

KG

11365

974

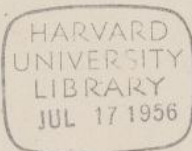
Measures of The New Satellite
of Saturn.

E.F.L. Also Nova Sagittarii.

No 16

KG 11365.97#

RG 11360.954



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March 18 1899

Mittels

Measures of position of Satellite of Saturn -
with reticules in eye piece

D6607

	x	y	A	B	C	D	A+B	B+D	C-A	B-D	x x 60	y x 60	C-A x.199	B-D x.199
Sat.	33.4	10.6	101	80	50	71	151	151	-51	+09	1980	600	-10.1	+1.8
a.	35.3	9.6	110	80	40	71	150	151	-70	+09	2100	540	-13.9	+1.8
b.	30.4	10.3	81	48	70	102	151	150	-11	-54	1800	600	-2.2	-10.7
Sat.	33.4	10.6	101	80	50	71	151	151	-51	+09	1980	600	-10.1	+1.8

D6608 x y A. B. C. D.

Sat	34.7	11.4	32	58	119	92	151	150	+87	-34	2040	660	+17.3	-6.8
a.	35.8	11.2	31	18	119	132	150	150	+88	-114	2100	660	+17.5	-22.7
b.	30.9	11.8	151	130	151	20	302	150	+110	1800	660	+21.9		
Sat.	34.7	11.4	30	58	120	92	150	150	+90	-34	2040	660	+17.9	-6.8

$$\begin{aligned} a+b. \\ 151.00 : \frac{1}{2} 60 :: x : X \\ 150.88 \quad X = 199x \end{aligned}$$

$$\begin{aligned} B+D \\ 150.38 : \frac{1}{2} 60 :: y : Y \\ Y = 199y \end{aligned}$$

x y A. B. C. D.

D6610

Sat.	35.2	9.3	120	55	31	96	151	151	-89	-41	2100	540	-17.7	-8.2
a.	36.8	8.7	21	110	130	41	151	151	+109	+69	2160	480	+21.7	+13.7
b.	32.1	9.4	145	60	7	90	152	150	-138	-30	1920	540	-27.5	-6.0
Sat	35.2	9.3	121	55	30	96	151	151	-91	-41	2100	540	-18.1	-8.2

D6609 x y A. B. C. D.

Sat.	32.5	10.1	80	9	71	142	151	151	-09	-133	1920	600	-1.8	-26.5
a.	34.6	9.1	55	6	96	142	151	148	+41	-136	2040	540	+8.2	-27.1
b.	29.8	9.8	21	124	130	27	151	151	+109	+97	1740	540	+21.7	+19.3
Sat	32.4	10.1	80	9	71	141	151	150	-09	-132	1920	600	-1.8	-26.3

			$(x-.5) \times 60.$	$(y-.5) \times 60.$		
1969.9	601.8	¹⁹⁷ 3228	1974.0	606.0	+4.1	+4.2
2086.1	541.8		2088.0	546.0	+19	+4.2
1797.8	589.3		1794.0	588.0	-3.8	-1.3
1969.9	601.8		1974.0	606.0	-4.1	-4.2

2057.3	653.2	2233	2052.0	654.0	-5.3	+0.8
2117.5	637.3		2118.0	642.0	+0.5	+4.7
1830.0	681.9		1824.0	678.0	-6.0	-3.9
2057.9	653.2		2052.0	654.0	-5.9	-0.8

2082.3	531.8	3230 3227	2082.0	528.0	-0.3	-3.8
2181.7	493.7		2178.0	492.0	-3.7	-1.7
1892.5	534.0		1896.0	534.0	+3.5	0.0
2081.9	531.8		2082.0	528.0	+0.1	-3.8

1918.2	573.5	3227 3220	1920.0	576.0	+1.8	+2.5
2048.2	512.9		2046.0	516.0	-2.2	+3.1
1761.7	559.3		1758.0	558.0	-3.7	-1.3
1918.2	573.7		1914.0	576.0	-4.2	+2.3

22.00

D6608 A3223

March 17, 1899.

x	y	A.	B.	C.	D.	$a+b$	$b+d$	$b-a$	$b-d$	$x \times 60$	$y \times 60$	$a \times 199$	$b \times 199$
J.	8.5	18.6	76	85	75	66	151	151	-01 +19	480	1080	-0.2	+3.8
A.	12.7	11.8	35	130	117	21	152	151	+82 +109	720	660	+16.3	+21.7
B.	14.6	17.6	50	90	101	61	151	151	+57 +29	840	1020	+10.1	+5.8
J.	19.2	16.9	125	146	27	5	152	151	-98 +141	1140	960	-19.5	+28.1
B.	34.9	6.8	10	125	142	26	152	151	+132 +99	2040	360	+26.3	+19.7
B.	34.9	6.8	10	121	140	30	150	151	+130 +91	2040	360	+25.9	+18.1

D6608

x	y	A.	B.	C.	D.	$a+b$	$b+d$	$b-a$	$b-d$	$x \times 60$	$y \times 60$	$a \times 199$	$b \times 199$
J.	7.2	16.9	110	135	40	15	150	150	-70 +120	420	960	-13.9	+23.9
A.	12.3	10.4	114	55	37	96	151	151	-97 -41	720	600	-15.3	-8.2
B.	13.1	17.6	140	95	11	56	151	154	-129 +39	780	1020	-25.7	+7.8
J.	16.8	16.7	29	100	121	51	150	151	+92 +49	960	960	+18.3	+9.8
B.	34.3	5.2	100	25	51	127	151	152	-49 -102	2040	300	-9.8	-20.3
B.	34.3	5.2	100	26	50	124	150	150	-50 -98	2040	300	-10.0	-19.5

D6610

A3223
323/6

x	y	A.	B.	C.	D.	$a+b$	$b+d$	$b-a$	$b-d$	$x \times 60$	$y \times 60$	$a \times 199$	$b \times 199$
J.	19.1	14.9	141	140	10	11	151	151	-131 +129	1140	840	-26.1	+25.7
B.	35.9	4.5	146	60	6	91	152	151	-140 -31	2100	240	-27.9	-6.2
B.	35.9	4.5	144	55	7	96	151	151	-137 -41	2100	240	-27.3	-8.2

D6609

x	y	A.	B.	C.	D.	$a+b$	$b+d$	$b-a$	$b-d$	$x \times 60$	$y \times 60$	$a \times 199$	$b \times 199$
J.	6.6	16.4	55	55	96	96	151	151	+41 -41	360	960	+8.2	-8.2
A.	11.6	9.7	59	125	92	26	151	151	+33 +99	660	540	+6.6	+19.7
B.	12.3	17.2	90	21	60	130	150	151	-30 -109	720	1020	-6.0	-21.7
J.	16.2	16.2	135	29	16	122	151	151	-119 -93	960	960	-23.7	-18.5
B.	33.7	4.8	25	110	126	40	151	150	+101 +70	1980	240	+20.1	+13.9
B.	33.7	4.8	26	109	125	42	151	151	+99 +67	1980	240	+19.7	+13.3

22.45

$$150.95 : \frac{1}{2} 60 : x : X$$

$$X = 0.199x$$

$$151.05 : \frac{1}{2} 60 : y : Y$$

$$Y = 0.199y$$

$$\frac{3170}{21} \quad \frac{3172}{21}$$

$$150.952 \quad 151.048$$

$(x-.5) \times 60.$
 $(y-.5) \times 60.$

479.8	1083.8	480.0	1086.0
736.3	681.7	732.0	678.0
850.1	1025.8	846.0	1026.0
1120.5	988.1	1122.0	984.0
2066.3	379.7	2064.0	378.0
2065.9	378.1	2064.0	378.0

406.1	983.9	402.0	984.0
704.7	591.8	708.0	594.0
754.3	1027.8	756.0	1026.0
978.3	969.8	978.0	972.0
2030.2	279.7	2028.0	282.0
2030.0	280.5	2028.0	282.0

1113.9	865.7	1116.0	864.0
2072.1	233.8	2124.0	240.0
2072.7	231.8	2124.0	240.0

368.2	951.8	366.0	954.0
666.6	559.7	666.0	552.0
714.0	998.3	708.0	1002.0
936.3	941.5	942.0	942.0
2000.1	253.9	1992.0	258.0
1999.7	253.3	1992.0	258.0

22^h 23^m (1st meal)

March 22, 1899

A 3228

D 6607	x	y	A	B	C	D	A+B	B+D	C-A	B-D	x x 60	y x 60	C-A x.199	B-D x.199
Sat.	33.1	10.5	140	74	11	81	151	155	-129	-07	1988	600	-25.7	-1.4
23.30 Sat.	33.1	10.5	139	75	11	79	150	154	-128	-04	1986	600	-25.5	-0.8

2. 00

March 22, 1899

A 3227

D 6609	x	y	A	B	C	D	A+B	B+D	C-A	B-D	x x 60	y x 60	C-A x.199	B-D x.199
Sat.	32.5	10.1	80	08	71	144	151	152	-09	-136	1920	600	-1.8	-27.1
2 ^h 30 Sat.	32.5	10.1	80	08	71	143	151	151	-09	-135	1920	600	-1.8	-26.9

2.55 Sat 32.5 10.0 81 05 70 146 151 151 -11 -141 1920 600 -2.2 -28.4

$$(x-.5) \times 60 \quad (y-.5) \times 60$$

^{5.4}
1918.3 598.6 1956.0 600.0

^{5.4}
1918.5 599.2 1956.0 600.0

$$(x-.5) \times 60. \quad (y-.5) \times 60.$$

1918.2 572.9 1920.0 576.0

1918.2 573.1 1920.0 576.0

1917.8 571.9 1920.0 570.0

12.25 D6607

March 23, 1899

x y A. B. C. D. a+b B+D b-a B-D x x60. y x60. c-a x.199 B-D x.199

C 34.4 12.6 105 83 46 68 151 151 -59 +15 2040 720 -11.7 +3.0

D 6609 C 33.6 12.1 48 10 103 141 151 151 +55 -131 1980 720 +109 -21.7

D 6610 C 35.8 11.7 30 110 121 41 151 151 +91 +69 2100 660 +18.1 +13.7

D 6608 C 34.7 14.2 21 124 130 151 151 +97 -109 2040 840 +19.3 -21.7

D 6610 Plate turned 90°

x y A. B. C. D.

a 8.2 36.8 110 130 41 21

Sat 9.4 38.0 54 31 97 120

b 9.4 32.1 61 7 90 145

Sat 11.7 35.8 115 125 36 27

c 11.7 35.8 115 125 36 27

^{change right B-D}
 B+D C+A D-B C-A
 a+b B+D b-a B-D x x60 y x60 x.199 x.199

151 151 ±69 +109 480 2160 +13.7 +21.7

151 151 -43 -89 540 2100 -8.6 -17.7

151 152 -29 -138 540 1920 -58 -27.5

152 151 -40 -85 540 2100 -8.0 -16.9

151 152 ±79 +98 660 2100 +15.7 +19.5

A 3230

1.00 21.25
 D 6607 a 9.6 35.3 80 40 71 111

March 23, 1899 Sat 10.5 33.1 75 14 76 137

b 10.3 30.5 45 70 105 81

Sat 10.5 33.1 75 14 76 138

A 3228 21.35 C 12.6 34.3 81 49 70 102

151 151 ±09 -71 540 2100 +1.8 -14.1

151 151 -01 -123 600 1980 -2.0 -21.5

150 151 +60 -11 600 1800 -11.9 -2.2

151 152 -01 -124 600 1980 -2.0 -24.7

151 151 ±11 -53 720 2040 +2.2 -10.5

2028.3 723.0

1990.9 698.3

2118.1 673.7

2059.3 818.3

493.7 2181.7

531.4 2082.3

534.2 1892.5

532.0 2083.1

~~675.7~~
~~644.3~~ 2119.5

541.8 2085.9

~~598.0~~ 1955.5

588.1 1797.8

~~598.0~~ 1955.3

722.2 2029.5

Plate turned 90°

21.35 D6608

March 23, 1899

x y A B C D $a+b$ $B+D$ $C-a$ $B-D$ $(C-a) \times 199$ $(B-D) \times 199$
 B C D a $B+D$ $a+b$ $D-B$ $C-a$

A 3233

a.	11.2	35.8	15	121	136	30	151	151	+121	+91	660	2100	-24.1	+18.1
Sat.	12.4	38.7	59	120	92	31	151	151	+33	+89	660	2040	-6.6	+17.7
b.	11.8	38.0	131	150	20	01	151	151	+111	+149	660	1860	+22.1	+29.7
Sat.	12.4	38.7	59	119	92	32	151	151	+33	+87	660	2040	-6.6	+17.3
c.	14.21	34.8	20	126	131	25	151	151	+111	+101	840	2040	-22.1	+20.1

A 3227

D 6609 a.	9.1	34.6	8	99	143	53	151	152	+135	+46	540	2040	-26.9	+9.2
Sat.	10.1	32.5	8	71	143	80	151	151	+135	+09	600	1920	-26.9	-1.8
b.	9.8	29.8	122	132	29	19	151	151	+93	+183	540	1740	+18.5	+22.5
Sat.	10.1	32.5	8	71	143	80	151	151	+135	+09	600	1920	-26.9	-1.8
c.	12.1	33.6	10	107	140	46	150	151	+130	+59	720	1980	-25.9	+11.7

Star S

23.20 Plate in original position

March 26, 1899

A 3230

D 6610	a	b	c	D	a+b	B+D	C-a	B-D
C.	4.9	6.21	11	26	140	126	151	152+129 -100 240 360 +25.7 -19.9

A 3227

D 6609	b.	2.7	7.1	31	120	139	151	151 +89 -127 120 420 +17.7 -25.3
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A 3228

D 6607	b.	3.4	7.6	90	101	61	50	151 151 -29 +51 180 420 -5.8 +10.1
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A 3233

D 6608	b.	3.9	9.2	2	20	148	131	150 151 +146 -111 180 540 +29.1 -22.1
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23.30

635.9 2118.1
~~653.4~~ 2057.7
~~713.4~~ 1997.7
682.1 1889.7
~~653.4~~ 2057.3
~~713.4~~ 1997.3
817.9 2060.1

513.1 2049.2
573.1 1918.2
558.5 1762.5
573.1 1918.2
694.1 1991.7

265.7 340.1

137.7 394.7

174.2 430.1

209.1 517.9

4.25-

D 6609

Mar. 27, '99. N.H.P. A 3227

	x	y	A	B	C	D	A+C	B+D	C-A	B-D	x ₁ x ₂	y ₁ y ₂	x ₁ z ₁	x ₂ z ₂
a	34.6	9.0	5.1	07	99	14.3	15.0	150	+48	-136	2040	540	+196	-271
Lat	32.5	10.0	8.1	06	70	14.5	151	151	-11	-139	1920	600	-22	-277
b	29.9	9.8	2.0	124	13.0	2.6	15.0	150	+110	+98	1740	540	+219	+195
Lat	32.5	10.0	8.0	06	7.2	14.5	15.2	151	-8	-139	1920	600	-16	-277
c	33.7	12.1	4.7	10	10.3	10.0	15.0	150	+56	-130	1980	720	+111	-259

D	6607a	35.3	9.6	11.0	8.1	4.0	7.0	15.0	151	-70	+11	2100	540	-139	+22
	Lat	33.1	10.6	13.7	7.7	1.6	7.3	15.3	150	-121	+4	1980	600	-241	+8
3228	b	30.5	10.3	8.0	4.9	7.2	10.3	15.2	152	-8	-54	1800	600	-16	-107
	Lat	32.1	10.6	13.6	7.7	1.7	7.3	15.3	150	-119	+4	1980	600	-237	+8
5.05	c	34.3	12.6	10.9	8.8	4.3	6.5	15.2	153	-66	+23	2040	720	-131	+46

13 8

2049.6 512.9

1917.8 572.3

1761.9 559.5

1918.4 572.3

1991.1 694.1

2086.1 542.2

1955.9 600.8

1798.4 589.3

1956.3 600.8

2026.9 724.6

10.00

D 6610

Mar 28, '99 W.V.P. A 3230

	π	γ	A	B	C	D	A+B	B+D	C-A	B-D	$\pi \times 60$	$\gamma \times 60$	$\times 199$	$\times 199$
a	35.9	8.8	2.2	11.0	12.9	4.1	151	151	+107	+6.9	2160	480	+213	+137
Lab	35.2	9.4	12.0	5.4	3.0	9.6	150	150	-90	-4.2	2100	540	-179	-84
b	32.1	9.4	14.6	6.5*	0.6	9.0*	152	(152)	-140	(-2.2)	1920	540	-279	-44
Lab	33.2	9.4	12.1	5.3	3.1	9.5	152	14.8	-90	-4.2	2100	540	-179	-84
c	35.9	11.8	2.4	11.1	12.9	4.0	148	15.1	+90	+7.1	2100	660	+179	+141

D 6608

a	35.8	11.1	3.1	11.6	12.0	13.5	151	151	+89	-18.9	2100	660	+177	-237
Lab	34.8	11.4	3.0	5.8	12.0	9.3	150	151	+90	-3.5	2040	660	+179	-70
b	32.9 ^{31†}	11.9	0.1	13.1	15.0	2.0	151	151	+149	+11.1	1800 ¹⁸⁰⁰	660	+297	+221
Lab	34.8	11.4	3.1	5.8	12.1	9.2	152	150	+90	-3.4	2040	660	+179	-68
c	34.9	14.1	2.8	2.0	12.3	13.0	151	150	+95	-11.0	2040	840	+189	-219

8 5

* Re-measured after adding B and D. The readings were found to be 6.5 and 8.7 $\therefore$ C+D = 15.2 as given above.

† On account of the reading of C-A, this becomes ^{30.0}29.0

$$\begin{array}{r}
 13 \\
 8 \\
 8 \\
 5 \\
 \hline
 36 \\
 40 \overline{) 34} \\
 \underline{0.85} \\
 150 \\
 \hline
 150.85
 \end{array}
 \quad
 \begin{array}{l}
 \text{by } 150 = 2.1760913 \\
 \text{ } 150.85 = 2.1785453 \\
 \hline
 9.9975460 \\
 \text{ } 2 = 0.3010300 \\
 \hline
 0.2985760 \\
 1.989
 \end{array}$$

2181.3"	493.7"
2082.1	531.6
1892.1	535.6
2082.1	531.6
2117.9	674.1

2117.7	636.3
2057.9	653.0
1829.7	682.1
2057.9	653.2
2058.9	818.1

Measures of position of Nova Sagittarii
and Comparison Stars.

1899pha

D 6613 from B 21319		April 12, 1899.						x.437						
	α	δ	A.	B.	C.	FQ	A+B	B+D	C-A	B-D	x179	y179	C-A	B-D
23.30 Nova 11.6	14.6	74	130	131	76	205	206	+57	+54	1969	2506	+24.9	+23.6	
Nova 11.6	14.6	74	130	131	75	205	205	+57	+55	1969	2506	+24.9	+24.0	
a 0.5	20.5	101	120	103	85	204	205	+02	+35	0	3580	+0.9	+15.3	
f 1.1	7.5	201	101	4	103	205	204	-197	-02	179	1253	-86.1	-0.9	
c 3.6	25.8	85	180	120	25	205	205	+35	+155	537	4475	+15.3	+67.7	
d 4.9	9.6	15	119	190	86	205	205	+175	+33	716	1611	+76.5	+14.4	
e 5.9	7.8	1	179	204	26	205	205	+203	+153	895	1253	+88.7	+66.9	
f 8.3	18.2	140	20	65	184	205	204	-75	-164	1432	3222	-32.8	-71.7	
g 8.6	11.4	80	92	125	113	205	205	+45	-21	1432	1969	+19.7	-9.2	
h 12.5	4.4	94	75	111	120	205	205	+17	-55	2148	716	+7.4	-24.0	
i 13.3	22.3	160	57	45	153	205	204	-115	-102	2327	3938	-50.3	-44.6	
Re-measured	13.5	12.7	108	160	97	45	205	205	-11	+115	2327	2148	-4.8	+50.3
m 13.7	24.6	29	129	146	77	205	206	+147	+52	2327	4296	+64.2	+22.7	
n 13.4	15.2	145	24	60	181	205	205	-85	-157	2327	2685	-37.1	-68.6	
o 15.5	14.6	101	120	104	85	205	205	+03	+35	2685	2506	+1.3	+15.3	
p 16.6	14.5	57	101	64	103	204	204	+13	-02	2864	2506	-0.9		
q 19.3	23.6	168	129	38	77	206	206	-130	+52	3401	4117	-56.8	+22.7	
Nova 11.6	14.6	74	130	131	75	205	205	+57	+55	1969	2506	+24.9	+24.0	
Nova 11.6	14.6	73	130	132	75	205	205	+59	+55	1969	2506	+25.8	+24.0	
a 0.5	20.6	101	120	104	85	205	205	+03	+35	0	3580	+1.3	+15.3	
f 1.1	7.5	201	101	4	104	205	205	-197	-03	179	1253	-86.1	-1.3	
c 3.6	25.8	85	180	120	25	205	205	+35	+155	537	4475	+15.3	+67.7	
d 4.9	9.6	15	119	190	87	205	206	+175	+32	716	1611	+76.5	+14.0	
e 5.9	7.8	1	180	203	35	204	205	+202	+155	895	1253	+88.3	+67.7	
f 8.3	18.2	140	20	65	184	205	204	-75	-164	1432	3222	-32.8	-71.7	
g 8.6	11.4	80	95	126	110	206	205	+46	-15	1432	1969	+20.1	-6.6	
h 12.5	4.4	95	75	110	120	205	205	+15	-55	2148	716	+6.6	-24.0	
						5330	5534							
						26	27							

1993.9	2529.6
1993.9	2530.0
0.9	3595.3
92.9	1252.1
552.3	4542.7
792.5	1625.4
983.7	1319.9
1399.2	3150.3
1451.7	1959.8
2155.4	692.0
2276.7	3893.4
2322.2	
2680.2	2198.3
2391.2	4318.7
2289.9	2616.4
2686.3	2521.3
	2505.1
3344.2	4139.7
1993.9	2530.0
1994.8	2530.0
1.3	3595.3
92.9	1251.7
552.3	4542.7
792.5	1625.0
983.8	1320.7
1399.2	3150.3
1452.1	1962.4
2154.6	692.0

Measures of position of Nova Sagittarii
and Comparison Stars.

6613 from B 21319
24.00

April 12, 1899.

	α	δ	A.	B.	C.	EQ	a+b	B+D	C-a	B-D	$x \times 179$	$y \times 179$	$x \times 437$	B-D
k	13.3	22.3	160	50	46	154	206	204	-114	-104	2327	3938	-49.8	-45.4
l	13.5	12.7	108	160	97	45	205	205	-11	+115	2327	2148	-4.8	+50.3
m	13.8	24.6	29	129	176	77	205	206	+147	+52	2327	4296	+64.2	+22.7
n	13.3	15.2	145	25	60	180	205	205	-85	-155	2327	2685	-37.1	-67.7
o	13.5	14.6	101	120	104	80	205	205	+03	+35	2685	2506	+1.3	+15.3
p	16.6	14.5	53	102	62	103	15	205	-	-01	2864	2506	-	-0.4
q	19.3	23.6	169	129	36	77	205	206	-133	+52	3401	4117	-58.1	+22.7
Nova	11.6	14.6	74	130	131	76	205	206	+57	+54	1969	2506	+24.9	+23.6
Nova	11.6	14.6	73	129	132	76	205	205	+59	+53	1969	2506	+25.8	+23.2

"p" remeas. p. 40

$$a+b \begin{array}{r} 26 \ 5330 \\ 8 \ 1641 \\ \hline 34 \ 6971 \end{array} (205.03)_{(0.29)}$$

$$205.03 : \frac{1}{2} 179 :: x : X$$

$$0.437 x = X$$

$$B+D \begin{array}{r} 27 \ 5534 \\ 9 \ 1847 \\ \hline 36 \ 7381 \end{array} (205.028)$$

$$205.03 : \frac{1}{2} 179 :: y : Y$$

$$0.437 y = Y$$

6614 from B 21319

	α	δ	A.	B.	C.	EQ	a+b	B+D	C-a	B-D	$x \times 179$	$y \times 179$	$x \times 437$	B-D
Nova	11.4	14.4	126	85	79	120	205	205	-47	-35	1969	2506	-20.5	-15.3
Nova	11.4	14.4	126	85	80	120	206	205	-46	-35	1969	2506	-20.1	-15.3
a	11.3	20.4	154	79	51	126	205	205	-103	-47	0	3580	-45.0	-20.5
b	1.7	7.3	57	60	154	144	205	204	+103	-84	179	1253	+45.0	-36.7
c	3.4	25.6	135	126	70	69	205	205	-65	+67	537	4475	-28.4	+29.3
d	4.6	9.4	70	75	135	130	205	205	+65	-55	716	1611	+28.4	-24.0
e	5.6	7.6	55	135	150	70	205	205	+95	+65	895	1253	+41.5	+28.4
f	8.1	17.8	194	134	11	21	205	205	-183	+163	1432	3043	-80.0	+71.2
g	8.4	11.3	133	49	71	156	204	205	-62	-107	1432	1969	-27.1	-46.8
h	12.3	4.2	150	30	55	176	205	206	-95	-146	2148	716	-41.5	-63.8

$$\frac{2050}{10} \quad \frac{2050}{10}$$

2277.2 3892.6

2322.2 2198.3

2391.2 4318.7

~~2389.9~~ 2617.3

2686.3 2521.3

2505.6

4139.7

3342.9 4004.3

1993.9 2529.6

1994.8 2482.4

2529.2

2482.8

1948.5 2490.7

1948.9 2490.7

-45.0 3559.5

224.0 1216.3

508.6 4504.3

744.4 1587.0

936.5 1281.4

1352.0 3114.2

1404.9 1922.2

2106.5 652.2

Measures of position of Nova Sag.
and Comparison Stars.

1899ph

66.14 from B 21 319

24.15

April 12, 1899.

x437

	x	y	A.	B.	C.	H.	a+b	B+D	C-A	B-D	x179	y179	C-A	B-D
k 12.9	22.1	5	6	200	199	205	205	+195	-193	2148	3938	852	-843	
l 13.3	12.6	161	114	44	91	205	205	-117	+23	2327	2148	-51.1	+10.1	
m 13.6	24.4	80	80	125	125	205	205	+45	-45	2327	4296	+19.7	-19.7	
n 12.1	14.8	196	185	9	20	205	205	-187	+165	2327	2506	-81.7	+72.1	
o 15.3	14.4	155	70	50	130	205	205	-105	-55	2685	2506	-45.9	-24.0	
p 16.5	14.3	106	56	99	149	205	205	-07	-93	2864	2506	-31	-40.6	
q 18.9	23.4	14	81	191	124	205	205	+177	-43	3222	4117	+77.3	-18.8	
Nova 11.4	14.4	126	85	79	120	205	205	-47	-35	1969	2506	-20.5	-15.3	
Nova 11.4	14.4	126	85	80	120	206	205	-46	-35	1969	2506	-20.1	-15.3	
a 0.3	20.4	155	79	50	126	205	205	-105	-47	0	3580	-45.9	-20.5	
t 1.7	7.3	57	60	154	145	205	205	+103	-85	179	1253	+45.0	-37.1	
c 3.4	25.6	134	³ 149	70	66	204	205	-64	+73	537	4475	-280	+31.9	
d 4.6	9.4	70	76	135	129	205	205	+65	-53	716	1611	+28.4	-23.2	
e 5.6	7.6	55	185	150	70	205	205	+95	+65	895	1253	+41.5	+28.4	
f 8.1	17.8	194	181	10	24	204	205	-184	+157	1432	3043	-80.4	+68.6	
g 8.4	11.3	131	49	73	156	204	205	-58	-107	1432	1969	-25.3	-46.8	
h 12.3	4.2	150	80	55	175	205	205	-95	-145	2148	716	-41.5	-63.4	
k 12.9	22.1	5	6	200	199	205	205	+195	-193	2148	3938	85.2	-84.3	
l 13.3	12.6	160	114	45	91	205	205	-115	+23	2327	2148	-50.3	+10.1	
m 13.6	24.4	80	80	125	125	205	205	+45	-45	2327	4296	+19.7	-19.7	
n 12.1	14.8	196	185	9	20	205	205	-187	+165	2327	2506	-81.7	+72.1	
o 15.3	14.4	155	70	50	130	205	205	-105	-55	2685	2506	-45.9	-24.0	
p 16.5	14.3	105	⁶ 59	100	149	205	205	-05	-93	2864	2506	-2.2	-40.6	
q 18.9	23.4	14	80	191	125	205	205	+177	-45	3222	4117	+77.3	-19.7	
Nova 11.4	14.4	126	85	79	120	205	205	-47	-35	1969	2506	-20.5	-15.3	
Nova 11.4	14.4	126	85	79	120	205	205	-47	-35	1969	2506	-20.5	-15.3	

a+b 10 2050

$\frac{26}{36} \frac{5328}{7378} (204.94)$

$204.94 : \frac{1}{2} 179 : X : X$

$0.437x = X$

B+D 10 2050

$\frac{26}{36} \frac{5330}{7380} (205.00)$

$205.00 : \frac{1}{2} 179 : Y : Y$

$0.437y = Y$

³³²
 22323 3853.7
 2275.9 2158.1
 2346.7 4276.3
 2245.3 2578.1
 2639.1 2482.0
 2860.9 2465.4
 3299.3 4098.2
 1948.5 2490.7
 1948.9 2490.7
 -45.9 3559.5
 2240 1215.9
 509.0 4506.9
 744.4 1587.8
 936.5 1281.4
 1351.6 3111.6
 1406.7 1922.2
 2106.5 652.6
 2233.2 3853.7
 2276.7 2158.1
 2346.7 4276.3
 2245.3 2578.1
 2639.1 2482.0
 2861.8 2465.4
 3299.3 4097.3
 1948.5 2490.7
 1948.5 2490.7

Measure of position of Nova Sagittarii

Q 6825 From C 11⁸²⁷ #96.

April 10, 1899

22.15	α	δ	A.	B.	C.	SD	a+b	B+D	b-a	B-D	Mean of 6	Resid.
1 Nova	23.1	17.6	120	79	10	51	130	130	-110 +28	-110 +28	-110 +28	0 0
2.	23.1	18.3	127	36	3	94	130	130	-124 -58	-111 +30		-1 +2
3.	23.1	18.7	122	100	8	30	130	130	-114 +70	-111 +28		-1 0
4.	23.4	19.5	84	60	46	70	130	130	-38 -10	-109 +28		+1 0
5.	23.5	19.7	74	105	56	25	130	130	-18 +80	-111 +29		-1 +1
6.	23.6	21.3	50	34	81	96	131	130	+31 -62	-109 +28		+1 0
1 Nova	23.1	17.6	120	79	10	51	130	130	-110 +28	-110 +28	-111 +28	+1 0
2.	23.1	18.3	127	35	3	96	130	131	-124 -61	-111 +27		0 -1
3.	23.1	18.7	122	100	8	30	130	130	-114 +70	-111 +28		0 0
4.	23.4	19.5	85	60	45	70	130	130	-40 -10	-111 +28		0 0
5.	23.5	19.7	74	105	56	25	130	130	-18 +80	-111 +29		0 +1
6.	23.6	21.3	50	35	80	96	130	131	+30 -61	-110 +29		+1 +1
1 f	11.3	28.9	99	129	31	1	130	130	-68 +128	-68 +128	-66 +128	-2 0
2	11.2	29.6	105	85	25	46	130	131	-80 +39	-67 +127		-1 -1
3	11.2	30.2	101	21	29	109	130	130	-72 -88	-69 +130		-3 +2
4	11.5	30.8	62	111	68	19	130	130	+06 +92	-65 +130		+1 +2
5	11.6	31.2	50	23	80	108	130	131	+30 -85	-63 +124		+3 -4
6	11.8	32.7	38	86	102	44	130	130	+74 +42	-66 +132		0 +4
1 g	13.2	6.3	103	41	27	90	130	131	-76 -49	-76 -49	-75 -42	-1 -7
2	13.2	7.0	110	129	20	1	130	130	-90 +128	-77 -40		-2 -2
3	13.2	7.5	107	66	23	65	130	130	-84 +01	-81 -41		-6 +1
4	13.5	8.2	66	28	64	102	130	130	-02 -74	-73 -36		+2 +6
5	13.6	8.6	54	70	76	60	130	130	+22 +10	-71 -41		+4 +1
6	13.7	10.0	21	130	99	131	130	261	+68 -01	-72 -41		+3 +1
1 w	28.6	19.5	45	65	85	66	130	131	+40 -01	+40 -01	+38 +04	+2 -5
2	28.5	20.2	53	21	78	110	131	131	+25 -89	+38 -01		0 -5
3	28.6	20.6	50	90	80	40	130	130	+30 +50	+33 +08		-5 +4
							3512	3648				
							27	28				

$x \times 52.6$ $y \times 52.6$ $\overset{\times 202}{C-A \ B-D}$
 1209.8 894.2 $-22.2 + 5.7$ 1187.6 899.9

1209.8 894.2 $-22.4 + 5.7$ 1187.4 899.9

578.6 1472.8 $-13.3 + 25.9$ 565.3 1498.7

683.8 315.6 $-15.2 - 8.5$ 668.6 307.1

1472.8 999.4 $+7.7 + 0.8$ 1480.5 1000.2

Measures of position of Nova Sagittarii
April 10, 1899.

6825-	α	γ	δ	β	ϵ	se	a+b	B+D	b-a	B-D	
24. m	28.9	21.4	11	50	120	20	131	130	+109 -30 +38 +08	a	0 +4
5.	28.9	21.7	129	92	130	58	259	130	+01 +54 +38 +03	8	0 +1
6.	29.2	23.2	104	23	26	107	130	130	-78 -84 +42 +06		4 +2
1 l	29.6	11.5	50	65	80	65	130	130	+30 00 +30 00	+31 +06	-1 -06
2	29.5	12.2	56	32	74	108	130	130	+18 -86 +31 +02		0 -14
3	29.5	12.6	53	90	78	40	131	130	+25 +50 +28 +08		-3 +2
4	29.9	12.4	15	50	115	80	130	130	+100 -30 +29 +08		-2 +2
5	30.0	12.7	120	93	131	37	261	130	+01 +56 +38 +05		+7 -1
6	30.1	10.2	109	25	21	105	130	130	-88 -80 +32 +10		+1 +4
1 o	36.2	18.0	96	129	34	1	130	130	-62 +128 -62 +128	-63 +134	+1 -6
2	36.2	18.6	104	87	26	43	130	130	-78 +44 -65 +132		-2 -2
3	36.3	19.2	100	21	30	109	130	130	-70 -88 -67 +130		-4 -4
4	36.5	19.8	60	115	70	15	130	130	+10 +100 -61 +138		+2 +4
5	36.6	20.3	49	28	81	102	130	130	+32 -74 -61 +135		+2 +1
6	36.8	21.7	26	89	104	41	130	130	+78 +48 -62 +128		+1 +4
1 p	40.5	17.8	65	115	65	16	130	131	00 +99 00 +99	-03 +104	+3 -5
2	40.4	18.6	72	71	58	59	130	130	-14 +12 -01 +100		+2 -4
3	40.4	19.1	71	9	60	121	130	130	-10 -112 -07 +106		+4 +2
4	40.7	19.7	30	100	100	31	130	131	+70 +69 -01 +107		+2 +3
5	40.8	20.1	20	11	110	119	130	130	+90 -108 -03 +101		0 -3
6	41.1	21.6	128	74	2	56	130	130	-126 +18 -06 +108		-3 +4
1 Nova	23.1	17.6	119	79	11	51	130	130	-108 +28 -108 +28	+10 +29	+2 -1
2	23.1	18.3	127	35	3	95	130	130	-124 -60 -111 +28		-1 -1
3	23.1	18.7	121	100	8	30	129	130	-113 +70 -110 +28		0 -1
4	23.4	19.5	85	60	45	70	130	130	-40 -10 -111 +28		-1 -1
5	23.4	19.7	74	105	56	25	130	130	-18 +80 -111 +29		-1 0
6	23.6	21.3	50	35	80	94	130	129	+30 -59 -150 +31		0 +2
							3771	3511			
							29	27			

$x_{152.6} y_{x_{152.6}}^{x_{20.2}} C-A B-D$

1525.4 578.6 +6.3 +1.2 1531.7 579.8

1893.6 946.8 -12.7 +27.1 1880.9 973.9

2104.0 894.2 -0.6 +21.0 2103.4 915.2

1209.8 894.2 -22.2 +59.1 1187.6 900.1

Measures of position of Nova Sag.
April 15, 1899.

