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XII

Miscellaneous Observations.

W.J.

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February 15, 1905

Measures to determine brightness of Comparison Stars for g3 and g4 Orionis - Maraldi Orionis.

This sequence is dependent upon that selected for Wolf's variable 11, 1904. The stars for the latter are designated by simple letters those for the variables g3 and g4 are accented and begin with h'

Plate A 220 Scale 1 (see page 7)

a	2.5	2.8				2M	-2°	1318	5h 30m	17.8	-2° 13'.5	9.5
b	2.9	3.2				3D	-1°	130	5	30	44.6	-1° 57'.3	9.7
c	3.0	3.3					-2°	1310	5	29	8.3	-2° 2'.6	10
d	3.2	3.5											
e	3.6	4.0	-0.4										
f	3.9	4.2	-0.3										
g	4.3	4.7	-0.4										
h	4.6	4.9	-0.3	h'	4.6	4.9	-0.3						
k	5.2	5.4	-0.2	k'	4.9	5.1	-0.2						
l	5.8	6.1	-0.3	l'	5.5	5.8	-0.3						
m	6.1	6.4	-0.3	m'	5.8	6.3	-0.5						
n	6.6	6.8	-0.2	n'	6.2	6.7	-0.5						
o	6.8	7.3	-0.5	o'	6.7	7.2	-0.5						
p	7.1	7.7	-0.6	p'	7.0	7.7	-0.7						
q		8.1		q'		8.0							
r		8.3		r'		8.8							
s		9.1		s'		9.7							
t		9.8		t'		n.s.							

Images poor, especially of the faint stars. Those of bright stars are fair

Sequence marked on A 2199

With magnitude image on faint scale surrounded by defects

Comparison Stars for g3 and g4 Orionis Cont.

Plate A 2199 Scale 1 (see page 7)

a	1.7	2.0				
b	1.9	2.2				
c	2.1	2.4				
d	2.2	2.5				
e	2.7	3.0				
f	2.9	3.2				
g	3.0	3.3				
h	3.2	3.5		h'	2.8	3.1
k	3.6	3.9		k'	3.2	3.5
l	4.0	4.5	-0.5	l'	4.0	4.3
m	4.8	4.9	-0.1	m'	4.7	5.0
n	5.8	5.7	+0.1	n'	4.8	5.1
o	6.6	5.8	+0.2	o'	5.7	6.0
p	6.8	7.2	-0.4	p'	6.4	6.7
q		Image Misplaced		q'		
r				r'		
s				s'		
t				t'		

The faint images in this plate are much too poor for comparison with the scale

The main sequence is near Wolf's 11, 1904. The second sequence (accented) beginning with l' is near g3 and g4 Orionis

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Comparison Stars for 93 and 94 Orionis Cont.

Plate I 24349

a	5.7	6.0		
b	6.0	6.4		
c	6.2	6.9		
d	6.8	7.3		
e		7.7		
f		8.1		
g		8.6		
h		7.1	h'	8.6
k		9.1	k'	8.7
l		9.3	l'	5.9
m		9.7	m'	9.3
n		9.9	n'	9.6
o		10.0	o'	10.0
p		03p	p'	10.3
q		p2q	q'	10.5
r			r'	10.8?
s			s'	n.s.
t			t'	n.s.

New Scale cut from Plate C 15350

Scale P (named March 26, 1909) Scale 1

The bright star on this scale is Merope

Scale 1 (Wolf No. 146 $\Delta\alpha$ $-1^m 8^s.8$ $\Delta\delta$, $+9'.6$ magn. 5.5)

The fainter star is

(Wolf No 120 $\Delta\alpha$ $-1^m 36^s.4$ $\Delta\delta$, $+4'.2$ magn. 8.25

This scale injured in mounting

Scale 2 Another scale was cut from the same plate. The principal star image on it is Atlas

(Wolf No. 349 $\Delta\alpha$ $+1^m 40^s.5$ $\Delta\delta$ $+2'.8$ magn. 5.0 Scale 2

No. 338 $\Delta\alpha$ $+1^m 28^s.2$ $\Delta\delta$ $-14'.6$ magn. 7.5

353	+1	41.7	-2.2	5.75 (Pleione)
358	+1	43.6	+12.8	8.5
376	+1	56.2	-8.8	8.5

The two brightest images of No. 376 are concealed by the frame of the scale

Wolf	No. 146	DM +23° 522	3h 37m 43s.4	+23° 29' .4	4.5
	No. 120	+23 517	37 14.9	34.9	8.2
Atlas	No. 349	+23 557	40 33.8	36.1	4.0
	No. 358	+23 559	40 36.5	26.6	8.4

Bright stars compared with images of DM +23° 557 (Atlas) and faint stars compared with +23° 559. Images of +23° 557 are designated 1–7, and those of +23° 559 are designated 4–10. To reduce the measures on the bright scale to those on the faint scale, a correction of −0.3 is applied.

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February 16, 1905

Measures to determine Brightness of Comparison Stars for 93 and 94 Orionis

Plate A 220 remeasured with scale 1 (see page 7)

a	2.3	2.4				
b	2.8	2.9				
c	3.0	3.1				
d	3.2	3.3				
e	3.7	3.8				
f	4.0	4.1				
g	4.7	4.7	+0.0			
h	5.1	4.9	+0.2	h'	4.9	4.8 +0.1
k	5.5	5.4	+0.1	k'	5.1	5.0 +0.1
l	6.0	6.1	-0.1	l'	5.6	5.8 -0.2
m	6.3	6.4	-0.1	m'	5.9	6.2 -0.3
n	6.6	6.7	-0.1	n'	6.4	6.6 -0.2
o	6.9	7.3	-0.4	o'	6.7	7.0 -0.3
p		7.8		p'		7.7
q		8.2		q'		8.0
r		8.9		r'		8.7
s		9.3		s'		9.3
t		9.9		t'		9.3

Comparison Stars for 93 and 94 Orionis cont.

Plate A 220 remeasured with Scale 2 (see p. 7)

a	3.0	2.8				
b	3.1	2.9				
c	3.5	3.3				
d	3.9	3.7				
e	4.1	3.9				
f	4.7	4.4	+0.3			
g	5.3	5.0	+0.3			
h	5.5	5.1	+0.4	h'	5.6	5.2 +0.4
k	6.0	5.9	+0.1	k'	5.8	5.3 +0.5
l	6.4	6.2	+0.2	l'	6.2	6.0 +0.2
m	6.6	6.5	+0.1	m'	6.4	6.3 +0.1
n	7.0	6.9	+0.1	n'	6.8	6.7 +0.1
o		7.2		o'		7.1
p		7.6		p'		7.6
q		8.0		q'		7.8
r		8.7		r'		8.6
s		9.0		s'		9.4
t		9.7		t'		9.8

The correction -0.2 has been applied provisionally to the magnitudes on the brighter series of scale 2 on this and the four pages following

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February 16, 1905

Measures of Comparison Stars for 91 Ursæ

Plate Ce 2119 Scale 2

a	-			DM −6°1269	5h30m58.2	−6°29'.5	8.5	
b	-			−6°1268	5 30 56.7	17.9	9.5	
c	~~1.6~~	1.4		−6 1270	5 31 4.3	31.2	9.3	
d	~~1.620~~	1.8		−6 1273	31 27.1	30.6	9.3	
e	2.2	2.0		−6 1263	30 38.1 ~~37.6~~	39.6	9.8	
f	2.6	2.4		−6 1266	30 46.0	31.8	9.8	
g	3.0	2.8						
h	3.6	3.4						
k	4.0	3.8						
l	4.2	4.1	+0.1					
m	5.1	4.9	+0.2					
n	5.6	5.7	-0.1					
o	6.4	6.1	+0.3	~~7~~ 60	6.2	+0.2		
p	6.8	6.9	+0.2	~~7~~ 6.6	6.7	+0.1		
q		7.1		~~7~~ 7.1	7.6			
r		7.9		~~8~~	8.0			
s		8.9			9.1			
t		~~7.6~~ 8.1			~~9.6~~ 8.2			
u		8.8			9.0			
v		9.0			9.2			
w		9.7			9.6			
x		m.s.						
y		m.s.						
z		m.s.						

Sequence marked on fraser print. Stars r, s, t are of nearly the same magnitude, but s is evidently fainter in this plate and is perhaps variable; t is in a region of variables. On this account s and t selected and measured in the sequence, to be used if s and t should both prove to be variable.

February 16, 1905

Comparison Stars for 91 Ursæ

Plate Ce 3429 Scale 2

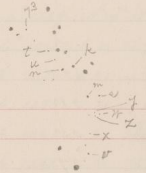
a		
b	1.7	1.5
c	2.0	1.8
d	2.3	2.1
e	2.7	2.5
f	2.9	2.7
g	3.1	2.9
h	3.5	3.3
k	3.9	3.7
l	4.0	3.8
m	4.6	4.7 -0.1
n	5.4	5.1 +0.3
o	5.8	5.9 -0.1
p	6.7	6.5 +0.2
q		7.3
r		7.9
s		8.0
t		~~9.5~~ 7.9
u		8.4
v		9.0
w		9.6
x		-
y		-
z		-

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February 16, 1905

Comparison Stars for 91 Orionis cont.

Plate A 5731



These stars are marked on prints as far as W.

a			
b			
c			
d			
e	1.7	1.5	
f	2.0	1.8	
g	2.7	2.5	
h	2.9	2.7	
k	3.0	2.8	
l	3.0	2.8	
m	3.5	3.3	
n	3.8	3.6	
o	4.0	3.8	
p	4.6	4.2	+0.4
q	5.1	4.8	+0.3
r	5.6[2]	5.3[2]	+0.3
s	5.7	5.6	+0.1
t	6.0	5.9	+0.1
u	6.7	6.4	+0.3
v	6.7	6.5	+0.2
w		7.1	
x		7.6	
y		7.1	
z		8.6	

Comparison Stars for 91 Orionis cont.

Plate A 1553

a	2.5[2]	2.3[3]	
b	2.8	2.6	
c	3.0	2.8	
d	3.6	3.4	
e	3.8	3.6	
f	4.0	3.8	
g	4.3	4.2	+0.1
h	5.0	4.7	+0.3
k	5.5	5.1	+0.4
l	5.7	5.4	+0.3
m	6.3	6.1	+0.2
n	7.0	6.6	+0.4
o		7.0	
p		7.6	
q		8.2	
r		8.7	
s		8.6	
t		8.8	
u		9.1	
v		9.8	
w		m.s	
x		m.s	
y		m.s	
z		m.s	

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February 17, 1905

Estimates of the brightness of Variables 93 and 94 Orionis

	✓ Plate A 2199, Jan. 22, 1897, 1, 22			3947
No. 93	14.1			
94	14.4			
	✓ Plate A 5731	'01	12 4	5723
93	13.9²	Edge of Plate		
94	15.0²			
	A 1271	'95	1 27	3224
93	Too near edge			
94				
	✓ A 153	'94	1 8	2837
93	14.6²			
94	12.9			
	✓ A 2119	'96	10, 6	3839
93	14.7	Near Edge of Plate		
94	13.0			
	✓ A 3429	'98	12, 17	4641
93	13.0	Near Edge of Plate		
94	15.4			
	✓ A 61	'93	11, 30	2778
93	14.6	Near edge of Plate. Images ray from		
94	14.0			

93 and 94 Orionis continued

	✓ Plate A 192	'94	1, 25	2854
93	14.7			
94	13.1			
	✓ Plate A 2254	'96	11, 9	3873
93	14.7			
94	15.1			
	✓ Plate A 5730	'01	12.3	5722
93	12.9	Near edge. Images ray from		
94	14.5²			
	✓ Plate A 123	'93	12, 27	2825
93	14.8³	Images ray faint and from		
94	13.9			
	✓ Plate A 144	'94	1, 1	2830
93	14.1			
94	13.7			
	Plate A 2156	'96	11, 10	3874
93	Too near edge			
94				
	A 205 Exp. 27m	'94	1, 31	2860
93	15 m.s.	Images whitely faint		
94	13.3²			

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93 and 94 Drums continued

A 216 Exp. 26m '94 2,2 2862
93 14.2?
94 12.9?
Edge of Plate Images poor

A 241 Exp 11m '94 2,16 2876
93 13.0
94 12.7
Images very faint and poor

Plates A 3433, 3432, 3431, 3430, 3423, 3422, 2865, 2864, 2863, 1270, 240, 187, 176, 142, 29, 44, 188 were looked at, but do not show the familiar class of regions

Plate I 24 349 Dec. 29, 1899 5018
93 13.7
94 12.8

I 24306 '99 12, 26 5015
93 13.3
94 13.5

I 24377 '00 1, 3 5023
93 14.1
94 13.7

B 2335 '88 2 13 0681
93 13.9?
94 13.9?
Images extremely poor

93 and 94 Drums Cont

B 2414 '88, 3, 4 0701
93 14.5?
94 13.1?

I 24355 '00, 1, 4 5024
93 14.7?
94 13.1?

B 2423 '88, 3, 6 0703
93 14.6?
94 13.9?

I 576 '90, 1, 24 1892
93 13.9?
94 12.5?

B 1043 '87, 1, 25 0297
93 ns < 14.4
94 13.5?

B 8895 Dec. 22, 1892 2455
93 14.0
94 13.0

I 19334 Oct. 22, 1897.
Too poor

B 8891 '92, 12, 19 2452
93 14.7?
94 13.9?

B 32478 Aug. 18, 1903 6345
93 13.8
94 15.7?

I 31447 Feb. 9, 1904 6520
93 14.0?
94 14.4?

I 17446 Feb. 27, 1897 2983
93 14.6?
94 14.9?

I 10250 Sept. 7, 1893 2715
93 14.8?
94 13.5

I 31437 Feb. 13, 1904 6527
Too poor

I 135 Too poor

B 17478 '93, 12, 5
93 13.5?
94 13.5?

I 31571 March 4, 1904 6544
93 13.7?
94 13.9?

B 193 '85, 12, 11 09887
13.6?
13.8?

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February 17, 1905

93 and 94 Orionis Cont.

Plate B 31282 Jan. 5, 1903

93 12.6
94 13.7

B 2312 '88, 2, 6

93 12.8
94 12.8

B 2354 '88, 2, 17

93 <14.0 Images poor
94 13.8?

Feb. 21, 1905 Plate A 220

93 14.3
94 12.6

The following plates are lost: I 647, B 1771, I 73, I 58, I 71, B 184, I 66, B 2081, B 830, I 25243, B 249, I 209

February 18, 1905

Plate B 8391 remeasured

93 14.7? Images injured by turning out of focus about
94 13.1? 5 Orionis

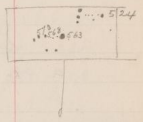
Plate B 8395 remeasured

93 13.0?
94 13.1?

New scale cut from Plate B 31281, March 3, 1905, Exp 22m

Scale M (named March 26, 1909)

DM +22° 543	3 32 37m 46.8	+22° 58.8	6.9
+22° 568	3 40 38.0	+22 57.4	9.0
+22° 570	3 40 52.3	+22 52.4	8.7
+23° 524	3 37 57.0	+23 9.7	8.4



The images to be employed will be +22° 563, and probably +23° 524, but trial is to be made of +22° 568 and +22° 570

Scales decided upon are images of +22° 563 and +23° 524. The brightest image of the former is called 1.0 magnitude, that of the latter, +.0 mags, the faintest images being 7.0 and 10.0 magnitude respectively.

In Bork XII pp 4-19, a sequence of comparison stars has been measured with this scale on eight Bache plates and four AM plates. The mean of the differences of magnitudes measured on the second scale from those measured on the first, is +0.2 magnitude, which is the correction to be applied to measures made on the first scale, to make them conform to those on the second.

April 11, 1905.

Scale A numbered 1 to 7 Correction +0.2
B " 4 to 10 " 0.0

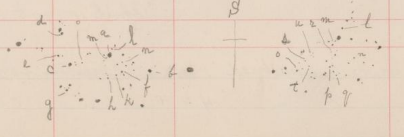


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May 12, 1905

Mean of Comp Stars for Variable in Cygnus, near NGC 6960 and 6992

	Plate A 6911		Plate A 6914	
a	~~3.8~~ 2.7	2.4	2.4	2.1
b	3.0	2.7	2.8	2.5
c	3.4	3.1	3.0	2.7
d	3.8	3.5	3.6	2.9
e	4.1	3.8	3.6	3.3
f	4.8	4.5	4.1	3.8
g	5.0	4.5 4.6	4.8	4.4
h	5.7	5.4	5.1	4.8
k	5.9	5.7	5.4	5.0
l	6.4	6.2	6.2	5.8
m		6.6		6.5
n		7.1		6.7
o		7.3		6.9
p		7.5		7.3
q		7.9		7.7
r		8.3		8.0
s		8.6		8.6
t		9.1		9.3
u		10.0		n.s.



May 12, 1905

Comp. Stars for Variable in Cygnus cont.

	Plate A 6837		Plate A 6915	
a	2.4	2.1	2.4	2.1
b	2.9	2.6	2.9	2.6
c	3.2	2.9	3.1	2.8
d	3.7	3.4	3.4	3.1
e	4.1	4.3 4.0	3.7	3.4
f	5.0	4.9 4.8	4.0	3.7
g	5.5	5.6 5.4	4.7	4.7 4.6
h	5.8	4.5 5.8 5.6	5.2	5.3 5.1
k	6.0	5.9 5.8	5.4	5.6 5.4
l	6.6	6.6 6.4	6.0	6.2 6.0
m		6.7	6.7	6.7 6.6
n		7.1		7.0
o		7.4		7.1
p		7.9		7.5
q		8.3		8.0
r		8.7		8.1
s		8.9		8.4
t		9.6		9.2
u		n.s. near edge difficult		n.s.

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May 16, 1905

Variable Stars in Cygnus near NGC 6960 and 6992

	Bo	H
No. 1	6915 [14.2?] 6914 [14.1] 2837	6911 [14.2?]
× No. 2	6915 6914 [13.8]	6911 [14.2?]
	Difficult. Probably variable, but not to be announced	
No. 3	6911 [13.8]	6914 [14.9] 6915 2837
No. 4	6914 [12.6] 6915 2837	6911 [14.1]
No. 5	6911 [14.2]	6915 [14.8] 2837 6914 [15.0]
No. 6	6911 6915 6914 [Bo 6911, 14.2?]	2837 [14.9]
	Difficult to estimate magn. on account of nearness to edge of plate	
No. 7	6911 [10.5] 6914 6915	2837 [12.5]
	B 32047 [10.7] B 32052	
	Long period?	

Variable Stars in Cygnus near NGC 6960 and 6992 cont

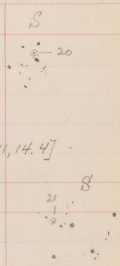
	Bo	H
No. 8	2837 (12.) 2832	6911 [< 15.5] 6915
	Period apparently long	
9	~~Known~~ See page 29	
AP Cygni 10	A 6911 [11.5] 6915 6914	A 2837 [13.7], 2832
	Period apparently long	
11	~~Known~~ U Cygni	
12	A 2837 [13.4] 2832	6911 [15.3] 6915 6914
	Prob. 2pp. long	
13	~~Known~~ See page 29	
14	~~Known~~ See page 29	
15	A 2837 [12.5] 2832	A 6911 [13.7] 6915 6914
16	A 6911 [13.6] 6915 6914	A 2237 [14.3] 2232
	Period apparently long. Variation small, but certainly real	
× 17	A 2837 [15.2]	A 6914, 6915, 6911
	Possibly a defect on A 2837. There is a faint star in this position, and it is uncertain whether it or really bright on A 2837. A 2832 is too faint for a result.	
18	A 2837 A 2832 [14.1]	A 6911 [< 16?] 6914
	Period long?	
× 19	A 6911, 6914, 2832	A 6915
	Near edge of $\frac{A\ 2837}{A\ 2832}$ variation, if real, about 0.^m7 seems to be indicated, but the star is so faint on A 6915. Do not announce	

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November 15, 1905

Variables in Cygnus continued

No.	Bc	H
× 20	A6915 [14.1] 6914	A6915 [14.7]
	Probably variable. Too little material for confirmation.	
21	A6915) A6932 [13.0]	6911, 6914 A6937 (or A6911, 14.4]
	Discerned in comparing A6911 and A6915, on which the difference is slight. Near edge on A 6932, but clearly seen.	



November 16, 1925

The Nebula of Orion. New Variables near σ Orionis

No.	Bc	H
108	A 2199 [15.6] 192 5730	A 220 [≤ 16.4] (153) 3429
109	2199 [14.1] (B24326) B17446	220 [≤ 16.4] 153, 192 3429 5730
110	220 [15.0] 153	2199 [16.3] 192 3429 5730
111	220 [14.4] 153, 192 3429, 5730	2199 [16.0] 127 B17446
112	153 [15.0] 192 [14.5]	220 [15.5] 3429
113	2199 [14.5] 144	220 [15.4] 192, 3429, 153 [16.0]

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Friday November 17 1905.

Nova Vanishes in Virg. (Infinites plates)

No.	Pz	H
1	3554 [14] 3556	3657 [15] 3667 3655 3654
2	3669 [13.] (3670)	3657 [13.7] 3554 3667 3655 [14.] 3654 3556
3	No Virginis	
4	3669 [18.] 3670	3657 [14.5] 3554 3667 2666 3654 3556



Measurements to determine Corrections to Photographic Magnitudes as the Edge of the Plate is approached.

Plate A 3307. M. Mag Cloud $0^h\ m$ -7 Exp. 60 m



x	y				x	y			
-8	+21	d'	~~+10~~	4.3	-124	-10	d^4	~~4.9~~	4.2
12	+21	e'	~~5.7~~	5.9	115	-15	e^4	~~6.1~~	5.9
16	+23	f'		7.2	116	-19	f^4		7.8
8	+25	g'		7.9	120	-20	g^4		9.1
9	+25	h'		9.7	119	-17	h^4		9.8
-41	+12	d^2	4.6	4.4	-154	-11	d^5	~~5.2~~	4.9
41	9	e^2	5.2	5.1	156	-14	e^5		7.0
46	16	f^2	6.7	6.6	158	-14	f^5	~~8.2~~	8.2
44	15	g^2		~~7.1~~ 7.2	158	-17	g^5		9.2
47	15	h^2		9.4	158	-13	h^5		10.1
77	+6	d^3	4.8	4.4	-18	721	k'		8.2
73	-3	e^3	~~5.4~~	5.0	29	+13	k^2		8.0
75	-2	f^3		7.1	~~41~~ 56	+8	k^3		8.3
71	-6	g^3		8.1	67	+4	k^4		8.7
73	-1	h^3		9.7	76	-9	k^5		8.7
					89	-9	k^6		8.8
					101	-9	k^7		8.8
					127	-14	k^8		8.8
					109	-18	k^9		8.9
					146	-16	k^{10}		9.1

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Friday, November 17, 1905

Measures to determine Corrections & Photographic Magnitudes ordered

x	y		Plate A 6950. 0h 50m – 73° .1 Exp 80m		x	y			
+129	+39	d'	5.0?	4.5?	+16	+12	d^4	5.7	5.0
125	+40	e'	5.9?	5.6?	+23	+15	e^4	6.3	6.0
128	+43	f'	5	7.0?	+22	+12	f^4		7.1
128	+44	g'		7.6	+20	+9	g^4		7.8
128	+45	h'		9.1	+20	+13	h^4		8.9
+95	+33	d^2	5.2	4.8	-16	+24	d^5	5.4	5.0
96	31	e^2	5.9	5.6	-20	+22	e^5	6.3	6.0
90	33	f^2	66	6.3	-20	+22	f^5		6.9
91	37	g^2		7.2	-20	+22	g^5		7.5
89	37	h^2		8.5	-20	+22	h^5		9.0
+63	32	d^3	5.3	4.9	+120	+42	k'		7.8
+67	22	e^3	5.9	5.5	108	+36	k^2		7.7
+65	24	f^3		6.7	80	32	k^3		7.7
+69	19	g^3		7.3	68	28	k^4		7.9
65	25	h^3		8.1	57	18	k^5		7.9
					46	19	k^6		7.8
					31	10	k^7		7.8
					+6	13	k^8		7.7
					-6	16	k^9		7.7
					-7	20	k^{10}		7.9

The series k'–k^{10} extends from the center of the plate towards the edge, and the stars are supposed to be not far from the same magnitude.

