

KG
11366
v. 679

*Equator Point
Corrections,
From Apr 26 1871 to Dec 31 1873*

Charles W. Sever, University Bookstore, Cambridge.

Equator Point-Correction?

General Catalogue
B71-2

R.A. Nov. 1871. Apr. 26				R.A. May 11				R.A. May 14				R.A. May 17				R.A. May 21			
1871. Apr. 26				1871. May 11				1871. May 14				1871. May 17				1871. May 21			
6 10	+ 78	19	32.93 + 44.29	20	10.5 - 8.67 - 75	- 16.712	28 1	+ 70	29	34.00	+ 31.80	30	9.8	- 16.0 + 7	13				
13 21	+ 0	3	36.96 - 33.97	2	35.2 + 10 - 78 - 68	- 15.712	48 24	+ 56	39	45.31	+ 15.13	39	44.8	- 15.6 + 3	13				
35 11	- 0	43	30.51 - 56.01	- 44	36.4 + 10 - 9.9 - 8.9	- 15.712	55 49	+ 11	39	58.59	- 34.48	39	8.6	- 15.5 + 5	14				
					- 8.13 - 7.93	- 15.713	3 19	- 4	49	46.32	- 2.75	51	5.3	- 16.2 + 1	14				
						- 15.713	5 55	+ 28	32	27.97	- 14.54	31	59.3	- 14.1 + 8	14				
						- 15.713	10	+ 91	22	4.49	+ 7.33	22	53.9	- 17.9 + 1	14				
						- 15.712	50	+ 39	01	18.91	- 3.30	1	0.0	- 15.4 + 0	14				
															14				
6 10	+ 78	19	34.06 + 43.15	20	11.2 - 8 - 6.0 - 68	- 15.717									14				
3 21	+ 0	3	54.62 - 52.44	2	35.4 + 10 - 6.8 - 5.8										14				
					- 6.40 - 6.30										14				
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R.A.					S(c)					+R ₂ +R ₃ +R ₄					S(c)					+R ₂ +R ₃ +R ₄					S(c)					+R ₂ +R ₃ +R ₄																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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13	48	29	+19	2	22.43	-	24.75	2	47.2	+6.49.5	+50.1	+47.2	14	20	51	+52	26	6.82	+	10.28	26	64.6	+	3.47.5	13	55	08	+2	10	8.64	-	48.07	10	9.7	+9.49.1	+50.0	+49.5	14	26	18	+30	55	50.82	-	11.62	56	28.4	+	3.49.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
14	0	58	+64	58	34.08	+	25.43	59	48.8	-6.49.3	+48.7	+49.9	14	35	00	+14	16	42.90	-	30.11	17	2.0	+	7.49.2	14	4	34	+25	41	46.36	-	17.12	42	19.6	+4.50.4	+50.8	+49.9	14	48	10	+59	48	13.52	+	18.70	49	22.5	-	7.50.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
14	9	50	+19	50	54.74	-	23.72	51	22.1	+5.51.1	+51.6	+47.0	14	51	07	+79	39	47.90	+	35.94	41	11.7	-	7.47.9	14	20	51	+52	26	3.40	+	10.42	26	63.6	-2.49.8	+49.6	+46.7	14	57	10	+40	53	25.58	-	0.65	54	11.6	+	7.46.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
14	26	18	+30	55	36.07	-	11.33	56	27.6	+3.49.9	+49.3	+50.6	14	59	59	+27	26	38.31	-	14.99	27	13.5	+	7.50.2	14	26	54	+38	51	49.24	-	3.65	52	33.7	+1.48.7	+48.2	+48.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
14	34	40	+16	58	2.78	-	26.42	58	24.6	+6.48.2	+48.8	+48.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

RA.

$S'(0)$ $+R_2$
 $+R_m + R + R$
 1871 Aug. 6
 " " "

$+R_2$
 $+R_m + R + R_b$
 Aug. 6
 "

 $\delta(r)$

T

P4

53

$+R^2$
 $+R_m + R_{23} + R_6$
 Aug. 17

С.

T

"	x	m	s	°	'	"
48.9	16	22	18	+ 61	47	34.20
49.6	16	24	24	+ 2	16	9.13
46.0	16	28	20	+ 69	01	49.91
47.1	16	38	34	+ 39	09	38.97
47.6	16	45	15	+ 15	11	23.97
49.7	16	51	37	+ 9	34	33.78
46.4	16	41	04	+ 112	49	26.51
	16	59	40	+ 82	13	23.88
47.90	17	03	35	+ 40	40	38.15
	17	08	50	+ 14	32	14.34
	17	10	39	+ 36	56	53.55
	17	29	02	+ 12	39	15.38
	17	37	47	+ 68	48	2.11

	"	"	"	"
+	19.65	48	40.1	- + 546.3
+	46.95	16	9.5	+ + 947.3
-	27.05	3	5.5	+ 748.5
-	2.70	10	21.0	+ + 144.7
-	28.73	11	40.6	+ + 745.4
-	35.30	34	45.2	+ + 847.0
+ 2	93.19	58	0.7	+ 147.7
+	47.08	14	58.7	+ + 947.7
-	1.34	41	22.9	+ + 046.1
-	29.74	32	29.4	+ + 144.8
-	5.35	57	34.4	+ + 146.2
-	31.35	39	28.9	+ + 744.6
+	29.11	49	16.4	+ + 645.2

1871, Aug. 17

L	m	S		'	"		'	"		"
14	10	39	+ 36	56	54.32	-	5.39	57	35.7	++ .146.8
17	27	36	+ 52	23	12.11	+	10.66	24	7.3	- + 344.5
										+ 45.65

Aug. 18

46.3
46.7
47.0
47.4
47.1

$$+ 46154636$$

+ 44.81	27	36	+ 52	23	11.73	+	10.61	24	7.4	-	3.45	1
+ 46.37	29	02	+ 12	39	16.07	-	31.68	39	30.0	+	7.45	6
+ 43.71	37	47	+ 68	48	5.27	+	28.68	49	18.2	-	6.44	3
+ 44.93										+	45.00	

Aug. 10

46.5	16	16	16	+19	27	15.47
46.2	16	24	24	+2	16	9.53
45.1	16	28	20	+69	01	53.32
46.5	16	36	31	+31	49	50.55
46.3	16	38	34	+39	09	39.53
	16	43	04	+57	00	2.85
47.05	16	46	15	+15	11	25.70
	16	51	37	+9	34	35.58
	16	55	26	+31	06	41.52
	16	59	40	+82	13	25.79
44.5	17	08	50	+14	32	15.14
44.1	17	27	36	+52	23	11.22

+	24.01	27	36.4	++	6.44.9	+455
-	47.24	16	9.7	++	9.47.5	+484
+	28.58	3	3.8	++	6.43.9	+483
-	9.81	50	28.9	++	3.48.2	+435
-	2.60	10	21.4	++	1.44.5	+446
+	15.17	18	62.5	++	4.44.5	+441
-	28.85	11	40.8	++	7.44.0	+447
+	35.71	34	45.4	++	6.5.5	+463
-	11.18	7	16.0	++	3.45.7	+460
+	45.98	14	59.2	++	9.47.4	+465
-	29.87	32	29.7	++	7.44.4	+451
+	10.86	24	6.3	++	2.44.2	+440

Aug. 19

+ 48.1 17 29 02 + 12 39 15.14 - 32.41 39 30.1 ++ 747.4

+ 48.10 + 47.40

45.1						
44.5						
44.2						
45.6						
46.3						
46.4						
46.7						
46.2						
45.6	16	38	24	+39	09	41.28
	16	43	04	+57	00	2.61
45.38	16	46	15	+15	11	25.89
	16	51	37	+9	34	36.82
	16	55	26	+31	06	40.82
	16	59	40	+82	13	23.87
	17	03	35	+40	40	41.00
	17	08	50	+14	32	14.79
	17	27	36	+52	23	12.93

Aug. 11

Aug 22

47.5					
46.5					
46.8					
45.9					
46.2					
47.1					
47.9					
46.0					
46.2					
	1/6	4/1	04		
46.8	1/6	43	04	+ 57	00 2.66
	1/6	35	26	+ 31	06 43.11
	17	10	39	+ 36	56 55.97

Aug. 13

Aug. 28

[illegible]

48.2
- 46.2
46.4
- 45.1
44.9
- 45.3
46.02

John C. Wolbeck

+	15.25	00	62.7	-	+	44.8	+44.8
-	11.30	7	16.2	+	+	34.4	+44.7
-	5.45	37	35.3	+	+	14.8	+44.9
					+	44.6	+44.67

RA

[illegible]

Sept. 1

[illegible]

Sept. 7

[illegible]

Sept. 2

[illegible]

Sept. 3

[illegible]

Sept. 10

-	21.30	42	59.0	+5	46.6
+	17.45	43	54.5	-4	48.8
-	23.09	35	41.4	+5	48.1
-	8.69	13	7.9	+2	48.1

+ 47.90

18
19
19
19
19
19

1871 phae. proj.

R.A.						S(c)						I						R.A.						S(c)						I					
1871						Sept. 18						1871						Sept. 25						1871						Sept. 25					
h	m	s	°	'	"	h	m	s	°	'	"	h	m	s	°	'	"	h	m	s	°	'	"	h	m	s	°	'	"	h	m	s	°	'	"
48.0	18	40	07	+20	24	23.92	-	24.48	25	41.7	++	54.2.3	+428	+19.8	18	59	28	+13	39	50.23	-	32.03	40	37.3	++	1.7	19.1								
47.2	18	51	18	+43	45	12.91	+	0.95	46	56.5	-	1.04	2.6	+426	+18.4	19	12	31	+67	24	39.73	+	26.15	26	24.9	-	1.6	19.0							
47.2	18	53	38	+14	52	43.57	-	31.67	53	54.1	++	74.2.2	+429	+17.2	19	14	07	+53	06	44.39	+	10.48	8	12.4	-	1.3	17.5								
48.0														+16.9	19	18	59	+2	51	16.61	-	47.77	51	44.8	++	1.9	16.0								
47.5														+19.3	19	25	31	+27	40	38.85	-	15.54	41	42.2	++	1.4	18.9								
47.5														+19.6	19	40	11	+10	17	33.36	-	36.94	18	15.2	++	1.8	18.8								
47.4														+20.7	19	41	42	+18	12	25.21	-	26.10	13	19.2	++	1.6	20.1								
46.7														+18.5	19	48	46	+68	54	53.61	+	29.44	56	42.2	++	1.7	19.2								
46.6														+20.2	20	04	42	-1	13	21.41	-	35.61	11	37.8	++	1.0	19.2								
47.32														+21.0	20	13	25	+77	17	36.30	+	40.33	19	38.4	-	1.8	21.8								
														+19.16																					

Sept. 21															Sept. 27														
18	40	07	+20	25	11.51	-	24.44	25	41.8	+	5	44.1	44.6	+16.1	19	48	59	+6	4	50.60	-	42.97	5	22.9	+	1.8	15.3		
18	51	18	+43	46	0.87	+	1.11	46	56.7	-	0	54.7	54.7	+18.5	20	04	42	-1	12	19.65	-	55.65	11	57.8	+	1.0	17.5		
18	53	38	+14	53	29.71	-	31.78	53	54.2	+	7	56.3	57.0	+15.6	20	13	25	+77	17	43.06	+	39.26	19	38.7	-	1.8	16.4		
18	59	28	+13	40	16.43	-	33.05	40	37.2	+	7	53.8	54.5	+16.7	20	17	41	+39	49	18.12	-	3.04	51	1.7	+	1.1	16.6		
19	11	46	+11	21	46.64	-	36.06	22	4.7	+	7	54.1	54.8	+17.9	20	41	01	+33	28	29.30	-	9.76	29	37.2	+	1.2	17.7		
														+21.8	21	07	29	+29	41	7.09	-	13.39	42	15.2	+	1.3	21.5		
														+16.0	21	09	41	+37	28	53.39	-	5.55	30	3.7	+	1.1	15.9		
														+16.4	21	24	46	-6	8	12.85	-	65.59	8	3.1	+	1.1	15.3		
														+17.0	21	37	53	+9	16	42.49	-	38.21	17	20.5	+	1.8	16.2		
														+16.78													+1 16.36		

48.3	Sept. 23																								Sept. 28											
48.2	18	59	28	+13	39	49.32	-	31.84	40	37.2	++	719.7	+20.4	+19.1	19	25	31	+27	40	39.11	-	15.56	41	42.3	++	1.4	18.7									
45.7	19	11	46	+11	21	22.35	-	34.68	22	4.7	++	717.0	+17.7	+20.2	19	40	11	+10	17	34.99	-	37.14	18	15.3	++	1.8	19.4									
	19	14	07	+53	06	44.01	+	10.71	8	12.3	-	1.317.6	+17.3	+21.6	19	41	42	+18	12	26.08	-	26.22	13	19.3	++	1.6	21.0									
	19	18	59	+2	51	15.43	-	47.42	51	44.8	++	716.8	+17.7	+17.1	20	49	05	+27	33	32.84	-	15.97	34	23.6	++	1.4	16.7									
	19	25	31	+27	40	38.86	-	15.40	41	42.1	++	718.6	+19.0	+18.6	20	52	25	+40	39	21.36	-	2.31	40	37.6	++	1.0	18.6									
	20	52	25	+40	39	16.55	-	2.25	40	36.7	++	722.4	+17.7	+19.32													+1 18.88									
	21	01	06	+36	06	5.47	-	4.62	7	19.9	++	721.1	+19.3																							
	21	07	29	+29	41	10.16	-	13.30	42	14.7	++	717.8	+18.1																							
	21	09	41	+37	28	50.89	-	5.50	30	3.0	++	717.6	+17.7																							
	21	15	36	+62	01	3.89	+	20.12	2	41.2	-	717.2	+16.7																							
	21	27	07	+69	58	11.45	+	29.24	59	59.1	-	718.4	+17.7	+62.7	20	27	06	+10	51	48.09	-	36.85	52	13.0	++	8.6	1.7									
	21	37	53	+9	16	39.99	-	37.54	17	20.3	++	717.9	+18.7	+64.5	20	37	06	+44	48	27.94	+	1.66	49	34.3	-	1.6	64.6									

48.0
48.1
48.1

Sept. 24

47.90

18	45	12	+33	11	58.46	-	9.24	13	8.7	++	219.5	+19.7															
19	12	31	+67	24	40.68	+	25.89	26	24.8	-	1.618.2	+17.6	+62.61														+62.47
19	18	39	+2	51	14.55	-	46.60	51	44.8	+	1.916.8	+17.7															
19	25	31	+27	40	38.11	-	15.14	41	42.1	+	1.420.0	+20.4															
19	40	11	+10	17	32.47	-	35.42	18	15.2	+	1.818.2	+19.0															
19	41	42	+18	12	23.72	-	25.49	13	19.1	+	1.620.9	+21.5	+60.3	21	15	36	+62	01	22.56	+	20.00	2	43.4	-	5	60.8	
19	48	46	+69	54	56.45	+	28.76	56	42.0	-	1.716.8	+16.1	+58.6	21	18	06	+98	04	20.29	+1	23.44	6	43.5	-	12	59.8	
													+61.7	21	27	07	+69	58	31.26	+	28.30	0	1.6	-	7	62.4	
													+62.7	21	37	53	+9	16	56.48	-	37.57	17	20.8	+	5	61.9	
																											+61.70

A

A	S'(0)	+R ₂ +R ₃ +R ₄	S(c)	I	R.A.	S'(0)	+R ₂ +R ₃ +R ₄	S(c)	I	R.A.														
1871, Oct. 4																								
18	59	28	+13	40	6.95	-	32.06	40	37.3	++	7.62.4+63.1	+60.8	21	01	06	+38	06	26.08	-	4.78	7	22.0.1+	60.7	22
19	12	31	+67	24	57.18	+	26.20	26	25.5	-	6.62.1+61.5	+60.6	21	07	29	+29	41	29.91	-	13.72	42	16.5+3+	60.3	22
19	25	31	+27	40	54.77	-	15.55	41	42.5	++	4.63.3+63.7	+59.9	21	09	41	+37	29	11.26	-	5.85	30	5.2+1+	59.8	22
19	45	54	+27	40	35.46	-	51.83	40	44.7	++	10.61.1+62.1	+60.0	21	15	36	+62	01	23.67	+	20.28	2	44.4+5+	60.1	22
19	48	59	+6	05	3.85	-	42.91	5	22.9	++	8.62.0+62.8	+56.2	21	18	06	+98	04	21.10	+1	26.24	6	44.7+12+	59.4	22
19	53	18	+88	53	31.15	+	59.90	53	34.4	-	10.63.4+62.4	+58.3	21	22	56	+109	33	16.58	+2	19.17	36	35.3+13+	59.6	22
21	07	29	+29	41	28.91	-	13.38	42	16.1	++	3.61.6+61.9	+58.2	21	27	07	+69	58	33.44	+	30.40	0	2.7+7+	58.9	22
21	09	41	+37	29	18.44	-	5.70	30	4.7	++	1.62.0+62.1	+60.0	21	37	53	+9	17	0.72	-	38.92	17	21.6+5+	59.2	22
21	15	36	+62	01	21.04	+	20.16	2	43.6	-	5.62.4+61.9	+59.5	21	40	04	+70	41	33.98	+	31.97	43	26.1+7+	60.2	22
21	18	06	+98	04	18.61	+	23.93	6	43.7	-	12.61.2+60.0	+58.1	21	42	03	+48	42	5.13	+	6.17	43	9.6+2+	58.3	22
21	24	46	-6	07	57.26	-	65.30	8	3.2	++	1.139.4+60.5	+60.2	21	47	12	+25	18	47.00	-	19.01	19	2.7+7+	58.9	22
21	27	07	+69	88	29.87	+	29.55	0	1.8	-	7.62.4+61.7	+61.8	21	59	10	-0	56	34.06	-	56.71	56	32.0+10+	60.8	22
21	37	53	+9	16	59.11	-	37.88	17	20.9	++	8.59.7+60.5	+61.9	22	01	00	+24	42	35.09	-	19.94	43	16.6+4+	61.5	22
21	42	03	+48	42	2.90	+	6.19	43	9.1	++	2.60.1+59.9	+60.2	22	03	44	+5	33	52.02	-	45.18	34	6.1+4+	59.3	22
21	59	10	-0	56	35.48	-	55.21	56	30.0	++	1.060.7+61.7	+59.7	22	06	28	+57	33	2.82	+	15.19	34	19.1+4+	61.1	23
22	01	00	+24	42	35.84	-	19.42	43	16.2	++	4.59.8+60.2	+62.4	22	10	04	-8	25	3.98	-	73.18	25	16.4+1+	61.3	23
22	03	44	+5	33	51.30	-	44.00	34	6.1	++	9.59.7+60.6	+60.3	22	21	41	+70	41	53.98	+	34.97	42	16.1+4+	60.2	23
22	06	28	+57	33	3.14	+	14.74	34	18.1	-	4.60.2+59.8	+60.3	22	41	14	-	41	14	-	-	-	-	+60.12	23
22	10	04	-8	25	6.49	+	7.125	25	16.8	++	1.160.9+62.0	+60.3	22	23	48	+103	34	54.79	+	47.18	87	43.5+13+	61.5	23
22	18	32	+51	34	10.41	+	8.70	35	20.6	-	2.61.5+61.3	+63.3	22	28	46	+49	36	25.76	+	7.30	37	32.2+2+	59.1	23
22	26	03	+49	36	23.27	+	7.02	37	31.3	-	2.61.0+60.8	+63.3	22	28	46	-0	46	42.21	-	56.50	49	39.4+10+	62.3	23
22	28	46	-0	46	46.23	-	54.98	46	39.4	++	1.061.8+62.8	+62.6	22	35	05	+10	09	24.54	-	38.13	9	48.2+8+	61.8	23
22	36	59	+29	32	21.46	-	13.55	33	9.1	++	3.61.2+61.5	+60.7	22	36	59	+29	32	23.10	-	13.75	33	9.7+3+	60.4	23
22	40	22	+22	52	52.06	-	21.44	53	33.0	++	5.62.6+63.1	+62.9	22	38	22	+41	07	54.07	-	2.14	8	54.8+0+	62.9	23
22	43	50	+23	54	52.14	-	20.02	55	33.4	++	5.61.3+61.8	+62.9	22	40	22	+22	52	54.82	-	22.00	53	33.4+5+	60.7	23
22	45	56	-8	15	32.28	-	11.06	15	41.8	++	1.161.5+62.6	+60.3	22	43	50	+23	54	54.71	-	20.48	53	34.0+5+	59.8	23
22	56	02	+41	37	17.03	-	0.96	38	17.9	++	0.61.8+61.8	+61.4	22	56	02	+41	37	19.53	-	0.99	38	18.8+0+	60.3	23
22	58	23	+14	30	28.16	-	31.11	30	59.7	++	7.62.7+63.4	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
											+61.43+61.76													
Oct. 5																								
18	59	28	+13	40	6.55	-	31.95	40	37.3	++	7.62.7+63.4	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	11	46	+11	21	37.23	-	34.74	22	4.8	++	7.62.3+63.0	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	14	07	+53	07	1.70	+	10.71	8	13.0	-	3.60.6+60.3	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	18	59	+2	51	31.03	-	47.44	51	44.7	++	9.61.1+62.0	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	25	31	+27	40	53.78	-	15.39	41	42.6	++	4.62.2+62.6	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	44	33	+8	31	35.98	-	38.60	31	59.0	++	8.61.6+62.4	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	45	54	+0	40	35.58	-	51.41	40	44.7	++	10.60.5+61.5	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	48	46	+69	35	11.69	+	29.10	36	43.3	-	7.62.5+61.8	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
20	41	01	+33	28	44.26	-	7.78	29	38.0	++	2.63.5+63.7	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
20	42	48	+61	19	18.95	+	19.15	20	41.0	-	5.62.9+62.4	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
20	49	05	+27	33	36.93	-	15.97	34	24.2	++	4.63.2+63.6	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
20	52	25	+40	39	36.73	-	2.37	40	38.5	++	0.64.1+64.1	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
20	01	06	+38	06	23.42	-	4.63	7	21.9	++	1.62.1+63.2	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
21	18	06	+98	04	19.34	+	23.26	6	43.9	-	12.61.3+60.1	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
											+62.33+62.62													
Oct. 8 W.A.R. ds.											+62.87													
18	59	28	+13	40	6.82	-	32.91	40	37.3	++	7.63.4+64.1	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	12	31	+67	24	56.21	+	27.05	26	25.5	-	6.62.4+61.8	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	25	31	+27	40	57.08	-	16.02	41	42.6	++	4.61.5+61.9	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	40	11	+10	17	51.26	-	38.01	18	15.4	++	5.62.1+62.9	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	41	42	+18	12	42.79	-	26.75	13	19.6	++	6.63.6+64.2	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	45	54	+0	40	37.68	-	53.22	40	44.7	++	1.060.2+61.2	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	48	46	+69	35	11.82	+	30.22	36	43.6	-	7.61.6+60.9	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
19	53	18	+88	53	30.62	+	61.69	55	35.9	-	10.63.6+62.6	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
20	04	42	-1	12	1.67	-	57.12	11	57.8	++	10.61.0+62.0	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
20	17	41	+39	50	4.64	-	3.19	51	2.7	++	0.61.3+61.3	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
20	27	06	+10	51	48.62	-	36.59	52	13.3	++	8.61.3+62.1	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
20	31	32	+14	08	37.49	-	32.63	09	7.8	++	7.63.0+63.7	+61.4	22	58	23	+14	30	31.29	-	31.96	30	60.0+7+	60.7	23
20	33																							

R.A.										S(o) $\frac{R}{R_0} + \frac{R}{R_1} + \frac{R}{R_2}$										S(c) I																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
1871, Oct. 9 A. M. obs.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
"	h	m	s	"	"	"	"	"	"	"	m	s	"	"	"	"	"	"	"	"	"	h	m	s	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"

R.A.		S'(o)		$R_1+R_2+R_3$		S(c)		I		R.A.		S'(o)		$R_1+R_2+R_3$		S(c)		I	
1871, Oct. 23		1871, Oct. 30 W.A.R. obs.																	
m	s	m	s	m	s	m	s	m	s	m	s	m	s	m	s	m	s	m	s
12	07	12	07	12	07	12	07	12	07	12	07	12	07	12	07	12	07	12	07
18	59	18	59	18	59	18	59	18	59	18	59	18	59	18	59	18	59	18	59
41	42	41	42	41	42	41	42	41	42	41	42	41	42	41	42	41	42	41	42
19	44	19	44	19	44	19	44	19	44	19	44	19	44	19	44	19	44	19	44
45	34	45	34	45	34	45	34	45	34	45	34	45	34	45	34	45	34	45	34
48	59	48	59	48	59	48	59	48	59	48	59	48	59	48	59	48	59	48	59
53	18	53	18	53	18	53	18	53	18	53	18	53	18	53	18	53	18	53	18
04	42	04	42	04	42	04	42	04	42	04	42	04	42	04	42	04	42	04	42
17	41	17	41	17	41	17	41	17	41	17	41	17	41	17	41	17	41	17	41
27	06	27	06	27	06	27	06	27	06	27	06	27	06	27	06	27	06	27	06
31	32	31	32	31	32	31	32	31	32	31	32	31	32	31	32	31	32	31	32
33	42	33	42	33	42	33	42	33	42	33	42	33	42	33	42	33	42	33	42
37	06	37	06	37	06	37	06	37	06	37	06	37	06	37	06	37	06	37	06
42	48	42	48	42	48	42	48	42	48	42	48	42	48	42	48	42	48	42	48
49	03	49	03	49	03	49	03	49	03	49	03	49	03	49	03	49	03	49	03
52	25	52	25	52	25	52	25	52	25	52	25	52	25	52	25	52	25	52	25
07	29	07	29	07	29	07	29	07	29	07	29	07	29	07	29	07	29	07	29
09	41	09	41	09	41	09	41	09	41	09	41	09	41	09	41	09	41	09	41
15	36	15	36	15	36	15	36	15	36	15	36	15	36	15	36	15	36	15	36
18	06	18	06	18	06	18	06	18	06	18	06	18	06	18	06	18	06	18	06
24	46	24	46	24	46	24	46	24	46	24	46	24	46	24	46	24	46	24	46
47	12	47	12	47	12	47	12	47	12	47	12	47	12	47	12	47	12	47	12
18	32	18	32	18	32	18	32	18	32	18	32	18	32	18	32	18	32	18	32

Oct. 29 A.M. obs.

19	44	33	+8	31	37.97	-	39.97	31	58.3	++	860.3+61.1	+61.7 21	27	07	+69	58	34.39	+	29.77	0	6.5-7+62.4
19	48	46	+69	55	11.72	+	30.14	56	44.2	-	762.3+61.6	+60.3 21	40	04	+70	41	58.60	+	30.74	43	30.3-7+61.0
20	27	06	+10	51	49.45	-	36.61	52	13.1	++	860.3+61.1	+59.6 21	42	03	+48	42	6.26	+	6.32	43	12.4-2+59.8
20	31	32	+14	08	40.08	-	31.66	9	7.7	++	759.3+60.0	+62.3 21	47	12	+28	18	45.81	-	18.73	19	29.1-3+62.0
20	33	42	+15	27	16.36	-	30.33	27	46.6	++	760.6+61.3	+62.9 21	59	10	-0	56	36.66	-	55.80	56	30.6-10+61.9
20	37	06	+44	48	31.57	+	1.63	49	36.4	-	0.163.2+63.1	+63.2 22	01	00	+24	42	34.63	-	19.18	43	18.3-4+62.8
20	41	01	+33	28	47.15	-	10.12	29	39.0	++	762.0+62.2	+62.1 22	03	44	+5	33	49.45	-	44.52	34	6.1-9+61.2
20	49	05	+27	33	37.75	-	16.54	34	25.2	++	464.3+64.7	+61.6 22	06	28	+57	33	6.46	+	14.81	34	23.3-4+62.0
20	52	25	+40	39	39.48	-	2.39	40	40.2	++	063.1+63.1	+62.5 22	10	04	-8	25	7.39	-	72.11	25	18.1-11+61.4
21	01	06	+38	06	26.86	-	4.80	7	23.7	++	161.6+61.7	+64.1 22	15	02	-2	2	3.41	-	57.38	1	57.7-10+63.1
21	07	29	+29	41	29.52	-	13.92	42	17.5	++	361.9+62.2	+65.2 22	18	32	+51	34	14.93	+	8.88	35	25.5-2+61.7
21	09	41	+37	29	11.54	-	5.82	30	6.8	++	161.7+61.2	+65.2 22	23	48	+103	35	1.13	+	46.27	37	50.2-13+62.8
21	15	36	+62	01	25.89	+	20.96	2	47.5	-	560.7+60.2	+63.7 22	35	05	+10	09	23.46	-	37.56	9	48.8-8+62.9
21	39	10	-0	56	34.48	-	56.90	56	30.5	++	1060.9+61.9	+61.5 22	36	59	+29	32	24.54	-	13.58	33	12.2-2+61.2
22	01	00	+24	42	36.48	-	19.98	43	18.2	++	461.7+62.1	+64.1 22	15	02	-2	2	3.41	-	57.38	1	57.7-10+63.1
22	03	44	+5	33	52.99	-	45.35	34	6.2	++	958.6+59.8	+65.2 22	18	32	+51	34	14.93	+	8.88	35	25.5-2+61.7
22	06	28	+57	33	5.42	+	15.21	34	23.1	-	462.5+62.1	+63.7 22	35	05	+10	09	23.46	-	37.56	9	48.8-8+62.9
22	10	04	-8	25	4.60	-	73.55	25	17.9	++	1159.2+60.3	+61.5 22	36	59	+29	32	24.54	-	13.58	33	12.2-2+61.2
22	28	46	-0	46	43.62	-	56.73	46	39.9	++	1060.4+61.4	+64.1 22	15	02	-2	2	3.41	-	57.38	1	57.7-10+63.1
22	36	59	+29	32	25.82	-	13.85	33	12.0	++	360.0+60.3	+65.2 22	18	32	+51	34	14.93	+	8.88	35	25.5-2+61.7
22	40	22	+22	52	56.32	-	22.09	53	35.2	++	561.0+61.5	+63.7 22	35	05	+10	09	23.46	-	37.56	9	48.8-8+62.9
22	43	50	+23	54	55.63	-	20.54	53	36.0	++	560.9+61.4	+61.6 22	19	45	+53	07	0.24	+	10.63	8	12.1-3+61.2
22	56	02	+41	37	21.78	-	1.84	38	22.4	++	062.5+62.5	+62.9 22	19	45	+53	07	0.24	+	10.63	8	12.1-3+61.2
22	58	23	+14	30	32.38	-	32.10	30	61.1	++	700.8+61.5	+61.2 22	19	45	+53	07	0.24	+	10.63	8	12.1-3+61.2
23	10	31	+2	34	47.80	-	50.37	34	56.2	++	58.8+59.7	+62.9 22	19	45	+53	07	0.24	+	10.63	8	12.1-3+61.2
23	19	00	+22	41	19.77	-	21.78	41	59.3	++	561.3+61.8	+61.2 22	19	45	+53	07	0.24	+	10.63	8	12.1-3+61.2
23	23	40	+109	54	19.13	+	23.20	57	46.8	-	1364.5+63.2	+62.9 22	19	45	+53	07	0.24	+	10.63	8	12.1-3+61.2
23	31	18	+45	44	51.80	+	2.89	45	56.0	-	161.2+61.1	+61.2 22	19	45	+53	07	0.24	+	10.63	8	12.1-3+61.2
23	34	05	+76	53	25.39	+	40.51	54	68.4	-	862.5+61.7	+62.2 21	09	41	+37	29	10.22	+	5.84	30	6.8-1+62.4

R.A.

$S'(0) \frac{R}{R_m + R_{25} + R_f} S(c) \quad I$
1871, Nov. 2 A.M. obs.

	m	s	o	i	"	"	"	"	"	"	
28	46	-0	46	45.97	-	58.32	46	40.0	+	1.064.3 + 65.3	
35	05	+10	09	25.66	-	33.43	9	48.8	+	861.6 + 62.4	
36	59	+29	32	26.35	-	13.88	33	12.3	+	359.8 + 60.1	
38	22	+41	07	58.37	-	2.24	8	58.7	+	062.6 + 62.6	
40	22	+22	52	59.30	-	21.40	53	35.4	+	559.2 + 59.7	
45	08	+65	30	19.33	+	25.05	31	45.9	-	661.5 + 60.9	
0	1	31	+28	22	15.94	-	15.21	22	62.4	+	361.7 + 62.0
0	03	37	+45	20	34.20	+	2.65	21	38.2	-	161.4 + 61.3
0	06	38	+14	27	48.00	-	32.85	27	76.7	+	761.5 + 62.2
0	12	56	-9	31	50.90	-1	17.45	32	8.5	+	159.9 + 61.0

$$+ 61.02 + 6636$$

Nov 2 W.A.R. obs.

0	23	30	-4	39	54.83	-1	5.13	39	59.1	+	1060.9	+61.9
0	25	42	+62	12	6.78	+	21.62	13	32.9	-	564.5	+64.0
0	27	50	+109	26	53.00	+2	21.24	29	39.8	-	1366.0	+64.7
0	33	14	+55	48	50.08	+	13.84	49	67.6	+	363.7	+63.4
0	40	32	+23	33	30.81	-	21.46	33	73.1	+	463.8	+64.2
0	41	18	+57	06	52.06	+	15.62	7	71.6	-	463.9	+63.5

$$+ 63.36 + 63.40$$

R.A.

