

KG
11366
v. 781

Time Book.
A. 1875

Charles W. Sever, University Bookstore, Cambridge.

Jan 5 1875

W.H.R.

Jan 84 1475 NAR.

Jan 9 1875 W. R.

Jan 10 1875 W.R.

Sam 111875 H.R.

Jan. 12 1875 W.A. B

Revised.

Jan. 14 1875 W.A.R.

Jan. 16 1875 W.A.R.

Jan. 17 1875 W.A.R.

sdm 18 475- W A R.

Jan 19 1875 H.A.R.

Jan. 20 1875 W.A.R.

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
2	50	16.0	2	55	58	3	3	46.5	3	14	42.9	4	28	6.0
		20.0												
		23.7			7.9			51.0			45.9			8.3
		24.4												
		31.2			10.0			55.7			49.3			10.0
		35.3												
		39.2			12.0			0.2			52.4			12.6
		42.7												
		44.0			14.0			5.6			56			14.7
50	31.39		55	9.94		3	55.50		14	49.20		28	10.44	
50	31.45		55	9.92		3	55.74		14	49.17		28	10.42	
51	5.67		55	44.96		4	31.90		15	24.50		28	45.61	
	-34.22			-35.04			-36.16			-35.33			-35.19	

$$\begin{aligned}
 u &= -85.04 + 0.6 + 0.1 - 35.03 \\
 &= -35.33 + 1.28 + .05 \\
 &= -35.19 + 1.29 + 0.7 \quad .12
 \end{aligned}$$

$$\begin{aligned}
 v &= -39.22 - 3.65 \\
 &= -36.16 + 1.42
 \end{aligned}$$

$$w = -35.19 + 0.51$$

$$\begin{aligned}
 x &= -0.87 + 4.16 \quad n = +2.3 \\
 &= -0.97 + 3.91 \quad n = +2.5
 \end{aligned}$$

Hourly rate assumed = 0.5 s $ddt \text{ per } 2 \text{ s}$

$$\begin{aligned}
 &-35.03 + 0.1 - 35.03 \\
 &0.05 + 0.2 \quad .03 \\
 &12 + 0.08 \quad .04
 \end{aligned}$$

$$ddt \text{ from } 2 \text{ h } 55^m - + 35.03$$

$$m = + 2.4$$

$$dT = 34.9$$

$$ddT = + 1.25$$

$$dt - 2 \text{ s}$$

Jan 25 W.A.R.

h m s	h m s	h m s	h m s	h m s
5 6 41.0	5 7 47.3	5 24 52.9	5 26 28.6	16 57 34.8
44.1	49.4	55.0	20.8	42.1
47.1	51.6	57.0	23.0	50.3
50.0	53.7	59.0	25.1	58.6
53.0	55.7	1.1	27.2	5.7
47.04	51.524	57.00	27.94	13.4
6 47.62	7 51.52	24 56.98	26 32.92	20.8
7 28.47	8 32.75	25 38.20	27 14.09	29.0
-41.45	-41.23	-41.22	-41.17	37.0

$$\begin{aligned}
 0 &= 41.45 + 1.03 + 20 - 41.25 \\
 41.23 &- .14 - .03 \quad .26 \\
 41.22 &- .01 - .00 \quad .22 \\
 41.17 &- .32 - .06 \quad .23
 \end{aligned}$$

$$\begin{aligned}
 0 &= -39.91 - 7.31 \\
 0 &= -41.24 + .11 \\
 0 &= -1.36 + 7.42 \\
 n &= +19
 \end{aligned}$$

$$\begin{aligned}
 dt + m &= +41.24 \\
 m &= +.24 \\
 dt + m &= +41.00 \quad dt - 5 \frac{h}{16} m \\
 ddt &= +1.22
 \end{aligned}$$

Jan. 27, 1970

W.A.R.

h m s	h m s	h m s	h m s	h m s	h m s
2 36 31	14 50 13.4	2 54 58.6	16 56 34.0	5 6 29.9	5 7 46.3
5.2	17.4		48.9		48.4
7.3	21.4	0.7	50.0	42.8	50.4
9.3	25.3	2.7	54.0	45.8	52.6
11.5	28.9	4.8	4.8	52.0	54.8
	33.0	7.0	18.1		
	36.3		20.3		
			28.1		
			38.9		
72.8	24.95	27.6	52.2	45.88	50.50
36 42.6	50 24.01	55 27.4	37 5.35	6 45.66	7 50.48
36 49.49	51 6.27	55 44.88	37 48.87	7 28.45	8 32.73
-43 23	-41.26	-42.14	-40.52	-42.59	-44.25

$$\begin{aligned}
 \Delta T & \\
 0 &= -42.23 + 0.0 - 42.23 + 0.5 \\
 &= -42.14 + 0.2 - 42.12 + 0.6 \\
 &= -42.59 + 0.2 - 42.47 + 0.3 \\
 &= -42.25 + 1.2 - 42.13 - 1.4
 \end{aligned}$$

$$0 = -42.24 + 2.0$$

$$m = +2.4$$

$$\begin{aligned}
 0 &= -42.23 + 0.1 - 42.22 \\
 &= 42.12 + 1.1 \quad .11 \\
 &= 42.37 + 2.5 \quad .22 \\
 &= 42.13 + 0.3 \quad .10 \\
 &= -42.16
 \end{aligned}$$

$$\begin{aligned}
 0 &= -41.26 - 3.65 \\
 &= -40.52 - 7.32
 \end{aligned}$$

$$\begin{aligned}
 0 &= +0.98 - 2.90 \quad n = +2.5 \\
 &= +1.72 - 7.57 \quad = +7.23
 \end{aligned}$$

$$\Delta T + m = +42.16$$

$$m = +.24$$

$$\Delta T = +41.92$$

$$d\Delta T = +1.22$$

$$\Delta 2 \quad h \quad m$$

Jan. 27 W. L. R.

h m s	h m s	h m s	h m s	h m s	h m s
59 19.6	2 17 52.1	25 26 22	16 57 34.3	5 6 39.0	5 7 45.3
	54.7	4.3	4.12		47.4
21.9	57.2	6.3	49.7	42.0	38.6
	59.8	8.4	54.0		49.5
24.1	2.3	10.5	4.4	44.8	—
	5.2		12.1		
26.4	8.0		19.6	47.8	51.6
	10.6		26.9		
28.6	13.2		35.2	50.9	53.7
5 24.12	2.54	6.34	4.99	24.86	49.50
59 24.10	18 2.63	366.32	58 46.2	6 44.84	7 49.48
10 7.39	18 46.36	56 49.49	58 46.88	7 28.45	18 29.90
— 43.29	— 43.83	— 43.17	— 41.26	— 43.87	— 43.28

$$\begin{aligned}
 &S \\
 &v = -43.29 + 4.2 + 11 - 43.18 \\
 &\quad - 43.17 + 10.5 + 1 - 43.16 \\
 &\quad - 43.19 \\
 &n = +2.6
 \end{aligned}$$

$$\begin{aligned}
 &S \\
 &dT + m = +43.19 \quad dT - 2.14 \\
 &\quad m = +.24 \\
 &\quad dT = +42.95 \\
 &\quad d dT = +1.05
 \end{aligned}$$

$$\begin{aligned}
 &S \\
 &v = -43.83 + 2.83 \\
 &\quad - 43.28 + .23 \\
 &\quad - .50 + 2.10 \\
 &\quad n = +2.4
 \end{aligned}$$

$$\begin{aligned}
 &S \\
 &v = -43.87 + 1.03 + 2.7 - 43.84 \\
 &\quad 43.25 + 1.4 - .04 \quad .27 \\
 &\quad 43.50 + .54 + .14 \quad .36 \\
 &\quad - 43.33
 \end{aligned}$$

$$\begin{aligned}
 &S \\
 &v = -41.26 - 7.83 \\
 &\quad - 43.51 + .48 \\
 &\quad v = +2.26 - 7.81 \\
 &\quad n = +2.9 + 2.9 = +2.6 \\
 &\quad - 43.33 \\
 &dT + m = +43.33 \quad dT - 5.10 \\
 &\quad m = +.24 \\
 &\quad dT = +43.09 \\
 &\quad d dT = +1.04
 \end{aligned}$$

Observations of Companion stars (112)

1475

Jan 10														h m s		47.4 m T+47.4 m ntg J				1475.0		2 1475.0	
h	m	s	s	s	s	s	s	s	s	s	s	s	s	h	m	s	s	s	h	m	s	s	
2	48	59.2	1.3	3.5	7.9	10.0	12.2	14.4	16.7	21.0	23.3	25.6	2	49	12.28	+ 28.22	2	49	37.50 + 0.9	- 0.14	2	49	37.45
5	2	48	48.8	51.8	53.7																		
14	48	55.7	57.8	00	45	67	89	11.1	13.3	17.6	19.6	22.0	2	49	8.84	+ 28.76		37.60 + .14	- 0.11			37.53	
	49	31.6	33.9	34.9																			
17	48	52.6	53.6	57.0	14	37	6.0	8.3	10.4	14.9	17.0	19.2	2	49	8.95	+ 31.55		37.50 + .10	- 0.06			37.54	
																					2	49	37.51

Jan 10	3	27.6	30.0	32.0	36.5	38.7	40.9	43.1	45.7	48.8	52.0	54.2	3	3	40.23	+25.22	3	4	6.15	+0.9	-0.23	3	4	6.01
	3	14.8	22.0	24.4																				
11	3	26.8	28.9	31.3	35.8	38.0	40.2	42.5	44.7	49.1	51.3	53.6	3	3	40.20	+26.09			6.29	+11	-0.22			6.18
	3	18.1	20.2	22.3																		3	4	6.09

Jan 14	3	h m s										3	3	30.96	47.4 m T+47.4 m ntg J				Red. 1475.0	2 1475.0		
		h	m	s	s	s	s	s	s	s	s				h	m	s	s		h	m	s
	3	17.7	20.9	22.0	26.5	28.7	31.0	33.2	35.4	39.8	42.0	44.3								3	3	59.56
	3	14.4	16.6	18.1																		

Jan 27 2 54

Jan 27	2	h m s										2	55	7.18	47.4 m T+47.4 m ntg J				Red. 1475.0	2 1475.0		
		h	m	s	s	s	s	s	s	s	s				h	m	s	s		h	m	s
	2	54	54.0	56.2	58.3	27	49	7.2	9.4	11.6	16.0	18.3	20.4							2	55	57.27
		54	55.3	17	4.0																	
" 80	2	54	50.9	53.0	56.7	59.0	19	40	6.2	8.5	12.9	15.1	17.3	2	55	4.04	+ 46.32					
		54	38.7	42.0	44.2																	

0
5
3
4
6
7

1875 Jan 30

W.A.R.

h	m	s	h	m	s	h	m	s	h	m	s
16	58	38.9	5	6	36.0	5	7	42.0	5	14	33.1
		46.0			38.9			44.1			35.5
		53.3			41.9			46.3			37.9
x		1.3			44.9			48.2			40.1
		8.9			47.8			51.4			42.6
		15.9			49.0			54.0			34.84
		23.6			49.8			56.18			37.88
58		1.13	6		41.88	7		32.68	17		24.36
58		1.26	7		28.44				18		46.54
58		46.13			46.53						
		-44.87									

comp # 112

2

$$\begin{aligned}
 0 &= -46.53 + 1.13 + 22 - 46.31 & 0 &= -44.87 - 7.33 \\
 46.51 - 1.14 - 3 & 46.54 & & -46.53 + .51 \\
 46.54 + .54 + 11 & 46.43 & 0 &= -1.66 + 7.84 \\
 & & m &= +21
 \end{aligned}$$

$$\begin{aligned}
 dT + m &= +46.43 \\
 m &= +.29 \\
 dT &= +46.19 \\
 ddT &= +1.23
 \end{aligned}$$

1875 R 56.1 W. A. R.

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
3	51	19.5	5	17	31.0	5	21	59.4	5	24	34.1	5	29	0.3	5	47	32.4
		21.6			83.2			3.8			39.0			2.4			34.5
		23.8			35.6			6.9			41.0			4.0			36.5
		26.1			37.9			10.9						6.6			38.7
		28.1			40.3			14.9			57.8			8.8			40.8
		28.82			85.60			16.8			59.6						
51	23	80	17	86	38	22	14	89	24	49	35	29	45	0	4	36	58
52	12	34	28	24	34	23	4	24	20	38	14	29	53	14	47	36	56
		-48.54			-48.56			-49.35			-48.79			-48.64			-48.69

$$\begin{aligned}
 0 &= -48.54 - 25 - 07 - 48.61 \\
 &= -48.76 + 54 + 14.62 \\
 &= -48.79 - 01 - 00 (.79) \\
 &= -48.64 - 02 - 01.64 \\
 &= -48.69 + 13 + 23.66
 \end{aligned}$$

$$\begin{aligned}
 0 &= -49.35 + 34.2 \\
 0 &= -48.42 + 1.6 \\
 0 &= -0.93 + 3.56 \\
 m &= +2.6
 \end{aligned}$$

$$\begin{aligned}
 dT + m &= +48.63 \text{ at } 5^h 29^m \\
 m &= +2.4 \\
 dT &= +48.39 \\
 ddt &= +1.10
 \end{aligned}$$

Feb. 2 1875 W. A. R.

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
4	11	47.2	4	57	28.9	5	6	22.5	5	17	29.7	5	24	44.1	5	26	19.9
					35.3			35.6									
		49.3			43.0			38.4			37.1			46.2			22.0
		51.6			50.0			41.3			34.6			48.2			24.2
					55.3			44.3			36.8			50.4			26.3
		53.8			6.5						39.0			52.4			28.6
					14.4						34.44			48.26			24.20
		55.8			22.0						34.42			46.24			24.18
					29.4						24.34			38.13			14.01
		51.52			58.71			38.42									
11		51.54	57		58.4	6		88.40									
12		41.32	58		46.71	7		28.39									
		- 49.82			- 47.87			- 49.98			- 49.92			- 49.89			- 49.83

$\Delta t = +0.45$ (assumed)

$\Delta t = .057$

$$\begin{aligned}
 0 &= -49.82 + 00 - 49.82 + 27 + 07 - 49.75 \\
 &= -49.89 + 04 - 49.95 + 03 + 27 - 49.68 \\
 &= -49.82 + 05 - 49.87 + 54 + 14 - 49.73 \\
 &= -49.49 + 06 - 49.83 - 01 - 00 - 49.83 \\
 &= -49.83 + 06 - 49.77 - 32 - 08 - 49.85 \\
 &= -49.23 + 06 - 49.87 - 02 - 01 - 49.88
 \end{aligned}$$

49.79

$$\begin{aligned}
 \Delta t + m &= +49.79 \quad \Delta t - h \quad m \quad s \\
 m &= +24 \\
 \Delta t &= +49.55 \\
 \Delta \Delta t &= +1.23
 \end{aligned}$$

$$\begin{aligned}
 0 &= -49.87 - 7.33 \\
 &= 49.85 + 2.5 \\
 0 &= +198 - 7.58 \\
 \Delta &= +2.6
 \end{aligned}$$

$$\begin{aligned}
 0 &= -49.82 + 07 - 49.75 + 00 - 49.75 \\
 &= -49.89 + 27 - 49.72 + 05 - 49.67 \\
 &= -49.92 + 14 - 49.78 + 06 - 49.72 \\
 &= -49.89 - 00 - 49.89 + 06 - 49.83 \\
 &= -49.83 - 08 - 49.81 + 07 - 49.78 \\
 &= -49.73 - 01 - 49.74 + 07 - 49.71
 \end{aligned}$$

49.78

Set the South Clock ahead one minute.
 $\Delta t - 19^h$ S. T. Feb. 2

Feb. 4 1975 W.A.R.

h m s	h m s	h m s	h m s	h m s
4 12 45.4	4 28 49.5	4 58 25.7	5 7 30.6	5 8 26.7
47.5	51.6	89.0	88.5	88.8
49.7	53.7	41.6	86.4	41.0
51.8	55.9	49.5	89.2	43.1
53.8	58.0	57.0	42.3	45.1
49.64	51.74	1 56.84	36.40	44.94
12 49.62	28 51.72	58 57.00	7 36.38	8 40.92
12 41.28	28 45.46	58 47.00	7 25.39	8 32.64
+8.34	+8.26	+10.00	+8.04	+8.28

$\Delta T = +0.5$ (assumed)

$$\begin{aligned}
 0 &= +8.34 + 0.0 + 8.34 + 2.7 + 0.6 + 8.40 \\
 &+ 8.26 + 0.1 + 8.24 + 2.9 + 0.7 + 8.33 \\
 &+ 8.04 + 0.5 + 8.04 + 1.23 + 2.4 + 8.28 \\
 &+ 8.28 + 0.6 + 8.33 - 1.9 - 0.3 + 8.25 \\
 &+ 8.32
 \end{aligned}$$

$$\begin{aligned}
 0 &= +10.00 - 7.33 \\
 0 &= +8.26 + .36 \\
 0 &= +1.74 - 7.68 \\
 n &= +.23
 \end{aligned}$$

$$\begin{aligned}
 \Delta T + m &= -8.32 \quad \Delta h \quad 4 \quad 12 \quad m \\
 m &= +2.4 \\
 \Delta T &= -8.56 \\
 \Delta T &= +.95
 \end{aligned}$$

Feb. 6 1875 J. R. M.

h	m	s	h	m	s	h	m	s
4	12	34.2	4	21	11.1	4	28	34.0
		36.2			146			404
		38.4			168			424
		42.9			210			468
		45.0			23.2			491
		47.1			25.3			512
		49.2			27.4			533
		51.4			29.9			556
		53.4			34.0			598
		57.9			36.3			21
		6.0			38.4			42
		47.06			25.27			51.17
12		47.01	21		25.25	28		57.15
12		41.26	21		19.60	28		45.44
		+0.78			+0.65			+5.71

$$m = +25$$

$$\begin{aligned} 0 &= +5.78 + 27 + 0.7 + 5.85 \\ &+ 5.65 + 3.91 + 0.9 + 5.74 \\ &+ 5.71 + 2.9 + 0.7 + 5.78 \\ &+ 5.79 \end{aligned}$$

$$\begin{aligned} dt+m &= -5.79 \\ m &= -3.4 \\ dt &= -6.03 \end{aligned}$$

$$ddt = +1.27$$

Feb. 8. 1875 V. R.

h	m	s	h	m	s
2	15	21.1	3	33	59.3
		24.4			2.2
		27.5			5.2
		30.7			8.3
		34.0			11.4
		27.57			5.28
15		27.52	34		5.26
15		24.08	34		1.76
		+3.44			+3.50

$$m = +25$$

$$\begin{aligned} 0 &= +34.4 + 1.17 + 2.9 + 3.73 \\ &+ 3.50 + 1.08 + 2.7 + 3.77 \end{aligned}$$

$$\begin{aligned} dt+m &= -3.75 \\ m &= +2.4 \\ dt &= -3.99 \end{aligned}$$

$$\begin{aligned} ddt &= +1.145 \\ (\text{from Feb. 4 to Feb. 8}) \end{aligned}$$

Feb. 9 1895 W.A.R.

h	m	s	h	m	s	h	m	s
4	41	30.6	5	7	29.3	5	8	30.9
		33.1						
		35.7			27.3			32.9
		38.7						
		41.0			30.5			34.8
		43.2						
		45.7			33.4			37.0
		48.7						
		50.9			36.1			39.0
		1.						
		40.86			30.32			34.92
41		40.14	7		30.30	8		34.90
41		38.88			28.25			32.88
		+ 1.86			+ 2.05			+ 2.32

$$\begin{aligned}
 & \text{51 } n = +2.0 \\
 & 0 = +1.88 + 2.26 + .45 + 2.31 \\
 & \quad + 2.08 + 1.03 + .21 + 2.25 \\
 & \quad + 2.22 - 0.14 - 3 + 2.29 \\
 & \quad + 2.28
 \end{aligned}$$

$$\begin{aligned}
 & dt + m = -2.28 \\
 & m = +.24 \\
 & dt = -2.52 \\
 & ddt = +1.32
 \end{aligned}$$

Feb. 10 1895 W.A.R.

