

KG

11366

2813

Apr. 5 1890
DM. +51° 2275

This star is not double
 There is a very faint star in about
 the same R.A., 2.5 north, mag 10.8
 Probably this star would not be
 observed in the meridian circle.
 No other star near.

DM. +51° 2222

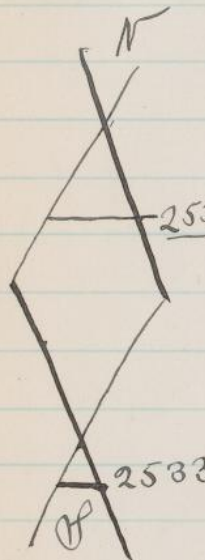
There are not two stars here
 Star is not double. No other star in
 immediate vicinity

Apr. 5/1890

3

Dm. +50° 2483

This star is not double. The only star near it is 2282 which is in the pos. indicated by the Dm. relative to it

Apr. 5 1890Dist. +50 2534 & 2533


	<u>2534</u>	<u>2533</u>					
10	23 55.0	24 18.0					
	25 11.2	24 30.0					
	49 6.2	48 48.0	0	18.2	0	9.10	
	25 45.1	26 8.1					
	<u>2534</u> 27 - 1.7	26 21.0					
	52 46.8	52 29.1	0	17.7	0	8.85	
	27 32.0	27 34.9					
	<u>2533</u> 28 48.9	28 7.5					
	56 20.9	56 2.4	0	18.5	0	9.25	
	29 19.9	29 42.6					
	30 37.4	29 56.0					
	59 57.3	59 38.6	0	18.7	0	9.35	
	31 7.0	31 29.9					
	32 24.6	31 43.7					
	63 31.0	63 13.6	0	18.0	0	9.00	
	33 4.0	33 26.6					
	34 22.3	33 40.9					
	67 26.3	67 7.5	0	18.8	0	9.40	
						0.95	
						+ 0 9.16	

Star not double, no other star near.

This reduction carefully checked. ⁵

$\Delta 2534$

$\Delta 2533$

76.2"

12.0

64.2

76.6

12.9

63.7

$$+50 \ 2533 = 18^h 7^m 27.5$$

$$\text{" } \underline{2534} = \frac{37.6}{10.1}$$

76.9

12.6

64.3

$$+50 \ \underline{2534} = 45.5$$

$$\text{" } \underline{2533} = \frac{35.5}{1.0}$$

77.5

13.4

64.1

$$+50^{\circ} 40.5$$

78.6

13.8

63.8

78.3

14.3

64.0

0.1

64.02

$$\log 64.02 = 1.80632$$

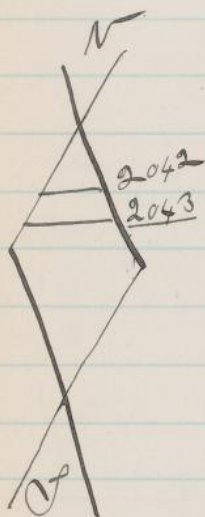
$$\text{" } 7.5 = 0.87506$$

$$\text{" } \cos \delta = 9.80197$$

$$364.3' = 2.48335$$

$$\frac{886.0}{581.7} = +9.417'$$

Apr. 5, 1890

Dir. + 53° 2043 & 2042

	<u>2043</u>		<u>2042</u>					
10	47	15.8	46	58.4				
	47	58.8	47	35.3				
	95	14.6	84	33.7	0	40.9	0	20.45
	48	46.0	48	28.5				
	49	29.5	49	5.8				
	98	15.5	97	34.3	0	41.2	0	20.60
	50	11.5	49	54.0				
	50	54.5	50	31.0				
	101	6.0	100	25.0	0	41.0	0	20.50
	51	42.0	51	24.7				
	52	26.0	52	2.2				
	104	8.0	103	26.9	0	41.1	0	20.55
	53	15.6	52	88.1				
	54	0.1	53	36.8				
	107	15.7	106	34.9	0	40.8	0	20.40
								2.50'
								+ 0 20.50'

Star 2043 is a coarse double. The brighter & foll. component taken. The companion precedes principal comp. about 2 sec., is a little south, and 0.8 mag. fainter.

Reduction carefully checked

7

43.0 36.9 6.1

43.5 37.3 6.2

43.0 37.0 6.0

$$\begin{array}{r} +53^\circ 2042 = 18^\circ 17' 42.9 \\ \text{" } 2043 = \quad 8' 1.1 \\ \hline 0 18.2 \end{array}$$

44.0 37.5 6.5

44.5 38.7

5.8

.60

6.12

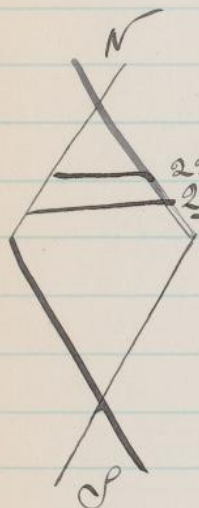
$$+53 2042 = +53' 28.2$$

$$\underline{2043} = \quad 27.6$$

$$\begin{array}{r} 18.8 \\ +53^\circ 27.9 \end{array}$$

$$\begin{array}{rcl} \log 6.12 & = & 0.78675 \\ \text{" } 7.5 & = & 0.87506 \\ \text{" } \cos L & = & 9.77473 \\ - 27.3 & = & \underline{1.43654} \\ - 0 \quad 27.3 & & \end{array}$$

Apr. 5, 1890
Dr. +54° 22'05" & 22'02"



	<u>22'05"</u>	<u>22'02"</u>			
11	29 5.5'	28 37.2'			
	30 13.5'	29 31.5'			
	<u>59 19.0'</u>	<u>58 8.7'</u>	1 10.3'	0 35.15'	
	22'02 31 8.5	30 40.1			
	<u>22'05 32 17.0</u>	<u>31 35.2</u>			
	63 25.5	62 15.3	1 10.2	0 35.10	
	35 26.0	34 57.2			
	36 36.2	35 54.8			
	<u>72 2.2</u>	<u>70 52.0</u>	1 10.2	0 35.10	
	37 34.8	37 60			
	38 46.2	38 4.0			
	<u>76 21.0</u>	<u>75 10.0</u>	1 11.0	0 35.50	
	39 39.0	39 10.7			
	40 51.0	40 9.1			
	<u>80 30.0</u>	<u>79 19.8</u>	1 10.2	0 35.10	
				0.95	
				+ 0 35.19'	

The star assumed as 22'05" is the south, foll. and slightly brighter of two.
 This star seems to be the star indicated by the Dr. and also Vol. VI of the Bonn Obs.
 Transits of other stars on p. 10

Reduction carefully checked.

9

68.0 54.3 13.7

68.5 55.1 13.4

$$\begin{array}{r} +54^\circ \quad 2202 = 19 \quad 37 \quad 38.6 \\ \underline{2205} = \quad 38 \quad 13.6 \\ 0 \quad 35.0 \end{array}$$

70.2 58.6 12.6

71.4 58.0 13.4

$$\begin{array}{r} +54 \quad 2202 = +54^\circ \quad 47.9 \\ " \quad \underline{2205} = \quad 46.9 \\ .8 \end{array}$$

72.0 58.4 13.6
1.7
13.34

$$+54^\circ \quad 47.4$$

$$\begin{array}{r} \log 13.34 = 1.12516 \\ " \quad 7.5 = 0.87506 \\ " \quad \cos 2 = 9.76093 \\ 57.7 = 1.76115 \\ - 0 \quad 57.7 \end{array}$$

Apr. 5 1890
Dur. +54° 2202 & other stars (see note)
m. 8

Other * +54 2202
 11 47 50.0 47 18.5
 48 36.5 48 6.2
 96 26.5 95 24.7 1 1.8 0 30.90'

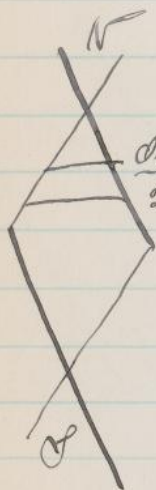
49 36.5 49 4.5
Other 50 22.6 49 52.7
2202 99 58.1 98 57.2 1 1.9 0 30.95

51 23.0 50 51.6
 52 10.1 51 40.0
 103 33.1 102 31.6 1 1.5 0 30.75

53 8.7 52 37.4
 53 56.5 53 26.5
 107 5.2 106 3.9 1 1.3 0 30.65

55 3.4 54 31.6
 55 52.0 55 21.6
 110 55.4 109 53.2 1 2.2 0 31.10
 4.35
 + 0 30.87

