KG
11365
818

1906phae.proj..819F

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KG11365 .618

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KG 11365.818

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183647. B33492, 9694.

Mrs. F. 1.2. by comparison.
E. C. P. More than 1.2 magn.
S. I. Bailey. 0.4 or 0.5 magn
Miss Leland 1.0 or more
Miss Cannon 1.0 or more
Miss Breslin 1.0 or more
Miss Wells 1.0

These are all, independent estimates, except in the case of E. C. P. who knew that the estimated difference on these two plates amounted to 1.2 magnitudes.

W. P. F. February 18, 1910.

For estimates of this star, see p. 127.

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A Sixth Type of Stellar Spectra.

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Berk 18, h. 36. 31, 1907.

a

h	m	s	°	′	″
6	59	59.3	+47	32.3	
−	2	24.7		− 14.3	
6	2	24.0	+47	46.6	

b

h	m	s	°	′	″
6	4	41.3	+47	25.9	
+	2	17.4		− 19.3	
6	2	23.9	+47	45.2	

c

h	m	s	°	′	″
6	2	26.7	+47	18	
+	0	5.2	−	27.(	
6	2	21.5	+47	45.(	

d

h	m	s	°	′	″
6	1	36.9	+47	34.9	
−	0	50.1	−	11.4	
6	2	27.0	+47	46.3	

24.0	−1	46.6	+8	
23.9	−2	45.2	−6	
21.5	−25	45.0	−8	
27.0	+29	46.3	+5	
164		31		
24.1		45.8		

−1.4	+.9	+1					
−13	−.8						
~~−11~~	~~−6~~	−2					
−2.2	−9	−1					
+28	+2	−3					

6h 2m 24.1 +47° 46.0 (1855)

24.1 45.8 (1855)

1906phae.proj..819F

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1906phae.proj..819F

It is here stated that it may not
be safe to accept as variables, not out to
~~It~~ Stars showing a range
of less than a magnitude,
on the photographic plates,
unless sufficient material
has been studied to indicate
the character and period
of the variation. Stars
~~going~~ were observed as
changing by more than a
magnitude in the ~~st~~ work
done with the meridian photometer
and these ~~were not~~ difference
were not assumed to be due
to changes in the stars but to
some source of error in the
observations.

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1906phae.proj..819F

31, 1907.

$6^h\ 2^m\ 24^s.2 \quad +47^\circ\ 45'.9 \quad (1855)$

$1\ 42.3 \quad -\ .7$

$6^h\ 4^m\ 6^s.5 \quad +47^\circ\ 45'.2$ ~~41.2~~ 45.8

R.A. Annual Prec.	Dec. "
4.5450	0.2103
22½	22½
90900	4206
90900	4206
99.9900	4.6266
2.2725	1052
102.2625 (1	4.7318
60	
42	

$6^h\ 4^m\ 6^s.5 \quad +47^\circ$ ~~41.2~~ 45.8

4.5447	0.3595
45	45
22723 5	17975
18178 8	14380
204.5115 (3	16.1775
180	
24	

$6^h\ 2^m\ 24^s.2 \quad +47^\circ\ 45'.9$

$8\ 24.5 \quad -\ .3$

$6\ 5\ 48^s.7 \quad +47^\circ\ 45'.6$

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1906phae.proj..819F

31, 1907. Catalogue stars.

~~a 5 5 59 59.3~~

a	6	3	23.3	+47	32.2	1900 BD		
			25.2		31.1	I	+1.9	-1.1
			24.0		31.2	[illegible]	+0.7	-1.0
b	6	5	50.1	+47	17.7			
			53.4		18.6		+3.3	+0.9
			53.8		18.7		+3.7	+1.0
c	6	8	5.0	+47	25.5			
			6.8		26.4		+1.8	+0.9
			6.0		26.5		+1.0	+1.0
d	6	5	1.0	+47	34.7			
		4	58.7		34.4		-2.3	-0.3
			58.5		34.3		-2.5	-0.4

f						1900 BD		
	6	5	11.6	+47	58.4	" I	-2.1	-0.8

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1906phae.proj..819F

31, 1907.

α = 1855

+47° 1260 — 5h 59m 59.3s +47° 32.3′

Prec. 2½ yrs. 1m 42.0s — .0

6h 1m 41.3s +47° 32.3′

Prec. 45 yrs. 3m 24.0s — .1

5h 59m 57.3s +47° 32.3

6h 3m 23.3s +47° 32.2 (1900)

δ = +47° 1264

1855

6h 1m 36.9s + 47° 34.9′

1m 42.0s — 0.1

6 2 18.9 + 47 ~~34.8~~ 25.0

3m 24.1s — .2

6 1 36.9 + 47 34.9

6h 5m 1.0s + 47° 34.7′ (1900)

47° 1260 6 0 53

1264

1267 — 18

1272 — 26

1258 6 0 53.18 +47 45 23.8

1259 37

1261 55

1265 26

1270 45

1271 19

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1906phae.proj..819F

*31, 1907.

$b = +47°1267$

Prec. $6^h\ 2^m\ 26^s.7\ +47°\ 18'.0$

22½ yrs. $1\ 39.5$ — *0.1 / 17.9

$6\ 4\ 6.2\ +47\ 18.1$

45 yrs. $3\ 23.4 - .3'$

$6\ 2\ 26^s.7\ +47\ 18'.0$

$6^h\ 5^m\ 50^s.1\ +47°\ 17'.7$ (1900)

$c = +47°1272$

$6^h\ 4^m\ 41^s.3\ +47°\ 25'.9$

$1\ 39.6\ -.2$

$6\ 6\ 20.9\ +47°\ 25'.7$

$3\ 23.7 - .4'$

$6\ 4\ 41^s.3\ +47°\ 25'.9$

$6^h\ 8^m\ 5^s.0\ +47°\ 25'.5$ (1900)

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1906phae.proj..819F

Nov 24 | 22 44 | −11,3

Ad. 4528 Ad. 4538	Nov. 27 Nov 30				
7044	Nov 24	21	00	−15.0	
7049	Nov 25	22	00	0.0	22 8.2 −8 22 (1853)
7043	Dec 1	22.	00	0.0	
7086	Dec 7	22	00	0.0	(not over)
I 33943	Dec. 13	23	10	−17.0	

Regions of Flagstaff Comet

4' one hour = 96' one day
2 day 192'

192
3.2

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1906phae.proj..819F

December 11, 1905.

Exam. of plates for Wolf's Nova,
per card. 116. 1905 Orietis. Astron Nach.
Vol. 169, #4045. Rd. 3 19 19.29 +19 29 38.7 (1900)
Rd. 3 16.7 Dec +19° 20' (1855).

Plate	Date	Exp.	Est.	
A 7015	Nov. 1, 1904	10 m	X12,	Nova N.S.
I 26522	Jan. 25, 1901	33.	13	Nova N.S.
AC 5368	Oct 15, 1904	60		
AC 6881	Oct. 23, 1905			
AC 6942	Nov. 4, 1905	85		
AC 7061	Nov. 27, 1905	59		
A 4151	Nov. 22 1899	60		
A 215	Feb 2 1904	61		N.S.
A 60	Nov. 30, 1893	60		N.S. ft. st. dev.
A 185	Jan. 23 1894	60	Nova N.S.	?. ft. obj. Def.
A 191	Jan. 25 1894	60		N.S. fl. st. Stars Am. iv. 185

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1906phae..proj..819F

April 18, 1906.

Exam. of plates for var. if any in
Com -48° 39′ 1h 25m 37.8 -48° 27′6 9.8 (1875).
Shows one bright image (may be due to defect) in
set of multiple images on AM 3960. Mr. King enlarge.

Plate	Date	Exp.	Est.
AM. 3926	Oct. 3 1905	63m	
AM. 3983	Nov. 18 1905	70m	
AM. 4019	Dec. 13 1905	60m	
AM. 3887	Sept. 8 1905	60m	
AM. 3805	Aug. 18 1905	60m	
AM. 3769	Aug. 9 1905	60m	
AM. 3736	July 25 1905	66m	
AM. 2909	Aug. 2 1904	60m	
AM. 2313	Oct. 9 1903	60m	
AM. 2353	Oct. 30 1903	58m	
AM. 2221	Aug. 18 1903	60m	
AM. 2180	Aug 10 1903	60m	
AM. 2076	June 27 1903	60m	
AM. 1582	Sept. 27 1902	1h13m	
AM. 1606	Oct. 6 1902	60m	
AM. 1400	June 26 1902	60m	
AM. 1329	June 10 1902	61m	
AM. 119	Aug. 25 1899	7h m	
AM. 1012	Aug. 28 1901	60m	
AM. 1077	Oct. 1 1901	48	
AM. 3134	Oct. 13 1904	61m	
AM. 1643	Oct. 11 1902	60m	
AM. 2329	Oct. 14 1903	65m	
AM. 990	Aug 12 1901	63	
AM. 2869	July 22 1904	60	

Plate	Date	Exp.	Est.
B 32314	July 23 1903	60m	
B 34534	July 30 1904	13m	
B 30983	Oct. 22 1902	10m	
B 32249	July 15 1903	10m	
B 14121	July 12 1895	10m	
B 14910	Oct. 23 1895	10m	
B 12208	Sept 19 1894	10m	
B 26452	Oct. 16 1900	60m	
B 32394	Aug. 3 1903	60m	
B 20165	Aug 26 1897	10m	
B 28424	Sept. 3 1901	10m	
B 22233	Nov. 12 1898	11m	
B 17125	Aug. 13 1896	24m	
B 24257	Sept. 30 1899	11m	
B 4056	Aug. 20 1889	60m	
B 5768	Sept. 20 1890	60m	
B 11826	Aug. 11 1894	13m	
B 17918	Nov. 13 1896	12m	
B 26250	Sept. 19 1900	10m	
B 23797	Aug. 9 1899	11m	
B 4384	Oct. 8 1889	10m	
B 11872	Aug. 13 1894	10m	

22

25

An examination of the above plates seems to show a slight change of magn. which may be due to the photographic images on AM plates. Examined B Plates. No perceptible change. W. P. F.
Not to be announced without further evidence of var.

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1906phae.proj..819F

July 4, 1906.

Exam. of A.C. and A.M. plates for variation if any in +14° 3073. Suspected of variability by Royal H. Frost. See letter of June 4, 1906, and accompanying blue print from Enl. of AM 4263. in which 4th image is about a magn. fainter than images 3 and 5.

+14° 3073 $16^h\ 25.8$ +14° 26'

Plates	Date	Gf.	
Am.			
AC 355	June 30, 1899	343	Multiple images
AC 358	July 3, 1899	273	
Am 857	June 18, 1901		
Am 858	June 19, 1901		
AC 863	May 22, 1900	395	
AC 864	May 25, 1900	364	
Am 1292	May 29, 1902	427	
Am 1402	June 27, 1902	480	
Am 2735	June 10, 1904	452	
Am 2136	July 16, 1903	366.	

No evidence of variability has been found in this star from the exam. of the above plates. On plate Am 2136, the first image differs from the others, but the difference is apparently due to the central part of the image being cut out by some defect in the film.

W.P.F. July 4, 1906.

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1906phae.proj..819F

July 6, 1906.

Eqaun of +14 3073 (Cont).

Plate	Date	Eqn.	Plate	Date	Eqn.
Am 658	Sept. 17, 1900	64	AC 6577	Aug. 4, 1905	75
Am 578	Aug. 30, 1900	65	AC 6598	Aug. 14 1905	64
Am 537	July 23, 1900	61.	AC 6665	Sept. 8, 1905	60
Am 508	June 25, 1900	61.	AC 6779	Oct. 5, 1905	61
Am 472	May 22, 1900	255	AC 6839	Oct. 14, 1905	67
Am 432	April 9, 1900	66	Am 37	Aug. 1, 1899	52
Am 211	Oct. 12, 1899	60	Am 44	Aug. 2, 1899	60
Am 120	Aug 26, 1899	60	Am 825	June 5, 1901	61
Am 101	Aug 21, 1899	62	Am 842	June 7, 1901	61
AC 6521	July 18, 1905	53	Am 860	June 20, 1901	66
AC 5141	Aug. 12, 1904	38	Am 965	Aug 7, 1901	68
AC 5218	Sept 2 1904	62	Am 1009	Aug 23, 1901	70
AC. 5251	Sept. 16, 1904	70	Am 1179	April 3, 1902	60
AC 5332	Oct. 5, 1904	60			
AC 5899	Jan. 26, 1905	45			
AC 5988	Feb. 11, 1905	51			
AC 6109	March 2, 1905	67			
AC 6199	March 17, 1905	57			
AC 6260	April 3, 1905.	58			
AC. 6363	May 8, 1905.	13			
AC 6444	June 15, 1905.	70			
AC 6472	June 29, 1905	91			
AC 6498	July 9, 1905	84			
AC 6511	July 13, 1905	39			
AC 6531	July 21, 1905	64			

Am eqaun. of these additional plates fails to give any definite evidence of variation. On two or three plates the image seems to be slightly denser but this might be due to photographic effect.

W. P. F, July 6, 1906.

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1906phae.proj..819F

July 13, 1906.

Chem. Plates for Gas neb? of Rev Joel D Metcalf. See letter of July 12/7 1906.

I 33604 ~~+41° 4004~~
2.1 2 +41° 35' Gas neb.

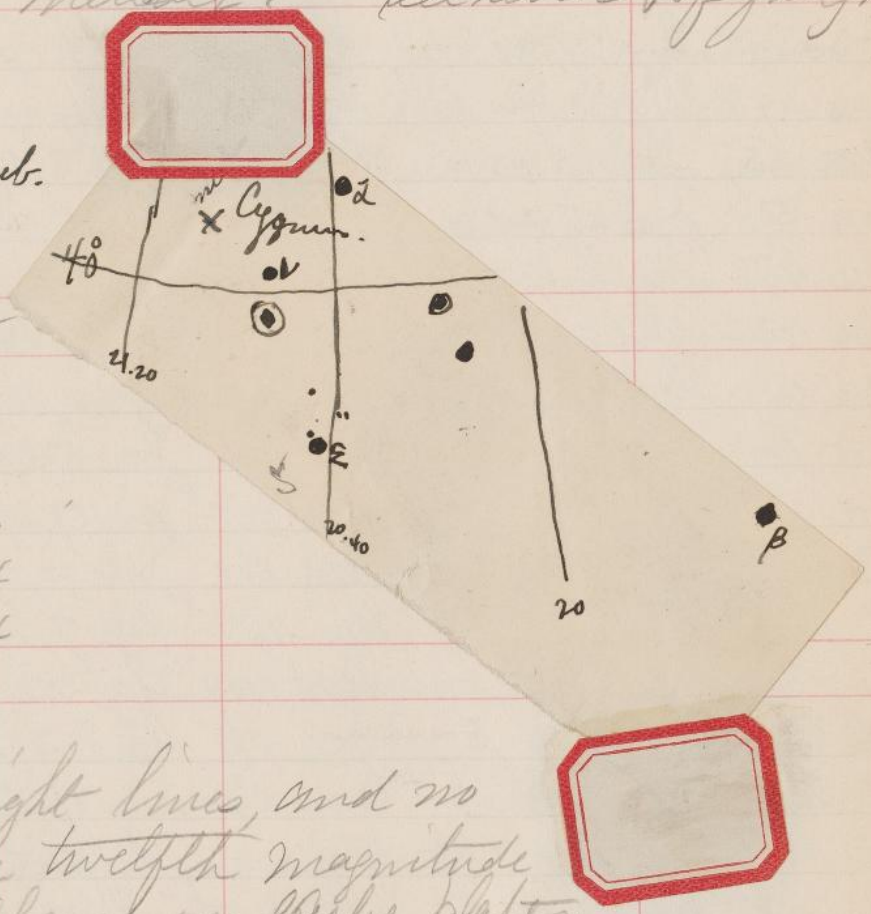


Plate	Date	Ex
AC 7126	Dec. 27, 1905	90
I 33604	Nov. 1, 1905	83
I 13133	July 29, 1895	66
AI 105	" 5, 1906	76
AI 2606	July 29, 1904	74
AC 7614	June 14, 1906	57

No object having bright lines, and no object brighter than twelfth magnitude which does not appear on early plates, was found in the place given by Joel D. Metcalf.

July 14, 1906.

Metcalf's object

I 34131
A.C. 7654

July 13, 1906. No object showing bright lines anywhere near.
July 13, 1906. No new object brighter than the eleventh magnitude, and no plate showing marked variation, found near region indicated on Chart of Joel D Metcalf. Was not his object +41° 4004, with an error in stating position?

W. P. Fleming.

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1906phae.proj..819F

July 18, 1906.

Exam. of Plates for Iris.

20 32.2 −11 20 , $+1^{m}.0$ +1′ ,
+16 +16

20 49.2 −11 4 = Pos. July 13, 1906.
2 47 − 10 33′ (1855 Prec).

20 46.4 −11 14′.6 (1855) July 13, 1906.

Plate	Date	Ex.	Object.	R.A.	Dec.	Obs'r
I 34132	July 13, 1906	10^{m}	Iris ?	20 44.5	−11 28	W.P.F
I 34137	July 14, 1906	19	Iris	20 44.3	−11 27	"
				20 43.7	−11 27	"

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1906phae.proj..819F

Saturday July 21. 1906

Selection of Plates for measuring Asteroids found by Miss Wolf Friday July 20, 1906. on A 7588

		1906	RA	Dec	
	3975	Nov 13	h	-90°	
AR	4008	Dec 4	10.0	-75°	
	4050	Jan 26	6.0	-90°	found 10 25.3 -80 10.5
	4051	" "	9.0	-60°	too far north.
	4053	" "	12.0	-60	too far north.
	4060	" 27	10.0	-75	found, 10 16.2 -80 10.5
	4062	" "	12.0	-90	
✓	4067	" 29	6.0	-75	found? may 9 56.3 -79° 55'
	4100	Feb 13	10.0	-75	
	4126	Mar 13	9.0	-60	
	4086	Jan 31	14.0	-75	
	4101	Feb 13	14.0	-75	
	4115	" 17	6.0	-75	
Steel.	A 7588	Jan 30 '06			9h 38m.1 -79° 58'

Limit of Operation 1.6 of asteroid 1.0 of other stars.
diff 0.6 = 0.2 mm. = 12" = 64s in 1 day = 288" = 5'
Telescope was tracking moving faster than sidereal time
Asteroid was retrograding. Hence motion of asteroid was 40 + 2.6
= 0.83 mm = 64m. = 24h 19.92m = 24h 20'

.83
24
332
166
19.92

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1906phae.proj..819F

Sund July 22, 1906.

8-9 a.m.

Examined plates a.m. 4050, 4060, 4062, 4067 to 4086 carefully search to find object on 4060 on 4062, or object in right ascension = 4086

Approx 1900 po. 9 37.5 −80 5
H 9 38.1 −79 58

Pec!!!

20869

A7588 No. 485 BV. 96 p. 34 Asteroid See Mw. Fo Book, 18 p. 12

Omit Asteroids
can not be included.

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1906phae.proj..819F

August 1, 1906.

Exams. of plates for object (Comet?) marked by W.P.F. on A.C. 7635, on July 25, 1906.

Plates	Date	Ref.	R.A.	Dec.	
A.C. 7635	June 29, 1906.		7h 20m	+89° 40' (1855)	Comet?
A.C. 7633	June 27, 1906.		7 26	+85 15	?
"	"	"	7 48	+84 16	?

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1906phae.proj..819F

August 30, 1906.

Exam. of plates for evidence of variability in star near 55 Cygni, suspected by Colson,

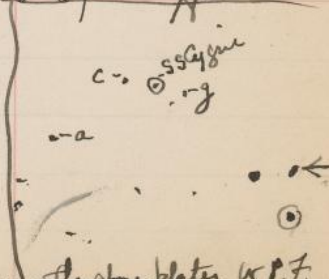
~~He~~

D.M. +42° 4172 21 33.8 +42 37.4 8.4 (1855)

The star indicated by an arrow in black ink on O.C. Wendell's observing chart was marked by Mr. Colson on Plate I 34167, on August 22, 1906, as his variable star in Cygnus. This seems to be the object which I first examined for Mr. Colson finding at that time a change of about 0.5 to 0.6 magn. An examination of the following plates on August 29, 1906 shows a slight change in this object, 0.3 to 0.4 magn, which may be due to the photographic images, as compared with adjacent stars.

