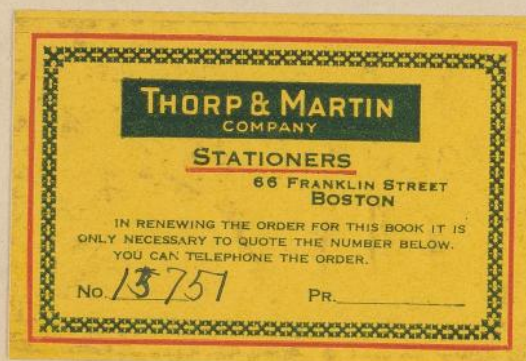


8



Book 8.

Positions (continued) 13810.

Section A

pg. 4

Section B

" 12

Precision corrections to 2000

pg. 63

Measurements on Schilt
Microphotometer

pg. 71

Measurements for ^{lower} limit in
diameter of stellar
images - A.A. & S.F.M.

pg. 85

Star counts, right & left side A 13810

pg. 89.

Measurements on A 12949 of
class, mag, and diameter for polar clusters.

pg. 101

Early measures of br. neb. in Coma-Virgo
Extension

pg. 111

Positions on A 7848

pg. 118

First Identifications in C-V Extension

pg. 134

Schilt measures on nebulae and
sequences in Coma Virgo Extension

pg. 150.

4

13810 Section A.

118	48.6	-30.6	92634	12 25 30.4
	-10.3	17.4	82619	12 29 26.1
	194.4		See Bk. 2 pg. 46	
	-41.2			

132	38.9	-41.9
	-20.0	6.3
	155.6	
	-88.0	

119	37.5	-18.4	82606	12 23 9.7	+
	-15.5	7.5	82611	12 26 41.9	+
	150.0		See Bk 2 pg. 38		
	-62.0				

120	14.7	5.4	72546	12 22 29.7	+
	-7.8	-15.1	72549	12 23 59.3	+
	58.8		See Bk 2 pg. 28		
	-31.2				

121	10.7	-15.3	62615	12 22 34.3	+
	-9.1	14.7	62617	12 23 54.3	+
	42.8		See Bk 2 pg. 20		
	-36.4				

122	13.0	8.0	62614	12 22 22.2	+
	-9.9	-12.6	62617	12 23 54.0	+
	52.0		12 20 51.0 +6 6.7		
	-39.6		12 21 36.8 +6 27.3		
			2 17.2 -14.9		

+9 4.9 12 2P 44.8 +P 34.3

+8 16.7 12 2P 44.9 +P 34.1

12 2P 45 +P 34.2

12 2P 06.0 +8 23.0

12 2P 06.1 +8 23.0

12 2P 6 +P 23.0

+8 12.2 12 25 39.7 +7 58.8

+7 51.3 12 25 39.9 +7 58.8

12 25 40 +7 58.8

+7 4.5 12 23 2P.5 +7 9.9

+7 24.9 12 23 2P.1 +7 9.9

12 23 2P +7 9.9

+6 42.4 12 23 17.1 +6 27.1

+6 12.4 12 23 17.9 +6 27.1

12 23 1P +6 27.1

+5 51.8 12 23 14.2 +5 59.8

+6 12.4 12 23 14.4 +5 59.8

12 23 14 +5 59.8

123 28.5 -14.5
 -6.9 20.6
 114.0
 -27.6

62617
 52638
 See Bk 2 pg. 18

12 23 54.3
 12 26 16.7

125 31.9 -27.8
 -3.5 7.4
 127.6
 -14.0

124 11.5 4.4
 -0.6 -15.0
 46.0
 -2.4

52638
 62625
 12 23 59.2 +5 52.1
 12 24 47.5 +6 11.3
 2 17.5 -14.9

12 26 16.7
 12 27 05.0

126 8.3 -0.7
 -3.8 -20.0
 33.2
 -15.2

127 11.3 11.0
 -4.2 -28.0
 45.2
 -16.8

52634
 52638
 12 22 57.8 +5 12.9
 12 23 59.2 +5 52.1
 2 17.5 -14.9

12 25 15.3
 12 26 16.7

128 14.3 9.3
 -6.7 -14.7
 57.2
 -20.8

72555
 72556
 12 26 58.9 +7 11.6
 12 28 23.9 +7 35.4
 2 16.9 -14.9

12 29 15.8
 12 30 40.8

+6	12.4	12	25	48.3	+5	57.9
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+5	37.2	12	25	49.1	+5	57.8
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		12	25	49	+5	57.8
--	--	----	----	----	----	------

		12	26	1.9	+5	44.6
--	--	----	----	-----	----	------

		12	26	2.7	+5	44.6
--	--	----	----	-----	----	------

		12	26	2	+5	44.6
--	--	----	----	---	----	------

+5	37.2	12	27	2.7	+5	41.6
----	------	----	----	-----	----	------

+5	56.4	12	27	2.6	+5	41.4
----	------	----	----	-----	----	------

		12	27	3	+5	41.5
--	--	----	----	---	----	------

		12	26	49.9	+5	36.5
--	--	----	----	------	----	------

		12	26	49.8	+5	36.4
--	--	----	----	------	----	------

		12	26	50	+5	36.4
--	--	----	----	----	----	------

+4	58.0	12	26	0.5	+5	09.0
----	------	----	----	-----	----	------

+5	37.2	12	25	59.9	+5	09.2
----	------	----	----	------	----	------

		12	26	0	+5	9.1
--	--	----	----	---	----	-----

+6	56.7	12	30	13.0	+7	06.0
----	------	----	----	------	----	------

+7	205	12	30	14.0	+7	05.8
----	-----	----	----	------	----	------

		12	30	14	+7	5.9
--	--	----	----	----	----	-----

$$\begin{array}{r}
 129 \quad 12.2^3 \quad 5.4 \\
 -39.8 -41.0 -40.5 \\
 48.8 \quad 49.2 \\
 -159.2 \quad 164.0 \\
 \hline
 53.2
 \end{array}$$

$$\begin{array}{r}
 131 \quad 6.45 \quad 4.5 \\
 -45.6 -46.7 -41.4 \\
 25.6 \quad 26.0 \\
 -182.4 -186.8
 \end{array}$$

$$\begin{array}{r}
 133 \quad 38.2^9.1 \quad 32.2 \\
 -13.8 -14.2 -13.8 \\
 152.8 \quad 156.4 \\
 -55.2 -56.8
 \end{array}$$

$$\begin{array}{r}
 134 \quad 27.9^{28.4} \quad 27.5 \\
 -24.28 -18.3 \\
 111.6 \quad 113.6 \\
 -96.8 -99.2
 \end{array}$$

$$\begin{array}{r}
 130 \quad 37.3 \quad 25.3 \\
 -9.8 -5.6 \\
 149.2 \\
 -39.2 \\
 \hline
 47.2 \quad 30.8
 \end{array}$$

$$\begin{array}{r}
 135 \quad 4.2 \quad 21.1 \\
 -42.9 -9.7 \\
 16.8 \\
 -171.6
 \end{array}$$

$$\begin{array}{r}
 92626 \quad 12 \quad 21 \quad 57.7 \quad + \\
 102432 \quad 12 \quad 25 \quad 30.7 \quad +
 \end{array}$$

$$\begin{array}{r}
 12 \quad 19 \quad 40.4 \quad +9 \quad 46.2 \\
 12 \quad 23 \quad 13.4 \quad +10 \quad 32.0 \\
 2 \quad 17.3 \quad -15.0
 \end{array}$$

$$\begin{array}{r}
 82604 \quad 12 \quad 22 \quad 21.7 \\
 92634 \quad 12 \quad 25 \quad 30.4 \\
 \text{See Bk 2 pg. 48}
 \end{array}$$

+9	31.2	12	22	46.5 ^{46.9}	+ 9	36.6
+10	17.0	12	22	46.5 ^{46.7}	+ 9	36.5
		12	22	47	+ 9	36.6

12	22	23.7	+ 9	35.7
12	22	23.9	+ 9	35.6
12	22	24	+ 9	35.6

12	24	34.1	+10	03.4
12	24	33.9	+10	03.2
12	24	34	+10	3.3

12	23	51.3	+ 9	58.7
12	23	51.5	+ 9	58.7
12	23	51	+ 9	58.7

+8	34.1	12	24	50.9	+ 8	59.4
+9	4.9	12	24	50.2	+ 8	59.3
		12	24	50	+ 8	59.4

12	22	38.5	+ 8	55.2
12	22	38.8	+ 8	55.2
12	22	39	+ 8	55.2

10

136 2.4 0.0
 - 44.8 - 30.8
 9.6
 - 179.2

12 22 21.7
 12 25 30.4

83 50.1 5.3
 - 4.5 - 27.2
 200.4
 - 18.0

72553 12 27 03.3
 72556 12 30 40.8
 12 24 46.4 +7 2.8
 12 28 23.9 +7 35.4
 2 16.9 -14.9

84 38.7 3.4
 - 15.9 29.1
 154.8
 - 63.6

+F 34.1 12 22 31.3 +F 34.1

+9 4.9 12 22 31.2 +F 34.1

12 22 31 +F 34.1

+6 47.9 12 30 23.7 +6 53.2

+7 20.5 12 30 22.8 +6 53.3

12 30 23 +6 53.2

12 29 34.1 +6 51.3

12 29 37.2 +6 51.4

12 29 38 +6 51.4

12

13810 Section B.

131	5.8	-0.5	8°2587	12	14	40.0
	-29.9	26.7	8°2592	12	17	3.0
	23.2		See Bk 2 pg. 106			
	-119.6					

456	30.2	-20.8	10°2416	12	17	9.4
	-18.1	15.2	10°2420	12	20	27.5
	123.8		See Bk 2 pg. 60			
	128.8					
	-74.2					
	-72.4					

458	33.4	-5.4	52606	12	12	11.5
	-7.3	36.7	52613	12	14	53.9
	133.6		See Bk 2 pg. 176			
	-29.2					
	40.6	41.9				

460	8.6	-38.8				
	-32.0	3.2				
	34.4					
	-128.8					

459	41.2	24.5	62607	12	19	23.5
	-6.7	-18.0	62615	12	22	34.6
	164.8		Bk 2 pg. 204			
	-26.8					
	47.8	42.4				

461	+30.8	12.7	92614	12	13	23.2
	+1.3	-17.5	92617	12	15	21.5
	+123.2		See Bk 2 pg. 66			
	+5.2					
	29.6	30.2				

+8	34.9	12	15	03.2	+P	34.4
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+8	7.7	12	10	03.4	+P	34.4
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		12	10	3	+P	34.4
--	--	----	----	---	----	------

+10	23.7	12	19	13.2	+10	22.9
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+9	47.7	12	19	13.3	+10	02.9
----	------	----	----	------	-----	------

		12	19	13	+10	2.9
--	--	----	----	----	-----	-----

+5	43.0	12	14	25.1	+5	37.6
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+5	1.5	12	14	24.7	+5	38.2
----	-----	----	----	------	----	------

		12	14	25	+5	37.9
--	--	----	----	----	----	------

		12	12	45.9	+5	4.2
--	--	----	----	------	----	-----

		12	12	45.9	+5	4.7
--	--	----	----	------	----	-----

		12	12	46	+5	4.4
--	--	----	----	----	----	-----

+5	59.9	12	22	P.3	+6	24.4
----	------	----	----	-----	----	------

+6	42.3	12	22	7P	+6	24.3
----	------	----	----	----	----	------

		12	22	P	+6	24.4
--	--	----	----	---	----	------

+9	14.0	12	15	26.4	+9	26.7
----	------	----	----	------	----	------

+9	44.2	12	15	26.7	+9	26.7
----	------	----	----	------	----	------

		12	15	26	+9	26.7
--	--	----	----	----	----	------

See Over -

Page skipped by

mistake.

462	29.1	10.2		12	13	23.2
	-0.5	-20.1		12	15	21.2
	116.4					
	-2.0					

463	31.5	3.5	82587	12	14	39.8
	-12.0	-25.5	92618	12	17	34.7
	126.0		See Bk 2 pg. 98			
	-48.0					

465	11.2	6.6				
	-32.5	-22.3				
	44.0					
	-130.0					

464	13.2	22.5	82586	12	13	22.7
	-10.0	-7.1	92616	12	14	55.5
	52.0		See Bk 2 pg. 92			
	-40.0					

466	23.0	-4.5	72535	12	15	49.2
	-2.6	7.0	72537	12	17	31.7
	92.0		See Bk 2 pg. 156			
	-10.4					

467	16.8	-19.0	72540	12	19	38.7
	27.2	9.9	62615	12	22	34.5
	67.2		See Bk 2 pg. 200			
	108.0					

28.8

+9	14.0	12	15	19.6	+9	24.2
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+9	44.2	12	15	19.2	+9	24.1
----	------	----	----	------	----	------

		12	15	19	+9	24.2
--	--	----	----	----	----	------

+8	34.9	12	16	45.8	+P	3P.4
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+9	4.0	12	16	46.7	+P	3P.5
----	-----	----	----	------	----	------

		12	16	46	+P	3P.4
--	--	----	----	----	----	------

		12	15	24.6	+P	41.5
--	--	----	----	------	----	------

		12	15	24.7	+P	41.7
--	--	----	----	------	----	------

		12	15	25	+P	41.6
--	--	----	----	----	----	------

+8	37.3	12	14	15.5	+P	59.8
----	------	----	----	------	----	------

+9	6.8	12	14	15.5	+P	59.7
----	-----	----	----	------	----	------

		12	14	16	+P	59.8
--	--	----	----	----	----	------

+7	8.5	12	17	21.2	+7	4.0
----	-----	----	----	------	----	-----

+6	56.9	12	17	21.3	+7	3.9
----	------	----	----	------	----	-----

		12	17	21	+7	4.0
--	--	----	----	----	----	-----

+7	11.1	12	20	45.9	+6	52.1
----	------	----	----	------	----	------

+6	42.3	12	20	45.7	+6	52.2
----	------	----	----	------	----	------

		12	20	45.8	+6	52.2
--	--	----	----	------	----	------

457a	26.6	23.5	72540	12	19	38.7
	-13.5	-22.0	82603	12	22	19.0
	106.4		See Bk 2 pg. 146			
	-54.0					
	40.1	45.5				

467			82586	12	13	22.7
			82616	12	14	55.5
			See Bk 2 pg. 92			

469	35.2	-7.7	92610	12	10	22.5
	-9.6	3.1	82586	12	13	22.7
	140.8		See Bk 2 pg. 92			
	-38.4					

471	34.4	-8.6	62596	12	16	45.8
	-7.7	19.0	52624	12	19	32.9
	137.6		See Bk 2 pg. 192			
	-30.8					

470	14.3	3.0	82596	12	19	26.6
	-29.8	-22.5	82604	12	22	22.2
	57.2		See Bk 2 pg. 130			
	-119.2					

		25.6				
219	31.5	-14.5	82589	12	16	23.3
	-27.3	19.0	82597	12	20	19.6
	126.0		12 14 5.6 +8 38.3			
	-109.2		12 18 1.9 +8 5.2			
			2 17.7 -15.0			

+7	11.1	12	21	25.1	+7	34.6
----	------	----	----	------	----	------

+7	56.6	12	21	25.0	+7	34.6
----	------	----	----	------	----	------

		12	21	25	+7	34.6
--	--	----	----	----	----	------

+8	37.3					
---------------	-----------------	--	--	--	--	--

+9	6.8					
---------------	----------------	--	--	--	--	--

+8	48.1	12	12	43.3	+8	40.4
----	------	----	----	------	----	------

+8	37.3	12	12	44.3	+8	40.4
----	------	----	----	------	----	------

		12	12	44	+8	40.4
--	--	----	----	----	----	------

+6	3.4	12	19	34	+5	54.8
----	-----	----	----	----	----	------

+5	35.9	12	19	2.1	+5	54.9
----	------	----	----	-----	----	------

		12	19	3	+5	54.8
--	--	----	----	---	----	------

+8	8.4					
----	-----	--	--	--	--	--

+8	34.0	12	20	24.8	+8	11.4
----	------	----	----	------	----	------

		12	20	23.0	+8	11.5
--	--	----	----	------	----	------

		12	20	24	+8	11.4
--	--	----	----	----	----	------

3	+8	23.3	12	18	29.3	+8	9.3
---	----	------	----	----	------	----	-----

.6	+7	50.2	12	18	30.4	+8	9.2
----	----	------	----	----	------	----	-----

			12	18	30	+8	9.2
--	--	--	----	----	----	----	-----

13810 Section C

108	27.7	10.2	92602	12 7 38.6	+
	-30.7	-25.6	102398	12 11 32.0	+
	110.8		12 5 20.6 +9 50.0		
	-122.8		12 9 14.0 +10 25.9		
			2 18.0 -15		
1	10.6	21.0	92598	12 6 33.9	+
	-5.6	-15.0	92602	12 7 38.6	+
	42.4		12 4 15.9 +9 13.8		
	-22.4		12 5 20.6 +9 50.0		
		36.2	2 18.0 -15		
2	10.6	12.2			
	-57.5	-23.8			
	42.4				
	-22.0				
3	11.7	4.3			
	-4.5	-31.7			
	46.8				
	-18.0				
4	23.6	6.8	92604	12 8 41.1	+
	-7.0	-19.6	92611	12 10 43.3	+
	94.4		12 6 23.1 +9 24.1		
	-28.0		12 8 25.3 +9 50.7		
			2 18.0 -15		
5	9.9	-4.3	92604		
	-15.7	16.7	92610		
	40.6		12 6 23.1 +9 24.1	12 8 41.1	+
	-52.8		12 8 5.0 +9 3.1	12 10 23.0	+
	25.5	21.0	2 18.0 -15		

$+9$ 35.0 12 9 29.4 $+9$ 45.2
 $+10$ 10.9 12 9 29.2 $+9$ 45.3
 12 9 29 \checkmark $+9$ 45.2 \checkmark

$+8$ 58.8 12 7 16.3 $+9$ 19.8
 $+9$ 35.0 12 7 16.2 $+9$ 20.0
 12 7 16 \checkmark $+9$ 19.9 \checkmark

12 ~~8~~⁷ 16.3 $+9$ 11.0
 12 7 16.6 $+9$ 11.2
 12 7 16 \checkmark $+9$ 11.1 \checkmark

12 7 20.7 $+9$ 03.1
 12 7 20.6 $+9$ 03.3
 12 7 21 \checkmark $+9$ 3.2 \checkmark

1 $+9$ 9.1 12 10 15.5 $+9$ 15.9
 3 $+9$ 35.7 12 10 15.3 $+9$ 16.1
 12 10 15 \checkmark $+9$ 16.0 \checkmark

1 $+9$ 9.1 12 9 21.7 $+9$ 4.8
 0 $+8$ 48.1 12 9 21.2 $+9$ 4.8
 12 9 21 \checkmark $+9$ 4.8 \checkmark

6	13.9	-7.5
	-11.5	13.5
	55.6	
	-46.0	

9	20.5	-9.5
	-5.0	11.5
	82.0	
	-20.0	

10	20.7	-10.7
	-4.8	10.3
	82.8	
	-19.6	

11	10.2	-12.6
	-15.3	8.3
	40.8	
	-61.2	

12	10.9	-12.6
	-14.6	8.3
	43.6	
	-58.4	

For 18+19 See pg 22.

7	0.9	15.0
	-44.2	-11.0
	3.6	
	-176.8	
	45.2	25.9

9	26.1	0
9	26.1	+
8	5.0	+9
11	5.9	+9
2	15.0	+10

12	41.1
12	23.0

12	10	23.0
12	13	23.0

+9	9.1	12	9	36.7	+9	1.6
+P	4P.1	12	9	37.0	+9	1.6
		12	9	37✓	+9	1.6✓

12	10	03.1	+P	59.6
12	10	03.0	+P	59.6
12	10	3✓	+P	59.6✓

12	10	03.9	+P	58.4
12	10	03.4	+P	58.4
12	10	4✓	+P	58.4✓

12	9	21.9	+P	56.5
12	9	21.8	+P	56.4
12	9	22✓	+P	56.4✓

12	9	24.7	+P	56.5
12	9	24.6	+P	56.4
12	9	25✓	+P	56.4✓

+8	48.1	12	10	26.6	+9	0.3.1
+9	14.0	12	10	26.2	+9	0.3.0
		12	10	26	+9	3.0

8 4.3 12.9
 -41.0 -13.2
 17.2
 -164.0

12 10 23.0
 12 13 23.0

15 4 2.7 2.5
 ~~3~~ 2.5 -23.4
 10.8
 ~~7~~ 0.0

13 10.3 3.5
 -35.0 -22.5
 41.2
 -140.0

14 8.9 -0.7
 -24.7 34.6
 33.5
 27.6
 -98.8
 33.4 35.4

92610
 82585
 12 8 5.0 +9 3.1
 12 10 18.8 +8 27.7
 2 18.0 -15

12 10 23.0
 12 12 36.8
 12 10 23.0
 12 12 36.8

17 8.0 -2.7
 -25.5 32.7
 32.0
 -102.0

16 10.0 -2.5
 -23.7 32.8
 40.0
 -94.8

+P 4P.1 12 10 40.2 +9 01.0

+9 14.0 12 10 39.0 +9 00.4

12 10 40^v +9 0.9^v

12 10 33.8 +P 50.6

12 10 33.0 +P 50.6

12 10 33.0 +P 50.6^v

12 11 04.2 +P 51.6

12 11 3.0 +P 51.5

12 11 4^v +P 51.6^v

+8 48.1 12 10 58.6 +P 47.4

+8 12.7 12 10 58.0 +P 47.3

+8 48.1 12 10 58^v +P 47.4^v

+8 12.7

12 10 55.0 +P 45.4

12 10 54.8 +P 45.4

12 10 55^v +P 45.4^v

12 11 03.0 +P 45.6

12 11 02.0 +P 45.5

12 11 2^v +P 45.6^v

21 3.2 -6.6
 -30.3 28.7
 12.4
 -121.2

12 10 23.0
 12 12 36.8

22 1.8 -8.3
 -31.6 27.1
 7.2
 -126.4

30 11.2 -19.1
 -22.3 16.3
 44.8
 -89.2

29 7.8 -10.9
 -53.3 7.5
 31.2
 -213.2
 -163.2

82577

12 8 32.8

82585

12 12 36.8

12 6 14.2 +8 46.3

12 10 18.8 +8 27.7

2 18.0 -15

61.0 18.6
 31 26.0 -3.4
 -35.0 14.9
 104.0
 -140.0

32 27.5 -7.6
 -33.5 10.7
 110.0
 -134.0

+P 48.1 12 10 35.4 +P 41.5

+P 12.7 12 10 35.6 +P 41.4

12 10 36✓ +P 41.4 ✓

12 10 30.2 +P 39.8

12 10 30.4 +P 39.8

12 10 30✓ +P 39.8 ✓

12 11 07.8 +P 29.0

12 11 07.6 +P 29.0

12 11 P✓ +P 29.0 ✓

+8 31.3 12 9 04.0 +P 20.4

+8 12.7 12 9 03.6 +P 20.2

+8 31.3 12 9 4✓ +P 20.3 ✓

+8 12.7

12 10 16.8 +P 27.9

12 10 16.8 +P 27.6

12 10 17✓ +P 27.8 ✓

12 10 22.8 +P 23.7

12 10 22.8 +P 23.4

12 10 23✓ +P 23.6 ✓

33	26.7	-11.1
	-34.3	7.3
	106.8	
	-137.2	

12	8	32.8
12	12	36.8

34	38.0	-12.8
	-23.1	5.6
	152.0	
	-92.4	

35	29.2	-15.8
	-31.8	2.5
	116.8	
	-127.2	

36	30.1	-16.2
	-31.0	2.1
	120.4	
	-124.0	

18	22.5	-18.6
	-3.0	2.3
	90.0	
	-12.0	

92604
92610
See pg. 20.