6825	π	y	δ	B	C	EQ	$a+b$	$B+D$	$b-a$	$B-D$
1 Nova	23.1	17.6	120	78	10	51	130	130	-110+28	-110+28
2	23.1	18.3	126	35	4	95	130	130	-122-60	-109+28
3	23.1	18.7	121	100	9	30	130	130	-112+70	-109+28
4	23.4	19.5	84	60	46	70	130	130	-38-10	-109+28
5	23.5	19.7	73	105	57	25	130	130	-16+80	-109+29
6	23.6	21.3	50	35	80	96	130	131	+30-61	-110+29
1 γ	11.3	28.9	99	129	31	1	130	130	-68+128	-68+128
2	11.2	29.6	105	85	20	45	130	130	-80+40	-67+128
3	11.2	30.2	101	20	29	110	130	130	-72-90	-69+128
4	11.5	30.8	61	111	69	19	130	130	+08+92	-63+130
5	11.6	31.3	50	25	80	105	130	130	+30-80	-63+129
6	11.8	32.7	29	86	101	44	130	130	+72+42	-68+132
1 ρ	13.1	6.3	104	40	26	90	130	130	-78-50	-78-50
2	13.2	7.0	110	129	20	1	130	130	-90+128	-77-44
3	13.3	7.6	106	69	24	61	130	130	-82+08	-79-34
4	13.5	8.3	66	28	64	102	130	130	-02-74	-73-36
5	13.6	8.6	51	70	79	60	130	130	+28+10	-65-41
6	13.7	10.0	31	130	99	130	130	260+68	00-72	-40
1 μ	28.6	19.4	44	65	86	65	130	130	+42 00	+42 00
2	28.6	20.2	51	21	79	108	130	129	+28-87	+41+01
3	28.6	20.6	49	90	81	40	130	130	+32+50	+35+08
4	28.9	21.4	10	50	120	80	130	130	+110-30	+39+08
5	29.0	21.7	130	94	130	36	260	130	00+58	+37+08
6	29.1	23.2	104	22	26	108	130	130	-78-86	+42+04
1 λ	29.6	11.5	50	65	80	65	130	130	+30 00	+30 00
2	29.6	12.2	56	22	74	109	130	131	+18-87	+31+01
3	29.6	12.6	51	90	79	40	130	130	+28+50	+31+08
4	29.8	13.4	15	50	115	80	130	130	+100-30	+29+08
							3770	3771	29	29

		x.202			
		x526	y526	C-A	B-D
-1	0	1209.8	894.2	-22.0+5.7	1187.8 899.9
0	0				
0	0				
0	0				
0	+1				
-1	+1				
-2	-1	578.6	1472.8	-13.3+26.1	565.3 1498.9
-1	-1				
-3	-1				
+3	+1				
+3	0				
-2	+3				
-4	-9	683.8	315.6	-14.9-8.3	668.9 307.3
-3	-3				
-5	+7				
+1	+5				
+9	0				
+2	+1				
+3	-5	1472.8	999.4	+7.9+1.0	1480.7 1000.4
+2	-4				
-4	+3				
0	+3				
-2	+2				
+3	-1				
-1	-6	1525.4	578.6	+6.3+1.2	1531.7 579.8
0	-3				
0	+2				
-2	+2				

Measure of position of Nova Sag.
April 15, 1899.

	α	δ	A	B	C	D	$a+b$	$B+C-A$	$B-D$
23.15	30.0	13.7	130	94	130	36	260	130	00 +58+37+07
	30.1	15.2	110	35	20	105	130	130	-90 -80 +30+10
1	36.3	17.9	96	129	34	1	130	130	-62 +128 -62 +128 -64 +133
2	36.2	18.6	104	86	26	44	130	130	-78 +42 -65 +130
3	36.2	19.2	100	22	20	108	130	130	-70 -86 -67 +132
4	36.6	19.8	60	115	70	18	130	130	+10 +100 -61 +138
5	36.6	20.3	50	26	20	104	130	130	+30 -78 -63 +131
6	36.8	21.7	29	89	101	41	130	130	+72 +48 -72 +138
1	40.5	17.8	65	115	65	16	130	131	00 +99 00 +99 -02 +102
2	40.4	18.5	74	70	56	60	130	130	-18 +70 -05 +98
3	40.4	19.1	70	9	60	121	130	130	-10 -112 -07 +106
4	40.7	19.7	30	100	100	30	130	130	+70 +70 -01 +108
5	40.8	20.1	20	10	110	120	130	130	+90 -110 -03 +99
6	41.1	21.6	126	71	4	59	130	130	-122 +12 ⁺⁰² +102
1 Nova	23.1	17.6	120	50	10	50	130	130	-110 +30 -110 +30 -109 +28
2	23.1	18.2	126	35	3	95	129	130	-123 -60 -110 +28
3	23.1	18.7	121	100	9	30	130	130	-112 +70 -109 +28
4	23.4	19.5	85	60	46	70	131	130	-39 -10 -110 +28
5	23.5	19.7	78	104	58	26	130	130	-14 +78 -107 +27
6	23.6	21.3	50	35	81	95	131	130	+31 -60 -109 +30
1 Nova	23.1	17.6	119	79	10	57	129	130	-109 +28 -109 +28 -108 +27
2	23.1	18.2	125	35	5	95	130	130	-120 -60 -107 +28
3	23.1	18.7	121	100	9	30	130	130	-112 +70 -109 +28
4	23.4	19.5	84	60	45	70	130	130	-38 -10 -109 +28
5	23.5	19.7	72	104	58	26	130	130	-14 +78 -107 +27
23.30	23.6	21.3	50	32	80	98	130	130	+30 -66 -110 +24

$a+b$ 27 3512
29 3771
29 3770
27 3510

112) 14563 (130.027

130.03: $\frac{1}{2}$ 52.6: $\frac{1}{2}$ $x = x$

$B+C$ 28 3648
27 3511
29 3771
26 3381

110) 14311 (130.10

130.10: $\frac{1}{2}$ 52.6: $\frac{1}{2}$ $y = y$

0.202 $y = y$

3510 3381
27 26

$x \times 52.6$ $y \times 52.6$ $C \overset{\times 20.2}{a}$ $B-D$

+6 +1 15
-1 +4
+2 -5 1893.6 894.2 -12.9 +26.9 1880.7 921.1
-1 -3

-3 -1

+3 +5

+1 -2

-4 +5

+2 -3 2104.0 894.2 -0.4 +20.6 2103.6 914.8

-3 -4

-5 +4

+1 +6

-1 -3

+4 0

-1 +2 1209.8 894.2 -22.0 +5.7 1187.8 899.9

-1 0

0 0

-1 0

+2 -1

0 +2

-1 +1 1209.8 894.2 -21.8 +5.5 1188.0 899.7

+1 +1

-1 +1

-1 +1

+1 0

-2 -3

21.30

Measures of positions of Nova Sag.

D 6826 From C 11496.

April 16, 1899.

	α	δ	A.	73	6	20	a+b	B+D	b-a	B-D
1 Nova	23.0	17.5	129	69	1	61	130	130	-128 + 08	-128 + 08 -127 + 8
2	22.9	18.21	7	25	123	105	130	130	+116 - 80	-127 + 09
3	22.9	18.6	2	90	128	40	130	130	+126 + 50	-126 + 08
4	23.3	19.4	95	50	35	80	130	130	-60 - 30	-128 + 08
5	23.4	19.6	84	95	46	34	130	129	-38 + 61	-128 + 09
6	23.5	21.2	59	24	71	106	130	130	+12 - 82	-126 + 08
1 Nova	23.0	17.5	129	69	1	61	130	130	-128 + 08	-128 + 08 -128 + 07
2	22.9	18.21	8	25	122	106	130	131	+114 - 81	-129 + 08
3	22.9	18.6	2	90	128	40	130	130	+126 + 50	-126 + 08
4	23.3	19.4	95	50	35	80	130	130	-60 - 30	-128 + 08
5	23.4	19.6	84	95	46	35	130	130	-38 + 60	-128 + 08
6	23.5	21.2	59	22	71	108	130	130	+18 - 86	-126 + 04
1 f.	11.2	28.8	110	119	20	11	130	130	-90 + 108	-90 + 108 -86 + 107
2	11.1	29.6	116	75	14	55	130	130	-102 + 20	-85 + 109
3	11.1	30.1	111	10	19	120	130	130	-92 - 110	-81 + 108
Assumed Remission 29 on 140	4	11.4	30.7	75	100	55	130	(³⁰ 140)	-20 (+60 - 88 + 98)	reject
5	11.5	31.1	61	16	69	114	130	130	+08 - 98	-82 + 110
6	11.6	32.6	39	74	91	57	130	131	+52 + 17	-86 + 107
1 g	13.2	6.3	114	30	16	100	130	130	-98 - 70	-98 - 70 -92 - 61
2	13.1	6.8	120	120	10	10	130	130	-110 + 110	-93 - 61
3	13.1	7.5	116	56	14	74	130	130	-102 - 18	-94 - 60
4	13.4	8.2	77	19	53	111	130	130	-24 - 92	-92 - 54
5	13.5	8.5	64	60	66	70	130	130	+02 - 10	-88 - 62
6	13.6	9.9	41	120	89	10	130	130	+48 + 110	-90 - 60
1 m	28.5	19.4	55	56	75	75	130	131	+20 - 19	+20 - 19 + 21 - 15
2	28.5	20.1	62	14	68	117	130	131	+06 - 103	+23 - 14
22.00	3	28.5	20.6	60	80	70	130	130	+10 + 30	+18 - 12

* Omit in mean.

$$\frac{3510}{27} \quad \frac{3383}{26}$$

		$x \times 52.6$	$y \times 52.6$	$C - a^{x202}$		
-1 0	1209.8	894.2	-25.7	+1.6	1184.1	895.8
0 1						
+1 0						
-1 0						
-1 1						
+1 0						
0 +1	1209.8	894.2	-25.9	+1.4	1183.9	895.6
-1 +1						
+2 +1						
0 +1						
0 +1						
+2 -3						
-4 +1	578.6	1472.8	-17.4	+21.6 ²²⁰	561.2	1494.4 ^{4.8}
+1 +2						
+2 +1						
-2 -9						
+4 +3						
0 0						
-6 -9	683.8	315.6	-18.6	-12.3	665.2	303.3
-1 0						
-2 +1						
0 +7						
+4 -1						
+2 +1						
-1 -4	1472.8	999.4	+4.2	-3.0	1477.0	996.4
+2 +1						
-3 +3						

22,00

D6826.

April 16, 1899.

x-y. A. B. C. D. a+b B+D c-a B-D

4 w.	28.8	21.3	20	40	110	90	130	130	+90	-50	+22	-12
5	28.9	21.6	9	82	121	48	130	130	+112	+34	+22	-18
6	29.1	23.1	115	14	15	117	130	131	-100	-103	+22	-13
1 b.	29.5	11.4	60	55	70	75	130	130	+10	-20	+10	-20 +14 ⁻¹³ / ₋₁₆
2	29.4	12.1	66	14	64	116	130	130	-02	-102	+15	-13
3	29.5	12.6	62	80	68	50	130	130	+06	+30	+14	-12
4	29.7	13.3	25	40	106	90	131	130	+81	-50	+13	-12
5	29.9	13.6	10	85	120	45	130	130	+110	+40	+20	-12
6	30.1	15.1	119	15	11	115	130	130	-108	-100	+14	-10
1 o.	36.2	17.9	106	120	24	10	130	130	-82	+110	-82	+110 -82 +116
2	36.1	18.6	114	79	15	51	129	130	-99	+28	-82	+117
3	36.1	19.1	110	15	20	116	130	131	-90	-101	-82	+107
4	36.5	19.8	71	106	59	24	130	130	-12	+82	-80	+120
5	36.5	20.2	60	18	70	112	130	130	+10	-94	-80	+114
6	36.6	21.6	38	79	92	51	130	130	+54	+28	-84	+118
1 p.	40.4	17.8	76	105	54	25	130	130	-22	+80	-22	+80 -22 +85
2	40.4	18.5	84	64	46	67	130	131	-38	-03	-21	+86
3	40.4	18.9	80	129	50	1	130	130	-30	+128	-22	+86
4	40.6	19.7	40	90	90	40	130	130	+50	+50	-18	+88
5	40.7	20.1	31	1	99	129	130	130	+68	-128	-22	+80
6	40.9	21.5	8	64	122	66	130	130	+114	-02	-24	+88
1 Nova	23.0	17.5	129	69	1	61	130	130	-128	+08	-128	+08 -128 +08
2	22.9	18.2	7	24	123	106	130	130	+116	-82	-127	+07
3	22.9	18.6	3	90	127	40	130	130	+124	+50	-128	+08
4	23.3	19.4	95	51	35	79	130	130	-60	-28	-128	+10
5	23.4	19.6	84	95	46	35	130	130	-38	+60	-128	+08
22,20 6	23.5	21.2	60	25	70	106	130	131	+10	-81	-128	+09
							3510	3514				
							27	27				

xx 52.6 γ x 52.6 C-A ^{x.202}B-D

+1 +3

+1 -3

+1 +2

-4 -4 15254 578.6 +2.8 -2.6 1528.2 576.0

+1 +3

0 +4

-1 +4

+6 +4

0 +3

0 -6

1893.6 894.2 -16.6 +23.4 1877.0 917.6

0 +1

0 +1

+2 +4

+2 -2

-2 +2

0 -5

2104.0 894.2 -4.4 +17.2 2099.6 911.4

+1 +1

0 +1

+4 +3

0 -5

-2 +3

0 0

1209.8 894.2 -25.9 +1.6 1183.9 895.8

+1 -1

0 0

0 +2

0 0

0 +1

22.20 D 6826 April 16, 1899.

x y A. B. C. D. a+b B+D b-a B-D

Nova. 1	23.0	17.5	129	69	1	61	130	130	-128	+08	-128	+08	-128	+08
2	22.9	18.2	7	24	123	106	130	130	+116	-82	-127	+07		
3	22.9	18.6	3	90	127	40	130	130	+124	+50	-128	+08		
4	23.3	19.4	95	50	35	80	130	130	-60	-30	-128	+08		
5	23.4	19.6	83	95	47	35	130	130	-36	+60	-126	+08		
6	23.5	21.2	60	25	70	106	130	131	+10	-81	-128	+09		
f1	11.2	28.9	110	119	20	11	130	130	-90	+108	-90	+108	-86	+109
2	11.1	29.6	116	115 76	15	55	131	131	-101	+21	-84	+110		
3	11.1	30.1	111	10	19	120	130	130	-92	-110	-84	+108		
4	11.4	30.8	75	101	55	29	130	130	-20	+72	-88	+110		
5	11.5	31.1	61	15	69	115	130	130	+08	-100	-82	+108		
6	11.6	32.6	40	75	90	56	130	131	+50	+19	-88	+109		
g1	13.2	6.3	114	30	16	100	130	130	-98	-70	-98	-70	-91	-62
2	13.1	6.9	120	120	10	10	130	130	-110	+110	-93	-61		
3	13.1	7.5	116	56	14	74	130	130	-102	-18	-94	-60		
4	13.4	8.1	76	16	54	114	130	130	-22	-98	-90	-60		
5	13.5	8.5	61	60	69	70	130	130	+08	-10	-82	-62		
6	13.6	9.9	41	120	89	10	130	130	+48	+110	-90	-60		
h1	28.5	19.4	55	56	75	74	130	130	+20	-18	+20	-18	+21	-15
2	28.5	20.1	61	120	65	118	126	130	+04	-106	+21	-17		
3	28.5	20.6	59	80	70	50	129	130	+11	+30	+19	-12		
4	28.8	21.4	20	40	110	90	130	130	+90	-50	+22	-12		
5	28.9	21.6	9	84	121	46	130	130	+112	+38	+22	-14		
6	29.1	23.1	115	11	15	119	130	130	-100	-108	+22	-18		
i1	29.5	11.4	60	56	70	74	130	130	+10	-18	+10	-18	+14	-13
2	29.4	12.1	66	14	64	116	130	130	-02	-102	+15	-13		
22.35	3	29.5	12.6	61	80	69	51	130	131	+08	+29	+16	-13	
							3506	3514						
							27	27						

		$x \times 52.6$	$y \times 52.6$	$C - A$	$B - D$	
0 0		1209.8	894.2	-25.9	+1.6	1183.9 895.8
+1 -1						
0 0						
0 0						
+2 0						
0 +1						
-4 -1		578.6	1472.8	-17.4	+22.0	561.2 1494.8
+2 +1						
+2 -1						
-2 +1						
+4 -1						
-2 0						
-7 -8		683.8	315.6	-18.4	-12.5	665.4 303.1
-2 +1						
-3 +2						
+1 +2						
+9 0						
+1 +2						
-1 -3		1472.8	999.4	+4.2	-3.0	1477.0 996.4
0 -2						
-2 +3						
+1 +3						
+1 +1						
+1 -3						
-4 -5		1525.4	578.6	+2.8	-2.6	1528.2 576.0
+1 0						
+2 0						

22.35

D 6826

April 16, 1899

x y A. B. C. D. a+b B+D C-a B-D

4 l 29.8 13.4 25 40 105 90 130 130 +80 -50 +12 -12
 5 29.9 13.6 9 85 121 45 130 130 +112 +40 +22 -12
 6 30.1 15.1 120 15 10 115 130 130 -110 -100 +12 -10

N.B.
order

1 36.2 17.9 108 120 22 10 130 130 -⁸⁶78 +110 -86 +110 -82 +116
 2 36.1 18.6 115 79 15 51 130 130 -100 +28 -82 +117
 4 36.5 19.8 71 105 59 25 130 130 -12 +80 -80 +118
 5 36.6 20.1 60 19 70 111 130 130 +10 -92 -80 +116
 6 36.6 21.6 38 80 92 51 130 131 +54 +29 -84 +119
 3 36.2 19.1 110 14 20 116 130 130 -90 -102 -82 +116

1 p. 40.4 17.8 75 106 55 24 130 130 -20 +82 -20 +82 -21 +83
 2 40.4 18.5 84 61 46 69 130 130 -38 -08 -21 +81
 3 40.4 18.9 80 129 50 2 130 131 -30 +127 -22 +85
 4 40.6 19.6 40 90 90 40 130 130 +50 +50 -18 +88
 5 40.7 20.1 30 1 100 129 130 130 +70 -128 -20 +80
 6 40.9 21.5 9 62 121 68 130 130 +112 -06 -26 +84

Nov 23.0 17.5 128 69 2 61 130 130 -126 +08 -126 +08 -127 +08

2 22.9 18.2 7 25 123 105 130 130 +116 -80 -127 +09
 3 22.9 18.6 3 90 127 40 130 130 +124 +50 -128 +08
 4 23.3 19.4 94 50 36 80 130 130 -58 -30 -126 +08
 5 23.4 19.6 84 94 46 36 130 130 -38 +58 -128 +08
 6 23.5 21.2 59 24 71 106 130 130 +12 -82 -126 +08

1 Nov 23.0 17.5 128 69 1 61 129 130 -127 +08 -127 +08 -128 +08

2 22.9 18.2 8 25 122 106 130 131 +114 -81 -129 +08
 3 22.9 18.6 4 90 126 40 130 130 +122 +50 -130 +08
 4 23.3 19.4 95 50 35 80 130 130 -60 -30 -128 +08
 5 23.4 19.6 84 95 46 35 130 130 -38 +60 -128 +08

22.55 b

23.5 21.2 60 25 70 106 130 131 +10 -81 -128 +09

129.95: ^{52.6}277.1: x: X
 0.202x = X

27 3510
 27 3510
 27 3506
 27 3509

B+D

26 3383
 27 3514
 27 3514
 27 3514

3509 3514
 27 27

108) 14035 (129.954

107) 13925 (130.14: ¹2 52.6: y: Y

0.202y = Y

		$x \times 52.6$	$y \times 52.6$	x^{202} C-A	x^{202} B-D		
-2							
-4	+1						
+8							
+6	+1						
-2							
-4	+3						
-4	-6	1893.6	894.2	-16.6	+23.4	1877.0	917.6
-1	+1						
+2	+2						
+2	0						
-2	+3						
0	0						
+1	-1	2104.0	894.2	-4.2	+16.8	2099.8	911.0
0	-2						
-1	+2						
+3	+5						
+1	-3						
-5	+1						
+1	0	1209.8	894.2	-25.7	+1.6	1184.1	895.8
0	+1						
7 1	0						
+1	0						
-1	-2						
+1	0						
+1	0	1209.8	894.2	-25.9	+1.6	1183.9	895.8
-1	0						
-2	0						
0	0						
0	0						
0	+1						

Apr. 18, 1899. Remeasures of Comp. Stars of Nova Sag.

D6613 x y a B C D $a+b$ $B+D$ $b-a$ $B-D$ $x \times 179$ $y \times 179$ $C - a^{x \times 37}$ $B-D$
 μ 16.6 14.5 51 101 154 103 205 204 +103 -02 2864 2506 +45.0 -0.9

D6626
 as seen 30.7
 f, 4.

11.4 ~~12.7~~ 74 101 56 29 130 130 -18 +72 -86 +110

D6613

 $a+C$ $B+D$ $C-a$ $B-D$ $x \times 179$ $y \times 179$ $C - a^{x \times 37}$ $B-D$

May 2, 99. μ 16.6 14.5 51 101 154 103 205 206 +103 -04 2864 2506 +45.0 -1.7

29090 2505.1

29090 2504.3

May. 16 1899.

RC 6855

Measures of positions of Satellite of Saturn
and Comparison Stars.28.00
from
A 2650

	α	η	A.	B.	C.	R.	A+C	B+D	C-A	B-D	$x \times 60$	$y \times 60$	C-A $\times 200$	B-D $\times 200$
Sat.	14.4	14.4	91	60	60	91	151	151	-31	-31	840	840	-6.2	-6.2
a	4.2	15.6	121	90	29	60	150	150	-92	+30	240	900	-18.4	+6.0
Q	13.0	16.5	150	70	150 0	80	300 150	150	-150	-10	780	960	-30.0	-2.0
T	16.8	17.1	20	9	130	141	150	150+110	-132		960	1020	+22.0	-26.4
H	23.5	17.3	73	36	77	114	150	150+04	-78		1320	1020	+0.8	-15.6
L	34.2	15.2	130	25	20	125	150	150-110	-100		2040	900	-22.0	-20.0
Sat.	14.4	14.4	91	60	59	90	150	150	-32	-30	840	840	-6.4	-6.0

RC 6856

from
A 2654

Dec 14 48 49

	α	η	A.	B.	C.	R.								
Sat.														
a	4.4	15.6	98	89	52	61	150	150	-46	+28	240	900	-9.2	+5.6
Q	14.8	15.9	37	131	113	19	150	150	+76	+112	840	900	+15.2	+22.4
T	19.6	16.5	50	75	100	75	150	150	+50	00	1140	960	+10.0	0.0
H	25.1	15.9	141	146	9	5	150	151	-132	+141	1500	900	-26.4	+28.2
L	34.3	14.8	103	125	48	25	151	150	-55	+100	2040	840	-11.0	+20.0
Sat.														

RC 6859

from
A 3308

	α	η	A.	B.	C.	R.								
Sat.	26.0	10.8	149	135	1	15	150	150	-148	+120	1560	600	-29.6	+24.0
a	6.6	35.3	65	36	26	114	151	150	+21	-78	360	1500	+4.2	-15.6
Q	5.9	14.8	10	130	140	30	150	150	+130	+90	300	840	+26.0	+18.0
H	7.0	15.6	150	86	150 64		300 150	150	-150	+22	420	900	-30.0	+4.4
T	8.8	14.8	20	130	130	31	150	151	+110	+89	480	840	+22.0	+17.8
L	29.5	25.7	78	115	72	35	150	150	-06	+80	1740	1500	-1.2	+16.0
Sat.	26.0	10.8	149	134	1	16	150	150	-148	+118	1560	600	-29.6	+23.6
							3153	2853						
							21	19						

*

P turned out lines very indistinct.

833.8	833.8
221.6	906.0
750.0	958.0
982.0	993.6
1320.8	1004.4
2018.0	880.0
833.6	834.0

230.8	905.6
855.2	922.4
1150.0	960.0
1473.6	928.2
2029.0	860.0

1530.4	624.0
364.2	1484.4
326.0	858.0
390.0	904.4
502.0	857.8
1738.8	1516.0
1530.4	623.6

May 16 1899.

Measures of positions of Satellite of Saturn

π y A.B.C.D. $\frac{a}{b}$ $\frac{c}{d}$ $\frac{e}{f}$ $\frac{g}{h}$ $\frac{i}{j}$ $\frac{k}{l}$ $\frac{m}{n}$ $\frac{o}{p}$

6851
from
3304

very faint

Sat 28.3 12.6 105 25 46 65 151 150 -59 +20 1680 720 -11.8 +4.0

28.5 16.3 78 35 72 95 150 150 -06 -40 480 960 -1.2 -8.0

29.4 16.9 80 145 70 5 150 150 -10 +140 540 960 -2.0 +28.0

* Turned out.

212.1 26.2 140 40 10 110 150 150 -130 -70 720 1560 -26.0 -14.0

2400 234.9 26.7 150 100 150 48 150 151 +150 +65 2040 1560 +30.0 +13.0

Sat 28.3 12.6 104 25 46 65 150 150 -58 +20 1680 720 -11.6 +4.0

* Turned out.

$\frac{1051}{7}$ $\frac{901}{6}$

21 3153
7 1051
28) 4204 (150.143

$150.14 : \frac{1}{2} 60 :: x : X$

$0.200x = X$

19 2853
6 901
25) 3754 (150.160

$150.16 : \frac{1}{2} 60 :: y : Y$

$0.200y = Y$

1668.2 724.0

478.8 952.0

538.0 988.0

694.0 1546.0

~~2070.0~~ 1573.0

1668.4 724.0

Measures of positions of P.M. stars,
on Saturn Plates.

15- FD 6858

January 11, 1900.

A 2650	x	y	A	B	C	FD	A+C	B+D	C-A	B-D	x x 60	y x 60	C-A x.200	B-D x.200
FD.M -16° 41'14"	1.8	23.9	91	135	119	15	150	150 + 88	+120	60	1560	+176	+240	
" -16 41'16"	8.8	10.6	25	100	126	50	151	150 + 101	+50	480	600	+20.2	+100	
" -17 43'29.8"	0.7	25	108	125	48	150	151 + 100	+65	540	0	+20.0	+130		

A 2654 FD 6856

FD.M -16° 41'14"	2.1	26.9	139	141	11	10	150	151 -128 +131	120	1560 -256 +262
-16 41'16"	8.9	10.6	10	92	140	59	150	151 +130 +33	480	600 +260 +66
-17 43'29.8"	0.6	30	91	120	60	150	151 +90 +31	540	0 +180 +62	

1.35

77.6 1584.0
500.2 610.0
560.0 13.0

944 1586.2
506.0 606.6
558.0 6.2

Jan. 12, 1900.

Measures of Position of Phoebe. See p. 42.

	x	y	A	B	C	D	A+C	B+D	C-A	D-B	$\times 60$	$\times 60$	C-A	B-D
D 685-6													$\times 200$	$\times 200$
from	16.1	13.5	123	78	25	72	148	150	-98	-6	960	780	-19.6	-1.2
A 265-4	16.1	13.5	125	80	25	70	150	150	-100	-10	960	780	-20.0	-2.0

940.4 778.8
940.0 778.0

Page 32. D6826
Nova.

C-a	(1-2)	(1-3)	(1-4)	(1-5)	(1-6)
	244	254	68	90	140
	242	254	68	90	140
	244	252	68	90	138
	244	252	68	92	138
	242	250	68	88	138
	241	249	67	89	137
	<u>243</u>	<u>252</u>	<u>68</u>	<u>90</u>	<u>138</u>
	-243	-252	-68	-90	-138

B-2	(1-2)	(1-3)	(1-4)	(1-5)	(1-6)
	88	42	38	53	90
	89	42	38	52	94
	90	42	36	52	89
	90	42	38	52	89
	88	42	38	50	90
	89	42	38	52	89
	<u>89</u>	<u>42</u>	<u>38</u>	<u>52</u>	<u>90</u>
	+89	-42	38	52	90

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(1-2)	(1-3)	(1-4)	(1-5)	(1-6)
14	4	72	92	141
14	4	70	92	140
16	5	68	90	138
12	2	72	84	140
13	2	71	96	141
11	3	71	95	139
<u>80</u>	<u>20</u>	<u>4</u>	<u>19</u>	<u>59</u>
13	3	71	93	140

(1-2)	(1-3)	(1-4)	(1-5)	(1-6)
86	42	38	52	90
89	42	38	52	89
88	42	38	52	89
88	42	38	52	89
90	40	40	48	90
88	42	38	50	94
<u>49</u>	<u>10</u>	<u>50</u>	<u>6</u>	<u>59</u>
88	42	38	51	90

940.4 778.8

940.0 778.0

11.0

11.0
16
94

Measures of position of Phoebe and other stars.

22.15

January 31, 1900.

	x	y	a	b	c	d	a+c	b+d	c-a	b-d	x160	y160	c-a x200	b-d x200
107327	13.4	25.7	90	115	60	35	150	150	-30	+80	600	1500	-60	+160
Q3312	12.9	14.8	5	120	145	91	150	151	+140	+89	720	840	+28.0	+17.8
	14.3	15.8	100	130	50	20	150	150	-50	+110	840	900	-100	+220
	13.5	14.9	70	135	80	15	150	150	+10	+120	900	840	+20	+240
	22.3	26.6	100	90	50	60	150	150	-50	+30	1980	1560	-100	+60
Phoebe	22.2	11.0	100	150	31	150	151	300	-89	-150	1980	660	-17.8	-30.0
							$\frac{901}{6}$	$\frac{1051}{87}$						
							150.17	150.14						

$$150.17 : \frac{1}{2} 60 :: x : X$$

$$0.200 x = X$$

$$150.14 : \frac{1}{2} 60 :: y : Y$$

$$0.200 y = Y$$

107324	7.0	16.1	145	10	114	135	289	145	-145	-125	420	960	-30.0	-25.9
3821	7.9	18.0	5	115	140	145	145	290	+135	-145	420	1080	+27.0	-30.6
Phoebe	27.0	14.9	140	130	130	145	290	145	-145	+110	1820	840	-30.0	+23.8
10.4	22.5	5.5	70	75	75	70	145	145	+5	+5	1920	300	+1.0	+1.0

$144.83 : \frac{1}{2} 60 :: x : X$
 $0.207 x = X$

$\frac{869}{64} = \frac{725}{5}$
 $144.83 \quad 145.00$

$$144.83 : \frac{1}{2} 60 :: x : X$$

$$0.207 x = X$$

$$145.00 : \frac{1}{2} 60 :: y : Y$$

$$0.207 y = Y$$

													$\times 199$	$\times 199$
107309	1.2	16.6	125	26 ⁸⁰	26	71	151	151	-99	+9	60	960	-19.7	+1.8
Q3913	4.1	14.3	130	70	20	80	150	150	-110	-10	240	840	-21.9	-2.0
No. 3	6.5	18.7	81	120	70	91	151	151	-11	+89	360	1080	-2.2	+17.7
Phoebe	24.6	12.3	65	40	86	111	151	151	+21	-71	¹⁴ 840	720	+4.2	-14.1
No. 4	30.9	6.1	10	⁰ 15	140	141	150	151	+130	-131	¹⁸ 900	360	+25.9	-26.1
							$\frac{753}{5}$	$\frac{754}{5}$						
							150.60	150.80						

$150.60 : \frac{1}{2}60 :: x : X$
 $0.199x = X$

$150.80 : \frac{1}{2}60 :: y : Y$
 $0.199y = Y$

$$150.60 : \frac{1}{2} 60 :: x : X$$

$$0.199 x = X$$

$$150.80 : \frac{1}{2} 60 :: y : Y$$

$$0.199 y = Y$$

Take means of plates separately.
Feb. 3, 1900.

594.0 1516.0
 748.0 857.8
 830.0 922.0
 902.0 864.0
 1970.0 1566.0
 1962.2 ~~660.0~~ ^{430.0} *x 2 ago*

390.0
~~419.8~~ 934.1 *x 2 ago*
 1050.0
 447.9 ~~1080.0~~ *x 2 ago*
 1590.0 ^{863.2} 843.1
 1620.8 ~~856.9~~ *x 2 ago*
 1921.0 301.0

40.3 961.8
 218.1 838.0
 357.8 1097.7
 1444.2 705.9
 1825.9 333.9

Measures of position of Phoebe and other stars.

Jan. 31, 1900.

7320	No. 2	x	y	a	B	C	D	A+C	B+D	C-A	B-D	x $\times$ 60	y $\times$ 60	C-A $\times$.200	B-D $\times$.199
3794	No. 2	5.6	17.5	50	90	100	61	150	151	+50	+29	300	1020	+10.0	+5.8
	I	20.4	14.6	92	88	59	63	151	151	-33	+25	1200	840	-6.6	+5.0
	H	21.1	15.3	125	51	25	100	150	151	-100	-49	1260	900	-20.0	-9.8
	S	24.1	14.1	130	10	20	-	150	-	-110	-	1440	840	-22.0	-
	Phoebe	23.9	15.4	5	55	146	95	151	150	+141	-40	1980	900	+28.2	-8.0
	No. 4	30.5	5.5	90	66	60	85	150	151	-30	-19	1800	300	-6.0	-3.6

$$150.33 : \frac{1}{2} 60 :: x : X$$

$$0.200 x = X$$

$$150.80 : \frac{1}{2} 60 :: y : Y$$

$$0.199 y = Y$$

$$\frac{902}{6} = \frac{754}{5}$$

$$150.33 \quad 150.80$$

7328

3824

	No. 1	x	y	a	B	C	D	A+C	B+D	C-A	B-D	x ²	y ²	C-A ^{x200}	B-D ^{-30.0} ^{x200}
I	-5.0	14.8	150	110	150	40	300	150	-150	+70	300	840	+14.0	+14.0	
No. 2	-7.3	16.5	85	80	65	70	150	150	-20	+10	420	960	-4.0	+2.0	
Phoebe	-25.6	13.3	70	40	80	110	150	150	+10	-70	1500	780	+2.0	-14.0	
No. 4	-32.0	4.1	150	15	150	135	300	150	-150	-120	1920	240	-24.0	-24.0	

$$150.00 : \frac{1}{2} 60 :: x : X$$

$$0.200 x = X$$

$$150.00 : \frac{1}{2} 60 :: y : Y$$

$$0.200 y = Y$$

$$\frac{900}{6} = \frac{600}{4}$$

$$150.00 \quad 150.00$$

The lines on Pl. 7328 are very indistinct.

