

KG
11366
v.1064

NATIONAL		NATIONAL	
✓ 14095	Nov. 4, 1917	1	
✓ 14131	" 5 "	11	
✓ 14132	" " "	21	

14095

Star Measures

1

1	16336	17468	19532	16324
184	13004	1079092	12505	13348
12.7	04	94	0304	48
	36	68	32	24
	<u>18.3332</u>	<u>18.3324</u>	<u>12.7028</u>	<u>12.7024</u>

2	16338	16870	16900	17250
250	1537276	7832	16308	7842
240	80	32	08	42
	38	70	00	50
	<u>25.0962</u>	<u>25.0962</u>	<u>24.0592</u>	<u>24.0592</u>

3	16650	16230	17454	16780
81.3	13368	9510	1390048	1032228
	6466	10	96	34
6.3	50	30	54	80
	<u>31.3284</u>	<u>31.3280</u>	<u>6.3556</u>	<u>6.3548</u>

Moon

1	16038	17580
24	13985	9630
141	8987	30
	38	80
	<u>14.2051</u>	<u>14.2050</u>

2	16430	16938
25	830406	15038
149	08	38
	30	38
	<u>14.8124</u>	<u>14.8100</u>

3	16888	16772
25	1544046	8212
15	52	12
	88	72
	<u>25.1442</u>	<u>25.1440</u>

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Star Measures.

1

L	16336	17468	19532	16324
84	13004	1079092	12505	13348
2.7	04	94	0304	48
	36	68	32	24
	<u>183332</u>	<u>18.3324</u>	<u>12.7028</u>	<u>127024</u>

2	16338	16870	16900	17250
50	1537276	7832	16308	7842
40	80	32	08	42
	38	70	00	50
	<u>25.0962</u>	<u>25.0962</u>	<u>240592</u>	<u>240592</u>

	16650	16230	17454	16780
3	13368	9510	1390048	1032228
3	6466	10	96	34
	50	30	54	80
	<u>31.3284</u>	<u>31.3280</u>	<u>6.3556</u>	<u>6.3548</u>

Moon

L		16038	17580
24		1398541	9830
41		89	30
		38	80
		<u>14.2051</u>	<u>14.2050</u>

21		16430	16938
5		830406	15038
49		08	38
		30	38
		<u>14.8124</u>	<u>14.8100</u>

31	16888	16772
25	1544046	8212
15	52	12
	88	72
	<u>25.1442</u>	<u>25.1440</u>

5
2
1
6
25
17
2
1
8
2
1

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Moon

4	16940	16154
253	1241822	10670
16.0	26	70
	40	54
	<u>25.4518</u>	<u>25.4516</u>

5	16392	16110
25.1	1460004	7900
17.0	08	00
	92	10
	<u>* 25.1788</u>	<u>25.1790</u>

6	16240
25	14602236
17.2	30
	90
	4

16890	16726
1442226	9190
30	90
90	26
<u>17.2464</u>	<u>17.2464</u>

7	16858	16240
24.4	1286870	10232
17.7	72	32
	58	40
	<u>24.3988</u>	<u>24.3992</u>

16274	16478
921215	13530
18	30
74	78
<u>17.7059</u>	<u>17.7052</u>

8	16498
24	800804
17.9	00
	98
	494

16498	16084
800804	14570
00	70
98	84
<u>17.8494</u>	<u>17.8486</u>

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Mean

4	16940	16154
253	1241822	10670
16.0	26	70
	40	54
	<u>25.4518</u>	<u>25.4516</u>

5	16392	16110
25.1	1460004	7900
17.0	08	00
	92	10
	<u>25.1988</u>	<u>25.1790</u>

6	16890	16726
15	1442226	9190
7.2	30	90
	90	26
	<u>17.2464</u>	<u>17.2464</u>

16890	16726
1442226	9190
30	90
90	26
<u>17.2464</u>	<u>17.2464</u>

7	16858	16240
248	1286870	10232
17.1	72	32
	58	40
	<u>24.3988</u>	<u>24.3992</u>

16274	16478
921215	1352818
18	30
74	78
<u>17.7059</u>	<u>17.7052</u>

8	16498	16084
24	800804	14570
17.9	00	70
	98	84
	<u>17.8494</u>	<u>17.8486</u>

16498	16084
800804	14570
00	70
98	84
<u>17.8494</u>	<u>17.8486</u>

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3

Date Nov-4, 1917

Times Etc

Exp. X Stars.	8	16	✓		8	28	✓
" " Moon	8	21		30.8	8	21	31.2
Clock slow		1		26.8			

H. Sid. Time	8	22		57.8	✓		
H. Long	4	44		31.05	✓	$\Theta = + 0^h 24^m$	
G. Sid. Time	13	07		28.85	✓		
" " " M.N.	14	52		38.09	✓		
Interval	22	14		50.76	✓		
Red		03		38.68	✓		
G. M. T	22	11		12.08	✓	22	1867

From Naut. Alman.	R.A.	Dec-
Moon 22 ^h	7 59	01.02
motion 1 ^m		2.0626
" 11 ^m 2013		23.10
Latular Place.	7 59	24.12
		+18 23
		11.4
		-8.452
		-01 34.7
		+18 21 36.7

$$934'' = 14.3''$$

moon age 204

$$\begin{aligned}
 a &= -510.7 \\
 &+ 24.0 \\
 &= -486.7
 \end{aligned}$$

Parallax	55	6.3
Semi-dian	15	2.5
R	9	02.5
ang		13.4
Dir 3		-0.5
R		915.4
R		1.9623
aR		-95.5
(1+a)R		1.8668
R ²		3.4850

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3

Date Nov. 4, 1917

Times Etc.

Exp 1 stars.	8	16		8	28	
Moon	8	21	30.8	8	21	31.2
Clock slow		1	26.8			
H Sid Time	8	22	57.8			
H Long	4	44	31.05	6	+ 0	24
G Sid Time	13	07	28.85			
" " M.N	14	52	38.09			
Interval	22	14	50.76			
Red		03	38.68			
G M.T	22	11	12.08	22	1	1867

From Naut. Alman	RA	Dec.	
Moon 22h	7 59	01.02	+18 23 11.4
Moon 1"		2.0626	- 8.452
" 11" 2013		23.10	- 01 34.7
Latular Place.	7 59	24.12	+18 21 36.7

$$934'' = 14.3$$

moon age 204

$$9 = -510.7$$

$$+24.0$$

$$-486.7$$

Parallax	55	6.3
Semi-dian	15	2.5
R	9	02.5
ang		13.4
Err 3		0.5
R	9	15.4
R	19	62.3
a R		-95.5
(1+a/R)		1.8668
R ²		3.4850

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Plati Constants.

7

X	18.3328	25.0962	31.3282
S	18.6308	25.8204	32.2445
X-S	-0.2980	-0.7242	-0.9163

Y	12.7026	24.0592	6.3552
Y	14.7243	26.6161	7.9618
Y-Y	-2.0217	-2.5569	-1.6066

X-S + 5.00 X	+ 7.24	+ 10.7X - 7286
- 2980 + 9166 =	6186 + 904 = 7090	+ 196 = 7286
- 7242 + 12548 =	5306 + 1713 = 7019	+ 268 = 7287
- 9163 + 15664 =	6501 + 452 = 6953	+ 333 = 7286
23.5852 + 11793	+ 1141	+ 252 = 24.1752

Y - 3 + 5.00 Y	- 69.2 X	+ 12.5Y + 14976
+ 20217 + 6351 = -13866	- 1268 = -15134	+ 158 = -14976
- 25569 + 12030 = -13539	- 1737 = -15276	+ 300 = -14976
- 16066 + 3178 = -12888	- 2168 = -15056	+ 79 = -14977
16.0271 + 8014	- 1632	+ 200 = 18.1829

Tables	a = -0.9	l = -1.6	a - l = +0.7	t + d = 0.0
Obs.	-510.7	-512.5	+ 1.8	-2.0
	-519.8	-510.9	+ 1.1	-2.0

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Plate Constants.

7

X	18.3328	25.0962	31.3282
S	18.6308	25.8204	32.2445
X-S	-2980	-7242	-9163

y	12.7026	24.0592	26.3552
y	14.7243	26.6161	7.9618
y-y	-20217	-2.5569	-16066

-S + 5.00 X	+ 71.24	+ 10.78	- 7286
2980 + 9166 =	6186 + 904 =	7090 + 196 =	7286
7242 + 12548 =	5306 + 1713 =	7019 + 268 =	7287
9163 + 15664 =	6501 + 452 =	6953 + 333 =	7286
23.5852 + 11793	+ 1141	+ 252 =	24.1752

-y + 5.00 y	- 69.2 X	+ 12.57y	+ 14976
20217 + 6351 =	-13866 - 1268 =	-15139 + 1582 =	-14976
25569 + 12030 =	-13539 - 1737 =	-15276 + 300 =	-14976
16066 + 3178 =	-12888 - 2168 =	-15056 + 79 =	-14977
160271 + 8014	-1632	+ 200 =	18.1829

Tables	a = -0.9	b = -1.6	a-b = +0.7	b+d = 0.0
Chs.	-510.7	-512.5	+1.8	-2.0

1.4095

Moon Center

5

dx = 0

D-C

O-C

1	24.0000	+0.4150	0.1722	3.4959	+1.09
2	25.0000	+1.4150	2.0022	3.4831	-1.9
3	25.1441	+1.5591	2.4308	3.4878	+2.8
4	25.4517	+1.8667	3.4846	3.4846	-4
5	25.1789	+1.5939	2.5405	3.4855	+5
6	25.0000	+1.4150	2.0022	3.4869	+1.9
7	24.3990	+0.8140	0.6626	3.4769	-8.1
8	24.0000	+0.4150	0.1722	3.4886	+3.6
			R ²	3.4850	
			134673		

arc

1	14.2050	-1.8230	-1	3.3237	167°
2	14.8112	-1.2168	-1	1.4809	131
3	15.0000	-1.0280	-1	1.0570	123°?
4	16.0280	0.0000	0	0.0000	90°
5	17.0000	+0.9720	+1	0.9450	59°
6	17.2464	+1.2184	+1	1.4847	49°
7	17.7055	+1.6775	+1	2.8143	26°
8	17.8490	+1.8210	+1	3.3164	13°
			4.4220	Range	154°