$S'(0) \overset{R}{=} R_1 + R_2 + R_3$ $S(c)$ I
1871. Nov. 7. W.A.R. obs.

	h	m	s	0	1	2	3	4	5	6	7	8	9
+65.320	31	32		+14	08	36.42	-	32.61	9	7.2	+7	64.6	
+64.820	33	42		+15	27	12.49	-	30.57	27	46.1	+6	64.2	
+65.220	37	06		+44	48	28.91	-	2.09	49	36.2	+1	65.2	
+64.520	41	01		+33	28	44.33	-	9.83	29	38.8	+2	64.3	
+64.420	42	48		+61	19	18.53	+	20.09	20	43.5	-5	64.9	
+65.021	01	06		+38	06	23.48	-	4.72	7	23.7	+1	64.9	
+63.021	07	25		+29	41	28.58	-	13.79	42	17.5	+3	62.7	
+62.421	09	44		+37	29	10.03	-	5.55	30	6.8	+1	62.3	
+64.921	22	56		+109	33	13.74	+2	21.06	36	41.0	+3	66.2	
+61.721	24	46		-6	07	57.39	-	67.83	8	4.6	+1	60.6	
+62.321	27	07		+69	58	33.65	+	30.50	0	7.2	+7	63.0	
+62.821	37	53		+9	16	58.54	-	37.29	17	21.2	+8	62.0	
+62.621	40	04		+70	41	35.35	+	32.39	43	31.0	-7	63.3	
+62.521	42	03		+48	42	3.72	+	6.48	43	12.8	-1	62.6	
+62.621	47	12		+25	18	46.27	-	18.90	19	29.6	+1	62.2	
+64.021	59	10		-0	56	36.87	-	56.96	56	30.8	+10	63.0	
+63.522	01	02		+24	42	35.02	-	19.68	43	18.4	+4	63.1	
+60.722	03	44		+5	33	51.43	-	45.34	34	6.9	+9	59.8	
+63.322	06	28		+57	33	4.71	+	18.73	34	24.1	-4	63.7	
+64.422	15	02		-2	02	2.26	-	58.23	1	58.0	+9	63.5	
+62.223	45	57		+18	23	59.45	-	27.24	24	33.8	+6	61.6	
+63.623	47	37		+56	46	0.21	+	14.97	46	29.1	-3	63.9	
+59.823	52	44		+6	08	38.86	-	44.35	8	73.3	+8	59.0	

+ 62.95

Nov. 5 W.A.R. obs.

20	13	25	+17	17	59.42	+	42.14	19	42.0	-	860.6	1896
20	17	41	+39	50	2.59	-	3.06	51	3.1	+	163.6	163.7
20	27	06	+10	51	48.49	-	37.49	52	12.9	+	862.9	163.7
20	52	25	+40	39	38.41	-	2.22	40	40.2	+	0.64	0.64
20	58	44	+112	17	13.86	+2	45.18	21	2.9	-	1.463.9	162.5
21	27	07	+69	58	33.22	+	31.46	0	7.0	-	762.3	161.6
21	37	53	+9	16	58.68	-	40.04	17	21.2	+	862.6	163.4
21	42	03	+48	42	4.20	+	6.56	43	12.7	-	1.61.8	161.7
21	59	10	-0	56	35.88	-	58.09	56	30.8	+	1.063.2	164.2
22	01	10	+24	42	36.02	-	20.07	43	18.4	+	4.62.5	162.9
22	03	44	+5	33	51.18	-	46.25	34	5.9	+	9.61.0	161.9
22	06	28	+57	33	4.24	+	16.04	34	23.9	-	1.63.6	163.2
22	10	04	-8	25	4.97	-	75.22	25	18.3	+	1.161.9	163.0

$$+ 62.48 - 162.73$$

+6304

Nov. 9

+68.2	20	17	41	+39	49	37.51	-	2.96	+51	1.29	+68.1
+64.5	20	42	48	+61	19	18.32	+	20.05	-20	543.4	+65.0
+64.2	21	01	06	+38	06	24.39	-	4.79	+7	1.23.7	+64.1
+63.0	21	24	46	-6	07	58.38	-	68.22	+8	1.1.4.7	+61.9
+62.1	21	27	07	+69	38	33.27	+	31.21	-0	7.7.3	+62.8
+61.5	21	42	03	+48	42	4.41	+	6.67	-43	2.12.8	+61.7
+64.1	21	59	10	-0	56	36.74	-	57.30	+36	1030.9	+63.1
+61.2	22	01	00	+24	42	37.41	-	19.79	+43	4.8.4	+60.8
+61.7	22	03	44	+5	33	50.60	-	43.60	+34	9.8.8	+60.8
+63.0	22	06	28	+57	33	4.99	+	15.82	-34	4.24.2	+63.4
+62.4	22	10	04	-8	25	6.10	-	74.15	+25	818.6	+61.6
+63.0	22	18	32	+51	34	13.74	+	9.49	-35	226.4	+63.2
+66.9	22	23	48	+103	34	53.25	+1	49.24	-37	1352.1	+67.6
+62.4	23	31	18	+45	44	37.86	+	3.35	-45	1.57.7	+62.5
+62.1	23	45	57	+18	23	59.74	+	27.33	+24	6.33.9	+61.5
+62.4	23	47	57	+56	46	1.29	-	15.21	-46	379.2	+62.7
+62.8	23	52	44	+6	08	56.01	-	44.72	+8	7.7.3	+62.0

 $+6283$

A.

$S'(o)$	$+R_2$	$+R_3+R_4$	$S(c)$	I
1871, Nov. 12			A.M.	
22 01 00 +24 42 34.42	-	19.86	43 18.4	+ + 463.8 + 642
22 06 28 +57 33 4.97	-	16.13	34 24.6	- + 463.5 + 63.1
22 38 22 +41 07 56.31	-	1.80	8 59.6	+ + 065.1 + 65.1
22 40 22 +22 52 55.17	-	22.08	53 35.7	+ + 562.6 + 63.1
22 43 50 +23 54 53.54	-	21.02	55 36.4	+ + 563.9 + 64.4
22 58 23 +14 30 32.37	-	33.16	30 61.3	+ + 762.1 + 62.8
				+ 635.0 + 637.8

Nov. 13 W.A.R.

20 58 44 +112 17 11.36	+2	45.89	21 36	- + 146.6 + 65.0
21 01 06 +38 06 26.03	-	4.75	7 23.7	+ + 162.4 + 62.5
21 22 56 +109 33 13.09	+2	24.17	36 41.6	- + 164.4 + 63.1
21 24 46 - 6 08 52.91	-	69.28	8 5.0	+ + 157.2 + 63.3
22 18 32 +51 34 13.87	+2	9.55	35 26.6	- + 263.2 + 63.0
22 28 46 - 0 46 44.33	-	57.89	46 40.5	+ + 106.1 + 62.7
22 35 05 +10 09 23.64	-	39.14	9 48.5	+ + 864.0 + 64.8
22 36 59 +29 32 23.53	-	14.18	33 12.8	+ + 363.4 + 63.7
22 40 22 +22 52 55.61	-	22.15	53 35.7	+ + 563.2 + 62.7
22 56 02 +41 37 23.04	-	0.97	38 24.0	+ + 061.9 + 61.9
22 58 23 +14 30 31.29	-	32.76	30 61.3	+ + 762.8 + 63.5
23 10 31 +2 34 45.77	-	57.42	34 55.7	+ + 961.3 + 62.2
23 14 18 +23 01 43.48	-	21.85	2 25.3	+ + 563.2 + 63.7
23 19 00 +22 41 21.24	-	22.26	41 60.0	+ + 561.0 + 61.5
23 23 40 +109 52 16.82	+2	26.84	57 51.2	- + 113.8 + 65.9
				+ 62.79 + 63.10

Nov. 19 W.A.R.

21 24 46 - 6 08 57.98	-	68.84	8 5.3	+ + 116.0 + 61.6
21 47 12 +25 18 46.66	-	19.11	19 29.2	+ + 461.7 + 62.1
21 59 10 - 0 56 36.23	-	57.84	56 31.5	+ + 1062.5 + 63.5
22 01 00 +24 42 35.58	-	19.89	43 18.2	+ + 462.5 + 62.9
22 03 44 +5 33 50.77	-	46.00	34 5.3	+ + 960.5 + 61.4
22 06 28 +57 33 49.93	+2	16.28	34 24.6	- + 463.4 + 63.0
22 15 02 - 2 02 1.65	-	60.07	1 58.7	+ + 1063.0 + 64.0
22 23 48 +103 35 18.36	+1	50.54	37 53.8	+ + 1134.4 + 64.3
22 38 22 +41 07 56.94	-	1.88	8 59.9	+ + 064.8 + 64.8

Nov. 22 W.A.R.

22 06 28 +57 33 6.05	+2	15.77	34 24.5	- + 462.7 + 62.3
22 10 04 - 8 25 6.97	-	72.92	25 19.5	+ + 1160.4 + 61.5
22 15 02 - 2 02 2.36	-	58.54	1 58.9	+ + 1062.0 + 63.0
22 18 32 +51 34 12.46	+2	9.24	35 27.0	- + 265.3 + 65.1
22 23 48 +103 35 1.87	+1	49.01	37 54.3	- + 1363.4 + 62.1
22 28 46 - 0 46 46.06	-	56.05	46 41.1	+ + 1060.0 + 61.0
22 35 05 +10 09 24.60	-	37.80	9 48.1	+ + 861.3 + 62.1
22 36 59 +29 32 24.11	-	13.74	33 12.8	+ + 362.4 + 62.7
22 38 22 +41 07 58.91	-	1.34	9 00.0	+ + 062.4 + 62.4
22 40 22 +22 52 54.63	-	21.48	53 35.6	+ + 562.4 + 62.9
0 1 31 +28 22 16.98	-	15.03	22 63.8	+ + 361.9 + 62.2
0 03 37 +45 20 35.19	+2	2.86	21 41.1	- + 163.1 + 63.0
0 06 08 +101 37 43.35	+1	39.57	40 27.5	- + 1264.6 + 63.4
				+ 62.17 + 62.56

R.A.

$S'(o)$	$+R_2$	$+R_3+R_4$	$S(c)$	I	R
1871, Nov. 23			W.A.R.		
22 01 00 +24 42 34.42	-	19.86	43 18.4	+ + 463.8 + 642	
22 06 28 +57 33 4.97	-	16.13	34 24.6	- + 463.5 + 63.1	
22 38 22 +41 07 56.31	-	1.80	8 59.6	+ + 065.1 + 65.1	
22 40 22 +22 52 55.17	-	22.08	53 35.7	+ + 562.6 + 63.1	
22 43 50 +23 54 53.54	-	21.02	55 36.4	+ + 563.9 + 64.4	
22 58 23 +14 30 32.37	-	33.16	30 61.3	+ + 762.1 + 62.8	
				+ 635.0 + 637.8	

22 01 00 +24 42 34.42	-	19.86	43 18.4	+ + 463.8 + 642	
22 06 28 +57 33 4.97	-	16.13	34 24.6	- + 463.5 + 63.1	
22 38 22 +41 07 56.31	-	1.80	8 59.6	+ + 065.1 + 65.1	
22 40 22 +22 52 55.17	-	22.08	53 35.7	+ + 562.6 + 63.1	
22 43 50 +23 54 53.54	-	21.02	55 36.4	+ + 563.9 + 64.4	
22 58 23 +14 30 32.37	-	33.16	30 61.3	+ + 762.1 + 62.8	
				+ 635.0 + 637.8	

Nov. 25 W.A.R.

22 01 00 +24 42 34.42	-	19.86	43 18.4	+ + 463.8 + 642	
22 06 28 +57 33 4.97	-	16.13	34 24.6	- + 463.5 + 63.1	
22 38 22 +41 07 56.31	-	1.80	8 59.6	+ + 065.1 + 65.1	
22 40 22 +22 52 55.17	-	22.08	53 35.7	+ + 562.6 + 63.1	
22 43 50 +23 54 53.54	-	21.02	55 36.4	+ + 563.9 + 64.4	
22 58 23 +14 30 32.37	-	33.16	30 61.3	+ + 762.1 + 62.8	
				+ 635.0 + 637.8	

Nov. 28 W.A.R.

22 01 00 +24 42 34.42	-	19.86	43 18.4	+ + 463.8 + 642	
22 06 28 +57 33 4.97	-	16.13	34 24.6	- + 463.5 + 63.1	
22 38 22 +41 07 56.31	-	1.80	8 59.6	+ + 065.1 + 65.1	
22 40 22 +22 52 55.17	-	22.08	53 35.7	+ + 562.6 + 63.1	
22 43 50 +23 54 53.54	-	21.02	55 36.4	+ + 563.9 + 64.4	
22 58 23 +14 30 32.37	-	33.16	30 61.3	+ + 762.1 + 62.8	
				+ 635.0 + 637.8	

R.A.

$\delta(\phi) \frac{+h_2}{+h_m+h_{28}+h_x} \delta(c) \quad I$
1871, Nov. 29 A.M.

R.A.

$S'(a) \begin{matrix} +R_1 \\ +R_2 + R_3 \\ +R_4 \end{matrix} S(c) \quad I$
 1871, Dec. 6, W.A.R.

[illegible]

Dec. 1 A.M.

+62.31

+ 61.91

[illegible]

Dec. 2 A.M.

 $+ 63.716389 + 62.51$

+62.21

62.65	1	04	33	+29	23	48.44	—	14.81	24	36.1	++	362.5	+62.8											
	1	24	36	+14	40	33.94	—	33.36	40	65.2	++	764.6	+65.3											
	1	30	04	+47	57	38.78	+	5.75	58	48.5	—	164.0	+63.9											
	1	47	31	+26	10	15.77	—	26.05	10	52.6	++	562.9	+63.4											
	1	56	00	+41	41	51.63	—	0.98	42	54.9	++	064.2	+64.2											
	1	59	53	+22	50	40.23	—	22.69	51	22.1	++	564.6	+65.1											
64.5												+61.2	23	31	18	+45	44	34.90	+ 3.55	45	59.84	++	61.3	
62.4												+61.4	23	33	19	+4	55	40.28	—	48.18	55	52.6	++	60.5
62.7												+62.8	23	45	57	+18	23	59.79	—	28.17	24	33.8	++	62.2
62.6												+63.0	23	47	57	+56	46	3.85	+	16.01	46	83.2	++	63.3
61.8												+62.9	0	1	31	+28	22	17.26	—	15.81	22	64.0	++	62.6
64.0												+61.8	0	03	37	+45	20	37.36	+	3.06	21	42.3	++	64.9
63.2												+64.0	0	06	08	+101	37	40.96	+1	44.79	40	31.5	++	65.8

Dec. 9, 1914.

Dec. 9, W.A.R.

Dec. 5 W. A. R.

+60.9
+63.4

$$1.1 + 39.8$$
[illegible]

P.A.

1871phae. prof. 11		S'(o) $\frac{R_1}{R_2} + R_3 + R_4$		S(c)		I		R.A.		S'(o) $\frac{R_1}{R_2} + R_3 + R_4$		S(c)		I		R.									
1871phae. prof. 11		1871, Dec. 11 W.A.R.		h		m		s		1871, Dec. 17 A.M.		h		m		s									
0	25	42	+62	12	16.08	+	21.57	13	40.3	-	562.7	+62.2	+62.5	30	04	+47	57	42.40	+	5.19	58	50.2	-	162.6	1
0	33	14	+55	48	59.87	+	13.99	49	74.2	-	360.3	+60.0	+60.8	34	44	+4	50	2.97	-	47.27	49	75.6	+	959.9	1
0	37	08	+74	15	48.51	+	37.59	16	86.3	-	860.2	+59.4	+62.5	38	36	+8	30	20.98	-	41.32	30	41.4	+	861.7	1
1	21	37	+69	34	54.07	+	30.74	36	26.6	+	761.8	+61.1	+63.5	47	31	+20	10	15.15	-	25.35	10	52.8	+	563.0	1
1	24	36	+14	40	35.88	-	32.24	40	65.0	+	761.4	+62.1	+62.0	52	20	+71	46	34.38	+	34.05	47	71.1	-	762.7	1
1	30	04	+47	57	42.54	+	5.08	58	49.6	-	762.0	+61.9	+62.0	56	00	+41	41	55.36	-	0.88	42	56.5	+	062.0	3
1	34	44	+4	50	3.58	-	47.04	49	76.0	+	959.5	+60.4	+62.5	10	33	-7	00	45.18	-	11.51	0	55.3	+	1161.4	3
1	38	36	+8	30	21.48	-	41.12	30	41.7	+	861.3	+62.1	+60.9	18	28	+66	48	9.68	+	26.94	49	38.1	-	661.5	3
1	47	31	+20	10	15.07	-	25.21	10	52.8	+	562.9	+63.4	+62.3	21	18	+7	52	44.10	-	42.72	52	62.9	+	861.5	3
1	52	20	+71	46	33.19	+	34.14	47	69.7	-	762.4	+61.7	+59.4	31	29	+21	23	48.22	-	24.06	24	23.1	+	558.9	3
1	56	00	+41	41	53.67	-	0.92	42	55.9	+	063.2	+63.2	+62.7	32	51	-0	13	40.51	-	56.43	13	35.2	+	1061.7	3
2	04	23	+65	53	59.86	+	26.03	54	89.3	-	663.4	+62.8	+58.8	35	24	+48	40	7.50	+	6.19	40	72.6	-	158.9	3
2	10	33	-7	00	43.62	-	11.05	0	54.7	+	1160.0	+61.1	+61.2	36	37	+2	41	27.98	-	50.91	41	87.3	+	960.2	3
2	18	28	+66	48	7.59	+	27.07	49	36.8	-	662.0	+61.4	+62.1	42	21	+26	43	10.12	-	17.87	43	53.9	+	461.7	4
2	21	18	+7	52	44.19	-	42.43	52	63.2	+	861.4	+62.2	+60.6	45	03	+52	13	7.06	+	9.97	13	77.8	-	260.8	4
2	28	00	+103	41	20.02	+2	56.78	44	15.1	-	1261.7	+60.5													
																+ 61636167		+6158				+ 6123			

Dec. 12 W.A.R.

Dec. 18

[illegible]

Dec. 20 W. A. R.

Dec. 17 W. A. R.

[illegible]

1871phae.proj.15

R.A.				$S'(o) \frac{H}{R_1+R_2+R_3}$				$S(c) \quad I$				R.A.				$S'(o) \frac{H}{R_1+R_2+R_3}$				$S(c) \quad I$			
1871 Dec. 27				1871 Dec. 27				1871 Dec. 27				1871 Dec. 29				1871 Dec. 29				1871 Dec. 29			
"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
62.6	1	02	32	+34	55	38.19	-8.43	56	33.3	+263.5	+63.7	18	28	+66	48	9.82	+27.44	49	40.4	-	663.1		
59.9	1	04	33	+29	23	48.46	-14.99	24	36.5	+363.0	+63.3	21	18	+7	52	43.90	-43.50	52	62.2	+	861.8		
61.7	1	21	37	+69	34	54.13	+31.32	36	28.8	+763.4	+62.7	31	29	+21	23	45.38	-24.52	24	23.1	+	562.2		
63.0	1	24	36	+14	40	34.66	-32.86	40	64.5	+762.7	+63.4	36	37	+2	41	26.68	-51.80	41	36.5	+	961.6		
62.7	1	30	04	+47	57	41.64	+5.21	58	50.9	+164.0	+63.9	42	21	+26	43	11.28	-18.18	43	54.4	+	461.3		
62.0	3	15	07	+49	23	8.00	+6.94	23	78.3	+263.4	+63.2	45	03	+52	13	6.48	+10.53	13	79.4	-	262.4		
61.4	3	17	51	+8	34	14.98	-42.18	34	32.9	+860.1	+60.8	51	15	+105	16	22.29	+10.10	40	30.0	-	1366.6		
61.5	3	20	08	+9	16	42.39	-40.71	16	61.7	+860.0	+60.8	55	32	+3	34	56.33	-50.44	35	4.6	+	938.7		
61.5	3	26	55	-9	53	23.44	-20.60	53	42.3	+1161.7	+61.8	59	44	+40	26	43.37	-2.37	27	43.4	+	062.4		
58.9	3	30	46	+62	46	36.60	+22.84	47	64.1	+564.7	+64.2	03	50	+77	14	2.99	+42.14	15	48.3	-	863.2		
61.7	3	33	46	+47	27	31.21	+5.03	22	38.6	+162.4	+62.3	15	07	+49	23	9.36	+6.96	23	78.5	-	262.2		
58.9	3	53	35	+12	07	9.65	-36.56	7	34.5	+761.7	+62.1	17	51	+8	34	13.81	-42.24	34	32.8	+	861.2		
60.2	3	59	20	+47	21	2.83	+5.07	22	10.1	+162.2	+62.2	20	08	+9	16	40.71	-41.70	16	61.6	+	862.6		
61.7	4	12	30	+15	18	29.24	-32.53	18	59.0	+762.3	+63.0	26	55	-9	53	24.98	-20.70	53	42.4	+	163.3		
60.8	4	15	31	+17	13	50.19	-29.88	14	24.5	+664.2	+64.8	30	46	+62	46	38.04	+22.92	47	64.4	-	563.4		
61.23										+626.0	+628.8	+62.38										+62.10	

Dec. 28

62.6	23	23	40	+109	54	20.62	+2	32.57	57	58.3	-1.865.1	+63.8													
61.4	23	31	18	+45	44	51.37	+3.32	45	58.9	-1.64.2	+64.1														
61.1	0	01	31	+28	22	20.10	-16.07	22	63.3	+2.59.3	+59.6														
62.0	0	06	08	+101	37	40.71	+1	46.04	40	34.0	-1.167.3	+66.1													
61.6	0	12	56	-9	31	54.93	-1	21.76	32	13.0	+1.163.7	+64.8													
61.9	0	23	30	-4	39	54.67	-1	8.76	39	63.0	+1.060.4	+61.4	+64.5	1	24	36	+14	40	33.43	-	32.62	41	4.3	+7.763.5	
61.2	0	27	50	+109	26	58.01	+2	29.45	29	24.9	-1.136.7	+66.3	+63.4	1	30	04	+47	57	42.41	+	3.21	38	51.1	-1.163.5	
60.0	0	33	14	+35	48	56.03	+	14.70	49	74.9	-364.2	+63.9	+62.4	1	34	44	+4	50	0.59	-	4.753	50	14.7	+9.61.5	
63.7	1	02	32	+34	55	38.91	-	8.77	56	33.3	+263.2	+63.4	+63.3	1	38	36	+8	30	19.75	-	4.163	30	40.6	+8.62.5	
62.8	1	21	37	+69	34	51.99	+	32.41	36	28.9	-764.5	+63.8	+63.6	1	47	31	+20	10	14.97	-	25.55	10	52.5	+5.63.1	
63.3	1	24	36	+14	40	35.54	+	33.94	40	64.4	+762.8	+63.5	+63.9	1	56	00	+41	41	54.48	-	1.00	42	57.4	+0.63.9	
61.9	1	30	04	+47	57	42.39	+	6.09	58	51.0	-162.5	+62.4	+62.1	1	59	53	+22	50	43.04	-	22.21	51	22.4	+5.61.6	
60.6	1	34	44	+4	50	3.62	-	49.55	49	74.8	+960.7	+61.6	+62.5	2	01	51	+34	22	0.58	-	8.82	22	54.1	+2.62.3	
61.79	1	38	36	+8	30	21.38	-	43.27	30	40.8	+862.7	+63.5	+64.8	2	04	23	+65	54	9.99	+	26.34	55	32.6	-6.61.3	
	1	47	31	+20	10	16.09	-	26.55	10	52.7	+563.2	+63.7	+64.5	2	18		+7	52	42.41	-	43.04	52	62.1	+8.62.3	
	1	56	00	+41	41	53.92	-	0.96	42	57.3	+064.3	+64.3	+63.2	2	31	29	+1	23	44.68	-	24.28	24	23.1	+5.62.7	
	1	59	53	+22	50	43.64	-	23.08	51	22.5	+562.0	+62.5	+61.3	2	36	37	+2	41	27.14	-	57.28	41	36.3	+9.60.4	
	2	01	51	+34	21	58.41	-	9.20	22	54.0	+264.8	+65.0	+63.4	2	42	21	+26	43	9.42	-	18.03	43	54.4	+4.63.0	
	2	04	23	+65	54	0.60	+	27.21	55	31.3	-463.5	+62.9	+62.8	2	45	03	+45	13	6.85	+	9.91	14	19.7	-1.62.9	
	2	18	28	+66	48	7.61	+	28.38	49	40.2	-664.2	+63.6	+63.2	2	51	15	+105	16	26.00	+	60.20	40	29.2	+1.364.6	
63.1	2	28	00	+103	41	15.32	+3	6.77	44	20.1	-1.262.0	+60.8	+61.4	2	55	32	+3	34	53.80	-	49.93	35	4.4	+9.60.5	
60.0	2	31	29	+21	23	48.49	-	25.19	24	23.2	+559.9	+60.4	+63.9	2	56	55	+38	19	39.07	-	4.88	20	38.0	+1.63.8	
61.4	2	32	51	-0	13	38.52	-	59.08	13	36.2	+1061.4	+62.4	+64.3	2	59	44	+40	26	41.71	-	2.37	27	43.6	+0.64.3	
60.8	2	36	37	+2	41	28.94	-	53.21	41	36.6	+960.9	+61.8	+62.3	2	03	50	+77	14	4.01	+	41.97	15	49.0	-8.63.0	
65.3	2	42	21	+26	43	10.11	-	18.68	43	54.4	+463.0	+63.4	+63.2	3	15	07	+49	23	9.22	+	6.80	24	19.4	-2.63.4	
64.2	2	45	03	+52	13	6.35	+	10.21	13	79.3	-262.7	+62.5	+63.5	3	21	06	+107	39	32.13	+2	12.99	42	48.9	+7.364.8	
64.7													+62.9	3	30	46	+62	46	38.62	+	22.93	47	61.9	+5.63.4	
61.5													+62.2	3	33	46	+47	21	31.61	+	5.06	22	39.1	-1.162.3	
62.5																									
65.1																									
62.4																									
61.3																									
64.4																									
65.6																									
63.0																									
61.7																									
63.3																									
62.8																									
62.79																									

Jan. 2

+63.0	1	31	+28	22	16.21	-15.96	22	62.9	+3	62.7	
+64.4	03	37	+45	20	34.62	+2.93	21	42.0	-1	64.5	
+65.0	06	08	+101	37	42.72	+1	45.31	40	34.3	-12	66.3
+63.8	05	42	+62	12	13.89	+22.39	13	41.1	-5	64.3	
+64.8	27	50	+109	27	1.15	+2	28.30	29	24.4	-13	66.1
+62.9	33	14	+55	48	56.99	+14.71	49	74.9	-3	63.2	
+62.7	56	16	+7	11	39.24	-44.95	11	56.2	+8	61.9	
+64.5	02	32	+34	55	37.53	-8.70	56	33.1	+2	64.3	
+63.1	21	37	+69	34	53.03	+32.36	36	29.4	-7	64.0	
+63.51											
+63.56											

1871phae.proj.16

R.A.

$S'(l)$

$R+R_s+R_t$

$S(c)$

I

R.A.

$S'(l)$

$R+R_s+R_t$

$S(c)$

I

R

1872, Jan. 5

1872, Jan. 9

h	m	s	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	
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+ 61.54+61.75

Jan. 6										Jan. 10															
h m s					h m s					h m s					h m s										
2	18	28	+66	48	10.63	+	27.39	49	41.3	-	663.3	+62.7	45	03	+52	13	9.56	+	10.12	14	20.5	-	260.8	2	
2	21	18	+7	52	43.48	-	42.05	52	61.8	++	860.4	+61.2	48	38	+78	53	0.82	+	43.84	54	45.8	-	861.1	2	
2	31	29	+21	23	46.22	-	23.94	24	23.1	++	560.8	+61.3	51	15	+105	16	28.50	+	58.59	40	27.0	-	1865.9	2	
2	35	24	+48	40	5.03	+	6.31	41	14.8	-	163.5	+63.4	55	32	+3	34	54.68	-	49.32	35	3.9	++	958.5	2	
2	42	21	+26	43	10.16	-	17.70	43	54.4	++	461.9	+62.3	56	55	+38	19	40.19	-	4.71	20	38.5	++	163.1	2	
2	45	03	+52	13	7.88	+	9.89	14	20.2	-	262.4	+62.2	59	44	+40	26	43.27	-	2.30	27	44.3	++	063.3	2	
2	48	38	+78	52	58.80	+	43.88	54	45.2	-	862.5	+61.7	03	50	+77	14	6.35	+	41.69	15	50.8	-	862.8	2	
2	55	32	+3	32	54.85	-	49.38	35	4.1	++	958.6	+59.5	21	07	+18	53	4.12	-	26.71	53	39.9	++	662.5	2	
2	59	44	+40	26	42.80	-	2.33	27	43.9	++	063.4	+63.2	28	33	+16	14	26.08	-	30.44	14	58.9	++	663.3	2	
3	03	50	+77	14	6.16	+	41.31	15	50.0	-	862.5	+61.7	29	53	-3	37	2.36	-	3.17	36	62.3	++	1063.2	2	
3	17	51	+8	34	13.36	-	41.33	34	32.4	++	860.4	+61.2	34	31	+22	41	53.92	-	22.07	42	33.3	++	561.5	2	
3	20	08	+9	16	41.41	-	39.99	16	61.3	++	959.9	+60.7	37	16	+56	30	24.21	+	14.97	31	43.0	-	363.8	2	
3	23	47	+12	29	18.47	-	35.56	29	44.7	++	761.8	+62.5	39	06	-3	29	32.09	-	3.22	29	33.5	++	1061.8	2	
3	26	55	-9	53	26.02	-	18.73	53	43.4	++	1161.3	+62.4	48	36	+32	56	49.74	-	10.37	57	42.4	++	263.0	2	
3	30	46	+62	46	40.87	+	22.45	47	65.8	-	562.5	+62.0	51	57	+60	13	50.42	+	18.95	15	13.4	-	464.0	2	
3	33	46	+47	21	33.00	+	5.21	22	39.7	-	161.5	+61.4	55	26	+21	23	39.87	-	24.05	24	18.0	++	562.2	2	
3	39	50	+23	41	47.82	+	20.90	42	27.5	++	560.6	+61.1	59	16	+97	43	0.08	+	27.64	45	33.2	-	1265.5	2	
3	46	02	+31	29	19.46	-	12.22	30	7.5	++	360.3	+60.6	03	00	-8	55	3.69	-	16.34	54	78.2	++	161.8	2	
3	49	12	+39	37	21.69	-	3.07	38	20.1	++	161.5	+61.6	04	36	+38	18	52.72	-	0	4.87	19	52.4	++	164.6	2
													07	10	+45	50	50.05	+	3.48	51	58.4	-	164.9	2	
													08	24	-8	20	57.13	-	14.92	20	70.8	++	1161.2	2	
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+ 61.53+61.73

Jan. 8

1	21	37	+69	34	55.69	+	31.88	36	29.6	-	762.0	+61.3	59	44	+40	26	46.17	-	232	27	44.2	++	060.3
1	24	36	+14	40	31.91	-	33.27	41	4.1	++	765.5	+66.2	53	35	+12	07	9.69	-	35.09	7	33.9	++	759.3
1	30	04	+47	57	41.01	+	5.51	58	51.1	-	164.6	+64.5	59	20	+47	21	7.30	+	4.95	22	12.1	-	159.8
1	34	44	+4	50	1.21	-	48.49	50	14.3	++	961.6	+62.5	12	30	+15	18	27.81	-	31.21	18	58.6	++	762.0
1	38	36	+8	30	19.16	-	42.39	30	40.2	++	863.4	+64.2	15	31	+17	13	52.13	-	28.57	14	24.3	++	660.8
3	39	50	+23	41	45.81	+	21.55	42	27.6	++	563.3	+63.8	21	07	+18	53	4.78	-	26.68	53	39.9	++	661.8
3	45	58	+60	42	35.69	+	20.05	43	61.5	++	465.8	+65.4	37	16	+56	30	23.40	+	14.72	31	43.3	-	365.2
3	49	12	+39	37	19.50	-	3.13	38	20.3	++	163.9	+64.0	41	12	+66	05	58.75	+	25.93	7	26.8	-	662.1
3	53	35	+12	07	7.09	-	36.92	7	34.0	++	763.8	+64.5	48	36	+32	56	51.81	-	10.19	57	42.5	++	260.9
3	59	20	+47	21	2.23	+	5.29	22	11.7	-	164.2	+64.1	51	57	+60	13	49.72	+	18.71	15	13.8	-	465.4
4	15	31	+17	13	50.48	+	30.09	14	24.3	++	663.9	+64.5	59	16	+97	43	2.03	+	26.68	45	33.8	-	1265.1
4	21	50	+53	36	37.29	+	12.28	37	53.6	-	364.0	+63.7	04	36	+38	18	56.92	-	480	19	52.6	++	160.5

$+ 63.83 + 64.06 + 61.78$

Jan. 12

4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
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$+ 61.65$

+ 63.83+64.06+61.78

+ 61.65

RA.

