

KG
11365
936

H. S. L.

Phoebe

K B 11365-936

KG113659 36



Saturday, December 3, 1904.

Supplementary Table of Plates upon which Proke has been identified.

Fig.	Page	Date	x	y	B	Log dist. from E
3529	6	'99 May 19	-27.9	+5.1	-4.0	0.960 ¹ / ₂
3913	8	'99 Aug. 25	-4.1	+2.7	-4.9	0.988 ⁹
4331	10	'00 Apr. 26	-5.4	-1.8 [?]	+1.7	0.978 ⁶
4340	12	'00 Apr. 30	-7.9	-1.3	+1.9	0.976 ⁰
4379	Bk 83, 146, 216	'00 May 8				0.971 ²
4797	14	'00 Oct. 11	-27.0	+2.6	+0.6	1.014 ¹ / ₅
6000	16	'02 July 1	+4.6	+4.3 [?]	+13.1	0.956 ⁷
6003	18	'02 July 2	+5.5	+4.1 [?]	+10.2	0.956 ³ / ₄
6006	20	'02 July 3	+5.1	+3.8	+12.5	0.956 ²
6167	22	'02 Sept. 24	+24.6	+4.1	+8.4	0.982 ⁸

Tuesday, December 6, 1904.

Measure of Phoebe copied from Phoebe Miss Leland's Book 29 p. 52
'99 May 19 Plate 3529 (10960) & Saturn $17^{\circ} 26'$, $\delta - 21^{\circ} 7'$

Very faint

Object	x	y		x	y		x	y
Phoebe	3.8	22.9	96-96 ₂	-0.2	7.4	Sat ₂	31.9	25.1
Saturn ₂	31.9	25.1	98-98 ₂	-0.2	7.2	Sat ₁	31.7	17.8
96 ₁	20.2	7.9	04-04 ₂	-0.2	7.3	Phoebe	3.8	22.9
96 ₂	20.4	15.3	05-05 ₂	-0.2	7.3	P.S.	-27.9	+5.1
98 ₁	32.4	31.3		-0.2	7.3			
98 ₂	32.6	38.5						
				x	y			Means
04 ₁	46.9	2.1	96-98 ₁	-12.2	-23.4	x		y
04 ₂	47.1	9.4	96 ₂ -98 ₂	-12.2	-23.2		-12.20	-23.30
05 ₁	49.1	12.3	04-05 ₁	-2.2	-10.2			
05 ₂	49.3	19.6	04 ₂ -05 ₂	-2.2	-10.2		-2.20	-10.20

Star	α	δ	$d\alpha$	$d\delta$
6396	$17^{\circ} 23' 6.5''$	$-21^{\circ} 51.1'$	-51.0	-23.2
6398	57.5	27.9		
6404	25 0.1	56.9	-9.1	-10.1
6405	9.2	46.8		

$$\frac{51.0 \cos \delta}{4} = \frac{47.43}{4} = 11.86$$

$$\frac{9.1 \cos \delta}{4} = \frac{8.44}{4} = 2.11$$

96-98		04-05	
x	y	x	y
-12.20mm	-23.30mm	-2.20mm	-10.20mm
-11.86'	-23.2'	-2.11'	-10.1'
-0.34	-0.1	-0.09	-0.1

Tuesday, December 6, 1904
Location of Phoebe cont.