X = 24	Y = 14.2050	X = 25	Y = 14.8112
	17.8490		17.2464
	320540		320576
Y ₀	16.0270		16.0288

X max = 25.4517
 Com R = 1.8668
 X₀ = 23.5849

Moon Center

X₀ = 23.5850Y₀ = 16.0280

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Moon Center

5

Dx = 0

C - 0 - C

1	24.0000	+0.4150	01722	3.4959	+1.09
2	25.0000	+1.4150	20022	3.4831	-19
3	25.1441	+1.5591	24308	3.4878	+28
4	25.4517	+1.8667	34846	3.4846	-4
5	25.1789	+1.5939	25405	3.4855	+5
6	25.0000	+1.4150	20022	3.4869	+19
7	24.3988	+0.8140	06626	3.4769	-81
8	24.0000	+0.4150	01722	3.4886	+36

R² 34850

arc

1	14.2050	-1.8230	-1	33237	167
2	14.8112	-1.2168	-1	14809	131
3	15.0000	-1.0280	-1	10570	128
4	16.0280	00000	0	00000	90
5	17.0000	+0.9720	+1	09450	59
6	17.2464	+1.2184	+1	14847	49
7	17.7055	+1.6775	+1	28143	26
8	17.8490	+1.8210	+1	33164	13

Range 154

X = 24	Y = 14.2050	X = 25	Y = 14.8112
	17.8490		17.2464
	320540		320576
	Y ₀ 16.0270		16.0288

X max = 25.4517
 Com R = 1.8668
 X₀ = 23.5849

Moon Center

X₀ = 23.5850Y₀ 16.0280

1	- 0.76	+	45.8	-	198.2
2	- 1.73	-	27.0	+	23.2
3	- 1.61	+	43.7	-	28.8
4	0.00	-	7.5		0.0
5	+ 1.54	+	8.0	+	4.8
6	+ 1.73	+	27.0	+	23.2
7	+ 1.36	-	65.5	-	136.0
8	+ 0.76	+	15.1	+	65.5
	<u>+ 5.39</u>		<u>+ 139.6</u>		<u>+ 116.7</u>
	<u>- 4.10</u>		<u>- 100.0</u>		<u>- 363.0</u>
	+ 1.29		+ 39.6		- 246.3

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Conditional Equations

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o-e

1	+0.42	-1.82	= +1.09	+	2	+32	= +34	+	75
2	+1.42	-1.22	= -1.9	+	7	+21	= +28	-	47
3	+1.56	-1.03	= +2.8	+	7	+18	= +25	+	3
4	+1.87	0.00	= -4	+	9	0	= +9	-	13
5	+1.59	+0.97	= +5	+	7	-17	= -10	+	15
6	+1.42	+1.22	= +1.9	+	7	-21	= -14	+	33
7	+0.81	+1.68	= -81	+	4	-29	= -25	-	36
8	+0.42	+1.82	= +36	+	2	-32	= -30	+	66

+192 - 116
avr. 38

$$+13.47 + 1.29 = +39.6$$

$$+1.29 + 14.42 = -2.463$$

$$-() - 0.12 = -3.8$$

$$+1.3 + 14.30 = -250.1$$

$$h = -17.5^{\circ}$$

$$+13.47 = +39.6 + 22.6 = +62.2$$

$$a = +4.6^{\circ}$$

ARC 154

$$\frac{P}{n} = .18^{\circ}$$

$$\frac{\Sigma V}{n} = +9.5^{\circ}$$

$$\frac{+9.5}{.18} = +53^{\circ}$$

$$\Delta R = +0.65^{\circ}$$

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Conditional Equations

6

[illegible]

$$+ 13.47 + 1.29 = + 39.6$$

$$+ 192 - 116$$
$$\text{av. } 38$$

$$+ 1.29 \quad 1.442 \quad - 2.463$$

$$-(1) = 0.12 = -38$$

$$+1.3 \quad +1.430 = -250.1$$

$$b = 17.5^\circ$$

$$+ 13.97; + 39.6 + 22.6 + 62.2$$

$$G = 4,6$$

ARC 154

$$\frac{p}{e} = 18$$

$$\frac{E_V}{n} \rightarrow +9.5$$

$$+ \frac{4.5}{18} = +5.3$$

$$\Delta R = +0.65^{\circ}$$

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Mars Mean Position

7

$$\begin{array}{r} \gamma_0 \quad 23.5850'' \\ + 2 \\ \hline 23.5852'' \end{array}$$

$$\begin{array}{r} \gamma_0 \quad 16.0280'' \\ - 9 \\ \hline 16.0271'' \end{array}$$

Frame Plate Constants

$$\begin{array}{r} 24.1752'' \\ 22. \\ \hline \delta_0 \quad + 2.1752'' \end{array}$$

$$\begin{array}{r} 18.1829'' \\ 18. \\ \hline + 0.1829'' \end{array}$$

$$\begin{array}{r} \log S_0 \quad 0.33750'' \\ 9.97825'' \\ 8.50724 \\ 1.85201'' \end{array}$$

$$\begin{array}{r} 9.5113'' \\ 0.6750'' \\ 7.0534 \\ 7.2397'' \end{array}$$

$$\begin{array}{r} + 71.12'' \\ + 01 \quad 11.12'' \\ A \quad 07 \quad 57 \quad 51.90 \end{array}$$

$$\begin{array}{r} \eta_1 \quad + 0.0017'' \\ \eta_0 \quad + 0.1812'' \end{array}$$

$$\begin{array}{r} \alpha_0 \quad 07 \quad 59 \quad 03.02'' \\ + 4.37'' \end{array}$$

$$\begin{array}{r} 9.25816'' \\ 7.33115'' \\ 1.92701'' \\ + 84.53'' \end{array}$$

$$\alpha' \quad 07 \quad 59 \quad 07.39''$$

$$+ 1 \quad 24.5''$$

$$\delta \quad + 17 \quad 57 \quad 43.4$$

$$\delta_0 \quad + 17 \quad 59 \quad 07.9''$$

$$- 11.0$$

$$\delta' \quad + 17 \quad 58 \quad 56.9''$$

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Mean Position

7

$$\begin{array}{r}
 10 \quad 23.5850 \\
 \quad + 2 \\
 \hline
 23.5852
 \end{array}$$

$$\begin{array}{r}
 40 \quad 16.0280 \\
 \quad - 9 \\
 \hline
 16.0271
 \end{array}$$

Frame Plate Constants

$$\begin{array}{r}
 24.1752 \\
 22. \\
 \hline
 3. \quad + 2.1752
 \end{array}$$

$$\begin{array}{r}
 18.1829 \\
 18. \\
 \hline
 + 0.1829
 \end{array}$$

$$\begin{array}{r}
 \log S. \quad 0.33750 \\
 997825 \\
 8.50724 \\
 1.85201
 \end{array}$$

$$\begin{array}{r}
 9.5113 \\
 06750 \\
 7.0534 \\
 7.2397
 \end{array}$$

$$\begin{array}{r}
 + 71.12 \\
 + 01 \quad 11.12 \\
 A \quad 07 \quad 57 \quad 51.90
 \end{array}$$

$$\begin{array}{r}
 20 \quad 07 \quad 59 \quad 03.02 \\
 \quad \quad \quad + 437
 \end{array}$$

$$\alpha' \quad 01 \quad 59 \quad 07.39$$

$$\begin{array}{r}
 \eta \quad + 00017 \\
 \gamma_0 \quad + 0.1812
 \end{array}$$

$$\begin{array}{r}
 9.25816 \\
 7.33115 \\
 1.92701
 \end{array}$$

$$- 84.53$$

$$\begin{array}{r}
 + 1 \quad 24.53 \\
 E \quad + 17 \quad 57 \quad 43.40
 \end{array}$$

$$\begin{array}{r}
 \delta_0 \quad + 17 \quad 59 \quad 07.9
 \end{array}$$

$$- 11.0$$

$$\delta' \quad + 17 \quad 58 \quad 56.9$$

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Lunar Parallax.

8

α'	07	59	07.39"	π	55	06.3"
θ	08	52	57.80"			
$\theta - \alpha$	+23		50.41"			
$=$	+5	57	36.15"			9.86913
$\frac{1}{2}\alpha - \alpha'$		2	13.80			8.20490"
$\theta - \alpha - "$	+5	55	22.35"			9.01634"
						002269"
						7.11306
			9.95727			
			0.00000	$\alpha - \alpha'$	+4	27.59
			000232"			
			9.95959"	$=$	+17.84	

γ	42	20	16.8"
δ'	+17	38	56.9"
$\gamma - \delta'$	24	21	19.9"

9.82640
 8.20490"
 9.61531"
 0.17166"
 7.81827"

$\delta - \delta'$ 22 37.4"

δ	18	21	34.3"	α	7	59	25.23
$\gamma - \delta$	+18	21	36.7"	$\alpha - \alpha'$	7	59	24.12"
$\delta - \alpha$			-2.4"	$\delta - \alpha$			+1.11
curr.			+0.1"	curr.			-0.03"
3rd and Ref.			0.0				
δ	+18	21	34.4	α	7	59	25.20
$\delta - \alpha$			-2.3	$\delta - \alpha$			+1.08

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Lunar Parallax.