h	m	s	h	m	s	h	m	s	h	m	s
2	30	34.0	2	35	41.6	3	4	11.6	3	15	18.3
		57.6			43.7			16.2			21.6
		78			45.7			21.6			24.7
		84			47.7			25.7			28.9
		9.3			49.9			30.0			37.1
		13.5						35.1			
		17.5						39.1			
		21.4						43.7			
		26.6						48.8			24.72
		2.46			45.72			53.7			15.24.70
51		6.57	53		45.74	4		30.15	4		15.24.70
51		7.35	53		46.69	4		36.12	4		15.24.70
		+1.96			+1.01			+0.63			+0.67

$$\begin{aligned}
 & n = +2.4 \\
 & 0 = +1.01 + .06 + .01 + .02 \\
 & \quad + .67 + 1.17 + 2.8 + 1.95 \\
 & 0 = 1.84 + .62 \\
 & \quad n = +2.4 \\
 & 0 = +1.96 - 2.65 \\
 & \quad + 0.63 + 4.42 \\
 & 0 = +1.12 - 4.27 \quad n = 2.6 \\
 & 0 = +.81 - 3.82 = -2.2
 \end{aligned}$$

$$\begin{aligned}
 & dt + m = +0.98 \\
 & m = +.24 \\
 & dt = -1.22 \\
 & ddt = +1.42
 \end{aligned}$$

Feb. 11 + 75 W.D.R. Feb. 13 1276

h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
18 22 23.9	5 28 30.8	5 29 45.8	5 34 25.3	5 48 9.6	5 48 52.1	6 4 51.7	3 23 52.8	6 11	
26.7			28.4	11.7	55.6	54.7			
29.2	32.9	48.0	31.4	13.7	58.7	56.8	53.6	12.28	
34.6			34.1		1.7	59.9		57.62	
37.0	34.9	50.0	36.9	30.5	5.7	2.9	58.6	17.58	
39.4			39.7	32.5	8.7	5.7		25.2	
42.2	37.0	51.9	42.6	34.7	12.1	8.9	1.5	33.4	
45.0			45.5		15.6	11.6			
50.3	39.0	54.0	48.7		18.7	14.5	4.7		
52.8									
58.7	34.92	49.94	36.96	22.12	114 5.43	5 2.77	58.58	20.6	
32 39.74	25 34.90	29 49.72	37 37.01	22.10	41 5.48	5 3.02	33 58.56	20.6	
32 39.72	25 38.01	29 53.02	37 38.38	25.24	7.69	5 6.71	34 1.64	10.2410	
32 41.13	-3.11	-3.10	-2.37	-3.14	-2.21	-5.69	-3.08	12.770	
-7.41									

$$dT+m = -1.41 + 7.9 + 20 - 1.21$$

$$dT+m = +1.21$$

$$m = +2.5$$

$$dT = +0.96$$

$$0 = -3.11 - .01 - .00 - 3.11 + 0 - 13.11$$

$$-3.10 - .02 - .01 - 3.11 + 0 - 13.11$$

$$-3.14 + .13 + .03 - 3.11 + 1 - 13.10$$

$$-3.08 + 1.05 + .29 - 3.11 + .13$$

$$0 = -3.12 + .03$$

$$0 = -2.37 + 2.58$$

$$-2.21 - 3.12$$

$$-3.69 + 2.65$$

$$-1.72 - 16.83$$

$$0 = -7.5 + 2.61$$

$$-9.1 + 3.15$$

$$-5.7 + 2.62$$

$$-4.82 + 16.16$$

$$dT+m = +3.11$$

$$m = +2.41$$

$$dT = +2.57$$

$$dT = +1.44$$

$$n = +2.4$$

Feb. 14 1974 W.A.R.

h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
4 41 23.6	4 48 42.7	5 18 15.2	5 22 42.0	5 25 29.7	5 27 5.7	5 29 44.8	5 41 16.7
28.9	44.9	17.6	45.6	8.16	9.4	46.9	18.7
34.1	47.4	19.8	49.5	33.8	9.7	49.0	20.9
39.2	50.0	22.2	51.6	35.9	11.9	51.0	23.0
44.6	52.6	24.7	53.7	37.9	14.0	53.1	25.1
4 41 34.08	44.02	19.90	57.44	33.76	9.74	44.96	20.88
4 41 34.12	48 44.50	18 19.88	22 57.69	25 33.74	27 9.72	29 41.94	48 30.16
41 38.78	48 51.81	18 24.18	23 3.5	37.99	13.84	52.88	25.12
-466	-4.31	-4.30	-5.82	-4.25	-4.12	(-4.04)	-4.26

$$\begin{aligned}
 & \text{S} \\
 & v = -4.31 + 6.5 + 16 - 4.15 \\
 & \quad -4.30 + 5.4 + 13 - 4.17 \\
 & \quad -4.25 - 0.1 - 0.0 - 4.25 \\
 & \quad -4.12 - 3.2 + 0.8 - 4.20 \\
 & \quad -4.26 + 1.3 + 0.3 - 4.23
 \end{aligned}$$

$$\begin{aligned}
 & \text{S} \\
 & v = -4.31 + 2.0 - 4.20
 \end{aligned}$$

$$\begin{aligned}
 & \text{S} \\
 & v = -4.66 + 2.66 \\
 & \quad -5.82 + 3.72
 \end{aligned}$$

Seeing 0.75".

$$\begin{aligned}
 & \text{S} \\
 & d\tau + m = +4.20 \\
 & \quad m = +.24 \\
 & d\tau = +3.96 \quad d\tau - 5^h 26^m \\
 & ddr = +1.09
 \end{aligned}$$

Feb. 15 1878 W.A.R.

h	m	s.	h	m	s.	h	m	s.
6	11	14.7	6	39	21.3	6	40	38.7
	11	29.4			23.5			
	11	48.5			25.7		41	2.1
	12	6.0			29.5			
	12	22.8			31.7		41	23.5
	12	43.3			33.9			
	13	0.6			36.2		41	45.0
	13	17.6			38.1			
	13	35.1			42.6		42	7.0
6	12	24.33			44.7			
					47.1			

12	24.33	89	34.03	6	41	23.26
12	24.58	89	39.04		41	22.95
12	24.55	89	34.29		41	36.73
	+0.1		-5.28			-13.78

$$0 = -5.28 - 29 - 10 - 5.38$$

$$0 = +0.1 - 16.83 + 31$$

$$-13.78 + 20.72 + 41$$

$$R = +35$$

$$dT + m = +5.38$$

$$m = +24$$

$$dT = +5.14$$

$$ddt = +1.08$$

Feb. 16 1875 W. A. R.

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
5	48	14.6	6	4	47.2	6	11	13.1	6	30	19.5	6	40	28.5	6	41	-
		16.5			50.7			31.4			21.7			30.7			21.3
		18.4			53.7			48.8			23.8			32.8			41.0
		20.6			56.6			6.8			25.9			34.9			2.0
		22.7			59.2			23.7			28.2			37.0			23.8
					2.0			41.9									46.1
					5.1			57.5									6.7
					8.1			15.1									30.8
					10.9			33.6									-

48	18.52	4	59.28	12	24.50	30	23.42	40	32.78	41	24.49
48	18.50	4	59.24	12	24.71	30	23.80	40	32.76	41	24.18
48	28.10	5	6.57	-	.71	30	30.81	40	39.28	41	36.73
	-6.60		-7.33		-4.71		-6.71		-6.52		-12.50

$$\begin{aligned}
 & n = +3.1 \\
 o &= -6.60 + 13 + 104 - 6.56 \\
 & - 6.71 + 30 + 09 - 6.62 \\
 & - 6.52 - 30 - 09 - 6.61
 \end{aligned}$$

$$o = -6.61 + .04$$

$$\begin{aligned}
 & n = +3.1 \\
 o &= -7.33 + 26.6 \\
 & - 6.71 - 16.23 \\
 & + 12.55 + 20.73
 \end{aligned}$$

$$\begin{aligned}
 o &= -0.72 + 2.62 \quad n = +2.8 \\
 & - 5.90 + 16.87 \quad n = +3.5 \\
 & - 5.94 + 20.69 \quad n = +2.9
 \end{aligned}$$

$$\begin{aligned}
 dT + m &= +6.60 \\
 m &= +2.4 \\
 dT &= +6.36 \quad d-b \quad 29 \\
 ddr &= +1.21
 \end{aligned}$$

Feb. 17 1275 W.A.R.

h	m	s	h	m	s	h	m	s	h	m	s
6	11	12.8	6	30	18.6	6	39	27.5	6	38	55.2
		32.0							41	18.7	
		48.5			20.7			29.7		40.5	
		6.1						31.8		3.0	
		23.2			22.9					28.7	
		40.4						34.0		40.3	
		58.5			28.0					5.6	
		10.7						36.1		27.5	
		82.7			27.1					50.0	
		23.32			22.86			39.81.82		23.27	
12	23.58		30	22.84		39	31.80			22.96	
12	24.97		30	30.50		39	39.07			26.68	
	-1.39			-7.66		39	-7.47			-13.72	

$n = +23$

$$0 = -7.66 + 30 + 10 - 7.56$$

$$-7.47 - 30 - 10 - 7.57$$

$$0 = -15.9 - 16.13 \quad n = +37$$

$$-13.72 - 24.73 \quad = +30$$

$$dT + m = +7.56 \quad \text{at } 6 \text{ } ^{\circ} 35'$$

$$m_1 = 7.24$$

$$m_2 = +7.32$$

$$ddr = +0.97$$

Feb. 18 1875 W.A.R.

h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
4 28 32.1	4 41 21.6	4 48 38.2	5 7 13.0	5 8 19.6	6 30 17.3	6 39 26.3	6 40 02	6 53 30.6
34.4	24.4	40.6	16.1	21.4	19.4	28.5	40 23.2	32.8
36.6	26.9	43.0	19.0	23.4	21.6	30.6	40 40.3	35.1
38.7	29.3	45.4	22.0	25.8	23.8	32.6	41 2.3	37.6
40.9	32.1	47.8	24.5	27.9	26.0	34.8	41 25.4	39.9
	34.8						41 43.1	
	37.6						42 5.2	
							42 28.9	
							42 46.3	

28 36.54	41 29.54	48 43.00	4 10.98	8 23.44	30 21.62	39 30.56	41 23.91	53 35.20
28 45.27	41 29.84	48 42.88	4 18.86	8 23.72	30 21.60	39 30.54	41 23.60	53 35.18
28 36.52	38.61	48 51.14	4 25.08	8 32.43	30 30.49	39 39.20	41 37.11	53 43.20
-8.75	-9.07	-8.76	-9.12	-8.71	-8.85	-8.66	-13.51	-43.23
								-8.95

$$\begin{aligned}
 & n=+23 \\
 & 0 = -8.75 + 29 + 0.8 - 8.68 \\
 & \quad -8.76 + 65 + 1.5 - 8.61 \\
 & \quad -9.12 + 123 + 24 - 8.58 \\
 & \quad -8.71 - 14 - 13 - 8.94 \\
 & 0 = -8.83 + 46 - 8.70
 \end{aligned}$$

$$dT + m = +8.81$$

$$\begin{aligned}
 m &= +2.4 \\
 dT &= +8.57 \text{ at } 6 \text{ } h \text{ } 41 \text{ } m \\
 ddT &= +1.24
 \end{aligned}$$

$$\begin{aligned}
 dT &= +8.57 \text{ at } 6 \text{ } h \text{ } 41 \text{ } m \text{ } I \\
 dT &= 8.56 \text{ at } 6 \text{ } h \text{ } 41 \text{ } m \text{ } II
 \end{aligned}$$

$$\left(n = +23 + \frac{33}{12} = +2.75 \right)$$

Feb. 22 1895 W. T. R.

h	m	s	h	m	s
6	11	6.9	7	12	14.0
		2.44			16.3
		4.14			17.6
		5.89			18.4
		-16.5			36.2
		38.4			38.6
		50.2			40.8
		8.7			
		26.4			

12	16.86	27.42	27.40
12	16.62	12	27.39
12	26.89	12	40.70
	-2.78		-13.31

$$\begin{aligned}
 0 &= -13.31 + 16.83 \\
 0 &= -9.97 + 17.41 + 0.8 - 9.89 \\
 0 &= +3.34 - 17.24 \\
 n &= +2.0
 \end{aligned}$$

$$\begin{aligned}
 0 &= -13.31 + 17.41 + 0.8 - 13.23 \\
 0 &= -9.97 + 16.83 \\
 0 &= +3.34 - 17.24 \\
 n &= +2.0
 \end{aligned}$$

$$\begin{aligned}
 dT + m &= +9.88 \\
 m &= +2.4 \\
 dT &= +7.68
 \end{aligned}$$

$$\begin{aligned}
 dT + m &= +13.23 \\
 m &= +2.4 \\
 dT &= +12.99 \\
 ddt &= +0.10
 \end{aligned}$$

Feb. 24 1875

h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
5 22 813	5 25 184	5 29 334	5 48 53	4 4 391	6 11 10	17 37 182	17 43 896
852	204	353	78	423	11 188	161	428
894	226	376	97	451	11 376	190	461
433	247	396	118	480	11 541	218	496
476	267	417	139	509	12 114	247	530
511				539	12 286	276	561
549				569	12 463	303	596
592				598	13 40	332	631
634				627	13 10	361	664
22 4727	25 2256	29 3752	48 964	4 5097	12 1168	37 2467	43 5292
22 4722	25 2254	29 3750	48 962	4 5092	12 1168	37 2472	43 5294
23 552	25 3784	29 5285	48 2499	5 623	12 2728	37 4004	44 843
-1530	-1530	-1535	-1537	-1531	-1560	-1532	-1546

$$\begin{aligned}
 & n = -01 \\
 0 &= -1530 - 01 + 00 = -1530 \\
 & -1535 - 02 + 00 = -1535 \\
 & -1537 + 01 - 00 = -1536 \\
 0 &= -1534 - 01
 \end{aligned}$$

$$\begin{aligned}
 0 &= -1530 + 352 \\
 & -1531 + 265 \\
 & -1560 - 1683 \\
 & -1532 - 258 \\
 & -1546 - 312
 \end{aligned}$$

$$\begin{aligned}
 & n = +56 \\
 m &= +74 + 01 = +75
 \end{aligned}$$

$$\begin{aligned}
 dT/m &= +15.34 \\
 m &= +.24 \\
 dT &= +5.10 \\
 d dT/m &= +1.05
 \end{aligned}$$

$$\begin{aligned}
 0 &= +0.04 + 3.73 \quad n = -01 \\
 & +0.03 + 2.66 = +01 \\
 & -0.26 - 16.82 = -01 \\
 & +0.02 - 2.57 = +01 \\
 & -0.12 - 3.12 = -04
 \end{aligned}$$

$$\text{Mean} = -01$$

1925 Feb. 26 A.R.M.

Feb. 28 1925 W.A.R.

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s			
5	7	28	5	8	89	1	39	156	6	40	274	1	49	456	6	53	198	7	2	587	7	12	169
		87			112			179			462			526			220			580			191
		87			133			200			70			20			246			03			212
		116			154			221			287			108			268			216			235
		146			174			242			504			169			294			50			258
		8																					
7	8	68	8	13	24	34	19	96	41	7	94	50	238	53	24	52	3	032	12	21	30		
7	8	66	8	13	22	39	19	94	41	7	61	50	243	50	24	50	3	030	12	21	28		
7	8	88	8	32	27	39	39	12	41	33	61	20	45	53	43	77	19	50	12	40	63		
-	19	22	-	29	05	-	19	18	-	26	00	-	18	02	-	19	27	-	19	20	-	19	36

$$\begin{aligned}
 & S \\
 & 0 = -19.22 + 1.03 + 34 - 18.88 \\
 & \quad -19.05 - 14 - 05 \quad 19.10 \\
 & \quad \quad \quad -18.99
 \end{aligned}$$

$$\begin{aligned}
 & S \\
 & 0 = -19.18 - 30 - 10 - 19.28 \\
 & \quad -19.27 - 58 - 17 - 19.44 \\
 & \quad -19.20 - 49 - 16 - 19.36 \\
 & \quad -19.36 + 41 + 10 - 19.20 \\
 & 0 = -19.22 - 23 - 19.32
 \end{aligned}$$

$$\begin{aligned}
 & S \\
 & 0 = -26.00 + 20.83 \quad n = +33 \\
 & \quad -18.02 - 3.82 \quad +33 \\
 & 0 = -6.18 + 21.06 \quad n = +32 \\
 & \quad -1.20 + 3.69 \quad +33
 \end{aligned}$$

$$\begin{aligned}
 & \delta' \\
 & dT + m = +17.1\phi \\
 & m = +.48 \\
 & dT = +16.42
 \end{aligned}$$

$$\begin{aligned}
 & dT + m = +19.32 \\
 & m = +.42 \\
 & dT = +18.90 \\
 & dT = +19.5
 \end{aligned}$$

$$\begin{aligned}
 & l = +56 \\
 & m = +71 - 29 = +42
 \end{aligned}$$

Mar 4 1875 W.A.R.

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
6	39	10.7	6	40	14	6	17	34.3	7	22	18.3	7	27	12.5	7	26	9.8
		12.9			24.1			81.8			20.4			19.8			12.1
		15.0			43.0			82			22.4			19.2			16.7
		17.1			8.7			25.7			24.4			19.5			17.1
		19.4			27.2			42.7			26.5			21.8			19.6
		15.02			46.4			5									
39	15.00				11.0			8.53	32	20.40			17.16				14.66
39	15.00		41	5.54		12	8.28		32	46.55		34	17.14		26	14.64	
39	88.98		41	32.25		12	29.79		32	46.55		34	41.29		26	38.72	
	23.98			26.41			21.51			24.17			24.15			24.08	

$$m = +13$$

$$\begin{aligned} 0 &= -23.98 - 30 + 0.4 - 24.02 \\ &= -24.08 + 63 + 0.8 \quad 24.00 \\ &= -24.17 + 10 + 0.1 \quad 24.16 \\ &= -24.15 + 54 + 0.7 \quad 24.08 \\ &= 24.06 \end{aligned}$$

$$\begin{aligned} 0 &= -21.57 - 16.13 \\ &= -26.41 + 20.72 \end{aligned}$$

$$\begin{aligned} 0 &= +20.8 - 17.07 \quad m = +15 \\ &= +2.2 - 20.48 \quad +11 \end{aligned}$$

$$\begin{aligned} dT + m &= +24.06 \\ m &= +60 \\ dT &= +23.46 \\ ddT &= +1.14 \end{aligned}$$

$$m = 4 \times 2 - 12 = +60$$

Mar. 8 1895 N.A.R.

h	m	s	h	m	s	m	s	h	m	s	h	m	s	h	m	s
6	10	53.7	22	29	54.1	12	45.7	6	40	18.3	8	39	37.7	8	50	6.8
	11	10.1			59.3		51.0			40.8			39.7			8.9
	11	28.2			1.6		58.0			1.1			41.9			12.0
	11	43.8			3.8		10.2			23.7			44.0			15.3
	12	2.6			5.9		12.3			46.2			46.0			18.3
	12	20.1					14.4									
	12	36.9														
	12	54.8														
	13	11.6														
	12	29.3		30	15.7			41	1.62		41.66				12.06	
	12	2.69		30	1.55			41	1.31		39	41.84			12.04	
	12	31.20		30	30.26			41	30.64		40	10.67			40.51	
	- 28.51			- 28.71				- 29.33			- 28.83				- 28.77	

$$n = +0.1$$

$$0 = -28.71 + 0.0 - 28.71 + 12.0 - 0.0 - 28.71$$

$$- 28.83 + 0.9 - 28.74 + 12.0 - 0.0 - 28.74$$

$$- 28.77 + 0.0 - 28.77 + 1.13 - 0.1 - 28.78$$

$$0 = -28.74 + 0.2$$

$$0 = +2.3 - 17.40 \quad n = +0.1$$

$$- 5.7 - 20.22 - 0.3$$

$$b = +4.8$$

$$m = +6.3 + 0.1 = +6.4$$

$$dT + m = +28.74$$

$$m = +.64$$

$$dT = +28.70$$

$$dT = +28.77$$

Mar 11 11-75 W.A.R.

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	
6	29	54.1	6	39	2.9	6	40	35.2	8	39	34.6	7	48		8	50	2.7	
		56.3			5.2			58.5			36.8						5.8	
		58.4			7.3			19.3			38.8		48	(24.0)			9.0	
		0.5			9.3			41.8			40.8			54.0			12.1	
		2.7			11.8			0.9			43.0						15.2	
					26.0												40.1	
29	58.40		39	7.24	7.5	41	18.74		39	38.80		48	26.0-53.20	50	8.96		40	57.36
39	58.38		39	7.22	7.43	41	18.43		39	38.78		48	26.0/53.20	50	8.74		40	57.05
30	30.22			38.86	8.86		24.39		40	10.64		48	16.00 16.00	50	40.78		41	29.39
-	31.84		-	31.64	-31.73				-	31.86			+6.01-22.80	-	31.84			-22.84

$$\begin{aligned}
 & \text{SV} \quad \text{W} = +10 \\
 & 0 = -31.84 + 30 + 0.3 - 31.61 \\
 & \quad -31.43 - 30 - 0.3 - 31.76 \\
 & \quad -31.86 + 0.5 - 0.0 - 31.16 \\
 & \quad -31.84 + 1.13 + 1.1 - 31.73 \\
 & 0 = -31.82 + 2.7 - 31.77
 \end{aligned}$$

$$\begin{aligned}
 & \text{W} \\
 & 0 = -32.34 + 20.7' = +0.3 \\
 & \quad -22.80 - 53.3' = +1.7
 \end{aligned}$$

$$\begin{aligned}
 & \text{SV} \\
 & dt + m = +31.7' \\
 & \text{on} = +6.4 \\
 & dr = +31.13 \quad a/7 \quad h_{44} \\
 & ddr = +1.01
 \end{aligned}$$

Mar 12 1875 J. R. M.