310.0 1025.8
1193.4
~~1206.6~~ 845.0
1280.0 890.2
1418.0
2008.2 892.0
1794.0 296.2

270.0 854.0
416.0 962.0
1502.0 766.0
1890.0 216.0

December 10, 1903
 Meas. to det. pos. of Procyon

w		31		Plate D10201				Pols.		C-a		B-D		x 237		1237	
D10		A		B		C		D		a+c		B+D					
2	31	7.6	5.1	4.9	7.7	7.9	128	128	03	02	+26	-30	+6.2	-7.1			
"	10201	7.6	5.1	4.9	7.7	7.9	128	128	03	02	+26	-30	+6.2	-7.1			
"	10197	7.6	8.6	4.5	4.4	8.0	130	125	05	01	-42	-35	-9.0	-8.3			
"	10189	7.6	7.1	6.9	5.8	5.7	129	126	04	00	-13	+12	-3.0	+2.8			
"	10196	7.6	7.0	3.6	5.1	9.0	121	126	04	00	-19	-54	-4.5	-12.8			
"	10195	7.6	6.2	9.3	6.2	3.4	124	127	01	01	00	+59	00	+14.0			
"	10199	7.6	5.6	12.0	7.1	0.4	127	124	02	02	+15	+116	+3.5	+27.5			
"	10192	7.6	4.0	4.8	8.6	3.7	126	8.5	01	00	+46	-30	+10.9	-7.1			
"	10188	7.6	7.5	4.6	5.0	8.3	125	129	00	03	-25	-37	-5.9	-8.8			
"	10193	7.6	10.8	6.6	1.5	6.1	123	127	02	01	-93	+0.5	-22.0	+1.2			
"	10203	7.6	7.0	8.2	5.5	4.0	125	122	00	04	-15	+42	-3.6	+10.0			
"	10194	7.6	3.4	8.1	9.4	4.6	128	127	03	01	+60	+35	+14.2	+8.3			
"	10202	7.6	1.5	8.6	9.8	4.5	113	131	12	05	+83	+41	+19.7	+9.7			
2	49	1386	1499	1518	15-19	12-7											
3	00	12600	12	12472	126.59	12											
		237															

w		31		Plate D10201				Pols.		C-a		B-D		x 237		1237	
D10		A		B		C		D		a+c		B+D					
2	49	7.6	5.3	4.8	7.9	7.8	132	126	04	02	+26	-30	+6.2	-7.0			
"	10201	7.6	5.3	4.8	7.9	7.8	132	126	04	02	+26	-30	+6.2	-7.0			
"	10197	7.6	8.4	4.8	4.8	7.8	132	126	04	02	-36	-30	-8.5	-7.0			
"	10189	7.6	7.2	7.1	5.3	5.6	125	127	03	01	-19	+15	-4.5	+3.5			
"	10196	7.6	7.3	3.7	5.3	9.1	126	128	02	00	-20	-54	-4.7	-12.7			
"	10195	7.6	6.2	9.3	6.7	3.7	129	130	01	02	+05	+56	+1.2	+13.2			
"	10199	7.6	6.2	12.1	7.2	0.6	134	127	06	01	+10	+115	+2.4	+27.0			
"	10192	7.6	4.1	5.3	8.8	7.6	129	129	01	01	+47	-23	+11.0	-5.5			
"	10188	7.6	7.2	4.4	5.1	8.2	123	126	05	02	-21	-38	-4.9	-8.9			
"	10193	7.6	10.8	7.1	2.0	5.8	128	129	00	01	-88	+13	-20.7	+3.1			
"	10203	7.6	7.3	8.2	5.4	4.2	127	124	01	04	-19	+40	-4.5	+9.4			
"	10194	7.6	6.1	8.5	9.7	4.4	128	129	00	01	+66	+41	+15.5	+9.6			
"	10202	7.6	6.2	8.7	9.9	4.4	121	131	07	03	+77	+43	+18.2	+10.2			
2	35	1534	1532	1532	15-18	8-12											
3	29	1273	1273	1273	1273	1273											

2x60 yx60

420 1200 426.2 1192.9 ✓
 120 1260 110.0 1251.7 ✓
 300 1200 296.9 1202.8 ✓
 360 1320 355.5 1307.2 ✓
 120 1200 120.0 1214.0 ✓
 360 1200 363.6 ^{27.5} 1250.7 ✓
 240 1320 250.9 1312.9 ✓
 240 1260 234.1 1251.2 ✓
 120 1320 98.0 1321.2 ✓
 480 1380 476.4 1390.0 ✓
 60 1320 74.2 1328.3 ✓
 480 1200 499.7 1209.7 ✓

420 1200 426.1 1193.0 ✓
 120 1260 111.5 1253.0 ✓
 300 1200 295.5 1203.5 ✓
 360 1320 355.3 1307.3 ✓
 120 1200 121.2 1213.2 ✓
 360 1200 362.4 1227.0 ✓
 240 1320 251.0 1314.6 ✓
 240 1260 235.1 1251.1 ✓
 120 1320 99.3 1323.1 ✓
 480 1380 475.5 1389.4 ✓
 60 1320 ~~75.5~~ 1329.6 ✓
 480 1200 498.1 1210.1 ✓

December 11, 1903

12.30

Meas. to determine pos. of Phoebe & companion stars.

Mrs. E. F. Leland Obs. N. S. M. Coy. Rec.

Plate D 10194-A4614

Dec 12, 1903
10.23

C-a B-D
x233 x233

	x	y	A	B	C	D	A+C B+D	C-a B-D	x x60	y x60	
B.	1.6	22.6	3.2	8.5	9.8	4.4	130 129 + 66 + 41	60	1320 + 15.4 + 9.6		
a1	7.7	33.7	2.1	10.6	10.8	2.3	129 129 + 87 + 83	420	1980 + 20.3 + 19.3		
a2	7.9	26.6	1.1	8.1	11.9	4.6	130 127 + 108 + 35	420	1560 + 25.2 + 8.2		
b1	9.5	16.0	6.9	12.7	6.0	12.8	129 255 - 09 - 01	540	960 - 2.1 - 2		
b2	9.5	8.8	5.4	10.5	6.9	2.4	123 129 + 15 + 81	540	480 + 3.5 + 18.9		
c1	14.1	13.4	12.1	5.5	0.8	7.3	129 128 - 113 - 18	840	780 - 26.3 - 4.2		
c2	14.2	6.3	10.9	3.0	2.0	9.8	129 128 - 89 - 68	840	360 - 20.7 - 15.8		
d1	15.9	22.0	1.0	12.9	11.8	12.8	128 257 + 108 + 01	900	1320 + 25.2 + 2		
d2	16.7	14.8	12.1	10.5	0.8	2.3	129 128 - 113 + 82	960	840 - 26.3 + 19.1		
e1	20.5	21.0	6.0	13.0	6.9	12.8	129 258 + 09 + 02	1200	1260 + 2.1 + 5		
e2	20.6	13.8	5.0	10.8	7.8	2.0	128 128 + 28 + 88	1200	780 + 6.5 + 20.5		
g1	30.7	33.3	2.5	3.1	10.3	9.7	128 128 + 78 - 66	1800	1980 + 18.2 - 15.4		
g2	30.9	26.1	1.1	0.8	11.9	12.0	130 128 + 108 - 112	1800	1560 + 25.2 - 26.1		
f.	1.6	22.6	3.2	8.4	9.8	4.5	130 129 + 66 + 39	60	1320 + 15.4 + 9.1		
f1	29.9	24.3	1.0	3.0	11.9	10.0	129 130 + 109 - 70	1740	1440 + 25.4 - 16.3		
f2	29.9	17.1	0.5	0.6	12.4	12.3	129 129 + 119 - 117	1740	1020 + 27.7 - 27.3		
S2	34.5	12.6	6.0	7.5	6.9	5.3	129 128 + 09 + 22	2040	720 + 2.1 + 5.1		
R2	34.6	13.2	4.1	1.5	2.7	11.0	128 125 + 46 - 95	2040	780 + 10.8 - 22.1		
L2	34.7	12.0	3.1	12.8	9.8	12.9	129 257 + 67 - 01	2040	720 + 15.6 - 2		
I?	34.5	17.6	5.5	8.5	7.3	4.3	128 128 + 18 + 42	2040	1020 + 4.2 + 9.8		
S1	36.9	20.2	0.5	2.5	12.5	10.3	130 128 + 120 - 78	2160	1200 + 28.0 - 18.2		
S2	37.1	12.9	12.1	12.5	0.8	0.3	129 128 - 113 + 122	2220	720 - 26.3 + 28.4		
v1	42.6	32.7	4.9	10.1	7.8	2.8	127 129 + 29 + 73	2520	1920 + 6.8 + 17.0		
v2	42.6	25.6	3.9	8.2	2.8	4.9	127 131 + 49 + 33	2520	1500 + 11.4 + 7.7		
							3086 3594				
							24. 28.				

B-D
F233

+7.6	75.4	1329.6✓✓
+19.3	440.3	1999.3✓
+8.2	445.2	1568.2✓
-2.	537.9	929.8 456.9 ✓
18.9	543.5 603.5	498.9✓
-4.2	813.7	775.8✓
15.8	819.3	344.2✓
+2.	925.2	1290.2✓
+19.1	933.7	859.1✓
5-	1202.1	1230.5✓
20.5	1206.5	800.5✓
-15.4	1818.2	1964.6✓
-26.1	1825.2	1533.9✓
+9.1	75.4	1329.1✓
-16.3	1765.4	23.7 1412.7✓
-27.3	1767.7	992.7✓
+5.1	2042.1	725.1✓
-22.1	2050.7	757.9✓
6-2	2055.6	689.8✓
+9.8	2044.2	1029.8✓
0-18.2	2188.0	1181.8✓
3+28.4	2193.7	748.4✓
+17.0	2526.8	1987.0✓
+7.7	2531.4	1507.7✓

December 11, 1903.

Meas. to determine pos. of Phoebe and comparison stars

Plate D 10194 (Cont) Dec. 12, 1903.

	x	y	A	B	C	D	A+B	C-A	B-D	x×60	y×60	C-A ×233	B-D ×233
h1	42.2	17.9	10.5	11.1	2.8	1.9	133 130	-77	+92	2520	1020	-17.9	+21.4
h2	42.3	10.6	9.0	9.1	3.8	3.9	128 130	-52	+52	2520	600	-12.1	+12.1
j1	43.9	16.5	1.5	5.9	11.8	7.3	133 132	+103	-14	2520	960	+24.0	-3.3
j2	43.0	9.3	12.9	3.0	12.9	9.8	258 128	00	-68	2580	540	00	-15.8
p	1.7	22.6	3.1	8.4	9.7	4.4	128 128	+66	+40	60	1320	+15.4	+9.3
g	6.3	17.6	9.3	7.2	3.4	5.5	90 127	-59	+17	360	1020	-13.7	+4.0
							7. 6.5						
							128.87 128.54						
							128.88 128.50						
	3086	24	3594	28									
	780	6	646	8									
	907	7	775	6									
	3866	30	4242	33									
	3993	31	4369	34									

December 12, 1903.

Plate D 10197 = A 4624

	x	y	A	B	C	D	A+C	B+D	C-A	B-D	x×60	y×60	C-A ×232	B-D ×234
P	2.4	21.4	8.3	4.8	4.8	8.0	131	128	-35	-32	120	1260	-8.1	-7.5
a1	8.9	22.8	1.1	10.0	11.8	2.9	129	129	+107	+71	480	1920	+24.8	+16.6
a2	W.S													
b1	10.5	14.9	6.5	12.0	6.3	0.8	128	128	-02	+112	600	840	-5	+26.2
b2	10.5	11.6	6.5	7.3	6.3	5.5	128	128	-02	+18	600	660	-5	+4.2
c1	15.1	12.4	12.0	4.8	0.8	8.0	128	128	-112	-32	900	720	-26.0	-7.5
c2	15.1	8.9	12.1	12.0	1.0	1.0	131	130	-111	+110	900	480	-25.8	+25.7
d1	16.9	20.9	0.5	11.9	12.8	1.0	133	129	+123	+109	960	1200	+28.5	+25.5
d2	17.0	17.6	12.9	6.8	12.9	6.0	258	128	00	+08	1020	1020	00	+1.9
e1	21.5	19.9	5.9	11.8	6.9	1.0	128	128	+10	+108	1260	1140	+2.3	+25.2
							11294	11564						
							110	94						

1.4
2.1
3.3
5.8
7.3
4.0

2502.1 1041.4 ✓

2507.9 612.1 ✓

2544.0 956.7 ✓

2550.0 524.7 ✓

75.4 1329.3 ✓

346.3 1024.0 ✓

111.9 1252.5 ✓

504.8 1936.6 ✓

599.5 866.2 ✓

599.5 664.2 ✓

874.0 712.5 ✓

874.2 505.7 ✓

988.5 1225.5 ✓

990.0 1021.9 ✓

1262.3 1165.2 ✓

December 12, 1903

Meas. to determine pos of Phoebe & companion stars

Plate D 10 197

	x	y	A	B	C	D	Data B & D		x x 60	y y 60	C-A	B-D
							Dec 14, 1903				x 232	x 234
e2	21.5	16.5	6.0	6.9	6.9	6.0	129	129 + 09 + 09	1260	960	+2.1	+2.1
f1	30.9	23.1	0.9	1.0	12.0	12.0	129	130 + 111 - 110	1800	1380	+25.8	-25.7
f2	30.9	19.7	1.0	9.0	12.0	3.9	130	129 + 110 + 51	1800	1140	+25.5	+11.9
g1	31.9	22.1	1.0	1.5	11.9	11.3	129	128 + 109 - 98	1860	1920	+25.3	-22.9
g2	31.9	28.7	1.2	9.0	11.5	3.9	127	129 + 103 + 51	1860	1680	+23.9	+11.9
P.	2.4	21.4	8.3	4.7	4.5	2.0	128	127 - 38 - 33	120	1260	-8.8	-7.7
h1	33.6	16.5	2.9	6.5	10.0	6.5	129	130 + 71 00	1980	960	+16.5	00

Cannot
measure
of square

Bright Cannot measure.

S1	37.7	19.0	2.0	12.9	11.0	13.0	130	259 + 90 - 01	2220	1140	+20.9	-2
L1	37.8	17.7	3.2	8.2	10.0	4.9	132	128 + 68 + 31	2220	1020	+15.8	+7.3
L2	37.7	14.3	3.8	3.0	8.8	9.7	126	127 + 50 - 67	2220	840	+11.6	-15.7
h1	43.2	16.7	10.0	9.0	2.9	4.0	129	130 - 71 + 50	2580	960	-16.5	+11.7
h2	43.3	13.4	9.8	4.0	3.0	2.9	128	129 - 68 - 49	2580	780	-15.8	-11.5
i1	43.6	31.6	4.0	7.9	8.9	5.0	129	129 + 49 + 29	2580	1860	+11.4	+6.8
i2	43.6	28.2	4.0	2.6	8.9	10.0	129	126 + 49 - 74	2580	1680	+11.4	-17.3
j1	43.9	15.2	1.1	3.8	11.9	10.0	130	128 + 108 - 72	2580	900	+25.2	-16.8
j2	43.9	11.8	1.1	10.5	11.9	2.0	130	125 + 108 + 85	2580	660	+25.2	+19.9
P.	2.4	21.4	8.3	4.7	4.6	2.0	129	127 - 37 - 33	120	1260	-8.6	-7.7
3	7.4	16.5	9.0	6.5	3.9	6.3	232	2439 - 51 + 02	420	960	-11.8	+5.1

$$\sqrt{18.} \quad \sqrt{19.} \quad \sqrt{129.14} \quad \sqrt{128.39}$$

Feb 1, '04. S2 35.0 14.9 12.9 10.9 12.8 2.0 257 129 -01 +89 2100 840 -2 +20.8

$$\begin{array}{r} 10 \quad 1294 \quad 9 \quad 1156 \\ 2579 \quad 20 \quad 2568 \\ \hline 20 \quad 3873629 \quad 2913724 \quad 128.41 \\ 30 \end{array}$$

1262.1 962.1 ✓

1825.8 1354.3 ✓

1825.5 1151.9 ✓

1885.3 1897.1 ✓

1883.9 1691.9 ✓

111.2 1252.3 ✓

1996.5 960.0 ✓

2240.9 1109.8 ✓

2235.8 1027.3 ✓

2231.6 824.3 ✓

2563.5 971.7 ✓

2564.2 768.5 ✓

2591.4 1866.8 ✓

2591.4 1662.7 ✓

2605.2 883.2 ✓

2605.2 679.9 ✓

111.4 1252.3 ✓

408.2 960.5 ✓

2269.8 860.8 ✓

December 14, 1903

Meas. to determine pos. of Phoebe & comparison stars

A 4691
Plate D 10199² Dec. 16, 1903

	x	y	a	B	C _{12.2.0}	D _{12.2.0}	a+B+D	C-a	B-D	x ₆₀	y ₆₀	C-a ₃ x 233	B-D x 233
12.25 P	6.6	26.9	6.0	12.0	7.0	0.9	130 129 +10 +11	360	1200	+2.3	+25.9		
a1	7.9	32.9	1.5	12.9	11.3	12.9	128 258 +98 00	420	1980	+22.7	00		
a2	7.9	30.1	1.5	1.9	11.4	11.0	129 129 +99 -91	420	1800	+23.2	-21.2		
b1	9.5	16.2	6.1	2.0	6.8	10.9	129 129 +07 -89	540	960	+1.6	-20.7		
b2	11.8												
c1	14.1	13.6	11.5	7.0	1.3	5.9	128 129 -102 +11	840	780	-23.7	+2.6		
c2	14.1	9.7	12.0	8.5	1.0	4.0	130 125 -110 +45	840	540	-25.5	+10.5		
d1	16.0	22.1	12.6	2.0	12.8	11.0	254 130 +02 -90	960	1320	+3.5	-21.0		
d2	15.9	18.3	0.4	3.2	12.8	9.6	132 128 +124 -64	900	1080	+28.8	-14.9		
e1	20.6	21.2	5.1	1.9	7.6	10.9	127 128 +25 -90	1200	1260	+5.8	-21.0		
e2	20.5	17.3	6.0	3.1	6.9	9.5	129 126 +09 -64	1200	1020	+2.1	-14.9		
f1	29.9	24.3	0.5	4.1	12.4	9.0	129 131 +119 -49	1740	1440	+27.6	-11.4		
f2	29.9	20.4	1.0	5.9	11.9	7.1	129 130 +109 -12	1740	1200	+25.2	-2.8		
g1	30.9	33.4	0.5	4.4	12.4	2.9	129 133 +119 -45	1800	1980	+27.6	-10.5		
g2	30.9	29.5	1.5	5.9	11.2	6.9	127 128 +97 -10	1800	1740	+22.5	-2.3		
P	6.6	20.9	5.9	12.1	7.0	0.9	129 130 +11 +112	360	1200	+2.6	+26.1		
S1	31.2	18.0	9.9	12.8	3.0	12.9	129 257 -69 -01	1860	1080	-16.8	-2		
S2	31.2	14.1	10.5	1.0	2.6	11.9	131 129 -79 -109	1860	840	-18.8	-25.4		
H1	34.8	17.6	2.9	8.0	10.0	4.9	129 129 +71 +31	2040	1020	+16.5	+7.2		
T1	37.6	19.0	4.0	12.8	9.0	12.8	130 256 +50 00	2220	1140	+11.6	00		
T2	37.7	14.9	2.0	12.0	11.0	13.0	130 127 +90 +113	2220	840	+21.0 +20.9	+26.3		
R2	37.4	14.4	7.2	3.9	5.7	8.8	129 137 -15 -49	2220	840	-3.5	-11.4		
h1	42.3	17.9	9.2	12.0	3.4	1.0	126 130 -58 +110	2520	1020	-13.5	+25.6		
h2	42.2	14.1	10.1	1.0	2.9	12.0	130 130 -72 -110	2520	840	-16.7	-25.6		
j1	43.0	16.5	12.9	6.1	13.0	6.9	259 130 +01 -08	2580	960	+2.1	-1.9		
$\frac{3356}{26} \quad \frac{3478}{27}$													

362.3	1225.9 ✓
⁸ 442.7	^{2010.0} 1980.0 ✓
443.7	1778.8 ✓
541.6	939.3 ✓
² 816.8	782.6 ✓
⁴ 814.8	550.5 ✓
⁹ 930.5	1299.0 ✓
⁹ 928.8	1065.1 ✓
1205.8	1239.0 ✓
1202.1	1005.1 ✓
⁷ 1767.6	1428.6 ✓
⁴ 1765.3	1197.2 ✓
⁷ 1827.6	1969.5 ✓
⁶ 1822.5	1737.7 ✓
362.6	1226.1 ✓
^{3.9} 1847.8	1049.8 ✓
⁶ 1841.7	814.6 ✓
2056.5	1027.2 ✓
2231.6	1110.0 ✓
^{1.0} 2248.9	866.3 ✓
²⁸ 2216.5	844.6 ✓
2506.5	1045.6 ✓
² 2503.3	814.4 ✓
2550.2	958.1 ✓

Dec. 16, 1903

$$\begin{array}{r} 263356 \\ 6774 \\ \hline 32 \overline{) 4126} \quad 128.94 \end{array}$$
$$\begin{array}{r} 128 \\ \times 7 \\ \hline 896 \end{array}$$

1.45

December 16, 1903
Plate 10193 = K 4612 Dec 17, '03

	x	y	a	B	C	D	$x \times 60$	$y \times 60$	$C-a$	$B-D$
P.2.1	22.6	11.0	6.9	1.9	5.9	$129 \ 128 - 91 + 10$	120	1320	-21.2	+2.3
a1	7.8	33.5	2.0	7.0	5.8	$130 \ 128 + 90 + 12$	420	1980	+21.0	+2.8
a2	7.2	27.1	2.3	0.2	10.6	$129 \ 128 + 83 - 124$	420	1620	+19.3	-28.9
b1	7.4	15.7	7.0	9.6	5.9	$129 \ 128 - 11 + 64$	540	900	-2.6	+14.9
b2	9.4	9.2	7.4	2.6	5.3	$127 \ 127 - 21 - 75$	540	540	-4.9	-17.5
c1	14.1	13.1	12.0	2.0	0.9	$129 \ 129 - 111 - 89$	840	780	-25.9	-20.7
c2	14.0	6.6	12.9	7.5	5.2	$127 \ 127 - 01 + 23$	840	360	-2	+5.4
d1	15.9	21.7	0.5	9.5	12.3	$128 \ 128 + 118 + 62$	900	1260	+27.5	+14.4
d2	15.9	15.2	1.1	2.0	11.7	$128 \ 128 + 106 - 88$	900	900	+24.7	-20.5
e1	20.5	20.7	6.1	9.5	6.9	$130 \ 128 + 08 + 62$	1200	1200	+1.9	+14.4
e2	20.5	14.2	6.8	2.1	6.1	$129 \ 128 - 07 - 86$	1200	840	-1.6	-20.0
f1	29.9	23.9	1.4	11.8	11.2	$126 \ 128 + 98 + 108$	1740	1380	+22.8	+25.2
f2	29.8	17.4	2.1	4.6	10.7	$128 \ 128 + 86 - 36$	1740	1020	+20.0	-8.4
g1	30.9	32.9	2.0	12.0	10.9	$129 \ 130 + 89 + 110$	1800	1920	+20.7	+25.6
						$\frac{1928}{15}$	$\frac{1793}{14}$			

4
2545.2 726.5✓

9
2531.8 1941.2✓

2518.2 1704.7 ✓ *1206 i. The object measured was an adjacent star.*

362.3 1225.9✓

7.9
348.8 1035.8✓

2263.7 796.8✓

98.8 1322.3✓

441.0 1982.8✓

439.3 1591.1✓

537.4 914.9✓

535.1 522.5✓

814.1 759.3✓

809.8 365.4✓

927.5 1274.4✓

924.7 879.5✓

1201.9 1214.4✓

1198.4 820.0✓

1762.8 1405.2✓

1760.0 1011.6✓

1820.7 1945.6✓

December 16, 1903

Meas. to determine pos. of Phoebe and comparison stars

Plate 10193 Con't

	x	y	A	B	C	D	a+c	b+d	c-a	B-D	x ₆₀	y ₆₀	x ₂₃₃	y ₂₃₃
g ₂	30.8	26.4	2.8	4.5	10.0	8.3	128	128	+72	-38	1800	1560	+16.8	-8.9
P	2.1	22.6	11.1	6.9	1.8	6.0	129	129	-93	+09	120	1320	-21.7	+2.1
Hard to measure R ₂	23.7	19.9	5.0	11.5	8.0	1.5	130	130	+30	+100	1980	1140	+7.0	+23.3
S ₂	34.6	13.0	3.5	12.8	9.3	13.0	128	258	+58	-02	2040	780	+13.5	-2
Hard to measure H ₁	35.1	21.1	10.0	2.9	2.8	10.0	128	129	-72	-71	2100	1260	-16.8	-16.5
J ₁	35.5	17.4	6.0	5.1	7.0	7.9	130	130	+10	-28	2100	1020	+2.3	-6.5
J ₂	?	Too far	Cannot measure											
S ₁	36.6	20.4	5.5	5.8	7.3	7.0	128	128	+18	-12	2160	1200	+4.2	-2.8
S ₂	36.5	13.8	6.0	11.1	6.7	1.9	127	130	+07	+92	2160	780	+1.6	+21.4
h ₁	42.2	17.6	10.5	7.0	2.6	5.9	131	129	-79	+11	2520	1020	-18.4	+2.6
h ₂	42.2	11.0	11.1	12.9	1.8	12.9	129	258	-93	00	2520	660	-21.7	00
i ₁	42.6	32.5	4.6	6.0	8.0	6.9	126	129	+34	-09	2520	1920	+7.9	-2.1
i ₂	42.5	25.9	5.5	11.3	7.2	1.5	127	128	+17	+98	2520	1500	+4.0	+22.8
j ₁	42.9	16.1	1.0	1.5	11.8	11.8	128	128	+108	-98	2520	960	+25.2	-22.8
j ₂	42.8	9.5	2.1	6.5	10.7	6.2	128	127	+86	+07	2520	540	+20.0	+7
2.15 P	2.1	22.6	11.0	7.0	1.9	6.0	129	130	-91	+10	120	1320	-21.2	+2.3
12.45 Z	6.3	17.4	10.0	4.0	3.0	8.9	130	129	-70	-49	360	1020	-16.3	-11.4
							2056	2320						
							16	18						
							128.52	128.53						
							15	1928						
							16	2056						
							31	3984	128.52					

1816.8 1551.1 ✓

98.3 1322.1 ✓

1987.0 1163.3 ✓

2053.5 749.8 ✓

2083.2 1243.5 ✓

2102.3 1013.5 ✓

2164.2 1197.2 ✓

2161.6 801.4 ✓

2501.6 1022.6 ✓

2498.3 630.0 ✓

2527.9 1917.9 ✓

2524.0 1522.8 ✓

2545.2 937.2 ✓

2540.0 540.7 ✓
~~538.4~~

98.8 1322.3 ✓

343.7 1008.6 ✓

Dec. 17, 1903.

Plate ^D 10196 = a4605 Dec 18, 03

1.35

	x	y	a	b	c	D	$aBbC-aBc$	$x \times 60$	$y \times 60$	$C-a$	$B-D$
										$\times 233$	$\times 233$
P.	6.4	22.3	7.3	3.8	5.5	9.0	128 128 - 18 - 52	360	1320	- 4.2	- 12.1
g	7.3	16.4	9.1	5.0	3.7	7.9	128 129 - 54 - 29	420	960	- 12.6	- 6.8
a1	8.9	32.6	1.0	8.0	12.0	4.9	130 129 + 110 + 31	480	1920	+ 25.6	+ 7.2
a2	8.9	23.6	0.5	8.4	12.4	4.4	129 128 + 119 + 40	480	1380	+ 27.7	+ 9.3
b1	10.5	14.7	6.8	10.0	6.0	2.8	128 128 - 08 + 72	600	840	- 1.9	+ 16.8
b2	10.5	5.8	6.1	10.6	6.7	2.3	128 129 + 06 + 83	600	300	+ 1.4	+ 19.3
c1	15.1	12.1	11.9	2.0	1.0	10.9	129 129 - 109 - 89	900	720	- 25.4	- 20.7
c2	15.1	3.3	11.9	2.5	1.0	10.4	129 129 - 109 - 79	900	180	- 25.4	- 18.4
d1	17.0	20.6	13.0	9.1	12.9	3.7	259 128 - 01 + 54	1020	1200	- 2	+ 12.6
d2	17.1	11.7	12.6	9.9	0.3	3.0	129 129 - 123 + 69	1020	660	- 28.7	+ 16.1
e1	21.5	19.7	5.5	9.4	7.2	3.4	127 128 + 17 + 60	1260	1140	+ 4.0	+ 14.0
e2	21.6	10.7	5.1	9.8	7.7	3.1	128 129 + 26 + 67	1260	600	+ 6.1	+ 15.6
f1	30.9	22.9	1.5	11.0	11.4	2.0	129 130 + 99 + 90	1800	1320	+ 23.1	+ 21.0
f2	30.9	13.9	0.5	11.5	12.4	1.4	129 129 + 119 + 101	1800	780	+ 27.7	+ 23.5
g1	31.9	31.9	1.0	11.1	11.9	2.0	129 131 + 109 + 91	1860	1860	+ 25.4	+ 21.2
g2	31.9	22.9	0.5	11.2	12.4	1.5	129 127 + 119 + 97	1860	1320	+ 27.7	+ 22.6
P.	6.4	22.3	7.3	3.8	5.5	9.0	129 130 - 19 - 52	360	1320	- 4.4	- 12.1
h1	35.9	20.2	2.0	2.9	11.0	10.0	130 129 + 90 - 71	2100	1200	+ 21.0	- 16.5
h2	36.4	19.8	7.0	9.5	6.0	3.6	130 131 - 10 + 59	2160	1140	- 2.3	+ 13.7
i1	36.4	10.7	7.0	9.7	5.9	3.1	129 128 - 11 + 66	2160	600	- 2.6	+ 15.4
R2	38.2	10.1	9.8	1.9	2.9	11.0	127 129 - 69 - 91	2280	600	- 16.1	- 21.2
D	38.6	10.6	5.0	7.5	8.0	5.3	130 128 + 30 + 22	2280	600	+ 7.0	+ 5.1
S2	39.2	10.4	8.0	3.9	4.0	9.0	120 129 - 40 - 51	2340	600	- 9.3	- 11.9
h1	43.3	16.5	10.0	5.8	3.1	7.0	131 128 - 69 - 12	2580	960	- 16.1	- 2.8
h2	43.3	7.5	9.9	6.0	2.9	6.8	128 128 - 70 - 08	2580	420	- 16.3	- 1.9
J1	43.4	16.6	8.5	8.1	4.5	4.8	130 129 - 40 + 33	2580	960	- 9.3	+ 7.7
J2	43.8	31.4	3.0	4.8							

355.8	1307.9✓
407.4	953.2✓
505.6	1927.2✓
507.7	1389.3✓
598.1	856.8✓
601.4	319.3✓
874.6	699.3✓
874.6	161.6✓
989.6	1212.6✓
991.3	676.1✓
1264.0	1154.0✓
1266.1	615.6✓
1823.1	1341.0✓
1827.7	803.5✓
1885.4	1881.2✓
1887.7	1342.6✓
355.6	1307.9✓
2121.0	1183.5✓
2157.7	1153.7✓
2157.4	615.4✓
2263.9	578.8✓
2287.0	605.1✓
2330.7	588.1✓
2563.9	957.2✓ 417.2✓
2563.7	418.1✓
2570.7	967.7✓

	x	y	a	B	C	D	Date	B+D	C+B-D	x x 60	y x 60	x-233	y-233
i1	43.8	31.4	3.0	4.8	9.8	8.1	128	129	+68-33	2580	1860	+15.8	-7.7
i2	43.6	22.4	3.3	4.9	9.6	8.0	129	129	+63-31	2580	1320	+14.4	-7.2
j1	43.9	14.9	1.0	12.1	11.9	1.0	129	131	+109+111	2580	840	+25.4	+25.9
j2	43.9	6.0	0.9	12.8	11.9	12.9	128	257	+110-01	2580	360	+25.6	-2
P.	6.4	22.3	7.3	3.9	5.5	9.1	128	130	-18-52	360	1320	-4.2	-12.1
							642	776					
							5	6					
							128.56	128.91					

	x	y	a	B	C	D						c-a	B-D		
												x 235	x 235		
1.13	P	8.4	23.6	7.1	8.5	5.4	4.2	125	127	-17	+43	480	1380	-4.0	+10.1
	Q	7.3	17.6	9.0	7.0	3.8	5.8	128	128	-52	+12	420	1020	-12.2	+2.8
	a1	89	33.9	1.0	10.9	11.8	2.0	128	129	+108	+89	480	1980	+25.4	+20.9
	a2	8.9	24.9	1.1	11.8	11.6	1.0	127	128	+105	+108	480	1440	+24.7	+25.4
	b1	10.5	16.0	6.0	13.0	6.9	12.8	129	258	+09	+02	600	960	+2.1	+5
	b2	10.5	7.1	6.6	1.1	5.9	11.5	125	126	-07	-104	600	420	-1.6	-24.4
	c1	15.1	13.4	11.8	5.0	1.0	7.9	128	129	-108	-29	900	780	-25.4	-6.8
	c2	15.1	4.5	11.9	6.0	0.9	6.8	128	128	-110	-08	900	240	-25.8	-1.9
Reestimated	x	17.0										1020			
	b1	16.0	22.0	12.7	12.8	12.8	12.8	255	256	+01	00	960	1320	+2	00
	d2	16.9	13.1	0.2	0.9	12.6	12.0	128	129	+124	-111	960	780	+29.1	-26.1
	e1	21.6	20.9	5.5	12.0	7.1	0.6	126	126	+16	+114	1260	1200	+3.8	+26.8
	e2	21.6	12.1	5.6	0.9	7.1	11.9	127	128	+15	-110	1260	720	+3.5	-25.8
	f1	30.9	24.1	1.0	1.5	11.9	11.3	129	128	+109	-98	1800	1440	+25.6	-23.0
								1784	1920						
								14	15						

2595.8 1852.3 ✓

2594.4 1312.8 ✓

2605.4 865.9 ✓

2605.6 329.8 ✓

355.8 1307.9 ✓

476.0 1390.1 ✓

407.8 1022.8 ✓

505.4 2000.9 ✓

504.7 1465.4 ✓

602.1 930.5 ✓

598.4 395.6 ✓

874.6 773.2 ✓

874.2 238.1 ✓

90. 1290.0 ✓

930.2 1320.0 ✓

989.1 753.9 ✓

1263.8 1226.8 ✓

1263.5 694.2 ✓

1825.6 1417.0 ✓

Dec 17, 1903

Meas. to det. pos. of Phoebe (cont)

Plate D 10203 (Cont)

	x	y	a	B	C _{2.10}	^{Dec 17} a+B+C-a-B-C	x x 60	y x 60	c-a	B-D
f2	30.9	15.2	1.0	2.9	11.9	9.9 129 128 + 109 - 70	1800	900	+25.6	-16.4
g1	31.9	33.2	1.1	2.0	11.8	10.9 129 129 + 107 - 89	1860	1980	+25.1	-20.9
g2	31.9	24.2	1.0	2.8	11.8	10.0 128 128 + 108 - 72	1860	1440	+25.4	-16.9
P	8.4	23.4	7.0	8.4	5.6	4.1 126 125 - 14 + 43	480	1380	-3.3	+10.1
Hard to measure	H2	37.8	20.9	2.0	10.5	11.0 2.4 130 129 + 90 + 81	2220	1200	+21.2	+19.0
?	S1	39.0 38.4	20.2	12.9	3.0	12.9 9.9 258 129 00 - 69	2280 2340	1200	00	-16.2
	S2	38.8	11.4	1.5	4.4	11.4 8.1 129 125 + 99 - 37	2280	660	+23.3	-8.7
	Se	41.4	11.9	7.1	11.1	5.6 1.7 127 128 - 15 + 94	2460	660	-3.5	+22.1
	D*	42.0	2.2	12.8	2.0	12.9 10.7 257 127 + 01 - 87	2520	720	+2	-20.4
	R	42.6	11.8	4.7	10.4	8.2 2.2 129 126 + 35 + 82	2520	660	+8.2	+19.3
	h1	43.2	17.7	9.0	9.0	3.8 3.7 128 127 - 52 + 53	2580	1020	-12.2	+12.5
	h2	43.2	8.8	9.9	10.8	2.8 2.2 127 130 - 71 + 86	2580	480	-16.7	+20.2
	i1	43.7	32.6	3.0	8.0	9.4 4.3 124 123 + 64 + 37	2580	1920	+15.0	+8.7
	i2	na.	?							
	j1	43.9	16.2	1.0	8.0	11.8 9.7 128 127 + 108 - 67	2580	960	+25.4	-15.7
	j2	43.9	7.4	1.1	4.5	11.8 8.0 129 125 + 107 - 35	2580	420	+25.1	-8.2
	J1	46.5	18.2	5.2	2.1	7.3 10.3 125 124 + 21 - 82	2760	1080	+4.9	-19.3
2.45	P	8.4	23.6	7.1	8.8	5.6 4.0 127 128 - 15 + 48	480	1380	-3.5	+11.3
2.20						$\sqrt{2430 \cdot 2158}$				
						$\sqrt{19 \cdot 17}$				
						$\sqrt{127.76 \cdot 127.44}$				
						67				

2.45

2.20

1825.6 883.6 ✓

1885.1 1959.1 ✓

1885.4 1423.1 ✓

476.7 1390.1 ✓

2241.2 1219.0 ✓

2340.0 1183.8 ✓

2303.3 651.3 ✓

2456.5 682.1 ✓

2490.2 699.6 ✓

2528.2 679.3 ✓

2567.8 1032.5 ✓

2563.3 572.2 ✓

2595.0 1928.7 ✓

2605.4 944.3 ✓

2605.1 411.8 ✓

2764.9 1060.7 ✓

476.5 1391.3 ✓

Dec. 21, 1903

Means to determine pos. of Phoebe & other comparison stars.

