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KG
11366
v.1045

13621
13622
13140

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13621 Star Measures Gr 4 1

	d		d	
1	20182	16310	17632	15582
12.0	10184	16292	16798 97	16410 10
11.1	80	88	790	08
	70	07		
	11.9988	11.9990	11.0838	11.0828
2	19916	17270	20858	17778
17.8	11147 48	16039 44	14630	13998 95
20.6	52	79	36	92
	18	60	50	80
	17.8769	17.8775	30.6220	30.6216
3	19601		1	
31.1	12			
33.9	5798			
4	19606	19991	19851	18176
33.4	15998	13612 15	12669	15343 40
13.7	16000	18	6064	38
	598	98	48	79
	33.3604	33.3620	13.7185	13.7163

Moon Measures

1	19861	17986
26.8	11602 97	16250 43
16.0	92	41
	64	89
	26.8268	26.8258
2	19881	17982
26.9	10751 56	18120
16.5	61	22
+X	78	88
	26.9122	26.9138

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13621 Star Measures Dr 4 1

	d		d	
1	20182	16310	17632	15582
12.0	10184	16292	16798 99	16410 10
11.1	80	88	790	00
	02	09		
	11.9988	11.9990	11.0808	11.0828
2	19916	17270	20858	17778
17.8	11174 78	16039 99	14630	13998 95
30.6	52	99	36	92
	18	60	50	80
	17.8769	17.8775	30.6220	30.6216
3	19606		1	
33.1	10			
33.9				
	998			
4	19606	19991	19851	18176
33.7	13998	13612 15	12669 6064	15393 90
13.7	16000	98	98	38
	598			79
	33.3607	33.3620	13.7185	13.7163

Moon Measures

1	19861	17986
26.8	11602 97	16250 45
16.0	92	41
	64	89
	26.8268	26.8258
2	19881	17982
26.9	10751 56	18120
16.5	61	22
+X	78	88
	26.9122	26.9138

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13621 Moon Measures 2

3
26.4
18

18930	20238
15280	13894 98.
88	902
32	32
26.3646	26.3664

4
26.0
18.3

18692	19178
15604 02	12252 56
600	60
688	71
18.3089	18.3083

5
24.9
18.7
+4

18718	18488
12120	15086 84
1618	82
16	88
18.6599	18.6596

6
29.0
18.4

20726	18478
15967 64	13210
61	10
20	78
18.4759	18.4733

7
23.3
18.0

18571	20301
15100 99	13750
0988	50
76	00
23.3474	23.3450

8
22.8
17.0

19862	15892
11502	14270
02	3033
60	88
22.8359	22.8343

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13621 Moon Measures 2

3
26.7
18

18930	20238
15280	13899 98.
88	902
32	32
26.3696	26.3664

18692	19178
12604 02	12232 56
600	60
688	11
18.3089	18.3083

4
26.0
18.3

5
24.9
18.7
+4

18718	18488
12120	13086 89
1618	82
16	88
18.6599	18.6596

6
27.0
18.9

20726	18476
13967	13210
61 64	10
20	78
18.4739	18.4733

7
23.3
18.0

18571	20301
15100 99	13750
098	50
76	00
23.3974	23.3450

8
22.8
17.0

19862	15892
11502	14240
02	3000
60	88
22.8359	22.8343

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13621 James Etc

Date Sept 30 '17 ✓

Exposure to Stars	1	49		2	01	
" " Moon	1	57	40.8 ✓	1	57	41.1 ✓
Clock slow		0	46.2 ✓			
M. Sid Time	1	55	27.15 ✓	$\Omega - \alpha =$	+ 1h	15m ✓
M Long	9	44	31.05 ✓			
G. Sid Time	6	39	58.20 ✓			
Sid T. M. Noon	12	34	38.71 ✓			
Interval	18	05	19.49 ✓			
Reduction		2	57.80 ✓			
G. M. T.	18	02	21.69 ✓			

From Naut Alm	R. a		Dec		
Moon 18h	0 40	09.23 ✓	+ 09	43	17.4 ✓
Motion in 1m		2.3367 ✓			+ 18.336 ✓
" " 2.3615		5.52			33.9
Tabular Place	0 40	14.75 ✓	+ 09	43	51.3 ✓ (2)

Moon's Age 15 days ✓

Paralax	60	47.05 ✓
Semid.	16	34.4 ✓
R		994.7 ✓
aug		14.2 ✓
Dec. 4		- 0.4 ✓
R.		1008.2 ✓
R.	2.16	12 ✓
alt	- 10	35 ✓
(1+q) R	2.03	77 ✓
R²	4.23	71

937 = 12.55 ✓

a = - 503.1 ✓
- 24
- 479.1 ✓

for Moon's Center A = + 1.2
B = + 1.2

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13621 Times Etc

Date Sept 30 '17

Exposure to Star	1	9		2	0	1
" Moon	1	57	70.8	1	57	71.1
Clock slow		0	76.2			
17 Sid Time	1	55	27.15	9-1 = +1h 13m		
17 Long	9	44	31.05			
9 Sid Time	6	39	58.20			
Sid T M. Moon	12	37	38.71			
Interval	18	05	17.49			
Reduction		2	57.80			
9 M.T.	18	02	21.69			

From Naut Alm		R A		Dec	
Moon 18h	0	40	09 23	+09	43 17.4
Motion in 1m			2.3367		+14.336"
" 2.3615"			5.32		23.7
Tabular Place	0	40	14.75"	+09	43 51.3" (2)

Moon's age 16 days

Palatian	60	44.05"
Second	16	39.4"
K		9999
avg		14.2
Δ K		-0.4
K		1008.2
K		2.1612"
Δ K		-10.3"
(1+a) K		2.0577
K²		9.2391

937 = 12.55"

a = -503.1
-24
-479.1

for Moons center K = +1.2
n = +1.2

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13621 Plate Constants. X

X	11.9989	17.8772	33.3612
ξ	9.1658	15.4003	31.6110
X-ξ	+28331	+27769	+17502

η	11.0833	30.6218	13.7177
η	10.1898	30.6931	12.8901
η-η	+8935	-713	+8273

X-ξ	+500X		+30.9η	+3.1X	-37709
+28331	+5999	=+38330	+372	=+37672	+37 =+37709
+27769	+8939	=33708	+976	=34654	+55 = 09
+17502	+16681	=34183	+423	=34606	+103 = 09
24.8554	+12428		+513 ✓		+77 ✓ 22.6863 ✓

η-η	+500η		-31.1X	+3.1η	-17138
+8935	+5572	=+14477	-373	=+14104	+37 =+17138
-713	+15311	=+14598	-556	=14042	+95 = 37
+8273	+6859	=+15132	-1037	=14095	+93 = 38
16.6013	+8301		-773 ✓		+51 ✓ 15.9456 ✓

Tables a = -.1 e = -1.9 a-e = +1.8 δ+d = -1.2
Obs = -5031 = -5031 = 0 = +0.2

-5030 -5012 -1.8 +1.4

-.1

Did not use cafe No. 91.

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13621 Plate Constants. 4

x	11.9989	17.8772	33.3612
ȳ	9.1635	15.4003	31.6110
x-ȳ	+2831	+2769	+17502

y	11.0833	30.6218	13.7178
η	10.1898	30.6931	12.8901
y-η	+8935	-713	+8273

x-ȳ	+502x		+30.9y	+3.1x	-39709
+28331	+5999	=+38330	+392	=+39672	+37 =+39709
+24769	+8939	=33708	+996	=39654	+52 = 09
+17502	+16681	=34183	+923	=39606	+103 = 09
29.8559	+12428		+513		+77 22.6863

y-η	+500y		-31.1x	+3.1y	-14138
+8935	+5572	= +14477	-373	=+14104	+34 =+14138
-713	+15311	= +14598	-556	=14042	+95 = 37
+8273	+6859	= +15132	-1039	=14093	+93 = 38
16.6013	+8301		-773		+51 15.9956

Tables a = -.1 e = +1.9 a·e = +1.8 δ+d = -1.2
Obs = -503.1 = +503.1 = 0 = +0.2

-.1

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13621 Morris Center 5

	x	x-x0	Δx	(x-x0)²	(x-x0)²+(y-y0)²	Δ-C
1	26,82 63	+1,9703	-1	3,8814	4,2472	+101
2	+26,91 30	+2,0570	0	4,2312	4,2312	-29
3	26,36 55	+1,5095	+1	2,2789	4,2336	-5
4	26,0000	+1,1440	+2	1,3092	4,2223	-118
5	24,8560	0,0000	+2	0,0000	4,2350	+9
6	24,0000	-0,8560	+2	0,7324	4,2398	+54
7	23,3762	-1,5098	+2	2,2789	4,2339	-2
8	22,8351	-2,0209	+0	4,0840	4,2424	+83

P = 4,2341

	y	Δy	(y-y0)²	∠	
1	16,0000	-0,6020	-1	0,3625	107°
2	16,6020	0,0000	0	0,0000	90°
3	18,0000	+1,3980	+1	1,9547	47°
4	18,3086	+1,7066	+2	2,9131	34
5	+18,6597	+2,0577	+2	4,2350	0
6	18,4746	+1,8726	+2	3,5074	335°
7	18,0000	+1,3980	+2	1,9550	313
8	17,0000	+0,3980	+0	0,1584	281

186

Approx. Center

y = 18 x = 26,3655
23,3762
49,7117

x0 24,8558
xmax 26,91,30
R 2,0572
ymax 18,6597
y0 16,6025

x0 24,8560
y0 16,6020

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13621 Moons center

	x	x-x0	Δx	(x-x0)²	(x-x0)²+(y-y0)²	O-C
1	26.8263	+1.9703	-1	3.8817	9.2472	+101
2	+26.9130	+2.0570	0	9.2312	4.2312	-29
3	26.3655	+1.5095	+1	2.2789	4.2336	-5
4	26.0000	+1.1440	+2	1.3092	4.2223	-118
5	24.8560	0.0000	+2	0.0000	4.2350	+9
6	24.0000	-0.8560	+2	0.7324	4.2398	+57
7	23.3962	-1.5098	+2	2.2789	4.2339	-2
8	22.8351	-2.0209	+0	4.0840	4.2427	+83