$$\log -0.34 = 9.5315^m$$

$$\log -23.3 = 1.3674^m$$

$$\log \tan C = 8.1641$$

$$C = +0^\circ.8$$

$$\text{Mean } C = +0^\circ.6$$

$$\log -0.09 = 8.9542^m$$

$$\log -10.2 = 1.0086^m$$

$$\log \tan C = 7.9456$$

$$C = +0^\circ.5$$

$$\log 165.81 = 2.2196^{59} \quad 110.54$$

$$\log \cos \delta \quad 9.9681^{34} \quad 55.27$$

$$2.1877^{30} \quad 165.81$$

$$\log -8.98 \quad 0.9533^m$$

$$\log \tan D: 8.7656^m$$

$$D = -3^\circ.8$$

$$D - C = -3^\circ.9 - 4^\circ.0$$

$$\text{When Sun's } \alpha = 17^h 26^m$$

$$\text{Hourly motion in } \alpha = +11^s.054$$

$$\text{" " " } \delta = -8^m.98$$

Wednesday, December 7, 1904

Measures of Phoebe copied from Miss Leland's Book 29 p. 56

'99 Aug. 25 Plate A3913 (10947) α Saturn $17^h 4^m 8-21.5$

Object	x	y		x	y
Phoebe	7.9	20.6		Saturn	12.0 17.9
Saturn	12.0	17.9		Phoebe	7.9 20.6
24	10.1	33.4		P-S	-4.1 +2.7
²⁰ 26	4.5	10.0			x y
28	22.3	1.2		⁰ ~~24-26~~	~~5.6~~ ~~23.4~~
32	25.3	³ 35.2		28-32	-3.0 -34.1
	x	y		d α	d δ
(6324)	$17^h 2^m$	$46^s.6$		-21° 14' 7"	-23.0 -23.2
6320		21.6		37.9	
6328		3 37.6		46.9	-14.5 -34.0
6332		52.1		12.9	

$$\begin{aligned} \log -25.0 &= 1.3979 \\ \log \cos \delta &= 9.9690 \\ \log 0.25 &= 9.3979 \\ \hline &0.7648 \\ d\alpha &= -5'.82 \end{aligned}$$

$$\begin{aligned} \log -14.5 &= 1.1614 \\ \log \cos \delta &= 9.9687 \\ \log 0.25 &= 9.3979 \\ \hline &0.5280 \\ d\alpha &= -3'.37 \end{aligned}$$

$$\begin{array}{rcl} & 20-24 & \\ x & y & \\ -5.6^m & -23.4^m & \\ -5.82' & -23.2' & \\ \hline +0.22 & -0.2 & \end{array}$$

$$\begin{array}{rcl} & 28-32 & \\ x & y & \\ -3.0^m & -34.1^m & \\ -3.37' & -34.0' & \\ \hline +0.37 & -0.1 & \end{array}$$

Wednesday, Dec. 7, 1904.
Location of Phoebe continued

$$\begin{array}{r} \log +0.22 = 9.3424 \\ \log -23.4 = \frac{1.3892}{7.9732} \end{array}$$

$$C = -0^{\circ}.5$$

$$\text{Mean } C = -0^{\circ}.6$$

$$\begin{array}{r} \log +0.37 = 9.5682 \\ \log -34.1 = \frac{1.5328}{8.0354} \end{array}$$

$$C = -0^{\circ}.6$$

$$\begin{array}{r} \log 164.71 = 2.2167 \quad 109.81 \\ \log \cos \delta = \frac{9.9687}{2.1854} \quad \frac{54.90}{164.71} \end{array}$$

$$\log -14.68 = \frac{1.1667}{8.9813}$$

$$D = -5^{\circ}.5$$

$$D - C = -5^{\circ}.0 - 4^{\circ}.9$$

When ^{syn} Saturn's α is $17^{\circ} 4'$
Hourly motion in $\alpha = +10''.981$
" " " $\delta = -14''.68$

Wednesday, Dec. 7, 1904

Measure of Phoebe's position from Miss Leland's Book 29 p. 48
 on April 26 (Date 4331 (10250) α Saturn $18^h 21^m 8^s -22.3$

Object	x	y	x	y	x	y
Phoebe	16.1	19.9 ²	97.97 ₂	-0.1	+7.3	Sat. ₂ 21.5 14.3
Saturn ₂	21.5	14.3	00. - 00 ₂	+0.2	+7.4	Sat. ₁ 21.5 21.7
97 ₁	0.5	38.4	19. - 19 ₂	± 0.0	+7.4	Phoebe 16.1 19.9 ²
97 ₂	0.6	31.1	21. - 21 ₂	+0.1	+7.3	P.S. -5.4 -1.8 ²
00 ₁	2.9	19.3		± 0.0	+7.4	
00 ₂	2.7	11.9		x	y	Means
19 ₁	38.7	17.0	97. - 00 ₁	-2.4	+19.1	x y
19 ₂	38.7	9.6	97 ₂ - 00 ₂	-2.1	+19.2	-2.25 +19.15
21 ₁	39.9	35.6	19. - 21 ₁	-1.2	-18.6	
21 ₂	39.8	28.3	19 ₂ - 21 ₂	-1.1	-18.7	-1.15 -18.65

Star	α	δ	$d\alpha$	$d\delta$
6997	$18^h 18^m 8^s$	$-22^\circ 4'.6$	-10.0	+18.7
7000	18.1	23.3		
7019	20 53.1	25.6	-4.2	-18.2
7021	57.3	7.4		

$$\frac{-10.0 \cos \delta}{4} = \frac{9.259}{4} = -2.31$$

$$\frac{-4.2 \cos \delta}{4} = \frac{-3.8858}{4} = -0.97$$

97-00		19-21	
x	y	x	y
-2.25 ^{mm}	+19.15 ^{mm}	-1.15 ^{mm}	-18.65 ^{mm}
-2.31'	+18.7'	-0.97'	-18.2'
+0.06	+0.5	-0.18	-0.4