δ	m	s	s	δ	m	s	s
6	30	53.0	44.2	6	15	47.3	88.3
		55.2	46.4			49.6	40.6
		57.5	48.7			51.4	42.8
		59.6	6.0			53.9	0.6
		61.7	8.2			56.2	2.9
			10.2				5.1
30		57.40	57.29			57.74	57.72
30		57.38	57.27			57.72	57.70
30		57.23		15		57.71	
30		56.20		15		24.61	
		- 32.87				- 32.90	

$$m = 10$$

$$0 = -32.87 + 30 + 43 - 32.84$$

$$-32.90 + 42 + 44 - 32.86$$

$$d\tau m = -182.85$$

$$m = +64$$

$$dT = +32.31$$

$$ddT = +1.14$$

Mar 17 1075 W.A.R.

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
6	10	46.9	6	38	48.7	6	38	57.1	6	40	38.5	7	26	56.2	7	32	47	7	36	59.0
		58			50.7			59.2			26.3			58.7			6.9			1.3
		22.7			52.8			1.4			47.9			1.0			8.9			3.7
		21.6			10.0			3.6			12.1			3.6			11.0			6.0
		59.9			12.1			5.7			20.8			6.0			13.1			8.3
		14.6			14.4			1.40												
		32.1																		
		48.4																		
		7.8																		
		57.78			38 1.45			38 1.38			40 48.12			36 1.10			32 8.92			37 36.6
11		57.50			38 1.43			38 1.38			40 48.43			36 1.08			32 8.90			37 3.64
12		34.17			38 38.76			38 38.76			41 27.29			26 38.62			32 46.37			37 41.17
		-36.67			-37.38			-37.38			-38.86			-37.44			-37.47			-37.47

$$\begin{aligned}
 n &= +0.6 \\
 0 &= -37.36 - 30 - 0.2 - 37.38 \\
 &= -87.44 + 63 + 0.4 - 37.40 \\
 &= -37.47 + 10 + 0.1 - 37.46 \\
 &= -37.47 + 54 + 0.3 - 37.44 \\
 &= -37.42
 \end{aligned}$$

$$\begin{aligned}
 0 &= -36.67 - 16.88 \\
 &= -38.86 + 20.23 \\
 0 &= +77 - 17.04 \quad n = +0.5 \\
 &= +1.42 + 20.57 \quad = +0.7
 \end{aligned}$$

$$\begin{aligned}
 \Delta T_{\text{m}} &= +37.42 \\
 \Delta T_{\text{m}} &= +36.4 \\
 \Delta T &= +36.78 \\
 \Delta \Delta T &= +0.94
 \end{aligned}$$

W.B.R.

[illegible]

$$\begin{array}{r} -38,46 + 63 + 08 = 38,38 \\ \quad -38,48 + 10 + 01 = 38,47 \\ \qquad -38,49 + 57 + 07 = 38,42 \\ \hline 0 = -38,48 + 42 \end{array}$$

$$0 = -3660 - 168n \quad n = +11$$

$$-4184 + 20.73 = +16$$

$$13$$

$$\begin{aligned} dT + m &= +3842 \\ m &= +.64 \\ dT &= +37.78 \\ \text{dofT} &= +1.00 \end{aligned}$$

Mar 21 1875

h m s	h m s	h m s	h m s
6 10 46.0	7 25 50.0	7 37 58.8	7 36 52.7
1.6	52.7	0.8	55.0
15.7	58.0	2.9	58.6
35.6	59.5	5.0	0.8
53.6	59.9	7.0	2.2
1.5			
28.4			
46.3			
2.7			
52.71	55.60	29.0	57.66
11 52.97	25 54.98	32 2.88	36 57.69
12 36.23	26 28.45	32 46.30	37 41.03
- 43.06	- 43.47	- 43.42	- 43.39

$$\begin{aligned}
 0 &= -42.97 + 63 + 0.1 - 43.46 \\
 &= -43.42 + 10 + 0.0 - 43.42 \\
 &= -43.39 + 54 + 0.1 - 43.38 \\
 &= -43.42
 \end{aligned}$$

$$0 = -43.43 + .92$$

$$\begin{aligned}
 0 &= -43.06 - 16.887 \\
 0 &= -43.93 + .92 \\
 0 &= +0.37 - 17.30 \\
 n &= +.02
 \end{aligned}$$

$$\begin{aligned}
 dT + m &= +43.42 \\
 m &= +.64 \\
 dT &= +43.78 \\
 ddt &= +1.25
 \end{aligned}$$

Mar 23 1475 W.R.

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
11	51.0		25	48.7		31	55.3		36	61.4		18	2.7		20	38.8	
	53.2			57.2			59.6			58.7			9.3			41.0	
	55.4			53.5			14			56.1			16.9			43.0	
	57.7			56.0			8.5			58.4			28.9			45.1	
	59.9			58.3			5.7			60.8			31.0			47.2	
				7.7									33.7				
													46.3				
													53.9				
													1.7				

11	53.44	25	53.62	31	55.0	36	56.08	18	31.09	20	43.02
12	55.42	26	53.52	32	1.48	37	56.06	19	30.97	21	43.00
	40.29	26	38.42	32	46.28	37	41.01	19	16.84	21	27.91
	44.87		44.90		44.80		44.98		44.87		44.87
											+ .06
											- 44.81

$0 = -44.87 + 41.06 - 44.81$
 $-44.90 + 63.09 - 44.81$
 $-44.80 + 10.01 - 44.79$
 $-44.86 + 57.08 - 44.87$
 $44.81 - 1.5 - 0.2 - 44.83$

- 44.82

$d\Gamma + m = +44.82$
 $m = +.64$
 $d\Gamma = +4.18$

$a = -45.87 + 7.03$
 $b = -44.88 + 30$
 $c = -.99 + 6.73$
 $a = +.15$

$d\Gamma = +1.40$

Mar. 25 1475 N.A.R.

h	m	s	h	m	s	h	m	s	h	m	s
7	25	460	7	31	52.6	7	36	48.8	7	0	79
		48.6			56.7			51.0			102
		51.0			58.7			58.9			123
		53.4			0.7			55.8			145
		53.5			2.9			58.1			166
		50.96			58.72			53.44			1230
25		50.99	31		58.70	36		53.42	0		1238
26		35.38	32		46.25	37		40.78	0		59.03
		-47.44			-47.55			-47.56			-47.58

$m = +10$

$$\begin{aligned}
 0 &= -47.44 + 63 + 26 - 47.38 \\
 &= -47.58 + 10 + 01 \quad 46 \\
 &= -47.56 + 0.7 + 0.5 \quad 51 \\
 &= -47.55 + 2.0 + 0.2 \quad 53 \\
 &\quad \quad \quad 15.8 \\
 &\quad \quad \quad 47.44
 \end{aligned}$$

$$dT + m = +47.47$$

$$dT = +47.83$$

$$ddT = +1.33$$

Mar 27 N.A.R.

h	m	s	h	m	s	h	m	s
7	25	437	7	31	52.1	7	36	46.5
		46.1			54.3			44.7
		48.5			56.3			51.0
		50.9			58.4			53.4
		53.3			0.5			54.7
25		48.50	31		56.30			52.96
27		48.47	31		56.30			50.94
26		38.35	32		46.23			50.94
		-49.87			-49.93			-50.00

$m = +10$

$$\begin{aligned}
 0 &= -48.87 + 63 + 106 - 49.11 \\
 &= -49.43 + 10 + 01 - 49.92 \\
 &= -50.00 + 0.21 + 0.5 - 49.90
 \end{aligned}$$

$$dT + m = +49.91$$

$$m = +6.4$$

$$dT = +49.27$$

$$ddT = +1.22$$

Mar 26.8

$$\begin{aligned}
 S.C. &= 8^h 27^m 9^s \\
 dT &= +48.1
 \end{aligned}$$

$$\begin{aligned}
 8 & 27 58.1 \\
 0 & 14 52.4 \\
 8 & 13 47.7 \\
 & 20.5
 \end{aligned}$$

$$\begin{aligned}
 8 & 12 00.0 \\
 8 & 11 43.4 \\
 & + 16.1
 \end{aligned}$$

Mar 27.4

$+1.61$
 47.110
 48.000
 49.000
 50.000
 51.000
 52.000
 53.000
 54.000
 55.000
 56.000
 57.000
 58.000
 59.000
 60.000

Mar 28 1875 N.A.R.

h	m	s	h	m	s
36	45.3		39	15.0	
	47.4			17.1	
	49.9			19.3	
	52.2			21.3	
	54.5			23.4	

36	49.16	39	19.22
36	49.84	39	19.20
37	50.83	40	19.46
-	51.09	-	51.26

$m = 1.5$

$0 = 51.09 + 54.18 - 51.01$
 $- 51.26 + 12 + 02 = 51.24$

$- 51.12$

$dt + m = +51.12$
 $m = +69$
 $dt = +50.48$
 $qdt = +1.23$
 $S.C. =$

9	36	10.0
9	36	00.5
0	22	40.0
9	19	15.0
		30.8
9	12	44.2

Mar 28.8

$S.C.$	h	m	s
	21	48	0.9
			51.2
	21	48	0.2
	0	22	40.5
	21	36	19.0
		3	20.7
	2	22	44.0

$160 = dt + m$

Mar 29 1875 N.A.R.

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
7	11	43.6	7	2	22.2	8	39	14.0	9	26	56	9	37	45.5	9	38	53.8
		45.8			24.5			16.0			8.1			52.3			59.1
		48.0			26.8			18.1			12.3			54.4			2.3
		50.3			29.2			20.2			15.8			56.7			5.2
		52.0			31.4			22.3			19.5			59.0			8.2

monymies

48.04	26.82	14.12	12.46	54.56	7.60	84.4
48.02	26.80	18.10	12.50	54.44	7.68	84.9
40.20	14.94	10.44	58.94	46.87		1.60
- 52.16	- 52.14	- 52.34	- 46.33	- 52.43		52.51

$h = 0.00$

$0 = -52.16 - 49 + 0.0 - 0.5 - 52.21$
 $- 52.14 + 41 - 0.0 - 0.5 = 1.9$
 $- 52.24 + 12 - 0.0 + 0.2 = 3.2$
 $- 52.43 + 45 - 0.0 + 0.8 = 3.3$
 $m = 0.1$

$dt + m = +52.27$

$m = +64$
 $dt = 51.63$
 $qdt = +1.12$

9 59 0.8 - S.C.

		51.6
9	59	59.6
0	26	42.1
9	33	17.5
	1	33.9
9	31	43.6
9	32	0.0

Jan 30 1955 W.A.R.

h m s	h m s	h m s	h m s	h m s
59 18.7	9 37 48.7	9 38 53.6	9 44 42.6	12 1.0
216	509	570	448	6.1 x
244	533	09	44.2	10.6
24.2	55.6	39	49.0	
30.2	58.9	7.1	51.9	
82.7		10.0		
38.9		13.3		
38.4		16.2		
41.3		19.4		
59 30.3	37 53.28	39 60.0	44 47.20	12 5.90
59 29.98	37 53.26	39 59.0	44 47.18	12 5.96
40 35.66	38 46.86	0 1.06	45 40.83	13 59.69
(-55.68)	- 53.60	-54.01	-53.65	-53.73

$$\begin{aligned}
 SC &= 20 \text{ h } 50 \text{ m } 49.0 \\
 &\quad + 53.4 \\
 &= 20 \text{ h } 51 \text{ m } 42.4 \\
 &\quad 0 \text{ h } 30 \text{ m } 38.6 \\
 &= 20 \text{ h } 21 \text{ m } 3.8 \\
 &\quad - 3 \text{ m } 20.0 \\
 SC &= 20 \text{ h } 17 \text{ m } 43.8 \\
 AC &= 20 \text{ h } 18 \text{ m } 00.0 \\
 &\quad + 16.2
 \end{aligned}$$

$$\begin{aligned}
 S &= -0.6 \\
 0 &= -53.60 + 45 - 0.3 - 53.63 \\
 &\quad 53.65 + 50 - 0.3 - 53.68 \\
 0 &= -54.01 + 28.6 \\
 &\quad -53.73 + 44.4 \\
 0 &= -39 - 33.4 \quad n = -.10 \\
 &\quad -11 - 4.92 \quad - .02
 \end{aligned}$$

$$\begin{aligned}
 dT + m &= +53.66 \\
 m &= +.64 \\
 dT &= +0.301 \quad \text{at } 9 \text{ h } 41 \text{ m} \\
 ddT &= +1.30
 \end{aligned}$$

$$\begin{aligned}
 SC &= 10 \text{ h } 2 \text{ m } 3.0 \\
 &\quad + 53.0 \\
 &= 10 \text{ h } 2 \text{ m } 56.0 \\
 &\quad 0 \text{ h } 30 \text{ m } 38.6 \\
 &= 9 \text{ h } 32 \text{ m } 14.4 \\
 &\quad - 1 \text{ h } 38.4 \\
 SC &= 9 \text{ h } 30 \text{ m } 43.4 \\
 AC &= 9 \text{ h } 31 \text{ m } 00.0 \\
 &\quad + 16.3
 \end{aligned}$$

Mar 31 1845 W.A.R.

h	m	s	
7	36	32.1	417
		34.5	439
		36.9	462
		38.4	486
		57.8	508
		0.2	

4615 4624

364619
 $dt+m = 374887$
 -5468

$dt+m = +54.68$

$m = +.64$

$dt = +54.04$

$adt = +.113$

Stopped the sexton clock at about 8 hours,
 Sicular wire - removed all the lead weights,
 from the pendulum and raised the measure
 1/2 an about 2 1/2 revolutions. Set the sexton clock
 at about 16 5/8 feet.

h	m	s
8	40	22.3
		24.6
		26.7
		28.6
		30.7

h	m	s
P	50	50.1
		58.6
		56.7
		59.8
		2.8

h	m	s
9	27	27
		30
		8.3
		11.5
		14.4
		16.9
		20.4
		24.0
		26.4

40 36.58
 20 26.56
 40 10.42
 $+16.14$

50 56.60
 50 56.58
 50 40.43
 $+16.15$

27 14.57
 27 14.54
 26 58.86
 $+15.71$

$0 = +16.14 + 12 - 1 + 16.13$
 $+16.15 + 11.13 - 16 + 15.99$

$0 = +15.71 - 27.4$
 $= +16.14 + 62$

$dt+m = +16.07$
 $m = +.64$
 $dt = -16.71$

$0 = -0.43 - 3.36$
 $n = -.13$

50 = 10 h m s
 38 15
 $+16.7$
 10 37 58.7
 0 34 35.2
 10 3 23.1
 1 38.8
 10 1 44.0
 $+16.7$

Apr 1 1875 W.A.R.

h m s	h m s
7 56 42.0	7 27 49.6
h m s	h m s
7 32 55.3	7 27 52.0
57.5	54.3
59.6	56.5
1.6	58.9
3.7	

32 59.53	37 57.28
32 59.52	37 57.26
32 46.15	37 40.85
+13.37	+13.41

$n = -1.0$
 $0 = +13.37 + 10 - 01 = 13.36$
 $+13.41 + 54 - 05 = 13.36$

$dT + m = -13.36$
 $m = +.64$
 $dT = -14.00$
 $ddT = +2.90$

S.C. = h m s
 0 38 31.7
 S.C. = h m s
 7 56 42.0
 - 14.0
 7 56 28.0
 0 38 31.7
 7 17 56.3
 - 1 11.8
 7 15 44.5
 +16.5

Apr 1 1875 W.A.R.

h m s	h m s	h m s	h m s	h m s
8 40 9.7	8 50 37.7	9 26 50.0	9 38 40.7	9 40 39.6
11.8	40.4	53.1	48.0	41.8
13.9	43.9	55.7	50.1	44.2
16.0	47.1	58.2	52.5	46.0
18.1	50.3	1.9	54.8	48.8
		4.9		
		8.5		
		11.1		
		13.7		
13.90	43.94	2.18	50.22	44.15
40 13.88	50 43.92	2.2 2.23	38 50.20	40 44.16
40 10.34	50 40.33	26 59.12	38 46.50	45 40.76
+3.54	+3.41	+3.11	+3.40	+3.40

$0 = +3.54 + 12 - 11 = 13.53$
 $+3.41 + 11.3 - 10 = 13.31$
 $+3.40 + 40 - 04 = 13.36$
 $+3.40 + 50 - 04 = 13.36$

$0 = +3.11 - 2.44$
 $0 = +3.44 + 0$
 $0 = +0.33 - 3.54$
 $n = +.09$

$dT + m = -3.34$
 $m = +.60$
 $dT = -3.94$
 $ddT = +2.50$

S.C. 9 5-3 840
 - 40
 9 53 300
 0 54 180
 8 59 120
 P.C. 8 57 24.2
 K. 8 58 43.8
 +16.2

The rate of the S.C. being about .25" being the absolute way
 stopped at 9 h 50 m 57.7, and the jan was at up 2.1 revolution
 Set answer about 25" fast.