R: 42391

	y	Δy	(y-y0)²	∠
1	16.0000	-0.6020	0.3625	107
2	16.6020	0.0000	0.0000	90
3	18.0000	+1.3980	1.9547	47
4	18.3086	+1.7066	2.9131	34
5	+18.6597	+2.0577	4.2350	0
6	18.4726	+1.8726	3.5079	335
7	18.0000	+1.3980	1.9550	313
8	17.6000	+0.3980	0.1584	284

Approx. Center

y = 18 x = 26.3655

23.3962

49.7117

x_0 24.8558

x_{max} 26.913.0

R 2.0572

y_{max} 18.6597

y_0 16.6023

x_0 24.8560

y_0 16.6020

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Formation of Normals

1	− 1.18	+ 198.0	− 606
2	0.0	− 59.7	00
3	+ 2.12	− 7.5	− 7.0
4	+ 1.95	− 134.8	− 2020
5	00	00	+ 18.5
6	− 1.61	− 49.0	+ 1068
7	− 2.11	+ 3.0	− 28
8	− 0.81	− 168.0	+ 33.2
	+ 4.07	+ 201.0	+ 158.5
	− 5.71	− 419.0	− 2724
	− 1.64	− 218.0	− 124.1

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13621 Conditional Equations

							O-C
1	+1.94	− 0.60	= +101	−25	+6	= −19	+120
2	+2.06	0.00	= −29	−26	0	= −26	− 3
3	+1.51	+1.80	= −3	−19	−13	= −32	+27
4	+1.14	+1.71	= −118	−14	−16	= −30	−88
5	0.00	+2.06	= +9	0	−20	= −20	+29
6	−0.86	+1.87	= +57	+11	−18	= −7	+64
7	−1.51	+1.80	= −2	+19	−13	= +6	− 8
8	−2.02	+0.70	= +83	+25	− 4	= +21	+62

+302
− 99

18.79 − 1.69 = −218.0

−1.69 + 15.08 = −12.9.1

+[ ] − 0.14 = − 19.1

+14.94 = −143.2 b = −9.6

18.79 = −218.0 − 15.7 = −233.7 a = −12.5

Arc 180

$\frac{P}{n} = .38'$

$\frac{\Sigma K}{n} = +25.4''$

$\frac{+25.4}{.38} = +67''$

$\Delta R = +0.8''$

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L 621 Conditional Equations

								O-C
1	+ 1.97	− 0.60	= +101	− 25	+ 6	= − 19		+ 120
2	+ 2.06	0.00	= − 29	− 26	0	= − 26		− 3
3	+ 1.51	+ 1.70	= − 3	− 19	− 13	= − 32		+ 27
4	+ 1.14	+ 1.71	= −118	− 14	− 16	= − 30		− 88
5	0.00	+ 2.06	= + 9	0	− 20	= − 20		+ 29
6	− 0.86	+ 1.87	= + 57	+ 11	− 18	= − 7		+ 69
7	− 1.51	+ 1.70	= − 2	+ 19	− 13	= + 6		− 5
8	− 2.02	+ 0.70	= + 83	+ 25	− 9	= + 21		+ 62

+ 302
− 99

18.79 − 1.69 = − 218.0

− 1.69 + 15.08 = − 129.1

+ [ ] − 0.19 = − 19.1

+ 14.99 = − 143.2 b = − 9.6

18.79 = − 218.0 − 15.7 = − 233.7 a = − 12.5"

Arc 180

$\frac{P}{m} = .38$

$\frac{\Sigma K}{m} = + 25.4$

$+ \frac{25.4}{.38} = + 67$

$\Delta R = + 0.8$

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13621 Means Mean Position 7

x_0 27,8560″ y_0 16,6020″
− .6″ − 5″
24,8554″ 16,6015″

From Plate Constants

x 22,6863″ y 15,9756″

ξ +0,6863″ η −2,0574

Log ξ 9,8365 1″ log tan δ 9,2078″ 9° 10
" cos δ 9,9947 42″ " ξ 9,6730″
8.5072 7″ 7,0534″
1,3378 5″ 5,9342″

γ−A 21,62″ η 1 +.0,01″
η 0 −2,0345″

A 0 38 50,00″ log η 0 0,3127 0 n″
γ 0 0 39 11,62″ 7,3311 5″
2,9815 5 n″ −958,7″
Red +7,61″

γ' 0 39 16,23″ δ−D −15 58,7″

D +9 26 00,0″

δ_0 +9 10 1,6″

Red +29,7″

δ' +9 10 31,0″

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13621 Means Mean Position

x_0 29.8560 y_0 16.6020
= .6 − 5
24.5557 16.6015

From Plate Constants

x 22.6863 y 15.9956

ξ +0.6863 η −2.0574

log ξ 9.8365-1 log tan δ 9.2078 9° 10
log cos δ 9.9997 42 ξ² 9.6730
85°07'27 70538
1.337486 5.9342

η. +0.0001
η_0 −2.0575

log η_0 0.3127 0 n
73115
2.9815 5 4 −958.4

γ−A 21.62

A 0 38 50.00

γ_0 0 39 11.62

Red +4.61

γ' 0 39 16.23

δ−D −15' 58.4

D +9 26 00.0

δ_0 +9 10 1.6

Red +29.7

δ' +9 10 31.0

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13621 Lunar Parallax 8

γ'	D	39	16,23	T	60 47,05
ϕ		1	35 27,15		
$\phi - \gamma' + 1$		16	1092		9,869133
$= +19$		02	43,80		8,247022
$\frac{1}{2}(1-q)$		+7	26,13		9,513674
$\frac{1}{2}$	+18	55	17,65		0,006302
					7,636097

9,957277
0,000000
0,002412
9,981389

$\gamma - \gamma'$ 17 52,31
$=$ 0 57,79

δ 43 76 21,6

δ +9 10 31,0

$\gamma - \delta$ 34 35 50,6

9,826740
8,247022
9,757720
0,160033
7,987765

$\delta - \delta'$ 33 24,9

δ 9 43 55,9 α 0 70 15,72

Ephs +9 43 51,3 Ephs 0 70 14,73

O-C +4,6 O-C +0,97

2nd Ord Reg 0,0 corr. 0,00

corr. -0,1

δ +9 43 55,8

O-C +4,5

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13621 Lunar Parallax 8

π'	0	39	16.23
π	1	3	27.13
$\pi - \pi'$	+1	16	10.92
$= \pi_1$	+19	02	43.80
$\frac{1}{2}(1-\pi')$		+7	26.13
	+18	35	17.65

π 60 47.03

9.869713
8.247702
9.513367
0.000630
7.630412

9.935727
0.000000
0.002412
9.938139

$\pi - \pi'$ 17 2.31

$=$ 0 59.79

δ 43 46 21.6

δ +9 10 31.0

$\delta - \delta$ 34 35 50.6

9.826470
8.247702
9.735720
0.160033
7.979925

$\delta - \delta'$ 33 24.8

δ 9 43 35 56.8

Eph δ +9 43 51.3

O-C +4.5

2nd Ord Reg 0.0

Curv -0.1

δ +9 43 51.2

O-C

α 0 40 15.72

Eph α 0 40 17.73

O-C +0.97

Curv 000

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13622 Star Measures Err 3

	d	x	r	d	r
1	19999		19588	15345	
9.6	12579		16210	14019	17370
10.2	8381		10	17	70
	88		88		16042
	9.6611		9.6622	10.1327	10.1328
2	20103		19899	20758	20280
15.3	16860		13152	13401	17626 28
29.7	5658		52	899	30
	00		90	60	81
	15.3249		15.3260	29.7359	29.7347
3	15788		19[illegible]	18860	19920
28.5	13872		15962	13768	15018 18
33.2	7071		68 65	58 63	18
			13558	50	10
	33.1919		33.1907	28.5092	28.5102
4	20566		16862	16138	14919
31.0	10634		16807	16110	14928 23
13.0	3836		0202	08	18
	10568		59		
	30.9929		31.9940	13.0019	13.0004

Moon Measures

1	16222		19958
25.2	13954		12730
16.0	6057		8030
	25.2765		25.2772
2	15226		18309
25.3	12293 97		11220
16.4	300		20
+X			10
	25.2929		25.2911

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13622 Star Measures Dec 3

	d	r	d	r
1	19499	19588	15345	
7.6	12579	16210	14019	17370
10.2	8381	10	17	70
	88	88		16042
	9.6611	9.6622	10.1327	10.1328
2	20103	19899	20758	20240
15.3	16860	13152	13401	17626 28
29.7	5658	52	399	30
	00	90	60	81
	15.3299	15.3260	29.7359	29.7347
3	15788	19[illegible]	18860	19920
28.5	13872	15962 63	13768	15.418 18
33.2	7071	68	5863	18
		13558	50	10
	33.1919	33.1907	28.5092	28.5102
4	20566	16862	16138	19919
31.0	10634	16902	16110	19928 23
13.0	3836	0202	08	18
	10568	59		
	30.9929	31.9980	13.0019	13.0004

Moon Measures

1	16222	19958
25.2	13954 57	12720
16.0	60	3030
	25.2765	25.2772
2	15226	18309
25.3	12939 97	11220
16.4	300	20
+x		10
	25.2929	25.2911

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13622 Moon Measures

3	17092	12484
25.1	15°5'26	14030
17.0	22 24	2829
	23.15'68	23.15'45'
4	19770	19267
24.2	16498	12550
18.0	9295-	5854
	80	62
	24.3278	24.3290
	18558	
5	16899	15892
24.0	88 88	88 90
18.1		14244
	18.1670	18.1676
6	19749	20344
23.1	16594	18327
18.3	88 91	26 19
+4	50	360
	18.3150	18.3147
7	15612	
22.6	14189	15179
18.0	89	70 75-
		13781
	22.1423	22.1394
8	19750	19909
21.3	16604	13038
17	05-	30 34
	50	07
	21.3145	21.3129