2.45

Plate D 10 195^{a4618} Dec 22, 03

	x	y	A	B	C	D	$a+c+b+d$	$c-a$	$B-D$		
P	2.5	20.7	6.1	9.1	6.8	3.9	129 130+07+52	120	1200	+1.6	+12.1
g	7.3	15.7	9.0	8.8	3.9	4.0	129 128-51+48	420	900	-11.9	+11.2
a1	8.8	31.9	2.0	12.8	10.9	0.2	129 130+89+126	480	1860	+20.7	+29.4
a2	8.8	27.8	2.1	10.1	10.8	2.9	129 130+87+72	480	1620	+20.3	+16.8
x b1	10.4	14.2	7.1	2.2	5.8	10.6	129 128-13-84	600	840	-3.0	-19.6
x b2	10.4	10.0	7.9	12.8	5.0	12.8	129 256-29 00	600	600	-6.8	00
a1	15.1	11.6	12.1	7.0	0.7	5.8	128 128-114+12	900	660	-26.6	+2.8
a2	14.9	7.4	0.1	5.0	12.8	8.0	129 130+127-30	840	420	+29.6	-7.0
d1	16.9	20.2	0.1	2.0	12.7	10.9	128 129+126-89	960	1200	+29.4	-20.7
d2	16.9	16.0	1.4	12.7	11.5	0.1	129 128+101+126	960	960	+23.5	+29.4
e1	21.5	19.2	6.1	2.0	6.8	10.9	129 129+07-89	1260	1140	+1.6	-20.7
e2	21.5	14.9	6.9	12.8	6.0	0.2	129 130-09+126	1260	840	-2.1	+29.4
f1	30.9	22.2	1.0	3.8	11.8	9.1	128 129+108-53	1800	1320	+25.2	-12.3
f2	30.9	?									
g1	31.9	31.4	2.0	4.6	11.0	8.2	130 128+90-36	1860	1860	+21.0	-8.4
g2	31.8	27.2	2.1	2.0	10.8	11.0	129 130+87-90	1860	1620	+20.3	-21.0
P	2.5	20.7	6.1	9.0	6.8	3.9	129 129+07+51	120	1200	+1.6	+11.9
meal	34.4	15.7	6.0	10.1	6.1	3.0	121 131+01+71	2040	900	+2.2	+16.5
h2	35.1	13.5	11.0	6.0	2.0	6.8	130 128-90-08	2100	780	-21.0	-1.9
i1	38.1	17.6	12.8	6.9	12.9	6.0	257 129 101+09	2280	1020	+2.2	+2.1
i2	38.0	13.5	12.9	5.8	12.9	7.2	258 130 00-14	2280	780	00	-3.3
h1	41.1	15.9	12.9	11.8	2.0	1.1	129 129-89+107	2580	900	-20.7	+24.9
h2	41.1	11.7	11.1	9.8	1.6	3.0	127 128-95+68	2580	660	-22.1	+15.8
i1	41.6	30.9	4.9	10.9	8.0	2.1	129 130+31+88	2580	1800	+7.2	+20.5
							3213 3097				
							25. 24.				

121.6 1212.1✓

408.1 911.2✓

500.7 1889.4✓

500.3 1636.8✓

597.0 820.4✓

593.2 ~~574.0~~✓

873.4 662.8✓

869.6 413.0✓

989.4 1179.3✓

983.5 989.4✓

1261.6 1119.3✓

1257.9 869.4✓

1825.2 1307.7✓

1881.0 1851.6✓

1880.3 1599.0✓

121.6 1211.9✓

⁴⁰
2094.2 916.5✓

2079.0 778.1✓

2250.2 1022.1✓

^{9.0}
2256.2 776.7✓^{2559.3}
2619.3 924.9✓^{2557.9}
2617.9 675.8✓^{2557.2}
2647.2 1820.5✓

Dec. 21, 1903.

Measures to determine position of Phoebe & other companion stars.

Plate D 10195 Cont.

	x	y	A	B	C	D		x x 60	y x 60	C-A	B-D
								x 233	y 233		
P	2	4.6	26.6	5.0	8.9	7.8	4.1	128	130	+28	+48
								2580	2640	1560	+6.5 +11.2
J	1	4.9	14.4	1.1	5.9	11.8	6.9	129	128	+107	-10
								2580	2640	840	+24.9 -2.3
J	2	4.8	10.2	2.1	3.8	10.7	9.0	128	128	+86	-52
								2580	2640	600	+20.0 -12.1
P	2.5	29.6	6.0	9.1	6.7	3.8	12.9	129	129	+09	+53
								120	1200	+2.1	+12.3
								$\sqrt{514}$	$\sqrt{515}$		
								$\sqrt{4}$	$\sqrt{4}$		
								128.52	129.00		

December 24, 1903.

D 10189 = A 4603

	x	y	A	B	C	D							C-A	B-D	
													x-233	y-233	
2.10	P	5.4 7.1	20.5 7.0	7.1	7.0	5.9 7.0	130 128	128	-12	+12	300	1200	+28	+28	
	J	5.3	14.6	9.1	7.5	3.7	5.4	128	129	-54	+21	300	840	-12.7	+4.9
	a	7.0	30.7	12.9	10.8	12.8	2.1	257	129	-81	+87	420	1800	-2	+20.4
	a	7.0	21.6	12.8	7.8	12.8	5.0	256	128	00	+28	420	1260	00	+6.5
	b	8.5	13.0	6.1	12.9	6.9	12.9	130	258	+08	00	480	780	+1.9	00
	b	8.5	3.7	6.4	9.8	6.3	3.0	127	128	-01	+68	480	180	-2	+15.8
	c	13.1	10.4	11.1	4.6	1.7	8.1	128	127	-94	-35	780	600	-21.9	-8.2
	c	13.1	1.2	12.0	1.5	1.0	11.3	130	128	-110	-98	780	60	-25.8	-22.8
	d	15.0	18.9	12.8	12.0	12.9	1.0	257	130	+01	+110	900	1080	+2	+25.8
	d	15.5	9.6	12.4	9.0	0.3	3.9	127	129	-121	+51	900	540	-28.4	+11.9
	e	19.6	17.9	5.0	12.0	7.9	11.0	129	130	+29	+110	1140	1020	+6.8	+25.8
							$\sqrt{1799}$	$\sqrt{1544}$							
							42	39							

~~2586.5~~
~~2646.5~~ 1571.2_v
~~2644.9~~ 837.7_v
~~2600.0~~ 587.9_v
~~2660.0~~
 122.1 1212.3_v

297.2 1202.8_v
~~287.3~~ 844.9_v
 389.8 1820.3_v
 390.0 1266.5_v
 481.9 7500_p
 479.8 195.8_v
 758.1 591.8_v
~~754.2~~ 37.2_v
~~754.2~~ 757.2_v
~~870.2~~ 1105.8_v
~~871.6~~ 1054.2_v
 871.6 551.9_v
 1146.8 1045.8_v

Dec. 24, 1903

Measure to determine position of Phoebe ~~relative~~ comparison stars

Plate D 10189

	x	y	A	B	C	D	a+c+b+d	c-a	b-d	x x 60	y x 60	x 235	y 235
e	219.6	8.6	5.0	8.9	7.9	4.0	129	129+29+49		1140	480	+6.8	+11.4
f	29.0	21.1	12.9	0.5	12.8	12.2	257	127-01-117		1740	1260	-2	-27.3
f2	28.9	11.7	0.3	10.0	12.5	29	128	129+122+71		1680	660	+28.7	+16.5
g	30.0	30.0	12.9	12.8	12.9	12.9	258	25700-01		1800	1800	00	-2
g2	30.0	20.8	12.9	10.3	12.7	2.5	256	128-02+78		1800	1200	-5	+18.2
P	5.4	30.6	7.0	7.0	5.9	5.8	129	128-11+12		300	1200	-2.6	+2.8
H	34.7	18.1	4.0	1.0	9.0	12.0	130	130+50-110		2040	1080	+11.8	-25.6
S	35.5	17.5	6.0	7.0	6.9	6.0	129	130+09+10		2100	1020	+2.1	+2.3
S2	35.4	8.3	7.0	3.9	5.8	9.0	128	129-12-51		2100	480	-2.8	-11.9
S	38.4	8.4	8.8	4.0	4.0	8.9	128	129-48-49		2280	480	-11.3	-11.4
Q	38.6	7.7	4.1	9.7	8.5	3.1	126	128+44+66		2280	420	+10.3	+15.4
h	41.3	14.6	9.1	8.0	3.9	5.0	130	130-52+30		2460	840	-12.2	+7.0
h2	41.3	5.4	10.0	5.0	3.1	7.9	131	129-69-29		2460	300	-16.2	-6.8
i	41.8	29.6	2.0	7.0	10.9	6.0	129	130+89+10		2460	1740	+20.9	+2.3
i2	41.7	20.3	3.1	3.9	9.8	9.0	129	129+67-51		2460	1200	+15.7	-11.9
j	42.0	13.2	12.9	2.0	12.9	10.8	258	12800-88		2520	780	00	-20.5
j2	41.9	3.9	0.9	11.8	11.9	1.1	128	129+110+107		2460	180	+25.8	+24.9
J	42.9	14.9	1.0	11.9	12.0	1.0	130	129+110+109		2520	840	-25.8	+25.4
2.40	54	20.6	7.0	6.9	6.0	6.0	130	129-10+09		300	1200	-2.4	+2.1

$\sqrt{2963}$ 23.
 $\sqrt{2577.5}$ 20.
 128.70 128.78

1146.8 491.4 ✓
1709.8 1232.7 ✓
1708.4 676.5 ✓
1770.0 1769.8 ✓
1769.5 1218.2 ✓
297.4 1202.8 ✓
2051.6 1054.4 ✓
2102.1 1022.3 ✓
2097.2 468.6 ✓
2268.8 468.6 ✓
2290.3 435.4 ✓
2447.9 847.0 ✓
2443.9 293.2 ✓
2480.7 1742.3 ✓
2475.6 1188.1 ✓
2490.0 759.5 ✓
2488.6 204.9 ✓
2494.4 865.4 ✓
297.6 1202.1 ✓

Dec 28, 1903

Measurements to determine position of Phoebe & other comparison stars

11.30

Plate D 10209 = A 4700
Dec 29, 03

	x	y	A	B	C	D	A+C	B+D	x x 60	y x 60	C-A	B-D
P.	7.6	20.4	5.0	4.8	7.9	8.0	129	128+29-32	420	1200	+6.8	-7.5
g	6.3	17.3	9.1	3.8	3.7	9.0	128	128-54-52	360	1020	-12.6	-12.1
a1	7.9	33.6	1.3	7.6	11.5	5.1	128	127+102+25	420	1980	+23.8	+5.8
a2	7.9	30.1	1.3	0.9	11.7	12.0	130	129+104-111	420	1800	+24.2	-25.9
b1	9.4	15.7	6.8	9.7	6.1	3.2	129	129-07+65	540	900	-1.6	+15.1
b2	9.4	12.3	6.7	2.9	6.0	9.9	127	128-07-70	540	720	-1.6	-16.3
c1	14.1	13.2	11.8	2.0	1.0	10.9	128	129-108-89	840	780	-25.2	-20.7
c2	14.1	9.6	12.0	7.5	0.9	5.2	129	127-111+23	840	540	-25.9	+5.4
d1	15.9	21.7	0.9	9.1	11.8	3.8	127	129+109+53	900	1260	+25.4	+12.3
d2	15.9	18.2	0.5	2.1	12.4	10.9	129	130+119-88	900	1080	+27.7	-20.5
e1	20.6	20.6	5.8	9.0	7.0	3.8	128	128+12+52	1200	1200	+2.8	+12.1
e2	20.5	17.3	6.0	2.1	6.9	10.6	129	127+09-85	1200	1020	+2.1	-19.8
f1	29.9	23.9	1.0	11.1	11.9	1.8	129	129+109+93	1740	1380	+25.4	+21.7
f2	29.9	20.4	1.0	4.6	11.9	8.1	129	127+109-35	1740	1200	+25.4	-8.2
g1	30.9	32.9	1.0	11.6	11.8	1.2	128	128+108+104	1800	1920	+25.2	+24.2
g2	30.9	29.4	1.1	4.8	11.9	8.0	130	128+108-32	1800	1740	+25.2	-7.5
p	7.6	20.4	7.9	8.0	7.9	8.0	129	128+29-32	420	1200	+6.8	-7.5
d1	31.8	17.6	2.0	7.5	10.8	5.5	128	130+88+20	1860	1020	+20.5	+4.7
d2	31.8	14.1	2.0	0.9	11.0	12.0	130	129+90-111	1860	840	+21.0	-25.9
h	35.5	17.5	6.0	6.0	6.7	7.0	127	130+07-10	2100	1020	+1.6	-2.3
Lines on the left, hard to see												
Cannot see { 38.4 13.6? Doubt. Cannot meas.												
Lines of square approx → { 39.4 13.7? 8.0 9.2 4.9 3.8 129 130 -31+54 2340 780 -7.2+12.6												
{ 39.4 13.5? 40.2 13.7 12.5 9.0 0.5 3.9 130 129 -120+51 2400 780 -28.0+11.9												
{ 42.1 17.5 10.0 6.9 3.0 6.0 130 129 -70+09 2520 1020 -16.3+2.1												
2960 2956												
23 23												

426.8 1192.5 ✓

347.4 1007.9 ✓

443.8 1985.8 ✓

444.2 1774.1 ✓

538.4 915.1 ✓

538.4 703.7 ✓

814.8 759.3 ✓

814.1 545.4 ✓

925.4 1272.3 ✓

927.7 ⁶¹1059.5 ✓

1202.8 1212.1 ✓

1202.1 1000.2 ✓

1765.4 1401.7 ✓

1765.4 1191.8 ✓

1825.2 1944.2 ✓

1825.2 1732.5 ✓

426.8 1192.5 ✓

1880.5 1024.7 ✓

1881.0 814.1 ✓

2101.6 1017.7 ✓

2332.8 792.6 ✓

2372.0 791.9 ✓

2503.7 1022.1 ✓

Dec. 28, 1903.

Measures to determine position of Phoebe & other comparison stars.

Plate D 10209¹ Cont.

x, y, a, b, c, d $a+c, b+d, c-a, b-d$ $x \times 60, y \times 60$ $x \times 233, y \times 233$
 ha N.S.

x_1	42.6	32.5	3.9	5.9	8.9	7.9	128	129	+50	-11	2520	1920	+11.6	-2.6
x_2	42.6	28.9	4.0	11.3	8.9	11.7	129	130	+49	+96	2520	1680	+11.4	+22.4
f_1	42.9	16.1	1.0	12.9	12.0	12.8	130	257	+110	+01	2520	960	+25.6	+2
f_2	42.9	12.6	1.0	6.0	12.0	6.8	130	128	+110	-08	2520	720	+25.6	-1.9
P.	7.6	20.4	5.0	4.8	8.0	8.0	130	128	+30	-32	420	1200	+7.0	-7.5

Hard to see
lines

12.00

$$\begin{array}{r} \sqrt{647} \cdot \sqrt{772} \\ \hline 51 \cdot 61 \\ \hline \sqrt{128.82} \quad \sqrt{128.55} \end{array}$$

1.00

Dec. 29, 1903. Dec. 30, 1903.

D 10192 = A 4610

1.00

	x	y	A.	B.	C.	D.	$a+c$	$B+D$	$C-A$	$B-D$	$X \times 60$	$Y \times 60$	$X \times 233$	$Y \times 233$
P	4.6	5.0	4.0	5.0	8.9	7.9	129	129	129	129	129	129	129	129
B	7.3	16.7	9.5	9.0	30	3.8	125	128	-65	+52	-65	+52	420	960
a	8.9	33.1	1.6	0.9	11.3	12.0	129	129	+97	-111	+97	-111	480	1980
a2	n.s.													
b1	10.5	15.3	6.0	3.0	6.8	9.8	128	128	+08	-68	+08	-68	600	900
b2	n.s.													
c1	15.1	12.6	11.1	8.0	1.4	4.9	125	129	-97	+31	-97	+31	900	720
c2	15.2	3.8	10.1	10.3	2.9	4.4	130	127	-72	+79	-72	+79	900	180
d1	17.0	21.3	12.8	3.0	12.9	9.9	257	129	+01	-69	+01	-69	1020	1260
d2	17.1	12.4	12.1	5.0	0.6	7.7	127	127	-115	-27	-115	-27	1020	720
							1150	1026						
							9	8						

2531.6 1917.4 ✓

2531.4 1702.4 ✓

2545.6 930.2 ✓

2545.6 718.1 ✓

427.0 1192.5 ✓

251.4 1313.2 ✓

404.9 972.1 ✓

502.6 1954.1 ✓

601.9 884.2 ✓

877.4 727.2 ✓

883.2 198.4 ✓

990.2 1244.2 ✓
3.9

993.2 713.7 ✓

December 29, 1903.
Measures to det. position of Phoebe.

Phoebe Plate D 10204

	x	y	A	B	C	D	Date		B-A	C-A	B-D	C-D	x x60		y x60	x233		y233
e1	21.5	20.3	5.7	3.0	7.0	9.9	127	129	+13	-69	1260	1200	+3.6	-16.1				
e2	n.s. ?																	
f1	30.9	23.4	1.0	5.0	11.9	7.8	129	128	+109	-28	1800	1380	+25.4	-6.5				
f2	30.9	14.6	1.0	8.5	11.9	5.0	129	135	+109	+35	1800	840	+25.4	+8.2				
g1	31.9	32.5	1.5	5.6	11.0	7.1	125	127	+95	-15	1860	1920	+32.1	-3.5				
g2	31.8	23.6	1.9	7.9	11.0	4.9	129	128	+91	+30	1860	1380	+21.2	+7.0				
P.	4.6	22.4	4.0 8.8	5.0 7.9	8.0 8.9	8.0	129	130	+49	-30	240	1320	+11.4	-7.0				
H	35.2	21.1	10.0	1.0	3.0 11.0	11.0	130	120	-70	-100	2100	1260	-16.3	-23.3				
S1	36.1	20.8	12.0	10.0	1.0	2.8	130	128	-110	+72	2160	1200	-25.6	+16.8				
S2	36.2	11.9	10.4	12.0	2.5	0.9	129	129	-79	+111	2160	660	-18.4	+25.9 +22.6				
S	37.5	10.7	6.0	9.0	6.9	4.0	129	130	+09	+50	2220	600	+2.1	+11.6				
R	38.4	10.6	7.4	9.0	5.5	4.0	129	130	-19	+50	2280	600	-4.4	+11.6				
H	40.2	17.1	10.1	1.0	2.9	12.0	130	130	-72	-110	2400	1020	-16.8	-25.6				
i1	43.6	32.0	4.0 2.2	12.9	8.8	13.0	130	259	+46	-01	2580	1920	+10.7	-2				
i2	43.6	23.3	4.0	2.9	8.9	9.9	129	128	+49	-70	2580	1380	+11.4	-16.3				
h1	43.2	17.1	10.0	1.0	3.0	11.9	130	129	-70	-109	2580	1020	-16.3	-25.7				
h2	43.2	8.3	10.0	3.0	2.8	10.0	128	130	-72	-70	2580	480	-16.8	-16.3				
j1	43.9	15.6	1.1	7.9	11.8	5.0	129	129	+107	+29	2580	900	+24.9	+6.8				
j2	43.9	6.8	1.5	10.1	11.3	2.8	128	129	+98	+73	2580	360	+22.8	+17.0				
1. 40	4.6	22.4	4.0 4.0	5.0 5.8	8.9	8.0	129	130	+49	-30	240	1320	+11.4	-7.0				
							2448	2578										
							19	20										
							128.50	128.71										

1263.0 1183.9 ✓

1825.4 1373.5 ✓

1825.4 848.2 ✓

1882.1 1916.5 ✓

1881.2 1387.0 ✓

251.4 1313.0 ✓

^{83.7}
~~2074.4~~ 1236.7 ✓

2134.4 1216.8 ✓

^{5.9}
2141.6 682.6 ✓

2222.1 611.6 ✓

2275.6 611.6 ✓

2383.2 994.4 ✓

2590.7 1889.8 ✓

2591.4 1363.7 ✓

2563.7 994.4 ✓

2563.2 463.7 ✓

2604.9 906.8 ✓

2602.8 377.0 ✓

251.4 1313.0 ✓

Dec 31, 1903

Measures to determine pos. of Phoebe.

Plate D10188 = a 4608

	x	y	a	B	C	D	a+b+c	a-b-d	c-a	B-D	x x60	y x60	x233	x232
x2 00	7.5	7.5	8.0	6.8	Jan 1, 04									
Right image meas. $\times 1$	4.4	21.4	7.5	4.5	5.2	8.4	12.7	12.9	-23	-39	240	1260	-5.4	-9.0
	6.3	15.6	9.6	6.9	3.3	6.0	12.9	12.9	-63	+09	360	900	-14.4	+2.1
a1	7.9	31.9	2.0	11.0	10.9	2.0	12.9	130	+89	+90	420	1860	+20.7	+20.9
a2 ms.														
b1	9.5	14.0	6.1	13.0	6.8	12.8	12.9	258	+07	+02	540	840	+1.6	+5
b2	9.5	3.8	5.9	10.6	7.0	2.8	12.9	134	+11	+78	540	180	+2.6	+18.2
c1	14.1	11.5	11.1	5.8	2.0	7.1	131	129	-91	-13	840	660	-21.2	-3.0
Reestimated $\times 1$ Apr 25	14.1	11.5	11.1	5.8	2.0	7.1	131	129	-91	-13	840	660	-21.2	-3.0
Assumed to be $\times 1$ 13.1	13.1	1.3	12.0	3.0	0.9	10.0	12.9	130	-111	-70	1800	60	-22.6	-16.3
d1	15.9	20.0	0.8	12.9	12.1	12.9	12.9	258	+113	00	900	1200	+26.3	00
d2	15.9	9.8	0.9	10.0	12.0	2.7	12.9	127	+111	+73	900	540	+22.6	+17.0
e1	20.6	19.1	5.8	0.5	7.0	12.3	12.8	128	+12	-118	1200	1140	+2.8	-27.5
e2	20.5	8.8	6.0	10.2	7.0	2.5	130	127	+10	+77	1200	480	+2.3	+17.9
f1	29.9	22.2	1.1	3.0	11.9	10.0	130	130	+108	-70	1740	1320	+25.2	-16.3
f2	29.9	12.1	2.0	0.6	11.0	12.2	130	128	+90	-116	1740	720	+21.0	-27.0
g1	30.8	31.2	2.0	3.1	10.8	9.9	128	130	+88	-68	1800	1860	+20.5	-15.8
g2	30.8	21.1	2.0	1.0	10.9	12.0	12.9	130	+89	-110	1800	1260	+20.7	-25.6
h1	4.4	21.4	7.6	4.7	5.2	8.2	12.8	12.9	-24	-35	240	1260	-5.6	-8.1
h2	34.2	19.8	11.0	8.0	2.0	4.9	130	12.9	-90	+31	2040	1140	-21.0	+7.2
i1	34.9	19.6	1.0	8.0	12.0	4.8	130	12.8	+110	+32	2040	1140	+25.6	+7.5
i2	34.9	9.3	1.8	3.9	10.9	9.0	12.7	12.9	+91	-51	2040	540	+21.2	-11.9
j1	Bro. Cannot measure													
k1	37.4	8.4	9.1	4.0	3.8	9.0	12.9	130	-53	-50	2220	480	-12.3	-11.6
k2	38.1	8.3	12.0	3.0	1.0	10.0	130	130	-110	-70	2280	480	-25.6	-16.3
	$\sqrt{\frac{2710 \cdot 2972}{21 \cdot 23}}$													

234.6 1251.0 ✓

345.6³ 902.1 ✓

440.7 1880.9 ✓

541.6 810.5 ✓

542.6 198.2 ✓

~~818.8~~~~758.8~~ 657.0 ✓~~814.1~~~~757.4~~ 43.8 ✓

926.3 1170.0 ✓

25.9

922.6 557.9 ✓

1202.8 1112.6 ✓

1202.3 497.9 ✓

1765.2 1303.7 ✓

1761.0 693.2 ✓

1820.5 1844.2 ✓

1820.7 1234.4 ✓

234.4 1251.9 ✓

2019.0 1147.2 ✓

2065.6 1147.5 ✓

2061.2 528.2 ✓

2207.7 468.4 ✓

2254.4 463.7 ✓

Dec 31, 1903

Measures to determine pos. of Phoebe.

Plate D 1018

	x	y	A	B	C	D	a+b+c	a-b+c	x ² 60	y ² 60	C-a	B-D	
											x ² 33	x ² 32	
D	44.6	16.0	5.1	12.9	7.8	0.1	129	130	+27	+128	2400	960	+6.3 +29.8
i1	42.6	30.9	5.0	10.0	8.0	2.9	130	129	+30	+71	2520	1800	+7.0 +16.5
i2	42.6	20.6	5.0	8.0	7.9	4.9	129	129	+29	+31	2520	1200	+6.8 +7.2
h1	42.2	15.9	10.0	10.9	2.9	2.0	129	129	-71	+89	2520	900	-16.5 +20.7
h2	n.s.												
j1	42.9	14.4	1.0	6.0	11.9	7.0	129	130	+109	-10	2520	840	+25.4 -2.3
j2	42.9	4.3	2.0	3.1	10.9	10.0	129	131	+89	-69	2520	240	+20.7 -16.0
P	44	21.4	7.5	4.6	5.3	8.2	128	128	-22	-36	240	1260	-5.1 -84
							903	906					
							7	7					
							129.04	129.27					

Jan 1, 1904

D 10202 = A 4713

	x	y	A	B	C	D			x ² 60	y ² 60	C-a	B-D	
											x ² 33	x ² 32	
P	8.8	20.6	2.1	8.6	10.8	4.1	129	127	+87	+45	480	1200	+20.3 +10.5
z	6.3	17.8	9.0	10.3	3.8	2.7	128	130	-52	+76	360	1020	-12.1 +17.7
a1	7.9	34.1	1.8	1.0	11.1	11.9	129	129	+93	-109	420	2040	+21.7 -25.4
a2	n.s.												
b1	9.4	16.3	6.9	3.7	6.0	9.3	129	130	-09	-56	540	960	-2.1 -13.0
b2	9.4	12.5	6.9	6.0	5.9	7.0	128	130	-10	-10	540	720	-2.3 -2.3
c1	14.1	13.6	11.9	8.0	0.9	4.9	128	129	-110	+31	840	780	-25.6 +7.2
c2	14.1	9.6	11.0	7.9	1.8	5.0	128	129	-92	+29	840	540	-21.4 +6.8
d1	15.9	22.3	4.3	3.4	12.4	9.5	127	129	+121	-61	900	1320	+28.2 -14.2
d2	16.1	18.3	12.1	3.0	0.8	10.0	129	130	-113	-70	960	1080	-26.3 -16.3
							1155	1163					
							9.	9.					

Phoebe. Not to be measured.

A 4293 = D April 1900

97 = D 10209, 10210

10210.

4331 = D 10211, 10212.

40 = D 10213.

2406.3 989.8 ✓
2527.0 1816.5 ✓
2526.8 1207.2 ✓
2526.8 1192.8 ✓
2503.5 920.7 ✓

2545.4 837.7 ✓
2540.7 223.9 ✓
234.9 1251.6 ✓

Image was not very
but uncertain. It is
probably the satellite
but the image is so faint
measure satisfactory.
W. P. Fleming

Received from W. P. Fleming.
January 5, 1904, with instructions
not to measure, as wrong image
had been identified and
marked as Phoebe.

W. P. Fleming
January 5, 1904.

500.3 1210.5 ✓
347.9 1037.7 ✓
441.7 2014.6 ✓

537.9 947.0 ✓
537.7 717.7 ✓
814.4 787.2 ✓
818.6 546.8 ✓
928.2 1305.8 ✓
933.7 1063.7 ✓

Jan 1, 1904

Measures to determine pos. of Phoebe.

D 10202 (cont)

	x	y	A	B	C	D	a+c	b+d	c-a	b-d	x x 60	y x 60	x 2.33	y 2.33
Re1	20.5	21.3	5.9	3.0	7.0	9.8	129	128	+11	-68	1250	1260	+26	-15.8
e2	20.6	17.3	5.1	3.0	7.9	12.0	130	130	+28	-70	1200	1020	+6.5	-16.3
f1	29.9	24.4	1.0	5.0	12.0	7.8	130	128	+110	-28	1740	1440	+25.6	-6.5
f2	29.9	20.4	0.8	5.1	12.0	7.9	128	130	+112	-28	1740	1200	+26.1	-6.5
g1	30.9	33.5	1.0	5.6	11.9	7.2	129	128	+109	-16	1800	1980	+25.4	-3.7
g2	30.9	29.4	0.5	5.0	12.1	7.9	126	129	+116	-29	1800	1740	+27.0	-6.8
P	8.8	20.6	2.0	8.7	10.8	4.0	128	127	+88	+47	480	1200	+20.5	+11.0
L	32.6	18.1	4.1	1.9	8.6	11.0	127	129	+45	-91	1920	1080	+10.5	-21.2
I2	32.6	14.2	3.9	1.0	8.9	11.8	128	128	+50	-108	1920	840	+11.6	-25.2
H	36.8	18.2	2.0	2.0	11.0	10.9	130	129	+90	-89	2160	1080	+21.8	-20.7
S	40.5	13.5	9.0	5.0	4.0	7.9	130	129	-50	-29	2400	780	-11.6	-6.8

Cannot
distinguish
objects

(T. Burned out
h1
" "
h2
" "

i1 42.7 32.9 3.9 12.0 9.0 0.8 129 128 +51 +112 2520 1920 +11.9 +26.1

i2 42.7 29.1 3.9 1.8 9.0 10.9 129 127 +51 -91 2520 1740 +11.9 -21.2

j1 42.9 16.4 2520 960

j2 42.9 12.5 9.5 7.8 12.3 5.0 128 128 +118 +28 2520 720 +27.5 +6.5

P 8.8 20.7 2.0 8.8 10.8 4.0 128 128 +88 +48 480 1200 +20.5 +11.2

1929 1926
15 15

128.50 128.70

1202.6 1244.2 ✓

1206.5 1003.7 ✓

1765.6 1433.5 ✓

1766.1 1193.5 ✓

1825.4 1976.3 ✓

127.0
~~1822.6~~ 1733.2 ✓

500.5 1211.0 ✓

1930.5 1058.8 ✓

1931.6 814.8 ✓

2181.0 1059.3 ✓

2388.4 773.2 ✓

2531.9 1946.1 ✓

2531.9 1718.8 ✓

~~2547.5~~ 726.5

2547.5 726.5 ✓

500.5 1211.2 ✓

Jan 12, 1904

Measurements of Phoebe and other comp. stars?

	x	y	A	B	C	D	$a+c$	$b+d$	$c-a$	$B-D$	$x \times 60$	$y \times 60$	$x \times 234$	$y \times 234$
2 15														

-43.6
~~446.4~~ 722.8
 -34.7 208.5
~~475.7~~ 145.5
 223.4 1219.0 ✓
 233.0 567.4 ✓
 239.3 48.8 ✓
 344.1 1085.4 ✓
 352.5 565.3 ✓
 624.6 1024.2 ✓
 626.0 506.2 ✓
 860.6 1945.3 ✓
 866.0 3
 872.2 1428.8 ✓
 1921.9 889
 1919.8 ✓
 1927.3 321.1 ✓
 223.6 1219.0 ✓
 2107.5 2048.9 ✓
 2113.3 1529.5 ✓
 2213.2 546.8 ✓
 2246.2 532.7 ✓
 2262.9 532.0 ✓
 2275.8 561.5 ✓
 2351.7 1003.4 ✓
 2352.2 483.0 ✓
 2378.5 1339.0 ✓
 2374.0 825.7 ✓

Jan 12, 1904

Meas. to determine pos. of Phoebe

D 10215 (cont)

		A. B. C. D. ^{Jan 14 '04}						a+c B+D c-a B-D		x x 60	y x 60	x 234	y 234	
20'		40.4	18.2	7.7	2.0	5.0	10.9	127	129	-27	-89	2400	1080	-6.3 -20.8
20 ²		40.5	9.6	6.0	7.0	6.8	5.9	128	129	+08	+11	2400	540	+1.9 +2.6
23'		41.9	16.9	1.8	12.0	11.0	1.0	128	130	+92	+110	2460	960	+21.5 +25.7
23 ²		41.9	8.4	0.6	4.0	12.1	8.7	127	127	+115	-47	2460	480	+26.9 -11.0
I		44.6	15.8	4.8	10.7	8.0	2.1	128	128	+32	+86	2640	900	+7.5 +20.1
3 00 P.		4.3	20.8	10.0	10.4	2.9	24	129	128	-71	+80	240	1200	-16.6 +18.7
								767	771					
								6	6					
								128.36	128.23					

*D 10221 = A 4379

	$\checkmark$	$\checkmark$	A	B	C	D	$a+c$	$B+D$	$C-a$	$B-D$	$\checkmark \times 60$	$\checkmark \times 60$	$\times 233$	$\times 234$
3 10 P.	12.7	18.7	2.1	9.6	10.7	3.4	128	130	+86	+62	720	1080	+20.0	+14.5
	16.5	20.7	5.1	9.9	7.9	3.0	130	129	+28	+69	960	1200	+6.5	+16.1
85'	1.5	35.6	6.7	6.7	6.1	4.2	128	129	-06	+45	60	2100	-1.4	+10.5
85 ²	1.4	28.3	7.1	3.2	5.8	9.6	129	128	-13	-64	60	1680	-3.0	-15.0
84'	1.4	21.4	7.8	4.8	5.1	8.0	129	128	-27	-32	60	1260	-6.3	-7.5
84 ²	1.4	13.9	8.1	12.1	4.7	0.6	128	127	-34	+115	60	780	-7.9	+26.9
93 ²	14.7	37.8	3.6	11.0	9.0	1.9	126	129	+54	+91	840	2220	+12.6	+21.3
91 ²	14.6	30.5	4.1	5.8	8.8	7.0	129	128	+47	-12	840	1800	+11.0	-2.8
94	19.5	7.4	5.9	5.0	7.0	7.9	129	129	+11	-29	1140	420	+2.6	-6.8
*94 ²	19.5	0.1	6.5	12.6	6.3	0.3	128	(129)	-02	+12.3	1140	00	-5	+28.8
							1156	1027						
							9	8						
							1154	1157						

*Line cut off-

*Line cut off-

³
 2593.7 1059.2 ✓
 2401.9 542.6 ✓
 2481.5 985.7 ✓
 2486.9 469.0 ✓
 2647.5 920.1 ✓
 223.4 1218.7 ✓

740.0 1094.5
 966.5 1216.1 ✓
 58.6 2110.5 ✓
 57.0 1665.0 ✓
 53.7 1252.5 ✓
 52.1 806.9 ✓
 852.6 2241.3 ✓
 851.0 1797.2 ✓
 1142.6 413.2 ✓
 1139.5 28.8 ✓

Jan 13, 1904

Measures to determine pos. of Phoebe.