Plate	~~Plate~~	Date	Ex.
I	18609	Aug. 28 1897	15m
I	17784	April 2 1897	12m
I	16932	Dec. 30 1896	10m
I	34208	Aug. 26 1906	29m
I	34206	Aug. 24 1906	9m
I	18052	May 4 1897	24m
I	20080	Jan. 27 1898	14m
I	25248	April 28 1900	17m
I	18074	May 7 1897	10m
I	18109	May 18, 1897	21m
I	16079	Sept. 30, 1896	11m
I	13320	Sept. 1 1895	10m
I	20979	July 6 1898	14m
I	4627	Oct. 28 1891	10m

Plate	Date	Ex.
I	7303	Oct. 10 1892	10m
I	18141	May 25 1897	16m
I	18259	June 21 1897	10m
I	19246	Oct. 13 1897	10m
I	17184	Jan. 25 1897	10m
I	22841	May 5 1899	13m
I	16399	Oct. 31 1896	12m
I	7402	Oct. 23 1892	11m
I	8886	July 21 1893	10m
I	25290	May 5 1900	11m
I	34197	Aug. 22 1906	29m



21h 38.8m +42° 32.8 see Mrs. F's Book 12 page 106

The star in the circle is that observed by Wendell, Campbell, White, Leland, Miss Cannon and on the plates. The star marked with the arrow was probably that originally marked by Colson and used on the other plates. W.P.F.

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1906phae.proj..819F

September 19, 1906.

Exam of Plate I 34259 for Iris.

Plate	Date	Ex.	Obj.	R.A. 1855 Dec.	
I 34259	Sept. 18, 1906	22	Iris ? 8.9	~~19 56.9 −13° 19'~~ ~~19 59.5 −10 54~~	
"	" " "	"	var	19 49.5 −9 46	4 ★ from I 34259, Br. on I 21170.
" 34265	" Sept. 19, 1906	20	var	19 51.5 −8 16	new R.S. Aquilæ
			Iris 8.5	19 57.1 −13 20	

Found while looking for Iris.

Plate	Date	Ex.	Est.
I 34259	Sept. 18, 1906	22	<11
I 21170	Sept. 13, 1898	10.	9.6
B 29486	April 28 1902	10	<11
B 17726	Oct. 28, 1896	10	<10.7
B 36535	Aug. 8, 1905	11	11
B 29886	May 28, 1902	10	9.7
B 11690 3	July 18, 1896	13	9.6
B 15746	May 9, 1896	18	<11.5
B 12586	Nov. 16, 1894	10	<11

Variation confirmed by Pickering, Wells, & Breslin. Apparent mags 9.6 to <11.5

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1906phae.proj..819F

September 22, 1906.

Eye Means of light of Clusters as compared with star images on plate taken out of focus. Wedge used is that with which AB plates were measured.

Plate I 34246 Sept. 15, 1906. 64.62m

Object		Br.	Br.				C80 -06a	Adopted
N.G.C. 6656								
-23°7149		3.20	3.11	3.16	04	05		8.21
C.P.D.-24°6417 8.2	a	3.08	3.15	3.12	04	03	5.1	
" -23°7111 8.1	b	3.10	3.17	3.14	04	03	5.0	
" -23°7114 8.1	c	3.26	3.20	3.23	03	03	4.9	
" -23°7167 8.2	d	3.33	3.28	3.30	03	02	4.9	
N.G.C. 6626		3.50	3.55	3.52	02	03		8.57
-24°6385								
C.P.D.-24°6386 8.2	a	3.25	3.21	3.23	02	02	5.0	
" -24°6370 8.4	b	3.33	3.27	3.30	03	03	5.1	
" -24°6384 8.6	c	3.43	3.46	3.44	01	02	5.2	
" -24°6381 8.8	d	3.67	3.62	3.64	03	02	5.2	
							50.5	

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1906phae.proj..819F

October 6, 1906.

Copy of record of Obs. of suspected binaries and other objects found in unpacking Peruvian X Plates.

Plate	Date	Ex.	Object.	R.A.	Dec.	Date of original record
X 11230	June 15, 1906	63	K Gp. double Sp. Binary?	19 14.8	-54 36	Bm 6792 Sept. 24, 1906.
[X 11160	May 21, 1906	55	Lines triple.	"	"	. .]
X 11150.			Lines double Sp. Binary	17 42.3	-53.6	pm 6199 Sept. 24, 1906.
~~X 11150.~~			~~Omitted to be Replaced.~~			
X 11216	June 12, 1906	60	Lines double Binary.	17 28.1	-32°.5	pm 6091 Sept. 24, 1906
X 11167	May 23, 1906.	90m	Lines double Binary	16 48.4	-50 31	0h 1 27854. Sept. 18, 1906.
X 11221	June 13, 1906	62	Hβ, Hγ (Cont 48?)	15 55.2	-60 13	68 Ch. 21688
X 11205				"	"	Sept. 21.
X 11191	May 29, 1906	60.	Divided to be Replaced Broken & new replaced	16 57.2	-37 42	Ch. 22073 Sept. 18, 1906.
X 11207	June 9, 1906	60	lines double	18 09	-56.1	pm 6446 Sept 18, 1906
X 11180	May 28, 1906	60.	lines wide & hazy	14 17.7	-65 43	a.g.c. 19452 Sept. 18, 1906

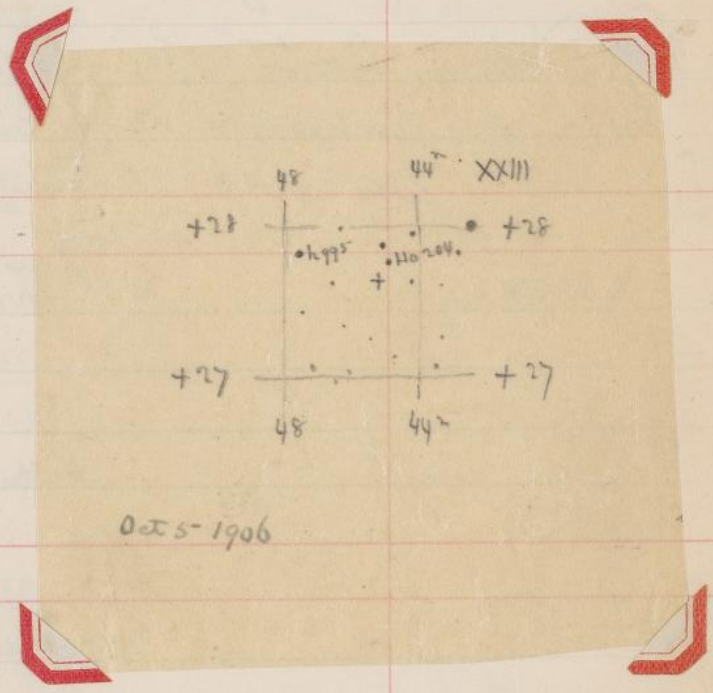
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1906phae.proj..819F

November 26, 1906.

Exam. of plates for star referred to in postal and also letter of Rev. T. E. Espin of Nov. 12, 1906.

Plate		Date		Ext.	
I 18650		Sept.	3, 1897	11m	
I 23853		Oct.	19, 1899	14	
I 28102		Dec.	21, 1901	14	
I 31127		Nov.	10, 1903	11	
I 32115	**	Oct.	3, 1904	12	Ident
ab 6855		Oct	17, 1905	63	
ab 6908		"	29, 1905	19	
ab 6931		Nov.	2, 1905	71	
ab 7820		Sept.	17, 1906	81	
ab 7831		"	19, 1906	80	Dec. 5, 1906
ac. 7826		Sept.	18, 1906	68	
ac. 7919		Oct.	13, 1906	77	
ac. 7909	*	Oct.	12, 1906	68	
ac. 7938 39		Oct.	25, 1906	84	
a 6227	*	Nov	7, 1902	10	
a 5669		Sept	24, 1902	10	Too poor to show ft. stars



Shows very faint star near Espin's plotted Position. Compare with other A plates where unperceived. W.P.F. Dec. 5, 1906.
AC. Plates point to show such faint objects.

An examination of the above plates fails to show any trace of an object near the region marked in Chart accompanying Espin's letter, and nearly all these plates show stars as faint or fainter than magn. 11.8

W. P. F. Nov. 26, 1906

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1906phae.proj..819F

15

Dec. 7, 1906.

See also p. 19.

Exam. of Plates for var. if any in No. 2 on Plate X 11221. Taken June 13, 1906. Bright hydrogen lines, Hβ, Hγ, Hδ(?). Br. Hβ confirmed independently on X 11205. A.G.C. 21688 R.A. 15h 55m.2 Dec. -60° 13' 6".8 (1909)

	Plate	Date	Ex.
B	23915	Aug. 18 1899	10m
B	3859	July 15 1889	
B	27397	May 25 1901	10m
B	3778		
B	29444	April 26 1902	10m
B	22505	April 6 1899	10m
B	19315	June 1 1897	10m
B	25011	April 7 1900	62
B	27898	July 17 1901	61
B	27709	June 26 1901	64
B	21894	Aug 26 1898	10
B	20239	Sept. 2 1897	10
B	11241	May 22 1894	
B	16324	June 13 1896	10
B	33442	April 22 1904	10m

An exam. of the above plates fails to show any marked variation in light of A.G.C. 21688. It is always from 0.5 to 0.8 br. than A.G.C. 21547 magn. 8.0, and 0.4 to 0.6, ft than A.G.C. ~~21547~~ 21499 magn. ~~8.0~~ 6.2

W. P. F. Dec. 15, 1906.

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1906phae.proj..819F

January 17. 1907

Object found by Miss Leland Jan 15, 1907.

I 28190 Phot 4h 58m6 −13° 26′ (1855) { 5 09 Jan 3 1902 / 5 19 Jan 3 1902 (D.1.)
AC 2145 526 { 4 56 Jan 3 1902 / 5 55 Jan 3 1902

(1855)

RD −13° 1057 90 4 57 29.6 −13 24.7
1060 10.0 57 0.5 −13 22.6
1063 6.0 56 55.1 −13 19.1

This obj. is in eff. on Plate 526.

W.P.F.

RA 5h 0m.3 −13° 53′ (1855). Suspected of variability

Plate	Date	Ex.	Plate	Date	Ex.	Plate	Date	Ex.
B 20343	Sept. 14 1897	10m	B 18279	Jan. 5 1897	12m	AC. 2145	Jan. 3, 02	07m
B 26736	Nov. 27 1900	10	B 16998	July 21 1896	15	B 14924	Oct. 23, 95	10
B 30914	Oct. 13 1902	10	B 17161	Aug. 14 1896	10	B 24310	Oct. 2, 99	11
AC. 2202	Jan. 17 1902	60	B 24037	Aug. 31 1899	11			
AC. 2321	Feb. 12 1902	60	B 19984	Aug. 7 1897	13			
B 24050	Sept. 1 1899	10	I 28213	Jan. 5 1902	54			
B 16823	July 11 1896	12	B 18619	March 12 1897	12			
B 17671	Oct. 13 1896	10	B 24191	Sept. 23 1899	10			
B 17215	Aug 17 1896	10	B 18217	Dec. 7 1896	10			
B 18328	Jan. 20 1897	10	B 26605	Nov. 16 1900	10			
B 32922	Dec. 16 1903	10	B 24400	Oct. 13 1899	10			

An exam. of the above plates fails to show any evidence of real variability.

W.P.F. Feb. 8 1907.

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1906phae.proj..819F

See also B19, 112.

January 28, 1907.

R.A. 7h 49m.2 Dec. +22° 16' (1900).

0749 22. U Geminorum. The hydrogen lines are visible but weak in the spectrum of U Geminorum on I 2023. The lines Hγ and Hδ have been identified by superposition on Chart Plate I 2812.

2138 43 S S Cygni. R.A. 21h 38m.8 Dec. +43° 8'

Plate I 17188. The spectrum is nearly continuous but the lines Hγ and Hδ are present and very weak, but have been identified by superposition on Chart Plate I 18515.

S S. Cygni

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1906phae.proj..819F

January 31, 1907

Explan. of region for Object of Lowell, supposed comet having "two tails".

Date Sept. 20, 1906. R.A. $20^h\ 52^m$ Dec. $-21°\ 45'$ (1900).

Plates	Dates	Exp.
Cam 4564	Sept. 11, 1906	60
Cam 4560	Sept. 10, 1906	71.

No bright object found within a reading of 1 about 1°.

W. P. F.

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1906phae.proj..819F

February 1, 1907.

Exam. of Plates of δ Cygni for note for Table of Variables of Class for

Plate	Date	Ef.	Description of Sp.
I 17188	Jan. 25, 1897	65m	Var. br. faint trace of lines Hγ & Hδ
I 17739	March 31, 1897	61	Var. ft. difficult Object, Pec? Hγ & Hδ br.
I 18515	Aug. 12, 1897	11	Var br. (Chart plate)
I 18607	" 28, 1897	60	Var. ft. difficult Object Pec.? Faint trace of br. lines which may be due to dyf.
I 19061	Sept 28 1897	74	Var. br. Hβ, Hγ, & Hδ, well defined; 0.5 of the normal int. of the Hγ lines in other spectra of class A on this plate.
I 19120	Oct. 1, 1897	61	Hγ, Hδ & Hε ~~var~~ present but ft. Var br.
I 19154	" 4, 1897	46	H & K well defined Hγ & Hδ present but very ft. Class F. Var. br.
I 19171	" 5, 1897	33	Var. br. No lines distinctly seen.
I 19173	" 5, 1897	41	Var. br. H & K strong; Hγ & Hδ very ft.?
I 22838	May 5, 1899	60	Hβ, Hγ, & Hδ, very ft. but present - Var. br.
I 27782	Oct 5, 1901	60	Var. br. Hγ lines not vis.? Spect. too dense to classify.
May 9, 1911 I 33688	Nov. 23, 1905	64.	Hβ, Hγ and Hδ faint, but well defined. Var Br. H and K not identified.
I 34206	Aug. 24, 1906	97.	Peculiar. Spectrum hazy. Hγ and Hδ suspected.
I 34213	Aug. 28, 1906	61.	Resembles Cl. F, Hγ and Hδ faint H and K normal (?)
I 34218	Aug. 31, 1906	67.	Sp. Peculiar. Faint traces of lines visible but not identified. Has appearance of two spectra, diff in dec., superposed.

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1906phae.proj..819F

~~February~~ January 8, 1907.

Exam. of plates for susp. var. of H 1050.
+1° 1105. R.A. 5h 37m.3 Dec. +1° 26' (1900). Magn. 5.24. Lines Hγ and Hδ
bright on Plate, see note on R.H.P.

	Plate	Date	Exp.
I	24897	March 20 1900	12m
AC	2885	Oct. 9 1902	59
AC	5371	Oct. 15 1904	60
AC	5500	Nov. 8 1904	52
AC	5665	Dec. 4 1904	62
AC	5918	Jan. 30 1905	60
AC	5893	Jan. 26 1905	103
AC	5797	Jan. 4 1905	61
AC	7238	Jan. 30 1906	77
Isochromatic AW	348	Dec. 5 1899	67
AW	315	Nov. 23 1899	60
AW	1559	Sept. 22 1902	60
AW	1705	Nov. 24 1902	60
AW	2386	Nov. 19 1903	61
AW	2366	Nov. 14 1903	60
AW	2295	Sept. 29 1903	60
AW	3192	Nov. 4 1904	60
AW	3167	Oct. 31 1904	60m
AC	2390	March 6 1902	73
AC	2398	March 10 1902	74
AC	2309	Feb. 10 1902	60m
AC	2156	Jan. 3 1902	73
AC	552	Nov. 24 1899	64
AC	2931	Oct. 24 1902	78
AC	3447	March 20 1903	60
AC	7221	Jan. 27 1906	71
AC	1779	Sept. 24 1901	52

An exam. of the above plates fails to show sufficient evidence of variability. There seems to be a slight change, of uncertain, which is probably due to the photographic images.

W.P.F.

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1906phae.proj..819F

February 13, 1907.

Examn of plates to det. var. of A.G.C. 15946.

R.A. ~~11 33 19 to 47 58.0~~ Dec. ~~-71° 51' 12" 8.5~~ ~~9.8~~ (1875).

~~11 35 10 to 48.8~~ -72° 14' (1900). Sp Na var? on A 7582.

Plate	Date	Ex	Est. Magn.
A 3033	May 27, 1898	60	9.0
B 4838	April 1, 1890	60	10.2
B 9296	May 2, 1893	11	9.4
B 11136	May 15, 1894	11	9.6
B 16349	June 15, 1896	10	9.2
B 9354	May 4, 1893	13	9.3
B 16216	June 10, 1896	10	9.6
B 22643	April 28, 1899	10	9.8
B 11084	May 9, 1894	21	9.4
B 33158	March 17, 1904	10	9.1
B 9361	May 4, 1893	10	9.2
B 5198	May 15, 1890	60	9.8
B 36011	May 12, 1905	12	8.8
B 21267	April 26, 1898	10	9.7
B 25102	April 11, 1900	10	9.3
B 18451	Jan. 30, 1897	10	9.4
B 5520	July 3, 1890	35	9.9
B 33313	April 12, 1904	12	8.6

An examn. of the above plates shows a variation of about 1.6 magnitude. Est. limits 8.6 to 10.2. W.P.F.

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1906phae.proj..819F

~~February~~ 21 February 13, 1907.

Exam. of Plates for var. of CPD −72° 1048, 9.8.
R.A. 10 47 58.0 −72° 6′4 (1875).
10 48.8[7] −72 14 (1900). Sp. Mbsc. br. lines. var? on
A 7582. January 29, 1906.

Plate	Date	Ex.	Est.
A 3033	May 27, 1898	60	10.5
B 4838	April 1, 1890	60	10.1
B 9096	April 11, 1893		10.3
B 11136	May 15, ~~1904~~ 1894		10.5
B 16349	June 15, 1896	10	10.3
B 9354	May 4, 1893	13	10.4
B 16218	June 10, 1896	10	10.2
B 22643	April 28, 1899	10	10.3
B 11084	May 3, 1894	21	10.2
B 33158	March 17, 1904	10	10.0
B 9361	May 4, ~~+4~~ 1893	10	10.7
B 5198	May 15, 1890	60	10.3
B 36011	May 12, 1905	12	10.0
B 21267	April 26, 1898	10	10.4
B 25102	April 11, 1900	10	10.2
B 18451	Jan. 30, 1897	10	11.5
B 5220	May 17, 1890	15	10.8
B 33313	April 12, 1904		9.8
			~~10.5~~

Our exam. of the above plates shows a variation of about 1.7 mag. Est. limits 9.8 to 11.5 W.P.F.

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1906phae.proj..819F

February 20, 1907.

Exam. of Plates to determine variation if any
in +32° 3850° magn. 9.1. R.A. 20h 25m 48s.3, Dec. +32° 5'.0 (1855)
Sp. Type IV, var.? in I34124, No. 6046. R.A. 20h 27m.6 Dec +32° 14' (1900)

Plate	Date	Exp.	Est.	
I 34124 Sp.	June 27, 1906	102	..	Type IV. Na. var?
I 33634	Nov. 9, 1905	10	8.5	
I 4372	Sept. 28, 1891	22	9.5	
I 14743	March 27, 1896	11	9.2	
I 23647	Sept. 23, 1899	14	9.2	
I 8801	July 16, 1893	11	9.1	
I 1580	Aug. 4 1890	15	8.5	
I 6947	Sept. 9, 1892	21	9.6	
I 25163	April 14, 1900	11	9.0	
I 21134	Aug. 28, 1898	12	9.1	
I 27645	Sept. 30, 1901	10	9.2	

Sequence selected.

An examination of the above plates shows a variation of about a magnitude. Estimated limits 8.5 to 9.5.

W. P. F.

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1906phae.proj..819F

February 21, 1907.

Exam. of plates for confirmation of var. discovered from Paris Charts and announced in "Compt Rendus" Vol. 144 p. 251. (No 5. Feb. 1907).

R.A. 19h 0m 8.s44, Dec. + 24° 40' 15."8 (1900).

Plate	Date	Exp	Est.	GMT	J.D.
a 26811	Aug. 31, 1897	75	13.8	12h 45m	4168.531
a 5556	Aug 21, 1901	60	14.0	13 48	5618.575
a 3211	Aug. 5, 1898	10	13.7	14 36	4507.608
a 3212	Aug. 5, 1898	10	13.7	14 52	.620
a 1937	July 20, 1896	11	14.1	14 41	3761.612
a 2881	July 21, 1906	60	13.7	15 53	7413.668
a 3214	Aug. 5, 1898	10	14.2	15 39	4507.652
I 33738	Dec. 8, 1905	26	14.2		7185.441
I 16090	Oct. 3, 1896	10	13.8		3836.550
I 27433	Sept. 6, 1901	35	13.7		5634.566
I 30763	Aug. 24, 1903	16	13.9		6351.657
I 21261	Sept. 28, 1898	10	14.0		4561.558
I 34139	July 14, 1906	20	14.0		7496.721
I 11647	Oct 15, 1897	10	13.8		3112.505
I 8957	July 27, 1893	10	14.3		2672.649
I 27427	Sept. 5, 1901	19	Too poor		
I 11675	Oct. 17, 1894	10	Too poor.		
I 9140	Aug. 9, 1893	15	Too poor.		
I 3976	Aug. 10, 1891	11	Too poor.		
I 16380	Oct. 28, 1896	14	13.0		3861.502
a 779	Aug. 11, 1894	10	13.7	13 35	3052.566

For pos. of Comp stars see p. 32.