12	8	41.1
12	10	23.0

19	21.0	-18.9
	-4.5	2.1
	84.0	
	-18.0	

+P 31.3 12 10 19.6 +P 20.2

+P 12.7 12 10 19.6 +P 20.6

12 10 20^v +P 20.1^v

12 11 04.8 +P 18.5

12 11 04.4 +P 18.3

12 11 5^v +P 18.4^v

12 10 29.6 +P 15.5

12 10 29.6 +P 15.2

12 10 30^v +P 15.4^v

12 10 33.2 +P 15.1

12 10 32.8 +P 14.8

12 10 33^v +P 15.0^v

+P 9.1 12 10 11.1 +P 50.5

+P 48.1 12 10 11.0 +P 50.4

12 10 11^v +P 50.4^v

12 10 05.1 +P 50.2

12 10 05.0 +P 50.2

12 10 5^v +P 50.2^v

24	4.6 -22.8 18.4 -91.2	8.2 -8.6	82577 92610 12 6 14.8 +8 46.3 12 8 5.0 +9 3.1 2 18.0 -10	12 8 32.8 12 10 23.0	
23	8.8 -18.6 35.2 -74.4	9.2 -7.5			
20	19.0 -8.5 76.0 -34.0	13.7 -2.9			
26	17.0 -12.5 68.0 -50.0	-12.5 14.8	92598 82577 12 4 15.9 +9 13.8 12 6 14.8 +8 46.3 2 18.0 -10	12 6 33.9 12 8 32.8	+8 +8
25	24.6 -5.0 98.4 -20.0	-21.9 5.7			
39	7.0 -31.9 28.0 -127.6 38.8	23.9 -18.5 42.3	82575 82577 12 3 39.5 +8 4.0 12 6 14.8 +8 46.3 2 18.0 -10	12 5 57.5 12 8 32.8	+7 +8

+8	31.3	12	A	51.2	+P	39.5
+8	48.1	12	A	51.8	+P	39.5
	51.5	12	A	52.0	+P	39.5 ✓

-8 70.1

12	9	0P.0	+P	40.5
12	9	0P.6	+P	40.6
12	9	0P.6	+P	40.6 ✓

12	9	4P.8	+P	45.0
12	9	49.0	+P	45.2
12	9	49.0	+P	45.1 ✓

+8	58.8	12	7	41.9	+P	46.3
+8	81.3	12	7	42.8	+P	46.1
		12	7	42.0	+P	46.2 ✓

12	8	12.3	+P	36.9
12	A	12.8	+P	37.0
12	A	12.0	+P	37.0 ✓

5	+7	49.0	12	6	25.5	+P	12.9
8	+8	31.3	12	6	25.2	+P	12.8
			12	6	25.0	+P	12.8 ✓

38 23.3 -25.5
 -15.7 -16.9
 93.2
 -62.8

12 5 57.5
 12 A 32.8

37 24.0 25.7
 -14.9 -16.6
 96.0
 -59.6

28 28.9 38.5
 -10.0 -3.8
 115.6
 -40.0

27 30.3 39.0
 -8.5 -3.2
 121.2
 -34.0

47 28.1 2.5
 -10.8 -39.8
 112.4
 -43.2

46 32.8 -2.0
 -10.0 18.1
 131.2
 -40.0
 42.8 20.1

82575

12 5 57.5

72523

12 8 48.6

12 3 39.5 48 4.0

12 6 30.6 +7 43.9

2 15.0 -15

5 +7 49.0 12 7 30.7 +F 14.5
 P +P 31.3 12 7 30.0 +F 14.4
 12 7 30[✓] +P 14.4[✓]

12 7 33.5 +F 14.7
 12 7 33.2 +F 14.7
 12 7 33[✓] +F 14.7[✓]

12 7 53.1 +F 27.5
 12 7 52.8 +F 27.5
 12 7 53[✓] +F 27.5[✓]

12 7 58.7 +F 28.0
 12 7 58.8 +F 28.1
 12 7 59[✓] +F 28.0[✓]

12 7 49.9 +7 51.5
 12 7 49.6 +7 51.5
 12 7 50[✓] +7 51.5[✓]

5 +7 49.0 12 P 09.7 +7 47.0
 6 +7 28.9 12 P 08.6 +7 47.0
 12 P 9[✓] +7. 47.0[✓]

48 25.5 -7.1
 -17.4 13.0
 102.0
 -69.6

12 5 57.5
 12 8 48.6

49 34.0 -15.7
 -8.9 4.4
 136.0
 35.6

51 18.4 0.7
 -20.2 -25.3

72523

12 8 48.6

82583

12 11 22.0

73.6

12 6 30.6 +7 43.9

-80.8

12 9 4.8 +8 9.7

38.6

25.8

2 18.0 -15

45 16.7 12.7
 -21.8 -13.2

66.8

-87.2

41 22.0 25.7
 -16.5 -0.2

88.0

-66.0

44 34.9 12.7
 -3.6 -13.2

139.6

-14.4

+7	49.0	12	7	39.5	+7	41.9
+7	28.9	12	7	39.0	+7	41.9
		12	7	39✓	+7	41.9✓

12	8	13.5	+7	33.3
12	8	13.0	+7	33.3
12	A	13✓	+7	33.3✓

+7	28.9	12	10	22.2	+7	29.6
+7	54.7	12	10	1.2	+7	29.4
		12	10	2✓	+7	29.5✓

12	9	33.4	+7	41.6
12	9	54.8	+7	41.5
12	9	55✓	+7	41.6✓

12	10	16.6	+7	54.6
12	10	16.0	+7	54.5
12	10	16✓	+7	54.6✓

12	10	08.2	+7	41.6
12	10	07.6	+7	41.5
12	10	A✓	+7	41.6✓

40	1.9	2.8	82583	12	18	22.8	+
	-16.5	-15.2	82585	12	12	36.8	+
	7.6		12 9 4.8 +8 9.7				
	-66.0		12 10 18.8 +8 27.7				
			2 18.0 -15				
42	42.0	11.5	82575	12	5	57.5	+7
	-19.0	-10.5	82581	12	10	01.0	+8
	168.0		12 3 39.5 +8 4.0				
	-76.0		12 7 43.0 +8 26.1				
			2 18.0 -15				
43	40.9	11.6					
	-20.0	-10.4					
	163.6						
	-18.0						
58	5.5	7.0	72521	12	6	42.4	+7
	-26.0	-2.5	72523	12	8	48.6	+7
	22.8		12 4 24.4 +7 34.5				
	-104.0		12 6 30.6 +7 43.9				
	31.6	9.4	2 18.0 -15				
57	12.0	5.5					
	-19.5	-3.9					
	48.0						
	-78.0						
59	8.7	-1.9	72521	12	6	42.4	+7
	-4.8	36.5	62567	12	7	36.0	+6
	34.8		12 4 24.4 +7 34.5				
	-19.2		12 5 18.0 +6 55.9				
	13.4	38.6	2 18.0 -15				

+7	54.7	12	11	304	+ 7	57.5
+8	12.7	12	11	308	+7	57.5
		12	11	31✓	+ 7	57.5 ✓

+7	49.0	12	P	45.5	+ P	00.5
+8	11.1	12	P	45.0	+ P	00.6
		12	P	45✓	+ P	0.6 ✓

		12	P	41.1	+ P	00.6
		12	P	41.0	+ P	00.7
		12	P	41✓	+ P	0.6 ✓

+7	19.0	12	7	04.4	+ 7	26.5
+7	28.9	12	7	04.6	+ 7	26.4
		12	7	4✓	+ 7	26.4 ✓

		12	7	30.4	+ 7	25.0
		12	7	30.6	+ 7	25.0
		12	7	30✓	+ 7	25.0 ✓

+7	19.5	12	7	17.2	+ 7	17.6
+6	40.9	12	7	16.8	+ 7	17.4
		12	7	17✓	+ 7	17.5 ✓

60 9.0 -7.0
 -4.6 31.6
 36.0
 -18.4

12 6 42.4
 12 7 36.0

61 1.3 -5.6
 -12.2 32.9
 5.2
 -48.8

62 3.5 -14.4
 -9.8 24.1
 14.0
 -38.2

56 2.0 -11.8 72523 12 8 48.6
 -33.1 30.5 72526 12 11 9.6
 A.0 46.2 12 6 30.6 +7 43.9
 -132.4 12 8 51.6 +7 1.7
 35.2 2 18.0 -15
 42.2

55 7.3 -9.4
 -27.8 32.8
 29.2
 -111.2

63 9.5 -30.9
 -25.7 11.4
 38.0
 -102.8

+7	19.5	12	7	18.4	+7	12.5
+6	40.9	12	7	17.6	+7	12.5
		12	7	1A✓	+7	12.5✓

12	6	47.6	+7	13.9
12	6	47.2	+7	13.8
12	6	47✓	+7	13.8✓

12	6	56.4	+7	05.1
12	6	57.8	+7	05.0
12	6	57✓	+7	05.0✓

+7	28.9	12	8	56.6	+7	17.1
+6	46.7	12	8	57.2	+7	17.2
		12	8	57✓	+7	17.2✓

12	9	17.8	+7	19.5
12	9	18.4	+7	19.5
12	9	1A✓	+7	19.5✓

12	9	26.6	+6	58.0
12	9	26.8	+6	58.1
12	9	27✓	+6	58.0✓

50	28.7	-2.1		12	P	48.6
	-6.5	40.0		12	11	9.6
	114.8					
	-26.0					
53	23.7	-9.1				
	-11.4	33.0				
	94.8					
	-45.6					
54	22.0	-11.0				
	-13.1	31.2				
	88.0					
	-52.4					
52	34.8	-12.2				
	-0.3	29.9				
	139.2					
	-1.2					
73	19.1	9.1	62561	12	6	8.0
	-3.0	-2.9	62567	12	7	36.0
	76.4		12 3 50.0 +6 43.7			
	-12.0		12 5 18.0 +6 55.9			
	22.0	12.2	2 18.0 -10			
74	2.5	11.5				
	-19.5	-0.7				
	10.0					
	-78.0					

$+7$ 28.9 12 10 43.4 $+7$ 26.8
 $+7$ 46.7 12 10 43.6 $+7$ 26.7
 12 10 44 \checkmark $+7$ 26.8 \checkmark

12 10 23.4 $+7$ 19.8
 12 10 24.0 $+7$ 19.7
 12 10 24 \checkmark $+7$ 19.8 \checkmark

12 10 16.6 $+7$ 17.9
 12 10 17.2 $+7$ 17.9
 12 10 17 \checkmark $+7$ 17.9 \checkmark

12 11 07.8 $+7$ 16.7
 12 11 08.4 $+7$ 16.6
 12 11 8 \checkmark $+7$ 16.6 \checkmark

$+6$ 28.7 12 7 24.4 $+6$ 37.8
 $+6$ 40.9 12 7 24.0 $+6$ 38.0
 12 7 24 \checkmark $+6$ 37.9 \checkmark

12 6 18.0 $+6$ 40.2
 12 6 18.0 $+6$ 40.2
 12 6 18 \checkmark $+6$ 40.2 \checkmark

	3	7	5		
72	12.3	+ 0.6	62567	12 7 36.0	+
	-49.9	+ 26.1	62580	12 11 46.7	+
	49.2		12 5 18.0	59.5	
	-199.6		12 9 28.7	+6 30.4	
			2 18.0	-15	
71	12.6	-2.5			
	-49.5	22.9			
	50.4				
	248.8				
	-198.0				
69	16.2	-3.4			
	-46.0	22.1			
	64.8				
	-184.0				
70	14.9	-13.7			
	-47.3 ^{62.2}	11.8			
	59.6				
	-189.2				
68	25.9	-12.8			
	-36.8 ³	12.8			
	103.6				
	148.4^{5.2}				
67	32.4	-4.6			
	-29.8	20.9			
	129.6				
	-119.2				

			4		4	
0	+6	40.9	12	P	25.2	+6 41.5
7	+6	15.4	12	P	27.1	+6 41.5
5	+6	3.4	12	P	26✓	+6 41.5✓
			12	P	26.4	+6 38.4
			12	P	28.7	+6 38.3
			12	P	28✓	+6 38.4✓
			12	P	40.8	+6 37.5
			12	P	42.7	+6 37.5
			12	P	42✓	+6 37.5✓
			12	P	35.6	+6 27.2
			12	P	37.5	+6 27.2
			12	P	36✓	+6 27.2✓
			12	9	19.6	+6 28.1
			12	9	^{1.5} 22.8	+6 28.2
			12	9	21✓	+6 28.2✓
			12	9	45.6	+6 36.3
			12	9	47.5	+6 36.3
			12	9	46✓	+6 36.3✓

66	42.8	-14.9		12	7	36.0	+
	-19.4	10.6		12	7	46.7 59.5	+
	171.2						
	-77.6						
65	44.7	-7.6					
	-17.4	18.0					
	17A.A						
	-69.6						
64	55.5	-3.9					
	-6.7	24.7					
	222.8						
	-26.A						
76	14.5	-22.5	62561	12	6	8.0	+6
	-18.0	22.5	62571	12	8	17.3	+6
	58.0		12 3 50.0 +6 43.7				
	-72.0		12 5 59.3 +6 18.9				
		24.8	2 18.0 -15				
75	27.5	-13.7					
	-4.9	11.2					
	11 80.0						
	-19.6						
79	0.0	20.7	52600	12	8	58.1	+5
	-42.2	-20.1	62580	12	11	46.7	+6
	0.0		12 6 40.1 +5 49.8				
	-168.A		12 9 28.7 +6 30.4				
	42.2	40.6	2 18.0 -15				

0	+6	40.9	12	10	27.2	+6	26.0
7		15.4					
5	+6	3.4	12	10	29.1	+6	26.0
			12	10	2A✓	+6	26.0 ✓
			12	10	34.8	+6	33.3
			12	10	37.1	+6	33.4
			12	10	36✓	+6	33.4 ✓
			12	11	18.0	+6	37.0
			12	11	19.9	+6	37.1
			12	11	19✓	+6	37.0 ✓
	+6	28.7	12	7	06.0	+6	6.2
	+6	3.9	12	7	05.3	+6	6.4
			12	7	6✓	+6	6.3 ✓
			12	7	52.0	+6	15.0
			12	7	57.7	+6	15.1
			12	7	58✓	+6	15.0 ✓
	+5	34.8	12	A	52.1	+5	55.5
	+6	15.4	12	8	57.9	+5	55.3
			12	A	5A✓	+5	55.4 ✓

80	8.8 - 33.3 35.2 - 133.2	27.9 - 12.7	12 A 58.1 12 11 46.7
81	9.5 - 32.5 38.0 - 130.0	28.1 - 12.5	
89	24.0 - 18.0 96.0 - 72.0	32.0 - 8.5	
88	24.3 - 17.9 97.2 - 71.6	33.0 - 7.6	
87	21.0 - 21.1 84.0 - 84.4	35.5 - 5.0	
86	24.6 - 18.0 96.0 - 72.0	33.8 - 6.8	

7 45 34.6 12 9 33.3 + 6 02.7

46 15:4 12 9 33.5 + 6 02.7

12 9 33✓ + 6 2.7✓

12 9 36.1 + 6 02.9

12 9 36.7 + 6 02.9

12 9 36✓ + 6 2.9✓

12 10 34.1 + 6 06.8

12 10 34.7 + 6 06.9

12 10 34✓ + 6 6.8✓

12 10 35.3 + 6 07.8

12 10 35.1 + 6 07.8

12 10 35✓ + 6 7.8✓

12 10 22.1 + 6 10.3

12 10 22.3 + 6 10.4

12 10 22✓ + 6 10.4✓

12 10 34.1 + 6 08.6

12 10 34.7 + 6 08.6

12 10 34✓ + 6 8.6✓

84	29.6	36.6
	-12.5	-3.9
	112.4	
	-50.0	

12	A	58.1	+
12	11	46.7	+

83	29.9	40.4
	-12.2	-0.2
	117.6	
	-48.4	

85	32.5	36.5
	-9.7	-4.0
	130.0	
	-37.4	

82	33.4	38.1
	-8.7	-1.8
	133.6	
	-33.4	

90	34.2	32.0
	-7.9	-8.6
	136.8	
	-31.6	

91	33.4	29.5
	-8.6	-11.1
	133.6	
	-34.4	

+5 34.8 12 10 58.5 +6 11.4
 +6 15.4 12 10 56.7 +6 11.5
 12 10 58^v +6 11.4^v

12 10 55.7 +6 15.2
 12 10 55.9 +6 15.2
 12 10 56^v +6 15.2^v

12 11 8.1 +6 11.3
 12 11 8.9 +6 11.4
 12 11 8^v +6 11.4^v

12 11 11.7 +6 13.5
 12 11 12.9 +6 13.6
 12 11 12^v +6 13.6^v

12 11 14.9 +6 06.8
 12 11 15.1 +6 06.8
 12 11 15^v +6 6.8^v

12 11 11.7 +6 04.3
 12 11 12.3 +6 04.3
 12 11 12^v +6 4.3^v

92	33.4	29.0
	- 8.7	-11.6
	133.6	
	-34.8	

12 A 58.1

12 11 46.7

94	36.1	23.0
	- 6.0	-17.7
	144.4	
	-24.0	

114	34.4	26.3
	- 8.0	-14.3
	137.6	
	-32.8	

93	32.3	25.4
	- 9.9	-15.2
	129.2	
	-39.6	

96	38.5	19.4
	- 3.5	-20.8
	154.0	
	- 14.0	

95	37.0	20.0
	- 5.1	-20.7
	149.0	
	-20.4	

21 +5 34.4 12 11 11.7 +6 03.4
 7 +6 15.4 12 11 11.9 +6 03.4
 12 11 12[✓] +6 3.4[✓]

12 11 22.5 +5 57.4
 12 11 22.7 +5 57.7
 12 11 23[✓] +5 57.8[✓]

12 11 15.7 +6 01.1
 12 11 14.7 +6 01.1
 12 11 15[✓] +6 1.1[✓]

12 11 07.3 +6 00.2
 12 11 07.1 +6 00.2
 12 11 7[✓] +6 0.2[✓]

12 11 32.1 +5 54.2
 12 11 32.7 +5 54.6
 12 11 32[✓] +5 54.4[✓]

12 11 26.1 +5 54.4
 12 11 26.3 +5 54.7
 12 11 26[✓] +5 54.8[✓]

97	38.8	18.8
	-3.5	-21.6
	103.2	
	-14.0	

12	2	58.1	+
12	11	46.7	+

98	42.3	14.9
	-0.0	-25.7
	169.2	
	-0.0	

99	37.5	19.0
	-4.6	-21.5
	150.0	
	-18.4	

100	36.0	19.9
	-6.0	-20.6
	144.0	
	-24.0	

101	35.6	14.9
	-6.6	-25.5
	142.4	
	-26.4	

102	33.6	17.0
	-8.5	-23.6
	134.4	
	-34.0	

1	+5	34.8	12	11	33.3	+5	53.6
7	+6	10.4	12	11	32.7	+5	53.8
			12	11	33✓	+5	53.7✓
			12	11	47.3	+5	49.7
			12	11	46.7	+5	49.7
			12	11	47✓	+5	49.7✓
			12	11	28.1	+5	53.8
			12	11	28.3	+5	53.9
			12	11	28✓	+5	53.8✓
			12	11	22.1	+5	54.7
			12	11	22.7	+5	54.8
			12	11	22✓	+5	54.8✓
			12	11	20.5	+5	49.7
			12	11	20.3	+5	49.9
			12	11	20✓	+5	49.8✓
			12	11	12.5	+5	51.8
			12	11	12.7	+5	51.8
			12	11	13✓	+5	51.8✓

103	28.7	14.1
	-13.5	-26.5
	114.8	
	-55.0	

12	A	58.1	+
12	11	46.7	+

104	26.5	16.0
	-15.6	-24.6
	106.0	
	-62.4	

106	33.5	6.8
	-8.8	-33.2
	⁴ 133.0	
	⁵ -34.2	

105	24.5	9.9
	-17.7	-30.7
	98.0	
	-70.8	

111	15.8	17.2
	-26.4	-23.4
	63.2	
	-125.6	

112	12.9	2.5
	-29.2	-38.3
	51.6	
	-116.8	

1	+5	34.8	12	10	52.9	+5	48.9
7	+6	15.4	12	10	51.7	+5	48.9
			12	10	52✓	+5	48.9✓
			12	10	44.1	+5	50.8
			12	10	44.3	+5	50.8
			12	10	44✓	+5	50.8✓
			12	11	12.1	+5	41.6
			12	11	11.5	+5	42.2
			12	11	12✓	+5	41.9✓
			12	10	36.1	+5	44.7
			12	10	35.9	+5	44.7
			12	10	36✓	+5	44.7✓
			12	10	01.3	+5	52.0
			12	10	01.1	+5	52.0
			12	10	1✓	+5	52.0✓
			12	9	49.7	+5	37.3
			12	9	49.9	+5	37.1
			12	9	50✓	+5	37.2✓

78	6.5 11.2 -4.5 36 44.2 26.0 -16.0 14.4	-8.1 21.1	62571 52600	12 8 17.9 12 8 58.1
			12 5 59.3 + 6 18.9 12 6 40.1 + 5 49.8 2 1A.0 - 10	
77	20.8 -8.2 83.2 -32.8	13.9 -5.5	52596 52600	12 7 02.1 12 8 58.1
			12 4 44.1 + 5 30.5 12 6 40.1 + 5 49.8 2 1A.0 - 10	
107	11.3 -19.7 45.2 -78.8	7.3 -31.2	52602 52606	12 10 08.4 12 12 11.7
			12 7 50.4 + 5 19.7 12 9 53.7 + 5 58.0 2 1A.0 - 10	
113	-0.4 -31.3 -1.6 -125.2	2.4 36.1		
110	12.2 -11.4 48.8 -45.6 13.4	-16.9 21.6	72521 72567	12 6 42.4 12 7 36.0
			See pg. 36.	
109	17.0 -16.5 68.0 -66.0 33.5	-18.9 5.1	72525 72529	12 10 87.5 12 12 21.6
			12 7 49.5 + 7 48.3 12 10 3.6 + 7 24.5 2 1A.0 - 10	

3 +6 3.9 12 8 43.3 +5 55.8
 1 +5 34.8 12 8 43.7 +5 55.9
 12 8 44 ✓ +5 55.8 ✓

1 +5 15.5 12 8 25.3 +5 29.4
 1 +5 34.8 12 8 25.3 +5 29.3
 12 8 25 ✓ +5 29.4 ✓

4 +5 4.7 12 10 53.6 +5 12.0
 7 +5 43.0 12 10 52.9 +5 11.8
 12 10 53 ✓ +5 11.9 ✓

12 10 6.8 +5 7.1
 12 10 6.5 +5 6.9
 12 10 7 ✓ +5 7.0 ✓

4 +7 19.5 12 6 51.2 +7 2.6
 0 +6 40.9 12 6 50.4 +7 2.5
 12 6 51 ✓ +7 2.6 ✓

7.5 +7 33.3 12 11 15.5 +7 14.4
 1.6 +7 9.5 12 11 15.6 +7 14.6
 12 11 16 ✓ +7 14.5 ✓

60

$$\alpha_{2000} = \alpha_{1900} + 5^m +$$

$$\alpha = 12^h +$$

	0	4 ^m	8 ^m	12 ^m	16 ^m	20 ^m	24 ^m	28 ^m	32 ^m	36 ^m	40 ^m	44 ^m	48 ^m	52 ^m	56 ^m	60 ^m
$\delta = +5$	7 ^s	8 ^s	8 ^s	8 ^s	8 ^s	8 ^s	9 ^s	9 ^s	9 ^s	9 ^s	9 ^s	10 ^s	10 ^s	10 ^s	10 ^s	10 ^s
6	"	"	"	"	"	9 ^s	"	"	"	10 ^s	10 ^s	"	"	11 ^s	11 ^s	11 ^s
7	"	"	"	"	9 ^s	"	"	"	10 ^s	"	"	11 ^s	11 ^s	"	"	12 ^s
8	"	"	"	"	"	"	"	10 ^s	"	"	11 ^s	"	"	12 ^s	12 ^s	"
9	"	"	"	"	"	"	10 ^s	"	"	11 ^s	"	"	12 ^s	"	"	13 ^s
10	"	"	"	9 ^s	"	"	"	"	11 ^s	"	"	12 ^s	"	13 ^s	13 ^s	"
11	"	"	"	"	"	10 ^s	"	11 ^s	"	"	12 ^s	"	13 ^s	"	14 ^s	14 ^s
12	"	"	"	"	"	"	"	"	"	12 ^s	"	13 ^s	"	14 ^s	"	15 ^s
13	"	"	"	"	10 ^s	"	11 ^s	"	12 ^s	"	13 ^s	"	14 ^s	"	15 ^s	"
14	"	"	9 ^s	"	"	"	"	"	"	13 ^s	"	14 ^s	"	15 ^s	"	16 ^s
15	"	"	"	"	"	"	"	12 ^s	"	"	14 ^s	"	15 ^s	"	16 ^s	17 ^s
16	"	"	"	"	"	11 ^s	"	"	13 ^s	"	"	15 ^s	"	16 ^s	17 ^s	"
17	"	"	"	10 ^s	"	"	12 ^s	"	"	14 ^s	"	"	16 ^s	17 ^s	"	18 ^s
18	"	"	"	"	"	"	"	13 ^s	"	"	15 ^s	16 ^s	"	"	18 ^s	19 ^s
19	"	"	"	"	11 ^s	"	"	"	14 ^s	15 ^s	"	"	17 ^s	18 ^s	19 ^s	"
20	"	"	"	"	"	12 ^s	"	"	"	"	16 ^s	17 ^s	"	"	"	20 ^s

✓

$$\delta_{2000} = \delta_{1900} -$$

33'.4, 33'.4, 33'.4, 33'.4, 33'.3, 33'.3, 33'.2, 33'.2, 33'.1, 33'.0, 32'.9, 32'.8, 32'.7, 32'.5, 32'.4, 32'.3

Precession correction 1900 to 2000

(B.P.G. from the Hamburg tables)

Incorrect in R.A.

No.	Lat.	Blog A.	Neb.	Deflected Neb.	Mag	
						<u>B33772</u>
1	3.21	16.10	13.95	10.73	14.8 ✓	
773		16.04	<u>13.93</u> 13.94		15.0	
2	3.21	16.08	14.50	11.21	15.0 ✓	
3136			<u>14.35</u> 14.42		15.0	
3	3.30	15.95	14.4	11.10	14.9 ✓	
776		16.05	<u>14.40</u> 14.40		14.9	
4	3.32	15.94	14.60	11.29	15.1 ✓	
789			<u>14.62</u> 14.61		15.0	
5	3.34	16.18	15.04	11.70	15.3 ✓	
790			<u>15.05</u> 15.04		15.1	
6	3.4	15.8	14.44	11.02	14.9 ✓	Identity different
3115		15.87	<u>14.40</u> 14.42		14.7	
7	3.41	15.83	14.26	10.86	14.8 ✓	
3131			<u>14.28</u> 14.27		14.9	
8	3.41	15.96	14.96	11.42	15.3 ✓ 15.1 ✓	
3153			<u>14.90</u> 14.93		15.5	
9	3.45	16.09	14.70	11.26	15.0 ✓	
3156			<u>14.72</u> 14.71		15.1	
10	3.45	16.20	14.90	11.46	15.3 ✓ 15.2 ✓	
3167			<u>14.93</u> 14.91		15.8	

72

	Zero	Brgd.	Neb.	Deflectn Neb.	Mag.	
11 3170	3.52	16.64	14.87 <u>14.85</u> 14.86	11.34	15.1 ✓ 15.6	
12 3175	3.57 <u>3.62</u> 3.59	16.85	15.84 <u>15.83</u> 15.84	12.25	15.7 ✓ 15.7	
13 3211	3.6	16.8	13.65	10.05	15.6 14.4 15.7 ✓	neb. much too large.
Identity wrong - 1496.4307 meas.						
14 3225	3.6	16.92	15.30 <u>15.30</u> 15.30	11.70	15.3 ✓ 15.0	
15 3229	3.63	16.88	15.73 <u>15.76</u> 15.74	12.11	15.6 ✓ 15.3	
16 3259	3.64	16.75	16.27 <u>16.30</u> 16.28	12.64	15.6 ✓ 16.0 15.2 ✓	
Identity wrong						
17 3267	3.66	16.76	15.14 <u>15.19</u> 15.16	11.50	15.0 ✓ 15.2 14.7 ✓	
18 3291	3.70	16.80	15.75	12.05	15.5 ✓ 15.5	
19 3274	3.72	16.70	15.72 <u>15.70</u> 15.71	12.00	15.5 ✓ 15.2	
20 3322	3.73	16.82	15.30 <u>15.28</u> 15.29	11.56	15.2 15.2 14.3	Identity?

	Zero.	Blogd.	Neb.		<u>Repetitions</u>	73
8	2.71	15.93	14.47	11.76	15.3	
10	2.72	15.60	14.47	11.75	15.3	
13	2.80	15.88	14.93	12.13	<u>15.6</u>	
16.	2.90	15.57	14.32	11.42	15.6	too large.
17	2.85		14.13	11.28	15.0	
20.	2.83	15.55	14.35	11.52	15.2	much too large.

	Zero.	Blazh.	Net.	Deflectn	Magn.	— B 33772 —
1 4180	2.71	15.2	10.83	8.12	13.4	
2 4191	2.88	15.20	12.03	10.15	14.4	
3 4197	2.89	15.41	12.72	9.83	14.3	much too large.
4 4207	2.93	15.46	12.40	9.47	14.0	somewhat too large.
5 4215						
6 4224						
7 4233						
8 4247						
9 4249						
10 4252						
11						

76

11

4255

12

4257

13

4264

14

4268

15

4270

16

4282

17

4292

18

4300

19

4301

20

4342

78

MC1660

Zero

Blind

Star

Deflection
Neb.

9

1.65

11.24

6.25

4.63

11.20

 $\frac{6.30}{6.28}$ 80K

10

1.68

11.24

6.54

4.86

11

1.70

11.2

7.83

6.13

12

1.73

11.3

8.69

6.96

13

1.70

11.28

8.80

7.10

14

1.74

11.07

8.60

6.86

15

1.73

11.07

9.23

7.50

16

1.73

11.10

9.68

7.95

17

1.71

11.33

9.76

8.05

19

1.76

11.21

10.44

8.68

MC 1660		Zero	Bkgd.	Star	
1	1.72	11.09	7.23	5.51	
MW					
80	2	1.74	11.21	7.81	6.07
3	1.76	11.2	7.75	5.99	
4	1.70	11.1	8.25	6.55	
5	1.71	11.1	9.26	7.55	
6	1.73	11.32	10.08	8.35	
7	1.70	11.13	10.27	8.57	
8	1.77	11.13	10.81	9.04	

80

B33772

Zero. Bkgd. Star

9 1.45 15.60 8.20 6.75

Cinta
10^h + 5^m

10 1.50 15.48 10.23 8.73

13 1.62 15.60 10.87 9.25

14 1.62 15.60 10.92 9.30

15 1.65 15.65 12.90 11.25

16 1.60 15.50 12.60 11.00

17 1.70 15.77 13.35 11.65

18 1.71 15.80 13.70 11.99

A6720

Black: A.A.