8

α' 07 59 09.39
 G 08 22 57.80
 $E \lambda$ + 23 50.41
 $=$ + 5 57 36.15
 $\frac{1}{2} \times \lambda$ 2 13.80
 $E - \lambda - "$ + 5 55 22.35

995727
 000000
 000232
 995959

π 55 06.3

986913
 820490
 901639
 002269
 711306

$\lambda - \lambda'$ + 4 27.59
 $=$ + 17.84

γ 42 20 16.8

δ' + 1.7 58 56.9

$\gamma - \delta'$ 24 21 19.9

982640
 820490
 961531
 017166
 781827

$\delta - \delta'$ 22 37.4

δ 18 21 34.3

$\gamma - \delta$ + 1.8 21 36.7

$\delta - \delta'$ - 2.4

curr. + 0.1
 2nd And Ref. 0.0

δ + 1.8 21 34.4

$\delta - \delta'$ - 2.3

α 7 59 25.23

$\gamma - \alpha$ 7 59 24.12

$\delta - \alpha$ + 1.15

curr. - 0.03

α 7 59 25.20

$\delta - \alpha$ + 1.08

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Star Measures

11

1	18654	16502	16022	16142
104	15720	943842	12010	10152
5.4	20	46	10	52
	54	02	22	42
	<u>10.2934</u>	<u>10.2940</u>	<u>5.4012</u>	<u>5.4010</u>
3	16038	16150	16342	16783
20.1	1536462	6832	1293236	1018889
44	60	32	40	90
	38	50	4.3406	83
	<u>20.0676</u>	<u>20.0682</u>		<u>4.3406</u>
3	17550	16620	18164	16896
14.3	1372824	1045452	4036	16020
24.9	20	5052	3234	2422
	50	20	64	96
	<u>24.3826</u>	<u>24.3832</u>	<u>24.9130</u>	<u>24.9126</u>
4	16990	17150	16518	16270
35.5	12150	10980	9208	13376
24.7	50	8482	08	76
	90	50	18	80
	<u>35.3840</u>	<u>35.3832</u>	<u>24.7310</u>	<u>24.7306</u>

Moon

1		16148	18408
23.1		12946	1162016
14.4		46	12
		48	08
		<u>14.3202</u>	<u>14.3208</u>
2		16414	16202
24.0		1052224	12098
14.6		26	98
		14	02
		<u>14.5890</u>	<u>14.5896</u>

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Star Measures

11

-	18659	16502	16022	16142
0.4	15720	943842	12010	10152
4	20	46	10	52
	59	02	22	92
	<u>10.2934</u>	<u>10.2940</u>	<u>5.4012</u>	<u>5.4010</u>
1	16038	16150	16342	16783
8	1536462	6832	1293236	1918889
	60	32	40	90
	38	50	4.3408	83
	<u>20.0676</u>	<u>20.0682</u>	<u>4.3408</u>	<u>4.3406</u>
3	17550	16620	18164	16896
4	1372834	10459	9036	16020
	20	5052	3234	2422
	50	20	64	96
	<u>24.3826</u>	<u>24.3832</u>	<u>24.9130</u>	<u>24.9126</u>
5	16990	17150	16518	16270
7	12150	1098082	9208	13376
	50	8982	08	76
	90	50	18	70
	<u>35.3840</u>	<u>35.3832</u>	<u>24.7310</u>	<u>24.7306</u>

Moon

-	16148	18408
3.1	12946	1162016
4.4	46	12
	48	08
	<u>14.3202</u>	<u>14.3208</u>
240	16414	16202
196	1052224	12090
	26	96
	14	02
	<u>14.5890</u>	<u>14.5896</u>

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Moon Measures

12

3	16882	16940
24.4	12120	11694
15.0	2422	94
	82	40
	<u>24.4760</u>	<u>24.4754</u>

4	16888	16636	16204	16270
24.5	10658	12880	14050	841214
15.2	58	80	58	16
	88	36	09	70
	<u>24.6230</u>	<u>24.6244</u>	<u>15.2150</u>	<u>15.2144</u>

5	16236	16609
24.9	7380	15460
16.0	80	60
	36	04
	<u>24.8856</u>	<u>24.8856</u>

6	16242	16580
24.9	730402	15524
16.1	00	34
	42	80
	<u>24.8940</u>	<u>24.8944</u>

7	16276	16580
24.7	928225	135669
17.0	88	72
	76	80
	<u>24.6991</u>	<u>24.6989</u>

8	16600	16820
24	9036	14376
17.8	36	76
	00	20
	<u>17.7564</u>	<u>17.7556</u>

14/31

Moon Measures

12

3	16882	16940
24.9	12120	11694
15.0	24 ²²	94
	82	40
	<u>298760</u>	<u>294754</u>

4	16888	16636	16204	16270
24.5	10658	12880	14050 ⁵⁴	841214
15.2	58	80	58	16
	88	36	09	70
	<u>296230</u>	<u>296244</u>	<u>152150</u>	<u>152144</u>

5	16236	16604
24.9	7380	15460
16.0	80	60
	36	04
	<u>298856</u>	<u>298856</u>

6	16242	16580
24.9	73040 ²	15524
16.1	00	24
	42	80
	<u>298940</u>	<u>298944</u>

7	16276	16580
24.7	92828 ⁵⁴	1356669
17.0	88	72
	76	80
	<u>296991</u>	<u>296989</u>

8	16600	16820
24	9036	14376
17.8	36	76
	00	20
	<u>177564</u>	<u>177556</u>

14131

Times Etc

13

Date Nov. 5 1917

Exp to Stars 0 6 45[✓]
 " " Moon 6 51 23.0[✓]
 clock slow + 01 28.2[✓]

0 6 57[✓]
 6 51 23.2[✓]

H. Sid. Time 6 52 51.3[✓]
 H. Long 4 44 31.05[✓]
 S. Sid. Time 11 37 22.35[✓]
 " " " M.N 14 56 34.64[✓]
 Interval 20 40 47.71[✓]
 Red 13 23.27[✓]
 G. m. T 20 37 24.44[✓]

 $\theta = -1^h 52^m$
 $20^h 62 345^m$

From Naut. Alman. R. A.

Dec.

Moon 20^h 8 43 12.50 + 15 0 40.2[✓]
 Motion 1^m 1.9565[✓] - 9.913[✓]
 " 37^m 4073[✓] 01 13.19 - 06 10.8[✓]
 Tabular Place 8 44 25.69[✓] + 14 54 29.4[✓]

934" = 12.6

Avg Moon 21^d

$A = -5^h 05.5^m$
 $+ 24.0$
 $- 48 1.5$

Parallax 54 38.97[✓]
 Moon Semidian 14 55.1[✓]
 R. 89 5.1[✓]
 Aug 1.9 11.6[✓]
 L^u. 5[✓] - 0.3[✓]
 R. 906.4[✓]
 R. 19430[✓]
 a R. - 936[✓]
 11+0 R. 1.8494[✓]
 R² 34203[✓]

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Times Etc

13

Date Nov 5 1917

Exp to Stars	0 6	45		0 6	57	
Mean	6	51	23.0	6	51	23.2
clock slow		01	28.2			

H Sid Time	6	52	51.3
------------	---	----	------

H Long	4	44	31.05
--------	---	----	-------

S Sid Time	11	37	22.35
------------	----	----	-------

M.N	14	56	34.69
-----	----	----	-------

Interval	20	40	47.71
----------	----	----	-------

Red		13	23.27
-----	--	----	-------

G.M.T.	20	37	24.44
--------	----	----	-------

 $\theta = -1^h 52^m$
 $20^h 62^m 34.5^s$

From Naut Alman. R.A.

Dec.

Moon	20 ^h	8	43	12.50	+15	0	40.2
------	-----------------	---	----	-------	-----	---	------

Moon 1 ^m				195.65			9913
---------------------	--	--	--	--------	--	--	------

"	37 ^h	40	73	0.1	13.19	16	70.8
---	-----------------	----	----	-----	-------	----	------

Tabular Place	8	44	25.69	+14	54	29.4
---------------	---	----	-------	-----	----	------

 $434'' \rightarrow 12.6$

Avg Moon 219

Parallax	54	38.97
----------	----	-------

Moon Semidiam	54	55.1
---------------	----	------

R	89.51
---	-------

Avg	1.178
-----	-------

2nd: 5"	-0.3
---------	------

R	906.4
---	-------

R	1.9430
---	--------

a R	-936
-----	------

1+4R	1.8494
------	--------

R ²	34203
----------------	-------

 $A = -5^h 05^m 5^s$
 $+24.0$
 -48.15

10.2937	5.4011	10340	1055.52
20.0679	4.3406	10160	95.21
24.3829	34.9128	12409	8949
35.3836	24.7308	12338	7783

3468	3031	22749	19501
55.45	2907	22498	17304

3036	9.74	20500	28073
5977	4964	24747	16732

-20.77	+	1.24	=	+	251	=	+	2197
-29.41	-	39.90	=	-	4247	=	+	3341
-20.77	+	1.24	=	+	251.0	=	+	2197.0
-0.91	-	1	=	-	131.8	=	+	103.8

-21.68	+	119.2	=	+	2300.8	X = -51.5 = -106.0
-39.90	=	-4247	=	-162.0	=	-4409
	=	+3341	=	3120	=	+221

g. + 110.2 = -5.54

10.2937	5.4011	10340	1055.2
20.0679	4.3406	10160	95.21
24.3829	54.9128	12409	8949
35.3836	24.7308	12338	7783