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1906phae.proj..819F

February 21, 1907.

Exam. of plates for confirmation of var. discovered from Paris plates and announced in "Compt Rendus" Vol 144 p. 251.

S. J.

Plate	Date	Expo.	Est.				GMT	LD
		m			h	m	h m	
✓a 5337	June 8, 1901	60	14.8	10			17 59	5544.749
✓a 5482	July 25 1901	10	14.7	12			14 34	5591.607
✓a 3146	June 29 1898	11	14.8	~~5~~ 7			15 06	4470.628
✓l 34336	Nov. 8, 1906	26	12.9	14	21	26 .891 .569		7523 .460
✓l 11100	May 14, 1894	12	12.7	3	17	11 .714 .052		2963 .766
✓l 27144	June 27 1901	17	13.0	11	16	12 .673 .934		5563 .607
✓l 18874	Sept. 17, 1897	16	13.0	3 4	20	15 .841 .708		4154 .549
~~l 20661~~	~~Apr. 7, 1898~~	~~12~~	13.0	~~5~~ 6	17	20 .720 .183		4387 .873
✓l 20661	Apr. 7, 1898	12	13.0	~~5~~ 6	17	20 .720 .183		4387 .873
✓l 30529	May 20, 1903	31	13.2	13	17	20 .720 .039		6255 .759
✓l 23345	Aug. 16, 1899	10	13.2	~~7~~ 8	18	07 .787 .797		4883 .584
✓l 18953	Sept. 21, 1897	13	14.2	~~4~~ 5 Equth.	20	22 .846 .697		4189 .543
✓l 8981	July 29 1893	16	14.2	1	17	24 .723 .844		2674 .567
✓a 397	March 16 1894	10	13.7	~~1~~ 2	~~15~~	~~55~~ .661	21 02	2904.876
✓l 20195	Apr. 13, 1900	11	Toppon. 9		14	52 .618 .138		5123 .756

For Pos. of Comp. stars see p. 33.

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1906phae.proj..819F

February 22, 1907.

Meas. to det. pos. of stars used for comparison of new variable recorded on p. 30.

R.A. 19h 0m 8.44 Dec +24° 40' 15".8 (1900)

Plate A 2681,

		x	y	x	y	x×30	y×30
var.		0.00	0.00	000	000		
Wagn.	13.0	-2.75	-5.15	-2.75	-5.20	-165.00	-310.50
	13.4	-5.90	-0.50	-5.90	-0.50	-354.00	-30.00
	14.0	-0.80	-2.20	-0.80	-2.20	-48.00	-132.00
	14.2	-0.40	-0.70	-0.40	-0.70	-24.00	-42.00
comp.		-0.25	-0.25	-0.20	-0.20	-13.50	-13.50
var.		±0.00	±0.00	0.00	0.00		

February 23, 1907.

Pairs Chart. Dist of var. from

y	x
14.4	1.9
2.9	10.6
17.3	~~12.5~~ 8.7 = ~~7.0~~
8.6	

109
783
87
9.48

21.8
7
152.6/8
19.1

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1906phae.proj..819F

February 22, 1907

Meas. to det. pos. of stars used for comparison of new Variable recorded on p. 31

R.A $16^h\ 54^m\ 11^s$ Dec. $+21^\circ\ 42'\ 0.0$ (1900)

Plate A 5337

		x	y	x	y	x×30	y×30
	var	0.00	0.00	0.00	0.00		
mags	12.7	-0.90	-6.90	-0.90	-6.90	-54.00	-414.00
	12.9	-8.25	+1.30	-8.30	+1.30	-496.50	+78.00
	13.4	-4.50	+0.75	-4.45	+0.75	-268.50	+45.00
	13.8	+3.50	-4.75	+3.50	-4.75	+210.00	-285.00
p	14.2	+1.70	+0.75	+1.70	+0.75	+102.00	+45.00
f	14.5	-1.35	-0.60	-1.40	-0.65	-82.50	-37.50
	var.	0.00	0.00	0.00	0.00		

5167
2584
1292

Position of +24°3624

	18	59 43.14	+24° 43′ 48.″0		1875
+		1 1.94	+ 2 9.2		
	19	0 45.08	24 45 57.2		1900
		0 8.44	40 15.8		
	0	36.64	5 41.4		

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1906phae.proj..819F

April 23 1908.

Means to det pos. of ft comp stars for van 31, 1907. – Abrigal

6h 2m 24.1 +47° 46.9 (1855)
α δ
×9.19s ×93″

Adopted in ink. (from Campbell's notation).
Prov. in pencil

Plate Mph. 515.

	x	y	x	y	mean x	Res.	mean y	Res.	x	y	ψ	y
van	+3.15	+5.60	+3.15	+5.60	+3.15	0 0	+5.60	0 0	00	00		
a	12.55	−3.75	−12.60	−3.75	−12.58	3 2	−3.75	0 0	−15.73	−9.35	−144.56	−869.55
c	+18.10	−6.80	+18.10	−6.80	+18.10	0 0	−6.80	0 0	+14.95	−12.40	+137.39	−1153.20
b	+ 3.70	−11.80	+ 3.75	−11.80	+ 3.72	2 3	−11.80	0 0	+ 0.57	−17.40	+ 524	−1618.20
d	− 2.30	− 1.75	−2.30	− 1.75	−2.30	0 0	−1.75	0 0	−5.45	− 7.35	−50.09	− 683.55
k	+ 3.20	+ 6.85	+3.15	+6.90	+ 3.18	2 3	+6.88	3 2	+ 0.03	+ 1.28	+0.28	+ 119.04
e	+ 5.30	− 8.35	+5.30	− 8.35	+ 5.30	0 0	−8.35	0 0	+ 2.15	−13.95	+19.76	−1297.35
g	+ 5.25	+ 3.40	+5.30	+ 3.40	+ 5.28	3 2	+ 3.40	0 0	+ 2.13	− 2.20	+19.57	− 204.60
f	+ 5.70	− 1.15	+5.70	− 1.15	+ 5.70	0 0	− 1.15	0 0	+ 2.55	− 6.75	+23.43	+ 627.75
h	+ 0.70	− 2.60	+0.70	− 2.65	+ 0.70	0 0	− 2.62	2 3	− 2.45	− 8.22	−22.52	− 764.46
m	+ 1.15	+ 0.25	+1.15	+ 0.25	+ 1.15	0 0	+ 0.25	0 0	− 2.00	− 5.35	−18.38	− 497.55
kl	+ 7.75	+ 7.85	+7.75	+7.85	+ 7.75	0 0	+ 7.85	0 0	+ 4.60	+ 2.25	+42.27	+ 209.25
van	+ 3.15	+ 5.60	+ 3.15	+ 5.60								
n	+11.45	+ 8.25	+11.45	+ 8.20	+11.45	0 0	+ 8.22	3 2	+ 8.30	+ 2.62	+76.28	+ 243.66
p	+ 3.10	− 3.15	+3.10	− 3.15	+ 3.10	0 0	− 3.15	0 0	− 0.05	− 8.75	− 0.46	− 813.75
o	+ 0.15	+ 1.80	+0.15	+ 1.85	+ 0.15	0 0	+ 1.88	2 2 3	− 3.00	− 3.75	−27.57	− 348.75 / 351.54
q	+ 5.40	+ 5.90	+5.40	+5.90	+ 5.40	0 0	+ 5.90	0 0	+ 2.25	+ 0.30	+20.68	+ 27.90
r	+ 0.50	+ 7.15	−0.55	+ 7.20	− 0.52	2 3	+ 7.18	3 2	− 3.67	+ 1.58	−33.73	+ 146.94
s	− 0.15	+ 2.65	−0.15	+ 2.70	− 0.15	0 0	+ 2.68	3 2	− 3.30	− 2.92	−30.33	− 271.56
t	+ 0.80	+ 4.55	+0.80	+ 4.55	+ 0.80	0 0	+ 4.55	0 0	− 2.35	− 1.05	−21.60	− 97.65
u	+ 1.75	+ 4.60	+1.75	+ 4.60	+ 1.75	0 0	+ 4.60	0 0	− 1.40	− 1.00	−12.87	− 93.00
w	+ 2.10	+ 5.90	+2.10	+ 5.90	+ 2.10	0 0	+ 5.90	0 0	− 1.05	+ 0.30	− 9.65	+ 27.90
x	+ 3.80	+ 5.60	+3.80	+ 5.60	+ 3.80	0 0	+ 5.60	0 0	+ 0.65	0.00	+ 5.97	0.00
y	+ 4.15	+ 5.40	+4.20	+ 5.40	+ 4.18	3 2	+ 5.40	0 0	+ 1.03	− 0.20	+ 9.47	− 18.60
z	+ 3.85	+ 5.35	+3.85	+ 5.35	+ 3.85	0 0	+ 5.35	0 0	+ 0.70	− 0.25	+ 6.43	− 23.25
α	+ 2.90	+ 5.30	+2.95	+ 5.30	+ 2.92	2 3	+ 5.30	0 0	− 0.23	− 0.30	− 2.11	− 27.90
β	+ 1.85	+ 5.20	+1.85	+ 5.25	+ 1.85	0 0	+ 5.22	2 3	− 1.30	− 0.38	−11.95	− 35.34
γ	+ 3.25	+ 5.35	+3.25	+ 5.40	+ 3.25	0 0	+ 5.38	3 2	+ 0.10	− 0.22	+ 0.92	+ 20.46
	+ 3.15	+ 5.60	+3.15	+ 5.60								

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	x	y	x	y	x mean	x Res.	y	y Res.	x	y	x	y	
1	+3.45	+4.75	+3.45	+4.70	+3.45	0.0	+4.72	3 2	+0.30	-0.88	+2.76	-81.84	
2	3.90	4.50	+3.90	+4.50	+3.90	0.0	+4.50	0 0	+0.75	-1.10	+6.89	-102.30	
3	4.30	4.60	+4.30	+4.60	+4.30	0 0	+4.60	0 0	+1.15	-1.00	+10.57	-93.00	
4	4.60	4.40	+4.60	+4.35	+4.60	0 0	+4.38	2 3	+1.45	-1.22	+13.33	-113.46	outside
5	3.60	6.25	+3.60	+6.30	+3.60	0.0	+6.28	3 2	+0.45	+0.68	+4.14	+63.24	
6	3.80	6.20	+3.80	+6.25	+3.80	0 0	+6.22	2 3	+0.65	+0.62	+5.97	+57.66	
7	4.05	6.30	+4.10	+6.30	+4.08	3 2	+6.30	0 0	+0.93	+0.70	+8.55	+65.10	
8	4.50	6.70	+4.50	+6.70	+4.50	0 0	+6.70	0 0	+1.35	+1.10	+12.41	+102.30	outside
9	—	—	—	—									
10	—	—	—	—									

~~α 1874~~

α 1260	6	4	41.3	+47	25.9				
1267	5		~~49.3~~		22.7				
1272									
1264	4		56.7		56.7				
	5	59	59.3	+47°	32.3′	-145″	-15.4′		
α 1260	~~6~~	~~2~~	~~15.8~~	~~+47°~~	~~54.9~~	~~-116″~~	~~+7.2~~		
67	2		26.7		18.0	+15″	-29.1′		
72	4		41.3		25.9	+149	-21.8		
64	1		36.9		34.9	-35	-12.8		
ν 1855	2		12.		47.7				
1900	5		36		47.4				

	x	y	Corr. x	Corr. y
	-15.74	-9.35	-14.62	~~-9.24~~ +9
	~~-15.73~~	~~-9.35~~	~~-11.69~~	~~+4.32~~
	+0.57	-17.40	+1.51	-17.82 -42
	+14.95	-12.40	+15.03	-13.08 -64
	-5.45	-7.35	-3.53	-7.68 -33

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April 29, 1908.

Meas to det. pos. of Aurigae, 060547, 31, 1907, and bright comparison stars.

(See also p. 34, for complete sequence).

Plate I 35-203.

	x	y	x	y	x Res.	y Res.	Diff. x	Diff. y	x x163	y x163
var.	+10.60	+12.60	+10.60	+12.65	+10.60 0 0	+12.64 4 1	0 0	0 0	..	..
a,	+1.70	+7.30	+1.70	+7.25	+1.70 0 0	+7.28 2 3	−8.90	−5.36	1450.70	873.68
b	+8.30	+17.30	+8.30	+17.35	+8.30 0 0	+17.32 2 3	−2.30	+4.68	374.90	76284
c, X*	+19.20	+5.55	+19.15	+5.55	+19.18 2 3	+5.55 0 0	+8.58	−7.09	1398.54	1155.67
b&	+10.90	+2.65	+10.90	+2.70	+10.90 0 0	+2.68 3 2	+0.30	−9.96	48.90	1623.48
d	+7.50	+8.50	+7.50	+8.45	+7.50 0 0	+8.48 2 3	−3.10	−4.16	505.30	678.08
K &	+10.60	+13.40	+10.65	+13.40	+10.62 2 3	+13.40 0 0	+0.02	+0.76	3.26	123.88
e, X	+11.85	+4.65	+11.85	+4.65	+11.85 0 0	+4.65 0 0	+1.25	−7.99	203.75	1302.37
var.	+10.60	+12.65	+10.60	+12.65						

x) a b c d

−15.74 +14.95 +0.57 −5.45

a

5 59 59.3 +47 32.3
44.6
+48 16.9

b

6 4 41.3 +47 25.9
59.1
+48 25.0

c

6 2 26.7 +47 18.0
82.9
+48 40.9

d

6 1 36.9 +47 34.9
35.0
+48 9.9

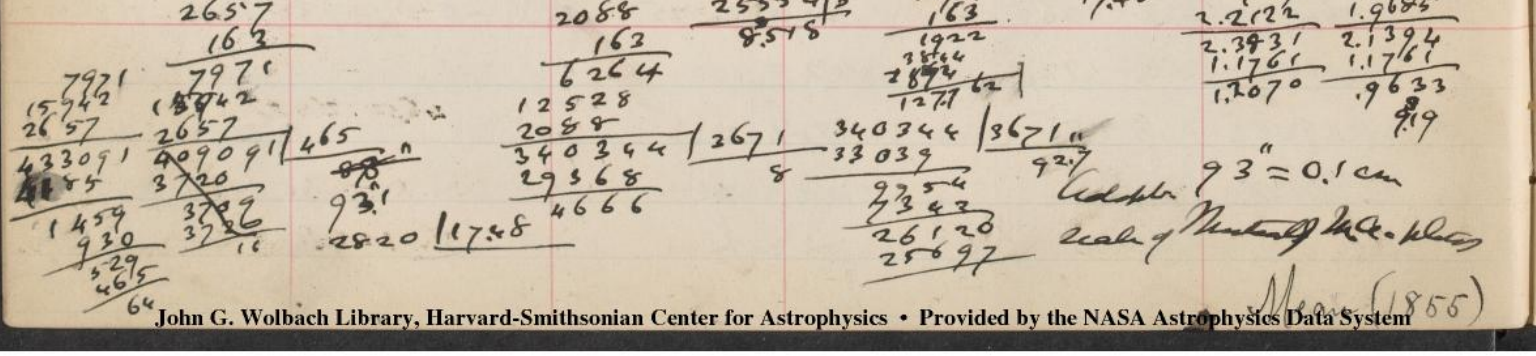
y) a b c d

−9.35 −12.40 −17.40 −7.35

x 286

2674.10 3546.40 4976.40 2102.10

44' 34".10 59' 6".40 82' 56".40 35' 2".10



Scale of Meters (1855)

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July 14, 1908 Plate Ma. 515 Magn. 15.8 (=2) 16.0 (fainter & not seen) W.P.F. 514 "

July 13, 1908 Plate Ma. 515 W.P.F. 514 est. B 4 g.

Mean Dec. = +47° 34'.1 = 0.1708826
1.0362 3
1.2071 1

Diff. x

	a	b'	b	c	d	e	e'
	-8.90	-2.30	+8.58	+0.30	-3.10	+0.02	+1.25

D.M. (1855) Magn.

+47 1260 5h 59m 59.3 +47° 32'.3 7 7 0.94939 0.36173 0.93349 9.47712 0.49136
+47 1266 6 1 49.3 +47 59.4 8.7 9.4 1.20711
+47 1272 6 4 41.3 +47 25.9 8.7 2.15650 1.56884 2.14060 0.68423 1.69847
+47 1267 6 2 26.7 +47 18.0 8.5 143.s38 37.s05 138.s2355 4.s833 49.s974
+47 1264 6 1 36.9 +47 34.9 9.2 2m 23.s4 2m 18.s52
+47 341

Diff. y x163

873".68	762".84	1155".67	1623".48	678".08
14' 33".68	12' 42".84	19' 15".67	27' 3".48	11' 18".08

a	b'	b & c	d & b
5h 59m 59.s3 +47° 32'.3	6h 1m 49.s3 +47° 59'.4	6h 4m 41.s3 +47° 25'.9	6h 2m 26.s7 +47° 18'.0
-2 23.4 -14.6	-37.0 +12.7	+2 18.s52 -19.3	+4.8 -27.1
6 2 22.7 +47 46.9	6 2 26.3 +47 46.7	6 2 22.s8 +47 45.7 23.1	6 2 21.9 +47 45.1

d

6h 1m 36.s9 +47° 34'.9
50.0
-49.9 -11.3
26.8
6 2 26.9 +47 46.2

93" = 1mm.

120 | 93
40 | 31
31 | 1.3
90

6h 2m 24.s12 +47° 45'.9 (1855)
6h 5m 48.s6 +47° 45'.17 (1900) H
6 5 48.7 +47 46.6 (1900) C.

					°.19 K	'.5 y	s.19	93"	
a)	6h	2m	22.s7	+47°	46'.9	+1.5	+0.9	-8.90	-5.36	-15.74	-9.35
b')			26.3		46.7	+2.2 1	+.7	(-2.30	+4.68)		
b)			23.1 22.8		45.2	+1.1	-.8	+8.58	-7.09	+14.95	-12.40
c)			21.9		45.1	-2.2 3	-.9	+0.30	-9.96	+0.57	-17.40
d)			26.9 8		46.2	+2.8 6	+.2	-3.10	-4.16	-5.45	-7.35
						+5.0 4.7	+1.8	-12.00	-26.57	+15.52	-46.50
						-4.9	-1.7	+8.88		-21.19	
b	6	2	24.s1 2	+47°	46'.0						

$-3.12 : -5.67 = 163 : \frac{-924.21}{-3.12} = 296.$

$y\ -26.57 : -46.50 = 163 : \frac{7579.50}{26.57} = 285.$

$46.50 : 26.57 = 163$

$x\ 20.88 : 36.71 = 163 : \frac{5983.73}{20.88} = 287.$

$36.71 : 20.88 = 163 : \quad 286.$

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July 13, 1908.

Slaisnear - Aurigae 31, 1907
Pl. Ma 5-15 W.P.7, Obs. B.E.B. Mc.

Obs.	Est.	Est.
1	17.0	17.0
2	16.0	16.0
3	—	—
4	16.2	16.2
5	16.7	16.8
6	16.4	16.5
7	16.6	16.7

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August 8 & 1908

JD

Remeasures of R Trianguli

W.P.F obs E.F.L. rev

2481 ✓ I 7899

c 4, o d, 5 e = 8.09 8.04 8.19 = 8.11 02 07 08

~~o d~~

~~5 e~~

Var. about equal to "d". Comparison by H certainly wrong.

3230 ✓ I 12283 a 4, 2 b 7.37 6.99 = 7.18 19 19

Var. Certainly brighter than "b" Comparison by B certainly wrong

Var. brighter than b. Comp by L.J.

✓ 6810 ✓ I 32353

g 3, 1 h 10.81 11.11 10.96 15 15

Var. Certainly brighter than "h" about equal to h. E.F.L. obs.

Reg. corner of pl. Obs. not difficult

2480 ✓ I 7882

c 3, 1 d 7.99 7.94 = 7.96 03, 02

Var. about equal to "d" Comp by B & H certainly wrong. This obs. is comp by L.

2463 ✓ I 7799

Plate does not cover region. Var ^ Off edge

✓ I 7530

Var. not in region covered by plate.

✓ I 7289 (3)

Var on edge, and in badly fogged region.

Observation worthless.