Red: S.F.M.

85

P.F.	I	1	2	3	Diam	Magn.	Class.	Remarks.
a	.9	1.0	1.0	12"	18.0 ^m	a 10		
				6		a 10		
f	1.2	1.4	1.3	16	16.5	d 7		
				12		f 10		
c	1.1	1.1	1.1	13	17.6	c 7		irregular concentration
				12		f 9		
d	1.0	.9	1.0	12	17.6	f 9		
				12		f 10		
e	1.5	1.2	1.4	17	17.7	a 6		2. possibly nebula.
				12		a 9		
f	1.3	1.1	1.2	14	17.6	f 9		
				12		a 9		
g	1.2	1.0	1.1	13	17.3	f 7		
				12		f 9		
h	1.1	1.1	1.1	13	16.8	c 10		
				12		f 10		
				13.8"				
P.F.	II							
a	.8	.9	.8	10"	17.0	d 10		
				6		f 10		
f	.7	1.1	.9	11	17.8	f 8		
				6		a 10		
e	1.0	.8	.9	11	17.5	f 7		
				12		a 9		
d	.9	1.0	1.0	12	17.6	f 10		
				12		a 10		
e	1.1	1.1	1.1	13	17.1	a 10		
				12		a 10		

				Diam	Mag	Class.
f	.9	.9	.9	11"	16.5	a 8
				12		a 10
g	1.2	1.1	1.2	14	17.6	a 7
				12		a 8
h	1.0	.7	.8	10	17.5	c 10
				<u>6</u>		f 10
				11.5		

possibly nebula

F.F. III

a	1.2	1.4	1.3	16"	16.7	f 8
				12		a 10
b	1.1	1.0	1.0	12	16.9	f 9
				12		a 8
c	1.3	1.2	1.2	14	17.0	c 10
				12		f 10
d	1.4	1.4	1.4	17	17.7	a 7
				12		a 9
e	1.5	1.3	1.4	17	15.9	f 7
				12		a 8
f	1.0	1.0	1.0	12	17.8	a 10
				12		a 9
g	1.1	1.3	1.2	14	17.8	a 8
				18		a 9
h	1.3	1.0	1.2	14	17.7	d 10
				12		f 9
i	1.2	1.1	1.2	14	16.6	f 7
				12		f 9
				<u>12</u>		
				14.5		

Feb 1929

Star Counts on A 13810.

Right Side
of Plate

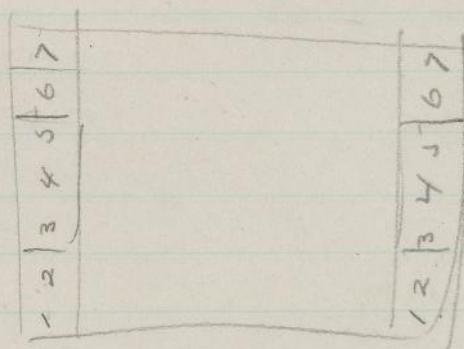
Region	m_1	m_2	m_3	Total.
I 250 A'	17	81	259	357
II	20	56	312	388
III	24	74	270	368
IV	25 } 75	87 } 231	209 } 697	301
V	26	70	218	314
VI	20	48	260	328
VII				

$$\begin{array}{r} 983 \\ 32827 \\ \hline 2.126 \\ \hline \end{array}$$
 sq. degrees

Left Side

I				
II	15	72	286	373
III	21	76	257	354
IV	19 } 59	85 } 231	276 } 773	380
V	19	70	240	339

± 15
 ± 10



1358

328

$$\begin{array}{r} 301 \\ \hline \end{array}$$
 ± 15
 ± 22
 ± 15

1927phae.proj.2313A

Sequence. Mt. W. S. A. 57 $13^h 4^m + 30^{\circ} 0'$

58 14.6

72 15.0

25 15.4

36 15.8

15 16.1

61 16.2

74 16.6

78 16.8

A12949

Class.

Diameter
Scale "

Mag.

Remarks.

101

1	P9	3.0	36	15.9	
2	P9	3.2	38	14.5	
3	a8	4.5	54	15.8	
4	a10	1.7	20	16.2	
5	f8	2.1	25	16.4	
6	f6	2.4	29	16.1	
7	c9	1.8	22	15.9	
8	a9	2.7	32	16.5	
9	P10	1.7	20	16.1	
10	f9	2.1	25	15.9	
11	a10	1.9	23	16.4	
12	f8	2.0	24	16.2	
13	d7	3.4	41	16.0	
14	a9	2.2	26	16.6	
15	a6	3.2	38	16.5	

102

	Class	Diameter		Mag.
		Scale	"	
16		1.8	22	16.2
17		1.7	20	16.4
18		2.0	24	16.1
19		2.0	24	16.2
20		1.2	14	16.6
21		1.5	18	15.9
22		3.6	43	16.0
23		2.3	28	16.7
24		4.3	52	15.4
25		1.3	16	15.9
26		1.7	20	15.8
27		1.9	23	14.7
28		2.9	35	16.1
29		1.0	12	16.3
30		1.6	19	16.4

Within halation ring of
bright star.

	Class	Diameter		Mag
		Scale	"	
31		1.8	22	15.9
32		3.4	41	15.0
33		2.5	30	16.0
34		1.4	17	14.8
35		1.2	14	16.3
36		1.3	16	16.6
37		4.6	55	16.0
38		2.3	16	15.2
39		6.1	73	15.9
40		2.3	28	16.3
41		1.3	16	16.3
42		1.1	13	16.0
43		2.2	26	15.8
44		3.0	36	15.3
45		1.7	20	16.0

46	2.8	34	15.5
47	2.0	24	15.7
48	1.5:	18:	16.7
49	1.0	12	16.5
50	1.2	14	16.6
51	1.8	22	16.6
52	1.5	18	16.1
53	2.0:	24:	16.3
54	1.1	13	16.1
55	2.3	28	16.2
56	3.8	46	16.0
57	2.2	26	16.6
58	3.5	42	16.2:
59	1.3	16	16.2
60	2.3	28	15.8

Very diffuse

61	5.0	60	15.3
62	4.1	49	15.7
63	2.4	29	15.8
64	1.9	23	16.1
65	1.8	22	15.9
66	1.6	19	16.4
67	2.0	24	16.0
68	3.0	36	16.1
69	2.6	31	16.5
70	6.3	76	14.7
71	1.4	17	16.4
72	2.3	28	15.2
73	2.1	25	16.0
74	1.2	14	15.7
75	1.0	12	16.3

76	4.4	53	14.5	
77	1.0	12	16.0	
78	1.7	20	16.4	
79	0.9	11	15.9	
80	1.2	14	16.8	stellar?
81	1.0	12	16.6	
82	3.3	40	16.1	
83	1.4	17	16.0	
84	1.3	16	16.7	
85	2.0	24	16.2	
86	1.7	20	16.7	
87	2.8	34	15.9	
88	2.0	24	16.1	
89	1.4	17	16.2	
90	1.7	20	16.6	

91	3.1	37	16.4
92	2.1	25	15.8
93	1.7	20	16.5
94	2.4	29	16.3
95	1.9	23	15.9
96	2.3	28	14.7
97	3.4	53	15.2
98	1.3	16	16.2
99	1.6	19	16.4
100	1.9	23	16.6
101	1.3	16	15.9
102	1.5	18	15.6
103	1.5	18	16.2
104	1.2	14	16.3
105	2.2	26	16.0

1927phae.prj.231.A

Mags. of bright objects south of Coma Virgo:

	AX-1005	1043	mean
4457	11.8	11.4	11.6
4517	12.2	11.6	11.9
4527	11.2	11.3	11.25
4536	11.1	11.2	11.15
4586	12.9	12.8	12.85
4592	12.7	12.2	12.45
4632	12.3	12.1	12.2
4636	11.0	11.1	11.05
4643	11.6	12.0	11.8
4665	12.2	11.7	11.95
4666	11.6	11.3	11.45

114

118

A 7848A 7848

NEB.

 α δ

COMP. STARS

1

12	45	46	-13	39.3	-13	3607
12	45	46	-13	39.3	-13	3606
12	45	46	-13	39.3	12	45 59 -13 59.5
$\Delta\alpha = 13''$		$\Delta\delta = 45.3'$		12 45 46 -13 14.2		
$= 4.0 \text{ mm}$		$= 46.0 \text{ mm}$				

2

12	46	12	-13	32.4
12	46	12	-13	32.4
12	46	12	-13	32.4

2a

12	46	18	-12	39.4	-13	3606
12	46	18	-12	39.5	-12	3712
12	46	18	-12	39.4	12	45 46 -13 14.2
$\Delta\alpha = 127''$		$\Delta\delta = 36.2'$		12 47 53 -12 38.0		
$= 31.5 \text{ mm}$		$= 36.8 \text{ mm}$				

3

12	46	50	-14	47.4	-14	3594
12	46	50	-14	47.4	-14	3597
12	46	50	-14	47.4	12	46 29 -15 1.1
$\Delta\alpha = 128''$		$\Delta\delta = 30.6'$		12 48 37 -14 30.5		
$= 30.8 \text{ mm}$		$= 31.3 \text{ mm}$				

4

12	48	5	-14	51.5
12	48	5	-14	51.5
12	48	5	-14	51.5

5

12	49	13	-15	41.0	-15	3555
12	49	13	-15	41.1	-14	3594
12	49	13	-15	41.0	12	50 17 -16 4.2
$\Delta\alpha = 228''$		$\Delta\delta = 631'$		12 46 29 -15 1.1		
$= 55.5 \text{ mm}$		$= 62.5 \text{ mm}$				

F7848

NES.

	α			δ	COMP. STARS	
6	12	49	14	-14	1.3	-14 3597
	12	49	15	-14	1.3	-13 3622
	12	49	14	-14	1.3	12 48 37 -14 30.5
	$\Delta\alpha = 162''$		$\Delta\delta = 40.0'$		12	51 19 -13 30.5
	$= 39.0\text{mm}$		$= 40.5\text{mm}$			
9	12	50	6	-14	17.2	
	12	50	7	-14	17.2	
	12	50	6	-14	17.2	
7	12	49	30	-12	25.4	-12 3712
	12	49	30	-12	25.4	-12 3723
	12	49	30	-12	25.4	12 47 53 -12 38.0
	$\Delta\alpha = 165''$		$\Delta\delta = 20.3'$		12	50 38 -12 17.7
	$= 40.8\text{mm}$		$= 21.0\text{mm}$			
8	12	50	6	-12	33.2	
	12	50	6	-12	33.2	
	12	50	6	-12	33.2	
11	12	50	35	-12	38.9	
	12	50	35	-12	38.9	
	12	50	35	-12	38.9	
10	12	50	50	-16	17.0	-16 3572
	12	50	50	-16	16.9	-15 3555
	12	50	50	-16	17.0	12 52 20 -16 43.4
	$\Delta\alpha = 123''$		$\Delta\delta = 39.2'$		12	50 17 -16 4.2
	$= 29.5\text{mm}$		$= 40.0\text{mm}$			

120

H7848

NEB

NEB	α			δ	COMP. STARS	
13	12	51	45	-16	39.0	12 52 20 -16 43.4
	12	51	45	-16	39.0	12 50 11 -16 4.2
	12	51	45	-16	39.0	...
12	12	50	57	-13	46.0	-13 3630
	12	50	57	-13	46.0	-12 3720
	12	50	57	-13	46.0	12 53 35 -14 5.6
	$\Delta\alpha = 21.3''$			$\Delta\delta = 62.3'$		12 50 2 -13 3.3
	$= 52.5 \text{ mm}$			$= 62.7 \text{ mm}$		
17	12	51	25	-13	34.8	
	12	51	25	-13	34.8	
	12	51	25	-13	34.8	
18	12	51	27	-13	31.6	
	12	51	27	-13	31.6	
	12	51	27	-13	31.6	
19	12	51	25	-13	30.6	
	12	51	25	-13	30.6	
	12	51	25	-13	30.6	
20	12	51	33	-13	19.6	
	12	51	33	-13	19.6	
	12	51	33	-13	19.6	

H 7848

NEB.

	α		δ	COMP. STARS	
16	12 51	56	-14	22.2	-14 3619
	12 51	56	-14	22.3	-13 3622
	12 51	56	-14	22.2	12 55 2 -14 35.1
	$\Delta\alpha = 223''$		$\Delta\delta = 44.6'$		12 51 19 -13 50.5
	$= 54.5\text{mm}$		$= 45.0\text{mm}$		
27	12 54	19	-14	34.1	
	12 54	19	-14	34.1	
	12 54	19	-14	34.1	
22	12 54	25	-14	17.3	
	12 54	25	-14	17.3	
	12 54	25	-14	17.3	
28	12 54	37	-14	34.1	
	12 54	37	-14	34.1	
	12 54	37	-14	34.1	
30	12 54	50	-14	3.8	
	12 54	50	-14	3.9	
	12 54	50	-14	3.8	
14	12 52	6	-15	7.8	-15 3569
	12 52	6	-15	7.8	-14 3619
	12 52	6	-15	7.8	12 51 29 -15 9.3
	$\Delta\alpha = 213''$		$\Delta\delta = 34.2'$		12 55 2 -14 35.1
	$= 51.8\text{mm}$		$= 34.2\text{mm}$		

122

H 1848

NEB.

15

α	δ	COMP. STARS
12 52 6 -14	59.3	12 51 29 -15 9.3
12 52 6 -14	59.3	12 55 2 -14 35.1
12 52 6 -14	59.3	

21

12 53 14 -14	52.3	
12 53 14 -14	52.3	
12 53 14 -14	52.3	

29

12 54 49 -14	42.3	
12 54 49 -14	42.3	
12 54 49 -14	42.3	

20

12 53 51 -16	58.0	-17 37.5R
12 53 51 -16	58.0	-16 35.7R
12 53 51 -16	58.0	12 56 4 -17 13.1
$\Delta\alpha = 22.4''$	$\Delta\delta = 29.7'$	12 52 20 -16 43.4
$= 54.0 \text{ mm}$	$= 29.5 \text{ mm}$	

25

12 54 56 -16	22.7	-16 35.7R
12 54 57 -16	22.7	-16 35.7R
12 54 56 -16	22.7	12 52 20 -16 43.4
$\Delta\alpha = 17.1''$	$\Delta\delta = 21.0'$	12 55 11 -16 22.4
$= 41.5 \text{ mm}$	$= 22.6 \text{ mm}$	

34

12 54 57 -12	20.6	-12 37.3R
12 54 57 -12	20.6	-12 37.2R
12 54 57 -12	20.6	12 54 31 -12 20.3
$\Delta\alpha = 35.3''$	$\Delta\delta = 12.6'$	12 50 38 -12 17.7
$= 86.2 \text{ mm}$	$= 13.0 \text{ mm}$	

A 7848

NEB

 α δ

COMP STARS

35

12	55	1	-12	20.1
12	55	1	-12	20.1
12	55	1	-12	20.1

31

12	55	13	-13	39.3	-13	3630
12	55	13	-13	39.4	-13	3641
12	55	13	-13	39.4	12	53 35 -14 5.6

$\Delta\alpha = 186''$
 $= 45.5 \text{ mm}$

$\Delta\delta = 55.8'$
 $= 56.3 \text{ mm}$

12 56 41 -13 9.8

33

12	55	50	-13	40.3
12	55	50	-13	40.4
12	55	50	-13	40.4

34

12	56	41	-13	15.1
12	56	41	-13	15.1
12	56	41	-13	15.1

32

12	55	34	-14	25.3	-14	3619
12	55	34	-14	25.3	-14	3622
12	55	34	-14	25.3	12	55 2 -14 35.1

$\Delta\alpha = 73''$
 $= 18.0 \text{ mm}$

$\Delta\delta = 27.5'$
 $= 28.0 \text{ mm}$

12 56 15 -14 7.6

26

12	55	52	-17	32.4	-17	3747
12	55	52	-17	32.4	-17	3752
12	55	52	-17	32.4	12	54 23 -17 37.4

$\Delta\alpha = 101''$
 $= 24.5 \text{ mm}$

$\Delta\delta = 24.3'$
 $= 24.3 \text{ mm}$

12 56 4 -17 13.1

124

H 7848

NEB.

37

α	δ	COMP. STARS
12 56 43 -15 14.9	-15 3584	
12 56 43 -15 14.9	-14 3619	
12 56 43 -15 14.9	12 57 26 -15 21.6	
$\Delta\alpha = 144''$	$\Delta\delta = 46.5'$	12 55 2 -14 35.1
$= 35.0 \text{ mm}$	$= 47.0 \text{ mm}$	

38

12 57 3 -15 6.0	
12 57 4 -15 5.9	
12 57 4 -15 6.0	

39

12 57 6 -16 58.1	-17 3752	
12 57 7 -16 58.1	-16 3589	
12 57 6 -16 58.1	12 56 4 -17 13.1	
$\Delta\alpha = 181''$	$\Delta\delta = 37.2'$	12 58 15 -16 30.9
$= 31.5 \text{ mm}$	$= 37.2 \text{ mm}$	

40

12 57 6 -17 1.1	
12 57 7 -17 1.1	
12 57 6 -17 1.1	

41

12 57 58 -16 45.6	
12 57 58 -16 45.6	
12 57 58 -16 45.6	

36

12 56 47 -14 13.2	-14 3633	
12 56 47 -14 13.2	-14 3622	
12 56 47 -14 13.2	12 59 2 -14 27.7	
$\Delta\alpha = 167''$	$\Delta\delta = 20.1'$	12 56 15 -14 7.6
$= 40.8 \text{ mm}$	$= 20.4 \text{ mm}$	

H 7848

NEB.

44

α	δ	COMP. STARS
12 58 21 -13 46.2	-14 36 33	
12 58 21 -13 46.1	-13 36 39	
12 58 21 -13 46.2	12 59 2 -14 27.7	
$\Delta\alpha = 171''$	$\Delta\delta = 49.5'$	12 56 5 -13 38.2
$= 43.0 \text{ mm}$	$= 50.2 \text{ mm}$	

42

12 58 11 -15 24.1	-15 35 9.2	
12 58 11 -15 24.1	-15 35 8.4	
12 58 11 -15 24.1	12 59 4 -15 59.6	
$\Delta\alpha = 98''$	$\Delta\delta = 38.0'$	12 57 26 -15 21.6
$= 23.0 \text{ mm}$	$= 38.0 \text{ mm}$	

46

12 59 36 -15 42.3	-15 35 9.2	
12 59 36 -15 42.3	-15 35 9.3	
12 59 36 -15 42.3	12 59 4 -15 59.6	
$\Delta\alpha = 63''$	$\Delta\delta = 47.7'$	13 0 7 -15 11.9
$= 19.8 \text{ mm}$	$= 48.2 \text{ mm}$	

47

12 59 53 -15 32.8		
12 59 53 -15 32.9		
12 59 53 -15 32.8		

45

12 59 19 -14 29.5	-15 35 9.3	
12 59 19 -14 29.5	-14 36 33	
12 59 19 -14 29.5	13 0 7 -15 11.9	
$\Delta\alpha = 65''$	$\Delta\delta = 44.2'$	12 59 2 -14 27.7
$= 19.0 \text{ mm}$	$= 44.6 \text{ mm}$	

126

H 7848

NEB.

 α δ

COMP. STARS

48

13	1	14	-15	43.0	-16	3607
13	1	14	-15	43.0	-15	3593
13	1	14	-15	43.0	13 3 58	-16 34.5
$\Delta\alpha = 231''$		$\Delta\delta = 82.6'$		13 0 7	-15	11.9
$= 535 \text{ mm}$		$= 84.2 \text{ mm}$				

49

13	1	16	-16	0.1
13	1	16	-16	0.2
13	1	16	-16	0.2

51

13	1	49	-15	32.7
13	1	50	-15	32.7
13	1	50	-15	32.7

55

13	2	27	-16	2.1
13	2	27	-16	2.2
13	2	27	-16	2.2

57

13	3	10	-15	46.4
13	3	10	-15	46.4
13	3	10	-15	46.4

50

13	1	6	-15	8.9	-15	3593
13	1	6	-15	8.9	-14	3649
13	1	6	-15	8.9	13 0 7	-15 11.9
$\Delta\alpha = 183''$		$\Delta\delta = 13.8'$		13 3 10	-14	38.1
$= 40.2 \text{ mm}$		$= 13.0 \text{ mm}$				

7848

NEB.

 α δ

COMP. STARS

52

13	1	52	-15	4.2
13	1	52	-15	4.2
13	1	52	-15	4.2

53

13	1	13	-12	55.0	-12	3755
13	1	13	-12	55.0	-12	3766
13	1	13	-12	55.0	13	0 57 -13 5.6
$\Delta\alpha = 22.1''$			$\Delta\delta = 20.5'$		13 4 37 -12 45.1	
$= 54.0 \text{ mm}$			$= 20.3 \text{ mm}$			

60

13	3	28	-13	7.1
13	3	28	-13	7.1
13	3	28	-13	7.1

54

13	2	45	-17	7.2	-17	3775
13	2	45	-17	7.2	-16	3601
13	2	45	-17	7.2	13	8 10 -17 15.2
$\Delta\alpha = 96''$			$\Delta\delta = 20.0'$		13 1 34 -16 55.2	
$= 23.0 \text{ mm}$			$= 20.0 \text{ mm}$			

61

13	4	6	-16	10.0	-16	3607
13	4	7	-16	10.0	-15	3621
13	4	6	-16	10.0	13	3 58 -16 34.5
$\Delta\alpha = 291''$			$\Delta\delta = 40.6'$		13 8 49 -15 53.9	
$= 68.5$			$= 39.8 \text{ mm}$			

62

13	4	19	-15	55.7
13	4	19	-15	55.7
13	4	19	-15	55.7

128

A7848

NEB.

 α δ

COMP. STARS

63

13	4	57	-16	16.2	13	3	58	-16	34.5
13	4	57	-16	16.1	13	8	49	-15	53.9
13	4	57	-16	16.2					

64

13	6	35	-16	4.9
13	6	35	-16	4.9
13	6	35	-16	4.9

74

13	8	8	-16	26.3
13	8	8	-16	26.3
13	8	8	-16	26.3

71

13	7	46	-15	48.8	-15	3621						
13	7	46	-15	48.8	-15	3612						
13	7	46	-15	48.8	13	8	49	-15	53.9			
$\Delta\alpha = 136''$					$\Delta\delta = 31.4'$		13		6	33	-15	225
$= 32.5 \text{ mm}$					$= 32.2 \text{ mm}$							

72

13	7	54	-15	28.3
13	7	54	-15	28.3
13	7	54	-15	28.3

65

13	5	52	-12	51.8	-14	3664							
13	5	52	-12	51.8	-12	3766							
13	5	52	-12	51.8	13	7	40	-14	10.6				
$\Delta\alpha = 183''$					$\Delta\delta = 85.5'$		13			4	37	-12	45.1
$= 44.0 \text{ mm}$					$= 86.8 \text{ mm}$								

H 7848

NEB.

 α δ

COMP. STARS

66

13 6 25 -13 34.1

13 6 25 -13 34.1

13 6 25 -13 34.1

67

13 6 42 -13 34.1

13 6 42 -13 34.1

13 6 42 -13 34.1

68

13 6 44 -13 31.2

13 6 44 -13 31.2

13 6 44 -13 31.2

69

13 6 44 -12 53.6

13 6 44 -12 53.7

13 6 44 -12 53.6

70

13 6 11 -14 1.7

13 6 11 -14 1.7

13 6 11 -14 1.7

64a

13 4 46 -15 7.0 -15 3612

13 4 46 -15 7.0 -14 3649

13 4 46 -15 7.0 13 6 33 -15 22.5

 $\Delta\alpha = 203''$ $\Delta\delta = 24.4'$ 13 3 10 -14 58.1 $= 49.5 \text{ mm}$ $= 25.2$

130

H 7848

NEB.

77

α	δ	COMP.	STARS
13 10 22 -14 14.4	-14 3684		
13 10 22 -14 14.4	-14 3664		
13 10 22 -14 14.4	13 12 18 -14 39.4		
$\Delta\alpha = 278''$	$\Delta\delta = 25.8'$	13 7 40 -14 10.6	
$= 67.0\text{mm}$	$= 31.0\text{mm}$		

79

13 11 12 -14 38.0	
13 11 12 -14 38.0	
13 11 12 -14 38.0	

81

13 11 44 -15 37.0	-15 3621
13 11 44 -15 37.0	-15 3639
13 11 44 -15 37.0	13 8 49 -15 53.9
$\Delta\alpha = 263''$	$\Delta\delta = 42.9'$
$= 64.5\text{mm}$	$= 42.9\text{mm}$

80

13 11 32 -12 57.9	-13 3682
13 11 34 -12 57.9	-12 3781
13 11 33 -12 57.9	13 12 38 -13 25.7
$\Delta\alpha = 206''$	$\Delta\delta = 52.7'$
$= 50.0\text{mm}$	$= 54.0\text{mm}$

82

13 12 53 -15 2.8	-15 3639
13 12 53 -15 2.8	-14 3684
13 12 53 -15 2.8	13 13 12 -15 11.0
$\Delta\alpha = 54''$	$\Delta\delta = 31.6'$
$= 12.8\text{mm}$	$= 31.6\text{mm}$

H 7848

NEB.

83

α			δ		COMP. STARS		
13	13	10	-13	56.9	-13	3688	
13	13	10	-13	56.8	-13	3682	
13	13	10	-13	56.8	13	13 55	-14 5.0
$\Delta\alpha = 17''$			$\Delta\delta = 39.3'$		13	12 38	-13 25.7
$= 18.0 \text{ mm}$			$= 41.0 \text{ mm}$				

#

134

on AX plates

N.G.C. objects identified in Coma-Virgo Extension region,
($12^h 0^m$ to $12^h 20^m$ and $+5^\circ 5' - 18^\circ$)

N.G.C.