D 10221 (cont)

Jan 14 '04														C-a B-D	
H?	p	y	A	B	C	D	a+c	B+D	C-a	B-D	v x 60	y x 60	x 233	x 234	
H?	21.6	20.6	5.1	7.8	7.8	5.0	12.9	12.8	+2.7	+2.8	12.60	12.00	+6.3	+6.6	
D	23.8	13.1	1.5	0.9	11.2	12.0	12.7	12.9	+9.7	-11.1	13.80	7.80	+22.6	-26.0	
S	24.7	12.9	3.0	11.0	10.0	1.8	13.0	12.8	+7.0	+9.2	14.40	7.20	+16.3	+21.5	
R	24.9	13.4	1.2	5.0	11.8	8.0	13.0	13.0	+10.6	-3.0	14.40	7.80	+24.7	-7.0	
t	25.3	12.4	9.0	6.0	3.8	6.8	12.8	12.8	-5.2	-0.8	15.00	7.20	-12.1	-1.9	
P	12.8	18.7	2.1	9.8	10.7	3.1	12.8	12.9	+8.6	+6.7	7.20	10.80	+29.0	+15.7	
	16.5	20.7	5.1	9.8	7.8	3.0	12.9	12.8	+2.7	+6.8	9.60	12.00	+6.3	+15.9	
97	25.5	27.6	6.7	7.6	6.0	5.2	12.7	12.8	-0.7	+2.4	15.00	22.20	-1.6	+5.6	
97	25.4	30.3	7.1	2.5	5.8	10.3	12.9	12.8	-1.3	-7.8	15.00	18.00	-3.0	-18.6	
98	26.9	32.6	1.2	8.0	11.5	4.8	12.7	12.8	+10.3	+3.2	15.60	19.20	+24.0	+7.5	
98	26.8	25.2	2.0	2.9	10.9	10.0	12.9	12.9	+8.9	-7.1	15.60	15.00	+20.7	-16.6	
Can not see image well.	26.1	21.4	10.9	3.0	1.1	9.8	13.0	12.8	-10.8	-6.8	15.60	12.60	-25.2	-15.9	
T	26.0	13.9	12.8	11.6	0.1	1.3	12.9	12.9	-12.7	+10.3	15.60	7.80	-29.6	+24.1	
10	27.1	21.6	12.0	8.8	1.0	4.0	13.0	12.8	-11.0	+4.8	16.20	12.60	-25.6	+11.2	
10	27.0	14.3	12.9	3.7	13.0	9.0	2.5	12.7	+0.1	-5.3	16.20	8.40	+2	-18.4	
01	29.1	25.6	12.0	7.0	0.9	5.8	12.9	12.8	-11.1	+1.2	17.40	15.00	-25.9	+2.8	
01	29.0	18.2	12.9	2.0	0.1	10.9	13.0	12.9	-12.8	-8.9	17.40	10.80	-29.8	-20.8	
04	34.1	24.5	12.1	6.7	0.7	6.1	12.8	12.8	-11.4	+0.6	20.40	14.40	-26.6	+1.5	
04	33.9	17.2	0.5	1.8	12.3	11.1	12.8	12.9	+11.8	-9.3	19.80	10.20	+27.5	-21.8	
08	43.7	31.1	2.9	1.0	10.0	11.9	12.9	12.9	+7.1	-10.9	25.80	18.60	+16.5	-25.5	
08	43.6	23.6	3.5	8.8	9.3	4.1	12.8	12.9	+5.8	+4.7	25.80	13.80	+13.5	+11.0	
3 50 P	12.7	18.7	2.0	9.6	11.0	3.4	12.8	13.0	+8.8	+6.2	7.20	10.80	+20.5	+14.5	
	16.6	20.7	5.1	9.8	8.8	3.0	12.9	12.8	+2.7	+6.8	9.60	12.00	+6.3	+15.9	
*00	27.9	18.6	1.3	6.9	11.5	6.0	12.8	12.9	+10.2	+0.9	16.20	10.80	+23.8	+2.1	

9 1154 9 1157
23 2960 22 2828
32) 4114 31) 3985

22. 21.
128.78 128.38
2960. 2828.
23 22
128.78 128.41

The star "00" was measured after adding a+c+B+D columns. Found it had not been included, and added again - getting results in red ink. Apr 6, 04 E.S.

$\begin{array}{r} 1206.6 \\ 1266.3 \end{array}$ $\begin{array}{r} 1193.4 \\ 1402.6 \end{array}$ ✓
 $\begin{array}{r} 1456.3 \\ 1464.7 \end{array}$ $\begin{array}{r} 741.5 \\ 773.0 \end{array}$ ✓
 $\begin{array}{r} 1487.9 \\ 742.0 \end{array}$ $\begin{array}{r} 718.1 \\ 1095.7 \end{array}$ ✓
 ~~$\begin{array}{r} 966.3 \\ 1498.4 \end{array}$~~ ~~$\begin{array}{r} 1215.9 \\ 2225.6 \end{array}$~~ ✓
 $\begin{array}{r} 1497.0 \\ 1584.0 \end{array}$ $\begin{array}{r} 1781.4 \\ 1937.5 \end{array}$ ✓
 $\begin{array}{r} 1580.7 \\ 1534.8 \end{array}$ $\begin{array}{r} 1483.4 \\ 1244.1 \end{array}$ ✓
 $\begin{array}{r} 1530.4 \\ 1594.4 \end{array}$ $\begin{array}{r} 804.1 \\ 1271.2 \end{array}$ ✓
 $\begin{array}{r} 1590.2 \\ 1714.1 \end{array}$ $\begin{array}{r} 828.6 \\ 1502.8 \end{array}$ ✓
 $\begin{array}{r} 1710.2 \\ 2013.4 \end{array}$ $\begin{array}{r} 1059.2 \\ 1441.5 \end{array}$ ✓
 $\begin{array}{r} 2007.5 \\ 2596.5 \end{array}$ $\begin{array}{r} 998.2 \\ 1834.5 \end{array}$ ✓
 $\begin{array}{r} 2593.5 \\ 740.5 \end{array}$ $\begin{array}{r} 1391.0 \\ 1094.5 \end{array}$ ✓
 ~~$\begin{array}{r} 966.3 \\ 1643.8 \end{array}$~~ ~~$\begin{array}{r} 1215.9 \\ 1082.1 \end{array}$~~ ✓

*The wrong object was marked for Phoebe on D 10221. Another object was marked by Prof. W. H. P. and measured B 29, p 46 - Measure transferred to this book - in red ink.

Jan 14, 1904

Measures to determine pos. of Pluete

10 30

D 102226 = a 4555

	x	y	A	B	l _p	Date	B-D	C-A	B-D	x x 60	y x 60	C-A	B-D	
						Jan 15, 04						x 233	x 233	
P.	2.2	20.2	10.9	1.9	2.0	10.9	129	128	-89	-90	120	1200	-20.7	-21.0
33'	1.1	15.3	12.0	2.9	0.9	10.0	129	129	-111	-71	60	900	-25.9	-16.5
33 ²	1.4	22.4	8.0	4.1	4.8	8.9	128	130	-32	-48	60	1320	-7.5	-11.2
40'	5.6	30.6	5.6	7.0	7.4	5.9	130	129	+18	+11	300	1800	+4.2	+2.6
40 ²	5.8	37.6	1.1	8.5	11.8	4.4	129	129	+107	+41	300	2220	+24.9	+9.6
44'	8.3	14.2	9.9	1.8	2.7	11.1	128	129	-70	-93	480	840	-16.3	-21.7
44 ²	8.6	21.3	5.7	2.9	7.0	10.0	127	129	+13	-71	480	1260	+3.0	-16.5
48'	10.4	22.4	7.8	4.0	5.1	8.9	129	129	-27	-49	600	1320	-6.3	-11.4
48 ²	10.7	29.4	3.1	5.4	9.9	7.4	130	128	+68	-20	600	1740	+15.8	-4.8
74'	24.9	14.8	0.9	10.6	12.0	2.2	129	128	+111	+84	1440	840	+25.9	+19.6
74 ²	25.3	21.9	9.1	11.9	3.8	1.0	129	129	-53	+109	1500	1260	-12.3	+25.4
R	33.5	25.2	6.4	2.0	6.6	10.8	130	128	+02	-88	1980	1500	+5	-20.5
06'	34.1	24.3	11.5	3.0	1.2	10.0	127	130	-103	-70	2040	1440	-24.0	-16.3
06 ²	34.4	31.3	7.4	4.0	5.4	9.0	128	130	-20	-50	2040	1860	-4.7	-11.6
P.	2.2	20.2	10.8	1.8	2.1	11.0	129	128	-87	-92	120	1200	-20.3	-21.4
t	34.1	25.3	12.0	2.8	0.8	10.0	128	128	-112	-72	2040	1500	-26.1	-16.8
S	34.6	25.3	4.0	2.9	9.0	10.0	130	129	+50	-71	2040	1500	+11.6	-16.5
D	34.6	25.6	4.1	7.9	8.4	5.0	125	129	+43	+29	2040	1500	+10.0	+6.8
lines of sq indistinct	36.1	19.2	Cannot measure											
J2	36.4	26.2	8.0	2.1	4.8	10.6	128	127	-32	-85	2160	1560	-7.5	-19.8
J	37.8	19.4	2.0	5.0	10.8	8.0	128	130	+88	-30	2220	1140	+24.5	-7.0
26'	42.5	7.6	6.9	8.0	6.0	4.9	129	129	-09	+31	2520	420	-2.1	+7.2
26 ²	42.8	14.7	2.9	7.9	10.0	3.9	129	129	+71	+51	2520	840	+16.5	+11.9
24'	42.1	20.7	11.4	8.9	1.4	3.9	128	128	-100	+50	2520	1200	-23.3	+11.6
24 ²	42.4	27.7	7.0	10.0	5.7	2.9	127	129	-13	+71	2520	1620	-3.0	+16.5
							3083	3091						
							24	24						

$\begin{array}{r} 99.3 \\ 34.1 \\ 52.5 \end{array}$ $\begin{array}{r} 1179.0 \\ 883.5 \\ 1308.8 \\ 1188.8 \end{array}$ ✓
 $\begin{array}{r} 304.2 \\ 324.9 \\ 463.7 \\ 483.0 \\ 593.7 \\ 615.8 \\ 1465.9 \\ 1487.7 \\ 1980.5 \\ 2016.0 \\ 2035.3 \end{array}$ $\begin{array}{r} 1802.6 \\ 2229.6 \\ 818.3 \\ 1243.5 \\ 1308.6 \\ 1735.5 \\ 859.6 \\ 1285.4 \\ 1479.5 \\ 1423.7 \\ 1848.4 \end{array}$ ✓
 $\begin{array}{r} 99.7 \\ 2013.9 \\ 2051.6 \\ 2050.0 \end{array}$ $\begin{array}{r} 1178.6 \\ 1483.2 \\ 1483.5 \\ 1506.8 \end{array}$ ✓
 $\begin{array}{r} 2152.5 \\ 2240.5 \\ 2517.9 \\ 2536.5 \\ 2496.7 \\ 2497.0 \\ 51 \end{array}$ $\begin{array}{r} 1540.2 \\ 1133.0 \\ 427.2 \\ 851.9 \\ 1211.6 \\ 1603.5 \\ 36 \end{array}$ ✓

Jan 15 1904

Meas. to determine pos. of Phoebe

	A	B	C	D	A+B+D	C-A	B-D	Xx60	Yx60	C-A	B-D		
30 ¹	43.3	52.6	9.9	7.5	3.0	5.2	129	127	-69+23	2580	1920	-16.1	+5.4
30 ²	43.6	37.6	5.6	8.3	7.3	4.5	129	128	+17+38	2580	2340	+4.0	+8.9
44 ¹	47.6	18.5	4.0	6.9	9.0	6.0	130	129	+50+09	2820	1080	+11.6	+2.1
44 ²	48.0	25.6	12.4	8.0	6.5	4.7	(129)	127	+119	2880	1500	+27.7	+7.7
P.	2.2	20.2	10.9	2.0	2.0	12.9	129	129	-89-89	120	1200	-20.7	-20.7
							517	640					
							4.	5.					
							128.57	128.66					

*D 10219 = A 4399

11. 45

	A	B	C	D	A+B+D	C-A	B-D	Xx60	Yx60	C-A	B-D			
P	1.9	17.2	1.1	2.4	11.7	10.4	128	128	+196	-80	60	1020	+24.8	+18.6
	4.6	18.2	4.5	2.1	8.3	10.8	128	129	+38	-87	240	1080	+8.9	-20.3
51 ¹	2.4	18.5	8.1	5.9	4.7	6.9	128	128	-34	-10	120	1080	-8.0	-2.3
51 ²	2.3	10.7	9.7	10.0	3.1	2.9	128	129	-66	+71	120	600	-15.4	+16.5
52 ¹	3.6	26.1	3.9	1.5	9.0	11.6	129	131	+51	-101	120	1560	+11.9	-23.5
52 ²	2.6	18.5	4.6	5.5	8.1	7.3	127	128	+35	-18	120	1080	+8.2	-4.2
53 ¹	3.7	12.1	2.9	1.0	9.8	11.8	127	128	+69	-108	180	720	+16.1	-25.2
53 ²	3.6	4.4	3.9	5.0	9.0	7.9	129	129	+51	-29	180	240	+11.9	-6.8
56 ¹	7.9	32.7	1.0	10.0	11.9	3.0	129	130	+109	+70	420	1920	+25.5	+16.3
56 ²	7.8	25.1	1.9	1.0	11.0	11.9	129	129	+91	-109	420	1500	+21.3	-25.4
							1154	1168						
							9	9						

2563.9 1925.4 ✓

2584.0 2348.9 ✓

2831.6 1082.1 ✓

290⁷ 1507.7 ✓

99.3 1179.3 ✓

$$\begin{array}{r} 1 \\ 179 \\ 190 \end{array}$$

$$\begin{array}{r} 2.2 \\ 2.2 \end{array}$$
~~848~~ ~~1038.6~~ 1001.4
~~248.9~~ 1059.7 ✓

112.0 1077.7 ✓

104.6 616.5 ✓

131.9 1536.5 ✓

128.2 1075.8 ✓

196.1 694.8 ✓

191.9 233.2 ✓

445.5 1936.3 ✓

441.3 1474.6 ✓

Jan 15, 1904

Meas. to determine pos. of Phoebe

12 15

D 10219 (cont)

p y A. B. C. D. at C B + D c-a B-D $\sqrt{x60}$ $\sqrt{y60}$ $\frac{c-a}{x234}$ $\frac{B-D}{x233}$ Image
Cut off

9	9.3	4.5	10.0	6.0	2.9	6.9	129	129	-71-09	540	240	-16.6	-2.1
---	-----	-----	------	-----	-----	-----	-----	-----	--------	-----	-----	-------	------

62	11.2	23.4	11.1	4.0	1.8	8.8	129	128	-93-48	660	1380	-21.8	-11.2
----	------	------	------	-----	-----	-----	-----	-----	--------	-----	------	-------	-------

62	11.1	15.6	11.9	7.9	1.0	5.0	129	129	-109+29	660	900	-25.5	+6.8
----	------	------	------	-----	-----	-----	-----	-----	---------	-----	-----	-------	------

P	4.6	18.2	4.6	2.0	8.1	10.8	127	128	+35-88	240	1080	+8.2	-20.5
---	-----	------	-----	-----	-----	------	-----	-----	--------	-----	------	------	-------

T	17.9	11.6	1.0	7.5	12.0	54	130	129	+110+21	1020	660	+25.7	+4.9
---	------	------	-----	-----	------	----	-----	-----	---------	------	-----	-------	------

Cannot
separate these
objects from
Saturn.

D	18.4	10.7	Two Bright - Cannot meas						1080	600		
---	------	------	--------------------------	--	--	--	--	--	------	-----	--	--

T	18.4	10.6							1080	600		
---	------	------	--	--	--	--	--	--	------	-----	--	--

S	19.1	10.5	11.0	3.9	2.0	9.0	130	129	-20-51	1140	600	-21.1	-11.9
---	------	------	------	-----	-----	-----	-----	-----	--------	------	-----	-------	-------

R	19.8	10.7	2.0	8.9	10.9	4.0	129	129	+89+49	1140	600	+20.8	+11.4
---	------	------	-----	-----	------	-----	-----	-----	--------	------	-----	-------	-------

71	23.2	20.4	10.0	5.0	2.8	8.0	128	130	-72-30	1380	1200	-16.6	-7.0
----	------	------	------	-----	-----	-----	-----	-----	--------	------	------	-------	------

71	23.1	12.7	11.1	9.0	1.8	4.0	129	130	-93+50	1380	720	-21.1	+11.6
----	------	------	------	-----	-----	-----	-----	-----	--------	------	-----	-------	-------

74	26.1	17.1	11.0	1.0	2.0	11.9	130	129	-90-109	1560	1020	-21.1	-25.4
----	------	------	------	-----	-----	------	-----	-----	---------	------	------	-------	-------

74	26.1	9.4	12.0	5.0	0.7	7.8	127	128	-113-28	1560	540	-26.4	-6.5
----	------	-----	------	-----	-----	-----	-----	-----	---------	------	-----	-------	------

I	27.7	16.7	3.0	9.8	9.9	3.0	129	128	+69+68	1620	960	+16.1	+15.8
---	------	------	-----	-----	-----	-----	-----	-----	--------	------	-----	-------	-------

79	31.9	13.8	0.9	11.0	12.0	1.9	129	129	+111+91	1860	780	+26.0	+21.2
----	------	------	-----	------	------	-----	-----	-----	---------	------	-----	-------	-------

79	31.8	6.2	1.4	2.0	11.2	10.7	126	127	+98-87	1860	360	+22.9	-20.3
----	------	-----	-----	-----	------	------	-----	-----	--------	------	-----	-------	-------

89	45.4	18.4	8.0	4.0	4.8	8.9	128	129	-32-49	2700	1080	-7.5	-11.4
----	------	------	-----	-----	-----	-----	-----	-----	--------	------	------	------	-------

89	45.4	8.6	9.0	8.0	3.8	4.9	128	129	-52+31	2700	540	-12.2	+7.2
----	------	-----	-----	-----	-----	-----	-----	-----	--------	------	-----	-------	------

P	4.6	18.2	4.6	2.0	8.1	10.8	127	128	+35-88	240	1080	+8.2	-20.0
---	-----	------	-----	-----	-----	------	-----	-----	--------	-----	------	------	-------

12 30

9	1154	9	1160
17	2185	17	2185
26	3339	26	3345

$\sqrt{2184}$	$\sqrt{2186}$
42	65
128.38	128.73

Wrong object - marked for Phoebe on D 10219. Another object - marked later by Prof W.H.P. and measured B 29, p 46. Measures transferred to this book in red ink.

523.4 237.9 ✓

638.2 1368.8 ✓

634.5 906.8 ✓

~~850~~ ~~1000.9~~ ✓
~~248.2~~ ~~1059.5~~ ✓

1045.7 664.9 ✓

1135.3

18.9
 1135.3 588.1 ✓

1160.8 611.4 ✓

²
 1363.4 1193.0 ✓

²
 1358.5 731.6 ✓

1538.9 994.6 ✓

1533.6 533.5 ✓

1636.1 975.8 ✓

1886.0 801.2 ✓

1882.9 339.7 ✓

2692.5 1068.6 ✓

~~607.2~~
 2687.8 547.8 ✓

~~85.3~~ ~~1001.6~~
~~248.2~~ ~~1060.0~~ ✓

Jan 18, 1904

Meas to determine pos. of Phoebe

$$D_{10216} = a 4471$$

	x	y	A	B	C	D	a	B-D	x x6	y x60	C-a	B-D
											x 233	x 234
P	9.6	17.7	5.0	10.6	7.9	2.2	129	128+29+84	540	1020	+6.8	+19.7
89	4.6	18.7	4.0	10.8	8.9	2.0	129	128+49+88	240	1080	+11.4	+20.6
95	11.4	33.4	7.9	4.0	5.0	8.9	129	129-29-49	660	2100	-6.8	-11.5
96	13.3	3.6	10.0	7.5	2.9	5.4	129	129-71+21	780	180	-16.5	+4.9
94	11.4	18.6	8.8	8.1	4.0	4.6	128	127-48+35	660	1080	-11.2	+8.2
08	16.6	23.5	4.0	7.0	8.9	6.0	129	130+49+10	960	1380	+11.4	+2.3
19	23.5	18.8	6.5	11.0	6.2	1.9	127	129-03+91	1380	1080	-7	+21.3
P	9.6	17.7	5.1	10.7	7.9	2.1	130	128+28+86	540	1020	+6.5	+20.1
28	26.9	19.4	11.0	11.0	11.8	7.6	128	127+108-25	1560	1140	+25.2	-5.8
31	27.6	26.6	3.8	7.5	9.0	5.3	128	128+52+22	1620	1560	+12.1	+5.1
I	30.1	17.9	11.0	11.9	1.9	1.0	129	129-91+109	1800	1020	-21.2	+25.5
H	32.9	19.8	2.0	9.0	11.0	3.9	130	129+90+51	1920	1140	+21.0	+11.9
J	33.3	19.2	9.0	3.0	3.8	19.9	128	129-52-69	1980	1140	-12.1	-16.1
38	34.4	14.1	7.8	1.0	5.0	11.8	128	128-28-108	2040	840	-6.5	-25.3
52	43.1	18.2	12.1	2.0	0.8	10.9	129	129-113-89	2580	1080	-26.3	-20.8
P	9.6	17.7	5.0	10.7	7.9	2.1	129	128+29+86	540	1020	+6.8	+20.1
							$\sqrt{2059}$	$\sqrt{2055}$				
							16.	16.				
							128.69	128.44				

S 36.0 18.5 Bright

546.8 1039.7 ✓

251.4 1100.6 ✓

653.2 2088.5 ✓

763.5 184.9 ✓

648.8 1088.2 ✓

971.4 1382.3 ✓

1379.3 1101.3 ✓

546.5 1040.1 ✓

1585.2 1134.2 ✓

1632.1 1565.1 ✓

1778.8 1045.5 ✓

1941.0 1151.9 ✓

1967.9 1123.9 ✓

2033.5 814.7 ✓

2553.7 1059.2 ✓

546.8 1040.1 ✓

Jan 19, 1904

Meas. to determine pos. of Phoebe,

$$D_{10218} = a 4494$$

	x	y	A	B	C	D	a+c	b+c	a-b	D	x x 60	y x 60	c-a	b-D
P.	14.8	18.4	2.1	5.0	10.8	7.9	12.9	12.9	+87	-2.9	840	1080	+20.4	-6.8
02	1.8	17.6	1.8	8.1	11.0	4.7	12.8	12.8	+92	+3.4	60	1020	+21.5	+8.0
02	1.8	26.0	2.0	12.8	10.8	12.9	12.8	25.7	+88	-0.1	60	1560	+20.6	-2
20	11.9	22.4	0.4	5.0	12.4	6.2	12.8	12.7	+120	-2.7	660	1320	+28.1	-6.3
20	11.9	30.6	0.9	9.5	11.9	3.2	12.8	12.7	+110	+6.3	660	1800	+25.7	+14.7
25	16.4	2.6	7.1	8.8	5.6	4.1	12.7	12.9	-15	+4.7	960	120	-3.5	+11.0
25	16.4	11.0	8.0	0.1	4.8	12.7	12.8	12.8	-32	-12.6	960	660	-7.5	-29.5
28	16.7	23.8	2.6	11.0	10.1	2.0	12.7	13.0	+75	+9.0	960	1380	+17.6	+21.1
28	16.7	32.2	2.9	2.5	9.9	10.2	12.8	12.7	+70	-7.7	960	1920	+16.4	-18.0
35	25.3	14.2	9.6	1.9	3.2	11.0	12.8	12.9	-64	-9.1	1500	840	-15.0	-21.3
35	25.3	22.5	10.1	6.4	2.6	6.4	12.7	12.8	-75	0.0	1500	1320	-17.6	0
44	30.9	25.6	1.0	7.4	12.0	5.3	13.0	12.7	+110	+2.1	1800	1500	+25.7	+4.9
44	30.9	33.9	1.3	12.0	11.3	0.9	12.6	12.9	+100	+11.1	1800	1980	+23.4	+26.0
P.	14.8	18.4	2.2	5.0	10.8	7.9	13.0	12.9	+86	-2.9	840	1080	+20.1	-6.8
47	32.1	13.9	11.8	12.1	1.0	6.6	12.8	12.7	-108	+11.5	1920	780	-25.3	+26.9
47	32.1	22.4	12.1	4.4	0.8	8.4	12.9	12.8	-113	-4.0	1920	1320	-26.4	-9.4
52	34.5	2.4	5.8	5.5	7.9	7.3	12.8	12.8	+12	-1.8	2040	120	+2.8	-6.6
52	34.5	10.8	6.4	9.9	6.4	3.0	12.8	12.9	0.0	+6.9	2040	600	0	+16.1
J	34.6	20.4	5.1	4.0	7.6	8.9	12.7	12.9	+25	-4.9	2040	1200	+5.8	-11.5
J	34.6	28.6	7.5	8.8	5.0	4.0	12.5	12.8	-25	+4.8	2040	1680	-5.8	+11.2
56	37.1	10.4	10.9	5.5	1.9	7.3	12.8	12.8	-90	+1.8	2220	600	-21.1	+4.2
56	37.1	18.8	11.4	10.0	1.3	3.0	12.7	13.0	-101	+7.0	2220	1080	-23.6	+16.4
61	40.3	22.4	8.8	5.0	4.0	7.7	12.8	12.9	-48	-2.9	2400	1320	-11.2	-6.8
61	40.3	30.7	9.0	9.8	3.2	3.0	12.8	12.8	-52	+6.8	2400	1800	-11.2	+15.9
D	42.9	27.5	1.5	6.0	11.4	6.9	12.9	12.9	+99	-0.9	2520	1620	+23.2	-2.1
T	43.3	25.7	9.1	10.0	3.8	2.5	12.9	12.8	-53	+7.2	2580	1500	-12.4	+17.6
S	43.6	27.3	4.0	2.0	8.9	11.0	12.9	13.0	+49	-9.0	2580	1620	+11.5	-21.1
R	44.8	27.4	2.5	4.8	10.3	8.0	12.8	12.8	+78	-3.2	2640	1620	+18.3	-7.5
P	14.8	18.4	2.1	5.0	10.8	7.9	12.9	12.9	+87	-2.9	840	1080	+20.4	-6.3

$$a+c = 3713.128.03$$

$$b-D = 3852.128.40$$

$$30$$

860.4 1073.2 ✓

81.5 1028.0 ✓

80.6 1529.8 ✓

688.1 1313.7 ✓

685.7 1814.7 ✓

956.5 131.0 ✓

952.5 630.5 ✓

977.6 1401.1 ✓

976.4 1902.0 ✓

1485.0 818.7 ✓

1482.4 1320.0 ✓

1825.7 1504.9 ✓

1823.4 2006.0 ✓

860.1 1073.2 ✓

1894.7 806.9 ✓

1893.6 1310.6 ✓

2042.8 113.8

Change in Table III ✓

2040.0 616.5 ✓

2045.8 1188.8 ✓

2034.2 1691.2 ✓

Change in Table III ✓

8.9 2198.4 604.2

2196.4 1096.4 ✓

2388.8 1313.2 ✓

Change in Table III ✓

7.8 2388.1 1815.9

2543.2 1617.9 ✓

2567.6 1517.6 ✓

2591.5 1598.9 ✓

2658.3 1612.5 ✓

860.4 1073.7 ✓

Jan 22, 1904

Measures to det. pos. of Phoebe.

$$D 10227 = 24564$$

	α	γ	A	B	C	D	$D + C$	$B + D$	$C - A$	$B - D$	$\alpha \times 60$	$\gamma \times 60$	$\times .233$	$\times .233$
P	8.6	21.8	4.0	10.1	8.8	2.9	12.8	13.0	+4.8	+7.2	4.8	12.6	+11.2	+16.8
16 ¹	6.4	26.6	7.1	7.1	5.8	5.7	12.9	12.8	-1.3	+1.4	3.6	15.6	-3.0	+3.3
16 ²	6.4	19.8	6.6	10.6	6.2	2.1	12.8	12.7	-0.4	+8.5	3.6	11.4	-9	+19.8
19 ¹	7.7	22.4	3.0	4.0	10.0	8.9	13.0	12.9	+7.0	-4.9	4.2	13.2	+16.3	-11.4
19 ²	7.8	15.6	2.0	7.5	10.8	5.4	12.8	12.9	+8.8	+2.1	4.2	9.0	+20.5	+4.9
20 ¹	8.1	17.6	1.0	8.8	1.8	4.0	12.8	12.8	-9.2	+4.8	4.8	10.2	-21.4	+11.2
20 ²	8.2	10.9	12.5	12.0	2.2	0.8	12.7	12.8	-8.3	+11.2	4.8	6.0	-19.3	+26.1
48 ¹	29.6	24.4	4.9	5.0	8.0	7.7	12.9	12.7	+3.1	-2.7	17.4	14.4	+7.2	-6.3
48 ²	29.6	17.6	4.2	8.7	8.8	4.1	13.0	12.8	+4.6	+4.6	17.4	10.2	+10.7	+10.7
52 ¹	31.7	14.9	3.0	12.0	10.0	1.0	13.0	13.0	+7.0	+11.0	18.6	8.4	+16.3	+25.7
52 ²	31.7	8.3	2.8	2.6	10.0	10.1	12.8	12.7	+7.2	-7.5	18.6	4.8	+16.8	-17.5
60 ¹	35.8	10.6	2.0	8.3	10.9	4.5	12.9	12.8	+8.9	+3.8	21.0	6.0	+20.7	+8.9
60 ²	35.8	3.9	1.8	11.6	11.1	1.2	12.9	12.8	+9.3	+10.4	21.0	1.8	+21.7	+24.2
P	8.6	21.7	4.1	10.0	8.9	2.8	13.0	12.8	+4.8	+7.2	4.8	12.6	+11.2	+16.8
H	37.4	20.3	7.0	2.0	5.8	10.9	12.8	12.9	-1.2	-8.9	22.2	12.0	-2.8	-20.7
D	40.4	12.7	7.9	10.0	4.9	3.0	12.8	13.0	-3.0	+7.0	24.0	7.2	-7.0	+16.3
R?	41.4	12.7	9.0	9.8	3.9	4.0	12.9	13.8	-5.1	+5.8	24.6	7.2	-11.9	+13.5
S	41.2	13.2	11.0	2.0	2.0	10.8	13.0	12.8	-9.0	-8.8	24.6	7.8	-21.0	-20.5
T?	41.6	12.9	Cannot measure								24.6	7.2		
71 ¹	43.4	12.3	8.5	3.5	4.2	9.4	12.7	12.9	-4.3	-5.9	25.8	7.2	-10.0	-13.7
71 ²	43.4	5.5	8.1	6.8	4.9	6.0	13.0	12.8	-3.2	+0.8	25.8	3.0	-7.5	+1.9
74 ¹	44.3	17.1	9.5	0.9	4.0	12.0	13.5	12.9	-5.5	-11.1	26.4	10.2	-12.8	-25.9
74 ²	44.4	10.3	9.2	4.0	3.6	8.9	12.8	12.9	-3.5	+0.8	26.4	6.0	-13.0	-11.4
71 ² instead of	44.4	10.3	9.2	4.0	3.6	8.9	12.8	12.9	-3.5	+0.8	26.4	6.0	-7.2	+1.9
T ²	43.6	12.2	4.9	2.0	8.0	10.9	12.9	12.9	+3.1	-8.9	25.8	7.2	+7.2	-20.7
T ¹	43.8	18.7	10.0	11.0	2.9	1.9	12.9	12.9	-7.1	+9.1	25.8	10.8	-16.5	+21.2

Remeasured

Cannot distinguish
fr. SaturnW.S. meas.
71² instead of
$$\frac{3097.6}{24} = 129.06$$

$$\frac{3092}{24} = 128.83$$

$$\frac{128.88}{24} = 5.37$$

491.2 1276.8 ✓

357.0 1563.3 ✓

359.1 1159.8 ✓

436.3 1308.6 ✓

440.5 904.9 ✓

458.6 1031.2 ✓

460.7 626.1 ✓

1747.2 1433.7 ✓

1750.7 1030.7 ✓

1876.3 865.8 ✓

1876.8 462.5 ✓

2120.7 608.9 ✓

2121.7 204.2 ✓

491.2 1276.8 ✓

2217.2 1179.3 ✓

2393.0 736.3 ✓

2448.1 733.5 ✓

2439.0 759.5 ✓

Change in Table III

2570.0 706.3 ✓

2572.5 301.9 ✓

2627.2 994.1 ✓

270.8 588.6 ✓

2632.8 601.9 ✓

2587.2 699.3 ✓

2563.8 1101.2 ✓

Change in Table III ✓

Jan 22, 1904

Measured to det. pos. of Phoebe.

D 10227 (cont)

x	y	A	B	C	D	a+c	b+d	c-a	b-d	x x 60		y y 60		c-a B-D	
										x233	y233	x233	y233	x233	y233
67	402	39.5	10.0	6.1	2.9	6.7	129	128	-71-06	2400	2340	165	-1.4	-16.5	-1.4
67 ²	40.3	32.7	9.9	9.9	2.9	3.0	128	129	-70+69	2400	1920	163	+16.1	-16.3	+16.1
P	8.6	21.7	4.1	10.0	8.8	2.9	129	129	+47+71	480	1260	+11.0	+16.5	+11.0	+16.5
						386	386								
						3.	3.								
						12900	12881								

D 10222 = A 4522

x	y	A	B	C	D	a+c	b+d	c-a	b-d	x x 60		y y 60		x233 x234	
										x233	y233	x233	y233	x233	y233
P	0.9	20.8	2.1	11.9	10.9	1.0	130	129	+88+109	0	1200	+20.5	+25.5		
21	0.6	13.1	3.9	1.5	8.9	11.3	128	128	+50-98	0	780	+11.6	-22.9		
21 ²	1.2	20.5	11.7	6.6	1.1	6.1	128	127	-106+05	60	1200	-24.7	+1.2		
24	0.9	20.6	1.1	8.4	11.8	4.4	129	128	+107+40	0	1200	+24.9	+9.4		
24 ²	1.4	28.1	9.1	0.9	3.8	11.9	129	128	-53-110	60	1680	-12.3	-25.7		
37	3.4	19.5	8.9	6.8	3.9	6.0	128	128	-50+08	180	1140	-11.6	+1.9		
37 ²	3.6	26.9	4.0	11.8	8.8	1.0	128	128	+48+108	180	1560	+11.2	+25.3		
39	3.6	23.4	5.0	5.1	7.8	7.6	128	127	+28-25	180	1380	+6.5	-5.8		
39 ²	3.9	30.7	0.3	10.3	12.7	2.5	130	128	+124+78	180	1800	+28.9	+18.3		
44	6.5	18.5	6.1	6.0	6.8	6.8	129	128	+07-08	360	1080	+1.6	-1.9		
44 ²	6.8	25.8	1.5	11.1	11.1	1.5	126	126	+96+96	360	1500	+22.4	+23.5		
69	25.4	19.6	9.1	9.0	3.7	3.9	128	129	-54+51	1500	600	-12.6	+11.9		
69 ²	25.6	18.1	5.0	1.0	8.0	11.9	130	129	+30-109	1500	1080	+7.0	-25.5		
						1671	1663								
						13	13								

2383.5 2338.6 ✓

2383.7 1936.1 ✓

491.0 1276.5 ✓

20.5 1225.5 ✓

11.6 757.1 ✓

35.3 1201.2 ✓

24.9 1209.4 ✓

4 57.7 1654.3 ✓

168.4 1141.9 ✓

191.2 1585.3 ✓

186.5 1374.2 ✓

208.9 1818.3 ✓

361.6 1078.1 ✓

382.4 1522.5 ✓

1487.4 611.9 ✓

1507.0 1054.5 ✓

Jan 28, 1904

Measures to det pos. of Rhoche.