"Other Stars" is 0.4 mag. ft. than 2205



Reduction carefully checked

11

46.5 47.7 1.2

46.1 48.2 2.1

47.1 48.4 1.3

+54° 22' 2" = 47.9

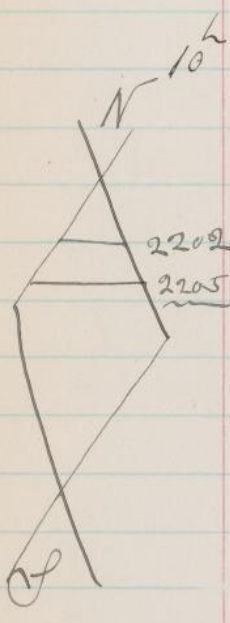
47.8 49.1 1.3

48.6 50.0 1.4

 2.3
 1.46

Log 1.46 = 0.16435
 " 7.5 = 0.87506
 " ~~cos~~ 2 = 9.76075
 6.3 = 0.80016
 + 0 6.3

Apr. 30, 1890
Dir. +54° 2205 and 2202



<u>2205</u>		<u>2202</u>					
45	22.6	44	54.5				
46	28.0	45	47.0				
91	50.6	90	41.5	1	9.1	0	34.55
47	31.2	47	2.5				
48	36.8	47	55.2				
96	8.0	94	57.7	1	10.3	0	35.15
49	~~46.8~~	49	18.1				
50	53.0	50	11.9				
100	39.8	99	30.0	1	9.8	0	34.90
51	53.1	51	25.4				
53	0.6	52	19.7				
104	53.7	103	45.1	1	8.6	0	34.30
54	12.4	³ 54	^{43.9} ~~12.4~~				
55	22.0	⁴ 55	^{40.4} ~~40.4~~				
109	34.4	108	24.3	1	10.1	0	35.05
56	23.9	55	54.6				
57	33.4	56	52.0				
113	57.3	112	46.6	1	10.7	0	35.35
							5.30
							+0 34.88

Slightly fainter & prec. 4.4 sec., 1.2 m.; this may have been confounded with 2205.

65.4' 52.5' 12.9

$$\begin{array}{r} 37 \ 38.6 \\ 38 \ 13.6 \\ + 0 \ 35.0 \\ \hline \end{array}$$

65.6 52.7 12.9

$$\begin{array}{r} + 54^{\circ} 22' 02'' = 47.9 \\ \text{" } \underline{22' 05''} = 46.9 \end{array}$$

66.2 53.8 12.4

67.5 54.3 13.2

$$\begin{array}{l} \log 12.77 = 1.10619 \\ \text{" } 7.5 = 0.87506 \\ \text{" } \cos 2 = 9.76093 \end{array}$$

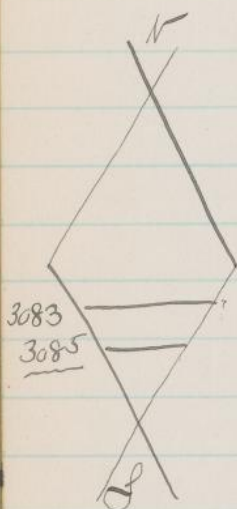
69.6 56.5 13.1

$$\begin{array}{r} - 55.2 = 1.74218 \\ - 0 \ 55.2 \end{array}$$

69.5 57.4 12.1

$$\begin{array}{r} 4.6 \\ 12.76 \end{array}$$

May 2 1890
Dir. +50° 3085 & 3083



<u>3085</u>		<u>3083</u>					
11 ^h	9 34.9	9	19.1				
	10 11.4	10	18.5				
	<u>19 46.3</u>	<u>19 37.6</u>		0	8.7	+ 0	4.35
	10 55.5	10 40.4					
	11 32.0	11 39.0					
	<u>22 27.5</u>	<u>22 19.4</u>	0	8.1	0	4.05	
	12 24.9	12 9.4					
	13 0.2	13 7.4					
	<u>25 25.1</u>	<u>25 16.8</u>	0	8.3	0	4.15	
	13 50.8	13 35.0					
	14 25.5	14 32.5					
	<u>28 16.3</u>	<u>28 7.5</u>	0	8.8	0	4.40	
	14 ^h 13.9	14 57.8					
	15 48.2	15 55.0					
	<u>31 2.1</u>	<u>30 52.8</u>	0	9.3	0	4.65	
	16 43.0	16 27.1					
	17 16.1	17 23.3					
	<u>33 59.1</u>	<u>33 50.4</u>	0	8.7	0	4.35	
						1.95	
						+ 0 4.32	

36.5 59.4 22.9

36.5 58.6 22.1

$$3083 = 20 \ 31.6$$

$$3085 = \underline{20 \ 37.0}$$

$$5.4$$

35.3 58.0 22.7

$$+50^\circ \ 3083 = 52.6$$

$$+50 \ 3085 = \underline{50.6}$$

$$+50^\circ \ 51.6$$

34.7 57.5 22.8

34.3 57.2 22.9

$$\log 22.75 = 1.35698$$

$$\sigma_{11} \ 7.5 = 0.87506$$

$$11 \cos I = \underline{9.80043}$$

$$- 107.7 = \underline{2.03246}$$

33.1 56.2

$$\underline{23.1}$$

$$4.5$$

$$22.75$$

$$- 1 \ 47.7$$

May 2 1890
Dr. + 52 2709 & 2711

	² <u>2709</u>	² <u>2711</u>	<u>2709-11</u>	
11	26 37.5	27 6.0		
	<u>27 56.5</u>	<u>27 42.6</u>		
	54 34.0	54 48.6	0 14.6	0 7.30

	28 22.4	28 50.0		
	<u>29 40.7</u>	<u>29 27.7</u>		
	58 3.1	58 17.7	0 14.6	0 7.30

	30 4.6	30 32.0		
	<u>31 22.5</u>	<u>31 10.1</u>		
	61 27.1	61 42.1	0 15.0	0 7.50

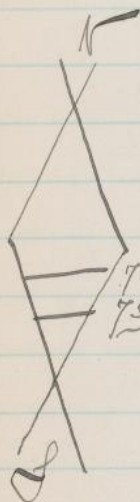
	31 45.5	32 11.9		
	<u>33 2.5</u>	<u>32 50.8</u>		
	64 48.0	65 2.7	0 14.7	0 7.35

	33 25.5	33 51.1		
	<u>34 41.4</u>	<u>34 30.6</u>		
	68 6.9	68 21.7	0 14.8	0 7.40
				1.8 5
			- 0	7.37

May 2 1890Dm. +52° 2510

The only star in the immediate vicinity of 2510 is 2509. It precedes 2510 6.5 secs. and is 1.6' north, which is substantially the same difference as given in Dm. between these two stars. 2510 is not double.

May 3 1890
Dm +52 758 and 752



	<u>758</u>	<u>752</u>				
10	58 50.8	57 32.0				
	59 21.3	58 21.3				
	<u>118 52.1</u>	<u>115 53.3</u>	2	^{18.} 59.8	1	9.40

#	<u>758</u>	<u>752</u>				
61	14.7	59 56.0				
61	45.5	60 45.4				
	<u>123 0.2</u>	<u>120 41.4</u>	2	18.8	1	9.40

11	³ 2 38.0	2 19.5				
	4 9.6	3 9.4				
	<u>7 47.6</u>	<u>5 28.9</u>	2	18.7	1	9.35

6	8.6	4 50.1				
6	40.8	5 40.5				
	<u>12 49.4</u>	<u>10 30.6</u>	2	18.8	1	⁴⁰ 9.40

8	38.0	7 19.7				
9	10.8	8 10.1				
	<u>17 48.8</u>	<u>15 29.8</u>	2	19.0	1	9.50

11	18.5	10 -0.5				
11	52.0	10 51.9				
	<u>23 10.5</u>	<u>20 52.4</u>	2	18.1	1	9.05

2.10
+1 9.35

30.5 49.3 18.8

$$\begin{aligned} +52 &= 53 \quad 13.5 \\ +58 &= \underline{54} \quad 22.0 \end{aligned}$$

30.8 49.4 18.6

31.6 49.9 18.3

$$\begin{aligned} +52 & \overset{3}{\cancel{758}} = 55.3 \\ +52 & \overset{8}{\cancel{758}} = \underline{54.0} \\ & \quad 9.3 \\ +52 & \quad 54.65 \end{aligned}$$

32.2 50.4 18.2

$$\begin{aligned} \log 18.23 &= 1.26079 \\ \text{" } 7.5 &= 0.87506 \\ \log 2 &= 0.30103 \\ 82.4 &= 1.91615 \\ -1 & \quad 22.4 \end{aligned}$$

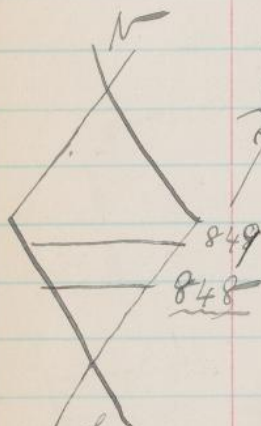
32.8 50.4 17.6

33.5 51.4 $\frac{17.9}{1.4}$
18.23

May 3/1890
Dm. +53 848 & 849

<u>848</u>	<u>849</u>
37 8.1	36 54.0
<u>37 46.0</u>	<u>38 5.0</u>
74 54.1	74 59.0

$$\begin{array}{r}
 0 \quad 4.9 \\
 \hline
 0 \quad 2.45 \\
 - \quad 0 \quad 2.45 \\
 \hline
 \end{array}$$



There is a faint * spec. this is about the position indicated by Prof. Rogers.