3468	3031	22749	19501
55.45	2907	22498	17304

3036	9.74	20500	20073
5977	4964	24747	16732

-20.77	+	1.24	=	+	251	=	+	2197
-29.41	-	39.90	=	-	4247	=	+	3341
-20.77	+	1.24	=	+	251.0	=	+	2197.0
-0.91	-	(1)	=	-	131.8	=	+	103.8

-21.68	+	119.2	=	+	2300.8	X = -5.5	=	-106.0
-39.90	=	-4247	=	-162.0	=	-4409	g =	+110.2
	=	+3341	=	-3120	=	+221		= -5.54

4.200
3.8249
3757
2100
5851

961

Egan Adams

4.200
3.8249
3757
2100
5851

981

Egan Adams

14131

Standard Coordinates

14

Cape No. 3548 my 7.1

Cape No. 1223 my 6.3 Cape No. 1238 my 5.1

C	08	43	09.74	08	45	27.36	08	51	40.38
q						27.37			40.35
z						27.31			40.35
m	08	43	09.74	08	45	27.34	08	51	40.36
Pec			+56.21			56.87			+56.94
x	08	44	05.95	08	46	24.21	08	52	37.30
A	08	45	07.96	08	45	07.96	08	45	07.96
x-A	-01		02.01	+01		16.25	+7		29.34
sin			-62.01			+76.25			+449.27
log			1.79246			1.88224			2.65251
" cos			9.98893			9.98357			9.98361
" S.			0.28863			0.37305			1.14336
S.	-1.9437			+2.3607			+13.9110		
S.	-10			+4			+80		
S	20.0553			24.3611			35.9190		
X	20.0679			24.3829			35.3836		
X-S	+0126			+0218			-5354		

C	+12	56	36.5	15	43	17.7	15	42	22.7
q						17.7			22.5
z						17.1			22.4
m	12	56	36.5	15	43	17.5	15	42	22.5
Pec	-03		41.7	-03		44.6	-03		52.1
S	12	52	54.8	15	39	32.9	15	38	30.4
D	14	43	05.6	14	43	05.6	14	43	05.6
S-D	-1	50	10.8	+56		27.3	+55		24.8
tan			-6613.1			+3387.6			+3325.1
log			3.82041			3.52989			3.52180
" No			1.15156			0.86104			0.85295
tan			9.3593			9.4476			9.4471
S ²			0.5772			0.7461			2.2867
log			6.9899			7.2471			8.7872
no	-14.1761			+7.2617			+7.1277		
n ₁	+0.0010			+0.0018			+0.0613		
n ₂	3.8249			25.2635			25.1890		
q	4.3406			24.9129			24.7308		
q ₂	+5.157			-35.07			-45.82		

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Standard Coordinates

14

Cape No. 3548 May 71

Cape No. 1223 May 63 Cape No. 1238 May 51

C	08	43	09.74	08	45	27.35	08	51	40.38
Y						27.37			40.35
Z						27.31			40.35
m	08	43	09.74	08	45	27.34	08	51	40.38
Puc			+56.21			56.61			+56.9
X	08	44	05.95	08	46	24.21	08	52	31.30
A	08	45	07.96	08	45	07.96	08	45	07.96
X-A	-01		02.01	+01		16.25	+7		29.34
Sm			-62.01			+76.25			+448.27
log			1.79296			1.88224			2.65251
cos			998893			998357			998361
S			0.28863			0.37305			1.14336
J	-1.9	43	7	+2.3	60	7	+13.9	11	0
J	-	10		+14			+8	0	
J	20.0	55	3	24.2	61		35.9	19	0
X	20.0	67	9	24.3	82	9	35.3	83	6
X-S	+01	26		+02	18		-5	35	4

C	+12	54	36.3	+15	43	17.7	15	42	22.7
Y						17.7			22.5
Z						17.1			22.9
m	1.2	56	36.5	15	43	17.5	15	42	22.5
Puc	-03		41.7	-03		44.6	-03		52.1
S	1.2	52	54.8	15	39	32.9	15	38	30.4
Q	1.4	43	05.6	14	43	05.6	14	43	05.6
S-Q	-1	50	10.8	+1	56	27.3	+5	55	24.8
tan			-66131.1			+3387.6			+3325.1
log			3.82041			3.52989			3.52180
η_0			1.15156			0.86104			0.85295
tan δ			935.93			944.76			944.71
δ_0			057.72			074.61			228.67
log δ_1			6.9899			7.2471			8.7872
η_0	-14.1	70	1	+7.2	61	7	+7.1	27	7
η_1	+0	00	10	+0	00	18	+0	06	13
η_2	38	24	9	25	26	35	25	18	90
	4.3	40	6	24	91	24	24	73	08
	+5	15	7	-8	50	7	-4	58	2

S_0	N_0	DS	-7.55	$+94$	$+14$
-12.22	-13.42	-98	$+92$	-6	$-12 = -18$
-1.94	-14.18	-10	$+15$	$+3$	$-13 = -10$
$+2.36$	$+7.26$	$+3$	-18	-15	$+6 = -9$
$+13.91$	$+7.13$	$+80$	-104	-24	$+6 = -18$
$+1.05$	-1.93		-8	-2	$+4 = +0.01$

$$\begin{array}{rcl}
 \Delta\eta & -3.24 & -3.15 + 22 \\
 -106 + 43 & -63 + 38 & -25 \\
 -70 + 45 & -25 + 6 & -19 \\
 +11 & -23 & -12 - 7 = -19 \\
 +42 & -23 & +19 - 43 = -24 \\
 & +6 & -3 = +25 = +1.2
 \end{array}$$

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Plate Constants & Center

15

24.3829	24.9128	08 46	24.21	15 39	32.9
22.	18.	-01	16.25	-56	27.3
-2.3829	-6.9128				
32	490				
-76.25	-3387.3				

Plate Center

$$A = 08 \quad 45 \quad 07.96.$$

$$D = +14 \quad 43 \quad 05.6.$$

0.01

$$\begin{array}{rclclcl}
 X-S & +50.0X & & -110.5Y & & +5.5X & -97.95 \\
 +5193 + 5147 & = 10340 & -597 = & 9743 & +57 = & 9800 \\
 +0129 + 10034 & = 10160 & -479 = & 9681 & +110 = & 9791 \\
 +0218 + 12191 & = 12409 & -2752 = & 9657 & +134 = & 9791 \\
 -5354 + 17692 & = 12338 & -2732 = & 9606 & +194 = & 9800 \\
 23.0442 + 11522 & & -1787 = & & +127 = & 23.0509
 \end{array}$$

2

$$\begin{array}{rclclcl}
 Y-T & +50.0Y & & +106.1X & & +5.54Y & -116.74 \\
 +7852 + 2700 & = 10552 & +1092 = & 11644 & +30 = & 11674 \\
 +7327 + 2194 & = 9521 & +2129 = & 11650 & +24 = & 11674 \\
 -3507 + 12456 & = 8949 & +2586 = & 11535 & +138 = & 11673 \\
 -4582 + 12365 & = 7783 & +3754 = & 11537 & +137 = & 11674 \\
 16.1716 + 8086 & & +2445 = & & +89 = & 16.0662
 \end{array}$$

Tables $a = -1.1$
obs. $-50.5.5$

$b = -2.3$
 $-50.5.5$

$a-b = +1.2$
 $+0.04$

$b+d = +1.6$
 $+4.4$

-504.4

-503.2

-1.2

$+2.8$

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Plate Constants + Center

15

24.3829	24.9128	0.846	24.21	15.39	32.9
22.	18.	-01	16.25	-56	26.3
-2.3829	-6.9128				
<u>32</u>	<u>490</u>				
-76.25	-33.873				

Plate Center

$$A = 0.845 \quad 07.96$$

$$D = +14 \quad 43 \quad 05.6$$

$\delta + 5^{\circ}00'$	-110.54	$+5.5''$	$-97.95''$
$5193 + 5147 = 10340$	$-597 = 9743$	$+5.7 = 9800$	
$0129 + 10034 = 10160$	$-479 = 9681$	$+110 = 9791$	
$0218 + 12191 = 12409$	$-275.2 = 9657$	$+134 = 9791$	
$5354 + 17692 = 12338$	$-2732 = 9606$	$+194 = 9800$	
$230442 + 1152.2$	-1787	$+127 = 23.0509$	

$\gamma + 5^{\circ}00'$	$+106.1''$	$+5.54''$	-116.74
$45.2 + 2700 = 10552$	$+1092 = 11644$	$+30 = 11674$	
$327 + 2194 = 9521$	$+2129 = 11650$	$+24 = 11674$	
$1507 + 12456 = 8949$	$+2586 = 11535$	$+138 = 11673$	
$582 + 12365 = 7783$	$-3754 = 11537$	$+137 = 11674$	
$161716 + 8086$	$+2445$	$+89 = 16.0662$	

after $a = -1.1$
 obs. -50.55

$b = -2.3$ $a-b = +1.2$
 -505.54 $+0.04$

$b+d = +1.6$
 $+7.4$

14131

Moon Center

16

0 - c

1	23.0440	0.0000	+3	00000	3.4284	+	81
2	24.0000	+0.9560	+2	0.9143	3.4196	-	7
3	24.4757	+1.4317	+2	2.0503	3.4241	+	38
4	24.6237	+1.5797	+1	2.4954	3.4120	-	83
5	24.8856	+1.8416	+0	3.3915	3.4211	+	8
6	24.8942	+1.8502	0	3.4232	3.4232	+	27
7	24.6990	+1.6550	-1	2.7387	3.4243	+	40
8	24.0000	+0.9560	-2	0.9135	3.4229	+	26
				9269	3.4203		

arc

1	14.3205	-1.8515	-1	3.4284	180°
2	14.5893	-1.5827	-1	2.5053	149°
3	15.0000	-1.1720	-1	1.3738	129°
4	15.2147	-0.9573	-1	0.9166	121°
5	16.0000	-0.1720	-0	0.0296	95°
6	16.1720	0.0000	0	0.0000	90°
7	17.0000	+0.8280	+0	0.6856	63°
8	17.7560	+1.5840	+1	2.5094	31°
				4427	

Range 149.