D 10222 (cont)

	x	y	A	B	C	D	$\frac{A+B+D}{4}$	$C-A$	$B-D$	$x \times 60$	$y \times 60$	$C \times 233$	$B \times 234$	
73	27.4	21.4	7.2	4.9	5.7	8.0	129	129	-1.5	-31	1620	1260	-3.5	-7.3
73	27.8	28.7	2.1	9.8	10.6	3.0	127	128	+85	+68	1620	1680	+19.8	+15.9
Reestimated J values & value changed for J'	28.2	28.5	10.1	6.8	2.7	6.0	128	128	-74	+08	1680	1680	-17.2	+1.9
J'	28.5	28.9	6.8	11.7	6.0	1.0	128	127	-08	+107	1680	1680	-1.9	+25.0
P	0.8	20.9	2.1	11.9	10.8	0.9	129	128	+87	+110	0	1200	+20.3	+25.7
L?	32.1	26.4	12.0	5.5	1.0	7.4	130	129	-110	-19	1920	1560	-25.6	-4.4
D?	32.4	26.6	8.0	7.5	5.0	5.4	130	129	-30	+21	1920	1560	-7.0	+4.9
S	32.5	26.3	5.1	2.0	7.8	10.9	129	129	+27	-89	1920	1560	+6.3	-20.8
80	34.5	4.8	6.7	11.0	6.0	1.9	127	129	-07	+91	2040	240	-1.6	+21.3
80	34.8	12.3	1.9	3.0	10.9	9.7	128	127	+90	-67	2040	720	+21.0	-15.7
T	34.2	17.4	11.1	3.9	1.8	8.9	129	128	-93	-50	2040	1020	-21.7	-11.7
T	34.4	24.8	8.4	10.0	4.5	2.9	129	129	-39	+71	2040	1440	-9.1	+16.6
R	33.9	25.9	1.1	12.0	11.5	0.9	126	129	+104	+111	1980	1500	+24.2	+26.0
81	36.8	24.9	2.1	11.8	10.8	1.0	129	128	+87	+108	2160	1440	+20.3	+25.3
812	37.3	32.4	10.0	4.0	2.8	8.8	128	128	-72	-48	2220	1920	-16.8	-11.2
85	38.4	11.8	8.9	11.0	4.0	2.0	129	130	-49	+90	2280	660	-11.4	+21.1
85	38.6	19.3	4.0	3.0	8.9	9.8	129	128	+49	-68	2280	1140	+11.4	-15.9
P	0.8	20.9	2.3	11.9	19.5	0.8	128	127	+82	+111	0	1280	+19.1	+26.0
							2312	2310						
							18	18						
							128.48	128.16						

1616.5	1252.7✓
1639.8	1695.9✓
1662.8	1264.9✓
1678.1	1681.9✓
1678.1	1705.0✓
20.3	1225.7✓
1894.4	1555.6✓
1913.0	1564.9✓
1926.3	1539.2✓
2038.4	261.3✓
2061.0	704.3✓
2018.3	1008.3✓
2030.9	1456.6✓
2004.2	1526.0✓
2180.3	1465.3✓
2203.2	1908.8✓
2268.6	681.1✓
2291.4	1124.1✓
19.1	1226.0✓

57.3

22.6

53

 23.3
 15.3

In making
reductions first
of A+B readings
rejected. Second
set used (Per
instructions of W.H.P.)
10.30

D 10202

	<i>v</i>	<i>y</i>	A	B	C	D	<i>a+c</i>	B+D	<i>c-a</i>	B-D
✓ D 10202	88	20.6	2.5	8.5	10.4	3.8	12.5	12.6	+8.3+5.0	+19.7+11.8
✓ " 10188	4.4	21.4	7.5	4.1	5.1	8.0	12.0	12.5	-1.8-3.5	-4.3-8.3
✓ " 10192	4.6	22.4	4.0	4.9	9.0	3.7*	12.9	13.0	+5.1-2.4	+12.1+5.7
✓ " 10201	7.6	20.4	5.0	4.8	7.6	7.9	12.7	12.9	+2.5-2.9	+5.9-6.9
✓ " 10194	1.6	22.6	3.5	8.0	9.8	4.5	12.8	12.5	+6.8+3.5	+16.1+8.3
✓ " 10199	6.6	20.9	5.5	12.2	7.5	0.5	12.5	12.5	+2.5+11.5	+5.9+27.3
✓ " 10197	2.4	21.4	8.2	4.4	4.5	8.0	12.3	12.5	-3.3-3.5	-7.8-8.3
✓ " 10193	2.1	22.6	10.9	6.6	1.6	5.8	12.5	12.8	-9.3+12	-22.0+2.8
✓ " 10196	6.4	22.3	7.1	3.7	5.7	9.0	13.1	12.7	-1.7-5.3	-4.0-12.6
✓ " 10195	2.5	20.7	6.2	9.0	6.8	3.5	12.9	12.5	+0.7+5.5	+1.7+13.0
✓ " 10189	5.4	20.5	6.5	7.0	6.0	5.3	12.8	12.4	-0.8+18	-1.9+4.3
✓ " 10203	8.4	23.6	7.0	8.9	5.9	3.8	12.7	12.7	-0.9+5.1	-2.1+12.1

c-a
x 237
127

B-D
x 237
127

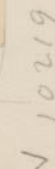
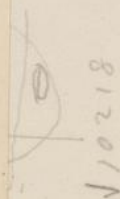
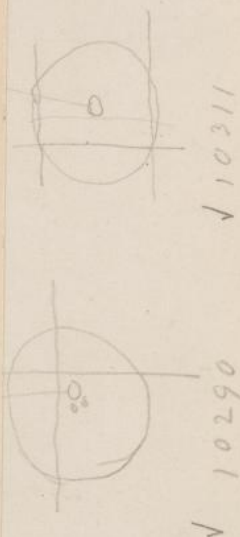
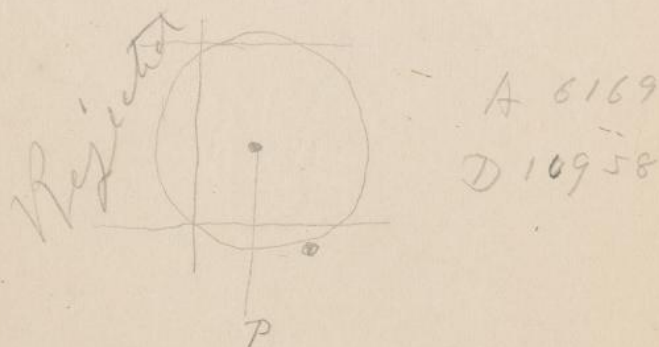
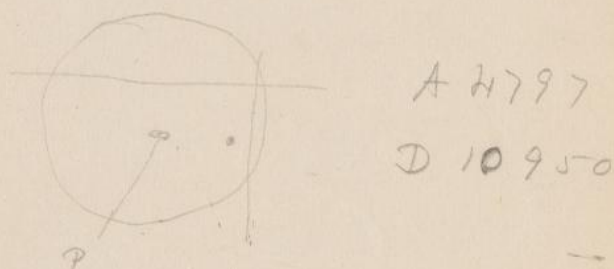
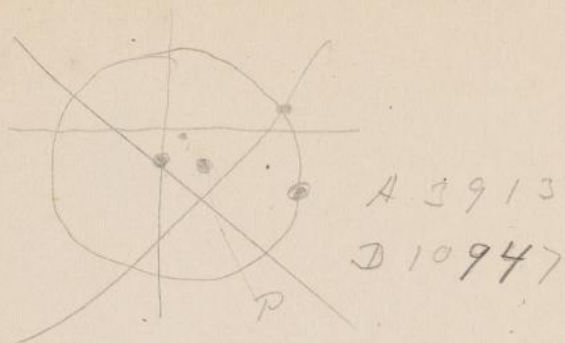
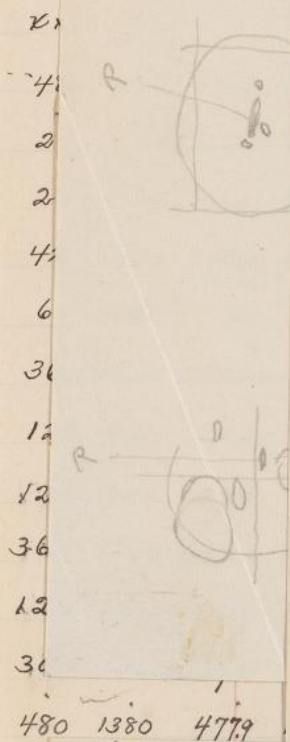
1517
12.126.42

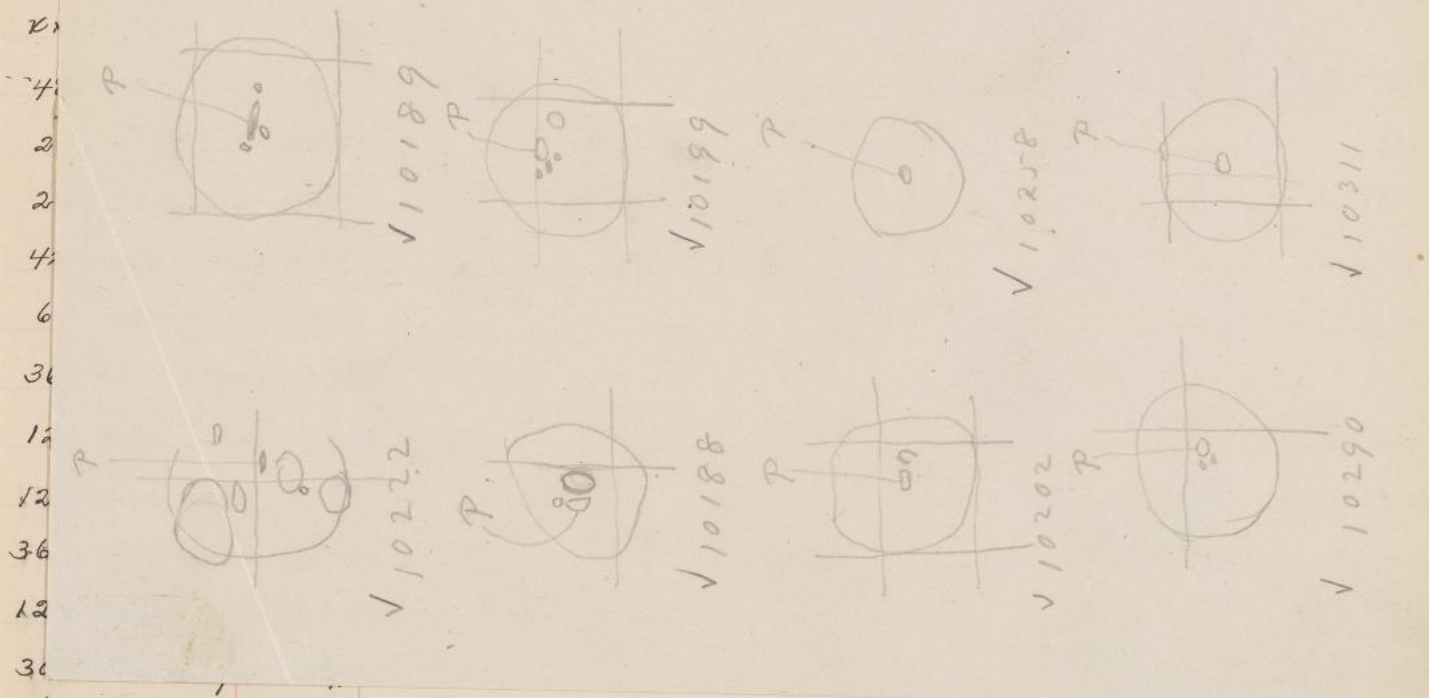
1516
12.126.33

	<i>a</i>	<i>b</i>
D 10202	2.1	8.8
" 10188	6.9	4.5
" 10192	3.9	5.3
" 10201	5.1	5.0
" 10194	3.0	8.0
" 10199	5.0	12.0
" 10197	7.8	4.5
" 10193	10.9	7.0
" 10196	7.2	3.7
" 10195	6.1	9.0
" 10189	6.8	7.1
" 10203	6.8	8.9

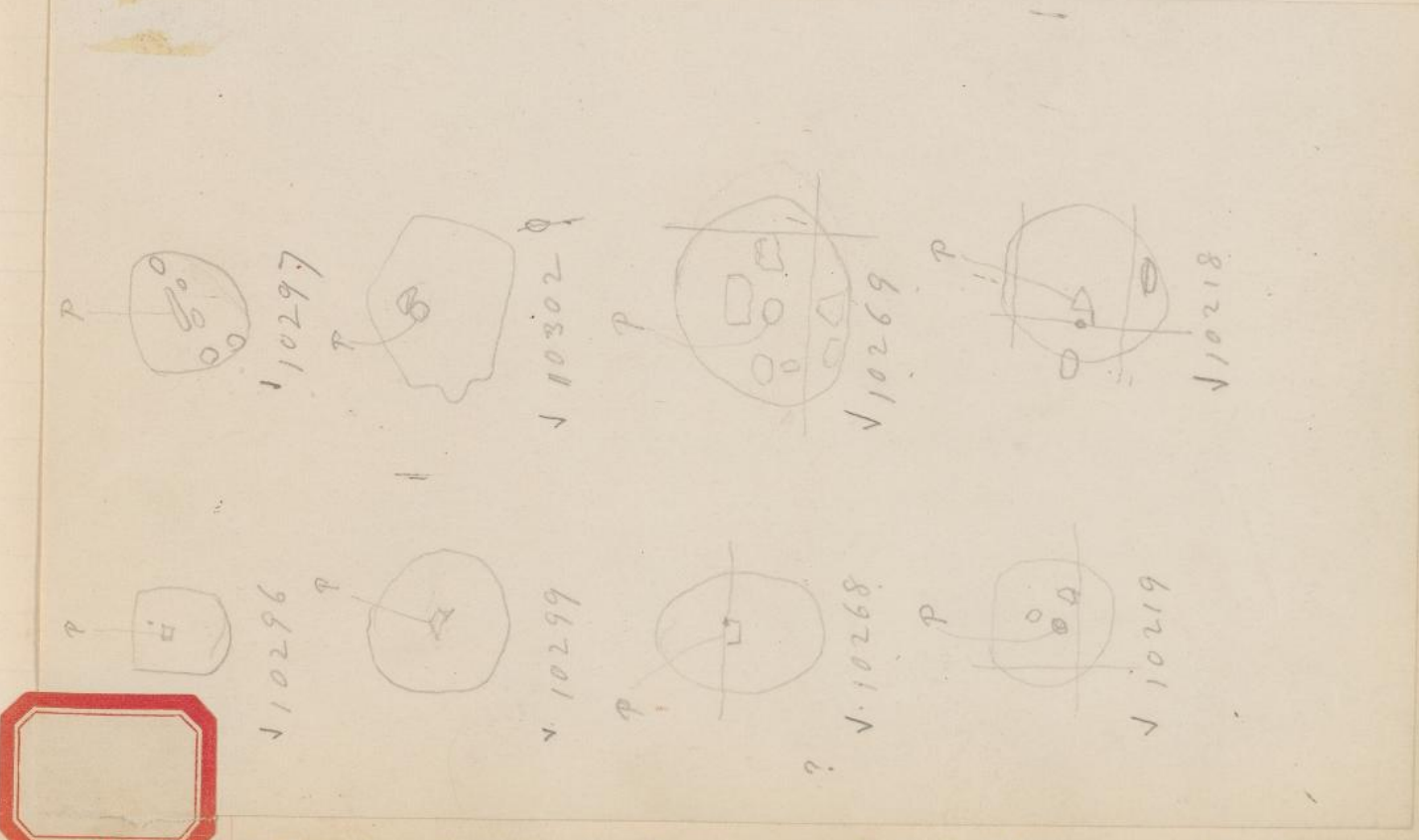
Measures of Phoebe
continued in
B. 29 p 4

* Remeasured. Estimate made for wrong line -

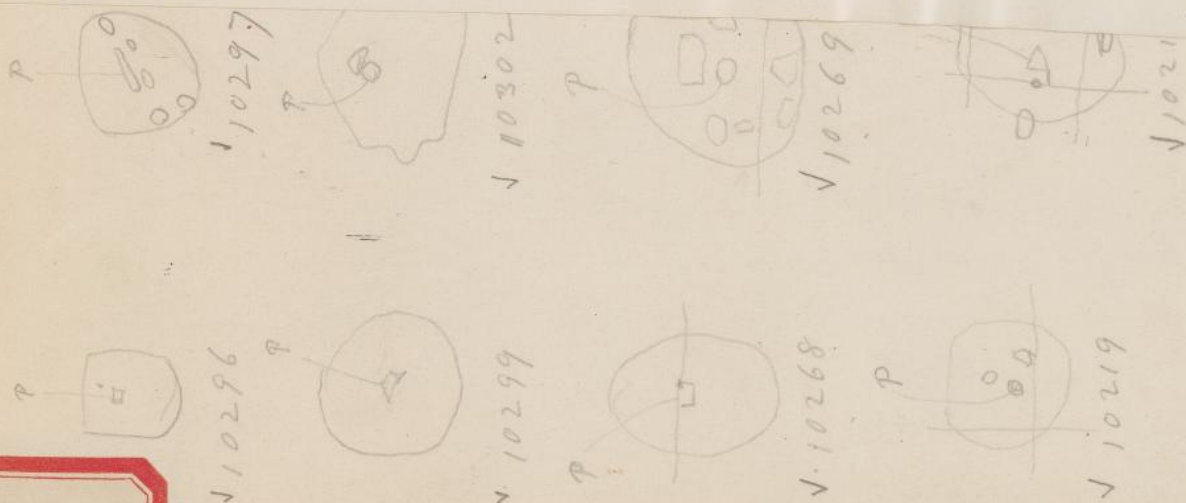


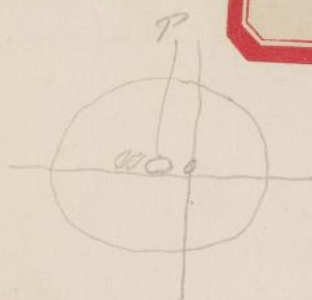


480 1380 477.9 1392.1

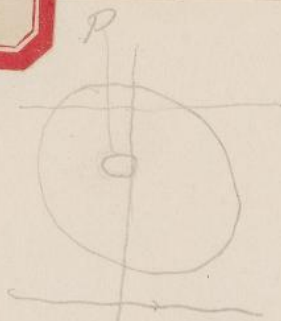


$x \times 60$ $y \times 60$ z
 480 1200 499.7 1211.8 ✓
 240 1260 235.7 1251.7 ✓
 240 1320 252.1 1325.7 ✓
 420 1200 425.9 1193.1 ✓
 60 1320 76.1 1328.3 ✓
 360 1200 365.9 1227.3 ✓
 120 1260 112.2 1251.7 ✓
 120 1320 98.0 1322.8 ✓
 360 1320 356.0 1307.4 ✓
 120 1200 121.7 1213.0 ✓
 360 1200 298.1 1204.3 ✓
 480 1380 477.9 1392.1 ✓





10306



10313

Memorandum of Shute (1904).

As least three catalogues stars, each to be measured
times.

Shute to be measured three times.

Memis " " " " " "

11.10

Measures to determine position of Phoebe + c
 "A" + "B" read first - for each plate, then "C" + "D"

Q 11066 = a 6841

June 15, 1905

H. J. S. recorder

	μ	γ	A	B	C	D	$a+c$	$B+D$	$a-B-D$	$x \times 60$	$y \times 60$	$x \times 199$	$y \times 199$
P	66.1	33.4	14.8	5.1	0.3	9.4	151	145	145 -43	3960	1980	-28.9	-8.6
"	66.1	33.4	14.7	5.6	0.2	9.5	149	151	145 -39	3960	1980	-28.9	-7.8
"	66.1	33.4	14.8	5.5	0.2	9.5	150	150	146 -40	3960	1980	-29.1	-8.0

Shen

"

20m-17	62.72	21.1	8.1	12.1	2.5	3.0	12.6	151	151-91-101	1260	480	-18.1-20.1	1241.9
20m-16	5866	34.9	19.8	1.0	11.6	14.1	3.5	151	151+131+81	2040	1140	+26.1+16.1	2066.1
20m-16	5868	43.1	25.6	14.0	8.0	1.0	7.1	150	151-130+09	2580	1500	-25.9+1.8	2554.1
20m-16	5871	48.1	29.5	13.0	6.1	2.0	8.9	150	150-110-28	2880	1740	-21.9-5.7	2858.1
image elongated	H	57.3	30.4	10.9	6.1	4.1	8.9	150	150-68-28	3420	1800	-13.5-5.7	3406.5
	J	58.2	31.1	11.0	1.5	4.0	13.6	150	151-70-121	3480	1860	-13.9-24.1	3466.1
20m-16?	5876	67.5	16.5	8.5	6.6	6.6	9.0	151	156-19-24	4020	960	-3.8-4.8	4016.2
P	66.1	33.4	14.8	5.5	0.2	9.4		150	149-146-39	3960	1980	-29.1-7.8	3930.9
"	66.1	33.4	14.9	5.4	0.3	9.5		152	149-146-41	3960	1980	-29.1-8.2	3930.9
"	66.1	33.4	14.7	5.5	0.1	9.6		148	151-146-41	3960	1980	-29.1-8.2	3930.9

Shen

"

20m-17	62.72	21.2	8.2	12.0	2.5	3.1	12.6	151	151-89-101	1260	480	-17.7-20.1	1242.3
20m-16	5866	34.9	19.7	1.0	11.6	14.0	3.5	150	151+130+81	2040	1140	+25.9+16.1	2065.9
20m-16	5871	43.1	25.6	14.0	8.0	1.0	7.0	150	150-130+10	2580	1500	-25.9+2.0	2554.1
20m-16	5871	48.2	29.4	13.0	6.1	2.1	9.0	151	151-109-29	2880	1740	-21.7-5.8	2858.3
	H	57.4	30.4	11.0	6.0	4.1	9.0	151	150-69-30	3420	1800	-13.7-6.0	3406.3
	J	58.3	31.1	11.0	1.5	4.0	13.6	150	151-70-121	3480	1860	-13.9-24.1	3466.1
5876	67.5	16.5	8.5	6.8	6.6	8.9		151	152-19-26	4020	960	-3.8-5.2	4016.2

3007 3011
 20 20

6735
42
49
60

1971.4

1972.2

1972.0

459.9

1156.1

1501.8

1734.4

1794.4

1835.9

955.2

1972.2

1971.8

1971.8

459.9

1156.1

1502.0

1734.2

1794.0

1835.9

954.8

Measures to determine position of Phoebe

11.45

D 11066 = a 6841

June 15, 1905.

H.D. recorder

x	y	a	B	C	D	$a+c$	$B+D$	$C-a$	$B-D$	$xx60$	$yy60$	$x \times 199$	$y \times 199$
P	66.1	33.4	14.8	5.5	0.3	9.6	151	151	-145	-41	3960	1980	-28.9 - 8.2 3931.1
"	66.1	33.4	14.8	5.4	0.2	9.4	150	148	-146	-40	3960	1980	-29.1 - 8.0 3930.9
"	66.2	33.4	14.7	5.5	0.2	9.5	149	150	-147	-40	3960	1980	-28.9 - 8.0 3931.1
							450	449					
							3	3					

Hermes

$$\begin{array}{r} 20 \ 3007 \\ 3 \ 450 \\ \hline 23 \ 3457 \end{array} \quad \begin{array}{r} 20 \ 3011 \\ 3 \ 449 \\ \hline 23 \ 3460 \end{array} \quad \begin{array}{r} 150.30 \\ 150.43 \end{array}$$

1.10

20 11076 = a 6995

	a	B	C	D	$a+c$	$B+D$	$C-a$	$B-D$
P	14.8	18.4	2.9	5.0	12.1	10.0	150	150 + 92 - 50 840 1080 + 18.3 - 10.0 858.3
20m - 17°	6203	5.9	39.2	1.9	2.1	13.1	12.5	150 146 + 112 - 104 300 2340 + 22.3 - 20.8 322.3
20m - 17°	6206	10.6	29.2	4.0	0.5	11.0	14.6	150 151 + 70 - 141 600 1740 + 13.9 - 28.2 613.9
20m - 18°	5886	22.9	5.6	1.4	8.2	13.6	6.7	150 149 + 122 + 151 320 300 + 24.3 + 3.0 1344.3
20m - 18°*	5888	25.6	2.7	5.9	11.0	9.1	3.8	150 148 + 32 + 72 1500 120 + 6.4 + 14.4 1506.4
20m - 17°	6213	28.9	24.1	1.9	1.0	13.1	14.0	150 150 + 112 - 130 1680 1440 + 22.3 - 26.0 1702.3
J	31.4	23.4	11.0	4.8	4.1	10.1		151 149 - 69 - 53 1860 1380 - 13.7 - 10.6 1846.3
J	36.6	23.6	5.8	9.9	9.2	5.1		150 150 + 34 + 48 2160 1380 + 6.8 + 9.6 2166.8
20m - 17°	6214	37.2	26.4	12.5	4.6	2.5	10.6	150 152 - 100 - 60 2220 1560 - 19.9 - 12.0 2200.1
20m - 18°	5892	40.0	4.7	15.0	12.0	15.0	3.1	300 151 00 + 89 2400 240 0 + 17.8 2400.0
20m - 17°	6216	42.1	18.6	13.6	9.5	1.9	6.0	155 155 - 117 + 35 2520 1080 - 23.3 + 7.0 2496.7
20m - 17°	6224	68.8	24.1	2.5	0.5	12.6	14.5	151 150 + 101 - 140 4080 1440 + 20.1 - 28.0 4100.1
								1957 1801
								13 12

1.25

* Object very faint

1971.8

1972.0

1972.0

1070.0

2319.2

1711.8

303.0

134.4

1414.0

1369.4

1389.6

1548.0

257.8

1087.0

1412.0

X.25

Measured to determine position of Phoebe.

June 15, 1905

H. J. S. recorder

189

	x	y	a	B	C	D	$a+c$	$B+D$	$C-a$	$B-D$	$x \times 60$	$y \times 60$	$C-a \times 199$	$B-D \times 200$	
①	148	18.4	3.1	5.1	12.0	10.0	151	151	+89	-49	840	1080	+17.7	-9.8	857.7
20m-17°	6203	5.9	39.2	2.0	2.5	13.1	151	150	+111	-100	300	2340	+22.1	-20.0	322.1
20m-17°	6206	10.6	29.1	4.0	0.4	11.0	150	149	+70	-141	600	1740	+13.9	-28.2	613.9
20m-18°	5886	2.29	5.6	1.5	8.5	13.6	151	150	+121	+20	1320	300	+24.1	+4.0	1344.1
20m-18°	5888	2.56	2.7	5.5	11.9	9.1	146	155	+36	+83	1500	120	+7.2	+16.6	1507.2
20m-17°	6213	2.89	24.1	1.6	1.0	13.6	152	150	+120	-130	1680	1440	+23.9	-26.0	1703.9
20m-17°	6213	2.89	24.1	1.6	1.0	13.6	152	150	+120	-130	1680	1440	+23.9	-26.0	1703.9
②	31.4	23.4	11.0	4.9	4.1	10.1	151	150	-69	-52	1860	1380	-13.7	-10.4	1846.3
②	36.6	23.6	5.9	9.9	9.1	5.1	150	150	+32	+48	2160	1380	+6.4	+9.6	2166.4
20m-17°	6214	37.2	26.3	12.5	4.5	2.4	149	150	-101	-60	2220	1560	-20.1	-12.0	2199.9
20m-18°	5892	40.0	4.7	15.0	12.0	15.1	301	150	+01	+90	2400	240	+2	+18.0	2370.2
20m-17°	6216	42.2	18.6	13.6	9.6	1.5	151	152	-121	+40	2520	1080	-24.1	+8.0	2495.9
20m-17°	6224	68.8	24.1	2.5	0.5	12.6	151	150	+101	-140	4080	1440	+20.1	-28.0	4100.1
1.55	①	14.8	18.4	3.0	5.0	12.1	151	146	+91	-46	840	1080	+18.1	-9.2	858.1
							2105	1953							
							14	13							

$$\begin{array}{r}
 13 \quad 1957 \\
 14 \quad 2105 \\
 \hline
 27 \quad 4062
 \end{array}$$

$$\begin{array}{r}
 12 \quad 1801 \\
 13 \quad 1953 \\
 \hline
 25 \quad 3754
 \end{array}$$

1070.2

2320.0

1711.8

304.0

136.6

1414.0

1369.6

1389.6

1548.0

288.0

1088.0

1412.0

1070.8

23.0

Measures to determine position of Phoebe

11070 = A 6812

June 16, 1905

H J S recorder

	x	y	a	B	C	D	$a+B$	$B+D$	$C-A$	$B-D$	$x \times 60$	$y \times 60$	$x \times 200$	$y \times 200$
P.	28.5	23.4	7.1	3.9	7.9	11.1	150	150 + 08 - 72	1680	1380 + 1.6 - 14.4	1681.6			
20m - 15°	6004	4.4	51.4	10.5	5.8	4.9	9.4	154	152 - 56 - 36	240	3060 - 11.2 - 7.2	228.8		
20m - 16°	5881	4.6	21.5	3.0	6.9	12.1	8.1	151	150 + 91 - 12	240	1260 + 18.2 - 2.4	258.2		
H.	8.6	19.4	4.5	6.0	10.4	9.0	149	150 + 59 - 30	480	1140 + 11.8 - 6.0	491.8			
20m - 15°	6006	13.6	45.4	5.4	5.0	9.5	10.1	149	151 + 41 - 51	780	2700 + 8.2 - 10.2	788.2		
image very bright J.	15.1	19.7	13.1	9.9	2.2	5.2	153	151 - 109 + 47	900	1140 - 21.8 + 9.4	878.2			
20m - 16°	5884	20.6	1.4	5.1	5.0	9.9	10.0	150	150 + 48 - 50	1200	60 + 9.6 - 10.0	1209.6		
I	21.5	19.6	7.9	9.0	4.0	6.0	149	150 - 09 + 30	1260	1140 - 1.8 + 6.0	1258.2			
20m - 15°	6008	25.6	70.1	6.0	1.0	9.1	13.9	151	149 + 31 - 129	1500	4200 + 6.2 - 25.8	1506.2		
20m - 16°	5890	46.4	35.6	8.9	9.0	6.1	6.0	150	150 - 28 + 30	2760	2100 - 5.6 + 6.0	2754.4		
20m - 16°	5892	55.1	22.9	13.9	14.0	1.0	1.0	149	150 - 129 + 130	3300	1320 - 25.8 + 26.0	3274.2		
P.	28.5	23.4	7.0	3.9	8.0	11.0	150	149 + 10 - 71	1680	1380 + 2.0 - 14.2	1682.0			
20m - 15°	6004	4.4	51.4	10.1	5.5	4.9	9.5	150	150 - 52 - 40	240	3060 - 10.4 - 8.0	229.6		
20m - 16°	5881	4.7	21.5	3.0	6.9	12.0	8.1	150	150 + 90 - 12	240	1260 + 18.0 - 2.4	258.0		
image elongated H	8.6	19.4	4.9	6.8	10.4	9.0	153	155 + 55 - 25	480	1140 + 11.0 - 5.0	491.0			
20m - 15°	6006	13.6	45.4	5.5	5.0	9.1	10.0	146	150 + 36 - 50	780	2700 + 7.2 - 10.0	787.2		
J	15.1	19.7	13.0	9.9	2.0	5.1	150	150 - 110 + 48	900	1140 - 22.0 + 9.6	878.0			
20m - 16°	5884	20.6	1.4	5.1	5.0	9.8	10.0	149	150 + 47 - 50	1200	60 + 9.4 - 10.0	1209.4		
I	21.5	19.6	8.0	9.0	6.9	6.1	149	151 - 11 + 29	1260	1140 - 2.2 + 5.8	1257.8			
20m - 15°	6008	25.6	70.1	6.0	1.0	9.1	13.9	151	149 + 31 - 129	1500	4200 + 6.2 - 25.8	1506.2		
20m - 16°	5890	46.4	35.6	9.1	9.0	6.1	6.0	152	150 - 30 + 30	2760	2100 - 6.0 + 6.0	2754.0		
20m - 16°	5892	55.1	22.9	13.5	14.0	1.1	1.0	146	150 - 124 + 130	3300	1320 - 24.8 + 26.0	3275.2		
24.0	P.	28.5	23.4	7.0	4.0	7.9	11.0	149	150 + 09 - 70	1680	1380 + 1.8 - 14.0	1681.8		

3450 3457
23 23

23/ 3450/150.00

23/ 3457/150.30

1365.6

3052.8

1257.6

1134.0

2689.8

1149.4

50.0

1146.0

4174.2

2106.0

1346.0

1365.8

3052.0

1257.6

1135.0

2690.0

1149.6

50.0

1145.8

4174.2

2106.0

1346.0

1366.0

23.00

11052 = α 6846

June 19, 1905.