Wednesday, Dec. 7, 1904
Location of Phobos Cont.

$$\begin{array}{r} \log +0.06 = 8.7782 \\ \log +19.15 \quad 1.2822 \\ \hline 7.4960 \end{array}$$

$$C = +0^{\circ}.2$$

$$\text{Mean } C = +0^{\circ}.4$$

$$\begin{array}{r} \log -0.18 = 9.25532 \\ \log -18.65 \quad 1.27062 \\ \hline 7.9847 \end{array}$$

$$C = +0^{\circ}.6$$

$$\begin{array}{r} \log 166.50 = 2.2214 \quad 111.00 \\ \log \cos \delta = 9.9662 \quad 55.50 \\ \hline 2.1876 \quad 166.50 \end{array}$$

$$\begin{array}{r} \log +5.61 = 0.7490 \\ \hline 8.5674 \end{array}$$

$$D = +2^{\circ}.1$$

$$D - C = +1^{\circ}.7$$

When Saturn's α is $18^{\circ} 21' 0''$
Hourly motion in $\alpha = 11^{\circ} 10' 6''$
" " " $\delta = +5^{\circ} 55'$

Thursday, Dec. 8, 1904.

Measure of Phoebe speed from Miss Leland's Book 29 p. 47, 48
 '00 April 30 Plate 4340 (10249) α Saturn $18^h 21^m 5.22.3$

Object	x	y		x	y		x	y
Phoebe	7.9	19.4	97 ₁ -97 ₂	0.0	+7.5	Sat ₂	15.7	13.3
Saturn ₂	15.7	13.3	00 ₁ -00 ₂	+0.1	+7.5	Sat ₁	15.8	20.7
"Chine is cut off"	97 ₁	0.6	19 ₁ -19 ₂	+0.1	+7.5	Phoebe	7.9	19.4
	97 ₂	0.6	21 ₁ -21 ₂	+0.2	+7.3	P-S	-7.9	-1.3
	00 ₁	3.1		+0.1	+7.4			
	00 ₂	3.0						
	19 ₁	38.8		x	y	Means		
	19 ₂	38.7	97 ₁ -00 ₁	-2.5	+19.0	x	y	
	21 ₁	40.1	97 ₂ -00 ₂	-2.5 ⁴	+19.0	-2.5 ⁴	+19.0	
	21 ₂	39.9	19 ₁ -21 ₁	-1.3	-18.5			
			19 ₂ -21 ₂	-1.2	-18.7	-1.25	-18.6	

For Positions of Stars, see page 10.

97 - 00		19 - 21	
x	y	x	y
-2.55 mm	+19.0 mm	-1.25 mm	-18.6 mm
-2.31'	+18.7'	-0.97'	-18.2
-0.24	+0.3	-0.28	-0.4

$$\begin{aligned}\log -0.14 &= 9.1461 \approx \\ \log +19.0 &= 1.2788 \\ \hline &7.8673 \approx\end{aligned}$$

$$C = +0^{\circ}.4$$

$$\text{Mean } C = +0^{\circ}.2$$

$$D = +2^{\circ}.1 \text{ when Saturn's } \alpha = 18^h 21^m \text{ (see page 10)}$$

$$D - C = +1^{\circ}.9$$

$$\begin{aligned}\log -0.28 &= 9.4472 \approx \\ \log -18.6 &= 1.2695 \approx \\ \hline &8.1777\end{aligned}$$

$$C = +0^{\circ}.9$$

Thursday, Dec. 8, 1904.