[illegible]

A. R.

$$S'(0) = R_1 + R_2 + R_3 + R_4$$
$$\delta(c) \quad I$$

I

A. R.

$$S'(0) = R_1 + R_2 + R_3$$
 $\delta(c)$

1

1872, Feb. 8

1872, Feb. 15

39.9	4	55	26	+21	24	0.91	-	24.62	24	18.2	+5	41.9	+42.4	+45.0	4	28	00	+110	54	19.07	+2	33.63	57	39.0	-	+1.3	46.3
45.9	4	59	16	+97	43	28.36	+	30.02	45	40.8	-12	42.4	+41.2	+43.2	4	29	53	-3	36	43.54	-1	3.52	36	64.9	+	+0	42.2
41.1	5	04	36	+38	19	16.94	+	5.08	19	52.6	+1	42.7	+42.8	+44.2	4	53	27	+40	52	35.37	-	1.63	53	17.9	+	+0	44.2
41.3	5	08	24	+45	51	15.59	+	3.45	51	61.7	-1	42.7	+42.6	+44.25	11	24		-6	58	44.67	-1	11.49	58	72.8	+	+8	43.4
42.2	5	18	10	-8	20	37.88	-1	16.75	20	73.8	+1	40.8	+41.9	+43.05	18	10		+28	29	23.75	-	15.53	29	50.9	+	+3	42.7
42.1	5	22	30	+28	29	24.64	-	16.13	29	50.6	+3	42.1	+42.4	+44.25	25	28		-0	23	38.24	-	56.98	23	52.0	+	+1.0	43.2
44.2	5	25	28	+74	36	6.04	-	39.38	57	28.0	-8	42.6	+41.8	+43.65	50	53		+37	11	31.45	-	5.90	12	9.0	+	+1	43.5
42.0	5	29	43	-0	23	34.28	-	58.11	23	51.6	+10	40.8	+41.8														
41.56	5	32	16	-1	16	56.32	-	59.73	16	74.5	+10	41.5	+42.5	+43.73													+43.20
5	35	55		-2	40	19.78	-	63.10	40	39.3	+10	43.6	+44.6														
5	37	24		+49	45	19.97	+	7.81	45	69.8	-2	42.0	+41.8														
5	42	32		+111	07	53.49	+2	39.05	11	18.3	-13	45.8	+44.5														
5	44	27		+39	05	56.42	+	3.84	6	36.9	+1	44.3	+44.4														
5	48	14		+107	44	38.87	+2	15.01	12	20.0	-13	46.1	+44.8	+42.23	48	50		+101	46	40.51	+1	43.01	49	6.9	-	+1.2	43.4
5	50	53		+7	22	51.56	-	43.99	22	48.0	+1	40.4	+41.2	+45.48	53	35		+12	07	23.78	-	35.83	7	32.6	+	+7	44.7
5	50	53		+37	11	31.80	-	6.06	12	8.5	+1	42.8	+42.9	+43.63	59	20		+47	21	25.21	+	5.09	22	14.0	-	+1	43.7
6	0	14		+14	46	38.91	-	33.04	46	52.2	+7	46.3	+41.0	+46.4	12	30		+15	18	43.31	+	31.71	18	57.8	+	+7	46.2
6	4	38		+69	20	35.56	+	31.45	21	49.9	-6	42.9	+42.3	+45.84	15	31		+17	14	7.57	-	29.16	14	23.6	+	+6	45.2
6	39	42		+57	12	44.72	+	1.58	12	28.3	-10	42.0	+41.0	+45.24	21	07		+18	53	21.76	-	26.98	53	39.4	+	+6	44.6
6	30	15		+16	30	8.97	-	30.94	30	21.7	+6	43.7	+44.3	+46.04	28	33		+16	14	43.14	-	30.38	14	58.2	+	+6	45.4
														+44.55	18	10		+28	29	22.37	-	15.58	29	51.0	+	+3	44.2
														+43.75	22	30		+74	36	6.36	+	38.63	57	29.5	-	+8	44.5
														+45.85	25	28		-0	23	40.08	-	56.79	23	52.1	+	+1.0	44.8
														+46.55	29	43		-1	17	2.05	-	58.45	16	75.0	+	+1.0	45.5
														+46.45	32	16		-2	40	23.75	-	61.58	40	39.9	+	+1.0	45.4
														+47.43	37	24		+111	07	59.06	+2	35.84	11	20.5	-	+1.3	45.6
														+42.85	44	27		+107	44	44.32	+2	12.64	12	18.9	-	+1.3	44.7
														+42.85	48	14		+7	22	46.58	-	43.01	22	47.6	+	+8	42.0

R.A.	S' (0)	R ₁ +R ₂ +R ₃	R ₄	S' (c)	I	R.A.	S' (0)	R ₁ +R ₂ +R ₃	R ₄	S' (c)	I																	
1872, March 3																												
24.5	5	07	10	+45	51	33.50	+	3.45	51	62.7	+	125.8	+25.7	+24.8	6	14	45	+93	22	14.50	+1	17.76	23	38.5	-	+1.25.9		
26.1	5	18	10	+28	29	42.80	-	15.51	29	51.1	+	3.23.8	+24.1	+25.9	6	39	30	-16	31	26.36						+1.24.4		
26.5	5	22	30	+74	56	26.06	+	38.36	57	30.7	-	8.26.3	+25.5	+25.6	7	37	24	+28	19	53.58						+3.25.3		
24.5	5	25	28	-0	23	19.87	-	56.36	23	52.5	+	1.02.3	+24.7	+26.2	7	44	41	+74	14	30.51						+8.27.0		
26.5	5	29	43	-1	16	45.46	-	58.48	16	75.4	+	1.02.8	+29.5	+26.8	7	48	26	+110	00	54.72						+1.328.1		
26.6	5	32	16	-2	40	4.76	-	61.19	40	40.3	+	1.02.5	+26.6	+25.3	7	52	18	+91	03	19.48						+1.126.4		
26.1	5	35	55	+49	45	38.81	+	74.6	45	71.7	-	2.25.4	+25.2	+27.3	8	09	31	+9	34	53.02						+8.26.5		
26.3	5	42	32	+39	06	13.04	-	3.66	6	38.2	+	1.28.8	+28.9	+25.1	8	19	32	+61	08	1.06						+5.25.6		
29.0	5	50	23	+37	11	58.63	-	5.86	12	9.9	+	1.25.1	+25.2	+27.8	8	25	16	+20	52	25.18						+5.27.1		
28.1	6	39	42	+87	13	10.28	+	57.84	14	33.5	-	1.025.4	+24.4															
24.9	6	50	28	+104	41	4.04	+	55.46	43	28.0	-	1.328.5	+27.2	+26.32												+26.07		
26.3	6	53	36																									
26.4	6	56	29	+20	45	20.59	-	24.64	45	21.9	+	5.26.0	+26.5															
25.9	7	02	48	+39	31	18.62	-	3.22	31	43.1	+	1.27.7	+27.8															
28.0	7	09	04	+41	06	10.74	-	1.52	6	36.2	+	0.27.0	+27.0															
25.97	7	10	40	+16	46	11.96	-	29.40	46	8.7	+	6.26.2	+26.8															
	7	12	30	+112	30	54.85	+2	46.99	34	10.1	-	1.028.3	+26.9															
	7	17	41	+28	02	54.45	-	16.18	3	3.9	+	3.25.6	+25.9															
	7	20	49	+32	02	1.29	-	11.47	2	15.6	+	3.25.8	+26.1	+24.8	5	50	23	+37	11	51.18	-	5.72	12	10.2	++	+124.7		
	7	32	36	+5	33	21.03	-	46.37	32	60.0	+	9.25.3	+26.2	+26.6	6	00	14	+14	46	58.13	-	31.79	46	52.2	++	+725.9		
	7	37	24	+28	19	57.48	-	15.86	19	62.1	+	3.26.5	+26.8	+25.1	6	04	38	+69	20	58.12	+	30.43	21	54.3	+	+6.25.7		
	7	48	26	+110	00	52.04	+2	27.21	56	11.2	-	1.329.6	+28.3	+25.6	6	07	06	+22	32	29.28	-	22.60	32	31.3	+	+524.0		
26.3														+25.2													++	+125.1
26.0														+26.3													++	+026.3
26.4														+25.6													++	+6.25.0
26.0														+26.1													++	+525.6
27.7														+25.3													++	+3.25.0
26.4														+26.2													++	+8.25.4
27.8														+27.0													++	+3.28.7
27.5														+24.4													++	+9.23.5
27.7														+25.3													++	+3.25.0
25.3														+26.2													-	+8.27.0
25.8														+25.1													-	+1.126.2
27.9	4	59	16	+97	43	52.21	+	26.61	45	43.3	-	1.24.5	+23.3	+26.1	8	09	31	+9	34	53.33						++	+8.25.3	
26.9	5	04	36	+38	19	25.50	-	4.81	19	35.2	+	1.34.5	+34.6	+26.28	8	13	08	+102	38	38.58						-	+1.27.4	
26.5	5	07	10	+45	51	33.91	+	3.59	51	62.5	-	1.25.0	+24.9	+24.58	8	19	32	+61	08	2.43						-	+5.25.0	
26.2	5	08	24	-8	20	24.61	-1	14.55	20	74.9	+	1.124.3	+25.4														+	+25.32
28.4	5	11	21	-6	58	28.01	-1	10.87	58	73.5	+	1.125.4	+26.5	+25.57														
	5	22	30	+74	56	26.58	+	38.73	57	30.9	-	8.25.6	+24.8															
	5	37	24	+111	08	20.73	+2	34.81	11	22.8	-	1.327.3	+26.0															
	5	44	27	+107	45	6.71	+2	11.06	12	16.4	-	1.325.8	+24.5															
26.9	6	14	55	+93	22	17.82	+1	17.80	23	48.2	+	1.113.1	+12.0															
29.7	6	39	42	+87	13	12.44	+	60.24	14	34.8	-	1.022.1	+21.1															
6.56	7	09	04	+41	06	11.80	-	1.54	6	36.9	+	0.26.6	+26.6	+28.4	6	56	29	+20	45	19.47						++	+5.27.9	
	7	10	40	+16	46	12.66	-	29.40	46	8.7	+	6.25.4	+26.0	+29.4	7	02	48	+39	31	18.41						++	+1.29.3	
	7	12	24	+22	12	55.79	-	22.98	12	59.5	+	5.26.7	+27.2	+29.3	7	09	04	+41	06	10.00						++	+0.29.3	
	7	17	41	+28	02	54.96	-	16.10	3	4.4	+	3.25.6	+25.9	+30.4	7	16	40	+16	46	9.33						++	+6.29.8	
	7	26	22	+32	09	50.57	-	11.42	9	65.4	+	3.26.3	+26.6	+29.1	7	12	24	+22	12	54.49						++	+5.28.6	
	7	32	36	+5	33	22.71	-	46.04	32	59.9	+	9.23.2	+24.1	+27.9	7	20	49	+32	02	0.72						++	+3.27.6	
	7	37	24	+28	19	53.17	-	15.65	19	62.7	+	3.25.2	+25.5	+29.3	7	26	22	+32	09	45.93						++	+3.27.0	
														+27.5	8	46	31	+31	03	33.75						++	+3.27.2	
														+27.3	8	48	39	+6	26	7.55						++	+5.26.5	
														+28.2	8	50	22	+48	32	5.53						-	+1.28.3	
														+31.0	8	53	30	+99	53	54.16						-	+1.28.2	
8.5														+27.1	8	54	50	+47	39	13.44						++	+1.27.2	
6.9														+27.5	8	59	00	+67	38	20.87						-	+6.28.1	
7.0														+28.45													+	+28.23
7.2																												
8.2	6	0	14	+14	46	59.31	-	31.42	46	52.2	+	7.24.3	+25.0															
8.6	6	04	38	+69	20	58.14	+	30.38	21	54.1	-	6.25.6	+25.0															
8.3	6	07	06	+22	32	30.07	-	21.75	32	31.3	+	5.23.0	+23.5															
7.8	6	14	45	+93	22	15.62	+1	16.73	23	58.4	-	1.126.0	+24.9															
6.0	6	30	15	+16	30	25.92	-	29.33	30	22.1	+	6.25.5	+26.1															
	6	39	30	-16	31	28.21	-1	38.93	32	43.3	+	1.223.8	+25.0															
	6	39	42	+87	12	12.30	+	57.53	14	35.0	-	1.025.2	+24.2															
	7	32	36	+5	33	23.44	-	45.26	32	59.9	+	9.21.7	+22.6															
	7	37	24	+28	19	53.95	-	15.39	19	62.9	+	3.24.3	+24.6															
	7	48	26	+110	00	31.32	-							+1.355.1														
	7	52	18	+91	03	20.95	-							+1.126.2														
	8	09	31	+9	34	53.																						

A.	S'(o)	$R_2 + R_3 + R_4$	S(c)	I	R.A.	S'(o)	$R_2 + R_3 + R_4$	S(c)	I	R.
	1872, March 24					1872, Apr. 2				
7 09 04	+41	06 13.75			+ + .025.7 +25.7 +24.5 8	+102	38 42.78			- .025.7 8
7 12 30	+112	30 57.85			+ + .125.9 +24.5 +23.6 8	+61	08 4.88			- .57 24.1 8
7 17 41	+28	02 56.10			+ + .325.0 +25.3 +24.4 8	+20	52 28.78			+ .57 23.9 8
7 20 49	+32	02 3.94			+ + .324.4 +24.7 +25.0 8	+18	37 25.92			+ .67 24.4 9
7 26 22	+32	09 18.62			+ + .328.9 +29.2 +24.4 8	+6	53 29.60			+ .87 23.6 9
7 37 24	+28	19 54.86			+ + .324.4 +24.7 +23.3 8	+31	03 38.66			+ .87 23.0 9
7 52 18	+91	03 18.49			+ + .112.7 +26.3 +24.6 8	+6	26 8.74			+ .87 23.8 9
8 37 24	+18	37 24.86			+ + .625.7 +26.3 +23.7 8	+48	32 11.65			- .27 23.9 9
					+ 25.04 +25.34 +23.7 8	+99	54 5.39			- .12 +26.3 9
					+23.9 8	+47	39 18.39			- .17 23.8 9
					+24.1 9	+67	38 27.70			- .67 24.5 9
					+26.4 9	+2	51 32.74			+ .97 23.2 9
					+25.2 9	+37	20 19.76			+ .17 26.3 9
					+24.9 9	+18	14 50.58			+ .67 24.6 9
					+34.6 9	+34	55 44.38			+ .27 24.7 9
					+25.1 9	+81	52 11.84			- .97 35.5 9
					+28.4 9	-8	05 35.82			+ .17 27.0 9
					+24.7 9	+70	22 41.93			- .77 29.1 9
					+8.24.8 +25.6 +25.5 9	+110	57 32.57			- .13 +26.0 9
					+ + .324.9 +25.3 +23.9 9	+24	21 40.63			+ .47 25.1 9
					+ + .523.5 +23.3 +25.6 9	+59	37 18.01			- .47 29.3 9
					+ + .524.8 +25.3 +24.7 6	+26	26 25.94			+ .47 25.2 9
					+ + .625.0 +25.6 +24.7 6					+24.53 9
					+ + .824.6 +25.4 +25.5 9					
					+ + .325.6 +25.9 +22.7 +23.5					
					- + .224.6 +24.4 +25.5 6	53	36			
					- + .128.4 +27.2 +25.5 6	6	56 29			+20 45 21.60
					- + .625.2 +24.6	7	03 12			+ .57 25.0 8
					+ 24.72 +25.01 +26.6 7	10	40			+ .67 26.0 8
					+26.2 7	12	30			- .14 +27.6 8
					+25.5 7	17	41			+ .37 25.2 8
					+24.4 7	20	49			+ .37 24.1 8
					+25.5 7	26	22			+ .37 25.2 8
					+24.2 7	32	36			+ .97 23.3 8
					+24.5 7	37	24			+ .37 24.2 8
					+1.225.2 +26.4 +24.8 7	+74	14 35.43			- .87 25.6 8
					- + .424.3 +23.9 +22.7 7	+91	03 26.10			- .17 +23.8 8
					- + .125.6 +24.3 +23.7 8	+18	37 27.06			+ .67 23.1 8
					+ + .526.2 +26.7 +25.4 8	+31	03 36.65			+ .37 25.1 8
					+24.3 8	+6	26 8.77			+ .87 28.5 8
					- + .623.4 +22.8 +26.2 8	+48	32 9.81			+ .27 26.0 8
					- + .725.3 +24.6 +26.7 8	+99	54 4.78			- .12 +27.9 8
					- + .1325.0 +24.3 +24.4 8	+47	39 17.81			- .07 +24.5 8
					+ + .424.8 +25.2 +24.6 1					+24.29 8
					- + .1325.8 +24.0 +24.6 1					
					- + .424.2 +23.8					
					+ 24.77 +24.77					
					+26.6 6	56	29			+20 45 20.58
					+25.9 7	7	03 12			+ .67 25.3 9
					+25.5 7	10	40			+ .37 25.2 9
					+23.9 7	20	49			+ .97 23.0 9
					- + .223.6 +23.4 +26.1 7	37	24			+ .37 25.8 9
					- + .1230.3 +23.3 +24.6 7	44	41			- .87 25.4 10
					- + .625.1 +24.5 +23.9 7	52	18			- .17 +25.0 10
					+ + .522.3 +22.8 +25.4 +25.5					+25.13 10
					+ + .125.4 +25.5 +24.9 +25.5					
					+ + .224.4 +24.6 +24.4 +24.4					
					- + .935.3 +24.4 +24.9 +24.2					
					- + .724.9 +24.2 +1325.3 +27.0					
					+ + .823.9 +24.7 +424.0 +24.4					
					- + .1327.0 +25.7 +424.0 +24.4					
					- + .424.7 +24.3 +424.0 +24.4					
					+ + .739.8 +23.1 +24.39 +24.39					
					+ 24.29 +24.39					
8 50 22	+48	32 11.93								
8 53 30	+99	54 3.32								
8 59 00	+67	38 26.56								
9 07 42	+2	51 33.53								
9 10 49	+37	20 20.50								
9 11 49	+18	14 50.19								
9 13 14	+34	55 44.59								
9 18 32	+81	52 12.16								
9 23 00	+70	22 44.75								
9 27 00	+110	57 30.98								
9 34 18	+14	28 35.61								
9 38 33	+24	21 41.52								
9 40 00	+109	14 11.98								
9 41 49	+59	37 47.49								
9 45 28	+26	36 26.00								
9 46 48	+73	28 8.16								

[illegible]

A.

S(10) $\frac{R}{R_1+R_2+R_3}$
1872, Apr. 21

S(c)

I

R.A.

S(10) $\frac{R}{R_1+R_2+R_3}$
1872, April 25

S(c)

I

R.

8	50	22	+48	32	3.51
8	59	00	+67	38	26.06
9	07	42	+2	51	22.96
9	10	49	+37	20	11.30
9	13	14	+34	55	35.77
9	18	32	+81	52	17.29
9	21	18	-8	05	48.39
9	23	00	+70	22	37.24
9	27		+110	57	27.24
9	38	33	+24	21	33.34
9	40	50	+109	14	8.15
9	46	48	+78	28	16.61
10	9	22	+43	32	41.06
10	14	44	+42	8	5.44
10	30	50	+104	24	4.80
10	38	47	+31	21	3.32
10	42	33	+11	13	18.05
10	55	50	+82	25	44.21
11	02	30	+48	11	2.11
11	07	20	+21	13	17.66
11	11	22	+82	14	84.66
11	23	48	+70	01	20.52
11	30	21	-0	6	18.36
11	34	00	+103	02	52.59

-2+	34.2+34.0	+34.810	01	34
-6+	29.0+28.4	+34.110	9	22
+9+	31.2+32.1	+34.510	14	44
+1+	36.2+36.3	+33.710	20	25
+2+	34.8+35.0	+33.310	24	06
-7+	34.7+33.8	+34.610	26	05
+11+	33.0+34.1	+34.410	30	00
-7+	36.4+35.7	+32.710	38	47
-13+	(39.9)+38.6	+33.610	42	33
+4+	33.8+33.4	+33.310	55	50
-13+	(38.7)+27.4	+33.310	58	26
-7+	36.1+35.4	+33.311	02	30
+0+	34.3+34.3	+34.011	07	20
+0+	34.7+34.7	+34.611	11	22
-13+	(24.9)+23.6	+34.411	14	34
+3+	32.0+32.3	+32.511	23	48
+7+	33.2+33.9	+35.111	30	21
-5+	34.4+33.9	+34.511	34	00
-1+	34.0+33.9	+33.211	39	19
+5+	33.1+33.6	+33.711	42	33
+3+	35.1+35.4	+33.511	44	00
-7+	32.9+32.2	+32.111	47	08
+10+	33.5+34.5	+33.811	58	44
-12+	(34.4)+33.4	+31.412	5	59

+ 33.79+33.84 +33.61

+12	35	29.07
+43	32	41.69
+42	8	6.17
+37	21	22.31
+76	21	18.23
+9	57	53.19
+104	24	0.80
+31	21	3.62
+11	13	17.89
+62	25	45.32
+8	01	42.43
+45	11	8.25
+21	13	17.68
+32	14	36.06
+6	43	54.11
+70	01	20.85
-00	06	48.53
+103	02	57.19
+48	28	46.71
+15	18	9.97
+2	29	20.10
+54	23	45.06
+9	26	39.23
+78	18	34.43

++	7341	9
++	0341	10
++	0345	10
++	1336	10
++	8341	10
++	8338	10
++	1838	10
++	3324	10
++	7329	10
++	5338	10
++	8325	10
++	1334	10
++	5332	11
++	3343	11
++	8336	11
++	7332	11
++	10391	11
++	1333	11
++	7330	11
++	9326	11
++	3324	11
++	8330	11
++	8322	11

+ 3338

Apr. 22

10	9	22	+43	32	41.17
10	14	44	+42	8	4.57
10	20	25	+37	21	20.58
10	24	06	+76	21	17.32
10	26	05	+9	57	54.05
10	30	50	+104	23	48.11
10	38	47	+31	21	2.98
10	42	33	+11	13	17.62
10	55	50	+62	25	44.51
10	58	26	+8	01	43.24
11	2	30	+45	11	0.78
11	07	20	+21	13	17.21
11	11	22	+32	14	34.78
11	23	48	+70	01	18.94

-0+	34.3+34.3	+34.09	46	48
+0+	35.7+35.7	+37.210	00	22
+1+	35.2+35.3	+37.410	01	34
-8+	34.5+33.7	+35.010	14	44
+8+	33.2+34.0	+33.610	20	25
-13+	(39.7)+38.4	+31.310	24	06
+3+	32.7+32.0	+36.710	26	05
-7+	34.4+35.1	+34.310	38	47
+5+	34.1+33.6	+36.810	42	33
+8+	32.1+32.9	+33.510	55	50
-1+	35.4+35.3	+35.010	58	26
+5+	34.0+34.5	+33.811	02	30
+3+	35.3+35.6	+36.411	07	20
-7+	34.0+33.3	+36.111	11	22
		+36.011	14	34
		+33.811	23	48
		+27.911	30	21
		(34.3)+32.7	34	00
		+32.711	39	19
		+36.711	42	33
+9+	35.6+36.5	+36.311	44	00
+1+	35.2+33.3	+33.911	47	08
+6+	35.4+36.0	+35.211	58	44
+6+	33.9+34.5	+33.212	5	59
+7+	35.8+36.5			
-0+	34.2+34.2	+35.08		
+0+	33.3+33.3			
+1+	33.1+33.2			
-8+	34.6+33.8			
+8+	34.3+35.1			
-13+	(37.8)+36.2			
+3+	32.6+32.9			
-5+	35.0+34.5			
+8+	32.6+33.3			
-1+	33.4+33.3			
+5+	33.8+34.3			
+3+	34.3+34.6			
+8+	33.6+34.4			

+ 34.22+34.33

+78	28	28.16
+17	22	59.33
+12	35	25.24
+42	8	5.72
+37	21	22.27
+76	21	22.45
+9	57	49.70
+31	21	1.71
+11	13	14.48
+62	25	46.35
+8	01	39.48
+45	11	3.17
+32	14	14.65
+21	13	34.34
+6	43	57.20
+70	01	20.81
-00	16	53.20
+103	02	54.85
+48	28	47.52
+15	18	5.99
+2	29	15.79
+54	23	44.03
+9	26	36.77
+78	18	34.70

++	7347	8
++	6366	9
++	7367	9
++	0350	9
++	1335	9
++	8321	9
++	8359	9
++	3340	9
++	7361	10
++	5340	10
++	8342	10
++	1339	10
++	5359	11
++	3338	11
++	8352	11
++	7345	11
++	1333	11
++	9354	11
++	3342	11
++	8344	11
++	8340	11

+ 3487

Apr. 23

9	07	42	+2	51	19.75
9	10	49	+37	20	12.50
9	11	49	+18	14	40.46
10	00	22	+17	23	3.43
10	01	34	+12	35	27.87
10	9	22	+48	32	41.93
10	14	44	+42	8	6.83
10	20	25	+37	21	22.60
10	24	06	+76	21	17.47
10	26	05	+9	57	53.58
10	30	50	+104	23	49.08
10	38	47	+31	21	3.29
10	55	50	+62	25	43.34
10	58	26	+8	01	43.37
11	02	30	+45	11	2.85
11	07	20	+21	13	17.77
11	11	22	+32	14	36.07
11	14	34	+6	43	55.07

+9+	35.6+36.5	+36.311	44	00
+1+	35.2+33.3	+33.911	47	08
+6+	35.4+36.0	+35.211	58	44
+6+	33.9+34.5	+33.212	5	59
+7+	35.8+36.5			
-0+	34.2+34.2	+35.08		
+0+	33.3+33.3			
+1+	33.1+33.2			
-8+	34.6+33.8			
+8+	34.3+35.1			
-13+	(37.8)+36.2			
+3+	32.6+32.9			
-5+	35.0+34.5			
+8+	32.6+33.3			
-1+	33.4+33.3			
+5+	33.8+34.3			
+3+	34.3+34.6			
+8+	33.6+34.4			

+ 34.15+34.45

R.A. Sio) $R_n + R_{25} + R_4$ Sici I
1872. April 27

7341	9	46	48	+ 73	28	19.14
7341	10	00	22	+ 17	23	1.77
0341	10	01	34	+ 12	35	27.07
1336	10	14	44	+ 42	8	4.97
8338	10	20	26	+ 37	21	21.37
8338	10	24	06	+ 76	21	18.34
8338	10	26	05	+ 9	57	52.99
3324	10	30	03	+ 104	23	53.86
7329	10	38	47	+ 31	21	2.32
5338	10	42	33	+ 11	13	15.30
8325	10	55	50	+ 62	25	49.03
1334	10	58	26	+ 8	01	41.72
5332	11	02	30	+ 45	11	1.41
3343	11	07	26	+ 21	13	16.85
8336	11	11	22	+ 32	14	34.69
7382	11	14	34	+ 6	43	52.57
10341	11	30	21	- 00	06	50.37
7357	11	34	00	+ 103	02	52.30
1333	11	59	19	+ 48	28	45.57
7330	11	42	33	+ 15	18	7.57
9326	11	44	00	+ 2	29	19.19
3324	11	47	08	+ 54	23	42.98
8330	11	58	44	+ 9	26	36.90

3338

Apr. 29

7347	8	59	00	+ 67	38	20.79
7366	9	07	42	+ 2	51	21.52
7367	9	18	32	+ 81	52	16.29
0330	9	21	18	- 8	05	25.64
1335	9	27	00	+ 110	57	26.74
8321	9	38	33	+ 24	21	32.34
8359	9	40	00	+ 109	14	7.84
3340	9	45	28	+ 26	36	17.50
7361	10	00	22	+ 17	23	7.23
5340	10	01	34	+ 12	35	46.20
8342	10	14	44	+ 42	8	35.1
1339	10	20	25	+ 37	21	21.47
5359	11	23	48	+ 70	01	20.70
3358	11	30	21	- 00	06	47.77
8382	11	34	10	+ 103	02	48.90

April 30

3487	10	00	22	+ 17	22	43.22
	10	01	34	+ 12	35	28.08
	10	9	22	+ 43	32	41.70
	10	14	44	+ 42	8	5.74
	10	20	25	+ 37	21	20.99
	10	24	06	+ 76	21	18.31
	10	26	05	+ 9	57	53.49
	12	5	59	+ 78	18	32.84

R.A. Sio) $R_n + R_{25} + R_4$ Sici I
1872. May 20

- + 7343	+33.6	-6.0	11	30	21	- 03	06	8.54
+ + 6353	+35.9	-5.2	11	34	02	+ 103	03	38.91
+ + 7361	+36.8	-6.3	11	42	33	+ 18	17	51.20
+ + 0359	+35.9	-7.3	11	47	08	+ 54	24	29.07
+ + 1348	+34.9							
+ + 8349	+34.1	-6.53						
+ + 8361	+36.9							
- + 1338	+34.5							
+ + 3338	+34.1							
+ + 7363	+37.0							
+ + 5358	+35.3							
+ + 8354	+34.2							
- + 1356	+35.5							
+ + 5345	+35.0							
+ + 3359	+36.2	-7.4	11	39	19	+ 48	29	31.69
+ + 8349	+35.7	-6.4	11	42	33	+ 15	17	52.06
+ + 10359	+36.9	-8.3	11	44	02	+ 2	30	2.57
- + 1371	+35.8	-7.8	11	47	08	+ 54	23	24.73
- + 1348	+34.7	-6.0	11	58	44	+ 9	27	20.62
+ + 7356	+36.3					+ 78	18	36.47
+ + 9335	+34.4							
- + 3350	+34.7	-7.18						
+ + 8355	+36.3							

+ 35.14 + 35.45

May 22

Apr. 24

	+33.4	10	24	06	
	+34.7	10	26	05	
	+33.2	10	38	47	
	+33.6	10	42	35	
	+33.4	10	55	50	
	+33.0	10	58	26	
	+32.3	11	02	30	
	+34.4	11	07	20	
	+34.6	11	11	22	
	+32.3	11	23	48	
	+35.4	11	30	21	
	+35.3	11	34	03	
	+34.2	11	42	33	
	+33.7	11	47	08	
	+035.7	+35.7			
	+134.9	+35.0	+33.71		
	+733.7	+33.0			
	+1034.3	+35.3			
	+133.7	+35.8			

+ 34.11 + 34.23

+ - 10.70
+ - 12.40
+ - 7.70
- 7.00

- - 27.2
+ - 77.1
+ - 96.5
- - 34.5
+ - 86.8
+ - 37.1
- 7.56

- + 834.2
+ + 833.9
+ + 332.9
+ + 732.9
+ + 533.9
+ + 832.2
- + 132.4
+ + 535.9
+ + 334.3
+ + 733.0
+ + 1034.4
+ + 1236.5
+ + 733.0
- + 334.0

+ 335.0

Nfl. = +11.5

1872 June 11 $N_{\text{fl}} = +4' 44.86$ 45.21

T	lamps	S	Z	Sinuz	Ref.	"
13 18	-19	-10° 30'	+52.53	+50		"
14 36	-08	-5 6	+47.29	+74 + 4	43.3 + 10	44.85
15 26	+88	+41 16	+1 7	+0.2 + 4	45.5 + 02	45.52
15 29	+7	+27 09	+15 18	+26 + 4	45.2 + 30	45.50
15 33	+56	+40 46	+1 34	+03 + 4	45.5 + 03	45.53
15 38	+12	+6 50	+35 23	+58		45.18
15 37	-289	+70 56	-28 33	-47 + 4	46.7 - 106	45.64
+02	45.52	+24	44.15	-92	45.64	
+03	45.53	+74	44.15	-92	45.64	
+13	45.53					

1872 June 13

W.R. only.

14 05	+4.8	+25 42	+16 41	+29	
14 12	+128	+57 57	-9 36	-17	
14 21	+130	+52 26	-10 3	-17	
14 48	+171	+39 49	-17 26	-30	
14 09	+176	+78 09	-25 46	-58	
14 49	-510	+78 55	-36 32	-55	

1872 June 18

$N_{\text{fl}} = +4' 45.17$

13 24	+178	+60 36	-18 13	-31	
13 28	+00	+0 03	+42 20	+67 + 4	44.4 + 77
					45.17

1872 June 19

$N_{\text{fl}} = +4' 44.16$

13 42	+119	+49 57	-7 34	-13 + 4	43.9 - 15	43.75
13 49	+35	+19 02	+23 21	+39 + 4	45.3 + 45	45.75
13 55	+64	+2 10	+40 13	+64 + 4	41.6 + 74	42.34
14 04	+48	+25 42	+16 41	+29 + 4	44.0 + 23	44.33
14 12	+128	+57 57	-9 36	-17 + 4	44.5 + 20	44.30
14 21	+130	+52 26	-10 03	-17 + 4	45.1 - 20	42.90
14 01	+214	+64 59	-22 36	-33 + 4	45.9 - 44	45.46
14 09	+176	+78 09	-25 46	-58 + 4	45.7 - 67	44.483
14 26	-3.12	+72 16	-29 58	-58 + 4	48.1 - 105	47.05
-13	4375	+39	4555	-88	45.46	
-17	4430	+64	4234	-68	44.483	
-17	4290					
+29	4433					
-04	4382	+51	4404	-48	44.95	

1872 June 27 $N_{\text{fl}} = +4' 43.88$

T	lamps	S	Z	Sinuz	Ref.	"
13 49	+35 + 19	02	+23 21	+39 + 4	43.1 + 45	43.58
13 55	+04 + 2	10	+40 13	+64 + 4	41.8 + 74	42.54
14 04	+48 + 25	42	+16 41	+29 + 4	44.1 + 33	44.43
14 09	+52 + 27	27	+14 56	+26 + 4	42.9 + 30	43.20
15 10	+67 + 33	47	+8 36	+15 + 4	44.9 + 17	45.09
15 40	+28 + 15	49	+26 33	+43 + 4	44.0 + 52	44.52
15 42	-05 - 3	02	+45 25	+71 + 4	44.0 + 82	44.82
15 51	+29 + 16	05	+26 18	+44 + 4	44.9 + 51	45.41
15 52	+52 + 27	15	+15 8	+26 + 4	44.9 + 30	45.20
15 59	+66 + 58	54	-16 31	-28 + 4	44.2 - 32	43.80
14 01	+214 + 64	59	-22 36	-38 + 4	46.0 - 24	45.56
15 21	+313 + 17	17	+25 6	+42 + 4	45.7 - 48	45.22
15 37	-289 + 70	56	-28 33	-47 + 4	46.1 - 53	45.58
15 44	+176 + 62	60	-20 37	-35 + 4	43.3 - 40	42.90
15 49	+478 + 78	11	-35 48	-58 + 4	45.0 - 67	44.33

1872 June 30 $N_{\text{fl}} = +4' 43.20$

+39	43.55	-28	43.50
64	42.54	38	45.56
29	44.43	42	45.22
26	43.20	42	45.57
45	44.52	35	42.90
41	44.52	-58	44.33
+44	45.41	-40	43.62
+45	44.07		

1872 July 1 $N_{\text{fl}} = +4' 45.90$

14 44	-0.28 - 15	31	+57 54	+85	
14 48	+171 + 59	49	-17 26	-30 + 4	46.1 - 39
14 57	+37 + 40	34	+1 09	+03 + 4	45.3 + 03
15 45	+176 + 62	60	-20 37	-35 + 4	44.7 - 40
17 09	+26 + 14	32	+27 51	+47 + 4	45.6 + 54
17 11	+75 + 36	57	+5 26	+09 + 4	46.4 + 10
17 28	+130 + 52	24	-10 1	-17 + 4	44.5 - 20
14 49	-510 + 78	55	-28 33	-47 + 4	46.6 - 102
14 51	+365 + 74	40	-38 17	-53 + 4	44.6 - 61
14 56	+229 + 66	26	-24 3	-41 + 4	46.3 - 47
15 57	-289 + 70	56	-28 33	-47 + 4	46.3 - 47
15 44	+176 + 62	59	-20 36	-35 + 4	44.7 - 40
17 22	-272 + 74	57	-22 36	-38 + 4	46.6 - 102
+03	45.33	+47	46.14	-53	43.85
+09	46.050	+17	46.14	41	45.83
-17	44.30	-35	44.30	-35	44.30
-02	45.348	+47	46.29	-93	44.71

1872 July 1

1872 July 1 $N_{\text{fl}} = +4' 45.90$

14 48	+171 + 59	49	-17 26	-30 + 4	45.6 - 35	45.25
15 09	+09 + 5	25	+36 58	+60	-170	
15 10	+67 + 33	47	+8 36	+15 + 4	47.8 + 17	47.97
15 59	+166 + 58	54	-16 31	-28 + 4	45.0 - 32	44.68
16 05	+101 + 48	16	-3 53	-05	-06	
16 12	-08 - 4	23	+46 46	+73	-185	
16 16	+35 + 19	27	+22 56	+37 + 4	45.8 + 48	46.28
16 19	+26 + 14	20	+28 3	+47 + 4	46.9 + 55	47.45
16 22	+146 + 35	30	-13 7	-23 + 4	45.2 - 27	44.93
16 25	+40 + 21	46	+20 37	+35 + 4	44.8 + 41	45.21
16 38	+81 + 89	10	+3 13	+05 + 4	45.5 + 06	45.56
16 46	+27 + 15	11	+27 12	+46	-253	
16 55	+20 + 31	7	+11 16	+19 + 4	43.9 + 22	44.12
14 49	-510 + 78	55	-28 33	-47 + 4	-99	
15 13	+245 + 67	50	-25 27	-13 + 4	45.4 - 50	44.90
16 15	+409 + 76	12	-38 49	-56 + 4	46.2 - 65	45.55
16 28	+261 + 69	02	-36 89	-15 + 4	44.9 - 52	44.38
16 36	+459 + 77	42	-35 19	-58 + 4	44.5 - 67	43.83
16 59	+734 + 82	15	-39 52	-64	-74	