37.9

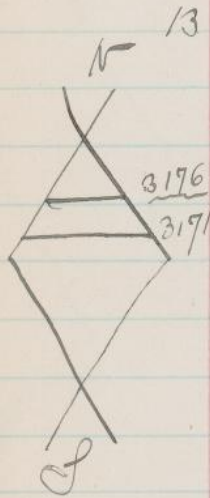
71.0

$$\begin{array}{r} 33.1 \\ \hline 33.10 \end{array}$$

$$\begin{aligned} \log 33.10 &= 1.51983 \\ \text{" } 7.5 &= 0.87506 \\ \text{" } \cos 2 &= 9.77795 \\ 148.9 &= 2.17284 \\ - 2 \quad 28.9 & \quad \star \end{aligned}$$

$$\begin{aligned} +53^{\circ} 848 &= 7.7 \\ \text{" } 849 &= \frac{10.1}{17.8} \quad 2.4 \\ +53^{\circ} 8.90 & \end{aligned}$$

$$\begin{aligned} 848 &= 53 \quad 46.8 \\ 53 \quad 49.2 \\ \hline &2.4 \end{aligned}$$

May 21, 1890Dr. +50 3176 and 3171


	<u>3176</u>	<u>3171</u>				
13	18 47.1	18 5.9				
	19 44.1	19 20.4				
	38 31.2	37 26.3	1	4.9	0	32.45
	20 47.8	20 6.2				
	21 45.2	21 21.0				
	42 33.0	41 27.0	1	6.0	0	33.00
	22 57.1	22 15.5				
	23 54.9	23 30.8				
	46 52.0	45 46.3	1	5.7	0	32.85
	25 13.9	24 32.3				
	26 12.5	25 48.5				
	51 26.4	50 20.8	1	5.6	0	32.80
	27 47.0	27 5.0				
	28 45.1	28 21.4				
	56 32.1	55 26.4	1	5.7	0	32.85
						3.95
						+ 0 32.79

43764371

57.0

74.5

17.5

57.4

75.0

17.6

57.8

75.3

17.5

$$3171 = 38 \ 22.7$$

$$3176 = \frac{38 \ 54.9}{32.2}$$

58.6

76.2

17.6

$$+50 \ 3176 = 31.6$$

$$3171 = \frac{30.3}{+50 \ 31.0}$$

$$+50 \ 31.0$$

58.1

76.4

$$\frac{18.3}{3.5} = 17.70$$

$$\log 17.70 = 1.24797$$

$$" \ 7.5 = 0.87506$$

$$" \ \cos 2 = 9.80336$$

$$84.4 = 1.92639$$

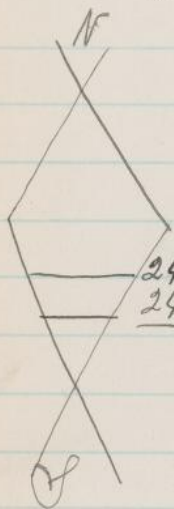
$$+ 1 \ 24.4$$

May 21 1890

Dm. +52° 2778

Dm. *+52° 2781 and 2778 are in the position indicated by the Dm. 2 & these two are the brightest *'s in this vicinity. There are however quite a number of faint *'s which might possibly be seen with the meridian circle and so confounded with the one in question. The nearest one of these however is as far distant from 2778 as 2781 is

May 24, 1890

Dm. + 54° 2406 and 2405

<u>2406</u>		<u>2405</u>					
13	15	23.5	15	30.0			
	15	29.3	16	39.8			
	31	52.8	32	9.8	0	17.0	0 8.50

	17	12.7	17	18.7			
2405	18	17.4	18	28.2			
2406	35	30.1	35	46.9	0	16.8	0 8.40

	19	11.8	19	18.0			
	20	16.9	20	27.7			
	39	28.7	39	45.7	0	17.0	0 8.50

	20	57.5	21	3.7			
	22	1.9	22	12.6			
	42	58.4	43	16.3	0	17.9	0 8.45

	23	14.0	23	20.2			
	24	18.5	24	29.5			
	47	32.5	47	49.7	0	17.2	0 8.60
							2.45
							- 0 8.49

65.8 69.8 4.0

$$+54 \ 240 \ 5 = 39 \ 4.2$$

$$+54 \ 240 \ 6 = \underline{12.0}$$

64.7 69.5 4.8

2.0

2.3

+54 2.2

65.1 69.7 4.6

64.4 68.9 4.5

64.5 69.3 4.8

2.7

4.5.4

$$\log 4.54 = 0.65706$$

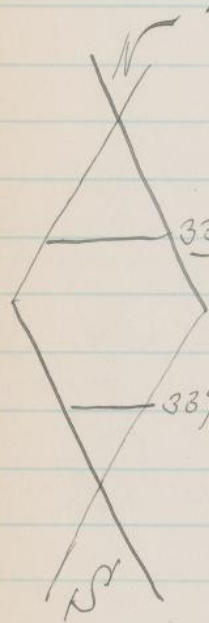
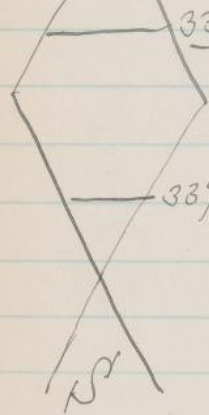
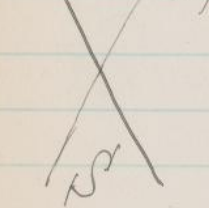
$$\log 7.5 = 0.87506$$

$$\log \cos \alpha = \underline{9.76887}$$

$$20.0 = 1.30099$$

$$- \ 0' \ 20.0$$

June 9 1890
Dm. +5⁰ 3377 and 3375

	<u>3377</u>		<u>3375</u>						
	14	0	53.5	1	1.0				
	1		32.2	1	15.0				
	2		25.7	2	16.0	0	9.7	0	4.85
	<u>3377</u>		<u>3375</u>						
	1		51.6	1	59.0				
	2		29.2	2	13.0				
	4		20.8	4	12.0	0	8.8	0	4.40
	<u>3375</u>								
	2		55.6	3	3.5				
	3		34.0	3	16.7				
	6		29.6	6	20.2	0	9.4	0	4.70
	3		58.0	4	5.5				
	4		36.0	4	19.0				
	8		34.0	8	24.5	0	16.5	0	4.75
	5		0.5	5	8.1				
	5		38.5	5	21.7				
	10		39.8	10	29.8	0	9.2	0	4.60
									3.30
									+ 0 4.66

$$38.7 \quad 14.0 \quad 52.7$$

$$37.6 \quad 14.0 \quad 51.6$$

$$38.4 \quad 13.2 \quad 51.6$$

$$\begin{array}{r} 30 \quad 44.7 \\ 31 \quad 7.8 \\ \hline 0 \quad 23.1 \end{array}$$

$$38.0 \quad 13.5 \quad 51.5$$

$$\begin{array}{r} 8.0 \\ 2.3 \\ \hline 10.3 \\ 5.2 \end{array}$$

$$\begin{array}{r} 38.0 \quad 13.6 \quad \underline{51.6} \\ 4.0 \\ 51.80 \end{array}$$

