

KG
11366
v.531

Gone.
Chronograph Records.

Charles W. Sever, University Bookstore, Cambridge.

Circle Readings.
A 3.
From Feb. 11 1871 to April 5, 1872

Charles W. Sever, University Bookstore, Cambridge.

44

Runs.

Sum
Mean.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

Feb. 28 1871

$$\begin{array}{r} 239,7 \\ - 33,01 \\ \hline 206,69 \end{array}$$

8 Lyncis 45 2 480
4'37 jul = 2.88
3'4

2 Lem:

a Can min

12 7/8 Cst: Rej break before lost wire. Paint on
lost 4 wires

Bar. 3018

Alt. 690

Exp. 29^o

ate.

first minute-break.

set at.

1871 Feb 11

~~Feb 11~~

Feb. 20

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

1st Cam pro
4 21 49
2 Tarni

53° 34'

57°-52°

4 Cam.
4 34 15

56° 31'

~~4 39 09 8.2 38.4~~
~~4 40 58 8.6 60.8~~

9.0

8.8

~~40 46 9.5 60.3~~
~~4 42 29 8.3 46.29.16~~

~~43 19 8.2 51.9~~
~~4 42 23 8.9 4.6~~

8.5

8.8

9.1

both Sp. for 1st
lower x
5 full for 12th x

~~45 05 7.8 62.5~~
~~45 07 7.0 22.8~~

8.0

7.8

~~46 02 8.4 59.8~~
~~46 08 8.2 53.5~~

8.6

9.2

9.4

double

~~48 13 8.0 44.9~~
~~47 48 8.0 54.7~~

9.0

9.0

~~49 43 8.0 63~~
~~50 46 8.9 18.2~~

8.8

~~52 55 8.9 46.8~~
~~52 11 8.6 29.9~~

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

45 0 27.2 20.8

45 1 5.3 0.3

45 0 23.2 21.8

~~45 0 22.2 20.4~~

40 4 49.0 43.4

40 4 14.0 9.3

50 2 18.4 16.2

50 1 11.1 56.2

T.16 50 1 40.2 36.1 X

50 2 14.2 9.8

50 1 40.9 37.2

50 0 57.5 49.8

20 2 30.2 23.7

25 5

20 2 29.7 22.6

10 2 46.4 41.6

T.16 10 2 14.4 9.5 X

10 2 17.7 10.3

55 4 39.5 35.3

55 4 38.0 32.1

25 4 49.3 43.8

T.16 25 4 54.4 51.0 X

25 4 49.5 43.8

25 3 29.2 24.4

25 3 26.6 19.8

5 0 6.0 59.3

50 4 25.0 20.1

Date.

1891 Feb 11

1891 Feb 20

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

~~4 53 51 90 45.898~~ 5 full
4 53 12 95 31.0

~~56 07 80 388~~
54 44 89 430 20

~~57 28 86 16.8~~ 22
55 37 85 3.4 1.84

~~58 2 75 5.9~~
56 34 82 25.4 5.5

57 41 85 56.5 188 20

58 36 91 30.5 10.4

5 1 30 80 53.5 8.9
9.2

3 27 88 30.3 8.7 5 ft before Tim
9.6

4 51 85 109 8.6
8.8

5 53 80 494 8.5
8.3

56.7

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 1 57.2

15 4 53.9 49.9

55 2 34.0 28.7

25 1 40.1 33.5

50 3 11.9 6.0

25 3 53.1 48.2

25 3 51.5 44.4

50 2 58.3 53.8

50 3 0.2 53.8

10 2 36.7 30.2

10 2 34.7 28.0

30 4 49.9 45.0

30 4 45.1 38.7

Date.

1871 Feb 11

First minute-break.

1871 Feb 20

1871 Feb 21

Sum

Mean.

N. Coll.

S. Coll.

c, set at.

a.

s.

Mag.

REMARKS.

5 8 26

82

56.7

8.7

8.2

11 00

9.0

17.3

9.8

2

9.1

11 56

8

52.6

9.6

13 31

9.5

1.3

9.8

2

last stroke bad

9.8

14 31

9.0

30.9

9.3

5 fold

9.0

15 14

8.9

29.8

9.0

5 fold

21 00

7.5

10.6

8.0

7.5

23 2

9.2

29.3

9.0

9.3

8.5 mag below 1/100

24 18

8.0

58.3

9.5

not seen sure

not seen sure

not seen sure

27 49

9.2

16.0

9.0

9.4

9.1

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 1 31.9 27.3

25 1 31.8 26.0

5 1 28.2 23.0

5 1 17.2 10.0

30 1 21.1 15.3

20 1 52.4 52.3

20 1 52.8 48.2

50 1 32.2 28.0

50 1 50.8 43.2

50 2 31.3 26.3

50 2 52.2 52.2

10 2 25.8 21.3

10 2 23.8 16.2

55 0 42.0 36.3

50 3 19.5-130

50 2 49.3

5 1 53.4 47.2

5 1 51.8 46.1

5 1 53.0 46.1

Date.

1871 Feb 11

First minute-break.

1871 Feb 20

1871 Feb 21

Sum

c, set at.

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

5 29 20 84 154 8.8

8.7
8.7

36 37 88 2.5

not been sure
not been sure
not been sure

39 41 88 11.8 9.0

9.0

44 16 20 45.9 9.7

9.8

too faint to obs

45 49 88 50.9 9.2 22p

8.8
8.9

46 39 88 44.3 9.2

8.9
8.5

mag. bad on acct of aurora
fall flb after d
and haze

50 02 67 2.9 8.8

7.8
7.2

52 57 81 14.6 9.0

8.9
8.5

55 43 85 27.8 9.0

8.7
8.5

57 22 92 21.5 9.5

9.5
9.5

flb before Tm
lost TE 79

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 2 46.1 41.1

~~5 2 44.8 37.1~~

3 2 46.0 40.2

10 1 17.8 13.8

~~10 1 13.2 8.5~~

10 1 14.3 9.0

35 1 55.3 52.7

30 2 8.5 2.8

~~30 2 1.2 53.2~~

30 1 58.4 52.8

35 2 54.2 48.1

~~35 3 20.2 13.1~~

35 2 2.3 57.5

15 4 4.0 38.0

~~15 4 1.3 54.3~~

15 4 3.4 58.0

5 3 54.4 50.1

June 5 2 52.4 45.3

~~5 2 54.4 47.4~~

53 1 13.1 8.2

~~55 1 15.2 8.7~~~~55 1 12.2 8.5~~

0 1 41.8 36.5

~~0 1 39.2 32.8~~

0 1 41.1 36.9

Date.

1871 Feb 11

First minute-break.

1871 Feb 20

C, set at.

1871 Feb 21

Sum

Mean.

N. Coll.

S. Coll.

α.

δ.

Mag.

REMARKS.

6 00 38 90 16.4 9.0

9.5

2 03 09 47.9 9.0

9.3

9.2

4 13 03 11.4 9.0

8.8
8.7

55 mag force
1 in

5 22 03 34.3 9.2

9.2
9.7
9.5

Seeing bad. Cloudy

~~9 41 00 15~~
2 Lynx
6 8 14 59° 3'

Magnitudes bad. Noisy

~~11 55 07 50.4~~
4 Aurigae
6 14 54 49° 21'

~~13 09 02 36.9~~
2 Lynx
6 25 53 61° 35'

W.A.R ends. Pas.

14 14 00 8.4

A.M. .. bedding

2 Lynx

15 36 09 56.5

4 Aurigae

15 38 02 56.6

2 Lynx

Yuck 20

Runs.

Sum
Mean.

A.		C.	
465	489	499	500
468	490	500	507
467	492	498	495
473	497	494	503
472	493	500	502

Nov 4 300
Bar 30.10 640

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

5 1 47.1 42.2

5 1 44.9 37.8

5 1 46.7 42.7

35 0 59.2 54.8

35 1 0.4 54.9

35 0 59.4 46.8

10 1 23.7 19.9

10 1 18.1 12.0

10 1 20.5 16.3

50 0 0.8 56.7

45 4 59.0 51.8

35 0 3.0 36.8

15 4 58.8 53.5

20 0 29.0 23.6

15 4 59.0 52.2

15 4 22.5 14.2

0 1 52.8 48.2

0 2 34.7 28.9

0 2 4.1 57.8

0 1 20.5 14.3

45 2 44.0 40.0

45 2 57.5 49.7

45 2 13.8 8.1

20 0 25.7 16.9

15 4 60.2 53.0

15 4 15.1 7.8

0 2 32.8 27.0

0 1 58.9 52.7

0 1 20.4 12.8

45 3 19.0 14.9

45 2 49.3 44.4

115 2 5.7 3.1

20 0 39.5 34.7 P.R.