1739 ✓ I 2717

g 3, 2 h 10.81 11.01 = 10.91 10 10

Var. Certainly brighter than "h" Obs of H confirmed. Certainly br. than h. On edge of pl.

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1906phae.proj..819F

Aug. 8, 1908

Remeasures of R Trianguli

J.D.		W.W.F. obs.	E.E.B. rec
1736	I 2705		
	g 6 v Rejct. if not on plate	11.11 Record wrong	9.91 ?
		f 6 v = 10.51 adopt. g not on plate.	Wrong star marked for var. in orig. obs.
		Wrong star certainly obs by H.	Region on southern edge of plate
			Obs f 6, g not on plate confd by L.
1706	I 2424		
	d 5, o e, 6 f	8.54 8.69 9.31 = 8.84 .39 .15 .47	
	About equal i. ë. may be slightly brighter.	Comparison by H. certainly wrong. Confirmed by L.	
5770	ac 2219		
	h o v ?	11.21 ?	
	On limit of vis.	Observation by B. certainly wrong. Probably W.S. obs.	
6826	ac 5709		
	h 2 v	11.41 11.71 = 11.56 .15 .15	
	v 2 k		
	Certainly bet. h + k.	Obs. by B certainly wrong.	
6810	ac 5597		
	h 3 v	11.51 11.81 = 11.66 .15 .15	
	v 1 k	[h 2, 2 k. Independent est of L. Confirms magn. on this plate.]	11.41 11.71
	Almost equal to k		
3223	a 1274		
	b 4 v	7.59 7.49 = 7.54 .05 .05	
	v 2 c		
	Certainly brighter than c	Certainly not midway between b and c. L makes it about 0.1 brighter than c. { magn. 7.69.	
		and 0.5 fainter than b. { 7.69	

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August 11, 1908.

Exam. of spectra announced as Pec, IV? and IV Pec, for spectra having dark bands, and similar to 7 C.

W.P.F. Obs. Pec.

Plate	Obj.	Sp.	Mag.	Sp.	No. Obj.	Cl.	
Plate	Desig.	R.A.	Dec.	Magn.			
I 34348.	+53°66	0h 16m.7	+53° 29'		IV	6239	Pec.
I 34884.	"						

Spectrum shows three dark bands, the spectrum between them, being brighter the edge of greater wavelength from the bands and losing in intensity towards the band of gr. w-length. This is also shown on I 34884. This spectrum has sometimes been referred to as Nd in the original records, but seems to contain too much blue light photographically for a star of Type IV, the acknowledged red stars.

I 33365	+57°.702.	3 0,3	+57	20' (1855)	IV	5242	Pec..
I 35015	Missing.						
I 33437	I	Enl.?					
I 33679							

Dark bands. Same as typical star of new class. This spectrum, in addition to the dark bands shows also the lines H and K at about their greatest intensity.

These plates show that this spectrum should be included in new Class. I 33437 shows H and a trace of K.

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August 11, 1908.

Plate	Desig.	R.A.	Dec.	Magn.	Sp.	Obj.	bl.	Rem.
B20430	Gillis 2351.	4h 8.2m	-70° 2'		Pec.	11693	Pec. var?	Spectrum very faint shows traces of 3 bright lines which might be formed by the spectrum on the following edges of the 3 dark bands in spectra of Type VI(?). This is confirmed by the spectrum on plate A6964 which although faint, shows the dark bands.
A6964.								
B14359.		4 25.2	-79 30			7919	Pec.	Spectrum nearly continuous; traversed by fine bright lines. This does not in any way resemble the new class of spectrum.
B20582.		6 49.9	-24 1 (1900)				Pec.	Given as K2 in H.R. No. . ο' Canis Majoris K2 in Vol. 28, p. 199. On Plate B20582 shows Hδ as a well defined bright line, and a trace of Hγ as bright. The spectrum on this plate is so bright, that the line Hγ is not easily observed. Certainly not same as the new class of spectrum.

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August 11, 1908.

Plate	Design.	R.A.	Dec.	Magn.	Sp.	No. Obj.	bb.	Rem
B20679	-3° 11548	6 5.4	-3 3	(1855).	IV.	11548	Nd.	This spectrum shows the dark bands very strongly marked, cyanogen bands, but shows a distribution of light in the continuous spectrum similar to that described on p. 42. +53° 66. Seemingly this spectrum should be included as of the new Class (Type VI).

August 12, 1908.

I B31565	+43°	3 17.9	+43 39.9	(1855).	IV.	Pec.	This object is faint. It shows two dark bands and extends farther towards the violet than ordinary spectra of Type IV. It probably belongs to the new Class of spectra, Type VI.
I 32382	"	"	"	"			[Another good plate required].
I 31565	—	3 23.7	+45 16			Pec.	The spectrum on this plate appears to be that of an ordinary fourth type star. The spectrum may vary, like that of R Cygni(?). Spectrum peculiar on this plate, but too faint to permit definite classification. Appears to resemble new Class (VI?). No other plate of region shows the spectrum of this star.

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August 12, 1908.

Plate.	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Id.	Rem.
I 26125	+24° 1686	7h 23m.1	+24° 49′ (1875)	8.2	IV		Pec.	This spectrum is more nearly Type IV, a Na, than those which are being included in new Class, (Type VI?). Only one strong dark band is visible, although the spectrum is quite bright and clearly marked on I 26125.
B 15571 B 18994	A.G.C. 11890	8 42.4	-29 21	7.5	IV		Pec.	Spectrum fairly bright but definitely not especially good. The superposition of this, however on the spectrum of -10° 5057 19h 15m.2 -10° 58′.6 (1855) shows that the spectra are similar and that A.G.C. 11890 should be included in the new Class (Type VI?). The spectrum is best shown on B 18994 where it is separated from A.G.C. 11889 magn. 7.8 which is Cl. K.

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August 12, 1908.

Plate	Design.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Cl.	
B32374	+5°1603	8h 56.2m	+50° 29' (1900)	9.2	Pec.	4916	Pec.	Three well marked broad dark bands are present in this spectrum and it is similar to that of ζ C. 10° 2112. HC. 66. which is the like -16° 5057 19h 15.2m = 1958. -16 5272 19 10.9 -16 +02 (1855).
I31601								Shows dark bands and also a diminution in light of the continuous spectrum between the bands.
I31601	+5°1603	(var?)						"Chart plates show slight evidence, if any, of variation"

I32758.	9	2.2 +21 58 (1900)	Pec.	The spectrum is faint but shows three broad dark bands. This peculiarity is confirmed on I 32498, where the spectrum although faint is more distinctly marked than on I 32758. This should be included in the new class (Type VI?).
I32498				

I31587.	+14°2048. 9	5 49.6 +14 47.5	8.8 IV Pec.	Pec. This spectrum is similar to that of 9 2.2 +21 58. and shows three broad dark bands which by superposition of I31587 and I32758 prove the ζ to be identical in the spectra of these two stars. Plate B 38064 was not used for superposition since the dispersion ~~too~~ is greater than on the 8 inch Draper plates. Include in new Class (Type VI?).

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August 13, 1908.

Plate	Desig.	R.A.	Dec	Magn.	Sp.	No. Obj.	Rem.
B21452	—	9 13.5	-65 49 (1900)		14?		Very faint on B21452. Also faint on A2222, but seems to show the spectrum of shorter wavelength than the band G. So faint and uncertain however, that it had better not be added to the new Class (Type VI?) without further confirmation of Class of Sp.
A2222.							
B11332	-13° 3407	11	28.4	-13 47			In this spectrum the central of the three bands forms two distinct well separated dark lines the central point between these identifying with the position of the band G in adjacent spectra. The band of shorter wave length slowly dark line between near H8 and is of greater wavelength and the band of greater λ identifies with the characteristic bright line in stars of Type V.
B21155							
B21406							
B22784							
I33783.	-10°513	2	28.0	-10 48			Spectrum similar to that of -13°3407. Should be included in new Class.

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August 17, 1908.

Plate	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Cl.	Rem.
I 33878	+66°780	12h 52.5m	+66° 32′	7.3	Pec IV		IV? Pec.	A bright broad band in this spectrum identifies with or near Hβ. The dark band of shorter wavelength than Hβ is not identical with the well marked band of similar spectra of the new Class (VI?). The ident. of the bands was made by superposition on I 28344. Spectrum Peculiar and unlike ordinary Type IV, Class IVa.
I 22121.	+46° 1817.	12 38.3	+46 13	5.5	IV		IV.	IVa?. In this spectrum the line Hβ and at least two lines of gr. λ. are seen. The spectrum is probably IVa. It does not extend beyond the G band, on this plate.

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August 17, 1908.

Plate.	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Id.	Rem.
B 37592	1908 13 14 0	13h 26.7m	-53 19		IV	14174	Pec.	The spectrum on this plate shows the dark bands present in -10° 5057, but is too faint to show well the lines H and K. A trace of H is seen. On B 36266 the peculiarity in the spectrum is confirmed. It should be placed in the new Class (VI?). Spectrum too faint to describe or classify on B 36229.
B 36266.								
B 36229.								
A 4372.	1908 19 7 45	14 29.5	-42 56		IV		Pec?	Image poor. Shows only one band and extends only to about the band G. Probably Type IV. Not in new Class (VI?).

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1906phae.proj..819F

August 17, 1908.

Plate	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Cl.	Rem.
I 31573	-2° 3939	14 58.8	-2 28.				Pec. IV?	Spectrum very faint on this plate. Another required to determ Cl. The spectrum is faint also on I 31681, but shows two dark bands. On I 28881, the spectrum shows all well marked dark bands of the new Class, and extends to the line Hε. Include in new Class.
I 31681,								
I 28881.								
B 36121.	20554.	15 4.8	-69 42				IV	13823, Pec Ba line? Object very faint. Appears to be of Class IVa. Too faint to be certain of Classification. Not to be placed in New Class (VI?)

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1906phae.proj..819F

August 17, 1908.

Plate	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Cl.	Rem.
B 9614	20437	15 21.9	-24 49.		IV.		Pec. dark bands.	This spectrum seems to be identical with -13°3407 and shows this class much better, especially on B 18980 and B 37568. The lines H and K are well marked on these plates. The double lines in -13°3407 are also clearly defined on these plates.
9616								
18980								
18967								
19619								
21504								
21931								
37568.								

These plates appear to show changes in the separation of the lines near "G" but this may be due to the poor definition on some of the plates

B 9469	+5°4237.	15 58.4	-5 9	3219	IV.?		Object extremely faint. Appears to be Na. A good image of this object on B 11335 shows the spectrum is Class K
B 11335.							

on other plate! ✓

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1906phae.proj..819F

August 14, 1908.

Plate Desig.	R.A.	Dec.	Magn.	Sp.	Obj. No.	Col.	Rem.
B17084	17h 9m21s	17 15.3	-41 39 6/10		9365 ~~4896~~	Rec IV?	Image too poor to classify with certainty. On examination of these plates shows that the spectrum does not extend to ~~beyond~~ Hβ, shows the dark band near Hβ, but is too faint to show any other bands although it can be seen to beyond Hδ. Plate B37604 shows the brightest image but that is too narrow and poor to classify with certainty. Probably new class
B17090							
B19751							
B37604							
B8710 Chart.							
			Another plate. Good star on this plate for comp.				
B3837613			No. 14355 Nd1, var? Reexamination of this object places it in type VI, Class R. Dec. 2, 1908.				
B9546	24406	17 52.7	-36 0				
Plate 9565					3340	Rec.	Hydrogen lines very faint and br. on edge of gr. R. Hβ br. Confirmed on B9565.

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1906phae.proj..819F

August 17, 1908.

Plate.	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Rem.
A 7728 -39°12196 B13829.		17 58.2 -39 30		IV.	Pec?		This may belong to new class but image on this plate is too poor to classify with certainty B13829. Best plate, but image to faint and poor to afford confirmation of Cl. of Sp. Omit from new Class for present.
				Another plate!	✓		
A 6429 -38°12843 B13830.		18 23.4 -38 29 95 Get B13830		IV			Pec. dark bands. Spectrum faint but apparently of new class. Shows two dark bands and a trace of the spectrum of shorter λ. B13830 shows three dark bands in spectrum & separation of central band into two lines, similar to -13°3407.

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1906phae.proj..819F

August 17, 1908

Plate	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Obl.	Rem.
B 17062	-31°5954	18 40	-31 25		Pec.	3959	Pec.	This is similar to that of -10°5057 and should be included in new Class (VI?).
B17062	-29°15547	18 52.4	-29 38	8.9	Pec.	395-8	Pec.	This spectrum is similar to that of -13°3407 and should be included in new Class (VI?).
a 6475	— Circ 92. Dark bands.							

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1906phae.proj..819F

August 17, 1908.

Plate	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Vel.	Rem
B 23253	-5° 458	18 56.7	-5° 53		IV			Rec. All plates show this star as peculiar, more nearly like W Gris than an ordinary Type IV star. From these plates it would not be included in new Class
B 38111								
B 38112								
B 37580								

August 18, 1908.

C 15108	-16° 5272.	19 13.4	-16 5	6.8				Rec. IV? Object difficult to classify, since plate is isochromatic and shows only a few stars
B 14208								B 14208 shows a good image of this spectrum and shows that it is of Class Na.

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1900phae.proj.:010F

August 18, 1908

Plate	Desig.	R.A.	Dec.	Magn.	Sp.	No.	Obj.	Ob.	Rem.
I 14592	+85° 832	19 43.8	+85	9	9.2	IV	4182	Rec.	Image poor, but the appearance of the dark bands and the extent of the spectrum towards the violet, together with the presence of lines H and K, show that this should be included in the new Class (VI?).

II 16969 Chart plate used for superposition to identify bands and extent of spectrum.

B 19013	-65° 3832	19 44.6	-65	41	(875)			Rec.	Superposition of B 20541 on B 37567, shows that this spectrum is similar to that of CDM. -24° 12084 15 21.9 -24 49 (905). and should be included in new Class (VI?).
B 20541	"								

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1906phae.proj..819F

August 18, 1908.

Plate	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Cl.	Rem.
I3463	7.	+43°3425	1	9	5m2	30,2	+43°52'0	82	~~IV~~	Pec.	Probably Type IV, Na, but image too poor and too near edge of plate to classify with certainty. Not to be included in new Class (VI?).

cl. c.

~~B19013 27330~~

I32359	+36°3852.	20	0.8	+36	32	Pec IV?	4828	Pec	Pec. Resembles Type IV Na, and should not be included in new Class without further confirmation.

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1900phae.proj..810F

August 18, 1908.

Plate	Desig	R.A.	Dec.	Magn.	Sp.	No. Obj.	Cl.	Rem.
I 31923	+47° 3077	20 15.2	+47 25 (1855).		IV		IVa.	Type IV Na. Should not be included in new Class (VI)?

B 20427.	27615.	aq. 20h 5.7m		-6 52°	35	7.1. (1900)	Pec.	Spectrum consists of three dark bands. Include in new Class. Appears to be Nova Cyg. -13°3407. 11h 28m.4 -13° 47'.

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1966phae.proj..819F

August 18, 1908.

Plate.	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	Obl.	Rem.
A 2023	—	20 6.8	−44 48	(1875).				IV Pec. Spectrum may be of new Class, but requires confirmation
								Another plate.

I 32359	+38°3957	20 9.8	+38 28	(1900).				Pec. Spectrum Changes, already announced. Not in new Class.

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1906phae.proj..819F

August 18, 1908.

Plate	Desig	R.A.	Dec.	Magn.	Sp.	No. Obj.	Cl.	Rem.
B 14172 - 12	5755.	20	26.2 - 12		IV		IV? Nd.	Image very ft on B 14172.
13873						8699	IV	Best definition on B 13873
13872						8694	IV?	Where it is shown to belong to new Class. This spectrum shows a tendency to a diminution [illegible] towards the [illegible] in the continuous [illegible] separating [illegible] between the [illegible] bands.

E. F. G.
Please return the D Plates to me after entering corrections to identifications in Cat.
W. C. S.

* A 6934 alg.c. 29232. 21 [illegible] Spectrum on this [illegible] is peculiar and [illegible] ls to shorter λ than [illegible] Hδ and sev. al other lines. [illegible] greater λ than Hβ. Hβ very [illegible] B 14388. at seems to be of Class IVa (Type IV), and extends only to about the band G.

* A 6958 alg.c. 29252. 21 15.2 - 70 10 IV 389 Rec. Spectrum peculiar on A 6958 and B 36151. It is similar to that of Alg.C. 29232 on both plates. On B 38018. The spectrum extends only to about the band G, and seems to resemble Class IVa.
B 36151 13886
B 38018. 14559

Spectrum Changes?

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1906phae.proj..819F

August 18, 1908.

Plate	Desig.	R.A.	Dec.	Magn.	Sp.	No. Obj.	bl.	Rem.
B 14172	-12 5755.	20 26.2	-12		IV		IV? Nd.	Image very faint on B 14172.
13873						8699	IV	Best definition on B 13873,
13872						8694	IV?	Where it is shown to belong to new Class. This spectrum shows a tendency to a diminution [illegible] towards the [illegible] in the continuous [illegible] separating [illegible] between the [illegible] bands.

78 88
7 36
32

* A 6934 alg.c. 29232. 21 [illegible]
B 14388.

[illegible] ectrum of this [illegible] is peculiar and [illegible] to shorter λ than [illegible] and several other lines. [illegible] greater in them than Hβ. Hβ on [illegible] 14388. It seems to be of Class IVa (Type IV), and extends only to about the band G.

Spec

* A 6958 alg.c. 29252. 21 15.2 -70 10 IV 389 Rec. Spectrum peculiar on A 6958 and B 36151. It
B 36151 13886 is similar to that of
B 38018. 14539 Alg.C. 29232 on both plates.
On B 38018. The spectrum extends only to about the band G, and seems to resemble Class IVa.

Spectrum Changes?

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1906phae.proj..819F

August 18, 1908.

Plate	Desig	R.A.	Dec.	Magn.	Sp.	No. Obj.	Bl.	Rem.
B 14172	-12 5755	20 26.2	-12		IV		IV? Nd.	Image very faint on B 14172.
	13873					8699	IV	Best definition in B 13873
	13872					8694	IV?	Where it is shown to belong to new Class. This spectrum shows a tendency to a diminution in light, towards the red, in the continuous spectrum, separating between the dark bands.
* A 6934	alg C. 29232.	21	136-4527.		IV.		Pec.!!!	The spectrum on this plate is peculiar and extends to shorter λ than H δ. Shows Hγ and Hδ and several other lines. Strong dark band of greater λ than Hβ. Hβ very faint but visible.
B 14388.								On B 14388. it seems to be of Class IVa (Type IV), and extends only to about the band G.
	Enl. Pec. Spectrum Changes.							
* A 6958	alg C. 29252.	21	15.2-70 10		IV	389	Pec.	Spectrum peculiar on A 6958 and B 36151. It is similar to that of Alg C. 29232 on both plates. On B 38018. The spectrum extends only to about the band G, and seems to resemble Class IVa.
B 36151						13886		
B 38018.						14559		
	Spectrum Changes?							

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1906phae.proj..819F

August 18, 1908.

Plate	Desig.	R.A.	Dec.	Mags.	Sp.	No. Obj.	bl.	Rem.
~~B 38102.~~		21 36.6	-65 30		IV	14582	Pec.	Dark bands. Spectrum peculiar, showing three dark bands. Is similar to that of ~~H~~ -10° 5057 19h 15m.2 -10° 59' Belongs in new Class (VI?).
~~B 38081~~								
B 12418	aqc. 30526				P		Pec.	Unlike any of the spectra examined for this classification.
B 12261	π Grus							
B 11766								
B 11703								
B 9788								
B 9789								
B 20549								
B 20454								
B 20494								
I 33584	+54° 3032	23 36.9	+54 46			5453	IV Na.	Spectrum very faint, and apparently of Class Na. Not to be included in new Class.

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1906phae.proj..819F

August 18, 1908.

Plate	Desig.	Rd.	Dec.	Magn.	Sp.	No.	Obj.	Cl.	Rem.
B 12340	+2°4709	23	39.0	+2	41	IV.	6610	Rec.!!	Spectrum Peculiar and
							7805	Rec.!!	Similar to that of
B 14205	— Enl.								A.G.C. 29232. See p. 59.
	Same Cl. as A.G.C. 29232. See p. 59.								Confirmed on plate B 14205 which shows this even more clearly.

	D 9396	Type I Cl. A.	
−24°12084	D 13475	Type VI Cl R.	
U Hydra	D 13479	Type IV Cl. Na	
γ Velorum	D 13466,7	Type V Cl. Ca & Fe	
H.P. 1311	D 13471	Type V Cl Fe.	
−24° 12084.	D 13475	Type VI Cl R	
B 12340 + −10° 5057	13476 ,7,8	Type VI Cl R	ctrum shows
B 14205 −51° 11725	D 9394	Type VI Cl R.	dark bands
B 17058. V Crucis	D 9396	Type VI Cl R Rec.	! is similar
	D 9396	Type I Cl. A	that of

−10°5057. 19h 15m.2.