		AX 2178 1681	AX 2155 1043	AX 2155 1043	AX 2155 1043	AX 2155 1043
4114	B27643					
4116	MC19680		12.8	12.3	12.7	12.4
4123	MC19680		12.1	12.1	12.3	12.1
4129	I24668 B27643	AX 2155 1681				
4177	A8754 B27643	AX 2178 1681				
4179	MC17177	AX 2155 1043	11.9	11.4	11.7	11.2
4234	MC18312	AX 2155 1043	13.2	12.9	13.2	12.8
4240	B27643	not resolved on AX plates.				
4263	B27643	AX 2178 1681				
4329	B27643	AX 2178 1681				
4348	{ MF11285 MC11950-1 MC16666 B27214	AX 2155 1043	13.7	12.6	13.3	12.7
4361	B27633	AX 2178 1681				
4385	MC18312 MF11285	AX 2155 1043	11.0	12.7	13.2	12.8
4412	MC18312	AX 2155 1043	13.5	12.6	13.2	12.6

Planetary Nebula Pick XIII

		AX 1043 Complete	AX 2155 Complete		
4418	B27214 MF11285	AX 2155 1043	13.7	13.1	13.4 13.0
4420	MC18312	AX 2155 1043	13.1	12.2	13.0 12.3
4422	MC16666	AX 2178 1053			
4428	I24668	AX 2178 1681			
4433	I24668	AX 2178 1681			
4454	MF11285 B27214	AX 2155 1043	13.0	12.3	12.9 12.4
4457	MF11285 B1335	AX 2155 1043	11.6	11.2	11.6 11.1
4484 see Rein.	B27643	AX 2178 1681			
4487	A5194 I25064 I24668	AX 2155 1043 2178 1681	11.6		
4496 (Double)	B1335 MF11285	AX 2155 1043	12.0	11.5	12.0 11.6
4504	MC16666 I24668	AX 2155 1043 2178 1681	12.3		
4517	MC381 B1335 MF11285	AX 2155 1043	impossible on AX - too large & h. cl. close.		
4527	B1335 MF11285	AX 2155 1043	11.2	11.2	
4533	MF11285 MC19581	AX 2155 1043			
4536	B1335 MF11285	AX 2155 1043	11.4		

		AX 1043	AX 2155
4538	MF11285 MC19581	AX 2155 1043	13.7
4541	MC 381 MF11285	AX 2155 1043	14.8
4544	MF11285 MC19581	AX 2155 1043	12.9
4546	MC 381 MF11285	AX 2155 1043	11.0
4581	MC21889 MF11285		13.3
4592	MC 366 MC21889 MF11285	AX1043 2155	12.1
4593	MC 366 I 24658	AX1043 2155	11.8
4594	MC12014 I 24658 I 25064	AX2178 1681	
4597	I 24658	AX1043 2155	12.6
4599	MF11285 MC21889	AX1043 2155	14.6
4600	MF11285 MC21889	AX2155 1043	13.1
4602	I 24658	AX2155 1043	12.5
4626	MC12003	AX1681 2178	
4628	MC12003	AX2178 1681	
4630	MF11285	AX2155 1043	12.7

			AX1043	AX2155
4632	MF11285	AX2155 1043	2.0	
4636	MC19715 MF11285	AX2155 1043	9.8	
4642	MF11285	AX2155 1043	13.7	
4643	MC19715 MF11285	AX1043 1053		
4653	MF11285	AX2155 1043	12.5	
4658	MC12014 MC12003	AX2178 1681		
(4663	MC12014 MC12003	AX2178		near a bright star.)
4665	MC19715 MF11285	AX2155 1043	10.8	
4666	MF11285	AX2155 1043	10.9	
4668	MF11285	AX2155 1043	13.0	
4671	I25064	AX2178 1681		
4674	MC12014 I25064 MC12003	AX2178 1681		
4682	MC12003	AX2178		
4684	MF11285	AX2155 1043	11.8	
4690	MF11285	AX2155 1043	12.0	

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4691	MF11285	AX 2178	
4697	MC 262	AX 2178	
4699	MC12014 MC12003	AX 2178 1681	
4700	MC12014 MC12003	AX 2178 1681	
4701	MC19715 MF11285	AX 2155 1043	
4703	MC12014 MC12003	AX 2178 1681	
4705	MC 262	not resolved on AX.	
4708	MC12014 MC12003	AX 2178 1681	
4714	could not be found on I 28430		
4716	MC12003 MC12014	AX 2178 1681	Not resolved on AX.
4717	MC12003 MC12014		
4718	MC 262	AX 2155 1043?	Not resolved from ft. st. on AX.
4720	MC 262 MF11285		
4724	I 28430	AX 2178 1618	Not resolved on AX plate
4727	I 28430		

4731 MC 262 AX 2178

4739 MC 12003 AX 2178
MC 12014 1681

4742 MC 12014 AX 2178
MC 12003 1681

4748 A 7848 AX 2178
1681

4753 MF 11285 AX 2155
1043

4756 A 7848 AX 2178
1681

4757 MC 12014 AX 2178
MC 12003 1681

~~4759~~ MC 12014 AX 2178
MC 12003 1681

too near a bright star

4760 MC 12014 AX 2178
MC 12003 1681

4761 MC 12014 not resolved on AX
MC 12003

4763 A 7848 AX 2178
1681

4770 MC 12014 AX 2178
MC 12003 1681

4771 MC 19715
MF 11285

4772 MC 19715 AX 2155
MF 11285 1043

4773 MC 12014 AX 2178
MC 12003 1681
MC 19682

4775	MC12003 MC262	AX 2178 1681	
4777	MC12014 MC12003 MC19682	AX 2178 1681	
4780	MC12014 MC12003 MC19682	AX 2178 1681	
med. h. st. involved			
4781	MC12014 MC12003 MC19682	AX 2178 1681	
4782	MC12014 MC12003 MC19682	AX 2178 1681	Not sufficiently resolved for measurement.
4783			
4784	MC12014 MC12003 MC19682	AX 2178 1681	
4786	MC12003 MC262	AX 2178 1681	
4790	MC12014 MC12003 MC19682	AX 2178 1681	
4792	MC12014 MC17436	AX 2178 1681	
4799	MC19715 MF11285	not resolved on AX.	
4809- 10	MC19715 MF11285	not resolved on AX	
4813	MC262 MC12003	AX 2178 1681	
4818	MC12014 MC12003 MC19682		
4820	A7848	AX 2178 1681	

4899	A7848	AX2178 1681
4822	MC12014 MC19682	AX2178 1681
4825	A7848	AX2178 1681
4836	A7848 MC19682	AX2178 1681
4838	A7848	AX2178 1681
4845	MC19715 MF11285	
4855	A7848	AX2178 1681
4856	A7848	AX2178 1681
4862	A7848	AX2178 1681
4863	A7848	AX2178 1681
4877	A7848	AX2178 1681
4878	MC262	AX2178 1681
4885	MC262	AX2178 1681
4887	A7848	AX2178 1681
4890	MC262	AX2178
4891	A7848	AX2178 1681

too faint.

* See top of page

4900	MC19715	AX 2155 1043
4902	A7848	AX 2178 1681
4904	MC19715 MC21330	AX 2155 1043
4915	MC262 MC17178	AX 2178 1681
4920	MC12014 MC19682	AX 2178 1681
4924	A7848	AX 2178 1681
4925	MC17178	AX 2178 1681
4928	MC12014 MC12003 MC19682	AX 2178 1681
4933	MC12014 MC19682	AX 2178 1681
4939	MC19682	AX 2178 1681
4941	MC262 I24669	AX 2178 1681
4942	MC17178	AX 2178 1681
4948	MC19682	AX 2178 1681
4951	MC262 I24669 MC17178	AX 2178 1681
4958	MC19682	AX 2178 1681

4981	I 24669 MC 17178	AX 2178 1681	(bright star attached)
4984	A 7848	AX 2178 1681	
4989	I 24669 MC 17178	AX 2178 1681	
4990	I 24669 MC 17178	AX 2178 1681	
4995	I 24669	AX 2178 1681	
4996	MC 19536 MC 21330		
4997	A 7848	AX 2178 1681	too close to bright star
4999	I 24657 MC 19536 MC 21330	AX 2155 1643	
5010	A 7848	AX 2178 1681	
5015	MC 19716 I 24669	AX 2178 1681	
5017	A 7848	AX 2178 1681	
5030	A 7848	AX 2178 1681	too near bright star
5031	A 7848	AX 2178 1681	
5035	A 7848	AX 2178 1681	bright star on either side
5037	A 7848	AX 2178 1681	too near to bright star

5038	A7848	AX2178 1687
5044	A7848	AX 2178 1687
5046	A7848	AX2178 1687
5047	A7848	AX 2178 1687
5049	A7848	AX 2178 1681
5054	A7848	AX 2178 1681
5073	A7848	AX 2178 1681 1053
5076	B25483	AX 2178 1053
5077	B25483	AX 2178 1053
5079	B25483	AX 2178 1053
5088	B25483	AX 2178 1053
5094	B25483	AX 2178 1053
5104	MC 19536	
5111	B25483	AX 2178 1053
5119	B25483	AX 2178 1053

too faint

5146

B25483

AX2179
1053

5147

L24576
MC 19536

Other N.G.C. objects in Coma Virgo Extension Region.

4130	n.s. on MC 16665	4355	uncertain on MF 11285
4139	n.s. on I, MC and MF.	4403	MC 16666 v not resolved on AX
4140		4404	
4176	n.s. on I 24668	4409	same as 4420
4182	n.s. on MC 19680	4437	not found
4188	B 27643 v n.s. on AX	4493	uncertain on MC 381
4201	B 27643 v not resolved on AX.	4505	n.s. on B 1335
4202	n.s. on MC 17177	4520	MC 16666 not resolved on AX
4225	B 27643 v n.s. on AX.	4524	n.s. on B 27643
4265	B 27643 n.s. on AX	4582	star
4243	n.s. on B 27643	4587	n.s. on MC 21889
4279	n.s. on B 27643	4604	? = 4602
4280	n.s. on B 27643	4624	? = 4626
4285	n.s. on B 27643	4629	n.s. on MF 11285
4289	MC 16312 v n.s. on AX		
4347	n.s. on MC 11950-1 and B 27214		

4664 not found.

4678 not found

4680 MC12014 ✓ not resolved
MC12003 on AX.

4722-3 n s on I28430

4726 n s on I28430

4740 n s on A7848

4764 } n s on MC12003, 12014
 4766 } and 19682
 4768 } all TV nebulae.
 4769 }

4776 Identification uncertain.

4778 Identification impossible.

4794 MC12014 ✓ not resolved
MC19682 ✓ on AX4802 MC19682 ✓ not resolved on
AX

4804 A7848 n s on AX.

4823 n s on A7848

4829 A7848 ✓ n s on AX.

4843 MF11285 ✓ not resolved on AX
MC262

4844 n s on A7848

4847 n s on A7848

4879 MC262 ✓ n s on AX

4888 MC262 ✓ not resolved
on AX

4897 ? = 4891

4910 not found

4918 MC262 n s on AX

4975 MC17178 ✓ n s on AX

4982 n s on MC19682

4991 MC19536? n s on AX

5013 MC19536 n s on AX

5028 A7848 not resolved
on AX

5036 MC19716 n s on AX

5039 MC19716 n s on AX

5050 I 24576v n s on
AX

5066 n s on I 24669

5067 stellar

5069 same as 5066

5070 n s on B 25483

5072 B 25483v not recorded
on AX

5095 MC 19583 n s on AX
MC 19716

5097 n s on B 25483

5099 n s on B 25483

5105 n s on B 25483

5110 same as 5111

5122 n s on MC 12748

5130 n s on B 30312

5133 MC 19716v n s on
AX

5148 n s on MC 19536.

Sequences on AX 2155 August 21st 7:30 P.M.

Voltage		6.2 - 5.2				mean Obj.	O-D.	C-D.	O-D reduced individually	O-D reduced to mean C-D.
Designation		Object	Clear.	Dark	Obj.					
R Virgins	10.4	3.30	7.64	0.83	3.36	3.33	2.50	6.81	3.67	3.67
Sequence.	11.1	3.80	7.86	0.82	3.86	3.83	3.01	6.96	4.32	4.43
AX 2155	11.4	3.83	7.57	0.82	4.0	3.91	3.09	6.75	4.50	4.55
	11.8	5.02	7.89	0.83	4.0	5.01	4.18	7.06	5.93	6.14
	12.1	4.60	7.63	0.82	4.57	4.59	3.77	6.81	5.53	5.55
	12.2	5.10	7.48	0.83	5.13	5.12	4.29	6.65	6.45	6.31
	12.6	6.04	7.70	0.84	6.03	6.04	5.20	6.86	7.60	7.66
	12.9	6.60	7.64	0.85	6.48	6.54	5.69	6.79	8.38	8.37
	13.4	6.80	7.63	0.86	6.70	6.75	5.89	6.77	8.69	8.66
	y	6.45	7.50	0.85	6.65	6.55	5.70	6.65	8.58	
	z	6.50	7.50	0.83	6.45	6.47	5.64	6.67	8.46	
							7478			
							6.80			

Voltage 5.10 - 6.10

Carte	10.0	2.93	6.70	0.83	2.95	2.94	2.11	5.87	3.59	3.57
12 ^w + 4 ^o	10.9	3.57	6.72	0.80	3.56	3.56	2.76	5.92	4.65	4.67
AX 2155	11.0	4.58	6.72	0.80	4.55	4.57	3.77	5.92	6.37	6.38
	11.25	4.63	6.80	0.80	4.60	4.62	3.82	6.00	6.20	6.47
	11.9	other star too near						5.90		
	12.6	5.22	6.70	0.80	5.22	5.22	4.42	5.91	7.49	7.48
	13.1	5.60	6.74	0.83	5.60	5.60	4.77	5.83	8.06	8.07
	13.4	5.68	6.66	0.83	5.70	5.69	4.86	5.92	8.33	8.24
	13.7	5.95	6.75	0.83	5.95	5.95	5.12	5.88	8.65	8.67
	14.1	6.05	6.71	0.83	6.27	6.16	5.33	5.92	9.10	9.02
	14.4	6.10	6.73	0.81	6.17	6.14	5.33		9.00	9.02
							5707			
							5.91			

Voltage 5.10 - 6.00

August 22, 1929

	Voltage		6, 1	—	5, 1	mean obj.	O-D.	C.-D.	O.-D.	O-D reduced
Repealbon	10.4	2.15	6.40	-0.1	2.01	2.08	2.18	6.41	3.40	3.37
R Vang.	11.4	2.96	6.20	-0.09	3.00	2.98	3.07	6.29	4.88	4.76
AX 2155	11.8	3.42	6.59	-0.10	3.47	3.45	3.55	6.69	5.30	5.50
	12.1	3.43	6.40	-0.05	3.40	3.42	3.47	6.45	5.38	5.37
	12.2	3.82	6.23	-0.04	3.78	3.80	3.84	6.27	6.13	5.94
	13.4	5.50	6.54	-0.05	5.50	5.50	5.55	6.59	8.45	8.60
								3870 6.45		

104 K

AX 2155	2)	10.0	1.5	6.0	-0.04	1.56	1.53	1.57	6.04	2.60	2.54
	3)	10.5	2.5	6.10		2.54	2.52	2.56	6.14	4.17	4.14
	4)	another star to close.									
	5)	11.5	3.17	6.39		3.20	3.18	3.22	6.43	5.00	5.20
close!	6)										
	7)	11.7	3.15	6.05			3.15	3.18	6.08		5.14
close.	8)										
	9)	12.4	3.79	6.19	-0.03	3.76	3.78	3.81	6.22	6.13	6.16
	10)										
	11)										
	12)										
	14)	14.3	5.10	6.22	0.0	5.12	5.11	5.11	6.22	8.22	8.27
										3713 6.19	

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August 27 1929

R Verquins
AX 1043

Voltage 6.4 - 5.4									
Obj. No.	Obj.	Clear.	Dark	Obj.	Mean	O.	O-D	Q-D	
8.9 ^m	2.92	12.57	0.22	2.79	2.86	2.64	12.35	2.21	
9.8	4.92	12.14	0.26	4.95	4.94	4.58	11.88	3.88 ³	
10.4	6.25	12.35	0.30	6.25	6.25	5.95	12.05	4.98	5.00
11.1	7.32	11.96	0.31	7.30	7.31	7.00	11.65	5.86	
close to fl. st.	11.4	7.77	12.35	0.35	7.19	7.48	7.13	12.00	5.98
	11.8	8.62	12.25	0.33	8.67	8.64	8.31	11.92	6.97
	12.1	8.94	12.24	0.33	8.94	8.94	8.61	11.91	7.20
	12.2	9.28	12.35	0.35	9.23	9.26	8.91	12.00	7.47
	12.6	9.48	12.17	0.33	9.36	9.42	9.09	11.84	7.60
close to st.	12.9	10.59	12.35	0.32	10.55	10.58	10.26	12.03	8.78 ⁵⁸
	13.4	10.97	12.30	0.35	10.99	10.98	10.63	11.95	8.89
							13158		
							11.96		

Carte 12.0 + 4.5
AX 1043

Voltage 5.3 - 6.3									
Obj. No.	Obj.	Clear.	Dark	Obj.	Mean	O.	O-D	Q-D	
10.0	5.77	11.36	0.32	5.75	5.76	5.44	11.04	4.93	
10.9	6.90	11.41	0.32	7.45	6.18	5.86	11.09	5.29	
11.0	8.04	11.62	0.31	7.98	8.01	7.70	11.31	6.97	
11.25	8.15	11.52	0.32	8.07	8.11	7.78	11.19	7.04	
12.6	9.75	11.62	0.35	9.75	9.75	9.40	11.27	8.50	
13.1	10.35	11.35	0.35	10.10	10.22	9.87	11.00	8.93	
13.4	10.14	11.25	0.37	9.95	10.04	9.67	10.88	8.74	
13.7	9.90	11.15	0.36	10.08	9.99	9.63	10.79	8.72	
14.1	10.68	11.27	0.36	10.65	10.66	10.30	10.91	9.33	
							9948		
							11.05		

August 27

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104 K
AX1043

Voltage

5.28 - 6.30

mean
D.

O-D.

Cl-D.

O-D.
reduced

2)	10.0	5.55	11.51	0.33	5.50	5.52	⁵ 4.19	11.18	4.51 3.64
3)	10.5	6.70	11.30	0.36	6.63	6.66	6.30	10.94	5.48
4)	star too close.								
5)	11.5	7.25	11.55	0.35	7.40	7.32	6.97	11.20	6.06
6)	11.3	7.22	11.80	0.38	7.20	7.21	6.83	11.42	5.93
7)	11.7	8.20	11.56	0.35	8.30	8.25	7.90	11.21	6.87
8)	12.2	9.00	11.96	0.35	8.90	8.95	8.60	11.61	7.48
9)	12.4	9.15	11.90	0.33	9.10	9.12	8.79	11.57	7.63
10)	covered								
11)	hole in film								
12)	too close to 11 star								
14)	in hole in plate								
15)	14.7	11.38	12.30	0.45	11.20	11.26	10.81	11.85	9.41
							9.98		
							11.50		

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August 27 1929

Nehalae

A X1043

	obj.	Cl.	D.	obj.	mean O-D	O-D	Cl-D.	O-D. reduced.	Magnitudes
NGC. 4116	9.80	12.06	0.45	9.87	9.83	9.38	11.61	8.07	12.7
4123	9.25	12.0	0.43	9.18	9.22	8.79	11.57	7.60	12.3
sk. close. 4179	8.60	12.0	0.45	8.40	8.50	8.05	11.55	6.97	11.9:
4234	9.78	12.05	0.47	9.67	9.72	9.25	11.58	7.99	12.6
st too close 4348	10.70	12.09	0.47	10.67	10.68	10.21	11.62	8.96	13.6:
4454	10.15	12.18	0.48	10.13	10.14	9.66	11.70	8.26	12.8
4418	10.82	12.10	0.45	10.87	10.84	10.39	11.65	8.91	13.4
4385	10.70	12.10	0.46	10.50	10.60	10.14	11.64	8.73	13.2
4420	10.27	12.35	0.45	10.10	10.18	9.73	11.96	8.19	12.8
4457	8.36	12.09	0.45	8.19	8.28	7.83	11.64	6.73	11.7
4412	10.75	12.36	0.48	10.70	10.72	10.22	11.88	8.61	13.1
4496	9.03	12.13	0.43	9.00	9.02	8.57	11.70	7.34	12.1

Voltage 4.25 - 6.20

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AX1043

N.G.e.

August 28, 1929

	Cl.	Obj.	Cl.	D.	Cl.	Obj.	Mean O	Mean C	O-D.	C-D.		Mag
4536	13.02	9.10	13.34	1.02	13.05	9.03	9.06	13.14	8.04	12.12	6.83 ⁶⁵	11.1
4581	13.20	11.83	13.20	1.01	13.0	11.74	11.78	13.13	10.77	12.12	8.88	13.3
4599	13.28	12.33	13.10	1.03	13.18	12.22	12.28	13.18	11.25	12.15	9.25	14.3
4632	13.16	10.24	12.95	1.04	13.10	10.25	10.24	13.07	9.20	12.03	7.65	12.0
4517.	Impossible - long, and br. st superpass.											
4541	13.22	12.37	13.10	1.03	13.24	12.30	12.33	13.18	11.30	12.15	9.32	14.8
4592	13.10	10.42	13.12	1.02	13.04	10.35	10.38	13.09	9.36	12.07	7.75	12.1
4666	12.98	8.87	13.42	1.05	13.16	8.90	8.88	13.19	7.83	12.14	6.47	11.0
4668	13.55	11.43	12.91	1.06	12.97	11.54	11.48	13.14	10.42	12.08	8.65	13.0
sl. to close 4653	13.17	11.08	13.09	1.08	13.05	10.73	10.90	13.10	9.82	12.02	8.18	12.5
4642	13.00	11.92	13.10	1.07	13.09	11.87	11.90	13.06	10.83	11.99	9.02	13.7
4904	13.86	11.40	13.73	1.06	13.98	11.34	11.37	13.86	10.30	12.80	8.05	12.4
4753	13.55	7.46	13.72	1.06	13.57	7.44	7.45	13.59	6.39	12.53	5.10	9.8
4690	13.52	11.88	13.39	1.07	13.60	11.85	11.86	13.50	10.79	12.43	8.68	13.1
4684	13.57	10.39	13.58	1.07	13.26	10.20	10.30	13.47	9.21	12.40	7.43	11.8
4671	13.05	9.07	13.44	1.08	13.20	8.98	9.02	13.23	7.94	12.15	6.55	11.0
4720	13.35	12.07	13.30	1.09	13.47	12.10	12.08	13.36	10.99	12.27	8.94	13.5
4546	13.10	8.95	13.10	1.06	12.90	8.87	8.91	13.03	7.85	12.97	6.55	11.0
4602	13.04	10.84	13.13	1.06	13.10	10.88	10.86	13.09	9.80	12.03	8.17	12.5
4593	13.32	10.06	13.38	1.06	13.00	9.98	10.02	13.23	8.96	12.17	7.39	11.8
4597	13.26	11.20	13.15	1.04	13.37	11.22	11.21	13.26	10.17	12.22	8.32	12.6
4697	13.22	6.42	13.46	1.08	13.28	6.47	6.44	13.32	5.36	12.24	4.37	9.1
4504	13.08	10.68	12.91	1.09	13.23	10.60	10.64	13.07	9.55	11.98	7.97	12.3
4487	13.13	9.87	13.23	1.10	13.30	9.76	9.82	13.22	8.72	12.12	7.18	11.6
4600	13.48	11.80	13.45	1.05	13.17	11.73	11.76	13.37	10.71	12.32	8.70	13.1
4636	13.01	7.32	13.20	1.05	13.30	7.26	7.29	13.17	6.24	12.12	5.14	9.8
4630	13.44	11.60	13.68	1.05	13.52	11.66	11.60	13.55	10.55	12.50	8.43	12.7

August 28, 1929

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AK1043
N.C.C.

cl	obj	cl	D	cl	obj	mean O	mean Q.	O-D.	Q-D.	O-D. reduced.
13.60	8.75	12.80	1.09	13.10	8.80	8.78	13.17	7.69	12.08	6.37
13.52	11.09	13.60	1.09	13.52	10.98	11.04	13.55	9.95	12.46	7.98
1										
14.1	11.00	13.55	1.05	14.05	10.90	10.95	13.90	9.90	12.85	7.72
13.70	11.15	13.58	1.09	14.0	11.10	11.12	13.76	10.03	12.67	7.91
13.78	10.95	13.75	1.07	14.08	10.92	10.94	13.87	9.87	12.80	7.70
14.15	10.52	13.95	1.10	14.05	10.45	10.48	14.05	9.38	12.95	7.24

Mag.
10.8
12.3
12.1
12.3
12.1
11.6

	obj.	cl.	D.	obj.	Mean D.	O-D	Q-D.	O-D reduced
10.0 2)	7.72	13.13	1.09	7.70	7.71	6.62	12.04	5.55
11.7 7)	9.75	12.73	1.10	9.70	9.73	8.63	11.63	7.24
14.7 15)	12.15	13.20	1.08	12.20	12.18	11.10	12.12	9.30
							11.93	

Volt- 5.10 - 6.10

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August 29 1929

AX2155

Voltage 6.2 - 5.20

		O	Cl	D	O	D-D	Cl-D	
R. Viny slightly for surf	8.9	1.84	7.95	0.77	1.87	1.86	1.09	1.49
	9.8	2.83	7.89	0.75	2.79	2.81	2.06	2.83
	10.4	3.48	8.15	0.78	3.52	3.50	2.72	3.74
	12.6	6.22	8.05	0.78	6.28	6.25	5.47	7.51
	12.9	6.90	8.20	0.82	6.87	6.88	6.06	8.32
	13.4	7.16	8.14 8.14	0.83	7.15	7.16	6.33	7.31 7.28
104 K 2)	10.0	3.06	7.72	0.87	3.02	3.04	2.17	6.85 3.13
3)	10.5	4.10	7.70	0.85	4.08	4.09	3.24	6.85
5)	11.5	4.68	7.55	0.86	4.65	4.66	3.80	6.69
6)	11.3	4.43	7.55	0.85	4.45	4.44	3.59	6.70
7)	11.7	4.70	7.68	0.87	4.70	4.70	3.83	6.81
8)	12.2	5.27	7.82	0.88	5.30	5.28	4.40	6.94
9)	12.4	5.37	8.02	0.90	5.37	5.37	4.47	7.12
15)	14.7	7.61	8.38 8.38	0.92	7.58	7.60	6.68	7.46 6.93

	N.G.C.	Cl.	Obj.	Cl.	D	Cl.	Obj.	mean O	mean Cl.	O-D	Cl-D	2-D. reduced	Mag.
V. S. L.	4116	7.30	5.30	7.43	0.90	7.03	5.28	5.29	7.25	4.39	6.35	6.92	12.3
S. L.	4123	7.22	5.03	7.12	0.92	7.30	5.04	5.04	7.21	4.12	6.29	6.53	12.1
h. st. d.	4179	7.72	4.55	7.59	0.91	7.45	4.52	4.54	7.59	3.63	6.68	5.44	11.4
	4234	7.50	6.30	7.58	0.95	7.39	6.29	6.30	7.49	5.35	6.54	8.15	12.9
	4348	8.07	6.32	8.12	0.99	7.84	6.30	6.31	8.01	5.32	7.02	7.58	12.6
	4454	8.40	6.02	8.20	0.98	8.30	6.02	6.02	8.30	5.04	7.32	6.92	12.3
	4418	8.15	6.96	8.04	0.98	8.13	6.92	6.94	8.11	5.96	7.13	8.41	13.1
	4385	7.85	6.45	7.99	1.00	8.19	6.44	6.44	8.01	5.44	7.01	7.77	12.7
	4420	8.02	6.00	7.95	1.00	7.96	6.01	6.00	7.98	5.00	6.98	7.18	12.2
S. L.	4457	7.72	4.48	7.92	0.98	8.09	4.49	4.48	7.91	3.50	6.93	5.06	11.2