0 21.2 18.2 P.R.

15 4 18.1 12.9

3 54.8 49.8

0 2 42.2 39.0
14.3 8.3

45 2 8.2 4.3
1 41.0 36.9

too doubtful

ate.

first minute-break.

set at.

1871 Feb 21

Feb 28 1871

Sum

Mean.

N. Coll.

S. Coll.

a.

8.

Mag.

REMARKS.

45 Curiae
37 27

43° 42'

4-0-500
S. M. begins obs.
50 18 144 9.3
W. K. Rec.

15 Lynce
46 05

58° 35'

45-3 164 12.2

45-3 33.3 26.4

^{n m s}
5 50 2 67 27
6 48 39 80 31.1

80

82

51°-52°

~~52 57 81 146~~
50 54 88 55.4

8.7

88

~~54 16 63 347~~
51 54 88 50.4

85

88

20

~~55 43 85 278~~
52 50 88 85.8

88

83

20

~~57 22 82 715~~
53 47 90 45.2

88

88

~~59 08 80 827~~
55 07 94 84

94

94

~~2 33 89 479~~
57 42 93 33.3

not seen

not seen

~~4 13 83 114~~
0 12 80 37.8

88

9.5

at Antares

Runs.

Sum
Mean.

A.	C.
465	421
405	427
400	433
401	423
409	413
453	454
452	452
452	452
457	457
473	462
472	472
479	479
477	477

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

40	0	500	463	35-458, 7 583	
40	0	468	414	0	68 2.0
45	2	523	476	2	140 104
45	2	580	526	2	71 16
50	2	150	96		
50	2	127	69		
25	2	437	388		
25	2	399	342		
30	2	494	450		
30	2	509	448		
45	3	140	89		
45	3	112	67		
35	3	476	423		
35	3	486	379		
10	4	427	390		
10	4	456	399		
45	0	307	254		
45	0	310	251		

1871phae.pro.1535R

Date.

First minute-break.

set at.

1871 Feb 21

1871 Feb 28th

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

6 5 22 43 344
7 3 59 84 353 80
85

~~14 14 70 84~~
~~19 47 93 58~~
104 211 07

~~19 12 19~~
33 31
65 31

14 14 70 84
7 18 28 89 56 85

15 36 89 565
19 47 93 58 90

15 38 92 566
21 26 88 418 80

20 22 90 511
23 56 65 339 70 2
70

22 27 78 33
24 41 81 484 80

24 17 80 114
28 55 91 281 90 22

25 08 90 531
30 20 93 272 92
1

455

both b.b. at T₂
50 2 313 294

fol.

pre

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

45 3 32 -10

45 3 32 -25

15 0 45.3 42.7 ✓

10 2 40.5 37.0 1580 547

50# 1 50.0 46.4 50 158 8.4

50 1 51.8 48.7 1130 95

15 2 45.7 41.3

15 2 22.7 19.3

35 0 39.6 35.2

45 2 58.3 55.3

45 2 53.6 49.0

30 3 20.5 16.6

50 4 57.7 52.9

55 0 44.3 38.5

Date.

First minute-break.

Set at.

1871 Feb 21

1871 Feb 28

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

~~26 23 94 454~~
~~31 24 83 455~~ 85

~~27 58 80 183~~
~~32 37 87 344~~ 87

34 00 92 0.4 90

35 16 85 9.3 83
 80

36 25 75 20.3 73
~~85~~

37 43 91 7.0 90
 90

39 40 90 12.6 85
 88

40 41 82 4.1 80
 80

42 15 85 56.9 86
 83

43 24 95 16.3 93
 92

8.3

Struck "S"

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 3 3,3 -15

45 3 41,3 36-

20 2 16 -0,3

10 3 50,9 48,5

10 3 52,3 49,0

0 3 5,7 3,8

⑩ 3 44 53

15 1 15 -2,3

15 1 39 -10

5 4 49,7 49,4

5 4 41,6 39,7

40 1 360 330

40 1 331 279

wrong #?

25 0 449 401

25 0 446 401

5 1 364 336

5 1 322 272

1 1

Date.

first minute-break.

set at.

1871 Feb 21
Feb. 28 1871

Sum

Mean.

N. Coll.

S. Coll.

33.590	37.618
582	623
586	619
584	629
587	610

433	98
33.5866	37.6198

Feb. 28

a.

s.

Mag.

REMARKS.

7 44 41 9.1 3.3 9.3

9.0

46 34 87 299 9.0

8.9

48 24 80 41.3 8.8

8.3

was faint - all

49 41 9.3 280

9.0

50 48 85 0.5

8.5

52 28 9.2 386

9.5

54 58 83 170 8.3

8.8

10 better - good

57 47 80 16.0 9.2

8.5

58 45 57 52.5 6.5

5.5

22

59 37 87 18.6 8.0

8.0

Runs.

Sum

Mean.

A.		C.	
18.1	17.8	21.8	23.2
17.1	17.4	21.6	23.9
17.0	16.8	21.1	22.9
17.2	16.5	21.3	23.0
17.1	16.4	21.3	23.3
Sum		-	
Mean.			

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 3 363 340

15 3 380 342

50 3 198 140

50 8 194 160

40 1 330 302

40 1 310 265

50 4 472 438

20 2 162 119

40 3 457 405

5 0 284 253

5 0 212 170

5 2 403 367

5 2 448 400

30 0 317 272

30 0 284 233

0 4 267 232

0 4 310 263

N. Coll.

S. Coll.

Date.

First minute-break.

Sum

Mean.

c, set at.

a.

s.

Mag.

REMARKS.

8 4 31 91 132

94

90

6 18 86 118

87

82

8 46 91 51.5

90

90

9 54 88 44.9

92

22

88

10 45 89 43.4

86

83

11 44 94 40.5

95

93

31 Lynx
8 14 0

43 35'

41 2 186 147

0 Mus Maj
8 19 35

61 8'

15 0 80 20

15 0 64' 05

55 1 119 100

55 1 82 51.5

2 m. ends. Jas. 81

1944 4 91 Rec. 49

Gr. 1450
8 24 30

38 26

Gr. 1460
8 29 45

53 9

Runs.

Sum
Mean.

A.

C.

Feb. 28

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5	4	298	27.2		
5	4	311	280		
10	2	303	332		
10	2	323	289		
30	1	163	128		
30	1	100	44		
35	3	61	87		
35	3	70	27		
35	4	446	399		
35	4	380	338		
40	2	60	-33		
40	1	590	543		
45	2	186	149	45	1 160 123
10	4	318	290	3	507 480
10	4	299	254	10	3 570 480
55	0	354	341	50	4 450 441
55	3	523	470	3	298 268
55	0	291	269	2	497 434
10	3	270	240	50	14 488 463
				2	477 428
					fb. bef. cant - A

date.

first minute-break.

C, set at.

1871 March 1

Mar 5 1871

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

53 Camel
7 50 4651
60 40

30 0588 51.7

WHR obs.

J.M. Rec.

J.M. obs.

WHR Rec
10 4 51.4 51.927 Lynx
7. 58 4951
57 520 hr May
8 19 3751
68 50
61.08
43 3631 Lynx
8 14 451° - 52°
45 2 30.0 26.58 22 18 7.8
2

8.4

8.3

8.0

23 20 8.8

12.2

9.0

24

9.0

lost T_n

25 37 9.2

7.2

9.5

9.3

29 15 8.8

55.7

8.5

8.8

29 40 8.5

55.7

8.4

L. J. J.
S. andy miss for ad. m.

31 18 7.0

52.9

6.8

7.8

32 57 8.8

7.0

8.9

8.6

Runs.