- X = 24 y = 14.5893

17.7560

32.3453

y₀ 16.1726y_{max} 14.3205

1.8521

Com R. 1.8495

X_{max} 24.8942X₀ 23.0421

Moon Center

X₀ 23.0440y₀ 16.1720

14131

Mican Center

16

0 - C

1	14.3205	+3	000000	3.4284	+81
2	24.0000	+2	09143	3.4196	-7
3	24.4757	+2	20503	3.4241	+38
4	24.6237	+1	24954	3.4120	-83
5	24.8856	+0	3.3915	3.4211	+8
6	24.8942	0	34232	3.4232	+29
7	24.6990	-1	2.7387	3.4243	+40
8	24.0000	-2	09135	3.4229	+26
				3.4603	

ARC

1	14.3205	-1	3.4284	1800
2	14.5893	-1	2.5053	149
3	15.0000	-1	1.3738	129
4	15.2147	-1	0.9166	121
5	16.0000	-0	0.0296	95
6	16.17	0	0.0000	90
7	17.0000	+0	0.6856	63
8	17.7560	+1	2.5094	31

Range 149

$$- X = 24.04 - 14.5893$$

$$17.7560$$

$$32.3453$$

$$y_0 = 16.1726$$

$$if \text{ min } R = 14.3205$$

$$18.521$$

Came R.

Formation of Normals.

1	0.00	00.0	- 149.8
2	- 1.52	- 6.7	+ 11.0
3	- 1.67	+ 54.3	- 44.5
4	- 1.52	- 131.2	+ 7.6
5	- 0.31	+ 14.7	- 1.4
6	0.00	+ 53.6	- 0.0
7	+ 1.38	+ 66.4	+ 33.2
8	+ 1.52	+ 25.0	+ 41.0
	+2.90	+2.140	+ 92.8
	-5.02	-137.9	- 195.7
	-2.12	+ 76.1	- 102.9

14131

Conditional Equations.

17

O-C

1	0.00	-1.85 = +81	0. +15	= +15	+66
2	+0.96	-1.58 = -7	+3. +13	= +16	-23
3	+1.43	-1.17 = +38	+5. +10	= +15	+23
4	+1.58	-0.96 = -83	+6. +8	= +14	-97
5	+1.84	-0.17 = +8	+7. +1	= +8	0
6	+1.85	0.00 = +29	+7. 0	= +7	+22
7	+1.66	+0.83 = +40	+6. -7	= -1	+41
8	+0.96	+1.58 = +26	+3. -13	= -10	+36

+ 188 - 120

av. 38

$$+15.93 - 2.12 = +76.1$$

$$- 2.12 + 11.45 = -102.9$$

$$+ () - 0.28 = +10.1$$

$$+ 11.17 = -92.8$$

$$h = -8.3$$

$$+15.93 = +76.1 - 17.6 = +58.5 \quad a = +3.7$$

Arc 149

$$\frac{p}{n} = .16$$

$$\frac{2k}{n} = +8.5$$

$$\frac{+8.5}{.15} = +56$$

$$\Delta R = +0.7$$

14131

Conditional Equations.

17

0 - C

1	0.000	-1.85° = +81	0 + 15° = +15	+66
2	+0.96	-1.58 = -7	+3 + 13 = +16	-23
3	+1.43	-1.17 = +38	+5 + 10 = +15	+23
4	+1.58	-0.96 = -83	+6 + 8 = +14	-98
5	+1.84	-0.17 = +8	+7 + 1 = +8	0
6	+1.85°	0.00 = +29	+7 0 = +7	+22
7	+1.66	+0.83 = +40	+6 + 7 = +13	+41
8	+0.96	+1.58 = +26	+3 - 13 = -10	+36

+ 188 - 120

$$+15.93 - 2.12 = +76.1$$

or 38

$$- 2.12 + 11.45 = -102.9$$

$$+ () - 0.28 = +101$$

$$+ 11.17 = -92.8$$

$$L = -83 -$$

$$+15.93: +76.1 - 11.6 = +58.5 \quad a = +3.7$$

Arc 149

$$\frac{P}{n} = 15$$

$$\frac{24}{n} = 48.5$$

$$\frac{+83}{15} = +5.6$$

$$\Delta R = +0.7$$

14131

Moon's Mean Position

18

$$\begin{array}{r} X_0 \quad 23.0440 \\ \quad + 2 \\ \hline 23.0442^{\vee} \end{array}$$

$$\begin{array}{r} Y_0 \quad 16.1720 \\ \quad - 4 \\ \hline 16.1716^{\vee} \end{array}$$

$$\begin{array}{r} 23.0509^{\vee} \\ 22. \\ \hline + 1.0509 \end{array}$$

From Plate Constants.

$$\begin{array}{r} 16.0662^{\vee} \\ 18. \\ \hline - 1.9338^{\vee} \end{array}$$

$$\begin{array}{r} 0.02156^{\vee} \\ 9.98601 \\ 8.50724 \\ 1.52831^{\vee} \end{array}$$

$$\begin{array}{r} 9.4116^{\vee} \\ 0.0431 \\ 7.0534 \\ 6.5081 \end{array}$$

$$\begin{array}{r} \eta_1 \quad + 0.0003^{\vee} \\ \eta_0 \quad - 1.9341^{\vee} \end{array}$$

$$+ 33.75^{\vee}$$

$$A \quad 08 \quad 45 \quad 07.96^{\vee}$$

$$\alpha_0 \quad 0.8 \quad 45 \quad 41.71^{\vee}$$

$$\text{Red} \quad + 3.98^{\vee}$$

$$\alpha' \quad 08 \quad 45 \quad 45.69^{\vee}$$

$$\begin{array}{r} 0.28648^{\vee} \\ 7.33115^{\vee} \\ 2.95533^{\vee} \end{array}$$

$$- 902.3^{\vee}$$

$$- 15 \quad 02.3^{\vee}$$

$$D = + 14 \quad 43 \quad 05.6^{\vee}$$

$$S_0 \quad + 14 \quad 28 \quad 03.3^{\vee}$$

$$\text{Red} \quad - 14.0$$

$$S' \quad + 14 \quad 27 \quad 49.3^{\vee}$$

14.31

Mean Mean Position

18

$$\begin{array}{r} X_0 \quad 23.0440 \\ \quad + 2 \\ \hline 23.0442 \end{array}$$

$$\begin{array}{r} Y_0 \quad 16.1720 \\ \quad - 4 \\ \hline 16.1716 \end{array}$$

From Plate Constants

$$\begin{array}{r} 23.0509 \\ 22 \\ \hline +1.0509 \end{array}$$

$$\begin{array}{r} 16.0662 \\ 18 \\ \hline -1.9338 \end{array}$$

$$\begin{array}{r} 0.02156 \\ 998601 \\ 850724 \\ 1.52831 \end{array}$$

$$\begin{array}{r} 99116 \\ 0.0431 \\ 7.0534 \\ 6.5081 \end{array}$$

$$+33.75$$

$$\begin{array}{r} T_1 \quad +0.0003 \\ T_0 \quad -1.9341 \end{array}$$

$$\begin{array}{r} 0.28648 \\ 7.33115 \\ 2.95533 \end{array}$$

$$A \quad 0.8 \quad 45 \quad 07.96$$

$$X_0 \quad 0.8 \quad 45 \quad 41.71$$

$$\text{Red} \quad +3.98$$

$$X \quad 0.8 \quad 45 \quad 45.69$$

$$\begin{array}{r} -902.3 \\ -15 \quad 02.3 \\ B_0 \quad +14 \quad 43 \quad 05.6 \end{array}$$

$$S_0 \quad +14 \quad 28 \quad 03.3$$

$$\text{Red} \quad -14.0$$

$$S \quad +14 \quad 27 \quad 49.3$$

$$\begin{array}{r}
 (1) \quad 8 \quad 42 \quad 26.764 \\
 \quad \quad \quad 22.940 \\
 \quad \quad + 3.824 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 6 \quad 43 \quad 15.93 \\
 \quad \quad \quad 26.95 \\
 \hline
 - 11.02
 \end{array}$$

$$\begin{array}{r}
 2. \quad 8 \quad 49 \quad 15.466 \\
 \quad \quad \quad 11.098 \\
 \quad \quad + 4.376 \\
 \hline
 \end{array}$$

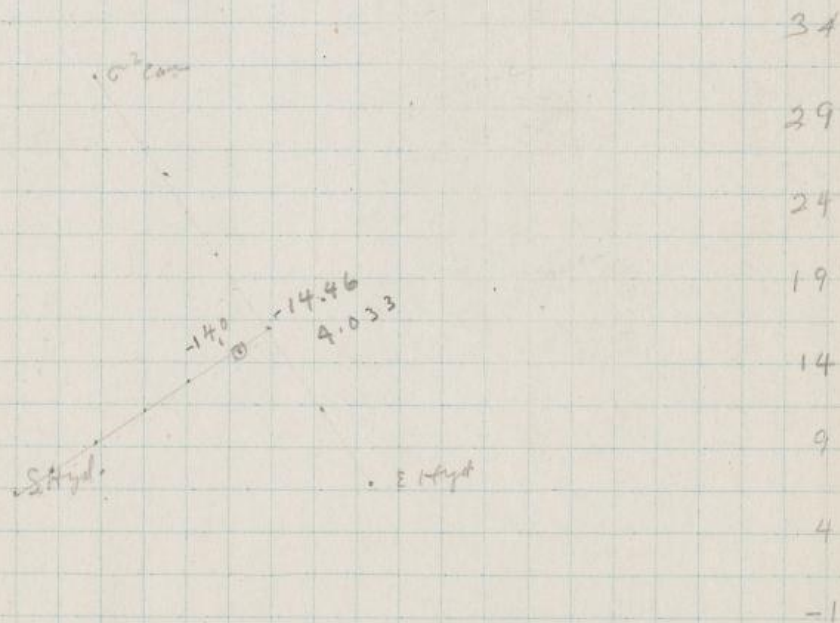
$$\begin{array}{r}
 30 \quad 53 \quad 20.43 \\
 \quad \quad \quad 40.50 \\
 \hline
 - 20.07
 \end{array}$$

$$\begin{array}{r}
 3. \quad 8 \quad 51 \quad 4.269 \\
 \quad \quad \quad 0.503 \\
 \quad \quad + 3.766 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 6 \quad 15 \quad 32.32 \\
 \quad \quad \quad 43.81 \\
 \hline
 - 11.49
 \end{array}$$

$$\begin{array}{r}
 4.376 \\
 3.824 \\
 \hline
 5.52
 \end{array}$$

$$\begin{array}{r}
 - 20.07 \\
 11.02 \\
 \hline
 9.05
 \end{array}$$



14131

Reduction to Apparent Place.