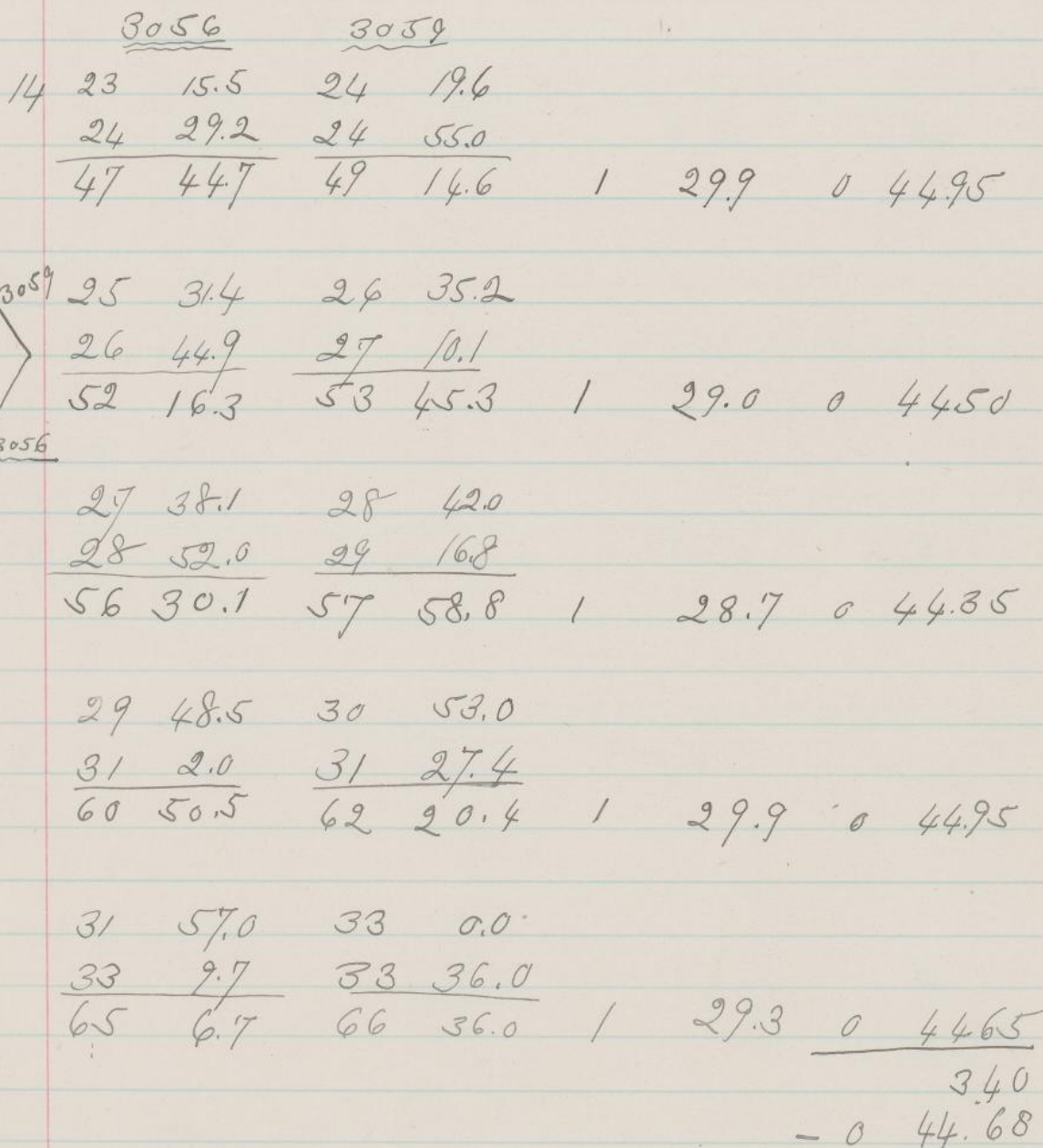
$$\begin{array}{lcl} \log 51.80 & = & 1.71433 \\ \log 7.5 & = & 0.87506 \\ \log 2 & = & 9.80728 \end{array}$$

$$\begin{array}{r} 249.3 \\ 886.0 \\ \hline 636.7 \end{array} = 2.39667$$

$$636.7 = +10 \quad 36.7$$

June 16 1890

Dim. +52 3056 and 3059



73.7 35.4 109.1

73.5 34.9 108.4

73.9 34.8 108.7

73.5 34.4 107.9

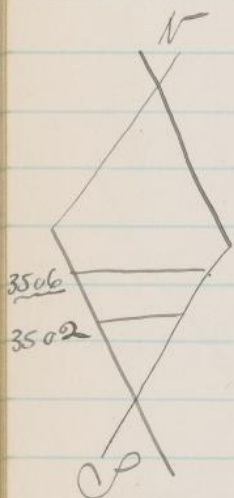
+52 17.0
26.6
 43.6

72.7 36.0 108.7
 47.8
 108.56

+52 21.8

Log 108.56 = 2.03567
 " 7.5 = 0.87506
 " cos δ = 9.78576
 497.1 = 2.69649
 886.0

June 18/1890

Dm. + 50. 3506 and 3502

<u>3506</u>		<u>3502</u>			
30	18.5	30	10.5		
31	21.6	30	38.5		
61	40.1	60	49.0	0	51.8
				0	25.5 ⁵
31	55.4	31	47.1		
32	58.1	32	14.6		
64	53.5	64	1.7	0	51.8
				0	25.90
33	38.0	33	29.5		
34	40.3	33	56.8		
68	18.3	67	26.3	0	52.0
				0	26.00
35	15.6	35	7.1		
36	17.9	35	34.1		
71	33.5	70	41.2	0	52.3
				0	26.15
36	59.5	36	52.0		
38	1.6	37	18.4		
75	1.1	74	10.4	0	50.7
				0	25.35
					28.95
				+ 0	25.79

63.1 28.0 35.1

62.7 27.5 35.2

$$\begin{array}{r} \underline{\underline{3506}} = 52 \quad 38.4 \\ 3502 = \quad \underline{13.5} \\ 0 \quad 24.9 \end{array}$$

62.3 27.3 35.0

$$\begin{array}{r} 11.7 \\ 9.0 \\ \hline 10.3 \end{array}$$

62.3 27.0 35.3

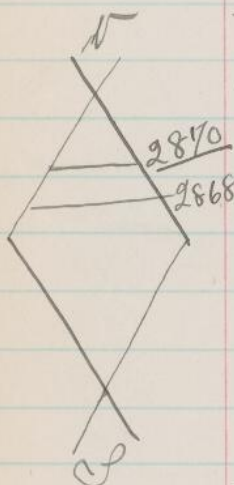
62.1 26.4 35.7
1.3
35.26

$$\begin{array}{lcl} \log 35.26 & = & 1.54728 \\ \text{" } 7.5 & = & 0.87506 \\ \text{" } \cos 2 & = & \underline{9.80650} \\ 169.4 & = & 2.22884 \end{array}$$

+ 2 49.4

June 18/1890
Dir. +53 2870 and 2868

	<u>2870</u>	<u>2868</u>		
17	4 39.8	4 21.6		
	<u>5 17.5</u>	<u>5 12.5</u>		
	9 57.3	9 34.1	0 23.2	0 11.60



	<u>2870</u>	<u>2868</u>		
	6 17.2	5 59.2		
	<u>6 55.2</u>	<u>6 50.0</u>		
	13 12.4	12 49.2	0 23.2	0 11.60

	<u>2870</u>	<u>2868</u>		
	7 55.2	7 37.1		
	<u>8 33.2</u>	<u>8 28.2</u>		
	16 28.4	16 5.3	0 23.1	0 11.55

	<u>2870</u>	<u>2868</u>		
	9 36.1	9 18.0		
	<u>10 13.9</u>	<u>10 8.5</u>		
	19 50.0	19 26.5	0 23.5	0 11.75

	<u>2870</u>	<u>2868</u>		
	13 23.1	13 5.2		
	<u>14 2.6</u>	<u>13 57.5</u>		
	27 25.7	27 2.7	0 23.0	0 11.50
				<u>3.00</u>
				+ 0 11.60

37.7 50.9 13.2

38.0 50.8 12.8

$$\begin{array}{r} 2870 = 19 \quad 17.6 \\ 2868 = \quad \quad 4.8 \\ \hline 12.8 \end{array}$$

38.0 51.1 13.1

$$\begin{array}{r} 2868 \quad 58.3 \\ 2870 \quad 59.2 \\ \hline 17.5 \end{array}$$

37.8 50.5 12.7

$$+53 \quad 58.7$$

$$\begin{array}{r} 39.5 \quad 52.3 \quad 12.8 \\ \hline 4.6 \\ 12.92 \end{array}$$

$$\begin{array}{rcl} \log 12.92 & = & 1.11126 \\ \text{" } 7.5 & = & 0.87506 \\ \text{" } \cos 2 & = & 9.76942 \\ 57.0 & = & 1.75574 \end{array}$$