	A.	C.
302	41.3	41.7
386	46.8	41.0
353	41.2	41.3
362	40.5	41.2
360	40.7	41.0
Sum	43.8	122
Mean	39.20	42.44
	41.20	119
		234

Mean

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

2 30 0 34.2 26.2 25 4 57.2 46.3

30 0 31.5 25.7

10 4 28.0 24.6 3 48.1 44.4

~~42.5 2 30.5 26.5~~ 1 1.5 - 2.4

10 4 23.1 36.2

~~10 4 40.0 35.6~~

10 1 28.0 21.1

10 1 24.3 19.8

15 0 50.9 43.1

15 0 45.1 39.8

25 2 31.6 26.7

25 2 25.2 21.9

25 1 57.5 51.1

25 2 25.2 21.9

30 0 16.7 9.1

30 0 13.7 8.1

15 1 29.5 23.1

15 1 26.2 21.2

5 Fall
1 full

Date.

1871 Mar 1

First minute-break.

Mar 5

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

8 34 15 91 507 9.0

88

36 27 91 174 9.2

38 58 88 396 9.0

91

40 08 81 98 8.5

84

45 14 89 433 9.1 a little hazy

9.2

48 00 72 141 8.0

8.2

a little hazy

~~49 39 90 200~~

102ms May
8 50 68

68° 7'

15 0 58.8 49.1
15 0 50.7 43.3

50 50 90 39.8 2.2

9 yr
8 54 57

524 47

35 1 19.8 13.8
35 0 57.2 54.2

51 33 85 25.5

54 05 93 651

20.2

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 1 47.0 40.8

30 1 44.3 40.2

5 0 35.4 30.3

5 0 34.2 28.8

40 3 5.6 0.1

40 2 58.3 52.6

10 4 16.3 10.9

10 4 17.0 13.0

35 4 17.1 11.2

85 4 14.2 9.2

8 4 2.2 56.3

5 4 0.6 -3.1

June 145 0 37.9 28.6 15 0 3.3 54.0
 15 0 35.9 28.2 0 -10.6 -18.0

35 0 44.3 40.3
 35 0 44.4 40.6

35 0 10.8 4.7

Date.

First minute-break.

t, set at.

N. Coll.

S. Coll.

Sum

Mean.

1871 Mar 1
Mar 5 1871

a.

δ.

Mag.

REMARKS.

8 56 13 6.8 20.2 7.4
7.0

5 fol

57 13 9.4 29.2 9.6
9.3

5 fol Too faint

59 53 8.0 14.9

not seen ~~time~~~~9 1 32 9.3 33.9~~

Not seen

1 32 9.3 33.9 9.2
9.7Setting perhaps wrong
None faint.2 56 6.5 - 0.9 6.3
6.55 35 9.0 - 0.9 9.2
9.07 9 8.6 12.3 8.8
8.68 7 9.0 5.1 9.0
8.510 59 8.5 0.8 8.4
8.612 05 8.2 50.7 8.0
8.0

Runs.

Sum
Mean.

A.		C.	
52.2	53.7	57.3	58.0
53.2	53.8	56.9	58.3
52.1	53.9	56.8	58.5
52.1	54.1	57.2	58.4
52.2	53.7	56.8	58.4
Sum			
Mean.			

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

0 2 36.6 30.0

0 2 52.7 48.2

50 4 13.0 6.4

50 4 7.6 3.9

Sol.

45 2 39.8 34.0

45 2 35.2 30.3

25 0 15.1 7.4

25 0 12.6 8.3

20 4 15.2 9.3

20 4 16.1 11.3

10 0 16.7 9.8

10 0 14.3 9.6

30 1 38.7 32.2

30 1 34.6 30.2

20 0 51.0 45.3

20 0 46.2 41.3

30 2 28.0 22.7

30 2 24.6 19.9

Date.

1871¹⁰ Mar 1
Mar 5

first minute-break.

Sum

Mean.

N. Coll.

S. Coll.

c, set at.

a.

s.

Mag.

REMARKS.

9 13 05

31.2

14 16 21 19.5

9.0

9.3

15 49 20 44.3

9.2

9.5

16 51 23 57

9.7

9.9

17 23 24 54.2

9.7

10.0

Too faint to obs. clear
false obs. records

22 39 20 -1.3

8.6

9.0

27 01 21 4.5

9.2

9.4

28 7 24 10.9

10.0 22

a bright * above
records 20.5

28 55 29 17.8

8.7

5 fold

8.8

32 36 29 29.3

8.4

9.0

30.2

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

0 3 42.7 39.8

0 3 36.6 32.0

35 4 54.8 49.1

35 4 51.8 48.4

15 2 17.2 13.1

25 3 16.3 8.9

20 4 40.4 35.8

20 4 43.6 40.8

15 3 35.1 29.2

15 3 24.9 20.1

10 3 32.7 26.4

5 0 30.1 23.5

5 0 52.4 47.0

50 2 52.5 46.8

50 2 49.3 45.0

Date.

1871 Mar 1
Mar 5

First minute-break.

c, set at.

Sum
Mean.

N. Coll.	S. Coll.

α .

δ .

Mag.

REMARKS.

9 32 59 20 30.2

lost Tan 5 full

9.2

34 01 25 57.4

6.5

Tan lost 5 fol on 73

38 59 85 33.1

8.7

Double

8.8

"

~~40 16 91 29.1~~
in Mus maj' 59 38
9 41 52

40 4 54.1 48.7
40 4 46.8 42.4

~~41 28 88 43.4~~
9 45 23 89 19.1

8.4

sure

8.9

46 30 85 55.2

9.3

47 25 84 48.5

8.4

9.2

79 Draconis, lost out side wire
a series in near
somewhere. None.

A Louis min 49 40
9 49 50

40 3 31.6 27.4
40 3 8.8 6.1

32 Mus maj' 65 44
10 8 43

5 full

a Mus maj' 42 08
10 14 41

10 4 30.8
10 4 17.5 15.9

31 Leon Min 37.2

9 Draconis

Runs.

Sum
Mean.

A.

C.

 No. 27
 Bar. 30.15
 Alt 67

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 2 24.8 22.8

50 2 100 58

30 1 28.1 22.0

50 0 9.1 1.9

50 0 13.4 7.8

40 4 31.9 28.7

40 4 39.0 36.2

5 0 18.8 5.1

50 14.2 10.7

25-2 51.5-45.7

~~30~~

35 0 6.4 1.3

30 4 67.0 62.2

40 2 52.5 47.2

40 2 54.3 50.2

35 3 9.2 0.3

10 3 50.2 44.9

10 4 11.6 5.3

0 10.7 5.8

1837.7

10 3 9.1 1.0

10 3 23.2 20.1

0 0 8.9 7.3

S. for.

Ev. M. 37.5

Bar. 30.97

Alt M. 62.8

40 3 59.3 50.7

4 0.5-2.3

 Seeing good, but -
 a little hazy though
 out this zone.

40 1 67 59.2

40 2 80 5.9

35-2 43.5-35.1

Date.

First minute-break.

C, set at.

1871 Mar 2

1871 Mar 5

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

6 3 35.6 11.9

6.8

WAR, des. S.M. Va

6.7

WAR, des. S.M. Va

6 8 20
= 2 Lynx

59° 3'

20 0 21.8 170

5 full

9 41 9.0 15

9.5

67° - 52°

13 09 8.2 86.9

9.0

13 09 8.2 86.9

8.8

8.4

14 14 9.0 84

6.5

6.0

15 26 8.9 56.5

8.9

8.8

15 38 9.2 86.6

9.3

9.2

52 p.m. 52 p.m.

20 22 9.0 51.7

9.0

8.7

24 17 8.0 11.4

8.8

22

7.7

25 08 9.0 53.7

9.6

9.2

5 full

454

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 0 53.0 47.8

10 0 53.4 45.8

15 4 57.2 50.4

15 4 35.7 29.9

20 0 53.2 47.0

20 0 48.3 40.8

45 1 15.0 7.7

45 1 15.9 8.1

10 4 44.2 38.9

10 4 41.7 36.0

25 1 36.7 29.9

25 1 33.3 26.5

30 1 28.3 21.4

30 1 26.0 19.5

10 1 51.2 45.2

10 1 49.0 42.2

25 3 59.8 53.3

25 4 26.1 20.0

reject 1st str for 5

Date.

First minute-break.

set at.

1871 Mar 2

1871 Mar 5

35.600

Sum

Mean.

N. Coll.

S. Coll.

35549

37642

532

654

572

643

539

654

530

672

Mar

192

265

538

37.653

a.

s.

Mag.

REMARKS.