+15	47.97	+15	47.97	-43	44.90
39	46.25	+05	45.56	56	45.55
47	47.45			45	44.38
35	45.21			58	43.83
+34	46.72	+10	46.6	-58	44.66

1872 July 3 $A_{\text{gl}} = +4$ 45.23
T tango δ z sin z R_{eq}

[illegible]

15	49	+478	+78	11	-35	48	-58	+4	45.0
16	15	+4.07	+76	12	-33	49	-56	+4	45.5
16	28	+2.61	+69	3	-26	40	-45	+4	45.8
16	22	-3.83	-75	42	-23	49	-55	+4	46.2
16	36	+4.59	+77	42	-35	49	-58	+4	44.8
16	1	+7.34	+82	15	-42	32	-64	+4	45.3
<hr/>									
+44	46.41	+01	45.39	-58	44.3				
+26	46.00	+06	46.37	-56	45.75				
+77	45.22			-45	45.28				
+39	45.33			-58	44.13				
+54	40.34			-58	44.13				
+35	45.61			-64	44.06				
+415	45.59	+03	45.38	-56	44.73				

18.2 July 6 $N_{\text{eff}} = +4 \quad 44.8$

14	27	+ 0.57	+ 40	54	+ 1	29	+ .01	+ 4	44.8
14	59	+ .52	+ 27	27	+ 14	56	+ .26	+ 4	43.8
15	45	+ 1.96	+ 62	60	- 2.0	37	- .35	+ 4	44.1
17	04	+ .86	+ 40	41	+ 1	43	+ .01	+ 4	44.0
17	09	+ .26	+ 14	32	+ 2.7	51	+ .47	+ 4	44.3
17	11	+ .78	+ 36	57	+ 5	26	+ .09	+ 4	44.9
17	28	+ 1.30	+ 52	24	- 10	1	- .17	-	-
14	56	+ 2.23	+ 66	26	- 2.4	0.3	- .41	+ 4	46.5
15	04	- 1.42	+ 77	16	- .81	53	- .37	+ 4	46.4
15	37	- 2.89	+ 70	56	- 2.8	38	- .48	+ 4	46.3
16	59	+ 7.34	+ 82	10	- 3.9	52	- .64	+ 4	45.9
17	22	- 3.72	+ 74	57	- 3.2	34	- .54	+ 4	44.9
				+ 26	440	+ .01	44.87	- .25	43.6
				+ .47	45.44	+ .01	46.01	41	46.0
						+ .09	45.00	- .64	45.1

1572 July 7 $+ .36$ $44.457 + .03$ 44.61 $- .97$ 44.1
 $N_H = +4$ 44.78^5

14	58	+ .58	+ 40	54	+ 1	29	+ .01	+ 4	43.6
14	59	+ .62	+ 37	57	+ 14	56	+ .26	+ 4	43.3
15	09	+ .09	+ 5	25	+ 36	58	+ .60	+ 4	39.7
15	10	+ .67	+ 33	47	+ 8	36	+ .15	+ 4	45.7
15	26	+ .88	+ 41	16	+ 1	7	+ .02	+ 4	45.8
15	29	+ .51	+ 27	9	+ 15	14	+ .26	+ 4	45.5
15	45	+ 1.96	+ 62	60	- 20	37	- .35	+ 4	45.6
17	09	+ .26	+ 14	33	+ 27	51	+ .47	+ 4	44.7
17	11	+ .75	+ 36	57	+ 5	26	+ .09	+ 4	46.6
17	28	+ 1.30	+ 52	24	- 10	1	- .17	+ 4	46.6

14	57	+3.65	+74	40	-32	17	-53	+4	43.8
14	56	+2.29	+66	26	-24	83	-41	+4	45.6
15	4	-4.42	+77	16	-34	53	-87	+4	44.5
15	13	+2.45	+67	50	-25	27	-43	+4	44.5
16	28	+2.68	+79	11	-15			+4	43.8
15	49	+4.78	+78	11	-35	48	-58	+4	44.5
16	37	+7.34	+82	15	-39	52	-64	+4	44.5
17	23	-3.72	+74	57	-32	34	-54	+4	44.1
							-59		
				+33	44.80	+67	45.44	-57	44.10

1572 July 9 $A_p = +4^{\circ} 44'.68$
 $T \text{ tang } S$ $2 \sin 2 R_{rd}$

57	+ 87	+ 40	64	+ 1	29	+ .01 + 4
59	+ 52	+ 27	27	+ 14	56	+ .26 + 4
69	+ .09	+ 5	25	+ 36	58	+ .60 + 4
10	+ .67	+ 33	47	+ 8	36	+ .15 + 4
26	+ .88	+ 41	16	+ 1	7	+ .80 + 4
29	+ .31	+ 27	9	+ 15	14	+ .26 + 4
45	+ 1.96	+ 62	60	- ²⁰ 14	37	- .35 + 4
69	+ .24	+ 14	32	+ 27	51	+ .47 + 4
11	+ .75	+ 36	57	+ 5	26	+ .09 + 4
28	+ 1.30	+ 62	24	- 10	1	- .17 + 4
55	+ 2.29	+ 66	26	- 24	3	- .41 + 4
13	+ 2.45	+ 67	50	- 25	27	- .13 + 4

47	+1.78	+1.3	11	-3.8	48	-3.8 + 4
28	+2.61	+6.9	3	-2.6	40	-1.5 + 4
59	+7.34	+5.2	15	-3.9	52	-6.4 + 4
01	-5.18	+7.9	5	-3.6	42	-6.0 + 4
22	-3.72	+7.4	57	-3.2	34	-5.4 + 4

172 July 11 $H_{22} = +4$ 144.89

48	+1.71	+8.9	49	-1.7	26	-3.0 + 4
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$$\begin{array}{r} 59 + 32 + 27 + 14 + 56 + 26 + 4 \\ 09 + 09 + 5 + 25 + 36 + 58 + 60 + 4 \\ 10 + 12 + 30 + 15 + 2 + 31 + 15 + 1 \end{array}$$

26	+ .87	+ 38	47	+ 1	86	+ 10	+ 4
27	+ .88	+ 44	16	+ 1	7	+ .02	+ 4
29	+ .57	+ 27	9	+ 15	14	+ 26	+ 4
33	+ .86	+ 40	46	+ 1	37	+ .03	+ 4
45	+ 1.86					- .35	+ 4
51	+ .29	+ 16	5	+ 26	18	+ 14	+ 4
52	+ .52	+ 27	15	+ 15	8	+ 26	+ 4
59	+ 1.66	+ 58	54	- 16	31	- 28	+ 4
65	+ .60	+ 31	7	+ 11	16	+ 20	+ 4
84	+ .86	+ 40	41	+ 1	42	+ .03	+ 4
99	+ .26	+ 16	32	+ 27	51	+ 17	+ 4
11	+ .78	+ 36	57	+ 5	26	+ .09	+ 4
28	+ 1.30	+ 52	24	- 10	57	- 17	+ 4
56	+ 3.65	+ 74	40	- 32	17	- .53	+ 4
56	+ 2.29	+ 66	26	- 24	3	- .41	+ 4
21	+ 3.13	+ 92	17	- 29	54	- .50	-

37	-289	+70	56	-28	3.3	-48	+4
49	+478	+78	11	-35	48	-58	+9
26	+450	72	42	-35	19	58	+4

[illegible]

4	+1.01	+45	16	-2	53	-05 + 4	4
22	+1.46	+55	30	-13	7	-23 + 4	4
22	+1.87	+61	48	-19	25	-33 + 4	4
52	+1.7	+9	34	+52	49	+54 + 4	4
28	+1.30	+52	24	-10	01	-.17 + 4	4
15	+4.07	+76	13	-63	49	-56 + 4	4
36	+4.59	+77	42	-35	19	-58 + 4	4
59	+7.34	+82	15	-40 ³¹	52	-64 + 4	4
22	-3.72	+74	57	-22	34	-54 + 4	4

6 + 01	43.61		11
6 + 30	43.90	+ 26	45.20
2 + 70	42.90	+ 47	45.24
3 + 17	45.47	+ 26	43.80
6 + 00	45.60	+ 33	44.45
9 + 30	45.20		
4 - 41	44.99	+ 01	43.61
7 + 54	44.24	+ 8	45.47
6 + 10	44.70	00	45.60
4 - 20	45.20	+ 09	44.70
		+ 06	44.24
7 - 47	45.23	- 41	45.23
2 - 50	44.70	- 43	44.70

-61	44.43	-58	44.92
1.5-.52	43.98	-45	43.98
1.74	44.36	-64	44.36
7-106	44.62	-50	44.69
7-103	44.67		
8-.35	44.45	+26	43.90

36 + 36	43.90	44	45.20
20 + 70	42.70	26	45.70

74.31	48.07	+37	41.34
56.02	46.62		
53.30	45.60	+34	45.15
49.03	44.93	+01	45.01
9.41	45.47	+02	46.22
74.51	45.21	+03	46.53
44.30	45.70	+03	44.03
0.32	44.68	+09	45.10
8+23	44.03	+04	45.86
6+03	44.63		
84.54	45.34		
57.10	45.60	-35	45.49
2.20	47.00	53	43.49
		41	44.03
		58	43.43
9.61	43.29	-58	43.23
0.47	44.53		
-58		-49	44.17

4-107	44.33
4-67	43.83
4-67	42.73

7-10	2.15
-74	
3-108	43.22
5-103	43.47

July 15 1872 follows Dec 29/72

9- .06	44.84	+54	4383
2- .27	42.93		
14- .38	44.02		
3+ .63	43.93	-05	4349
7- .20	43.50		
<hr/>			
2- .65	43.55	-56	4355
0- .67	43.33	-58	4333
- .74			
4- .103	43.67	-57	4344

1872 July 20

 $\Delta\mu = +4$ 43.65

I	longs	S	2	sin 2	R_{eq}
16	42	+134	+37	1	-14 38
17	14	+86	+40	41	+1 42
17	09	+26	+14	32	+27 51
17	11	+75	+36	57	+5 26
17	28	+130	+52	34	-10 1
17	36	+104	+46	5	-3 42
17	41	+83	+27	48	+15 35
17	53	+126	+31	30	-9 7
18	33	+80	+38	40	+3 43
18	45	+65	+33	13	+9 10

16	59	+734	+82	15	-39 52
17	22	-372	+74	57	-32 54
17	32	+250	+68	13	-25 58
17	38	+258	+68	49	-26 26
18	14	+1688	+86	36	-44 13
18	39	-2073	+87	14	-44 51

+25	4408	+03	4403	-64	4336
		+09	4530	-44	4299
		-06	4253	-44	4499
		-16	4242	-51	4261
+25	4409	-02	4322	-54	

1872 July 22

 $\Delta\mu = +4$ 43.31

16	4	+701	+45	16	-2 53
16	12	-08	-4	23	+46 46
16	19	+26	+14	20	+28 3
16	25	+40	+21	46	+35 4
16	38	+80	+39	10	+3 13
16	52	+17	+9	34	+32 49
17	09	+26	+14	32	+27 57
17	41	+53	+27	48	+14 35
17	53	+126	+31	30	-9 7
18	33	+80	+38	40	+3 43
18	45	+65	+33	13	+9 10

16	36	+459	+77	42	-35 19
16	59	+734	+82	14	-39 51
17	38	+258	+68	49	-26 26
17	44	+312	+72	13	-32 50
18	14	+1688	+86	36	-44 13
18	39	-2073	+87	14	-44 51

1872 July 24

 $\Delta\mu = +4$ 43.88

14	57	+87	+40	54	+1 29
16	08	-06	-3	22	+45 45
16	12	-08	-4	23	+46 46
16	19	+26	+14	20	+28 3
16	25	+40	+21	46	+35 4
17	28	+130	+52	24	-10 1
17	30	+144	+58	16	-12 53
17	36	+104	+46	4	-3 41
18	33	+80	+38	40	+3 43
18	45	+65	+33	13	+9 10

14	51	+365	+74	40	-32 17
15	21	+313	+72	17	-32 54
16	15	+407	+76	12	-33 49
16	38	+261	+69	3	-26 40
16	36	+459	+77	42	-35 19
16	59	+734	+82	15	-39 52
17	22	-372	+74	57	-32 54
18	33	+80	+38	40	+3 43
18	39	-2073	+87	14	-44 51

1872 July 25

 $\Delta\mu = +4$ 45.35

I	longs	S	2	sin 2	R_{eq}
16	19	+26	+14	20	+28 3
16	22	+187	+61	48	-19 25
16	25	+40	+21	46	+20 37
16	30	+92	+42	42	-0 19
16	38	+81	+39	10	+3 13
16	36	+27	+15	11	+27 12
16	52	+17	+9	34	+32 49
17	04	+86	+40	41	+1 42
17	09	+26	+14	32	+27 57
17	11	+75	+36	57	+5 26
17	28	+130	+52	24	-10 1
17	31	+153	+56	34	-14 31
17	53	+126	+31	30	-9 7

16	28	+261	+69	3	-26 40
16	36	+459	+77	42	-35 19
16	59	+734	+82	14	-39 51
17	02	-518	+79	5	-35 42
17	22	-372	+74	57	-32 54
17	44	+312	+72	13	-32 50

1872 July 27

 $\Delta\mu = +4$ 43.39

16	22	+187	+61	48	-19 25
16	25	+40	+21	46	+20 37
16	38	+81	+39	10	+3 13
16	52	+17	+9	35	+32 48
17	28	+130	+52	24	-10 1
17	41	+83	+27	48	+14 35
17	51	+153	+56	34	-14 31
17	53	+126	+31	30	-9 7
18	03	+258	+68	49	+3 13
18	18	+40	+21	43	+20 37
18	33	+80	+38	40	+3 43
18	45	+65	+33	13	+9 10

16	28	+261	+69	3	-26 40
16	32	-373	+75	42	-35 19
16	36	+459	+77	42	-35 19
16	59	+734	+82	15	-39 52
17	22	-372	+74	57	-32 54
17	38	+258	+68	49	-26 26
17	44	+312	+72	13	-32 50
17	55	+432	+76	59	-34 36
18	14	+1688	+86	36	-44 13
18	23	+295	+71	16	-28 53
18	39	-2073	+87	14	-44 51

14	23	+72	4423	+54	4423
15	25	+73	4425	+25	4425
16	36	+459	4426	+24	4426
17	35	+439	4427	+35	4427
18	39	-2073	4428	+34	4428
19	43	-2073	4429	+34	4429

14	23	+72	4423	+54	4423
15	25	+73	4425	+25	4425
16	36	+459	4426	+24	4426
17	35	+439	4427	+35	4427
18	39	-2073	4428	+34	4428
19	43	-2073	4429	+34	4429

1872 July 28										1872 July 30									
I large S										I large S									
Z										Z									
Ref.										Ref.									
"										"									
"										"									
16	4	+101	+45	16	-2	53	-.05	+4	44.4	17	11	+75	+36	57	+5	26	+09	+4	45.3
16	12	-.05	-4	23	+46	46	+.73	+4	44.6	17	26	+104	+46	4	-3	41	-.06	+4	43.5
16	19	+.36	+14	20	+28	3	+.17	+4	44.2	17	41	+.33	+27	48	+14	35	+.25	+4	43.3
16	22	+1.87	+61	48	-19	25	-.33	+4	45.0	17	53	+126	+51	30	-9	7	-.16	+4	42.5
16	25	+.40	+21	46	+20	37	+.35	+4	44.4	17	63	+.25	+28	45	+13	38	+.24	+4	43.5
16	38	+.81	+39	10	+3	13	+.06	-	43.5	17	83	+.25	+28	45	+13	38	+.24	+4	43.5
16	43	+1.54	+87	1	-14	38	-.25	+4	43.5	17	32	+250	+68	13	-85	50	-.44	+4	43.1
16	46	+.27	+15	11	+27	12	+.16	+4	43.6	17	38	+238	+68	49	-26	26	-.44	+4	43.2
16	52	+.17	+9	34	+32	49	+.34	+4	43.8	17	44	+313	+72	13	-29	50	-.50	+4	41.6
17	04	+.36	+40	41	+1	42	+.03	+4	44.2	17	55	+432	+76	59	-34	36	-.57	+4	44.5
17	09	+.26	+14	22	+27	51	+.47	+4	44.2	17	32	+250	+68	13	-85	50	-.44	+4	43.1
17	11	+.75	+36	87	+5	26	+.09	+4	45.1	17	38	+238	+68	49	-26	26	-.44	+4	43.2
17	28	+130	+53	24	-10	1	-.17	+4	46.7	17	44	+313	+72	13	-29	50	-.50	+4	41.6
									46.7	17	55	+432	+76	59	-34	36	-.57	+4	44.5
									46.7	17	32	+250	+68	13	-85	50	-.44	+4	43.1
									46.7	17	38	+238	+68	49	-26	26	-.44	+4	43.2
									46.7	17	44	+313	+72	13	-29	50	-.50	+4	41.6
									46.7	17	55	+432	+76	59	-34	36	-.57	+4	44.5
									46.7	17	32	+250	+68	13	-85	50	-.44	+4	43.1
									46.7	17	38	+238	+68	49	-26	26	-.44	+4	43.2
									46.7	17	44	+313	+72	13	-29	50	-.50	+4	41.6

1872 Aug 5

T lang S

$$H_{gl} = +4 \quad 42,69$$
$$Z \sin Z \quad R_{\frac{1}{2}}$$

1872 Aug 7

T'lung's P

$$A_{20} = +4 \quad 44.05$$
$$Z \sin Z \quad R_{\text{eq}}$$

$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
16 38	+281	+89	10	+3	13 +.06 +4	43.8 +.07	
17 36	+1.04	+46	4	-3	41 -.06 +4	40.9 -.07	
17 41	+53	+27	48	+14	35 +.25 +4	42.6 +.29	
17 37	+1.53	+56	54	-14	31 -.25	29 -.29	
17 53	+1.26	+51	30	-9	7 -.16 +4	42.4 -.18	
16 36	+4.59	+77	42	-35	19 -.58	-.67	
16 59	+7.34	+82	15	-39	52 -.64 +4	42.4 -.74	
17 32	+2.54	+68	13	-25	50 -.44 +4	43.2 -.51	
17 38	+2.58	+68	49	-26	26 -.44 +4	43.8 -.51	
17 44	+2.12	+72	13	-29	52 -.50 +4	44.6 -.58	
17 55	+4.32	+76	59	-34	36 -.57	-.66	
		"			"	"	
	+2.5	42.89		+0.6	43.87	-.64	41.66
				-.06	40.83	44	42.69
				-.16	42.22	44	43.29

$\begin{array}{r} 42.89 \\ + 25 \\ \hline 67.89 \end{array}$
 $\begin{array}{r} 42.31 \\ - .05 \\ \hline 42.26 \end{array}$
 $\begin{array}{r} 50.4402 \\ - .54 \\ \hline 49.8998 \end{array}$

1872 Aug 6

$$H_{10} = +4 \quad 43.45$$

16	38	+ 81	+ 39	10	+ 3	13 + 36 + 4	440 + 07
16	43	+ 1.54	+ 57	1	- 14	38 - 25 + 4	425 - 29
16	46	+ 27	+ 15	11	+ 27	12 + 46 + 4	484 + 53
16	52	+ 17	+ 9	34	+ 32	49 + 51 + 4	498 + 63
17	04	+ 86	+ 40	41	+ 1	42 + 33 + 4	428 + 03
17	09	+ 26	+ 14	32	+ 27	51 + 47 + 4	446 + 34
17	11	+ 75	+ 36	57	+ 5	26 + 09 + 4	449.5 + 10
17	28	+ 1.30	+ 32	24	- 10	1 - 17 + 4	444 - 20
17	30	+ 1.44	+ 55	16	- 12	53 - 22	- 25
17	36	+ 1.04	+ 46	4	- 3	47 - 06 + 4	438 - 07
17	41	+ 53	+ 27	48	+ 14	35 + 25 + 4	436 + 29
17	53	+ 1.26	+ 51	30	- 9	7 - 16	- 18
18	1	+ 17	+ 9	33	+ 32	50 + 54 + 4	429 + 63
18	33	+ 50	+ 38	40	+ 3	43 + 06 + 4	431 + 07
18	45	+ 65	+ 33	13	+ 7	10 + 16 + 4	434 + 18
19	7	+ 65	+ 2	53	+ 39	31 + 64	+ 74

16	59	+734	+82	15	-39	52	-64	+4	433	-74
17	22	-372	+74	07	-32	34	-54	+4	440	-103
17	32	+250	+68	13	-25	50	-44	+4	436	-51
17	38	+258	+68	49	-26	26	-44	+4	434	-51
17	44	+312	+72	13	-29	50	-50	+4	436	-58
17	55	+432	+76	07	-34	36	-57			-66
18	14	+1688	+86	36	-44	13	-70			-81
18	36	+218	+68	23	-23	0	-39	+4	443	-45
18	39	-2073	+84	14	-44	51	-70	+4	439	-84
19	18	+329	+73	7	-30	24	-57			-89
19	52	+3344								-59
"										
	+46	4353	+06		"	4907	-64		"	4256
	54	4343	+03			4213	44			4309
	4044		+09			4460	44			4289
	25	4348	-06			4373	50			4302
	+54	4353	+06			4317	39			4345
	<u>~~~~~</u>		+16			4358	<u>~~~~~</u>			43081
	+60	4369	+06			4366	-53			43084

[illegible]

17 01 -5.18 +79 5 -^{08 32 83-}~~36 42 60~~ +4 45.0 - .99 44.01 -64 45.36

16 37 +7.34
17 22 -3.72

$$\begin{array}{r} -39 \quad 52 \quad 64 + 11 \\ -32 \quad 34 \quad 54 + 11 \end{array}$$

17	32	+2.50	+68	13	-25	50	-44 + 4	42.9 - .31	42.19	50	43.82
17	38	+2.58	+68	49	-26	26	-44 + 4	44.0 - .51	43.49	39	43.05
17	44	+3.12	+22	13	-29	50	-50 + 4	44.4 - .58	43.82	-48	43.68
18	14	+1.88	+86	36	-44	13	-70 + -	- .81			
18	39	-26.3	+87	14	-45	51	-70 + 4	44.9 - .89	43.51		
18	37	+2.18	+60	22	-22	59	-39 + 4	44.0 - .45	43.53		

1872 Aug 8

$$A_H = +4 \quad 43.2$$

17	04	+0.86	+40	41	+1	42	+0.3 + 4	42.7 + 0.3	42.73	+47	44.54	v
17	09	+26	+14	32	+27	51	+17 + 4	44.0 + 5.4	44.54	+25	43.69	
17	11	+75	+36	87	+5	26	+0.9 + 4	44.5 + 10	44.60	+54	43.03	
17	28	+1.30	+32	24	-10	1	-17 + 4	44.1 - 20	44.90	+92	43.75	
17	36	+1.04	+46	4	-8	41	-0.6 + 4	43.5 - 07	43.43			
17	41	+63	+27	48	+14	35	+25 + 4	43.4 + 29	43.69	+03	42.78	
17	51	+1.53	+06	54	-14	31	-25	-29		+09	44.60	
17	53	+1.26	+51	30	-9	7	-16 + 4	42.5 - 18	42.32	-06	43.43	
18	01	+17	+9	83	+32	50	+34 + 4	42.4 + 63	43.03	-16	42.32	
18	28	+50	+38	40	+3	43	+0.6 + 4	43.3 + 07	43.37	+06	43.37	
18	46	+1.65	+33	13	+9	10	+16 + 4	43.9 + 18	44.08	+16	44.08	
										+0.20	43.42	
17	01	-518	+79	5	-36	42	-60 + 4	44.1 - 70	43.40	-60	43.90	
16	59	+7.34	+82	15	-39	52	-24 + 4	42.6 - 74	41.86	64	41.86	
17	22	-372	+74	87	-33	34	-54 + 4	43.6 - 103	42.57	44	43.29	
17	32	+2.50	+68	13	-28	50	-14 + 4	43.8 - 51	43.29	44	43.29	
17	38	+258	+68	49	-26	56	-44 + 4	43.9 - 51	43.39	50	42.82	
17	44	+3.13	+50	13	-29	50	-30 + 4	43.4 - 58	42.82	87	42.82	
17	55	+4.32	+76	59	-34	36	-34 + 4	43.5 - 66	42.84	-53	42.77	
18	14	+16.88	+86	36	-44	10	-70	-81				
18	39	-2073	+87	14	-44	51	-74 + 4	43.4 - 59	42.51			.93

T lang δ δ

Zur Schweiz Reg.

T langd 8

$$Z \quad \sin Z.$$

17	44	+312	+72	13	-29	50	-50 + 4	44.5 - .58	43.92
17	55	+4.32	+76	89	-34	36	-57 + 4	43.2 - .66	42.54
18	14	+16.58	+86	36	-44	13	-70	41 - .81	

23 +1.19

19	29	+582	+79	21	³ 26 58	-60	-70
22	07	+302	+71	43	-28	20	-57
22	32	+327	+72	59	-30	36	-59
22	45	+220	+65	32	-23	9	-45

1872 Sept

19	18	+3.29	+73	7	-30	44	-51	-	-	-59	
19	29	+5.32	+79	21	-36	58	-60	+7	43.6	-70	42.96
19	49	+2.75	+69	57	-27	34	-46	+7	46.4	-53	45.8
19	52	+5.44	+88	56	-46	33	-73	+7	4.89	-85	48.08
20	03	-4.05	+76	8	-32	45	-58	+7	48.9	-102	47.88
20	25	-3.50	+74	4	-63	29	-83	-	-	-103	
21	47	-13.57	+73	29	-64	39	-82	-	-4	-104	
22	01	+1.89	+62	10	-19	47	-89	+7	46.9	-39	46.51
22	07	+3.02	+71	43	-29	20	-49	-	-	-57	

14	+ 1688	+ 86	36	- 44	13	- 70	-	-	-	81	
23	+ 295	+ 71	16	- 28	53	- 48	-	-	-	56	
23	+ 321	+ 72	41	- 30	18	- 50	-	-	-	58	
36	+ 218	+ 65	23	- 23	00	- 39	+ 7	46	3	45	45.85
39	- 20.73	+ 87	14	- 04	57	- 77	+ 77	409	-	87	45.01

1872 Oct-3 $\Delta H = +7$ 46.39

37	+1.00	+44	50	-2	25	-14	+4	47.0	-35	46.95
41	+0.28	+15	40	+26	43	+45	+7	45.0	+52	45.52

$+144$ 45.05 $+50$ 45.90 -49 45.82

1872 Oct 9	$\Delta p = +7$	45.16			
33 +0.50	+58	40	+3	46 + +	46.1 + .07
45 + .65	+33	13	+9	16 + +	45.9 + .18
49 +1.68	+59	14	-16	51 -29 + +	44.2 - .34
51 +.66	+43	47	-1	24 -02 + +	45.5 - .02
12 +1.20	+11	22	+31	1 +51 + +	45.1 + .59
19 +0.05	+2	52	+39	31 +64 + +	43.3 + .74
					44.04

[illegible]

1872 Oct. 10 $H_L = +7' 46.25''$

I	$\tan \mu$	ρ	Z	$\sin Z$	$R_{\text{ref.}}$
18 37	+0.96	+43	47	-1	24
18 39	-0.79	-5	4	+47	27
19 08	+0.72	+35	54	+6	29
19 12	+0.20	+11	22	+31	1
19 14	+1.33	+53	8	-10	45
19 19	+0.05	+2	62	+39	31
19 26	+0.53	+27	42	+14	41
19 27	+1.25	+51	28	-9	5
19 40	+0.75	+37	3	+5	20
19 41	+0.99	+44	49	-2	26
19 44	+0.15	+8	33	+33	51

18 56	+2.92	+71	8	-28	45
19 29	+5.32	+79	21	-26	58
19 32	+5.44	+88	36	-46	33

1872 Oct. 14

18 33	+0.80	+38	40	+3	43
18 45	+0.65	+33	13	+9	10
18 49	+1.68	+59	14	-16	51
18 51	+0.96	+43	47	-1	24
18 59	-0.09	-5	4	+47	27
19 14	+1.33	+53	8	-10	45
19 27	+1.25	+51	28	-9	5

18 23	+2.95	+71	16	-28	53
18 23	+3.21	+72	41	-30	18
18 36	+2.18	+65	22	-22	59
18 39	+2.03	+87	14	-44	51
18 56	+2.92	+71	8	-28	45
19 18	+3.29	+73	7	-20	44

1872 Oct. 12 $H_L = +7' 47.83''$

20 10	+1.05	+46	21	-3	58
20 18	+0.83	+39	57	+2	32
20 37	+1.00	+44	50	-2	27
20 41	+0.28	+15	40	+26	43
21 32	+0.83	+39	51	+2	32
21 35	+1.53	+56	53	-14	32
21 55	+0.22	+12	31	+29	52
22 04	+0.64	+32	33	+9	50

20 03	-4.05	+76	8	-33	45
20 25	-2.50	+74	4	-31	41
20 33	+3.61	+74	31	-32	8
20 36	+1.89	+62	3	-19	40
21 23	-2.81	+70	23	-28	0
21 27	+2.75	+70	0	-27	37
22 01	+1.89	+62	10	-19	47

+45	47.82	-07	47.92	-53	47.29
50	47.84	-02	47.71	-47	47.96
		-04	47.15	-46	47.87
		+04	46.60	-34	47.71
+47	47.65	-01	47.99	-45	47.16

1872 Oct. 20 $H_L = +7' 46.34''$

19 14	+1.83	+63	8	-10	45
19 19	+0.05	+2	62	+39	31
19 33	+1.19	+49	56	-7	33
19 40	+0.75	+37	3	+5	20
19 41	+0.99	+44	49	-2	26
19 44	+0.15	+8	33	+33	51

19 18	+3.29	+73	7	-30	44
19 52	+5.44	+88	36	-46	33

1872 Oct. 21

19 03	+0.72	+35	54	+6	29
19 12	+0.20	+11	22	+31	01
19 19	+0.05	+2	62	+39	31
19 33	+1.19	+49	56	-7	33
19 40	+0.75	+37	3	+5	20
19 41	+0.99	+44	49	-2	26

19 18	+3.29	+73	7	-30	44
19 45	-3.33	+74	5	-31	42
19 49	+2.75	+69	57	-27	34
19 52	+5.44	+88	36	-46	33

1872 Nov. 4

20 18	+0.83	+39	57	+2	32
20 37	+1.00	+44	50	-2	27
20 41	+0.28	+15	40	+26	43
20 42	+1.53	+56	53	-14	32
22 15	+0.20	+11	34	+30	49
22 18	+1.26	+61	86	-9	13
22 26	+1.18	+49	38	-7	15
22 38	+0.87	+41	9	+1	14
22 37	+0.57	+22	33	+19	50
22 40	+0.42	+22	84	+19	29
22 56	+0.89	+41	39	+0	44
22 58	+1.26	+14	31	+27	52

20 33	+3.61	+74	31	-32	8
20 34	+4.13	+76	22	-33	58
22 32	+3.27	+72	59	-30	36
22 45	+2.50	+65	32	-23	9
22 49	-4.89	+78	27	-58	4

20 03	-4.05	+76	8	-33	45
20 25	-2.50	+74	4	-31	41
20 33	+3.61	+74	31	-32	8
20 36	+1.89	+62	3	-19	40
21 23	-2.81	+70	23	-28	0
21 27	+2.75	+70	0	-27	37
22 01	+1.89	+62	10	-19	47

+42	52.00	-06	52.20	-48	53.28
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1872 Nov. 13

 $H_0 = +4 \ 52.39$ T tang δ ρ Z sin z R_{eq}

	m	o	i	e	i	"	"	"
1	36	+13	+7	12	+35	11	+58	+4
1	4	+56	+29	25	+12	53	+22	+4
1	24	+26	+14	41	+27	42	+46	+4
1	1	+5.14	+78	60	-3.6	37	-60	+4
1	12	+4192	+88	38	-4.6	15	-42	+4
1	16	+241	+67	23	-25	5	-42	+4
1	28	+3.15	+72	28	-30	0	-50	+4
2	18	+2.34	+66	30	-24	27	-41	+4
2	9	-4.76	+78	9	-35	46	-58	+4
2	25	+3.12	+72	16	-39	33	-50	+4
					+58	53.17	+22	52.5
					46	52.13		52.75

 $H_0 = +4 \ 51.85$

	m	o	i	e	i	"	"	"
20	42	+1.55	+57	7	-14	44	-25	+4
20	49	+0.52	+27	35	+14	48	+26	+4
21	10	+1.77	+37	30	+4	53	+09	+4
21	16	+1.89	+62	30	-17	40	-34	+4
21	32	+1.83	+39	51	+2	32	+04	+4
22	37	+1.57	+29	34	+12	49	+22	+4
22	40	+1.42	+22	54	+19	29	+33	+4
22	56	+1.89	+41	39	+0	44	+01	+4
22	58	+1.26	+14	31	+27	52	+47	+4
0	12	-1.17	-9	32	+57	53	+09	+4
0	26	+1.90	+62	14	-19	51	-34	+4
0	31	+1.53	+28	37	+13	46	+24	+4
0	33	+1.47	+55	50	-13	27	-23	+4
0	41	+1.53	+07	8	-14	45	-25	+4
					+52	52.65	+22	52.75
					46	52.13		52.75

 $H_0 = +4 \ 51.11$

	m	o	i	e	i	"	"	"
22	10	-1.5	-8	25	+50	48	+14	+4
22	15	+2.0	+11	34	+30	48	+51	+4
22	18	+1.26	+57	36	-9	13	-16	+4
22	37	+1.57	+29	33	+12	50	+22	+4
22	38	+1.87	+41	9	+1	14	+02	+4
22	40	+1.42	+22	54	+19	29	+33	+4
22	56	+1.89	+41	39	+0	44	+01	+4
22	58	+1.26	+14	31	+27	52	+47	+4
0	12	-1.17	-9	32	+57	53	+09	+4
0	31	+1.53	+28	37	+13	46	+24	+4
0	33	+1.47	+55	50	-13	27	-23	+4
0	41	+1.53	+07	8	-14	45	-25	+4
					+46	51.77	+22	51.70
					46	51.13		51.70

	m	o	i	e	i	"	"	"
22	07	+3.02	+71	43	-29	20	-49	+4
22	24	+1.13	+76	22	-33	59	-56	+4
22	32	+3.27	+72	59	-30	36	-57	+4
22	45	+2.20	+65	32	-23	9	-39	+4
22	49	-4.89	+78	27	-36	4	-59	+4
0	9	+4.08	+76	15	-33	52	-56	+4
0	25	+1.90	+62	14	-19	51	-34	+4
0	38	+2.82	+70	29	-28	6	-48	+4
0	37	+3.86	+74	16	-34	53	-33	+4
					+49	51.77	+22	51.70
					46	51.13		51.70