Measures of Phoebe copied from Miss Leland's Book 29 p. 50
'00 Oct. 11 Plate 4797 (10950) α Saturn $17^h 58^m 5 - 22^\circ 7'$

Object	x	y	x	y	x	y
Phoebe	16.5	14.6	$40_1 - 40_2$	-0.1 +4.0	Sat ₂	43.6 8.0
Saturn ₂	43.6	8.0	$44_1 - 44_2$	0.0 +4.0	Sat ₁	43.5 12.0
40 ₁	1.5	35.4	$26_1 - 26_2$	-0.1 +3.9	Phoebe	16.5 14.6
40 ₂	1.6	31.4	$30_1 - 30_2$	-0.2 +3.9	P-S	-27.0 +2.6
44 ₁	4.6	18.9		-0.1 +4.0		
44 ₂	4.6	14.9				
			x	y	Mean	
26 ₁	38.9	13.2	$40_1 - 44_1$	-3.1 +16.5	x	y
26 ₂	39.0	9.3	$40_2 - 44_2$	-3.0 +16.5	-3.05	+16.5
30 ₁	39.1	38.2	$26_1 - 30_1$	-0.2 -25.0		
30 ₂	39.3	34.3	$26_2 - 30_2$	-0.3 -25.0	-0.25	-25.0

Star	α	δ	$d\alpha$	$d\delta$
6540	$17^h 53^m 59^s.6$	$-22^\circ 18'.7$	-12.5	+16.4
6544	54 12.1	35.1		
6626	56 38.8	41.3	-3.0	-24.8
6630	41.8	16.5		

$$\begin{aligned} \log -12.5 & 1.0969 \\ \log \cos \delta & 9.9659 \\ \log 0.25 & 9.3979 \\ & \hline & 0.4607 \end{aligned}$$

$$d\alpha = -2.89'$$

$$\begin{aligned} \log -3.0 & 9.4771 \\ \log \cos \delta & 9.9656 \\ \log 0.25 & 9.3979 \\ & \hline & 98.8406 \end{aligned}$$

$$d\alpha = -0.69'$$

40 - 44

$$\begin{array}{r} x \\ -3.05 \\ -2.89' \\ \hline 0.16 \end{array} \quad \begin{array}{r} y \\ +16.5 \\ +16.4' \\ \hline +0.1 \end{array}$$

26 - 30

$$\begin{array}{r} x \\ -0.25 \\ -0.69' \\ \hline +0.44 \end{array} \quad \begin{array}{r} y \\ -25.0 \\ -24.8' \\ \hline -0.2 \end{array}$$

Thursday, Dec. 8, 1904.
Location of Phoebe cont.

$$\begin{array}{r} \log -0.16 \quad 9.2041^m \\ \log +16.5 \quad \underline{1.2175} \\ 7.9866^m \end{array}$$

$$C = -0^{\circ}.6$$

$$\text{Mean } C = -0^{\circ}.8$$

$$\begin{array}{r} \log +0.44 \quad 9.6435 \\ \log -25.0 \quad \underline{1.3979^m} \\ 8.2456^m \end{array}$$

$$C = -1^{\circ}.0$$

$$\begin{array}{r} \log 166.57 = 2.2216^7 \\ \log \cos \delta = \underline{9.9650^{27}} \\ 2.1866^{44} \end{array} \quad \begin{array}{r} 141.07^7 \\ \underline{55.52^4} \\ 166.57^{61} \end{array}$$

$$\begin{array}{r} \log -0.58 = 9.7634^m \\ \underline{7.5768^{90}} \end{array}$$

$$D = -0^{\circ}.2$$

$$D - C = +0^{\circ}.6$$

$$\text{Then Sun's } \alpha = 17^h 56^m$$

$$\text{Hourly motion in } \alpha = 11^s.105^7$$

$$\text{" " " } \delta = -0^{\circ}.58$$

Thursday, Dec. 8, 1904.

Measures of Phoebe copied from Miss Leland's Book 29 p. 62
'02 July 1 Date 6000 (10942) α Saturn $19^{\circ} 25' 21''$ δ $-21^{\circ} 16' 16.7''$

Object	x	y		x	y	
Phoebe	20.6	15.3		Saturn	16.0	16.0?
Saturn	16.0	11.0?		Phoebe	20.6	15.3
40	9.3	2.3		P-S	+4.6	+4.3?
43	4.1	29.4			x	y
42	18.7	6.4		40-43	+5.2	-27.1
48	26.5	25.9		42-48	-7.8	-19.5

Star	α	δ	$d\alpha$	$d\delta$
7540	$19^{\circ} 48' 22.5''$	$-21^{\circ} 17' 16''$	+17.0	-27.0
7743	5.5	-20 50.6		
7542	49 3.6	$-21^{\circ} 13.9''$	-36.7	-19.1
7748	40.3	-20 54.8		

$$\begin{aligned} \log +17.0 &= 1.2304 \\ \log \cos \delta & 9.9702 \\ \log 0.25 & 9.3979 \\ \hline & 0.5985 \end{aligned}$$

$$d\alpha = +3.96$$

$$\begin{aligned} \log -36.7 &= 1.56472 \\ \log \cos \delta & 9.9699 \\ \log 0.25 & 9.3979 \\ \hline & 0.93252 \end{aligned}$$

$$d\alpha = -8.56$$

40-43

x	y
+5.2 mm	-27.1 mm
+3.96'	-27.0'
+1.24	-0.1

42-48

x	y
-7.8 mm	-19.5 mm
-8.56'	-19.1'
+0.76	-0.4

Thursday, Dec. 8, 1904.