6 26 23 99

45.4

9.4

1st Star

9.2

6 27 06 90

87.0

8.8

5 full

51 Aurigae

39° 30'

not seen

6 29 47

6 36 37 91

49.2

9.4

9.2

40 50

87

17.5

8.6

8.7

42 41

90

33.6

9.2 2p

8.9

43 22

82

47.2

8.2

8.2

5 full

45 27

93

13.1

9.3

9.4

46 48

91

58.2

9.2

9.1

49 03

79

-0.4

7.5

7.8

Last two
clouds were

Runs.

	A.		C.
358	368	382	394
353	372	382	392
352	365	380	393
350	370	384	392
356	367	387	390
Sum	269	345	15
Mean.	3.532	36.90	38.30

man 2

35.32	38.30
36.50	39.37
1.58	1.00

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 2 43.1 37.3

35 2 44.8 37.5

115 1 34.8 27.2

30 4 10.2 4.8

30 4 7.1 0.2

5 0 50.8 44.5

5 0 57.8 44.2

50 0 39.2 32.2

50 0 40.4 33.8

30 4 48.2 42.2

30 4 51.8 45.1

10 0 6.9 0.3

10 0 3.3 57.4

20 4 45.3 38.9

20 4 44.9 38.0

20 4 18.0 12.8

20 4 13.0 7.3

Date.

First minute-break.

Set at.

1871 Mar 2

1871 Mar 5

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

6 51 17 81 53.7 8.14 2.2
7.8

52 10 75 44.4 8.0
9.0

53 52 91 15.7 9.6
9.2

54 42 83 28.3
9.4 Not seen sure
setting wrong

7 0 26 82 57.8 8.3
9.8

63 Aurigae 39.31 50 1 38.1 34.4

7 4 30 94 1.0 9.8
9.7 8 flare x
wrong star setting wrong

7 40 83 52.9 8.2
Not seen

9 18 77 43.2 8.0
7.8

10 44 91 7.9 9.2
8.9

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 2 17.5 12.3

25 2 16.4 9.8

35 3 6.1 58.9

35 3 5.8 59.9

5 3 22.4 17.2

5 3 20.0 13.8

55 2 54.0 46.6

25 0 26.3 19.1

25 0 23.2 16.3

50 1 8.2 4.3

3

20 2 36.8 29.6

Sure 35 4 45.1 39.8

30 0 29.1 21.8

35 4 39.1 33.5

35 4 33.8 28.1

15 1 55.4 49.4

Sure 15 0 49.9 43.5

ate.

first minute-break.

set at.

1871 Mar 2

1871 Mar 5

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

7 11 48 80 17.9 8.8

8.2 sure

18 28 89 56 8.5

not seen setting wrong

19 47 93 58 9.6

9.4

21 26 88 47.8 8.5

8.0

24 41 81 48.4 8.4

7.8

28 55 91 28.1 9.1

9.0

24 Lyncis
7 32 10 58.59

20 2 55.2 79.3

34 00 92 0.4 9.2

9.2

36 44 92 6.1

not seen sure

not seen sure

40 26 93 30.2 9.5

9.6

45.6

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 0 53.8 49.1

5 0 48.8 42.9

15 2 40.8 34.1

15 2 25.3 19.1

15 2 24.8 17.9

35 0 29.3 22.5

35 0 30.2 24.1

30 3 48.3 41.0

30 3 39.8 32.2

50 4 46.2 41.6

50 4 51.9 45.5

20 2 38.2 31.3

20 2 41.1 35.1

20 2 2.4 56.5

20 1 56.8 52.2

50 2 52.2 46.6

50 2 58.5 52.3

Date.

1871 Mar 2

First minute-break.

1871 Mar 5

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

a.

s.

Mag.

REMARKS.

7 43 12 93 45.6

9.6

L lower
2 fold45 24 = 47 53
26 Lynce's

25 4 42.3 37.3

25 4 24.2 19.9

rf bad

48 27 20 31.6 10.0

haze

49 41 93 28.0 9.0

9.6

~~50 48~~ 83 ~~50 46~~
53 Camel 60° 40'

lost

2 fold

52 28 92 38.6 9.5

sitting wrong
haze

54 58 83 17.0 8.3

8.5

Runs.

Sum
Mean.

A.

C.

No. 37
 Bar 30.08
 CHH 66

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 3 38.0 31.3

35 4 0.2 55.9

~~25 4 42.3 34.3~~~~25 4 12.3 7.2~~

25 4 37 58.5

25 3 36.1 31.9

25 3 26.1 21.0

50 0 14.9 9.3

50 4 46.5 41.0

50 4 50.9 45.7

40 2 10.5 - 4.6

40 3 45.8 39.8

5 0 29.3 20.8

5 0 24.1 18.7

Date.

Mar 2 1871

first minute-break.

1871 Mar 5

set at.

35.60

Sum

Mean.

N. Coll.

S. Coll.

37.771

33.454

.750

.453

.746

.459

.741

.455

.748

.448

Sum 208 5

269

Mean. 37.752

33.454

a.

δ.

Mag.

REMARKS.

Polaris
a Leonis

Toed m g

o Aurigae 49° 46'

5-36 or
p' Draconis

L

δ Aurigae = 39° 7'

5-42 37

J Aurigae = 54° 16'

5-48 59

5-2 14.0 8.1 m.

36 Camel = 65° 40'

5-59 58

35-4 10.2 2.1

35-4 11.4 1.1

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 1 55.6 55.2

15 1 19.2 14.9 0 40.1 35.7

5 1 45.2 39.8 *ful*

5 1 51.8 42.1

35 3 55.8 46.9 3 15.3 6.8

35 3 54.8 43.8 3 12.1 6.0

3 54.8

Date.

first minute-break.

set at.

Mar 7 1871

Mar 9

35.607

Sum

Mean.

N. Coll.

S. Coll.

37.754
752
741
740
75133422
469
465
460
465

238

331

27.747635.4662

a.

s.

Mag.

REMARKS.

~~7 15 31 83 - 57~~
~~6 18 02 80 188~~

 9.8 ~~22~~ Zone 50° - 51° S fall
 9.6

~~16 14 80 358~~
~~19 58 80 9.4~~
~~17 58 80 47~~
~~21 56 80 44.5~~

 8.3
 8.2
 full

~~18 49 83 390~~
~~24 42 88 41~~

 9.0
 8.8

~~19 48 80 129~~
~~25 51 75 116~~

 8.0
 8.4

~~20 51 78 124~~
~~27 42 89 111~~

9.0

~~22 18 80 240~~
~~29 00 94 33.2~~

 9.4
 9.6

~~23 36 80 254~~
~~30 48 90 14.4~~

 9.0
 9.2

~~24 52 95 300~~
~~32 00 95 45.0~~

 9.0
 9.0 Double line T_g too late

~~25 46 95 33.2~~
~~33 0 89 26.7~~

8.5 line

104

Runs.

Sum
Mean.

306.8

301.2

A.

C.

May

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50

0

14.6

8.3

W R ps Am Rec
 SM ps W R Rec.

35

4

10.8

5.1

35

4

5.7

2.0

25

1

24.8

23.3

25

1

32.2

26.8

20

4

11.1

5.4

20

4

17.4

13.0

10

1

3.5

56.9

~~10~~~~1~~~~3.0~~

45

4

60.0

53.8

45

4

48.3

41.0

5

3

13.2

7.2

5

3

14.7

9.2

35

3

13.6

6.2

35

3

11.9

7.6

55

2

40.3

35.4

Date.

7871 March 7th

Fast minute-break.

7871 March 9

c, set at. 35.61

Sum

Mean.

N. Coll.

S. Coll.

37.728

33.510

.710

.493

.730

.480

.730

.474

.740

.500

.138

.2457

37.728

33.491

a.

s.

Mag.

REMARKS.

38 46 82 164 8.3

2^d stroke for s

9.0

Wiped moisture from
glass.

36 20 73 30.6 7.0

37 15 75 40.6 -9.5 ~~not seen~~ ^{Tm lost} sure & full

39 33 88 -99 8.0

8.0

40 32 87 45.6 8.8

8.0

41 22 85 41.1 8.4

8.0

42 26 85 49.4 8.2

8.6

44 35 75 10.5 7.0

7.8

46 29 80 21.4 9.0

2 stars

9.0

47 16 89 4.0 9.0

8.8

7m doubtful

Runs.

Sum

Mean.