1872 Nov. 19

 $H_0 = +4 \ 49.13$ T tang δ ρ Z sin z R_{eq}

	m	o	i	e	i	"	"	"
20	49	+0.52	+27	35	+14	48	+26	+4
21	01	+1.78	+38	8	+4	15	+07	+4
21	10	+1.77	+37	30	+4	53	+09	+4
21	16	+1.89	+62	30	-17	40	-34	+4
21	32	+1.83	+39	51	+2	32	+04	+4
21	35	+1.03	+36	53	-14	32	-25	+4
21	42	+1.14	+48	43	-6	20	-11	+4
21	55	+2.2	+12	31	+29	52	+50	+4
21	59	+0.2	-0	56	+43	19	+69	+4
22	04	+1.64	+32	33	+9	50	+17	+4
22	10	-1.15	-8	25	+50	48	+77	+4
					+58	53.17	+22	52.5
					46	52.13		52.75

	m	o	i	e	i	"	"	"
20	33	+3.61	+74	31	-32	8	-53	+4
20	53	+5.72	+10	4	-37	41	-61	+4
21	08	+4.55	+77	57	-35	14	-58	+4
21	23	-2.31	+70	23	-28	0	-47	+4
21	27	+2.75	+70	00	-27	37	-46	+4
21	40	+2.56	+70	44	-28	2	-17	+4
21	47	-3.37	+73	29	-31	6	-52	+4
22	01	+1.89	+62	10	-19	47	-34	+4
22	07	+3.02	+71	43	-29	20	-49	+4
					+50	48.38	+04	49.65
					69	48.30	-11	48.27
					17	48.99	+17	30.10
								58
								46
								17
								34
								52
								49
								50

1872 Nov. 20

 $H_0 = +4 \ 49.98$

	m	o	i	e	i	"	"	"
20	15	+2.0	+11	34	+30	48	+51	+4
22	18	+1.26	+57	36	-9	13	-16	+4
22	26	+1.13	+76	22	-33	59	-56	+4
22	37	+1.57	+29	33	+12	50	+22	+4
22	38	+1.87	+41	9	+1	14	+02	+4
22	40	+1.42	+22	54	+19	29	+33	+4
22	56	+1.89	+41	39	+0	44	+01	+4
22	58	+1.26	+14	31	+27	52	+47	+4
0	1	+1.84	+28	23	+14	0	+24	+4
0	3	+1.01	+45	22	-2	59	-05	+4
0	12	-1.17	-9	32	+57	53	+09	+4
0	31	+1.53	+28	37	+13	46	+24	+4
0	33	+1.47	+55	50	-13	27	-23	+4
					+65	48.56	+03	49.34
								50

	m	o	i	e	i	"	"	"
22	07	+3.02	+71	43	-29	20	-49	+4
22	24	+1.13	+76	22	-33	59	-56	+4
22	32	+3.27	+72	59	-30	36	-57	+4
22	45	+2.20	+65	32	-23	9	-39	+4
22	49	-4.89	+78	27	-36	4	-59	+4
0	9	+4.08	+76	15	-33	52	-56	+4
0	25	+1.90	+62	14	-19	51	-34	+4
0	38	+2.82	+70	29	-28	6	-48	+4
0	37	+3.86	+74	16	-34	53	-33	+4
					+51	50.39	-16	49.72
					47	50.34	-13	48.85
					24	48.58	+02	49.82
					19	49.42	-05	51.44
					24	49.48		
								52
								47

h	m	s	0	1	2	3	4	5	6	7	8	9
20	41	+28	+15	40	+26	43	+46	+4	49.0	+52	4952	0
20	49	+32	+27	35	+14	48	+26	+4	46.6	+30	4690	1
21	08	+78	+38	5	+4	15	+07			+08		1
21	18	+77	+39	30	+4	53	+09	+4	49.3	+10	4940	0
21	42	+114	+48	43	-6	20	-11	+4	50.4	-13	5027	2
21	55	+22	+12	31	+29	52	+50	+4	47.2	+58	4778	2
21	59	+22	-0	56	+40	19	+89	+4	47.6	+80	4840	2
22	04	+64	+32	33	+9	50	+17	+4	51.3	+20	5150	0

20	53	+372	+50	4	-37	41	-61	+4	51.0	-	71	5029	2
21	08	+455	+77	37	-55	14	-38	—	—	—	-67		2
21	40	+286	+70	44	-28	21	-48	+4	52.0	-	56	5144	2
21	47	+337	+73	29	-31	6	-32	+4	55.6	-	60	5300	
22	01	+189	+63	10	-19	47	-34	+4	52.2	-	39	5181	
22	07	+302	+71	43	-24	20	-49	+4	51.8	-	57	5123	
					+45	49.52	+09	49.40			-61	50.29	
					-50	47.78	-11	50.27			48	51.44	
					.69	48.40					37	51.81	

16/2	17/2	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
21	32	+83	+39	51	+2	32	+04	+4	488	+05	4885	22	31	+84	+40	52	+3	31	+05	+4	489	+06	4896	23	30	+85	+41	53	+4	30	+06	+4	490	+07	4907	24	29	+86	+42	54	+5	29	+07	+4	491	+08	4918	25	28	+87	+43	55	+6	28	+08	+4	492	+09	4929	26	27	+88	+44	56	+7	27	+09	+4	493	+10	4930	27	26	+89	+45	57	+8	26	+10	+4	494	+11	4941	28	25	+90	+46	58	+9	25	+11	+4	495	+12	4952	29	24	+91	+47	59	+10	24	+12	+4	496	+13	4963	30	23	+92	+48	60	+11	23	+13	+4	497	+14	4974	31	22	+93	+49	61	+12	22	+14	+4	498	+15	4985	32	21	+94	+50	62	+13	21	+15	+4	499	+16	4996	33	20	+95	+51	63	+14	20	+16	+4	500	+17	5007	34	19	+96	+52	64	+15	19	+17	+4	501	+18	5018	35	18	+97	+53	65	+16	18	+18	+4	502	+19	5029	36	17	+98	+54	66	+17	17	+19	+4	503	+20	5030	37	16	+99	+55	67	+18	16	+20	+4	504	+21	5041	38	15	+100	+56	68	+19	15	+21	+4	505	+22	5052	39	14	+101	+57	69	+20	14	+22	+4	506	+23	5063	40	13	+102	+58	70	+21	13	+23	+4	507	+24	5074	41	12	+103	+59	71	+22	12	+24	+4	508	+25	5085	42	11	+104	+60	72	+23	11	+25	+4	509	+26	5096	43	10	+105	+61	73	+24	10	+26	+4	510	+27	5107	44	9	+106	+62	74	+25	9	+27	+4	511	+28	5118	45	8	+107	+63	75	+26	8	+28	+4	512	+29	5129	46	7	+108	+64	76	+27	7	+29	+4	513	+30	5130	47	6	+109	+65	77	+28	6	+30	+4	514	+31	5141	48	5	+110	+66	78	+29	5	+31	+4	515	+32	5152	49	4	+111	+67	79	+30	4	+32	+4	516	+33	5163	50	3	+112	+68	80	+31	3	+33	+4	517	+34	5174	51	2	+113	+69	81	+32	2	+34	+4	518	+35	5185	52	1	+114	+70	82	+33	1	+35	+4	519	+36	5196	53	0	+115	+71	83	+34	0	+36	+4	520	+37	5207	54	9	+116	+72	84	+35	9	+37	+4	521	+38	5218	55	8	+117	+73	85	+36	8	+38	+4	522	+39	5229	56	7	+118	+74	86	+37	7	+39	+4	523	+40	5230	57	6	+119	+75	87	+38	6	+40	+4	524	+41	5241	58	5	+120	+76	88	+39	5	+41	+4	525	+42	5252	59	4	+121	+77	89	+40	4	+42	+4	526	+43	5263	60	3	+122	+78	90	+41	3	+43	+4	527	+44	5274	61	2	+123	+79	91	+42	2	+44	+4	528	+45	5285	62	1	+124	+80	92	+43	1	+45	+4	529	+46	5296	63	0	+125	+81	93	+44	0	+46	+4	530	+47	5307	64	9	+126	+82	94	+45	9	+47	+4	531	+48	5318	65	8	+127	+83	95	+46	8	+48	+4	532	+49	5329	66	7	+128	+84	96	+47	7	+49	+4	533	+50	5330	67	6	+129	+85	97	+48	6	+50	+4	534	+51	5341	68	5	+130	+86	98	+49	5	+51	+4	535	+52	5352	69	4	+131	+87	99	+50	4	+52	+4	536	+53	5363	70	3	+132	+88	100	+51	3	+53	+4	537	+54	5374	71	2	+133	+89	101	+52	2	+54	+4	538	+55	5385	72	1	+134	+90	102	+53	1	+55	+4	539	+56	5396	73	0	+135	+91	103	+54	0	+56	+4	540	+57	5407	74	9	+136	+92	104	+55	9	+57	+4	541	+58	5418	75	8	+137	+93	105	+56	8	+58	+4	542	+59	5429	76	7	+138	+94	106	+57	7	+59	+4	543	+60	5430	77	6	+139	+95	107	+58	6	+60	+4	544	+61	5441	78	5	+140	+96	108	+59	5	+61	+4	545	+62	5452	79	4	+141	+97	109	+60	4	+62	+4	546	+63	5463	80	3	+142	+98	110	+61	3	+63	+4	547	+64	5474	81	2	+143	+99	111	+62	2	+64	+4	548	+65	5485	82	1	+144	+100	112	+63	1	+65	+4	549	+66	5496	83	0	+145	+101	113	+64	0	+66	+4	550	+67	5507	84	9	+146	+102	114	+65	9	+67	+4	551	+68	5518	85	8	+147	+103	115	+66	8	+68	+4	552	+69	5529	86	7	+148	+104	116	+67	7	+69	+4	553	+70	5530	87	6	+149	+105	117	+68	6	+70	+4	554	+71	5541	88	5	+150	+106	118	+69	5	+71	+4	555	+72	5552	89	4	+151	+107	119	+70	4	+72	+4	556	+73	5563	90	3	+152	+108	120	+71	3	+73	+4	557	+74	5574	91	2	+153	+109	121	+72	2	+74	+4	558	+75	5585	92	1	+154	+110	122	+73	1	+75	+4	559	+76	5596	93	0	+155	+111	123	+74	0	+76	+4	560	+77	5607	94	9	+156	+112	124	+75	9	+77	+4	561	+78	5618	95	8	+157	+113	125	+76	8	+78	+4	562	+79	5629	96	7	+158	+114	126	+77	7	+79	+4	563	+80	5630	97	6	+159	+115	127	+78	6	+80	+4	564	+81	5641	98	5	+160	+116	128	+79	5	+81	+4	565	+82	5652	99	4	+161	+117	129	+80	4	+82	+4	566	+83	5663	100	3	+162	+118	130	+81	3	+83	+4	567	+84	5674	101	2	+163	+119	131	+82	2	+84	+4	568	+85	5685	102	1	+164	+120	132	+83	1	+85	+4	569	+86	5696	103	0	+165	+121	133	+84	0	+86	+4	570	+87	5707	104	9	+166	+122	134	+85	9	+87	+4	571	+88	5718	105	8	+167	+123	135	+86	8	+88	+4	572	+89	5729	106	7	+168	+124	136	+87	7	+89	+4	573	+90	5730	107	6	+169	+125	137	+88	6	+90	+4	574	+91	5741	108	5	+170	+126	138	+89	5	+91	+4	575	+92	5752	109	4	+171	+127	139	+90	4	+92	+4	576	+93	5763	110	3	+172	+128	140	+91	3	+93	+4	577	+94	5774	111	2	+173	+129	141	+92	2	+94	+4	578	+95	5785	112	1	+174	+130	142	+93	1	+95	+4	579	+96	5796	113	0	+175	+131	143	+94	0	+96	+4	580	+97	5807	114	9	+176	+132	144	+95	9	+97	+4	581	+98	5818	115	8	+177	+133	145	+96	8	+98	+4	582	+99	5829	116	7	+178	+134	146	+97	7	+99	+4	583	+100	5830	117	6	+179	+135	147	+98	6	+100	+4	584	+101	5841	118	5	+180	+136	148	+99	5	+101	+4	585	+102	5852	119	4	+181	+137	149	+100	4	+102	+4	586	+103	5863	120	3	+182	+138	150	+101	3	+103	+4	587	+104	5874	121	2	+183	+139	151	+102	2	+104	+4	588	+105	5885	122	1	+184	+140	152	+103	1	+105	+4	589	+106	5896	123	0	+185	+141	153	+104	0	+106	+4	590	+107	5907	124	9	+186	+142	154	+105	9	+107	+4	591	+108	5918	125	8	+187	+143	155	+106	8	+108	+4	592	+109	5929	126	7	+188	+144	156	+107	7	+109	+4	593	+110	5930	127	6	+189	+145	157	+108	6	+110	+4	594	+111	5941	128	5	+190	+146	158	+109	5	+111	+4	595	+112	5952	129	4	+191	+147	159	+110	4	+112	+4	596	+113	5963	130	3	+192	+148	160	+111	3	+113	+4	597	+114	5974	131	2	+193	+149	161	+112	2	+114	+4	598	+115	5985	132	1	+194	+150	162	+113	1	+115	+4	599	+116	5996	133	0	+195	+151	163	+114	0	+116	+4	600	+117	6007	134	9	+196	+152	164	+115	9	+117	+4	601	+118	6018	135	8	+197	+153	165	+116	8	+118	+4	602	+119	6029	136	7	+198	+154	166	+117	7	+119	+4	603	+120	6030	137	6	+199	+155	167	+118	6	+120	+4	604	+121	6041	138	5	+200	+156	168	+119	5	+121	+4	605	+122	6052	139	4	+201	+157	169	+120	4	+122	+4	606	+123	6063	140	3	+202	+158	170	+121	3	+123	+4	607	+124	6074	141	2	+203	+159	171	+122	2	+124	+4	608	+125	6085	142	1	+204	+160	172	+123	1	+125	+4	609	+126	6096	143	0	+205	+161	173	+124	0	+126	+4	610	+127	6107	144	9	+206	+162	174	+125	9	+127	+4	611	+128	6118	145	8	+207	+163	175	+126	8	+128	+4	612	+129	6129	146	7	+208	+164	176	+127	7	+129	+4	613	+130	6130	147	6	+209	+165	177	+128	6	+130	+4	614	+131	6141	148	5	+210	+166	178	+129	5	+131	+4	615	+132	6152	149	4	+211	+167	179	+130	4	+132	+4	616	+133	6163	150	3	+212	+168	180	+131	3	+133	+4	617	+134	6174	151	2	+213	+169	181	+132	2	+134	+4	618	+135	6185	152	1	+214	+170	182	+133	1	+135	+4	619	+136	6196	153	0	+215	+171	183	+134	0	+136	+4	620	+137	6207	154	9	+216	+172	184	+135	9	+137	+4	621	+138	6218	155	8	+217	+173	185	+136	8	+138	+4	622

21	23	-281	+70	23	-28	0	-47	+4	53.1	-54	8256
22	01	+189	+62	10	-19	47	-34	+4	50.3	-39	4991
22	07	+3.02	+71	43	-29	20	-49	+4	50.1	-57	4653
22	24	-413	+76	22	-33	59	-56	+4	51.0	102	49978
23	23	-275	+70	2	-27	69	-76	+4	52.2	107	5113
0	49	+173	+60	2	-17	39	-30	+4	49.0	-35	4665
					+10	4598	+04		4685	-97	5206
					69	5120	+11		4907	34	4991
					77	5108	+78		524	49	4903

	1072	10025	446 = +4 4993	51	50.99	54	54.99	58	58.47	50.04	-03	48.96	-40	50.16	22
0	31	+55	+28	37	+13	46	+24	+4	49.1	+28	49.38	23			22
0	33	+47	+55	50	-13	27	-23	+4	49.8	-27	49.53	0			22
0	49	+173	+60	2	-17	39	-30	+4	50.5	-35	50.15	0			22
0	36	+43	+7	12	+35	11	+38	+4	49.9	+67	48.57				22
1	24	+26	+14	41	+27	42	+46	+4	50.3	+53	50.83				22
0	25	+190	+62	14	-19	57	-34	-		-	39				22
0	37	+5.66	+74	13	-81	55	-33	+4	50.4	-61	49.79	23			22
0	49	+173	+60	2	-17	39	-30	+4	50.5	-35	50.15	22			22
1	12	+49.82	+88	38	-46	15	-72	+11	50.7	-83	50.87	28			22
1	16	+241	+67	28	-25	5	-42	+4	50.4	-49	49.91	0			22
1	28	+3.5	+72	23	-81	0	-50	+4	55.21	-38	54.92				22

124	4838	-30	5215
58	4857	53	4878
46	5083	70	4857
		42	4891
		57	
+43	4959	49	5018

$$\begin{array}{r} 23 \ 19 \ + \ 42 \ + \ 22 \ 42 \ + \ 19 \ 41 \ + \ 34 \ + \ 4 \ 48.7 \ + \ 39 \ 49.09 \\ 23 \ 31 \ + \ 1.03 \ + \ 45 \ 46 \ - \ 3 \ 23 \ - \ .06 \ + \ 4 \ 50.7 \ - \ .07 \ 50.63 \end{array}$$

23	25	-25	+70	3	-27	39	- ⁹² 46 + 1	544	-107	5333
23	34	+421	+77	55	-35	32	-58 + 4	428	-67	4913

m	0	1	2	3	4	5	6	7	8	9
41	+155	+57	8	-14	405	-26	4	49.7	-30	49.40
56	+89	+41	43	+0	445	+01	4	57.0	+01	57.01
59	+42	+22	52	+19	51	+33	4	48.9	+38	50.28
1	+68	+34	23	+8	0	+14	4	49.2	+16	49.36
61	+39	+21	25	+20	58	+36	4	48.9	+42	49.32
35	+1.44	+48	41	-6	18	-11	4	49.5	-13	49.37
36	+85	+2	42	+39	41	+64	4	46.7	+74	47.44

[illegible]

1872 Sec 4

				$\Delta_f = +4'$	49.70	
52	+11	+6	10	+36	13 +59+4	48.6 +68 49.28
1	+54	+28	23	+14	0 +24+4	48.6 +28 48.98
3	+101	+45	22	-2	59 -05+4	51.1 -06 51.04
6	+484	+78	19	-35	56-59	-68
9	+408	+74	15	-33	52-56	-65
				+59	49.28	-05 51.04
				+20	48.78	
				+41	49.03	-05 51.04

1972 Dec 7		Afl = +4 50.22						
54	+22	+12	31	+29	52+50	-	-	+58
4	+64	+32	33	+9	50+17+4	51.2	+20	51.40
10	-15	-8	25	+50	48+177+4	50.7	+89	51.59
07	-0.02	-0	56	+43	19+69	-	+80	
13	+126	+51	36	-9	13-16+4	49.9	-18	49.72
34	+87	+29	34	+12	49+22+4	49.2	+25	49.45
38	+87	+41	9	+1	14+02+4	48.1	+02	48.12
40	+42	+22	34	+19	29+33+4	49.4	+38	49.78
58	+26	+14	31	+27	32+17+4	49.7	+54	50.24
07	+0.1	+56	28	-14	5-24	-	-28	
10	+105	+2	35	+39	48+64+11	47.0	+74	47.74
1	+54	+28	23	+14	0+24+11	18.1	+28	48.68
3	+101	+45	22	+2	49-05+4	50.4	-06	50.34

01	+1.89	+62	10	-19	47	-34	+4	53.0	-39	52.61
07	+3.02	+71	43	-29	20	-49	+4	50.4	-57	49.83
32	+3.27	+72	59	-30	36	-51	+4	49.9	-59	49.11
45	+2.20	+65	32	-23	9	-39	+4	51.6	-45	51.15
49	-4.89	+78	27	-36	4	-59	---	---	-100	
03	+3.66	+74	42	-32	19	-35	---	---	-61	
6	-4.84	+78	19	-35	56	-59	---	---	-100	

+77	51.5	+17	51.40	-34	52.61
33	49.78	-16	49.92	49	41.63
47	50.24	+02	48.12	38	42.11
64	48.74	-08	50.34	38	51.15
24	48.68				

39 44.08 +49 29.61 -01 49.59 -43 50.68

H_{pl} = 2.201872 Dec. 10 H_{pl} = +4 51.71T large S Z sinz R_{eq}

m	0	1	0	1	0	1	0	1
0	31	+55	+28	37	+13	46	+24	+4
0	33	+147	+55	50	-13	27	-23	+4
0	36	+13	+7	12	+35	11	+58	+4
1	4	+86	+29	25	+12	58	+22	+4

0	25	+190	+62	14	-19	51	-34	+4
0	28	-252	+70	29	-28	6	-42	+4
0	37	+356	+74	18	-31	55	-33	+4
1	1	+5.14	+78	60	-36	37	-60	+4
1	12	+41.92	+88	38	-46	15	-72	+4

Reversed.
 +24 51.05 -23 52.63 -34 52.11
 55 49.77 +22 51.15 -53 52.49
 -40 51.40
 -22 53.07

1872 Dec. 17 H_{pl} = -2 31.20

1	4	+56	+29	25	+12	58	+22	-2
1	24	+26	+14	41	+27	42	+46	-

1	1	+5.14	+78	60	-36	37	-60	-
1	12	+41.92	+88	38	-46	15	-72	-2

1872 Dec. 21 H_{pl} = -2 30.43

22	58	+26	+14	31	+27	52	+47	-2
23	10	+25	+2	35	+39	48	+64	-2
23	19	+42	+22	42	+19	41	+34	-2
23	31	+1.03	+45	46	-3	23	-06	-2
23	45	+33	+13	25	+23	58	+11	-
23	52	+11	+6	10	+36	13	+59	-2
1	24	+26	+14	41	+27	42	+46	-2

23	3	+366	+74	42	-32	19	-33	-2
23	23	-275	+70	2	-27	39	-46	-2
23	34	+431	+76	55	-34	32	-57	-2
23	41	+237	+67	6	-24	43	-42	-2
1	28	+2.15	+72	23	-30	0	-50	-2
1	34	-3.06	+71	53	-29	30	-44	-2

H_{pl} = -2 30.7

1872 Dec. 23

2	35	+1.14	+48	41	-6	18	-11	-2
2	36	+25	+2	42	+39	41	+64	-2
2	41	+1.45	+55	22	-12	54	-22	-2
2	45	+1.29	+52	14	-9	51	-17	-2
2	56	+79	+28	21	+4	2	+07	-2
2	56	+26	+3	35	+38	48	+63	-2
2	59	+85	+40	28	-1	50	+03	-2
2	33	+1.08	+47	23	-5	0	-09	-2
3	39	+44	+23	43	+18	40	+32	-2
3	41	+44	+23	40	+18	43	+32	-2
3	52	+71	+35	25	+6	58	+12	-2

2	49	+5.10	+78	55	-36	32	-59	-2
2	51	-3.65	+74	40	-32	17	-52	-2
3	4	+4.42	+84	26	-43	3	-69	-2
3	36	+2.59	+70	56	-28	33	-18	-2
3	46	+1.78	+60	44	-18	21	-32	-2
3	48	-4.78	+78	11	-35	48	-58	-2

1872 Dec. 24 H_{pl} = -2 30.7T large S Z sinz R_{eq}

m	0	1	0	1	0	1	0	1
23	19	+42	+22	42	+19	41	+34	-2
23	31	+1.03	+45	46	-3	23	-06	-2
23	45	+33	+18	25	+23	58	+11	-2
23	52	+11	+6	10	+36	13	+59	-2

23	23	-275	+70	1	-27	39	-46	-2
23	34	+431	+76	55	-34	32	-57	-2
23	41	+237	+67	6	-24	43	-42	-2

+34 30.15 -06 30.93 -57 30.25
 +41 31.40 -42 29.82
 +59 31.00
 +35 30.85 -06 30.93 -50 30.83

1872 Dec. 25 H_{pl} = -2 26.76

23	7	+1.51	+56	28	-14	5	-24	-2
23	10	+1.05	+2	35	+39	48	+64	-
23	19	+42	+22	42	+19	41	+34	-2
23	31	+1.03	+45	46	-3	23	-06	-2
23	45	+33	+18	25	+23	58	+11	-2
0	3	+1.01	+45	22	-2	59	-05	-2

23	23	-275	+70	2	-27	39	-46	-2
23	34	+431	+76	55	-34	32	-57	-2
23	41	+237	+67	6	-24	43	-42	-2
0	6	-4.84	+78	19	-35	56	-59	-2

+34 29.45 -06 28.43 -57 26.35
 +41 27.40 -05 28.61 -42 25.32
 +37 28.42 -06 26.02 -50 25.83

1872 Dec. 30 H_{pl} = -2 30.83

1	24	+26	+14	41	+27	42	+46	-2
1	35	+15	+8	31	+33	52	+56	-2
3	26	-17	-9	53	+52	16	+49	-
3	33	+1.08	+47	23	-5	0	-07	-
3	39	+1.44	+23	43	+18	40	+32	-

1	12	+41.92	+88	38	-46	15	-72	-2
1	28	+3.15	+72	23	-30	0	-50	-2
1	52	+3.04	+71	48	-29	25	-49	-2
3	31	+1.95	+62	48	-20	25	-35	-
3	36	+2.89	+70	56	-28	33	-48	-

+46 30.59 -72 32.58
 +56 32.37 -50 29.20
 -49 29.38
 +51 31.48 -57 30.39

+64 28.99 -11 31.04 -59 31.00
 +63 28.71 -17 32.77 -67 31.37
 +32 28.80 +07 28.35 -48 29.36
 +32 30.20 +03 31.83 -32 29.10
 -09 29.40
 +48 29.18 -05 30.68 -57 30.21

1873 Jan. 1.

T. Lang S. S.

$$A_{pl} = -2' \quad 30.83''^2$$
$$z \quad \sin z \quad \operatorname{Re} z$$

1873 Jan 7

$$H_l = -2 \quad 31.10$$
$$Z \sin z \quad \Re_{\text{eq.}}$$

2	2	0	1	0	1	1	"	"
23	45	+33	+18	25	+23	58 + 41	-2	31.4 + 90
23	52	+11	+6	10	+36	13 + 59	-2	31.2 + 130
0	12	-17	-9	33	+51	55 + 49	-2	32.7 + 178
1	24	+26	+14	41	+27	42 + 46	-2	31.6 + 1.01
8	15	+117	+49	24	-7	1 - 12	-2	31.7 - 26
3	26	-17	-9	33	+62	16 + 49	-2	32.8 + 178
3	33	+118	+47	23	-5	0 - 49	-2	29.6 - 20
3	39	+44	+23	43	+18	40 + 32	-2	33.3 + 78
3	41	+44	+23	43	+18	43 + 32	-2	31.5 + 70

200	0	1	0	1	1	11			
31	+39	+21	25	+20	58	+36	-2	320 + .79	-31.21 ✓
36	+1.05	+2	42	+39	41	+64	-2	325 + 1.41	31.09 ✓
41	+1.45	+55	22	-12	59	-22	-2	29.6 - .48	30.08
45	+1.29	+52	14	-9	57	-17	-2	32.4 - .37	32.77 ✓
59	+ .85	+40	28	+1	55	+03	-2	314 + .07	31.33 -
12	+27	+15	19	+27	4	+46	-2	31.2 + 1.01	30.19 ✓
15	+ .81	+15	19	+27	4	+46	-2	31.0 + 1.01	29.99 ✓
21	+1.36	+53	38	-11	15	-20	-2	325 - .44	32.94

23	3	+366	+74	45	-32	19	-53		117	4	
23	34	+181	+76	55	-34	52	-57	-2	30.7	-125	31.95 ✓
23	41	+287	+67	6	-24	43	-42	-2	29.8	-92	30.72 ✓
1	28	+3.15	+72	23	-30	0	-50	-2	29.0	-110	30.10 ✓
3	4	+440	+77	16	-34	53	-57	-2	29.7	-125	30.95 ✓
3	21	-3.13	+72	17	-49	54	-50	-2	26.6	-200	28.60
3	31	+1.95	+62	48	-56	23	-35	-2	30.7	-77	31.47 ✓
3	36	+2.89	+70	56	-28	33	-48	-2	28.0	-106	29.06 ✓

[illegible]

$\Delta\phi = -2^{\circ} 31.35''$
1873 Jan 4.

1873 Jan 4.

1	56	+89	+41	43	+0	40+01-	2	33.7+02	336.8
1	59	+42	+22	52	+19	31+33-	2	31.6+73	308.7
2	1	+68	+34	23	+8	0+14-	2	32.0+31	31.69
2	31	+29	+21	25	+20	58+36-	2	30.2+79	294.4
3	15	+1.7	+49	24	-7	1-12-	2	32.4-26	326.6
3	59	+109	+47	22	-4	59-09-	2	31.5-20	317.0
4	15	+31	+19	15	+25	8+42-	2	33.1+92	321.8
4	28	+29	+16	15	+26	8+14-	2	31.5+97	305.3
4	21	+136	+53	33	-11	15-19		-42	
4	34	+42	+22	43	+19	40+34-	2	29.0+75	282.5
4	37	+1.51	+56	32	-14	9-24-	2	31.6-53	321.3
4	39	-16	-3	29	+45	52+72-	2	33.7+158	321.2

1873 Jan. 9	$\Delta l = -2$	31.39 ²⁹	
36 +13	+7 12	+35 11 +58-2	34.3 +128
4 +36	+29 25	+13 68 +22-2	32.5 +48
31 +39	+21 25	+20 68 +36-2	31.8 +79
35 +114	+48 41	-6 18 -11-2	30.2 -24
41 +145	+55 23	-12 39 -22-2	30.6 -48
45 +129	+50 14	-9 51 -17-2	30.9 -37
59 +85	+40 28	+1 55 +03-2	30.2 +07
22 +136	+53 38	-11 15 -20-2	31.1 -44
28 +29	+16 15	+26 8 +14-2	32.3 +97
34 +42	+23 43	+19 40 +34-2	31.8 +75
39 -06	-3 29	+45 52 +42-2	32.6 +58
44 +09	+5 23	+37 0 +60-2	33.4 +132
48 +65	+17 43	-35 20 -58-2	31.7 -128
20 +190	+62 14	-19 57 -34-2	30.8 -75
1 +5.14	+78 60	-36 37 -60-2	-132

2	9	-476	+178	9	-35	46	-58	-2	32.7	-189	385.9	2
2	18	+234	+66	50	-24	27	-11	-2	31.1	-90	323.0	2
2	25	+612	+72	16	-29	53	-50	-2	28.8	-110	295.0	4
4	14	-4.07	+76	12	-33	12	-16	-2	25.1	-194	276.4	4
4	31	+393	+75	42	-83	79	-35	-2	29.3	-121	305.1	4
4	41	+226	+66	7	-23	44	-40	-2	32.2	-88	33.08	2

20	+190	+62	14	-19	57	-34	-2	30.8	-75	31.55 ✓
1	+15.14	+78	60	-36	87	-60	-	-	-132	
11	+4192	+88	58	-46	15	-72	-2	29.9	-158	31.48 ✓
16	+241	+67	28	-25	5	-72	-2	31.4	-92	32.62 ✓
25	+3.12	+52	16	-29	53	-30	-2	30.1	-110	31.20 ✓
51	-3.65	+74	40	-32	17	-53	-2	29.1	-196	31.06
14	-4.07	+76	12	-84	49	-36	-2	27.0	-194	28.94
31	+3.33	+75	42	-33	19	-35	-2	29.4	-121	30.61 ✓
41	+2.26	+66	7	-23	44	-10	-2	29.6	-88	30.48 ✓

1873 Jan 6

$$\text{Apl} = \frac{+44}{-2}$$

2	31	-0.39	+21	25	+20	58	+36	-2	31.7	+7.9	31.91 ✓
3	15	+1.17	+49	24	-7	1	-12	-2	31.1	-26	31.36 ✓
3	53	+0.22	+12	8	+30	15	+50	-2	32.9	+110	31.80 ✓
4	15	+31	+17	15	+25	8	+42	-2	32.2	+92	31.28 ✓
4	21	+1.36	+53	38	-11	15	-19	-2	31.9	-42	32.32 ✓
4	28	+29	+16	15	+26	8	+40	-2	30.5	+97	29.53 ✓

873 Jan 12			Hfl = -2 31.98						
35	+1.14	+48	41	-6	18	-11	-2	32.3 - 24	32.54 ✓
41	+1.45	+55	22	-12	59	-22	-2	32.0 - 48	32.48
45	+1.09	+52	14	-9	51	-17	-2	33.0 - 37	33.37
55	+ .66	+3	35	+38	48	+63	-2	33.3 + 1.39	31.9 1 ✓
57	+ .85	+40	28	+1	53	+33	-2	32.2 + .07	32.13 ✓
59	+ .44	+23	45	+18	40	+32	-2	32.5 + .70	31.80 ✓
41	+ .44	+23	40	+18	43	+32	-2	32.7 + .70	32.00 ✓
50	+ .71	+35	25	+6	58	+12	-2	32.0 + .26	31.74 ✓
53	+ .22	+62	8	+30	15	+50	-2	34.0 + 1.10	32.9 0 ✓
59	+1.09	+47	22	-4	59	-09	-2	31.5 - 20	31.70 ✓

2	18	+234	+66	50	= 24	37	-41	-2	31.2	-90	321.0
2	25	+3.12	+72	16	-29	53	-50	-2	32.9	-110	340.0
3	21	-3.13	+72	17	-29	54	-54	-2	29.9	-200	315.0
4	14	-4.17	+76	12	-33	49	-66	-2	28.9	-174	308.4
					+36	30.91	-82		31.36	-41	32.10
					+50	31.80	-19	32.32	-50	34.00	
					+42	31.28					
					+44	29.53					
					+43	30.88	-15	31.84	-46	33.05	