Apr 5 1875 W.A.R.

h m s	h m s
10 24 17.9	10 26 14.0
22.0	16.6
26.3	14.2
30.9	20.3
35.4	22.8
39.7	
44.6	
48.7	
53.1	

24 35.41	14.22
24 35.26	13.20
31.93	13.27
+3.43	+2.95

$0 = +2.43 + 4.11$
 $0 = +2.95 + .18$
 $0 = +0.48 + 2.93$
 $n = -4.12$

$dT+m = -3.41$
 $m = .6$

$dT+m = -2.83$
 $m = +.64$
 $dT = -3.57$

h m s
S.C. 10 31 40
36
10 31 04
0 54 14.2
1 44.6
S.C. 9 35 43.8
A.C. 4 36 0.0
+16.2

Apr 12 75 W.A.R.

h m s	m s
8 39 58.9	40 7.0
1.0	4.2
8.1	11.2
19.6	13.3
21.4	15.5
23.8	

11.35	11.24
40 11.30	
40 11.28	
40 10.33	
+0.95	

$dT+m = -0.95$
 $m = +.64$
 $dT = -1.59$
 $dtdt = +1.02$

S.C. = h m s
8 51 13.0
-1.6
8 51 11.4
1 2 11.1
7 49 0.3
1 16.8
7 47 43.8
+16.5

Set the S.C. annu. by the adjusting for dtdt = +16.0

Apr 1st 95

h m s	h m s	h m s	h m s	h m s	h m s	h m s
9 18 44.0	9 23 17.2	9 26 48.4	9 38 43.4	9 39 50.4	9 45 37.7	9 21 25.1
58.0	20.5	57.6	46.0	53.4	40.0	27.2
2.0	23.0	54.8	44.2	56.4	42.3	24.3
9.4	26.3	52.4	50.6	59.8	44.6	31.5
16.6	29.1	6.4	52.8	2.8	46.8	33.6
24.1	32.1	3.6		5.9		
31.6	35.2	6.6		9.0		
39.2	38.5	9.8		12.2		
46.4	41.4	12.8		15.4		
19 16.95	23 29.29	27 0.65	38 48.26	40 28.0	45 42.28	21 29.34
19 16.88	23 29.14	27 0.70	38 48.24	40 28.6	45 42.26	21 29.32
19 15.24	23 27.77	27 59.18	38 46.78	40 15.6	45 40.43	21 27.75
+1.64	+1.47	+1.82	+1.46	+1.30	+1.53	+1.57

$$\begin{aligned}
 0 &= +1.57 - 15 - 00 + 1.57 \\
 &+ 1.46 - 45 - 01 + 1.46 \\
 &+ 1.53 - 50 - 01 - 1.52
 \end{aligned}$$

$$0 = +1.52 + 2.7$$

$$\begin{aligned}
 dT + m &= -1.52 \\
 m &= +.64 \\
 dT &= -2.16
 \end{aligned}$$

$$\begin{aligned}
 0 &= +1.64 + 7.02 \\
 &+ 1.47 + 28.1 \\
 &+ 1.52 - 27.4 \\
 &+ 1.30 - 2.86
 \end{aligned}$$

$$\begin{aligned}
 0 &= +0.12 + 6.75 & m &= -.02 \\
 &- 0.05 + 1.54 & & +.03 \\
 &+ 0.00 - 3.04 & & +.00 \\
 &- 0.22 - 3.13 & & -.04 \\
 & & & -.02
 \end{aligned}$$

Apr. 10 1875

h m s			h m s			h m s			h m s			h m s		
8	50	34.8	8	59	15.7	18	47	47.9	21	24.2	23	16.4		
		38.0			14.3			34.6		26.3		19.7		
		41.1			20.9			1.7		28.4		22.7		
		44.3			23.9			9.4		30.6		25.4		
		47.4			26.4			16.0		32.7		28.9		
					29.0			28.7						
					31.9			30.8						
					34.7			38.8						
					37.3			46.0						
50	41.12		59	26.40		19	16.5	21 28.44	23	22.70				
50	41.10		59	26.35		19	16.48	21 28.42	23	22.65				
50	40.22		59	25.22			14.88	27.71		27.63				
	+0.88			+1.13			+1.60	+0.71		+1.02				

$$0 = +88 + 11.3 - 15 + 1.73$$

$$+ 51 - 15 + 0.2 + 1.69$$

$$0 = +11.3 + 2.43$$

$$+ 1.60 + 1.01$$

$$+ 1.02 + 2.81$$

$$0 = +0.0 + 4.9$$

$$0 = +33 + 1.94$$

$$+ 50 + 0.52$$

$$+ 22 + 2.32$$

$$n = -1.7$$

$$-1.12$$

$$-0.09$$

$$-1.13$$

$$AT + m = -0.91$$

$$m = +0.64$$

$$AT = -1.55$$

$$AT = +1.27$$

Apr. 11 1275

h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
8	59	162	9	0	562	9	18	477	9	21	241	9	23	209
	148			583			560			262			166	
	214			03			22			283			198	
	238			24			101			304			257	
	265			45			164			326			292	
	299						243						320	
	315						210						349	
	345						374						378	
	395						468						409	
	2662			034			1667			28322			2887	
39	2657		1	032		19	1744	1458	21	2830		23	2882	
39	2516		0	5962		10	1496	1976	21	2768		23	2758	
	+1.41			+1.70			+848	1.83		+62			+1.24	

$$0 = +70 + 20 - 05 + 6.5$$

$$+62 - 16 + 13 = 68$$

$$+62 + 41 - 15 = 88$$

$$0 = +1.41 + 2.43 n =$$

$$+7.88 + 7.02$$

$$+1.24 + 2.41$$

$$0 = +65 + 16$$

$$+5.9$$

$$60$$

$$0 = +76 + 2.27 n = .34$$

$$+118 + 6.08 = .19$$

$$+0.59 + 2.65 = .22$$

$$dHm = -0.5460$$

$$m = +84.64$$

$$dH = -1.23124$$

$$qdH = +11$$

$$S.C. = 9.52106$$

$$- 12$$

$$9.52106$$

$$17.5$$

$$8.34$$

$$8.32458$$

$$5$$

$$4.8$$

$$4.8$$

$$37.2$$

$$7.6$$

$$24.2$$

$$-35$$

Apr. 14 1970 W.A.R.

ϕ	m	s	ϕ	m	s	ϕ	m	s	ϕ	m	s	ϕ	m	s
18	452		21	239		23	187		26	113		42	358	
	327			260			184			134			408	
	0.8			280			189			155			430	
	79			301			250			187			449	
	16.0			322			279			198			471	
	237						311							
	398						338							
	373						371							
	446						407							
19	1508		21	2804		23	2799		26	1559		42	4290	
19	1493		21	2802		23	2793		26	1552		42	4288	
19	1438		21	2766		23	2740		26	1518		42	4284	
	+55			+36			+53			+34			+34	

$$n = -.95$$

$$0 = +36 - 15 + 0.1 + .37$$

$$+34 + 18 - 0.1 + .33$$

$$+34 + 20 - 0.1 + .33$$

$$0 = -.35 + .07$$

$$dT + m = -.034$$

$$m = +.64$$

$$dT = -.098$$

$$0 = +53 + 7.02$$

$$+53 + 2.81$$

$$0 = +22 + 6.95$$

$$+18 + 2.74$$

$$0 = -.03$$

$$-.07$$

$$-.08$$

$$SC = 10 \quad h \quad m \quad s$$

$$10 \quad 55 \quad 4.0$$

$$10 \quad 53 \quad 3.0$$

$$10 \quad 53 \quad 3.04$$

$$1 \quad 29 \quad 47.0$$

$$9 \quad 25 \quad 16.0$$

$$1 \quad 32.6$$

$$SC \quad 9 \quad 23 \quad 43.4$$

$$A.C. \quad 9 \quad 24 \quad 0.0$$

$$+16.6$$

Apr. 15/1875 W.A.R.

Apr. 19/1875 W.A.R.

h	m	s.	h	m	s.	h	m	s.
9	14	45.6	9	21	23.7	10	29	11.0
		53.1			25.7			13.1
		0.3			27.8			15.3
		7.8			24.8			14.3
		16.0			31.9			19.5
		22.2						
		29.6						
		34.0						
		44.2						

1509	27.78	18.24
19 10.01	21 27.76	15.28
19 14.18.08	27.64	15.14
+0.75	+12	+0.04

s	s
0 = +12 -15 +1 +0.13	0 = +75 +7.02
+14 +18 -02 +0.02	0 = +0.8 +0.2
	0 = +6.7 +7.00
	m = -.09

$dt+m = -.07$
 $m = +.61$
 $dt = -.68$
 $ddt = +.30$

$SC = 10 29 56.0$
 $- .07$
 $10 29 55.3$
 $1 33 48.5$
 $8 56 11.8$
 $7 27.8$

SC 8 14 40.0 +160

h	m	s.	h	m	s.
10	1	39.4	10	13	15
		41.8			3.5
		43.9			6.0
		46.0			8.2
		48.1			10.4

43.90	598
1 43.48	13 5.96
1 41.15	13 6.06
-2.7	-3.0

$m = -.09$
 $0 = 27 + 22 - 02 - 0.29$
 $-30 + 38 - 03 - 0.33$

$dt+m = +0.31$
 $m = +.64$
 $dt = +0.33$
 $ddt = +.07$

$S.L. = 10 42 41.5$
 $- .03$
 $10 42 40.7$
 $1 49 29.7$
 $8 53 11.0$
 $- 1 2.3$
 $SC 8 51 43.7$
 $APC 8 52 0.0$
 $+46.3$

Apr. 20 1475 W.A.R.

h m s	h m s	h m s	h m s
9 18 43.9	9 21 23.1	9 23 14.7	10 13 14
51.0	25.2	19.0	38
58.6	27.2	26.5	59
61	29.2	28.4	81
13.2	31.4	26.8	10.3
20.9		29.8	
28.0		32.9	
35.5		36.0	
42.7		39.2	
1332	3722	2676	590
19 13.24	21 27.20	23 26.71	13 8.88
19 13.61	21 27.58	27.14	13 6.25
-0.37	-0.38	-0.43	-0.37

$$n = +0.1$$

$$0 = -38 - 15$$

$$-37 + 38$$

$$0 = -37 + 70.2$$

$$-43 + 2.81$$

$$0 = +09 + 690 \quad n = +00$$

$$-06 + 26.9 \quad +02$$

$$dt + m = +38$$

$$m = +64$$

$$dt = -26$$

$$ddt = +27$$

h m s
S.C. = 11 51 48.0
- 0.2
11 57 48.8
1 53 26.2
9 58 21.6
1 38.0
9 56 43.6
+ 16.9

Apr. 21 1475 W.A.R.

h m s	h m s	h m s	h m s
9 35 41.4	9 45 30.3	10 55 02.2	11 7 25.1 + 1.5
43.7	37.7	56.0	27.4
46.9	40.0	58.6	29.7
48.3	42.2	0.8	31.9
50.6	44.6	3.0	34.1
		5.2	
		7.0	
		9.7	
		11.8	
38 45.98	45 39.96	56 3.23	7 29.64 + 1.5
38 45.96	45 39.94	56 3.01	7 29.62 + 1.5
38 46.59	46 40.54	56 3.40	7 29.30
- 60	- 0.60	- 40	- 0.68

$$n = -0.7$$

$$0 = -0.63 + 40 - 0.3 - 66$$

$$- 60 + 5.2 - 0.4 - 64$$

$$- 68 + 39 - 0.3 - 71$$

$$0 = -40 + 191$$

$$0 = -64 + 45$$

$$0 = +24 + 1.46$$

$$n = -1.6$$

$$n = \frac{-1.6 + 0.2}{2} = -0.7$$

$$dt + m = +6.7$$

$$m = +64$$

$$dt = +23$$

$$ddt = +2.9$$

Apr. 22 1875 W.R.

h m s.	h m s.	h m s.	h m s.
9 18 48.2	9 38 41.2	9 45 48.9	11 7 24.0
50.7	43.5	51.2	26.1
55.0	40.9	52.6	28.3
53	45.0	55.7	30.7
-12.4	50.2	57.8	32.8
19.8			
24.2			
34.4			
41.8			

5.90.57	45.72	53.44	28.38
19 5.8/12.4 38	45.70	45 53.52	28.36
1	13.4 38	45 40.54	29.29
-0.85	- .88		-0.93

$n = .01$

$0 = -0.88 + 45 - 00 - 0.88$
 $-0.93 + 39 - 00 - 0.93$

$0 = -0.85 + 40.1$
 $0 = -0.90 + .42$
 $0 = +.05 + 6.59$
 $n = -.01$

$dt+m = +0.90$
 $m = +.64$
 $dt = +0.26$
 $ddt = +.23$

h m s.
S.C. = 11 26 26.0
+0.3
11 26 36.3
2 01 19.3
9 25 17.0
1 32.6
7 23 44.4
+15.6

Apr. 24 1875 W.R.

h m s.	h m s.	h m s.
7 21 22.7	10 01 39.1	11 07 24.0
24.4	41.1	26.1
26.5	43.2	28.3
28.7	45.3	30.6
30.7	47.4	32.8

26.10	43.22	28.36
21 26.48	01 43.20	28.34
27.43	44.09	29.28
-1.05	-0.89	-0.94

$n = -.10$

$0 = -1.05 - 1.5 + 42 - 1.03$
 $-0.89 + 22 - 0.2 - 0.91$
 $-0.94 + 39 - 0.4 - 0.98$

S.C. = 11 28 28.0
 $+0.3$
 11 28 28.3
 2 9 12.5
 9 19 15.8
 1 21.6
 9 17 44.2
 7 18 0.0
 $+15.6$

-0.97
 $dt+m = +0.97$
 $m = +.64$
 $dt = +0.33$
 $ddt = +.54$

Apr 25 1875 W.A.R.

h	m	s	h	m	s	h	m	s
9	40	48.8	9	45	35.1	10	1	29.0
		57.7			37.4			41.2
		54.7			39.7			43.3
		58.1			42.0			45.5
		1.3			44.3			48.6
		4.4						
		7.6						
		10.6						
		13.7						

41	1.21		39.70		43.32
41	1.26	45	39.68	1	43.30
41	03.23		40.50		44.05
-	1.44		.82		-0.78

$0 = -0.82 + 50 - 10 - 0.92$
 $-0.78 + 22 - 0.4 - 0.82$
 $0 = -1.44 - 2.86$
 $0 = -.80 + .16$
 $0 = -.64 - 3.22$
 $m = -.20$

$dt + m = +0.87$
 $m = +0.64$
 $dt = +0.23$
 $ddt = -.10$

$S.C. = 11$

h	m	s
18	22.0	
	+0.2	
11	18	22.2
2	13	4.0
9	5	13.2
1		29.3
9	3	43.9
19	4	0.0
		+14.1

Apr. 26 1875.

W.A.R.

h	m	s	h	m	s
10	13	07	10	42	37.5
		3.0			39.6
		5.3			41.7
		7.5			43.8
		9.7			45.9

5.20	41.70
13 5.22	42 41.68
6.19	42.64
-0.97	-0.96

$0 = -0.97 + 3.8 - 0.7 - 1.04$
 $-0.96 + 20 - 0.64 - 1.00$

$dt + m = +1.02$
 $m = +.64$
 $dt = +0.38$
 $ddt = +.15$

$S.C. = 10$

h	m	s
37	11.0	
	+0.4	
10	37	11.4
2	17	5.6
8	20	5.8
1		21.9
8	18	43.9
8	19	0.0
		16.1

Apr. 27 1875 W.A.R.

May 3 1875 W.A.R.

h m s	h m s	h m s
9 39 48.7	9 45 35.0	10 01 38.8
51.7	37.2	41.0
54.8	39.6	43.0
57.9	41.8	44.7
1.0	44.1	47.3
3.9		
7.3		
10.6		
18.6		

40 1.05	40 39.54	1 43.04
40 1.11	45 39.52	1 43.02
2.60	45 40.58	1 44.07
-1.49	-0.96	-1.65

$$\begin{aligned}
 s' & & s \\
 0 &= -0.96 + 45 - 0.5 - 1.01 & 0 &= -1.49 - 2.86 \\
 -1.05 + .22 &= 43 - 1.08 & 0 &= -1.00 + .33 \\
 u &= -49 - 3.19 & u &= -.16 \\
 n &= -.16
 \end{aligned}$$

$$\begin{aligned}
 s \\
 dt+m &= +1.06 \\
 m &= +.64 \\
 dt &= +0.41 \\
 ddt &= +.03
 \end{aligned}$$

h m s	h m s	h m s	h m s	h m s
11 23 50.2	11 30 29.0	11 33 48.4	11 42 37.7	11 47 10.3
52.3	81.5	52.8	39.8	19.0
56.3	83.6	57.4	41.9	17.4
59.3	85.7	1.9	44.0	21.6
2.3	87.7	6.7	46.2	24.6
5.6		11.1		
8.0		15.2		
11.5		20.9		
14.7		24.8		

24 24.0	30 33.60	34 6.52	42 41.92	47 17.58
24 23.5	30 33.58	34 6.58	42 41.90	47 17.56
2.13	34.40	8.42	42.70	17.82
+2.22	-0.82	-1.84	-.80	-.26

$$\begin{aligned}
 s & & n &= -.32 & s \\
 0 &= -0.82 + .00 & -.00 &= -0.82 & 0 &= +0.22 + 2.75 \\
 -0.80 + .27 &= .07 &= -0.89 & & -1.86 &= 4.30 \\
 -0.26 + 1.40 &= .40 &= -0.71 & & e &= +0.50 + 2.19 \\
 0 &= -0.63 + .56 & & & n &= -.28 \\
 & & & & +1.23 &= 4.86
 \end{aligned}$$

$$\begin{aligned}
 s \\
 dt+m &= +0.81 \\
 m &= +.64 \\
 dt &= +1.17 \\
 ddt &= -.06
 \end{aligned}$$

May 4 1875 W.A.R. May 5 1875 W.A.R.

h m s.
10 42 37.6
39.8
41.8
43.8
46.2

41.88
42 41.88
42 42.88
- 0.82, 70

$n = -2.1$
 $c = +0.82 + 2.7 - 0.7 - 0.88$
- 70 - 77

$dt + m = +0.89 + 77$
 $m = +2.09 + 64$
 $dt = +0.25 + 13$

SC. 11 14 44.0
+ 0.2
11 14 44.2
21 48 38.0
8 26 6.2
- 1 22.9
8 24 43.3
+ 11.7

h m s.
SC. = 12 17 51.0
76.1
12 17 51.1
21 52 84.6
9 25 16.5
1 32.6
9 23 73.9
46.1

h m s. h m s. h m s. h m s. h m s.
10 42 38.0 12 6 9.1 12 13 27.8 11 42 58.0 11 47 10.9
40.1 14.0 29.8 40.1 14.7
42.1 19.0 31.9 42.4 15.0
44.2 24.1 34.0 44.6 21.6
46.3 29.1 36.1 46.7 25.1

34.4
39.3
44.4
49.7

42 42.14 6 29.23 13 31.92 42 42.86 11 47 10.9
42 42.12 6 29.17 13 31.90 42 42.84 11 47 10.9
42 42.54 6 29.14 13 32.32 42 42.86 11 47 10.9
- 42 + 203 - 52 - 432 + 2.6

$0 = -42 + 60 - 60 - 42$
 $- 32 + 27 - 14 - 46$
 $+ 26 + 140 - 71 - 45$

$0 = +223 + 4.80$
 $0 = -16 + 56$
 $0 = 219 + 42.7$
 $n = -51.2$

$dt + m = +0.44$
 $m = +.64$

Round the micrometer Head of 46.834
Nerve c = 37

$0 = -42 - 60 + 100 - 60 - 37.37$ $0 = +223 + 483 + 494$ $c = -37$
 $- 32 + 27 + 140 - 60 - 38.48$ $0 = -16 + 56 + 1.24$
 $+ 26 + 140 + 1.71 - 27 - 40.30$ $0 = 2.19 + 42.7 + 3.70$
 $- 79$ $0 = +59 + 1.16 + 1.10$
 $- 75$ $0 = +22 + 1.16$
 $- 64$ $n = -19$

$dt + m = +0.73$ $dt = +0.9$

May 11 1875 J. F. M.

May 12 1875 N. S. R.

h m s.	h m s.	h m s.
11 58 46.7	12 13 26.8	12 6 6.0
48.6	28.8	10.9
50.7	30.9	16.2
52.8	32.9	20.9
54.9	34.9	25.8
		31.4
		36.8
		41.5
		46.8

50.74	30.86
58 50.72	13 30.84
58 52.12	13 32.29
-1.40	-1.95

δ
 $0 = -1.40 + 16 - 0.3 - 1.43$
 $-1.45 + 0.0 - 0.0 - 1.45$

$0 = -0.52 + 4.83$
 $0 = -1.92 + .98$
 $0 = +.90 + 4.78$
 $n = -2.0$

δ
 $dT + m = +1.44$
 $m = +.64$
 $dr = +.80$
 $ddr = +.12$

h m s.	h m s.	h m s.
12 06 6.4	12 13 26.7	12 50 6.5
11.7	28.8	9.2
16.4	30.8	11.9
21.5	32.9	14.6
26.5	35.0	17.2
31.7		
37.2		
42.1		
47.0		

28.61	30.84	11.88
6 25.55	13 30.82	50 11.86
6 26.83	13 32.37	13.10
-1.28	-1.58	-1.34

$n = -1.2$
 δ
 $0 = -1.58 + 0.0 - 0.0 - 1.58$
 $-1.24 + 8.0 - 10 - 1.34$
 $0 = -1.28 + 4.83$
 $0 = -1.40 + .90$
 $0 = +.12 + 4.43$
 $n = \frac{.03 - 2.0}{2} = -1.2$

δ
 $dT + m = +1.46$
 $m = +.69$
 $dr = +0.81$
 $ddr = +.11$

Assume $n = -2.0$

δ
 $0 = -1.58 + 0.0 - 0.0 - 1.58$
 $-1.24 + 1.40 - 3.5 - 1.59$
 $dT + m = +1.57$
 $m = +.60$
 $dr = +.97$

May 13 1875 N.O.R.

h m s	h m s	h m s	h m s
11 42 36.8	11 47 9.9	12 6 6.4	12 13 26.6
39.0	13.0	11.3	28.7
41.1	16.6	16.4	30.8
43.2	20.1	21.4	32.8
45.4	23.7	26.8	34.8
		31.7	
		36.8	
		41.1	
		47.2	
42 41.10	16.56	26.57	30.72
42 41.08	47 16.54	1 26.51	13 30.72
42 42.61	47 17.62	6 26.55	13 32.28
-1.53	-1.08	-1.04	-1.54

$$\begin{aligned}
 s \\
 0 &= -1.53 + 2.7 - .09 - 1.62 \\
 &= -1.08 + 1.40 - 45 - 1.53 \\
 &= -1.52 + .00 - .00 - 1.52
 \end{aligned}$$

$$\begin{aligned}
 s \\
 0 &= -0.04 + 4.13 \\
 &= -1.38 + .56 \\
 0 &= +1.34 + 2.27 \\
 n &= -32
 \end{aligned}$$

$$\begin{aligned}
 dt + m &= +1.60 \\
 m &= +.64 \\
 dt &= +0.96 \\
 ddt &= +.00
 \end{aligned}$$

May 17 1875.