H. D. I. Recorder

	x	y	a	B	C	D	A+C	B+D	C-A	B-D	x x 60	y x 60	x x 200	y x 200
P.	67.4	27.6	10.8	10.1	4.5 4.5	5.0 5.0	153	151	-63	+51	4020	1620	-126	+10.2
5859	4.5	33.9	7.5	14.6	7.7	0.4	152	150	+02	+142	240	1980	+24	+28.4
6262	8.4	8.6	9.5	9.0	5.5	6.0	150	150	-40	+30	480	480	-8.0	+6.0
6272	36.1	7.3	13.0	4.0	2.0	11.0	150	150	-110	-70	2160	420	-22.0	-14.0
5866	49.7	18.9	3.4	14.6	11.7	0.5	151	151	+83	+141	2940	1080	+16.6	+28.2
5868	57.9	24.7	1.0	11.5	14.0	3.9	150	154	+130	+76	3420	1440	+26.0	+15.2
I	58.5	25.6	8.0	9.9	7.0	5.1	150	150	-10	+48	3480	1500	-2.0	+9.6
J	58.1	26.4	14.0	5.0	1.0	10.1	150	151	-130	-51	3540	1560	-26.0	-10.2
5871	62.9	28.6	0.5	10.0	14.1	5.0	146	150	+136	+50	3720	1680	+27.2	+10.0
P.	67.4	27.4	10.5	10.2	4.5	5.1	150	153	-60	+51	4020	1620	-12.0	+10.2
5859	4.5	33.9	7.4	14.8	7.6	0.3	150	151	+02	+145	240	1980	+24	+29.0
6262	8.4	8.5	9.3	9.1	5.4	6.0	147	151	-39	+31	480	480	-7.8	+6.2
6272	36.1	7.3	13.0	4.0	2.0	10.1	150	141	-110	-61	2160	420	-22.0	-12.2
5866	49.6	18.9	3.5	14.5	11.5	0.6	150	151	+80	+139	2940	1080	+16.0	+27.8
5868	57.9	24.7	1.0	11.1	13.9	4.0	149	151	+129	+71	3420	1440	+25.8	+14.2
I	58.4	25.6	8.0	9.9	7.0	5.0	150	149	-10	+49	3480	1500	-2.0	+9.8
J	59.1	26.4	14.0	5.1	1.0	10.0	150	151	-130	-49	3540	1560	-26.0	-9.8
5871	62.9	28.6	1.0	10.1	14.1	4.9	151	150	+131	+52	3720	1680	+26.2	+10.4
P.	67.3	27.4	10.5	10.0	4.6	5.0	151	150	-59	+50	4020	1620	-11.8	+10.0
5859	4.4	6					2850	2855						
							19	19						

23.30

19) 2850 150.00

19) 2855 150.26

1630.2

2008.4

486.0

406.0

1108.2

1455.2

1509.6

1549.8

1690.0

1630.2

2009.0

486.2

407.8

1107.8

1454.2

1509.8

1550.2

1690.4

1630.0

23, 30

11057 = 26844

June 19, 1905

H. J. S. recorder

x y a B C, 22

P. 67.1 29.2 13.4 2.0 2.6 13.0

	A+C	B+D	C-a	B-D
	150	150	-98	-110
	4020	1740	-19.6	-22.0
	4000.4			

20m -16* 5859

20m -17° 6262 2.4 12.6 9.0 11.6 6.1 3.4

151 150 -29+82 120 720 -5.8 +16.4 114.2

20m -17° 6272 30.0 9.5 15.0 8.0 15.0 7.0

300 150 00+10 1800 540 0.0 +2.0 1770.0

20m -16° 5866 44.4 20.4 9.0 4.0 6.5 11.0

155 150 -25-70 2640 1200 -5.0 -14.0 2635.0

20m -16° 5868 52.9 25.5 1.5 7.5 13.9 7.5

154 150 +124 00 3120 1500 +24.8 0.0 3144.8

R 54.4 28.3 8.5 3.0 6.5 12.1

150 151 -20 -91 3240 1680 -4.0 -18.2 3236.0

R 57.2 26.8 12.5 12.4 2.6 2.7

151 151 -99+97 3420 1560 -19.8 +19.4 3400.2

T 57.5 28.5 7.0 8.4 8.0 6.4

150 148 +10 +20 3420 1680 +2.0 +4.0 3422.0

20m -16° 5871 58.2 29.1 11.9 1.0 3.8 13.9

152 149 -86 -129 3480 1740 -17.2 -25.8 3462.8

I 58.5 27.6 7.1 9.0 8.0 6.1

151 151 +09 +29 3480 1620 +1.8 +5.8 3481.8

P 67.2 29.2 12.4 2.1 2.5 12.9

149 150 -99 -108 4020 1740 -19.8 -21.6 4000.2

20m -17° 6262 2.4 12.6 8.9 11.7 6.0 3.4

149 151 -29+83 120 720 -5.8 +16.6 114.2

20m -17° 6272 30.0 9.5 15.0 8.0 15.0 6.9

300 149 00 +11 1800 540 0.0 +2.2 1770.0

20m -16° 5866 44.4 20.4 8.5 4.1 6.5 11.0

150 151 -20 -69 2640 1200 -4.0 -13.8 2636.0

20m -16° 5868 52.9 25.5 1.0 7.6 13.9 7.5

149 151 +129 +01 3120 1500 +25.8 -2 3145.8

R 54.4 28.3 8.4 3.0 6.5 12.1

149 151 -19 -91 3240 1680 -3.8 -18.2 3236.2

R 57.2 26.8 12.4 12.6 2.6 2.5

150 151 -98+101 3420 1560 -19.6 +20.2 3400.4

T 57.5 28.5 7.0 8.5 7.9 6.5

149 150 +09 +20 3420 1680 +1.8 +4.0 3421.8

20m -16° 5871 58.2 29.1 11.6 1.0 3.5 14.0

151 150 -81 -130 3480 1740 -16.2 -26.0 3463.8

I 58.5 27.6 7.0 9.0 7.9 6.1

149 151 +09 +29 3480 1620 +1.8 +5.8 3481.8

P 67.1 29.2 12.3 2.1 2.7 13.1

150 152 -96 -110 4020 1740 -19.2 -22.0 4000.8

3459	3157
23	21

24, 10

23/ 3459 150.39

21/ 3157 150.33

* Put damage in official log.

1718.0

736.4

542.0

11

15

16

15

16

17

16

17

7

5

11

14

16

15

1684.0

1714.0

1625.8

1718.0

$$\begin{array}{r}
 4140 \\
 17.9 \\
 \hline
 41221
 \end{array}$$

$$\begin{array}{r}
 480 \\
 40 \\
 \hline
 4760
 \end{array}$$

$$\begin{array}{r}
 398 \\
 178 \\
 \hline
 398
 \end{array}$$

$$\begin{array}{r}
 14 \overline{) 2100} \quad (150) \\
 \underline{24} \\
 70
 \end{array}$$

30

20

40

60

80

100

120

140

160

180

200

220

240

260

280

300

320

340

360

380

400

420

440

460

480

500

$$\begin{array}{r}
 4998 \\
 5000
 \end{array}$$

$$\begin{array}{r}
 14 \overline{) 2099} \quad (149.93) \\
 \underline{69} \\
 56
 \end{array}$$

$$\begin{array}{r}
 69 \\
 56 \\
 \hline
 139 \\
 126 \\
 \hline
 13
 \end{array}$$

$$\begin{array}{r}
 130 \\
 126 \\
 \hline
 40 \\
 42
 \end{array}$$

1718.0

736.4

Xv

542.0

11

15

16

15

16

17

16

17

7

5

11

14

16

15

11057

11066

11070

11050

11049

11051

53

106

11058

1684.0

1714.0

1625.8

1718.0

1718.0

736.4

X✓

542.0

1186.0

1500.0

1661.8

1579.4

1684.0

1714.2

1625.8

1718.4

736.6

542.2

1186.2

1499.8

1661.8

1580.2

1684.0

1714.0

1625.8

1718.0

2310

Measures to determine position of Phoebe

June 24, 1905

H. J. S. recorder

$$11071 = 26854$$

	x	y	a	B	C	D	a+c	B+D	C-a	B-D	x ₁ x ₂ 60	y ₁ y ₂ 60	C-a	B-D	X ₂₀₀	X ₂₀₀
P.	22.4	12.0	10.5	15.0	4.5	15.0	150	300	-60	00	1320	720	-12.0	00	1308.0	
20m - 16° 58 59	6.8	35.9	2.0	14.0	13.0	1.0	150	150	+110	+130	360	2100	+22.0	+26.0	382.0	
I	10.1	11.5	14.1	8.5	1.0	8.5	151	150	-131	-20	600	660	-26.2	-4.0	573.8	
20m - 17° 62 62	10.2	10.5	11.9	7.0	2.9	8.1	148	151	-90	-11	600	600	-18.0	-2.2	582.0	
J	12.1	12.2	13.9	2.9	0.9	12.1	148	150	-130	-92	720	720	-26.0	-18.4	694.0	
20m - 17° 62 72	38.0	8.6	15.0	9.9	15.0	5.1	300	150	00	+48	2280	480	0.0	+9.6	2250.0	
20m - 16° 58 66	51.7	20.1	2.5	1.0	12.0	13.9	147	149	+97	-129	3060	1200	+19.4	-25.8	3079.4	
20m - 16° 58 68	60.1	25.7	14.0	11.1	1.0	3.9	150	150	+130	+72	3600	1500	-26.0	+14.4	3574.0	
20m - 16° 58 71	65.2	29.6	12.5	9.5	2.9	5.5	154	150	-96	+40	3900	1740	-19.2	+8.0	3880.8	
P.	22.4	12.0	10.5	14.9	4.5	15.0	150	299	-60	-01	1320	720	-12.0	-02	1308.0	
20m - 16° 58 59	6.8	35.9	2.0	14.0	12.9	1.0	149	150	+109	+130	360	2100	+21.8	+26.0	381.8	
I	10.1	11.5	14.2	6.6	1.0	8.4	152	150	-132	-18	600	660	-26.4	-3.6	573.6	
20m - 17° 62 62	10.2	10.5	11.9	7.4	3.0	8.0	149	154	-89	-06	600	600	-17.8	-1.2	582.2	
J	12.1	12.2	13.4	2.9	1.9	12.0	153	149	-115	-91	720	720	-23.0	-18.2	697.0	
20m - 17° 62 72	38.0	8.6	15.0	9.8	15.1	5.1	301	149	+01	+47	2280	480	+0.2	+9.4	2250.2	
20m - 16° 58 66	51.7	20.1	2.9	1.0	12.0	14.0	149	150	+91	-130	3060	1200	+18.2	-26.0	3078.2	
20m - 16° 58 68	60.1	25.7	14.0	11.0	1.0	4.0	150	150	-130	+70	3600	1500	-26.0	+14.0	3574.0	
20m - 16° 58 71	65.2	29.6	12.0	9.5	3.0	5.5	150	150	-90	+40	3900	1740	-18.0	+8.0	3882.0	
P.	22.4	12.0	10.6	15.0	4.4	15.0	150	300	-62	00	1320	720	-12.4	00	1307.6	
							3151	3301								
							21	22								

$$21 \overline{) 3151} \underline{150.05}$$

$$22 \overline{) 3301} \underline{150.05}$$

23.35

690.0
2126.0
656.0
597.8
701.6
489.6
1174.2
1514.4
1748.0
689.8
2126.0
656.4
598.8
701.8
489.4
1174.0
1514.0
174⁸~~8~~.0
690.0

23,35

$D_{11050} = A_{6804}$

$x \quad y \quad a \quad b \quad c \quad d \quad a+c \quad b+d \quad c-a \quad b-d \quad x \times 60 \quad y \times 60$

P. Image for Saint

[illegible]

Image too faint

20m - 16° 5884	1.1	1.5	14.0	8.4	1.1	6.5	151	149 - 129 + 19	60	60	25.7 + 3.8	34.3
20m - 15° 6008	5.7	70.4	3.5	4.6	11.6	10.4	151	150 + 81 - 58	300	4200 + 16.1	- 11.6	316.1
20m - 16° 5890	26.6	35.9	5.0	14.0	10.1	1.0	151	150 + 51 + 130	1560	2100 + 10.1 + 26.0		1570.1
20m - 16° 5892	35.4	23.4	8.5	4.9	6.5	10.1	150	150 - 20 - 52	2100	1380 - 4.0 - 10.4		2096.0
H	39.9	38.3	1.1	4.5	14.0	10.5	151	150 + 129 - 60	2340	2280 + 25.7 - 12.0		2365.7
D	40.9	37.1	1.9	1.0	13.1	13.6	150	146 + 112 - 126	2400	2220 + 22.3 - 25.2		2422.3
I	42.6	37.9	4.0	14.6	11.0	0.6	150	152 + 70 + 140	2520	2220 + 13.9 + 28.0		2533.9
20m - 16° 5895	50.6	41.6	5.0	7.9	10.0	7.5	150	154 + 50 + 04	3000	2460 + 10.0 + 8		3010.0

① Too faint

~~5884 1.0 6.6~~

16) $2407 \overline{) 150.44}$

$$16 \mid 2404 \mid \underline{150.25}$$

2400

63.8
4188.0
~~4212.0~~

2126.0

1370.0

2267.0

2195.8

2248.2

2460.6

63.8
4188.4

2126.0

1369.6

2268.0

2194.8

2248.0

2460.8

24.35

Measures to determine position of Phoebe

11114 = A6978

June 25, 1905

H. I. S. recorder

	x	y	a	B	C	D	a+c	B+D	C-a	B-D	x x 60	y x 60	x200	y200
P.	35.9	23.8	1.1	13.0	14.9	1.9	150	149+128+111	2100	1380+25.6+22.2	2125.6			
-17	6203	5.5	39.3	7.5	2.9	7.6	151	150+01-92	300	2340+2	-18.4	300.2		
-17	6206	10.3	29.0	11.0	15.0	4.0	150	300-70 00	600	1740-14.0 0.0	586.0			
-18	5886	22.3	5.4	11.9	6.0	3.1	150	150-88-30	1320	300-17.6 -6.0	1302.4			
-18	5888	24.9	2.6	1.5	9.0	13.4	149	151+149+29	1440	120+23.8+5.8	1463.8			
? -17	6243	27.8	23.1	2.9	0.5	12.1	150	149+92-139	1620	1380+18.4-27.8	1638.4			
-17	6214	36.4	26.0	5.1	15.1	10.0	151	301+49+01	2160	1560+9.8+2	2169.8			
-18	5892	39.4	4.5	10.9	7.0	4.1	146	150-64-10	2340	240-12.8-2.0	2327.2			
-17	6216	41.5	18.4	7.0	5.0	7.6	146	151+06-51	2460	1080+1.2-10.2	2461.2			
J.	45.4	27.6	11.1	9.8	4.0	5.1	151	149-71+47	2700	1620-14.2+9.4	2685.8			
D	52.6	28.5	4.0	7.5	11.0	7.4	150	149+70+01	3120	1680+14.0+2	3134.0			
-17	6224	68.4	23.4	10.1	6.0	4.9	150	149-52-29	4080	1380-10.4-5.8	4069.6			
P.	35.8	23.8	1.2	13.0	13.9	2.0	150	150+128+110	2100	1380+25.6+22.0	2125.6			
-17	6203	5.5	39.3	7.4	3.0	7.6	150	151+02-91	300	2340+4 -18.2	300.4			
-17	6206	10.3	29.0	11.0	15.0	4.0	150	301-70-01	600	1740-14.0-2	586.0			
-18	5886	22.3	5.4	11.9	6.0	3.1	150	151-88-31	1320	300-17.6-6.2	1302.4			
Object bright -18	5888	24.9	2.5	2.0	8.5	13.0	150	146+110+24	1440	120+22.0+4.8	1462.0			
-17	6243	27.7	23.1	2.9	0.5	12.0	149	151+91-141	1620	1380+18.2-28.2	1638.2			
-17	6214	36.6	26.0	5.1	15.0	9.9	150	300+48 00	2160	1560+9.6 0.0	2169.6			
-18	5892	39.4	4.5	10.9	7.0	4.0	149	149-69-09	2340	240-13.8-1.8	2326.2			
-17	6216	41.5	18.4	7.4	5.0	7.9	153	151+05-51	2460	1080+1.0-10.2	2461.0			
J.	45.4	27.6	11.1	9.8	4.0	5.1	151	149-71+47	2700	1620-14.2+9.4	2685.8			
D	52.6	28.5	4.0	7.5	11.0	7.5	150	150+70 00	3120	1680+14.0 0.0	3134.0			
1.15 -17	6224	68.4	23.5	10.0	6.0	4.8	148	151-52-31	4080	1380-10.4-6.2	4069.6			
25.15 P.	35.9	23.8	1.4	13.1	13.9	1.9	153	150+125+112	2100	1380+25.0+22.4	2125.0			

3747 4348
25 29

25) 3747 149.88

29) 4348 149.93

1402.2

2321.6

1710.0

294.0

125.8

1352.2

1530.2

238.0

1069.8

1629.4

1680.2

1374.2

1402.0

2321.8

1709.8

293.8

~~124.8~~~~115.2~~

1351.8

1530.0

238.2

1069.8

1629.4

1680.0

1373.8

1402.4

0.20

Measures to determine pos. of Phoebe

June 29, 1905

H. J. S. recorder

	x	y	A	B	C	D	$a+c$	$B+D$	$C-a$	$B-D$	$x \times 60$	$y \times 60$	$C-a \times 200$	$B-D \times 200$	
Imagofft	47.6	37.5	5.9	6.9	9.8	8.0	149	149	+31	-11	2820	2280	+6.2	-2.2	2826.2
$\times$	-15	6027	10.1	45.5	13.5	7.0	303	151	+33	-11	600	2700	+6.6	-2.2	606.6
-16	5903	14.5	3.8	8.1	13.2	7.0	151	152	-11	+12	840	180	-2.2	+22.4	837.8
$\mathcal{I}$	15.7	30.9	3.0	13.0	12.1	2.0	151	150	+9	+10	900	1800	+18.2	+22.0	918.2
-16	5905	20.9	12.8	1.0	11.9	14.1	151	249	+131	+89	1200	720	+26.2	+17.8	1226.2
$\mathcal{I}$	25.5	30.9	6.9	14.2	8.1	1.0	150	152	+12	+132	1500	1800	+2.4	+26.4	1502.4
16	26.7	30.4	3.9	5.1	11.1	10.0	150	151	+72	-49	1560	1800	+14.4	-9.8	1574.4
-15	5913	41.9	11.7	1.5	10.9	13.4	149	150	+119	+68	2460	660	+23.8	+13.6	2483.8
-15	6034	46.9	57.6	0.1	10.5	14.8	149	150	+147	+60	2760	3420	+29.4	+12.0	2789.4
0.55	$\times$	-15	6037	57.5	48.9	9.1	301	299	+119	-25	3420	2880	+23.8	-5.0	3443.8
$\mathcal{I}$	47.6	37.5	5.9	7.0	9.0	8.1	149	151	+31	-11	2820	2220	+6.2	-2.2	2826.2
-15	6027	10.1	45.5	13.5	6.9	16.8	303	149	+33	-11	600	2700	+6.6	-2.2	606.6
22.45	-16	5903	14.5	3.9	8.0	13.1	149	151	-11	+111	840	180	-2.2	+22.2	837.8
$\mathcal{I}$	15.8	30.9	3.0	13.0	12.0	2.0	150	150	+90	+111	900	1800	+18.0	+22.2	918.0
-16	5905	20.9	12.8	1.0	12.1	14.0	150	151	+130	+91	1200	720	+26.0	+18.2	1226.0
$\mathcal{I}$	25.5	30.9	7.0	14.1	8.0	1.0	150	151	+10	+131	1500	1800	+2.0	+26.2	1502.0
16	26.7	30.4	3.9	4.9	11.1	10.0	150	149	+72	-51	1560	1800	+14.4	-10.2	1574.4
-15	5913	41.9	11.7	1.5	10.9	13.6	151	149	+121	+69	2460	660	+24.2	+13.8	2484.2
-15	6034	46.9	57.6	0.2	10.4	14.6	148	146	+144	+58	2760	3420	+28.8	+11.6	2788.8
-15	6037	57.4	48.9	9.0	13.8	20.9	299	148	+119	+128	3420	2880	+23.8	+25.6	3443.8
22.55	$\mathcal{I}$	47.6	37.5	5.1	7.0	9.9	150	151	+48	-11	2820	2220	+9.6	-2.2	2829.6

3753 3303
25 22

25 3753 (150.12)

22 3303 (150.14)

yr
22¹7.8

2697.8

202.4

1822.0

3.

717.8

1826.4

1790.2

673.6

3432.0

2875.0

2217.8

2697.8

202.2

1822.2

738.2

1826.2

1789.8

673.8

3431.6

2905.6 - 30 = 2875.6 ?

2217.8

Meas. to determine pos. of Phoebe.

23.0
11078 = a 6979

July 3, 1905.

H. D. recorder

	x	y	a	B	C	D	$a+c$	$B+D$	$C-a$	$B-D$	$x \times 60$	$y \times 60$	$x \times 200$	$y \times 199$
P.	32.6	22.8	6.5	12.1	8.7	3.1	152	152	+22	+90	1920	1320	+44	+17.9
-17	6203	4.3	38.5	11.1	7.2	3.9	150	151	-72	-07	240	2280	-14.4	-1.4
-17	6206	9.1	28.4	14.0	5.1	16.1	301	150	+21	-48	540	1680	+4.2	-9.6
-18	5886	21.2	4.8	12.0	12.5	3.1	151	154	-89	+94	1260	240	-17.8	+19.2
-18	5888	23.9	2.1	17.0	16.0	13.0	300	299	-40	+21	1380	120	-8.0	+4.2
-17	6213	26.6	22.5	5.1	7.5	10.0	151	149	+49	+01	1560	1320	+9.8	+2
-17	6214	35.5	25.6	7.5	8.5	7.5	150	151	00	+19	2100	1500	00	+3.8
-18	5892	38.3	4.1	10.9	16.0	4.1	150	300	-68	+20	2280	240	-13.8	+4.0
-17	6216	40.4	17.9	8.5	13.0	6.5	150	150	-20	+110	2400	1020	-4.0	+21.9
T	41.1	26.9	13.9	14.8	1.1	0.5	150	153	-128	+143	2460	1560	-25.6	+28.5
J	50.1	27.6	14.0	8.6	1.0	6.0	150	146	-130	+26	3000	1620	-26.0	+5.2
-17	6224	67.2	23.2	12.0	3.0	2.9	149	151	-91	-91	4020	1380	-18.2	-18.1
P.	32.6	22.8	6.4	12.0	8.6	3.0	150	150	+22	+90	1920	1320	+44	+17.9
-17	6203	4.3	38.5	11.0	7.0	3.9	149	150	-71	-10	240	2280	-14.2	-2.0
-17	6206	9.1	28.4	14.0	5.5	1.0	150	154	-130	-44	540	1680	-26.0	-8.8
-18	5886	21.2	4.8	12.0	12.0	3.0	150	149	-90	+91	1260	240	-18.0	+18.1
-18	5888	23.9	2.1	17.1	15.9	12.9	300	300	-42	+18	1380	120	-8.4	+3.6
-17	6213	26.4	22.5	5.0	7.4	9.9	149	153	+49	-05	1560	1320	+9.8	-1.0
-17	6214	35.5	25.6	7.5	8.6	7.6	151	151	+01	+21	2100	1500	+2	+4.2
-18	5892	38.4	4.1	11.0	15.9	4.1	151	300	-69	+18	2280	240	-13.8	+3.6
-17	6216	40.5	17.9	8.1	12.9	21.9	300	298	+138	-40	2400	1020	+27.6	-8.0
T	41.1	26.9	13.8	14.9	1.0	0.2	148	151	-128	+147	2460	1560	-25.6	+29.3
J	50.1	27.6	14.0	8.5	1.0	6.5	150	150	-130	+20	3000	1620	-26.0	+4.0
-17	6224	67.2	23.2	12.0	3.0	2.9	149	151	-91	-91	4020	1380	-18.2	-18.1
23.40 P.	32.5	22.8	6.4	12.0	8.7	3.0	151	150	+23	+90	1920	1320	+4.6	+17.9
							4352	4513						
							29	30						
	29	4352	150.07											
	30	4513	150.43											

1337.9

2278.6

1670.4

 $\chi = 514.2$

239.2

124.2

1320.2

1503.8

244.0

1041.9

1588.5

1625.2

1361.9

1337.9

2278.0

1671.2

~~514.0 + 30 = 544.0~~

514.0 understood to be correct.

258.1

123.6

1319.0

1504.2

243.6

1012.0

1589.3

1624.0

1361.9

1337.9

1012.0 + 30 = 1042.0

2397.6

Meas. to determine pos. of Phoebe +
Cat. stars.

11042 = A 6669

July 5 1905 H. D. S. recorder

Object marked but not lettered? assumed to be Phoebe.	x	y	A	B	C	D	a+c	B+D	C-a	B-D	x x 60	y x 60	x 200	y 200	x
20m -15 6006	1.6	44.4	8.5	6.1	6.5	9.0	150	151	-20	-29	2520	3000	-4.0	-5.8	2516.0
20m -16 5884	8.9	0.5	0.5	7.9	14.5	7.1	150	150	+140	+08	480	0	+28.0	+1.6	508.0
20m -15 6008	13.4	69.3	9.9	3.5	5.1	11.6	150	151	-48	-81	780	4140	-9.6	-16.2	770.4
Difficult to meas.	15.6	39.5	6.0	8.0	9.0	7.0	150	150	+30	+10	900	2340	+6.0	+2.0	906.0
B reading assumed to be 11.6	15.9	39.7	2.5	11.6	12.5	11.6	150	150	+100	+82	900	2340	+20.0	+16.4	920.0
16	16.2	39.1	13.5	0.1	1.9	14.9	154	150	-116	-148	960	2340	-23.2	-29.6	936.8
20m -16 5890	34.4	34.9	8.9	14.8	6.1	15.2	150	299	-28	-03	2040	2040	-5.6	-6	2034.4
20m -16 5892	43.1	22.4	12.0	6.1	3.0	9.1	150	152	-90	-30	2580	1320	-18.0	-6.0	2562.0
20m -16 5895 for near edge to meas.															
P	42.8	50.4	8.4	6.1	6.6	8.9	150	150	-18	-28	2520	3000	-3.6	-5.6	2516.4
20m -15 6006	1.6	44.4	5.8	6.0	9.0	9.0	148	150	+32	-30	60	2640	+6.4	-6.0	66.4
20m -16 5884	8.9	0.5	0.5	8.0	14.4	7.1	149	151	+139	+09	480	0	+27.8	+1.8	507.8
20m -15 6008	13.4	69.3	9.8	3.5	5.1	11.4	149	149	-47	-79	780	4140	-9.4	-15.8	770.2
P	15.6	39.5	6.7	7.9	8.6	7.0	153	149	+19	+09	900	2340	+3.8	+1.8	903.8
J	15.9	39.7	2.5	11.6	12.6	3.5	151	151	+101	+81	900	2340	+20.2	+16.2	920.2
16	16.2	39.1	13.3	0.1	1.6	14.9	149	150	-117	-148	960	2340	-23.4	-29.6	936.6
20m -16 5890	34.4	34.9	8.9	14.5	6.1	15.2	150	297	-28	-07	2040	2040	-5.6	-1.4	2034.4
20m -16 5892	43.1	22.5	11.5	6.0	3.7	9.0	152	150	-78	-30	2580	1320	-15.6	-6.0	2564.4
20m -16 5895															
24.15 P	42.8	50.4	8.5	6.1	6.6	9.0	151	151	-19	-29	2520	3000	-3.8	-5.8	2516.2

28 57 31 52
19 21 10
150.37 150.05

✓

y

2994.2

2633.8

1.6

4123.8

2342.0

56.4

~~2323.6~~

2310.4

2039.4⁸

1314.0

2994.4

2634.0

1.8

4124.2

x

2341.8

2356.2

2310.4

2038.6⁶

1314.0

2994.2

0.40

Meas. to determine pos. of
Phoebe + Cat. stars

July 5, 1905

H. J. S. recorder

11077 = 26997

	x	y	A	B	C	D	a+b	B+D	C-D	x x 60	y x 60	C-a	B-D				
												X 200	X 200				
⊙	14.1	17.3	13.6	4.9	1.5	10.4	151	153	-121	-55	840	1020	-24.2	-11.0	815.8		
20m	-17	6203	6.3	38.4	11.9	5.0	3.0	10.0	149	150	-89	-50	360	2280	-17.8	-10.0	342.2
20m	-17	6206	11.1	28.3	14.1	3.0	1.0	12.0	151	150	-131	-90	660	1680	-26.2	-18.0	633.6
20m	-18	5886	23.2	4.7	11.7	11.0	3.1	4.0	148	150	-86	+70	1380	240	-17.2	+14.0	1362.8
20m	-18	5888	25.8	1.9	16.9	14.1	13.1	15.9	300	300	-38	-18	1500	60	-7.6	-3.6	1492.4
20m	-17	6213	28.5	23.2	7.1	16.6 ^{21.9}	8.0	13.1	151	297	+09	+35	1680	1380	+1.8	+7.0	1681.8
R	28.6	23.4	4.9	6.1 ^{21.9}	10.0	8.5			149	304	+51	+134	1680	1380	+10.2	+26.8	1690.2
T	30.2	22.2	12.8	2.9	2.5	12.3			153	152	-103	-94	1800	1320	-20.6	-18.8	1779.4
S	35.9	22.7	1.1	9.9	13.9	5.1			150	150	+128	+48	2100	1320	+25.6	+9.6	2125.6
20m	-17	6214	37.5	25.5	8.0	7.2	6.9	8.0	149	152	-11	-08	2220	1500	-2.2	-1.6	2217.8
20m	-18	5892	40.4	3.9	10.9	14.8	4.1	0.3	150	153	-68	+145	2400	180	-13.6	+29.0	2386.4
20m	-17	6216	42.5	17.6	9.0	12.0	6.0	21 ^{18.0}	150	300	-30	-60	2520	1020	-6.0	-12.0	2514.0
20m	-17	6224	69.1	23.2	13.1	2.5	1.9	12.4	150	149	-112	-99	4140	1380	-22.4	-19.8	4117.6
⊙	14.1	17.3	13.5	4.9	1.5	10.2			150	151	-120	-53	840	1020	-24.0	-10.6	816.0
20m	-17	6203	6.3	38.4	12.1	5.0	3.1	10.1	152	151	-90	-51	360	2280	-18.0	-10.2	342.0
20m	-17	6206	11.1	28.3	14.1	3.0	0.9	12.0	150	150	-132	-90	660	1680	-26.4	-18.0	633.6
20m	-18	5886	23.3	4.6	12.1	11.0	3.0	4.0	151	150	-91	+70	1380	240	-18.2	+14.0	1361.8
20m	-18	5888	25.8	1.9	17.0	14.5	13.1	15.8	301	299	-39	-09	1500	60	-7.8	-1.8	1492.2
20m	-17	6213	28.5	23.2	7.1	16.6	7.9	13.1	150	297	+08	+35	1680	1380	+1.6	+7.0	1681.6
R	28.6	23.4	5.0	22.0	10.0	8.0			150	300	+50	+140	1680	1380	+10.0	+28.0	1690.0
T	30.2	22.3	12.9	2.9	2.1	12.1			150	150	-108	-92	1800	1320	-21.6	-18.4	1778.4
S	35.9	23.6	1.4	9.9	13.9	5.1			153	150	+125	+48	2100	1380	+25.0	+9.6	2125.0
20m	-17	6214	37.5	25.5	7.9	7.1	6.8	7.6	147	147	-11	-05	2220	1500	-2.2	-1.0	2217.8
20m	-18	5892	40.4	3.9	10.9	14.6	4.1	0.5	150	151	-68	+141	2400	180	-13.6	+28.2	2386.4
20m	-17	6216	42.5	17.7	9.0	12.0	6.1	18.1	151	301	-29	-61	2520	1020	-5.8	-12.2	2514.2
20m	-17	6224	69.2	23.2	13.0	2.5	2.0	12.6	150	151	-110	-101	4140	1380	-22.0	-20.2	4118.0
⊙	14.1	17.3	13.5	5.0	1.5	10.0			150	150	-120	-50	840	1020	-24.0	-10.0	816.0
1.30	29	4356	150.21						4356	5256							
	35	5256	150.17						29	35							

1009.0

2270.0

1662.0

254.0

56.4

1387.0

1406.8

1301.2

1329.6

4

1598.4

209.0

1008.0

1360.2

1009.4

2269.8

1662.0

254.0

58.2

1387.0

1408.0

1301.6

1389.6

1499.0

208.2

1007.8

1359.8

1010.0

144

22.50

Measures of Phoebe and
Cat. stars

D 110.68 - 0.6773

July 6, 1905

H. J. S. recorder

189

		x	y	A.	B.	C.	D.	20	$a \pm b + d - c$	$B - D$	$x \times 60$	$y \times 60$	$c - a$	$B - D$	$x \times 199$	$y \times 199$	
	P	38.5	34.6	7.8	10.0	7.2	5.0		150	150	-06	+50	2280	2040	-12	+10.0	2278.8
20m	-15	6027	4.6	43.9	5.0	^{13.0} 14.0	10.4	2.0	154	150	+54	+110	240	2580	+10.7	+21.9	250.7
	I	8.0	27.8	15.0	13.5	15.0	1.6		300	151	00	+119	480	1620	00	+23.7	480.0
20m	-16	5903	9.5	2.5	7.5	6.0	7.5	9.1	150	151	00	-31	540	120	00	-6.2	540.0
20m	-16	5905	15.8	11.4	17.0	6.0	13.0	9.0	300	150	-40	-30	900	660	-8.0	-6.0	892.0
	H	17.7	^{26.9} 27.9	4.1	14.5	10.7	0.6		148	151	+66	+139	1020	1560	+13.1	+27.7	1033.1
	I	17.6	27.5	4.9	6.0	10.0	9.1		149	151	+51	-31	1020	1620	+10.1	-6.2	1030.1
20m	-16	5913	36.9	10.6	2.0	8.6	12.9	6.6	149	152	+109	+20	2160	600	+21.7	+4.0	2181.7
20m	-15	6034	41.4	56.6	9.0	9.0	6.0	6.1	150	151	-30	+29	2460	3360	-6.0	+5.8	2454.0
20m	-15	6037	51.9	47.9	16.1	14.5	14.0	15.6	301	301	-21	-11	3060	2820	-4.2	-2.2	3055.8
20m	-15	6042	^{68.4} 68.4	51.2	10.5	12.0	4.5	3.0	150	150	-60	+90	4080	3060	-11.9	+17.9	4068.1
	P	38.5	34.6	7.7	10.0	7.5	5.0		152	150	-02	+50	2280	2040	-4	+10.0	2279.6
20m	-15	6027	4.6	43.9	5.0	^{12.9} 14.5	10.0	2.0	150	149	+50	+109	240	2580	+10.0	+21.7	250.0
	I	8.0	27.9	15.1	13.5	15.1	1.6		302	151	00	+119	480	1620	00	+23.7	480.0
20m	-16	5903	9.5	2.4	7.6	6.0	7.5	9.0	151	150	-01	-30	540	120	-2	-6.0	539.8
20m	-16	5905	15.8	11.4	17.1	6.0	12.9	⁸ 7.9	300	149	-42	-29	900	660	-8.4	-5.8	891.6
	H	17.6	26.9	4.5	14.5	10.9	0.5		154	150	+64	+140	1020	1560	+12.7	+27.9	1032.7
	I	17.6	27.5	4.9	6.1	10.1	9.0		150	151	+52	-29	1020	1620	+10.3	-5.8	1030.3
20m	-16	5913	36.8	10.6	2.0	8.4	13.0	6.9	150	153	+110	+15	2160	600	+21.9	+3.0	2181.9
20m	-15	6034	41.4	56.6	9.1	9.0	6.0	6.0	151	150	-31	+30	2460	3360	-6.2	+6.0	2453.8
20m	-15	6037	51.8	47.9	16.2	14.2	13.9	16.0	301	302	-23	-18	3060	2820	-4.6	-3.6	3055.4
20m	-15	6042	68.4	51.7	10.5	12.0	4.6	2.9	151	149	-59	+91	4080	3060	-11.7	+18.1	4068.3
	P	38.5	34.6	7.9	9.9	7.0	5.0		149	149	-09	+49	2280	2040	-1.8	+9.8	2278.2
									4362	3761							
									29	25							

23.30

23.30

4362	3761
29	25

29 4362 150.41

25 3761 150.44

8	2050.0
7	2601.9
0	1643.7 x ✓
0	113.8
0	654.0
1	1587.7
1	1613.8
7	604.0
0	3365.8
8	2817.8
1	3077.9
6	2050.0
0	2601.7
0	1643.7 x ✓
8	114.0
6	654.2
7	1587.9
3	1614.2
9	603.0
8	3366.0
4	2816.4
3	3078.1
2	2049.8

23,10

July 19 1905

H. I. S. recorder

$D11045 = A 6677$

	x	y	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
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20m - 15 6006 1.4 44.4 11.9 7.0 3.1 8.0 150 150 - 8.8 - 10 60 2640 - 17.6 - 2.0

20m -16 5884 10.6 0.9 5.9 14.1 9.4 1.0 153 151⁺³⁵ ~~132~~ 131 600 0 + 7.0 + 26.2

20m -15 6008 11.7 69.8 3.6 12.9 11.5 2.1 151 150+79+108 660 4140+15.8+21.6

2 T 26.1 43.7 14.0 11.4 1.0 3.6 150 150 -130 + 78 1560 2580 -260 + 15.6

28.5 44.8 6.9 11.6 8.1 3.1 150 147+12+85 1680 2640+2.4+17.0

20m -16 5890 24.5 36.6 8.1 9.0 7.0 6.0 151 150 -11 +30 2040 2160 -2.2 +6.0

20m -16 5892 43.8 24.5 2.5 7.9 12.5 7.4 150 153+100+052580 1440 +20.0 +1.0

P. 53.6 55.5 3180 3300

20m. -15 6006 1.3 44.4 11.4 6.9 3.2 8.0 146 149 -82 -11 60 2640 -16.4 -2.2

20m. -16 5884 10.6 0.9 5.5 14.1 9.4 0.9 149 150+39+132 600 0 + 7.8 + 26.4

20m -15 6008 11.7 69.8 3.5 12.9 11.5 2.1 150 150+80+108 660 4140+16.0+21.6

D. 26.1 43.7 13.9 11.5 1.0 3.5 149 150 129 + 80 1560 2580 - 25.8 + 16.0

28.5 44.8 6.8 11.9 8.1 3.1 149 150 + 13 + 88 1680 2640 + 2.6 + 17.6

20m -16 5890 34,5 36,6 8.8⁵ 9.0 6.6 6.0 151 150 -19 +30 2040 2160 -3.8 +6.0

20m -16 58921 43.8 24.5 2.5 7.6 12.5 7.4 150 150 +100 +0.2 2580 1440 +20.0 +4

Q. 53.6 55.5 $\frac{2099}{14}$ $\frac{2100}{14}$ 3180 3300

23.40

149.93

150.00

42.4 2638.0
607.0 26.2
675.8 4161.6
1534.0 2595.6
1682.4 2657.0
2037.8 2166.0
2600.0 1441.0

43.6 2637.8
607.8 26.4
676.0 ⁴¹4161.6
1534.2 2596.0
1682.6 2657.6
2036.2 2166.0
2600.0 1440.4

Measures of Phoebe and Cat. stars.