Location of Procyon.

$$\log +1.24 = 0.0934$$

$$\log -27.1 \quad 1.4330^m$$

$$8.6604^m$$

$$C = -2^{\circ}.6$$

$$\text{Mean } C = -2^{\circ}.4$$

$$\log +0.76 = 9.8808$$

$$\log -19.5 = 1.2900$$

$$8.5908^m$$

$$C = -2^{\circ}.2$$

$$\log 160.85 = 2.2064$$

$$\log \cos \delta = 9.9699^{702}$$

$$2.1763$$

$$\log +28.34 = 1.4524$$

$$9.2764^{58}$$

$$D = +10^{\circ}.7$$

$$D - C = +13^{\circ}.1$$

$$107.23$$

$$53.62$$

$$160.85$$

When Sun's $\alpha = 19^h 51^m$

Hourly motion in $\alpha = 10^s 754^{23}$

" " " $\delta = +28^{\circ} 24^3$

Thursday, Dec. 8, 1904

Measure of Phoebe copied from Miss Leland's Book 29 p. 60
'02 July 2 Plate 6003 (10962) α Saturn $19^h 50^m$ $\delta - 21^\circ.1$

Object	x	y		x	y
Phoebe	15.5	15.1	Saturn	10.0	11.0?
Saturn	10.0	11.0?	Phoebe	15.5	15.1
40	7.4	3.5	P - S	+5.5	+4.1?
43	3.5	30.7		x	y
42	16.9	7.2	40-43	+3.9	-27.2
48	25.7	26.4	42-48	-8.8	-19.2

For Positions of Stars, see page 16

40-43

x	y
+3.9 ^{mm}	-27.2 ^{mm}
+3.96	-27.0
-0.06	-0.2

42-48

x	y
-8.8 ^{mm}	-19.2 ^{mm}
-8.56	-19.1
-0.24	-0.1

$$\begin{aligned} \log -0.06 &= 8.7782n \\ \log -27.2 &= 1.4346n \\ \hline &7.3436 \end{aligned}$$

$$C = +0^\circ.1$$

$$\text{Mean } C = +0^\circ.4$$

$$\begin{aligned} \log -0.24 &= 9.3802n \\ \log -19.2 &= 1.2833n \\ \hline &8.0969 \end{aligned}$$

$$C = +0^\circ.7$$

Thursday, Dec. 8, 1904.
Location of Phoebe cont.

$$\begin{array}{r}
 \log 160.97 = 2.2067 \\
 \log \cos \delta \quad 9.9699 \\
 \hline
 2.1766 \\
 \log +28.04 \quad 1.4478 \\
 \hline
 9.2712
 \end{array}$$

$$107.31$$

$$53.66$$

$$160.97$$

When Sun's $\alpha = 19^h 50^m$

Hourly motion in $\alpha = 10^s.731$

" " " $\delta = +28".04$

$$D = +10^\circ.6$$

$$D - C = +10^\circ.2$$

Thursday, Dec. 8, 1904.

Measures of Phoebe copied from Miss Ireland's Book 29p. 54
'02 July 3 Plate 6006 (10961) α Saturn $19^h 50^m 5 - 21.1$

Object	x	y		x	y
Phoebe	12.6	12.6	Saturn	7.5	8.8
Saturn	7.5	8.8	Phoebe	12.6	12.6
40	8.9	1.9	P-S	+5.1	+3.8
43	3.9	28.9		x	y
42	18.4	5.9	40-43	+5.0	-27.0
48	26.4	25.5	42-48	-8.0	-19.6

For Positions of Stars, see page 16

40-43		42-48	
x	y	x	y
+5.0 ^{mm}	-27.0	-8.0	-19.6
+3.96	-27.0	-8.56	-19.1
+1.04	0.0	+0.56	-0.5

$$\begin{aligned} \log 1.04 &= 0.0170 \\ \log 27.0 &= 1.4314 \\ \hline &= 8.5856 \end{aligned}$$

$$C = -2.2$$

$$\text{Mean } C = -1.9$$

$$D = +10.6 \text{ when Saturn's } \alpha = 19^h 50^m \text{ (see page 19)}$$

$$D - C = +12.5$$

$$\begin{aligned} \log 0.56 &= 9.7482 \\ \log 19.6 &= 1.2923 \\ \hline &= 8.4559 \end{aligned}$$

$$C = -1.6$$

R. yabanki

Thursday, Dec. 8, 1904.