$d^4 = k'$ $e^4 = e'$ $f^4 = \pi'$ $g^4 = g'$ $h^4 = d'$ in sequence for Variables in the Small Magellanic Cloud.

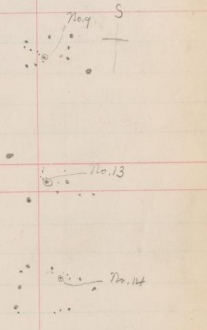
Sequence d^3–k^3 is about half way between center & edge of plate

Friday, Nov. 24, 1905

Variable Stars in Cygnus Continued from Page 24

2 20

Var.	Br	Ft
9	A 6911 [12.9]	A 6937 [< 16.0] 2832
~~13~~	~~60 A 2832 [13.8]~~	A 6911 [
13	A 6911 [13.3] 6913 6914 [13.3]	A 2832 [15.2] A 2837
14	A 2832 [12.5] A 2837	A 6911 [15.5] 6915



A 15th magnitude star is about 0'.1 south preceding variable 9

2 45

On the addition of these stars makes 16 instead of 15 variables in the region, one new variable for this region is entered in list of variables.

Also as one variable in Orion, beside the 5 entered in the above table, has been confirmed, it also has been entered in the list of variables for this date.

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Monday, January 15, 1906

The Cal-Lick. Examination of Plates for Variables

Plate D 1021 = A 3093 June 16, 1898 Exp. 24m 12h50m -62°.5
Superposed with A 7244 March 30, 1905 180 12 52 -62.5

Four variables

Three comp. vars.

The position, while it appears to be good, is full of star-like defects which are perhaps due to dust. Not suitable for continuing this work

The above comp stars marked on plate A 3093

Friday, March 2, 1906

Sixth Satellite of Jupiter

Examination of Plates I 32882 and I 32895, taken February 23 and Feb. 28, 1906,

According to ephemeris, position angles and distances from the planet on the two dates are 89° dist. 54", and 87° dist. 52" respectively. Plate I 32882, the better of the two plates was first examined with great care and two extremely faint spots which look like star images were marked. and I 32895

Plates used for comparison were, I 199, I 207, B 17782, The following plates were too poor: I 24893, B 30571, A 59, No other plates of long exposure cover the region. On all these plates the region is very near the edge and images of the faint stars are lost. The images marked on Plate I 32882 are fainter than any that can with certainty be identified, and it is, therefore impossible to know whether either of them is the satellite

On Plate I 32895, an object near the position was marked, which is certainly not seen on Plate I 32882, but it is extremely faint and it is as likely to be a defect as the real image.

The preceding of the two images marked on Plate I 32882 is in almost precisely the position given in the ephemeris, and is probably the satellite.

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Friday, March 9, 1906

The Sixth Satellite of Jupiter.

Remarks on the character of Images of the Satellite and Reference Star on Plates A 3654 to A 3670.

Plate A 3654

Image of Satellite and Reference star much elongated E. and W. Both images out of Focus. Ref. Star 2 grades brighter than Satellite and them star with Preceding 1.3

A 3670

Image of Reference Star round and good, though faint.

Image of Satellite poor. There appear to be a defect in the follow which gives it a slightly and irregularly elongated appearance. Magn. of Ref. Star probably the same as in A 3154

A 3667

Image of Reference Star round, fairly good, faint

Image of Satellite decidedly elongated

A 3658

Image of Reference Star elongated, with a faint defect preceding. This defect might easily be taken for a part of the image

Image of Satellite extremely poor. A defect south of it, within about 3", might easily be mistaken for the satellite, or for a part of the image.

A 3655.

Image of Reference Star. Somewhat elongated. Fairly good.

Image of Satellite looks double. Uncertain whether the faint object preceding (following) is a defect, or detached part of Image. Plate poor.

The Sixth Satellite of Jupiter.

Character of Images continued

Plate A 3657

Image of Reference Star elongated, clear. A slight defect following makes the image appear slightly longer.

Image of Satellite. Slightly elongated, very good.

Plate A 3666

Image of Reference Star elongated. Pretty good. A defect due to the image on the south preceding side is not likely to have affected measurements.

Image of Satellite nearly round, good.

Plate A 3669

Image of Reference Star nearly round. Good

Image of Satellite slightly elongated. Good

Plate A 191

Image of Reference Star elongated, good.

Image of Satellite elongated; poor and faint.

P. On this plate a faint image precedes the main image of the brighter stars. This image is so nearly a part of the principal images in the case of Nos. 880 and 882, that measurement are free to some uncertainty, although an effort was made to disregard them.

Plate A 215

Image of Reference Star slightly elongated, good.

Image of Satellite extremely faint and difficult.

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Saturday, March 31, 1906

AGC. 6886 - Star having large Proper Motion.
See Circular 105

Examination of pair of images 3/4 inch from ℄ left of right hand side of plate and 3/16 inch south of ℄. computed of proper motion by Professor Todd. See letter of March 29, 1906.

There is one of equal pairs computed by Mrs. Fleming and H.S.L., looked up in 1905.

Both the images are from plate B 5720. The painter one is too faint for the image from B 34996 to be seen on the plate, though it can be seen on the original negative. The image from of the brighter stars from plate B 34996 can just be distinguished in the print in its proper place. On the original negative it is clearly seen and shows no evidence of motion.

Measurement of Magnitude of Standard Sequence in the Pleiades, with wire scale cut from Plate C 15350
(see page 7)

Plate A 2123 Exp 60

a
b
f
g
h
j
k
l
m
n
o
p
q

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Friday, April 6, 1906

22 10

Measurements to determine Magnitudes of Standard Sequence in the Pleiades with Scale used from Plate RI 3821 (see Page 19).

Plate I 2811 Exp. 14m

			Prism.	Comp.
a	-		1.8	1.8
a'	-		1.8	2.0
b	-		2.0	2.2
b'	-		2.6	2.8
c	-		3.6	3.8
d	-		3.9	4.1
e	1.0	1.2	5.9	6.0 6.05
f	1.8	2.0	6.4	6.7 6.65
g	2.2	2.4	6.9	7.0 7.05
h	2.7	2.9	7.0	7.6
i	3.6	3.8		8.7
j	4.0	4.1 4.075	8.4	8.90
j'				n.s.
j	5.1	5.5 5.40		
k	5.9	6.0 6.05		
l	6.5	6.7		
m		8.2		
n		9.7		
o		n.s.		

Meas. repeated page 42

22 20

Friday, April 6, 1906

22 25

Meas. continued

Plate I 2490 Exp. 10m

			Prism.	Comp.
a	-		1.7	1.9
a'	-		2.6	2.8
b	-		3.7	3.9
b'	-		4.4	4.8 4.70
c	-		5.8	5.9 5.95
d	-		6.4	6.3 6.35
e	1.8	2.0		8.1
f	2.2	2.40		n.s.
g	2.5	2.70		
h	3.1	3.38		
i	3.0	4.0 4.10		
j	4.3	4.6 4.55		
j'	5.7	5.7 5.90		
k	6.2	6.7 6.55		
l	-	8.0		
m	-	9.7		
n	-	n.s.		

Prismatic components much elongated, irregular. Measures excessively poor.

22 40

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Friday, April 6, 1906

22 45 Mizar continued

B 1033. Jan. 18, '04

a	-	
á	-	
b	-	
b'	-	
c	-	
d	-	
e	-	
f	-	
g	-	
h	-	
i	-	
j	1.1	1.3
j'	2.2	2.4
k	3.1	3.3
l	3.8	4.1
m	5.7	6.0
n		7.8
o		8.7
p		9.8
q		n.s.

No Prism

Friday, April 6, 1906

Mizar continued

Plate I 24393, Jan. 6, 1910. Exp. 60m

a	-		2.6 Prism	Comp. 2.8
á	-		3.0	3.2
b	-		3.2	3.4
b'	-		3.8	4.0
c	-		Too faint	
d	-		4.9	5.0 5.05
e	-		5.8	5.9 5.95
f	24.8	2.0	6.3	6.7 6.60
g	5.0	2.2		6.9
h	5.3	2.5		7.2
i	5.6	2.8		7.9
j	3.0	3.2		8.3
j'	4.1	4.3		9.2
k	4.4	4.7 4.65		n.s.
l	5.7	5.8 5.85		
m	6.7	6.9		
n		8.3		
o		9.0		
p		n.s		
q		n.s.		

Near preceding edge of plate, but the images are good.
Prismatic companion elongated, but clear

2 3 16

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Friday, April 6, 1906

Measures Continued

Plate I 17460. March 4, 1899. Expo. 80m

			Prism. Comp.	
a	-		2.5	2.7
a'	-		compound w/ b'	
b	-		2.7	2.9
b'	-		3.8	4.0
c	-		4.0	4.1 4.15
d	-		4.3	4.6 4.55
e	-		5.6	5.8
f	-		6.0	6.3 6.25
g	-		6.1	6.3
h	-		6.8	7.0
i	1.7	1.9		7.8
j	2.5	2.7		8.0
j'	3.8	4.0		9.1
k	4.4	4.7 4.65		9.9
l	5.2	5.6 5.50		m.s.
m	6.7	6.8 6.85		
n		8.2		
o		8.8		
p		9.3		
q		10.0		

An excellent plate

Friday, April 6, 1906

Measures Continued

Plate I 199. Nov. 29, 1899 Expo.

a	-		
a'	-		
b	-		
b'	-		
c	-		
d	-		
e	-		
f	-		
g	1.1	1.3	
h	1.5	1.7	
i	1.8	2.0	
j	2.3	2.5	
j'	3.0	3.2	
k	3.7	3.9	
l	4.9	5.0	
m	6.4	6.5	
n		8.2	Second plate
o		8.8	
p		9.7	
q		m.s.	

No prism. comp.
A very good plate

Plate B 3157

a	-	
a'	-	
b	-	
b'	-	
c	-	
d	-	
e	-	
f	1.0	1.2
g	1.1	1.3
h	1.6	1.8
i	2.1	2.3
j'	2.8	3.0
k	4.1	4.4
l	5.3	5.7 5.6
m	6.8	7.0
n		8.6
o		10.0
p		-
q		-

Images elongated

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Friday, April 6, 1906

Measures continued.

Plate I 2311 repeated

				Prism. comp.	
a	-			1.8	2.0
á	-			2.0	2.2
f	-			2.1	2.3
f'	-			3.0	3.2
c	-			3.8	4.0
d	-			4.0	4.2
e	-			5.6 ~~5.8~~	5.7 5.75
f	1.9	2.1		6.5	6.8 6.75
g	2.0	2.2			6.9
h	2.5	2.7			7.6
i	3.4	3.6			8.7
j	4.0	4.1	4.15		9.0
j'	5.3	5.5			9.8
k	5.8	6.1	6.05		
l	6.7	7.0	6.95		
m	7.-	8.1			
n		9.7			
o		9.9			

Images elongated

2 45 Measures of Magnitudes of Standard Sequence in the Pleiades, with scale cut from Plate C 15350

	Plate A 2186 Expo 360m		Plate A 2185 Expo 255m	
a			a	
á				
f				
f'				
c				
d				
e				
f				
g				
h				
i				
j				
j'			j'	1.3? 1.0?
k	1.4?	1.1	k	2.6? 2.3?
l	2.4?	2.1	l	3.1? 2.8?
m	3.5?	3.2	m	4.0? 3.7?
m	5.6?	5.1 5.2	n	5.3 5.1
o	6.4	6.0	o	6.1 5.9
f		7.6	f	7.2
g		8.3	g	8.0
h		8.9	h	8.5
i		9.2	i	8.7
t		9.9	t	9.7

Images elongated and from Measures doubtful

Images elongated, but Clear. Difficult to measure

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Saturday, April 7, 1906

Measures continued.

Plate A 7528 Exp. 158m

			Secondary image	
a				
a'				
b				
b'				
c				
d				
e				
f				
g				
h				
i'				
j				
j'	1.9	1.6		
k	2.7	2.4		
l	3.6	3.3	l .	6.7 / 7.0
m	4.3	4.1	m	7.0
n	5.6	5.2	n	8.2
o	6.2	5.9	o	8.8
p		7.4	p	11.8
q		8.0		
r		8.3		
s		8.6		
t		9.6		

3 30

Monday, April 9, 1906

Measures continued

	Plate A 2123, Oct. 7, 1896		Plate A 2186	
a			a	
a'			a'	
b			b	
b'			b'	
c			c	
d			d	
e			e	
f			f	
g			g	
h			h	
i h			i	
j h	1.3?	1.0?	j	
j' m	2.2	1.9	j'	1.0
k	3.8	2.5	k	1.7,
l	3.7 / 5	3.4	l	3.7 / 3
m	4.3	4.8 4.9	m	4.2 / 2
n	7.0	6.8	n	5.4
o		8.0	o	6.5
p		9.5	p	
q		10.1	q	
r			r	
s			s	
t			t	

	Plate A 2186
j'	0.7
k	1.4
l	1.8
m	3.9
n	5.0
o	6.2
p	7.6
q	8.4
r	8.7
s	9.1
t	9.8

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Monday, April 9, 1906

Measures continued.

	Plate A 2185			Plate A 7528	
i					
j					
j	1.3	1.0		1.9?	1.6
k	2.2	1.9		2.4?	2.1
l	3.0	2.7		3.3?	3.0
m	4.1	4.0	3.9	4.2	4.0
n	5.2	5.1	5.0	5.7	5.4
o	6.1	6.0	5.9	6.3	6.1
p		7.2			7.7
q		8.0			8.2
r		8.6			8.7
s		8.9			9.0
t		9.7			9.9

Monday, April 9, 1906

Measures continued

[Tuesday, April 10, 1906]

	Plate A 2123, Oct. 7, 1896		Plate A 7528	
i			i	+7
j	1.2	0.9	j	2
j	2.0	1.7	j	1.7 1.4
k	2.7	2.4	k	2.0 1.7
l	3.4	3.1	l	3.5 3.2
m	5.2	4.8	m	4.2 4.0
n		7.1	n	5.7 5.7 5.6
o		8.2	o	66 6.4
p		9.6	p	7.7
q		10.1	q	8.2
r			r	8.9
s			s	9.2
t			t	9.8

Plate A 7588 - secondary images

k	5.2?	4.9
l	6.3	6.5 6.2?
m		7.2
n		8.3
o		9.0
p		9.5

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Tuesday, April 10, 1906

Measures of Standard Stars in the Pleiades on ~~Arth~~ C Plates. Scale cut from I 3 2 8 11

	Plate AC 2155		Plate AC 2379		
a			a		
a'			a'		
b			b	1.3	1.5
b'	1.7	1.9	b'	2.0	2.2
c	1.9	2.1	c	2.4	2.6
d	2.2	2.4	d	2.8	3.0
e	2.9	3.1	e	3.9	4.2
f	3.5?	3.7?	f	4.8?	5.0?
g	3.7	3.9	g	4.9	5.1
h	4.6	4.7	h	5.7	5.8
i	5.7	5.8	i	6.3	6.6
j	6.0	6.4 6.3	j		7.1
j'		7.6	j'		8.0
k		8.1	k		8.5
l		9.0	l		9.4
m		9.9	m		10.1
n		n.s.	n		-

Tuesday, April 10, 1906

Measures Continued

	Plate AC 5491			Plate AC 5625	
a			a		
a'			a'		
b			b		
b'	1.7	1.9	b'	1.4	1.6
c	1.9	2.1	c	1.8	2.0
d	2.2	2.4	d	2.1	2.3
e	3.2	3.4	e	2.9	3.1
f	3.7	3.9	f	3.7?	3.9?
g	3.8	4.0	g	3.8	4.0
h	4.8	4.8 4.9	h	4.7	5.0
i	5.7	5.7 5.8	i	5.8	6.1
j	6.2	6.6 6.5	j	6.4	6.7
j'		7.7	j'		7.6
k		8.4 3	k		8.5
l		9.0 7	l		9.1
m		9.8	m		10.0
n		-	n		-

In making the series of measurements recorded in the preceding pages the bright stars are identified by means of Plate B 2057, upon which they are marked. The faint stars were identified from a proper print from D enlarged from Plate A 2178.

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Measures of Comparison Stars for Variables in Carina. For Chart see Book VIII Page 55

	Plate A 2208		Plate A 3018		
a	.		a		
b	.		b		
c	.		c		
d	2.6	2.3	d	2.7	2.4
e	3.7	2.4	e	2.7	2.4
f	3.0	2.7	f	3.3	3.0
g	3.1	2.8	g	3.7	3.4
h	3.7	3.4	h	4.4	4.3 4.2
k	4.3	4.4 4.2	k	5.1	4.8
l	4.8	4.7 4.6	l	5.7	5.4
m	5.4	5.1	m	6.0	5.8.
n	5.8	5.8 5.6	n	6.3	6.3 6.2
o	6.3	6.2 6.1	o	6.7	6.6 6.5
p	6.5	6.6 6.4	p	~~6.7~~	~~7.3~~ 6.8
q	6.9	6.9 6.8	q		7.3
r		7.4	r		7.8
s		7.8	s		8.4
t		8.6	t		9.1
u		9.1	u		n.s
v		9.8	v		n.s.



t changed and u and v added

Measures continued

	Plate A 3013		Plate A 2208 (repeated)	
a	1.6	1.3	a	
b	1.8	1.5	b	
c	2.1	1.8	c	1.7 1.4
d	3.0	2.7	d	2.6 2.3
e	3.3	3.0	e	2.7 2.4
f	3.7	3.4	f	3.0 2.7
g	3.8	3.5	g	3.5 3.2
h	4.5	4.4 4.3	h	3.9 3.6
k	5.3	5.0	k	4.6 4.3
l	5.7	5.5	l	4.9 4.8 4.7
m	6.2	6.0	m	5.5 5.2
n	6.8	6.8 6.6	n	6.1 5.8
o		7.3	o	6.4 6.2
p		7.7	p	6.6 6.4
q		8.1	q	6.9
r		8.9	r	7.4
s		9.2	s	7.7
t		-	t	8.5
u		-	u	9.1
v		-	v	9.8

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Wednesday April 11, 1906

Variable Stars near ψ Caniae

Var		Br	H
	× 12	3018 ~~2208~~ [13.8] [3013] 2549 1807 1743 1737	2208 3018 [15.3] 1804
		Although faint only on A 2208, Vars seem to be ? Question no reality of the faintness on that plate. Announce?	
H1222	13	2208 [13.7] 1807 2549 [12.8]	3018 [13.6] 3018
H 1230	14	2208 [13.6] 1807 2549	3018 [14.3] 3013 1727
H 1231	15	2208 [11.7]	3018 [12.5] 3013 2549 1807 17 [13.7] 1743 1737
			B 17032 21439
		See page 54 Do not announce, though brightness appears to be evident on A 2208	
H1229	16	2208	3018
		B 17032 [10.8]	B 15420 [11.4] 16379 21439 ~~2433.20 [14.0?]~~

Thursday, April 12, 1906

Variable Stars near ψ Caniae

See also Bulk X; 8 pp 45-48, 65-69
" 13: 68-70

Var		Br	H
H1214	17	~~2208~~ ~~3018~~ [14.5?] 6646 [12.8]	3018 ~~2208~~ [< ~~15.5~~] 3013 2549
A 6646 examined Harv. Apr. 21		Undoubtedly bright on A 3018. Announce	and A 2646
		For near edge to be seen on most plates	
H796	7	~~2208~~ ~~3018~~	~~3018~~ ~~2208~~
		(B 17032) (21437) (15420)	(B 11302) 29687 27574 27332 [13.5?] [14.0?]
		16379 [12.2]	
		Estimate very difficult on account of nearness to edge of plate.	
	× 18	2208 ~~3018~~ [14.5] 3013	3018 ~~2208~~ [< 17] 2549 1807 3013 1737 1743
Marked on chart from Professor Bruce's Rich. July 21, 1916		No trace of this star is seen on any plate except A ~~3018~~ 2208 on which it appears to be a true star image, elongated like other images. Do not announce.	
H1217	19	2208 ~~3018~~ 3013 [13.5] 2549	~~2208~~ 3018 1807 [14.0?] 4320
		B 11302 27332	B 25490
		~~Plate~~ certainly variable, ~~but do not~~ announce Apr. 21	
H1223	20	2208 [11.9] 3013	3018 [14.2] 2549
H1233	21	3018	2208
		B 27332 [10.7]	B 15420 [13.0] 27574
H1235	22	3018 [14] 3013 1807 2549	2208 [15]
		B 27574 27332	B 11302?
		Unquestionably ft. on A 2208 and ft. on B 11302	
H1234	23	3018 1807 3013	2208 2549
		Occ 3018 [13.8]	Occ 2208 [14.5]
		Estimate very rough. Var. certain	
H1232	24	2208 [12.1] 2547 1807 3013	3018 [13.] ~~3013~~
		B 15420 17032 21439 11302	B 27332
		Apparently of the Algol type	

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Thursday, April 12, 1906

Variables near η Carinae

Var	Bi	ff
x 25	2208 ~~2216~~ 3013 ~~2544~~ 1807	3018 ~~2208~~
	B11302 27382 27574	
	Range small. Phot. vis. Do not announce	
~~26~~	~~3018~~	
12	B21439 25490 27332 11302	
H 1231 15		32757 4 etc
	Certainly variable	B25490 [13.5]

The above variables were found on Plate A2208 superposed with D 9685 = A 3018

Friday, April 13, 1906

Comparison stars for

Measures to determine the brightness of ~~near~~ Algol (2) Variable ~~near~~ 24 Carinae (near Eta Carinae)

	Plate A 1804	Plate A 2513		
a	5.1	a	3.7	3.4
b	5.6	b	4.0	3.7
c	5.9	c	4.2	4.3 4.1
~~d~~	~~6.9~~	~~d~~	~~4.5~~	~~4.7 4.5~~
d e	6.6	d e	5.6	5.5 5.4
e f	6.9	e f	5.9	5.9 5.8
f g	7.1	f g		6.2
Var	5.7			

	Plate A 2268	Plate B 15212 60m		Plate B 15181 2.2m	
a	6.6	a	6.0 6.3	a	7.7
b	7.0	b	6.3 6.6	b	8.0
c	7.3	c	7.1	c	8.5
~~d~~	~~7.6~~	~~d~~	~~7.5~~	~~d~~	~~8.6~~
d e	8.2	d e	8.0	~~d~~ e	8.9
e f	8.6	e f	8.5	f e	9.3
f g	9.0	f g	8.8	g f	9.7

	Plate B 35351	Plate B 31365		Differences B15181	B15212	B31365	B35351	Mean	Res	Sum	Diale Mags
a	8.4	a	7.9	c	3	3	4	5	38	1 1 01	0.00	11.82
b	8.9	b	8.3	b	5	5	4	3	42	1 1 01	0.38	12.20
c	9.2	c	8.7	c	4	9	4	6	58	2 3 2 0	0.80	12.62 13.40
~~d~~	~~9.4~~	~~d~~	~~8.8~~									
d e	9.8	d e	9.1	d	4	5	4	3	40	0 1 0 1	1.38	13.76 20
e f	10.1	e f	9.5	e	4	3	3	2	30	1 0 0 1	1.78	13.60
f g	10.9	f g	9.8	f							2.68	13.9

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Comparison of Sequences for Algol Var 24 Canum with Seq. for RS Canum

Plate B 31365

a	11.9
b	12.1
c	12.3
~~d~~	~~12.5~~
td	12.8
fe	13.0
gf	13.3

Plate B 15181

a	11.8
b	12.0
c	12.2
~~d~~	~~12.3~~
ed	12.6
fc	13.0
gf	13.2

Plate B 35351

a	11.8
b	12.0
c	12.2
~~d~~	~~12.5~~
dt	12.7
ef	13.0
fg	-

Plate B 15212

a	11.8
b	12.0
c	12.2
~~d~~	~~12.5~~
dt	12.8
ef	13.0
fg	13.3

~~Order. Magn.~~

	Mean	Rte
a	11.82	1000
b	12.02	1000
c	12.22	1000
~~d~~	~~12.45~~	~~1 1 11~~
dt	12.72	11 01
ef	13.00	0000
fg	13.27	01 10

3 55 Observations of the Brightness of Algol Variable 24 Canum
10h 54m -61° 2f

Plate B 15083, Oct. 21, 1895
12.3
Im. of c defective

B 5219
Too faint

B 11087
Too faint (near edge)

B 12948, Apr. 8, 1895
Plate broken, faint
spoiled in region

B 21172, Apr. 12, 1898
12.3

B 27100, March 23, 1901
12.3

B 7959,
12.2?
Image unsupported

B 3601
Too faint in neg.
Var. just faint

B 15131 Nov. 11, 1895
12.2

B 15211, Dec. 13, 1895
12.3

B 15212, Dec. 13, 1895
12.3

B 19074, May 12, 1897
12.3

B 15556, April 8, 1896
12.7

B 16844, July 14, 1896
12.3

B 21329, April 30 1898
12.3

B 21428, May 18, 1898
12.3

B 22~~32~~28, Dec. 14, 1898
12.3

B 29561, April 30, 1902
12.3

B 33559, May 3, 1904
12.3

B 14219, June 10, 1896
12.4 Extremely f.