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1917phae.proj.2

13622 Moon Measures

3
25.1
17.0

17092
15526
22 29

12484
14030
28 29

23.15.68

22.15.95

4
24.2
18.0

19770
16498 93
92
80

19267
12550 59
58
62

24.3278

24.3290

5
24.0
18.1

18558
16899 88
882

15892 90
88
14249

18.1670

18.1676

6
23.1
18.3
+4

19749
16594 91
88
50

20379
12502 19
76
360

18.3138

18.3139

7
22.6
18.0

15612
14189
89

15179 93
70
13781

22.1423

22.1394

8
21.3
17

19750
16604 05
05
50

19909
13038 39
30
09

21.3145

21.3129

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1917phae.proj: 2

13622 Junes Etc. Grp 3 13
Date Sept 30'17

Exp. to Stars	2	05		2	17	
" " Moon	2	10	51.0 ✓	2	10	51.3 ✓
Clock slow		0	46.2 ✓			
H. Sid Time	2	11	37.35 ✓	ϕ =	+1h	31m ✓
H. Long	4	47	31.05 ✓			
G. Sid T.	6	36	08.40 ✓			
Sid T. M. Noon	12	37	38.71 ✓			
Interval	18	21	29.69 ✓			
Reduction		3	00.45 ✓			
G. M. T.	18	18	29.24 ✓			

From Naut Alm			R. a		Dec
Moon 18h	0	40	09.23	+9	43 17.7
Motion in 1m			2.3363		14.326 ✓
" " 18.7873			43.19 ✓	4	27.8 ✓
Tabular Place	0	40	52.42 ✓(3)	+9	47 42.2 ✓

Moon's Age 15 days ✓

Parallax	60	43.73 ✓
Semid	16	34.3 ✓
R.		994.3 ✓
aug		13.9 ✓
R 3		−0.5 ✓
R		1007.7 ✓
R		2.1601 ✓
aR		−1034 ✓
(1+a)R		2.0567 ✓
R =		42300 ✓

934 = 12.3+ ✓

a = −502.8 ✓
+24
−478.8 ✓

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Capella 7.1 Mag 8.0

0 31 13.95
19.01
13.98
0 31 13.98
32.69
01 32 06.67
0 35 50.00
- 6 43.33
-40327
260562 n
9.99530
1.10818 n

-12 32 38
-68
19.1688
7.6616
+.8958

+8 19 26.6
26.8
26.9
+8 19 26.6
+5 37.5
+8 25 09.1
+9 26 00.0
-1 00 55.9
-3656.3
3.36344 n
0.89719 n

1.1702
2.2863
8.9399

-1.8377
+0.0275
10.1898
10.1327
- 5.71

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1917phae.proj.2

13622 Lunes Etc. Kr 3

Date Sept 30'17

Exp. to Stars	2	05"		2	17	
" " Moon	2	10	51.0	2	10	51.3
Clock slower		0	46.2			
17. Sid Time	2	11	37 35"	ϕ =	+1h	31m
17. Long.	4	44	31.05"			
G. Sid T.	6	56	08.40			
Sid T. M. Noon	12	39	38.71			
Interval	18	21	29.69			
Reduction		3	00.45"			
G.M.T.	18	18	29.24			

From Nautical Alm. R. a Dec

Moon 17h	0	40	09.23	+9	43	17.7
Motion in 1m			2.336			19.326"
18.7873			43.19"		4	27.8"
Tabular Place	0	40	52 42"(5)	+9	47	42.2"

Moon's age 15 days

Parallax	60	43.73"
Semid	16	34.3"
R		994.3
Aug		13.9
Kr		-0.5"
R		1007.7
R		2.1601"
a/R		-1039
Hor/R		2.0567
R =		42300

934 = 12.3+

a = -3°02.8
+24
-478.8

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1917phae.proj.2

" Capc Ku 7.1 Mg 8.0

0 31 13.95
14.01
13.98
0 31 13.98
52.69
0 32 06.67
0 38 50.00
- 6 43.33
-4032.7

260560 h
9.99530
1.10814 h

-12.8273
-69
9.1658
96616
+ 4958

+8 19 26.6
26.8
26.8
+8 19 26.6
+5 37.5
+8 25 07.1
+9 26 00 c
-1 00 55.9
- 3656.3
35 6307 h
0 8974 19 h

9.1702
2.2663
8.4399

-7.8377
+0.02755
10.1898
10.1327
- 571

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1917phae.proj.2

13622 Standard Coordinates

	Cape No 79 Mag 7.5	Cape No 91 Mag 5.7	Cape No 93 Mag 7.7
C	0 37 27.98		
I	28.07		
C	27.98		
Mean	0 37 28.00		
Prec	-2.90		
d	0 35 20.90	0 42 41.52	0 43 -2.35
A	0 38 -0.00	0 38 0.00	0 38 -0.04
d-A	- 3 29.10	+ 3 41.52	+ -2.35
Sin(u)	-209.09	+231.51	+302.37
log.	2.320274n	2.364657	2.480530
" Cos d	9.99183	9.99116	9.99790
" ξ0	0.81931n	0.86297	0.98264
ξ0	- 6.9764	+ 7.2940	+ 9.6082
ξ1	- 33	+.6	+ 28
η	15.4003	29.2996	31.6110
X	15.3252	28.0997	30.9937
X-η	- 7.51	- .7899	- 0.6176

C	+10 -8	-8.7	
I		-9.1	
C		-7.5	
Mean	10 -8	-8.7	
Prec		+-36.8	+11 31 16.7 +8 46 08.8
δ	+11 04	35.2	
D	+ 9 26	00.0	+ 9 26 00.0 + 9 26 00.0
δ-D	+ 1 38	35.2	+ 2 05 16.7 - 39 -5.2
Tan(δ-D)		+-9 16.8	+ -9 19.9 - 2391.3
Log.	3.77209	3.87621	3.37863 n
" ξ0	1.10324	1.20736	0.70978 n
log tan	9.2917	9.3092	9.1882
" ξ0²	1.6386	1.7259	1.9653
" η0	7.9837	8.0885	8.2069
η0	+126835	+161196	÷51260
η1	+.00096	+.00123	+.00161
η	30.6931	34.1319	12.8901
y	29.7353	33.1913	13.0011
y-η	- 95.77	- .9706	+ .1110

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13622 Standard Coordinates

	Cape No 79 Mag 7.5		Cape No 91 Mag 7.7		Cape No 93 Mag 7.7	
c	0 39	27.98				
l		28.04				
c		27.98				
Mean	0 39	28.00				
Prec		5°2.90				
α	0 35	20.90	0 42	41.52	0 43	5°2.35
A	0 35	5°0.00	0 38	5°0.00	0 35	5°0.00
α-A	− 3	29.10	+ 3	5°1.52	+ 5°	02.35
Sun(L)		−209.09		+231.51		+302.39
Log.	2.320248		2.369557		2.478050	
Cos δ	9.991183		9.991116		9.999790	
∴ ξ_0	0.819311		0.862947		0.978264	
ζ_0	− 6,5°9 6 4		+ 7,2 9 9 0		+ 9 6 0 8 2	
η_1	− 33		+5°6		+ 28	
η	15°7 0 0 3		29 2 9 9 6		31 6 1 1 0	
X	15°3 2 5°2		28 5°0 9 7		28.9 9 3 9	
X − η	− 7 5°1		− .7 8 9 9		− 0.6 1 7 6	

c	+10 5°8	5°8.7				
l		5°9.1				
c		5°7.5°				
Mean	10 5°8	5°8.7				
Prec		+5° 36.8	+11	31 16.7	+8	46 08.8
δ	+11	04 35.2				
D	+ 9	26 00.0	+ 9	26 00.0	+ 9	26 00.0
δ D	+ 1	38 35.2	+ 2	05 16.7	−	39 5°1.2
Fun(J D)		+5°9 16.8		+75°19.9		−2391.3
Log.	3.772209		3.876621		3.378634	
η_0	1.103247		1.207364		0.709788	
England	9.29171		9.30922		9.18842	
ξ_0^2	1.63886		1.72599		1.96533	
η_1	7.98337		8.08855°		8.20669	
η_0	+126835°		+161196		−51260	
η_1	+00096		+00123		+00161	
η	306931		341319		128901	
ξ	29.7353		33.1913		13.0011	
ξ − η	− 95°77		− 9906		+ 1110	

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ξ_0	η_0	ΔS	$-5^s.5$	-1.2η	$+6$
-12.83	-7.84	-70	$+64 = -6$	$+9 = +3$	
-6.60	$+12.68$	-34	$+33 = -1$	$-15 = -16$	
$+7.29$	$+16.12$	$+58$	$-36 = +22$	$-19 = +3$	
$+9.61$	-5.13	$+28$	$-48 = -20$	$+6 = -14$	
$M+1.51$	-1.57		-8	$+2$	$0 = 0.00$

$\Delta\eta$	-5.6η	$-1.4S$	-10
-43	$+44 = +1$	$+18 = +19$	
$+62$	$-71 = -9$	$+9 = 0$	
$+120$	$-90 = +30$	$-10 = +20$	
-16	$+29 = +13$	$-13 = 0$	
	$+9$	$-2 = -3 = -0.1$	

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13622 Plate Center & Constants

x	y	α	δ
9.6616	10.1327	0 32 07.7	+8 25 07.1
15.3252	29.7353		
28.5097	33.1913		
39.9934	13.0011	0 43 52.35	+8 46 08.8
22	18	-4 55.88	+40 49.5
-8.9934	+4.9989	0 38 56.47	+9 26 58.3

Center { 0 38 50.0 / +9 26 00.0

X-Y +500x +176.5y +2.85x − 11307

+495.8	+4831	= +9789 + 1784	= +11273 + 28	= +11301 −6
−75.1	+7663	= +6912 + 4356	= +11268 + 44	= 11312 +5
−7899	+1425.5	= +6356 + 4862	= +11218 + 81	= 11299 −8
−6176	+15497	= +9321 + 1906	= 11227 + 88	= 11315 +8
23.2351	+11618	+2382	+66	23.5110

Y-y +500y −176.7x +2.25y − 3117.