Measures of Phoebe copied from Miss Seland's Book 29 p. 58
 '02 Sept. 24 Plate 6167 (10972) α Saturn $19^h 32^m$ $\delta -21.9$

Object	x	y		x	y
Phoebe	35.6	28.9	Saturn	11.0	24.8
Saturn	11.0	24.8	Phoebe	35.6	28.9
28	2.6	14.5	P-S	+24.6	+4.1
49	3.9	39.3		x	y
64	42.6	31.4	28-49	-1.3	-24.8
36	44.5	3.6	64-36	-1.9	+27.8

Star	α	δ	$d\alpha$	$d\delta$
7528	$19^h 29^m 27.7^s$	$-22^\circ 10.8'$	-5.7	-24.8
7449	33.4	-21 46.0		
7464	32 18.4	-21 53.3	-10.3	+27.4
7536	28.7	-22 20.7		

$$\begin{aligned} \log 5.7 &= 0.7559 \\ \log \cos \delta & 9.9672 \\ \log 0.25 & \underline{9.3979} \\ & 0.1210 \end{aligned}$$

$$d\alpha = -1.32$$

$$\begin{aligned} \log 10.3 &= 1.0128 \\ \log \cos \delta & 9.9669 \\ \log 0.25 & \underline{9.3979} \\ & 0.3776 \end{aligned}$$

$$d\alpha = -2.39$$

28-49

x	y
-1.3 mm	-24.8
-1.32'	-24.8
+0.02	0.0

64-36

x	y
-1.9	+27.8
-2.39'	+27.4
+0.49	+0.4

Thursday Dec. 8, 1904.
Position of Procyon continued

$$\begin{array}{r} \log + 0.02 = 8.3010 \\ \log - 24.8 = \frac{1.3945}{6.9065} \end{array}$$

$$C = 0^{\circ}.0$$

$$\text{Mean } C = +0^{\circ}.5$$

$$\begin{array}{r} \log + 0.49 = 9.6902 \\ \log + 27.8 = \frac{1.4440}{8.2462} \end{array}$$

$$C = +1^{\circ}.0$$

$$\begin{array}{r} \log 162.66 = 2.2113 \quad 108.44 \\ \log \cos \delta \quad \frac{9.9678}{2.1788} \quad \frac{54.22}{152.66} \end{array}$$

$$\begin{array}{r} \log + 23.75 = 1.3757 \\ \quad \quad \quad \frac{9.1969}{} \end{array}$$

$$D = +8^{\circ}.9$$

$$D - C = +8^{\circ}.4$$

$$\text{When Sun's } \alpha = 19^{\text{h}} 32^{\text{m}}$$

$$\text{Hourly motion in } \alpha = 10^{\circ}.844$$

$$\text{" " " } \delta = +23.7^{\circ}$$

Friday, December 9, 1904.

Location of Phoebe

'99 May 19 Plate 3529

$$x = -27.9 \quad y = +5.1 \quad B = -4.0$$

$$\begin{aligned} \log y &= 0.7076 \\ \log x &= 1.4456n \\ \hline & 9.2620n \end{aligned}$$

$$\begin{aligned} \log x &= 1.4456n \\ \log \cos E &= 9.9934^{28} \\ \hline & 1.4522n \end{aligned}$$

$$E = -10.4$$

$$B = -4.0$$

$$F = -6.4$$

m

$$\begin{aligned} \log r &= 1.4522^8n \\ \log \cos F &= 9.9973 \\ \log \text{dist. fr. } E &= 0.9601 \\ \hline & 2.4096n \end{aligned}$$

$$m = -25.7$$

n

$$\begin{aligned} \log r &= 1.4522^8n \\ \log \sin F &= 9.0472n \\ \hline & 0.9601 \\ & 1.4595 \end{aligned}$$

$$n = +2.9$$

'99 Aug. 25 Plate 3913

$$x = -4.1 \quad y = +2.7 \quad B = -4.9$$

$$\begin{aligned} \log y &= 0.4314 \\ \log x &= 0.6128n \\ \hline & 9.8186n \end{aligned}$$