B 15420, March 16, '96
12.3

4 16

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4 15

Algol Variable Cont.

Plate B 15919, March 16, '96
12.3

B 15503, April 2, '96
12.3

B 16042, June 1, 1896
Too poor in reg.

B 16634, July 3, 1896
Too poor in reg.

B 18270, Jan. 4, 1897
Too poor in reg

B 18321
12.3

B 18466, Feb. 1, 1897
12.3 Very poor

B 18702, April 19, 1897
12.3

B 5001 May 1, 1890
12.3

B 3559, June 14, '89
12.2

B 21173, April 12 '98
12.2

B 21266, Apr. 26, '98
Too poor (near edge)

B 20675 May 2, 1899
Too poor (near edge

B 21525 June 7, 1898
12.2

B 24970, April 6, 1900
12.2?
Near edge F

B 29557, April 30, 02
Too near edge

B 9479
12.3

B 15181, Nov. 18, '95
12.3

B 3535, Dec. 6, 1904
12.3
Impr very slightly faint

B 31365, May 9, 1903 P
12.8

4 30

4 30

Measures Continued

B 4748, Jan. 2/90
Too poor

B 15157 Nov. 13/95
12.3

B 15101, Nov. 4/95
12.3

B 7107
Too poor

B 15405, May 9/96
12.3

B 11302, May 25/94
12.3

B 27169, Apr. 13/01
12.3

B
B 11294 May 24/94
12.3

B 15111, Nov. 5/96
12.3 ?
Image very poor

B 15016, Oct. 29/95 v
12.5

B 25493, May 29/00
12.3

B 16379, June 16/96
12.3?
Image very poor

B 27574 June 6, 1901
12.3

B 21439 May 20/98
12.2

B 26967 Feb. 25/01
12.3

B 27332, May 18/01 v
12.8

B 18290, Jan. 3/97
12.3

B 18344, Jan. 21/97
12.3

4 40

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4 40

Algol Var. Cont.

Plate B18573 Feb 3/97
Too few in reg.

B18669, March 23/97
12.3
Images poor

B17804, April 19/97
12.3

B18910, April 22/97
12.3

B3315
Too few

B15721, May 9/96
Too few

B15635, Apr 23/96
12.3
Images very poor

B15626 Apr 13/96
12.3?
Images extremely faint & poor

B15239, Dec. 16/95
12.3

B15780, Nov. 18/95
Too few

B25356, May 19/00
12.3

B16507, June 29/96
Too few

B15919, May 19/96
Too few

B25185, Apr 30/00
12.5?
Difficult near edge.
Certainly faint.

B19646, June 30/97
Too few

B32157 Mar 17/04
Too few

B30007 June 12/02
12.3?
Edge of plate. Im very poor.

Algol Var. Cont.

B29061, Jan 3/02
Too few in reg.

B25441, May 24/02
12.4?
Near edge. Images very poor. Probably faint

B17106, Aug 13/96
Too few

B18702, Mar 29/97
Too few

B18859, Apr 24/97
12.8?
Extremely poor & faint

B19072, May 12/97
12.3

B19263 May 29/97
12.7?
Images poor. Certainly faint

B19470, June 9/97
12.3

B19668, July 1/97
Probably faint.
Images too poor for est.

B21171, Apr 12/98
12.3

B13473, June 1/95
12.3

B15790, Nov. 20/95
12.3

B13477 June 1/95
12.3

B16391, June 13/06
12.3

B22810, May 10/99
12.3

B24652, Jan 30/00
12.2

B11152, May 17, 94
Too near edge

5 00

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Friday, April 13/06

5 05 Measures of Algol Variable continued

Photo B 18179, Dec. 1/96
Too poor

B 21120, April 2/98
12.3

B 11317, May 28/94
12.3

B 12743, Dec. 14/94
12.3

B 12793 Jan 17/95
Too poor

B 12813, Feb 20/95
Too poor

B 13861 July 1/96
12.3

B 13591, June 3/95
12.5

B 10836
Too poor

A 1737 Apr 7/96
12.3

A 1743, Apr. 10/96
Does not come reg.

A 2573
12.3

A 3018
12.3

A 1807
12.4?
Sup. slightly faint

A 2549
12.3

A 1804
12.3

A 2268
12.3

A 2208
12.8

Friday, April 13/06

5 15 Measures Continued

A 3013
12.3

A 2200
12.3

A 3107
12.3

A 3106
12.3

A 3105
12.3

A 3104
12.2

A 3103
12.2

A 3102
12.2

A 3101
12.2

A 3012
12.3

A 2201
12.3

5 25

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Saturday, April 14, 1906

Algol Variable in Carina continued

Plate A 2521
12.3

Plate A 2958
12.3

A 3076
12.3

X 7393
12.3

X 7369 v
12.9

A 2241
Too near edge

A 2530
Fogged in reg.
of Var.

A 2484
12.3

Saturday, April 14, 1906

2 40

Algol Variable in Carina continued

Plate B 16969, July 21/96
12.3

B 18427, June 28/97
12.3

B 18629, March 12/97
12.2

B 13183, May 8/95
12.3

B 13521, June 3/95 v
12.5
Near edge Image too

B 13199, May 9/95
12.3

B 13479, June 11/95
12.3

B 15140, Nov 12/95
12.3

B 15292, Jan 10/96
12.3

B 19668, July 1/97
Too poor

B 15353, Feb 13/96
Too poor

B 15365, March 2/96
Too poor

B 9294
12.3

B 10752
12.3

B 10882
12.2

B 10924
12.2

B 12538
Too near edge

B 12834, March 5/95
Too poor
B 12941, April 8/95
Too poor

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Saturday, April 14, 1906

3 10

Algol Variable in Camelopardus continued

Photo B6501
Too poor

B7140
Too poor

B7264
Too poor

B7584
Too poor

B7726
Trails

B7727
Trails

B36034, May 13/05
12.3

B35798 Ht. Apr. 10/05
Class S

B35791 Class S

B35834, April 21/05
12.2

B33407, April 20/04
Too poor

B35496, Jan 13/05
Too near edge

B36029, May 12/05
12.2

B36017, May 12/05
12.3

B36032, May 13/05
12.3

B21067, March 25/98
Too poor

B21328, April 30/98
12.3

B21361 v
12.4? Desp. ft.

B 24646
Too poor

3 10

Saturday, April 14, 1906

3 15

Algol Variable in Camelopardus cont.

Photo B 26857 Dec 28/00
Too poor

B27377, May 24/01
Class S

B27670
Class S

B16886 July 17/96
Too poor

B16219, June 10/96 v
12.4? Poor ft.
Images very poor

B25785 April 30/00 v
12.5
Near edge. difficult

Bg472
12.6
Several images of each star. Obs. difficult.
Brightest image only measurable

B21036, Mar. 17/98
Too poor

B7520
Too poor

B7951, June 19/92
12.3

B21557, June 1/98 v
12.4?
Poor ft.

B15556 April 8/96
15.7

3 25

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Friday, April 20, 1906

Variables in Canum.

Plate A 2549 superposed with Dg685 = A 3018

Rediscovered Nos 1, 7, 13, U Canum, RX Canum

	Var	Br	H
×	26	A2549 [12.4] 1807 2208	3018 [12.5] 3013 4320 2968
		Prot. var. But small range.	
~~such~~ ×	27	2549 3012	~~3018 3101~~
		Prot. slightly variable on above below	
	28	2549 [13.0] (2201)	3018 [13.6] 4263 1807 [13.7] 3013
	29	2549 [12.5] (4320) 1737	3018 [12.3] 1807 [13.1] 4268 3013 2208
	~~30~~	~~36~~	

Plate A 3013 superposed with Dg685

×	~~30~~ 29	3018 [12.8] 2208 [12.8]	3013 [13.5] 2549 (1807)
×	30	3013 [13.6]	3018 [14.7] 2549 2208 1807

Seems to be certainly bright in A 3013, but there are many defects on plate. Do not announce

Friday, April 20, 1906

Variables in Canum

Plate A 1807 superposed with Dg685 = A 3018

	31	1807 [13.5] 2549 2962	3018 [14.62] 3013 [14.52]
		The following of two stars. Near edge. Estimate difficult	
-58° 2234	32	1807	3018
		B19292 [8.8] B15635 [8.8]	B35824 [9.6] (25024) 22642 18321 [9.5
	33	1807 [13.6]	3018 [16.0] 2549 3013 2208
		No question of brightness in A 1807	
	34	1807 [12.7] 2549 2208	3018 [13.3] 2268 3013
		Range probably greater than est. indicate. Near edge	
		Near R.L. Canum	
-56° 3737	35	1807	3018
		B35834 [8.2] 18321 12538 1268	B15365) 21172 [8.9] 15350
		7264	

No 16 re-discovered

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Saturday, April 21, 1906

Variable Stars in Carina.

Plate A 1742 superposed with D 9685 = A 3018

Var	Bright	Faint
	1743	
36	~~301~~	3018 3012 3013
	B9668 16862 [12.0] 21173 15365	B33407 [13.3] 13183
-58° 2797 37	1743	3018
	B33407 [9.5] 16866 [9.2]	B21173 [9.9] 19668 [10.0]
~~38~~		

Re-discovered Nos. 1, 13, 16, 20, 21

Plate A 1727 superposed with D 9685

38 3018 [13.2] 4320 2208 [13.0] 1737 [13.9] 3013 3012 2201
Period evidently short.

-60° 2033	39	3018	1737
		B16866 [8.6] 19668 18321	B21173 [9.8] 36032

Re-discovered Nos 1, 5, 6, 16, 20

Monday, April 23, 1906

11 45 Algol Variable 10 5461 continued from page 67

B5134, May 9/90
12.3
Very poor

B11141 May 15, 1894
12.3?
Very poor

remeasured B2544, May 24, 1900
12.5?
Near edge, very poor.
Image of c superposed
Possibly not faint

B21556 June 7, 1898
12.2

B21774, June 24, 1898
Too poor

B22644, April 23, 1899
Imag. defective

B22772, May 20, 1899
12.5?
Possibly not faint.
Near edge. very poor

B24734, Feb. 23, 1900
n.s. <12.6

B24882
12.3 (slightly faint?)

B25655, July 21, 1900
Too poor

B7492
Region not on plate

B9191
Image defective

B9293
12 X.F.?

Near edge. Very poor
Identification doubtful

B21557 remeasured
12.2

B11686
Too poor

B13018, April 11, 1895
Too poor

12 68

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Monday, April 23, 1906

1200 Algol Variable 105461 Carnie cont.

B15151, Nov. 13, 1895
12.2

B15181, Nov. 18, 1895
12.3

B19265, May 29, 1897
12.8

B19471, June 9, 1897
12.3

B19537, June 16, 1897
12.2
Very fine, near edge

B19669, July X 1897
Ds. < 12.3
Certainly faint

re-measured B21361, May 2, 1898
12.3

B15966 May 28, 1896
Fine near edge

B18322, Jan. 15, 1897
Fine near edge

B21732, June 21, 1898
12.3

Algol Variable 105461 Carnie cont.

Photo A 5824 April 28, 1902
12.4?
Near edge - Faint star invisible

A 2250, April 26/97
12.3?
Image defective - Certainly faint - estim <12.3
Image poor - Poss. faint

A 2242, April 22/97
12.3

B
Dg 291,
12.3

B17032, July 3, 1896
12.3

B10807
12.3

A 5824
Probably of normal brightness

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Saturday, September 8, 1906

Variables in Orion

Superposed A 7434 with D 11552 = A 2119.

Re-discovered H 1177, 792, and original Nos. 6, 7, 8, 13, 29, 75, 81, 83, with Wolf's Variables 40, 1903; 37, 1903; 60, 1903; 86, 1903; 37, 1903; Also S Orionis

A star with large proper motion was found to be DM - 3° 1123, contained in Cleveland Catalogue of stars with large proper motion, (A.N. 125, 395)

These plates have nearly the same centre. Plate A 2119 was exposed 230m and A 7434 only 75m but there are as many stars, apparently on the latter as on the former. Superposition not as favorable as if plates had been more nearly of the same quality

Some additional stars were marked of which nearly all are certainly variable

Of course variably marked in strong nebulosity could not be seen by this method.

Variables in Orion.

No	Bz	H
114 ~~108~~	7434 [12.5] 3429	2119 [13.4] (5731) 2156 5730 1271
115 × ~~109~~	7434 [11.5.]	2119 [12.4] 1271 (3429) (5731 5730) 2156, 192 61 128 142 2156

Seen bright only on A 7434, though slight changes are suspected on other plates, and also on the finer photographs of Dr. Roberts. ~~2119~~

116 × ~~110~~	7434 [14.1]	2119 [14.9] 3429 1271 5730 2156 192 153 5731

Certainly bright on A 7434 Another of the puzzling Orion Variables Susp. list

117 × ~~111~~	2119 3429 [12.0] 2154 61 5731 2156 192	7434 144 [12.8]

Probably var. Do not announce

~~118~~ ~~113~~	2119 [11.8] 153 5730	7434 [13.1] 192 (2156) 61

This is Wolf's Variable 38, 1906 (Nov. 5, 1906)

Variable on Susp. list examined on this plate

Conf. 14	2156 [14.0]	2119 7423 [14.6]

Why was this rejected? See Bk XII p. 44. Never presented with others for confirmation. Announce

16, 36, 40, 44, 45, 46, 47 show no marked change

48 seems to be really bright on A 7434, but do not announce

52, 63, 78, 84a, 86, 87, 89, 90, 98, 99, 105, 107, show no obvious changes

2 news var. Found Also Nos. 109, 94, 83 (=Roberts no. 10), 18, 6, 7, 8, 29, 75, 81,
16 known S; 86, 1901; 30, 1903; 40, 1903; 38, 1903; 37, 1903
(Conf (omit in reporting) 14 per cent news

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Thursday, September 13, 1906

Examination of the Region of the Pleiades for Variables. (Madsen Book VIII page 105)

Plate D 10705 (= A 2186) superposed with A 7528, Nov. 29, 1906 Exp. 15^{m}.

The plates superposed only fairly well as the images on plate A 2186 are undoubtedly larger than those on A 7528. Also the central plate has too light a background. Still, it was to be expected that variables brighter than the 14th magnitude would not be overlooked.

One variable found.

Var 1 A 2186 [12] A 2185 B1033 A 7528 [15] (A 59) A 2153 320638

On A 2153 (04^{h}, 2^{m})

A 7528 04, 2^{p}

A 2186 05, 1^{m}

A 59 m 4, 10

On B 20638, Var. is fainter than g

glass side up

The letter used above are those of the standard sequence, marked on A 2128, to which they were transferred from proper print enlarged from plate A 2186.

In general, it may be said that the stars in this region appear to be very steady in their radiation. No case of suspected variation

Friday, September 14, 1906

The Oval-Sack - Search for Variables. Cont. from p. 30

10 30 Plate A ~~3359~~ 3093 superposed with D 12033 = A 7244

The central plate was found to be excellent, although it is a little darker than desirable. Line is a fine thread is just right but is apparently difficult to observe. A slightly darker shade is better than a lighter shade. A black or very light background is nearly useless.

A considerable number of spots were marked, a few of which are probably defects

12 15

Friday, September 14, 1906

The Coal-Sack. Measures to determine magnitude of Comparison Stars 10h 50m – 62.5°

film side up



Plate A 7244

a	-	
a'	-	
b, a	~~1.7~~	1.7 Two bright
c, d	2.0	1.7
d, e	2.8	2.5
e, f	3.0	2.7
g, f, g	3.9	3.6
h, g, h	4.6	4.4
i, h, i	5.0	4.7
l, i, k	5.5	~~4.7~~ 5.1
m, l	5.9	5.6
n, m	6.2	6.0
o, n	6.7	6.7 6.6
p, o		7.1
q, p		7.5
r, q		7.9
s, r		8.2
t, s		8.7
u, t		9.5
v, u		ns.

Plate A 3093

a	-	-
b	-	-
c	1.8	1.5
d	~~2.8~~ 2.7	2.4 ~~1.5~~
e	2.8	2.5
f, g	3.8	3.5
h, i	4.0	3.7
k, l	4.4	4.3 4.2
l, m	5.1	5.0
m, n	5.3	5.1
n, o	5.7	5.5
o, p	6.1	6.1 6.0
p, q	6.6	6.6 6.5 6.4
q, r	6.9	6.9 6.8
r, s		7.2
s, t		7.4
t, u		7.8
u, v		8.6
v, w		9.2

o Taken to add Decimals, & can depend with m and p

Run repellents to plates

Friday, September 14, 1906

The Coal-Sack. Comparison Stars Cont.

	Plate A 7277		Plate A 7269		Plate A 7281	
a	-		a -		a 1.0	0.7
b	1.8		b 2.0	1.7	b 2.1	1.8
c	~~2.1~~ ~~1.5~~		c 3.0	2.7	c 3.0	2.7
d	3.0		d 3.6	3.3	d 3.4	3.1
e	3.4		e 3.9	3.6	e 3.6 3.4	3.4
f	4.8	4.8	g, f 5.0	4.8	f 4.8 5.0	4.7
g	5.4	5.7	i, g 5.8	5.4	g, h 5.7	5.4 5.8
h	5.9		k, i 6.1	5.8	i, k 6.0	5.9
k	6.5		l	6.3	k, l	6.6
l			m, l	6.6	l, m	6.9
m			n, m	6.9	m, n	7.0
n			o, n	7.3	n, o	7.5
o			p, o	7.6	o, p	7.8
p			q, p	7.9	p, q	8.0
q			r, q	8.1	q, r	8.5
r			s, r	8.4	r, s	8.9
s			t, s	9.0	s, t	9.2
t			u, t	9.7	t, u	10.0
u			v, u	ns.	u, v	ns.

A very good plate

Plate too from

Plate fairs Images poor

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Saturday, September 15, 1906

The Coal-Sack.

Means of an additional comparison star between original c and f

Plate A 7244

				Interval				Mean	As	Magn	Con. Magn	Diff.
d	3.7	2.4		a_{3093}	a_{7244}	a_{7269}	a_{7281}					
e	3.9	2.6										
f x′	4.4	3.1	d	3	2	3	5	32	0.02	10.28	10.28	10.24
g y	5.0	3.7	e	4	5	6	6	52	1.0 11	10.60	10.55	10.48
			f x′	5	6	7	8	65	1.012	11.12	11.05	10.96
			g y							11.77	11.68	11.58

Plate A 7269

d	3.4	3.1
e	3.7	3.4
f x′	4.3	4.0
g y	5.0	4.7

Plate A 3093

d	2.7	2.4
e	3.0	2.7
f x′	3.4	3.1
g y	3.9	3.4

Plate A 7281

d	3.1	2.8
e	3.4	3.3
f x′	4.2	3.9
g y	5.0	4.7

Saturday, September 15, 1906

The Coal-Sack. New Variables

Var	Br	Ft
x 1	7244 [13.6] 7269 7277 7272	3093 [14.2] (7253)
	7283 7239 4339 2504	
	B21708 24924 30245	B21702 [13.2]
	Almost certainly a variable of the Algol type, but apparent range is small and there are few available plates. Do not announce	
2	3093 2504 [12.8]	7244 7269 7281
	B(24924)	B30245 [14.5]
	B21708 [13.2] 21702	
	Period probably long.	
3	3093 [14.2]	7244 7269 [16.0] 17.0 4339 2504
	B21702 [14.5] 21708	
	Period probably long. Ruedes * 10 mgn. by 0.5	
No. 4 4	7244 7253 7283 [14.2]	3093 [16.0] [< 17.0]
	7281	B21708 21702
x 5	3093 [14.6]	7244 7269 [14.7] etc
	B21702 [14.8]	
	Probably variable, but evidence is not conclusive	
No. 6 6	7244 [14.0] 7283 etc	3093 [16.4]
		B27702
7	7244 [13.2] 7283 7239	3093 [15.7] (4339) 2504
	Follows a pair of 15th magn. stars by 0.2	
8 8	7244 [14.7] 7239 7253	3093 (7283 [14.7]) (7277) (7281)
	7277 7283	(On 3093 < 17.0)
	Period apparently rather short	
x 9	3093 [15.2] 7269 4339 [7253]	7244 [16.5]
	7253 7269 7281 8 3	
	B24924 30245 B27708 21702	
	Probably of Algol type. See Harv. 7244 and 7269	

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~~Saturday, September 15, 1906~~
Monday, September 17, 1906

The Coal-Sack

Var	Br	Ft
x 10	3093 [15.3]	7244 7281 [15.6] 7283
	Very doubtful - Do not announce.	
11	3093 2504 [12.7] 7272 7249	7244 7239 [13.3] 4339 [13.8] 7253
	Period apparently rather short	
12	3093 [14.0] 7269 7253 4339 7239	7244 7283 [15.3]
	7277 7281	
	Probably of the Algol Type.	
x 13	3093 [14.0] 2504 [14.0]	7244 7281 7283 [14.4] 7267 [14.4]
	Almost certainly var. but do not announce	
14	7244 (7269) 7239 [14.0]	3093 [17.1] (7283) [15.5]
	Period apparently rather short	
x 15	3093 [15.1]	7244 7281 [<17.0] 7283 etc
	Seemingly on A 3093, where it appears to be a genuine star image. Blended w. 15th magn star by 0".2 Do not announce	
16	3093 [13.4] 4339	7244 7277 [14.5] 2504
	Situated between a 13th or 14th magn star	
C.P.D.-63°2632 17	3093, etc A M 2529	7244 A M 2569 2568
	Seems to be of the Algol Type	

Tuesday, September 18, 1906

The Coal-Sack

Var	Br	Ft
18	3093 [11.5] (2504)	7244 7281 7283 [12.8] 7277 4339
	B 21702 21708	B 24924, 30245
19	3093 [13.2] (7277) 2504 [12]	7244 7253 4339 [14.2]
	7272 7269 7239 7283	
	Probably of the Algol Type. Has a hazy appearance, and may be double.	
Discovered by Mrs. Fleming in August, 1906	20 7244 4339 7239 7272	3093 [16.0] 2504 21702
	B 24924 [11.2] (22875)	B 21702, 21708 [16.0] 30245
	Range 5 magnitudes - Prob. long period	
21	7244 7239	3093
	B 24924 [10.4]	B 30245 [14.4] 21708
	Prof Kunze var. near. Is it the same?	
22	3093	7244 7239
	B 24924 [10.5] 21702	B 30245 [<14.0]
23	7244 7239 2509 4339	3093
	B 24924 [11.5]	B 21708 [13.0] 21702

No. 22 found independently on Plate A 2218 by Mrs. Fleming, who noticed its spectrum while recording the spectrum of Algol Var. C.P.D.-63° 2632, September 22, 1906

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September 18, 1906

Measurements for new Algol Variable -63°2632.