−5.71	+5.066	= +4795 − 1408	= +3087 + 23	= +3110 −7
−95.77	+17868	= +5291 − 2233	= +3058 + 67	= +3125 +8
−9706	+16596	= +7190 − 4154	= +3036 + 75	= +3111 +6
+1110	+6501	= +7611 − 4516	= +3095 + 29	= +3124 +7
16.2588	+8129	−3385	+37	16.2752

Tables a = −.1 e = −1.9 a−e = +1.8 b+d = −1.2

Obs = −502.8 = −502.2 = −0.6 = −0.8

−502.7 −500.3 − 2.4 + 0.4

−.1

for Mars Center A = +1.4

B = +1.1

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13622 Plate Center & Constants 15

x	y	α	δ
9.6616	10.1327	0 32 07.7	+8 23 09.1
19.3252	29.7353		
28.5097	33.1913		
39.9934	13.0011	0 73 52.35	+8 76 08.8
22	18	-9 35.85	+70 49.5
+8.9934	+7.9989	0 38 56.47	+9 26 58.3

Center { 0 38 30.0 / +9 26 00.0

x-y +500x +176.5y +2.5x -11307

+19.5-8 + 9831 = +9789 + 1744 = +11473 + 28 = +11361 -6
-7.1 + 7663 = +6912 + 4356 = +11268 + 44 = 11312 +5
-7899 + 19235 = +6356 + 7862 = +11218 + 81 = 11299 -8
-6176 + 15497 = +9321 + 1906 = +11227 + 84 = 11315 +1
23.235-1 +11618 +2382 +66 23.5110

y-y +500y -190.7x +2.25y -3117.

-5.71 + 5066 = +9495 - 1908 = +3587 + 23 = 13110 -7
-9.77 + 19868 = +5291 - 2233 = +3058 + 67 = 13125 +8
-9706 + 16596 = +7190 - 9159 = +3036 + 75 = +3111 +6
+1110 + 6501 = +7611 - 9516 = +3095 + 29 = +3129 +7
16.25-88 +8129 -3385 +37 16.925-2

Tables a = -.1 e = -1.9 a-e = +1.8 b+d = -1.2
Obs = -502.8 = -502.2 = -0.6 = -0.8

-.1

for Mons Center A = +1.4
B = +1.1

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13622 — Moons Center — 16

	X	X − X₀	Δx	(X − X₀)²	(X−X₀)² + (Y−Y₀)²	
1	25 27 68	+2 04 18	− 0	4,1690	4,2361	+61
2	+ 25 29 20	+2 05 70	0	4,2312	4,2312	+12
3	25 15 57	+1 92 07	+ 1	3,6894	4,2386	+86
4	24 32 87	+1 09 37	+ 2	1,1959	4,2277	− 23
5	24 00 00	+0 76 50	+ 3	0,5857	4,2223	− 77
6	23 23 50	0 00 00	+ 3	0,0000	4,2312	+12
7	22 17 08	−1 09 42	+ 2	1,1968	4,2286	− 14
8	21 31 37	−1 92 13	+ 1	3,6910	4,2402	+102

R = 4,2300

	Y	Y − Y₀	ΔY	(Y − Y₀)²	∠
1	16,0000	−0,2590	− 0	0,0671	97
2	16,2590	0,0000	0	0,0000	90
3	17,0000	+0,7410	+ 1	0,5492	69
4	18,0000	+1,7410	+ 2	3,0318	32
5	18,1658	+1,9068	+ 2	3,6366	22
6	+ 18,3156	+2,0566	+ 2	4,2312	0
7	18,0000	+1,7410	+ 2	3,0318	328
8	17,0000	+0,7410	+ 1	0,5492	291

166

Approx Center

Y = 18 X = 24,3287 Y = 17 X = 25 15 57

22,1708 21,3137

46,4995 46,4694

X_0 23,2497 X_0 23,2347

Xmax 25,2920

R 2,0574

Ymax 18,3156

Y_0 16,2582

Center { X_0 23,2350 ; Y_0 16,2590

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13622 Moore's Center 16

	λ	λ − λ₀	Δλ	(λ − λ₀)²	(λ−λ₀)²+(φ−φ₀)²	
1	25°27'68	+2,04 18	− 0	4,1690	9,2361	+61
2	+25°29'20	+2,0570	0	4,2312	9,2312	+12
3	25°15'57	+1,9207	+ 1	3,6899	9,2386	+86
4	24,3289	+1,0934	+ 2	1,1959	9,2277	− 23
5	24,0000	+0,7650	+ 3	0,5857	9,2223	− 77
6	23,2350	0,0000	+ 3	0,0000	9,2312	+12
7	22,1908	−1,0972	+ 2	1,1968	9,2286	− 14
8	21,3137	−1,9213	+ 1	3,6910	9,2402	+102

R = 9,2300

	φ	φ − φ₀	Δφ	(φ − φ₀)²	∠
1	16,0000	−0,2590	− 0	0,0671	97
2	16,2590	0,0000	0	0,0000	90
3	17,0000	+0,7410	+ 1	0,5492	69
4	18,0000	+1,7410	+ 2	3,0318	32
5	18,1658	+1,9068	+ 2	3,6366	22
6	+18,3136	+2,0566	+ 2	9,2312	0
7	18,0000	+1,7410	+ 2	3,0318	328
8	17,0000	+0,7410	+ 1	0,5492	291

Approx Center

φ = 18 λ = 24,3289 φ = 17 λ = 25°15'57
22,1908 21,8137
46,5197 46,9694
λ₀ 23,2348 λ₀ 23,2347
λ max 25°29'20
R 2,0574
φ max 18,3136
φ₀ 16,2582

Center { λ₀ 23,2350
φ₀ 16,2590

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Formation of Normals

1	− 0,53	+ 124,3	− 16p
2	0,0	+ 24,7	0p
3	+ 1,42	+ 163,0	+ 63,6
4	+ 1,90	− 25,1	− 40,0
5	+ 1,43	− 35,5	− 14,0
6	+ 0,0	+ 0,0	+ 24,7
7	− 1,90	+ 15,2	− 24,7
8	− 1,42	− 19,6	+ 75,5
	+ 4,77	+ 329,4	+ 163,8
	− 3,85	− 279,6	− 227,4
	+ 0,92	+ 49,8	− 63,6

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13622 Conditional Equations 17

								O-C
1	+2.07	- 0.26	= +61	+ 6	+ 1	= +7		+58
2	+2.06	0.00	= +12	+ 6	0	= +6		+ 6
3	+ 1.92	+ 0.78	= +86	+ 6	- 3	= +3		+83
4	+ 1.09	+ 1.78	= -23	+ 3	- 8	= -5		-18
5	+ 0.76	+ 1.91	= -77	+ 2	- 8	= -6		-71
6	+ 0.00	+ 2.06	= +12	+ 0	- 9	= -9		+21
7	- 1.09	+ 1.78	= -18	- 3	- 8	= -11		- 3
8	- 1.92	+ 0.78	= +102	- 6	- 3	= -9		+111

+275
- 92

18.76 + 0.92 = + 79.8

+0.92 + 15.09 = -63.6

+ [ ] + .05 = + 2.9

+ 15.04 = - 66.0 b = - 4.4

18.76 = +79.8 + 4.0 = + 53.8 a = + 2.9

arc 166

$\frac{p}{n} = .26'$

$\frac{\Sigma K}{n} = +23''$

$\frac{+23}{.26} = +88.5''$

$\Delta R = +1.1''$

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13622 Conditional Equations 17

								O-C
1	+2.09	- 0.26	= +61	+ 6	+ 1	= +7	+59	
2	+2.06	000	= +12	+ 6	0	= +6	+ 6	
3	+ 1.92	+ 0.79	= +86	+ 6	- 3	= +3	+83	
4	+ 1.09	+ 1.79	= -23	+ 3	- 8	= -5	-18	
5	+ 0.76	+ 1.91	= -77	+ 2	- 8	= -6	-71	
6	+ 000	+ 2.06	= +12	+ 0	- 9	= -9	+21	
7	-1.09	+ 1.79	= -18	- 3	- 8	= -11	- 3	
8	- 1.92	+ 0.79	= +102	- 6	- 3	= -9	+111	

+276
- 92

18.76 + 0.92 = + 49.8

+0.92 + 15.09 = -63.6

+ [ ] + .05 = + 2.9

+ 15.09 = - 66.0 b = - 9.9

18.76 = +49.8 + 9.0 = + 53.8 a = + 2.9

arc 166

$\frac{f}{n} = .26$

$\frac{\Sigma v}{n} = +23$

$\frac{+23}{.26} = +84.5$

$\Delta R = +1.1$

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13622 Reduction to Apparent Place 18

x_0 = 23.235°0″
+1″
23 23 51.″

y_0 16.25°90″
−2″
16.25°88″

From Plate Constants

x 23.5°110″

ξ +1.5°110″

y 16.4°25°2″

η −1.5°748″

log ξ 0.17926″
Cos δ 9.99435″
8.50727″
1.67767″

log tan δ 9.21110″ 9 17
ξ² 0.35385″
7.05387″
6.6229″
η, +0.00047″

η_0 −1.5°45°2″

log η_0 0.19734″ η
7.33115″
2.86619 η −737.8″

α−A +47.61″

A 0 38 50.0″

α_0 0 39 37.61″

Red +7.61″

α 0 39 42.22″

δ−D −12 178″

D +9 26 00.0″

δ_0 +9.13 45.2″

Red +29.4″

δ' +9 14 19.6

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13622 Reduction to Apparent Place

$x_0 = 23.23.5^{\circ}0$
$+1$
$23\ 23\ 51$

$y_0\ 16.25^{\circ}90''$
-2
$16\ 25\ 88$

From Plate Constants

$x\ 23.5^{\circ}110$

$\xi\ +1.5^{\circ}110$

$y\ 16.825^{\circ}2$

$\eta\ -1.5^{\circ}748$

$\log \xi\ 0.17926$
$\cos \delta\ 9.99935^{\circ}$
8.50729
1.67767

$\log \tan \delta\ 9.21100\ 9\ 19$
$\xi^2\ 0.35885$
7.05378
6.6229
$n\ +0.00004$

$\xi - A\ +47.61$

$\eta_0\ -1.5^{\circ}752$

$\log n_0\ 0.19739\ n$
7.33115°
$2.86619\ n\ -737.8$

$A\ 0\ 38\ 5^{\circ}0.0$

$\eta_0\ 0\ 39\ 37.61$

$\delta \cdot D\ -12\ 17.8$

Red $+7.61$

$D\ +9\ 26\ 00.0$

$\eta\ 0\ 39\ 42.22$

$\delta_0\ +9.13\ 45^{\circ}2$

Red $+29.9$

$\delta'\ +9\ 14\ 19.6$

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13622 Reductions to Apparent Place 19

Sept 30 $2^h.2$

δ +9 13.8

log Cos 9.9943

c +.9072

c 0.9015

= 91° 43.5'

H+α 6 06.9

H 15 27.3

α 0 39.6

G 23 42.5'