+ 0.570

June 19, 1890
Dm. + 53 2876 and 2874

	<u>2876</u>		<u>2874</u>				
N 14	27. 22.8		27 42.0				
	<u>28 37.0</u>		<u>28 3.1</u>				
<u>2876</u>	55 59.8		55 45.1	0	14.7	0	7.35
	29 2.0		29 21.4				
	<u>30 16.5</u>		<u>29 42.3</u>				
<u>2874</u>	59 18.5		59 3.7	0	14.8	0	<u>7.40</u>
							0.75
						+	0 7.38

$$\begin{array}{r} \text{Dm} + 53 \quad 2874 = 20 \quad 8.5 \\ \quad \quad \quad \underline{2876} \quad \quad \quad 14.4 \\ \quad \quad \quad \quad \quad \quad 5.9 \end{array}$$

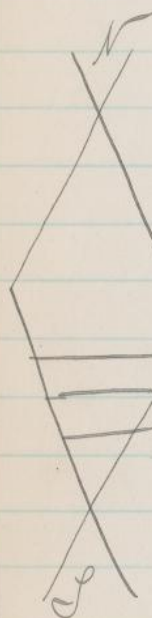
$$\begin{array}{r} 2874 = 4.8 \\ 2876 = \underline{12.0} \\ \quad \quad 16.8 \\ + 53^\circ \quad 8.4 \end{array}$$

$$74.2 \quad 21.1 \quad 95.3$$

$$74.5 \quad 20.9 \quad \frac{95.4}{94.35}$$

$$\begin{aligned} \log 94.35 &= 1.97474 \\ \text{" } 7.5 &= 0.87506 \\ \text{" } \cos L &= \frac{9.77805}{424.5} \\ 424.5 &= 2.62785 \\ \frac{886.0}{461.5} &= +7 \quad 41.5 \end{aligned}$$

June 20 1890

Dr. + 50° 3770 with 3788 & 3789

	<u>3770</u>	<u>3788</u>	<u>3789</u>				
14	23 58.9	26 20.0	26 52.7				
	<u>24 30.7</u>	<u>27 30.2</u>	<u>27 21.5</u>				
	48 29.6	53 50.2	54 14.2	5	20.6	5	44.6 2 40.30

	28 18.7	30 39.4	31 12.4				
	<u>28 49.1</u>	<u>31 49.1</u>	<u>31 40.1</u>				
	57 7.8	62 28.5	62 52.5	5	20.7	5	44.7 2 40.35

3788
3770
3789

	32 30.4	34 51.0	35 24.5				
	<u>33 0.0</u>	<u>35 59.8</u>	<u>35 51.2</u>				
	65 30.4	70 50.8	71 15.7	5	20.4	5	45.3 2 40.20

	36 39.3	39 0.0	39 33.1				
	<u>37 7.5</u>	<u>40 7.5</u>	<u>39 58.6</u>				
	73 46.8	79 7.5	79 31.7	5	20.7	5	44.9 2 40.35

	40 45.0	43 5.5	43 38.6				
	<u>41 11.5</u>	<u>44 11.6</u>	<u>44 2.5</u>				
	81 56.5	87 17.1	87 41.1	5	20.6	5	44.6 2 40.30

1.50

2 40.30

3770	22 31	27.0	48.2
3788	34	5.1	30.8
3789		17.6	47.8

$\Delta 3770$ $\Delta 3788$ $\Delta 3789$

2 52.30 31.8 70.2 28.8 38.4 3.0

2 52.35 30.4 69.7 27.7 39.3 3.7

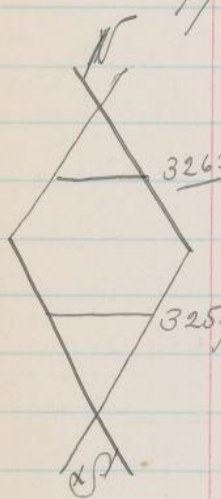
252.65 29.6 68.8 26.7 39.2 2.9

252.45 28.2 67.5 25.5 39.3 2.7

$$\begin{array}{r} 252.30 \\ \hline 2.05 \\ - 252.41 \end{array}$$
$$\begin{aligned} \log 39.16 &= 1.59284 \\ \text{" } 7.5 &= 0.87506 \\ \text{" } \cos 2 &= 9.80058 \\ 185.6 &= 2.26848 \\ - 3 \quad 5.6 \end{aligned}$$
$$\begin{aligned} \log 2.98 &= 0.47422 \\ \text{" } 7.5 &= 0.87506 \\ \text{" } \cos L &= \underline{9.80070} \\ 141.2 &= 1.14998 \\ + 0.14.1 \end{aligned}$$

June 20/1890

Dm. +52 3263 and 3257

	<u>3263</u>		<u>3257</u>					
	17	15	19.0	13	22.1			
		15	42.0	13	48.4			
		31	1.0	27	10.5	3	50.5	1 55.25
		18	15.0	16	17.2			
		18	36.0	16	44.4			
	3257	36	51.0	33	1.6	3	49.4	1 54.70
		21	6.0	19	9.0			
		21	28.7	19	35.5			
		42	34.7	38	44.5	3	50.2	1 55.10

24	21.6	22	24.0				
24	43.2	22	51.0				
49	4.8	45	15.0	3	49.8	1	54.90

27	39.0	25	42.2				
28	2.2	26	8.0				
55	41.2	51	50.2	3	51.0	1	55.50

0.45
+ 1 55.09

23.0 26.3 49.3

21.0 27.2 48.2

32 45.0
34 38.9

1 53.9

21.7 26.5 48.2

+ 52 3263 = 18.3
3257 = 6.7
+ 52 12.5
11.6

21.6 27.0 48.6

23.2 25.8 49.0

33.3
48.66

Log 48.66 = 1.68717
" 9.5 = 0.87506
" cos d = 9.78731
223.6 = 2.34954

886.0
662.4 = + 11 2.4

June 25/1890
DM + 52 ³2340 and 3331

<u>³2340</u>		<u>3331</u>					
15	18	9.5	16	2.4			
	19	25.7	16	57.0			
	37	35.2	32	59.4	4	35.8	2 17.90

<u>3340</u>							
22	17.0	20	10.1				
23	33.6	21	3.9				
45	50.6	41	14.0	4	36.6	2	18.30

26	18.0	24	12.8				
27	36.0	25	5.6				
53	54.0	49	18.4	4	35.6	2	17.80

30	31.5	28	27.0				
31	50.1	29	19.0				
62	21.6	57	46.0	4	35.6	2	17.80

34	39.8	32	~~25.8~~ ^{35.2}				
35	59.1	33	27.0				
70	38.9	65	52.8	4	36.1	2	18.05
						4.85	
						+ 2	17.97

76.2 54.6 130.8

76.6 53.8 130.4

3340 = 53 7.2

3331 = 50 50.0

78.0 52.8 130.8

+52 3340 = 15.6

3331 = 14.8

13.2

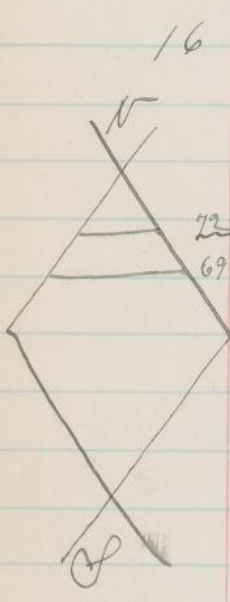
78.6 52.0 130.6

79.3 51.2 130.5
 3.1
 130.62

$\log 130.62 = 2.11601$
 " 7.5 = 0.87506
 " $\cos 2 = 9.78723$

 $\frac{600.2}{8860} = 2.77830$

June 27 1890
Dir. +54° 2972 and 2969



	<u>2972</u>	<u>2969</u>				
16	32 38.7	31 26.1				
	33 11.2	32 15.6				
	<u>65 49.9</u>	<u>63 41.7</u>	2	8.2	1	4.10
72	34 53.6	33 41.2				
69	35 25.2	34 29.8				
	<u>70 18.8</u>	<u>68 11.0</u>	2	7.8	1	3.90
	37 12.0	35 59.5				
	37 44.2	36 48.7				
	<u>74 56.2</u>	<u>72 48.2</u>	2	8.0	1	4.00
	38 33.8	38 21.4				
	40 6.0	39 10.0				
	<u>79 39.8</u>	<u>77 31.4</u>	2	8.4	1	4.20
	41 45.0	40 32.5				
	42 17.0	41 21.5				
	<u>84 2.0</u>	<u>81 54.0</u>	2	8.0	1	4.00
						0.20
						+1 4.04

32.5 49.5 17.0

31.6 48.6 17.0

18 17.6
19 19.6

T 2.0^s

32.2 49.2 17.0

+54° 2972 = 18.7
2969 = 17.9

+54 18.4

32.2 48.6 16.4

32.0 49.0 17.0
74.4
14.88

$\log 14.88 = 1.17260$
" 7.5 = 0.87506
" $\cos 3 = 9.76607$
65.1 = 1.81373
+ 1' 5.1"