Original Number 17 Centauri

Plate B 22875

a	4.1	4.1	4.2
b	4.6	4.8	
c	5.1	5.0	5.2
d	5.8	5.7	5.8
e	6.0	6.0	6.1
f	6.4	6.5	

Plate B 25608 reject

a	2.1
b	2.8
c	3.5
d	4.2
e	4.6
f	5.7

reject

B. 31634

a	4.0	4.1	
b	4.8	4.9	
c	5.2	5.7	5.6
d	6.0	6.2	
e	6.3	6.7	6.6
f		7.1	

B. 23/52490

a	4.7	4.9	
b	5.1	5.4	
c	5.8	5.9	
d	6.2	6.5	
e	6.4	6.8	6.7
f	7.0	7.3	

Images are not comparable with scales on B 25608.

September 18, 1906

Algol Var. -63°2632 cont.

Plate B. 29754 reject

a	3.0
b	3.7
c	4.7
d	5.6
e	6.0
f	7.0

reject

Plate B 21616

a	4.8	~~5.0~~	Orbit as given discordant diffs. if corrected.
b	5.2	4.8	5.1
c	5.5	5.4	5.6
d	6.0	6.0	6.1
e	6.3	6.3	6.4
f	6.9	7.1	

B 29692
B 30246 reject

a	4.0	4.2
b	4.8	4.9
c	5.6	5.5
d	6.0	6.0
e	6.2	6.1
f		diffs.

Images not comparable with the scale on plate B 29754

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Wednesday, September 18, 1906

Variables near the "Cod-Sack" Cont. from page 23.

Plate A 6993 superposed with D12033 (=A 7244)

Var	Br	Ht
24	7244 7277 [2.3] 72532504	7283 [13.5/8] 7281
	3093 4339 7270 7239 7269	

Re-discovered Nos. 6, 7, 17

This plate was formerly superposed with D (=A 3093). On examining the marks made at that time, it is found that Nos. 6 and 17 were marked. A number of other marks were for defects in Plate A3093

Continued page 100

Wednesday, September 19, 1906

Observations of Brightness of Algol Variable -63° 2632

4 50 Spectrum B8A on Plate A2218. Dig. No. 17 Cordoba

B18638, Mar. 12/97 8.8

B18526, Feb 4/97 8.8 Drumtorm reg.

B19569, June 18/97 8.9

B19286, May 31/97 8.7

B19561, June 17/97 8.7

B21235 Apr. 18/98 8.7

B22738, May 7/99 8.7

B3347 May 27 '89 8.7

B3431, June 10 '89 8.8

B3420 June 6 '89 8.8

B11111, May 14/94 8.8

B21702, June 16/98 8.8

B21703, June 17/98 8.9 Probably faint

B24924, April 2/00 8.8

B26943, Jan. 30, 1901 8.7

B13569, June 4/95 8.7

B29754, May 17/02 8.9 Perhaps faint

B21614, June 10/98 8.8

B31639, May 5/03 8.8

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Wednesday, September 19, 1906

Algol Variable -63° 2632 Cnt.

B23490, July 17/99
9.0

B19269, May 29/97
8.7

B16049, June 1/96
8.8

B13811, Apr 19/97
8.7

B15724, May 9/96
8.8

B18676, Mar 24/97
8.7

B7254 March '92
Does not conv reg.

B18469, Feb. 1/97
8.7

B25608, June 25/00
8.8

B18285, Jan. 5/97
8.7

B22875, May 20/99
8.7

B17236, Aug. 31/96
8.7

B29692, May 15/02
8.7

B17110, Aug 13/96
8.7

B30245, June 30/02
8.9
Probably faint

B16600, July 2/96
8.7

B3418, June 6, '89
9.0
faint

B16383, June 16/96
8.7

B24874, Mar 21/00
Too near edge

5 15

-63° 2632 Cnt.

B19827, July 15/97
Too near edge

B28025, July 26/01
Does not conv reg.

B16039, June 3/96
8.7

B16673, July 6/96
8.7

B15507, April 2/96
8.7

B16047, June 1/96
8.7

B25697, July 3/00
8.7

B15542, Apr 7/96
8.7

B25302, May 2/00
Does not conv reg

B11139, May 15/94
8.7

B21881, Aug. 23/98
8.7

B19073, May 12/97
Reg. off edge

B5335
Does not conv reg.

B22582 Apr. 20/99
8.6

B32213, July 15/03
8.7

B23193, June 27/99
8.7

B30136, June 24/02
8.7

B25004 Apr 7/00
8.7

B30012 June 12/02
8.7

B25217, May 14/00
Reg. Diffused

5 25

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Wednesday, September 19, 1906

Algol Variable -63 2632 cont.

B 25493, May 29/00
8.7

B25714, July 5/00
8.7

B26998, Mar 26/01
9.0
Past. faint

B27310, May 13/01
8.7

B27964, July 24/01
8.7

B29645, May 14/02
8.7

B33567, May 3/04
8.7

B30471, July 29/02
8.7

B32349, July 3/03
8.7

B35617, Mar 27/05
8.7

B11506, July 2, 1894
8.7

B19673, July 1/97
10.0
Irreg. short & ff edge

B15637, Apr 23/96
9.3

B19475, June 9/97
8.7

AM 2588, May 2/04
9.6

AM 2569, Apr 22/04
9.6

AM 2801, July 2/04
8.7

B21714, June 20/98
8.7

Thursday, September 20, 1906

Algol Variable -63° 2632 cont.

AM 1915
9.0 May 6/03

AM 1944 May 19, 1903
8.7

AM 1970 May 27 28 '03
8.7

AM 2098 July 6, 1903
8.7

AM 2117 July 14, 1903
8.7

AM 2442 Jan 9, 1904
8.7

AM 4134 March 21, 1906
8.7

AM 2738 June 11, 1904
8.7

AM 2717 June 6, 1904
8.7

AM 3487 April 26, 1905
8.7

AM 3444 April 6, 1905
8.7

AM 3370 March 6, 1905
8.7

AM 3682 July 3, 1905
8.7

AM 3664 June 24, 1905
8.8

AM 4212 May 10, 1906
8.7

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September 20, 1906

Algol Var. -63° 2632

AM 4194 April 30, 06 8.8

AM 4053 Jan. 26, '06 8.7

AM 2529 April 12, '04 8.7

AM 2522 April 11, '04 Stars not over region

AM 2478 March 9, '04 8.7

AM 4300 June 13, 1906 8.7

AM 3604 June 9 '05 8.7

AM 3557 May 25 '05 8.8

AM 3499 May 6, 1905 8.7

AM 389 March 26 '00 too pm

AM 459 May 8, 1900 10.2

AM 9.22 Nov. 17 '00 Stars not over region

AM 738 March 20 '01 8.7

AM 782 May 13 '01 8.7

AM 806 May 27 '01 8.7

AM 846 June 11 '01 9.3 Isochromatic

AM 9.28 July 23 '01 8.7

AM 1159 March 11 '02 8.7

September 20, 1906

-63° 2632

AM 1229 May 11 '02 8.7

AM 1258 May 17 '02 8.7

AM 1411 July 2, '02 8.7

AM 1724 ~~March~~ Nov 26 '02 8.7

AM 1799 Jan. 15 '03 8.7

AM 1803 J not region

AM 1808 Jan 17 '03 8.7

AM 1839 March 16 '03 8.7

AM 1843 March 26 '03 too pm

AM 1894 May 4 '03 8.7

AM 1467 July 14 '02 8.7

AM 400 March 31 '00 8.7

AM 4143 March 26 '06 Bl. B. Image superposed

Bl. B. AM 445 April 24 '00 8.7 throughout

Bl. B. AM 446 April 26 '00 8.7 throughout

AM 1886 April 25 '03 8.7

AM 1885 April 4 '03 8.7

AM 1828 Feb. 20 '03 8.7

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September 20, 1906.

−63° 2632 cat.

am 1389 June 25'02 8.7

am 1334 June 11'02 8.7

am 1352 June 13'02 9.3

am 1363 June 14'02 8.7

am 1190 April 7'02 8.7

am 1224 April 30'02 8.7

Bl.B. am 1239 May 3'02 8.7 thinglount

am 839 June 7'01 8.7

am 886 June 25'01 8.7

am 954 Aug 3'01 2 exp. 8.7 Loch.

am 760 April 10,'01 12.0

am 768 April 26'01. 8.7

am 417 April 6,'00 8.7

am 431 April 9'00 8.8

Bl.B. am 451 May 4'00 Probably normal. Images almost superposed.

Bl.B. am 492 June 4,'00 Probably normal. Images almost superposed.

am 501 June 19'00 8.7

am 526 July 20'00 Loch. 8.7

Bl.R. am 364 Feb. 20'00 10.2 comparison star of n.s.

am 3324 Jan '3'05 8.7

September 20, 1906

−63° 2632

am 2777 June 23'04 9.3

am 2814 July 6'04 8.7

am 2922 Aug. 5'04 8.7

am 2649 May 13'04 8.7

am 2606 May 4'04 8.7

am 2474 Feb 23'04 8.7

am 2504 April 7'04 8.7

am 2547 April 16'04 8.7

am 2042 June 16'04 8.7

am 2082 June 30,'03 8.7

am 2198 Aug 13'03 8.7

am 2016 June 12'03 8.8

am 1978 June 1' 23 8.7

am 4188 April 28'06 8.7

am 4221 May 11'06 8.7

am 4301 June 13'06 8.7

am 4310 June 14'06 8.7

am 3583 June 3'05 8.7

am 3615 June 10'05 10.2

am 3621 June 12'05 8.7

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September 20, 1906.

−63° 2632 Cnt.

am 3701 July 10'05 8.7

am 3773 Aug. 10'05 8.7

am 3817 Aug. 21'05 10.1

am 3520 May 11'05 8.7

Cl. C. am 3481 April 25'05 normal

am 3382 March 13'05 8.7

am 3383 March 13'05 8.7

am 3428 April 1'05 8.7

am 2542 April 15'14 8.7

am 758 April 10'01 10.1 near edge

am 831 June 6'01 9.0

am 902 July 6'01 ter pov

am 1187 April 17'02 10.0 comp. star 2 m.s.

am 1218 April 29'03 defect in region.

am 1342 June 12'02 8.7

am 1349 June 13'02 9.8

am 1764 Dec. 22'02 8.7

am 1815 Feb. 3'03 8.7

am 1825 Feb. 20'03 8.7

am 1851 April 3'03

September

−63° 2632

am 1857 April 15'03 8.7

am 1893 April 28'03 8.7

am 2015 June 12'03 8.7

am 2044 June 16'03 8.7

am 2057 June 22'03 8.7

am 2174 Aug 10'03 8.7

am 2429 Dec. 24'03 8.8

am 2470 Feb 13'04 ter pov

am 2506 April 7'04 9.5

am 2567 April 22'04 8.7

am 2612 May 5'04 8.7

am 2676 May 24'04 8.7

am 2686 June 1'04 8.7

am 2813 July 6'04 8.7

am 3343 Jan 24'05 8.7

am 3359 Feb. 28'05 8.7

am 3396 March 27'05 8.7

am 3424 March 31'05 8.7

am 3433 April 21'05 8.8

am 3470 April 22'05 8.8

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September 20, 1906

a −63° 26 32

am 3522 May 11 '05
8.7

am 3574 June 2 '05
8.7

am 3629 June 13 '05
8.8

am 3697 July 8 '05
8.8

am 3791 Aug 17 '05
8.8

am 4070 Jan. 29 '06
8.8

am 4107 Feb. 14 '06
8.7

am 4135 March 22 '06
Trapezium

am 4167 April 03 '06
8.8

am 4224 Mar 12 '06
8.8

am 4280 June 9 '06
8.8

am 2543 April 5 '04
8.7

am 368
does not cover rg.

am 1517 April 22 '02
8.7

am 3328 Jan. 13 '05
8.7

B 33736 May 11 '04
8.8

am 3306 Jan. 9 '05
8.7

am. 4255
Images superposed

am 770 May 8, 1901
8.7

am 1165 April 1, 1902
Broken in Pieces not seen.

September 20, 1906

Algol Var −63° 2632 cont.

a 4339 April 30 '00 ✓
8.9

a 7269 April 25 '05 ✓
8.9

a 7239 March 29 '05 ✓
8.9

a 7272 April 26 '05 ✓
8.9

a 7281 April 28 '05 ✓
8.9

a 2504 June 02 '97 ✓
8.9

a 7253 April 10 '05 ✓
8.9

a 7277 April 27 '05 ✓
8.9

a 7247 March 30 '05 ✓
10.1

a 7283 April 29 '05 ✓
9.2 Probably ft.

a 3093 June 16 '98 ✓
8.9

a 4408 May 28 '00 ✓
9.0

a 1931 July 20 '96 ✓
8.7

a 2379 June 1 '97 ✓
8.8

a 1932 June 20 '96
Not legible.

a 2507 June 24 '97 ✓
8.8

~~a 7677~~

~~a 7659 April 25 '06~~

Continued from page 101

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Friday, September 21, 1906

Examination of Plates near the "Coal-Sack"
Cont. from p. 86

Plate A 2504 superposed with D12033 (=A7244)

Var	Br	7	76
25	7244 7281 7272 [11.4] etc	2504 [12.2] 4339 1931	
	3893		
	B21714 B30245 [10?]	B29754	
26	7244 44083093 7257 etc	2504 [2507	
	B29754 [10.5] 21708 26998	B19569 [12.1] (23490)	
	3418 30?5		

Period probably long

Re-designated No. 17.

This plate (2504) is not well adapted for superposition with D12033, because it is of much shorter exposure. Only fairly striking variations among the brighter stars could possibly be seen

Cont. p. 102.

Friday, September 21, 1906

Algol Variable C.P.D. −63° 2632
Examination of plates giving considerable residuals from light-curve

AM 1915
9.1

AM 1352
9.3

AM 831
9.1 near edge

AM 2506
9.6 Near edge - image inherently poor

AM 2588
9.4

AM 1349
9.7 Near edge.

All the above estimates made with great care and cannot vary greatly from true magn.

Continued on page 121

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Saturday, September 22, 1906

Examination of Plates near the "Coal-Sack"

cont. from p. 100

Plate A 7269 superposed with D 12033 (= A 7244)

Var	Br	Ft 7269
27	7244 4339 1931 3093	7269 7253
	B9754 [10.3]	B9754:
	AM 4194 [8.5] 4300 [8.5]	AM 1799 [8.9] AM 1839 [8.7] 1944 [8.8]
	Seems to be of the Algol Type and certainly variable	
28	7244 4339 1931	7269
	B9754 [10.3] 21616	(B19569) B23490 [10.5] 31634 34163 [10.6]
	AM 2529 [10.3]	AM 2788 [10.9] AM 2717

Nos 27 and 28 both seem to vary really, though the range of each is very small. Both appear to be of the Algol Type. Do not announce unless the measures give definite results.

No. 17 ac-discovered.

Plate superpose pretty well, though very faint variables probably would not be found.

Cont. to 105 49.

Saturday, September 22, 1906

Measurement of Comparison Stars for Suspected Algol Var. 27 Centauri

	Plate B 21616 / ~~23490~~		B 19569	
a	3.8	4.0	a 3 4.2	3.4
b	4.7	4.9	b 5.0	4.2
c	5.0	5.2	c 5.3	4.9 4.7
d	5.4	5.7	d 5.8	5.2 5.1
e	6.0	6.0 6.1	e 5 6.3	5.7 5.6
Var	~~4.7~~ 5.1	5.4	Var	4.0 4.2

	B 22875		B 25608	
a	2.7	2.9	a 3.0	3.2
b	3.4	3.6	b 3.4	3.6
c	3.9	4.1	c 3.6	3.8
d	4.3	4.5	d 3.9	4.1
e	4.8	5.0	e 4.2	4.4
Var	3.7		Var 3.5	

Comparison with Comp. Stars for Algol Var. −63° 2632

	B 19569	B 21616	B 22875	B 25608
a	8.4	-	-	8.5
b	8.9	8.7	8.4	8.9
c	9.2	8.9	8.6	9.0
d	9.4	9.3	8.9	9.4
e	9.6	9.6	9.2	9.6

All things the stars are near together, the above shows that Comparison star is not −63° 2632 variable. Try AM plates.

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Saturday, September 22, 1906

Comparison plate for 27 Centauri Arch.

Comparison with Sequence for −63° 2632

	AM 2442 78	AM 2529	AM 2717	AM 2738	
a	-	-	-	-	
b	-	~~8.6~~	-	-	
c	8.7 6	8.6	8.6	8.7	8.62
d	8.8	8.9	8.8	8.9	8.85
e	9.1	9.2	9.2	9.3	9.20

Monday, September 24 1906

Examination of Plates near the "Coal Sack"

10 15

Plate A 7277 superposed with D 12033 (=A 7244

No. 17 and 27 rediscovered

Images on A 7277 are rather feeble, and only striking variations in comparatively bright stars could be discovered. No new variables

10 45 found on the plate.

Plate A 7283 superposed with D 12033

No. 17 rediscovered

No new variables found

Plate A 7281 superposed with D 10721 (=A 2092)
No. 22 re-discovered
No new variables found

Continued p. 119

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Monday, September 24, 1906

1.30 Observations of Suspected Variables 27-28 Centauri

am 1799, Jan. 15, 1903
No. 27 9.0
No 28 10.5

am 3615 June 10, 1905
No 27 8.8
No. 28 10.5

am 3487, April 8, 1905
No 27 8.8
No 28 10.4

am 459, May 8, 1903
No 27 8.7
No 28 10.4

am 367, February 20, 1903
No 27 8.7
No 28 Concealed by trail

am 1839, March 16, 1903
No 27 8.9
No 28 10.3

am 4212, May 11, 1906
No 27 8.8
No 28 10.2

am 1944, May 15, 1903
No 27 8.9
No 28 10.2

am 4350, June 13, 1906
No 27 8.5
No 28 10.3

am 2738, June 11, 1904
No 27 8.5
No 28 10.9

am 3370 March 6, 1905
No 27 8.5
No 28 10.3

am 3744, April 6, 1904.
No 27 8.5
No 28 10.3

am 3499 May 6, 1905
No 27 8.4
No 28 10.5

am 3557 May 25, 1905
No 27 8.8
No 28 10.2

1.50

A. D. N.

Monday, September 24, 1906

1.50 Observations of Suspected Variables 27-28 Centauri

am 3604, June 9, 1905
No 27 8.6
No 28 10.3

am 3664, June 27, 1905
No 27 8.7
No 28 10.3

am 3682, July 3, 1905
No 27 8.5
No 28 10.4

am 4053 January 26, 1906
No 27 8.6
28 10.5

am 4137 March 21, 1906
No 27 8.7
No 28 [illegible]

am 4194 April 30, 1906
No 27 8.5
No 28 10.3

am 2117 July 14, 1903
No 27 8.5
28 10.4

am 2098 July 6, 1903
No 27 8.5
28 10.5

am 1899 May 4, 1903
No 27 8.5
28 10.6

am 1843, March 26, 1903
Not good

am 1808 Jan. 17, 1903
No 27 8.4
28 Too poor

am 1724 Nov. 26, 1902
No 27 8.6
28 [illegible]

am 1411 July 2, 1902
No 27 8.7
28 10.3

am 1258 May 17, 1902
No 27 8.6
28 10.3

2.02 A. D. N.

2.05

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Monday, September 24, 1906

2.03 Observations of Suspected Variables 27+28 Cntaurii

am 1229 May 1, 1902
No 27 8.6
28 10.2

am 1159 March 11, 1902
No 27 8.4
28 N.S.

am 928 July 23, 1901
No 27 8.6
28 Too poor

am 806 May 27, 1901
No 27 8.6
28 10.8

am 782 May 13, 1901
No 27 8.4
28 Too poor

am 738 March 26, 1901
No 27 8.4
28 Too poor

am 389 March 26, 1900
No 27 8.4
28 Too poor

am 417 April 6, 1900
No 27 8.8
28 10.2

am 431 April 9, 1900
No 27 8.6
28 10.3

am 501 June 19, 1900
No 27 8.5
28 10.2

am 526 July 20, 1900
No 27 8.5
28 Too poor
Plate is isochromatic

am 765 April 26, 1901
No 27 8.4
28 Too poor

am 839 June 7, 1901
No 27 8.6
28 Too poor

am 886 June 25, 1901
No 27 8.8
28 10.2

2.20 A.D.W.

Monday, September 24, 1906

2.20 Observations of Suspected Variables 27+28 Cntaurii

am 954 Aug 3, 1901
No 27 ~~8.6~~ 8.5
28 Too poor

am 1190 April 7, 1902
No 27 8.4
28 Too poor

am 1224 April 30, 1902
No 27 8.6
28 10.2

am 1334 June 11, 1902
No 27 8.5
28 10.2

am 1363 June 14, 1902
No 27 8.5
28 10.1

am 1389 June 25, 1902
No 27 8.5
28 10.4

am 1828 Feb. 20, 1903
No 27 8.5
28 10.3

am 1855 April 4, 1903
No 27 8.4
28 10.2

am 1886 April 25, 1903
No 27 8.4
28 Too poor

am 1978 June 1, 1903
No 27 8.8
28 10.2

am 2016 June 12, 1903
No 27 8.5
28 10.2

am 2042 June 16, 1903
No 27 8.9
28 10.2

am 2082 June 30, 1903
No 27 8.5
28 Too poor

am 2195 Aug. 13, 1903
No 27 8.6
28 Too poor

228 A.D.W.

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Monday, September 24, 1906.

2.28 Observations of Suspected Variables 27+28 Cntaur.

am 2474 Feb. 23, 1904
No 27 8.6
28 Too poor

am 2504 April 7, 1904
No 27 8.5
28 Too poor

am 2542 April 15, 1904
No 27 } Too near edge
28

am 2547 April 16, 1904
No 27 8.5
28 Too poor

am 2606 May 4, 1904
No 27 8.5
28 10.3

am 2649 May 13, 1904
No 27 8.5
28 10.2

am 2814 July 6, 1904
No 27 8.5
28 Too poor

am 2922 Aug 5, 1904
No 27 8.4
28 Too poor

am 3329 January 13, 1905
No 27 8.5
28 10.2

am 3382 March 13, 1905
No 27 8.6
28 Too poor

am 3383 March 13, 1905
No 27 8.5
28 Too poor

am 3428 April 1, 1905
No 27 8.5
28 10.2

am 3520 May 11, 1905
No 27 8.8
28 10.2

am 3583 June 3, 1905
No 27 8.4
28 10.7?

2.40 A. G. W.

Image of 28 very poor 2.40

Monday, September 24, 1906

2.40 Observations of Suspected Variables 27+28 Cntaur.

am 3621 June 12, 1905
8.7
10.7

am 3701 July 10, 1905
No 27 8.6
28 10.5

am 3773 Aug. 10, 1905
27 8.8
28 10.3

am 4188 April 28, 1906
No 27 8.5
28 10.2

am 4221 May 11, 1906
No 27 8.5
28 Too poor

am 4301 June 13, 1906
No 27 8.4
28 Too poor

am 4310 June 14, 1906
No 27 8.4
28 10.2

am 428 Mr April 4, 1910
Too near edge.

am 1704 Dec. 22, 1902
No 27 8.5
28 Too poor

am 1815 Feb 3, 1903
No 27 8.76
28 Too poor

am 1825 Feb 20, 1903
8.4
Too poor

am 1851 April 3, 1903
8.6
Too poor

am 1857 April 15, 1903
27 8.9
28 Too poor

am 1893 April 27, 1903
8.6
Too poor

2.53 A 2M

2.53

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Monday September 24, 1906.