Plates sent over for Enl. & prints.

					D
I 33437	+57°702	3h 0m 20.6	+57° 20′ 7.9.		
B 18980	A.G.C. 2937	15 21.9	−24 49 (1900)		13474,5
~~B 3768~~	−10° 5057	19 15.2	−10 58.6 (1855.)	(7.0)	13476,7,8
B 3760 B 37568	−24° 12084	15 21.9	−24 49		13472
B 14205	+2°4709	23 39.0	+2 41 (1855)	6.2 Pec.	13468 13469
B 14388	A.G.C. 29232	21 13.6	−45 27 (1900)	6.0 Pec.	13473
A 6934	"	"	"	" " " "	
B 10768					
X 6266					
H.P. B 12631					

U Hydrae 13479

γ Velorum 13466 13467

H.P. 1311. 13470 13471

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1906phae.proj..819F

August 18, 1908.

Plate	Design	Rd.	Dec.	Magn.	Sp.	Obj.	Cl.	Rem.
B 12340	+2°4709	23	39.0	+2 41		IV. 6610	Pec.!!	Spectrum Peculiar and
B 14205	— Enl.					7805.	Pec.!!	Similar to that of
								A.G.C. 29232. See p. 59.
								Confirmed on plate
								B 14205 which shows
								this even more clearly.

Same Cl. as A.G.C. 29232.
See p. 59.

B 12340	+5°5223	23 41.7	+5°35	IV?	Pec.!
B 14205					
B 17058.					

Spectrum shows three dark bands and is similar to that of -10°5057. 19h 15m.2.

Plates sent over for enl. & prints.

							D
I 33437	+57°702	3h 0m 20.6	+57° 20′ 7.9.				
B 18980	A.G.C. 20937	15 21.9	−24 49	(1900)			13474,5
~~B 37687~~	−10°5057	19 15.2	−10 58.6	(1855.)	(7.0)		13476,7,8
B 37607 B 37568	−24°12084	15 21.9	−24 49				13472
B 14205	+2°4709	23 39.0	+2 41	(1855)	6.2	Pec.	13468 13469
B 14388	A.G.C. 29232	21 13.6	+45 27	(1900)	6.0	Pec.	13473
A 6934	"	"	"	"	"	"	"
B 10768							
X 6266							
~~H.P.~~ B 12631							

U Hydrae 13479
γ Velorum 13466 13467
H.P. 1311 13470 13471

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1906phae.proj..819F

Wednesday, Aug 19, 1908.

Wave Lengths of Variable – Class R. Type ~~VII~~ VI ?

3 30 V Crucis

Type I

~~10.00~~ H.

410.1	H δ	9.60	.88	10.13	.91	10.56	.93	.91
434.1	H γ	10.48	1.41	11.04	1.41	11.49	~~.91~~ 1.41	
486.2	Hβ	11.89		12.45		12.90		

From curve	H γ	12.50	.89	12.68	.88	12.75	.86	.88 434.1
λ 4642 ~~4742~~	Edge	13.39	21	13.56	24	13.11	23	23 464.2
λ 4783	"	13.60	29	13.80	30	1334	28	29 4735
	Hβ	13.89	.139	1410	1.42	13.62	1.37	140

V Crucis HC 76 465 – 471 3.5

4642 – 4783

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1906phae.proj.819F

~~-53° 9606~~ R. W. obs. Bk 1, 53. Error in meas. or Proper Motion?
~~-53° 9607~~
-54° 9432 Error in ident.
-54 9445

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1906phae.proj..819F

September 4, 1908

Exam. of Plates for Comet. (Lick Obs. Tel.)

Comet.

Plate	Region	R.A. Apparent	Dec.	F. Obs.
✓ I 35483	3 20 +66.0	3h 14m 18s	+67° ~~28~~ 8′	(185
✓ I 35485	3 20 +66.0	3 14 0	+67 ~~26.5~~ 11	
✓ AC, 9716		3 16.1	+67 ~~20~~ 19	
I 35482	3 20 +66.0	3 15.7	+66 42.	"

Comet.

Plate	Date	J.D.	Eff.	S.T.	R.A.	Dec.	
I 35482	08, 9, 2	8187.859	40m	~~22~~ 2 40 +	3 15.7	+66 42.	
I 35483	" " 3	8188.538	20	19 00	3 14 18	+67 8	
I 35485	" " 3	" .648	37	21 39	3 14 0	+67 ~~26.5~~ 11	
AC 9716	08, 9 3	" .673	62	22 16	3 ~~15.7~~ 13.9	+6 ~~66 42.~~ 67 19	
					~~3 +0.0 +67 20~~		

AI #6975 Aug. 24, 1908 8178.835 60 1 33 3 20.8 +66 1 1855

Comet.

Sept. 1. 1908

Plate	Date	J.D.	S.T.	R.A. 1855	Dec. 1855.	
AI 6975	8 24	8178.835	1 33	3h 20.8m	+ 66° 1′	3 23.1 +66 6
I 35482	1908 9 2	8187.859	2 40	3 15.7	+ 66 42	3 17.9 +66 48
I 35483	" " 3	8188.538	19 00	3 14.3	+ 67 8	3 16.6 +67 14
I 35485	" " 3	" .648	21 39	3 14.0	+ 67 11	3 16.3 +67 17
AC. 9716	" " 3	" .673	22 16	3 ~~15.7~~ 13.9	+ 67 19	3 16.2 +67 25

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1906phae.proj..819F

+64.0

+64.0

3h 25m

3h 20m

3h 15m

16 55 46.6 +21 41 0 20 3022

+640 −218

16 56 50.6 +21 38 42 1900

54 53.4 21 43.4 1855

54 11 21 42 0 Ham.

2s 40s 2' 3.3

1 55 4.7 Rem 43

53 0 2(1855)

16 52 16 +21 46.7

13' land y +21° 3016 R

454
277
138

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1906phae.proj..819F

+46½°

+47°

3h 25m

3h 20m

3h 15m

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1906phae.proj..819F

October 10, 1908.

Exam of plates to det. approx. amount of change in No. 14284, Type IV Na var? on B37601. Dec. -42°9465 14 29.9-42 49 8.3
14 29.5-42 56 (1900).

Plate	Date	Ef.	Est.
B30286	July 3, 1902	60m	8.8
B22458	April 4, 1899	10	8.2
B21238	April 18, 1898	10	9.2
B18879	April 21, 1897	10	9.1
B15773	May 11, 1896	10	9.3
B20115	~~May~~ August 19, 1897	10	9.6
B5252	May 22, 1890	60	8.5
B5310	May 28, 1890	10	8.9
B27258	April 24, 1901	10	9.2
B11204	May 21, 1894		9.3
B27335	May 18, 1901	60	9.5
B29405	April 18, 1902	10	9.0
B25203	May 2, 1900	60	9.2
B6065	May 27, 1891	10	9.3

✓ An exam. of the above plates shows a variation of about 1.3 (4) magn. Limits 8.2 to 9.5 (6). Corf by L. D. Wells.
W. P. Oct. 10, 1908

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1906phae.proj..819F

October 10, 1908.

Exam. of plates to det. approx. amount of Change in No. 14022 Md 3, var. on B37568. DM. -23°12248 15 15 46.1 -23 37.0 9.3
15 17.2 -23 42 (1900.)

Plate	Date	Exp.	Est.
B15777	May 11, 1896	10m	9.4
B30318	July 9. 1902	60	9.9
B23650	July 26. 1899	10	8.6
B32538	Sept. 1. 1903	11	10.7
B14028	July 9. 1895	10	11.6
B13120	April 26. 1895	10	10.6
~~B6203~~	~~June 3, 1891~~	~~10~~	~~Too fm~~
B3603	June 19. 1889	62	11.7
B13110	April 25, 1895	10	10.9
B6395	June 23, 1891	12	11.7
B34476	July 23, 1904	11	9.5
B36950	Sept. 9. 1905	10	9.6
B34209	June 30, 1904	10	11.0
B36736	August 19. 1905	10	10.1

An exam. of the above plates shows a variation of about 3.1 magn. Limits 8.6 to 11.7. Conf. by L. D. Wells.
W. P. F. Oct. 10, 1908.

~~Provisional sequence marked by Mrs Fleming about~~

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1906phae.proj..819F

October 10, 1908.

Eyam. to determine approx. amount of change in No. 14795 on B38526, and No. 14825 on B38500. C.P.D. -59° 6790 16 28.3 - 59 32.9 (1875)
16 30.4 - 59 36.1 (1900).

Plate	Date	Exp.	Est.
B38887	May 8, 1908	11m	9.4
~~B19640 Sp.~~	~~June 29 1897~~	~~9~~	
B27146	April 11. 1901	10	12.4
B22891	May 22, 1899	12	<12.8
B3953	August 6, 1889	10	<11.0
B15872	May 13. 1896	10	9.1
B25447	May 24. 1900	68	9.2
B35760	April 5, 1905	10	<11.2
AM5310	Feb. 20, 1908	60	<10.6 ~~9.6~~
AM5332	March 25, 1908	60	9.6
AM5331	March 25, 1908	60?	9.6
AM4951	July 1. 1907	70	<11.0
AM5064	August 15, 1907	65	10.0

An eyam. of the above plates shows a variation of about 3.7 magn. Limits 9.1 to <12.8. Var. Conf. by L. D. Wells.

W. P. F. Oct. 10, 1908.

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1906phae.proj..819F

October 10, 1908.

Exam. to determine approx. amount of change in

No. 13924 on B 36170. Sp. Type IV, Na. var? H.P.D. -7° 2844 21 12.9 -70 18.9 (1875) 8.5
No. 12886 on B 36151 Sp. Dec. Type IV? Na? Var? Pole 2h 25z -68 21h 15z -70° 10' (1900).
No. 14559 on B 38081 Sp. Type IV Na var?

Plate	Date	Ef.	Est.
B 26266	Sept. 21 1900	62m	8.3
am 6086	Aug 31, 1900	64	8.5
am 2336	Oct. 19, 1903	61	7.4
am 3024	Sept 9, 1905	60	6.5
am 2610	May 4, 1904	61	6.2
am 2696	June 2, 1902	61	6.8
am 3939	Oct. 6, 1905	60	6.5
am 3611	June 9, 1905	60	6.7
am 2581	April 28, 1904	60	6.2
am 3200	Nov. 8, 1904	63	6.0
am 1656	~~April~~ Oct. 22, 1902	60	7.3
am 3580	June 2, 1905	60	6.1
am 2207	Aug. 14, 1903	67	6.3
am 1399	June 26 1902	60	6.8
am 873	June 21 1901	60	6.8
am 1005	Aug. 22, 1901	63	6.5
am 2018	June 12, 1903	64	6.0
am 1744	Dec. 6, 1902	60	6.3
am 2969	Aug. 19, 1904	62	6.7
am 951	Aug. 2, 1901	60	7.5
am 3114	Oct. 6, 1904	60	6.2
am 2046	June 16, 1903	63	6.4
am 889	June 25, 1901	61	7.7
am 2001	June 3, 1903	63	6.2
am 62	Aug. 4, 1899	79	5.7

√ An exam. of the above plates shows a variation of about 2.8 magn. Limits 5.7 to 8.5. Var. conf. to E.D. Wells. W. P. Fleming Oct. 10 1908

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1906phae.proj..819F

October 12, 1908.

Exam. to determine approx. amount of change in
No 14867, Nd? var on B38370 Ref. -59° 250 8.4
AG 3347 +19 7 3 1.0 -59 19 7.5

Plate	Date	Exp.	Est.	Plate	Date	Exp.	Est.
B 14728	Sept. 27, 1895	13m	7.0	AM 2390	Nov. 27, 1903	71m	7.4
B 26326	Sept. 28, 1900	60	8.8	AM 3188	Nov. 4, 1904	62	9.3
B 14815	Oct. 12, 1895	10	7.1	AM 3661	June 23, 1905	60	7.3
B 8737	Oct. 6, 1892	10	7.2	AM 3681	July 1, 1905	63	9.0
B 12156	Sept. 14, 1894	10	7.0	AM 3856	Sept. 6, 1905	62	8.2
B 24071	Sept. 6, 1899	11	8.3	AM 3959	Oct. 20, 1905	70	7.3
B 35102	Oct. 15, 1904	10	9.2	AM 4028	Dec. 15, 1905	61	7.3
B 26407	Oct 11, 1900	11	8.3	AM 4049	Jan. 26, 1906	56	8.0
B 22308	Dec. 14, 1898	10	7.9	AM 4635	Oct. 18, 1906	60	8.5
B 14326	Aug 3, 1905	10	8.2	AM 4692	Nov. 14, 1906	62	7.0
B 20919	Dec. 20, 1897	10	7.2	AM 5109	Aug 30, 1907	61	7.4
B 17926	Nov. 13, 1896	15	8.3	AM 2929	Aug 5, 1904	60	9.0
B 17925	Nov. 13, 1896	10	8.0	AM 2384	Nov. 19, 1903	65	7.1
AM 5127	Sept. 5, 1907	60	8.1	AM 3016	Sept. 3, 1904	61	8.8
AM 295	Nov. 20, 1899	61	8.7	AM 321	Nov. 28, 1899	69	8.0
AM 705	Nov. 1, 1900	62	8.9	AM 3146	Oct 15, 1904	60	9.1
AM 942	July 24, 1901	58	8.0	AM 923	July 19, 1901	33	7.5
AM 1112	Nov. 12, 1901	61	7.8				
AM 1680	Nov. 7, 1902	60	7.3				
AM 1795	Jan. 15, 1903	60	8.6				
AM 2249	Sept 1, 1903	60	9.0				
AM 2297	Sept. 30, 1903	63	7.2				

An exam. of the above plates shows a variation of about
2.3 magn. Limits 7.0 to 9.3. Var. confirmed by L. D. Wells. W. P. F. October 12, 1908.

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1906phae.proj..819F

October 24, 1908.

Exam. to determine approx. amount of change in star found to be variable on A 3241 and B 27913 on June 14, 1908. [See B 27913].
for enlargement of region of var. & Telescopii.
R.A. = 19 54.3 − 56 + 4 (1875)
19 56.3 − 56 ± 0 (1900)

Plate	Date	Exp	Est.
B 27913	July 18, 1901	60m	10.8
B 30973	Oct. 22, 1902	60	10.5
B 37717	July 1, 1907	15	11.2
B 32127	July 6, 1903	10	9.6
~~B 37648~~	~~June 20, 1907~~	~~10~~	Trojan
B 18972	April 26, 1897	10	9.7
B 13752	June 12, 1895	10	9.5
B 17655	Oct. 13, 1896	10	10.6
B 16234	June 10 1896	10	10.7
~~B 11564~~	~~July 14 1894~~	~~10~~	~~10.6~~ Reject 1st returning
B 12177	~~Sept. 15 1894~~	10	10.5
A 3241	Aug. 23, 1898	62	9.0 v

October 26, 1908

Plate	Date	Exp	Est.
B 33544	May 2, 1904	10m	< 11.5
B 11640	July 21, 1894	10m	10.2
B 15896	May 14, 1896		< 10.5
B 14401	Aug 20, 1895	10	< 11.5
B 11564	July 14, 1894	10	10.0
A 5648	Sept. 11, 1901	60	11.6
A 2603	Aug. 3, 1897	10m	10.1
A 7828	July 11, 1906	10	10.5
A 2604	Aug. 3, 1897	10	10.4

An exam. of the above plates shows a variation of about 9.0 < 11.5 (6), R.A. 2.5 (6) magn. Limits 9.0 < 11.5 (6). Var confirmed by L. D. Wells.
October 24, 1908.

Provisional sequence marked on A 2604 by Mrs F.

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1906phae.proj..819F

October 30, 1908.

Classification of Spectra for Comparison Stars for Miss Leavitt's New Star in Argo, No. 404 on her list in her Obs. Book 22, 162. R.A. 9h 1. Dec. -30°

B 18927 April 23, 1897 Ef. 60m. B 13102 April 25, 1895 Ef. 60m.

Plate		Date	C.S.	Design	Magn.	Sp.	Sp	Adopt.	Photom. Magn.
B18927	B13102		a	-31° 6835	7.0	A	A	A	~~6.76~~ 7.90
"	"		b	-31° 6760	7.6	A	A	A	7.65
"	"		c	-30° 7117	7.3	A5	A5	A5	7.49
"	"		d	-31° 6914	7.7	A_2?	A	A	
"	"		e	-31° 6929	8.0	G	G	G	
"	"		f	-31° 6939	7.9	K	K	K	
"	"		g	-31° 6877	7.7	Ma	Ma	Ma	
"	"		h	-31° 6867	9.0	G	G	G	
"	"		k	-31° 6873	9.1	A	"	A	
"	"		l	-31° 6903	9.5	F	"	F.	

W.P.F. Oct. 30, 1908

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1906phae.proj..819F

October 31. 1908.

Examination of plates for ent. of variables for Prof. Bailey.
For original not see A 3786.

Plate	Date	Exp.
B 8715	October 6, 1892	10m.
B 9212	April 28, 1893	10
B 9410	May 8, 1893	10
B 9412	" " 1893	10
B 9674	June 23, 1893	10
B 10035	July 31, 1893	10
B 12170	September 15, 1894	70
B 13733	June 12, 1895	60
B 15450	March 23, 1896	30
B 17315	September 1, 1896	60
B 19450	June 8, 1897	10
B 21575	June 7, 1898	12
A 3789	July 31, 1899	35
A 3788	July 31, 1899	38

S Cor. Aust. Variability confirmed from photographs. Range about 1.5 magn.
R Cor. Aust. Variability confirmed from photographs. Range appears to exceed 2.5 magn.
T Cor. Aust. Appears to show slight variation. Precedes and is north of R.

S 18h 54.4 -37 5
R 18 55.2 -37 6
T 18 55.2 -37 6

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1906phae.proj..819F

November 10, 1908.

Exam. of plates for spectrum of +22° 3647.

	Plate	Plate	Date	Exp	Sp.	Sp.	Dm.	R.A. h m s	Dec.	Magn.
a	B1660	I25485	August 20, 1890 / June 23, 1900	15m / 60m	B8	—	+22° 3647	19 11 29.9	+22° 10.8	7.5
b	"	"			A	A	+22 3644	19 11 1.4	+22 10.1	8.0
c	"	"			—	A	+22 3649	19 12 1.6	+22 15.5	9.2
d	"	"			—	A	+22 3653	19 12 26.5	+22 14.5	9.2
e	"	"			—	M6	+22° 3660	19 13 22.0	+22 18.2	7.7

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1906phae.proj..819F

March 17, 1909.

Exam. of plates for amount of variation in
15083 Md 4 var. in B 39391. R.A. 19h 7m 7s Dec. -21° 49' (1855).
The south preceding of two stars. 21 45 1900

Plate	Date	Exp.	Est.
B 30289	July 8, 1902	60m	8.2
B 32159	" 12, 1903	10	10.5
B 9239	Apl. 30, 1893	10	9.8
B 19847	July 16, 1897	10	10.5
B 18731	Apl. 2, 1897	11	11.5
B 17780	Nov. 7, 1896	13	11.5
B 22798	May 9, 1899	11	10.5
B 25396	" 22, 1900	10	10.5
~~B 6159~~	~~June 1, 1891~~	~~10~~	~~Too faint~~
B 19693	July 1, 1897	10	10.0
B 19148	May 21, 1897	10	10.5
B 36702	Aug. 18, 1905	11	9.8
~~B 18025~~	~~Nov. 23, 1896~~	~~13~~	~~Too faint~~
B 17260	Aug. 26, 1896	12	11.0
B 19349	June 2, 1897	12	10.5
B 18614	Mar. 10, 1897	12	10.2
B 27517	May 29, 1901	11	10.3

April 30, 1893
~~17~~15 ~~June 1, 1891~~ and August 18, 1905.

Exam. of the above plates gives a variation of about 3.3 magn. Limits 8.2 to <11.5.

W. P. Fleming.

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1906phae.proj..819F

March 19, 1909

Exam. of plates for variation if any in
* -47° 12862 R.A. 19h 13m.4 -47° 16 (1875). Cl. Md 4? var?
No. 15946 on B 39681.