June 27 1890
Dr. + 49 4126 and 4123

N	<u>4123⁶</u>		<u>4123³</u>			
	17	42 12.5	41	29.0		
		42 28.8	42	18.5		
		84 41.3	83	47.5	0 53.8	0 26.90
4126		43 41.0	42	59.1		
		43 59.5	43	47.2		
		87 40.5	86	46.3	0 54.2	0 27.10
4123		45 4.0	44	22.0		
		45 21.7	45	10.2		
		90 25.7	89	32.2	0 53.5	0 26.75
S		46 28.5	45	46.0		
		46 46.0	46	34.0		
		93 14.5	92	20.0	0 54.5	0 27.25
		48 12	47	19.5		
		48 19.0	48	7.5		
		96 20.2	95	27.0	0 53.2	0 26.60
					4.60	
					+ 0	26.92

16.3 49.5 65.8

$$+49 \ 4123 = 41.4$$

$$4126 = 50.9$$

$$\underline{92.3}$$

$$46.2$$

18.5 48.1 66.6

$$20 \ 122$$

$$\underline{37.3}$$

$$251$$

17.7 48.2 65.9

17.5 48.0 65.5

17.8 48.0 65.8

$$4.6$$

$$65.92$$

$$\text{Log } 65.92 = 1.81902$$

$$\text{'' } 7.5 = 0.87506$$

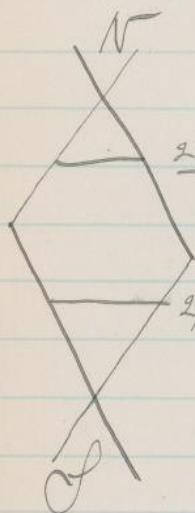
$$\text{'' } \cos I = \underline{9.81014}$$

$$319.3 = 2.50422$$

$$\underline{886.0}$$

$$566.7 = +9 \ 26.7$$

June 28/1890
Dr. + 54 2985 and 2979



<u>2985</u>		<u>2979</u>			
15	16 0.5	15	11.0		
	<u>17 18.6</u>		<u>16 18.5</u>		
	33 19.1	31	29.5	1	49.6
				0	54.80
	18 56.6	17	54.0		
	<u>20 2.0</u>		<u>19 14.6</u>		
	38 58.6	37	8.6	1	50.0
				0	55.00
	22 53.5	21	53.2		
	<u>24 1.2</u>		<u>23 12.0</u>		
	46 54.7	45	5.2	1	49.5
				0	54.75
	25 27.5	24	26.2		
	<u>26 34.8</u>		<u>25 45.8</u>		
	52 2.3	50	12.0	1	50.3
				0	55.15
	29 58.8	28	58.9		
	<u>31 6.8</u>		<u>30 17.1</u>		
	61 5.6	59	16.1	1	49.5
				0	54.75
					4.45
				+	0 54.89

78.1 77.5 155.6

75.4 ^{82.}
~~72.6~~ 158.0

20 44.9
21 39.4

0 54.5

77.7 78.8 156.5

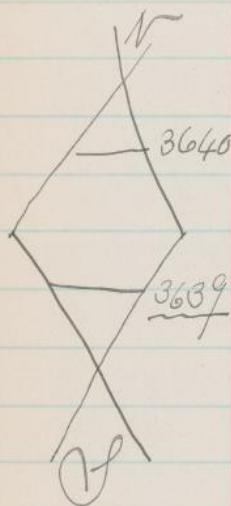
2979 24.3
2985 30.4
6.1

77.3 79.6 156.9

78.0
8.0 78.3 156.3
3
4.3
156.65

$\log 156.65 = 2.19493$
" 7.5 = 0.87506
" $\cos L = 9.76448$
683.1 = 2.83447
886.0
202.9 = +3 22.9

June 30 1890

Dir. +51° 3639 and 3640

<u>3639</u>		<u>3640</u>					
15	34 3.1	34	51.2				
	35 6.2	35	18.17				
	<u>69 9.3</u>	<u>70 9.9</u>	1	0.6	0	30.30	
	35 45.3	36 33.4					
	36 48.8	37 2.0					
	<u>72 34.1</u>	<u>73 35.4</u>	1	1.3	0	30.65	
	37 28.0	38 15.5					
	38 31.2	38 44.0					
	<u>75 59.2</u>	<u>76 59.5</u>	1	0.3	0	30.15	
	39 19.8	40 6.0					
	40 21.3	40 36.2					
	<u>79 41.1</u>	<u>80 42.2</u>	1	1.1	0	30.55	
	41 1.0	41 46.8					
	42 2.5	42 16.9					
	<u>83 3.5</u>	<u>84 3.7</u>	1	0.2	0	30.10	
						1.75	
						- 0 30.35	

63.1 27.5 90.6

63.5 28.6 92.1

63.2 28.5 91.7

26 5.1
34.7
0 29.6

61.5 30.2 91.7

+51° 3639 = 14.7
3640 = 22.2
+51° 18.4

61.5 30.1 91.6
2.7
91.54

$\log 91.54 = 1.96161$
 " 7.5 = 0.87506
 " $\cos 2$ = 9.79600
 429.2 = 2.63267
 886.0
 456.8 = -7 36.8

July 1 1890

Sta. 449 4145 and 4141

41454141

16

23 44.6

23 21.4

24 26.2

24 15.0

48 10.847 36.4

0 34.4

0 17.20

4141

25 14.5

24 51.2

25 56.0

25 45.0

51 10.550 36.2

0 34.3

0 17.15

4145

26 43.1

26 19.4

27 24.3

27 13.2

54 7.453 32.6

0 34.8

0 17.40

28 26.0

28 2.3

29 6.9

28 56.0

57 32.956 58.3

0 34.6

0 17.30

29 57.4

29 33.2

30 38.0

30 27.5

60 35.460 0.7

0 34.7

0 17.35

1.40

+ 0 17.28

41.6 53.6 95.2

41.5 53.8 95.3

41.2 53.8 95.0

$$\begin{aligned} +49^{\circ}4141 &= 59.1 \\ 49^{\circ}4145 &= 52.3 \\ \hline &114 \\ &55.7 \end{aligned}$$

40.9 53.7 94.6

40.6 54.3 94.9
0.0
95.00

$$\begin{aligned} \log 95.00 &= 1.97772 \\ \text{on } 7.5 &= 0.87506 \\ 11 \cos 2 &= 9.80862 \\ 458.6 &= 2.66140 \\ 886.0 \\ \hline 4.217.4 &= -7 \quad 7.4 \end{aligned}$$

July 1 1890

Dr. + 52 3480 and 3482

	<u>3480</u>		<u>3482</u>				
16	43	49.1	44	3.5			
$\sqrt{\quad}$	44	27.4	45	6.1			
	88	16.5	89	9.6	0	53.1	0 26.55

	<u>3480</u>		<u>3482</u>				
	45	33.0	45	47.6			
	46	11.6	46	50.1			
	91	44.6	92	37.7	0	53.1	0 26.55

	47	14.1	47	28.5			
	47	52.9	48	31.5			
	95	7.0	96	0.0	0	53.0	0 26.50

	49	5.4	49	19.6			
	49	48.4	50	27.5			
	98	53.8	99	47.1	0	53.3	0 26.55

	50	57.7	51	12.5			
	51	41.0	52	19.8			
	102	38.7	103	32.3	0	53.6	0 26.80
							3.05
							- 0 26.61

383 62.6 24.3

38.6 62.5 23.9

38.8 63.0 24.2

27 23.0
49.7
—
26.7

43.0 67.9 24.9

+52 3480 = 6.5
3482 = 4.2
+52 5.4

43.3 67.3 24.0
1.3
24.26

$\log 24.26 = 1.38489$
" 7.5 = 0.87506
" $\cos 2 = 9.78847$
111.8 = 2.04842
+ 1 " 51.8

July 1, 1890
Dist. +50 4091 and 4089

	<u>4091</u>	<u>4089</u>			
17	8 56.8	8 46.4			
	9 20.0	9 27.8			
<u>18</u>	<u>16.8</u>	<u>18 14.2</u>	0	2.6	0 1.30

	10 3.5	9 53.4			
	10 28.8	10 36.5			
<u>20</u>	<u>32.3</u>	<u>20 29.9</u>	0	2.4	0 1.20

	11 9.8	10 59.5			
	11 34.5	11 42.5			
<u>22</u>	<u>44.3</u>	<u>22 42.0</u>	0	2.3	0 1.15