Observations of Suspected Variables 27 & 28 Centauri

Am 2044 June 16, 1903
8.7
Too poor

Am 2057 June 22, 1903
8.4
Too poor

Am 2174 Aug 10, 1903
8.4
Too poor

Am 2429 Dec. 24, 1903
8.6
Too poor

Am 2543 April 15, 1904
8.7
I. p.

Am 2567 April 22, 1904
8.5
I p

Am 2612 May 5, 1904
8.5
I p

Am 2676 May 24, 1904
8.6
I p

~~2686~~

Am 2713 July 6, 1904
Film defective.

Am 3343 January 24, 1905
8.7
I p

Am 3359 Feb. 28, 1905
8.5
I p.

Am 3396 March 27, 1905
8.6
I p

Am 3424 March 31, 1905
No 27 8.4
28 10.2

Am 3433 April 2, 1905
8.4
I p

3.00 A.D.W.

3.00

Monday September 24, 1906

Observations of Suspected Variables 27 & 28 Centauri

Am 3470 April 22, 1905
8.6
10.2

Am 3522 May 11, 1905
8.8
Too poor

Am 3574 June 2, 1905
27 8.6
28 Too poor

Am 3629 June 13, 1905
8.7
Too poor

Am 3697 July 7, 1905
8.5
10.2

Am 3791 Aug 17, 1905
8.4
Too poor

Am 4070 Jan. 29, 1906
8.4
Too poor

Am 4107 Feb. 14, 1906
8.5
10.3

Am 4135 March 22, 1906
8.6
Too poor

Am 4167 April 23, 1906
8.8
10.3

Am 4224 May 12, 1906
No 27 8.6
28 10.2

Am 4280 June 9, 1906
8.8
Too poor

Am 1239 May 3, 1902
No 27 } Can't be measured
28 } Image & superposed

Am 445 April 24, 1900
No 27 8.9
28 Too poor

3.08 A.D.W.

3.08

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Monday, September 24, 1906.

Observations of Suspected Variables 27 + 28 Antauri

B 29757 May 17, 1902
No 27 8.8
28 10.3

B 31637 May 5, 1903
No 27 8.7
28 10.7

B 21708 June 17, 1898
27 8.7
10.2

AM 2717 June 6, 1904
27 8.4
28 10.6

AM 2529 April 12, 1904
27 8.7
28 10.3

AM 2478 March 9, 1904
27 8.6
10.2

AM 2442 Jan 9, 1904
27 8.7
28 10.4

B 22738 May 4, 1899
No 27 8.5
28 10.2

B 22874 May 20, 1899
No 27 8.7
28 10.3

B 24924 April 2, 1900
27 8.4
28 10.2

B 29083 Jan. 6, 1902
No 27 8.6
28 10.2

B 33885 May 31, 1904
No 27 8.6
28 10.3

B 33607 May 4, 1904
No 27 8.6
28 10.3

B 33095 Feb. 23, 1904
No 8.6
10.3

3.28 a.D.78.

Monday September 24, 1906.

3.28 Observations of Suspected Variables 27 + 28 Antauri

B 34183 June 21, 1907
No 27 8.6
28 10.7

B 35789 April 8, 1905
27 9.0
28 10.2

B. 15768 May 11, 1896
8.5
10.3

B 12993 April 10, 1892
8.4
10.3

B 35744 April, 1905
Too poor

B 9706
8.6
10.2

B 10880
27 8.6
28 Too poor

B 3418
No 27 8.8
28 10.2

B 26998 March 26, 1901
8.5
Off edge of plate.

B 22392 Dec 14, 1898
No 27 8.6
28 10.8

B 23490 July 17, 1899
No 27 8.5
28 10.6

B 22875 May 20, 1899
8.5
10.3

B 19569 June 18, 1897
8.5
10.4

3.28a.D.78.

3.28

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Monday, September 24, 1906.

Observations of Suspected Variables 27 & 28 Centauri

	B 13569 June 4, 1895	B 30245 June 30, 1902
No 27	8.7	No 27 8.6
28	10.2	28 10.8
	B 19286 May 31, 1897	B 25608 June 25, 1900
No 27	8.8	No 27 8.6
28	10.2	28 10.3
	B 19561 June 17, 1897	B 21714 June 20, 1898
	8.6	8.5
	10.3	10.3
	B 29952 May 15, 1902	B 21506
No 27	8.7	8.5
28	10.2	Off edge
	B 21616 June 10, 1898	B 19475 June 9, 1897
	8.8	8.6
	10.2	Off edge
	B 21235 April 18, 1898	B 15637 April 23, 1896
	8.4	8.6
	10.2	Off edge
	B 3481	Am 1352 June 13, 1902
27	8.5	No 27 8.5
28	10.2	28 10.2

3.35 A.D.H.

3.35

Monday, September 24, 1906.

Observations of Suspected Variables 27 & 28 Centauri

	B 19673 July 1, 1897	Am 1187 April 7, 1902
No 27	8.6	8.5
28	Off edge	Too poor
	Am 1915 May 6, 1903	Am 846 June 11, 1901
No 27	8.5	No 27 8.5
28	10.2	28 Too poor
	Am 831 June 6, 1901	Am 760 April 10, 1901
No 27	8.6	8.4
28	Too poor	10.2
	Am 2506 April 1904	Am 2777 June 23, 1904
No 27	8.6	8.5
28	Too poor	10.3
	Am 2588 May 2, 1904	Am 1349 June 13, 1902
No 27	8.6	8.6
28	10.3	Too poor
	Am 3817 Aug 21, 1905	Am 2801 July 2, 1904
No 27	8.4	8.4
28	Too poor	10.2
	Am 958 April 10, 1901	Am 2569 April 22, 1904
	Too near edge	8.5
		10.2

A.D.H.

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Monday, September 24, 1906.

Observations of Suspected Variables 27 + 28 Centauri

AM 1970 May 27, 25, 29, 1903

No. 27 8.7
28 10.2

3.50 a.2.20.

AM 451, May 4, 1900
Images superposed

AM 1239
Images superposed

AM 3481 Imm. superposed
AM 492 " "
AM 446 " "
AM 443 " "

AM 2813, 3328, 2686, 2470, 2015, 1342, 1218, 468
902, 532, 770, 496, 449, 448, 447, 425, 408
Do not cover region

Tuesday, September 25, 1906

Examination of Plates near the "Crab-Nebula"
Cont. from p. 102

Plate A 4408 superposed with D 12033 (= A 7244)

Nos 7, 16, 17 rediscovered -
No new variables.

The center of this plate is at $13^h\ 20^m\ -62.5$
while that of A 7244 is at $12^h\ 50^m\ -62°.5$,
so that only the preceding half of the plate
could be compared and then the images
were distorted in different directions. Otherwise
the comparison was good, as the images were
of similar density

Continued from p. 132

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Tuesday, September 25, 1906

Suspected Variables 3 and 28 Centauri cont'd from p. 118

A3093
25 8.5
28 10.3

A7277
9.1
10.6

A7244 69
27 8.7
28 10.7

A7253
8.8
10.4

A2504
27 8.6
28 10.8

A7269 44
8.5
10.5

A7239
27 8.6
28 10.4

A4408
8.5
Bright (Segment of edge

A7272
27 8.6
28 10.5

A7281
8.6
10.6

A2507
27 8.6
28 Bright (Segment of edge

A7282
8.6
10.5

A1931
27 8.7
28 10.3

A4339
8.6
10.5

A2379
8.6

Tuesday, September 25, 1906

Variables nos. 17, 27, & 28 Centauri
No. 17 Centauri - C.P.D. -63° 2632

B 3321
17 off edge
27 8.7
28 10.3

B 4588
17 off edge
27 8.6
28 too few

B 3314
17 off edge
27 8.6
28 too few

B 6492 July 5, 1891
17 too few
27 8.6
28 off edge

B 3309
17 8.7
27 8.6
28 10.4

B 6494 July 5, 1891
17 8.7 image staunchly fine 7 ft. near edge
27 8.5
28 off edge

B 3378
17 8.7
27 8.5
28 10.3

B 7225 too few.

B 7274
17 9.8 Extreme edge of
27 8.5 plate. Film defective
28 10.4

B 3433
17 8.7
27 8.7
28 10.3

B 7275
17 too few.
27 too few
28 " "

B 3480
17 8.7
27 8.6
28 10.2

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Tuesday September 25, 1906

Variables nos. 17, 27, + 28.

B 7276
17 off edge
27 8.5
28 10.3

B 7538
two pair

B 9358
17 off edge
27 8.5
28 10.2

B 9292
17 off edge
27 8.6
28 10.3

B 9299
17 off edge
27 8.6
28 10.3

B 9300
17 off edge
27 8.6
28 10.3

B 9331
17 8.7
27 8.5
28 10.3

B 9357
17 off edge
27 8.7
28 10.6

B 9358
17 off edge
27 8.5
28 too near edge

B 9360
17 8.7
27 8.6
28 off edge

B 9364
17 8.7
27 8.6
28 10 9.7

B
17
8.7
28

Tuesday September 25, 1906

Variables nos. 17, 27, + 28.

B 9485
17 off edge
27 8.6
28 10.3

B 9549
17 8.7
27 8.6
28 10.5

B 9659
17 off edge
27 8.7
28 off edge

B 11135
17 8.7
27 8.5
28 off edge

B 11138
17 off edge
27 8.6
28 10.3

B 11142
17 8.7
27 8.6
28 10.4

B 11318
17 off edge
27 11
28 10.5

B 11338
17 off edge
27 8.5
28 10.2

B 11339
17 off edge
27 8.6
28 10.2

B 11340
17 off edge
27 8.5
28 too pair

B 11341
17 off edge
27 8.5
28 10.3

B 11410
17 10.2
27 8.6
28 off edge

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

September 25, 1906

Variable, nos. 17, 27, + 28.

B 12542
17 off edge
27 8.7
28 off edge

B 12745
17 8.7
27 8.7
28 to near edge

B 12795
17 off edge
27 8.5
28 off edge

B 12803
17 off edge
27 8.8
28 off edge

B 12836
17 off edge
27 8.7
28 off edge

B 12837
17 off edge
27 8.7
28 off edge

B 12878
17 off edge
27 8.6
28 too faint

B 12903
17 8.7
27 8.6
28 too faint

B 12904
too faint

B 12905
17 off edge
27 8.6
28 too faint

B 12942
17 8.7
27 8.5
28 off edge

B 12943
17 8.7
27 8.6
28 off edge

September 25, 1906

Variable nos 17, 27, + 28.

B 33259 [illegible]
17 off edge
27 8.5
28 too ft.

B 33565
17 off edge
27 8.5
28 10.3

B 33567
17 8.7
27 8.6
28 10.3

B 33760
17 8.7
27 8.7
28 10.5

B 26947
17 8.7
27 8.7
28 10.2

B 26946
17 8.7
27 8.8
28 10.3

B 13174
17 off edge
27 8.7
28 too near edge

B 13209
17 8.7
27 off edge
28 off edge

B 13481
17 9.7
27 8.6
28 off edge

B 13523
17 off edge
27 8.8
28 off edge

B 13863
17 off edge
27 8.7
28 too near edge

B 15269
17 off edge
27 8.7
28 too near edge

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September 25, 1906

Variables nos. 17, 27, +28.

B 15994
17 off edge
27 8.7
28 too near edge

B 15355
17 off edge
27 8.9
28 off edge

B 15369
17 9.9 Extreme edge of plate
27 8.7
28 off edge

B 15424
17 8.7
27 9.0
28 off edge

B 15932
17 8.7
27 8.7
28 off edge

B 16220
17 off edge
27 8.6
28 10.3

B 16251
17 off edge
27 8.6
28 off edge

B 16870
17 8.7
27 8.8
28 off edge

B 17276
17 8.7
27 8.6
28 off edge

B 18323
too faint

B 18579
17 8.7
27 8.6
28 off edge

B 18779
17 8.8
27 8.6
28 off edge

September 25, 1906

Variables nos. 17, 27, +28

B 18911
17 8.8
27 8.6
28 off edge

B 18902
17 off edge
27 8.5
28 too faint

B 19799
17 off edge
27 8.5
28 off edge

B 19996
17 8.7
27 too near edge
28 off edge

B 21124
17 off edge
27 8.6
28 10.3

B 22443
17 off edge
27 8.7
28 10.3

B 22879
17 8.7
27 off edge
28 "

B 23487
17 off edge
27 8.5
28 11.0

B 25103
17 off edge
27 8.6
28 10.4

B 25662
17 off edge
27 8.6
28 too near edge

B 27023
17 off edge
27 8.7
28 10.3

B 27170
17 off edge
27 8.7
28 10.3

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September 25, 1906

Variables pos. 17, 27, + 28.

B 27310
17 8.7
27 8.7
28 10.3

B 27369 blen. S.
17 too near edge
27 8.6
28 too near edge

B 27370 blen. S.
17 8.7
27 off edge
28 "

B 27378 blen. S.
17 8.7
27 8.6
28 10.2

B 23160
17 off edge
27 8.7
28 too faint

B 31605
17 8.7
27 8.7
28 10.4

B 30008
17 Off. edge
27 8.5
28 10.3

B 29997
17 off edge
27 8.5
28 10.3

B 29687
17 off edge
27 8.6
28 10.3

B 29073
17 off edge
27 8.5
28 too faint

B 36391
17 8.8
27 off edge
28 "

B 36368
17 8.9 certainly ft.
27 too near edge
28

September 25, 1906

Variable 17, 27 + 28

B 25743
17 off edge
27 8.6
28 10.3

B 35669
17 off edge
27 8.6
28 10.3

B 34135
17 8.8
27 off edge
28 "

B 34157
17 off edge
27 8.6
28 10.5

B 34134
17 8.7
27 off edge
28 "

B 34044 bl. S.
17 8.7
27 8.6
28 10.3

B 31633
17 off edge
27 8.6
28 10.7 images runy from Observations uncertain

B 35617
17 8.7
27 8.7
28 10.3

AM 1467 ~~268~~ July 14, 1902
17 8.7
27 8.7
28 10.3

AM 400
17 round by a crack
27 8.4
28 too faint

B 12860
17 8.8
27 off edge
28 "

B 23528
17 8.7
27 8.5
28 too near edge

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September 25, 1906

Variables nos. 27 + 28

B 30012
27 off-edge
28 11

B 30471
27 too faint
28

B 32349
27 8.7
28 off-edge

B 22582
27 8.7
28 10.3

B 26948
27 8.9
28 10.3

B 23193
27 too much edge
28 "

B 24890
27 8.7
28 10.8

B 25004
27 8.8
28 10.3

B 19269
27 9.0
28 off-edge

B 3347
27 8.5
28 10.3

B 3420
27 87
28 off-edge

B 11139
27 8.6
28 10.3

B 15724
27 8.6
28 off-edge

B 16047 June 1, '96
27 8.9
28 off-edge

September 25, 1906

Variables nos. 27 & 28.

B 16049
27 9.0
28 off-edge

B 16089
~~doesn't come up.~~

B 16600
27 8.6
28 off-edge

B 16673
27 8.5
28 off-edge

B 17110
27 8.6
28 off-edge

B 17286
27 8.6
28 off-edge

B 18285
27 8.6
28 off-edge

B 18469
27 8.6
28 off-edge

B 18638
27 8.7
28 off-edge

B 18676
27 8.6
28 off-edge

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September 25, 1906

Variables no. 17 + 27, + 28

B 9386
17 8.7
27 too near edge
28 off edge

B 26962
17 8.7
27 8.6
28 10.3

B 5360
doesn't exist upon.

September 29, 1906

Variables no. 17, 27 + 28

B 10910
17 8.8
27 off edge
28 " "

B 34165
17 8.8
27 8.6
28 too near edge

B 9972
17 off edge
27 8.8
28 too near edge

B 29435
too faint.

B 11088
17 9.2° extreme edge; comp. star + ~~to edge~~
27 8.6
28 too faint.

AM 3306
27 8.7
28 10.3

AM 4255
images superposed.

B 33736
27 8.6
28 10.3

Continued page 145

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September 29, 1906

Region of the Southern Cross. Measures to determine the portion magnitudes of comp. stars. 12h 20 - 62.5

A 7639

a	1.6	1.3	
b	1.9	1.6	
c	2.2	1.9	
d	2.6	2.3	
e	3.0	2.7	
f	3.7	3.4	
g	4.7 3.9	4.3	4.2
h	5.7 4.6	5.2	5.2
k	6.0	5.9	5.8
l	6.4	6.6	6.4
m		6.7	
n		7.0	
o		7.2	
p		7.5	
q		7.9	
r		8.1	
s		8.7	
t		9.0	
u		9.5	

A 1813

a	3.0	2.7	
b	3.5	3.2	
c	3.9	4.2	3.9
d	4.7	4.9	4.9
e	5.8	5.7	5.6
f	6.3	6.0	
g		6.5	
h		6.9	
k		7.3	
l		7.7	
m		8.0	
n		8.2	
o		8.7	
p		9.0	
q		9.4	
r		m.s	
s			
t			
u			

Images are double on A 1813

September 29, 1904

Region of the Southern Cross

Measures to determine the magn. of comp. stars. 12h 20 - 62.5

A 3094

a	2.0	1.7	
b	2.5	2.2	
c	2.8	2.5	
d	3.1	2.8	
e	3.5	3.2	
f	3.9	3.6	
g	4.3	4.3	4.2
h	5.0	4.8	
k	5.4	5.1	
l	6.0	5.7	
m	6.2	6.0	
n		6.2	
o		6.4	
p		7.0	
q		7.3	
r		7.6	
s		8.0	
t		8.7	
u		8.9	

A 3094

a	2.0	1.7	
b	2.6	2.3	
c	2.9	2.6	
d	3.0	2.7	
e	3.4	3.1	
f	3.7	3.4	
g	3.9 4.0	4.0	3.8
h	4.8	4.7	4.6
k	5.5	5.1	
l	5.9	5.8	5.7
m	6.2	6.1	6.0
n		6.4	
o		6.5	
p		6.9	
q		7.3	
r		7.6	
s		7.9	
t		8.5	
u		8.9	

J. C. M. rec.

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Monday, October 1, 1906

Region of the Southern Cross. Near Vanadis

$12^h 25^m -62° 5$

Numbers continue ones for each Scale Region p. 81

Plate A 3094 superposed with D 12355 (= A 7639

Var	Br	Ft
29	3094 [10.8]	7639 [16.0] 1813 [5.15]
	B21708 (edge)	B27170
30	3094 [10.8]	7639 [13.5]
	B21708 27170 30708	B33760
31		

Tuesday, October 2, 1906.

Region of Southern Cross. Near Vanadis

Var	Br	Ft
31	3094 [13.1] 1813	7639 [14.2]
	B21708 21702	B27170 33760
X 32	3094 [14.1]	7639 [16.0] 1813
		B33760 21708 27170 21702

Probably the image of this star is exactly covered by a defect in A 3094, as B 21708, taken on the same date, does it faint. Do not announce

33	7639 [12.5]	3094 [14.0] 1813
	(B27170)	B21702 33760 21708
X 34	? 7639	3094 1813

Very doubtful. Seen bright only on 7639, where it is very near edge: Variation if any is small, as seen on other plates. Do not announce

35	R Crucis	3094	7639

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Wednesday, October 3, 1906

The Southern Cross. New Variables

Var	Bz	H
36	3094 [13.4]	7639 [16.4]
	B27174 21708	B33760
X 37	3094	7639

This is probably a nebula. Image same in-tensse on A 3094. Not to be announced, of course, not even suspected of variability.

X 38	3094 [16]	7639 1813 ? On 7639 ns <170

This star closely following ~~and~~ on 15th magnitude star. It may possibly be a defect on plate A 3094, but looks like a genuine star image. Too close for examination on B plates. Do not announce

X 39	3094 [14.5]	7639 [15.5] B 21708

Almost certainly a defect ~~on~~ near the image of the star on A 3094. On B 21708, taken the same day, the image is of same brightness as on A 7639

40

Rediscovered No. 11

Thursday, October 4, 1906

The Southern Cross. New Variables

Var	Bz	H
40	3094 [15.] 7244	7639 [16.] (7269)
X 41	3094 7244, 7269 7237	7639 7277 2504
	B21708, 21702, 27174, 33760	
	Bz 13.	H 13.5

Range small, but variation almost certain. Probably of the Algol Type. Do not announce.

42	3094 [15.] 3093 7239 7244	7369 [16.] 2504

On Plate A 3094 superposed with D 12355 = A 7639, were discovered Nos 29-42, of which Nos. 32, 34, 37, 38, 39, 41 are on the suspected list. No. 35 is the same as R Crucis. No. 11 was rediscovered

Nos 34, 38, 39, 40, 41, 42 are in the region covered by D 12033 = A 7244, on which Variables Nos 1-28 were discovered.

Of the variables 1-28, those nos. 1, 2, 3, 4, 5, 6, 9, 10, 11, 25 are in the region common to the two positives

The two plates did not superpose very well, as the negative (A 3094) was full of pin holes and star like black spots, while at the same time it is somewhat badly fogged and the images are so large that there was but little contrast with the positive. The quality of the individual images on both plates is excellent.

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Thursday, October 4, 1906

The Southern Cross

Plate AM 2738 (12^h -60°) superposed with D 12353 (= AM 4300)

These plates superposed very satisfactorily. Region of Southern Cross first examined, and number given in continuation of preceding pages.

Var	Br	Ft
Var. ~~43~~ 1	2738 [24 / 7.] 2717 2801	4300 [10.1] (4212) 459 4194 3682 3664 1915 [10.5]

Re-discovered R. Crucis

This variable was originally assigned to the series in Crux and Centaurus, but as it was discovered on the map of the sky and was at first given the number 1 in that series (see next page) it is now definitely transferred to the map of the sky series.

Map of the Sky 12^h -60°

Plate AM 2738 superposed with D 12353 = AM 4300

Var	Br	Ft
±	~~Same as No. 43 in Region of the Southern Cross.~~	
S Carinae ±	2738 [8.] 1944	4300 [9.] 1803 [10.]
10 12 59 3	2738 [9.] 1258 1229 846 459 732 3307 3454 4308	4300 [10.] 3444 (2801) 2098
	Apparently of the Algol Type. Measure up.	
X 4	2738 2717 [10.] 4112412	4300 1944 [10.5]
	Variation very slight, though probably real. Do not announce	
X 5	2738 [10.] 3370 1803	4300 [10.5] 3444 3664 3682 2442
	Do not announce. Probably variable, but difficult	
39 Carinae X ±	4300 [9.4] 3604 3664 1803 459	2738 3444 [10.0] 3370 3682 4194 2442 [10.3]
	This is the same as 39 Carinae.	

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Friday, October 5, 1906

Map of the Sky 12^h $-60°$ cont.

	Var	Br	Ft
Per. post. beg.	7	2738 [9.0]	4300 [9.7]
		2717 2098 1803 1944 2442	4053 459 4212 3682
	X 8	4300 [8.7] 3664 3682 4134	2738 [9.2]
Examined with a high power, no. of Pls. 8 appears to be post. displ. since Nov. 28, '06		4194 2442 1944 1803 1411 4212 2717	
		All plates in brt 12^h–$60°$ examined. Image uniform on all can see 2738. Image possibly disturbed, though it does not appear to be so. Do not announce.	
	9	4300 [9.4] 1799 [9.0] 1808	2738 [10.0] 2569 2529
		Period apparently long.	
	X 10	2738 1839 1799 782 1951 429	4300 3370 [9.0 ?]
See also pag. 186.		2801 ~~4212~~ [8.5 ?] 1803	
		Near edge estimates made are only very approximate. Seems to be a variable of the Algol type, but do not announce as it is seen faint only on 2 plates and the range is small.	
114359 Not known	11	4300 [8.6] 1411 4212 4053	2738 [9.0] 1944 [9.2] 3682 [9.4]
		2098 3664 4134 2801	
		Apparently of the Algol Type. Measure up ?	