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H. J. S. recorder

	γ	γ	A.	B.	C.	D.	$a+c$	$B+D$	$C-a$	$B-D$	$x \times 60$	$y \times 60$	$\frac{B-D}{2}$	$B-D$
23.00 $11080 = a 6742$														
P	55.6	44.5	4.9	8.4	10.1	6.6	150	150	+52	+18	3300	2640	+10.4	+3.6
20m -15° 60 27	4.1	42.5	14.1	8.0	1.0	7.1	151	151	-131	+9	240	2520	-26.2	+1.8
20m -16° 59 03	too near edge of plate.													
20m -16° 59 05	14.5	9.7	7.0	12.0	8.1	3.0	151	150	+11	+90	840	540	+2.2	+18.0
Hb	24.6	36.8	7.0	11.9	8.0	3.1	150	150	+10	+88	1440	2160	+2.0	+17.6
T	29.1	35.3	13.0	3.0	17.0	12.1	300	151	+40	-91	1740	2100	+8.0	-18.2
20m -16° 59 13	35.5	8.5	7.0	7.9	8.1	7.1	151	150	+11	+08	2100	480	+2.2	+1.6
20m -15° 60 34	41.1	54.5	14.1	7.0	1.0	8.0	151	150	-131	-10	2460	3240	-26.2	-2.0
20m -15° 60 37	51.5	45.5	9.0	8.5	21.0	21.9	300	304	+120	-124	3060	2700	+24.0	-24.8
20m -15° 60 40	61.0	58.6	15.0	9.9	15.0	5.1	300	150	0	+48	3660	3480	0	+9.6
20m -15° 60 42	67.8	49.1	2.1	1.0	12.9	14.0	150	150	+108	-130	4020	2940	+21.6	-26.0
P	55.6	44.5	4.9	8.0	10.1	6.9	150	149	+52	+11	3300	2640	+10.4	+2.2
20m -15° 60 27	4.1	42.5	14.2	7.5	1.0	7.6	152	151	-132	-01	240	2520	-26.4	-2
20m -16° 59 03	too near edge													
20m -16° 59 05	14.5	9.6	6.8	12.0	8.2	3.1	150	151	+14	+89	840	540	+2.8	+17.8
Hb	24.6	36.7	6.9	11.9	8.1	3.1	150	150	+12	+89	1440	2160	+2.4	+17.8
T	29.1	35.3	13.0	3.4	16.9	11.5	299	149	+69	-81	1740	2100	+13.8	-16.2
20m -16° 59 13	35.5	8.5	7.0	7.7	8.4	7.1	154	148	+14	+06	2100	480	+2.8	+1.2
20m -15° 60 34	41.1	54.5	14.1	7.0	1.1	8.0	152	150	-130	-10	2460	3240	-26.0	-2.0
20m -15° 60 37	51.5	45.5	9.0	8.6	21.0	21.8	300	304	+120	-132	3060	2700	+24.0	-26.4
20m -15° 60 40	61.0	58.6	15.0	9.9	15.0	5.0	300	149	0	+49	3660	3480	0	+9.8
20m -15° 60 42	67.8	49.1	2.1	1.0	12.9	14.1	150	151	+108	-131	4020	2940	+21.6	-26.2
P	55.6	44.5	4.9	8.0	10.0	7.0	149	150	+52	+10	3300	2640	+10.4	+2.0
23.30							4060	3458						
							27	23						
							150.37	150.35						

6	3310.4	2643.6	
8	213.8	2521.8	
8.0	842.2	558.0	
16	1442.0	2177.6	
12	1748.0	2081.8	
6	2102.2	481.6	
0	2433.8	3238.0	
6.8	3084.0	267 ³ 52	XV
6	36 ³ 0.0	3489.6	XV
6.0	4041.6	2914.0	
12	3310.4	2642.2	
2	213.6	2519.8	
18	842.8	557.8	
6	1442.4	2177 ⁶ 8	XV
18	17 ⁴⁷ 53.8	2083.8	XV
12	2102.8	481.2	
2.0	2434.0	3238.0	
6.4	3084.0	2673.6	
18	36 ³ 0.0	3489.8	XV
6.2	4041.6	2913.8	
2.0	3310.4	2642.0	XV

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x y a B C. 20.

P film defective, cannot measure A+C B+D C-a B-D $x \times 60 y \times 60$ $x200 \times 200$ ^{C-a B-D}
 18.1 12.9

-15° 6027	5.6	43.8	18.1	12.9	11.9	17.0	300	300	-62	-40	300	2580	-12.4	-8.0
20m. -16° 5903	11.6	2.5	4.9	7.5	10.1	8.0	150	155	+52	-05	660	120	+10.4	-1.0
20m. -16° 5905	17.7	11.6	18.0	10.0	11.9	5.1	299	151	-61	+49	1020	660	-12.2	+9.8
20m. -16° 5913	38.7	11.4	2.9	5.9	12.1	9.1	150	150	+92	-32	2280	660	+18.4	-6.4
20m. -15° 6034	42.2	57.5	13.1	7.9	2.0	7.0	151	149	-111	+09	2520	3420	-22.2	+1.8
20m. -15° 6037	52.8	49.1	17.0	16.9	13.1	13.0	301	299	-39	+39	3120	2940	-7.8	+7.8
20m. -15° 6042	69.1	53.4	13.4	6.0	16.9	9.0	303	150	+35	-30	4140	3180	+7.0	-6.0

[illegible]

150,19 150,33

287.6 2572.0

670.4 119.0

1007.8 669.8

2398.4 653.6

2497.8 3421.8

3112.2 2947.8

4147.0 3174.0 ?

287.6 2571.6

670.6 118.6

1007.6 669.8

2298.6 653.6

2497.8 3422.0

3112.2 2947.6

4117.6 3174.0 *add 30?* $4117.6 + 30 = 4147.6$?

1.45

Measures of Phoebe and Cat. stars.

July 20, 1905

H. D. S. recorder

11055 = a 6807

x y a B C D

a+c B+D C-a B-D x x 60 y x 60 ^{C-a B-D} x 200 x 200

Faint. P.	50.8	38.8	2.0	12.1	13.0	3.0	150	151+110+91	3000	2280+22.0+18.2
20m -15°	6006	1.0	47.4	14.9	4.0	15.0	11.0	299	150+01-70	60 2820+2-14.0
20m -16°	5884	7.8	3.4	16.0	3.5	14.0	11.4	300	149-20-79	420 180-4.0-15.8
20m -16°	5890	33.6	37.5	4.5	7.5	10.1	7.6	146	151+56-01	1980 2220+11.2-2
H.	35.5	33.4	7.5	4.0	7.5	11.0		150	150 0-70	2100 1980 0-14.0
J.	39.2	34.4	12.9	4.9	2.1	10.0		150	149-108-51	2340 2040-21.6-10.2
20m -16°	5892	42.4	24.7	9.1	12.6	5.9	2.0	150	146-32+106	2520 1440-6.4+21.2
20m -16°	5895	57.6	42.9	4.5	14.9	10.5	15.0	150	299+60-01	3420 2520+12.0-2
P.	50.8	38.8	2.5	12.1	12.9	3.1		154	152+104+90	3000 2280+20.8+18.0
20m -15°	6006	1.0	47.4	15.0	3.5	15.0	11.4	300	149 0-79	60 2820 0-15.8
20m -16°	5884	7.9	3.4	16.1	3.6	14.0	11.5	301	151-21-79	420 180-4.2-15.8
20m -16°	5890	33.6	37.5	4.6	7.3	10.6	7.5	152	148+60-02	1980 2220+12.0-4
H.	35.5	33.4	7.4	3.9	7.5	11.1		149	150+01-72	2100 1980+2-14.4
J.	39.2	34.4	12.9	4.8	2.1	10.6		150	154-108-58	2340 2040-21.6-11.6
20m -16°	5892	42.4	24.7	9.5	12.5	5.4	2.5	149	150-41+100	2520 1440-8.2+20.0
20m -16°	5895	57.6	42.9	4.6	14.0	10.1	15.0	147	290+55-20	3420 2520+11.0-2.0
2.25	P.	50.8	38.8	2.4	12.3	12.9	2.9	153	152+105+94	3000 2280+21.0+18.8

$\frac{3150}{21}$ $\frac{2841}{19}$
 150.00 150.05
 149.53

3022.0 2298.2

30.2 2806.0

416.0 164.2

1991.2 2219.8

2100.0 1966.0

2318.4 2029.8

2513.6 1461.2

3432.0 2519.8?

3020.8 2298.0⁸ X ✓

30.0 2804.2

415.8 164.2

1992.0 2219.6 X ✓

2100.2 1965.6

2318.4 2028.4

2511.8 1460.0

3431.0 2518.0⁸

3021.0 2298.8

22,45

Measures of Pleiades and Cat. stars.

D11075 = A6735

July 21, 1905 H. D. S. recorder

x y A. B. C. D.

C-A B-D
x200 x200

Q. 53.5 45.9 8.9 13.5 6.0 1.6 149 151 -29+119 3180 2700 -5.8 +23.8

20m. -15° 6027 3.6 42.9 4.9 14.1 10.1 0.5 150 150+52+132 180 2520+10.4 +26.4

20m. -16° 5903 8.6 1.5 6.5 6.6 8.5 8.6 150 152+20-20 480 60+4.0 -4.0

20m. -16° 5905 14.9 10.5 16.0 7.0 14.0 8.0 300 150-20-10 840 600-4.0 -2.0

16. 21.2 36.9 11.9 14.6 3.2 0.5 151 151-87+141 1260 2160-17.4 +28.2

T. 27.6 36.3 5.5 3.9 9.5 11.0 150 149+40-71 1620 2160+8.0 -14.2

20m. -16° 5913 35.9 9.7 15.6 10.0 14.1 5.1 297 151-15+49 2100 540-3.0 +9.8

20m. -15° 6034 40.4 55.6 8.5 10.4 6.5 4.5 150 149-20+59 2400 3300-4.0 +11.8

20m. -15° 6037 50.9 47.0 16.0 15.1 13.9 15.0 299 301-21+01 3000 2820-4.2 +2

20m. -15° 6042 67.4 50.9 10.1 13.9 5.0 1.0 151 149-51+129 4020 3000-10.2 +25.8

P. 53.5 45.9 8.9 13.5 6.1 1.5 150 150-28+120 3180 2700-5.6 +24.0

20m. -15° 6027 3.6 42.9 4.9 14.8 10.0 1.0 149 150+51+130 180 2520+10.2 +26.0

20m. -16° 5903 8.6 1.5 6.4 6.5 8.6 8.5 150 150+22-20 480 60+4.4 -4.0

20m. -16° 5905 14.9 10.5 16.0 7.0 14.0 8.0 300 150-20-10 840 600-4.0 -2.0

16. 21.3 36.9 12.0 14.5 3.2 0.5 152 150-88+140 1260 2160-17.6 +28.0

T. 27.6 36.3 5.0 4.0 10.1 11.1 151 151+51-71 1620 2160+10.2 -14.2

20m. -16° 5913 35.9 9.6 16.0 10.1 14.1 5.1 301 151-19+50 2100 540-3.8 +10.0

20m. -15° 6034 40.4 55.6 8.6 10.1 6.0 5.0 146 151-26+51 2400 3300-5.2 +10.2

20m. -15° 6037 50.9 47.0 16.1 15.0 13.9 15.0 300 300-22 03000 2820-4.4 0

20m. -15° 6042 67.4 50.9 10.3 14.0 4.9 1.0 152 150-54+130 4020 3000-10.8 +26.0

23.20 P. 53.4 45.9 9.0 13.5 6.1 1.6 151 151-29+119 3180 2700-5.8 +23.8

4049 3457

27 23

149.96 150.30

3174.2 2723.8

190.4 2546.4

484.0 56.0

836.0 598.0

1242.6 2188.2

1628.0 2145.8

2097.0 549.8

2396.0 3311.8

2995.8 2790.2

4009.8 3025.8

3174.4 2724.0

190.2 2546.0

484.4 56.0

836.0 598.0

1242.4 2188.0

1630.2 2145.8

2096.2 550.0

2394.8 3310.2

2790.0
2995.6 2820.0

4009.2 3026.0

3174.2 2723.8

3539.2 2578.2

294.0 2473.9

462.3 21.9

917.5 476.2 xJ

1678.2 2080.1

30.0
1729.9 2070.7 xJ

2175.9 425.4

2516.2 3180.4

3134.1 2643.0

3715.8 3427.8

4122.1 2849.8

3539.8 2578.8

294.2 2473.7

462.5 21.9

6.0
917.7 474.2

1678.0 2080.1

1730.0 2070.9

2175.7 425.6

2516.4 3181.6

3134.1 2642.0

3715.8 3428.0

5
4122.1 2880.0

3539.8 2577.8

1.25

Measures of Phoebe and Cat. Stars.

D11046 = A6733

July 25, 1905 H.D. S. recorder

X y a B.C. 20

$$\begin{array}{ccccccc} & & & & & C-a \times & B-D \\ & & & & & 200 & \times 200 \\ & & & & & 7 & \\ A+C & B+D & C-A & B-D & x \times 60 & y \times 60 & \end{array}$$

P 53.3 47.4 11.9 6.5 3.1 8.9

150 154 -88 -24 3180 2820 -17.6 -48

20m-15° 6027 4.6 43.5 18.9 8.0 11.1 7.0

300 150 -78 +10 240 2580 -15.6 +2.0

20m-16° 5903 10.6 2.2 5.5 17.0 9.9 11.1

154 301 +44 +39 600 120 +8.8 +7.8

20m-16° 5905 16.6 11.4 18.4 5.0 11.4 10.1

298 151 -70 -51 960 660 -14.0 -10.2

H. 21.1 37.5 13.8 7.0 1.3 8.1

151 151 -125 -11 1260 2220 -25.0 -2.2

I 26.5 37.3 8.9 4.0 6.0 11.0

149 150 -29 -70 1560 2220 -5.8 -14.0

J 27.5 37.4 8.0 6.0 7.0 9.0

150 150 -10 -30 1620 2220 -2.0 -6.0

20m-16° 5913 37.6 11.0 4.0 15.0 11.0 15.1

150 301 +70 -01 2220 660 +14.0 -2

20m-15° 6034 41.2 57.2 13.0 2.0 2.0 13.1

150 151 -110 -11 2460 3420 -22.0 -22.2

20m-15° 6037 51.9 48.6 16.5 10.9 13.6 4.0

301 149 -29 +69 3060 2880 -5.8 +13.8

20m-15° 6042 68.2 52.9 13.0 14.8 2.0 15.0

150 298 -110 -02 4080 3120 -22.0 -4

P 53.3 47.4 11.9 6.1 3.1 8.9

150 150 -88 -28 3180 2820 -17.6 -5.6

20m-15° 6027 4.6 43.5 18.9 8.0 11.1 7.1

300 151 -78 +09 240 2580 -15.6 +1.8

20m-16° 5903 10.4 2.2 5.0 16.9 10.0 13.0

150 299 +50 +39 600 120 +10.0 +7.8

20m-16° 5905 16.6 11.4 18.5 5.0 11.0 10.0

295 150 -75 -50 960 660 -15.0 -10.0

H. 21.1 37.5 13.5 7.0 1.5 8.1

150 151 -120 -11 1260 2220 -24.0 -2.2

I 26.4 37.3 8.9 4.0 6.0 11.0

149 150 -29 -70 1260 2220 -5.8 -14.0

J 27.5 37.4 8.0 6.0 6.9 9.1

149 151 -11 -31 1620 2220 -2.2 -6.2

20m-16° 5913 37.6 11.0 4.0 15.0 10.9 15.0

149 300 +69 0 2220 660 +13.8 0

20m-15° 6034 41.2 57.2 13.0 2.0 2.0 13.0

150 150 -110 -110 2460 3420 -22.0 -22.0

20m-15° 6037 51.8 48.6 16.9 11.0 13.6 4.0

305 150 -33 +70 3060 2880 -6.6 +14.0

20m-15° 6042 68.2 52.9 13.0 14.6 2.0 15.0

150 296 -110 -04 4080 3120 -22.0 -8

2.00 P 53.3 47.4 11.9 6.0 3.1 8.9

150 149 -88 -29 3180 2820 -17.6 -5.8

4350 4353

29 29

150.00 150.10

316²~~4~~.4 2815.2

224.4 2582.0

608.8 127.8

946.0 649.8

1235.0 2217.8

1554.2 2206.0

1618.0 2214.0

2234.0 6²59.8 X

2438.0 3397.8

3054.2 2893.8

4058.0 3119.6

3162.4 2814.4

224.4 2581.8

610.0 127.8

945.0 6^{50.0}~~49.8~~ X

1236.0 2217.8

⁵~~12~~54.2 2206.0

1617.8 2213.8

2233.8 6³~~2~~0.0 X

2438.0 3398.0

3053.4 2894.0

4058.0 3119.2

3162.4 2814.2

23.25

Measures of Phoebe and Cat. Stars.

D11056 = a 6856

July 26, 1905

H. J. S. recorder

	α	δ	A	B	C	D	A+C	B+D	C-A	B-D	$x \times 60$	$y \times 60$	$x \times 200$	$y \times 200$
$\rightarrow$	5.8	8.6	2.0	9.9	13.1	5.0	151	149 + 111 + 49	300	1480 + 22.2 + 9.8				
$\leftarrow$	18.4	9.2	10.0	2.4	5.0	12.5	150	149 - 50 - 101	1080	540 - 10.0 - 20.2				
20m - 16° 58 59	7.3	34.5	12.0	8.5	3.0	7.0	150	155 - 90 + 15	420	2040 - 18.0 + 3.0				
20m - 17° 6 26 2	11.6	9.0	7.0	15.0	8.1	15.1	151	301 + 11 - 01	660	540 + 2.2 - 2				
20m - 17° 6 27 2	38.6	7.5	6.6	8.1	8.5	7.0	151	151 + 19 + 11	2280	420 + 3.8 + 2.2				
20m - 16° 58 66	52.4	19.3	10.0	1.5	5.0	13.5	150	150 - 50 - 120	3120	1140 - 10.0 - 24.0				
20m - 16° 58 68	60.5	24.8	7.6	12.8	7.4	2.5	150	153 - 02 + 103	3600	1440 - 4 + 20.6				
20m - 16° 58 71	65.6	28.6	6.5	11.0	8.5	4.1	150	151 + 20 + 69	3900	1680 + 4.0 + 13.8				
$\rightarrow$	9.0	9.6	15.0	10.0	14.9	5.0	299	150 - 01 + 50	540	540 - 2 + 10.0				
$\leftarrow$	18.4	9.2	9.9	2.5	5.0	12.5	149	150 - 49 - 100	1080	540 - 9.8 - 20.0				
20m - 16° 58 59	7.3	34.5	12.0	8.5	3.0	6.4	150	149 - 90 + 21	420	2040 - 18.0 + 4.2				
20m - 17° 6 26 2	11.5	9.0	7.0	15.0	8.1	15.0	151	300 + 11	0	660	540 + 2.2	0		
20m - 17° 6 27 2	38.5	7.5	6.8	8.2	8.0	6.7	148	149 + 12 + 15	3280	420 + 2.4 + 3.0				
20m - 16° 58 66	52.4	19.2	10.0	1.6	4.9	13.3	149	149 - 51 - 117	3120	1140 - 10.2 - 23.4				
20m - 16° 58 68	60.5	24.8	7.8	12.5	7.1	2.5	149	150 - 07 + 100	3600	1440 - 1.4 + 20.0				
20m - 16° 58 71	65.6	28.6	6.5	11.0	8.5	4.1	150	151 + 20 + 69	3900	1680 + 4.0 + 13.8				
$\leftarrow$	18.4	9.2	9.9	2.5	4.9	12.4	148	149 - 50 - 99	1080	540 - 10.0 - 19.8				
$\rightarrow$	5.8	8.6	2.0	9.7	13.0	5.2	150	149 + 110 + 45	300	480 + 22.0 + 9.0				
23.50 $\leftarrow$	9.0	9.6	15.0	10.1	15.0	5.0	300	151	0 + 51	540	540	0 + 10.2		
							3146	3156						
							21	21						
							149.81	150.39						

322.2 489.8
1070.0 519.8

402.0 2043.0

³
662.2 509.8

2283.8 422.2

3110.0 1116.0

3599.6 1460.6

3904.0 1693.8

509.8 550.0

¹070.2 520.0

402.0 2044.2

³
662.2 540.0

2282.4 423.0

3109.8 1116.6

3598.6 1460.0

3904.0 1693.8

1070.0 520.2

322.0

~~278.0~~ 489.0

¹
540.0 550.2

23,50

Measures of Phoebe and Cat. Stars.

11072 = 26684 July 26, 1905 H. I. S. Recorder

x y a B C D a+c B+D C-a B-D x x60 y x60 x200 x200

image very faint P.	57.6	57.1	4.9	1.1	10.0	14.0	149	151+51-129	3420	3420+10.2-25.8	
20m -15° 6006	1.7	45.7	2.9	12.0	12.0	3.0	149	150+91+90	60	2700+18.2+18.0	
20m -16° 5884	9.6	2.0	6.0	15.0	9.0	15.1	150	301+30-01	540	120+6.0 -2	
20m -15° 6008	13.4	70.7	10.9	12.0	5.0	3.0	149	150-69+90	780	4200-13.8 +18.0	
only part of image visible Observed by Satterly	29.5	45.3							1740	2700	
J	33.3	46.4	11.0	5.0	4.0	10.0	150	150-70-50	1980	2760-14.0 -10.0	
20m -16° 5890	34.6	36.7	4.5	11.9	10.6	3.2	151	151+61+87	2040	2160+12.2+17.4	
20m -16° 5892	43.6	24.4	5.0	4.0	10.1	11.0	151	150+51-70	2580	1440+10.2-14.0	
20m -16° 5895	58.5	42.6	6.0	10.9	8.9	4.1	149	150+29+68	3480	2520+5.8+13.6	
P	57.6	57.1	4.5	1.0	10.5	14.0	150	150+60-130	3420	3420+12.0-26.0	
20m -15° 6006	1.7	45.8	3.0	12.0	12.1	3.0	151	150+91+90	60	2700+18.2+18.0	
20m -16° 5884	9.6	2.0	6.0	15.0	9.0	15.0	150	300+30	0	540	120+6.0 0
20m -15° 6008	13.4	70.7	10.9	12.0	4.9	3.0	148	150-70+90	780	4200-14.0+18.0	
See note above T	29.5	45.2							1740	2700	
S	33.3	46.4	11.1	4.9	3.9	10.0	150	149-72-51	1980	2760-14.4-10.2	
20m -16° 5890	34.6	36.6	4.5	11.5	10.6	3.6	151	151+61+79	2040	2160+12.2+15.8	
20m -16° 5892	43.6	24.4	5.1	4.0	10.1	11.0	152	150+50-70	2580	1440+10.0-14.0	
20m -16° 5895	58.5	42.6	6.2	10.5	8.9	4.1	151	146+27+64	3480	2520+5.4+12.8	
24.25 P	57.6	57.1	4.9	1.0	10.1	14.1	150	151+52-131	3420	3420+10.4-26.2	
							2851	2850			
							17	19			
							150.06	150.00			

3430.2 3394.2

78.2 2718.0

546.0 89.8

766.2 4218.0

1966.0 2750.0

2052.2 2177.4

2590.2 1426.0

3485.8 2533.6

3432.0 3394.0

78.2 2718.0

546.0 190.0

766.0 4218.0

1965.6 2749.8

2052.2 2175.8

2590.0 1426.0

3485.4 2532.8

3430.4 3393.8

12.45

Measures of Phoebe and
Cat. Stars

D 11113 = A 6760

July 27, 1905 H. J. S. recorder

x y A. B. C. D. $a+c$ $B+D$ $C-a$ $B-D$ $x \times 60$ $y \times 60$ $x \times 200$ $x \times 199$

P. 56.0 40.6 15.0 9.0 15.0 6.1 300 151 0 +29 3360 2400 0 +5.8

20m. -15° 6027 4.8 42.4 2.0 3.1 13.0 12.1 150 152+110 -90 240 2520+22.0 -17.9

20m. -16° 5903 9.0 0.6 15.0 10.0 15.1 5.0 301 150+01+50 540 0 +2 +10.0

20m. -16° 5905 15.5 9.5 7.5 8.0 7.6 7.0 151 150+01+10 900 540 +2 +2.0

I 20.9 33.1 16.0 ^{17.0}~~16.1~~ 14.1 13.1 301 301 -19+39 1200 1980 -3.8 +7.8

76 26.1 33.3 14.9 3.9 0.1 11.0 150 149 -148 -71 1560 1980 -29.6 -14.2

20m. -16° 5913 36.5 8.4 7.5 5.6 7.5 9.4 150 150 0 -38 2160 ⁴~~1980~~ 0 -7.6

20m. -15° 6034 41.7 54.4 3.1 5.0 12.0 10.0 151 150+89 -50 2460 3240+17.8 -10.0

20m. -15° 6037 52.1 45.5 13.0 8.0 17.1 7.1 301 151+41+09 3120 2700+8.2 +1.8

20m. -15° 6040 61.7 58.6 4.0 10.0 10.9 5.0 149 150+69+50 3660 3480+13.8 +10.0

20m. -15° 6042 68.5 49.2 6.1 1.5 8.9 13.5 150 150+28 -120 4080 2940+5.6 -2.9

P. 56.0 40.6 15.0 9.1 15.0 6.0 300 151 0 +31 3360 2400 0 +6.2

20m. -15° 6027 4.8 42.3 2.0 3.0 13.1 12.0 151 150+111 -90 240 2520+22.2 -18.9

20m. -16° 5903 9.0 0.6 15.1 10.0 15.0 5.1 301 151-01+49 540 0 -2 +9.8

20m. -16° 5905 15.5 9.5 7.5 8.1 7.6 7.1 151 152+01+10 900 540+2 +2.0

I 20.9 33.1 16.0 17.0 14.0 13.1 300 301 -20+39 1200 1980 -4.0 +7.8

76 26.1 33.3 15.0 4.0 0.1 11.0 151 150-149 -70 1560 1980 -29.8 -14.0

20m. -16° 5913 36.5 8.4 7.5 6.0 7.5 9.1 150 151 0 -31 2160 480 0 -6.2

20m. -15° 6034 41.7 54.4 3.0 5.0 12.0 10.1 150 151+90 -51 2460 3240+18.0 -10.2

20m. -15° 6037 52.1 45.5 13.0 8.0 17.0 7.0 300 150+40+10 3120 2700+8.0 +2.0

20m. -15° 6040 61.6 58.6 4.0 10.0 11.0 5.0 150 150+70+50 3660 3480+14.0 +10.0

20m. -15° 6042 68.5 49.1 6.1 1.4 9.0 13.9 151 153+29 -125 4080 2940+5.8 -2.9

1.30 P. 56.0 40.6 15.0 9.0 15.0 6.1 300 151 0 +29 3360 2400 0 +5.8

4809 3765

32 25

150.28 150.60

³
~~3360.0~~ 2405.8
 262.0 2502.1
 510.2 18.0
 900.2 542.0
 1196.2 1987.8
 1530.4 1965.9
⁴
 2160.0 ~~1972.4~~
 2477.8 3230.0
 3128.2 2701.8
 3673.8 3490.0
 4085.6 2916.1
³
~~3360.0~~ 2406.2
 262.2 2502.1
 509.8 9.8
 900.2 542.0
 1196.0 1987.8
 1530.2 1966.2
 2160.0 473.8
 2478.0 3229.9
 3128.0 2702.0
 3674.0 3490.0
 4085.8 2915.1
 3330.0 2405.8

23.25

11079 = 26761

July 28, 1905

H. J. S. recorder

18

Is the x

7 P 50.9 or 51.9?

	x	y	a	B	C	D	a+c	B+D	c-a	B-D	x x 60	y x 60	x 200	x 200
	58.9	40.1	1.1	1.0	13.9	14.0	150	150 + 128	-130	3080	2400	+25.2	-26.0	
-15°	6027	1.6	42.4	4.0	4.0	11.1	151	150 + 71	-70	60	2520	+14.2	-14.0	
-16°	5903	5.7	0.6	2.0	9.0	13.0	150	150 + 110	+30	300	0	+22.0	+6.0	
20m -16°	5905	12.4	9.6	10.1	9.0	5.0	151	150 - 51	+30	720	540	-10.2	+6.0	
J	16.9	32.8	2.0	11.9	13.0	3.0	150	149 + 110	+89	960	1920	+22.0	+17.8	
H.	22.1	33.1	13.1	1.9	1.9	13.1	150	150 - 112	-112	1320	1980	-22.4	-22.4	
20m -16°	5913	33.4	8.5	9.9	7.0	5.1	150	150 - 48	-10	1980	480	-9.6	-2.0	
20m -15°	6034	39.6	54.4	6.0	5.9	9.0	150	150 + 30	-32	2340	3240	+6.0	-6.4	
20m -15°	6037	48.9	45.6	16.0	9.0	14.0	300	151 - 20	+29	2880	2700	-4.0	+5.8	
20m -15°	6040	58.6	58.5	7.0	10.9	8.2	150	149 + 10	+69	3480	3480	+2.0	+13.8	
20m -15°	6042	65.5	49.3	9.0	2.0	6.1	151	150 - 29	-110	3900	2940	-5.8	-22.0	
J	51.9	40.1	1.0	1.1	14.0	13.9	150	150 + 130	-128	3060	2400	+26.0	-25.6	
20m -15°	6027	1.6	42.4	3.9	4.0	10.9	148	150 + 70	-70	60	2520	+14.0	-14.0	
20m -16°	5903	5.8	0.6	2.0	9.0	12.9	149	150 + 109	+30	300	0	+21.8	+6.0	
20m -16°	5905	12.4	9.6	10.0	9.0	5.0	150	150 - 50	+30	720	540	-10.0	+6.0	
J	16.8	32.6	2.0	11.5	13.0	4.0	150	155 + 110	+75	960	1920	+22.0	+15.0	
H.	22.1	33.1	12.9	2.0	2.0	13.1	149	151 - 109	-111	1320	1980	-21.8	-22.2	
20m -16°	5913	33.4	8.4	10.0	6.6	5.1	151	151 - 49	-19	1980	480	-9.8	-3.8	
20m -15°	6034	39.6	54.4	6.0	5.9	9.1	151	149 + 31	-31	2340	3240	+6.2	-6.2	
20m -15°	6037	48.9	45.5	15.9	9.0	14.1	300	152 - 18	+28	2880	2700	-3.8	+5.6	
20m -15°	6040	58.5	58.6	6.5	10.9	8.1	146	149 + 16	+69	3480	3480	+3.2	+13.8	
20m -15°	6042	65.4	49.2	9.0	2.0	6.1	151	150 - 29	-110	3900	2940	-5.8	-22.0	
12.25 J	51.9	40.1	1.1	1.0	14.0	13.9	151	149 + 129	-129	3060	2400	+25.8	-25.8	
							3749	3455						
							25	23						
							149.96	150.22						

$$3025.2 \overset{8.6}{2} 2374.0$$

$$74.2 \ 2506.0$$

$$322.0 \ 6.0$$

$$709.8 \ 546.0$$

$$982.0 \ 1937.8$$

$$1297.6 \ 1957.6$$

$$1970.4 \ 478.0$$

$$2346.0 \ 3233.6$$

$$2876.0 \ 2705.8$$

$$3482.0 \ 3493.8$$

$$3894.2 \ 2918.0$$

$$3086.0 \ 2374.4$$

$$74.0 \ 2506.0$$

$$321.8 \ 6.0$$

$$710.0 \ 546.0$$

$$982.0 \ 1935.0$$

$$1298.2 \ 1957.8$$

$$1970.2 \ 476.2$$

$$2346.2 \overset{32}{2} 3338$$

$$2876.2 \overset{4}{2} 2705.6$$

$$3483.2 \ 3493.8$$

$$3894.2 \ 2918.0$$

$$3085.8 \ 2374.2$$

479.6 669.8
566.2 706.0
904.2 839.8
2038.0 2598.0
2344.2 105.8
2698.0 645.6
3958.4 586.2

479.4 670.2
566.0 706.0
903.8 839.8
2037.8 2598.0
2344.2 105.8
2698.4 644.2
3959.0 586.0

March 26, 1906.

Object of Barnard's, measured with reference to
 DM. -18° 5888. Found by W.P.F. on Plate A 6978, 6979. See letter of
 E.B. Barnard. March 1906.

D 11114 = A 6978

x x 60 y x 60

f. 134

	x	y	A	B	C	D	A+C	B+D	C-A	B-D	x x 60	y x 60	C-A x 200	B-D x 200
DM. -18° 5888 90M.	24.9	2.6	2.0	9.0	13.0	6.1	15.0	15.1	+11.0	+2.9	1440	120	+22.0	+5.8

	x	y	A	B	C	D	A+C	B+D	C-A	B-D	x x 60	y x 60	C-A x 200	B-D x 200
B's obj. North, Jell.	29.6	3.9	7.0	14.5	8.0	0.5	15.0	15.0	+1.0	+14.0	1740	180	+2.0	+28.0

D 11078 = A 6979

C-A f. 138
x 200 B-D
x 199

	x	y	A	B	C	D	A+C	B+D	C-A	B-D	x x 60	y x 60	C-A x 200	B-D x 199
-18 5888 90M.	23.9	2.1	2.0	1.0	13.1	14.0	15.1	15.0	+11.1	-13.0	1380	120	+22.2	-25.9
Obj.	27.5	4.2	7.5	2.0	7.6	13.0	15.1	15.0	+0.1	-11.0	1620	240	+0.2	-21.9

a 6978
N

4 .7 +

a 6979

.

6978

①

6979

②

x	y
1462.0	125.8
1742.0	208.0
280.0	72.2

x	y
1402.2	94.1
1620.2	218.1
218.0	124.0

16003556:proj..975L