h m s	h m s	h m s	h m s	h m s
10 58 52.5	11 13 0.4	11 21 25.9	11 23 48.8	13 3 24.3
54.7	2.6	2.0	5.8	26.5
57.0	4.7	30.1	54.3	28.5
59.1	6.8	32.1	58.6	30.6
1.5	9.0	34.1	6.6	32.8
3.7			4.0	
6.0			6.7	
8.1			9.7	
10.4			12.7	
56 1.44	13 4.70	30.04	0.70	28.54
56 1.41	13 6.69	21 30.04	1.50	3 28.52
56 2.60	12 1.99	21 31.89	34-0.80	3 30.84
-1.18	-2.01	-1.85	24-0.86	-2.02

$$\begin{aligned}
 n &= -38 \\
 0 &= -2.01 - 2.5 + .09 - 1.92 \\
 &= -1.85 + .05 + .02 - 1.87 \\
 &= -2.02 - .09 + .03 - 1.99
 \end{aligned}$$

$$0 = -1.96 - .10$$

$$\begin{aligned}
 dt + m &= +1.93 \\
 m &= +.64 \\
 dt &= +1.29 \\
 ddt &= +.08
 \end{aligned}$$

$$\begin{aligned}
 0 &= -1.19 + 1.91 \\
 &= -0.86 + 2.70 \\
 0 &= +0.77 + 2.01 \quad n = -38 \\
 &= +1.10 + 2.85 \quad -39
 \end{aligned}$$

$$\begin{aligned}
 dl &= h m s \\
 &= 13 9 40 \\
 &= 13 9 10.3 \\
 &= 8 39 03.2 \\
 &= 9 29 17.1 \\
 &= 11 33.2 \\
 &= 9 17 43.9 \\
 &= 19 28 00 \\
 &= +16.1
 \end{aligned}$$

May 20 1875 W. R. May 22 1875 W. A. R.

h	m	s	m	s
16	21	81.1	21	20.2
		83.3		42.6
		85.6		43.8
		84.0		47.1
		86.3		49.5
		88.9		

44.83 44.84
44.81 44.82

21 44.81
17.04
-22.6

$n = -39$

$0 = -2.26 - 49 + 19 - 2.07$

$dt + m = +2.07$
 $m = +.64$
 $dt = +1.43$
 $ddt = +.74$

4 N.B. = 1.2

h	m	s	h	m	s
11	23	42.8	11	42	58
		52.0			80
		56.8			10.1
		1.4			12.2
		-5.9			14.3
		10.5			
		11.1			
		19.2			
		24.5			
		5.94			
		5.94			
34		6.88	42		10.08
37		10.23	42		10.06
		-42.3			

$n = -43$

$0 = -2.45 - 89 + 04 - 2.41$
 $-2.09 + 81 - 38 - 2.44$

$0 = -2.27 + .36$

$dt + m = +2.42$
 $dm = +.64$
 $dt = +1.38$
 $ddt = +.16$

h	m	s	h	m	s	h	m	s	h	m	s
13	3	22.9	13	8	49.9	12	58	9.7			
		26.4			9.22			12.2			
		28.1			10.14.2			14.9			
		30.2			10.59.8			17.6			
		32.2			11-46.5			20.2			
					12.24.7						
					13.5.2						
					13.51.7						
					14.36.6						
					41.75			14.92			
					11.42.56			10.56			
					12.38.3			12.99			
					-2.45			-2.09			
					-2.27						

$0 = -42.3 - 4.32$
 $-2.27 - 42.20$

$0 = +1.56 + 46.8$
 $+19.00 + 42.56$
 $n = -42$
 $= -44$

N.C. = 3 52 12.0
+1.9
43 52 13.9
3 59 16.1
23 52 37.8
3 58.7
23 48 43.1
23 49 52
-14.5

May 23 1875 W.A.R.

h m s	h m s	h m s
13 03 23.5	13 9 29.1	13 18 31.2
25.6	12.2	33.3
27.6	5.4	35.6
28.7	37.6	37.6
31.8	20.8	37.8
	2.7	
	5.1	

27.64	38.40	35.50
3 27.62	12 39.21	18 35.48
36.50	4.53	35.34
- 2.88	- 2.832	- 2.86

$\delta = -2.88 - 0.9 \mu \alpha \cos \delta = -2.832 - 4.220$
 $-2.86 - 1.8 + 10 - 2.760 = -2.87 - 1.13$
 $\alpha = +22.45 + 42.07$
 $n = -5.3$

$dt + m = +2.19$
 $m = +1.64$
 $dt = +2.15$
 $d\delta = +.36$

$N.C. = 13 21 45.0$
 $+ 2.1$
 $13 21 47.1$
 $4 0 32.6$
 $9 18 16.5$
 $1 35.4$
 $9 16 43.1$
 $4 17 16.9$

May 26 1875 W.A.R.

h m s	h m s	h m s
13 3 23.1	13 10 48	13 18 30.9
25.1	10 53.7	33.1
27.2	11 34.6	35.1
29.2	12 21.9	37.1
31.4		39.4

27.74	11 39.07	25.10
3 27.74	11 39.88	35.08
3 30.48	12 6.45	38.83
- 3.31	- 26.57	- 3.25

$\delta = -3.31 - 0.9 \mu \alpha \cos \delta = -3.26$
 $-3.20 - 1.8 + 10 - 3.15$

$\delta = -2.60 - 4.210$
 $\alpha = -3.128 - 1.14$
 $\alpha = +23.29 + 4.196$
 $n = -5.6$

$dt + m = +3.20$
 $m = +6.4$
 $dt = +2.86$
 $d\delta = +1.14$

$N.C. = 13 28 34$
 $+ 2.6$
 $13 28 36.6$
 $4 15 22.3$
 $9 13 14.3$
 $1 30.6$
 $9 11 43.7$
 $9 12 4.0$
 16.3

May 27 1875 W.B.R.

12	h	m	s	13	h	m	s	13	h	m	s
6	47			13	13	24.8		42	26.4		
	9.4					26.9			26.6		
	14.1					27.0			27.7		
	19.2					27.10			27.9		
	24.7					27.31			27.2		
	29.8										
	34.9										
	39.5										
	44.1										
	50.8										
6	30.36				28.46				32.46		
6	30.30			13	28.94			42	32.74		
6	35.40				32.19				32.87		
	-5.10				-3.45						

$n = -.39$

$0 = -3.25 + .00 - 3.25$

$dT+m = +3.25$
 $m = .64$
 $dt = +2.61$
 $ddt = +.05$

$Ph = 13$ h m s
 42 32.0
 +2.6
 13 42 34.6
 4 19 18.9
 9 23 15.4
 1 32.2
 9 21 43.5
 7 22 00
 +16.5

May 29 1875 W.B.R.

13	h	m	s	13	h	m	s
42	30.7			48	34.7		
	33.8				41.0		
	37.0				43.2		
	40.2				45.3		
	43.6				47.5		

37.66	43.14
37.07	43.12
42 59.64	48 46.09
-2.58	-2.97

$0 = -2.58 + 11.9 - 5.9 - 3.14$
 $0 = -2.95 + .30 - .08 - 3.13$

$dT+m = +3.15$
 $m = .64$
 $dt = +2.51$
 $ddt = -.00$

$Ph = 13$ h m s
 51 20.0
 +2.0
 13 51 22.0
 4 27 12.0
 9 24 15.5
 1 32.4
 9 22 43.1
 7 20 00
 +16.9

June 1 1875 W.A.R.

June 4 1875 V.P.M.

h m s
11 58 45.4
47.5
49.7
51.9
53.9

h m s
12 13 20.6
27.7
29.8
31.9
33.9

49.68
29.66
51.95
-2.29

29.70
29.68
32.15
-2.47

n = -6.0

0 = -2.29 - 18 - 11 - 2.40
-2.47 - 00 - 00 - 2.47

dt + m = +2.43
m = + 6.9
dt = +1.79
ddt = -.24

M.C. = +16.4

h m s
13 42 31.1
34.4
37.7
40.9
44.0

37.62
37.60
39.56
-1.96

h m s
13 48 39.6
41.6
43.9
46.0
48.1

43.84
43.82
46.06
-2.24

h m s
14 0 53.4
53.2
55.8
0.6
2.7
5.0
7.3
10.0
12.6

22.3
26.7
43.0
-1.53

h m s
14 9 53.5
55.2
57.9
59.7
2.0

54.62
57.60
59.76
-2.16

s
0 = -1.96 + 11.9 - 48 - 2.44
-2.24 + 34 - 14 - 2.38
-2.16 + 36 - 14 - 2.30

dt + m = +2.34
m = +.64
dt = +1.73
ddt = -.02

s
0 = -1.53 + 2.14
0 = -2.12 + 1.63
0 = +0.57 + 1.51
n = -4.0

June 6 1875

J. B. M.

June 8 W. A. R.

h	m	s	h	m	s	h	m	s	h	m	s
15	10	126	15	19	413	15	20	468	15	29	192
		145			488			500			216
		166			460			537			240
		186			493			572			261
		207			518			607			283
								4.1			
								7.3			
								11.0			
								14.5			
								0.73			26.84
10	16.58		19	46.54		20	0.67		29	23.82	
10	19.16		19	48.73		20	1.86		29	26.18	
	-2.58			-2.19			-0.89			-2.36	

$$\begin{aligned}
 s \\
 0 &= -2.58 - 16 + 0.8 - 2.50 \\
 &= -2.19 + 7.8 - 41 - 2.60 \\
 &= -2.36 + 5.1 - 2.7 - 2.63 \\
 s' \\
 0 &= -0.89 + 3.13 \\
 &= -2.39 + 3.8 \\
 &= +1.45 + 2.75 \\
 n &= -5.3
 \end{aligned}$$

$$\begin{aligned}
 dr + m &= +2.58 \\
 m &= +6.9 \\
 dr &= +1.99 \\
 ddr &= +1.10
 \end{aligned}$$

h	m	s	h	m	s	h	m	s	h	m	s
13	08	588	13	18	319	14	09	535	14	20	571
		9			407			535			545
		10			266			577			549
		11			87			60			52
		11			52.8			2.1			5.7
		12			35.7						
		13			19.7						
		14			4.1						
		14			45.3						
11	52.49		18	36.10				577			5718
11	53.12		18	36.08		9		57.74			5716
12	17.08		18	35.27				57.74			57.31
	-24.96			-2.19				-2.00			-1.50

$$\begin{aligned}
 s \\
 0 &= -2.19 - 18 + 10 - 2.29 \\
 &= -2.00 + 0.6 - 1.9 - 2.19 \\
 &= -1.50 + 1.30 - 1.0 - 2.20 \\
 s' \\
 0 &= -2.496 - 42.10 \\
 &= -1.98 + 3.9 \\
 &= +23.06 + 42.57 \\
 n &= -5.34
 \end{aligned}$$

$$\begin{aligned}
 dr + m &= +2.23 \\
 m &= +6.4 \\
 dr &= +1.58 \\
 ddr &= +1.8
 \end{aligned}$$

$$M. b = +16.2$$

June 10 1875 N.A.R.

h	m	s	h	m	s
13	18	22.2	12	9	58.6
		89.2			55.7
		36.3			58.0
		88.8			82
		40.6			2.4

3636	57.77
86.34	57.26
3826	57.23
-1.82	-1.77

$$s = -192 - 18 + 88 - 1.8$$

$$-1.77 + 36 - 18 - 1.95$$

$$s$$

$$A + m = +1.89$$

$$m = +.64$$

$$A = +1.25$$

$$s.c. = \begin{array}{r} h \ m \ s \\ 15 \ 1 \ 50.0 \\ + \ 1.2 \\ 15 \ 1 \ 51.2 \\ 8 \ 14 \ 30.7 \\ 1 \ 36.2 \\ 4 \ 47 \ 20.0 \\ 1 \ 36.2 \\ 9 \ 45 \ 44.3 \\ + \ 15.4 \end{array}$$

June 11 1875

Professor Joseph Willcocks
died this morning at one
o'clock A.M. of Congestion
of the brain.

Wm. A. Rogers

I here record my testimony to his
unvarying kindness in all my re-
lations as his assistant.

W.A.R.

June 13 1875

W. R.

June 14 1875 W. R.

h m s
14 20 57.1
54.6
54.9
14
4.7

h m s
14 27 37.0
46.0
54.7
8.5
11.7

h m s
14 43 53.7
53.8
54.9
6.1
3.1

h m s
14 43 54.0
56.2
58.3
6.4
2.5

h m s
13 18 32.2
34.4
36.5
38.5
40.5

54.94
54.92
54.31
-1.39

54.52
54.46
54.63
-0.17

54.72
54.90
54.10
-2.20

58.28
58.26
0.09
-1.83

36.46
36.44
38.23
-1.79

$$o = -1.37 + 1.39 - .58 - 1.95 \\ -2.20 - 0.28 + .12 = -3.08$$

$$u = -0.14408 \\ -1.78 + .51 \\ u = +1.61 + 2.56 \\ m = +1.5$$

$$o = -1.83 - .78 + .9 - 1.68 \\ -1.79 - .78 + .14 = -1.67$$

$$dI+m = +2.01 \\ m = +.64 \\ dI = +1.57$$

$$SC = 15 \quad h \quad m \quad s \\ 7 \quad 43.0 \\ +1.6 \\ 15 \quad 7 \quad 44.6 \\ 22 \quad 28.8 \\ 9 \quad 45 \quad 20.8 \\ 1 \quad 35.9 \\ 9 \quad 43 \quad 44.9 \\ 9 \quad 44 \quad 0.0 \\ +1.51$$

$$dI+m = +1.68 \\ m = +.64 \\ dI = +1.04 \\ dI = -.26$$

$$SC = 15 \quad h \quad m \quad s \\ 20 \quad 36.0 \\ 1.0 \\ 15 \quad 20 \quad 37.0 \\ 5 \quad 20 \quad 16.9 \\ 9 \quad 50 \quad 26.1 \\ 1 \quad 36.7 \\ 9 \quad 45 \quad 43.4 \\ 14 \quad 49 \quad 0.0 \\ +1.66$$

June 15 1875 W.A.R.

June 20 1875 W.A.R.

h	m	s	h	m	s
13	42	22.1	14	9	54.0
		25.3			56.2
		38.5			58.0
		41.7			0.6
		45.0			2.8

42	38.2	9	58.2
42	38.50	9	58.40
42	39.37	9	59.69
	-0.87		-1.29

$m = -.50$

s
 $0 = -0.87 + 1.19 - 6.0 - 1.47$
 $-1.29 + 3.6 - 1.8 - 1.47$

s
 $dt + m = +1.47$
 $m = +.64$
 $dt = +0.83$
 $ddt = -.22$

h m s
 $SC = 14$ 40 26.0
 14 40 7.08
 14 40 26.8
 14 39 13.5
 9 06 13.3
 9 1 24.5
 9 4 23.8
 19 5 0.0
 $+16.2$

h	m	s	h	m	s	h	m	s	h	m	s
13	42	32.9	13	48	41.3	14	0	52.6	14	57	11.2
		36.1			43.5			57.2			14.1
		39.5			45.6			58.7			16.7
		42.6			47.8			1.9			19.5
		45.8			50.0			4.4			22.3
								6.8			
								9.2			
								11.6			
								14.0			

39.38	45.64	4.04	16.76
42	39.36	41	40.0
42	39.27	48	40.8
	-1.09		+0.32
			-0.03

s
 $0 = +0.9 + 1.19 - 3.6 - 2.7$
 $-4.23 + 0.24 - 1.0 - 4.3$
 $-0.23 + 0.66 - 2.0 - 2.3$
 $0 = +0.32 + 2.14$
 $0 = -0.09 + 1.73$
 $0 = +4.1 + 1.41$
 $m = -.30$

s
 $dt + m = +0.31$
 $m = +.64$
 $dt = -0.33$
 $ddt = -0.23$

h m s
 $SC = 15$ 16 12.0
 15 16 0.3
 5 53 56.3
 9 22 16.4
 1 32.1
 9 20 43.3
 19 21 0.0
 $+16.7$

1475 June 21 N.A.R.

h m s	d m s	57 111
14 50 56.2	14 57 03	140
02	30	167
42	58	154
49	277	232
11.9	304	
15.8	329	
19.6		
23.5		
27.5		
57 11.87	57 16.67	57 16.68
57 11.81	16.65	
57 10.32	16.76	
+1.48	+0.11	

$$\begin{aligned}
 0 &= +0.11 + 66 - 17 - .06 \\
 0 &= +1.49 + 11 \\
 0 &= 1.38 + 3.5 \\
 n &= -2.5
 \end{aligned}$$

$$\begin{aligned}
 dt+m &= +.06 \\
 m &= +.64 \\
 dt &= -0.58 \\
 ddt &= -.20
 \end{aligned}$$

$$\begin{aligned}
 SC &= 15-16 \ 9.0 \\
 &\quad -0.6 \\
 N &= 16 \ 8.4 \\
 S &= 57 \ 02.8 \\
 9 &= 18 \ 15.6 \\
 &\quad -1 \ 31.5 \\
 9 &= 16 \ 43.1 \\
 9 &= 17 \ 02 \\
 &\quad +1.9
 \end{aligned}$$

1475 June 21 N.A.R.

h m s	d m s	h m s	h m s
14 9 55.2	15 20 49.0	14 29 21.7	14 0 54.9
57.4	52.5	24.0	54.9
57.6	08.9	26.3	48
18	09.3	28.6	37
4.0	5.7	31.0	14.6
	8.9		
	9.0		
	12.8		
	16.4		
57.60	2.50	26.26	4.8
57.58	2.43	26.24	4.7
57.54	2.1	26.14	3.3
+0.44	+1.66	+0.10	+1.21
-0.05			

$$\begin{aligned}
 0 &= +0.29 + .36 \\
 &\quad +0.10 + .51 \\
 n &= .65 \\
 0 &= -0.5 + 3.6 - 2.3 - 2.8 \\
 &\quad +1.0 + 5.1 - 3.3 - 2.3 \\
 0 &= +1.66 + 3.13 \\
 0 &= +0.19 + .49 \\
 &\quad 1.47 + 2.69 \\
 0 &= +1.66 + 3.13 \\
 0 &= +1.21 + 2.14 \\
 0 &= +.02 + .44
 \end{aligned}$$

$$\begin{aligned}
 dt+m &= +0.20 \\
 m &= +.64 \\
 dt &= -0.39 \\
 ddt &= +0.06
 \end{aligned}$$

$$\begin{aligned}
 SC &= 15 \ 8 \ 50.9 \\
 &\quad -0.4 \\
 N &= 2 \ 54.6 \\
 6 &= 9 \ 42.5 \\
 8 &= 53 \ 12.5 \\
 1 &= 2.3 \\
 8 &= 51 \ 49.6 \\
 &\quad +1.48 \\
 &\quad +10.2 \\
 0 &= +1.19 + 1.70 \quad n = -.70 \\
 &\quad +1.64 + 2.69 \quad n = -.61
 \end{aligned}$$

1475 June 2 1475 NOK

June 28 1475 NOK

h m s	h m s	h m s
14 50 56.9	15 20 49.3	15 29 22.2
0.9	82.5	24.5
46	56.1	26.7
58	59.8	29.1
12.6	2.8	31.5
16.4	6.4	
20.2	10.0	
24.2	13.1	
28.3	16.6	

12.53		26.80
12.94	20 2.99	29 26.78
9.94	2.53	26.12
2.53	0.73	+0.66
+25.3	+2.20	+0.66

m = -60

$$0 = +0.66 + 0.7 - 3.1 + 3.5$$

$$0 = +20.3 + 3.65 + 2.20 + 3.13$$

$$0 = +9.66 + .57$$

$$d\tau + m = -0.35$$

$$m = +.64$$

$$d\tau = -0.99$$

$$dd\tau = -.20$$

$$0 = +18.7 + 3.14 \quad m = -60$$

$$+15.4 + 2.62 \quad -.59$$

h m s	h m s	h m s	h m s
14 9 56.0	14 07 12.3	15 20 49.7	15 29 22.3
55.2	15.6	52.9	24.6
0.3	17.8	56.4	27.0
2.6	20.6	59.6	29.1
4.8	23.4	3.1	31.6
		6.5	
		10.0	
		13.3	
		16.8	

10 0.36	57 17.42	21 2.98	26.82
0.34	17.10	2.92	26.91
59.59	16.67	0.67	26.11
+0.75	+1.13	+2.25	+0.79

$$0 = +0.70 + 3.6 - 1.9 + 0.6$$

$$+1.13 + .66 - 3.4 + .79$$

$$+0.79 + .07 - .26 + .53$$

$$0 = +2.20 + 3.13$$

$$0 = 2.59 + .57$$

$$0 = +1.36 + 2.62$$

$$m = -.52$$

$$d\tau + m = -0.63$$

$$m = +0.64$$

$$d\tau = -1.27$$

$$dd\tau = -.28$$

h m s
SC = 15 38 44
-1.3
15 38 42.7
6 49 42.5
9 29 0.2
9 12 1.0
1 30.4
9 10 43.6
9 11 6.8
16.4

Aug 7 1875

Seeing very bad.

$$t_{90} = -45$$

slat
16° 52' 20"
-24° 0' 36"

[illegible][illegible]

July 7

$$\begin{array}{r} \text{Index error } h'' \\ 15.58 = +16 \quad 117 \\ 15.52 \quad 106 \\ 15.58 \quad 128 \\ 16.21 \quad 183 \\ \hline +16 \quad 1205 \end{array}$$

$$\begin{array}{r} z = +5' 19.53 \\ \text{ref.} = +2 + 9.65 \\ + 28.18 \\ c + 16 1205 \\ \hline 23 41.23 \end{array}$$

$$\begin{array}{r} J = -192 22 48.6 \\ - 24 00 52.6 \\ \hline \text{Red. to } 1875.0 + 13.0 \\ J 1875.0 - 24 00 89.6 \end{array}$$

$$\begin{array}{r} o = +1.76 + 57 - 32 + 1.44 \\ + 1.40 + 12 - 07 + 1.33 \\ + 1.59 + 08 - 05 + 1.54 \\ + 1.24 - 33 + 21 + 1.45 \\ + 1.19 - 38 - 24 + 1.43 \\ + 1.23 - 49 - 30 + 1.58 \\ \hline + 1.46 \end{array}$$

$$\begin{array}{r} o = +4.40 + 4.78 \\ + 6.53 + 7.33 \\ \hline o = +1.40 - 0.08 \end{array}$$

$$\begin{array}{r} o = +3.00 + 4.86 m = -6.2 \\ o = 4.63 + 7.41 - 6.2 \\ \hline 4.52 \end{array}$$

$$\begin{array}{r} SC = 16^h 29^m 17^s \\ 16 29 17.9 \\ \hline 1 0 57.1 \\ 9 24 17.1 \\ \hline 1 03.1 \\ 9 26 44.0 \\ \hline 9 27 00.6 \\ + 16.0 \end{array}$$

$$\begin{array}{r} dT + m = -1.46 \\ m = +.64 \\ dT = -2.10 \\ \hline d dT = +.10 \end{array}$$

Aug 1875. W. A. R. Seeing very bad.