Saturday, October 6, 1906

Map of the Sky 12^h $-60°$

Var	Br	Ft
	4300	2738
12	~~2738~~	~~4300~~ [

See next page

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Monday, October 8, 1906

Map of the Sky 12h -60°

Var	Br	Ft
12	4300 [8.7] 2098 459	2738 [9.3] 3604 [9.5] 4134
	Period apparently long	
13	4300 1897 1799 4053 [9.8]	2732 1229 [10.5] 1258 (3444) 2801 2588
	Period apparently long	
14	2738 [8.8] 1411 4053 3664	4300 [9.4] 4194 2442 2717 3370 459 2098 3682 [9.8]
	Period evidently short. Measure up?	
X 15	2738 [9.8] 3682 3664 4053 459 4682 2217 2442 etc.	4300 [10.5]
See also p. 186	Possibly not seen on Am 4300	
	Seen faint only on Am 4300 Probably a variable of Algol Type, as image on that plate does not appear to be defective. Do not announce.	
16	2738 [8.5] 1839 1258 3444	4300 [9.4] 1299 702 1899 3499 3557 738
1	Period evidently rather short	
R Muscae 17	2738 [7.2] 3604 4282 4272	4300 [8.3] 2098 3664 3682 1947 4053 2717 4194 2442
	Variation about half a magnitude. Period apparently short Certainly variable. Announce?	
X 18	2738 459 2442 [8.7]	4300 4134 [9.5] 2098 4053 (1944) 1411
Confirmed BK 22: 48	Variation seems to be real, but slight. Do not announce	
19	2738 [9.5] (3444) 3557	4300 [10.5] 4194 459 4053 (1944) 3682 2422 2717
	Period apparently short Not seen on print	
133561 20	2738 [10.0] 3557 3499 3444	4300 [10.8] 3682 2801 3604 3664
30	Evidently of the Algol Type. Measure up? Not known	

Tuesday, October 9, 1906

Variable No 27 Centauri

Plate Am 445

Preceding image 9.0
Following image 8.9

Am 2044
8.9 extreme edge of plate

Am 1467
8.6

Am 2042
9.0

Am 1411
8.7

Continued page 151

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Tuesday, October 9, 1906

Map of the Sky 12h -60°

Var	Br	H
134459 21	4300 [9.7] (3370) 3682	2738 [10.7] 1411 1944 (4053) 2717
	Period probably long	
134358 22	2738 [8.?] 2442 2717 2098	4300 3682 [9.0] (1799) 1159
	3664 4134 4194 459 4212	
	3604	
	Probably of the Algol Type. Certainly short period	
	Not known	Melvine ref?
X 23	2738 [9.8] 459 2717 1944	4300 3664 [10.4] 2098 2442 3682
X 24	2738 4194 3664 2098 2442	4300
	3682	

Nos 23 and 24 are doubtful. Do not announce
No. 23 probably variable

~~25~~

On Plate Am 2738 superposed with D 12353 (= AM 4300) were found nos 1-24, of which nos 4, 5, 8, 10, 15, 18, 23 and 24 are on the list of suspected Variables. The known variables R Crucis, S Canum (no. 2), R Muscae (no. 17) and W.S.L. variable 1 Camelopardi, 39 Camelopardi (= No. 6) 37 Camelopardi, 43 Centauri (= No. 1) were re-discovered.

In all, 12 new variables
4 known
8 suspected.

Four of the new variables appear to be of the Algol Type, and three others probably have short periods.

Wednesday, October 10, 1906

Map of the Sky 12h -60°

Plate Am 3557 superposed with D 12353 (= AM 4300).

Var	Br	H
See pp 148, 185 X 25	4300 [8.9] 2801 4194 1229	3557 [9.4] 3370 [9.8] 1159 1803 4053 3499
Both sp on. After	Exam. B 11086, 2943, 2242, 3234	1799 Aclinochrite. Pattern comp. almost cent.
26	4300 [8.] (434) 3454	3557 [9.] 1411 1944 738 1229 782
	Period probably long	
27	4300 [8.8] 459 4134	3557 [9.4] 1799 4212 4194
	Period apparently short	
~~28~~	4300 [8.6] 3444 3682	3557 [9.2] 738 [9.4] (3499) 2801
This is 35 Camelopardi	(2442) 2717	2098
	Period probably short	
29	3557 3664 2717 4053	4300 2442 3682 [10.6]
	1803 2081 3444 [9.8]	
	Probably of the Algol Type.	
30	4300 [8.8] 2442 2717	3557 [9.4] 3499 3444 2801 3682 3664
31	3557 [8.8] 3444 4300	3499 [9.4] 738 [9.6] 2801 3682 2442 2717
	1815 2, 39	Centauri (No. 15) 1819 2 11
	Period probably short. Possibly of Antalgol Type	
	Disarmed while observing No. 30	
X 32	4300 [9.8] 4053 3370 3664 2717	3557 [10.1]
See also page 186	Forms a close double with a 9th magn. star north of var. Probably var. of Algol Type. Almost too difficult for AM plates. Shows in change in B plates mentioned under No. 25. Do not announce.	
33	3557 [9.2] 3682 2442 1159	4300 [8.2] 2801 (3664) 2098
	A faint star south of var. might be suspected of affecting estimates on plates 1159 and 2098 separation is especially good + var. clearly seen.	

Retarmed No 2, 5 Camelopardi, 3, 35 Ca. 1 Cer,

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Thursday, October 11, 1906

Map of the Sky 12^h $-60°$

	Var	Bz	Ft
R S Centauri	34	3557 [9.4] 3664 3682	4300 [10.0] 2738 [10.2] 1159 2098
		Period probably long.	
	X 35	3557 [9.0] 3682 3664 3644	4300 (2098) (1159) (2717) 2501 [9.4]
		Doubtful. Probably slightly variable in long period	
	36	4300	Do not announce
CPD 49° 5046 Magn. 8.9	36	4300 [8.2] 4282 [9.4] 459	3557 [< 10.7] 4212 [9.4] 1944
		3604 1799 3437 1899 702 806	
		846 4194	Not known
		Evidently Algol Type. Range at least 3 magnitudes	
	14-37	1899 No 14 rediscovered	3557 1899 [while observing No 36
H Centauri	37	3557 [9.3] 3604	4300 [10.0] 1411 [no S 10.6] 459
		Period apparently long	
	X 38	3557 [9.8] 3604 1899 1229	4300 [10.2]
		Probably variable, but difficult + very slight. Do not announce	
S Crucis	39	3557 [7.1] 1839 1229 782	4300 [8.2] (4882) 1724 1899
		1799 3604 459 1419	(494)
	40	4300 [8.9] 1411 4194 459	3557 [9.4] 3604 1899 (806)
		1799 1229 1724 782 1839	(1258) 2117
		2569	
		Period probably short.	
See also page 187	X 41	3557 [8.5] 782 1839 2569	4300 1258 (4115) [Gr 4300 88]
		2529 2479 2117 1808 2588	
		Perhaps of the Algol Type. Very slight. Do not announce unless confirmed.	

Rediscovered No. 13, 14, 34 Centauri (= 1 of the Series)

Map of the Sky 12^h $-60°$

On Plate AM 3557 superposed with D 1235 = AM 4300 were found Nos 25 - 41, of which Nos 25, 32, 35, 38, 41 are on the list of suspected variables.

The known variables R S Centauri (= No 34) W Centauri (= No 37) S Crucis (= No 39) S Carinae, and H.S.C. variables 35 Carinae, 1 Carinae, 43 Centauri, nos 3, 13, 14 Map of Sky, were re-discovered.

In all, 8 new variables
10 known
5 suspected

Of the new variables, 2 appear to be of the Algol Type, and three others to have short periods.

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Monday, October 15, 1906

Map of the Sky 13h –60°

Plate AM 1944 superposed with D 12353 = AM 4300

Var	Br	H
25	4300	1944

Perhaps 6th component of this sup. var. Chang.
Consult A plates.

42 1944 [9.4] 1229 738 4300 [10.0] 1411 [10.3] (3692) (3664) (1975)
Precedes a 10th magnitude star by 0'.5

43 4300 [8.6] 2717 4134 4194 49 1944 [9.0] 2442 3444 3499 3454
1799 3604 4308
Range small but var. certain. Have confirmed.
Period probably long

~~44~~

Continued page 170

Redisamined S Caninae, 25, 26, 28, 39 Caninae, 27 Caninae, 33, 7, 31,

32.40 Variable 27 Centauri — Observations repeated.

am	2044 June 16, 1903 ÷ 8.7 Extreme edge	am 2738 June 11, 1904 ÷ 8.7
am	4212 May 10, 1906 ÷ 8.8	Am 4300 June 13, 1906 ÷ 8.6
am	1258 May 17, 1902 ÷ 8.5	am 2472 Jan. 9, 1904 ÷ 8.8
am	806 May 27, 1901 ÷ 8.6	am 2717 June 6, 1904 ÷ 8.5
am	1970 ÷ 8.7	am 2098 July 6, 1903 ÷ 8.6
Am	928 July 23, 1901 ÷ 8.6	am 1159 Ma ÷ 8.4
am	722 Reg ÷	am 1899 May 4, 1903 ÷ 8.7
am	3615 June 10, 1905 ÷ 8.8	am 2649 May 13, 1903 ÷ 8.9
Asn	4053 Jan. 26, 1906 ÷ 8.5	am 1915 May 6, 1903 ÷ 8.6
am	3370 March 6, 1905 ÷ 8.6	am 738 ÷ 8.5

A. D. K.

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Monday, October 15, 1906.

22.55 Variable 27 Centauri = Observations repeated.

am	1724 ✓ 8.8	am 3499 ✓ 8.5
am	1229 ✓ 8.7	am 2801 ✓ 8.6
am	3664 ✓ 8.7	am 3437 ✓ 8.6
am	3682 ✓ 8.5	am 3629 ✓ 8.7 Ex. edge
am	1411 ✓ 8.8	am 1508 ✓ 8.6
am	1843 ✓ useless.	am 2117 ✓ 8.5
am	3604 ✓ 8.7	am 2522 ✓ Reg
am	459 ✓ 8.8	am 2478 ✓ 8.6
am	4194 ✓ 8.5	am 2529 ✓ 8.8
am	4134 ✓ 8.8	am 2569 ✓ 8.7

a.D.W.

Monday October 15, 1906

23.03 Variable 27 Centauri — Observations repeated.

am	846 ✓ 8.5	am 3329 ✓ 8.6
am	1839 ✓ 8.9	am 1978 ✓ 8.9
am	782 ✓ 8.5	am 2922 ✓ 8.5
am	2588 ✓ 8.6	am 2814 ✓ 8.5
am	3487 ✓ 8.9	am 2777 ✓ 8.5
am	3583 ✓ 8.7	am 2606 ✓ 8.5
am	3621 ✓ 8.8	am 2547 ✓ 8.5
am	3428 ✓ 8.6	am 2504 ✓ 8.5
am	3383 ✓ 8.6	am 2474 ✓ 8.7
am	3382 ✓ 8.7	am 2198 8.6 ✓

a.D.W.

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Monday, October 15, 1906.

23.11 Variable 27 Centauri – Observations repeated

am	2082 ✓ 8.6	am	1224 ✓ 8.5	am	501 ✓ 8.5			
am	3016 ✓ 8.6	am	417 ✓ 8.9	am	431 ✓ 8.5			
am	1886 ✓ 8.4	am	1190 ✓ 8.5	am	364 ✓ 8.7			
am	2042 ✓ 8.9	am	954 ✓ 8.5	am	3557 ✓ 8.8			
am	1855 ✓ 8.5	am	886 ✓ 8.6	am	1389 ✓ 8.5			
am	1828 ✓ 8.6	am	839 ✓ 8.9	am	1799 ✓ 8.9			
am	1363 ✓ 8.6	am	768 ✓ 8.5	am	408 ✓ Reg.			
am	1352 ✓ 8.5	am	760 ✓ 8.5	am	1187 ✓ 8.6 ex. edge			
am	1334 ✓ 8.4	am	526 ✓ 8.5	am	831 ✓ 8.6 ex. edge			

A. D. W.

Monday, October 15, 1906

23.25 Variable 27 Centauri – Observations repeated.

am	902 ✓ 8.7 ex. edge	am	2015 ✓ too poor	am	2676 ✓ 8.4 edge
am	758 ✓ too poor	am	2057 ✓ 8.5 edge	am	3520 ✓ 8.8
am	1218 ✓ too poor	am	2174 ✓ 8.5 edge	am	8.9 8.5 7 ✓ 8.5
am	1349 ✓ 8.5 ex. edge	am	2429 ✓ 8.7 edge	am	400 ✓ 8.4
am	1764 ✓ too poor	am	2506 ✓ 8.6 edge	am	4280 ✓ 8.8 edge
am	1515 ✓ 8.5 ex. edge	am	2542 ✓ 8.7 edge	am	4167 ✓ 8.7 edge
am	1825 ✓ 8.4 ex. edge	am	2543 ✓ 8.7 edge	am	3522 ✓ 8.8 edge
am	1551 ✓ 8.5 edge	am	2567 ✓ 8.5 edge	am	1857 ✓ 8.9 edge
am	1793 ✓ 8.6 edge	am	2612 ✓ 8.4 edge	am	2686 ✓ too near edge

A. D. W.

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Monday, October 15, 1906.

Variable 27 Centauri - Observations repeated

am	2813 ✓ too poor	am	3697 ✓ 8.5 edge	B	19269 ✓ 8.9
am	3343 ✓ 8.7 edge	am	3791 ✓ 8.5 edge	B	9972 ✓ 8.9.0
am	4224 ✓ 8.6 edge	am	4070 ✓ 8.5 edge	B	15355 ✓ 8.9
am	3359 ✓ 8.5 edge	am	4107 ✓ 8.6 edge	B	15424 ✓ 9.0
am	3396 ✓ 8.7 edge	am	4135 ✓ 8.6 edge	B	16870 ✓ 8.7
am	3424 ✓ 8.5 edge	am	1944 ✓ 9.0	B	16047 ✓ 8.9
am	3433 ✓ 8.5 edge	B	21616 ✓ 8.9	B	16049 ✓ 9.0
am	3470 ✓ 8.5 edge	B	26948 ✓ 8.7	B	29754 ✓ 8.8
am	3574 ✓ 8.5 edge	B	25104 ✓ 8.8	B	35789 ✓ 8.9

A. D. W.

23.41 Variable 27 Centauri - Observations repeated

B	3418 ✓ 8.8	am	3791 ✓ 8.6	am	3348 ✓ 8.7
B	12503 ✓ 8.8	am	3697 ✓ 8.5	am	2813 ✓ too poor
B	26946 ✓ 8.8	am	3574 ✓ 8.6	am	1857 ✓ 8.9
B	13523 ✓ 8.7	am	3470 ✓ 8.5	am	3522 ✓ 8.8
B	19286 ✓ 8.8	am	3433 ✓ 8.5	am	4167 ✓ 8.8
3rd measurement.					
~~am~~ B	1944 ✓ 8.9	am	3424 ✓ 8.5	am	4250 ✓ 8.8
am B	4135 ✓ 8.5	am	3396 ✓ 8.6	am	3520 ✓ 8.7
am B	4107 ✓ 8.5	am	3359 ✓ 8.5	am	2676 ✓ 8.6
am B	4070 ✓ 8.5	am	4224 ✓ 8.7	am	26121 ✓ 8.4

A. D. W.

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Monday, October 15, 1906.

23.50 Variable 27 Centauri – Observations repeated

am	2567 ✓ 8.4		am	1851 ✓ 8.5		am	1187 ✓ 8.5	
am	2543 ✓ 8.7		am	1825 ✓ 8.4		am	1799 ✓ 8.9	
am	2542 ✓ 8.9		am	1815 ✓ 8.4		am	1389 ✓ 8.5	
am	2506 ✓ 8.5		am	1764 ✓ 8.5		am	3557 ✓ 8.9	
am	2429 ✓ 8.7		am	1349 ✓ 8.5		am	4212 ✓ 8.9	
am	2174 ✓ 8.5		am	1218 ✓ Offedge		am	364 ✓ 8.7	
am	2057 ✓ 8.4		am	758 ✓ Off too poor		am	431 ✓ 8.5	
am	2015 ✓ Offedge		am	902 ✓ 8.7		am	501 ✓ 8.5	
am	1793 ✓ 8.6		am	831 ✓ 8.7		am	526 ✓ 8.5	

a. D. H.

Tuesday, ~~Wednesday~~, October 16, 1906.

0.00 Variable 27 Centauri – Observations repeated.

am	760 ✓ 8.5		am	1352 ✓ 8.6		am	2474 ✓ 8.6	
am	768 ✓ 8.5		am	1363 ✓ 8.6		am	2504 ✓ 8.5	
am	839 ✓ 8.8		am	1528 ✓ 8.6		am	2547 ✓ 8.5	
am	886 ✓ 8.5		am	1855 ✓ 8.5		am	2606 ✓ 8.6	
am	954 ✓ 8.5		am	2042 ✓ 8.9		am	2777 ✓ 8.4	
am	1190 ✓ 8.4		am	1886 ✓ 8.5		am	2814 ✓ 8.5	
am	417 ✓ 8.9		am	2016 ✓ 8.6		am	2922 ✓ 8.5	
am	1224 ✓ 8.5		am	2082 ✓ 8.5		am	1978 ✓ 9.0	
am	1334 ✓ 8.4		am	2198 ✓ 8.6		am	3329 ✓ 8.5	

a. D. H.

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0.07 Variable 27 Centauri - Observations repeated.

am	3352 ✓ 8.7	am	846 ✓ 8.5	am	3499 ✓ 8.4
am	3383 ✓ 8.5	am	2569 ✓ 8.6	am	4134 ✓ 8.8
am	3428 ✓ 8.5	am	2529 ✓ 8.8	am	4194 ✓ 8.5
am	3621 ✓ 8.8	am	2478 ✓ 8.5	am	459 ✓ 8.9
am	3583 ✓ 8.5	am	2117 ✓ 8.6	am	3604 ✓ 8.5
am	3487 ✓ 8.9	am	1808 ✓ 8.6	am	1843 ✓ too poor
am	2588 ✓ 8.5	am	3629 ✓ 8.7 ex edge	am	1411 ✓ 8.6
am	782 ✓ 8.5	am	3444 ✓ 8.6	am	3682 ✓ 8.5
am	1839 ✓ 8.9	am	2801 ✓ 8.5	am	3664 ✓ 8.8

a.D.H.

0.15 Variable 27 Centauri, Observations repeated.

am	1229 ✓ 8.7	am	2442 ✓ 8.8	am	806 ✓ 8.5
am	1724 ✓ 8.8	am	4300 ✓ 8.5	am	1258 ✓ 8.7
am	735 ✓ 8.5	am	2738 ✓ 8.6	am	2044 ✓ 8.7 ex edge
am	1915 ✓ 8.5	am	3370 ✓ 8.6	am	400 ✓ 8.5
am	2649 ✓ 8.9	am	4053 ✓ 8.5	am	1437 ✓ 8.6
am	1899 ✓ 8.7	am	3615 ✓ 8.8	~~am~~	
am	1159 ✓ 8.5	am	722 ✓ Rej	B	21616 ✓ 8.9
am	2095 ✓ 8.6	am	928 ✓ 8.7	B	26948 ✓ 8.9
am	2717 ✓ 8.6	am	1970 ✓ 8.7	B	25004 ✓ 8.9

a.D.H.

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0.27 Variable 27 Centauri. Observations repeated.

B	19269 ✓ 9.0	B	29754 ✓ 8.7		
B	9972 ✓ 9.0	B	16049 ✓ 9.0		
B	15355 ✓ 8.8	B	16047 ✓ 9.0		
B	19286 ✓ 9.0	B	16570 ✓ 8.8		
B	13523 ✓ 8.9	B	15424 ✓ 9.0		
B	26946 ✓ 8.8				
B	12803 ✓ 8.9				
B	3418 ✓ 8.8				
B	35789 ✓ 8.9				

A. D. W.

2.06 Variable 27 Centauri — Fourth measurement.

am	4194 ✓ 8.5	am	2547 ✓ 8.6	am	3621 ✓ 8.8
am	1411 ✓ 8.7	am	2606 ✓ 8.5	am	1828 ✓ 8.5
am	3604 ✓ 8.7	am	2777 ✓ 8.5	am	1363 ✓ 8.6
am	459 ✓ 8.9	am	2814 ✓ 8.5	am	1352 ✓ 8.5
am	1389 ✓ 8.5	am	2922 ✓ 8.4	am	1334 ✓ 8.5
am	2649 ✓ 8.9	am	1978 ✓ 9.0	am	1224 ✓ 8.6
am	3615 ✓ 8.9	am	3329 ✓ 8.5	am	1886 ✓ 8.4
am	3583 ✓ 8.5	am	3383 ✓ 8.5	am	2042 ✓ 9.0
am	2647 ✓ 8.9 ex edge	am	3428 ✓ 8.5	am	1865 ✓ 8.5

2.12 A. D. W.

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2.12 Variable 27 Centauri — Fourth measurement.

am	2082 ✓ 8.5	am	839 ✓ 8.8	am	4300 ✓ 8.6
am	2016 ✓ 8.5	am	768 ✓ 8.5	am	1944 ✓ 8.9
am	2198 ✓ 8.6	am	760 ✓ 8.5	am	1915 ✓ 8.5
am	2474 ✓ 8.6	am	526 ✓ 8.5	am	738 ✓ 8.5
am	2504 ✓ 8.4	am	501 ✓ 8.5	am	1724 ✓ 8.7
am	417 ✓ 8.8	am	431 ✓ 8.7	am	1229 ✓ 8.7
am	1190 ✓ 8.5	am	364 ✓ 8.7	am	3664 ✓ 8.7
am	954 ✓ 8.5	am	3557 ✓ 8.9	am	2442 ✓ 8.9
am	886 ✓ 8.5	am	3382 ✓ 8.7	am	2717 ✓ 8.4

2.22 a.D.H.

2.22 Variable 27 Centauri — Fourth measurement.

am	2098 ✓ 8.5	am	3487 ✓ 8.9	am	1815 ✓ 8.5
am	1159 ✓ 8.4	am	1258 ✓ 8.6	am	1825 ✓ 8.4
am	1899 ✓ 8.8	am	7212 ✓ 8.7	am	1851 ✓ 8.4
am	4053 ✓ 8.7	am	1799 ✓ 8.8	am	1893 ✓ 8.7
am	3370 ✓ 8.6	am	1187 ✓ 8.5	am	2057 ✓ 8.5
am	2738 ✓ 8.6	am	831 ✓ 8.7	am	2174 ✓ 8.5
am	928 ✓ 8.6	am	902 ✓ 8.7	am	2429 ✓ 8.8
am	1970 ✓ 8.7	am	1349 ✓ 8.4	am	2506 ✓ 8.6
am	506 ✓ 8.5	am	1764 ✓ 8.5	am	2542 ✓ 8.8

2.31 a.D.H.

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Tuesday, October 16, 1906.

