
0.5	1.3	0.6	0.3
0.2	0.0	0.3	0.0
0.3	1.0	0.6	0.6
0.0	1.6	0.0	0.0
0.2	0.6	1.0	-0.2
Sum			
Mean.			

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 1 9.8 2.7

~~50 0 59.0 60.2~~~~53 2 11.2 2.2~~

50 4 0.0 53.2

50 4 0.0 52.7

50 0 51.0 57.2 5 fol

45 4 18.2 10.8

50 4 37.3 30.2

25 2 20.8 13.2

25 2 14.8 6.0

45 1 8.6 1.3

45 1 13.3 5.8

25 1 59.7 53.8

25 2 53.8 42.8 5 fol

5 2 19.3 12.7

5 2 50.1 43.8 a?

50 2 15.2 9.3

50 2 28.7 22.0

Date.

First minute-break.

set at.

7871 Oct 21

7871 Nov 2

412146360
238 361
230 371
240 372
225 365
164

Sum
Mean.

N. Coll.

S. Coll.

46.223
228
224
229
216
120

46.352
367
362
355
359
295

Oct 23

46224 291

359
350

a.

s.

Mag.

REMARKS.

21 440-9 8.65355-8.4

8.5-

46 06 88 54 07 8.15-

8.8

47 25 94 54 57 9.15-2

9.8

48 09 70 54 26 6.9

8.0

49 26 91 53 14 8.8

8.9

~~8.8~~ last of 3 x's

50 27 90 53 58 8.9

9.0

52 00 89 54 00 8.5

8.8

54 21 92 54 12 9.0

9.4

55 34 78 54 24 6.9

7.5

56 43 90 54 45 9.0

8.9

54 15

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 3 16.0 8.9

25 3 15.2 7.8

15 0 57.2 50.3

15 0 56.0 48.8

25 0 57.8 51.7

25 0 56.8 49.5

55 2 32.1 26.0

55 2 48.0 39.7

5 3 58.4 53.0

5 4 0.2 52.2

25 0 3.0 56.8

25 0 0.2 52.7

20 3 19.4 13.4

20 3 25.4 17.0

10 1 17.4 11.5

10 1 14.7 7.0

55 4 11.8 5.0

55 4 14.1 5.8

35 2 50.3 43.5

Sum 55 2 57.4 43.2

1871phre.prodr.1540R

Date.

1871 Oct 21

First minute-break.

1871 Nov 2

set at.

Sum
Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

21 58 46

72 54 15

7.3

7.5

0 23

71

54 27

9.2

9.0

1 44

80

54 37

7.4

8.2

3 25

89

54 19

8.6

8.8

4 46

83

53 33

8.5

2d *

8.1

5 30

77

53 55

8.0

7.8

6 56

90

54 37

8.9

8.5

8 24

94

54 16

9.7

8.9

9 38

85

54 49

8.7

unc x hp *

8.5

14 28

90

54 47

9.0

2d *

8.9

54 30

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 3 53.7 47.8

5 2 58.7 49.7

55 1 5.9 59.7

55 1 0.0 52.0

45 1 8.7 2.2

45 1 9.1 0.2

0 4 16.8 10.3

0 4 21.9 13.8

50 1 24.3 18.3

50 1 12.3 64.3

25 3 5.4 59.2

25 3 1.0 52.0

45 0 19.6 13.2

45 0 21.7 13.4

5 1 44.9 39.1

5 1 36.4 29.0

30 4 45.2 36.3

30 4 48.9 40.0

35 1 0.8 54.1

35 0 54.0 45.9

Date.

1871 Oct 21

First minute-break.

1871 Nov 2

set at.

Sum

Mean.

N. Coll.

S. Coll.

α.

δ.

Mag.

REMARKS.

22 11 15 88 54 30

8.5

Lost a

8.5

12 15 88 54 10

8.8

lost a

8.8

13 19 88 54 38

8.5

9.1

15 55 90 54 38

8.2

15 39 83 55 02

7.8

9.0

16 49 91 55 00

8.0

18 07 92 54 54

9.2

19 21 95 54 08

9.8

9.8

20 48 91 54 34

9.0

8.9

21 48 85 53 51

~~8.0~~

8.0

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 3 12.6 6.0

50 2 40.7 32.8

10 3 16.7 11.0

10 2 40.8 34.3

45 0 21.4 13.9

45 0 6.4 57.1

40 4 36.6 28.9

20 1 22.0 15.8

20 2 56.1 47.8

20 2 57.8 45.3

25 4 10.2 3.0

10 4 30.9 25.0

10 4 30.7 22.8

45 3 43.9 36.3

45 3 40.2 32.0

30 2 40.2 32.8

30 4 39.9

4 16.0 6.0

Date.

first minute-break.

set at.

Oct-22 1871
Nov 2

Sum
Mean.

N. Coll.	S. Coll.

a.	s.	Mag.	REMARKS.
22 48 55 8.5	54 44	8.5	A.M. obs WARR,
51 47 8.5	55 00	8.9 8.8	A.M. obs WARR Mc
53 44 8.4	53 49	8.2 8.9	
55 13 8.3	54 31	8.5 8.6	
57 14 6.5	54 33	7.8 7.2	
58 44 8.8	54 25	8.6 9.0	
59 49 9.0	54 43	8.2 9.0	Lomen x
2 19 9.4	54 20	9.5 9.4	
3 48 8.5	53 44	8.8 9.1	
6 07 8.8	55 02	9.0 9.0	
	53 06		

Runs.