August 29, 1929

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A	X2155	Cl.	Obj	Cl.	D	Cl.	Obj	Mean D	Mean Cl.	O-D	Cl-D	O-D incl.	Mag.
	<u>NGC 4412</u>	7.85	6.22	7.65	1.10	8.07	6.19	6.20	7.86	5.20	6.86	7.60	12.6 ^c
	4496	8.10	5.00	8.08	0.98	8.05	4.96	4.98	8.08	4.00	7.10	5.64	11.5 ^c
	4538	8.12	7.70	8.02	1.03	8.20	7.64	7.67	8.11	6.64	7.08	9.39	14.4 ^c
	4544	8.13	7.20	8.08	1.06	8.03	7.18	7.19	8.08	6.13	7.02	8.76	13.4 ^c
	4527	8.03	4.55	8.04	1.06	8.17	4.54	4.54	8.08	3.48	7.02	4.97	11.2 ^c
	4533	8.07	7.16	8.15	1.05	8.15	7.12	7.14	8.12	6.09	7.07	8.61	13.3 ^c
lo.	4536	8.05	4.30	8.04	1.06	8.20	4.30	4.30	8.10	3.24	7.04	4.61	10.9 ^c
	4581	7.98	6.77	8.35	1.06	7.95	6.74	6.76	8.09	5.70	7.03	8.54	12.9 ^c
	4599	8.51	7.22	8.55	1.08	8.36	6.98	7.10	8.47	6.02	7.39	8.15	12.9 ^c
	4632	8.39	5.37	8.32	1.09	8.41	5.34	5.36	8.37	4.27	7.38	5.78	11.8 ^c
def. lose.	4541	8.30	7.15	8.17	1.10	8.20	7.17	7.16	8.22	6.06	7.12	8.51	13.2 ^c
s. lo.	4592	8.02	5.98		1.68	7.89	5.91	5.95	7.95	4.87	6.87	7.10	12.4 ^c
	4666	8.02	4.40	8.30	1.06	8.00	4.37	4.38	8.11	3.32	7.05	4.72	11.0 ^c
	4668	8.27	6.86	8.46	1.10	8.32	6.78	6.82	8.35	5.72	7.25	7.89	12.8 ^c
sto to cl.	4653	8.15	5.98	8.28	1.11		5.96	5.97	8.22	4.86	7.11	6.85	12.3 ^c
	4642	8.20	6.57	7.90	1.12	8.20	6.75	6.66	8.10	5.54	6.98	7.94	12.8 ^c

RV.	O	Cl.	D.	O.	\bar{O}	O-D	Cl-D	O-D reduced.
	8.9	2.08	8.57	1.10	2.00	0.90	7.47	1.22
	12.9	7.20	8.43	1.13	7.18	7.19	6.06	$\frac{7.30}{7.38}$

104K2)	10.0	3.38	8.22	1.09	3.33	3.36	2.27	7.13	3.27
7)	11.7	4.92	7.50	1.09	4.91	4.92	3.83	6.41	5.53
15)	14.7	7.70	8.36	1.12	7.62	7.66	6.54	$\frac{7.24}{6.93}$	9.44

Voltage 5.15 - 6.1

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AX 2155

September 2, 1929

		Voltage		6.30 - 5.20		0-D		Cl-D	
		cl	obj	cl	D	cl	obj	cl	D
RVing.	8.9	0.6	7.38	-0.05	0.6	0.6	0.65	7.43	0.89
	9.8	1.48	7.13	+0.05	1.53	1.50	1.45	7.08	1.99
	10.4	2.36	7.61	0.07	2.40	2.38	2.31	7.54	3.16
	12.6	5.25	7.32	0.10	5.28	5.26	5.16	7.22	7.08
	12.9	5.89	7.38	0.15	5.88	5.88	5.73	7.23	7.87
104 K	13.4	6.45	7.45	0.18	6.40	6.42	6.24	7.27 7.30	8.79
	2) 10.00	1.93	7.13	0.22	1.88	1.90	1.68	6.91	2.40
	3) 10.5	2.96	7.15	0.19	2.97	2.96	2.77	6.94	3.95
	5) 11.5	3.68	7.30	0.18	3.70	3.69	3.51	7.12	5.01
	7) 11.7	3.80	6.97	0.20	3.75	3.78	3.58	6.77	5.13
	8) 12.2	4.23	7.18	0.19	4.25	4.24	4.05	6.99	5.78
	11) 13.7	6.35	7.35	0.31	6.25	6.30	5.99	7.04	8.54
	15) 14.7	6.95	7.68	0.32	6.85	6.90	6.58	7.36 7.02	9.39

	NGC.	cl	obj.	cl.	D.	cl.	obj.	Mean obj.	Mean cl.	0-D	cl-D	0-D red.	Mag =0
h. st. cl.	4904	8.05	5.17	7.98	0.32	8.05	5.20	5.18	8.03	4.86	7.71	6.31	12.3 ^u
Large.	4753	7.78	2.12	7.76	0.32	7.70	2.10	2.11	7.75	1.79	7.43	2.40	10.0 ^u
	4690	7.65	6.50	7.55	0.35	7.78	6.48	6.49	7.66	6.14	7.31	8.40	13.4 ^u
	4684	7.77	3.94	7.46	0.32	7.65	3.88	3.91	7.63	3.59	7.31	4.91	11.5 ^u
	4691	7.72	3.25	7.73	0.32	7.57	3.22	3.24	7.67	2.92	7.35	3.96	10.9 ^u
	4720	7.90	6.22	7.71	0.37	7.63	6.20	6.21	7.75	5.84	7.38	7.93	13.1 ^u
	4546	7.58	3.10	7.92	0.35	7.60	3.06	3.08	7.70	2.73	7.35	3.72	10.7 ^u
s. long	4602	7.68	4.76	7.58	0.38	7.60	4.70	4.73	7.62	4.35	7.24	6.00	12.1 ^u
	4593	7.53	3.79	7.36	0.37	7.70	3.72	3.76	7.53	3.39	7.16	4.74	11.4 ^u
	4597	7.70	5.45	7.72	0.38	7.31	5.43	5.44	7.58	5.06	7.20	7.03	12.7 ^u
slarge flat. clae.	4697	7.50	1.47	7.62	0.33	7.67	1.41	1.44	7.60	1.11	7.27	1.53	9.5 ^u
	4504	7.70	4.62	7.62	0.39	7.55	4.56	4.59	7.62	4.20	7.23	5.80	12.0 ^u

September 2, 1929.

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	NGC.	α	δ	α	D.	α	δ	Mean α	Mean δ	O-D	α -D	δ -D red.	Mag
	4487	7.72	3.82	7.43	0.40	7.70	3.74	3.78	7.62	3.88	7.22	4.69	11.3 ^c
	4600	7.48	5.96	7.65	0.40	7.63	5.89	5.90	7.59	5.50	7.19	7.65	12.9 ^c
sl. large	4636	7.40	2.08	7.42	0.45	7.52	1.97	2.02	7.45	1.57	7.00	2.23	10.0 ^c
	4630	7.70	5.82	7.81	1.45	7.73	5.82	5.82	7.75	5.37	7.30	7.35 6.00	12.8 ^c
h. st to close.	4665	7.56	3.10	7.58	0.46	7.75	3.02	3.06	7.63	2.60	7.17	3.63	10.7 ^c
	4701	7.72	5.35	7.65	0.45	7.62	5.33	5.34	7.66	4.89	7.21	6.78	12.5 ^c
[out of the region]	4808	8.04	4.73	7.80	0.40	7.92	4.71	4.72	7.92	4.32	7.52	5.74	11.9
	4771	7.95	5.85	7.75	0.42	8.25	5.82	5.84	7.98	5.42	7.56	7.19	12.7 ^c
	4772	7.90	4.63	7.70	0.46	7.90	4.50	4.56	7.83	4.10	7.37	5.59	11.8 ^c
sts. to cl.	4845	8.10	4.68	7.85	0.42	7.95	4.70	4.69	7.97	4.27	7.55	5.65	11.9 ^c

	α	δ	α	D.	α	δ	O-D	α -D	δ -D reduced.
RV.	8.9	1.05	7.81	0.45	1.03	1.04	0.59	7.36	0.81
	12.9	6.17	7.65	0.42	6.14	6.16	5.74	7.23 7.30	7.86
104K 2)	2.20	7.38	0.45	2.18	2.19	1.74	6.93	2.52	
7)	4.08	7.22	0.40	3.98	4.03	3.63	6.62	5.26	
15)	6.88	7.43	0.45	6.87	6.88	6.43	6.98 6.91	9.40	

5.17 - 6.17

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September 4, 1929

AX 1043 remeasure -

Voltage

6.20 -

5.15

5.0

0-D

0-D

0-D

0-D

0-D

0-D

R. Viny

8.9

3.32

12.35

0.45

3.25

3.28

2.83

11.90

2.38

2.35

9.8

5.19

12.30

0.47

5.25

5.22

4.75

11.83

4.02

3.95

10.4

6.20

12.50

0.50

6.16

6.18

5.68

12.00

4.73

4.72

12.6

9.58

12.77

0.54

9.57

9.58

9.04

12.23

7.39

7.53

12.9

10.98

12.62

0.57

10.75

10.86

10.29

12.05

8.55

8.57

13.4

11.13

12.60

0.55

11.23

11.18

10.63

12.05

8.84

8.88

104 K

2)

10.0

5.93

11.96

0.55

5.90

5.92

5.37

11.41

4.69

4.75

3)

10.5

6.93

11.85

0.58

6.90

6.92

6.34

11.23

5.64

5.61

6)

11.3

7.56

11.90

0.58

7.68

7.62

7.04

11.32

6.23

6.24

7)

11.7

8.52

11.53

0.60

8.44

8.48

7.88

10.93

6.98

8)

12.2

9.10

12.00

0.60

8.95

9.02

8.42

11.40

7.45

9)

12.4

9.30

11.84

0.60

9.34

9.32

8.72

11.24

7.72

10)

14.7

11.18

12.10

0.53

11.20

11.19

10.66

11.57

7.910

9.45

Cl.

Obj.

Cl.

D.

Cl.

Obj.

N.G.C.

4116

11.67

9.87

11.75

0.53

11.68

9.80

9.83

11.70

9.30

10.17

8.33

12.8

4123

11.80

9.23

11.78

0.54

11.86

9.12

9.18

11.81

8.64

10.27

7.68

12.4

4179

11.90

8.43

11.64

0.51

11.90

8.25

8.34

11.81

7.83

10.30

6.94

11.7

4234

12.25

10.60

12.04

0.54

12.03

10.73

10.66

12.11

10.12

11.57

8.75

13.2

4348

11.70

10.48

11.98

0.67

11.78

10.40

10.44

11.82

9.77

11.15

8.77

13.2

4454

11.89

10.10

11.99

1.67

12.05

10.10

10.10

11.98

9.43

11.31

8.36

12.9

4418

12.02

10.75

11.90

0.68

11.80

10.77

10.76

11.91

10.08

11.23

8.97

13.4

4385

11.60

10.30

11.65

0.65

11.88

10.25

10.28

11.71

9.63

11.06

8.70

13.2

small defect on plate

4420

12.25

10.36

12.25

0.67

12.04

10.30

10.33

12.18

9.66

11.51

8.38

12.9

4457

12.34

8.49

12.43

0.68

12.45

8.40

8.44

12.41

9.76

11.73

6.61

11.5

							mean O	mean cl	O-D	cl-D		
4412	12.37	10.78	12.02	0.67	12.10	10.75	10.76	12.16	10.09	11.49	8.78	13.2 ^c
4496	12.44	9.14	12.02	0.70	12.42	9.15	9.14	12.29	8.44	11.59	7.30	12.0 ^c
4538	12.40	11.07	12.00	0.71	12.50	10.95	11.01	12.30	10.30	11.59	8.90 9.15	13.4 ^c
4544	12.37	11.30	12.18	0.70	12.41	11.30	11.30	12.32	10.60	11.62	9.13	13.6 ^c
too large 4527	12.38	8.44	12.36	0.68	12.51	8.38	8.41	12.42	7.73	11.74	6.59	11.5 ^c
4533	12.25	11.74	12.40	0.68	12.32	11.70	11.72	12.32	11.04	11.64	9.49	14.7 ^c
to large 4536	12.18	8.26	12.47	0.72	12.30	8.25	8.26	12.32	7.54	11.60	6.50	11.4 ^c
4581	12.40	10.87	12.55	0.73	12.36	10.87	10.87	12.44	10.14	11.71	8.68	13.2 ^c
4599	12.35	11.36	12.57	0.75	12.43	11.33	11.34	12.45	10.59	11.70	9.05	13.5 ^c
4632	12.45	9.34	12.06	0.74	12.18	9.30	9.32	12.23	8.58	11.49	7.46	12.2 ^c
4541	12.25	11.42	12.30	0.74	12.46	11.41	11.42	12.34	10.68	11.60	9.24	13.8 ^c
4592	12.41	9.45	12.24	0.75	12.16	9.46	9.46	12.27	8.71	11.52	7.55	12.2 ^c
4666	12.00	7.90	12.40	0.73	12.25	7.90	7.90	12.22	7.17	11.49	6.23	11.2 ^c
4668	12.45	10.95	12.30	0.74	12.60	10.94	10.94	12.45	10.20	11.71	8.72	13.2 ^c
4653	12.27	10.00		0.75	12.26	10.08	10.04	12.26	9.29	11.51	8.08	12.7 ^c
4642	12.13	10.95	12.25	0.76	12.15	11.00	10.98	12.18	10.22	11.42	8.95	13.4 ^c

RV 8.9 3.50 12.65 0.72 3.48 3.49 2.77 11.93 2.31

12.9 10.95 12.81 0.71 11.05 11.00 10.29 12.10 8.55

12.01

104 K₂ 10.0 6.10 12.10 0.75 6.10 6.10 5.35 11.35 4.75

7) 11.7 8.54 11.68 0.77 8.50 8.52 7.75 10.91 6.90

15) 14.7 11.48 12.28 0.78 11.51 11.50 10.72 11.50 9.55

11.26

Voltage 5.00 - 6.00

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Oct. 7, 1929

AX 1043

Voltage

6.2 - 5.2

		Obj.	Clear	Dark	Obj.	0	Q-D	Q-D	
R King	8.9	6.08	13.72	2.90	6.12	6.10	3.20	10.82	2.84
	9.8	8.12	13.75	2.95	8.07	8.10	5.15	10.80	4.57
	10.4	8.74	14.18	2.98	8.73	8.74	5.76	11.20	5.11
	12.6	11.42	14.12	2.95	11.50	11.46	8.51	11.17	7.55
	12.9	12.82	14.38	3.02	12.80	12.81	9.79	11.36	8.69
	13.4	13.30	14.32	3.07	13.17	13.23	10.16	11.25	9.02

$$\frac{67.60}{11.27}$$

104 K	2)	10.0	8.85	13.74	2.98	8.80	8.82	5.84	10.76	5.51
	3)	10.5	9.80	13.66	3.00	9.68	9.74	6.74	10.66	6.36
	6)	11.3	9.95	13.43	3.02	9.95	9.95	6.93	10.41	6.54
	7)	11.7	10.85	13.00	2.95	10.82	10.84	7.89	10.05	7.45
	8)	12.2	11.35	13.8.0	3.00	11.31	11.33	8.33	10.80	7.88
	9)	12.4	11.50	13.72	3.03	11.40	11.45	8.42	10.69	7.94
	15)	14.7	13.2	13.75	3.02	13.17	13.19	10.17	$\frac{10.73}{10.60}$	9.60

N.G.C.

	4116	11.68	13.50	3.03	11.69	11.68	8.65	10.47	8.25	12.6 ^c
large	4123	11.11	13.50	3.04	11.03	11.07	8.03	10.46	7.67	12.2 ^c
	4179	10.80	13.70	3.03	10.70	10.75	7.72	10.67	7.23	11.7 ^c
	4234	12.55	13.85	3.00	12.45	12.50	9.50	10.85	8.75	13.1 ^c
	4348	12.47	13.50	3.00	12.48	12.48	9.48	10.50	9.04	13.4 ^c
	4454	12.10	13.56	3.00	12.07	12.08	9.08	10.56	8.60	12.9 ^c
	4418	12.60	13.55	3.02	12.58	12.59	9.57	10.53	9.10	13.5 ^c
	4385	12.40	13.60	3.00	12.48	12.44	9.44	10.60	8.90	13.2 ^c
	4420	12.36	13.70	3.00	12.25	12.30	9.30	10.70	8.69	13.0 ^c
	4457	10.75	13.80	3.02	10.68	10.72	7.70	10.78	7.14	11.6 ^c
	4412	12.65	13.85	3.08	12.60	12.62	9.54	10.77	8.85	13.2 ^c
large.	4496	11.20	13.87	3.04	11.20	11.20	8.16	10.83	7.53	12.0 ^c

	bkg.	Clear.	Dark.	Obj.	\bar{O}	O-D	Q-D		
<i>Ident</i>	4538	13.25	13.98	3.15	13.35	13.30	10.15	10.83	9.49
<i>mountain</i>	4544	—	—	—	—	—	—	—	—
<i>Charge</i>	4527	10.50	13.92	2.96	10.42	10.46	7.50	10.96	6.86
	4533	13.30	14.00	2.95	13.30	13.30	10.35	11.05	9.38
	4536	10.13	13.53	2.93	10.12	10.12	7.19	10.60	6.74
	4581	12.51	13.85	2.98	12.55	12.53	9.55	10.87	8.78
	4599	12.90	13.78	2.93	12.98	12.94	10.01	10.85	9.30
	4632	11.52	13.67	2.92	11.43	11.47	8.55	10.75	7.95
	4541	13.05	13.50	2.90	12.95	13.50	10.10	10.60	9.46
	4592	11.35	13.62	2.90	11.25	11.30	8.40	10.72	7.82
	4666	10.17	13.95	2.92	10.18	10.18	7.26	11.03	6.57
	4668	12.65	13.85	2.95	12.58	12.62	9.67	10.90	8.87
<i>1st. to mean</i>	4653	11.65	13.72	2.98	11.70	11.68	8.70	10.74	8.11
	4642	12.55	13.50	2.92	12.59	12.57	9.65	10.58	9.14
	4904								
	4753								
	4690								
	4684								
	4691								
	4720								

R.V. 8.9 6.25 13.99 2.92 6.35 6.30 3.38 11.07 5.05
 12.9 12.70 14.08 2.98 12.66 12.68 9.70 11.10 8.73
 11.09

104K 2) 10.0 8.93 13.65 3.00 8.87 8.90 5.90 10.65 5.55
 7) 10.75 13.50 3.02 10.70 10.72 7.70 10.48 7.25
 15) 12.98 13.75 3.02 12.98 12.98 9.96 10.73 9.36
 10.62

Volts. 5.10 - 6.10

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AX2155

October 21, 1979.

Voltage 6.28-5.20

R Virg	8.9	1.52	6.42	1.17	1.54	1.53	0.36	5.25	0.67
	9.8	2.10	6.30	1.16	2.06	2.08	0.92	5.14	1.69
	10.4	2.83	6.74	1.22	2.74	2.78	1.56	5.52	2.79
	12.6	4.98	6.66	1.22	4.95	4.96	3.74	5.44	6.93
	12.9	5.43	6.85	1.30	5.50	5.46	4.16	5.55	7.73
	13.4	5.90	6.70	1.28	5.80	5.85	4.57	5.42	8.48
							³²³² 5.39		

104 K 2)	10.0	2.50	6.48	1.25	2.45	2.48	1.23	5.23	2.37
3)	10.5	3.80	6.45	1.29	3.27	3.28	1.99	5.16	3.83
6)	11.3	3.38	6.00	1.25	3.42	3.40	2.15	4.75	4.15
7)	11.7	3.75	5.88	1.25	3.70	3.72	2.47	4.63	4.75
8)	12.2	4.10	6.30	1.26	4.10	4.10	2.84	5.04	5.47
9)	12.4	4.35	6.30	1.25	4.26	4.30	3.05	5.04	5.88
15)	14.7	6.08	6.58	1.27	6.08	6.08	4.81	5.31	9.28

N.B.

O Q-D O-D

	4642	5.32	6.45	1.27	5.28	5.30	5.18	4.03	7.77	13.0 [✓]
	4653	4.96	6.15	1.25	4.95	4.96	4.90	3.71	7.60 ⁵⁸	13.0 [✓]
	4668	5.37	6.65	1.30	5.41	5.39	5.35	4.09	7.64	13.0 [✓]
large	4666	3.47	6.60	1.32	3.46	3.46	5.28	2.14	4.05	11.2 [✓]
	4592	4.48	6.36	1.35	4.50	4.49	5.01	3.14	6.26	12.5 [✓]
defect just below.	4541	5.47	6.57	1.86	5.55	5.51	5.21	4.15	7.96	13.5 [✓]
large	4632	4.13	6.54	1.35	4.12	4.12	5.19	2.77	5.34	12.0 [✓]
	4599	5.50	6.85	1.40	5.38	5.44	5.45	4.04	7.42	12.9 [✓]
	4581	5.23	6.32	1.40	5.22	5.22	4.92	3.82	7.79	13.1 [✓]
very large	4536	3.42	6.40	1.38	3.40	3.41	5.02	2.03	4.05	11.2 [✓]
	4533	5.88	6.58	1.40	5.78	5.83	5.18	3.78	7.28	12.9 [✓]
long	4527	3.55	6.35	1.40	3.50	3.52	4.95	2.12 4.28	7.18 7.18	11.3 [✓]

						D.	D-D.	Q-D.	D-D	Redund.
	4544	5.70	6.58	1.38	5.65	5.67	4.29	5.12	8.40	13.4 ^c
	4538	6.07	6.36	1.27	6.08	6.08	4.81	5.09	9.49	15.0 ^c
Large	4496	3.85	6.33	1.27	3.82	3.84	2.57	5.06	5.08	11.8 ^c
	4412	4.63	6.32	1.25	4.63	4.63	3.38	5.07	6.67	12.6 ^c
	4457	3.25	6.40	1.26	3.16	3.20	1.94	5.14	3.87	11.0 ^c
	4420	4.46	6.43	1.24	4.32	4.39	3.15	5.19	6.28 ⁰⁷	12.4 ^c
	4385	4.82	6.34	1.26	4.80	4.81	3.55	5.08	6.99	12.8 ^c
	4418	5.26	6.45	1.26	5.28	5.27	4.01	5.19	7.73	13.0 ^c
	4454	4.55	6.50	1.26	4.57	4.56	3.30	5.24	6.30	12.5 ^c
	4348	4.94	6.47	1.30	4.98	4.96	3.66	5.17	7.08	12.8 ^c
	4234	4.74	6.30	1.30	4.78	4.76	3.46	5.00	6.93	12.7 ^c
	4179	3.26	6.35	1.32	3.26	3.26	2.94	5.03	3.86	11.1 ^c
	4123	3.96	6.12	1.32	3.98	3.97	2.66	4.80	5.54	12.1 ^c
Large	4116	4.10	5.92	1.30	4.10	4.10	2.80	4.62	6.07	12.4 ^c

R Virg. 8.9 1.58 6.57 1.32 1.60 1.59 0.27 5.25 0.52
 12.9 5.30 6.48 1.32 5.30 5.30 3.98 5.16 7.65
 13.4

104 K2) 2.58 6.30 1.33 2.52 2.55 1.22 4.97 2.50
 7) 3.80 6.00 1.35 3.75 3.78 2.43 4.65 4.97
 15) 5.86 6.40 1.36 5.85 5.86 4.50 5.04 9.21
 4.88

Voltage 5.10 - 6.10

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October 23, 1929

AX 2155

Voltage 6.2 - 5.08

R Virg 8.9 1.83 6.44 1.40 1.80 1.82 0.42 5.04 0.84

9.8 2.23 6.25 1.43 2.27 2.25 0.82 4.82 1.64

other stars 10.4 3.05 6.58 1.46 2.90 2.98 1.52 5.12 3.05

near. 12.6 5.12 6.44 1.50 5.04 5.08 3.58 4.90 7.18

(13.1) 12.9 5.40 6.59 1.55 5.36 5.38 3.83 5.04 7.71

13.4 5.68 6.56 1.53 5.72 5.70 4.17 5.03 8.36

2995
4.99

104 K 2) 10.0 2.70 6.30 1.62 2.74 2.72 1.10 4.68 2.36

3) 10.5 3.38 6.20 1.45 3.32 3.35 1.90 4.75 4.08

6) 11.3 3.50 5.80 1.40 3.53 3.52 2.12 4.40 4.55

7) 11.7 3.80 6.20 1.42 3.77 3.78 2.36 4.78 5.07

8) 12.2 4.05 6.07 1.36 4.03 4.04 2.68 4.71 5.75

9) 12.4 4.19 5.86 1.36 4.18 4.18 2.82 4.50 6.05

15) 14.7 5.74 6.13 1.35 5.83 5.78 4.43 4.78 9.50

4.66

large and 4845 4.26 6.48 1.34 4.25 4.26 2.92 5.14 5.68 12.1^cH. stars 4772 4.20 6.44 1.36 4.15 4.18 2.82 5.08 5.54 12.0^c4771 5.10 6.45 1.37 5.05 5.08 3.71 5.08 7.30 12.9^c

out of region 4808 4.34 6.43 1.36 4.34 4.34 2.98 5.07 5.86 12.2

4701 4.62 6.30 1.37 4.53 4.58 3.21 4.93 6.51 12.5^c4665 3.02 6.13 1.40 3.00 3.01 1.61 4.73 3.40 10.7^c4630 4.90 6.33 1.40 4.90 4.90 3.50 4.93 7.10 12.8^clarge 4636 2.45 6.20 1.40 2.42 2.44 1.04 4.80 2.17 9.9^c4600 5.15 6.40 1.45 5.10 5.12 3.67 4.95 7.40 12.9^c4487 3.80 6.32 1.46 3.82 3.81 2.35 4.86 4.85 11.6^c4504 4.18 6.27 1.46 4.18 4.18 2.72 4.81 5.65 12.1^c

4697	2.25	6.28	1.46	2.23	2.24	0.78	4.82	1.62	9.6 ^c
4597	4.82	6.20	1.48	4.81	4.82	3.34	4.72	7.08	12.8 ^c
4593	3.66	6.23	1.48	3.72	3.69	2.21	4.75	4.65	11.4 ^c
4602	4.38	6.27	1.50	4.38	4.38	2.88	4.77	6.05	12.3 ^c
4546	3.20	6.37	1.52	3.20	3.20	1.68	4.85	3.46	10.7 ^c
4720	5.38	6.35	1.52	5.36	5.37	3.85	4.83	7.99	13.3 ^c
4691	3.48	6.43	1.55	3.52	3.50	1.95	4.88	3.99	11.1 ^c
4684	3.95	6.47	1.54	4.00	3.98	2.44	4.93	4.95	11.8 ^c
4690	5.41	6.72	1.53	5.40	5.40	3.87	5.19	7.46	13.0 ^c
Charge 4753	2.80	6.48	1.53	2.78	2.79	1.26	4.95	2.54	10.1 ^c
4904	4.90	6.54	1.55	4.90	4.90	3.35	4.99	6.71	12.6 ^c

RV.	8.9	1.90	6.48	1.56	1.83	1.86	0.30	4.92	0.62 6.15
(13.1) 12.9	5.33	6.40	1.57	5.30	5.32	3.75	4.83	7.68	4.88

104 K	2	2.67	6.35	1.58	2.70	2.68	1.18	4.77	2.55
	7	3.86	6.14	1.60	3.95	3.90	2.30	4.54	4.98
	15	5.78	6.15	1.60	5.85	5.82	4.22	4.55	9.13 4.62

Voltage 5.0 - 6.05-

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October 18, 1929.

A X 1043

Voltage 6.32 - 5.20.