$\frac{1}{10}$ h m s	$\frac{1}{10}$ h m s	$\frac{1}{10}$ h m s	$\frac{1}{10}$ h m s	$\frac{1}{10}$ h m s
29 101	38 103	44 102.21	16 21 292	16 51 587 5
29 440	38 590	44 102.11	21 439	52 472

h m s
16 58 322

29 230	28 63	44 347	21 439	52 110	m s 52 200
20.3	84	36.9	46.2	13.1	22.1
27.6	104	39.1	46.6	15.5	24.4
29.8	125	41.1	50.8	32.7	26.7
32.1	147	43.0	53.1	35.7	28.9
				38.0	
27.58	1046	3896	4852	(24.33)	24.42
27.56	1044	3894	4850	2435	
26.18	26.97	37.49	47.41		
+1.53	+1.47	+1.50	+1.09		

409
48.1
55.4
5.0
10.2
18.6
26.5
33.8

318
3.07
576.5
+6.42

$$\begin{aligned} 0 &= +1.83 + 51 - 28 + 1.25 \\ &+ 1.97 + 12 - 07 + 1.40 \\ &+ 1.50 + 05 - 05 + 1.45 \\ &+ 1.09 - 49 + 27 + 1.36 \end{aligned}$$

$$\begin{aligned} 0 &= +0.42 + 7.23 \\ 0 &= +1.40 + 05 \\ 0 &= +4.02 + 7.28 \end{aligned}$$

$$n = -.50$$

$$\begin{aligned} dt + m &= -1.37 \\ m &= +.64 \\ dt &= -2.01 \\ ddt &= +.09 \end{aligned}$$

$$S.C. = \begin{array}{r} h m s \\ 17 4 190 \\ 4 4 543 \\ 6 59 24.7 \\ 9 59 22.7 \\ 9 59 38.2 \\ 9 59 44.5 \end{array}$$

Circle readings of $\Delta \alpha, \Delta \delta = 16^h 52^m 20^s \quad \delta = -24^{\circ} 0' 36''$

					Bar.	Therm.	alt.	W. 4			
July 3	1875	0	4	58.3	184	30.18	71.1	65.2	5	23.70	28.70
July	"	(1) 0	4	49.1	94				5	19.51	
		(3) 5	0	53.1	14.3	30.23	69.2	64.9	5	19.56	19.53
		(2) 5	0	33.7	53.8				5	19.47	
July 8		0	4	39.2	59.2	30.29	73.1	66.9	5	20.01	
		5	0	37.5	57.8				5	20.32	20.17

July 3 $T = 15.52 \quad 20.70$
 $\Delta T = -2.05$
 $\Delta \log V = +.27$
 $\alpha / 15^h 52^m 23.32$
 $- 2.85$
 $15^h 52^m 20.47$
 16.5
 8

July 7 24.64
 24.50
 -1.37
 $+ .28$
 $+ 2.5$
 23.45
 23.25
 2.85
 20.60
 20.43

July 8 24.50
 24.50
 -1.37
 $+ 2.5$
 23.25
 2.85
 20.43
 20.50
 20.50

$T = \log 15.38 + 16' 10.26 \quad R = 5' 20.17$
 $16.21 + 16 13.69 \quad \Delta T = +2 9.35$
 $+ 16 11.97 \quad + 16 11.51$
 $2.8 4.47$
 $(42) 2.2 4.66$
 $5 = - 24 00 52.59$
 $Red to 1870 + 13.03$
 $1870 - 24 00 39.5$

July 11 1875 N.A.R.

h m s	h m s	h m s
15 10 13.3	15 29 22.6	15 38 5.7
14.7	34.8	7.7
19.8	2.1	9.8
22.0	29.3	11.9
24.0	31.4	14.0

10 19.80	2.9 34.10	38. 9.80
11 19.78	2.9 34.08	38 9.80
11 19.74	2.9 34.00	38 9.85
+ 0.74	+ 1.08	+ 0.85

$n = -0.27$

$\sigma = +0.74 - 1.6 + 0.9 + 0.83$
 $+ 1.08 + 1.7 - 1.8 + 0.80$
 $+ 0.85 + 1.2 - 0.7 + 0.78$

$dt + m = -0.80$
 $m = +0.64$
 $dt = -1.44$
 $ddt = +.19$

$S.C. = 17 \begin{matrix} h & m & s \\ 2 & 60 \\ & 14 \\ 17 & 2 & 46 \\ & 16 & 41.0 \\ 6 & 45 & 20.6 \\ & 1 & 38.9 \\ 9 & 43 & 44.7 \\ & & + 16.3 \end{matrix}$

July 14 1875

m assumed $+ .64$
 n " $- .55$

ΔT by α Virg. $- 1.40$
 η Urs. Maj. $- 1.36$

N. Clock - S. Clock 14.76

$N.$ Clock fast 16.14
 Took off 1 cube.

July 15 1875

m assumed $+ .64$
 n " $- .55$

ΔT by α Tauri $- 1.47$
 $N.$ Clock - S. Clock 14.95
 $N.$ Clock fast 16.42

July 15.3 $\Delta T = -1.40$ J. F. M.

1875 July 17th J. F. m.

$$\begin{array}{lcl} \beta \text{ Bootis} & \Delta t = -1.37 & \\ \beta \text{ Lyrae} & = -1.38 & \\ m, \text{ Bootis} & = -1.36 & \end{array} \left. \vphantom{\begin{array}{l} \beta \text{ Bootis} \\ \beta \text{ Lyrae} \\ m, \text{ Bootis} \end{array}} \right\} -1.37$$

$$\Delta \Delta t = +0.01$$

1875 July 19 J. F. m.

$$\begin{array}{lcl} \text{Spica} & \Delta t = -1.61 & \\ \gamma \text{ Virginis} & = -1.66 & \\ \gamma \text{ Bootis} & = -1.56 & \end{array} \left. \vphantom{\begin{array}{l} \text{Spica} \\ \gamma \text{ Virginis} \\ \gamma \text{ Bootis} \end{array}} \right\} -1.61$$

$$\Delta \Delta t = -0.12$$

1875 July 20 J. F. m.

$$\begin{array}{lcl} \text{from } \epsilon \text{ Bootis} & \Delta t = -1.40 & \\ \alpha \text{ Lyrae} & = -1.52 & \\ \beta^2 \text{ Bootis} & = -1.49 & \end{array} \left. \vphantom{\begin{array}{l} \text{from } \epsilon \text{ Bootis} \\ \alpha \text{ Lyrae} \\ \beta^2 \text{ Bootis} \end{array}} \right\} \text{mean} -1.47$$

$$\Delta \Delta t = +0.14$$

1875 July 21 J. F. m.

$$\begin{array}{lcl} \text{from Spica} & \Delta t = -1.52 & \\ \gamma \text{ Vir. Maj.} & = -1.50 & \\ \gamma \text{ Bootis} & = -1.39 & \end{array} \left. \vphantom{\begin{array}{l} \text{from Spica} \\ \gamma \text{ Vir. Maj.} \\ \gamma \text{ Bootis} \end{array}} \right\} \text{mean} -1.47$$

$$\Delta \Delta t = 0.00$$

1875 July 23rd R. m. n.

$$\begin{array}{lcl} \text{from Capella} & \Delta t = -1.78 & \\ \alpha \text{ Tel} & = -1.82 & \end{array} \left. \vphantom{\begin{array}{l} \text{from Capella} \\ \alpha \text{ Tel} \end{array}} \right\} \text{mean} = -1.80$$

1875 July 24.4 J. F. m.

$$\begin{array}{lcl} \text{from } \gamma \text{ Herculis} & \Delta t = -1.60 & \\ \kappa \text{ Ophiuchi} & = -1.74 & \\ \alpha' \text{ Herculis} & = -1.65 & \end{array} \left. \vphantom{\begin{array}{l} \gamma \text{ Herculis} \\ \kappa \text{ Ophiuchi} \\ \alpha' \text{ Herculis} \end{array}} \right\} -1.66$$

$$\Delta \Delta t = -0.06$$

1875 July 25.4 J. F. m.

$$\begin{array}{lcl} \text{from } 12 \text{ Can. Venet} & \Delta t = -1.98 & \\ \gamma \text{ Virginis} & = 1.92 & \\ \gamma \text{ Vir. Maj.} & = 1.94 & \\ \gamma \text{ Bootis} & = 1.68 & \end{array} \left. \vphantom{\begin{array}{l} 12 \text{ Can. Venet} \\ \gamma \text{ Virginis} \\ \gamma \text{ Vir. Maj.} \\ \gamma \text{ Bootis} \end{array}} \right\} -1.88$$

$$\Delta \Delta t = -0.22$$

1875 July 27.4 J. F. m.

$$\begin{array}{lcl} \text{from } \gamma \text{ Herculis} & \Delta t = -2.23 & \\ \kappa \text{ Ophiuchi} & = 2.19 & \\ \alpha \text{ Herculis} & = 2.26 & \end{array} \left. \vphantom{\begin{array}{l} \gamma \text{ Herculis} \\ \kappa \text{ Ophiuchi} \\ \alpha \text{ Herculis} \end{array}} \right\} -2.23$$

$$\Delta \Delta t = -0.07$$

1875 July 28.3 J. F. m.

$$\begin{array}{lcl} \text{from Spica} & \Delta t = -2.37 & \\ \gamma \text{ Vir. Maj.} & = 2.54 & \\ \gamma \text{ Bootis} & = 2.24 & \end{array} \left. \vphantom{\begin{array}{l} \text{from Spica} \\ \gamma \text{ Vir. Maj.} \\ \gamma \text{ Bootis} \end{array}} \right\} -2.38$$

$$\Delta \Delta t = 0.15$$

July 31 1870 - M.S.R.

h m s	h m s	h m s
16 57 45.9	16 58 32.2	17 8 57.4
48.0	39.4	59.8
50.1	46.5	20
52.2	54.2	42
54.2	2.2	6.3
	9.7	
	16.4	
	25.0	
	32.4	
50.08	02.07	2.00
47.49	54.77	04.30
+ 2.59	+ 1.30	+ 2.70

$$0 = +2.59 + 1.4 - 11 + 2.48 \\ + 2.70 + 2.26 - 17 + 2.53$$

$$0 = +7.30 + 7.33 \\ + 2.64 + 2.1 \\ 0 = +4.66 + 7.12 \\ n = +6.5$$

$$dT + m = -2.50 \\ m = +.64 \\ dT = -3.14 \\ ddr = -.25$$

S. b.	h m s
18	12 57.0
	- 3.1
18	12 53.9
8	35 35.2
7	37 16.7
	84.5
9	35 44.2
	+ 1.58

Aug. 4 1870 - M.S.R.

h m s	h m s	h m s	h m s
16 22 15.3	16 28 45	16 30 17.4	16 38 36.4
17.4	11.7	14.4	34.3
19.7	14.8	21.6	42.0
21.8	17.6	23.4	44.4
23.9	20.9	25.9	47.3
26.0	23.5		
28.2	26.3		
30.3	29.1		
32.6	32.1		
23.80	20.48	20.60	42.00
23.96	20.42	20.58	41.98
20.10	16.32	18.99	38.82
+ 3.66	+ 4.10	+ 2.84	+ 3.16

$$0 = +2.59 - 1.8 + 0.9 + 2.68 \\ + 3.16 + 6.3 - 31 + 2.85 \\ 0 = +2.87 + 2.22$$

$$0 = +2.66 + 1.88 \\ 0 = +4.10 + 2.61$$

$$0 = +7.9 + 1.66 \quad n = -48 \\ 0 = +7.23 + 2.39 \quad -32$$

$$dT + m = +2.76 \\ m = +.64 \\ dT = +0.40 \\ ddr = +.07$$

S. b.	h m s
17	28 36.6
6	51 21.4
8	37 10.4
	- 1 24.7
8	20 45.5
	+ 1.45

Aug 7 1475 W.A.R.

Aug 8 1475 W.A.R.

h m s	h m s
18 11 50.8	18 14 53.1
70	55.2
250	57.2
418	59.3
597	14
177	
342	
526	
10.9	
5997	5724
1256	5722
1245.1	5825
+1470	+397

$$\begin{aligned}
 0 &= +1397 - 0.5 + 0.3 + 4.00 \\
 &= +1470 + 16.8
 \end{aligned}$$

$$0 = +1073 + 16.88$$

$$m = -64$$

$$\begin{aligned}
 dt + m &= -1100 \\
 m &= +64
 \end{aligned}$$

$$dr = -464$$

$$ddt = -41$$

h m s
16 22 16.9
190
241
231
256
258
300
322
343
2555
2551
1986
+555

$$\begin{aligned}
 n &= 60 \\
 0 &= +555 + 188 - 112 + 443
 \end{aligned}$$

$$\begin{aligned}
 dt + m &= -443 \\
 m &= +64 \\
 dr &= -507 \\
 ddt &= -43
 \end{aligned}$$

Aug. 9 1875 W.A.R.

Aug. 10 1875 W.A.R.

h m s	h m s	h m s
11 499	18 14 536	16 21 469
51	556	482
23.0	598	576
41.2	598	538
55.7	18	561
17.0		
34.0		
51.9		
7.7		
52.90	577.2	51.52
58.88		5.00
12 5862	14 57.70	47.16
12 4840	53.29	+4.34
7422	+4.46	

$$\begin{aligned}
 0 &= +9.34 - 9.9 + 2.9 + 4.63 \\
 &+ 4.46 - 0.5 + 0.3 + 4.49 \\
 0 &= +4.22 + 16.83 \\
 0 &= +4.40 - 1.27 \\
 0 &= +9.82 + 17.10 \\
 m &= -5.5
 \end{aligned}$$

$$\begin{aligned}
 dt+m &= +4.56 \\
 m &= .64 \\
 dt &= -6.20 \\
 ddt &= -.13
 \end{aligned}$$

$$\begin{aligned}
 s.e. \quad h \quad m \quad s \\
 5 \quad 5 \quad 4 \quad 17.0 \\
 5 \quad 5 \quad 1 \quad 16.8 \\
 9 \quad 11 \quad 4.2 \\
 20 \quad 43 \quad 7.6 \\
 3 \quad 23.6 \\
 20 \quad 39 \quad 44.0 \\
 + 16.0
 \end{aligned}$$

h m s	h m s	h m s	h m s
16 21 420	18 19 487	18 14 539	18 32 447
494	68	539	574
51.7	22.8	580	500
540	42.2	6.3	52.6
56.3	58.7	2.4	55.1
	17.1		
	83.1		
	52.6		
	9.9		
21 5168	12 5899	14 5810	12 4996
21 5166	12 5873	14 5808	12 4994
21 77.14	12 48.07	14 53.23	12 49.77
+4.52	+1.66	+4.85	+3.11

$$\begin{aligned}
 0 &= +4.52 - 4.9 + 3.1 + 4.83 \\
 &+ 4.45 - 0.5 + 0.3 + 4.48 \\
 &+ 5.17 + 8.0 - 1.19 + 4.68 \\
 0 &= +1.66 + 16.83 \\
 0 &= +4.51 + .09 \\
 0 &= +1.25 + 16.74 \\
 m &= -.61
 \end{aligned}$$

$$\begin{aligned}
 dt+m &= -4.65 \\
 m &= +.64 \\
 dt &= -5.49 \\
 ddt &= -.29
 \end{aligned}$$

Aug. 12 1875 W.T.R. Aug. 14 1875 W.T.R.

h m s
16 51 40.4
42.5
44.6
1.3
3.4
5.3

5295 5296

5293
49.36
6.87

$$0 = +5.57 + 17 - 10 + 5.47$$

$$\begin{aligned} dt + m &= -5.47 \\ m &= +1.64 \\ dt &= -6.11 \end{aligned}$$

$$ddt = -3.1$$

S.C. = 16 h m s

6.1
16 54 51.9
9 22 53.8
7 31 58.1
1 14.0
44.1

h m s
16 51 49.7
51.8
53.9
56.0
58.1
40.9
49.3
57.0
4.0
11.7
19.5
26.9
31.2

5390
5388
57.33
+6.55

h m s
16 58 33.1
40.9
49.3
57.0
4.0
11.7
19.5
26.9
31.2

582
560
55.14
6.46

$$\begin{aligned} 0 &= +6.55 + 17 - 0.6 + 6.49 \\ &+ 6.46 + 2.6 - 0.9 p.37 \end{aligned}$$

$$\begin{aligned} 0 &= +11.55 + 16.13 \\ 0 &= +6.50 + 1.21 \\ 0 &= +5.15 + 16.62 \\ n &= -1.34 \end{aligned}$$

$$\begin{aligned} dt + m &= -6.42 \\ m &= +1.64 \\ dt &= -5.06 \\ ddt &= -1.47 \end{aligned}$$

Aug 16th 1875 NAR.

h m s	h m s	h m s	h m s
3 4 27.8	3 4 49.8	3 34 7.3	3 40 9.8
32.7	52.1	10.3	12.2
33.2	04.2	13.5	14.4
42.2	06.5	16.6	16.9
46.8	08.8	19.6	18.9
51.6			
56.2			
08			
5.7			
46.80	54.26	13.46	14.42
46.70	54.24	13.44	14.40
35.32	45.14	5.88	5.33
+11.83	+9.10	-9.56	-9.07

$$O = +1.43 + 4.82 \\ + 9.21 + 6.3$$

$$a = +2.22 + 0.75 \\ u = -60$$

$$dt + m = -8.81 \\ m = +.44 \\ dt = -9.25 \\ ddt = -5.3$$

$$u = -9.10 + 0.37 + 2.2 + 8.88 \\ - 8.46 + 1.8 - .65 + 8.1 \\ - 8.07 + .94 - 2.6 + 8.81$$

$$h m s \\ S.P. = 7 42 0.2 \\ - 9.0 \\ 7 41 52.5 \\ 9 46 33.2 \\ 21 55 18.3 \\ 3 38.4 \\ 21 51 43.9 \\ + 16.1$$

Aug. 25 1875 NAR.

h m s	h m s	h m s	h m s
18 11 53.7	18 28 37.0	18 32 54.0	18 40 34.9
11.7	39.1	56.7	56.7
27.7	41.2	59.3	17.3
43.7	43.3	1.9	38.8
-5.0	45.4	4.6	0.3
21.9			
39.6			
57.6			
14.8			
41.8	41.20	59.30	17.80
13 39.2	28 44.18	32 46.28	41 18.11
12 38.63	21.04	44.53	41 18.19
+28.29	+14.14	+14.75	-1.08

$$O = +14.14 - 10 + 10 + 14.24 \\ + 14.75 + 60 - 36 + 14.19$$

$$O = +20.29 + 16.83 \\ - 1.00 - 20.70$$

$$u = +14.44 + .32$$

$$O = +10.85 + 16.83 \quad u = .66 \\ O = +15.44 + 21.02 = -73 \\ 70$$

$$dt + m = -14.22 \\ m = +.64 \\ dt = -14.86 \\ ddt = -5.3$$

Aug. 26 1475 W.A.R.

h m s	h m s	h m s	h m s
16 51 57.8	16 59 32	17 5 57	18 12 27.9
0.0	9.6	11.8	4.8
2.0	15.2	13.9	4.6
4.2	25.0	16.0	22.4
6.3	34.8	18.2	39.3

2.06	17.86	13.92	24.00
3.09	17.47	13.90	3.74
4.76	50.34	58.86	38.20
+1488	+2313	+1484	-25.44

$0 = +14.88 + 17.11 + 14.77$
 $+ 14.90 + 26.17 + 14.77$

$0 = +24.13 + 7.33$
 $0 = 14.91 + 2.21$

$0 = +25.44 + 16.83$
 $0 = +14.91 + 2.21$
 $0 = +10.03 + 16.42$
 $n = -6.4$

$dT+m = -14.77$
 $m = +.64$
 $dT = -15.41$

$ddr = -.59$

E.C. = 5.0 fact. of S.E.