49	+5.10	+78	55	-36	32	-59	-2	30.8	-130	32.10 ✓
51	-3.65					.89	-2	29.6	-196	31.56
48	+6.78	+78	11	-35	48	-58	-2	28.8	-128	30.08 ✓
46	+1.78	+60	44	-18	21	-32	-2	32.2	-70	32.90 ✓
				+63	31.91	-11	32.54	-59	32.10	
				+32	31.80	+03	32.13	-58	30.08	
				+32	32.00	+12	31.74	-32	32.90	
				+50	32.90	-09	31.70			
				+44	32.15	-.01	32.03	-.50	31.69	

1873 Jan 14

Hfl = -2 31.05

1871 phase	long ^o	lat ^o	h.	Z	sin Z	Req.	"			
41	+1.45	+55	22	-12	59	-22	2	30.8	48	31.28
45	+1.29	+52	14	-9	57	-17	-2	31.7	37	32.07
2 58	+06	+53	35	+38	48	+63	-2	34.1	1.39	32.71✓
2 59	+85	+40	28	+1	85	+03	-2	31.1	07	31.03✓
3 18	+1.17	+47	24	-7	1	-12	-2	32.3	26	32.56✓
3 33	+1.08	+47	23	-5	0	-09	-2	30.7	20	30.90✓
3 59	+44	+23	43	+18	40	+32	-2	29.6	70	28.90✓
4 12	+27	+15	19	+27	4	+45	-2	31.9	99	30.91✓
4 59	-16	-3	29	+45	52	+72	-2	32.1	1.58	30.52✓
4 44	+09	+5	23	+37	0	+60	-2	32.3	1.32	31.98✓
4 48	+65	+32	58	+9	25	+16	-2	32.3	35	31.95
4 53	+87	+40	53	+1	30	+03	-2	30.1	07	30.03✓
2 49	+5.10	+78	55	-36	32	-59	-2	30.2	1.30	31.50✓
2 57	-3.65	+74	40	-32	17	-53	-2	30.8	1.96	32.76
3 4	+4.42	+77	16	-34	53	-57	-2	28.9	1.25	30.15✓
3 36	+2.89	+70	56	-28	33	-48	-2	31.3	1.06	32.36✓
4 14	-4.07	+76	12	-33	49	-56	-2	29.1	1.94	31.04
4 41	+2.26	+66	7	-23	44	-40	-2	29.7	.88	30.58✓
4 52	+1.75	+60	15	-27	52	-31	-2	29.9	.68	30.58✓

+63 32.71 +03 31.03 -59 30.50
 +32 25.90 -12 32.56 -57 30.15
 +45 30.91 -09 30.90 -48 32.36
 +72 30.52 +03 30.03 -40 30.58
 +60 31.98
 +54 31.70 -04 31.13 -47 31.03

Hfl = -2 31.54

2 59	+85	+40	28	+1	55	+03	-2	31.3	07	31.23
3 4	+4.42	+77	16	-34	53	-57	-2	30.6	1.25	31.85
				+03	31.23	-57	31.85			

1873 Jan 19

Hfl = -2 30.22

2 58	+16	+3	35	+38	48	+63	-2	35.7	1.39	34.31
2 59	+85	+40	28	+1	55	+03	-2	30.7	07	30.63
4 31	+4.42	+77	16	-34	53	-57	-2	29.7	.75	28.95
4 37	+1.57	+56	32	-14	9	-25	-2	30.3	.55	30.55
4 39	-16	-3	29	+45	52	+72	-2	31.8	1.58	30.22
4 44	+09	+5	23	+37	0	+60	-2	32.7	1.32	31.38
4 48	+65	+32	58	+9	25	+16	-2	32.0	.35	31.65

+34 28.95 +03 30.63 -57 29.25
 +72 30.22 +07 31.65 -55 29.71
 +60 31.38
 +55 30.78 +09 31.14 -57 29.65

+33 32.97 +01 32.08 -35 30.77
 +36 31.21 +14 30.79 -49 31.08
 +45 29.21 -11 32.44 -41 32.00
 +42 30.48 -17 31.47 -50 30.50
 +34 30.05 +07 29.85 -59 31.30
 +78 31.08 +02 31.26 -55 28.91
 +77 31.21 +07 31.65 -60 29.92
 +54 31.51 -06 31.33
 +42 30.38 -13 30.59
 +06 32.27
 +44 30.28 -01 31.77 -50 30.64

1873 Jan 22

Hfl = -2 31.32

T		Langs		S	Z	sin Z		Req		"
h	m									
4	15	+31	+17	15	+25	8	+42	-		"
4	21	+36	+53	38	-11	15	-30	-2	34.6	-44 35.04
4	28	+29	+16	15	+26	8	+44	-2	30.4	+9.7 29.43✓
4	34	+42	+22	43	+19	40	+34	-2	31.2	+75 30.45✓
4	37	+1.51	+56	32	-14	9	-25	-2	31.3	-55 31.85
4	39	-06	-3	29	+45	52	+72	-2	32.9	+1.58 31.32✓
4	44	+09	+5	23	+37	0	+60	-2	34.7	+1.32 32.78✓
4	48	+65	+32	58	+9	25	+16	-2	31.6	+35 31.25
4	53	+87	+40	53	+1	30	+03	-2	31.6	+07 31.53✓
4	58	+39	+21	24	+20	59	+26	-2	32.6	+79 31.81✓
4	57	+07	+41	4	+1	19	+02	-2	30.7	+04 30.66✓
5	4	+79	+38	20	+4	3	+07	-2	33.4	+15 33.25✓
5	7	+1.63	+45	52	-3	29	-06	-2	30.9	-13 31.03✓
5	8	-15	-8	21	+50	44	+77	-		+1.69

4 31	+2.93	+75	42	-33	19	-55	-2	29.6	-1.21	30.81
4 41	+2.26	+66	7	-23	44	-40	-2	29.9	88	30.78
4 52	+1.75	+60	15	-17	52	-31	-2	31.4	68	32.08
4 57	+1.57	+56	32	-14	9	-25	-2	29.9	-1.50	31.70
5 1	+5.18	+79	5	-36	42	-60	-2	30.0	-1.32	31.32
				+44	29.43	+16	31.25	-55	30.81	
				+34	30.95	+03	31.53	-40	30.78	
				+32	31.37	+07	31.66	-31	32.08	
				+36	31.87	+06	31.03	-60	31.32	
				+49	31.16	+04	31.54	-46	31.25	

1873 Jan 28

Hfl = -2 31.78

3 53	+1.08	+47	33	-5	10	-09	-2	32.3	-20	32.50
3 39	+4.4	+83	43	+18	40	+32	-2	31.5	70	30.80
3 41	+4.4	+83	40	+18	40	+32	-2	32.1	70	31.40
3 50	+71	+35	25	+6	58	+12	-2	31.4	26	31.14
3 31	+1.95	+62	48	-20	25	-35	-2	30.4	77	32.17
3 46	+1.78	+60	44	-18	21	-32	-2	32.5	70	33.00
3 36	+2.85	+70	56	-28	33	-48	-2	30.4	1.06	31.46
				+32	30.80	-09	32.50	-35	32.17	
				+32	31.40	+12	31.14	-32	33.00	
				+32	31.10	+01	31.82	-38	32.21	

1873 Jan 29

Hfl = -2 31.09

1 56	+89	+41	43	+0	40	+01	-2	32.1	+02	32.08
1 59	+42	+22	32	+19	31	+33	-2	33.7	+73	32.97
2 1	+68	+34	25	+8	0	+14	-2	31.1	+31	30.79
2 31	+39	+21	25	+20	58	+36	-2	32.0	+79	31.21
2 35	+1.14	+48	41	-6	18	-11	-2	32.2	-24	32.44
2 45	+1.29	+52	14	-9	57	-17	-2	31.1	-37	31.47
2 56	+79	+38	21	+4	2	+07	-2	30.3	+15	29.85
2 59	+85	+40	28	+1	55	+02	-2	31.3	+04	31.26
4 12	+27	+15	19	+27	4	+45	-2	28.2	99	27.21
4 15	+31	+17	15	+25	8	+42	-2	31.4	+92	30.48
4 21	+1.36	+33	38	-11	15	-30	-2	29.4	-44	29.84
4 34	+42	+22	43	+19	40	+34	-2	30.8	+75	30.05
5 2	-16	-8	55	+51	18	+78	-2	32.8	+1.72	31.08
5 4	+79	+38	20	+4	2	+07	-2	31.8	+15	31.65
5 7	+1.03	+45	52	-3	29	-06	-2	31.2	-13	31.33
5 8	-15	-8	21	+50	44	+71	-2	32.9	+1.69	31.21
5 11	-12	-6	59	+49	22	+76	-2	35.9	+1.67	31.23
5 25	-01	-0	24	+42	47	+68	-2		+1.50	
5 27	+17	+9	24	+32	59	+54	-2	32.7	+1.19	31.51
5 36	+1.18	+49	46	-7	23	-13	-2	34.3	-29	34.59
5 39	+32	+17	41	+24	42	+42	-2	31.3	+92	30.88
5 42	+81	+39	7	+3	16	+06	-2	32.4	+13	32.27

1 45	+1.97	+63	3	-20	40	-35	-2	30.0	-77	30.77
1 52	+3.04	+71	48	-29	25	-49	-2	30.0	-1.08	31.08
2 9	+4.36	+78	5	-35	46	-58	-2	30.1	-1.89	32.00
2 18	+2.34	+66	30	-24	37	-47	-2	30.1	-1.90	30.50
2 25	+3.12	+72	16	-29	53	-50	-2	29.4	-1.10	30.50
2 49	+5.10	+78	55	-36	32	-59	-2	30.0	-1.30	31.30
2 51	-3.65	+74	40	-32	17	-53	-2	25.7	-1.96	29.06
2 54	-4.07	+76	12	-33	49	-56	-2	27.1	-1.94	28.91
4 31	+3.33	+75	42	-33	19	-55	-2	27.7	-1.21	28.91
4 59	+2.38	+62	15	-17	52	-31	-2	26.1	-1.80	27.90
5 1	+5.18	+79	5	-36	42	-60	-2	28.6	-1.32	29.92

1873 Feb 9
large S

$$A_{\phi} = -2 \quad 28.57''$$
$$Z \text{ Lin } Z \quad R_{\text{eq}}$$

1873 Feb. 18

$$A_{\text{pl}} = -2 \quad \begin{matrix} ' \\ '' \end{matrix} \quad 29.88$$
$$Z \quad \sin Z \quad \Re_{\text{eq}}$$
$$\begin{array}{r} 28 \\ + 29 \\ + 14 \\ 15 \\ + 26 \\ - 8 + 44 - 2 \\ 297 + 97 \\ 28,354 \\ 4 \quad 31 \\ + 398 \\ + 75 \\ 42 \\ - 33 \\ 19 - 55 - 2 \\ 292 - 121 \\ 28,414 \\ + 44 \quad 28,73 \\ - 55, 28,41 \end{array}$$

2	m		o	1	o	1	1	1	1	1
28	+29		+16	15	+26	8	+44	-2	296+97	2863✓+44 2863
4	37	+101	+36	32	-14	9	-24	-2	301-53	3063 +60 3148
4	44	+09	+5	23	+37	0	-60	-2	328+132	3148✓ 48 2988
4	53	+87	+40	53	+1	30	+03	-2	313+07	3123✓ 77 2991
5	2	-76	-8	55	+51	18	+78	-2	316+172	2988✓ 76 2893
5	4	+79	+38	20	+4	63	+07	-2	302+15	3005✓ +69 2977
5	8	-15	-8	21	+50	44	+74	-2	316+169	2991✓
5	11	-12	-6	59	+49	22	+76	-2	306+167	2893✓+03 3123

1873 Feb 10

$$H_1 = -2 \quad 28,12$$

4	44	+08	+5	23	+37	0+60	-2	31.0+1.32	29.68	✓
4	48	+65	+32	58	+9	25+16	-2	27.8+35	27.45	✓
6	7	+41	+22	32	+19	57+34	-2	29.1+75	28.35	✓
6	15	+42	+22	35	+19	48+34	-2	30.4+75	29.65	✓
6	16	+08	+4	39	+37	44+61	-2	23.2+134	23.6	✓
6	23	+82	+39	50	+2	53+05	-2	29.7+11	28.99	✓
6	33	+18	+10	1	+32	22+54	-2	28.0+119	26.81	✓

[illegible]

1873 Feb. 19

$$A_{pl} = -2' 30.33''$$

4	41	+226	66	7	-23	44	-40	-2	26.8	-88	2,185
4	52	+175	+60	15	-17	52	-31	-2	26.2	68	2,688
4	59	+734	+82	15	-39	52	-65	-	-	1.80	
5	1	+578	+79	5	-36	42	-60	-	-	1.32	
6	13	+1692					78	-2	24.8	-1.72	26.52
6	22	+295	+71	16	-28	53	-48	-2	25.9	-2.02	27.92
6	23	+320	+72	41	-30	18	-39	-2	25.9	-2.08	27.90
6	24	+550	+79	42	-37	19	-61	-	-	-1.34	
				+60	29.68	+16	28.48	-40	27.18		
				+34	28.35	+05	28.99	-31	26.88		
				34	29.63						
				54	26.81						
				+46	28.62	+10	28.22	-36	27.03		

5	25	-01	-0	24	+42	47	+68	-2	31.9	+150	30.40	+68	30.40
5	27	+17	+9	24	+32	59	+54	-2	31.1	+119	29.91	54	29.91
2	30	1.15	+49	16	-7	23	-13	-2	31.1	-29	31.39	42	29.58
2	32	32	+17	41	+24	42	+42	-2	30.3	+92	29.38	57	31.35
2	35	81	+39	7	+8	16	+06	-2	30.4	+13	30.27	16	29.29
5	48	.13	+7	23	+35	0	+37	-2	32.6	+125	31.45	34	29.95
5	50	100	+44	56	-2	33	-05	-2	29.7	-11	29.81	+35	30.43
6	0	.26	+14	47	+27	36	+46	-2	30.3	+101	29.29	+48	30.10
6	7	.41	+22	33	+19	50	+34	-2	30.7	+75	29.65		
8	26	.27	+25	15	+17	8	+29	-2	30.4	+64	29.76	-13	31.39
6	37	.96	+63	42	-1	19	-02	-2	30.0	-04	30.04	+16	30.27
7	9	.87	+4	6	+1	17	+02	-2	30.8	+07	30.76	-05	29.81
13	12	.41	+22	13	+20	10	+35	2	31.2	+74	30.21	-02	30.20

1873 Feb 11

$$A_{\text{gl}} = -2 \quad 28.71$$

6	33	+18	+10	1	+32	22+54	-2	298+1.19	286.55
6	36	+47	+20	15	+17	8+29	-2	294+1.64	287.66
6	37	+56	+43	42	-1	19-82	-2	293-.04	293.66
6	44	+28	+34	7	+8	16+14	-2	294+.31	270.94
6	46	+1.64	+58	35	-16	12-28	-2	286-.62	292.2
6	40	+20.5	+57	14	-44	57-70	-2	282-1.54	297.4
6	55	-2.92	+71	8	-28	45-48	-2	277-2.02	297.2

[illegible]

1873 Feb 17

$\begin{array}{r} \text{Apr} \\ + 42 \\ \hline 28.68 \end{array}$

4	34	+42	+22	43	+19	40+34	-	-	75	
4	37	1.57	+36	22	-14	9-24	-2	30.0-	.53	30.53
6	7	.4	+22	32	+19	51+34	-2	29.7+	.75	29.56
6	8	1.67	+59	3	-16	40-29	-2	29.9	.64	30.54
6	29	.80	+39	30	+2	53+05	-2	30.5+	.11	30.37
6	33	.18	+10	1	+32	22+54	-2	30.9+	1.19	29.76
6	36	.47	+25	15	+17	8+29	-2	30.0+	.64	29.36
6	37	.96	+43	42	-1	19-02	-2	30.0-	.04	30.04
6	44	.68	+34	7	+8	16+14	-2	29.0+	.81	28.64
6	46	1.64	+58	35	-16	12-23	-	-	.62	
7	3	.82	+39	3.2	+2	57+05	-2	28.2+	.11	28.09
7	7	.87	+41	6	+8	17+02	-2	30.1+	.04	30.08
7	12	.41	+22	13	+20	10+35	-2	31.2+	.77	30.43

[illegible]

Feb. 17

+34	28.95
+54	29.71
+35	30.44
<u>+41</u>	<u>29.70</u>
+05	30.39
-02	30.04
+14	28.69
+05	28.09
+02	30.06
<u>+05</u>	<u>29.45</u>
-40	30.18
-78	30.52
-45	30.19
-70	29.04
<u>-58</u>	<u>30.21</u>

1873 March 13

Hfl = -2 28.20

T	long	S	2	Sin 2	Ref.	"					
6	46	+1.64	+58	35	-16	12	-28	-2	28.11	.62	29.02
7	55	+1.53	+28	9	+14	14	+25	-2	28.8	+1.55	28.25
8	9	+1.17	+9	34	+32	49	+54	-2	28.8	+1.19	27.61
8	24	+1.79	+38	27	+3	56	+07	-2	30.5	+15	30.35
8	29	+1.33	+53	9	-10	46	-19	-2	27.9	-42	28.32
8	37	+1.34	+18	37	+23	46	+30	-2	28.3	+88	27.42
8	39	+1.12	+6	53	+35	30	+58	-2	28.8	+1.28	27.52
6	40	+2.03	+87	14	-44	51	-71	---	---	---	1.56
8	13	-4.45	+77	20	-34	57	-57	-2	25.2	-1.91	27.11
8	19	+1.81	+61	8	-18	45	-32	---	---	---	.70
8	25	+3.00	+74	4	-31	41	-53	-2	26.8	-1.17	27.97
8	33	-3.61	+74	31	-32	8	-89	-2	26.2	-1.96	28.16
			+25	28.25	+17	30.35	-53				27.97
			54	27.61	-19	28.32					
			40	27.42							
			58	27.52							
			+44	27.70	-0.6	29.33	-53				27.97

1873 March 16

Hfl = -2 28.23

7	9	+1.87	+41	6	+1	17	+02	-2	27.8	+0.04	27.76
7	12	+1.41	+22	13	+20	10	+35	-2	27.5	.77	26.73
7	20	+1.63	+32	2	+10	21	+18	-2	27.4	+1.40	27.00
7	32	+1.10	+5	33	+36	50	+60	-2	30.6	+1.32	27.28
8	9	+1.17	+9	34	+32	49	+54	-2	30.9	+1.19	27.71
8	24	+1.79	+38	27	+3	56	+07	-2	29.9	+1.15	27.75
7	18	-3.25	+73	7	-30	44	-51	-2	24.3	-1.98	26.28
7	29	-3.52	+79	21	-36	53	-60	-2	24.4	-1.87	26.27
7	44	+3.55	+74	15	-31	52	-35	-2	25.5	-1.17	26.67
8	13	-4.45	+77	20	-34	57	-57	-2	24.8	-1.91	26.71
8	19	+1.81	+61	8	-18	45	-32	---	---	---	.70
8	25	+3.50	+74	4	-31	41	-53	-2	25.8	-1.17	26.97
			+35	26.93	+0.2	27.76	-53	26.67			
			60	27.28	+18	29.00	53	26.97			
			54	27.71	+0.7	29.75					
			+50	28.57	+0.6	28.84	-53	26.82			

1873 March 17

7	9	+1.58	+41	6	+1	17	+02		.04		
7	12	+1.41	+22	13	+20	10	+35				
7	20	+1.63	+32	2	+10	21	+18				
7	32	+1.10	+5	33	+36	50	+60				
7	37	+1.34	+28	20	+14	3	+24				
7	39	+1.67	+33	44	+8	39	+15				
7	55	+1.53	+28	9	+14	14	+25				
8	9	+1.17	+9	34	+32	49	+54				
8	24	+1.79	+38	27	+3	56	+07				
8	29	+1.33	+53	9	-10	46	-19				
8	37	+1.34	+18	37	+23	46	+30				
8	39	+1.12	+6	53	+35	30	+58				
8	46	+1.60	+31	4	+11	19	+20				
8	48	+1.11	+6	26	+35	57	+59				
8	50	+1.13	+48	32	-6	9	-11				
8	54	+1.10	+47	39	-5	16	-09				
7	27	-3.32	+79	21	-36	58	-60				
7	44	+3.55	+74	15	-31	52	-35				
8	13	-4.45	+77	20	-34	57	-57				
8	19	+1.81	+61	8	-18	45	-32				
8	25	+3.50	+74	4	-31	41	-53				
8	33	-3.61	+74	31	-32	8	-89				
8	37	-5.72	+80	4	-37	41	-89				
8	39	+2.43	+67	39	-25	16	-43				

1873 March 27

Hfl = -2 28.93

T	long	S	Z	sin Z	Ref.	"					
7	32	+1.10	+5	33	+36	50	+60	-2	31.8	+1.32	30.48
7	37	+1.54	+28	20	+14	3	+24	-2	29.7	+1.53	29.17
7	39	+1.67	+33	44	+8	39	+15	-	29.4	32	29.07
8	29	+1.33	+53	9	-10	46	-19	-2	28.7	-42	29.12
9	9	+1.96	+43	44	-1	21	-02	-2	28.9	-04	28.91
9	10	+1.76	+37	20	+5	3	+09	-2	29.5	.20	29.30
9	13	+1.70	+34	56	+7	27	+13	-2	28.0	.29	27.71
9	34	+1.19	+10	28	+31	55	+53	-2	30.8	+1.17	29.63
9	38	+1.45	+24	21	+18	2	+31	-2	30.1	+68	29.42
9	41	+1.70	+57	38	-17	15	-30	-2	27.8	-66	30.46
7	44	+3.55	+74	15	-31	52	-35	-2	27.3	-1.17	26.47
8	55	+2.43	+67	39	-25	16	-43	-2	28.2	-95	29.15
9	23	+2.81	+70	23	-28	0	-47	-2	27.6	-1.03	28.63
9	27	-2.75	+70	00	-27	37	-46	-2	25.9	-2.02	27.92
9	31	+2.72	+69	49	-27	26	-46	-2	27.6	-1.01	28.61
9	40	+2.75	+70	44	-27	37	-46	-2	25.9	-2.02	28.52
9	46	+3.37	+73	30	-31	54	-32	-2	26.4	-1.14	27.54
			+60	30.48	+15	28.07	-53	28.47			
			53	29.63	-19	29.12	43	29.15			
			31	29.42	-02	28.94	47	28.63			
					+09	29.30	46	28.61			
					+13	27.71	52	27.54			
153	May 20	+48	29.84	+03	28.83	-48	28.48				

1873 March 30

Hfl = -2 29.39

8	29	+1.33	+53	9	-10	46	-19	-2	31.2	-42	31.62
9	5	+1.96	+43	44	-1	21	-02	-2	30.0	-04	30.01
9	10	+1.76	+37	20	+5	3	+09	-2	31.5	.20	31.30
9	13	+1.70	+34	56	+7	27	+13	-2	28.4	.29	27.81
8	59	+2.43	+67	39	-25	16	-43	-2	28.8	-95	29.75
9	8	-4.55	+77	37	-36	14	-58	-2	27.9	-1.91	28.81
9	23	+2.81	+70	23	-28	0	-47	-2	28.0	-1.03	28.03
9	27	-2.75	+70	00	-27	37	-46	-2	28.4	-2.02	30.42
9	31	+2.72	+69	49	-27	26	-46	-2	-1.01		
			-02	30.04	-113	29.75					
			+09	31.30	47	29.03					
			+13	27.81							
			+03	29.72	-45	29.59					

1873 March 31

Hfl = -2 30.28

8	46	+1.60	+31	4	+11	19	+20	-2	29.7	.44	28.66
8	48	+1.11	+6	26	+35	57	+59	-2	31.6	+1.30	30.30
8	50	+1.13	+48	32	-6	9	-11	-2	29.9	.24	30.14
8	54	+1.10	+47	39	-5	16	-09	-2	31.6	.20	31.80
8	53	-5.72	+80	4	-37	41	-89	-2	30.0	-1.85	31.85
			+59	30.30	+20	28.66					
					-11	30.14					
					-09	31.80					
			+59	30.30	+20	30.20					

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1873 May 4

$$H_{\text{pl}} = -2 \quad 28,44$$

1873 May 7

$$A_{\mu} = -2 \quad 2805$$

lphae

$$Z \sin z \quad R_{eq.}$$

T tangs' d

$$Z \quad \sin Z$$
[illegible]

10	24	+412	+76	22	-33	59	-56	-2	27.6	-123	28.80	10	24	+412	+76	22	-33	59	-56	-2	26.3	-1.23	27.53	✓
10	32	-327	+72	59	-30	36	-51	-2	27.2	-198	29.18	11	3	-366	+74	42	-32	19	-53	-2	23.5	-1.96	25.66	
10	49	+489	+78	21	-36	04	-34	-2	27.5	-130	28.60	11	15	+215	+65	1	-22	38	-38	-2	27.1	-.84	27.94	✓
10	35	+192	+62	46	-26	3	-34	-2	27.1	-75	27.85	11	23	+275	+70	2	-27	39	-46	-2	27.0	-1.01	28.01	✓
11	3	-366	+74	42	-32	19	-53	-2	27.8	-196	27.76													
11	23	+275	+70	2	-27	39	-46	-2	28.1	-101	27.18													
11	34	+431	+76	53	-34	382	-57	-2	26.9	-191	28.81													
11	08	+455	+77	37	-35	14	-38	-2	27.8	-128	29.08													
12	6	+484	+78	19	-35	56	-59	-2	28.7	-130	28.00													
												15/3 May 12												
												HPL = -2												
												2804												

$$K_{sp} = -2.27$$
[illegible]

1873 May 5

[illegible][illegible]
$$+54 \quad 28.15 \quad +03 \quad 27.76 \quad -47 \quad 27.59 \quad 11 \quad 23 \quad +0.75 \quad +70 \quad 2 \quad -27 \quad 39 \quad -46 \quad -2 \quad 27.6 \quad -1.01 \quad 28.61 \quad \checkmark$$

$$Kpl = -2 \quad 27.75 \quad 13 \quad 01 \quad -2.4 \quad +78 \quad 60 \quad -56 \quad 37 \quad -40 \quad -2 \quad 28.2 \quad -1.57 \quad 30.07$$

$$10 \quad 10 \quad -11.40 \quad +88 \quad 38 \quad -58 \quad 37 \quad -1.58$$

10	36	+44	+23	57	+18	33+32	-2	31.1+	70	30.40									
10	38	+61	+31	21	+11	2+19	-2	28.74	42	28.28	+56	28.47		+68	26.50	+15	28.37	-38	28.43
10	46	+70	+34	54	+7	29+13	-2	24.3+	29	27.01	68	27.70		51	27.78			46	28.61
10	34	+134	+57	4	-14	41-25	-2	28.9-	55	28.45	+62	28.08		73	28.19				
10	38	+14	+8	1	+34	22+56	-2	29.7+	23	28.47				+64	27.47	+15	28.37	-42	28.52
11	2	+101	+45	11	-2	48-05	-2	28.2-	11	28.31	+13	27.01							
11	9	+120	+60	10	-7	47-14	-2	27.5-	31	27.81	-05	28.31							
11	11	+57	+23	47	+8	36+15	-2	26.4	33	26.07	-14	27.81							
11	30	-80	-0	7	+42	30+68	-2	29.2+	160	27.70	+15	26.07							
											+62	27.30							

10	40	+489	+78	27	-36	4	-59	-2	270	1.30	28.30	✓	-59	28.30
10	55	+192	+62	26	-20	3	-34	-2	277	75	28.65	✓	34	28.65
11	23	+275	+70	2	-27	39	-46	-2	264	1.01	27.41	✓	46	27.41
11	34	-431	+76	55	-34	32	-57		-191				-46	28.12

1873 May 14

$$A_{pl} = -2 \quad 27.75$$

1873 May 19 $H_{\beta}l = -1 \quad 8.87$

T langes P

Z Lin 2

T large

$$P \quad z \sin z \quad R_{29}$$

	h	an	0	1	0	1	1	"	"
10	46	+30	+34	54	+7	29	+13	-2	26.9+29.2611
10	54	+34	+57	4	-14	41	+25	-2	30.1+55.8511
10	58	+14	+8	1	+32	22	+56	-2	29.74123.547011
11	2	+1.01	+45	11	-2	48	+05	-2	28.7+11.88.911
11	7	+39	+21	13	+21	10	+36	-2	28.0+.79.27211
11	9	+1.20	+50	10	-7	47	+14	-2	27.5+31.271911
11	11	+67	+33	47	+8	36	+15	-2	27.04.33.264811
11	17	+20	+11	14	+31	9	+32	-2	27.3+114.251611
11	30	+50	-0	7	+42	30	+68	-2	28.2+130.267011
11	39	+1.13	+48	29	-6	6	-11		-24
11	42	+25	+15	17	+37	6	+46	-2	28.6+101.275911
11	44	+84	+20	27	+39	54	+64	-2	29.44.141.275911
11	47	+1.40	+54	24	-12	1	+21	-2	28.6+46.281411

[illegible]

10	49	+489	+78	27	-36	4	-59	-2	26.2-130 780
10	55	+192	+62	26	-20	5	-34	-2	27.8-75 285
11	3	-366	+74	42	-32	19	-33	-2	25.7-196 276
11	15	+245	+63	1	-32	38	-38	-2	26.4-84 2724
11	23	+278	+70	2	-37	39	-46	-2	27.8-101 281
11	34	-631	+76	55	-34	32	-47	-2	24.1491 26.1
11	58	+455	+77	36	-35	13	-53	-2	27.3-128 2858
12	6	+484	+78	19	-35	56	-59	-2	26.5-130 2760
12	9	-404	+76	15	-33	52	-56	-2	25.9-194 2784

34	-4.31	+70	65	-34	32	-57	-1	5.0	1.11	6.71
6	-4.81	+78	17	-35	56	-59	-1	8.6	130	9.90
2	-4.04	+76	15	-33	52	-56	-1	5.6	123	6.83
12	-4.76	+58	38	-46	15	-52	-1	7.7	158	9.28
				+52	8.46		-11	8.94	-38	9.54
				68	8.90				46	9.71
				46	8.09				59	9.70
				64	9.79				56	6.83
				51	8.58				42	9.28
				43	8.59					
1572	77	20		+50	8.67		-11	8.94	-54	9.71

56	2847	14	2719	59	2150
36	2721	15	2667	31	2855
52	2816			38	2724
68	2670			46	2881
46	2759			58	2858
14	2799			70	2820

17	+20	+11	14	+31	9+52-1	8.26✓
50	-10	-0	7	+42	30+.68-1	7.50✓
39	+13	+48	29	-6	6-11-1	9.64✓

10	38	+61	+31	21	+11	2	+19		+42
10	54	+134	+57	4	-14	41	-25	-1	10.9-55 11.45
10	58	+14	+9	1	+34	22	+58	-1	11.3+123 10.07
11	2	+101	+145	11	-2	48	-45	-1	9.8-11 9.51
11	7	+39	+21	13	+21	10	+36	-1	9.7+79 8.91
11	9	+130	+50	10	-7	47	-14	-1	8.7-31 9.01
11	11	+67	+33	4	+8	36	+15	-1	9.0+33 8.67
11	17	+20	+11	42	+30	41	+15	-1	9.5+12 9.38
11	30	-50	-0	4	+42	30	+68	-1	9.4450 7.50

42	+ 27	+ 10	- 17	+ 27	+ 46	- 1	83	+ 101	7.49 ✓
44	+ 14	+ 2	29	+ 39	54	+ 44	- 1	107	9.29 ✓
47	+ 140	+ 54	24	- 12	1	- 21	- 1	84	8.86
13	+ 10	+ 0	3	+ 42	21	+ 67	- 1	91	7.63 ✓
19	+ 83	439	44	+ 2	39	+ 05	- 1	103	10.19 ✓
15	+ 15	+ 65	1	- 22	38	- 38	- 1	77	8.54 ✓
23	+ 25	+ 70	3	- 27	39	- 44	- 1	71	8.11 ✓
84	- 431	+ 76	55	- 34	32	- 54	- 1	23	9.21
58	+ 455	+ 77	37	- 35	14	- 88	- 1	8	10.08 ✓

10	49	+489	+78	27	-36	4	-59	-	-130
10	58	+192	+62	26	-20	3	-34	-1	10.1 -75 108.5
11	3	-306	+74	42	-32	19	-53	-1	6.8 -46 8.76
11	15	+215	+65	1	-22	38	-38	-1	8.1 -84 89.4
11	23	+275	+70	2	-27	37	-46	-1	7.5 -101 85.1
			+56	1024	-05	991	-34	1085	
			56	891	-14	401	38	8.94	
			51	828	+15	8.64	46	8.51	
			68	790	-	-	-	-	
			+53	881	-01	920	-39	943	

2 6 -14.84 +78 19 -35 56 -59-1 83-130 9.60 ✓
 +52 8.26 -11 9.64 -38 8.54
 68 7.50 +05 10.19 46 8.11
 46 7.49 58 10.08
 64 9.29 59 9.60
 67 7.63
 +59 8.03 -03 9.941 -50 9.08
 1873 May 20 Hpl = - i 8.55-
 30 -60 -0.7 +42.30 +68-1 8.74 150 7.20 ✓

1873 May 18. Hgl = -1 9.49

10	54	+1.54	+57	4	-14	41	-25	-1	9.5-55	10.05
10	58	+1.14	+8	1	+34	22	+56	-1	11.6+123	10.37
11	2	+1.01	+15	11	-2	48	-55	-1	9.4-11	9.81
11	7	+39	+21	13	+21	10	+36	-1	9.9+79	9.11
11	9	+120	+50	10	-7	47	+14	-1	9.7-31	10.01
11	11	+67	+23	47	+8	36	+15	-1	8.3+33	7.97
11	17	+20	+11	14	+31	9	+52	-1	11.0+114	9.8

42	+27	+15	17	+27	6	+46	-1	8,64	101	17,39 ✓	
44	+24	+2	29	+39	54	+64	-1	10,4	141	8,69 ✓	
47	+140	+54	34	-12	1	-21			-46		
54	-431	+76	55	-34	32	-57	-1	5,0	-1,91	6,91	
58	+455	+77	37	-35	14	-38	-1	8,3	-1,28	9,58 ✓	
2	6	+484	+78	19	-35	56	-59	-1	84	-120	9,70 ✓
					+68	46	7,20	-58	9,58		
							7,59	59	9,70		