Plate	Date	Ex.	Est.	Spect.
B 39681	Sept 29, 1908	120.		
B 28121	Aug. 9, 1901	60	8.4	
B 11643	July 21, 1894	8?	8.0	
B 13667	June 6, 1895	10	7.7	
B 21158	Nov. 10, 1898	10	8.5-	
B 24416	Oct. 14, 1899	10	8.5-	
B 26056	Sept. 11, 1900	11	8.5-	
B 27640	June 10, 1901	60	7.9	
B 30829	Oct 10, 1902	10	7.7	

The above plates show a change of about ~~0.5~~ 0.8 mag. (7.7 to 8.5), and the change appears to be real and not due to photographic effect. W.P.F.

* Have examined the above plates & also several others (See cover B 39681) and found no evidence of variation in -47° 12862 No. 15946 on B 39681. I think Mrs Fleming examined by meridian -50° 12420 V Telescopii - as it shows change as recorded above - J.D.W. Aug. 31, 1911

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1906phae.proj..819F

March 19, 1909.

Exam. of plates for ~~Variation~~ amount of variation in
15083 on B3939 Sp. Md6. var: R.A. 19 11.2 – 21 11 (1855).

Z Sagittarii

Plate	Date	Exp	Est.
B 30289	July 3, 1902	60 m	9.9
B 27517	May 29, 1901	11 d/s	~~10.0~~ 11.4
B 18614	Mar. 10, 1897	12 d/s	~~10.2~~ 12.0
B 19349	June 2, 1897	12	8.0
B 17260	Aug. 26, 1896	12 d/s	~~10.2~~ 12.0
~~B 18025~~	~~Nov. 25, 1896~~	~~13~~	~~Too poor~~
B 36702	Aug. 18, 1905	11 d/s	~~10.2~~ 11.5
B 19148	May 21, 1897	10	7.3
B 19693	July 1, 1897	10	9.7
~~B 16169~~	~~June 1, 1896~~	~~10~~	~~Too poor~~
B 25396	May 22, 1900	10 d/s	~~10.2~~ 11.5
B 22798	May 9, 1899	11	11.5
B 17780	Nov. 7, 1896	13	11.3
B 18731	Apr. 2, 1897	11	7.6
B 19847	July 16, 1897	10	10.2
B 23239	Apr. 30, 1898	10	10.5
B 32159	July 12, 1903	10	7.8

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The above plates show a variation of about 4.7 magnitudes
Limits 7.3 to <12.5 ~~0~~ W.P.F.

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1906phae.proj..819F

March 19, 1909.

Exam. of plates for amount of variation in
No 15093 Sp Md 4. (var) or B39391. RA. 19h 5m.6 -17° 40' (1855.)
8.2 17 36 (1900

Plate	Date	Exp.	Est.
B30289	July 3, ~~1902~~ 1902	60m	9.2
B27517	May 29, 1901	11	10.5
B18614	Mar. 10, 1897	12	10.0
B19349	June 3, 1897	12	11.2
B17260	Aug. 26, 1896	~~3~~ 2 7	11.5
B36702	Aug. 18, 1905	11	11.5
B19148	May 21, 1897	10	11.7
B19693	July 1, 1897	10	11.0
B25396	May 22, 1900	10	10.5
B22798	May 9, 1899	11	11.1
B17780	Nov. 7, 1896	13	11.0
B18731	Apr. 2, 1897	11	11.3
B19847	July 16, 1897	10	11.6
~~B9239~~	~~Apr. 30, 1895~~	~~10~~	~~Too faint~~
B32109	July 12, 1903	10	11.2

14

Cir examination of the above plates shows a variation of about .2.5 magn. Limits 9.2 < 11.7. W.P.F.

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1906phae.proj.:819F

March 19, 1909.

Exam of plates for amount of variation, if any, in 15097 on Bd 9391 Sp. Md 4? var.
$-17^\circ 5588$ $19^h 12^m.2$ $-17^\circ 18'$ (1855).

Plate	Date	Ext.	Est.
B30289	July 3, 1902	60m	
B27517	May 29, 1901	11	
B18614	Mar. 10, 1897	12	
B19349	June 2, 1897	12	
✓B17260	Aug. 26, 1896	2 8	7
✓B36702	" 18, 1905	11	
B19148	May 21, 1897	10	
B19693	July 1, 1897	10	
B25396	May 22, 1900	10	
B22798	May 9, 1899	11	
B17780	Nov. 7, 1896	13	
B18731	Apr. 2, 1897	11	
B19847	July 16, 1897	10	
B32159	July 12, 1903	10	

In examination of the above plates shows a slight change, about 0.4 magn, which may be photographic. Write remark on Table, but do not announce as var. State change
W.P.F.

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1906phae.proj..819F

Obs. H.P.F. Rec. S. E. B.

April 9, 1909.

H.P. 2890 and H.P. 2893 with H.R. 6431 B3 and H.R. 6436 A 4.8

Comparisons of μ Herculis

Only this star is used for comparison, as it is adjacent on the M Plates, ~~is not~~ has nearly the similar spectrum, and is most readily comparable with μ on the photographic plates.

April 17, 1909.

Plate	Date	Est.	Sec. Est.
M 111	July 21, 1891	e 4μ : v	e 3μ / e 4π
M 79	June 8, 1891	[W.S. e? 6μ]	e 5μ
"	" " "	e 3μ v	e 5π?
M 497	July 17, 1892	e 4μ : v	e 3μ / e 7π
M 114	July 23, 1891	e 9μ : v	e 8μ / e 6π
M 479	May 31, 1892	e 0μ	e 1μ
M 480?	June 15, 1892	e 1μ v	e 0μ
M 500	July 20, 1892	μ 1 e	
M 468	May 17, 1892	e 1μ v	e 0μ v
M 496	July 16, 1892	e 3μ : v	e 3μ / e 4π
M 473?	May 24, 1892	μ 1 e	
M 465	May 16, 1892	e 2μ v	e 2μ v
M 83	June 10, 1891	e 0μ	
M 106	July 11, 1891	e 0μ	
M 109	" 17, 1891	e 3μ : v	e 2μ / e 4π
M 113	" 22, 1891	μ 2 e	e 0μ
M 118	" 25, 1891	e 1μ v	
M 1057		Too faint.	
" 1059		"	
" 1068		"	
" 1074		"	
" 1075		"	
" 1077		"	
" 1078		e 1μ	

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1900phae..proj..819F

Comparisons of μ Herculis cont.

Apr. 17, 1909.

Plate	Date	Eph.	Est.	Sec. Est.	
M	1079		Too poor.		
"	1083	July 3, 1894	e 2 μ v	e 2 μ	
"	1084	" 5, "	e 3 μ · v	e 3 μ e 2 π	
"	1090		Too poor		
"	1091	" 19, "	e 3 μ · v ·	e 3 μ e 1 π	
"	504	" 23, 1892	e 1 μ v	e 0 μ	
"	502	July 21, 1892	e 4 μ · v ·	e 5 μ e 6 π	
"	500		e 0 μ		
"	507	July 25, 1892	e 3 μ · v ·	e 2 μ e 4 π	
"	509		e 0 μ		
"	510	July 27, 1892	e 2 μ v	e 3 μ	
"	511		e 0 μ		
"	529		Too poor		
"	750	July 10, 1893	e 3 μ · v ·	e 4 μ e 5 π	
"	753		Too poor.		
"	756	July 16, 1893	μ 2 e		
"	758	July 19, 1893	e 5 μ · v ·	e 4 μ e 1 π	
"	760	" 20 "	μ 2 e		
"	764	" 23 "	μ 1 e		
"	766		Too poor (Moon in neg.)		
"	767		e 0 μ		
"	769		e 0 μ		
"	772	Aug. 2, 1893	e 7 μ · v ·	e 3 μ e 0 π	difficult. diff. bet. e & μ. X, at least 0.5 magn. F.
"	775	" 3, "	e 1 μ v	e 3 μ	
"	1698		Too poor		
"	1700	June 30, 1896	e 4 μ · v ·	e 3 μ e 4 π	
"	1720	July 31, "	e 1 μ v	e 2 μ	difficult.
"	1403	" 10, 1895.	e 7 μ · v ·	e 2 μ e 2 π	diff. bet. e & μ X F about 0.4 magn.

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1906phae.proj..819F

April 19, 1909.

Comparisons of μ Herculis cont.

Plate	Date	Eff. Ost.	Sec. Ost. (Apr. 17, 1909.)
M 1405	July 12, 1895	Too poor.	
" 1408		"	
" 1410	July 23, 1895	e 2 μ v	e 3 μ
" 1413	" 29, 1895	Too poor	
" 1416	" 30, 1895	e 4 μ . v .	e 4 μ e 0 π
" 1481	Aug. 16, 1895	Too poor	
" 1660		"	
" 1678	Apr. 16, 1896	"	
" 1681	" 22, "	"	
" 1682	" 23, "	"	
" 1687	" 30, 1895	"	
" 1691	May 7, 1896	"	
" 1697	" 27, 1896	"	
" 1375	" 23, 1895	μ 1 e	
" 1378	" 24, 1895	e 0 μ	
" 1386	June 10, 1895	e 0 μ	
" 1388	" 11, "	e 3 μ . v .	e 2 μ e 0 π
" 1394	" 16, "	e 2 μ v	e 3 μ
" 1396	" 17, "	Too poor.	
" 1398	" 18,	e 4 μ . v .	e 6 μ e 4 π
" 2497	" 29 1898	Pl. too poor, plate wrong.	
" 2068	" 25, 1897	e 1 μ v Identity of π uncertain	e 2 μ
" 2069	" 26, 1897	e 1 μ v	μ 2 e μ certainly H. Apart.
" "	" "	e 3 π	
" 2074	July 5, 1897	e 0 μ	
" "	" "	e 2 π	
" 2075	" 6, "	μ 4 e Efforts irregular	
" 2076	" 7, "	e 0 μ	
		e 2 π	

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1906phae.proj..819F

Comparisons of μ & Π Herculis cont.

Apr. 17, 1909.

Pl.	Date	Apx. Est.	Sec. Est.
M 2077		Too poor.	
" 2067	June 24, 1897	e 3 μ. v.	e 3 μ
" "	" " "	e 1 Π	Π 1 e
" 2040	Apr. 30, 1897	Too poor, Irregular.	
" 2043	May 4, 1897	e 1 μ v	e 0 μ
" "	" " "	e 0 Π	
" 2046	" 7, "	e 2 μ v	e 3 μ
" "	" " "	e 1 Π	
" 2050	" 25, 1897	e 1 μ v	e 2 μ
" "	" " "	e 3 Π	
" 2052	" 31, 1897.	~~e 2 e~~ μ e	
" "	" " "	e 0 Π	
" 2055	June 1, 1897	μ 3 e	
" "	" " "	Π 2 e	
" 2058	" 2, 1897	e 0 μ	
" "	" " "	Π 2 e	
" 2062	" 18, 1897	e 5 μ. v.	e 3 μ
" "	" " "	e 0 Π	e 1 Π
" 2063	" 21, "	e 4 μ. v.	e 5 μ
" "	" " "	e 1 Π	Π 1 e
" 2065	" 22 "	e 3 μ v	e 4 μ
" "	" " "	e 0 Π	
" 2000	March 30, "	μ 2 e	
" "	" " "	e 0 Π Idnk. of Π mountain. Apr. 17, 1909	
" 2003	" 31, "	e 1 μ v	e 3 μ
" 2480		Too poor	
" 2478	June 9, 1898	"	
" 2482	" 14, "	e 4 μ v	e 2 μ

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1906phae.proj..819F

April 29, 1909.

Meas. of α Herculis cont.

Plate	Date	Eff.	Est.	Sec. Est.
M 2482	June 14, 1898		e6u v	
" 1316	Mar. 24, 1895		Too poor	
" 1318	Mar. 25, 1895		u1e	
" 1326	Apr. 3, "		e2u v	e2u
" 1331	" 5, "		u2e	
" 1337	" 16 "		Too poor	
" 1340			"	
" 1342	" 18 "		"	
" 1345	" 19 "		u2e	
" 1348	" 21, "		e4u v	e3u
" 1350	" 23, "		Too poor	
" 1354	May 1, "		u4e	
" 1358	May 2, "		u3e	
" 1363	" 6, "		u3e	
" 1367	" 10, "		Too poor	
" 1369	" 13, "		e2u v	e2u
" 7025	Apr. 29, 1907		e4u v	e4u
" 7028	" 21, "		e2u v	e2u
" 7032	" 24, "		e4u v	e4u
" 7040	May 4, "		Too poor	
" 7043	" 5, "		u2e	
" 7053+7054	May 14, " 20, 1907		Too poor	
" 7057	" 21, "		e9u v	e8u
" 7060	" 22, "		e4u v	e3u
" 7062	" 24, "		e2u v	e2u
" 7064			Too poor	
" 7070			Too poor Eyght?	
" 7366			"	
" 7378			"	

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1900phae.proj..819F

Apr. 29, 1909.

Meas. of μ Herculis cont.

Plate	Date	Eff. Est.	Sec. Est.
M7379		Too poor	
" 7382		"	
" 7385		"	
" 7387		"	
" 7388		"	
" 7391	May 1, 1908	e5m v	Two images e4m
" 7393	" 2, "	e5m v	e3m
" 7394	" 3 "	e3m v	e3m
" 7395	" 5 "	e0m	e2m
" 7400		Too poor	
" 7401	" 15, 1908	"	
" 7403	" 16, "	"	
" 7404	" 17 "	"	
" 7406	" 18 "	e6m v	e0m
" 7409	" 24 "	e2m v	e2m
" 7411	" 25 "	e0m	e2m
" 7415	June 2 "	m2e v	e1m v
" 7422	" 6 "	e3m v	e5m.
		May 9, 1909	
" 7425	" 8 "	Too poor.	
" 7430	" 12 "	"	
" 7435	" 16 "	"	
" 7437	" 17 "	"	
" 7439	" 18 "	e7m v	e6m
" 7441	" 19 "	Too poor	
" 7443	" 20 "	"	
" 7444	" 23 "	"	
" 7448	" 25 "	"	
" 7450	" 26 "	e3m v	e3m

cont on pg. 87

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1906phae.proj..819F

Plate	Date	Ex.
A 6761	June 9, 1904	240m
B 6307	June 13, 1891	10
B 10191	August 21, 1893	10
B 13474	May 31, 1895	10
B 13913	July 2, 1895	10
Sp. B 14621	September 13, 1895	93
B 15054	October 31, 1895	9
B 17980	November 21, 1896	10
B 16265	June 11, 1896	65
B 19788	July 6, 1897	10
B 21445	May 20, 1898	10
B 22217	Nov. 12, 1898	10
B 23332	July 6, 1899	10
B 26129	Sept. 13, 1900	15
B 26657	Nov. 19, 1900	14
B 28491	Sept. 7, 1901	60
B 28678	Oct. 7, 1901	20
Sp. I 30935	Sept. 24, 1903	102
B 31981	June 6, 1903	10
B 32593	Sept. 2, 1903	10
B 32658	Oct. 8, 1903	10
B 32789	Oct. 20, 1903	62
B 33900	May 31, 1904	10
B 34015	June 7, 1904	10
B 36204	June 13, 1905	10
B 37991	August 16, 1907	10
Sp. B 39483	Aug. 25, 1908	140

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1900phae.proj.:819F

May 3, 1909.

Meas. of μ Herculis

Plate	Date	Eyp	Est.	Sec. Est.
M 7454	June 29, 1908		μ2e	e1μ ✓
" 7456	" 30 "		Too poor	
" 7458	July 1, "		"	
" 7461	" 3, "		μ1e	e1μ ✓
" 7465	" 6, "		e2μ ✓	e2μ
" 7467	" 8, "		e0μ	e2μ
" 7469	" 9, "		e3μ ✓	e2μ
" 7473	" 11, "		Too poor	
" 7477	" 15, "		e0μ	e1μ
" 7479	" 16, "		e0μ	e0μ
" 7481	" 20, "		Too poor.	
" 7483	" 21, "		"	
" 7489	" 29, "		"	
" 7492	" 30, "		"	
" 1372	May 16 1895		~~2~~ 4μ ✓	e4μ
" 2006	Apl. 1, 1897		μ3e	e4μ ✓
" 2014	" 11, "		~~2~~ 2μ ✓	e1μ
" 2017	" 12, "		μ3e	e3μ ✓
" 2019	" 15, "		μ1e	e2μ ✓
" 2024	" 18, "		μ1e	e2μ ✓
" 2027	" 19, "		e0μ	e0μ
" 2030	" 20, "		e1μ ✓	e1μ
" 2033	" 21 "		e1μ ✓	e3μ
" 2034	" 22 "		Too poor	
" 2087	Aug. 5 "		"	
" 2090	" 6 "		"	
" 2437	Apl. 1, 1898		e2μ ✓	e2μ
" 2439	" 3, "		Too poor	
" 2445	Apl. 7 "		e3μ ✓	e2μ

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1906phae.proj..819F

May 3, 1909.

Meas. of μ Herculis

Plate	Date	Ref. Est.	Sec. Est.	
Dr 2453	Apr. 18, 1898	e5μ ✓	e6μ	
" 2456	" 21, "	e1μ ✓	e3μ	
" 2464	May 13, "	e3μ ✓	e3μ	
" 2466	" 14, "	e3μ ✓	e4μ	
" 2469	" 20 "	Too faint		
" 2471	" 21 "	"		
" 2472	" 22 "	e2μ ✓	e2μ	
" 2475	June 7, "	e1μ ✓	e1μ.	
" 2484	" 15, "	e10μ ✓	e7μ	
" 2486	" 16, "	Too faint		
" 2488	" 17, "	Too faint		
" 2490	" 21, "	e4μ ✓	e3μ	
" 2492	" 22, "	Too faint		
" 2494	" 29, "	e3μ ✓	e1μ	
" 2499	" 30, "	Too faint		
" 2501	July 1, "	"		
" 2503	" 2 "	"		
" 2504	" 5, "	e1μ ✓	e2μ	
" 2506	" 6, "	μ1e	e1μ ✓	
" 2508	" 7, "	μ1e	e2μ ✓	
" 2510	" 8, "	Too faint		
" 2511	" 9, "	μ0e	e2μ ✓	
" 2512	" 14, "	Too faint		
" 2514	" 15, "	"		
" 2516	" 16, "	e1μ ✓	e1μ	
" 2519	" 20 "	e5μ ✓	e9μ	Certainly e7μ

May 10, 1909

" 2521	" 22, "	Too faint		

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1906phae.proj.819F

May 10, 1909.

Meas. of ν Herculis.

Plate	Date	Eff. Est	Sec. Est.
M 2525		Too poor	
" 2529		"	
" 2531		"	
" 2534		"	
" 2864		"	
" 2869		"	
" 2875		"	
" 2878		"	
" 2881		"	
" 2884	April 5, 1899	e 4 m ✓	e 4 m ✓
" 3052		Too poor	
" 3481		"	
" 3494		"	
" 3498		"	
" 3501		"	
" 3505	Mar. 29, 1900	e 10 m ✓	e 7 m Ident. assumed. Configuration distorted
" 3511	Apr. 2, 1900	e 2 m ✓	e 3 m
" 3515	Apr. 3, 1900	e 2 m ✓	e 3 m
" 3518	Apr. 4, 1900	e 1 m ✓	e 1 m
" 3522	" 5, "	Too poor	
" 3527	" 7, "	"	
" 3530	" 8, "	e 1 m ✓	e 3 m
" 3531	" 9, "	e 3 m	e 3 m
" 3536	" 11, "	Too poor	
" 3538	" 13, "	e 9 m ✓	e 1 m e 9 m
" 3541	" 14, "	e 4 m ✓	Ident. assumed. Config. distorted
" 3544	" 15, "	m 2 e	e 2 m ✓ Certainly H. Man e 3 m
" 3548	" 19, "	e 5 m ✓	Ident. assumed. Config. distorted

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1906phae.proj..819F

May 19 1909.

Meas. of ν Herculis.

Plate	Date	Of Est.	Sec. Est.
W 3551		Toofpor	
" 3554	Apr. 24, 1900	"	
" 3557	" 25, "	e2ν ✓	e2ν
" 3561	" 27, "	Toofpor	
" 3562	" 28, "	e0ν	e1ν
" 3566	" 29, "	e4ν ✓	e3ν
" 3568	" 30, "	Toofpor	
" 2904	" 17, 1899	"	
" 2907	" 18, "	"	

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1906phae.proj..819F

July 16, 1909.

α (1855) $0^h 59.8$ $+62° 13'$

Exam of plates to det. Spectrum of BD +62°211, No. 8. Espin Type IV. Astron. Soc. Notices 58, 444.

An examination of Chart plates.

I 3190	Feb. 27, 1895	Ey 11	Shows an error in the configuration of BD +62°208 magn. 9.3, +62°210 magn. 9.5 and +62°211 magn. 9.5 as plotted on DM Chart. Assuming the positions in DM. Cat. to be correct the spectra of these three stars are Class G, A, and A respectively on
I 3254	March 7, 1891	" 11	
I 8050	Feb. 15 1893	" 12	

~~and~~ Spectrum plates.