S.C.	h m s	h m s
	19 15 33	7 50 37.0
	-15.4	-15.7
	19 15 18.6	7 50 21.3
	10 15 56	10 15 56
	8 59 12.0	21 32 57
	1 25.0	3 31.7
	2 55 44.0	21 25 40.1

Aug. 29 1475 W.A.R.

h m s	h m s
17 18 59.2	19 19 27.6
15	29.7
8.7	31.8
6.0	33.9
8.3	36.0

3.74	
3.72	
-16.90	31.80
-46.82	31.78
	14.49
+16.90	+17.29

$n = -6.0$
 $0 = +16.90 - 6.0 + 3.9 + 17.29$
 $0 = +17.29 + 1.5 - 0.3 + 17.26$

$dT+m = -17.24$
 $m = +.64$
 $dT = -17.91$ $ddr = .83$

S.C.	h m s	h m s
	19 22 26.9	8 13 31
	17.9	18.3
	19 22 8.1	8 13 12.7
	10 29 55.2	10 29 55.2
	9 02 2.9	21 43 15.0
	1 28.8	3 33.5
	9 0 44.1	21 39 44.0
	15.0	

E.C. = 5.0 fact. of S.E.

Aug. 30 1875 W.A.R.

h	m	s	d	m	s
17	41	49.5	17	53	56.1
		51.9			59.7
		54.2			58
		56.5			61
		58.9			84

d	h	m	s	d	h	m	s
41	52	20		52	28	2	
41	54	18		54	28	50	
41	35	90		58	44	00	
		+18.24				+18.80	

$n = -60$
 $0 = +18.24 + 53 - 32 + 17.92$
 $+18.24 + 26 - 75 + 18.05$

$dC = 8$ 18 280
 -18.6
 8 18 80
 10 33 578
 21 44 176
 -3 336
 21 40 440
 $+18.0$

$\Sigma C = 15.9$ ant. of δC .

Aug. 31 1875

h	m	s
19	40	36.6
		38.9
		40.8
		42.9
		45.0

40.78
 40.76
 21.72
 19.04

$n = -60$
 $0 = +19.04 + 18 - 11 + 18.93$

$dT + m = -18.93$
 $m = +64$
 $dT = 19.57$
 $ddt = -1.57$

$\delta C = 8$ 3 23
 -20.0
 8 3 23
 11 37 494
 21 28 135
 3 30.5
 43.8

Sept. 11 1875 W.A.R.

h m s	h m s
19 40 37.3	19 44 59.5
39.4	1.5
41.6	3.5
43.6	5.7
45.6	7.7

41.50	3.58
40 41.48	4 5 3.56
40 41.68	41 43.78
+19.80	+19.78

m = -60

0 = +19.80 + 18 - 11 + 19.69
+ 19.78 + 10 - 49 + 19.69

dttm = -19.69
m = -64
dr = 203.3
ddt = -.76

S.C. =

h m s
26 57 20
- 20.3
28 56 59.7
10 41 40.9
15 19.8
1 31.0
9 13 43.8
+16.2

Sept 5 1875 W.A.R.

h m s	h m s
19 40 30	19 44 32.4
50	34.4
72	36.4
93	38.6
113	40.7

7.18	28.52
7.16	36.50
43.76	13.11
+23.40	+23.39

5' n = -60
0 = +23.40 + 18 - 11 + 23.29
+ 23.39 + 15 - 49 + 23.30

dttm = -23.30
m = +64
dr = 23.94
ddt = -.90

S.C. = 8 h 47 m 14.0
24.9
8 46 48.6
10 57 31.1
21 48 18.5
3 34.5
21 45 44.0
16.0

S.C. far. of S. 8. d. 10 A.M. M.T. = 31.5

Sept. 68 No 12

5 ^h 7 ^m 49.4	5 ^h 8 ^m 54.1
52.6	86.2
55.5	114
58.3	144
1.8	2.4

55.46	58.30
57.44	58.28
24.97	33.61
+25.47	+24.67

$$n = -60$$

$$0 = +25.47 + 103 - 62 + 24.85$$

$$+ 24.67 - 14 + 0.8 + 24.75$$

$$d\Gamma m = -24.20$$

$$m = +.64$$

$$dr = -25.44$$

$$ddr = -1.99$$

$$S.P. = 8^h 21^m 04^s$$

8	20	40.1
11	01	25.7
21	19	18.8
	3	29.6
21	15	19.2
		+15.8

Sept. 7 No 13

19 ^h 40 ^m 42.7	19 ^h 45 ^m 4.7
46.8	6.8
46.8	8.0
47.8	11.0
51.0	13.0

46.82	8.80
46.80	8.88
21.44	43.75
+25.16	+25.15

$$n = -60$$

$$0 = +25.16 + 1.8 - 11 + 25.05$$

$$+ 25.15 + 12.07 + 25.08$$

$$d\Gamma m = 25.06$$

$$m = -.64$$

$$dr = 25.70$$

$$ddr = -.52$$

$$S.P. = 9^h 7^m 11.0^s$$

9	-26.0
6	45.0
11	24.2
22	01.20.8
3	36.4
21	57.44.4

Sept. 8 1975 W.D.R.

19 ^h 40 ^m 5 ^s	19 ^h 45 ^m 5 ^s
43.3	52.1
45.4	7.5
47.5	9.5
49.6	11.7
51.7	13.8

47.50	9.58
47.48	9.56
21.64	43.23
25.84	25.83
	25.13

$n = -6.0$
 $\sigma = +25.84 + 18 - 11 + 25.73$
 $+ 25.88 + 12 - 07 + 25.76$

$dt+m = +25.75$
 $m = -60$
 $dt = -26.35$
 $ddt = -.65$

	h	m	s
S.C.	5	13	29
			-26.6
	5	13	29
	11	9	20.8
	18	3	41.6
		2	57.5
	18	0	43.1
			15.9

Sept. 13 1975 W.D.R.

18 ^h 45 ^m 5 ^s	18 ^h 47 ^m 5 ^s
54.2	58.0
56.6	0.3
59.1	2.6
1.6	4.9
4.1	7.2

59.12	2.60
59.10	2.58
29.77	33.81
+29.33	+28.77

$n = -6.0$
 $\sigma = +29.33 + 6.5 - 3.9 + 28.94$
 $+ 29.77 - 50 + 30 = 29.07$

$dt+m = -29.00$
 $m = .69$
 $dt = -29.69$
 $ddt = -.66$

S.C. = 8 49 47.0
 $\frac{30.0}{8.49} = 17.0$
 $\frac{11.29}{21.20} = 13.4$
 $\frac{3}{21.15} = 43.7$
 $+16.3$

Sept. 14 1975 N.A.P.

19 h 40 m 5'	19 h 45 m 5'	19 h 49 m 5'	19 h 48 m 5'
270	92	386	544
282	114	407	19
273	135	427	46
233	155	448	76
254	176	469	109
			138

51.20	13.44	427.4	762
51.22	13.62	427.2	758
21.55	43.65	1301	36.44
+29.67	+29.77	+29.71	+31.14

$0 = +29.67 + 18 - 10 + 29.57$
 $+29.77 + 15 - 08 + 29.69$
 $+29.71 + 11 - 06 + 29.65$
 $+29.64$

$dttm = -29.64$
 $m = +64$
 $dt = -30.28$
 $ddt = -0.64$

$0 = +31.14 + 27.3$
 $0 = +29.72 + 15$
 $0 = +14.2 + 2.58$
 $m = -50$

$N.C. = 9 h 43 m 5'$
 $N.C. = 9 h 42 m 58 s$

$50 = 9 h 33 m 5'$
 $9 33 20.6$
 $11 33 01$
 $22 00 20.3$
 $33 36.3$

Sept. 15 1875 - 7.10 R.

Sept. 18 1875

19 ^h 58 ^m 31.0	h m s'
33.1	41.3
35.2	43.5
37.5	45.7
39.6	48.0

h m s'	m s'	m s'
19 30 41.7	45 12.7	58 34.0
40.0	14.7	36.1
46.0	16.8	38.0
48.0	19.0	40.1
50.0	21.0	42.2

35.28	43.52
35.26	43.50
4.69	18.17
+30.57	+30.33

$n = -5.5$

δ
 $v = +30.57 + 1.2 - 0.7 + 30.50$
 $+ 30.33 - 33 + 18 + 30.57$

δ
 $dt + m = -30.57$
 $m = +6.4$
 $dt = -31.15$
 $ddt = -.87$

45.94	16.84	38.08
45.92	16.82	38.06
12.73	43.65	4.71
+33.18	+33.17	+33.35

δ

$n = -5.5$

$\delta = +33.19 - 1.2 + 0.7 + 33.26$
 $+ 33.17 + 15 - 0.8 + 33.09$
 $+ 33.31 + 12 - 0.7 + 33.24$

δ
 $dt + m = -33.20$
 $m = +6.4$
 $dt = -33.84$
 $ddt = -.90$

$S. C. =$

h m s'
9 38 38
33.2
9 38 38
48 46.3
21 48 17.5
3 28.2

Sept. 23 1275

18 h 33 m

30.62

2.16

43.88

136.92

36.72

$$d = +36.72 + 80 - 24 + 36.48 + 36.42 - 22 + 1.36.49$$

$$d/r + m = -36.48$$

$$m = +64$$

$$d/r = -3.12$$

$$d/r = -3.12$$

18 h 40 m 38.5

5.58

18.9

4.14

1.8

28.7

21.7

5.10

26.9

2.92

3.23

32.85

+30.88

20 h 10 m 42.3

4.2

4.66

4.8

10.7

4.60

46.48

10.06

+36.42

$$S.C. = 9 \text{ h } 58 \text{ m } 25.0$$

$$9 \text{ h } 58 \text{ m } 25.0$$

$$12 \text{ h } 08 \text{ m } 20.1$$

$$21 \text{ h } 49 \text{ m } 18.4$$

$$3 \text{ h } 34.5$$

$$21 \text{ h } 45 \text{ m } 43.9$$

$$+14.1$$

Sept. 25 1275 W.T.R.

18 h 28 m 5.8

2.0

4.1

6.2

8.3

4.08

40.6

26.56

-13.50

18 h 33 m 16.5

19.0

2.16

24.3

26.9

2.16

21.64

43.13

+3.1

18 h 42 m 5.1

41.436

42.50

43.264

5.00

5.31

24.53

+3.128

$$0 = +37.50 - 15 + 0.5 + 3.15 \quad 0 = +31.28 - 20.13$$

$$37.81 + 50 - 24 + 0.75 \quad 0 = 37.65 + 32$$

$$0 = 6.37 - 21.15$$

$$m = -30$$

$$d/r + m = -3.16$$

$$m = +64$$

$$d/r = -38.20$$

$$d/r = -3.16$$

$$S.C. = 9 \text{ h } 50 \text{ m } 16.0$$

$$-38.4$$

$$49 \text{ h } 37.6$$

$$12 \text{ h } 16 \text{ m } 22.2$$

$$21 \text{ h } 33 \text{ m } 15.4$$

$$-3 \text{ h } 31.8$$

$$21 \text{ h } 28 \text{ m } 3.6$$

Sept. 27 1975 J. R. M.

h m	s		s
18 46	6.0	18	76
	8.5		99
	10.9		122
	13.5		146
			169

8.52	12.24
8.52	12.22
29.45	33.57
39.07	38.67
39.05	

0 + 39.07 + 6.5 - 19 = 3888
 39.07 - 50 + 15 = 3882

dt+m = -38.85	h m s
6.9	10 26 15.0
dt = -39.99	10 25 35.2
ddt = -0.64	12 24 10.3
	22 01 19.9
	3 6.50
	21 57 43.4
	16.6

Sept. 28 1975

h m s		s
19 40	6.6	45 19.0
	8.7	21.0
	0.9	23.0
	8.0	25.0
	5.0	27.0

0.86	23.00
0.84	22.98
21.35	33.44
+89.99	+39.54

n = -20

0 + 89.99 + 18 - 0.5 + 39.47
 + 39.94 + 15 - 0.4 + 39.54

s
dt+m = -39.47
m = +.64
dt = -0.11
ddt = -.62

Sc. = h m s
 10 34 13.0
 -40.4
 10 33 32.6
 12.28 11.9
 22 05 20.7
 3 37.1
 22 1 43.6
 -116.4

Sept. 30.3 AT - 41.68
 Oct. 2.3 - 43.15
 3.3 - 43.55

Oct. 4 1875 N.S.R.

Oct-y 1875

h	m	s	h	m	s	h	m	s
19	41	0.7	19	49	52.2	20	13	29.4
	2.8			54.2			34.3	
	4.9			56.3			38.9	
	6.9			58.3			43.9	
	8.9			59.4			48.5	
	10.4			56.28			53.0	
	11.2			56.26			57.7	
	11.38			12.72			2.6	
	48.44			48.54			7.3	
							48.40	
							48.34	
							28.7	
							40.98	

$$\begin{aligned}
 u &= +48.44 + 18 - 0.7 + 48.46 = +48.97 + 4.44 \\
 &+ 48.54 + 11 - 0.3 + 48.49 = 48.49 + 1.14 \\
 &+ 4.08 + 4.20 \\
 n &= -4.6
 \end{aligned}$$

$$\begin{aligned}
 dT+m &= -48.48 \\
 m &= +.69 \\
 dT &= -48.6 \\
 ddr &= -.66
 \end{aligned}$$

$$\begin{aligned}
 S.C. &= 21.28 \quad 44.0 \\
 &\quad -48.1 \\
 21 \quad 27 \quad 59.8 \\
 12 \quad 51 \quad 51.2 \\
 8 \quad 36 \quad 5.7 \\
 1 \quad 24.5 \\
 8 \quad 34 \quad 44.2 \\
 &\quad +16.8
 \end{aligned}$$

h	m	s	h	m	s	h	m	s
20	37	52.0	20	46	38.6	20	53	12.9
		54.9			41.0			15.8
		57.7			42.7			18.5
		6.6			44.7			21.3
		8.7			47.1			24.0
37		57.98	46		42.82	53		18.54
		57.76			42.80	53		18.51
		12.03			57.60	52		10.53
		+45.73			+45.20			+47.91

$$\begin{aligned}
 u &= +48.73 + 1.00 - 0.2 + 48.21 = +6.77 + 5.72 \\
 &+ 48.20 - 1.7 + 0.9 + 48.29 = 48.56 + 4.2 \\
 &= +22.24 \quad 53.0
 \end{aligned}$$

$$\begin{aligned}
 dT+m &= -45.25 \\
 m &= +.64 \\
 dT &= -45.89 \\
 ddr &= -.61
 \end{aligned}$$

$$n = -.52$$

Oct-8-1275 J. R. M.

Oct-10-1875 J. R. M.

$$\Delta T + m =$$

$$v = 43.60$$

h m s	h m s	h m s
20 45 43.60	20 52 18.98	21 7 25.48
87.58	32.74	39.20
+46.02	+46.24	+46.23

$$v = +46.02 - 1.7 + 0.8 + 46.10$$

$$+46.24 + 86 - 4.3 + 45.81$$

$$+46.23 + 1.7 - .28 + 45.95$$

$$45.95$$

$$\Delta T + m = 45.95$$

$$m = + .64$$

$$\Delta T = 46.59$$

$$\Delta \Delta T = -.70$$

$$\Delta T + m = -4.66$$

$$\Delta \Delta T = -.54$$

001-128175

001-128175

4dT assumed = -060

dr = -48.6

S.P. = 10^h 41^m 29^s

10	40	40.4	10	40	40.4
13	19	29.1	13	19	29.1
21	17	16.2	21	21	13.3
	3	29.2		3	29.9
21	13	47.0	17	43.4	1.6

time	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
20 38	028			20 46	45.34		20 53	20.88		21 3	43.2		21 8	27.22	
	0.26				45.32			20.86			43.0			27.20	
	11.89				57.54			32.66			19.76			39.37	
	48.37				47.78			48.29			45.34			47.83	

$n = -50$
 $U = +48.37 + 1.00 - 50 + 47.87$
 $47.78 - 1.7 + 0.9 + 47.87$
 $48.20 + 86 - 43 47.77$
 $48.34 + 78 - 39 47.95$
 $47.83 + 57 - 28 47.55$
 47.80

S.P. = 11^h 16^m 31.8^s

- 48.7
 11 15 42.3
 10 23 23.6
 20 52 15.7
 3 35.0
 21 48 43.7
 16.3

dT-m = -47.50
 m = +6.4
 dr = -48.88
 ddr = -41

R.B. = 1.1³ / ant. of R.B. at 21^h 47^m

Oct 13 1875 W.S.R.

Oct. 12 1875 W.S.R.

h m s	h m s	h m s	h m s
21 8 22.7	21 16 18.3	21 25 45.6	21 27 40.8
25.2	19.2	47.7	43.3
27.6	21.3	48.8	46.6
29.8	23.8	51.8	50.0
32.3	24.8	54.0	52.6
	24.1		53.8
	30.5		55.7
	32.6		1.3
	34.8		4.7

$$\begin{aligned}
 &27.52 & 25.93 & 49.78 & 52.65 \\
 &27.50 & 25.89 & 49.76 & 52.60 \\
 &39.16 & 36.98 & 48.14 & 3.46 \\
 &48.34 & 48.91 & 48.14 & 48.14 \\
 &0 = +48.34 + 5.7 - 21 + 44.13 & 0 = +48.91 + 18.8 & n = -40 \\
 &+ 48.14 - 11 + 04 + 48.21 & + 48.14 + 2.74 & - 35
 \end{aligned}$$

$$\begin{aligned}
 dT &= -48.17 \\
 m &= +.64 \\
 dT &= -48.81 \\
 dT &= -33
 \end{aligned}$$

h m s
21 8 26.4
11 9 49.0
11 8 97.0
13 27 20.2
21 41 16.8
3 33.2
21 37 43.6
+ 16.4

$$M.C. = 11 9 26.7$$

h m s	h m s	h m s	h m s
21 8 22.8	21 16 17.1	21 25 45.7	21 27 40.6
25.1	21.7	47.8	43.8
27.6	26.7	48.8	46.6
29.8	30.2	52.0	49.8
32.2	34.7	54.1	52.8
			53.6
			58.9
			1.9
			4.8
21 8 27.50	25.88	49.90	52.73
27.48	30.86	49.88	52.71
39.14	36.83	1.57	3.41
48.34	48.93	48.31	49.30

$$\begin{aligned}
 &0 = +48.34 + 5.7 - 21 + 44.13 & 0 = +48.91 + 18.8 & n = -39 \\
 &+ 48.14 - 11 + 04 + 48.21 & + 48.14 + 2.74 & - 35 \\
 &0 = +48.34 + 5.7 - 21 + 44.13 & 0 = +48.93 + 18.8 & n = -39 \\
 &+ 48.31 - 11 + 04 + 48.21 & + 48.30 + 2.74 & - 35
 \end{aligned}$$

$$\begin{aligned}
 dT &= +48.23 \\
 m &= +.64 \\
 dT &= -48.87 \\
 dT &= -0.6
 \end{aligned}$$

Driederichsen's barometer.

$$M.C. = 11 1 22.1$$

h m s
21 8 26.4
11 9 49.0
11 8 97.0
13 27 20.2
21 41 16.8
3 33.2
21 37 43.6
+ 16.4
21 25 44.1
15.9

Oct. 17 1875

h m s	h m s
22 0 107	21 27 42.6
12.8	45.7
14.9	46.7
16.9	47.3
18.0	48.1
	49.5
	51.3
	53.6
	56.8

W.A.R.