10	55	+ 92	+ 62	26	- 20	8	- 34	- 1	8.8	- 75	9.5
11	3	- 3.66	+ 74	42	- 32	19	- 53	- 1	8.4	- 136	10.3
11	18	+ 2.45	+ 65	1	- 32	38	- 38	- 1	8.9	- 84	9.7
11	23	+ 2.75	+ 70	2	- 27	59	- 46	- 1	8.3	- 101	9.3
			+ 56	1059	- 05	9.51	- 34		9.55		
			36	9.11	- 14	10.01	38		9.94		
			52	9.86	+ 15	9.84	46		9.81		
			+ 48	9.80	- 01	9.16	39		9.00		

$$A_{\text{gl}} = -i \quad 7.89$$

$$Z \quad \sin Z \quad R_{\text{ig.}}$$

1873 May 31 $Kp1 = -1^{\circ} 6.96$
T tang² σ z $\sin z$ R_{eq}

1873 June 1 $A_1 = -1^{\circ} 6.8'$

1873 May 29 $\begin{matrix} +.07 & +.94 & +.03 \\ Hgl = -i & 7.18 \end{matrix}$

+ 4/6	8.99	+ 02	6
64	6.09	+ 05	8
36	4.31		

48	+35	+14	2	+23	21	+40	-1	7.3	+88	84.2	✓
0	6	+4.84	+78	19	-35	56	-59	-1	59	-1.30	7.20
2	28	12.12	+70	29	-28	6	-47	-1	62	-1.03	6.23 ✓
0	37	+3.56	+74	18	-31	55	-53	-1	3.4	-1.96	5.36
8	1	-5.14	+78	60	-36	37	-88	-1	4.4	-1.7	6.27
3	12	-4.16	+88	58	-46	15	-72	-1	4.6	-1.58	6.18 ✓
67	5.28				+46	4.69		+02	6.06	-59	7.20
36	7.81				67	4.23		+05	6.49	47	7.23
51	7.38				36	5.81				72	6.18
73	7.79				51	5.58					
67	5.93				73	5.89					
65	8.07				67	5.53					
29	6.66				46	6.42					
+55	6.49				+54	5.45		+03	6.24	-59	6.84

1873 June 5 $\Delta\phi = -1' 6.32''$

T	l	m	d	z	sin	Ref.	
13	3	-08	-4	52	+47	15 +73	+1.61
13	18	+19	-10	36	+52	53 +80	+1.76
13	24	+1.78	+60	36	-18	13 -31 -1	5.9
13	28	-00	+0	3	+42	20 +67 -1	7.1
13	42	+1.19	+49	57	-7	34 -13 -1	6.9
14	21	+1.30	+52	26	-10	3 -18 -1	7.2
14	36	-09	-5	6	+47	29 +74 -1	7.0
14	44	-28	-15	31	+57	54 +85	+1.57

14	26	-3.12	+72	16	-22	53 -50 -1	3.6
13	12	-4.76	+88	38	-46	15 -72 -1	4.2

+67	5.63	-13	7.19	-72	5.78
74	5.37	-18	7.60		
70	5.80	-15	7.40	-72	5.78

1873 June 9 $\Delta\phi = -1' 6.56''$

12	55	+21	+11	39	+30	44 +51 -1	7.0
14	34	+1.08	+44	57	-2	34 -05 -1	6.6
14	36	-09	-5	6	+47	29 +74 -1	7.3
14	18	+1.71	+59	49	-17	26 -21 -1	6.0
14	57	+87	+40	54	+1	29 +03 -1	7.6
14	59	+82	+27	28	+14	55 +26 -1	7.9

13	12	-4.76	+88	38	-46	15 -72 -1	4.5
14	26	-3.12	+72	16	-29	53 -50 -1	4.2
14	49	-5.16	+78	55	-36	58 -59 -1	0.0
14	51	+3.65	+74	40	-32	17 -33 -1	5.5
14	56	+2.29	+66	26	-24	3 -41 -1	6.3

+51	5.88	-05	6.71	-72	6.08
74	5.87	+03	7.53	53	6.67
62	5.88	-01	7.12	41	7.20
				-53	6.65

1873 June 10 $\Delta\phi = -1' 6.07''$

12	55	+21	+11	39	+30	44 +51 -1	6.5
13	3	-08	-4	52	+47	15 +73 -1	6.2
13	18	-19	-10	36	+52	53 +80	+1.76
13	24	+1.78	+60	36	-18	13 -31 -1	6.4
13	28	+1.00	+0	3	+42	20 +67 -1	7.7
13	42	+1.19	+49	57	-7	34 -13 -1	6.7
14	21	+1.30	+52	26	-10	3 -18 -1	7.1

13	1	-5.14	+78	60	-36	37 -60 -1	4.4
13	12	-4.76	+88	38	-46	15 -72 -1	5.6

+51	5.38	-13	6.99	-72	7.18
43	4.59				
67	6.23				
+64	5.40	-13	6.99	-72	7.18

1873 June 11

12	55	+21	+11	39	+30	44 +51 -1	6.4
13	3	-08	-4	52	+47	15 +73 -1	6.9
13	18	-19	-10	36	+52	53 +80	+1.76
13	24	+1.78	+60	36	-18	13 -31 -1	6.4
13	28	+1.00	+0	3	+42	20 +67 -1	7.8
13	42	+1.19	+49	57	-7	34 -13 -1	6.5
13	48	+1.35	+19	2	+23	21 +40 -1	3.5
14	12	+1.28	+51	57	-9	34 -17 -1	6.9
14	36	-09	-5	6	+47	29 +74 -1	5.5
14	48	+1.71	+59	49	-17	26 -30 -1	6.0
14	57	+87	+40	54	+1	29 +03 -1	6.1
14	59	+82	+27	28	+14	55 +26 -1	8.5
14	10	+1.07	+33	47	+8	36 +15 -1	4.5

1873 June 11 $\Delta\phi = -1' 5.86''$

T	l	m	d	z	sin	Ref.	
13	1	-5.14	+78	60	-36	37 -60 -1	3.6
13	12	-4.76	+88	38	-46	15 -72 -1	3.6
13	28	-3.15	+72	23	-30	0 -50 -1	3.8
13	34	+3.06	+71	53	-29	30 -44 -1	5.6
14	1	+2.14	+64	59	-22	36 -38 -1	5.5
14	9	+4.76	+78	9	-35	46 -58 -1	5.0
14	49	-5.10	+78	55	-36	32 -54 -1	2.0
14	61	+3.45	+74	40	-32	17 -33 -1	5.3
15	13	+2.45	+67	50	-25	27 -43 -1	4.8

-72	5.18
49	6.68
38	6.34
58	6.28
53	6.47
43	5.88
-52	6.78

1873 June 12 $\Delta\phi = -1' 5.52''$

13	3	-08	-4	52	+47	15 +73 -1	5.9
13	18	-19	-10	36	+52	53 +80	+1.76
13	24	+1.78	+60	36	-18	13 -31 -1	4.5
13	28	+1.00	+0	3	+42	20 +67 -1	7.6
13	42	+1.19	+49	57	-7	34 -13 -1	5.5
13	49	+1.35	+19	2	+23	21 +40 -1	5.8
14	5	+1.48	+25	42	+16	41 +29 -1	6.5
14	12	+1.28	+51	57	-9	34 -17 -1	6.4
14	21	+1.30	+52	26	-10	3 -18 -1	6.6

13	12	-4.76	+88	38	-46	15 -72 -1	3.4
13	28	-3.15	+72	23	-30	0 -50 -1	4.5
14	1	+2.14	+64	59	-22	36 -38 -1	5.3
14	9	+4.76	+78	9	-35	46 -58 -1	5.1

+73	4.29	-13	5.79	-72	4.98
67	6.13			38	6.14
50	4.92			58	6.38
+60	5.11	-13	5.79	-56	5.83

1873 June 15 $\Delta\phi = -1' 5.49''$

13	18	-19	-10	36	+52	53 +80	+1.76
13	24	+1.78	+60	36	-18	13 -31 -1	5.0
13	28	+1.00	+0	3	+42	20 +67 -1	5.9
13	42	+1.19	+49	57	-7	34 -13 -1	6.7
13	49	+1.35	+19	2	+23	21 +40 -1	4.3
13	55	+1.04	+2	10	+40	13 +65 -1	7.0
14	5	+1.48	+25	42	+16	41 +29 -1	5.4
14	11	+1.28	+51	57	-9	34 -17 -1	6.3
14	21	+1.30	+52	26	-10	3 -18 -1	6.7

13	12	-4.76	+88	38	-46	15 -72 -1	4.2
13	28	-3.15	+72	23	-30	0 -50 -1	4.4
13	34	+3.06	+71	53	-29	30 -44 -1	4.5
14	1	+2.14	+64	59	-22	36 -38 -1	4.9
14	9	+4.76	+78	9	-35	46 -58 -1	4.6
14	26	-3.12	+72	16	-29	53 -50 -1	3.0

+40	3.42	+08	5.72	-72	5.78
65	5.57	-13	6.99	49	5.58
29	4.76			58	5.74
				58	5.88
+45	4.58	-02	6.35	-54	5.76

1871phae.pro

1873 July 12

Hgl = -1 4.14

T lamp

P

Z sin Z Req.

28	+51	+27	9	+15	14	+26	-1	5.6	+ .57	5.03	15	26	+58	+41	16	+1	7	+02	-1	3.3	+ .04	3.26	✓	15	15	15	15	15	15	
15	33	+86	+40	46	+1	37	+03	-1	3.5	+ .07	3.43	15	29	+51	+27	9	+15	14	+26	-1	3.0	+ .57	2.43	✓	15	15	15	15	15	15
15	38	+12	+6	50	+35	33	+58	-1	6.5	+ 1.28	5.22	15	33	+86	+40	46	+1	37	+03	-1	4.1	+ .07	4.03	✓	15	15	15	15	15	15
15	40	+28	+15	49	+26	34	+45	-1	4.6	+ .99	3.61	15	38	+12	+6	50	+35	33	+58	-1	4.6	+ 1.28	3.32	✓	15	15	15	15	15	15
15	43	-85	-3	2	+45	25	+71	-1	5.0	+ 1.56	3.44	15	40	+28	+15	49	+26	34	+45	-1	3.6	+ .99	2.61	✓	15	15	15	15	15	15
15	51	+29	+16	5	+26	18	+44	-1	5.7	+ .97	4.73	15	43	-85	-3	2	+45	25	+71	-1	2.3	+ 1.56	0.74	✓	15	15	15	15	15	15
15	52	+32	+27	15	+18	8	+26	-1	5.3	+ .57	4.73	15	51	+29	+16	5	+26	18	+44	-1	3.0	+ .97	2.03	✓	15	15	15	15	15	15
15	55	+1.43	+53	6	-12	43	-22	-1	4.9	- .48	5.38	15	52	+32	+27	15	+15	8	+26	-1	3.2	+ .57	2.63	✓	15	15	15	15	15	15
15	59	+1.66	+53	52	-16	31	-28	-1	4.2	- .62	4.82	15	55	+1.43	+53	6	-12	43	-22	-1	4.4	- .48	4.58	✓	15	15	15	15	15	15
16	4	+1.01	+45	16	-2	53	-25	-1	4.6	- .11	4.71	15	59	+1.66	+53	52	-16	31	-28	-1	2.6	- .62	3.22	✓	16	16	16	16	16	16
16	8	-26	-3	22	+43	45	+72	-1	5.6	+ 1.58	4.02	16	4	+1.01	+45	16	-2	53	-25	-1	2.1	- .11	2.21	✓	16	16	16	16	16	16
16	12	-08	-4	23	+46	46	+73	-1	5.8	+ 1.61	4.19	16	8	-26	-3	22	+43	45	+72	-1	4.9	+ 1.58	3.32	✓	16	16	16	16	16	16
16	14	+35	+19	27	+22	36	+39	-1	3.8	+ .86	2.94	16	12	-08	-4	23	+46	46	+73	-1	3.8	+ 1.61	2.19	✓	16	16	16	16	16	16
16	19	+26	+14	20	+28	3	+47	-1	5.3	+ 1.03	4.27	16	16	+35	+19	27	+22	36	+39	-1	2.9	+ .86	2.04	✓	16	16	16	16	16	16
16	22	+1.46	+53	30	-13	7	-23	-1	3.1	- .50	3.60	16	19	+26	+14	20	+28	3	+47	-1	3.7	+ 1.03	2.67	✓	16	16	16	16	16	16
16	25	+40	+21	46	+26	37	+35	-1	2.9	+ .77	2.13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
16	30	+92	+42	42	-0	19	-01	-1	3.3	- .02	3.32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

1873 July 15

Hgl = -1 2.75

T lamp

P

Z sin Z Req.

15	37	-289	+70	56	-28	33	-44	-1	0.9	- 2.02	2.72	✓	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
15	45	+196	+62	60	-20	37	-35	-1	2.1	- .77	2.37	✓	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
15	49	+478	+78	11	-35	48	-58	-1	2.4	- 1.28	3.65	✓	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
16	15	+407	+76	12	-33	49	-56	-1	2.3	- 1.23	3.53	✓	16	15	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
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1873 July 21
T. Lang & S

$$H_{gl} = -1 \quad 4.30$$

$2 \sin 2$

R_{eq}

1873 July 24
T' tang S

$$H_{gl} = -i \frac{3.54}{z \sin z} R_{eq.}$$
[illegible]

1873 July 22

$$\Delta p = -1, 3.92$$

15	38	+12	+6	30	+33	33	+58	-1	5.5	+1.28	4.22	✓
15	40	+28	+15	49	+26	34	+45	-1	4.6	+ .99	3.61	✓
15	43	-.05	-3	2	+45	25	+71			+1.56		
15	51	+29	+16	5	+26	18	+44	-1	4.44	.97	3.43	✓
15	52	+37	+29	15	+15	8	+26	-1	4.1	+ .57	3.53	✓
15	55	+1.48	+55	6	-12	43	-22	-1	5.5	-.48	5.98	✓
15	59	+1.66	+58	54	-16	31	-28	-1	4.7	-.62	5.02	✓
16	5	+1.01	+45	16	-2	53	-.05	-1	3.9	-.11	4.01	✓
16	8	-.16	-3	23	+3	45	+72	-1	6.0	+1.58	4.42	✓
16	16	+ .35	+19	27	+22	56	+39	-1	3.9	+ .86	3.04	✓
16	25	+ .40	+21	46	+2.0	37	+35	-1	2.6	+ .77	1.83	✓
15	37	-2.87	+70	56	-28	33	-.48	-1	2.6	-2.02	4.62	✓
15	45	+1.96	+62	60	-20	37	-.35	-1	2.9	-.77	3.67	✓
15	49	+2.78	+78	11	-35	48	-.58	-1	4.2	-1.28	5.48	✓
16	15	+2.07	+76	12	-33	47	-.56	-1	3.4	-.23	4.63	✓
16	28	+2.61	+69	3	-26	40	-.45	-1	3.8	-.99	4.79	✓

1873 July 26

$$S_{\text{pl}} = -1 \quad 3.74''$$

38	+87	+59	10	+3	13	+06	-1	3.5	+ .13	3.37	✓ +46	5.99
42	+154	+57	11	-14	38	-25	-1	4.1	- .55	4.65	54	5.91
46	+71	+15	11	+27	12	+46	-1	7.0	+ 1.01	5.99	✓ 47	2.37
52	+74	+7	34	+32	49	+54	-1	4.2	+ 1.19	3.01	✓ +49	3.99
53	+160	+31	7	+11	16	+20	-1	6.8	+ .47	6.36		
4	+16	+40	41	+1	42	+03	-1	3.6	+ .04	3.53	✓	
9	+26	+14	32	+27	51	+47	-1	3.4	+ 1.03	2.37	✓ +06	3.37
11	+75	+36	57	+5	26	+09	-1	3.1	+ .20	2.90	✓ +03	3.53
28	+130	+22	34	-10	1	-17	-1	4.5	- .37	4.87	✓ +09	2.90
											+06	3.27
59	+784	+82	15	-39	52	-64	-1	3.6	- 1.41	5.01	✓ -64	5.01
1	-518	+79	5	-36	42	-60	-1	2.4	- 1.87	4.27		
22	-372	+74	57	-32	32	-54	-1	1.5	- 1.96	3.46		

$H = -1' \quad 3.44$
1873 July 2

1

-0.5 4.01 -4.8 4.4

1873 July 30

$$H_{\text{gl}} = -i \quad 3.22$$

15	59	+166	+53	34	-16	31	-28		-62	
16	5	+161	+45	16	-2	53	-95	-1	3.0	-11 3.1 ✓
16	8	-66	-3	22	+45	45	+72		+158	
16	12	-68	-4	23	+46	46	+73	-1	3.7	+161 2.03 ✓
16	17	+26	+14	20	+28	3	+47	-1	3.4	1.03 2.07 ✓
16	22	+157	+61	48	-19	25	-33	-1	3.1	.73 3.83
16	25	+40	+21	46	+20	37	+35	-1	1.57	.77 0.73 ✓
16	38	+81	+39	10	+3	13	+66	-1	4.0	.13 3.87 ✓
16	52	+17	+9	34	+32	49	+54	-1	2.0	+19 0.81 ✓
16	55	+60	+31	7	+11	16	+20	-1	8.9	+44 3.46 ✓
16	28	+261	+67	3	-26	40	-45	-1	2.7	.99 3.69 ✓
16	36	+459	+77	42	-35	13	-68		-128	
16	39	+234	+82	15	-39	53	-64	-1	4.0	1.41 5.41 ✓

[illegible]

15/3 Aug 4

$$A_{pl} = 1' \quad 4.35''$$

1873 Aug. 6

$$A_{\text{pl}} = -1 \quad 4.81$$

77 tang P

$$Z \sin Z \quad \text{Re}$$

T langes ad

$$z \sin z \quad \text{Req.}$$

	m	o	i	a	i	'	"	"	"		
1871	16	+35	+19	27	+22	56	+39	-1	5.6	+86	4.74
16	25	+40	+21	46	+20	37	+35	-1	4.5	+77	3.13
16	30	+92	+42	42	-0	19	-01	-1	4.4	-02	4.42
16	38	+81	+39	10	+3	13	+06	-1	4.4	+13	4.27
16	42	+154	+57	1	-14	38	-25	-1	4.5	-55	5.05
16	46	+27	+10	11	+27	12	+46	-1	6.4	+01	5.39
16	52	+10	+9	34	+32	49	+54	-1	5.6	+19	4.41
16	55	+20	+31	7	+11	16	+20	-1	5.9	+44	5.46
17	4	+16	+40	41	+1	42	+03	-1	4.6	+07	4.53
17	9	+26	+14	32	+27	51	+47	-1	3.3	+03	3.30
17	11	+75	+36	67	+5	26	+09	-1	3.5	+20	3.20
17	28	+130	+52	24	-10	1	-17	-1	4.7	-37	5.07
17	36	+104	+46	04	-3	41	-06	-1	4.4	-13	4.53
17	41	+83	+27	48	+14	35	+25	-1	5.3	+55	4.75
17	53	+126	+57	30	-9	7	-16	-1	4.8	-35	5.15

h	m	\bullet	\circ	\circ	\circ	\circ	\circ	\circ	\circ
16	36	+4.59	+77	42	-35	19	-58	-1	-1.28
16	39	+7.34	+82	15	-39	52	-64	-1	4.7 - 1.41
17	1	-5.18	+79	5	-38	42	-50	-1	2.2 - 1.87
17	32	+2.50	+68	13	-25	50	-45	-1	3.5 - .97
17	58	+2.68	+68	49	-26	26	-44	-1	4.6 - .97

$$\begin{array}{r} -64 \quad 6.11 \\ -44 \quad 447 \\ -44 \quad 557 \\ \hline 7-51 \quad 5.38 \end{array}$$

1873 Aug 9

$$\Delta \phi = -1^{\circ} 45'$$

16	38	+51	+39	10	+3	10 ² + .06 - 1	3.2 + .13	3.07 ✓
16	46	+27	+15	11	+27	12 + .46 - 1	4.5 + 1.01	3.49 ✓
16	52	+17	+9	34	+32	49 + .54 - 1	4.9 + 1.19	3.71 ✓
16	55	+60	+31	7	+11	16 + .20 - 1	4.8 + .44	4.36 ✓
17	4	+86	+40	41	+1	42 + .03 - 1	4.6 + .07	4.53 ✓
18	1	+17	+9	33	+32	50 + .54 - 1	8.1 + 1.19	6.91 ✓
18	3	+55	+28	45	+13	38 + .24 - 1	5.8 + .53	5.27 ✓
18	12	+90	+42	7	+0	16 + .01 - 1	4.2 + .02	4.18 ✓
18	18	+40	+21	43	+20	40 + .35 - 1	5.0 + .77	4.23 ✓
18	33	+80	+38	40	+3	43 + .06	4 + .13	

16	15	+407	+76	12	-33	49	-56	-1	5.6	-123	483 ✓
16	22	+187	+61	48	-19	25	-33	-1	3.4	-73	413 ✓
16	28	+261	+69	3	-26	40	-18	-1	4.2	-99	519 ✓
16	32	+393	+75	42	-33	19	-55	-1	2.0	-194	394 ✓
16	36	+453	+77	42	-35	19	-58	-1		-128	
16	59	+134	+82	15	-39	52	-64	-1	3.8	-41	521 ✓
17	1	-618	+79	5	-56	42	-60	-1	0.2	-187	207 ✓
17	22	-312	+74	57	-32	34	-54	-1	1.8	-196	376 ✓
17	32	+150	+68	13	-23	50	-34	-1	2.9	-97	387 ✓
17	38	+258	+68	49	-26	26	-44	-1	3.1	-97	437 ✓
17	44	+312	+72	13	-29	50	-50	-1	2.8	-110	390 ✓

16	36	+4.59	+5.7	42	-3.5	19	-5.8	1	5.8	-1.28	70.8
16	59	+7.34	+8.2	10	-3.9	52	-8.4	-1	3.7	-1.41	5.11
17	1	-5.18	+7.9	5	-3.6	42	-6.8	1	0.9	-1.87	2.77
18	14	+16.85	+1.6	36	-4.4	13	-7.0	-1	2.2	-1.54	3.74
18	23	+2.95	+7.1	16	-2.8	53	-4.8	-1	2.5	-1.06	3.56
18	39	-2.70	+5.7	14	-4.4	57	-7.1			-1.69	
18	41	-4.38	+7.7	8	-3.9	53	-5.4			-1.91	

20	29	34		-	1.91
+46	349	+06	307	-58	708
+54	271	+03	453	-64	511
+54	691	+01	418	-70	374
+35	423			-48	356
+14	458	+03	393	-60	487

1873 Aug. 5

$$H_{yl} = -1' 3''$$

1873 Aug. 10

$$A_{gl} = -1 \quad 4,02$$

17	28	+1.30	+52	24	-10	1	-17	-1	6.6	-.37	6.97
17	36	+1.04	+46	5	-3	42	-06	-1	6.2	-.13	6.33
17	41	+1.83	+27	88	+14	38	+25	-1	6.5	+55	5.95
17	51	+1.53	+56	64	-14	31	-25	-1	7.2	-55	7.75
17	53	+1.26	+51	30	-9	3	-16	-1	6.2	-.35	6.55
18	1	+1.17	+9	33	+32	58	+54	-1	7.6	+1.19	6.41
18	3	+1.85	+28	45	+13	38	+24	-1	6.3	+53	5.77
18	12	+1.90	+42	7	+0	16	+01	-1	5.4	+02	5.38
18	18	+1.40	+21	43	+20	40	+35	-1	5.7	+77	4.93

17	9	+26	+14	32	+28	57	+47	-1	4.6	+1.03	3.57 ✓
17	11	+75	+86	57	+5	26	+09	-1	3.8	+ .20	3.60 ✓
17	36	+101	+46	4	-3	41	-06	-1	4.0	- .13	4.13 ✓
17	22	-32	+74	57	-32	34	-54	-1	2.6	-1.96	4.56
17	32	+250	+68	13	-25	50	-44	-1	3.8	- .97	4.77 ✓

$$\begin{array}{r} +47 \quad 357 \\ +47 \quad 357 \\ \hline \end{array} \quad \begin{array}{r} +09 \quad 360 \\ -06 \quad 413 \\ +02 \quad 386 \\ \hline \end{array} \quad \begin{array}{r} -44 \quad 477 \\ -44 \quad 477 \\ \hline \end{array}$$

16	36	+459
17	37	+250

68	13	-25
18	18	01

1873 Aug. 1

$$Hgl = -i \quad 4.32$$

17	44	+312	-26	20	-44	-1	3.3	-77	641	u
17	55	+432	-29	50	-50	-1	4.1	-110	520	u
18	14	+468	-34	36	-54	-1	6.7	-25	795	u
			-44	13	-70	-1	3.3	-154	484	u
			+54	64	-06	683	-58	618		
			+24	577	-16	655	-44	577		

16	46	+57	+15	11	+27	12	+46	-1	5.3	+1.01	4.29
16	52	+57	+9	34	+32	49	+54	-1	4.2	+1.19	3.01
17	4	+58	+40	41	+1	42	+03	-1	4.8	+07	4.73
17	9	+56	+14	32	+27	51	+47	-1	4.6	+1.03	3.57

$$\begin{array}{r} +46 \\ +64 \\ +47 \\ +119 \end{array} \quad \begin{array}{r} 429 \\ 801 \\ 357 \\ 262 \end{array} \quad \begin{array}{r} +03 \\ +03 \end{array} \quad \begin{array}{r} 473 \\ 473 \end{array} \quad \begin{array}{r} -.64 \\ -.64 \end{array} \quad \begin{array}{r} 6.01 \\ 6.01 \end{array}$$

1873 Aug. 6

$$\begin{array}{r} 7.38 \\ 5.70 \\ -0.07 \\ 6.09 \\ -0.54 \\ \hline 6.09 \end{array}$$
$$\begin{array}{r} 16 \ 59 \ +7.34 \\ 17 \ 1 \ -5.18 \\ \hline \end{array}$$

-39 52 - 64 - 1
-36 42 - ~~60~~ - 1
85 -

16	58	+60	+31	87	+11	16 + 20	-1	5.1	+44	4.66
17	4	+86	+40	41	+1	42 + 03	-1	5.3	+07	5.23
17	11	+78	+36	87	+5	26 + 49	-1	3.9	+20	3.79
17	28	+130	+52	24	-10	1 - 17	-1	3.9	-37	4.27
17	63	+101	+46	5	-3	42 - 06	-1	11.9	-13	5.03
17	41	+83	+27	48	+14	35 + 25	-1	11.8	+55	4.25

$\begin{array}{r} 16 \quad 59 \\ 17 \end{array}$
 $\begin{array}{r} +724 \\ -58 \end{array}$
 $\begin{array}{r} +02 \\ +79 \end{array}$
 $\begin{array}{r} 16 \\ 0 \end{array}$
 $\begin{array}{r} -39 \\ -36 \end{array}$
 $\begin{array}{r} 52 \\ 42 \end{array}$
 $\begin{array}{r} -.64-1 \\ -.68-1 \end{array}$
 $\begin{array}{r} 4.6-1.41 \\ 2.1-1.87 \end{array}$
 $\begin{array}{r} 6.01 \\ 3.97 \end{array}$

$\begin{array}{r} +46 \\ +84 \\ +47 \\ +48 \end{array}$
 $\begin{array}{r} 429 \\ 801 \\ 357 \\ 242 \end{array}$
 $\begin{array}{r} +03 \\ +03 \end{array}$
 $\begin{array}{r} 473 \\ 473 \end{array}$
 $\begin{array}{r} -.64 \\ -.64 \end{array}$
 $\begin{array}{r} 6.01 \\ 6.01 \end{array}$

+20	466	+03	523
+25	425	+09	370
		-17	427
		-06	503
<u>+02</u>	<u>445</u>	<u>-03</u>	<u>456</u>

1873 Aug 12

T langd P

$$A_{\text{gl}} = -1 \quad 4.66$$

1873 Sept. 1

$$H_{\text{el}} = -\frac{1}{7.81}$$

T lang's S

Z Satz

k	m	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	
16	32	+1.17	+9	34	+33	49	+54	-1	5.6	+1.19	4.41	19	18	+3.29	+7.3	7	-3.10	4.41	-51	-1	9.0	1.12	10.12	✓				
17	4	+1.86	+40	41	+1	12	+0.3	-1	4.7	+0.7	4.63	19	29	+5.32	+7.9	21	-3.6	5.1	-60	-1	8.0	1.32	9.32	✓				
17	9	+1.26	+14	32	+27	51	+47	-1	5.1	+1.03	4.07	19	44	-3.55	+7.4	15	-3.1	2.3	-53	-1	-	1.96						
17	11	+1.05	+36	57	+5	26	+0.9	-1	3.4	+2.0	3.20	19	48	+2.75	+6.9	54	-2.7	3.7	-76	-1	7.6	1.01	8.61	✓				
17	28	+1.30	+62	24	-10	1	-17	-1	3.9	-37	4.27	19	52	+5.46	+8.8	54	-4.6	3.3	-73	-1	6.1	1.61	7.71	✓				
17	36	+1.01	+46	4	-3	41	-86	-1	4.4	-13	4.53	20	3	-4.05	+7.6	8	-2.3	4.4	-54	-1	6.2	1.94	8.84					
17	41	+1.51	+27	48	+14	35	+25	-1	5.4	+55	4.55	20	13	+4.45	+7.7	20	-3.1	3.7	-37	-1	7.5	1.25	8.75	✓				
												20	20	-3.50	+7.4	4	-2.3	4.4	-53	-1	7.9	1.96	9.86					

[illegible]

1873 Aug 28

$$A_{21} = -1 \quad 6.41$$
[illegible]

1873 Sept 6

441 +35 6.93

[illegible]

1873 Sept 1

[illegible]

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1873 Nov. 6

 $H\beta = -2 \quad 19.54$

T lamp

Z sin Z R_{eq}

h	m	o	i	o	i	"	"	h	m	o	i	o	i	"	"
21	54	+22	+12	31	+29	52	+50	-2	23.1	+10	22.00	1			
21	59	-02	-0	56	+43	19	+69	-2	21.7	+152	20.18	5			
22	3	+64	+32	33	+9	50	+17	-2	18.0	+37	17.63				
22	15	+20	+11	34	+30	49	+51	-2	20.8	+112	19.68	1	+5.14	+78	60
22	18	+126	+51	36	-9	13	-16	-2	19.9	+35	20.25	11	+42.02	+88	38
22	26	+118	+49	38	-7	15	-13	-2	19.8	+29	20.09				
23	45	+33	+18	25	+23	58	+11	-2	20.6	+90	19.70				
23	52	+11	+6	10	+36	13	+59	-2	21.0	+130	19.70				

1873 Nov. 19

 $H\beta = -2 \quad 20.77$

T lamp

Z sin Z R_{eq}

h	m	o	i	o	i	"	"	h	m	o	i	o	i	"	"
4	+36	+29	25	+12	58	+22	-2	21.2	+118	20.72	✓				
1	+5.14	+78	60	-36	37	-60	-2	19.5	-132	20.82	✓				
11	+42.02	+88	38	-46	15	-72									
				+22	20.72	-60	20.82								

1873 Dec. 1

 $H\beta = -2 \quad 19.83$

21	46	-3.37	+75	29	-31	6	-58								
22	7	+3.02	+71	43	-29	20	-19	-2	17.4	-108	18.48	0			
22	24	+4.13	+76	22	-33	59	-56								
23	41	+2.37	+67	6	-24	43	-32	-2	17.6	-92	18.52	0			
				+69	20.18	-16	20.25	-49	18.48	0					
				+51	19.68	-13	20.09	-42	18.52	0					
				+41	19.70					0					
				+59	19.70					0					

1	+5.14	+78	23	+14	0	+24	-2	20.5	+82	19.97					
3	+1.01	+45	22	-2	59	-05	-2	20.2	-11	20.31	✓				
12	-17	-9	32	+57	53	+79	-2	21.9	+179	20.16	✓				
31	+3.55	+28	37	+13	46	+24	-2	19.4	+53	18.87	✓				
33	+1.47	+65	30	-13	27	-23	-2	19.1	-51	19.61					
36	+1.3	+7	12	+35	11	+58	-2	21.6	+128	20.32	✓				

1873 Dec. 9

 $H\beta = -2 \quad 20.70$

22	3	+64	+32	33	+9	50	+17	-2	20.5	+37	20.13	0			
22	15	+20	+11	34	+30	49	+51	-2	22.3	+112	21.18	0			
22	18	+126	+51	36	-9	13	-16	-2	20.2	+35	20.55	1			
22	37	+57	+29	33	+12	50	+22								
22	38	+8	+41	9	+1	14	+20	-2	21.9	+04	21.86	✓			
22	40	+42	+22	34	+19	29	+33	-2	21.3	+73	20.57	✓			

0	6	-4.84	+78	19	-35	56	-59	-2	16.3	-189	18.19				
0	9	+4.08	+76	15	-33	52	-58	-2	18.7	-123	19.93	✓			
25	+1.96	+62	14	-19	51	-34	-2	17.9	-75	18.65	✓				
28	-2.82	+70	29	-28	6	-47	-2	14.9	-202	16.92	✓				
7	+5.14	+78	60	-36	37	-60	-2	19.3	-132	20.62	✓				
				+79	20.16	-05	20.31	-56	19.93						
				.24	18.87			.34	18.65						
				.58	20.32			.60	20.62						
				+5.14	19.98	-05	20.31	-50	19.93						

1873 Dec. 3

 $H\beta = -2 \quad 17.24$

22	1	+1.89	+62	10	-19	47	-34	-2	20.1	-75	20.85	✓			
22	7	+3.02	+71	43	-29	20	-19	-2	19.2	-108	20.28	✓			
22	24	+4.13	+76	22	-33	59	-56								
22	32	+3.27	+72	59	-30	36	-37	-2	18.5	-112	19.62	✓			
				+51	21.18	-16	20.55	-34	20.85						
				+33	20.57	+02	21.56	-47	20.28						
				+42	20.87	-07	21.20	-46	20.25	1					

1	+5.14	+78	60	-36	37	-60	-2	16.2	-132	17.52	✓				
11	+42.02	+88	38	-46	15	-72									
1	28	+3.15	+72	23	-30	0	-30	-2	15.9	-110	17.00	✓			
				+46	16.59	-60	17.52								
								.50	17.00						
				+46	16.59	-55	17.26								

1873 Nov. 10

 $H\beta = -2 \quad 19.75$

22	37	+57	+29	33	+12	50	+22								
22	38	+87	+41	9	+7	14	+02	-2	20.8	+04	20.76	✓			
22	40	+42	+22	34	+19	29	+33	-2	20.7	+73	19.77	✓			
23	45	+33	+18	25	+23	58	+11	-2	20.4	+90	19.50	✓			
23	52	+11	+6	10	+36	13	+59	-2	22.1	+130	20.80	✓			
0	1	+54	+28	23	+14	0	+24	-2	20.5	+53	19.97	22			
0	3	+1.01	+45	22	-2	59	-05	-2	19.3	-11	19.41	22			
0	12	-17	-9	32	+57	53	+79	-2	21.1	+174	19.36	23			