G+α 0 22.1

= +5° 31'.5

log Cos(G+α) 9.9980

" g 1.3335

" Sin " 8.9835

" tan δ 9.2108

8.8239

log Sin δ 9.2052

" Cos(H+α) 8.4786 n

" h 1.2747

" Sin(H+α) 9.9998

" Sec δ 0.0057

8.8239

log h' 8.9582 n

h 0.1038

log g' 1.3335

" g 8.3537

f +3.317

g +0.022

h +1.270

+4.609

g' +21.55

h' -0.094

c' +7.970

+29.429

checked 13626

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1917phec.proj.2

13622 Reduction to Apparent Place 17

$= 91^\circ\ 43'.5$

H+k	6 0 6.9
H	5 27.3
k	0 39.6
G	23 42.5
G+k	0 22.1
	$= +5^\circ\ 31'.5$

log cos(G+k)	9.9980
.. q	1.3335
.. Sin	8.9835
. tang	9.2105
	8.8239

log q' 1.3335
.. q 8.3537

f	+3.317
g	+0.022
h	+1.270
	+4.609

Sept 30 2h.2
J +9 13.8

log cos δ	9.9943
	+.9072
	= 0.9015

log sin	9.2052
. cos(H+k)	8.4786 n
.. h	1.2799
. Sin(H+k)	9.9998
. Sec	0.0057
	8.8239

log h' 8.9582 n
h 0.1038

g	+21.55
h	-0.091
i	+7.970
	+29.429

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13622 Lunar Parallax 20

α' 0 39 42.22"
+ 2 11 37.35"
α-α' + 1 31 55.13"
= +2 2 58 46.95"
½(α-α') + 8 53.96"
α + 22 49 53.0"

9.995727"
0.000000"
0.035443"
9.991270"

π +60 43.73"

9.869913"
8247710"
9.591351"
0.00063.7"
7.771411"

α-α' 17 47.92"
= + 1 11.19"

δ 47 31 6.9"

δ +9 17 14.6"

δ-δ 35 16 52.3"

9.826780"
8247710"
9.761162"
0.015720"
7.989932"

δ-δ' + 33 32.6"

δ +9 47 47.2"

Ephδ +9 47 42.2"

O-C +5.0"

Equ Clid. Rej. 0.0

curv. -0.1

δ +9 47 47.1

O-C + 4.9

α 0 40 53.41"

Ephα 0 40 52.42"

O-C + 0.99"

curv 0.00

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13622 Lunar Parallax 20

α'	0	39	42.22
α	2	11	37.35
$\alpha - \alpha'$	1	31	55.13
	22	58	46.95
$\frac{1}{2}(1-\lambda')$		8	53.96
	22	49	53.0

π 60 43.736

9.869713
8247710
9.59151
0.006637
7.714111

9.95727			
0.000000			
0.03593			
9.99270			

$\gamma - \alpha'$ 17 47.92

= 1 11.19

δ 99 31 16.9

δ 9 17 19.6

$\gamma - \delta$ 35 46 52.3

9.826490			
8.249710			
9.76462			
01.59420			
7.98932			

$\delta - \delta'$ 33 32.6

δ 9 47 47.2

α 0 40 53.41

Eph δ 9 47 42.2

Eph α 0 40 52.42

O-C +5.0

O-C +0.99

2nd Aid Rej 00

corr. 00

corr. -01

δ 9 47 47.1

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13140 Star Measures Dr 6 21

	d		d	
		r		r
L	20450	18537	17720	19967
10.7	12529	16441	12046	15824
12.7	17	41	50 48	28 26
	48	20	22	67
	10.7922	10.7912	12.5873	12.5862
2	20554	19306	13778	15172
23.7	14180	15676	13345 44	15578
23.1	80	78	43	70
	51	292		
	23.6372	23.6376	23.0434	23.0428
3	19668	20420	20046	18899
35.9	97448	20330	14329	14596 93
12.6	48	28 29	30	90
	60	392	38	92
	35.9912	35.9909	12.5712	12.5698
4	20179	20476	17136	19920
37.8	16182	14550	15136 39	11892 90
15.2	82	52	42	88
	69	49	10	02
	37.3993	37.3991	15.1992	15.1986

Moon Measures

1	18551	19022		
25.5	13228	14302	20146	19576
13.8	26	02	16335	18037 39
sc	40	02	37	49
	25.5318	25.5290	35	29
			13.8502	13.8496
2	20377	20018		
25.6	13771 70	16600		
14.0	69	600		
	72	08		
	25.6604	25.6588		

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1917phae.proj.2

5th Mar

3	18639	19636	20708	19880
31.2	17188	16102	12887	17688 89
20.8	90	096 99	838	90
			08	78
	38.1950	38.1963	30.7823	30.7810
−	19864	18658	17326	19130
31.2	10182	18336	15126	11336 37
17.9	8885	38 37	2023	38
	58	64	31	30
	17.9673	17.9679	31.2204	31.2207

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1917phae.proj.2

13140 Star Measures Gr 6 21

	d		d	
	x	z	7	z
1	20960	18537	11720	19964
10.7	12527	16941	12046	15829
12.7	27	41	50 48	28 26
	48	20	22	64
	10.7922	10.7912	12.5873	12.5862
2	20534	19306	13778	15192
23.7	19180	15676	13345 99	15578
23.1	80	78	43	70
	51	292		
	23.6372	23.6376	23.0434	23.0428
3	19668	20420	20096	18899
35.9	9748	20330 29	19329	19596 93
12.6	48	392	30	90
	60		38	92
	35.9912	35.9909	12.5712	12.5698
4	20179	20476	17136	19920
37.9	16182	19450	15136 39	18992 90
15.2	82	52	42	88
	69	99	10	02
	37.3993	37.3991	15.1992	15.1986

Moon Measures

1	18551	19020		
25.5	13228	19302	20196	19546
13.8	26	02	16333 35	18037 39
2c	90	02	37	49
	25.5318	25.5290	35	29
			13.8502	13.8496
2	20377	20018		
25.6	13771 70	16608		
19.0	69	600		
	72	08		
	25.6604	25.6588		

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1917phae.proj.2

54 Aur

5	18639	14636	20708	19880
38.2	17188	16102	12887	17688 89
30.8	90	0996 99	8385	90
			08	78
	38.1450	38.1463	30.7823	30.7810
6	19864	18658	17326	19130
31.2	10152	18336	15126	11336
19.9	8885	3837	2023	3837
M	58	64	31	30
	87,9673	17.9679	31.2204	31.2207

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1917phae.proj.2

3	14860	14401
26.1	14169	15068
15.3	69	6667
+x	26.0691	26.0666

4	20560	18929
25.9	11788	17982 86
16.0	88	90
	98	16
	25.9061	25.9058

5	19837	18672
23.0	10080 78	18390 92
16.9	76	94
	20	62
	16.9743	16.9722

6	19950	20579
24.9	10780 06	20020 24
17.0	502	28
	39	62
	24.9430	24.9445

poor points

7	17220	11180
24.1	15208	13192 91
17.1	0004	90
+4		
	17.2016	17.2011

8	19888	18761
23.5	13000	15676 79
17+	02	52
ac	78	41
	23.6879	23.6894

	16220	14217
	17590	15820 17
	90	08
	23.1630	23.1600

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3	14860	14401
26.1	14169	15068
15.7	69	6667
+x	26.0691	260666

4	20360	18929
25.9	11788	17982 96
16.0	88	90
	98	16
	25.9061	25.9058

5		19832 17672
25.0		10080 18390
16.9		78 92
		76 94
		20 62
		16.9743 16.9722

6	19950	20579
24.9	10480 06	20020
17.0	502	28 24
	39	62
	24.9430	24.9445

poor point

7		17220 11180
24.1		15208 13192
17.1		00 04 90 91
+4		
		17.2016 17.2011

8	19888	18761
23.5	13000	13646
17+	02	52 49
20	78	41
	23.6879	23.6894

	16220	14214
	14390	13820
	90	08 19
	23.1630	23.1600

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13140 Times Etc
Date Aug 7 '17

Ep. to Stars	22	19		22	31	
" " Moon	22	25	22.6	22	25	22.9
Clock slow		0	15.7			
H. Sid Time	22	25	38 45	$\phi - \alpha = -$	3h	0m +
H. Long	4	44	31.05			
G. Sid T.	3	10	09.50			
Sid T. M. Noon	9	1	47.81			
Interval	18	08	24.69			
Reduction		2	58.31			
G. M. T.	18	05	26.38			

From Naut. Alm.			R.A.		Dec		
Moon	18h	1	25	02.91	+14	21	20.5
Motion 1m				2.2509			+12.276
" 3.4396				+12.24		+1	066
Tabular Place	1	25	15.15		14	22	27.1 (2)

937: 10.56

a = -504.1
-27
-480.1

Moons age 20 days

Bradley	5 8	52.92
Semid	16	04.2
R		964.2
aug		11.2
ΣR (6)		-7
R		975.0
R		2.0900
aR		-1003
(1+a)/R		1.9897
R²		3.9589

A = -3.5
B = 0

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1917phae.proj.2

x-5	-132.77	+9.1K		- 12061
	+13673 - 1670	= +12003	+ 94 = +12097	- 14
	13034 - 3058	= 11976	+ 97 = 12073	+ 12
	13931 + 2017	= 11914	+ 153 = 12067	+ 6
	13977 - 4085	= 11892	+ 156 = 12048	- 13
-1282	+13610 = 19325	2387	11941	+ 128 = 12069	+ 8
29.0187	+ 12039	-2018	+ 99	23.5596	

y-7	+130.91	+9.94		- 17306
	+13912 + 1907	= +17322	+ 62 = +17384	- 22
	14233 + 3082	= +17317	+ 113 = 17430	+ 24
	12981 + 9877	= 17358	+ 74 = 17432	+ 26
	12256 + 9979	= +17230	+ 151 = 17381	- 25
+9261	+8989 = 13295	+ 9071	= +17316	+ 88 = 17409	- 2
13.2099	+ 7609	+ 3140	+ 79	17.5612	