I 32397	Dec. 6, 1904	" 55	
I 33412	Sept. 27, 1905	" 64	

A faint star appears on the chart plates in Dame R.A. as the star assumed to be +62°211, north 1.5. This may be a very red star and of Class IV, but our spectrum plates fail to show it.

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1906phae.proj..819F

July 16, 1909.

Exams of plates to determine spectrum of Cospins IV Iffe stars, Nos. 13, 14 and 17. Astron Soc. Pot. 58, 444.

The spectrum plate I 32414 fails to show any trace of a spectrum of Iffe IV, in the region of either No. 13, 14, or 17, although it shows many spectra beyond the limit of the DM., which could be readily classified.

	Rd. 1900		Dec 1900		
No. 13	1^h	37.^{m}7	+60°	7′	9.8
14	1	37.8	+61	7	9.6
17	2	3.4	+63	9	9.7

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1906phae.proj..819F

July 16, 1909.

Exams. of plates to determine Spectrum of X Cassiopeiæ, Algol IV Type star No. 16. Astron. Soc. Not. 58, 444.

Plate	Date	Ex.
I 33407	Sept. 26, 1905	60m
I 35788	Dec. 29, 1908	67m
I 17823	April 12, 1897	10m
I 19459	Nov. 4, 1897	27m
I 18464	Aug. 6, 1897	10m
I 17553	March 13, 1897	14m
I 18390	Aug. 2, 1897	25m
I 18720	Sept. 8, 1897	12m
I 19670	Nov. 30, 1897	17m
I 18313	July 5, 1897	10m
I 20129	Feb. 3, 1898	10m
I 17279	Feb. 9, 1897	14m
I 19859	Dec. 30, 1897	14m
I 17401	Feb. 24, 1897	17

The above plates fail to show any star in the position marked by L. Campbell on photog. print. Neither do they show any marked variation in any star near this position. No star having a spectrum of Type IV appears on the spectrum plates. W. P. F.

Examine Campbell's chart, for ident, on this return. F.

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1906phae.proj..819F

October 16, 1909.

Spectra of Spectra in region of Ring Nebula in Lyrae, to supply Classes of Spectra for Keivin Burns. See Letter of W.P.F. Obs. M.A.G. recipient.

Plate I 3542 8, August 2, 1908. Ex. 60 m.

H.R.	D.M.	Rd.	Dec.	Magn.	Cl. Sp.	H.R. Magn.	H.R. Sp.
		h m s	° ′				
7100	2 3227	18 44 23.0	+32 38.7	6.3	Too br.	5.77	B2
	11 3245	18 47 46.6	+33 2.4	8.8	a		a
	9 3241/36	18 46 56.3	+33 11.3	8.7	a		a
	14 3252	18 49 27.1	+32 49.0	9.2	F		
	3 3229/36	18 45 33.7	+33 27.5/2	9.x	G2		
	10 3243	18 47 15.3	+33 10.3	9.3	K		
	13 3250	18 49 14.4	+32 54.0	9.0	Ma		
	12 3246	18 47 55.9	+33 17.7	8.3	G5		
	1 3213	18 43 29.2	+33 9.6	8.2	G		
	8 3236	18 46 14.9	+33 17.2	9.1	a		
	6 3232	18 45 54.2	+33 9.6	9.5	a		
	7 3234	18 46 3.4	+33 0.2	9.4	K		
	4 3232	18 45 39.2	+32 59.8	9.5	a		
	5 3234	18 45 54.1	+32 55.2	9.5	a		

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1906phae.proj..819F

December 11, 1909.

Exam. of plates for variability of star prec. and north of W Aquilae 19h00m7. See letter of Mary W. Whitney, Dec. 2, 1909.

Plate	Date	Ef.	Est.
~~B20267~~	~~Feb. 26, 1898~~	~~16~~	~~10.0~~
I 23183	July 18, 1899	22	11.1
I 25936	Oct. 17, 1900	11	10.8
I 27318	Aug. 16, 1901	10	11.2
B 38978	May 20, 1908	13	10.5
B 23848	Aug 15, 1899	10	10.2
B 33956	June 3. 1904	11	10.6
B 16196	June 6, 1896	10	10.5
B 22860	May 19, 1899	10	10.3
B 32186	July 14, 1903	10	10.4
B 19846	July 16, 1897	10	10.2
B 36111	May 25, 1905	10	10.3
B 27518	May 29, 1901	11	10.3

An exam. of the above plates confirms the variation in 7°4896, 9.7, Comparison star "d" for W Aquilae. found by Miss Furness. It changes about 0.9 magn. on these plates. W.P.F.

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1906phae.proj..819F

December 15, 1909.

Exam. of Plates for variation in +58° 1785 following Wolf's variable 17.1909 = +58° 1782. See letter of M. W. Whitney, Dec. 2, 1909.

Plate	Date	Exp.	Est. To 1782	Est. No 1785
~~I 20498~~	~~March 14, 1898~~	~~20m~~	~~10.2~~	~~8.8~~
I 20657	April 7, 1898	15	10.0	11.8
I 20736	April 21, 1898	10	10.2	8.8 ~~9.0~~
I 34609	March 20, 1907	21	10.0	9.0
I 15795	August 28, 1896	11	10.2	9.0
I 20608	April 3, 1898	17	10.0	8.5

The above plates show a change of about ± 3.3 magn. in +58° 1785, but no appreciable change in +58 1782.
Est. limiting magn. of +58° 1785, 8.5 to 11.8.

W.P.F.

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1906phae.proj..819F

December 15, 1909

Exam. of plates to det. amt. of variation in −12° 72. R.A. = 0h 20m.7 Dec. = −12° 29' (1855) Magn. 6.7. Spect. M1 on A 9698. C.W.P. Nov. 12, 1909.

Suspected before on B 23485 and B 14199

Plate	Date	Exp	Est.	Plate	Date	Exp m	Est.
B 24363	Oct. 12, 1899	18	6.5	AC 2151	Jan. 31, 1902	64	6.0
AC 11018	Nov. 6, 1909	60	6.9	AM 3894	Sept. 18, 1905	65	6.3
AC 8843	Oct. 8, 1907	59	6.8	AM 5479	May 19, 1908	37	6.9
AC 8870	Oct. 15, 1907	55	6.6	AM 1969	May 23, 1903	66	6.7
AM 5145	Sept. 15, 1907	131	6.6	AC 1129	Jan. 5, 1901	60	6.6
AM 35	July 31, 1899	64	6.9	AM 2769	June 20, 1904	60	6.8
AC 630	Dec. 29, 1899	60	6.7	AC 5223	Sept. 4, 1904	64	7.0
AM 5649	July 8, 1908	64	6.7				
AM 5080	Aug. 17, 1907	61	6.5				
AM 4593	Sept. 26, 1906	61	6.7				
AM 2376	Nov. 18, 1903	68	6.4				
AM 2255	Sept. 2, 1903	60	6.0				
AM 1466	July 12, 1902	61	6.8				
AM 1024	Sept. 3, 1901	87	7.0				
AC 6765	Oct. 3, 1905	60	6.6				
AC 5367	Oct. 15, 1904	63	6.7				
AC 3135	Jan. 1, 1903	68	6.3				
AC 1719	Sept. 6, 1901	79	6.9				
AC 8931	Oct. 26, 1907	57	6.8				
AC 11030	Nov. 9, 1909	62	6.5				
AM 3294	Dec. 27, 1904	75	6.1				

The above plates show a variation of about a magnitude in −12° 72. Est. limiting magns. 6.0 to 7.0.

See A plate 9698. Note on cover.

additional plates examined.

W.P.F.

Rec'd by L.D. Wells

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1906phae.proj..819F

December 15, 1909.

Exam. 2 plates to det. Mag. of var. in
$-18°5480$. R.A. $19^h\ 38^m\ 2.3$, Dec. $-18°\ 30.2$ (1855), magn. 9.1
Sp. Na. var? on B 39347. 19 40 38.9 18 24.0 (1900). W.P.F.

Plate	Date	Ex.	Est.	Plate	Date	Ex.	Est.
B 22094	Nov. 2 1898	10m	9.5	B 20615	Oct. 13, 1897	10	8.6
B 3888	July 23 1889	60	9.2	B 28157	Aug. 6, 1901	68	8.7
B 29661	May 14 1902	10	8.4	B 9886	Nov. 3, 1893	60	8.5
B 37543	May 31 1907	10	8.9	A 3373	Oct. 25, 1898	10	9.5
B 39434	Aug. 6 1906	10	8.7				
B 27452	May 27 1901	10	8.8				
B 16807	July 11 1896	12	8.6				
B 32324	July 25 1903	60	8.8				
B 36536	Aug. 8 1905	16	8.7				
B 23974	Aug. 24 1899	10	8.8				
B 19332	June 1 1897	10	8.6				
B 23208	June 27 1899	10	8.8				
B 28660	Oct. 5 1901	10	8.5				
B 22013	Oct. 8 1898	10	10.2				
B 12585	Nov. 16 1894	14	8.6				
B 21416	May 16 1898	10	8.8				
B 34336	July 13 1904	64	8.6				
B 37089	Oct. 9 1905	10	8.9				
B 33962	June 3 1904	10	8.7				
B 19778	July 6 1897	10	9.0				

The above plates show a variation of about 1.8 magn. in
$-18°5480$. Est. limiting magn. 8.4 to 10.2. W.P.F.

Var. conf. by L.D. Wells.

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1906phae.proj..819F

December 15, 1909.

Eframs. of plates to det. amt. of var in Sp. Ndg. var from I 35151. W.P.F. 12h 40.m4 +39° 40' (1855)
12 42.6 +38 55 (1900),

Plate	Date	Ex.	Est.	Plate	Date	Ex.	Est.
I 28775	May 9 1902	30m	8.0	Ac 7438	April 2, 1906	67	9.4
I 33981	April 3 1906	20	9.4	Ac 675	Jan. 10, 1900	74	10.2 N.S.
I 24289	Dec. 19 1899	20	<12.4	Ac 6127	March 5, 1905	53	9.6
I 10701	Feb. 24, 1894	11	<12.0	Ac 6057	Feb. 23, 1905	54	9.6
I 14810	April 4, 1896	22	<12.5	I 10495	Jan. 19, 1894	10	11.2
I 28580	March 14, 1902	14	11.9	I 10585	Jan. 25, 1894	6	11.6
I 17732	March 31, 1897	10	<12.4	Ac 250	March 29, 1899	105	8.6
I 20676	April 8, 1898	10	<11.9	Ac 1415	April 26, 1901	93	9.4
I 22450	Feb. 24, 1899	13	<12.2	Ac 1540	December 16, 1909 June 14, 1901	155	8.8
I 22627	March 29, 1899	15	<12.1	Ac 1549	June 17, 1901	79	8.6
I 24804	March 12, 1900	11	<12.1	Ac 2529	May 8, 1902	87	8.4
I 12662	April 16, 1895	814	<12.5	Ac 2501	April 24, 1902	64	8.2
I 8529	May 11, 1893	16	<12.0	Ac 866	May 29, 1900	82	8.5
I 22513	Feb. 27, 1899	58	<12.0	I 36405	Dec. 16, 1909	10	9.0
I 12835	May 7, 1895	4	<11.4	December 20, 1909			
I 8570	May 24, 1893	17	<12.3	latest I 36417	Dec. 18 1909	10	8.2
earliest I 6217	May 4 1892	11	<11.5				
I 6295	May 18. 1892	10	<11.5				
I 12700	April 17, 1895	13	<11.6				
I 14601	March 5, 1896	16	<12.4				
Ac 7386	March 18, 1906	73	9.0				

The above plates show a range of over 4.5 magn. ~~and no trace of it is found on plates preceding 1900. Is probably of the Character of Nova.~~ Est. limit magn. 8.0 to <12.5.

W. P. F.

Var. Cur. by L. D. Wells

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1906phae.proj..819F

December 15, 1909.

Exam. of plates to det. amt. of change in Md? var? on B 39375. W.P.F. $17^h\ 18.^m2\ -49°47\ (1875)$.
$17\ 20.1\ -49\ 49\ (1900)$.

Plate	Date.	Ex.	Est.
B 23214	June 29 1899	12	< 12.8
B 30015	June 12 1902	60	10.9
B 25081	April 10 1900	10	11.7
B 27734	June 24 1901	60	< 12.5
B 21105	March 28 1898	10	< 12.0
B 16032	May 30 1896	15	< 12.5
B 19112	May 13 1897	13	10.7
B 38744	April 23 1908	10	< 12.5
B 13994	July 28 1895	10	< 12.6
B 22019	Oct. 10 1898	10	< 12.5
B 16449	June 19 1896	10	< 12.4
B 25919	Sept 3 1900	10	11.2
B 33298	April 11 1904	14	< 12.7
B 25496	May 29 1900	60	13.1
B 28256	Aug 22 1901	10	< 13.2
B 31920	June 2 1903	10	< 12.5
B 30587	Sept. 13 1902	10	< 12.9
B 36381	July 10 1905	11	< 12.8
B 29476	April 28 1902	10	< 12.6
B 19414	June 7 1897	10	10.9
B 24409	Oct. 14 1899	10	12.8

The above plates show a change of about 2.5 magn.
Est. limits 10.7 to < 13.2.

W.P.F.

Van. conf. by L.D. Wells.

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1900phae.proj.010F

December, 15, 1909.

Eform. of plates to det. amt. of change in Sp. Md 5, var, on B 39282 No. 16092. W.P.F. $19^h 57^m.7 - 63° 42' (1900)$
~~$19\ 55.4 - 63\ 46\ 1875$~~ ✓

Plate	Date		Ef.	Est.
B 30501	July 31	1902	60m	8.9
B 11855	Aug. 13	1894	10	9.7
B 26154	Sept. 17	1900	10	10.1
B 11565	July 14	1894	10	10.4
B 24380	Oct. 13	1899	13	10.2
B 32521	Aug. 31	1903	10	12.2
B 30830	Oct. 10	1902	10	12.2
B 28257	Aug. 22	1901	10	<12.2
B 27722	June 21	1901	60	<12.2
B 21419	May 16	1898	10	<12.0
B 30242	June 28	1902	60	9.1
B 38949	May 19	1908	10	10.6
B 27327	May 17	1901	61	10.9
B 4244	Sept. 20	1889	10 (60)	<10.2

The above plates show a change of about 3.3 magn.
Est. limits, 8.9 to <12.2

W.P.F.

Var. conf. by L.D. Walk

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1906phae.proj..819F

December 16, 1909.

Volume of Plates to det. amt. of Change in
No. Sp. Mc 5d var in B 40302. (W. P. F.) -21°44'5 16h 46m.5 -21 43 8,5
1649.1 -21 48 (1900)

Plate	Date	Ex.	Est.	Plate	Date	Ex.	
B 25355	May 18, 1900	10	8.7	AM 3551	May 22, 1905	60	9.0
B 32333	July 27, 1903	60m	8.8	AM 2079	June 29, 1903	60	9.2
AM 5670	July 22, 1908	64	9.2	AM 1880	April 24, 1903	64	8.8
B 13494	June 1, 1895	11	9.1	End: AM 4319	June 15, 1906	75	9.4
B 15868	May 13, 1896	10	8.8	AM 3750	July 27, 1905	60	8.8
I 30628	June 26, 1903	66	8.9	AC 10457	April 24, 1909	60	9.6
B 27176	April 13, 1901	61	9.2				
B 5392	June 9, 1890	60	8.5				
B 22815	May 10, 1899	13	9.2				
B 10061	Aug. 1, 1893	10	8.9				
AM 3576	June 2, 1905	61	9.3				
AM 2757	June 18, 1904	60	8.8				
AC 10641	July 19, 1909	60	8.9				
AM 2669	May 23, 1904	60	9.3				
AM 3560	May 25, 1905	61	8.8				
AM 1325	June 10, 1902	60	9.0				
AC 6492	July 7, 1905	52	8.5				
AC 9534	June 10, 1908	60	8.4				
AM 5544	June 7, 1908	68	8.9				
AC 8589	July 4, 1907	66	9.0				

The above plates show a change of about 1.2 magn.
Est. limit magn. 8.4 to 9.6.

W. P. F.

Var. Conf. by L. D. Wells

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1906phae.proj..819F

December 17, 1909.

Ecl. cam. of Plates to det. amt. of change in No. 15627, Mcsd var. (W.P.F.) on B 39381. CPD-63°4530. 19h 24.0 -63° 1.5 (1875) 89
19 26.4 -62° 58.5 (1900).

Plate	Date		Exp.	Est Cl.	
[B 39381]	July 28	1908	120 m	9.6	Mcsd 10.2
B 21293	April 26	1898	10	9.8	
B 29978	June 9	1902	60	9.7	
B 4080	Aug. 25	1889	60	9.3 ~~8.8~~	
B 13217	May 9	1895	10	9.9	
B 19514	June 10	1897	24	8.7	
B 11601	July 16	1894		9.8	
B 14250	Aug. 1	1895	10	9.4	
B 37976	Aug. 15	1907	14	9.7	
B 27520	May 29	1901	11	10.4	
B 38020	Aug. 19	1907	10	10.1	
B 22612	April 21	1899	9	8.8	
B 25434	May 23	1900	10	8.7 x	
B 36072	May 15	1905	10	8.7	
B 34010	June 7	1904	60	9.6	
B 33343	April 12	1904	10	9.0	
B 31837	May 19	1903	10	9.8	
B 29765	May 17	1902	10	10.1	
B 25564	June 19	1900	80	8.8	
B 27721	June 21	1901	60	8.8	
B 23505	July 17	1899	11	10.2	

The above plates show a change of about -1.5 magn. W.P.F.
Est. limit magn. 8.7 to 10.4
Var. conf. by L.D. Wells.

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1906phae.proj..819F

December 17, 1909.

Exam. of Plates to det. amt. of var in

No. 7103, Sp. Mcsd. var. (W.P.F.) on I 35763. +46°4187 23 43 37.7 +46 42.1 (1855) 8.5
23 45 51.4 +46 57.1 (1900).

Plate	Date		Ex.	Est.	
~~B~~ 34202	Aug. 22	1906	23	7.8	B
I 381	Dec. 26	1889	44	8.5	B
I 25641	Aug. 9	1900	10	7.9	B
I 16807	Dec. 17	1896	16	7.8	B
I 4536	Oct. 16	1891	11	7.4	B
I 13186	Aug 5	1895	14	7.7	B
I 4395	Sept. 30	1891	10	7.5	B
I 13372	Sept. 2	1895	11	7.7	B
I 27846	Oct 24	1901	10	8.2	B
I 1857	Sept. 24	1890	23	7.8	B
I 28104	Dec. 21	1901	11	7.6	B
I 423	Jan. 3	1890	14	8.3	B
I 6908	Sept. 7	1892	16	7.2	B
I 23802	Oct. 14	1899	11	8.0	B
I 23966	Nov. 2	1899	10	7.9	
I 33747	Dec. 14	1905	42	7.4	
I 21528	Oct. 28	1898	11	8.2	
I 21567	Oct. 31	1898	20	8.6	
I 31129	Nov. 10	1903	15	8.7	
I 16234	Oct. 22	1896	10	8.0	
Sp I 35763	Dec. 23	1908	65	8.2	

The above plates show a change of about 1.5 magn.
Est. limit. magn. 7.2 to 8.7

W.P.F.

Var conf. by L.D. Wells

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1906phae.proj..819F

January 5, 1910.

Comm. 6 Plates to determine amt. of var. in

No. Sp. Md. var. on B 40614. -30° 11047 R.A. 13h 52.m0 Dec. -30° 34.5 (1900).

Plate	Date	Exp.	Est.
B 22687	May 2, 1899	10m	7.6
B 25443	May 24, 1900	60	~~12.8~~ 13.4
B 11454	June 19, 1894	10	13.4
B 3725	July 5, 1889	60	~~12.7~~ 13.9
B 32274	July 17, 1903	64	13.8
B 25694	July 3, 1900	11	14.0
B 28030	July 26, 1901	11	8.6
B 25008	April 7, 1900	10	10.9
B 27549	June 5, 1901	10	10.7
B 37456	May 22 1907	10	8.4
B 38632	April 9, 1908	10	10.4
B 18913	April 22, 1897	11	10.9
B 23153	June 26, 1899	11	10.5
B 40614	July 19 1909	124	8.8 Sp Md 8

The above Plates show a change of about 6.4 magn. Est limits 7.6 to 14.0

W.P. 7.

Ver. Conf. by L.D. Wells.

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1906phae.proj..819F

January 5, 1910.