22	32	+3.27	+72	59	-30	36	-51	-2	17.6	-112	18.72	23			
0	6	-2.34	+78	19	-25	56	-59	-2	15.6	-189	17.49	23			
0	9	+4.08	+76	15	-33	52	-58	-2	18.3	+123	19.53	23			
				+33	19.47	+02	20.76	-51	18.72						
				+41	19.50	-05	19.41	-56	19.53	0					
				+59	20.50					0					
				+79	19.36					0					
				+53	19.91	-01	20.78	-53	19.12						

1873 Dec. 6

 $H\beta = -2 \quad 17.26$

22	32	+3.27	+72	59	-30	36	-51	-2	17.6	-112	18.72	23			
0	6	-2.34	+78	19	-25	56	-59	-2	15.6	-189	17.49	23			
0	9	+4.08	+76	15	-33	52	-58	-2	18.3	+123	19.53	23			
				+33	19.47	+02	20.76	-51	18.72						
				+41	19.50	-05	19.41	-56	19.53	0					
				+59	20.50					0					
				+79	19.36					0					
				+53	19.91	-01	20.78	-53	19.12						

56	+89	+41	39	+0	44	+01	-2	17.2	+02	17.18	✓				
58	+26	+14	31	+27	52	+17	-2	12.8	+103	11.77	✓				
7	+1.57	+56	28	-14	5	-24	-2	17.1	-53	17.63	✓				
10	+0.8	+2	30	+39	48	+64	-2	19.9	+191	18.49	✓				
19	+1.2	+22	42	+19	41	+34	-2	17.0	+19	16.25	✓				
31	+1.03	+45	46	-3	23	-06	-2	17.7	-13	17.83	✓				
46	+83	+18	25	+23	58	+41	-2	18.2	+90	17.30	✓				
52	+1.1	+6	10	+36	13	+59	-2	21.0	+130	19.70	✓				
0	1	+54	+28	23	+14	0	+24	-2	18.5	+53	19.97	✓			
0	3	+1.01	+45	22	-2	59	-05	-2	17.2	-11	17.31	✓			
0	12	-17	-9	32	+57	53	+79								

1873 Nov. 18

 $H\beta = -2 \quad 20.22$

1	4	+06	+29	25	+12	58	+22	-2	20.5	+48	20.02	23			
1	11	+42.02	+88	38	-46	15	-72								

3	+3.66	+74	45	-32	19	-53	-2	13.3	-117	14.47	✓
23	-2.75	+70	2	-27	39	-46	-2	12.0	-202	14.02	✓
34	+4.31	+76	55	-34	32	-37	-2	16.4	-125	17.65	✓
41	+2.87	+67	6	-24	43	-12	-2	15.3	-92	16.22	✓
9	+4.08	+76	15	-33	52	-56	-2	15.6	-123	16.83	✓
				+64	18.49	+01	17.18	-53	14.47		
				34	16.25	-06	17.83	.57	17.65		
				41	17.30	-05	17.31	.42	16.22		
				.59	19.70			.56	16.83		
				.24	17.97						
				+44	17.94	-03	17.44	-52	16.2		

1873 Sec. 7 $H_1 = -2 \quad 17.12$
 I' tango' 0' 2 sin 2 Req.

m	0	1	0	1	0	1	"
33	+147	+55	50	-13	27	-23	-2
41	+155	+57	8	-14	45	-26	-2
0 49	+173	+60	2	-17	39	-30	-2
0 56	+173	+7	12	+35	11	+58	-2
1 4	+56	+29	25	+12	58	+22	-2
1 24	+26	+14	41	+27	42	+16	-2
1 38	+15	+8	31	+33	52	+56	-2
1 56	+89	+41	43	+0	40	+01	-2
1 59	+42	+22	52	+19	31	+33	
							+173
0 57	+356	+74	18	-31	55	-53	-2
1 1	+574	+78	60	-36	37	-60	-2
1 11	+4203	+88	38	-46	15	-72	
1 16	+241	+67	28	-25	5	-42	-2
1 28	+315	+92	23	-30	0	-58	-2
1 34	-306	+71	53	-29	30	-49	-2
							+58 1882 +01 16.28 -53 17.27
							46 16.29 .60 17.52
							56 18.27 .50 15.40
							+53 17.79 +01 16.28 -54 16.73

1873 Sec. 9 $H_1 = -2 \quad 17.55$

1 24	+26	+14	41	+27	42	+16	-2	18.8	+101	17.79	0
1 38	+15	+8	31	+33	52	+56	-2	19.6	+123	18.37	0
1 56	+89	+41	43	+0	40	+01	-2	17.6	+02	17.58	0
1 59	+42	+22	52	+19	31	+33	-2	17.4	+73	16.67	1
2 1	+68	+34	23	+8	0	+14	-2	18.7	+31	18.39	2
0 25	+190	+62	14	-19	57	-34	-2	16.5	-75	17.25	0
0 28	+282	+70	29	-28	6	-47	-2	16.8	-202	18.82	0
1 11	+4203	+88	38	-46	15	-72				-158	0
1 16	+241	+67	28	-25	5	-42	-2	16.8	-92	17.72	0
1 32	+304	+71	48	-29	26	-49	-2	16.4	-108	17.48	1
2 9	-476	+78	9	-33	46	-58	-2	14.7	-189	16.59	1
											3
											42 17.72
											49 17.48
											+45 17.61 +01 17.58 -42 17.48

1873 Sec. 10 $H_1 = -2 \quad 16.47$

0 1	+34	+28	23	+14	0	+24	-2	17.3	+53	16.77	
0 3	+101	+45	22	-2	59	-05	-2	17.4	-11	17.51	0
0 12	-17	-9	32	+57	55	+79	-2	18.3	+174	16.56	0
1 36	+89	+41	43	+0	40	+01	-2	16.2	+02	16.18	0
1 59	+42	+22	52	+19	31	+33	-2	17.1	+73	16.37	0
2 1	+58	+34	23	+8	0	+14	-2	17.0	+31	16.69	0
2 31	+39	+21	25	+20	58	+36	-2	16.6	+79	15.81	0
2 35	+114	+48	41	-6	18	-11	-2	17.0	-24	17.24	1
2 36	+05	+2	42	+39	41	+64	-2	17.1	+141	15.69	0
0 6	-484	+78	19	-35	56	-59	-2	12.2	-189	14.09	0
0 9	+408	+76	15	-33	52	-56	-2	14.8	-123	16.03	1
0 28	-282	+70	29	-28	6	-47	-2	12.4	-202	14.42	1
1 11	+4203	+88	38	-46	15	-72				-158	1
1 16	+241	+67	28	-25	5	-42	-2	15.4	-92	16.32	1
1 32	+304	+71	48	-29	26	-49	-2	15.6	-108	16.68	1
2 9	-476	+78	9	-33	46	-58	-2	12.0	-189	13.89	1
2 18	+234	+66	50	-29	27	-49	-2	15.9	-90	16.80	1
2 25	+312	+72	16	-29	53	-50	-2	15.1	-110	16.20	1
											+79 16.56 -05 17.57 -56 16.03
											33 16.37 +01 16.18 42 16.32
											36 15.81 +14 16.69 49 16.68
											64 15.69 -11 17.24 41 16.80
											50 16.20
											+53 16.11 -00 16.90 -48 16.41

1873 Sec. 15 $H_1 = -2 \quad 16.04$
 I' tango' 0' 2 sin 2 Req.

m	0	1	0	1	0	1	"
3	+101	+45	22	-2	59	-05	-2
12	-17	-9	32	+57	55	+79	-2
31	+55	+28	37	+13	46	+24	-2
41	+155	+57	8	-14	45	-26	-2
56	+13	+7	12	+35	11	+58	-2
4	+56	+29	25	+12	58	+22	-2
6	-484	+78	19	-35	56	-59	-2
9	+408	+76	15	-33	52	-56	-2
28	+190	+62	14	-19	57	-34	-2
28	-282	+70	29	-28	6	-47	-2
37	+356	+74	18	-31	55	-53	-2
1	+574	+78	60	-36	37	-60	-2
11	+4203	+88	38	-46	15	-72	
16	+241	+67	28	-25	5	-42	-2
							+79 16.86 -05 15.21 -56 16.23
							58 17.32 .53 15.37
							60 16.22
							42 15.12
							+68 17.09 -05 15.21 -53 15.73

1873 Sec. 16 $H_1 = -2 \quad 16.84$

33	+147	+55	50	-13	27	-23	-2	18.2	-51	18.71	
41	+155	+57	8	-14	45	-26	-2	16.7	-57	17.27	
56	+13	+7	12	+35	11	+58	-2	18.1	+128	16.82	0
4	+56	+29	25	+12	58	+22	-2	16.0	+48	15.52	
59	+85	+40	28	+1	55	+03			+07		
15	+117	+49	24	-7	1	-12	-2	17.3	-26	17.56	0
25	+190	+62	14	-19	57	-34	-2	15.6	-75	16.25	0
37	+356	+74	18	-31	55	-53	-2	15.4	-117	16.57	0
49	+173	+60	2	-17	39	-30	-2	17.0	-66	17.66	0
1	+574	+78	60	-36	37	-60	-2	16.3	-132	17.62	0
11	+4203	+88	38	-46	15	-72			-158		
16	+241	+67	28	-25	5	-42	-2	16.2	-92	17.12	0
4	+442	+77	16	-34	53	-57	-2	15.3	-125	16.55	0
											+58 16.82 -12 17.56 -34 17.25
											53 16.57
											30 17.66
											60 17.62
											42 17.12
											57 16.55
											+46 16.73

1873 Sec. 17 $H_1 = -2 \quad 17.40$

41	+155	+57	8	-14	45	-26	-2	16.6	-57	17.17	
56	+13	+7	12	+35	11	+58	-2	18.2	+128	16.92	0
4	+56	+29	25	+12	58	+22	-2	17.7	+48	17.22	0
37	+356	+74	18	-31	55	-53	-2	16.1	-117	17.57	0
49	+173	+60	2	-17	39	-30	-2	17.9	-66	18.56	0
1	+574	+78	60	-36	37	-60	-2	16.4	-132	17.72	0
11	+4203	+88	38	-46	15	-72			-158		
16	+241	+67	28	-25	5	-42	-2	15.5	-92	16.42	0
											+58 16.92 -53 17.57
											22 17.22 .30 18.56
											60 17.72
											42 16.42
											+40 17.07 -46 17.57

[illegible]

H₂l = +4 44.61
 tang δ δ 2 sin 2 δ eq

m	o	i	o	i	"	"
26	+88	+41	16	+1	7 + .02	+4 44.5 + .02 44.52 ✓
15 29	+51	+27	09	+15	14 + .26	+4 44.3 + .30 44.60
15 33	+86	+40	46	+1	37 + .03	+4 44.1 + .03 44.13 ✓
15 38	+12	+6	50	+35	33 + .58	+ .67
15 40	+28	+15	49	+26	34 + .45	+4 44.5 + .52 45.02 ✓
15 45	+196	+63	00	-20	37 - .35	+4 44.1 - .41 43.69
15 51	+29	+16	5	+26	18 + .44	+4 44.2 + .51 44.71 ✓
15 52	+52	+27	15	+15	8 + .26	+4 45.6 + .30 45.90
15 55	+113	+55	6	-12	43 - .22	+4 43.8 - .26 43.04
16 08	-06	-3	22	+45	45 + .72	+4 43.3 + .84 44.14 ✓
16 04	+101	+45	16	-2	53 - .05	+4 45.1 + .06 45.04 ✓
16 12	-08	-4	23	+46	46 + .73	+4 43.6 + .85 44.45 ✓
16 16	+35	+19	27	+22	56 + .39	+4 45.1 + .45 45.55 ✓
16 19	+26	+14	20	+28	3 + .47	+4 44.9 + .55 45.45 ✓
16 22	+146	+55	30	-13	7 - .23	+4 44.1 - .27 43.83
16 22	+187	+61	48	-19	25 - .33	+4 43.3 - .38 42.92
16 25	+40	+21	46	+20	37 + .35	+4 44.8 + .41 45.21 ✓
16 30	+92	+42	42	-0	19 - .01	+4 45.0 - .01 44.99 ✓
16 38	+80	+39	10	+3	13 + .06	+4 44.7 + .07 44.77 ✓
16 46	+27	+15	11	+27	12 + .16	+4 45.2 + .53 45.73 ✓

15 37	-259	+70	56	-28	33 - .48	+4 44.2 - .107 43.03
15 49	+478	+78	11	-35	48 - .58	+4 43.8 - .67 43.13 ✓
16 15	+407	+76	12	-33	49 - .56	+4 44.7 - .65 44.05 ✓
16 28	+261	+69	3	-26	40 - .45	+4 44.6 - .52 44.08 ✓
16 32	-393	+75	42	-33	19 - .88	+4 44.3 - .102 43.28 ✓
16 36	+459	+77	42	-35	19 - .88	+4 44.0 - .67 43.33 ✓

+45	45.02	+0.2	44.52	-58	43.13
44	44.71	+0.3	44.13	56	44.05
72	44.14	-0.5	43.04	43	44.08
73	44.45	-0.1	44.99	58	43.33
39	45.55	+0.6	44.77		
77	45.45				
35	45.21				
16	45.23				
+50	45.03	+0.1	44.69	-54	43.65

Investigation of The Plume for 1872, Circle West.

Formula

$$N_p = \frac{R'_{eq} - R_{eq}}{R_n - R_{in}} \quad \text{Vol. 7 p. 221}$$

Day	Sin 2 α	R $_{eq}$	Sin 2 α	R $_{eq}$	Sin 2 α	R $_{eq}$	Sin 2 α	R $_{eq}$	Sin 2 α	R $_{eq}$	Sin 2 α	R $_{eq}$
Jan 11	+74	453	-92	4610	+50	4425	-92	4610	+42	4542	+142	4630
	+1	452										(+1.30)
Jan 19	+39	453	-38	458	+44	4363	-48	4637	-93	4544		
	+64	446	-58	451								
	+29	440	-50	441								[+2.95]
Jan 27	+64	448	-38	460	-92	4610	+56	4368	-43	4500	-92	4610
	+5	440	-42	457			+78		+98	+1.32	+1.98	+2.92
	+71	440	-38	433						[+1.33]		[+1.64]
	44	449	-18	450								
Jan 30	+30	461	-53	446			+38	4315	-43	4529		
	+47	458	-41	463					.81	-6.65		
			-38	447						[-.80]		
July 1	+39	458	-43	454	+35	4535	-50	4525				
	+47	469	-56	462					-85	.10		
	+35	448	-45	449								[+1.2]
	+19	439	-88	445								
July 3	+44	458	-58	450	-88	4620	+44	4518	-56	4526	-88	4620
	+26	457	-56	454					+1.00	+1.07	+1.32	+1.61
	+31	444	-45	458								
	+39	451	-58	448								[+0.7]
	+47	448	-64	453								[+1.7]
	+35	452										
July 6	+26	438	-41	465	-87	464	+36	4405	-53	4620	-89	4517
	+47	443	-64	459	-52	463			+7.89	+2.15	+1.26	+1.82
					+89	449						[+2.42]
												[+1.90]
July 7	+26	433	-53	438	+89	4410	+28	4410	-57	4410	-89	4410
	+65	437	-41	458					+79	-3.30	+1.17	-7.0
	+26	435	-43	445								[+1.38]
	+47	447	-45	438								[+1.60]
			-58	445								
			-64	435								
July 9	+26	4360	-41	457	-93	4570	+40	4360	-50	4577	-91	4570
	+60	422	-43	452	-89	4570			+90	+1.68	+1.31	+2.10
	+26	449	-50	460								
	+47	437	-58	451								[+1.88]
			-45	445								[+1.60]
			-64	451								
July 11	+26	436	-57	439	-92	4590	+38	4430	-52	4445	-91	4473
	+60	420	-41	450	-83	4430			+80	+15	+1.29	+1.43
	+26	413	-38	445	-89	4400						
	+40	417	-58	444								[+1.7]
	+26	454										[+3.3]
	+47	448										

Date.	sin ² Reg.	sin ² Reg.	sin ² Reg.	sin ² Reg.	sin ² Reg.	sin ² Reg.	sin ² Reg.	sin ² Reg.	sin ² Reg.
July 16	+54 +41 433	-58 -58 44.0	-58 -58 44.0	-58 -58 44.0	-58 -58 44.0	+54 4330	-58 +1.12 44.0	-58 +1.43 44.0	-58 +1.43 44.0
July 20	+25 438	-60 -44 44	-60 -44 44	-59 441	-59 441	+25 4380	-51 +76 44.0	-51 +76 44.0	-51 +76 44.0
July 22	+23 +47 +35 +54 440 431 440 423	-58 -64 -64 -64 4260 4250 4250 423	-58 -64 -64 -64 4260 4250 4250 423	-58 -64 -64 -64 4260 4250 4250 423	-58 -64 -64 -64 4260 4250 4250 423	+52 4335	-61 -1.13 4255	-61 -1.13 4255	-61 -1.13 4255
July 24	+72 +23 +47 +35 434 444 431 435	-53 -56 -56 -56 4335 444 442 445	-53 -56 -56 -56 4335 444 442 445	-53 -56 -56 -56 4335 444 442 445	-53 -56 -56 -56 4335 444 442 445	+57 4360	-55 +1.12 44.12	-55 +1.12 44.12	-55 +1.12 44.12
July 25	+47 +35 +46 +54 +47 446 448 451 461 444	-45 -45 -45 -45 -45 446 448 451 461 444	-45 -45 -45 -45 -45 446 448 451 461 444	-45 -45 -45 -45 -45 446 448 451 461 444	-45 -45 -45 -45 -45 446 448 451 461 444	+46 4570	-45 -91 4520	-45 -91 4520	-45 -91 4520
July 27	+54 +25 +24 +35 436 432 430 429	-45 -58 -58 -58 447 433 446 439	-45 -58 -58 -58 447 433 446 439	-45 -58 -58 -58 447 433 446 439	-45 -58 -58 -58 447 433 446 439	+58 434	-58 -58 44.6	-58 -58 44.6	-58 -58 44.6
July 28	+73 +47 +35 +46 +24 +47 446 442 444 436 435 442	-45 -64 -64 -64 -64 -64 446 442 444 436 435 442	-45 -64 -64 -64 -64 -64 446 442 444 436 435 442	-45 -64 -64 -64 -64 -64 446 442 444 436 435 442	-45 -64 -64 -64 -64 -64 446 442 444 436 435 442	+50 4408	-54 +1.04 44.10	-54 +1.04 44.10	-54 +1.04 44.10
Aug 1	+46 +54 +47 +25 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	+58 4330	-58 -94 4320	-58 -94 4320	-58 -94 4320
Aug 2	+46 +54 +47 +25 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	+58 4330	-58 -94 4320	-58 -94 4320	-58 -94 4320
Aug 5	+46 +54 +47 +25 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	-45 -58 -64 -64 -64 -64 425 426 437 437	+58 4330	-58 -94 4320	-58 -94 4320	-58 -94 4320
Aug 6	+46 +54 +47 +25 +54 434 428 446 436 429	-64 -64 -64 -64 -64 -64 434 428 446 436 429	-64 -64 -64 -64 -64 -64 434 428 446 436 429	-64 -64 -64 -64 -64 -64 434 428 446 436 429	-64 -64 -64 -64 -64 -64 434 428 446 436 429	+45 4346	-45 +93 4360	-45 +93 4360	-45 +93 4360
Aug 7	+46 +54 +47 +54 +24 436 443 440 423 437	-64 -64 -64 -64 -64 -64 436 443 440 423 437	-64 -64 -64 -64 -64 -64 436 443 440 423 437	-64 -64 -64 -64 -64 -64 436 443 440 423 437	-64 -64 -64 -64 -64 -64 436 443 440 423 437	+45 4358	-45 +93 4424	-45 +93 4424	-45 +93 4424

Date	Swiss	Reg.	Swiss	Reg.	Swiss	Reg.	Swiss	Reg.	Swiss	Reg.	Swiss	Reg.
Aug 8	+47 .25 .54	440 434 42.4	-60 .64 .44 .50 .57	44.1 42.6 43.8 43.9 43.4 43.5	-88 -77	43.6 43.4	+42	43.27	-53 +96	43.50 +2.8	-83 +1.25	43.50 +0.23
										$\Sigma +30$		+19
Aug 10	+46 .54 .47 .54 .24	427 442 44.5 42.4 43.6	-50 .57	44.5 43.2			+45	43.88	-54 +99	43.85 +3.7		+0.38
Sept. 28	+25 .58 .31 .50 .77	449 43.6 46.0 44.1 43.8	-60 .46 .73 .34	43.88 46.4 48.9 46.9	+8	48.9	+48	44.48	-53 +1.01	46.45 +1.97	-88 +1.36	48.80 44.2
										$\Sigma +1.95$		+3.25
Oct. 2	+31 .50 .57	445 447 44.5	-39 .48 .46 .43 .57 .34 .48	46.3 46.2 45.6 47.1 47.0 47.2 45.4	-77 .88 .88 .88 .90	45.9 45.4 47.0 46.1 47.5	+44	44.57	-48 -92	46.40 +1.83	-47 +1.31	46.78 +2.21
										$\Sigma +1.97$		+1.68
Oct. 3	+45	450	-53	47.30			+45	45.00	+58 +98	47.30 +2.30		+2.85
Oct. 9	+57 .64	451 43.3	-48	44.70			+58	44.20	-48 +1.06	44.70 +5.0		+0.47
										$\Sigma +0.47$		
Oct. 10	+64 .56	447 43.5	-48 .60 .73	46.8 45.5 48.3			+60	45.10	-60 +1.20	46.87 +1.77		+1.47
										$\Sigma +1.47$		
Oct. 14	+74	46.3	-39 .48 .57	48.3 46.6 47.0	-77	46.5	+74	46.30	-48 +1.20	47.30 +1.00	-77 +1.51	46.50 +0.20
										$\Sigma +8.3$		+1.3
Oct. 12	+45 .50	473 47.3	-53 .47 .46 .34	47.9 47.5 47.2 48.1	-88 -88	49.3 48.5	+47	47.30	-45 +92	47.68 +1.38	-88 +1.36	47.80 +1.60
										$\Sigma +1.50$		+1.18
Oct. 20	+64	458	-73	49.2			+64	45.80	-73 +1.37	49.20 +3.40		+2.47
										$\Sigma +2.47$		
Oct. 21	+64 +1.09	448 46.0	-57 .46 .73	46.8 46.7 46.3	-89	44.1	+57	45.40	-57 +94	46.60 +1.20	-89 +1.26	44.10 -1.30
										$\Sigma +1.28$		+1.03
Nov. 4	+45 +51	514 51.7 52.4 53.1	-53 .57 .35	52.2 54.7 52.6	-86 -88	53.8 50.3	+44	52.10	-48 +92	53.85 +1.68	-47 +1.31	53.55 +2.40
										$\Sigma +1.13$		+2.57

Date	Swiss R_{eq}	Swiss R_{eq}	Swiss R_{eq}	Swiss R_{eq}	Swiss R_{eq}	Swiss R_{eq}	Swiss R_{eq}	Swiss R_{eq}
1872 Nov 13	+58 +4 .22 .46	525 525 516	-60 .72 .42 .41 .50	531 529 527 526 535	-86 547	+42 5220	-53 5285 +95 +.65 +.128 +250	5470 +1.25
Nov 16	+26 .22 .33 .43 .75 .24	520 524 510 520 518 522	-58 .46 .51 .39 .53	517 516 525 516 535		+38 5157	-48 5224 +87 +2.67	5470 +1.25
Nov 17	+77 .57 .22 .33 .47 .79 .24	509 488 506 500 504 490 500	-48 .57 .56 .34 .53	513 528 517 533 533	-88 520 -86 533 -92 558	+48 5010	-48 5248 +2.38 +.137 +.20	5430 4.20
Nov 18	+26 .50 .68 .77	487 488 488 481	-53 .61 .53 .46 .43 .34 .45	514 483 487 488 484 502 501	580 460	+55 4802	-50 4884 +1.82 +.145 +.202	4600 2.02
Nov 20	+57 .22 .33 .47 .24 .75 .24	495 481 487 490 485 488 492	-49 .57 .32 .57 .34 .53	496 504 500 527 520 518		+40 4885	-47 5108 +57 +2.23	
Nov 21	+45 .26 .50 .69	490 486 472 476	-61 .48 .34 .49	510 510 522 518		+48 4760	-48 5175 +96 +4.15	
Nov 23	+50 .69 .77 .51 .33 .58 .22	484 504 507 489 481 478 509	-47 .24 .49 .30	531 503 501 490	-88 510 -92 522	+51 4960	-40 5262 +1.02 +.141 +.202	5160 2.02
Nov 25	+24 .58 .46	491 479 503	-53 .30 .72 .42	504 505 517 524		+43 4910	-48 5075 +92 +1.65	
Nov 27	+34	487	-58	498		+34 4870	-58 4980 +92 +1.10	
Dec 3	+33 .36 .64	499 489 469	-53 .82 .41	507 517 511		+44 4857	-48 5117 +92 +2.60	

		Monthly means!			
1872	1873	η_{c}	η_{c}	η_{c}	η_{c}
Date	Date	From stars above pole	From stars below pole	Above pole	Below pole
Dec 21	1872	+3.54	+3.72		
23		+1.14	+1.50		
24		+3.04	+3.52	+3.10	+2.98
25		+4.59	+3.19		
30		+3.21	—		
Jan. 1	1873	+2.40	+3.80		
4		+1.22	+1.78		
6		-0.26	+1.82		
7		—	+3.37		
9		+2.33	+3.35		
12		+2.66	+0.75	+1.93	+2.62
14		+2.17	+1.59		
19		+2.70	+3.26		
22		+2.10	+1.76		
28		+0.61	—		
29		+3.36	+4.77		
Feb. 2		+2.09	+2.00		
4		+2.19	+2.77		
5		+1.50	+3.50		
6		+1.70	+3.26		
9		+2.52	—		
10		+4.21	+3.10		
11		+1.26	+1.43		
17		+1.64	+1.22		
18		+2.30	+2.11		
19		+1.95	+1.30	+2.46	+2.51

Date	H. fl.		Monthly means	
	From stars above pole.	From stars below pole.	H. fl. Above pole.	H. fl. Below pole.
1873				
Feb. 22	+3.41	+4.20	"	"
23	+4.63	+4.39		
24	—	+2.50		
25	+1.44	+1.24		
26	+3.56	+2.12		
Mar. 4	+3.30	+3.70		
5	+1.87	+2.15		
6	+1.71	+1.33		
8	+0.86	+2.80		
9	+3.70	+2.98	+2.47	+2.32
10	+1.44	+0.75		
13	+1.94	+2.26		
16	+3.93	+3.77		
27	+3.53	+3.28		
31	—	+0.21		
Apr. 1	+0.69	+2.59		
10	+1.09	+1.76		
15	+2.33	+2.52		
16	+2.22	+2.02		
21	—	+1.70	+1.62	+1.86
23	+1.48	+1.49		
26	+1.20	+1.33		
27	+2.31	+1.50		

		Monthly means.	
Date	H _{fe} From stars above pole.	H _{fe} From stars below pole.	H _{fe} Above pole. H _{fe} Below pole.
1873			
May 1	+0.88	+1.15	" "
4	+0.72	+0.88	
5	+2.26	+3.70	
6	+2.96	—	
7	+2.84	+4.23	
12	+1.45	+1.51	
13	+1.20	+0.47	
14	+2.06	+2.78	
15	+1.55	+2.25	
18	+2.48	+1.77	+1.72 +2.13
19	+1.85	+2.62	
20	+1.26	+1.40	
25	+0.67	+2.83	
27	+2.10	—	
28	+1.56	—	
29	+1.02	+1.21	
31	+2.30	+3.07	
June 1	+0.37	+1.06	
2	+1.07	+2.03	
5	+1.97	+2.14	
9	+1.94	+2.32	
10	+0.88	+1.61	
11	+1.47	+2.37	
12	+1.58	—	+1.61 +2.03
15	+1.63	+1.81	
16	+3.60	—	
25	+0.61	—	
26	+1.06	+1.93	
29	+2.34	+2.47	
30	+2.36	+2.58	

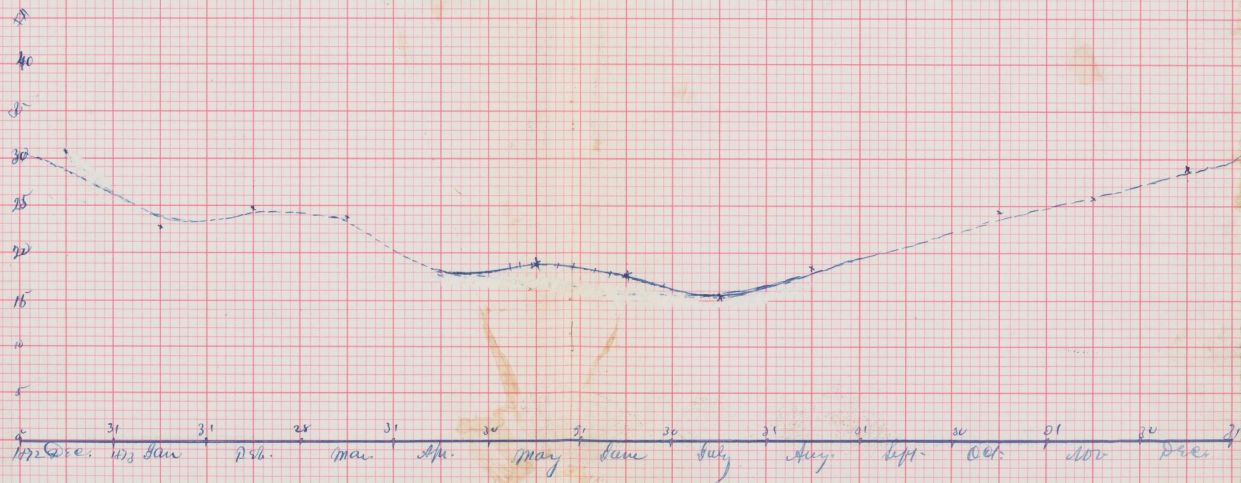
		H _{fe}		Monthly means.	
Date		From stars above pole	From stars below pole	H _{fe} Above pole	H _{fe} Below pole
1873					
July	3	+1.02	+1.58	"	"
	6	+1.62	+2.80		
	7	+2.17	+3.92		
	9	+1.86	+3.03		
	12	+1.42	+1.55		
	13	+1.72	+2.93		
	15	+1.25	+1.28	+1.20	+1.98
	20	+0.03	+0.37		
	21	+1.04	+1.43		
	22	+1.30	—		
	24	+0.53	+0.69		
	26	+1.12	+2.15		
	30	+0.52	—		
Aug.	4	+1.78	+2.86		
	5	+1.85	—		
	9	+1.90	+3.06		
	10	+0.88	+1.47	+1.58	+2.18
	11	—	+1.94		
	12	+0.93	+2.50		
	28	+2.90	+2.63		
Sept	1	+0.80	+0.80		
Sept.	1	+0.80	+0.80		
Oct.	5	+1.87	+1.49		
	8	+1.44	—		
	14	+2.28	+1.55		
	21	+3.76	+3.20	+2.46	+2.38
	22	+2.60	+2.59		
	28	+2.45	+2.56		
	29	+2.80	+2.90		

Date	Monthly means.	
	<i>R_p</i> From stars above pole	<i>R_p</i> From stars below pole.
1873		
Nov. 1	+1.71	+3.58
2	+1.15	+2.71
3	+2.21	—
4	+2.11	+0.36
5	+3.81	+2.45
6	+3.53	—
9	+2.91	—
10	+2.98	+4.02
Dec. 1	+2.34	+3.89
3	+2.08	—
6	+2.51	—
7	+3.21	+3.10
9	+2.33	+2.13
10	+1.90	+3.60
15	+3.22	+4.30
16	+2.05	—
17	+1.59	—
18	+2.28	+2.17
22	+3.74	+3.96
28	+3.84	+4.12
29	+1.92	+3.50

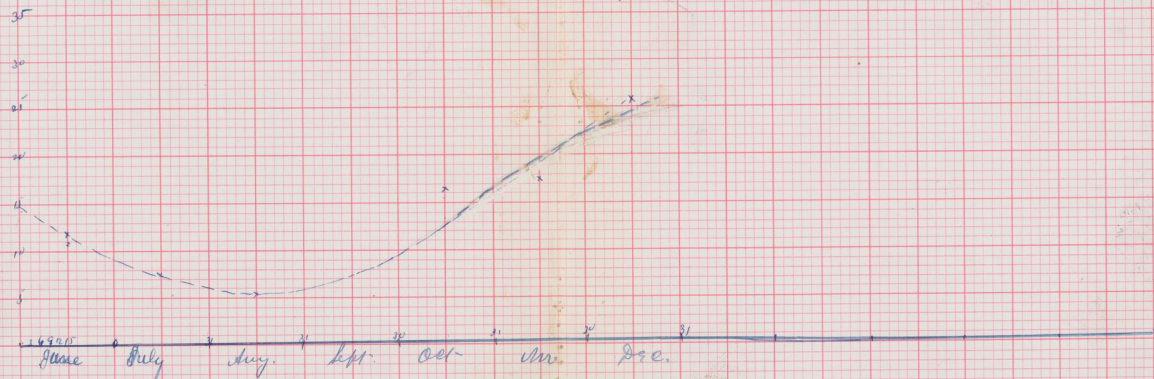
Discussion of Results.

Date	From stars above pole			From stars below pole			Adopt.
1872	R _p	stars wt.	R _p	R _p	stars wt.	R _p	
Dec.	3.10	5	15.50	2.98	4	11.92	+3.05
Jan. 1873	1.93	10	19.30	2.62	10	26.20	+2.27
Feb.	2.46	14	34.44	2.51	14	35.14	+2.46
March	2.47	9	22.23	2.32	10	23.20	+2.39
April	1.62	7	11.34	1.86	8	14.88	+1.75
May	1.72	17	29.24	2.13	14	29.82	+1.90
June	1.61	13	20.93	2.03	10	20.30	+1.79
July	1.20	13	15.60	1.98	11	21.78	+1.55
August	1.58	7	11.06	2.18	7	15.26	+1.88
Oct.	2.46	7	17.22	2.38	6	14.28	+2.42
Nov.	2.55	8	20.40	2.62	5	13.10	+2.58
Dec.	2.54	13	33.02	3.42	9	30.78	+2.90
		123	25028		108	25656	
			+2.04			+2.37	
			Adopt for 1873				
			+2.20				

Horizontal Pressure for Dec. 17 1872 to Dec. 31 1873



Horizontal Pressure for 1972. [From June 11 to Dec 17]



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