2.31 Variable 27 Centauri – Fourth measurement.

am	2567 ✓ 8.4	am	3343 ✓ 8.8	am	3791 ✓ 8.5			
am	2612 ✓ 8.5	am	4224 ✓ 8.7	am	4070 ✓ 8.5			
am	2676 ✓ 8.6	am	3359 ✓ 8.5	am	4107 ✓ 8.5			
am	3520 ✓ 8.8	am	3396 ✓ 8.7	am	4135 ✓ 8.6			
am	4280 ✓ 8.8	am	3424 ✓ 8.5	am	2117 ✓ 8.4			
am	2543 ✓ 8.7	am	3432 ✓ 8.5	am	2478 ✓ 8.5			
am	4167 ✓ 8.8	am	3470 ✓ 8.6	am	2529 ✓ 8.7			
am	3522 ✓ 8.8	am	3574 ✓ 8.7	am	2569 ✓ 8.6			
am	1857 ✓ 8.9	am	3697 ✓ 8.6	am	846 ✓ 8.5			

Tuesday, October 16, 1906

2.37 Variable 27 Centauri – Fourth measurement

am	1839 ✓ 8.9	am	3682 ✓ 8.5	B	3418 ✓ 8.7
am	782 ✓ 8.5	~~Attt~~		B	12803 ✓ 8.8
am	2588 ✓ 8.6	~~Attt~~		B	26946 ✓ 8.8
am	4134 ✓ 8.8	B	15424 ✓ 9.0	B	13523 ✓ 8.9
am	3499 ✓ 8.5	B	16870 ✓ 8.8	B	19286 ✓ 8.8
am	2801 ✓ 8.6	B	16047 ✓ 8.9	B	15355 ✓ 8.9
am	3444 ✓ 8.6	B	16049 ✓ 9.0	B	9972 ✓ 9.0
am	3629 ✓ 8.7	B	29754 ✓ 8.8	B	19269 ✓ 8.9
am	1508 ✓ 8.5	B	35779 ✓ 8.9	B	25004 ✓ 8.8

2.45 A.D.H.

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Tuesday, October 16, 1906

2.45 27 Centauri Fourth Measurement

B 26948 ✓
8.8

B 21616 ✓
8.9

am 368 ✓
Reg

am 1467 ✓
8.6

am 450 ✓
8.4

~~am 443~~

Rec. 06.18 B 26947
7hSd 8.7

Tuesday, October 16, 1906.

Variable 27 Centauri.
Examination of plates of class C.

am 445
Preceding image 9.0
Following 8.9

am 4143
Gn. superposed

am 451
Gn. superposed

am 492
Gn. superposed

am 1239, 3481
Gn. superposed

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Tuesday, October 16, 1906

Map of the Sky 12^{h} -60°

Continued from page 150

Var	Br	Ft
44	1944 [9.5] 1970 (928) 2738	4300 [10.2] 3487 (806)
	3370 (4053) 1899 [9.4] 1159 [9.2]	
45	1944 [9.1] 3664	4300 1159 2098 2717 [10.0] 2442
	Following of 2 stars	
46	1944 [7.5] 3499 4212 201	4300 [8.0?] 3682 4134 1915
	3444 2588 2117 2478 259	
	3664 4053	
	Apparently of the Algol Type - Variation small but clearly seen. Has confirmed	
x 47	1944 [10.0] 4134 2588 2117	4300 2478 [10.4] 2569
	Difficult for Am Plates. Pht. slightly var. Do not announce	
48	1944 [9.8] (1229) 3664 [9.4]	4300 [10.3] (738) 2442
	1899 1159 2717	

Rediscovered No. 12, 11,

Wednesday, October 17, 1906

Map of the Sky 12^{h} -60°

Var	Br	Ft
x 49	1944 1839	4300 2801 [11.2] 3499 782
	Var very slight, if real. Do not announce	
50	1944 [9.4] (459) 2098	4300 [< 11.0] 2717 2569
	Period apparently long	

Rediscovered No. 27 Autumn, 20, 22

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Thursday, October 18, 1906

Map of the Sky 12^h $-60°$

Var	Br	Ft
51	1944 [9.6] (4053) (337) 1970 1258	4300 [10.0] 2801 3444 2508 2478 2117 806
	Period probably long	Variation certain in spite of small range.
X 52	1944 [9.9] 2738 3557 806 4053 2117	4300 [10.1]
52	Probably not Var.	Possibly of Algol Type Variation very slight on these plates. Do not announce
53	1944 2478 3370 806	4053 4300 1970 2442 902 1127
	Examination of ten plates at 12^h and $-45°$ does not confirm variability which was suggested probably by the varying appearance of images near edge of plates at 12^h and $-60°$. Drop.	

On Plate AM 1944 superposed with D 12353 (= AM 4300) were discovered Nos 42 - 52, of which Nos 47, 49, 52 are on the suspected list.

The known variables S Carinae, and HSL Variable 37 Carinae, 39 Carinae 27 Centauri, 25, 26, 28, 29, 22, 7, 31, 33, 11, 12 were re-discovered.

In all, 8 new variables
12 known
3 suspected

Of the new variables, one appears to be of the Algol Type.

Monday, October 22, 1906

Map of the Sky 12^h $-60°$

Var	Br	Ft.
53	4300 (2442) (3444) 4212 [97] (806) 2717 [n.s. 10.5]	2588 2529
R V Centauri	Period apparently long	

On Plate AM 806 superposed with D 10252 (= AM 4300) was found No. 53, and the known variable R S Centauri, R Muscae, R Crucis, and HSL. Nos 25, 50

In all, ~~1 new variable~~ = R V Centauri
2 known variables

Plate 806 is of excellent quality, but images are very sharp and small, and there are many defects. Also the centre is different enough from that of AM 4300 to make superposition difficult. Plate D 10253, used for plate previously superposed, is at the Laboratory, but the quality differs but little from that of D 10252, though somewhat better.

Rediscovered 2.5, 50, R S Cent. R. Muscae, R Crucis

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Friday, October 26, 1906

Map of the Sky 12^h -60°

Plate AM 3370 superposed with D 10252 (=4300)

Re-discovered ~~Ha R Canum~~, R Crucis, S Crucis, H.S.L. Var. 39 Canum, and 1, 16, 22, 11, 46, 28, 29, 30, 3, 25 in this series. 32 Cor, No. 9, 43

Var	Br							H							
× 54	3370	[10.0]	4194	1724	1799			4300	[10.3]	3604	(4212)				
	1944														
	Variation as seen is slight, though probably real. Do not announce.														
55	3370	[9.0]	806	[8.8]	1799	1177	4310	[9.6]	1900	[9.3]	1411	(459)			
	Period probably long														

Saturday, October 27, 1906

Map of the Sky 12^h -60°

Var	Br							H							
56	4300	[8.9]	1905	3444				3370	[10.0]	2717	1799				
	2098	2478	2588	459	2738										
	Apparently of the Algol Type														
57	4300	[9.5]	4194	[9.5]	4053			3370	[mS 11.0]	3399	3682	1229	2717		
	4015 (Dec. 5/05)		[9.0]					459	3718 (Corr. 1.24)	[July 12/05]					
								A 1805 (mS)		2269	2354	3021	(60m app)		
	Nova? No trace of this object can be seen on any plate from the 12^h-60° until plate AM 4015 (Dec. 5, '05) the last plate available before that is AM 3718 (July 12, '05) on which it is not seen. It forms (on these plates) a close double with a 9.5 magnitude star, which it follows. On A 4194 both stars are clearly seen and of the same magn. All the A plates (4) covering this region were examined and found to be of excellent quality, but none of them show any trace of the object.														
× 58	3370	[9.3]	1229	738	[9.2]	4300	[9.6]	1258							
	See page 188	459	2717	2588	3444	2478									
	Probably variable. Do not announce														
59	3370	[8.9]	738	806	4212	4300	[9.5]	2717	1258						
	4053	2529	838	1986	3170	4308									
	3326	3358	3579												
	Variation small. Look up further on Monday.														
	See page 196														

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Monday, October 29, 1906

Map of the Sky 12^h $-60°$

Variable No. 57, supposed Nova, looked for on the following plates:—

B 5003	May 1, 1890	Exp. 12m
5199	May 15, 1890	Exp 60
7492		
9291	May 2, 1893	12
10836		
11190	May 21, 1894	
11317	May 28, 1894	242
12743	Dec. 14, 1894	10
16258	June 30, 1896	13
A1183	April 12, 1898	10
25059	April 10, 1900	10
25185	April 30, 1900	
25583	June 30, 1900	10
26844	Dec. 27, 1900	10
27225	April 22, 1901	60

No trace of a star in this position can be seen on any of the above plates

B 27 020 / 812	May 21, 1901	Exp. 11
29434	Apr. 26, 1902	10
29093	Jan 15 1902	10
33455	Apr. 23, 1904	10
29744	May 17, 1902	10
25185	April 30, 1900	62

On Plates B 27312, 27225 (Mar. 14, Apr. 22, 1901, 4h 74m 50s) a faint star about mag 14.5 which is certainly may even be the faint

Map of the Sky 12^h $-60°$

No. 57 (Nova?) continued.

It is also seen on A 3021 (May 24, 1898 Exp. 60m)

It is certainly somewhat ~~south~~ with of the position, however. Compare Plate Cam 4015 on which the origination is seen with especial clearness. The Nova is about 0'.3 south of the ff star

CPD −53° 4300 $10^h 57^m 18^s.2$ −53° 42' 8 Mag 10.0

The spirit precedes a 9.5 magnitude star by about 0'.5.

There has been no Bache plate taken since Dec 5, 1905 on which plate it is first seen (Cam 4015)

No Bruce plate taken since July 1905 when the region

Nova (?) Centauri

R A $10^h 58^m$ Dec. −53°.9

(approx. 1875)

Not seen on Spectrum plates

B 5880
B 15149
B 9421
B 7531
B 7530

$10\ 56.9$? − ~~54 2~~ 2

− 53 46 (approx 1875).

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Tuesday
Monday, October 30 29, 1906

Map of the Sky 12h −60°

Var	Br	Ft
60	3370 [9.1] 1258 3444 2588 2569 2529	4300 [9.4] 1724 1411 1944 [9.5] 1915 3499 2801 2478 2442

Variation certain - 9th companion also near
Filming of 2 stars

Wednesday, October 31, 1906

Map of the Sky 12h −60°

Var	Br	Ft
*61	4300 [9.8] 4287 4364 1899	3370 [n.s. < 11.2] 2717 2738 3444
	Pond apparently long	s f a ninth magn. star
62	3370 [10.6] (1411) 4185 4194	4300 [n.s. < 11.4] 3499 (3444) 2738 3682 3664 3487
	Pond fortably long	

*61 Faint on B 22681 [13.] Barely seen. Nov. 7, 1906

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Thursday November 1, 1906

Map of the Sky 12h -60°

Var | Bz | H

×63 | 4300 [8.5] 4212 | 3370 [9.0] 1411 3664
Probably slightly var. Do not announce

64 | 4300 [9.0] 3444 3499 1899 | 3370 [9.6] (2529) 2117 2098
1915 2442 2478 1944 2682 3664
This variable may be of the Algol Type, but it does not appear probable. Data slightly

See p 188 ×65 | 3370 3700 2738 2801 3444 [10.5] | 4300 [11.0]
Doubtful. Do not announce
Probably of Algol Type

66 | 4300 [9.1] (2442) 2478 2567 | 3370 [9.6] (2117) [9.5] 2098 1915 [98]
2529 | 1899 [10.0]
Period apparently long

67 | 4300 [8.5] 1915 2801 1258 | 3370 [8.9] 1899 3499 3444 2717
3682 [9.0] 1724 4194 | 3682 [9.0] 4134
Variation slight, but certainly real. Pr. Int. short

×68 | 3370 [9.5] 4194 1411 3664 | 4300 [10.5] ~~4134~~ (2442) 2478
See page 187 | 3682 1944 2738 3444 3899 2529
2478
Probably a variable of the Algol Type. Seem really fainter only on Ark 4300 I. Measure upf. Uncertain.

69 | 3370 [8.7.8] 2529 2478 3444 | 4300 [9.4] 2442 3499 2098 4194
3444 [7.6] 2569 2588 2117 3682 | ~~2738~~ 3370 [8.7] (2738)
Period apparently short. Measure upf with No. 22. Often has a hazy appearance, while sometimes the image is very sharp

Thursday Nov. 1, 1906

Map of the Sky 12h -60°

On Plate AM 3370 superposed with D 10252 (= AM 4300) were discovered Nos. 54-69, of which Nos 54, 58, 63, 65 and 68 are on the suspected list.

The known variable R Crucis, S Crucis, and W.S.L variable 32 Carinae, 39 Carinae, and Nos 1, 9, 3, 11, 16, 22, 25, 28, 29, 30, 43, 46 * were re-discovered

In all, 11 new variables
16 known
5 suspected

One of the new objects (No. 57) appears to be a Nova. One is of the Algol Type and another may be of the Algol Type.

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Monday, November 5, 1906

Map of the Sky 12^h $-60°$

Plate AM 3664 superposed with D 12353 (AM 432)
Variable R Crucis, RV Centauri, RS Centauri
HSH. Nos. 13, 14, 18, 25, 27, 28, 40, 48, 57, 69, 32 Car.
were re. discovered, No 1 Car. RS Cent.

Var	Br		Ft.				
70	3664 [9.]	(3604) 3487	4300 [^{on s}<10.]	4364	3370		
	Period apparently short. Near edge						
71	4300 [9.3]	2529 1915 3444	3664 [10.0]	2442	2478	3499	2098
	2569		(2588)				
	Period aff. rather short						
RS Centauri 72	3664 [9.6]	3682	4300 [10.2]	2588 [11.0]	2117		
	Period probably long						

Monday, Nov. 5, 1906

Map of the Sky 12^h $-60°$

Var	Br		Ft				
72	3664 [8.9]	2717 [8.7]	4300 [9.7]	2738	1258	1411 (4242)	
	4364						
	Period evidently short						

On Plate AM 3664 superposed with D 12353 (= AM 432)
were discovered Nos. 70, 71 and 72
The known Variable R Crucis, RV Centauri, RS Centauri, HSH var. 1 Canum, 32 Canum, 13, 14, 18, 25, 27, 28, 40, 48, 57, 69

In all, 3 new variables
15 known
0 susp.

All three of the new variables probably have short periods.

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Friday, November 9, 1906

The Pleiades - Estimate of No. of Stars

Regions 5' square

3 deg. sq	Centre of plate	9, 7. 8, 9, 8	8 per $\frac{25 sq}{\lambda}$ minute
5 deg. sq	A degree from edge	5, 8, 5, 7. 4, 9, 7, 4	6 " "
	$\frac{1}{2}$ degree from edge	5, 3, 1, 3, 2, 3, 3, 1	2 $\frac{1}{2}$ " "

9 sq degrees = 32,400
25 " " = 90,000
17 = 61,200
~~25~~ 79,200

32,400 sq minutes with 8 per $\frac{25 sq}{\lambda}$ minutes = 259,200 10.3680
57,600 " " " 6 " " = 345,600 13.8240
61,200 " " " 2 " " = 122,400 4.8960
25) 727 200 29,088
29,088

This would represent a total of nearly 300,000 in the plate; but fully half these counted were so faint to make it probable that variations would be seen. It may reasonably be estimated that 150,000 stars were examined

Tuesday, November 13, 1906

Map of the Sky 12^h -60°

Var	Br		Ft	
25	B11039	11060	~~12994~~ 15419	B15179 12791

Examined on A 6646, 2962, 2954, 4320, 2955, 2956
Shows no evidence of change. Difficult
Perhaps appearance of change in A&B
plates is due to varying character of combined
images of the bright star and the faint star
north of it, but it is probable that there
is a real, but slight variation - See below.

Thursday, Nov. 16, 1906

Var	Br		Ft ~~31284~~	
25	15929 [9.8]	28802 [10.0]	31285 [10.3]	31211 [10.5]

Observations continued

Plate	Mags
B12911	9.8
21118	9.5 x unst
	near edge, but certainly Var
31212	10.6
18702	9.4 x unst
31655	10.2
35305	9.7
21621	10.1

This star, though difficult is certainly variable. See Mrs. Fleming on form.
Period probably long.

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Thursday, November 15, 1906

Map of the Sky 12^h $-60°$

Var	Br	Ft
10	370[8.7] [333(8.8] 1664[8.7] 1772 2356 503 755 838 1180 1182, 1318, 1386, 1754, 1379	446[9.0] 3170

Variation probably real, but too slight to measure up

15 Examined on Plates R 7859, 35405, 33564, 33411, 31570, 29270, 25660, 21123, 19069, 18065, 16082, 13205, 9634, 5279 and about 50 Ark plates in addition to those previously examined. Image uniform on all plates. Image probably defective on Plate Ark 4300.

59	1918[8.8] 1831 (446) (1379) 755 1664 370 1891 1986 2576 3358 3386 3454 3581	corr 1754[9.3] 1749[9.2] (803) 2356 [9.4] (1772) 4308

Certainly variable. Period apparently long. Have confirmed. Measure up

32 Shows no change on following plates:—
B22328 20644 21566 21428 15556 15211 27084 24882 25441 21774 21120 19646 18179 15766 15239 15180 13861 30007 29061 33157

Kept on suspected list. Probably the image is defective on plate Ark 36-57, though it does not appear so.

Friday, Nov. 15, 1906

Map of the Sky 12^h $-60°$

Var	Br	Ft
41	4326[8.4] 4070[8.5] 4107 4135 4167 3343 3396 3324 [8.6] 2612	4300 [~~8.8~~ 8.7] 2429 2567 [Ark Paris 9.0 8.9] 1187

This star certainly varies, though with very small range. Measure up.

68	3791 3433 4224	

Does not show change on 27 Ark plates at 13^h, $-45°$. Probably not variable

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Thursday, November 22, 1906

Map of the Sky 12h -60°
Re-examination of Certain Variables

Var	Br	Ft
× 58	1841. 1103 1157 1243 1247 1739 710	4300 1793

Seems to have a real variation of about 0.3 mag, but is difficult and would be almost impossible to confirm absolutely save by actual measurement. Keep on suspected list.

× 65 Apparent faintness on AM 4300 is probably due to some defect in the image. Keep on list of suspected variables

Friday, February 8, 1907

Examination of New Eyepieces

(1) Two-inch, long tube. For ordinary use I find little difference between this and the one in ordinary use. The field, however, seems to be flatter near the edges, and it is certainly true that in comparing distant regions, as has constantly to be done in the Magellanic Clouds, identification is easier and more rapid.

2, 3 1½-inch long tube (like Miss Ireland's) and shorter tube (not the shortest). Both of these are excellent in close pairs and would be of great service to me. I have little choice between the two, but on the whole, prefer the shorter.

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Wednesday, March 20, 1907

The Pleiades - I' Plates

Examination of diameter of images in Polar sequence and Pleiades sequence

Plate B 33321

Polar Sequence

a and b much further from centre of plate than other stars. Images slightly elongated in a direction nearly at right angles to surrounding images of Pleiades stars.

c slightly elongated at right angles - image excellent

d image fairly good but plate fogged by star b of Pleiades sequence. The same is true of b + k the Pleiades stars me and m Polar images much more elongated than the first plate of Polar Sequence

On the whole, the sequences are only fairly comparably and in making scale measures large discrepancies are to be expected between different persons.

Plate B 33313

Polar Sequence

a and b - images circular - excellent

All images of both sequences are admissible and are strictly comparable.

Plate B 33774

Polar Sequence - a + b slightly elongated, less than in B 33321

d - image too close to a Pleiades star for satisfactory measurement.

Wednesday, March 20, 1907

The Pleiades I' Plate

Plate B 33774 continued

g of polar sequence - image very poor and perhaps defective.

Any of the remainder of the images, that is c, e and f are strictly comparable with the Pleiades images.

Any measure of b of the Pleiades in this plate will give an uncertain magnitude in reducing this plate as it is fainter than the faintest plate of the polar sequence which could safely be measured.

Plate B 34313 is much the best of the three. Could it not be given a large weight in making reductions? Observe that the weight actually used is only one half that of either of the others, as there is but one sequence of the Pleiades on it.

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Saturday, September 28, 1907.

Examination of Isochromatic Plate AC 8395 (12^h, +60°) for Red Stars.

The plate was superposed on Plate D 12557 (= AC 7427) and objects which were conspicuously bright on the isochromatic plate were marked as probably red. The stars in the sequences for T and S Ursae Majoris were used for comparison, the magnitudes employed for the isochromatic plate being those adopted in Volume 47 and those on Plate AC 7427, photographic magnitudes based on these.

No.		Ptm AC 8395	Ptg AC 7427	Ptm - Ptg
+58°1278	1	8.5	8.0	+.5
	2	Between two stars which are not seen on AC 8395, but are of magnitude 7.8 on the AC 7427		
+58°1281 v!	2	6.4	7.4	-.10
+62°1142	3	7.7: (occulted a film)	8.2	-.5
+61°1204	4	8.1	8.1	0
+60°1296	5	61.2	6.1	0
10^h40^m +63°3	6	Defect		
+64°810	7	6.9	7.4	-.5
+64°828	8	8.4	9.0	-.6
+62°1156	9	8.2	8.2	0
+62°1161	10	Very bright (Mag. 2)	Most bright on AC 8395	
+60°1306	11	7.9	8.1	-.2
+59°1338-9	12	7.0	7.2	-.2

Saturday September 28, 1907.

Red Stars 12^h +60°

No.	Ptm AC 8395	Ptg 7427	Ptm - Ptg
+59°1345 R 13	6.8	7.4	-.6
+58°1296 R 14	7.9	8.7	-.8
S Ursae a	6.65	6.72	-.07
b	6.97 +.02	7.20 +.02	-.21 -.02
c	7.30	7.62 -.04	-.32 -.24
d	7.52 +.05		-.29 -.22
T Ursae f	8.34	8.16	+.24
T Ursae (a)	6.42	6.14	+.28

The above stars in the sequences were marked as the photographic scale accordingly was made to depend upon these red or reddish stars, the differences are not great. The white star e, however, has the photometric magnitude 8.10 and the photographic magnitude 6.68

Observations interrupted by rapidly increasing darkness of storm.

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Monday, September 30, 1907

Isochromatic Photo AC 3395 Continued

	No.	Ptm AC 3395	Ptg 7427	Ptm - Ptg
+59°1367	15	7.9	8.1	-2
+61°1235	16	6.9	7.2	-3
+61°1230	17	8.2	8.2	0
+62°1172	18	7.1	7.5	-4
+63°960	19	8.1	8.1	0
	20	Defect		
+62°1188	21	7.9	8.0	-1
+62°1190	22	7.3	8.2	-9
+59°1388	23	7.4	7.9	-5
+60°1347	24	7.8	8.0	-2
+63°931	25	8.2	8.0	+2
26 +62°1204	26	6.4	6.1	+3
27 +62°1201 adjoins	27	6.9	6.7	+2
Diffuse star +62°1207		~~6.5~~ 7.7	6.5	[+12]

This star gives the measure of difference J white and red stars. Evidently the plate difference, J Nos. 25 and 26 is more than a magnitude.

+61°1275	28	8.0	8.0	0
+59°1420	29	7.7	7.3	+4
+63°999	30	6.2	6.6	-4
+65°874	30	7.5	7.9	-4
+64°887	32	7.4	7.4	0
+64°896	33	6.7	6.6	+1
+61°1285	34	8.2	8.0	+2
+61°1289	35	7.9	7.9	0

Monday, September 30, 1907

Isochromatic Photo AC 3395 Cont.

	No.	Ptm AC 3395	Ptg 7427	Ptm - Ptg
+60°1396	36	7.9	7.9	0
+62°1224 p	37	7.5	8.5	-10
+62°1228	38	6.9	6.9	0
near +59°1461	39	7.9	8.0	-1
+62°1268	40	7.2	7.5	-3
+62°1275	41	6.4	7.6 6.4	0
+63°1053	42	7.7	7.6	+1
+58°1422	43	7.9	7.9	0

Comparison Stars and Magnitudes employed

		Ptm	Ptg	Ptm - Ptg
J Nos.	a	6.4	6.1	+3
J Nos.	a	6.6	6.7	-1
	b	7.0	7.2	-2
	c	7.3	7.6	-3
	d	7.6	7.8	-2
	e	8.0	6.6	+14
J Nos.	f	8.3	8.1	+2
~~B~~ Nos	f	8.5	8.1	+4
J Nos.	g	n, s,	8.6	.

Stars a (of 5 Mean Mag.), b, c, d, e, f (of J Nos. Magnis are marked red on the plate. Star a (of J Nos. Magnis) was not marked red, but is much less white than stars on plate.