A.		C.	
35.3	35.9	38.9	38.7
35.3	35.7	38.5	38.2
35.0	35.2	39.1	39.2
34.7	35.9	38.0	38.7
34.8	35.4	38.3	39.5
Sum			
Mean.			

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

5 1 41.1 38.8

Zone 50°-50°

5 1 55.2 50.0

50 2 24.7 18.0

40 2 12.9 6.5

30 3 2.6 2.8

30 3 15.0 11.8

35 2 30.3 25.3

35 2 24.3 20.4

40 1 57.8 51.6

40 2 53.0 48.8

30 3 32.4 31.8

30 3 28.0 24.3

34-51 food compo

10 1 55.5 50.7

10 1 58.0 54.2

0 1 42.6 32.3

0 1 44.2 38.0

15 2 29.0 23.9

15 2 30.8 27.6

Setting of scale
for runs = 2° 19'

Date.

7871 Mar 7
Mon 9/87

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

6 48 39 25 ~~60~~ 19.6 = ch. ran down
9.5

50 51 25 29.0 9.5
9.6 up for *

52 15 85 0.5 8.8
8.2

53 29 90 20.0 9.1
8.7

54 19 90 7.8 9.0
9.6 lost 52
double path. lost
1 wire before middle
~~52~~ ~~no 52~~

55 49 91 47.0 8.8
9.3

57 46 85 30.0 8.2
8.7

58 47 89 -27 8.8
8.3

59 48 95 56.8 9.6
9.3 5 full

7 1 11 7.5 6.5 8.2
8.5 5 full Tm

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 0 32.3 26.0

15 0 34.2 29.9

50 3 7.5 1.3

50 3 9.5 5.3

20 2 7.2 0.8

20 2 8.3 3.9

0 3 29.4 23.9

0 3 26.5 23.7

10 4 57.8 50.0

~~15 0 1.7~~

Oh. ran down

35 1 1.8 56.2

Set anew at 6

35 1 0.3 55.4

50 3 40.6 35.0

50 3 37.7 34.3

40 0 35.8 30.5

Sum 25 0 34.0 30.0

25 1 40.3 34.9

25 1 10.4 5.4

15 0 12.0 4.9

15 0 14.0 10.0

Date.

1871 March 7
Mar 9 1871

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

7 2 12 90 32.0

8.5

sun

Ref. No.

3 25 86 89

8.3

8.8

4 52 94 85.3

9.5

9.0

5 48 90 1.0

8.6

8.6

8 21 94 18.5

9.3

9.0

9 40 84 -6.5

8.3

8.8

11 27 93 15.0

9.5

9.3

12 24 72 23.5

8.5

double 2nd first

7.5

2nd first

14 45 88 8.5

9.1

8.6

16 14 90 35.9

8.5

8.5

-47

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 1 463 408

10 4 13.1 7.9

10 4 11.1 6.7

45 2 19.2 13.3

45 2 12.0 ~~7.6~~

20 2 19.2 14.0

20 2 16.0 10.1

0 4 39.8 34.8

0 4 35.2 32.2

25 4 56.0 50.7

25 4 58.2 53.3

9 2 57.4 51.1

5 2 58.1 53.6

55 4 39.0 34.0

55 4 42.1 36.8

chrom comp

20 4 29.4 23.9

Sum 10 4 29.5 25.1

45 2 7.2 1.3

45 2 7.7 3.0

Date.

First minute-break.

c, set at.

1871 Mar 7
Mar 9 1871

N. Coll.

S. Coll.

Sum

Mean.

a.

δ.

Mag.

REMARKS.

7 17 58 90 - 41

9.0

not seen

18 49 83

89.0

8.6

87

19 48 90

129

9.0

wrong

90

20 11 60 - 45

21 05 94

56.2

9.5

9.2

✓ fac

22 13 80

24.0

Faint of a
Rej

82

23 36 90

25.4

8.6

22

90

24 52 85

+30.0

not seen

84

sf

25 40 95

+33.2

9.7

9.5

double the last faint

26 57 81

41.1

8.4

82

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25- 2 18.9 14.2

40 4 32.3 27.1

40 4 35.0 32.0

5 4 12.3 7.1

5 4 43.0 39.0

25- 1 29.0 24.0

25- 0 56.0 52.1

2

55- 2 7.6 1.4

~~55- 2 25.1 36.0~~
55- 1 59.0 56.0

45- 4 14.0 9.0

45- 4 8.9 4.6

35- 1 5.3 0.8

55- 0 57.6 46.0

Date.

Fast minute-break.

c, set at.

1871 Mar 7
Mar 9

Sum
Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

~~7 29 00 94 332~~
~~7 28 36 91 -58~~

9.0

Cloudy

~~30 48 80 144~~
~~29 34 72 48.0~~

6.8

" "

~~32 0 85 450~~
~~31 34 95 19~~

9.8

9.4

~~33 00 89 267~~
~~32 50 89 213~~

8.2 June

~~8.8~~ None

34 18 58 433

4.0

36 08 92 143

8.6

8.6

ful

37 31 87 244

8.5

8.8

38 43 71 18

7.5

8.0

40 42 86 545

8.5

8.0

41 30 86 -15

8.8

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 3 12.4 7.7

30 3 49.3 44.0

20 1 8.0 2.5

~~20 1 2.4~~

55- 0 55.0 42.8

55 0 46.5 41.8

35- 3 48.0 43.2

35 3 49.8 44.9

5 4 26.5 21.7

5 4 21.7 19.0

55 3 10.6 5.0

55 3 8.2 4.0

15 3 46.3 41.1

15 3 41.0 37.0

25 3 26.2 19.5

25 3 24.4 21.3

20 3 10.1 5.0

Date.

1871 Mar 7
Mar 9

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

7 42 38.75 - 1.8

8.1

8 fall

8.5

43 33 8.5 36.2

8.6

8.6

45 08 7.5 6.9

8.0

7.8

46 25 8.4 52.4

8.8

8.8

47 12 8.5 - 5.8

8.5

8 fall

48 34 8.5 12.4

8.6

9.0

49 22 8.0 - 8.9

8.0

8.9

50 11 8.0 - 8.8

51 15 8.3 42.3

9.4

9.0

53 42 8.5 19.7

10.5

10.4

10 faint

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 0 24.0 21.9

25 0 57.4 47.0

45 0 0.3 54.1

45 1 0.4 57.0

15 0 59.1 53.0

15 0 56.4 52.8

30 0 9.4 3.9

30 0 4.3 0.3

25 2 13.1 7.1

10 0 23.2 17.1

10 0 23.0 15.0

30 1 50.2 45.6

~~30 2 11.5 6.6~~

30 2 11.5 6.6

40 1 20.3 15.2

40 1 18.9 15.0

0 2 40.3 35.3

Date.

Fast minute-break.

c, set at.

1871 March &
May

Sum
Mean.

N. Coll.	S. Coll.

a.

δ.

Mag.

REMARKS.

7 54 50 8.5 28.1 8.0 28.1

8.5

55 30 9.5 4.8 9.5 5 full

9.2

5 fol

57 30 8.0 16.2 8.6

8.6

58 30 7.1 30.5 6.3

7.6

3 Mus Maj' 68° 50'

8 2 24 8.0 -2.2 9.0

9.0

3 38 9.4 29.7 9.4

9.4

4 42 9.1 3.7 9.0

5 34 9.1 28.7 8.5

8.8

6 31 8.3 9.1 8.9

8.7

double 2d upper
fine

upper. fine. for 1
lower comes 1st

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 3 44.1 39.2

50 3 46.5 42.1

30 4 19.0 13.5

30 4 11.3 6.0

5 2 28.8 22.2

5 2 26.8 20.7

50 2 40.2 34.9

50 2 36.7 33.4

30 2 19.5 9.4

25 0 38.2 33.4

25 0 38.2 33.8

50 3 10.9 5.3

50 3 7.8 2.4

20 0 38.9 33.8

50 4 22.4 17.2

50 4 19.0 15.0

10 3 23.2 17.5

10 3 22.7 18.8

Date.

1871 Mar 7th

first minute-break.

set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

88 16 50 303 9.0

9.2

9 39 80 -93 8.1 222

10 15 81 411

8.5

12 21 87 441 9.0

9.0

Am. Dr. W. K. v. c

31 Lyncis 43 36
8 14 4

45- 2 2.3 57.0

seeing bad.

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 2 53.2 47.8

50 2 55.2 51.9

30 2 17.1 11.2

4

40 2 27.5 24.2

35 2 29.0 23.7

35 2 24.7 20.9

45 1 49.2 43.9 45 1 12.1 5.9

45 1 49.2 44.1 1 7.7 3.2

Date.