$$\begin{aligned} \log x &= 0.6128n \\ \log \cos E &= 9.9216 \\ \hline & 0.6912n \end{aligned}$$

$$E = -33.4$$

$$B = -4.9$$

$$F = -28.5$$

m

$$\begin{aligned} \log r &= 0.6912n \\ \log \cos F &= 9.9439 \\ \log \text{dist. fr. } E &= 0.9889 \\ \hline & 1.6240n \end{aligned}$$

$$m = -4.2$$

n

$$\begin{aligned} \log r &= 0.6912n \\ \log \sin F &= 9.6787n \\ \hline & 0.9889 \\ & 1.3588 \end{aligned}$$

$$n = +2.3$$

Friday, December 9, 1904
Location of Phoebe

'00 Apr. 26 Plate 4331

$$\begin{aligned}\log y &= 0.2553n \\ \log x &= 0.7324n \\ \hline & 9.5229\end{aligned}$$

$$E = +18^{\circ}.4$$

$$B = +1.7$$

$$F = +16^{\circ}.7$$

m

$$\begin{aligned}\log r &= 0.7552n \\ \log \cos F &= 9.9813 \\ \log \text{dist. from } \Sigma &= 0.9786 \\ \hline & 1.7151n\end{aligned}$$

$$m = -5.2$$

$$x = -5.4 \quad y = -18^{\circ} \quad B = +11^{\circ}.7$$

$$\begin{aligned}\log x &= 0.7324n \\ \log \cos E &= 9.9772 \\ \hline & 0.7652n\end{aligned}$$

$$0.7652n$$

n

$$\begin{aligned}& 0.7552n \\ \log \sin F &= 9.4584n \\ & 0.9786 \\ \hline & 1.1922\end{aligned}$$

$$n = +1.6$$

'00 Apr. 30 Plate 4340

$$\begin{aligned}\log y &= 0.1139n \\ \log x &= 0.8976n \\ \hline & 9.2163\end{aligned}$$

$$E = +9^{\circ}.3$$

$$B = +1^{\circ}.9$$

$$F = +7^{\circ}.4$$

m

$$\begin{aligned}\log r &= 0.9033n \\ \log \cos F &= 9.9964 \\ \log \text{dist. fr. } \Sigma &= 0.9760 \\ \hline & 1.8757n\end{aligned}$$

$$m = -7.5$$

$$x = -7.9 \quad y = -1.3 \quad B = +1.9$$

$$\begin{aligned}\log x &= 0.8976n \\ \log \cos E &= 9.9943 \\ \hline & 0.9033n\end{aligned}$$

n

$$\begin{aligned}& 0.9033n \\ \log \sin F &= 9.1099 \\ & 0.9760 \\ \hline & 0.9892n\end{aligned}$$

$$n = -0.10$$

Friday, December 9, 1904

Location of Phoebe

Oct. 11
'00 May 8

Plate 4797

$x = -27.0 \quad y = +2.6$

$B = +0.6$

$\log y = 0.4150$

$\log x = 1.4314 n$

$\log x = 1.4314 n$

$\log \cos E = 9.9780$

$8.9836 n$

$1.4334 n$

$E = -5.5$

$B = +0.6$

$F = -6.1$

 m

$\log n = 1.4334 n$

$\log \cos F = 9.9975$

$\log \text{dist. fr. } E = 1.0145$

$2.4454 n$

$m = -27.9$

 n

$1.4334 n$

$\log \sin F = 9.0264 n$

1.0145

1.4743

$n = +3.0$

'02 July' Plate 6000

$x = +4.6 \quad y = +4.3$

$B = +13.1$

$\log y = 0.6335$

$\log x = 0.6628$

$\log x = 0.6628$

$\log \cos E = 9.8634$

9.9707

0.7994

$E = +43.1$

$B = +13.1$

$F = +30.0$

 m

$\log n = 0.7994$

$\log \cos F = 9.9375$

$\log \text{dist. fr. } E = 0.9567$

1.6936

$m = +4.9$

 n

0.7994

$\log \sin F = 9.6990$

0.9567

2.4551

$n = +2.9$

Saturday, December 10, 1904
Location of Phoebe.