19

$H + \alpha_0$	11	42.3	$175^\circ 34.5''$	δ_0	$+14^\circ 28.1$
H	2	56.6		$\cos \delta_0$	9.9860
α_0	8	45.7		$\log r$	0.7724
G	23	52.6		(1)	0.7584
$G + \alpha_0$	8	38.3	$129^\circ 34.5''$		

$\cos G + \alpha_0$	9.8042 ^m
g	1.3686
$\sin G + \alpha_0$	9.8869
$\tan \delta_0$	9.4117
	8.8239

$\sin \delta_0$	9.3977
$\cos H + \alpha_0$	9.9987 ^m
h	1.2922
$\sin H + \alpha_0$	8.8873 ⁻
$\sec \delta_0$	0.0140
	8.8239

$\log f'$	1.1728 ⁻
g	9.4911 ⁻

$\log h'$	0.6886 ^m
h	9.0174 ⁻

f	+3.568
g	+0.310
h	+0.104
Red	+3.982 ⁻

g	-14.890 ⁻
L	-4882 ⁻
I	+5.733 ⁻
Red.	-14.039 ⁻

14131

Reduction to Apparent Place.

19

$H + \alpha_0$ 11 42.3 175° 34.5°
 H 2 56.6
 X_1 8 45.7
 C 23 52.6
 $C + \alpha_0$ 8 38.3 129° 39.5°

 δ_0 +14° 28.1

$\cos \delta_0$ 99860
 $\log i$ 0.7724
 (ii) 0.7584

$\cos C + \alpha_0$ 98042~
 q 13686
 $\sin C + \alpha_0$ 98869
 $\tan \delta_0$ 94117
 88239

$\sin \delta_0$ 93977
 $\cos H + \alpha_0$ 99987~
 h 12922
 $\sin H + \alpha_0$ 98873
 $\sec \delta_0$ 0.0140
 88239

$\log q'$ 1.1728~
 q 94910~

$\log h'$ 0.6886~
 h 9.0174~

f +3.568
 g +0.310
 h +0.104
 Red +3.982~

q -14.890~
 h' -4882~
 i +5.733~
 $Red.$ -14.039~

14131

Lunar Parallax

20

α' 08 45 45.69"
 θ 06 52 51.30"
 $\phi - \alpha'$ -1 52 54.39"
 $=$ -28° 13 35.85"
 $\frac{1}{2} \alpha - \alpha'$ - 9 53.63"
 $\phi - \frac{1}{2} \alpha$ -28 03 42.22"

 π 54' 38.97"

9.86913
 8.20130"
 9.67482"
 0.01487"
 7.76012"

9.95727
 0.00000
 005431"
 0.01158"

 $\alpha - \alpha'$ -19' 47.27"

 $=$ -1" 19.15"

 γ 45 45 -50.4"

 δ' +14 27 49.3"

 $\gamma - \delta'$ 31 18 01.1

9.82640
 8.20130"
 0.14480"
 9.71560"
 7.88810

 $\delta - \delta'$ +26 34.1

 δ +14 54 23.4"

 $\phi - \delta$ +14 54 29.4"

 $0 - c$ -6.0"

Curr. +1.0"
 Quoted Ref. 0.0

 δ +14 54 24.4

 $0 - c$ -5.0

 α 08 44 26.34"

 $\phi - \alpha$ 08 44 25.69"

 $0 - c$ +0.85"

Curr. +0.01"

 α 08 44 26.55"

 $0 - c$ +0.86

14131

Yuma Parallax

20

α' 08 45 45.69
 δ 06 52 51.30
 $\Delta \alpha'$ -1 52 54.39
 $\Delta \delta$ -280 13 35.85
 $\frac{1}{2} \Delta \alpha'$ -9 53.63
 $\Delta \alpha' \frac{1}{2}$ -28 03 42.22

 π 5.4' 38.97

986913
 820130
 9.67482~
 0.01487
 776012~

995727
 0.00000
 005431
 0.01158

 $\alpha - \alpha'$ -19' 47.27

 $\delta - \delta'$ -1" 19.15

 γ 45 45 50.9

 δ' 14 27 49.3

 $\gamma - \delta'$ 31 18 01.1

982640
 820130
 014480
 971560
 788810

 $\delta - \delta'$ 26 34.1

 δ +14 54 23.4

 $\epsilon \delta$ +14 54 29.4

 $\delta - \delta'$ -6.0

Curr +1.0
 Quoted Ref 0.0

 δ +14 54 24.4

 $\delta - \delta'$ -5.0

 α 08 44 26.54

 $\epsilon \alpha$ 08 44 25.69

 $\alpha - \alpha'$ +0.85

Curr +0.01

 α 08 44 26.55

 $\alpha - \alpha'$ +0.86

527

1

1

2

-20

3

3

24

24

4

35

24

1

23

13

2

25

14

14132

21

Star Measures

1	16098	16218	16980	17332
10.5	10634 ₃₂	11686	7602	16780 ₀₂
4.9	30	86	02	04
	98	18	80	32
	<u>10.5466</u>	<u>10.5468</u>	<u>4.9378</u>	<u>4.9370</u>
2	16770	16378	17162	16664
20.3	13585 ₈₈	9570 ₆₆	8558 ₆₀	15258
3.9	91	62	62	58
	70	78	62	64
	<u>20.3182</u>	<u>20.3188</u>	<u>3.8602</u>	<u>3.8594</u>
3	17484	16858	16994	16080
24.6	10798 ₈₄	13548 ₄₆	12740	10338
24.4	02	44	40	38
	84	58	94	80
	<u>24.6684</u>	<u>24.6688</u>	<u>24.4254</u>	<u>24.4258</u>
4	16742	17130	16284	19632
35.7	10030	13838	14048	11854
24.2	30	38	48	54
	42	30	84	32
	<u>35.6712</u>	<u>35.6708</u>	<u>24.2236</u>	<u>24.2222</u>

Mean

1		16396	17708
23.8		10502 ₀₆	13586 ₈₉
13.6		10	92
		96	08
		<u>13.5890</u>	<u>13.5881</u>
3			
25			
14.			

14132

21

Star Measures.

L	16098	16218	16980	17332
10.5	1063432	11686	1602	1690002
49	30	86	02	49
	98	18	80	32
	<u>10.5466</u>	<u>10.5468</u>	<u>49318</u>	<u>4.9319</u>
2	16770	16378	17162	16664
10.3	1358588	957066	855860	15258
3.9	91	62	62	58
	70	78	62	64
	<u>203182</u>	<u>203188</u>	<u>38602</u>	<u>3.8594</u>
2	17484	16858	16994	16080
24.6	1079888	1354846	12740	10338
24.9	02	44	40	38
	84	58	94	80
	<u>24.6684</u>	<u>24.6688</u>	<u>244254</u>	<u>24.4258</u>
4	16742	17130	16284	19632
35.7	10030	13838	14048	11854
24.2	30	38	48	54
	42	30	84	32
	<u>35.6712</u>	<u>35.6708</u>	<u>24.2236</u>	<u>24.2222</u>

Mean

16396	17708
1050206	1358689
10	92
96	08
13.5890	13.5881

Moon.

3	1 6 4 2 8	1 6 0 6 2	1 6 8 7 8	1 6 5 7 6
	1 1 7 0 0	1 0 8 0 0	1 1 1 6 8	1 2 2 8 0
	0 0	0 0	6 8	8 0
	2 8	6 2	7 8	7 6
	<u>25.4728</u>	<u>25.4738</u>	<u>14.5710</u>	<u>14.5704</u>

4	1 7 1 4 0	1 7 4 3 0
25.6	1 0 7 5 0	1 3 8 1 0
15	5 0	1 0
	4 0	3 0
	<u>25.6390</u>	<u>25.6380</u>

5	1 7 1 5 0	1 7 4 1 2
25.7	1 0 2 4 0	1 4 3 1 0, 2
15.6	4 0	1 4
	5 0	1 2
	<u>25.6910</u>	<u>25.6900</u>

6	1 7 1 7 0	1 7 3 8 6
25.6	1 1 1 4 0	1 3 4 2 0
16.0	4 0	2 0
	7 0	8 6
	<u>25.6030</u>	<u>25.6034</u>

7		1 6 5 0 0	1 6 0 3 0
25.7		7 6 9 0	1 4 8 3 0
16.8		9 0	3 0
		0 0	3 0
		<u>16.8810</u>	<u>16.8800</u>

8	1 7 6 4 4	1 6 5 5 0
24.8	9 3 4 2 44	1 4 8 4 0
17.0	4 6	4 0
	4 4	5 0
	<u>24.8300</u>	<u>24.8290</u>

Moon.