First minute-break.

c, set at.

Mar 2 21471
(Mar 25)
25

N. Coll.	S. Coll.
37 702	33.484
740	570
710	454
731	465
731	570
Sum	147
Mean.	37.129
	33.461

a.

s.

Mag.

REMARKS.

8 43 31 77 26.1 8.2

Zone 50° - 51°
MTR Obs.
A.M. Rec.

44 15 9.3 50.6 8.5

Last 4 wire & full pre

45 31 9.1 23.5 9.1

46 35 8.5 20.4 8.2

48 32 9.3 28.8 9.2

49 44 9.5 ~~48.4~~ 42.4 9.5

50 43 8.7 14.0 8.5

Ms. Maj 42° 17'

5 0 25.1 22.0
5 0 33.0 30.5

54 01 72 28.3 7.5

A.M. Obs.
MTR, Rec.

7.2

-10.5

Runs.

	A.		C.
143	159	190	196
142	158	183	194
144	156	186	197
147	159	188	191
150	148	184	197
Sum			
Mean.			

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 2 25.5 22.0

30 1 55.0 50.6

55 4 35.1 31.1

0 3 22.2 19.9

55 0 2.3 57.4

35 4 47.8 44.0

5 4 23.1 19.8

5 0 25.1 22.0

5 0 20.7 17.0

55 0 46.4 42.0

55 0 46.7 43.8

Date.

1871 Mar 22

Mar 25

First minute-break.

c, set at.

N. Coll.

S. Coll.

Sum

Mean.

a.

δ.

Mag.

REMARKS.

8 55 36 8.4 -10.5

9.5

56 35 81 4.8

8.3

9.8

57 24 75 8.4

8.2

8.0

58 24 91 12.6

9.2

9.3

set for 36 Lynceis.

8 59 55 9.2 -10.1

8.8

6.8 foll

9 0 55 77 21.6

8.5

8.1

last three w

2 12 90 44.2

9.2

9.2

3 9 91 24.9

9.1

8.8

m.

m.

3 59 92 17.7

9.1

36 Lynceis
9 6-25

43 45

35 3 9.0 4.8

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30 3 34.5 31.5

30 4 43.4 39.2

30 4 35.7 33.8

15 0 26.7 23.1

15 0 28.0 27.4

10 1 9.8 5.2

10 1 5.4 5.1

30 2 56.4 52.7

0 1 20.8 17.9

0 1 50.0 46.7

35 3 53.9 49.8

35 3 56.4 52.7

55 3 36.2 32.8

55 3 40.4 37.3

5 0 34.9 31.0

35 3 0.5 -30 2 25.0 22.3

Date.

First minute-break.

C, set at.

7871 Mar 22
m 25

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

9 8 23 95 233 9.6

9.7

10 41 85 44.7 9.1

9.0

11 38 89 92 8.6

8.8

12 41 93 38.8 9.2

8.9

13 43 68 -21

9.1
7.2

Set for double
h Mus. Maj. 5 Fall
Examine setting
not clear

15 56 75 50.0 7.0

7.2

17 23 91 9.6 9.2

8.8

18 36 90 01 9.1

9.0

19 49 93 26.1 9.5

9.5

h Mus. Maj
9 21 25 63 37

sig bet 1 and 2

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 3 56.1 52.3

55 3 57.8 49.0

35 3 26.8 23.1

35 3 23.3 19.0

10 3 53.0 48.8

10 3 54.4 51.8

40 4 22.8 19.9

40 4 20.1 18.4

15 2 2.2 56.2

30 3 17.5 13.8

30 3 12.7 9.2

10 3 13.2 9.1

10 3 9.4 7.0

20 2 57.1 54.0

20 2 49.2 45.7

55 1 50.2 46.1

55 1 47.1 44.1

45 0 44.6 39.0

45 0 47.6 43.3

ate.

rst minute-break.

set at.

1871 Mar 22

Mar 25

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

9 22 53 9.2 27.5 9.2

9.0

24 00 89 43.3 9.0

8.8

25 04 9.1 10.0 8.9

8.6

26 26 88 50.3 8.6

8.9

28 57 87 - 8.0 8.7

8.7

29 25 } - 11.0 9.0

5 fall

1 fall

5 fall

30 22 93 23.0 9.0

8.7

30 53 85 18.0

not seen

32 51 92 - 3.6 8.4

8.8

33 36 88 - 3.5 8.9

9.0

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

55 0 25.3 21.1

55 0 25.0 20.7

40 0 18.0 14.2

40 0 16.4 12.4

10 2 5.3 1.7

10 2 3.2 0.0

30 2 16.8 13.0

30 2 20.3 17.8

30 0 6.2 1.3

30 0 9.6 5.1

25 3 13.4 9.7

25 3 3.9 0.4

55 4 33.8 29.8

55 4 44.7 41.7

25 1 23.1 19.8

25 1 23.0 19.7

25 1 23.1 19.8

25 1 23.0 19.7

Date.

First minute-break.

C, set at.

1871 Mar 22
Mar 25

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

9 35 15 90 54.5 8.8

8.7

37 52 94 4.0 9.4

9.1

39 21 95 1.9 9.7

9.7

5 fall

40 42 86 46.9 8.5

8.9

42 52 92 38.7 9.0

9.0

43 41 84 33.8 8.5

8.5

45 51 34.3

8.8

8.4

omit

46 29 91 53.9 8.5

8.7

47 18 56 26.0 5.10

6.0

5 fall

49 13 95 55.1 9.5

9.2

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 3 57.7 52.0

25 3 49.2 48.0

25 2 14.2 11.6

25 2 12.2 8.9

15 4 36.8 34.0

20 0 3.2 0.3

35 0 45.8 41.3

35 0 47.1 42.6

45 0 11.5 6.2

45 0 14.0 10.4

45 3 16.3 12.8

45 3 16.0 12.8

25 2 35.6 31.8

25 3 0.7 56.9

55 2 0.9 57.2

15 2 17.0 14.1

25 2 50.1 45.8

25 2 48.7 46.4

Date.

First minute-break.

set at.

1841 Mar 22
Mar 25

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

9 50 22 70 45.3 6.0 sure

6.5

51 29 87 35.4 8.5

8.7

52 12 89 40.8 8.7

8.8

54 30 75 29.0 7.5

8.0

56 05 88 ~~44.8~~ 47.3 9.0

8.7

56 28 83 49.7

not seen sure

not seen

9 58 11 92 50.7 8.5 sure

8.8

10 2 07 92 8.7 7.0 Get the runs

7.5

2 hrs. May
32 hrs. May
10 9 23 43 33

45 4 41.8 39.0

45 4 37.9 36.4

10 4 18.0 13.1

u hrs. May
10 14 41 42 08

10 4 16.0 13.7

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 3 43.8 40.6

35 3 39.8 36.9

45 2 19.8 15.0

45 2 20.8 19.7

40 1 41.0 37.1

40 1 38.4 35.6

50 3 44 59.8

50 3 30 0.5

35 0 52.8 54.7

35 0 54.1 50.4

30 2 13.1 9.8

30 2 11.7 8.5

10 4 36.1 32.5

10 4 41.1 39.8

45 4 22.8 18.8 45 3 43.0 38.6

45 4 30.1 28.8 45 3 55.5 52.4

10 4 57.1 53.7

10 4 40 26 10 3 32.4 29.8

ate.

rst minute-break.

set at.

1871 Mar 22

Mar 25 1871

Sum

Mean.

N. Coll.	S. Coll.
37760	33423
763	510
762	515
758	421
760	403
303	71
37760	33415

35588

α .	δ .	Mag.	REMARKS.
10 16 56	88-10.1	9.0	
		9.0	
22 59	8.4 19.6	8.3	
		8.4	
~~24 50~~	~~9.2-0.1~~		
25-12	8.8-10.1	9.0	
		8.9	
25-55	7.0-10.1	8.6	
		8.6	
27 3	9.2 46.2	9.1	
		9.0	
28 59	8.5-11.7	8.7	
		8.9	
30 50	8.2-7.3	8.4	
		8.2	Sig after T
32 6	9.3 16.6	9.7	
		9.6	
34 22	8.9 15.3	8.5	
		8.5	
36 10	6.6 28.6	6.8	
		7.1	

Runs.