O Cl. D O \bar{O} $\bar{O}-D$ Cl-D

R Virg.	8.9	1.65	10.15	0.82	1.58	1.62	0.80	9.33	0.85
	9.8	2.78	10.08	0.84	2.75	2.76	1.92	9.24	2.05
	10.4	3.80	10.32	0.89	3.77	3.78	2.89	9.43	3.08
	12.6	7.75	10.28	0.87	7.70	7.72	6.85	9.41	7.30
	12.9	8.70	10.28	0.90	8.68	8.69	7.79	9.38	8.30
	13.4	9.25	10.37	0.90	8.90	9.02	8.12	<u>9.47</u>	8.65
								9.38	

104 K 2)	10.0	3.15	9.90	0.90	3.15	3.15	2.25	9.00	2.51
3)	10.5	4.68	9.90	0.90	4.65	4.66	3.76	9.00	4.20
6)	11.3	5.32	9.80	0.93	5.25	5.28	4.35	8.87	4.84
7)	11.7	6.03	9.88	0.97	5.97	6.00	5.03	8.71	5.61
8)	12.2	6.40	10.05	0.96	6.45	6.42	5.46	9.09	6.08
9)	12.4	6.70	9.90	1.00	6.68	6.69	5.69	8.90	6.34
15)	14.7	9.13	10.05	0.94	9.13	9.13	8.19	<u>9.11</u>	9.12
								8.98	

large.	4845	7.50	10.82	0.93	7.55	7.52	6.59	9.89	6.65	12.3 ^c
large	4772	7.60	10.30	0.95	7.50	7.55	6.60	9.35	7.07	12.5 ^c
large	4771	8.45	10.45	1.00	8.55	8.50	7.50	9.45	7.94	13.0 ^c
out of focus	4808	7.48	10.55	1.00	7.43	7.46	6.46	9.55	6.75	12.3
	4701	7.80	10.63	1.00	7.70	7.75	6.75	9.63	7.02	12.5 ^c
	4665	5.55	10.10	1.03	5.55	5.55	4.52	9.07	4.98	11.3 ^c
	4630	7.90	10.50	1.00	7.90	7.90	6.90	9.50	7.27	12.6 ^c
large	4636	4.37	10.05	0.98	4.42	4.40	3.42	9.07	3.77	10.6 ^c
	4600	8.40	10.13	1.01	8.45	8.42	7.41	9.12	8.13	13.1 ^c
large	4487	6.30	9.93	1.00	6.34	6.32	5.32	8.93	5.98	11.9 ^c
	4504	7.28	10.30	0.97	7.24	7.26	6.29	9.33	6.73	12.5 ^c
X 5	4797	8.03	10.12	0.98	8.02	8.02	7.04	9.14	7.71	12.8 ^c

$\bar{O} \quad \bar{O}-D \quad Q-D$

* 4597	3.90	10.30	1.02	3.74	3.82	2.80	9.28	3.02	10.2 ^c
4593	6.68	9.93	1.02	6.52	6.60	5.58	8.91	6.26	12.1 ^c
4602	7.32	9.93	1.05	7.42	7.37	6.35	8.88	7.15	12.5 ^c
4546	5.52	10.02	1.03	5.46	5.49	4.46	8.99	4.96	11.4 ^c
4720	8.80	10.50	1.17	8.85	8.82	7.65	9.33	8.19	13.1 ^c
4691	5.54	10.32	1.03	5.55	5.54	4.51	9.29	4.85	11.4 ^c
4684	6.50	10.24	1.00	6.46	6.48	5.48	9.84	5.93	12.0 ^c
4690	8.75	10.10	1.10	8.55	8.65	7.55	9.00	8.39	13.2 ^c
Charge 4753	4.74	10.30	0.95	4.80	4.77	3.82	9.35	4.08	11.0 ^c
4904	7.84	10.07	0.98	7.85	7.84	6.86	9.09	7.55	12.7 ^c

R Ving.	8.9	1.82	10.05	0.94	1.67	1.74	0.80	9.11	0.88
12.9	8.45	10.12	0.94	8.50	8.48	7.54	<u>9.18</u>	8.25	
							9.14		

104 K 2)	10.0	3.16	9.61	0.96	3.17	3.16	2.20	8.65	2.55
7)	11.7	5.86	9.58	0.97	5.72	5.79	4.82	8.61	5.58
15)	14.7	8.95	9.67	1.00	8.93	8.94	7.94	<u>8.67</u>	9.20
								8.64	

Voltage 5.09 - 6.15

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October 25, 1929.

Sequences:

Voltage 6.30 - 5.25

A X 1005	O	Cl	D	O					
R Virg.	8.9	1.90	9.70	1.05	1.88	1.89	0.84	8.65	0.98
	9.2	2.08	9.50	0.92	2.07	2.08	1.16	8.58	1.35
	9.8	3.10	9.42	0.98	3.10	3.10	2.12	8.44	2.46
	10.4	4.20	9.27	0.90	4.16	4.18	3.28	8.37	3.82
	11.1	5.56	9.53	0.87	5.56	5.56	4.69	8.66	5.46
8/?	11.5	6.72	9.30	1.03	6.70	6.71	5.68	8.27	6.61
	12.2	7.32	9.66	0.95	7.30	7.31	6.36	8.71	7.40
	12.6	8.15	9.57	0.93	8.16	8.16	7.23	8.64	8.42
	13.1	8.64	9.60	0.94	8.65	8.64	7.70	8.66	8.97
	13.4	8.90	9.80	0.98	9.00	8.95	7.97	8.82	9.28
								8.58	

104 K	2)	10.0	3.63	8.93	1.00	3.63	3.63	2.63	7.93	3.28
	3)	10.5	5.06	8.80	1.02	5.10	5.08	4.06	7.78	5.07
	4)	11.2	5.65	9.15	1.02	5.70	5.68	4.66	8.13	5.82
	5)	11.5	6.30	9.13	1.05	6.27	6.28	5.23	8.08	6.47
	6)	11.3	6.00	9.10	1.06	6.04	6.02	4.96	8.04	6.19
	7)	11.7	6.50	9.04	1.10	6.45	6.48	5.38	7.94	6.70
	8)	12.2	6.90	8.98	1.10	6.95	6.92	5.82	7.88	7.14
	9)	12.4	7.20	8.98	1.02	7.15	7.18	6.16	7.96	7.69
	10)	12.8	7.60	8.96	1.06	7.53	7.56	6.50	7.90	8.12
	11)	13.7	8.52	9.15	1.02	8.48	8.50	7.48	8.13	9.34
	14)	14.3	8.66	9.25	1.00	8.60	8.63	7.63	8.25	9.52
	15)	14.7	8.77	9.18	1.03	8.67	8.72	7.69	8.15	9.60
									8.01	

Voltage 5.2 - 6.2

AX 1666

RVing. 8.9

9.2

9.8

10.4

11.1

11.5

12.2

12.6

13.1

13.4

104 K 2)

3)

4)

5)

6)

7)

8)

9)

10)

11)

14)

15)

174

AX1053
Sequences.

November 11, 1929.

Voltage 6.2 - 5.2

O C D O

104 K. 2)	10.0	2.63	8.93	0.95	2.70	2.66	1.71	7.98	2.15
3)	10.5	4.15	8.80	1.00	4.12	4.14	3.14	7.80	3.95
4)	11.2	4.92	8.90	1.04	4.90	4.91	3.87	7.86	4.87
5)	11.5	5.33	8.93	1.03	5.37	5.35	4.32	7.90	5.44
6)	11.3	4.88	8.92	1.07	4.83	4.86	3.79	7.85	4.78
7)	11.7	5.63	9.13	1.07	5.50	5.56	4.59	8.16	5.78
8)	12.2	6.00	9.14	1.06	6.00	6.00	4.94	8.08	6.22
9)	12.4	6.44	8.92	1.10	6.50	6.47	5.37	7.82	6.77
10)	12.8	7.15	9.00	1.12	7.13	7.14	6.02	7.88	7.58
11)	13.7	8.15	9.15	1.15	8.17	8.16	7.01	8.00	8.83

7933

7.93

Carte 13^h 0^m - 2.5

too large 4)	9.4	2.08	8.88	1.13	2.04	2.06	0.93	7.75	1.25
5)	10.0	2.60	8.76	1.12	2.58	2.59	1.47	7.64	1.95
6)	10.0	2.62	8.80	1.15	2.62	2.62	1.47	7.65	1.95
7)	10.5	3.45	8.90	1.13	3.47	3.46	2.33	7.77	3.04
/// 9)	11.3	4.48	8.80	1.17	4.46	4.47	3.30	7.63	4.30
/// 8)	11.1	4.15	8.86	1.16	4.12	4.14	2.88	7.70	3.75
10)	12.0	5.84	8.64	1.10	5.80	5.82	4.72	7.54	6.15
11)	12.4	6.40	9.05	1.20	6.42	6.41	5.21	7.85	6.80
12)	12.6	6.70	8.93	1.13	6.64	6.67	5.54	7.80	7.23
13)	12.8	7.00	8.67	1.08	6.96	6.98	5.90	7.59	7.69
14)	13.3	7.44	8.63	1.03	7.40	7.42	6.39	7.60	8.32

8452

7.68

		O	Cl	D	O.	\bar{O}	$\bar{O}-D$	Cl-D	($\bar{O}-D$) <u>adj.</u>	
D7	M	9.1	2.68	8.45	1.05	2.70	2.69	1.64	7.40	2.17
	Q	10.0	3.40	8.58	0.98	3.37	3.38	2.40	7.60	3.18
	R	10.2	3.64	8.60	1.00	3.64	3.64	2.64	7.60	3.50
	T	10.9	4.70	8.35	1.02	4.67	4.68	3.66	7.33	4.86
st. close	V	11.2	5.06	8.70	1.02	5.16	5.11	4.09	7.68	5.42
	W	11.7	5.43	8.37	0.96	5.40	5.42	4.46	7.41	5.91
	X	11.9	6.04	8.36	1.00	6.10	6.07	5.07	7.36	6.74
stay too close		12.3								
st. close	a very	12.5	6.67	8.67	1.00	6.45	6.56	5.56	7.67	7.37
st. very close	b close	13.0	6.67	8.78	1.00	6.77	6.72	5.72	7.78	7.59
	d	13.4	7.38	8.58	1.03	7.43	7.40	6.37	7.55	8.44
	e	13.85	7.66	8.63	1.00	7.60	7.63	6.63	7.63	8.80
	g	14.3	7.88	8.50	1.03	7.86	7.87	6.84	7.47	9.08

9048

7.54

Voltage $\overset{5-}{4.17}$ — 6.20.

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AX 1053
Sequences.

November 13, 1929

Voltage - 6.1 - 5.09

D7	M	9.1	2.36	7.24	0.76	2.36	2.36	1.60	6.48	2.35
	Q	10.0	3.04	7.72	0.76	3.03	3.04	2.28	6.96	3.35
	R	10.2	3.27	7.80	0.78	3.26	3.26	2.48	7.02	3.63
	T	10.9	4.30	7.47	0.83	4.28	4.29	3.36	6.64	4.92
	U	11.2	4.70	7.87	0.84	4.70	4.70	3.86	7.03	5.65
	W	11.7	5.03	7.72	0.88	5.06	5.04	4.16	6.84	6.10
	X	11.9	5.58	7.83	0.86	5.55	5.56	4.70	6.97	6.90
too close to Y ^{bright} star										
b.c.t.	a	12.5	6.10	7.52	0.93	6.08	6.09	5.16	6.69	7.56
	b	13.0	6.15	7.73	0.95	6.15	6.15	5.20	6.88	7.61
	d	13.4	6.78	7.87	0.93	6.78	6.78	5.85	6.94	8.55
	e	13.85	7.07	7.82	0.96	7.03	7.05	6.09	6.86	8.90
	g	14.3	7.22	7.80	0.90	7.26	7.24	6.34	6.90	9.30

8211
6.83Carte 13^h -15^o

4)	9.8	2.75	7.70	0.93	2.72	2.74	1.81	6.77	2.63
6)	10.0	4.19	7.90	0.96	4.13	4.16	3.20	6.94	4.65
7)	11.4	4.70	7.85	1.00	4.76	4.73	3.73	6.85	5.43
8)	11.4 ⁷	5.05	7.90	0.97	5.02	5.04	4.07	6.93	5.92
9)	12.4	5.82	7.92	1.00	5.80	5.81	4.81	6.92	7.00
10)	12.8	6.26	7.92	1.00	6.27	6.26	5.26	6.92	7.64
12)	13.1	6.40	7.98	1.00	6.34	6.37	5.37	6.98	7.80
13)	13.2	6.47	8.00	1.02	6.43	6.45	5.43	6.98	7.90
14)	13.4	6.55	7.89	1.00	6.53	6.54	5.54	6.89	8.05
16)	13.8	6.85	7.77	1.00	6.84	6.84	5.84	6.77	8.49
17)	14.2	6.95	7.84	1.00	6.95	6.95	5.95	6.84	8.64
18)	14.45	7.40	7.86	1.05	7.38	7.39	6.34	6.81	9.21

8260
6.88

Carte 12^h-10^o

1)	8.7	1.57	8.74	1.00	1.60	1.58	0.58	7.74	0.75
" 2)	9.2	1.90	8.80	1.00	1.87	1.88	0.88	7.80	1.14
4)									
" 5)	9.9	2.55	8.68	1.00	2.60	2.58	1.58	7.68	2.04
" 6)	10.3	2.92	8.80	0.98	2.92	2.92	1.94	7.82	2.48
" 7)	10.5	3.15	8.70	1.00	3.16	3.16	2.16	7.70	2.79
8)	10.7	3.65	8.62	1.00	3.60	3.62	2.62	7.62	3.38
9)	11.2	4.18	8.88	1.00	4.17	4.18	3.18	7.88	4.12
10)	11.7	5.20	8.80	1.05	5.13	5.17	4.12	7.75	5.33
11)	12.0	5.80	8.74	1.00	5.77	5.78	4.78	7.74	6.18
12)	12.0	5.68	8.70	1.00	5.80	5.74	4.74	7.70	6.13
13)	12.4	6.36	8.70	1.05	6.36	6.36	5.31	7.65	6.86
15)	13.1	7.20	8.75	1.05	7.20	7.20	6.15	7.70	7.95
16)	13.2	7.35	8.75	1.02	7.30	7.32	6.30	7.73	8.14
17)	13.6	7.90	8.79	1.05	7.84	7.87	6.82	7.74	8.81

10825
7.73

Voltage 4.95 - 6.00

178

A X 1043

November 14, 1929.

Voltage 6.3 - 5.3

RVing.	8.9	1.67	8.50	1.10	1.65	1.66	0.56	7.60	0.74 0.39
	9.8	2.45	8.63	1.13	2.46	2.46	1.33	7.50	1.75
	10.4	3.40	8.57	1.14	3.39	3.40	2.26	7.43	2.98
13.1	12.6	6.68	8.70	1.15	6.67	6.68	5.53	7.55	7.30
13.1	12.9	7.40	8.85	1.13	7.46	7.43	6.30	7.72	8.30
	13.4	7.55	8.83	1.15	7.55	7.55	6.40	7.68	8.43
								4548	
								7.58	

104 K	2)	10.0	2.81	8.43	1.14	2.86	2.84	1.70	7.29	2.36
	3)	10.5 ⁹	3.62	8.49	1.22	3.67	3.64	2.42	7.27	3.35
	6)	11.3	4.73	8.44	1.32	4.68	4.70 ⁴	3.38 ³	7.12	4.68
	7)	11.7	5.06	8.44	1.24	5.08	5.07	3.83	6.90	5.33
	8)	12.2	5.60	8.42	1.20	5.62	5.61	4.41	7.22	6.12
	9)	12.4	5.85	8.52	1.26	5.86	5.86	4.60	7.26	6.38
	15)	14.7	8.07	8.73	1.30	8.00	8.04	6.74	7.43	9.35
								5049		
								7.21		

m

4904	7.15	9.22	1.24	7.12	7.14	5.90	7.98	7.40	12.8 ^v
4753	4.27	9.05	1.21	4.23	4.25	3.04	7.84	3.88	10.9 ^v
4690	7.54	8.60	1.22	7.55	7.54	6.32	7.38	8.32	13.3 ^v
4684	5.62	8.80	1.20	5.66	5.64	4.44	7.60	5.84	12.0 ^v
4691	4.96	8.90	1.25	5.00	4.98	3.73	7.65	4.88	11.4 ^v
4720	7.70	8.95	1.34	7.69	7.70	5.36 ⁶	7.61	8.37	13.3 ^v
4546	4.85	8.63	1.32	4.80	4.82	3.50	7.31	4.79	11.4 ^v
4602	6.55	8.82	1.42	6.57	6.56	5.14	7.40	6.95	12.6 ^v
4593	5.92	8.94	1.38	5.85	5.88	4.50	7.56	5.95	12.1 ^v
4597	7.00	8.89	1.40	6.98	6.99	5.59	7.49	7.47	12.9 ^v
too large 4697	3.73	9.16	1.52	3.72	3.72	2.20	7.64	2.88	10.4 ^v
4504	6.60	8.95	1.55	6.62	6.61	5.06	7.40	6.85	12.5 ^v

4487	5.85	9.00	1.57	5.86	5.86	4.29	7.43	5.77	12.0 ^c
4600	7.66	9.10	1.52	7.58	7.52	6.10	7.58	8.04	13.1 ^c
4636	4.30	9.26	1.65	4.23	4.32	2.67	7.61	3.50	10.7 ^c
4630	7.05	9.17	1.45	6.95	7.00	5.55	7.72	7.88	12.7 ^c
st. too near, 4665	5.00	8.90	1.32	4.92	4.96	3.64	7.58	4.78	11.4 ^c
4701	6.70	9.22	1.25	6.80	6.75	5.50	7.97	6.90	12.6 ^c
4808	6.65	9.15	1.27	6.58	6.62	5.35	7.88	6.80	12.5 ^c
4771	7.23	8.74	1.25	7.24	7.23	5.98	7.49	8.00	13.1 ^c
4772	6.62	9.10	1.30	6.62	6.62	5.32	7.80	6.82	12.5 ^c
4845	6.50	9.35	1.25	6.50	6.50	5.25	8.10	6.48	12.3 ^c
4900	4.95	9.36	1.25	4.96	4.96	3.71	8.11	4.57	11.3 ^c

RVing 8.9	1.80	8.75	1.23	1.82	1.81	0.58	7.52	0.76
13.1 RV	7.42	8.90	1.23	7.43	7.42	6.19	7.67	8.17
						7.59		

104K 2) 10.0	2.86	8.43	1.22	2.90	2.88	1.66	7.21	2.28
7) 11.7								
15) 14.7	7.90	8.60	1.23	7.90	7.90	6.67	7.37	9.15
						7.29		

Voltage 5.2 - 6.22

180

AX2187

November 15, 1929.

Voltage 6.1 - 5.1

Carte 13 ^h	-16.5	0	Em.	D	0					
3)	8.8	1.93	6.25	1.52	1.96	1.94	0.42	4.73	0.92	
4)	9.8	2.17	6.25	1.52	2.20	2.18	0.66	4.73	1.42	
5)	10.6	2.92	5.95	1.50	3.00	2.96	1.46	4.45	3.14	
6)	11.0	3.27	6.27	1.55	3.30	3.28	1.73	4.52	3.72	
7)	11.4	3.43	6.20	1.55	3.47	3.45	1.90	4.65	4.08	
9)	12.4	4.36	6.28	1.60	4.40	4.38	2.78	4.68	6.00	
13)	13.2	4.95	6.30	1.57	4.83	4.89	3.32	4.73	7.13	
16)	13.8	5.25	6.25	1.55	5.15	5.20	3.65	4.70	7.86	
18)	14.45	5.80	6.38	1.62	5.80	5.80	4.18	4.76	8.99	

4.195
4.66

Carte 13 -2.5

10)	12.0	4.00	6.45	1.62	4.07	4.04	2.42	4.83	4.94	
13)	12.8	5.05	6.55	1.58	5.00	5.02	3.44	4.97	7.03	
14)	13.3	5.30	6.40	1.62	5.35	5.32	3.70	4.88	7.57	

4.89

D7 e)	13.85	5.35	6.25	1.65	5.26	5.30	4.65	4.60	8.03	
d)	14.3	5.59	6.15	1.66	5.60	5.60	3.94	4.49	8.67	

4.54

Voltage 5.15 - 6.08

Galvanometer extremely unsteady.

AX 2187

November 20, 1929

Voltage 6.2 - 5.1

Cante 13 - 16.5

3)	8.8	1.93	5.27	0.90	1.87	1.90	1.00	4.3 ⁷	2.25
4)	9.8	2.10	5.36	0.95	2.09	2.10	1.15	4.41	2.58
5)	10.6	2.85	5.42	0.90	2.86	2.86	1.96	4.52	4.41
6)	11.0	3.00	5.40	0.94	3.00	3.00	2.06	4.46	4.64
7)	11.4	3.20	5.25	0.97	3.20	3.20	2.23	4.28	5.02
9)	12.4	3.86	5.34	0.93	3.90	3.88	2.95	4.41	6.65
13)	13.2	4.30	5.50	0.98	4.35	4.32	3.34	4.52	7.51
16)	13.8	4.62	5.45	0.97	4.60	4.61	3.64	4.48	8.20
18)	14.45	5.18	5.50	1.00	5.20	5.19	4.19	4.50 ³⁹⁵⁵	9.45

Cante 13 - 2.5

10)	12.0	3.50	5.70	1.02	3.48	3.49	2.47	4.68	5.24
13)	12.8	4.28	5.77	1.02	4.28	4.28	3.26	4.75 ^{4.44}	6.93
14)	13.3							4.72	

D7 2)	13.85	4.66	5.45	0.98	4.66	4.66	3.68	4.47	8.30
3)	14.3	5.00	5.46	1.02	4.98	4.99	3.97	4.44	8.94

Large 4361	2.32	6.00	1.03	2.30	2.31	1.28	4.97	2.60	9.5 ^m
very large and uncertain 4114	5.30	6.25	1.03	5.25	5.28	4.25	5.23	8.14	13.7 ^c
4177	5.15	6.25	1.05	5.17	5.16	4.11	5.20	7.90	13.5 ^c
4263	5.02	6.00	1.05	5.02	5.02	3.97	4.95	8.02	13.5 ^c
R 4484	5.14	5.82	1.10	5.10	5.1 ²	4.02	4.72	8.6 ⁵²	13.9 ^c X
area 2X aperture 4594	1.30	5.40	1.05	1.28	1.29	0.24	4.35	0.55	8.00 ^c
4129	5.07	6.09	1.05	5.07	5.07	4.02	5.04	7.95	13.5 ^c
4433	4.30	5.84	1.08	4.40	4.35	3.27	4.76	6.88	12.7 ^c
4428	4.73	5.54	1.01	4.71	4.72	3.71	4.53	8.20	13.7 ^c

Voltage 5.0 - 6.05

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AX 2178

November 21, 1929

Voltage 6.2 - 5.1

Carte 13 ^h	-16.5	0	C	D	0					
3)	8.8	2.12	5.49	1.12	2.07	2.10	0.98	4.37	2.20	
4)	9.8	2.40	5.68	1.02	2.40	2.40	1.38	4.66	3.10	
5)	10.6	3.23	5.60	1.16	3.25	3.24	2.08	4.44	4.69	
6)	11.0	3.33	5.70	1.17	3.30	3.32	2.15	4.53	4.82	
7)	11.4	3.50	5.35	1.14	3.52	3.51	2.37	4.21	5.31	
7)	12.4	4.23	5.70	1.16	4.22	4.22	3.06	4.53	6.88	
13)	13.2	4.69	5.63	1.18	4.63	4.66	3.48	4.45	7.82	
16)	13.8	4.97	5.63	1.20	5.00	4.98	3.78	4.43	8.21	
18)	14.45	5.45	5.75	1.20	5.42	5.44	4.24	4.55	9.51	

Carte 13	-2.5									
10)	12.0	3.78	6.05	1.23	3.75	3.76	2.53	4.82	5.23	
13)	12.8	4.53	6.00	1.22	4.55	4.54	3.32	4.78	6.84	
14)	13.3	5.00	6.18	1.23	4.94	4.97	3.74	4.95	7.71	

D7 e	13.85	5.00	5.68	1.20	5.00	5.00	3.80	4.48	8.45	
g	14.3	5.20	5.70	1.20	5.20	5.20	4.00	4.50	8.90	

too large.	4487	3.60	6.00	1.25	3.60	3.60	2.35	4.75	4.95	11.1 ^u
	4504	4.23	5.96	1.23	4.18	4.20	2.97	4.73	6.27	12.1 ^u
2 stars near.	4626	5.27	5.98	1.22	5.28	5.28	4.06	4.76	8.53	13.9 ^u
	4628	4.82	5.90	1.24	4.86	4.84	3.60	4.66	7.73	13.3 ^u
	4671	4.82	5.97	1.23	4.75	4.78	3.55	4.74	7.48	13.1 ^u
slightly large	4697	1.96	5.85	1.26	1.95	1.96	0.69	4.59	1.50	8.4 ^u
scratch on film.	4731	4.05	5.80	1.27	4.02	4.04	2.77	4.53	6.11	12.0 ^u
	4775	3.32	5.78	1.26	3.32	3.32	2.06	4.52	4.56	10.8 ^u
	4786	4.46	5.85	1.25	4.40	4.43	3.18	4.60	6.92	12.6 ^u

November 21, 1929.

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4890	4.52	5.90	1.26	4.50	4.51	3.25	4.64	7.00 6.80	12.7 ^c	X
4915	4.42	5.75	1.28	4.41	4.42	3.14	4.47	7.05	12.7 ^c	
5015	4.75	5.90	1.30	4.77	4.76	3.46	4.60	7.52	13.1 ^c	
4990	4.87	5.50	1.28	4.88	4.88	3.60	4.22	8.54	13.9 ^c	
4989	4.50	5.35	1.30	4.53	4.52	3.23	4.05	7.99	13.5 ^c	X
4941	3.85	5.90	1.30	3.83	3.84	2.54	4.60	5.52	11.6 ^c	
4878	4.80	5.95	1.30	4.75	4.78	3.48	4.65	7.49	13.1 ^c	
4951	4.30	5.70	1.28	4.23	4.26	2.98	4.32	6.91 7.6	12.5 ^c	X
tookens h. st. 4981	3.40	5.82	1.25	3.24	3.32	2.07	4.57	4.53	10.8 ^c	
4813	4.75	5.80	1.26	4.80	4.78	3.52	4.54	7.75	13.3 ^c	
4942	4.23	5.62	1.27	4.73	4.73	3.45	4.35	7.94	13.5 ^c	
4995	3.35	5.50	1.27	3.35	3.35	2.08	4.23	4.92 5.40	11.1 ^c	X
4958	2.90	5.52	1.25	2.90	2.90	1.65	4.27	3.87	10.3 ^c	

13 - 16.5 2.55 5.73 1.28 2.53 2.54 1.26 4.45 2.88

4)

9) — 4.23 5.58 1.25 4.24 4.24 2.99 4.33 6.81

18) 5.80 5.64 1.28 5.30 5.30 4.02 4.36 9.19
4.38

Voltage 5.0 - 6.0

184

AX2178

December 2, 1929

[Measures attempted on Nov 22, 25,
and 27th. Instrument out of order.]