'02, July 2

Plate 6003

$$x = +5.5 \quad y = +4.1 \quad B = +10.2$$

$$\log y = 0.6128$$

$$\log x = 0.7404$$

$$\log x = 0.7404$$

$$\log \cos E = 9.9041$$

$$9.8724$$

$$0.8363$$

$$E = +36.7$$

$$B = +10.2$$

$$F = +26.5$$

m

n

$$\log r = 0.8363$$

$$0.8363$$

$$\log \cos F = 9.9518$$

$$r \sin F = 9.6495$$

$$\log \text{dist. fr. } E = 0.9564$$

$$0.9564$$

$$1.7445$$

$$1.4422$$

$$m = +5.6$$

$$n = +2.8$$

'02, July 3

Plate 6006

$$x = +5.1 \quad y = +3.8 \quad B = +12.5$$

$$\log y = 0.5798$$

$$\log x = 0.7076$$

$$\log x = 0.7076$$

$$\log \cos E = 9.9041$$

$$9.8722$$

$$0.8035$$

$$E = +36.7$$

$$B = +12.5$$

$$F = +24.2$$

m

n

$$\log r = 0.8035$$

$$0.8035$$

$$\log \cos F = 9.9600$$

$$\log \sin F = 9.6127$$

$$\log \text{dist. fr. } E = 0.9562$$

$$0.9562$$

$$1.7197$$

$$1.3724$$

$$m = +5.2$$

$$n = +2.4$$

Saturday, December 10, 1904

Location of Phoebe

'02 Sept. 24 Plate 6167 $x = +24.6$ $y = +41$ $B = +8.4$

$$\log y = 0.6128$$

$$\log x = 1.3909$$

$$\log x = 1.3909$$

$$\log \cos E = 9.9940$$

$$9.2219$$

$$1.3969$$

$$E = +9.5$$

$$B = +8.4$$

$$F = +1.1$$

 m n

$$\log x = 1.3969$$

$$1.3969$$

$$\log \cos F = 9.9999$$

$$\log \sin F = 8.2832$$

$$\log \text{dist. fr. } E = 0.9828$$

$$0.9828$$

$$2.3796$$

$$0.6629$$

$$m = +13.9 \text{ } 24.0$$

$$n = +0.5$$

Thursday, January 12, 1905
Location of Phoebe

Remeasurements of Phoebe on three Plates.

Copied from Miss Leland's Book 29, page 64

Plate 4331 (10250)

	x	y
Phoebe	14.0	20.6

	x	y
Sat.	21.5	21.7
Phoebe	14.0	20.6
P-S	-7.5	-1.1

Plate 4340 (10249)

	x	y
Phoebe	7.3	19.3

	x	y
Sat.	15.8	20.7
Phoebe	7.3	19.3
P-S	-8.5	-1.4

Plate 6003 (10962)

	x	y
Phoebe	15.5	15.1

	x	y
Sat.	10.0	11.0?
Phoebe	15.5	15.1
P-S	+5.5	+4.1?

This is the same as the original reading.

Saturday, January 12, 1905

Location of Phoebe

'00 April 26 Plate 4331

$$x = -7.5 \quad y = -1.1 \quad B = +1.7$$

$$\log y = 0.0414 n$$

$$\log x = 0.8751 n$$

$$\log x = \underline{0.8751 n}$$

$$\log \cos E = \underline{9.9954}$$

$$9.1663$$

$$0.8797 n$$

$$E = +8^{\circ}.3$$

$$B = \underline{+1^{\circ}.7}$$

$$F = +6^{\circ}.6$$

m

n

$$\log r = 0.8797 n$$

$$0.8797 n$$

$$\log \cos F = 9.9971$$

$$\log \sin F = 9.0605$$

$$\log \text{dist from } E = \underline{0.9786}$$

$$0.9786$$

$$1.8554 n$$

$$0.9188 n$$

$$m = -7.2$$

$$n = -0.8$$

'00 April 30 Plate 4340

$$x = -8.5 \quad y = -1.4 \quad B = +1.9$$

$$\log y = 0.1461 n$$

$$\log x = 0.9294 n$$

$$\log x = \underline{0.9294 n}$$

$$\log \cos E = \underline{9.9941}$$

$$9.2167$$

$$0.9353 n$$

$$E = +9^{\circ}.4$$

$$B = \underline{+1.9}$$

$$F = +7^{\circ}.5$$

m

n

$$\log r = 0.9353 n$$

$$0.9353 n$$

$$\log \cos F = 9.9963$$

$$\log \sin F = 9.1157$$

$$\log \text{dist from } E = \underline{0.9760}$$

$$0.9760$$

$$1.9076 n$$

$$1.0270 n$$

$$m = -8.1$$

$$n = -1.1$$