S.C. = 11 41 17.
 11 40 25.8
 13 43 64
 21 58 12.5
 3 35.8
 21 53 43.7
 +16.9

0 1486
 1484
 24.74
 +50.10

2) 5464
 5464
 3.21
 +51.37

O = +50.10 - 40 + 103 + 50.13
 O = +51.37 + 274
 O = +127 + 275
 m = -46

dt + m = -50.13
 m = +64
 dt = -50.65
 ddr = -63

Oct. 18 1875 W.A.R.

h m s	h m s
22 10 39	
59	
80	
10.1	
12.1	

11 8.00
 11 7.98
 17.80
 58.85

dt + m = +50.68 - 14 + 0.6 - 50.74
 64
 dt = -51.32
 ddr = -61

SC = 11 9 80
 W.C. = 11 9 96

11 8 16.3
 13 47 2.9
 21 29 13.4
 3 29.9
 21 17 43.5
 16.5

Oct. 20 1875 W.A.R.

20 h m s	h m s	h m s	h m s
20 9 190	20 13 360	20 28 41	20 38 08
211	403	63	37
233	446	84	66
255	500	106	22
277	546	127	95
	597		
	642		
	687		
	736		

20 f 2332	13 5463	28 842	38 2664
2330	13 6308	28 840	38 2660
	115	1663	1167
	+53.38	51.77	51.85

$$\begin{aligned}
 0 &= +57.77 + 19 - 08 + 5169 \\
 &+ 51.75 + 1.02 - 40 + 51.55 \\
 0 &= +53.38 + 444 \\
 &+ 51.16 + 1.60 \\
 0 &= +1.52 + 3.80 \\
 n &= -40
 \end{aligned}$$

$$\begin{aligned}
 dr + m &= -51.62 \\
 m &= + 64 \\
 dr &= 52.26 \\
 dr &= -44
 \end{aligned}$$

$$\begin{aligned}
 S.P. &= 11 h 50 m 5 s \\
 &- 52.5 \\
 &11 45 10.5 \\
 &13 34 56.1 \\
 &21 54 18.4 \\
 &3 35.3 \\
 &21 50 44.1 \\
 &15.9
 \end{aligned}$$

Oct. 21 1875

h m s	h m
20 13 366	28 94
412	68
457	89
508	110
557	131
599	
645	
693	
743	

58.27	8.92
55.21	28 8.90
1.09	16.62
54.12	52.28

$$\begin{aligned}
 0 &= +52.28 + 19 - 09 52.21 \\
 &+ 54.12 14.44 \\
 0 &= +1.84 + 420 \\
 m &= -43
 \end{aligned}$$

$$\begin{aligned}
 dr + m &= -52.21 \\
 m &= + 64 \\
 dr &= -52.85 \\
 dr &= -59
 \end{aligned}$$

Oct. 24.8, 1875.
 d Uss. Maj.
 At - 54.61
 N. Clark fast 16.77

$$\begin{aligned}
 h m s \\
 dr &= 12 3 90 \\
 sc &= 12 3 70 \\
 &53.1 \\
 &12 2 139 \\
 &13 58 26 \\
 &22 3 213 \\
 &3 367 \\
 &44.6 \\
 &+ 15.4
 \end{aligned}$$

Oct. 25 1275 W.A.R.

Oct. 25 1275 W.A.R.

h m s	h m s	h m s	h m s
20 28 68	20 38 06	20 46 47.5	20 53 41.6
89	84	496	473
110	63	516	531
130	93	537	591
151	122	558	48
			114
			174
			235
			295
10.96	6.36	51.64	61.31
12.54	6.34	51.62	51.22
16.56	11.55	52.34	51.53
+54.38	+54.79	54.25	56.69

$$\begin{aligned} \delta \\ 0 &= +54.38 + 19 - 0.8 + 54.30 \\ &+ 54.79 + 1.00 - 41 + 54.38 \\ &+ 54.28 - 17 + 0.7 + 54.35 \end{aligned}$$

$$\begin{aligned} \delta \\ 0 &= +56.69 + 5.72 \\ &= +54.68 + 3.4 \\ 0 &= +2.21 + 5.38 \\ m &= -1.11 \end{aligned}$$

$$\begin{aligned} \delta \\ dr + m &= -54.84 \\ m &= +.64 \\ dr &= -54.98 \\ ddr &= .53 \end{aligned}$$

h m s	h m s
20 58 16	20 46 48.7
43	526
74	528
102	548
131	568
732	5272
730	5270
1149	52732
55.81	5938

$$\begin{aligned} n &= -40 \\ 0 &= +55.81 + 1.00 - 40 + 55.41 \\ &+ 54.38 - 17 + 0.7 + 55.45 \end{aligned}$$

$$\begin{aligned} \delta \\ dr + m &= -55.93 \\ m &= +.64 \\ dr &= -56.07 \\ ddr &= -.54 \end{aligned}$$

h m s	h m s	h m s	h m s
S.C. = 22 35 32.0	11 39 41.0	39 41.0	39 41.0
	56.1	56.21	
22 34 30.5	11 38 49.6		
22 32.0	14 22 32.0		
12 33	21 16 12.6		
1 30.6	3 28.0		
8 10 43.3	3.6		
	+16.4		

Oct. 28 1975 N.R.

h m s
21 38 573
596
17
3.8
0.9

39 166
164
95 36
38 + 3 28
6

$$0 = +59.28 + 17 - .07 + 5.21$$

$$dT + m = -57.21$$

$$m = +.64$$

$$dT = 57.85$$

$$dT = -.78$$

new setting.
H₀ = 12 22 44.3
S.C. = 12 14 42.0 S.C. = 12 22 45.0
57.2
12 13 45.8 12 23 47.8
14 26 28.5 14 26 28.5
21 47 17.3 21 45 19.3
3 34.2 3 35.4
21 43 43.1 3 38

Oct. 29 1975 N.R.

h m s
9 39 423
446
469
491
515
1

4688
4686
4718
5908
1

$$0 = +59.08 + 40 - 18 + 58.90$$

$$dT + m = -58.90$$

$$m = +.64$$

$$dT = -59.54$$

S.C. = 12 6 29.0 12 9 29.0 12 21 31.0
591 592
12 5 29.9 12 8 29.9 12 20 31.8
14 42 14.7 14 42 14.7 14 42 14.7
21 23 15.2 21 26 15.2 21 38 17.4
3 30.2 3 30.7 3 32.7
21 19 45.0 21 22 44.5 44.4
15.0 15.5 + 15.6

$$H_0 = 12 21 31.4$$

No. 2 1475 W.A.R.

No. 3 1475 W.A.R.

h	m	s	h	m	s	h	m	s
22	5	19.8	22	29	57.3	22	48	58
		22.1			57.4			58
		24.2			58.4			11.1
		26.0			59			13.6
		28.0			2.3			15.8
								17.4
								21.0
								23.4
								26.0

22	1	24.02	29	58.34	46	15.95
		24.56		58.88		15.96
		59.46		59.46		59.99

$$s$$

$$0 = +59.46 - 0.2$$

$$+59.46 - 0.1$$

$$s$$

$$0 = +59.99 + 2.19$$

$$0 = 59.46 - 0.1$$

$$u = +5.3 + 2.20$$

$$n = 24$$

$$s$$

$$dt+m = -59.46$$

$$m = +.64$$

$$dr = -60.10$$

$$ddr = .56$$

S.C.	h	m	s	h	m	s
23	29	20	12	36	30	
		1	01		1	04
		23	28	18	35	25.6
		14	46	11.0	14	46
		8	42	8.6	21	49
			1	25.5		3
			41	43.1		43.8
				+15.9		+16.2

$$N.P. = 12.36.30.4$$

$$S_0 = 12.12.25.0$$

$$1$$

$$12.11.24.6$$

$$14.46.11.3$$

$$21.28.13.3$$

$$3.30.5$$

$$42.8$$

$$+17.2$$

h	m	s	h	m	s	h	m	s
32	51	43.0	22	58	30.7	22	39	59.5
		41.3			32.8			4.6
		43.8			34.8			9.4
		50.3			35.0			13.4
		52.4			38.0			18.3
								22.4
								25.1
								31.9
								36.5

47.76	34.86	18.12
47.74	34.84	18.06
48.04	34.96	16.91
59.50	59.88	61.10

$$0 = +59.70 - 58 + 17.59.87$$

$$+59.88 + 2.6 - 0.8 + 59.40$$

$$0 = +61.15 + 4.33$$

$$0 = +59.79 - 0.16$$

$$0 = +13.6 + 4.89$$

$$n = -3.0$$

S	h	m	s	S.C.	h	m	s
dt+m = 59.83				12	31	25	
m = +.64					1	20.8	
dr = -60.47				12	30	24.2	
				14	50	7.5	
ddr = -.07				21	40	16.3	
				2		33.0	
				29	36	43.3	
						+16.7	

$$N.P. = 12.31.24.9$$

Mr. 6 1475 W.A.R.

Mr. 7 1475 W.A.R.

h m s	h m s
22 51 49.1	22 59 31.7
46.5	23.8
47.8	31.9
51.2	34.0
53.7	40.3

h m s
22 36 13.7
15.8
17.5
22.0
22.4

4886	2594
4881	3592
48.17	34.83
60.94	60.99

$\sigma = +60.84 - 5.8 + 12 + 60.96$
 $+ 60.99 + 26 - 0.5 + 60.94$

σ
 $dT+m = -60.95$
 $m = +.64$
 $dT = -61.59$
 $ddT = -.34$

Disposition to the Bond & Bond
 Boston, but then close to
 work as through the main line.
 The signal will be given from
 Boston at 10.30 AM. The
 main clock is around.

8.8
1.88
1.86
16.41
61.45

$dT = +61.45 + 15 - .03 + 61.42$

$dT+m = -61.42$
 $m = .64$
 $dT = -62.06$
 $ddT = -.47$

h m s	h m s
12 37 12.0	12 37 13.0
12 36 2.3	12 37 13.3
15 36 8.7	
21 30 14.6	
3 31.9	
21 26 94.2	
15.8	

Nov. 8 1875 W.A.R.

h	m	s	h	m	s	h	m	s
21	47	290	23	0	221	22	46	51
		310			242			106
		333			263			131
		355			282			163
		377			305			180
								203
								230
								254
								282
21	47	3330			3626			1816
		3328			2624			1411
		3165			2446			1572
		6163			6176			1239

$$\begin{aligned}
 0 &= +6163 - 25 + 07 + 6170 \\
 &+ 6176 - 02 + 01 + 6177 \\
 0 &= 6288 + 219 \\
 0 &= +6169 - 13 \\
 a &= +0.70 + 2.32 \\
 n &= -30
 \end{aligned}$$

$$\begin{aligned}
 dr+m &= -61.73 \\
 m &= -1.64 \\
 dr &= -62.37 \\
 ddr &= -62.31 \\
 S.C. &= 10 \quad h \quad m \quad s \\
 &= 10 \quad 17 \quad 45 \\
 &= 10 \quad 16 \quad 424 \\
 &= 15 \quad 9 \quad 506 \\
 &= 19 \quad 6 \quad 518 \\
 &= 3 \quad 79 \\
 &= 15 \quad 2 \quad 439 \\
 &= +161
 \end{aligned}$$

$$\begin{aligned}
 M.L. &= 10 \quad 17 \quad 454 \\
 A.B. &= 10 \quad 17 \quad 458
 \end{aligned}$$

Nov. 9 1875 W.A.R.

h	m	s
49	0	
51	2	
53	8	
55	5	
57	8	

5326
5333
5124
6209

$$\begin{aligned}
 n &= -30 \\
 0 &= +6209 + 26 - 08 + 6201
 \end{aligned}$$

$$\begin{aligned}
 dr+m &= -6201 \\
 m &= +1.64 \\
 dr &= -6265
 \end{aligned}$$

$$ddr = -1.27$$

S.C.	h	m	s
13	59	28	
	-1	28	
	13	58	52
	15	13	472
	21	44	180
	3	33.6	
		44.4	
		+166	

$$\begin{aligned}
 M.L. &= 13 \quad 59 \quad 7.5 \\
 A.B. &= 13 \quad 59 \quad 8.1
 \end{aligned}$$

Nov. 109 4 45 T U R.

13 h m s
18 36.1
58.2
50.9
42.6
44.6

4038
4036
3886
6250

$$0 = +62.50 - 18 + 0.5 + 62.55$$

$$d\tau + m = -62.55$$

$$m = +.64$$

$$d\tau = 63.21$$

$$dd\tau = -.387$$

12 50 3.0 S.C. = 13 h m s
33 10.0
1 3.2
13 32 6.8
15 17 43.7
22 14 23.1
3 38.6
22 10 44.5

Nov 11 12 45 T U R

h m s h m s
23 53 55.3 0 1 57.0
54.4 55.3
59.5 1.7
1.7 4.0
3.8 6.3

5954 166
5952 1.64
56.73 58.13
62.79 62.81

$$0 = +62.81 + 54 - 13 + 62.68$$

$$0 = +62.79 + 15 - 09 + 62.75$$

$$d\tau + m = -62.71$$

$$m = +.64$$

$$d\tau = 63.35$$

$$dd\tau = -.28$$

S.C. = 13 h m s
32 6.0
1 3.8
13 31 2.8
14 17 30.5
22 13 32.0
21 40.3
22 18 37.5
3 4.3
+1.57

Set the South Clock Back 1 pm.

Nov. 17 1875 - N.S.R.

h m s	h m s
22 02 58.3	0 1 59.8
0.4	2.2
2.6	4.6
4.6	6.8
6.6	9.2

2.50	2.50
2.48	4.48
5.66	5.76
16.50	6.72

$$n = -25$$

$$0 = +66.80 + 5.9 - 13 + 61.64$$

$$+ 6.72 + 11 - 0.3 + 6.69$$

dt + m = 6.68
 m = 1.64
 dt = 6.622
 qdt = .45

h m s
13 52 48
1 6.6
13 50 48.4
15 41 19.6
22 08 21.8
3 37.1
22 1 43.7
16.3

MC 13 52 49.3
 MC 13 52 43.4

Nov. 21 1875. N.S.R.

h m s	h m s
0 2 06	0 6 53.4
2.9	5.5
8.2	5.6
7.6	5.8
10.0	20

5.26	5.66
5.24	5.64
5.73	5.14
6.51	6.50

$$n = -20$$

$$0 = +66.81 - 10 + 6.41$$

$$+ 6.50 - 2 + 6.48$$

dt + m = 6.44
 m = .64
 dt = 7.08
 ddt = .19

h m s
13 53 2.20
7.2
13 53 2.98
16 1 5.9
21 52 18.9
3 34.9
21 48 44.0
16.0

MC = 13 53 35.6 36.2 m f
 MC = 13 53 22.0 MC
 MC = 36.3 slow of N.C.
 MC = 36.2 slow of Bond.

Nov. 22 1975 W.R.R.

+15'

0 h m s'	22 h m s'	0 h m s'
56 31.8	58 36.5	10 54.2
339	355	11 41.2
360	409	12 26.3
381	431	13 9.7
401	451	13 45.1
		14 36.8
		15 20.3
		16 3.3
		16 45.4

358.8	40.98	13 51.45
365.6	40.92	13 50.85
36.85	34.78	13 34.52
6.11	6.14	+16.33

$0 = +6.11 + 12 - 0.3 + 6.08$
 $+ 6.14 + 26 - 0.6 + 6.08$

$0 = +16.33 + 42.20$
 $0 = +6.12 + .19$

$0 = +10.21 + 42.01$
 $n = -2.4$

$dt + m = -6.08$
 $m = +.64$
 $dt = -6.72$
 $ddt = +.86$

S.C. =

h m s'
11 8 53.8
16 5 2.4
19 3 51.1
18 8 44
18 55 43.7
+16.3

Nov. 23 1975 W.R.R.

h m s'	m s'
13 78 39.7	18 31.5
418	32.5
435	35.6
460	32.4
481	54.4
	56.5
4890	4896

13 18 42.91
 35.11
 5.76

$0 = +5.76 - 18 + 0.5 + 5.81$
 $dt + m = -5.81$
 $dt = -6.45$

$ddt = +.27$

S.C. = 13 h 30 m 19 s
 -6.4

13 30 12.6	13 30 12.6
16 12 55.5	16 8 59.0
21 17 18.1	21 21 13.4
3 29.4	3 29.4
47.7	43.7
	+16.3

N.C. = 49 feet of Bond L.
 N.B. = 00 feet of Bond L.

Nov 24 1875 N.H.R.

22^h 58^m 36.3^s
 38.6
 40.7
 42.7
 44.8

46.2
 48.0
 49.3
 5.87

$$0 = +5.87 + 2.0 - 0.5 + 0.82$$

$$\begin{aligned} \text{clt} + m &= -5.82 \\ \text{clt} &= -6.4 \\ \text{clt} &= -6.46 \\ \text{clt} &= -6.41 \end{aligned}$$

S.C. = 12 14 20
 12 - 6.5
 13 8.5
 16 12 53.6
 20 0 59.9
 8 16.7
 19 56 43.2
 +1.8

Nov 27 1875 S.R.M.

04 56^m 31.5^s / 17 52.8^s / 24 52.8^s
 33.5 52.8 64.0
 35.7 54.5 76.1
 38.7 56.0 88.2
 59.0 0.3

35.6 34.90 56.28
 35.62 56.88 56.26
 30.82 50.10 51.29
 4.80 4.78 4.97

$$\begin{aligned} 0 &= +4.80 + 1.2 - 3 + 4.77 \\ &+ 4.78 - 1.5 + 4 + 4.82 \\ &+ 4.87 + 2.6 - 5 + 4.92 \end{aligned}$$

$$\begin{aligned} \text{clt} + m &= -4.84 \\ m &= 64 \\ \text{clt} &= 5.48 \end{aligned}$$

Nov. 29 1875 W.R.R.

ok 1^m 58.3
0.7
8.0
5.3
7.7

2 3.00
2 2.58
1 58.65
4.33

$dT+m = -$
 $n = -2.05$
 $0 = +4.33 + 5.2 + 1.3 + 4.20$

$dT+m = +4.20$
 $m = -6.4$
 $dT = +4.84$

Nov. 30 1875 W.R.R.

23 52^m 56.4 0 1 58.1 0 6 57.0
58.7 0.8 58.2
0.7 2.6 58.0
2.9 5.0 58.4
4.9 7.3 59.5

53 0.72 2 2.66 6 58.22
0.70 2.64 58.20
56.48 58.64 51.07
4.22 4.00 4.13

$n = -2.5$
 $0 = +4.22 + 1.0 - 2 + 4.20$
 $+ 4.00 + 5.4 - 1.3$ 3.87
 $+ 4.13 + 2.0 - 5$ 4.08

$dT+m = -4.05$
 $m = +6.4$
 $dT = -4.69$
 $ddT = +1.5$

$S.P. = 14$ 1^m 54.6
14.1 58.4
16.38 58.9
21.23 19.5
3 20.2
21.19 44.3
15.7

Q90.2 1475 2.2

h	m	s	h	m	s	h	m	s
22	10	15.7	22	24	25.4	23	21	39.4
		17.9			30.7			41.4
		20.0			35.2			43.4
		22.0			35.6			45.4
		24.0			43.2			47.6

19.92
19.90
16.82
3.08

3482
34.82
32.45
2.37

43.41
43.42
40.42
3.00

$$0 = +30.8 - 14 + 1 + 30.8$$

$$+ 3.00 \quad 10 + 1 + 3.01$$

$$0 = +26.5 - 4.11$$

$$0 = +3.04 - 1.12$$

$$0 = +0.89 + 3.99$$

$$n = -10$$

$$d/r + m = -3.04$$

$$m = +0.4$$

$$d/r = -3.68$$

$$d/r = +.50$$

S.P. = 14

h	m	s
14	19	47.0
		3.4
		43.6
		16.0
		18.6
		3.4
		43.4
		16.6

Q90.4 1475 I.R.M.

h	m	s	h	m	s	h	m	s
22	10	14.0	18	53	2	28	10	6
		16.1			55.2			57.6
		18.2			57.3			57.7
		20.3			58.3			2.0
		22.4			58.5			4.0

18.14
15.16
16.76
+1.40

57.10
57.08
56.07
+1.01

0.98
0.98
58.52
+1.44

19.24
17.58
16.09
+1.09

$$0 = +14.0 - 14 + 3$$

$$+1.01 + 1 - 0$$

$$+1.44 + 1 + 0$$

$$+1.08 + 18 - 4$$

$$1.22$$

$$d/r + m = +1.22$$

$$m = .64$$

$$d/r = -1.86$$

$$d/r = -.91$$