3	16428	16062	16878	16576
	14700	10800	11158	12280
	00	00	68	80
	28	62	78	76
	<u>254728</u>	<u>254738</u>	<u>145760</u>	<u>145704</u>

9	17140	17430
25.6	10750	13810
15	50	10
	40	30
	<u>256390</u>	<u>256380</u>

5	17150	17412
25.7	10240	14310.2
15.6	40	14
	50	12
	<u>256910</u>	<u>256900</u>

6	17170	17386
25.6	11140	13420
16.0	40	20
	70	86
	<u>256030</u>	<u>256034</u>

7		16500	16030
25		7690	14830
16.8		90	30
		00	30
		<u>168810</u>	<u>168800</u>

8	17644	16550
24.8	934244	14840
17.0	46	40
	44	50
	<u>248300</u>	<u>248290</u>

14132

Times Etc-

Date Nov. 5. 1917

Exp. to Stars	06	59	07	11
" " Moon	07	05	02.1	07 05 02.3
Clock Slow		01	28.2	

H. Sid. Time	07	06	30.4	
H. Long.	04	44	31.05	$\Theta = -1^h 38^m$
G. Sid. Time	11	51	01.45	
" " 11 M.N.	14	56	34.64	
Interval	20	54	26.81	
Red		03	25.51	
G. M. T	20	51	01.30	20 ^h 45 ^m 03.6

From Naut. Alman.	R.A.	Dec.
Moon 2 nd	08 43	12.50 +15 0 40.2
Latitude 1 ^m		1.9560 - 9.919
" 51 ^m 02.17	01	39.80 - 08 26.1
Tabular Place.	08 44	52.30 +14 52 14.1

937" = 12.9

Moon's ap 214

$$\begin{array}{r}
 a = -5^{\circ} 02.5' \\
 + 24.0' \\
 \hline
 - 478.5'
 \end{array}$$

Parallax	54	38.7
Semi-diam	14	55.0
R		895.0
ang		11.8
Int 5		-0.3
R		906.5
R		1,943.2
a R		-930
(1+a) R		1,850.2
R ²		3,423.2

14132

Times Etc.

Date Nov 5. 1917

Exp. to Stars	06	59		07	11	
" " Moon	07	05	02.1	07	05	02.3
Clock Slow		01	28.2			

H. Sid Time	07	06	30.4	
H. Long	04	44	31.05	$\Theta = -1^{\circ} 38'$
G Sid Time	11	51	01.45	
" " " M.N.	14	56	39.64	
Interval	20	54	26.81	
Red		03	25.51	
G.M.T	20	51	01.30	$21^{\circ} 45' 03.6$

From Naut. Almanac	RA	Dec.
Moon 20 ^h	08 43 12.50	+15° 0 40.2
Meridian 1 ^m		- 9.919
51 ^m 02.17	01 39.80	- 08 26.1
Tabular Place	08 44 52.30	+14 52 14.1

937" = 12.9

Moon sep 21^d

$$\begin{array}{r}
 G = -5^{\circ} 02.5' \\
 + 240 \\
 \hline
 - + 18.5'
 \end{array}$$

Parallax	54	38.7
Semi-diam	14	55.0
R		895.0
ang		11.8
2nd 5'		-0.3
R		906.5
R		1943.2
a R		-930
(1+a) R		1.8502
R =		3.4232

14132

Plate Constants

λ	10.5467	20.3185	24.6686	35.6710
δ	9.7744	20.0553	24.3611	35.9190
$\lambda-S$	+0.7723	+0.2632	+1.3075	-1.2480

η	4.9374	3.8598	24.4256	24.2229
π	4.6159	3.8249	25.2635	25.1890
$\eta-\pi$	+0.3215	+0.0349	-0.8379	-0.9661

$\lambda-S$	+5.00X		-125.64	+25X = 12403
+0.7723	+5.273	= 12996	-620 = 12376	+26 = 12402
+0.2632	+10.159	= 12791		
+0.3075	+12.334	= 15409	-3068 = 12341	+62 = 12403
-2480	+17836	= 15356	-3042 = 12314	+89 = 12403
23.8398	+11920		-1939	+60 = 23.6036

$\eta-\pi$	+5.004		+126X	+3.64 = 7031
+0.3215	+2469	= 5684	+1329 = 7013	+18 = 7031
+0.0349	+1930	= 2279	+	
-8379	+12213	= 3834	+3108 = 6942	+88 = 7030
-9661	+12111	= 2450	+4494 = 6944	+87 = 7031
15.4388	+7719		+3004	+56 = 15.8136

Tables	$a = -1.0$	$l = -2.3$	$a-l = +1.3$	$h+d = +1.2$
cm	-5.025	-5.036	+1.1	-0.4
	-5.015	-5.013	-0.2	-1.6

14132

Plate Constants

1	10.5467	20.3185	24.6686	35.6110
5	9.7744	20.0553	24.3611	35.9190
$\lambda - S$	+0.1723	+0.2632	+ .3015	- .2480

η	4.9374	3.8598	24.4256	24.2229
η	4.6159	3.8249	25.2635	25.1840
$\eta - \eta$	+ .3215	+ 0.349	- .8319	- .9667

$\lambda - S$	+5.00 X		5.64		+ 251 - 12403
+ 77.23	+ 5.273	= 127.96	620	12376	+ 26 = 12402
+ 26.32	+ 10.159	= 127.91			
+ 30.75	+ 12.334	= 154.09	3068	12341	+ 62 = 12403
- 24.80	+ 17.836	= 153.56	3042	12314	+ 89 = 12403
23.8398	+ 11.920		- 1939		+ 60 = 236036

$\eta - \eta$	+ 5.00 η		+ 1268		+ 364 - 7031
+ 3.215	+ 24.67	= 5.684	+ 13.29	= 70.13	+ 18 = 70.31
+ 0.349	+ 19.30	= 22.79			
- 8.379	+ 12.213	= 38.34	+ 31.08	= 69.42	+ 88 = 70.30
- 9.668	+ 12.111	= 24.50	+ 44.94	= 69.44	+ 87 = 70.31
5.4388	+ 7.719		+ 30.04		+ 56 = 15.8136

$\lambda - S = -1.0$ $\lambda = -2.3$ $\lambda - \lambda = +1.3$ $\lambda + d = +1.2$
 $-5.02.5$ $-5.03.6$ $+1.1$ $= -0.4$

14132

Moon Center

25-

O-C

1	23.8400	0.0000	+2	0.0000	3.4280	+48
2	25.0000	+1.1600	+2	1.3461	3.4200	-32
3	25.4732	+1.6332	+1	2.6677	3.4234	+2
4	25.6385	+1.7985	+1	3.2350	3.4286	+54
5	25.6905	+1.8505	+0	3.4243	3.4243	+11
6	25.6032	+1.7632	-1	3.1085	3.4221	-11
7	25.0000	+1.1600	-2	1.3451	3.4204	-28
8	24.8295	+0.9895	-2	0.9787	3.4126	-106
					3.4232	

arc.

1	13.5886	-1.8514	-1	3.4280	180
2	14.0000	-1.4400	-1	2.0739	141
3	14.5707	-0.8693	-0	0.7557	118
4	15.0000	-0.4400	-0	0.1936	104
5	15.4400	0.0000	0	0.0000	90
6	16.0000	+0.5600	+0	0.3136	72
7	16.8805	+1.4405	+1	2.0753	39
8	17.0000	+1.5600	+1	2.4339	32

Range 148

$X = 25$ $Y = 14.0000$
 16.8805
 30.8805
 $Y_0 = 15.4402$
 $y_{mk} = 13.5886$
 $R = 1.8516$
 $\text{Corr } R = 1.8502$
 $X_{\text{max}} = 25.6905$
 $X_0 = 23.8389$

Moon Center

 $X_0 = 23.8400$ $Y_0 = 15.4400$

14132

Thou Overt

221

1	23 29 00	00 00 00	+ 2	00 00 00	3 42 80	+ 48
2	25 00 00	+1.1 6 00	+ 2	1 34 61	3 42 00	- 36
3	25 47 32	+1.6 3 32	+ 1	2 66 77	3 42 34	+ 3
4	25 63 25	+1.7 9 25	+ 1	3 23 50	3 42 86	+ 54
5	25 69 05	+1.85 05	+ 0	3 42 43	3 42 43	+ 11
6	25 60 32	+1.7 6 32	+ 1	3 10 85	3 42 21	- 11
7	25 00 00	+1.1 6 00	+ 2	1 34 51	3 42 04	- 28
✓	24 52 95	+0.9 2 95	+ 2	0 91 87	3 41 26	- 106
					3 42 32	

1	135886	-18514	-1	34280
2	140000	-14400	-1	20739
3	145707	-08693	-0	07557
4	150000	-04000	-0	01936
5	154400	00000	0	00000
6	160000	+05600	+0	03136
7	168805	+14405	+1	20753
8	170000	+15600	+1	24339

unc.

180

141

118

104

90

712

39

32

Range 148

$$x = 25^\circ \quad y = 1400000$$

16. 8805"

30 88 05

15. 4 4 0 2

1 3 5 8 8 6

1. 8 5 1 6

18502

25.6905

4 m²
R
Cone R.
X war
Xo

Thompson Center

K_c 23.8400

40 15 4400

Formation of Uernals

1	-	0.00	+	00.0	-	88.7
2	-	1.67	-	37.2	+	46.0
3	-	1.42	+	3.2	-	1.7
4	-	0.79	+	97.3	-	23.8
5		0.00	+	20.4		0.0
6	+	0.99	-	19.4	-	6.2
7	+	1.67	-	32.5	-	40.3
8	+	<u>1.55</u>	-	<u>105.0</u>	-	<u>165.0</u>
		+ 4.21		+ 120.9		+ 46.0
		- 3.88		- 194.1		- 325.7
		+ 0.33		- 73.2		- 279.7

14132

Conditional Equations.