The following stars show a difference as great as -0.5 magn:- Nos. 2, 3, 7, 8, 13, 14, 22, 23, 37

Of these, Nos. 2, 14, 22, 37, show a difference J - 0.8 to -1.0 magn, and may safely be considered to be decidedly red.

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Wednesday, October 2, 1907

Isochromatic Plate AC 8395 Cont.

Estimates of brightness of white stars

		Phot AC 8395	Ptg AC 7427	Phot − Ptg
+58° 1331	α	6.6	5.7? (much brighter than α of Phot)	+1.5? +0.8?
+57° 1324	β	6.6	5.8? " "	
+57° 1326	γ	7.1	6.7	+0.4
+59° 1400	δ	8.2	7.3	+0.9
+60° 1352	ε	8.5	7.2	+1.3
+59° 1401	ζ	not seen	8.2	
+62° 1207		7.7	6.5	+1.2

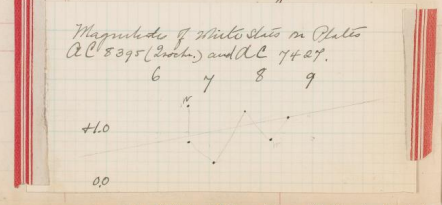
+5 −1 −2 −6 −1 +4

5 | 49 | 6/61
0.98 | 7.01

α and ε were marked as very white on original examination of plate.

There appears to be no systematic difference among the brighter and fainter stars. White stars average a magnitude brighter on AC 7427 than on AC 8395.

A difference of 0.0 between the two plates would then indicate that the star was red to a considerable degree. A difference of −0.4 or −0.5 should, then, indicate a very red star.



Thursday, October 3, 1907

Isochromatic Plate AC 8395 Cont.

No. 1 re-examined.

	AC 8395 Phot	AC 7427 Ptg
1	8.3	8.2

Near edge. Estimate difficult. The star does not appear conspicuous on the plate, but shows a difference of nearly a magnitude from two stars on either side of it.

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Wednesday, October 3, 1907.
Thursday

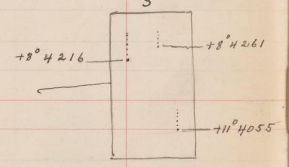
New Scale to be cut from Plate AC 8796

Scale O (named March 26, 1909)

This plate had 7 exposures of 3^s, 9^s, 27^s, 81^s, 243^s and 729^s, ~~and 2187^s~~ The aperture was reduced as for I' Plates.

Images selected for scale are those of α Aquilae, DM +8° 4216 and ϕ Aquilae, DM +11° 4055.

Identified on Plate I 18624.



If a third scale should seem to be desirable, the image of +8° 4261 may be used. Unfortunately there is a star image very near the faintest of this series, but if a strong exposure ($1\frac{1}{2}$ inch) is used, it is not troublesome. It is the best series for the purpose, because the magnitudes of the images fall between those of the series +11° 4055.

In making readings, the images of +8° 4216 are designated 1-7; those of +11° 4055 are designated 8-10; and those of +8° 4261 are designated 6-10.

Scale 1 = +8° 4216 ±0.0 cor. Brightest im. 1.0 -70
Scale 3/8 = +11° 4055 adopted standard Brightest im. 5.0 -120
Scale 2/8 = +8° 4261 cor. = -0.3 magn. Brightest im. 6.0 -100

From measures made on 6 AC plates, on one of which there are 4 exposures and on another 3 exp., and on 4 AI plates, the corrections to be applied to the first and second readings to reduce them to the third scale are found to be 0.0 and -0.35 magn. respectively.

Cu Bds XII 127-137

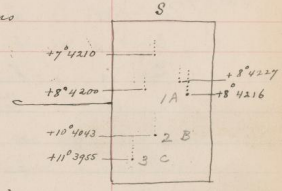
Monday, October 21, 1907

New Scale to be cut from Plate AC 8858.

Scale N (named March 26, 1909)

This plate had 7 exposures of 3^s, 9^s, 27^s, 81^s, 243^s, ~~and~~ 729^s, and 2187^s. The aperture was that ordinarily used in taking AC Plates.

It was desired to use images of the same stars that were selected for the scale cut from AC 8796, to be used for plates taken with reduced aperture and for AI plates. Three stars, known (+8° 4261 and +11° 4055) have other star images so near as to interfere with their use on this plate. The best general scale is that of +10° 4043. If it should be necessary to measure stars brighter than the 6th magnitude, the image of α Aquilae, +8° 4227, may be used. It will be necessary, if any faint stars are to be measured, to use a third scale which may be selected from among the stars marked on the figure, after the scale is made.



Identifications made on Plate I 18624

Adopted scales as follows:—

A Scale 1 = +8° 4216 cor. = $-0.\frac{2}{8}$ Bar Images 1 to 7 -45 to -70
B Scale 2 = +10° 4043 cor. = $-0.\frac{4}{8}$ Images 5 to 11 -80 to -120
C Scale 3 = +11° 3955 adopted standard. Images 6 to 12 -40 to -80

From measures made on 7 AI plates it appears that the corrections to be applied to the readings for first and second scales to reduce them to the third, are $-0.\frac{2}{8}$ magn. and $-0.\frac{4}{8}$ magn. respectively.

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Friday, April 30, 1909

The Pleiades

Distances from Center of Plate AC

AC 10305

Plate	dist	Map	Pleiades	Magn
A	5	a	7	3.1
B	21	a'	9	3.9
C	24	b	4	4.3
D	17	b'	9	5.3
E	18	b²	13 14	3.8
F	13	α	5	4.0
b	20	β	14	4.4
a'	7	γ		
a²	18	δ		
a³	7	ε		
a⁴	13	ζ		
a⁵	6	c		
b'	6	d		5.9
b²	6	e		
c'	0	f	11	7.4
c²	0	g	10	7.4 5.0
c³		h	9	8.0
d		h'	7	
		i'	7	8.6
		i²	12	

All stars fainter than 7.5 near center of plate.

Pole star and a few Pleiades measured B, C, D, E, 7, β, a², a³, dist. from center

AC 10326

Plate		Pleiades
a	11	a 13
B	16	a' 15
C	26	b 11
D	21	b' 15
E	14	b² 9
F	9	d 10
b	16	e 13
a'	12	f 15
a²	21	g 17
a³	10	h 14
a⁴	12	k' 11
a⁵	4	i 11
b'	12	i' 18
b²	12	c 10
c'	6	β 9
c²		
c³	3	
d		

Pole star fainter than 8? near center.

Pleiades stars more distant (av. about 19)

Bright stars on both regions distant with very few exceptions.

Pole star and a few Pleiades about equally distant.

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Friday, May 21, 1909

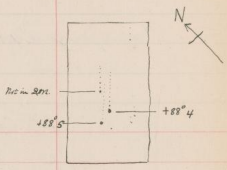
New scale to be cut from Plate C 17493

Scale R

Name assigned May 9, 1911

Taken October 19, 1908

This plate has 11 exposures of 1, 2, 4, 8, 16, 32, 64, 128, 256, 516, 1018 s



Exp.	Scale 1 Read	Scale 2 Read
1	(11)	.
2	(10)	(15)
3	9	14
4	8	13
5	7	12
6	6	11
7	5	10
8	4	9
9	3	8
10	2	(7)
11	1	(6)

Notice that the 2 brightest exposures do not quite accord with the rates.

Images of +88°4 and +88°5 are well adapted for comparison with bright and faint images respectively. In case of any injury to the images of +88°5, those of the adjacent star marked in diagram "not in Dr." may be used.

Scale received May 26, 1910. Pieces of plate given to Miss Breslin.

May 26, 1910

Do not use the faintest exposure ("No. 11") on "first scale" as that appears to be probably too faint in proportion to remaining images.

Note that the two faintest exposures do not appear on the "second scale".

Remark

The night to the faintest exposure on second scale can just be seen in a good light and if used may be called 15.

March 7, 1917

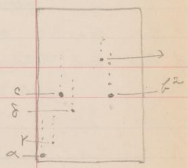
Note Oct. 11, 1910. The 2 brightest images on "second scale", i.e. +88°5 have been little used in making reductions on account of observed discordances with "first scale". This is probably on account of the incorrect ratio for these 2 images which, therefore, should not be used when it can be avoided. It is not probable, however, that the differences of +4s and −16s respectively have a serious effect on images of such long exposure.

Thursday, May 26, 1910

New Scale to be cut from A 9873
Taken on the Pleiades October 20 1909
On the region selected See p. 207

6 Approaches $3^s, 9, 27, 81, 243, 729$

b^2	$+23^\circ$	507
c	$+23^\circ$	505
a	$+23^\circ$	516
γ	$+23^\circ$	512
δ	$+23^\circ$	508



The above 5 stars are in the Pleiades sequence

The stars c and δ may be used for bright and faint images, respectively. If still brighter images are needed, b^2 may be used. Stars marked with arrow may be used for faint image instead of δ, if there should be any saying to the latter.

This scale has not yet been cut. Nov. 20, 1912.

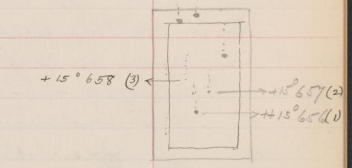
Friday, January 13, 1911

New Scale to be cut from Plate MC 831

Scale M
Name assigned
May 9, 1911

Center, R.A. $= 4^h\,33^m$ Dec. $= +15^\circ.6$ Taken Dec. 27, 1910

6 Approaches of $3^s, 9^s, 27^s, 81^s, 243^s$ and 729^s



The star (1) $+15^\circ 656$ may be used for bright images and (2) $+15^\circ 657$ for faint images.

The identifications were made by A.D.M. and checked by G.C. & M.

First used January 20, 1911
Scale 3 added in September, 1913

~~Correction to~~ Scale 1 Images numbered 3 to 8 Correction 0.0
Scale 2 " " 5 to 10 Correction 0.0
Scale 3 " " 7 to 10 Correction +0.3

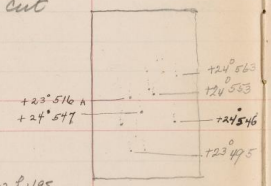
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Thursday, June 1, 1911

New Scale to be cut from Plate I 32811 (Sep. 19)
For Miss Leland Scale V

Scale M has already been cut from this plate. (See p. 19)

On this scale, bright stars may be confused with the images of +24° 553, and faint stars with those of +24° 563, or +23° 495. The choice between the two latter stars may be made after the scale has been mounted



Three scales were used. The brightest stars were compared with +23° 516, & which the brightest image is called 0 and the faintest 6

Stars of intermediate brightness were are compared with +24° 546, images numbered 1 to 7

Faint stars compared with +24° 563, images numbered 4 to 10.

+23° 516. Scale 1. (0") Images numbered 0 to 6. Correction −0.2
Scale 1 +24° 546 Scale 2 (.8") " " 1 to 7 " +0.1
Scale 2 +24° 563 Scale 3 (.6") " " 4 to 10 " 0.0

The scale originally called "a" or "1" was used only for a short time. Assume that scale 1 in all current work requires corr. +0.1 and scale 2, 0.0.

Oct. 1, 1914

Thursday, June 1, 1911

Miss Leland's Scales "Isochrome" "A", and "B"

Scale "A" has not been used, as it is too faint. The star is + 3° 2039

Scale "B" was used for MC and MH plates until superseded by other scales. The bright stars are compared with + 3° 2026. The name assigned to Scale, Scale "B", is Scale 2. Faint stars on this scale are compared with the images of + 3° 2025. Second scale reduced to first by applying correction − 1.7.

The identifications were made after the scale had been cut, by comparing plate MC 309, from which they were made, with I 22116, on which the stars are marked.

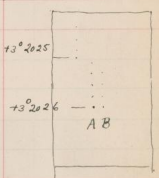
Remark February 19, 1917

Scale "2" may be used but constants must be re-determined. Make no comparisons with + 3° 2025.

Scale 6 R is prismatic comparison of + 3° 2026.

+ 3° 2026 A numbered 3 to 8

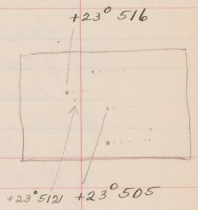
+ 3° 2026 pc. B numbered 7 to 10



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Thursday, November 21, 1912

New Scale to be cut from Isochromatic Plate MC 2086 Scale W.



Bright stars may be confused with DM +23° 516
Faint ones with DM + 23° 505

Scale W

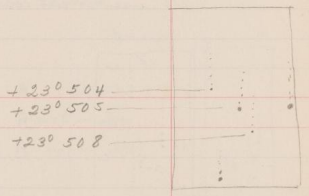
Scale 1 (Bright Stars) DM + 23° 516 Images 2-7
Scale 2 (Faint Stars) " 5-10
" 3 " DM + 23° 505 " 4-10

Correction to Scale 1, +0.1

When Scales 1 and 3 are used, Corr. to Scal 1, +0.7

Tuesday, May 12, 1914

New Scale to be cut from Plate A 9873.
For use when focus is very bad.



Use Images +23° 505 and +23° 508.
+23° 504 may be used if 508 should be injured

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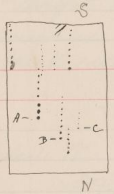
~~X~~

New scale to be cut from H 1342

Scale X = β. Eight exposures of 5ˢ, 8ˢ, 15, 30, 60, 120, 240, 480ˢ

Provisionally known as Scale β

For use when images are very poor.



A = +24° 562

B = +24° 566

C not in Dm.

Images A numbered 1 to 8

B 3 to 10

C 9 to 16

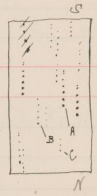
Evaporation of large corrections for distance to center of plate the corrections from one scale to the next cannot be uniform.

I = α

New scale to be cut from H 1317

Eight exposures of 5ˢ, 8ˢ, 15, 30, 60, 120, 240, 480ˢ

Provisionally known as Scale α



A = +23° 553

B not in Dm.

C not in Dm.

The exposures of 5ˢ and 8ˢ are nearly superposed. The remaining six images are to be employed

Images A numbered 1 to 6 Corr. 0.0

B 4 to 9 Adjt mass. >4.6 and <9.0. See Rules

C 7 to 12 Corr. 0.0

Scale B brightest Mass 7.1 Corr. 0.0

7.1 to 7.5 −.1

7.6 to 8.0 −.2

8.1 to 8.5 −.3

8.6 to 9.0 −.4

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Thursday, July 27, 1916.

New scale to be cut from

1 +19° 4009
2 +19° 4010
3 +19° 4015
4 +19° 4017
5 +19° 4019
6 +19° 4024

Wednesday, January 17, 1917

New scale for Measuring Machine.
To be cut from MF 126

Bright star = +3° 3493
Faint " = +3° 3492

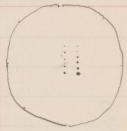
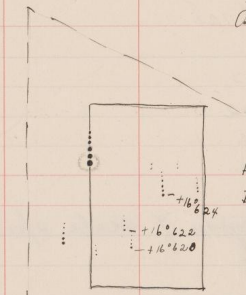


Plate broken. Region of scale spoiled

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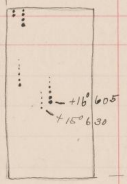
Scales marked on pieces of plate MC 831.
Broken line indicates edge of piece of plate.

Z



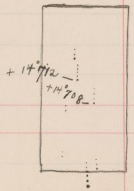
A +16°624 numbered 3 to 8
B numbered 5 to 10

AA
For large, pm Images



+16°605 A numbered 2 to 7
+15°630 B numbered 5 to 10

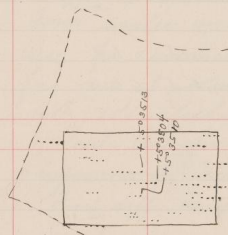
AB



A numbered 4 to 9
+14°708 B numbered 5 to 10

Scales marked on pieces of plate MF 120
Nine exposures of 2^s, 3^s, 5^s, 10, 20, 40, 80, 160, 320

AC



+5°3504 A numbered -1, 0, 1 to 7
+5°3510 B numbered 2 to 10

AD
For Prof. Stetson
(sent)



+4°3482 B numbered 9 to 17 Corr. ~~+0.3~~ variable.
+4°3483 C numbered 12 to 20 Corr. 0.0
A numbered 2 to 10 Corr. ~~+1.0~~ +1.2

Scale A D. Corrections found from measures O R 19: 194–211
Images on Scale A fine and correction would probably vary accordingly to observer. Do not use Scale A when it can be avoided. If Scales A and B must be combined, determine correction A–B for each Observer.
In combining B and A, do not measure stars fainter than 10 on Scale A
In combining C and B, do not measure fainter than 15 on Scale B
" " " brighter than 13 " " C

Corr. to Scale B		
12.0 to 13.0	inclusive,	+0.4
13.1 to 15.4	"	+0.3
15.5 " 15.8	"	+0.2
15.9 " 16.2	"	+0.1
16.3 and fainter		0.0
Brighter than 12.0		+0.5

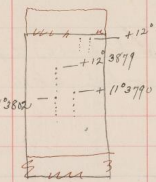
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Wednesday, February 7, 1917.

Scales marked on piece of plate AC 8858.

AE

For small, faded images.



+11°3790 A numbered 3 to 8
B numbered 6 to 10

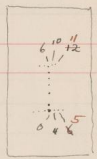
Provisional correction to Scale A, +0.8, based on measures of AC 19333. O-R 28".44

Mc Cormick Plate B126 with Centers
Center $19^h\ 22^m$, $+20^\circ.0$
Five 7 Expenses of $35^s, 1^m\ 2^m, 4^m, 8^m, 16^m, 32^m$
~~Four~~ scales were cut from this plate.
One for measuring Machine, the others for use at Windsor. The images were not identified.

AF Scale A 7 for Measuring Machine.
~~7 Expenses of~~ 7 Central images 0 to 6
First diffr. images to right, 4 to 10
Second " " " " 5 to 12



AG Scale A 6 for Windsor
Central images 0 to 6
First diffr. im. to right 4 to 10
Second " " " " 5 to 11



AM Scale A M for Windsor
Central Images 0 to 6
First diffr. im on left 4 to 10



ABS 1 Reproduced from Scale A 6 to give hazy images.
Central images 0 to 6
First diffr. to right 4 to 10
Second " " " 5 " 11

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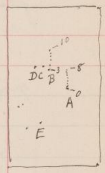
March 7, 1917

Scale A H (taken with 11-inch 2) Fogged.

AH

Old Scale used by E. F. L (?) No record of plate or use. Images rather large, admissable. Ratio apparently two. Nine exposures

Scale A numbred 0 to 8
" B " 3 to 10



Stars C ~~and~~ D might be substituted for B, if anything should happen to the latter.

A H 1
~~A 2~~
Sent to chart

Reproduced for Meas. machine
Scale A numbred ~~0 to 6~~ 1 to 9
B " 4 to 10

A H 2
Sent to chart

For Measuring Machine
Scale A numbred 0 to 8
B " 3 to 10

A H 3
D 17564

Enlarged 1.5 Scale A numbred 1 to 9 Correction 0.0
B " 4 to 10 " 0.0

On ~~first~~ scale A measure nothing fainter than 7 Correction
" ~~second~~ " B " " brighter " 5
(Unless one only of the two scales is employed

March 14, 1917.

Scale A 2 From MC 831.

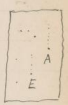
This scale was used exclusively with the measuring machine previously to February, 1917, when it was found to be seriously damaged and was rejected for further use.

6 exposures of 3, 9, 27, 81, 243, and 729 seconds.

The images were never identified, so it is not known what stars were employed.

Scale A H 4
For Professor Skiff.
D 17563
Sent March 23, 1917
Returned July 1917

Enlarged 1.5 Scale A crashed - 1 -
~~B~~ E numbred 2 to 10



Usually Scale E alone will suffice
Stars slightly brighter may be used by employing the brighter images of Scale A

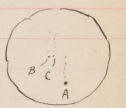
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March 29, 1917

Scales to be cut from MC 12670, (Praesepe)
8 Exposures of 5ˢ. 8, 15, 30, 60, 120, 240, 480ˢ
(Identified on MC 12669)
Two scales marked for Measuring Machine,
one of which is to be sent to Prof. Chant.

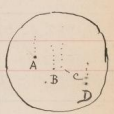
Scale A K
For Prof. Chant

A = 9M + 20°2178 Numbered 0 to 6
B = +21°1891 " 4 " 11
C = " " 7 " 14



Scale A L
First used
April 11, 1917

A = 9M + 19°2069 Numbered 0 to 7
B = +19°2064 " 1 to 8
C = " " 7 to 14



Scale A probably will be seldom, if ever used.
In combining scales B and C, always measure images
having magnitudes between 7 and 8, on both scales,
at least until corrections for the given observer
have been established by a large number of measures.
Corrections Scale B +0.8
Scale C 0.0

Scale A M See page 215.

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Scales for Photographic Magnitudes

Assigned	Name	Plate	Date	No. Eyp.	Time Ratio	Rel p	First used
Mar 24, 1909	M	I 32811	March 3, 1905	7	3	19	April 11, 1905
" " "	N	AC 8858		7	3	199	Nov. 12, 1907
" " "	O	AC 8796	Ap. Standard	7	3	198	October 14, 1904
" " "	P	C 15350		7	3	7	February 16, 1905
May 9, 1911	R	C 17493	October 19, 1908	11	2	201	May 26, 1910
" " "	U	MC 831	December 27, 1910	6	3	203	January 20, 1911
	D^2 (Lost)	~~I~~ B2185					Nov. 15, 1905
	C' and D and 2	D 4392		6	3		April 27, 1896
May 9, 1911	2	MC 300	May 15, 1910 ("Scale B"		3		E.F.L. March 19, 1910
" " "	4	MC					ECP.
" " "	7	MC					ECP.
	V	~~MC~~ I 32811	March 3, 1905	7	3	204	
	W	MC 2086 (Barba)				206	
	X ("B")	H 1342		8	1.6, 1.8, 2.0	208	
	Y ("2")	H 1317		8	1.6, 1.8, 2.0	209	
	Z	MC 831		6	3	212	
	AA	MC 831		6	3	212	Feb. 3, 1919 2nd Bk. 101
	AB	MC 831		6	3	212	
Circle of Declination	AC	MF 120		9	1.5, 1.7, 2.0	213	J.C.M.
	AD	MF 120				213	
	AE	AC 8858		7	3	214	
Meas. Mach.	A7	McCormick B 126		7 (grating)	2	215	
	AG	McCormick B126		7	2	215	
	AH	?		9	2	216	Dec. 28, 1910 E.C.P. May 26, 1915. H.S.L.
Meas. Mach.	AI	MC 831		6	3	217	
" "	AK	MC 12670		8	2 ±	218	
" "	AL	MC 12670		8		218	
In window	AM	McCormick B126		7 (grating)	2	215	

2-in Eyepiece Gundlach-Manhattan Optical Co. No. 101

Received April 28, 1911.

The prism seems to be somewhat lower than that of the 2-inch eye piece, but the field is somewhat larger and it will be a value for Bruce Plates, especially the Magellanic Clouds.

Scale M - successive cracks appeared approaching more and more nearly to the images employed. In Nov. 1914 a crack across the brighter scale made it useless; it can still be used for faint stars. Scale has been repaired and is still serviceable April 5, 1917.

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Scales used for Photographic Magnr

Dec	Plate	Date	Exposures	Images	Dec Corr		Rem
A'	B642	1886, 8, 3	10, 10, 10, 10,	+85° 226	·	·	Trails 18
			10, 10, X				
A^2	B2185	1887, 1, 16	3, 9, 27, 81,	+15° 624	A^2	0.0	
B			243, 729	+15° 625	B	+0.3	18
C'	X1090		3, 10, 30, 90,	+23° 535	C'	-0.5	38
D			270, 810	+23° 516	D	0.0	
E	X1090		3, 10, 30, 90,	+23° 539	·	·	38
			270, 810				
C^2	B2185		3, 9, 27, 81,	+17° 714	a	+0.7	not E.7.2
			243, 729	+17° 722	b	0.0	Page 4

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