	A.	C.
85	11.6	13.6
9.3	11.1	15.7
89	11.4	15.3
87	11.0	12.7
88	13.7	14.7
86	15.1	15.1
80	13.2	15.6
Sum		
Mean.		

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

30	2	35.0	31.4	
30	2	34.3	32.1	
0	2	43.4	40.4	
0	2	42.5	40.0	
30	3	14.8	11.9	
30	3	9.1	7.0	
30	2	12.3	8.1	
30	2	14.0	11.7	
35	1	44.0	39.0	
35	1	41.3	37.2	
30	4	35.0	32.2	
30	4	32.3	30.9	
30	0	26.4	24.1	
30	0	24.7	22.5	
5	1	29.0	24.0	
5	1	25.6	23.3	
5	3	10.8	7.8	
5	3	10.7	9.3	
50	4	29.4	26.3	
50	4	32.7	30.9	

Date. 1871 Mar 14

First minute-break.

set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

649 33 68 43.4

Zone 52°-53°

54 20 90 4.8 9.0

Factor Str before Tm.
2nd R Str

55 26 92 3.1 9.2

A.M. Rec.

57 19 88 0.4 9.0

58 9 85 53.1 8.8

59 20 85 15.4 8.5

63 Curiae 39 3.1
7 25.1

50 118.6 17.2

57 4 39 70 45.6 8.5
8.0

Factor Str 1st 5 Δa 0.1
double close

5 23 70 6.6 8.8

5 fall

6 31 77 16.0 7.5

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 3 54.2 53.9

16 4 54.3 54.0

20 3 32.8 29.2

30 0 1.3 54.3

5 3 43.8 40.5

50 1 3.0 2.0

35 2 20.9 12.4

15 1 37.0 1.8

5 2 21.5 19.0

ate.

first minute-break.

set at.

7871 Mar 14

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

64 Aug 18 11 6

15 1 25.6 23.3

11 41 85 12.9 8.2

MR Obs
WM, Rec.

12 43 82 13.9 8.7

14 27 88 57.0 8.7

15 48 91 56.9 9.0

17 46 87 36.3 8.5 cloud double? setting?

20 42 90 15.4 9.0

21 23 87 53.8 8.2 lost Tm

22 30 90 53.4 8.9

24 32 84 12.3 8.3

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

15 0 16.7 17.1

5 4 25.7 23.2

25 1 4.3 1.3

25 0 55.8 52.3

45 0 40.3 ³46.9

5 2 14.6 10.3

25 3 22.1 19.6

25 3 22.1 19.6

10 0 21.2 17.3

N. Coll.	S. Coll.
Sum	
Mean.	

Date.

7871 Mar 14

First minute-break.

7871 Mar 28

Sum

Mean.

α .	δ .	Mag.	REMARKS.
25 33 82	28.3	8.1	Mr R. J. S.
			Mr R. C.
27 17 85	28.8	8.0	sure
		8.4	5 fold
28 22 80	28.2	8.0	
		8.2	5 fold
29 13 73	50.9	6.5	5 fold
		7.5	
31 9 86	46.8	7.8	
		8.4	
32 12 90	24.1	8.8	
		9.0	sure
~~32 28 80~~	~~28.6~~		
33 59 85	57.1	8.3	
		8.5	
38 32 89	35.1	9.0	
		9.0	
39 50 83	56.9	8.2	
		8.3	
	15.0		

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

50 ~~30~~ 57.5 55.2

50 3 46.1 43.0

50 3 17.8 11.1

0 0 33.0 29.5

0 0 20.4 13.8

30 1 30.2 26.7

30 1 21.9 16.2

30 4 44.9 42.2

30 4 47.7 41.1

55 3 47.9 44.3

55 3 48.3 42.0

25 0 51.3 48.4

25 1 52.5 46.0

45 2 53.7 53.4

45 3 58.0 51.4

25 1 46.2 43.2

25 1 48.7 42.2

Date.

1871 Mar 14

First minute-break.

1871 Mar 28

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

a.

s.

Mag.

REMARKS.

7 42 46 82 15.0 9.1 m.

8.9

45 09 87 6.5 8.8 8.6

8.5-

51 05 89 34 8.8

8.5

52 20 89 14 9.6.

9.5

55 05 89 30.5 8.5

8.5

56 40 92 29.4 9.2

9.2

57 47 87 36.9 8.4

8.4

58 59 93 12.9 9.5-2.9

9.7

59 41 94 27.4 8.8

9.2

5 full

8 1 00 25 30.1 6.5 Sun

6.8 Sun

148

Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

	5	2	48.3	43.9	
	5	2	51.8	45.7	
	15	2	35.3	32.0	
	15	2	35.9	31.0	
	15	3	26.2	23.3	
	15	3	34.3	29.7	
	20	0	10.2	5.6	
	20	0	18.5	11.0	
	50	1	58.1	54.8	
	50	1	57.8	48.7	
	50	3	20.9	18.1	
	50	3	23.8	17.9	
	40	4	51.9	48.2	
	40	4	47.5	41.0	
	10	0	21.7	18.3	
	10	0	16.0	10.0	
	55	1	14.9	11.8	
	55	0	52.0	44.2	
	50	~~0~~	48.3	42.3	
	50	1	41.3	40.2	

1871phae.pro.1535R

Date.

First minute-break.

c, set at.

1871 Mar 14

1871 Mar 28

Sum

Mean.

N. Coll.

S. Coll.

Mar

α .

δ .

Mag.

REMARKS.

8 21 84 8.3

8.3

3 48 88 8.2

8.6

5 05 91 29.1

9.2

6 36 94 33.4

9.4

7 21 93 46.3

9.0

5 fall

9.3

5 fall

8 35 94 1.1

9.2

2.2

9.5

9 22 92 52.5

8.8

5 fall

9.1

5 fall

~~13 41~~ 94 17.2

31 89 0.1

8 14 4 43 36

45 2 0.9 59.0

45 1 55.3 51.1

45 1 55.3 51.1

more wires extra after 5

10 4.2 23 22.9

55 0 29.3 29.5

0 hrs Maj 61 8

8 19 37

42 14 50

8 24 35

38 27

Runs.

Sum

Mean.

A.

C.

268	273
269	277
265	275
269	272
270	270

mar 14

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 46 6.3 49

10 4 11.3 55-

10 ~~4~~ ~~4.6.3~~ 4.9
4 13.2 11.5

10 4 11.3 5.5

50 4 9.2 9.0

50 4 5.1 0.3

45 4 24.3 25.4

45 4 29.5 23.8

35 2 13.8 11.1

35 2 11.5 6.1

20 4 21.1 18.3

20 4 26.0 14.7

25 4 3.8 2.2

25 4 7.8 0.3

45 1 51.7 49.0 45 1 10.4 9.7

45 1 46.8 42.3 45 1 14.9 9.3

10 4 15.3 12.2 10 3 43.0 40.9

10 3 47.4 42.0

55 1 32.3 33.2

55 0 16.8 14.0 50 4 33.9

Date.

First minute-break.

Set at.

1871 Mar 14

1871 Mar 28

36.616

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

1.1460
8 29 47

53° 9'

Set for 52° 13' 26.2 - 24.3
10 3

8 31 02

78

12.6

8.3

5 foll 7m lost

8.12

32 16

87

30.3

9.0

34 44

85

53.3

8.5

8.4

37 15

91

0.6

9.4

9.3

38 37

90

35.7

9.0

8.9

42 38

91

9.1

9.2

9.1

1/2 Ropes
AM Rec.

43 48

68

50.7

6.8

22

44 17

73

-3.3

46 31

90

16.4

8.1

Runs.

Sum

Mean.

A.		C.	
34.2	35.1	40.3	41.3
34.0	35.2	40.4	41.2
34.0	35.4	40.2	41.4
33.8	34.8	40.1	41.2
34.2	35.2	40.4	41.3

Run 14

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

10 3 12.5-14.7

10 3 30.4 25.9

10 2 20.1 14.8

10 0 32.0 30.0

5 4 59.8 53.4

50 2 3.0 59.6

25 3 36.5 33.0

25 3 35.8 30.8

20 2 12.4 14.2

20 2 24.2 16.5

30 2 16.1 12.9

Sum 45 2 12.3 11.0

15 0 4.1 1.3

10 4 12.1 15.0

10 4 20.8 14.8

30 0 44.9 39.8

5 1 38.3 32.3 2^d det 5

Date.

First minute-break.

Set at.