	12 15.1	12 5.0			
	12 40.0	12 48.4			
<u>24</u>	<u>55.1</u>	<u>24 53.4</u>	0	1.17	0 0.85

	13 23.5	13 13.5			
	13 49.0	13 56.0			
<u>27</u>	<u>12.5</u>	<u>27 9.5</u>	0	3.0	0 1.50
					1.00
					+ 0 1.20

232 41.4 18.2

25.3 43.1 17.8

24.7 43.0 18.3

4089 = 28 56.4
4091 = 28 57.8

24.9 43.4 18.5

4089 42.9
4091 = 44.5
+50° 43.7

25.5 42.5 17.0
 4.8
 17.96

$\log 17.96 = 1.25431$
" 7.5 = 0.87506
" $\cos \delta = 9.80136$
85.3 = 1.93073
+1 25.3

July 5/1890

Dir. +50° 4054 and 4048

15^h

<u>4054</u>		<u>4048</u>				
47	45.5	46	43.0			
48	29.0	47	17.9			
96	14.5	94	0.9	2	13.6	1 6.80

4048

55	44.6	54	40.5			
56	25.8	55	17.0			
112	10.4	109	57.5	2	12.9	1 6.45

4054

58	3.2	56	58.7			
58	44.4	57	35.5			
116	47.6	114	34.2	2	13.4	1 6.70

60	27.4	59	22.0			
61	7.5	60	0.0			
121	34.9	119	22.0	2	12.9	1 6.45

16^h

2	39.7	1	33.9			
3	19.7	2	12.5			
5	59.4	3	46.4	2	13.0	1 6.50

2.90
+ 1 6.58

43.5 34.9 78.4

41.2 36.5 77.7

21 23.1

22 29.4

1 6.3

41.2 36.8 78.0

40 48 = 34.0

25.3

40.1 38.0 78.1

59.3
+50 29.6

40.0 38.6 78.6
 0.8
 78.16

$\log 78.16 = 1.89298$

" 7.5 = 0.87506

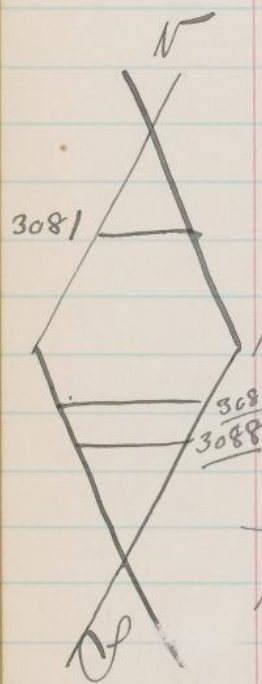
" $\cos 5 = 9.80351$

372.9 = 2.57155

886.0 "

513.1 = -8 33.1

July 8, 1890

Dir. +54° 3088, 3087 and 3081


<u>3088</u>	<u>3087</u>	<u>3081</u>	<u>88-81</u>	<u>87-81</u>
49 29.0	49 18.8	48 44.5		
50 38.2	50 31.7	49 44.6		
100 7.2	99 50.5	98 29.1	1 38.1	1 21.4 0 49.05
51 59.1	51 49.0	51 14.0		
53 7.7	53 1.5	52 14.5		
105 6.8	104 50.5	103 28.5	1 38.3	1 22.0 0 49.15
54 35.9	54 25.5	53 49.9		
55 43.7	55 37.5	54 51.0		
110 19.6	110 3.0	108 40.9	1 38.7	1 22.1 0 49.35
57 22.5	57 12.5	56 36.0		
58 30.0	58 23.8	57 37.8		
115 52.5	115 36.3	114 13.8	1 38.7	1 22.5 0 49.35
0 3.4	59 53.5	59 16.6		
1 10.4	1 4.4	0 18.9		
121 13.8	120 57.9	119 35.5	1 38.3	1 22.4 0 49.15
				1.05
				+ 0 49.21

43088 43087 43081

o 40.70 69.2 72.9 60.1 129.3 133.0

o 41.00 68.6 72.5 60.5 129.1 133.0

o 41.05 67.8 72.0 61.1 128.9 133.1

57 32.8
52 17.1
28.1

o 41.25 67.5 71.3 61.8 129.3 133.1

+54° 3081 = 34.4
3087 = 28.3
3088 = 28.1

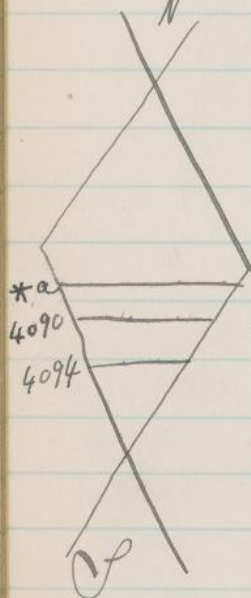
o 41.20 67.0 70.9 62.3 129.3 133.2
 0.20
+ o 41.04

 0.9 0.4
129.18 133.08

Log 129.18 = 2.11119
 " 7.5 = 0.87506
 " 0.22 = 9.76378
 562.4 = 2.75003
 886.0
 323.6 = -5' 23.6

Log 133.08 = 2.12411
 " 7.5 = 0.87506
 " 0.22 = 9.76378
 579.4 = 2.76295
 886.0
 306.6 = -5' 6.6

July 9/1890
Dir. +50° 4090, a and 4094



	<u>4090</u>		<u>a</u>		<u>4094</u>				
16	34	38.0	34	38.0	35	26.1			
	35	6.5	35	10.5	35	44.7	1	16.3	1 22.3
	69	54.5	69	48.5	71	10.8		~~0~~ 6.0	
	37	43.5	37	33.8	38	22.0			
	38	1.0	38	5.0	38	39.3			
	75	44.5	75	38.8	77	1.3	1	16.8	1 22.5
	40	45.2	40	35.2	41	23.5			
	41	1.8	41	5.8	41	39.8			
	81	47.0	81	41.0	83	3.3	1	16.3	1 22.3
	42	55.5	42	46.0	43	34.0			
	43	11.9	43	15.9	43	50.5			
	86	7.4	86	1.9	87	24.5	1	17.1	1 22.6
	44	47.0	44	37.5	45	25.0			
	45	3.0	45	7.0	45	41.2			
	89	50.0	89	44.5	91	6.2	1	16.2	1 21.7

$$+50^{\circ} 4090 = +50^{\circ} 19.8$$

*a

$$+50^{\circ} 4094 = 19.8$$

0 38.15 0 41.15 18.5 32.5 18.6 13.9

0 38.40 0 41.25 17.5 31.2 17.3 13.9

0 38.15 0 41.15 16.6 30.6 16.3 14.0 14.3

0 38.55 0 41.30 16.4 29.9 16.5 13.5 13.4

0 38.10 0 40.85 16.0 29.5 16.2 13.5 13.3
 1.35 0.70 0.0 4.9 3.8
 0 38.27 -0 40.14 17.00 16.98 13.76

+0.02

$$0.02 = 8.30103$$

$$7.5 = 0.87506$$

$$\cos 2 = 9.80504$$

$$957.5 = 8.98113$$

$$0.16$$

$$+ 0' 0.1''$$

$$13.76 = 1.13862$$

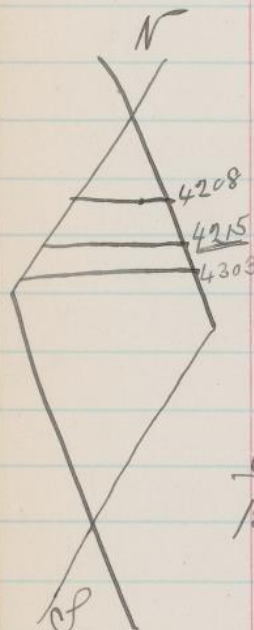
$$7.5 = 0.87506$$

$$\cos 2 = 9.80120$$

$$65.3 = 1.81488$$

$$+ 1^m 5.3$$

July 11, 1890

Dm. + 50 4215, 4208 and 49 4303

	<u>4215</u>	<u>4208</u>	<u>4303</u>	<u>4215-4208</u>	<u>4215-4303</u>
15 ^h	55 41.0	54 31.5	54 54.7		
	56 27.1	55 3.3	55 58.0		
N	112 8.1	109 34.8	110 52.7	2 33.3	1 15.4
	58 16.0	57 6.6	57 29.6		
	59 2.9	57 39.5	58 33.6		
	117 18.9	114 46.1	116 3.2	2 32.8	1 15.7
	60 49.5	59 40.0	60 2.9		
	61 36.9	60 13.3	61 49.8		
	122 26.4	119 53.3	122 26.4	2 33.0	1 15.7
			121 10.7		
	3 17.5	2 8.0	2 31.1		
	4 5.5	2 42.2	3 36.4		
	7 23.0	4 50.2	6 7.5	2 32.8	1 15.5
	5 55.7	4 46.0	5 9.4		
	6 44.1	5 21.0	6 15.0		
	12 39.8	10 7.0	11 24.4	2 32.8	1 15.4