Voltage 6.25-5.2

Carte 13 ⁴	-16.5	0	Cl	D	0				
3)	8.8	3.70	7.65	1.65	3.75	3.72	3.07	7.00	4.33
4)	9.8	4.25	7.70	0.63	4.25	4.25	3.62	7.07	5.10
5)	10.6	5.45	7.73	0.73	5.47	5.46	4.73	7.00	6.70
6)	11.0	5.54	7.93	0.77	5.52	5.53	4.77	7.16	6.75
7)	11.4	5.60	7.73	0.63	5.58	5.59	4.96	7.10	7.00
9)	12.4	6.50	7.83	0.75	6.52	6.51	5.76	7.08	8.13
13)	13.2	6.88	7.97	0.80	6.91	6.90	6.10	7.17	8.61
16)	13.8	7.22	7.88	0.82	7.20	7.21	6.39	7.06	9.03
18)	14.45	7.55	7.98	0.92	7.50	7.52	6.60	7.06	9.32
								7.08	

Carte 13	-2.5								
10)	12.0	5.57	8.54	0.90	5.58	5.58	4.68	7.64	6.22
13)	12.8	6.58	8.38	0.92	6.60	6.59	5.67	7.46	7.53
14)	13.3	7.18	8.37	0.95	7.20	7.19	6.24	7.42	8.30
								7.51	

D 7 e	13.85	7.00	8.00	0.90	7.02	7.01	6.11	7.10	8.64
g	14.3	7.32	7.93	0.88	7.32	7.32	6.44	7.05	9.10
								7.08	

4948	7.10	8.45	1.05	7.13	7.12	6.07	7.40	8.20	13.1 ^m
4928	6.30	8.23	1.10	6.25	6.28	5.18	7.13	7.27	12.1 ^c
4925	6.70	8.05	1.06	6.68	7.69	6.63	6.99	9.48	14.4 ^v
4885	7.27	8.38	1.04	7.23	7.25	6.21	7.34	8.47	13.4 ^v
4813	6.90	8.12	1.03	6.83	6.86	5.83	7.09	8.22	13.1 ^v
4818	5.73	7.88	1.01	5.13	5.13	4.12	6.87	5.98	10.8 ^v
4780	6.35	7.81	1.03	6.26	6.30	5.27	6.78	7.78	12.6 ^v
4739	6.50	7.80	1.05	6.51	6.50	5.45	6.75	8.07	13.0 ^v
4773	6.66	7.87	1.00	6.65	6.66	5.66	6.87	8.26	13.2 ^v
4777	7.02	7.70	1.05	6.98	7.00	5.95	6.65	8.95	13.8 ^v

too br.
near st. 4759

4699	2.76	7.88	1.05	2.80	2.78	1.73	6.83	2.53	7.3 ^c
4674	7.36	7.96	1.10	7.45	7.40	6.30	6.86	9.20	14.1 ^c
4703	7.00	8.17	1.08	6.98	6.99	5.91	7.09	8.35	13.2 ^c
4716-7	6.38	8.00	1.04	6.40	6.39	5.35	6.94	7.68	12.5 ^c
4658	6.12	8.30	1.07	6.10	6.11	5.04	7.23	6.97	11.8 ^c

br. st. too
near.

4663

4682	6.52	8.27	1.10	6.53	6.52	5.42	7.17	7.58	12.4 ^c
4708	6.95	8.17	1.10	6.95	6.95	5.85	7.07	8.28	13.2 ^c
4700	5.68	8.05	1.05	5.66	5.67	4.62	7.00	6.60	11.5 ^c

13² -16.5

8.8	3.95	7.95	1.10	3.95	3.95	4.85	6.85	4.22
9) 12.4	6.30	7.82	1.11	6.32	6.31	5.20	6.72	7.69
18) 14.45	7.48	7.80	1.09	7.52	7.50	6.41	6.71	9.49

Voltage 5.08 - 6.10

186

AX 2178

December 4, 1929.

Voltage 6.22 - 5.2

Carte 13^h -16.5

3)	8.8	3.18	7.85	0.77	3.18	3.18	2.41	7.08	3.32
4)	9.8	3.72	8.14	0.82	3.75	3.74	2.93	7.32	4.04
5)	10.6	4.95	8.25	0.86	4.97	4.96	4.11	7.39	5.68
6)	11.0	5.10	8.10	0.83	5.10	5.10	4.27	7.27	5.90
7)	11.4	5.38	7.90	0.83	5.33	5.36	4.50	7.07	6.20
9)	12.4	6.32	8.02	0.88	6.25	6.28	5.40	7.14	7.45
13)	13.2	6.80	8.10	0.80	6.73	6.76	5.96	7.30	8.22
16)	13.8	7.16	8.15	0.71	7.02	7.09	6.38	7.44	8.80
18)	14.45	7.50	7.98	0.73	7.50	7.50	6.77	7.25	9.35

Carte 13 -2.5

10)	12.0	5.30	8.63	0.85	5.26	5.28	4.43	7.78	5.74
13)	12.8	6.44	8.40	0.85	6.38	6.41	5.56	7.55	7.20
14)	13.3	7.12	8.70	0.88	7.10	7.11	6.23	7.82	8.08

D7 e	13.85	6.75	7.70	0.75	6.76	6.76	6.01	6.95	8.50
g	14.3	7.26	8.00	0.80	7.25	7.26	6.46	7.20	9.10

4770	6.80	7.88	0.93	6.70	6.75	5.82	6.95	8.80	13.6 ^c
4757	7.50	8.15	0.92	7.55	7.52	6.60	7.23	9.13	14.2 ^c
bi. st. near. 4742	4.98	8.10	0.95	4.95	4.96	4.01	7.15	5.62	11.1 ^c
4760	5.76	7.98	1.05	5.76	5.76	4.71	6.93	6.80	12.1 ^c
4790	5.65	7.95	1.08	5.66	5.66	4.58	6.87	6.68	12.0 ^c
large 4781	4.45	8.16	1.10	4.45	4.45	3.35	7.06	4.75	10.3 ^c
2 bi. st. near. 4784	7.25	8.04	1.20	7.20	7.22	6.02	6.84	8.84	14.0 ^c
4822	7.50	8.33	1.18	7.40	7.45	6.27	7.15	8.76	13.9 ^c
4939	5.35	8.03	1.20	5.37	5.36	4.16	6.83	6.10	11.5 ^c
4920	7.05	8.08	1.27	7.06	7.06	5.79	6.81	8.49	13.7 ^c

4933 5.74 7.98 1.28 5.83 5.78 | 4.50 | 6.70 | 6.72 | 12.1^c

479/2

4782-3

4836

4838

4855

4748

4714

Lighting circuit went off, putting out
galvanometer lamp - could not
finish measures.

Voltage 5.1 - 6.18



188

AX2178

December 6, 1929.

[December's one battery lead
corroded through during charge]

Voltage 6.22 - 5.20

Carte 13	+16.5	3.10	7.80	1.10	3.12				
3)	8.8	3.70	8.00	1.13	3.66	3.11	1.98	6.70	2.96
4)	9.8					3.68	2.55	6.87	3.81
5)	10.6	4.88	7.87	1.18	4.90	4.89	3.71	6.69	5.55
6)	11.0	5.00	7.90	1.16	5.00	5.00	3.84	6.74	5.74
7)	11.4	5.13	7.75	1.15	5.12	5.12	3.97	6.60	5.93
9)	12.4	6.12	7.82	1.15	6.10	6.11	4.86	6.67	7.27
13)	13.2	6.54	7.65	1.15	6.52	6.53	5.38	6.50	8.05
16)	13.8	7.00	7.82	1.18	6.98	6.99	5.81	6.64	8.70
18)	14.45	7.48	7.90	1.20	7.48	7.48	6.28	6.70	9.38

6.69

Carte 13	-2.5								
10)	12.0	5.35	8.60	1.22	5.36	5.36	4.14	7.38	5.70
13)	12.4	6.55	8.50	1.24	6.54	6.54	5.30	7.26	7.28
14)	13.3	7.10	8.75	1.25	7.12	7.11	5.86	7.50	8.05

7.38

D7 e	13.85	6.90	8.05	1.20	6.87	6.88	5.68	6.85	8.30
g	14.3	7.36	8.02	1.21	7.34	7.35	6.14	6.81	8.99

6.83

4792	7.34	7.85	1.20	7.35	7.35	6.15	6.65	9.25	14.3 ^m
4782-3	4.92	7.80	1.20	4.89	4.90	3.70	6.60	5.60	11.2 ^v
4836	6.75	7.80	1.18	6.72	6.74	5.56	6.62	8.39	13.6 ^v
4838	6.60	7.70	1.13	6.61	6.60	5.47	6.57	8.32	13.5 ^v
4855	6.45	7.68	1.13	6.46	6.45	5.32	6.55	8.13	13.4 ^v
4848	6.75	7.77	1.20	6.86	6.80	5.60	6.57	8.50	13.7 ^v
4715 ⁴									

Carte 13 -16.5 ^②	7.39	7.86	1.20	7.35	7.37	6.17	6.66	9.26	
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Voltage 5.12 - 6.18

AX 2178

December 9, 1929.

Voltage 6.2 - 5.2

Carte 13 46.5

3)	8.8	2.86 (3.50)	7.72 (7.77)	0.85 (1.05)	2.83 (3.48)	² 8.84 (3.49)	1.99 (2.43)	6.87 (6.74)	2.90 (3.64)
4)	9.8	3.32	7.78	0.85	3.36	5.34	2.49	6.93	3.63
5)	10.6	4.58	7.70	0.87	4.52	4.55	3.68	6.83	5.36
6)	11.0	4.67	7.73	0.90	4.70	4.68	3.78	6.83	5.50
7)	11.4	4.95	7.85	0.90	4.90	4.92	4.00	6.95	5.83
9)	12.4	^{5.75} 5.85 (7.72)	7.77 (7.72)	0.90 (1.10)	^{5.95} 5.90 (5.95)	5.88 (5.95)	4.98 (4.85)	6.87 (6.62)	^{7.20} 7.25 (7.20)
13)	13.2	6.40	7.82	0.90	6.40	6.40	5.50	6.92	8.00
16)	13.8	6.84	7.88	1.00	6.84	6.84	5.84	6.88	8.50
18)	14.45	^{7.35} 7.50 (7.75)	7.80 (7.75)	1.01 (1.09)	7.50 (7.34)	7.50 (7.34)	6.49 (6.25)	6.79 (6.66)	9.44 (9.35)

Carte 13 -2.5

10)	12.0	5.08	8.33	0.98	5.10	5.09	4.11	7.35	5.54
13)	12.8	6.18	8.33	0.96	6.20	6.19	5.23	7.37	7.04
14	13.3	7.00	8.50	0.93	7.10	7.05	6.12	7.57 ^{7.29} 7.43	8.24

D7 e	13.85	6.70	7.75	0.95	6.69	6.70	5.75	6.80	8.53
g	14.3	7.18	7.60	0.93	7.17	7.18	6.25	6.67 ^{6.73}	9.28

4825 5.72 7.68 0.95 5.70 5.71 4.76 6.73 7.07 12.5°

4820 6.85 7.74 0.94 6.84 6.84 5.90 6.80 8.52 13.8°

4863 too near faint star

4862 7.20 7.58 1.08 7.22 7.21 6.13 6.50 9.41 14.4°

4891 5.80 7.70 0.95 5.78 5.79 4.84 6.75 7.17 12.6°

4899 5.50 7.80 1.12 5.63 5.56 4.44 6.68 6.65 12.1°

4902 4.00 7.70 1.00 3.92 3.96 4.76 6.70 4.42 10.3°

4924 5.84 7.50 0.98 5.90 5.87 4.89 6.52 7.49 12.8°

4887 6.92 7.55 1.00 6.90 6.91 5.91 6.55 9.02 14.1°

4856 4.30 7.65 1.07 4.24 4.27 3.20 6.58 4.87 10.7°

4877 6.15 7.70 1.07 6.15 6.15 5.08 6.63 7.66 13.0°

Voltage 5.1 - 6.1

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AX 2178

— December 13, 1929 —

Voltage $\frac{6.2}{6.13} - \frac{5.13}{5.12}$ [Dec. 11 Illumination of
aperture uneven, adjusted
by Prof King]

Carte 13 -16.5

3)	8.8	3.08	8.00	1.74	3.04	3.06	1.32	6.26	2.12
4)	9.8	3.56	8.05	1.75	3.50	3.53	1.78	6.30	2.85
5)	10.6	4.60	8.03	1.77	4.57	4.58	2.81	6.26	4.50
6)	11.0	4.78	8.20	1.85	4.86	4.82	2.97	6.35	4.76
7)	11.4	5.08	7.82	1.84	5.06	5.07	3.23	5.98	5.18
9)	12.4	6.30	8.27	2.10	6.36	6.33	4.23	6.17	6.80
13)	13.2	6.75	8.16	1.98	6.78	6.76	4.78	6.18	7.67
16)	13.8	7.15	8.18	1.94	7.08	7.12	5.18	6.24	8.30
18)	14.45	7.85	8.26	1.92	7.86	7.86	5.94	6.34	9.51

6.23

Carte 13 -2.5

10)	12.0	5.32	8.52	1.90	5.34	5.33	3.43	6.62	5.03
13)	12.8	6.50	8.68	1.92	6.55	6.52	4.60	6.76	6.92
14)	13.3	7.00	8.45	1.93	7.00	7.00	5.07	6.52	7.65

6.63

D7. e 13.85

7.13 8.25 1.93 7.17 7.15 5.22 6.32 8.27

g 14.3

7.60 8.23 1.90 7.54 7.57 5.67 6.33 8.98

6.32

4984 4.37 8.05 2.04 4.36 4.36 2.32 6.01 3.86

m
10.3^c

5010 6.92 8.05 2.00 6.94 6.93 4.93 6.05 8.15

13.6^c

5031 6.53 8.10 2.00 6.48 6.50 4.50 6.10 7.38

13.0^c

5030 too near bright star.

5017 6.44 8.04 1.95 6.38 6.41 4.46 6.09 7.32

12.9^cbr. star
too near. 5035 6.01 8.21 1.95 6.14 6.08 4.13 6.26 6.6012.4^c

5037 too near bright star.

5047 6.70 8.10 1.90 6.76 6.73 4.83 6.20 7.80

13.3^c

5049 6.86 8.15 1.92 6.90 6.88 4.96 6.23 7.98

13.5^c

5046 7.30 8.00 1.95 7.24 7.27 5.32 6.05 8.80

14.1^c

— December 13, 1929 —

too large										
5054	4.75	8.07	1.94	4.70	4.72	2.78	6.13	4.55	10.9	°
5073	6.83	8.22	1.95	6.77	6.80	4.85	6.27	7.75	13.3	°
5094	other stars too near.									
5076	6.80	7.95	1.98	6.80	6.80	4.82	5.93	8.14 ⁰⁷	13.5	°
5079	6.38	7.77	1.94	6.27	6.32	4.38	5.83	7.51	13.1	°
5077	5.08	7.73	1.94	5.12	5.10	3.16	5.79	5.48	11.6	°
5088	6.14	7.63	2.02	6.10	6.12	4.10	5.61	7.30	12.9	°
5111	5.73	7.68	2.00	5.88	5.80	3.80	5.68	6.70	12.5	°
5119	6.00	6.98	1.98	6.00	6.00	4.02	5.00	8.00	13.5	°
5146	5.75	7.32	2.03	5.65	5.70	3.67	5.29	6.95	12.7	°

Corte 13 - 14.5

4)	3.57	8.20	2.00	3.63	3.60	1.60	6.20	2.62	9.4	
9)	6.10	8.03	2.00	6.10	6.10	4.10	6.03	6.70	12.5	
18)	7.76	8.10	2.00	7.76	7.76	5.76	6.10	9.41	11.6	

6.11

Voltage 5.08 - 6.15

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AX 1681

January 6, 1930

(Galvanometer jumping
slowly during
entire period)

Voltage 6.03 - 5.00

Carte 13 -16.5

3)	8.8	3.20	8.63	1.52	3.24	3.22	1.70	7.11	2.38
4)	9.8	3.82	8.80	1.57	3.80	3.81	2.24	7.23	3.14
5)	10.6	5.20	8.78	1.53	5.24	5.22	3.69	7.25	5.17
6)	11.0	5.48	8.73	1.72	5.43	5.46	3.74	7.01	5.24
7)	11.4	5.77	8.78	1.70	5.80	5.78	4.08	7.08	5.72
9)	12.4	6.88	8.90	1.70	6.90	6.89	5.19	7.20	7.27
13)	13.2	7.72	8.90	1.77	7.80	7.76	5.99	7.13	8.38
16)	13.8	8.20	8.95	1.80	8.20	8.20	6.40	7.15	8.97
18)	14.45	8.38	8.94	1.80	8.28	8.33	6.53	7.14	9.15

7.14

Carte 13 -2.5

10)	12.0	6.00	8.90	1.85	6.15	6.08	4.23	7.05	6.10
13)	12.8	7.38	8.87	1.85	7.18	7.28	5.43	7.02	7.82
14)	13.3	7.70	8.70	1.93	7.65	7.68	5.75	6.77	8.28

6.95

D7

e	13.85	8.08	8.83	1.82	8.04	8.06	6.24	7.01	8.89
d	14.3	8.47	8.86	1.80	8.43	8.45	6.65	7.06	9.46

7.04

5015	large?	7.37	8.68	1.88	7.30	7.34	5.46	6.80	8.02	13.0 ^c
4990		7.25	8.22	1.88	7.30	7.28	5.40	6.34	8.52	13.3 ^c
4989		7.20	8.30	1.85	7.30	7.25	5.40	6.45	8.37	13.2 ^c
4941		6.42	8.63	1.88	6.44	6.43	4.55	6.75	6.75	12.1 ^c
4915		7.13	8.68	1.91	7.03	7.08	5.17	6.77	7.64	12.7 ^c
4890		7.25	8.40	1.88	7.17	7.21	5.33	6.52	8.18	13.1 ^c
4878		7.75	8.45	1.91	7.80	7.78	5.87	6.54	8.98	13.8 ^c
4951		7.08	8.32	1.92	7.05	7.06	5.14	6.50	7.91	12.9 ^c
4885		7.85	8.55	1.95	7.92	7.88	5.93	6.60	9.00	13.8 ^c

Voltage 4.93 - 5.98

AX 1681

January 8, 1930

Voltage 6.3 - 5.23

Corte 13 -16.5

3)	3.16	9.12	2.01	3.17	3.16	1.15	7.11	1.60
4)	3.67	9.23	1.93	3.57	3.62	1.69	7.30	2.35
5)	5.06	9.20	1.97	5.10	5.08	3.11	7.23	4.33
6)	5.28	9.38	2.03	5.30	5.29	3.26	7.35	4.54
7)	5.70	9.20	2.00	5.63	5.67	3.67	7.20	5.11
9)	6.96	9.08	2.05	6.98	6.97	4.92	7.03	6.84
13)	7.90	9.23	2.02	7.88	7.89	5.87	7.21	8.17
16)	8.37	9.27	2.05	8.27	8.32	6.27	7.22	8.72
18)	8.55	9.17	2.07	8.67	8.61	6.54	7.10	9.10

Corte 13 -2.5

10)	6.29	9.26	2.22	6.25	6.27	4.05	7.04	5.75
13)	7.55	9.33	2.25	7.50	7.52	5.27	7.08	7.45
14)	8.20	9.24	2.18	8.10	8.12	5.97	7.06	8.46

D7

e	8.49	9.42	2.30	8.47	8.48	6.18	7.14	8.68
d	8.85	9.38	2.28	8.85	8.85	6.57	7.10	9.23

4942 7.85 9.40 2.12 7.80 7.82 5.70 7.28 7.83 13.0^cstreak! 4948 8.18 8.97 2.23 8.23 8.20 5.97 6.74 8.87 13.8^c4995 5.97 9.02 2.22 5.90 5.94 3.72 6.80 5.47 11.6^c4958 5.40 8.75 2.25 5.42 5.41 3.16 6.50 4.87 11.2^c4928 7.35 8.95 2.32 7.31 7.33 5.01 6.63 7.58 12.9^c4925 8.13 8.97 2.27 8.18 8.16 5.89 6.70 8.80 13.7^c4813 8.07 8.95 2.25 7.96 8.02 5.77 6.70 8.62 13.5^c4786 7.10 8.95 2.20 7.17 7.14 4.94 6.75 7.31 12.7^c4775 6.07 8.90 2.21 5.98 6.02 3.81 6.69 5.70 11.7^csmall too large. 4697 3.58 8.90 2.15 3.58 3.58 1.43 6.75 2.12 9.5^c

Voltage - 5.10 - 6.15

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January 10, 1930

AX 1681

Voltage 6.2 - 5.1

Carte 13^w -16.5

3)	8.8	3.80	11.45	1.86	3.83	3.82	1.96	9.59	1.99
		4.40	11.52		4.45	4.42	2.26	9.36	2.44
4)	9.8	4.40	11.80	2.66	4.51	4.46	2.54	9.88	2.58
5)	10.6	6.55	11.80	1.94	6.55	6.55	4.61	9.86	4.69
6)	11.0	6.77	12.10	2.07	6.90	6.84	4.77	10.03	4.86
		7.03	11.33	2.18	7.06	7.04	4.86	9.15	5.25
7)	11.4	7.37	12.03	2.13	7.40	7.38	5.25	9.90	5.34
9)	12.4	9.06	12.03	2.14	9.05	9.06	6.92	9.89	7.04
13)	13.2	10.15	11.80	2.08	10.13	10.14	8.06	9.72	8.19
16)	13.8	10.86	11.88	2.20	10.80	10.83	8.63	9.68	8.78
		10.56	11.47	2.18	10.58	10.57	8.39	9.29	9.05
18)	14.45	11.17	12.03	2.12	11.13	11.15	9.03	9.91	9.20

Carte 13 -2.5

10)	12.0	8.02	12.04	2.15	8.02	8.02	5.87	9.89	6.03
13)	12.8	9.95	11.78	2.16	9.76	9.86	7.70	9.62	7.91
14)	13.3	10.13	11.80	2.13	10.15	10.14	8.01	9.67	8.23

D 7

e	13.85	10.85	11.90	2.18	10.71	10.78	8.60	9.72	8.80
g	14.3	11.32	12.0	2.16	11.30	11.31	9.15	9.84	9.35

4818	8.48	11.65	2.13	8.42	8.45	6.32	9.52	6.54	12.1 ^v
4780	9.70	11.65	2.17	9.86	9.78	7.61	9.48	8.03	13.1 ^v
4739	9.20	11.80	2.10	9.40	9.30	7.20	9.70	7.42	12.7 ^v
4773	9.88	11.50	2.08	9.82	9.85	7.77	9.42	8.24	13.3 ^v
4777	10.18	11.40	2.08	10.20	10.19	8.11	9.32	8.72	13.7 ^v
4759	bright star too near.								
4699	4.25	11.15	2.05	4.30	4.28	2.23	9.10	2.45	9.4 ^v
4674	10.18	11.30	2.10	10.20	10.19	8.09	9.20	8.78	13.8 ^v
4703	10.05	11.28	2.10	10.05	10.05	7.95	9.18	8.67	13.7 ^v
4716-17	9.55	11.40	2.10	9.48	9.52	7.42	9.30	7.98	13.1 ^v
4658	8.75	11.42	2.14	8.77	8.76	6.62	9.28	7.13	12.5 ^v
4671	9.48	11.20	2.13	9.52	9.50	7.37	9.07	8.12	13.2 ^v

Voltage 5.0 - 6.05

January 15, 1930.

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A.X 1681

Carte 13 -16.5

Voltage 6.18 - 5.15

3)	2.48	10.10	0.77	2.47	2.48	1.71	9.33	1.83
4)	3.04	10.27	0.73	3.05	3.04	2.31	9.54	2.47
5)	5.05	10.15	0.82	5.03	5.04	4.22	9.27	4.53
6)	5.23	10.48	0.92	5.33	5.28	4.36	9.56	4.67
7)	5.78	10.26	0.90	5.76	5.77	4.87	9.36	5.22
9)	7.38	10.17	0.87	7.48	7.43	6.56	9.30	7.02
13)	8.48	10.10	0.87	8.43	8.46	7.59	9.23	8.01
16)	9.08	10.09	0.86	9.08	9.08	8.22	9.23	8.38 ⁸⁰
18)	9.37	10.08	0.85	9.40	9.38	8.53	9.23	9.14

9.34

Carte 13 -2.5

10)	6.50	10.13	0.85	6.50	6.50	5.65	9.28	6.07
13)	7.98	10.30	0.87	8.00	7.99	7.12	9.43	7.63
14)	8.72	10.14	0.88	8.70	8.71	7.83	9.26	8.40

9.32

D7

e 8.93 10.02 0.84 8.90 8.92 8.08 9.18 8.74

g 9.55 10.13 0.85 9.51 9.53 8.68 9.28 9.39

9.23

7m

4770 7.73 9.90 0.92 7.75 7.74 6.82 8.98 7.60 12.9^c4790 7.20 9.74 0.90 7.10 7.15 6.25 8.84 7.08 12.5^c

ft. star attached

4781 5.28 9.61 0.91 5.30 5.29 4.38 8.70 5.03 11.2^c

br. sts. near

4784 9.05 9.63 0.95 9.00 9.02 8.07 8.68 9.30 14.3^c4822 8.92 9.63 0.96 8.93 8.92 7.96 8.67 9.18 14.2^c4920 8.60 9.65 0.95 8.63 8.62 7.67 8.70 8.80 13.9^c

H st. attached

4933 7.25 9.57 0.95 7.27 7.26 6.31 8.62 7.33 12.7^c4939 6.88 9.68 0.99 6.80 6.84 5.85 8.69 6.73 12.3^c4757 8.90 9.53 0.97 8.83 8.86 7.89 8.56 9.33 14.3^cbr. st. near, 4742 5.88 9.75 1.02 5.90 5.89 4.87 8.73 5.58 11.5^c4760 7.28 9.74 1.02 7.25 7.26 6.24 8.72 7.15 12.6^c4682 8.05 9.65 1.03 8.07 8.06 7.03 8.62 8.17 13.3^c

Voltage 5.13 - 6.18

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January 20, 1930

A X 1681

Carte 13 -16.5

Voltage 6.2 - 5.13

3	8.8	4.46	8.99	1.43	4.47	4.46	3.03	7.56	3.92
4	9.8	4.88	9.17	1.43	4.88	4.88	3.45	7.74	4.45
5	10.6	6.33	9.23	1.46	6.27	6.30	4.84	7.77	5.85 6.23
6	11.0	6.46	9.34	1.47	6.50	6.48	5.01	7.87	6.46
7	11.4	6.76	9.20	1.46	6.78	6.77	5.31	7.74	6.84
9	12.4	7.78	9.33	1.45	7.73	7.76	6.31	7.88	8.13
13	13.2	8.42	9.20	1.48	8.43	8.42	6.94	7.72	8.95
16	13.8	8.74	9.34	1.48	8.75	8.74	7.26	7.86	9.36
18	14.45	8.84	9.32	1.49	8.85	8.84	7.35	7.83	9.47

Carte 13 -2.5

10	12.0	7.43	9.22	1.51	7.43	7.43	5.92	7.71	7.63
13	12.8	8.22	9.35	1.53	8.23	8.22	6.69	7.82	8.61
14	13.3	8.56	9.25	1.53	8.58	8.57	7.04	7.72	9.07

D 7

e	13.85	8.68	9.32	1.50	8.70	8.69	7.19	7.82	9.17
6 7	14.3	8.98	9.37	1.50	8.97	8.98	7.46	7.87	9.54