26

0 - c

1	+ 0.00	-1.85' = + 48	0	+ 46 = + 46	+ 2
2	+ 1.16	-1.44 = - 32	- 5	+ 36 = + 31	- 63
3	+ 1.63	-0.87 = + 2	- 7	+ 22 = + 15	- 13
4	+ 1.80	-0.44 = + 54	- 7	+ 11 = + 4	+ 50
5	+ 1.85	0.00 = + 11	- 7	0 = - + 7	+ 18
6	+ 1.76	+ 0.56 = - 11	- 7	- 14 = - 21	+ 10
7	+ 1.16	+ 1.44 = - 28	- 5	- 36 = - 41	+ 13
8	+ 0.99	+ 1.56 = - 106	- 4	- 39 = - 43	- 63

+ 93 - 139

or 30

$$+ 16.10 + 0.33 = - 73.2$$

$$+ 0.33 + 11.27 = - 279.7$$

$$- () - 0.00 = + 1.5$$

$$+ 11.27 = - 278.2$$

$$h = - 24.7$$

$$+ 16.10 : - 73.2 + 8.1 = - 65.1$$

$$a = - 4.0$$

arc 148

$$\frac{p}{n} = .15$$

$$\frac{\Sigma k}{n} = - 5.75$$

$$\frac{- 5.75}{.15} = - 38.3$$

$$\Delta R = - 0.5$$

14132

Conditional Equations

26

0-2

1	+0.00	-1.85' = +48	0	+46 = +46	+2
2	+1.16	-1.44 = -32	5	+36 = +31	-63
3	+1.43	-0.87 = +2	7	+22 = +15	-13
4	+1.80	-0.44 = +54	7	+11 = +4	+50
5	+1.85	0.00 = +11	7	0 = -7.1	+18
6	+1.76	+0.56 = -11	7	-14 = -21	+10
7	+1.16	+1.44 = -28	5	-36 = -41	+13
8	+0.99	+1.56 = -106	4	-39 = -43	-63
				+93 = 139	
					or 30

$$+16.10 + 0.33 = -73.2$$

$$+0.33 + 11.27 = -279.7$$

$$-1 - 0.07 = 1.5$$

$$+11.27 = -278.2$$

$$h = -24.7$$

$$+16.10 : -73.2 + 8.1 = -65.1$$

$$a = -4.0$$

arc 148

$$\frac{p}{n} = .15$$

$$\frac{\Sigma k}{n} = -5.75$$

$$\frac{-5.75}{.15} = -38.3$$

$$\Delta R = -0.5$$

14132

Moon's Mean Position.

27

$$\begin{array}{r} 23.8400^{\circ} \\ - 2^{\circ} \\ \hline 23.8398^{\circ} \end{array}$$

$$\begin{array}{r} 15.4400^{\circ} \\ - 12^{\circ} \\ \hline 15.4388^{\circ} \end{array}$$

From Plate Constants.

$$\begin{array}{r} 23.6036^{\circ} \\ 22. \\ + 1.6036^{\circ} \end{array}$$

$$\begin{array}{r} 15.8136^{\circ} \\ 18. \\ - 2.1864^{\circ} \end{array}$$

$$\begin{array}{r} 0.20509^{\circ} \\ 9.98607^{\circ} \\ 8.50724^{\circ} \\ 1.71178^{\circ} \end{array}$$

$$\begin{array}{r} 9.4106^{\circ} \\ 0.4102^{\circ} \\ 7.0534^{\circ} \\ 6.8742^{\circ} \end{array}$$

$$\begin{array}{r} \eta_1 + 0.0007^{\circ} \\ \eta_0 - 2.1871^{\circ} \end{array}$$

$$+ 51.50^{\circ}$$

$$A \quad 08 \quad 45 \quad 07.96^{\circ}$$

$$0.33987^{\circ}$$

$$\alpha_0 \quad 08 \quad 45 \quad 59.46^{\circ}$$

$$7.33115^{\circ}$$

$$3.00872^{\circ}$$

$$\text{Red} \quad + 3.98^{\circ}$$

$$- 1020.3^{\circ}$$

$$\alpha' \quad 08 \quad 46 \quad 03.44^{\circ}$$

$$- 17. \quad 0.3^{\circ}$$

$$D = 14 \quad 43 \quad 05.6^{\circ}$$

$$\delta_0 + 14 \quad 26 \quad 05.3^{\circ}$$

$$\text{Red} \quad - 14.0^{\circ}$$

$$\delta' \quad 14 \quad 25 \quad 51.3^{\circ}$$

14132

Mars Mean Position.

27

$$\begin{array}{r} 238400 \\ - 2 \\ \hline 238398 \end{array}$$

$$\begin{array}{r} 15.4400 \\ - 12 \\ \hline 15.4388 \end{array}$$

$$\begin{array}{r} 236036 \\ 22. \\ \hline + 1.6036 \end{array}$$

From Plate Constants.

$$\begin{array}{r} 15.8136 \\ 18 \\ \hline - 2.1864 \end{array}$$

$$\begin{array}{r} 0205^{\circ}09 \\ 998607 \\ 850724 \\ 171178 \end{array}$$

$$\begin{array}{r} 94106 \\ 04102 \\ 70534 \\ 6.8742 \end{array}$$

$$\begin{array}{r} \eta_1 = 00007 \\ \eta_0 = 21871 \end{array}$$

$$+ 51.5^{\circ}0$$

$$A \quad 08 \quad 45 \quad 07.96$$

$$0.33987 \sim$$

$$x_0 \quad 08 \quad 45 \quad 59.46$$

$$7.33115$$

$$3.00872 \sim$$

$$\text{Red} \quad + \quad 3.98$$

$$- 1020.3$$

$$x' \quad 08 \quad 46 \quad 03.44$$

$$- 17 \quad 0.3$$

$$D = 14 \quad 43 \quad 05.6$$

$$D_0 + 14 \quad 26 \quad 05.3$$

$$\text{Red} \quad - 1.4.0$$

$$S' \quad 14 \quad 25 \quad 51.3$$

14132

Lunar Parallax.

28

α' 08 46 03.44 $\checkmark$
 θ' 07 06 30.40 $\checkmark$
 $\theta - \alpha'$ - 1 39 33.04 $\checkmark$
 $=$ - 24 53 15.60 $\checkmark$
 $\frac{1}{2} \alpha - \alpha'$ - 8 48.08 $\checkmark$
 $\frac{1}{2} \theta - \alpha' - "$ - 24 44 27.52 $\checkmark$

π 54 38.7

9.86913
 8.20126 $\checkmark$
 9.62412 $\checkmark$
 0.01480 $\checkmark$
 7.70931 $\checkmark$

9.95727
 0.04182
 0.00000
 9.99909 $\checkmark$

$\alpha - \alpha' = -17' 36''.17$

$= -1'' 10.41$

γ 44 56 24.0 $\checkmark$

δ' + 14 25 51.3 $\checkmark$

$\gamma - \delta'$ + 30 30 32.7 $\checkmark$

9.82640
 8.20126 $\checkmark$
 9.70558 $\checkmark$
 0.15097 $\checkmark$
 7.88421 $\checkmark$

$\delta - \delta'$ + 26 19.9 $\checkmark$

δ + 14 52 11.2 $\checkmark$

eph δ + 14 52 14.1 $\checkmark$

$\delta - \delta'$ - 2.9 $\checkmark$

Curr. + 1.0 $\checkmark$

2nd Quad. Ref. 0.0

δ + 14 52 12.2

$\delta - \delta'$ - 1.9

α 8 44 53.03 $\checkmark$

eph α 8 44 52.30 $\checkmark$

$\alpha - \alpha'$ + 0.73 $\checkmark$

Curr. + 0.01 $\checkmark$

α 8 44 53.04

$\alpha - \alpha'$ + 0.74

14132

Lunar Parallax

28

α 08 46 03.44
 δ 07 06 30.40
 $\alpha - \alpha$ - 1 39 33.04
 $\delta - \delta$ - 24 53 15.60
 $\frac{1}{2} \alpha - \alpha$ - 8 48.08
 $\frac{1}{2} \delta - \delta$ - 24 44 27.52

α 54 38.7
 δ 54 38.7

986913

820126

962412

001480

770931

995727

004182

000000

999909

$\alpha - \alpha$ = -17 36.17
 $\delta - \delta$ = -1 10.41

α 44 56 24.0
 δ +14 25 51.3
 $\alpha - \alpha$ +30 30 32.7

982640

820126

970558

015097

788421

$\alpha - \alpha$ +26 19.9
 δ 14 52 11.2
 $\alpha - \alpha$ +14 52 14.1
 $\delta - \delta$ - 2.9
 $\alpha - \alpha$ +1.0
 $\delta - \delta$ 0.0
 $\alpha - \alpha$ +14 52 12.2
 $\delta - \delta$ - 1.9

α 8 44 53.03
 δ 8 44 52.30
 $\alpha - \alpha$ +0.73
 $\delta - \delta$ +0.01
 α 8 44 53.04
 $\delta - \delta$ +0.74

α 8 44 53.03
 δ 8 44 52.30
 $\alpha - \alpha$ +0.73
 $\delta - \delta$ +0.01
 α 8 44 53.04
 $\delta - \delta$ +0.74

$\alpha - \alpha$ +0.73
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$\alpha - \alpha$ +0.73
 $\delta - \delta$ +0.01
 α 8 44 53.04
 $\delta - \delta$ +0.74