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1917phae.proj.2

13140 Times Etc 23
Date Aug 7 '17

Eq. to Stars	22	19	2	22	31	
" " Moon	22	25	22.6	22	25	22.9
Clock slow		0	15.7			
H Sid Time	22	25	38.45	4·4 =	3	0 +
H Long	4	44	31.05			
G Sid T.	3	10	09.50			
Sid T. M. Noon	9	1	44.81			
Interval	18	08	24.69			
Reduction		2	58.31			
G. M. T.	18	05	26.38			

From Naut Alm.			R.A.		Dec		
Moon	18h	1	25	02.91	+19	21	20.5
Motion in 1m				2.509			+12.276
" " 5.4396			+	12.29		+	1 066
Tabular Place	1	25		15.15	19	22	27.1 (2)

Moon's age 20 days

Parallax	58 52.92
Semid	16 04.2
R	964.2
Aug	11.2
ΔR (6)	− 9
R	975.0
R	2.0900
aR	− 1003
(1+a)R	1.9897
R²	3.9588

934 : 10.56

a = −504.1
−27
−480.1

A = −3.5
a = 0

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1917phae.proj.2

Curvature -65 -2.83 -8

-12.03	-6.41	-52	+72 = +20	+18	= +38
+1.32	+4.77	+1	-8 = -7	-13	= -20
+9.35	-0.48	+20	-56 = -36	+1	= -35
+15.87	-3.36	+100	-95 = +5	+9	= +14
+16.43	+13.01	+172	-99 = +73	-36	= +37
+1.89	-3.44		-11	+10	= -9 = -0.03

Solved equations

	-6.87	-1.35	+2
-30	+44 = +14	+16	= +30
+3	-33 = -30	-2	= -32
-1	+3 = +2	-12	= -10
-24	+23 = -1	-21	= -22
+138	-89 = +49	-22	= +27
	+23	+2	= +27 = +1.3

x - ξ -132.74 +8.1X -12061

+13673	-1670 = +12003	+44 = +12047		-14
15034	-3058 = 11976	+97 = 12073		+12
13931	-2017 = 11918	+153 = 12067		+6
13977	-4085 = 11892	+156 = 12048		-13
-1285 +13610 =	12325	2387 = 11941	+128 = 12069	+8
24.0784	+12039	-2018	+99	23.8846

y - η +130.4X +4.94 -17306

+15913	+1407 = +17322	+62 = +17384		-22
14233	+3082 = +17317	+113 = 17430		+24
12481	+4877 = +17358	+74 = 17432		+26
12256	+4974 = +17230	+151 = 17381		-25
+4261 +8984 =	13245	+4071 = +17316	+88 = 17404	-2
15.2099	+7605	+3140	+74	17.5612

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1917phae.proj.2

13170 Plate center & Constants 29

x.	y			
10.7917	12.5867	1 19	55.2	+13 28 07.7
20.6377	23.0731			
33.9910	12.5705	1 34	01.5	13 30 24.7
37.3992	15.1989			
38.1456	30.7816			
46.7827	25.1572	2 53	56.7	26 58 32.4
23.3913	12.5786	1 26	58.3	+13 29 16.2
22	18		-76.5	+77 16.5
-1.3913	+5.7217	1 26	118	+14 13 32.7
33.8	490			
-46.5	+26.6.5 center			

$\begin{cases} A = 1\ 26\ 20 \\ b = +14\ 18\ 00 \end{cases}$

x-ξ	+500x	-133.1y	+4.7x	-1205.9
+5277	+5.396 = +13673	- 1675 = 11998	+ 47 = +12045	-14
+3215	+11819 = 15034	- 3067 = 967	+104 = 71	+12
-4422	+17995 = 13573	- 1673 = 900	+ 158 = 58	- 1
-4769	+18700 = 13931	- 2023 = 908	+ 165 = 73	+14
-3096	+19073 = 15977	- 4097 = 880	+ 148 = 78	-11
24.0787	+ 12039	- 2024	+ 106	23.8849

y-η	+500y	+130.9x	+1.6y	-1735.6
+7622	+6293 = +13915	+ 1413 = 17328	+ 20 = +17348	- 8
-2713	+11522 = 14236	+ 3094 = 17329	+ 37 = 366	+10
+6351	+6285 = 12636	+ 4711 = 17347	+ 20 = 367	+11
+4882	+7599 = 12481	+ 4896 = 17377	+ 27 = 401	+45
-3135	+15391 = 12256	+ 4993 = 17249	+ 49 = 298	-58
15.2099	+7605	+ 3152	+ 24	14.5524

Table a = -2.7 e = -3.0 a-c = +0.3 b+d = +3.5

Obs	= -504.4	= -501.6	= -2.8	= +2.2
Obs	= -504.1	= -507.9	= +0.8	= +2.3
O-C	-501.4	-501.9	+0.5	-1.2

See opposite page.

-.9

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1917phae.proj.2

13170.

3h Capella 232 - Mg 61

4h. Capella 231 - Mg 6.9

1 35 11.90
1 26 20
+ 8 31.90
+531.78
2,12 33.73
7,95 288
1,21 585

+164381
170
89552
38 19 56
+ 3096

1 34 98.38
1 26 20
+ 8 28.38
+508.26
2,70608
9,98716
1,20047

+15 8661
1100
37'8761
37'3992
- 4769

+1 39 06.2
17 18 000
+ 1 71 06.2
6068.0
3,78305
1,11420

9,75771
2,43174
8,74221

+13,0076
+0 0895
31,09851
30,78716
- 3155

+13 51 32.8
17 18 000
- 26 07.2
- 1567.2
3,19513
0,52628

9,99923
2,70094
8,84966

- 3,35 95
+0,07032
17,71037
15,19889
+ .4882

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1917phae.proj.2

13140 Plate center & Constants 29

X.	Y.		
10.7917	12.5867	1 1 9 55.2	+13 28 07.7
20.6377	23.0931		
35.9910	12.5705	1 39 01.5	1330 29.7
37.3992	15.1989		
38.1956	30.7816		
46.7827	25.1572	2 53 56.7	26 58 32.4
23.3913	12.5786	1 26 58.3	+13 29 16.4
22	18	-46.5	+44 16.-
-1.3913	+5.7217	126 11.8	+14 13 32.7
33.4	490		
-46.5	+26 56.5 center	A: 1 26 20	
		b: +14 18 00	

X-5	+500x	-133.14		+4.4x		-12059
+8277	+5.396	= +13673	- 1675	= 11998	+ 44	= +12042 -14
+3215	+11819	= 15034	- 3067	= 9967	+104	= 71 +12
-4922	+11995	= 13373	- 1673	= 9700	+ 158	= 58 - 1
-9769	+18700	= 13931	- 2023	= 9908	+ 165	= 73 +14
-3096	+19073	= 15977	- 7097	= 8880	+ 168	= 78 -11
24.0787	+12059		- 2024		+ 106	23.8899

Y-5	+500y	+130.9x		+1.67		-1735.6
+7622	+6293	= +15915	+ 1913	= 17328	+ 20	= +17398 - 8
+2713	+11322	= 14236	+ 3092	= 17329	+ 37	= 366 +10
+6357	+6285	= 12636	+ 4711	= 17347	+ 20	= 367 +11
+7882	+7599	= 12481	+ 4896	= 17377	+ 27	= 401 +43
-3132	+15391	= 12256	+ 4993	= 17249	+ 49	= 298 - 58

Tables a = -2.7 e = -3.0 a-e = +0.3 b+d = +3.5

Obs	-x-509.9	= -521.6	= -2.8	= +2.2
Obs	= -509.1	-509.9	= +0.8	= +2.3

See opposite page.

-.9

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1917phae.proj.2

13170 Standard Coordinates

5h Capc 232 - mg 61

PM

1 35 11.90
1 26 20
+ 8 51.90
+ 531.78
2,72 37 3
9,98 288
12 1585

+ 164381
+ 176
384552
381756
− 3096

7 15 59 06.2
17 18 000
+ 1 41 062
6068.0
3,78 30 5
1 1 14 20

9,45 71
24317
8,94 22

+ 13,0076
+ 00875
31,0951
30,7816
− 3135

4h. Capc 231 - mg 6.9

PM

1 37 48.38
1 26 20
+ 8 28.38
+ 508.26
2,70608
9,98716
1,20047

+ 158661
+ 100
3'87761
37'3992
− 4769

+13 51 52.8
14 18 000
− 26.072
− 1567.2
3,19 513
0,52628

9,99 23
24004
8,8766

− 33595
+ 00702
14,7107
15,1989
+ 4882

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1917phae..proj..2

13140 Standard Coordinates 23-

Cape No 193 Aug 8.8 Cape No 207 Aug 3.8 Cape No 478 Aug 5.9

c		1	19	01.17										7	33	07.12	
l				01.15													
E				01.12													
Mean		1	19	01.15													
Prec				54.07		1	27	02.35								54.34	
d		1	19	55.22										1	34	01.46	
A		1	26	20		1	26	20						1	26	20	
d-A		-	6	24.78		+		4235						+	7	41.46	
Sun			-	384.73			+	42.35						+		461.37	
Log.			2.558516				1.626853							2.664705			
" Cos			9.998789				9.998511							9.998182			
" Fp			1.080279				0.119220							1.153911			
Fp		-12,030.5				+	1,315.8						+	14,742.7			
Σ			-	55				+ 1							+ 85		
Σ'			09.9640				13.3159							36.7332			
x			10.7917				23.6374							35.9912			
x-Σ		+	8277			+	3215						+	9660			
													-	4422			
e		+13	22	47.7										+	13	25 21.0	
l				47.7													
E				46.5													
Mean		+13	22	47.2													
Prec			+	5	20.5											+ 5	13.7
δ		+13	28	07.7		+14	55	05.7						+13	30	24.7	
D		14	18	000		14	18	000						14	18	00.0	
δ-D		-		79.52.3			+37	05.7						-		47.35.3	
Tan δ-D			-	2992.5				+ 2225.8							-	2855.5	
Log.			3.476031				3.347491							3.455368			
" Fp			0.807187				0.678664							0.786853			
Cotan			9.37793				9.72556							9.38084			
" Σ			2.16049				0.23844							2.31823			
" H.			8.59311				6.71744							8.75322			
Ho		-	6.41747			+	4.77113							+	6.12111		
H'		+	0.03922			+	0.00053							+	0.05654		
H			11.62475				22.77118								11.93354		
y			12.58675				23.07431								12.57005		
y-H		+	9622			+	2713							+	6351		