1871 Mar 28

35.60

N. Coll.	S. Coll.
37752	33423
283	328
788	435
336	435
81	435
409	165
Sum 3782	Mean 432

m Thu 41.2
Mar 28

α .	δ .	Mag.	REMARKS.
8 48 59 88	48.2	8.8	
~~53~~			
53 0.5 9.4	28.8	9.8	Upper
54 46 9.0	5.7	9.0	
58 9 7.3	7.4	7.8	
59 50 5.0	7.6	5.0	
9 0 52 8.9	-2.0	8.9	lower pole *
2 23 8.0	-8.0	9.0	~~8.0~~
4 22 9.1	4.0	9.2	
9 49 9.0	30.0		
12 24 9.4	29.7	9.4	

W. K. Ober
F. M. R. C.

Runs.

	A.		C.	
	289	294	319	322
	297	292	323	322
	288	289	321	324
	289	300	318	321
	288	300	322	323
Sum	431	1475	1603	1
Mean.	286.2	295.6	303	

Maurice

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

35 0 287 24.0

~~4 50 31.3 26.7~~

15 0 49.1 42.5

10 4 16.0 9.8

15 0 39.0 33.2

25 0 54.1 47.0

15 3 34.2 28.1

50 1 25.8 19.4

Date.

First minute-break.

c, set at.

Mangrove
41.55

N. Coll.	S. Coll.
37759	33.489
746	425
740	420
722	441
783	436
191	410
Sum 37138	33284
Mean.	142

3728
33428
11166
35583

	s.	Mag.	REMARKS.
49 50			
59 43	26.2	41° 40'	
47 18	10° 47'	7.10	Work. #

51 54	86	139	
50 43	85	36.2	
51 54	86	139	80
53 29	75	7.0	80.

Zone 51° - 52°
W.R. Rec
A.M. Obs.
~~A.M. Obs.~~
W.R. Rec
A.M. Rec

56 40	9.3	25.8	93	20
			9.2	
57 26	75	34.2	77	
			7.8	
10 0 50	71	28.3	76	22
			8.0	
1 34	91	38.8	90	

5 fol
5 fol fol*

4 49 91 34
10 5 40 + 70 18

5 37 85 40
2 hrs May 43° 33'
10 9 22

set for 70 3'

252

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

40 2 44.0 42.0 Pen failed

5 4 2.4 -1.8

15 2 8.8 3.8

55 3 24.2 19.8

Sum 55 2 103 4.5

50 0 24.8 21.4

50 0 17.5 11.1

55 0 56.7 50.4

55 0 56.8 51.2

40 3 50.4 46.8 fol. X

40 3 58.1 52.8

0 4 4.8 8.0

0 4 19.0 21.8 0 4 5.8 9.6

0 3 17.0 20.3

45 4 30.4 26.0 fb bef Pen failed

c, set at.

S. Coll.

Mean.

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Runs.

Sum
Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

45-3 36.7 40.6 249.0 532

10 0 7.2-0.6 5-4 40.2 32.5

40 3 53.8 49.2

40 3 48.8 44.2

0 3 18.7 13.8

0 3 19.8 14.3

50 4 40.8 36.0

50 4 38.2 33.3

5 0 7.4 2.1

5 0 10.2 4.3

lower

Date.

First minute-break.

C, set at.

Mar 29 1871
Sun 5/1871

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

~~10 41 06 80 17.9~~

Set for (51) - 3.4

10 42 45 84 #
+40 52' 9.3

43 52 83 - 34 8.0

44 30 62 - 33 6.7
5.6

45 31 89 42.1 8.9
9.0

47 35 82 36.1 8.3
8.2

49 20 95 128 9.8
9.8

50 25 90 24.3 9.0
8.5

51 33 90 41.1 9.0 20.4
8.6

52 19 90 - 44 9.8

not seen

false obs

Runs.

Sum

Mean.

A.

C.

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 4 56.3 61.0

25 1 50.0 46.1

25 0 37.0 32.7

25 0 35.8 31.9

40 0 58.1 54.1

40 0 37.3 32.0

45 1 55.2 50.1

45 1 54.8 48.7

10 0 18.1 14.1

10 0 17.5 13.1

55 4 0.7 -4.1

55 3 55.0 49.4

40 2 28.4 23.2

40 2 27.3 22.7

ate.

first minute-break.

set at.

Mar 29 1871

Apr 5

Sum

Mean.

N. Coll.

S. Coll.

a.

δ.

Mag.

REMARKS.

10 55 24 9.3 - 4.2 9.0
9.1

J fol Tm lost

58 20 8.5 31.3 8.6
8.1

59 47 8.5 49.8 9.3
9.8

χ Mus Maj 45° 12'

10 1 18.6 15.7

1.0 1 22.3 19.1

χ Leonis 21° 14'

5 4 9.4 10.3
5- 4 3.9 6.0

Gr. 17 57 50° 10'

Set for 9° 20'

Pen failed

11 11 26 9° 20'

Pen failed

11 12 01 9° 20'

(Get if seen not otherwise)

11 17 06 9° 4' 8.5

all wires.
Pen O.K.

11 19 47 8° 49'

8° 53'

Runs.

	A.		C.	
	318	328	360	369
	317	329	361	362
	319	331	351	354
	320	330	354	362
		328	362	364
Sum	191	156	291	312
Mean.	33.8	33.1	35.8	36.2

Apr-5?
Sun, 5/18/71

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

	25	1	24.7	20.4		
June	25	2	17.3	13.2		
	50	2	11.8	6.4		
	50	2	9.9	4.1		
	80	4	432	394		
	30	4	41.1	36.2		
	10	0	59.5	53.6	034.0	31.0
	10	1	6.5	2.0	10019.2	15.9
		3	44.0	45.4		
	5	3	50.8	51.8		

0	2	296	33.9
0	2	370	40.0

15	3	490	52.0
----	---	-----	------

15	4	1.3	3.3	15	3	33.2	35.4
----	---	-----	-----	----	---	------	------

30	4	17.2	19.9
----	---	------	------

Date.

First minute-break.

set at.

Mar 29 1871

1871 Apr 5

N. Coll.

S. Coll.

Sum

Mean.

N. Coll. 30.9
 P. " 44.1
 No. 4 32.3
 Bar 29.24
 W. H. 57.5

α.

δ.

Mag.

REMARKS.

11 20 40

8° 53'

F. 11

11 25 08

8 35

45 3 160 18.1

α Leonis
 11 30 24

-0° 6'

25 0 40 52

Sum 25 4 7.5 12.8

β Leonis
 11 35 19

0° 24'

35 0 57.8 50.2

55 1 20 57.7

γ Leonis
 11 39 17

0° 29'

50 3 30.0 27.1

50 3 38.8 36.2

δ Leonis
 11 42 32

15° 18'

5 0 16.2 9.0

5 0 16.2 9.0

ε Leonis
 11 47 05

54° 24'

Seeing x good

55 5 41.0 38.5

Seeing pretty good

Runs.

1.5
1.7
1.6

Sum

Mean.

A.		C.	
10.5	10.3	13.7	14.8
9.2	10.3	12.6	14.7
9.2	11.0	12.6	14.7
9.1	11.4	12.9	14.0
9.6	10.4	12.6	14.6
11	8.7	4.4	2.8
9.2	10.7	12.9	14.6

Bar 30.18 610

N-4 320

10.74
09.22
4.15214.56
12.88
11.68
3.83.0
3.8
7.8 = 3.4

Pointer.

Stroke.

Rev.

A.

C.

REMARKS.

25 2 34.2 36.9

25 1 52.0 54.9

45 2 57.8 10 2 4.9 90

115 2 54.2 56.9 45 2 8.3 10.9

25 3 49.2 53.0 3 3.3 5.8

23 3 42.7 47.8 25 2 57.2 57.3

55 0 51.6 43.8 0 2 2.2 15.6

55 0 54.3 45.7 55 0 4.1 55.2

50 3 20.7 17.3 2 48.2 45.0

50 3 20.3 16.3 50 2 43.1 38.2

0 4 57.6 53 4 11.3 8.0

0 4 55.8 58.7 0 3 57.1 57.5

55 3 21.7 19.7 55 2 55.7 52.0

55 3 25.2 21.0 55 2 41.0 37.1

Date.

First minute-break.

c, set at.

Sum

Mean.

N. Coll.

S. Coll.

α .

δ .

Mag.

REMARKS.

764
755
743
761
756
279
756
7

1873phae, no. 5, 1835R