4708	8.60	9.24	1.52	8.65	8.62	7.10	7.72	9.20	13.6 ^v
4700	7.57	9.14	1.53	7.57	7.57	6.04	7.61	7.95	12.3 ^c
4836	8.84	9.30	1.50	8.82	8.83	7.33	7.80	9.40	14.0 ^v
4792	8.90	9.33	1.54	8.88	8.89	7.35	7.79	9.45	14.1 ^v
4782-3	6.87	9.23	1.57	6.88	6.88	5.31	7.66	6.95	11.5 ^v
4838	8.45	9.22	1.58	8.49	8.47	6.89	7.64	9.02	13.3 ^v
4855	8.46	9.23	1.57	8.43	8.44	6.87	7.66	8.98	13.2 ^v
4748	8.72	9.47	1.60	8.68	8.70	7.10	7.87	9.04	13.3 ^v
4825	7.92	9.28	1.58	7.90	7.91	6.33	7.70	8.24	12.5 ^c
4820	8.97	9.40	1.60	8.96	8.96	7.36	7.80	9.42	14.1 ^v
4863	too faint for identification								u
4862	9.07	9.25	1.60	9.10	9.08	7.48	7.65	9.77	14.7 ^v

a little bit too long

4887	8.63	9.20	1.57	8.64	8.64	7.07	7.63	9.25	13.7 ^c
4856	6.33	9.40	1.58	6.32	6.32	4.74	7.82	6.07	10.8 ^c
4877	8.33	9.22	1.58	8.37	8.35	6.77	7.64	8.86	13.0 ^c
4724-7	7.90	9.40	1.60	7.89	7.90	6.30	7.80	8.08	12.4 ^c
4756	8.05	9.38	1.60	8.00	8.02	6.42	7.78	8.25	12.5 ^c
4763	8.53	9.50	1.60	8.55	8.55	6.95	7.90	8.80	13.0 ^c

Carte 13 - 16.5

4)	5.07	9.47	1.60	5.03	5.05	3.45	7.87	4.40
9)	7.88	9.40	1.60	7.87	7.88	6.28	7.80	8.00
18)	8.92	9.50	1.62	8.95	8.94	7.32	7.88	9.33

Voltage ^{7.85} 5.08 - 6.08

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January 22, 1930

AX 1681

Carte 13 -15

Voltage 6.13 -5.10

3)	8.8	3.84	8.32	0.59	3.90	3.87	3.28	7.73	4.17
4)	9.8	4.25	8.40	0.55	4.23	4.24	3.69	7.85	4.67
5)	10.6	5.55	8.48	0.60	5.56	5.56	4.96	7.88	6.29
6)	11.0	5.74	8.64	0.55	5.70	5.72	5.17	8.09	6.54
7)	11.4	6.00	8.50	0.60	6.00	6.00	5.40	7.90	6.84
9)	12.4	6.97	8.42	0.62	6.98	6.98	6.36	7.80	8.05
13)	13.2	7.62	8.55	0.62	7.62	7.62	7.00	7.93	8.87
16)	13.8	7.96	8.53	0.63	8.00	7.98	7.35	7.90	9.32
18)	14.45	8.10	8.60	0.67	8.10	8.10	7.43	7.93	9.42

7.89

Carte 13 -2.5

10)	12.0	6.57	8.37	0.72	6.60	6.58	5.86	7.65	7.56
13)	12.8	7.46	8.52	0.70	7.48	7.47	6.77	7.82	8.73
14)	13.3	7.82	8.52	0.76	7.84	7.83	7.07	7.76	9.12

7.74

D 7

e	13.85	7.90	8.58	0.67	7.90	7.90	7.23	7.91	9.20
g	14.3	8.20	8.50	0.68	8.22	8.21	7.53	7.82	9.60

7.86

4891	7.20	8.57	0.77	7.36	7.28	6.51	7.80	8.34	12.6 [✓]
4899	7.18	8.77	0.84	7.28	7.23	6.39	7.93	8.07	12.4 [✓]
br. sts near. 4902	6.06	8.63	0.87	6.10	6.08	5.21	7.76	6.72	11.2 [✓]
4924	7.90	8.77	0.83	7.87	7.88	7.05	7.94	8.88	13.2 [✓]
4984	6.20	8.48	0.85	6.17	6.18	5.33	7.63	6.99	11.4 [✓]
5010	8.06	8.67	0.92	8.02	8.04	7.12	7.75	9.18	13.6 [✓]
4997	too close to bright star.								✓
5031	7.66	8.58	0.85	7.63	7.64	6.79	7.73	8.79	13.0 [✓]
very br. sts on either side 5035	br. stars too close:								✓
5017	7.85	8.62	0.93	7.86	7.86	6.93	7.69	9.01	13.3 [✓]
br. star near. 5030	7.48	8.65	0.87	7.45	7.46	6.59	7.78	8.48	12.7 [✓]

5047	7.80	8.60	0.86	7.78	7.79	6.93	7.74	8.98	13.2 [✓]
5054	5.95	8.58	0.84	5.89	5.92	5.08	7.74	6.58	11.0 [✓]
5049	8.02	8.66	0.95	8.00	8.01	7.06	7.71	9.16	13.5 [✓]
5046	8.10	8.48	0.93	8.05	8.08	7.15	7.55	9.46	14.1 [✓]
5044	6.26	8.58	0.92	6.22	6.24	5.32	7.66	6.96	11.4 [✓]
5038	7.77	8.56	0.90	7.73	7.75	6.85	7.66	8.95	13.2 [✓]
5073	7.76	8.62	0.88	7.75	7.76	6.88	7.74	8.90	13.1 [✓]
4114	8.20	8.95	0.90	8.18	8.19	7.29	8.05	9.07	13.3 [✓]
4177	7.92	8.80	0.88	7.88	7.90	7.02	7.92	8.88	13.1 [✓]
4361	4.82	8.32	0.90	4.80	4.81	3.91	7.42	5.27	9.9 [✓]
4433	7.52	8.55	1.00	7.43	7.48	6.48	7.55	8.60	12.7 [✓]
4428	7.50	8.30	0.82	7.50	7.50	6.68	7.58	8.81	13.2 [✓]
4487	6.05	8.38	0.80	6.05	6.05	5.25	7.58	7.93	12.2 [✓]
4504	6.76	8.48	0.80	6.80	6.78	5.98	7.68	7.80	12.1 [✓]

Curtis 13-15

4)	4.40	8.53	0.77	4.40	4.40	3.63	7.76	4.72
9)	6.94	8.36	0.73	6.94	6.94	6.21	7.73	8.07
16)	7.83	8.45	0.73	7.82	7.82	7.09	7.72	9.19
18)	7.95	8.35	0.73	7.94	7.94	7.21	7.62	9.35

7.71

Voltage 5.07 - 6.10

200

January 27, 1930

A X 1681

Voltage 6.2 - 5.15

Carte 13^h -16.5

3)	8.8	3.00	8.08	0.06	3.02	3.01	2.95	8.02	3.71
4)	9.8	3.43	8.10	0.08	3.42	3.42	3.34	8.02	4.20
5)	10.6	4.35	7.95	0.10	4.36	4.36	4.26	7.85	5.37
6)	11.0	5.10	8.25	0.13	5.07	5.08	4.95	8.12	6.22
7)	11.4	5.43	8.06	0.22	5.46	5.44	5.22	7.84	6.56
9)	12.4	6.50	8.13	0.21	6.40	6.45	6.24	7.92	7.85
13)	13.2	7.08	8.26	0.22	7.08	7.08	6.86	8.04	8.63
16)	13.8	7.50	8.18	0.21	7.42	7.46	7.25	7.97	9.12
18)	14.45	7.63	8.02	0.25	7.65	7.64	7.39	7.77	9.30

Carte 13 -2.5

10)	12.0	6.08	8.06	0.28	6.05	6.06	5.78	7.78	7.42
13)	12.8	6.95	8.13	0.30	6.95	6.95	6.65	7.83	8.51
14)	13.3	7.35	8.15	0.33	7.35	7.35	7.02	7.82	8.98

D 7

e	13.85	7.46	8.15	0.27	7.48	7.47	7.20	7.88	9.08
g	14.3	7.80	8.27	0.28	7.78	7.79	7.51	7.99	9.48

4129	7.48	8.48	0.38	7.47	7.48	7.10	8.10	8.77	13.3 ^v
4263	7.76	8.57	0.58	7.78	7.77	7.39	7.99	9.24	14.1 ^v
4329	7.92	8.35	0.50	7.93	7.92	7.42	7.85	9.45	14.5 ^v
4484	7.67	8.38	0.44	7.70	7.68	7.24	7.94	9.13	13.6 ^v
Area 2-3 times size of aperture 4594	1.50	8.07	0.46	1.48	1.49	1.03	7.61	1.35	7.11 ^v
4626	7.40	8.10	0.52	7.58	7.39	6.87	7.58	9.05	13.5 ^v
2 stars near. 4628	7.23	8.10	0.48	7.22	7.22	6.74	7.62	8.85	12.4 ^v
4731	5.83	8.08	0.50	5.85	5.84	5.34	7.58	7.05	11.7 ^v
4981	bright star attached -								

16)	7.63	8.23	0.52	7.60	7.62	7.12	7.71	9.25	
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Voltage 5.12 - 6.19

January 29, 1930

201

AX1053

Carte 13^h -16.5

Voltage 6.2 - 5.18

3)	2.80	8.41	0.43	2.78	2.79	2.36	7.97	3.01
4)	3.27	8.18	0.46	3.28	3.28	2.82	7.72	3.59
5)	4.50	8.20	0.48	4.50	4.50	4.02	7.72	5.13
6)	4.68	8.30	0.44	4.70	4.69	4.25	7.86	5.42
7)	5.22	8.36	0.46	5.20	5.21	4.75	7.90	6.05
9)	6.48	8.43	0.52	6.44	6.46	5.94	7.91	7.57
13)	7.13	8.42	0.55	7.10	7.12	6.57	7.87	8.37
16)	7.55	8.53	0.60	7.50	7.52	6.92	7.93	8.82
18)	8.02	8.36	0.60	8.06	8.04	7.44	7.76	9.48

7.85

Carte 13 -2.5

10)	6.47	8.34	0.65	6.47	6.47	5.82	7.69	7.48
13)	7.22	8.48	0.63	7.20	7.21	6.58	7.85	8.45
14)	7.55	8.42	0.60	7.50	7.52	6.92	7.82	8.90

7.79

D7

e)	7.70	8.42	0.63	7.70	7.70	7.07	7.79	9.12
g)	7.92	8.43	0.64	7.90	7.91	7.27	7.69	9.39

7.74

5073	7.53	8.30	0.68	7.53	7.53	6.85	7.62	9.00	13.7 ^c
5076	7.54	8.10	0.69	7.60	7.57	6.88	7.41	9.28	14.1 ^c
5077	5.96	8.07	0.70	5.98	5.97	5.27	7.37	7.13	12.0 ^c
5079	7.28	8.10	0.78	7.28	7.28	6.50	7.32	8.90	13.6 ^c
5088	6.98	8.24	0.79	7.00	6.99	6.20	7.45	8.32	12.9 ^c
5111	6.96	8.10	0.80	6.94	6.95	6.15	7.30	8.43	13.0 ^c
5119	7.00	7.88	0.78	6.93	6.96	6.15	7.10	8.68	13.3 ^c
5146	6.63	7.73	0.80	6.63	6.63	5.83	6.93	8.42	13.0 ^c
5094	too faint.								c

13-16.5 16) 7.67 8.62 0.90 7.60 7.63 6.73 7.72 8.71

Voltage 5.12 - 6.15

202

February 7, 1930

AX 1053

Carte 13 -16.5

Voltage 6.1 -5.07

3	8.8	1.92	8.19	0.58	2.00	1.96	1.38	7.61	1.84
4	9.8	2.55	8.12	0.57	2.57	2.56	1.99	7.55	2.65
5	10.6	3.64	8.02	0.60	3.55	3.60	3.00	7.42	4.00
6	11.0	4.00	8.08	0.60	3.98	3.99	3.39	7.48	4.52
7	11.4	4.50	8.13	0.61	4.45	4.48	3.87	7.52	5.15
9	12.4	5.70	8.18	0.60	5.70	5.70	5.10	7.58	6.80
13	13.2	6.60	8.28	0.62	6.57	6.58	5.96	7.66	7.95
16	13.8	7.06	8.08	0.67	7.00	7.03	6.36	7.41	8.48
18	14.45	7.62	8.06	0.68	7.60	7.61	6.93	7.38	9.23

7.51

Carte 13 -2.5

10	12.0	5.45	8.15	0.73	5.45	5.45	4.72	7.42	6.29
13	12.8	6.50	8.29	0.72	6.50	6.50	5.78	7.57	7.69
14	13.3	7.03	8.28	0.72	7.05	7.04	6.32	7.56	8.42

7.52

D 7

e	13.85	7.26	8.08	0.67	7.34	7.30	6.63	7.41	8.91
6	14.3	7.55	8.20	0.70	7.50	7.52	6.82	7.50	9.17

7.46

4984	4.55	7.25	0.72	4.53	4.54	3.82	6.53	5.85	11.8 c
4329	8.00	8.77	0.72	8.00	8.00	7.28	8.05	9.05	14.1 c
4422	8.00	8.66	0.78	7.97	7.98	7.19	7.88	9.12	14.2 c
4643	too high up to be reached on Schult								
4756	6.90	8.33	0.80	6.88	6.89	6.09	7.53	8.10	13.2 c
4763	7.00	8.55	0.75	6.98	6.99	6.24	7.80	7.99	13.1 c
5038	6.87	8.05	0.78	6.90	6.88	6.10	7.27	8.40	13.5 c
5044	5.22	7.94	0.80	5.20	5.21	4.41	7.14	6.18	12.0 c
4487	5.54	8.75	0.78	5.65	5.60	4.82	7.97	6.50 ⁰⁵	11.9 c
4682	7.26	8.65	1.08	7.17	7.22	6.14	7.57	8.12	13.2 c
4699	2.80	8.40	0.80	2.72	2.76	1.96	7.60	2.58	9.6 c
4775	5.05	7.92	0.92	5.07	5.06	4.14	7.00	5.90	11.8 c
4958	4.26	7.98	0.80	4.18	4.22	3.42	7.18	4.76	11.1 c

V. 25 5.0

204

February 10, 1930.

AX 1043

X Virg

Voltage 6.19 - 5.15

8.9	2.35	8.25	0.87	2.40	2.38	7.38	1.51	2.08
9.8	3.52	8.05	0.90	3.63	3.58	7.15	2.68	3.69
10.4	4.28	8.24	0.97	4.33	4.30	7.27	3.33	4.60
12.6	6.64	8.26	0.96	6.70	6.67	7.30	5.71	7.87
(13.1)	12.9	7.23	8.28	1.08	7.22	7.22	7.20	6.14
13.4	7.60	8.30	1.05	7.60	7.60	7.25	6.55	9.03
						7.26		

104 K

2)	10.00	4.13	7.92	1.02	4.10	4.12	6.90	3.10	4.55
3)	10.5	4.71	7.78	1.04	4.80	4.76	6.74	3.72	5.46
6)	11.3	5.00	7.78	1.03	5.08	5.04	6.75	4.01	5.89
7)	11.7	5.62	7.70	1.01	5.60	5.61	6.69	4.60	6.75
8)	12.2	6.05	7.87	1.00	6.00	6.02	6.87	5.02	7.38
9)	12.4	6.10	7.80	1.06	6.15	6.12	6.74	5.06	7.43
15)	14.7	7.68	8.01	1.03	7.64	7.66	6.98	6.63	9.74
						6.81			

W

m (right)

N 4197	7.17	8.13	1.03	7.15	7.16	7.10	6.13	8.65	13.1✓	7	1	13.8
4215	6.88	8.15	1.07	6.78	6.83	7.08	5.76	8.12	12.7✓	0	5	12.7
4241	6.85	8.00	1.03	6.90	6.88	6.97	5.85	8.38	12.9✓	7	1	13.6
4255	7.10	7.93	1.05	7.06	7.08	6.88	6.03	8.80	13.2✓	4	-2	13.6
4260	6.50	8.60	1.10	6.40	6.45	7.50	5.35	7.14	12.1✓	7	1	12.8
4261	5.20	8.00	1.05	5.08	5.14	6.95	4.09	5.89	11.1✓	10	4	12.1
4264	7.10	7.96	1.00	7.13	7.12	6.96	6.12	8.81	13.2✓	9	3	14.1
4268	7.00	7.85	1.08	7.06	7.08	6.77	6.00	8.87	13.2✓	6	0	13.8
4270	6.75	8.08	1.08	6.74	6.74	7.00	5.66	8.09	12.7✓	2	-4	12.9
4273	6.03	8.00	1.13	6.05	6.04	6.87	4.91	7.15	12.1✓	4	-2	12.5
4281	6.00	8.10	1.20	6.00	6.00	6.90	4.80	6.95	11.9✓	5	-1	12.4
4296	7.42	8.05	1.25	7.40	7.41	6.80	6.16	9.04	13.4✓	6	0	14.0
considerably large 4303	3.45	8.10	1.20	3.40	3.42	6.90	2.22	3.23	9.4✓	18	12	11.2

4300	7.20	8.05	1.13	7.22	7.21	6.92	6.08	8.78	13.9✓	-7 -7	13.8
4324	6.25	8.03	1.08	6.20	6.22	6.95	5.14	7.39	12.2✓	5 1	12.7
4339	6.00	7.95	1.10	6.10	6.05	6.85	4.95	7.23	12.1✓	6 0	12.7
4376	7.32	8.00	1.10	7.28	7.30	6.90	6.20	8.99	13.3✓	9 3	14.2
4378	6.40	7.90	1.12	6.38	6.39	6.78	5.27	7.77	12.5✓	4 -2	12.9
4430	6.56	8.05	1.10	6.60	6.58	6.95	5.48	7.87	12.6✓	8 2	13.4
4532	5.87	8.07	1.05	5.87	5.87	7.02	4.82	6.87	11.9✓	2 -4	12.1

-1 +119
 .59 = 6
 53
 127

8.9	2.45	8.22	1.13	2.55	2.50	7.09	1.37	1.94
12.9	7.23	8.20	1.18	7.26	7.24	7.02	6.06	8.60

2

7

15

Voltage 5.0 - 6.08

2
 12 x 15 = 28

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February 14, 1930.

AX 1043

R Ving

Voltage 6.2 - 5.13

8.9	2.4	7.84	1.00	2.5	2.45	1.45	6.84	2.12
9.8	3.42	7.70	1.00	3.54	3.48	2.48	6.70	3.64
10.4	4.25	7.79	0.96	4.23	4.24	3.28	6.83	4.80
12.6	6.55	7.80	0.98	6.54	6.54	5.56	6.82	8.15
12.9	6.90	7.82	0.97	6.85	6.88	5.91	6.85	8.67
13.4	7.28	7.90	0.96	7.30	7.29	6.33	6.94	9.28

104 K

2)	10.0	3.98	7.77	1.03	3.96	3.97	2.94	6.74	4.50
3)	10.5	4.62	7.70	1.04	4.60	4.61	3.57	6.66	5.40
6)	11.3	5.10	7.73	1.10	5.07	5.08	3.98	6.63	6.03
7)	11.7	5.47	7.45	0.96	5.43	5.45	4.49	6.49	6.78
8)	12.2	5.93	7.68	1.03	5.90	5.92	4.89	6.65	7.40
9)	12.4	6.15	7.69	1.25	6.30	6.22	4.97	6.44	7.52
15)	14.7	7.45	7.75	1.10	7.40	7.42	6.32	6.65	9.57

4180	6.83	7.87	1.08	6.75	6.79	5.71	6.79	8.42	12.8✓	6	13.4
4191	6.91	7.77	1.08	6.92	6.92	5.84	6.69	8.72	13.0✓	9	13.9
4207	6.78	7.80	1.10	6.82	6.80	5.70	6.70	8.51	12.9✓	10	13.9
4224	6.53	7.80	1.08	6.50	6.52	5.44	6.72	8.10	12.6✓	5	13.1
4233	6.58	7.83	1.10	6.57	6.58	5.48	6.73	8.15	12.7✓	4	13.1
4235	6.45	7.64	1.13	6.47	6.46	5.33	6.51	8.20	12.7✓	2	12.9
4246	6.95	7.90	1.08	6.90	6.92	5.84	6.92	8.43	12.9✓	11	14.0
4276	7.07	7.80	1.20	7.10	7.08	5.88	6.60	8.90	13.2✓	9	14.1
4307	6.85	7.95	1.19	6.86	6.86	5.67	6.76	8.39	12.8✓	1	12.9
4309	7.20	7.80	1.20	7.17	7.18	5.98	6.60	9.05	13.3✓	11	14.4
4316	6.98	7.83	1.13	6.99	6.98	5.85	6.70	8.73	13.0✓	10	14.0
4318	7.42	7.84	1.16	7.48	7.45	6.29	6.68	9.40	13.8✓	4	14.2
4341	6.84	7.83	1.20	6.83	6.84	5.64	6.83	8.25	12.7✓	5	13.2
4342	6.82	7.86	1.14	6.76	6.79	5.65	6.72	8.40	12.8✓	1	12.9

EXH A

4343	7.40	7.82	1.20	7.20	7.30	6.10	6.62	9.20	13.5v	3	13.8
st close 4353	to	difficult									
4365	4.28	7.56	1.10	4.28	4.28	3.18	6.46	4.93	10.5v	8	11.3
4370	7.10	7.80	1.10	6.95	7.02	5.92	6.70	6.83	13.1v	8	13.9
4416	6.76	7.82	1.18	6.78	6.77	5.59	6.64	8.42	12.9v	3	13.2
4417	5.86	7.82	1.18	5.81	5.84	4.66	6.64	7.03	11.9v	6	12.5
4424	6.15	7.90	1.15	6.20	6.18	5.03	6.75	7.46	12.2v	4	12.6
4434	6.99	7.70	1.28	7.00	6.70	5.72	6.42	8.90	13.2v	1	13.3
4442	5.22	7.93	1.20	5.10	5.16	3.96	6.73	5.90	11.1v	9	12.0
4445	7.30	7.80	1.20	7.32	7.31	6.11	6.60	9.28	13.6v	4	14.0
4451	7.05	7.85	1.18	6.90	6.98	5.80	6.67	8.70	13.0v	6	13.6
4464										130	
4469										.54	
4470											
4472											
4483											
4488											
4519											
4522											
4526											
4535											

Voltage 5.09 - 6.10

$$\begin{array}{r} 326 \\ 322 \\ \hline 648 \end{array}$$

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February 17, 1930.

AX1043

R Vir

Voltage 6.2 - 5.1

8.9	2.10	7.66	0.72	2.08	2.09	1.37	6.94	1.94
9.8	3.08	7.75	0.70	3.18	3.13	2.43	7.05	3.44
10.4	3.97	7.67	0.70	3.86	3.92	3.22	6.97	4.55
12.6	6.36	7.90	0.75	6.45	6.40	5.65	7.15	7.99
12.9	6.85	8.10	0.77	6.80	6.82	6.05	7.33	8.55
13.4	7.30	7.85	0.78	7.20	7.25	6.47	7.07	9.15

104 K

2) 10.0	3.50	7.78	0.86	3.55	3.52	2.66	6.92	3.87
3) 10.5	4.30	7.63	0.82	4.25	4.28	3.36	6.81	4.90
6) 11.3	4.65	7.56	0.80	4.70	4.68	3.88	6.76	5.65
7) 11.7	5.22	7.52	0.85	5.22	5.22	4.37	6.67	6.36
8) 12.2	5.72	7.80	0.87	5.66	5.69	4.82	6.93	7.01
9) 12.4	5.95	7.77	0.82	5.90	5.92	5.10	6.95	7.43
15) 14.7	7.48	7.84	0.82	7.40	7.44	6.62	7.02	9.63

m

4464	6.77	7.90	0.88	7.81	6.80	5.92	7.02	8.43	13.0✓	9	3	13.9
4469	5.86	8.00	0.88	5.88	5.87	4.99	7.12	7.01	12.1✓	5	-1	12.6
4470	6.62	7.70	0.89	6.62	6.62	5.73	6.81	8.41	13.0✓	2	-4	13.2
too large 4472	2.54	7.70	0.85	2.52	2.53	1.68	6.85	2.45	9.1✓	11	5	10.2
4483	7.00	7.97	0.87	6.90	6.95	6.08	7.10	8.56	13.1✓	1	3	13.0
4488 ^{fast} close	6.74	8.03	0.92	6.72	6.73	5.81	7.11	8.18	12.8✓	10	4	13.8
4519	6.27	7.85	0.92	6.30	6.28	5.36	6.93	7.75	12.5✓	3	-3	12.8
4522	6.87	7.88	0.92	6.90	6.88	5.96	6.96	8.55	13.0✓	0	-6	13.0
4526 ^{too} large	3.82	7.90	0.92	3.92	3.87	2.95	6.98	4.24	10.3✓	6	0	10.9
4535 ^{too} large	4.66	7.98	0.94	4.72	4.69	3.75	7.04	5.34	11.0✓	8	2	11.8
4643	4.78	7.91	0.90	4.75	4.76	3.86	7.01	5.51	11.1 c			
4599	7.10	8.07	0.98	7.10	7.10	6.22	7.09	8.78	13.2 c			
4538	7.48	7.91	0.92	7.38	7.43	6.51	6.99	9.31	13.7 c			
4533	7.26	7.80	0.78	7.30	7.28	6.50	7.02	9.27	13.7 c			

Voltage 5.05 - 6.12

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AX 1043

Voltage 6.15 - 5.10

R Ving

8.9	3.00	8.14	1.17	3.00	3.00	1.83	6.97	2.62
9.8	4.05	8.13	1.18	4.00	4.02	2.84	6.95	4.06
10.4	4.87	8.22	1.15	4.80	4.83	3.68	7.07	5.27
12.6	6.86	8.15	1.20	6.83	6.84	5.64	6.95	8.08
12.9	7.25	8.17	1.28	7.20	7.22	5.94	6.89	8.50
13.4	7.68	8.30	1.30	7.77	7.72	6.42	7.00	9.19

6.97

104 K

2) 10.0	4.45	7.90	1.22	4.48	4.46	3.24	6.68	4.87
3) 10.5	5.06	7.89	1.23	4.97	5.02	3.79	6.66	5.70
6) 11.3	5.33	7.57	1.22	5.32	5.32	4.10	6.35	6.17
7) 11.7	5.85	7.84	1.18	5.80	5.82	4.64	6.66	6.98
8) 12.2	6.27	7.92	1.20	6.25	6.26	5.06	6.72	7.60
9) 12.4	6.49	7.94	1.23	6.48	6.48	5.25	6.71	7.90
15) 14.7	7.65	8.02	1.23	7.66	7.66	6.43	6.79	9.69

6.65

4067	7.10	7.90	1.23	7.05	7.08	5.85	6.67	8.78	13.1 ✓	13.7
4078	7.40	7.87	1.20	7.42	7.41	6.21	6.67	9.32	13.7 ✓	14.1
4124	6.38	7.84	1.20	6.38	6.38	5.18	6.64	7.80	12.4 ✓	12.5
4168	6.65	8.10	1.22	6.64	6.64	5.42	6.88	7.87	12.4 ✓	12.8
4178	too large									
4189	6.83	8.16	1.26	6.85	6.84	5.58	6.90	8.08	12.6 ✓	12.9
4193	7.15	7.94	1.12	7.20	7.18	6.06	6.82	8.89	13.2 ✓	13.4
4294	7.12	8.06	1.23	7.10	7.11	5.88	6.83	8.61	13.0 ✓	12.8
4299	7.00	8.05	1.25	7.05	7.02	5.77	6.80	8.50	12.9 ✓	13.0
too large 4313										
4330	7.16	8.13	1.25	7.12	7.14	5.89	6.88	8.55	12.9 ✓	14.0
4352	7.30	8.05	1.28	7.28	7.29	6.01	6.77	8.89	13.2 ✓	14.0
4371	6.06	7.95	1.30	6.08	6.07	4.77	6.65	7.17	11.9 ✓	12.1
4380	6.82	8.04	1.32	6.73	6.78	5.46	6.72	8.12	12.6 ✓	12.9

Voltage 5.10 - 6.15