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1917phae.proj.2

Standard Coordinates

Cape No 222 Mag 6.2

c	51	30	25.50
L			25.49
E			25.48
Mean	1	30	25.49
Prec			15.43
x	1	30	19.92
A	1	26	20
x-A	+	4	59.92
Sin(x-A)		+	29990
log		2.476988	
" Cos		9.986495	
" ξ0		0.990067	
ξ0	+	92470	
ξ		+	20
ξ	31	34	90
x	31	22	05
x-ξ	7	12	85
c	+	19	08	59.9
L			9	00.3
E			7	00.1
Mean		19	09	00.1
Prec			+	5	19.3
S		19	14	19.4
D		19	18	
x-D			-	3	45.6
Sin(x-D)				-	2256
log			2.353394	
" η			9.648449	
log tan δ			9.40017	
" ξ0			19.4138	
" η			8.39971	
η0	-	0	49	36
η	+	0	0	25.1
η		17	59	47.5
η		17	49	76
η-η		+	92	81

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1917phae..proj.2

13190 Standard Coordinates 25

Cape No 193 Mag 8.8 Cape No 207 Mag 3.8 AG No 978 Mag 5.9

c	1	19	01.17									1	35	07.12			
l			01.13														
E			01.12														
Mean	1	19	01.15														
Prec			54.07		1	27	02.35									54.34	
x	1	19	55.22									1	34	01.46			
A	1	26	20		1	26	20					1	26	20			
x-A	−	6	24.78		+		42.35					+	7	41.76			
sin			−384.73				+72.35							+761.37			
log.			2.585316 n				1.626453							2.667053			
" cos			9.987789				9.998511							9.997822			
" ξ₀			1.080274 n				0.119208							1.139111			
ξ₀			−12.03.05				+13.13.82							+14.42.77			
ξ'			−55				+11							+85			
ξ			09.96.40				23.21.37							36.43.32			
λ			10.07.17				23.63.74							37.99.12			
x-ξ			+.82.77				+.32.15							+.96.60			
														−.74.22			
c			+13 22 47.9											+13 25 11.			
l			47.7														
E			46.5														
Mean			+13 22 47.2														
Prec			+5 20.5													+5 13.	
δ			+13 28 07.7				+19 55				05.7			+13 30 24.			
D			14 18 00.0				19 18				00.0			14 18 00.			
δ-D			− 49 52.3				+37 05.7				−			−47.35			
tan δ-D			− 29925				+22258							−2855			
log.			3.476034				3.347799							3.455684			
" 4ω			0.807184				0.678664							0.786834			
log tan δ			9.37933				9.72556							9.38064			
" F			21609				02384							23182			
" h.			8.59931				6.71174							8.75522			
h₀			−6.11477				+4.77133							−6.12111			
h'			+0.03922				+0.00023							+0.00569			
h			11.62485				22.77118							11.93354			
y			12.58.67				23.07.31							12.57.05			
y-h			+.96.82				+.27.13							+.63.51			

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1917phae.proj.2

Standard Coordinates

Cape No 222 Mg 6.2

c	1	30	25.50
1	1902.3		25.49
2			25.48
Mean	1	30	25.49
Prec			+57.43
α	1	31	19.92
A	1	26	20
α-A	+	4	59.92
sin(α-A)			+29990
log		2.477698	
" cos δ		9.986435	
" ξ₀		0970674	
ξ₀		+93470	
ξ		+20	
ξ		31349.0	
X		31220.5	
X-ξ		71.285	

c	+14	08	59.9
1		9	00.3
2		7	00.1
Mean	14	09	00.1
Prec		+5	14.3
δ	14	14	14.4
D	14	18	
δ-D		-3	45.6
tan (δ-D)		-2255.6	
log		2.353274	n
" η		9.684479	n
log tan δ		9.404744	
" ξ₀		1.947130	
" η		8.399874	
η₀		-0.48336	
η		+0.02514	
η		17.54145	
y		17.96776	
y-η		+.42631	

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1917phae_proj.2

13170 Moons Center

	x	x-x0	Δx	(x-x0)²	(x-x0)²+(y-y0)²	O-C
1	25.5304	+1.4534	+3	2.1138	3.9637	+48
2	25.6596	+1.5826	+4	2.5039	3.9700	+111
3	+26.0678	+1.9908	0	3.9633	3.9633	+44
4	25.9059	+1.8289	-3	3.3438	3.9679	+90
5	25.0000	+0.9230	-6	0.8508	3.9597	+8
6	24.9437	+0.8667	-6	0.7502	3.9543	-46
7	24.0770	0.0000	-7	0.0000	3.9653	+64
8	23.6886	-0.3884	-7	0.1514	3.9597	+8

R² 3.9589

	y	y-y0	Δy	(y-y0)²	∠	
1	13.8499	-1.3601	0	1.8499	133°	
2	14.0000	-1.2100	0	1.4641	127	
3	15.2100	0.0000	0	0.0000	90	
4	16.0000	+0.7900	0	0.6241	67	
5	16.4732	+1.2632	0	1.5089	25	
6	17.0000	+1.7900	0	3.2041	26	
7	+17.2013	+1.9913	0	3.9653	0	
8	17.1615	+1.9515	0	3.8083	349	147°

Approx Center

x0 24.0768
xmax 26.0678
R 1.9910
ymax 17.2013
y0 15.2103

Center { x0 24.0770
y0 15.2100

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1917phae..proj..2

13170 Moons center

	x	x - x0	Δx	(x-x0)²	(x-x)²+(y-y0)²	O-C
1	25.5304	+1.5399	+5	2.11138	3.9637	+98
2	25.6596	+1.5826	+4	2.50579	3.9700	+111
3	+26.0678	+1.9908	0	3.96333	3.9633	+99
4	25.9059	+1.8289	-3	3.34538	3.9679	+90
5	25.0000	+0.9230	-6	0.85208	3.9597	+8
6	24.9937	+0.8667	-6	0.75102	3.9543	-96
7	24.0770	0.0000	-7	0.00000	3.9653	+64
8	23.6846	-0.3884	-7	0.15019	3.9597	+8

R² 3.9589

	y	y - y0	Δy	(y-y0)²	←
1	13.8479	-1.3601	0	1.84997	133
2	14.0000	-1.2100	0	1.46411	127
3	15.2100	0.0000	0	0.00000	90
4	16.0000	+0.7900	0	0.62441	67
5	16.9732	+1.7632	0	3.10889	25
6	17.0000	+1.7900	0	3.20041	26
7	+17.2013	+1.9913	0	3.96533	0
8	17.1615	+1.9515	0	3.80803	349	199°

Approx center

x0 24.0768
x max 26.0678
R 1.9910
y max 17.2013
y0 15.2103

center { x0 24.0770
y0 15.2100

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1917phae.proj.2

Formation of Normals.

1	− 1,97	+ 696	− 653
2	− 191	+ 1753	− 1347
3	0	+ 773	0
4	+ 144	+ 1650	+ 712
5	+ 162	+ 73	+ 170
6	+ 156	− 400	− 813
7	0	0	+ 1273
8	− 0,76	− 31	+ 156
	+ 462	+ 4949	+ 2181
	− 464	− 431	− 1830
	− 0,02	+ 4518	− 539

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									O - C
1	+ 1.45	- 1.36	= + 78	+ 48	+ 4	=	+ 52		- 4
2	+ 1.58	- 1.21	= + 111	+ 52	+ 4	=	+ 56		+ 55
3	+ 1.99	0.00	= + 44	+ 66	0	=	+ 66		- 22
4	+ 1.83	+ 0.79	= + 90	+ 61	- 2	=	+ 59		+ 31
5	+ 0.92	+ 1.46	= + 8	+ 30	- 5	=	+ 25		- 17
6	+ 0.87	+ 1.79	= - 46	+ 29	- 5	=	+ 24		- 70
7	0.00	+ 1.99	= + 64	0	- 6	=	- 6		+ 70
8	- 0.39	+ 1.95	= + 8	- 13	- 6	=	- 19		+ 27

13.67 - 0.02 = + 451.8 + 183

- 113

- 0.02 + 18.02 = - 53.9

+ [ ] - 0 = + 0.7

+ 18.02 = - 53.2 b = - 3.0

13.67 = + 451.8 - 0.1 = + 451.7 a = + 33.0

arc 144

$\frac{p}{m} = .12$ ✓

$\frac{\Sigma v}{m} = + 8.7$ ✓

$+ \frac{8.7}{.12} = + 72.5$ ✓

$\Delta R = + 0.9$ ✓

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1917phae.proj.2

Value from page 27

17 55 27

-3 44.76

0.5376744

7.331153

3.206977 = -1608.7

-26 48.7

+14 18 00.0

13 51 11.3

19.6

13 51 30.9

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1917phae.proj.2

13170 Conditional Equations

								O-C
1	+ 1.73	- 1.36	=	+ 78	+ 98	+ 9	= +52	- 7
2	+ 1.58	- 1.21	=	+ 111	+ 52	+ 9	= +56	+ 53
3	+ 1.99	0.00	=	+ 99	+ 66	0	= +66	- 22
4	+ 1.83	+ 0.79	=	+ 90	+ 61	- 2	= +59	+ 31
5	+ 0.92	+ 1.76	=	+ 8	+ 30	- 5	= +25	- 17
6	+ 0.87	+ 1.79	=	- 96	+ 29	- 5	= +24	- 70
7	0.00	+ 1.99	=	+ 69	0	- 6	= -6	+ 70
8	- 0.39	+ 1.93	=	+ 8	- 13	- 6	= -19	+ 27

13.67 - 0.02 = +9 51.8

-0.02 +18.02 = - 53.9

+ [ ] - 0 = + 0.7

+ 18.02 = - 53.2

13.67 = +9 51.8 - 0.1 = +9 51.7

+ 183
- 113

b = - 30.

a = + 33,0

arc 149

$\frac{P}{n} = .12$

$\frac{\Sigma K}{n} = + 8.7$

$\frac{+ 8.7}{.12} = + 72.5$

$\Delta R = + 0.9$

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1917phae.proj.2

Value from page 27

14.55'27

-3,7476

0,5'3764 h

7,3311 5'