A.		C.	
24.0	24.6	30.8	31.8
24.0	24.2	30.8	31.6
24.1	24.4	31.1	31.3
24.0	24.4	31.4	31.1
24.5	24.4	30.4	31.1
Sum			
Mean.			

001'22

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 4 57.5 56.2

20 3 27.1 24.5

20 3 31.0 22.0

30 3 26.4 24.3

30 3 38.7 28.9

50 2 12.8 10.4

50 2 15.1 6.0

50 0 46.1 43.7

50 0 48.1 38.8

55 4 6.8 5.2

55 4 9.0 6.2

40 0 8.8 6.1

40 0 7.2 5.8

0 4 7.3 3.8

0 4 1.9 5.23

35 4 42.9 40.3

35 4 46.5 48.0

20 2 0.6 57.5

20 2 2.7 52.2

Date.

first minute-break.

set at.

001-22 1871
Nov 2

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

2-3 8/17 81 5306 6.0
6.5

~~9 24 85 53 38~~
9 17 85 54 14 6.4
8.7

Lower #

11 25 95 54 47 9.1
8.9

12 40 88 5342 8.8
8.6

14 02 93 5507 9.0
9.0

15-11 94 54 58 9.2
9.2

17 20 90 5423 9.2

18 26 92 54 57 8.8
9.0

right

18 37 75 54 44 8.5
7.0

20 08 87 5417 8.6
8.6
8.5

Both

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 2 31 07

~~15 3 9.9 0.9~~

5 4 7.9 4.7

~~5 4 12.7 3.0~~

35- 1 281 256

~~35- 1 26.0 16.6~~

40 11 30.7 32.9

~~40 1 38.4 29.0~~

20 2 19.7 16.8

~~20 2 18.3 9.6~~

25 0 41.7 38.4

~~25 0 43.6 34.8~~

0 0 21.0 18.9

25 1 34.5 49.2

50 2 55.2 47.2

40 0 18.0 15.7

40 0 25.0 16.6

5 2 28.3 25.1

5 2 25.0 15.9

Remained
Sun 17th 20th
Sun lost #

full #

in print

Pen 0.12.

1st two suns 2.

In regular order

ate.

first minute-break.

set at.

00/22/871

Nov 2

46, 285 Nov. 2

Sum
Mean.

N. Coll.	S. Coll.
46.420	46.146
421	143
422	152
425	152
421	148
422	242
	148

= Nov 2

a.

s.

Mag.

REMARKS.

23 21 52 8.8 54 58 8.2

8.3

23 05 9.5 55 02 9.0

9.2

24 02 8.0 54 34 8.5

8.3

25 05 9.0 55 01 8.9 2

8.5

25 59 8.8 54 13 8.8

8.3

28 07 8.3 54 47 8.0

8.5

29 24 8.5 53 19 8.8

8.5

31 01 9.5 54 27 9.8

9.3

32 02 8.5 54 31 8.0

8.8

33 09 9.2 54 30 9.2

9.1

54 31

Runs.

	A.		C.	
	16.2	16.2	14.2	13.2
	15.2	15.2	13.0	13.3
	16.6	15.6	14.1	12.8
	16.7	15.8	13.5	12.8
	16.5	15.8	14.1	13.0
Sum	316			
Mean.	16.3	15.5	14.0	13.0

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

25	1	22	58.7		Lower #
----	---	----	------	--	---------

25	1	94	55.0		
----	---	----	------	--	--

20	1	49.1	46.4		
----	---	------	------	--	--

20	1	48.2	38.8		
----	---	------	------	--	--

50	0	2.7	58.0		
----	---	-----	------	--	--

50	0	4.4	54.1		
----	---	-----	------	--	--

20	1	14.3	11.5		Mid. # of 3
----	---	------	------	--	-------------

20	1	14.2	4.2		
----	---	------	-----	--	--

10	0	55.0	5.4		
----	---	------	-----	--	--

10	0	58.5	48.3		
----	---	------	------	--	--

35	1	47.1	44.8		
----	---	------	------	--	--

35	1	43.5	33.0		
----	---	------	------	--	--

5	0	8.1	0.9		
---	---	-----	-----	--	--

5	0	10.1	2.1		
---	---	------	-----	--	--

55	2	9.9	6.3		
----	---	-----	-----	--	--

55	2	13.5	4.5		
----	---	------	-----	--	--

50	2	15.8	13.0		
----	---	------	------	--	--

50	2	22.4	13.9		Mid. #
----	---	------	------	--	--------

45	4	23.2	19.6		
----	---	------	------	--	--

45	4	26.6	16.8		
----	---	------	------	--	--

1871 Dec. 22 1540R

ate.

First minute-break.

set at.

Oct 22 1871
Nov 2

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

2 3 3428 88 5431 8.8

8.3

fair comp's^{time} m.

3542 86 5359 9.0

8.5

Begins to be hazy

3810 6.8 5430 6.8

8.2

3

3947 89 5420 9.2

9.3

4037 73 5410 7.5

7.5

4215 77 5456 8.8

8.0

4318 82 5456 9.0

7.9

4414 89 5425 8.7

8.6

4515 90 5420 9.4

8.8

4720 9.3 5411 9.8

9.2

fol #

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 3 506 473

50 3 448 361

20 4 23.6 199

20 4 33.5 241

50 3 470 450

50 3 561 466

0 3 43.2 395

0 8 44.8 351

10 4 45.5 424

10 4 49.1 400

25 2 23.6 206

25 2 29.9 202

25 1 56.2 53.1

25 1 55.0 440

50 4 28.9 259

55 4 24.0 150

0 3 54.1 50.5

0 3 55.1 45.2

10 3 16.9 130

10 3 17.8 7.7

Sum

Long variable

1871phae.proj.1540R

Date.

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

8.

Mag.

REMARKS.

17 51

MS. A. 9.2.1.140R