14.7
2 32.94
+1 16.47 + 0 31.35

4215	0.3	53 28.5
4208	1.6	52 11.4
4303	49 58.7	52 50.2

$\Delta 4215$ $\Delta 4208$ $\Delta 4303$ $4215 - 4208$ $15 - 03$

46.1 31.8 63.3 14.3 17.2

46.9 32.9 64.0 14.0 17.1

47.4 33.3 64.9 14.1 17.5

48.0 34.2 65.3 13.8 17.3

48.4 35.0 65.6 13.4 17.2
 4.6 1.3
 13.92 17.26

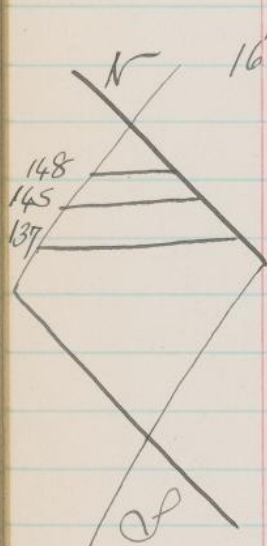
$\log 13.92 = 1.14364$
 $\log 7.5 = 0.87506$
 $\log \cos \angle = 9.80792$
 $67.1 = 1.82662$

$\log 17.26 = 1.23704$
 $\log 7.5 = 0.87506$
 $\log \cos \angle = 9.80822$
 $83.2 = 1.92032$

- 1 7.1

+ 1 23.2

July 19 1890
Dm. +54° 137, and 145 and 148



137	145	148	137-45	137-48 ⁵
46 41.0	49 26.0	49 48.1		<u>2</u>
47 31.7	50 10.5	50 30.0		
94 12.7	99 36.5	100 18.1	5 23.8	2 41.90

51 4.8	53 50.0	54 12.0		
51 56.5	54 35.7	54 55.0	5	
1023 1.3	108 25.7	109 7.0	24.4	2 42.20

55 37.8	58 22.8	58 44.8		
56 30.0	59 9.5	59 28.5	5	
112 7.8	117 32.3	118 13.3	24.5	2 42.25

0 10.5	2 56.0	3 17.5		
1 4.9	3 43.6	4 3.0		
1 15.4	6 39.6	7 20.5	5 24.2	2 42.10

4 35.2	7 20.5	7 42.0		
5 29.6	8 8.8	8 28.3		
10 4.8	15 29.3	16 10.3	4 24.5	2 42.25
				0.70
				- 2 42.74

137 = 30.0
 145 = 30.5
 148 = 30.8

$$\frac{137-48}{2} \quad \Delta 137 \quad \Delta 145 \quad \Delta 148$$

$$6 \quad 5.4 \quad 3 \quad 2.70 \quad 50.7 \quad 44.5 \quad 41.9 \quad 6.2 \quad 8.8$$

$$6 \quad 5.7 \quad 3 \quad 2.85 \quad 51.7 \quad 45.7 \quad 43.0 \quad 6.0 \quad 8.7$$

$$6 \quad 5.5 \quad 3 \quad 2.75 \quad 52.2 \quad 46.7 \quad 43.7 \quad 5.5 \quad 8.5$$

$$6 \quad 5.1 \quad 3 \quad 2.55 \quad 54.4 \quad 47.6 \quad 45.5 \quad 6.8 \quad 8.9$$

$$6 \quad 5.5 \quad \frac{3 \quad 2.75}{3.60} \quad 54.4 \quad 48.3 \quad 46.3 \quad \frac{6.1}{0.6} \quad \frac{8.1}{3.0}$$

$$-3 \quad 2.72 \quad 6.12 \quad 8.60$$

$$\log 6.12 = 0.78675$$

$$\log 7.5 = 0.87506$$

$$\log \cos 2 = 9.76395$$

$$-0^{\circ} 26.65' = 1.4218$$

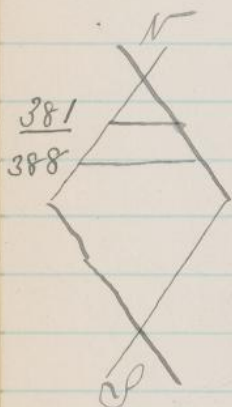
$$\log 8.60 = 0.93450$$

$$\log 7.5 = 0.87506$$

$$\log \cos 2 = 9.76378$$

$$-0^{\circ} 37.4' = 1.57834$$

July 23 / 1890
Dm. +50 381 and 388



	<u>381</u>		<u>388</u>			
18	40	45.5	41	51.5		
	41	11.5	43	1.5		
	81	57.0	84	53.0	2	56.0
					1	28.00
	43	40.5	44	46.5		
	44	5.0	45	54.5		
	87	45.5	90	41.0	2	55.5
					1	27.75
	46	40.6	47	47.0		
	47	5.9	48	55.4		
	93	46.5	96	42.4	2	55.9
					1	27.95
	49	42.0	50	48.0		
	50	7.8	51	57.2		
	99	49.8	102	45.2	2	55.4
					1	27.70
	52	36.5	53	42.5		
	53	2.8	54	51.8		
	105	39.3	108	34.3	2	55.0
					1	27.50

3.90
 - 1 27.78

26.0 70.0 44.0

24.5 68.0 43.5

$$\begin{array}{r} 381 = 43 \ 36.1 \\ 388 = 45 \ 3.7 \\ \hline 1 \ 27.4 \end{array}$$

25.3 68.4 43.1

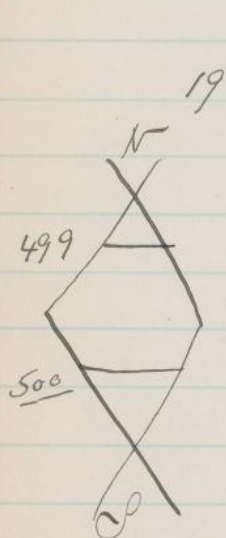
$$\begin{array}{r} 381 = 45.5 \\ 388 = 41.7 \\ \hline 7.2 \\ 150^\circ \ 43.6 \end{array}$$

25.8 69.2 43.4

26.3 69.3 $\frac{43.0}{2.0}$
43.40

$$\begin{array}{l} \log 43.40 = 1.63749 \\ \text{" } 7.5 = 0.87506 \\ \text{" } \cos 2 = 9.80143 \\ 206.1 = 2.31398 \\ + 3' \ 26.1 \end{array}$$

July 23, 1890
Dr. + 50 500 and 499



<u>500</u>		<u>499</u>					
19	7 7.0	6	54.5				
	8 10.1	7	46.5				
	<u>15 17.1</u>	<u>14 41.0</u>	0 36.1	0	18.05		

	9 6.0	8	54.1				
	10 9.1	9	46.0				
	<u>19 15.1</u>	<u>18 40.1</u>	0 35.0	0	17.50		

	10 52.5	10	40.5				
	11 55.5	11	32.1				
	<u>22 48.0</u>	<u>22 42.6</u>	0 35.4	0	17.70		

	12 40.0	12	27.7				
	13 42.4	13	19.8				
	<u>26 22.4</u>	<u>25 47.5</u>	0 34.9	0	17.45		

	14 38.0	14	25.0				
	15 40.5	15	17.6				
	<u>30 18.5</u>	<u>2.9 42.6</u>	0 35.9	0	17.95		
					2.95		
					+ 0 17.59		

$$63.1 \quad 52.0 \quad 115.1$$

$$63.1 \quad 51.9 \quad 115.0$$

$$63.0 \quad 51.6 \quad 114.6$$

$$\begin{array}{r} +50^\circ 500 = 7 \ 12.6 \\ +50 \ 499 = 6 \ 55.2 \\ \hline 17.4 \end{array}$$

$$62.4 \quad 52.1 \quad 114.5$$

$$\begin{array}{r} 500 = 51.2 \\ 499 = 57.0 \\ \hline 8.2 \\ +50 \ 54.1 \end{array}$$

$$\begin{array}{r} 62.5 \quad 52.6 \quad 115.1 \\ \hline 4.3 \\ 114.86 \end{array}$$

$$\begin{array}{l} \log 114.86 = 2.06017 \\ \text{" } 7.5 = 0.87506 \\ \text{" } \cos \delta = 9.79981 \\ 543.3 = 2.73504 \\ 886.0 \\ \hline 5 \ 42.7 \end{array}$$