3,20649 h = -1608,7

-26 48,7

+14 18 00,0

13 51 113

19,6

13 51 30,9

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1917phae.proj.2

13140 Moon's Mean Position

x_0 24.0770 v y_0 15.2100 v
+17 −1
24.0787 15.2099

From Plate Constants

X 23.8876 v Y 17.5612 v

ξ +1.8876 v η −3.4388 v

log ξ 0.27522 v log tan δ_2 9.3919 v 13 51
log cos δ 9.998718 v ξ^2 0.5504 v
8.507227 v 7.0537 v
1.780880 v 6.9957 v

α−A 6037 v η. +0.0040

A 1 26 20.00 v log η_0 0.53653 η v
α_0 1 27 2037 v 7.33113 v
3.20538 η = −1607.6 v

Red +3.53 v δ−D −26 47.6 v

α' 1 27 23.90 D +14 18 00.0 v

δ_0 +13 51 15.4 v

Red +19.6 v

δ' +13 51 35.0 v

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1917phae.proj.2

15140 Reduction

159° 10.5'

H+α	10	36.7
H	9	9.4
α	1	27.3
G	23	41.6
G+α	1	08.9
	= 17°	13.2'

Aug 7 1917 22h 3m

δ 13 3'.1

log cos δ 9.9572
+ 0.7614
(a) 0.7186

log cos(G+α) 7.9801
g 1.28 3'.1
sin 9.9113
tan δ 9.3919
8.8239

log sin δ 9.3791
cos(H+K) 9.9706 n
h 1.2931
sin(H+K) 9.3509
sec δ 0.0128
8.8239

log g' 1.2652
g 8.9729

log h' 0.6428 n
h 9.6807

f + 2.956
g + 0.094
h + 0.779
+3.329

g' 1.892
h' − 4.393
i + 3.606
19.633

Using plate constants from p 29

δ 32 07 18.2
δ 13 31 30.9
δ−δ 38 15 47.6

9.826780
8.233688
7.771188
0.102794
7.953470

+30 38.4

+14 22 29.3
Eph δ 14 22 27.1

O−C = +2.2

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13140

Using Plate constants from grouping on p 24 would about correct the error in dec.

From 3 groupings of stars that were used the centering quantities in right accension were similar - greatest diff being 7.

Using these constants + theoretical diffraction scheme the centering corr. for dec. should be same like that of p 27

star no C.207 is a double.

1917phae.proj.2

13190

143
5.7

x_0 2

2

From

x

y

150
7.3

115
6.8

122
6.4

log y
cos d

148
6.3

137
8.0

y - A

A 1

y_0 1

Red

y_0 1

57
7.1

+14

+13

+12

+11

+10

2 1 0 58 56 54 52 50 48

1h 0h

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13190 Mount Hopkins Station 26

x_0 24.0770″ y_0 15.2100″
+17 −1
24.0787 15 20 79

From Plate Constants

x 23.8846″ y 19.5612″
ξ +1.8846″ η −3.9388″

log ξ 0.27522″ log cos δ 9.39119″
cos δ 9.98718″ ξ^2 0.55094″
8.50729″ 7.05339″
1.78070″ 6.99557″

$\gamma - A$ 6038″ η. +0.0040

A 1 26 20.000″ log η_0 0.53633 η″
7.33115″
t_0 1 27 20.378″ 3.20538 η = −1607.6″

Red +3.53″ $\delta - D$ −26 49.6″

t 1 27 23.90 D +17 18 00.0″

D_0 +13 51 15.7″

Red +19.6″

δ' +13 51 35.0″

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13170 Reduction

	159°	10.5′
H+α	10	36.7
H	9	9.4
α	1	27.3
G	23	41.6
G+α	1	08.9
	= 17°	13.5′

Aug 7 '1917 22h 5m

S 13 5′1

log cos δ 9.9872
" ± 0.7614
" (μ) 0.7786

log Cos(G+α) 9.9801
" g 1.2851
" Sin " 9.4715
" Tan δ 9.3919
8.8239

log Sin δ 9.3791
" cos (H+α) 9.9706 n
" h 1.2931
" Sin (H+α) 9.5509
" Sec δ 0.0128
8.8239

log g′ 1.2652
" g 8.9424

log h′ 0.6428 n
" h 9.6807

f + 2.956
g + 0.094
h + 0.479
+ 3.529

g′ 1.842
h − 4.393
i + 5.606
19.633

Using plate constants from p 27

δ 52 07 18.5″
S 13 51 30.9
δ-S 38 15 47.6

9.826740
8.233688
9.791188
0.102744
7.954470

+30 58.4

+14 22 29.3
Eph.S 14 22 27.1

O-C = +2.2

O-C = +2.2

Corr = +1.1
2 Wilkd. Ref. 0.0

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13170 Lunar Parallax

δ'	1	27	23.90″	π	58′ 52.92″
ϕ	22	25	38.75		
$\phi - \delta'$	-3	01	45.15	9.86913	
$=$	-45	26	21.75	8.23368	
$\frac{1}{2}(\phi - \delta')$	-16	01.17		9.85278 n	
	-45	10	20.58	0.01381	
				7.96940 n	

9.95727

0.00000

0.15182

0.10909

γ 52 07 18.5″

δ +13 51 35.0″

$\gamma - \delta$ 38 15 43.5″

9.82670

8.23368

9.79188

0.10275

7.95471

$\delta - \delta'$ +30 58.7

δ +14 22 33.4″ α 1 25 15.74″

Eph δ +14 22 27.1″ Eph α 1 25 15.15″

O-C +6.3 O-C +0.59

see

+0.01 Comp 24

+0.60

Corr. -0.02

α 1 25 15.73

O-C +0.58

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13170 Lunar Parallax

Δ'	1	27	23.98″	π 58	52.92″
+	22	25	38.95″		
$\delta - \Delta'$	-3	01	45.45″	9.869913	
=	-95	26	21.80″	8.233685″	
$\Delta(+1)$	-16	01.17		9.852787″	
λ	-95	10	20.58	0.013811″	
				7.969407″	

9.95427″
0.000000
015182
010909

$\Sigma - \Delta'$ -32 02.33″
-2 8.16″

λ 52 97 18.5″

λ +13 51 35.0″

$\lambda - \lambda$ 38 15 93.5″

9.826700″
8.233685
9.791884
010275
7.953971

$\lambda - \lambda'$ +30 58.9″

λ +14 22 33.4″ λ 1 25 15.79″

Eph λ +14 22 27.1″ Eph λ 1 25 15.15″

O-C +6.3 O-C +0.59

+.01 Corr p 27

+0.60

Corr. -0.02

λ 1 25 15.13

O-C +0.58

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1917phae.proc..2

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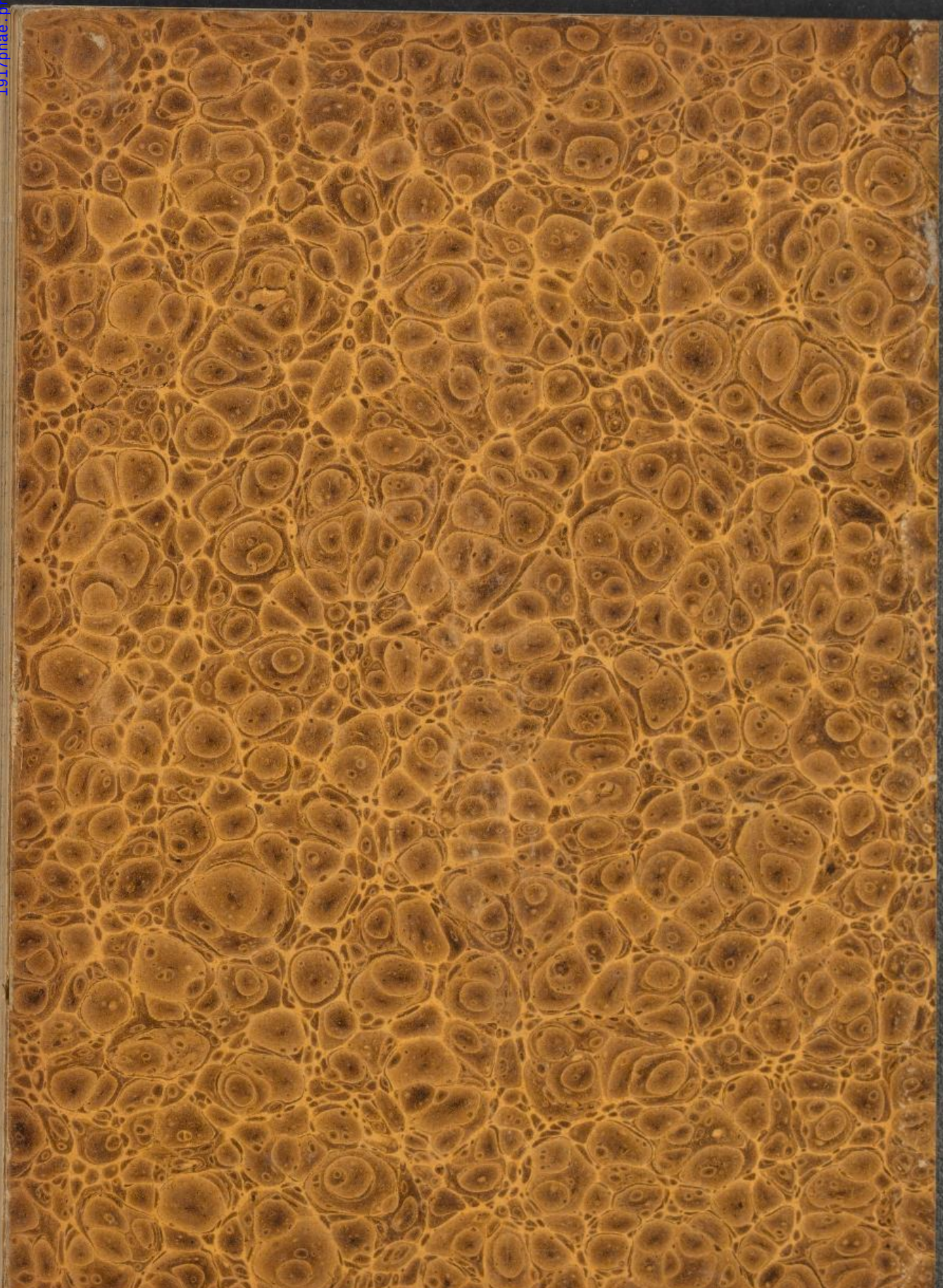
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