Exam. of Plates to det. amt. of var (Algol var?)
found on B 40352 by W.P.F. from change in images.

-7° 44 12 Rd. 17 7 11.4 Dec. -7° 53' 2 9.4 1855
17 9 37.8 -7 56.6 1900

Plate	Date	Ref.	Est.	Plate	Date	Ref.	Est.
B 40352	May 29, 1909	11m	Trail showing var. of about half a mag				
B 38941	May 19, 1908	13	10.1	AM 6445	Aug 10, 1909	75	9.6
AM 5716	Aug 3, 1908	61	-11.0	AM 6278	June 23, 1909	60	9.7
AM 5682	July 25, 1908	60	9.9	AM 6124	May 13, 1909	72	9.6
AM 6223	June 13, 1909	123	9.7	AM 6416	July 26, 1909	61	9.6
AC 6281	April 8, 1905	52	- 11.3	AM 5408	April 24, 1908	120	9.9
AM 4599	Sept. 28, 1906	58	- 11.5	AM 6302	July 7, 1909	71	9.7
AM 6393	July 22, 1909	61	9.6	AM 6068	April 25, 1909	120	9.7
AM 5047	Aug. 5, 1907	121	9.6	AM 5520	June 4, 1908	124	9.6
AM 6264	June 21, 1909	120	9.6	AC 9381	April 2, 1908	72	10.3
AM 6206	June 9, 1909	60	10.1	AC 10464	April 26, 1909	60	9.8
AM 6015	March 30, 1909	73	9.6	AC 9460	May 1, 1908	61	9.6
AM 5356	April 1, 1908	60	9.6	AC 8696	Aug. 15, 1907	56	9.8
AM 3514	May 10, 1905	61	98	AC 10497	May 11, 1909	60	9.7
AM 6475	Aug. 16, 1909	68	10.1	AC 9593	June 30, 1908	65	9.6
AM 6173	May 27, 1909	61	9.6	AC 8634	July 27, 1907	60	9.8
AM 2060	June 22, 1903	60	9.5	AC 6261	April 3, 1905	59	9.7
AM 987	Aug. 12, 1901	66	10.2	AC 6234	March 30, 1905	85	9.8
AM 5764	Aug. 20, 1908	137	9.5	AC 7610	June 13, 1906	65	10.0
AM 3890	Sept. 18, 1905	60	9.5	AC 5027	July 1, 1904	68	9.8
AM 3640	June 20, 1905	66	9.6	AC 4948	June 16, 1904	78	10.3
AM 6453	Aug 12, 1909	61	9.6	AC 6392	May 23, 1905	70	9.7
				AC 4958	June 12, 1904	58	9.7
AM 5443	May 7, 1908	76	9.7	AC 10551	June 8, 1909	68	9.6
				AC 9607	July 6, 1908	60	9.8
AM 5060	Aug. 14, 1907	62	9.5	AC 8413	April 11, 1907	82	9.5
				AC 10564	June 16, 1909	63	9.6
				AC 9727	Sept. 8, 1908	45	10.0 ? 2 mage def

50.

The above plates show a var. of about 2.0 magn. Est. limiting magnitudes 9.5 to 11.5
Probably one Algol var. Blink Blanze on AM 115, 1175 and B 40352 & Disc. turn change in trail on latter plate
W.P.F. Jan. 8, 1910

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1906phae.proj..819F

January 6, 1910

~~6466~~ see date

Cont.

fr. Pl. I 35203

$a = 6^h\ 3^m\ 25.2^s \quad +47^\circ\ 31'.1 \quad (1900)$

$b' = 6\ 5\ 11.6 \quad +47\ 58.4$

$c = 6\ 8\ 6.8 \quad +47\ 26.4$

$b = 6\ 5\ 53.4 \quad +47\ 18.6$

$d = 6\ 4\ 58.7 \quad +47\ 34.6$

$a = 6\ 0\ 0.8 \quad +47\ 31.3 \quad (1855)$

$b' = 6\ 1\ 47.2 \quad +47\ 58.6$

$c = 6\ 4\ 42.4 \quad +47\ 26.6$

$b = 6\ 2\ 29.0 \quad +47\ 18.8$

$d = 6\ 1\ 34.3 \quad +47\ 34.6$

Plate	Dat						Exp.	Est.
AM 2025	Jun						60m	9.6
AM 2079	Jun						60	9.5
AM 2176	~~Jun~~						60	10.1
AM 2190	Aug						60	9.7
AM 2524	Apr						61	9.6
AM 2563	Apr						70	9.6
AM 2616	Ma						64	10.0 ?2 image def.
AM 2637	Ma						52	10.2
AM 2669	Ma						62	9.5
AM 2692	Ju						63	9.8
AM 2757	Jun						65	10.1
AM 2816	Ju						70	10.0
AM 2833	Jul						66	10.0
AM 2883	Jul						62	~~10.3~~
AM 2896	Aug						60	9.7
AM 3049	Sep						60	9.6
AM 3414	Ma						60	10.3
AM 3435	Ap						62	9.5
AM 3551	Ma						60	9.6
AM 3560	Ma						68	9.9
AM 3576	Ju						64	9.7
AM 3750	Ju							10.6
AM 3792	Aug.	17, 1905	60	9.6	AM 4319	June 15, 1906	75	9.5

73 96

ge def.
11.5
ate
bo

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1906phae.proj..819F

January 6, 1910

6486 see date

(Cont.)

Plate	Date	Ex.	Est.	Plate	Date	Ex.	Est.
AM 2025	June 13, 1903	67m	9.5	AM 3811	Aug. 19, 1905	60m	9.6
AM 2079	June 29, 1903	60	9.6	AM 4175	April 24, 1906	60	9.5
AM 2176	~~June 13, 1903~~ Aug. 10, 1903	61	9.5	AM 4227	May 12, 1906	60	10.1
AM 2190	Aug 12, 1903	63	9.7	AM 4283	June 9, 1906	60	9.7
AM 2524	April 11, 1904	63	9.6	AM 4312	June 14, 1906	61	9.6
AM 2563	April 20, 1904	60	9.6	AM & 6466	June 28, 1905	70	9.6
AM 2616	May 5, 1904	60	9.6	AC 6485	July 4, 1905	64	10.0 ?2 image def.
AM 2637	May 7, 1904	60	9.8	AC 6492	July 7, 1905	52	10.2
AM 2669	May 23, 1904	60	9.6	AC 7490	April 18, 1906	62	9.5
AM 2692	June 2, 1904	60	9.6	AC 7595	June 10, 1906	63	9.8
AM 2757	June 18, 1904	60	9.9	AC 7665	July 16, 1906	65	10.1
AM 2816	July 6, 1904	68	9.6	AC 7701	Aug. 14, 1906	70	10.0
AM 2833	July 9, 1904	71	9.8	AC 8589	July 5, 1907	66	10.0
AM 2883	July 29, 1904	66	9.9	AC 8665	Aug. 9, 1907	62	~10.3
AM 2896	Aug. 1, 1904	60	9.7	AC 9534	June 10, 1908	60	9.7
AM 3049	Sept. 19, 1904	66	9.6	AC 10457	April 24, 1909	60	9.6
AM 3414	March 29, 1905	60	10.0	AC 10641	July 19, 1909	60	10.3
AM 3435	April 2, 1905	62	10.2	AM 4853	May 22, 1907	62	9.5
AM 3551	May 22, 1905	60	9.5	AM 4896	June 3, 1907	60	9.6
AM 3560	May 25, 1905	61	9.6	AM 5544	June 7, 1908	68	9.9
AM 3576	June 2, 1905	61	9.5	AM 5670	July 22, 1908	64	9.7
AM 3750	July 27, 1905	60	9.5	AM 5779	Aug. 29, 1908		10.6
AM 3792	Aug. 17, 1905	60	9.6	AM 4319	June 15, 1906	75	9.5
73				96			

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1906phae.proj..819F

January 6, 1910 —

(Cont.)

Plate	Date	Ex.	Est.	Plate	Date	Ex.	Est.
AM 4386	July 11, 1906	60m	9.8	AC 3666	May 22, 1903	98m	9.6
AM 4462	Aug. 7, 1906	63	— 10.8	AC 3682	May 25, 1903	65	10.1
AM 4471	Aug. 8, 1906	60	9.6	AC 3723	June 16, 1903	66	9.7
AM 4513	Aug. 22, 1906	60	— 10.6	AC 3676	May 24, 1903	61	10.0
AM 4777	April 20, 1907	65	9.8	AC 4746	March 13, 1904	42	9.7
AM 4953	July 1, 1907	60	9.7				
				January 7. 1910.			
earlier AC 283	April 12, 1899	103	9.7	AC 4827	April 12 '04	25	9.7
AC 301	April 22, 1899	59	10.2	AC 4905	May 12, 1904	64	9.6
AC 343	June 6, 1899	73	9.9	AC 5105	July 29, 1904	60	9.8
AC 808	April 9, 1900	66	9.8	AC 5989	Feb. 11, 1905	60	9.7
AC 947	Aug. 1, 1900	67	9.8	AC 3777 br.	July 24, 1903	83	9.6
AC. 1458	May 12, 1901	71	9.8	AC 8498 br.	May 13, 1907	60	10.2
AC 1500	June 4, 1901	73	9.7	AM 61	Aug. 4, 1899	60	10.1
AC 1658	Aug. 16, 1901	71	10.2	AM 72	Aug. 7, 1899	60	10.0
AC 1686	Aug. 28, 1901	41	9.6	AM 115	Aug. 25, 1899	74	9.5 1st image 10.0 2nd "
AC 1728	Sept. 8, 1901	27	9.8	AM 232	Oct. 17, 1899	56	10.0
AC 2452	April 2, 1902	79	9.6	AM 420	April 6, 1900	65	9.9
AC 2520	May 3, 1902	69	9.9	AM 505	June 20, 1900	61	9.5
AC 2577	May 26, 1902	74	10.1	AM 546	July 24, 1900	70	11.2 —
AC 2582	May 28, 1902	72	10.0	AM 841	June 7, 1901	61	9.6
AC 2658	July 1, 1902	60	9.6	AM 855	June 15, 1901		10.0
AC 2686	July 12, 1902	60	— 10.8	AM 956	Aug. 3, 1901	60	9.9
AC 3538	April 21, 1903	75	10.1	AM 2319 br.	Oct. 12, 1903	75	9.9
AC 3576	April 30, 1903	64	9.9	AM 1175	April 2, 1902	60	9.9 - 10.2

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1906phae.proj..819F

January 7, 1910 —

(Cont.)

Plate	Date	Ex.	Est.	Plate	Date	Ex.	Est.
AM 1325	June 10, 1902	60m	9.9	AM 2796	July 1, 1904	60	9.7
AM 1350	June 13, 1902	61	9.7	AM 2767	June 20, 1904	60	9.6
AM 1381	June 24, 1902	62	10.0	AM 2714	June 4, 1904	60	9.9
AM 1396	June 26, 1902	60	9.6	AC 2619	May 5, 1904	60	10.1
AM 1873	April 21, 1903	63	9.7	AM 3422	March 30, 1905	61	9.7
AM 1880	April 24, 1903	64	9.8	AM 2995	Sept. 1, 1904	60	9.8
AM 1990	June 2, 1903	65	10.1	AM 3561	May 25, 1905	60	9.9
AM 1510	Aug. 15, 1902	60	9.6	AM 6389	July 21, 1909	63	10.3
AC 8628	July 26, 1907	60	9.9	AM 6312	July 6, 1909	64	9.8
AM 3739	July 26, 1905	66	10.0	AM 6172 5569	June 17, 1908	65	9.9
AM 3835	Aug. 26, 1905	60	9.9	AM 4962	July 2, 1907	75	9.6
AM 3882	Sept. 16, 1905	60	9.9	AM 4655	Oct. 20, 1906	60	9.7
AC 7719	Aug. 17, 1906	83	9.8	AM 4546	Sept. 5, 1906	60	9.5
AC 7550	May 14, 1906	73	9.7	AM 4371	July 9, 1906	61	9.7 6
AC 7596	June 10, 1906	60	9.9	AM 4393	July 12, 1906	60	< 10.8 —
AM 1021	Sept. 3, 1901	69	9.8	AM 1309	June 6, 1902	514	Shows an increase
AM 1237	May 2, 1902	60	9.8	of about 0.2 mag. in [illegible] sixteen photographic images.			
AM 1287	May 28, 1902	60	9.6	This change may be due to photographic.			
AM 1424	July 3, 1902	60	9.6	AM 4348	June 24, 1906	526	Eighteen images which
AM 1436	July 9, 1902	60	9.7				show no apparent change.
AM 1483	July 25, 1902	60	9.9	AM 4916	June 10, 1907	518	Seventeen images;
AM 1961	May 19, 1903	60	10.0	AM 3678	July 1, 1905	406	no apparent change. Fourteen images,
AM 2137	July 16, 1903	60	9.6	AM 3603	June 8, 1905	118	no apparent change. Out four images it is apparently 9.5, on one it is 9.8, on the fifth 9.7 to 9.8
AM 2119	July 14, 1903	60	— < 10.8				

See p. 166.

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1906phae.proj..819F

January 8, 1910.

Exam. of plates to det. amt. of variation in
No. 7135 Sp! Nc var de I 35750 +53° 398. RA 1h 41.m1 Dec. +53° 1' (1855)
1 44.6 53 14 (1900)

Plate	Date		Ex.	Est.	Plate	Date	Ex.	Est.
I 35750 Sp.	Dec. 21	1903	34m	9.2	AC 1852	Oct. 8, 1901	90	9.4
I 5607	Feb. 10	1892	15	9.5	AC 1154	Jan. 18, 1901	63	9.5
I 18498	Aug. 12	1897	15	9.0	AC 48	Sept. 28, 1898	221	10.1
I 29726	Dec. 27	1902	12	10.0	AC 2711	July 30, 1902	60	9.5
I 27386	Aug. 28	1901	12	9.2	AC 9605	July 5, 1908	60	9.7
I 29293	Sept. 23	1902	63	9.5	AC 638	Dec. 30, 1899	60	8.9
I 11766	Oct. 20	1894	24	9.6	AC 134	Dec. 19, 1898	16	10.0
I 14124	Dec. 20	1895	20	10.3	AC 950	Aug 1, 1900	65	10.1
I 21757	Nov. 23	1898	12	9.8	AC 9036	Nov. 30, 1907	60	10.2
I 5307.	Jan. 1	1892	21	10.2	AC 10171	Jan. 25, 1909	60	9.0
AC 9660	July 29	1908	60	9.2	AC 2741	Aug. 12, 1902	59	9.4
AC 8878	Oct. 16	1907	66	9.5				
AC 8669	Aug. 9	1907	66	10.3				
AC 5487	Nov. 5	1904	63	9.1				
AC 5436	Oct. 27	1904	30	9.2				
AC 5132	Aug. 9	1904	55	9.2				
AC 5067	July 16	1904	58	9.3				
AC 3943	Sept. 15	1903	110	10.2				
AC 2929	Oct. 23	1902	100	10.3				
AC 2886	Oct. 8	1902	71	10.5				
AC 1884	Oct. 19	1901	61	9.4				

The above plates show a change of about 1.5 magn. Est. limiting magnitudes 9.0 to 10.5 (8.9 to 10.5)

Var. confirmed by L. D. Wells. W. P. F. January 8, 1910.

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1906phae.proj...819F

January 10, 1910.

Exam. of plates to det. amt. of variation in
No 15649, Sp. Na, var. on B39685. ADM +7° 929 R.A. 5h 25m.4, Dec. +7° 2' (1855).
5 27.8 +7 4 (1900).

Plate	Date	Exp.	Est.
B39685	Sept. 29, 1908	60m	8.7 Sp Na
I 28222	Jan. 10 1902	16	10.1
B28720	Oct. 8 1901	10	8.7
I 19228	Oct. 9 1897	10	10.3
I 7964	Jan. 25 1893	15	10.5
I 13879	Nov. 27 1895	10	10.1
I 23826	Oct. 16 1899	Exp. 12.	9.8
I 4704	Nov. 3 1891	10	9.8
I 295	Dec. 11 1889	17	10.6
I 4985	Dec. 7 1891	42	10.5
I 17311	Feb. 11 1897	10	10.6
I 26035	Nov. 10 1900	12	10.1
B 26571	Nov. 13 1900	10	9.0
I 21427	Oct. 16 1898	11	10.0

The above plates show a change of about 1.9 magn.
Est. limiting magn. 8.7 to 10.6

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1906phae.proj..819F

January 10, 1910.

Exam. of plates to det. amt. of var. in

No. 6896 Sp. Mcsd on I 35560. BD +79° 110 2 9.3 27.5 Dec. +79° 5' (1855).

No. 6925 Sp Mdb on I 35611. 3 33.8 +80 0.5 (1900).

Plate	Date	Ey.	Est.	Plate	Date	Ey.	Est. 8.4
I 35560	Oct. 3 1908	31	7.5 Sp.	Ab 3014	Nov. 23, 1902	60	84
I 35611	Oct. 20 1908	75	8.2 Sp	Ab 2143	Jan. 3, 1902	67	8.7
I 16644	Dec. 1 1896	16	84	Ab 1056	Dec. 14, 1900	82	8.4
I 19520	Nov. 7 1897	11	8.3	Ab 116	Dec. 9, 1898	65	8.5
I 12847	May 9 1895	16	83	Ab 4361	Dec. 13, 1903	70	8.5
I 12877	May 10 1895	10	7.7	Ab 2310	Feb. 10, 1902	53	8.5
I 23565	Sept. 17 1899	10	82	Ab 2718	July 31, 1902	60	8.5
I 21548	Oct. 30 1898	16	8.6	Ab 1777	Sept. 24, 1901	69	8.3
I 24215	Dec. 12 1899	11	8.3	Ab 3920	Sept. 11, 1903	60	8.4
I 7598	Dec. 2 1892	24	8.0	Ab 3210	Jan. 23, 1903	60	8.4
I 16559	Nov. 16 1896	10	8.1	Ab 2742	Aug. 12, 1902	54	8.5
I 11619	Oct. 12 1894	10	8.4				
I 8293	May 27 1893	12	8.0				
I 19531	Nov. 9 1897	15	8.5				
I 21805	Nov. 28 1898	13	8.5				
Ab 3372	Feb. 28 1903	60	8.3				
Ab 156	Jan. 12 1899	61	9.0				
Ab 3232	Jan. 31 1903	73	8.5				
Ab 3340	Feb. 22 1903	70	8.3				
Ab 490	Oct. 21 1899	73	8.6				
Ab 4115	Oct. 27 1903	60	8.4				
Ab 3820	Aug. 12 1903	58	8.5				

The above plate shows a variation of about 1.5 magn. Est. limits 7.5 to 9.0.

(Sp. 7.5)

Variability Conf. by L. D. Wells. W. P. F.

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1906phae.proj..819F

January 11, 1910

Exam. of plates to det. amt. of var. in No 6975
Sp. Na, var, on I 35708. Dm. +38°1035 RA. 4h 59m.2 Dec. +38°48'.5 (1855)
5 2.2 +38 52

Plate	Date	Ex.	Est.	Plate	Date	Ex.	Est.
I 35708 Sp.	Dec. 1 1908	60m	9.0	I 25059	April 7, 1900	10	9.7
I 10161	Dec. 12 1893	17	10.6	I 21874	Dec. 1, 1898	9	9.0
I 5253	Dec. 18 1891	15	9.9	I 33461	Oct. 5, 1905	20	9.5
I 33438	Oct. 3 1905	20	10.1	I 28121	Dec. 21, 1901	10	9.7
I 26582	Feb. 7 1901	10	9.1	I 31253	Dec. 11 1903	60	10.3
I 20102	Jan. 29 1898	13	10.3	I 24395	Jan. 6, 1900	79	9.3
I 10185	Dec. 17 1893	10	10.2				
I 29792	Jan. 1 1903	49	9.5				
I 5094	Dec. 11 1891	10	9.8				
I 26472	Jan. 13 1901	19	9.1				
I 33426	Sept. 28 1905	20	9.9				
I 28120	Dec. 21 1901	9	9.6				
I 15983	Sept. 20 1896	15	9.9				
I 22007	Dec. 23 1898	13	9.0				
I 20209	Feb. 12 1898	11	10.1				
I 7961	Jan. 25 1893	18	10.0				
I 2889	Jan. 23 1891	12	9.2				
I 3371	March 30 1891	12	9.1				
I 17148	Jan. 19 1897	10	10.0				
I 24791	March 12 1900	12	9.5				
I 29843	Jan. 18 1903	25	9.9				

The above plates show a var. of about 9.0 to 10.6 (1.6 magn.). Est limits 9.0 to 10.6.
Variability confirmed by L. D. Wells. W.P.F.

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1906phae.proj..819F

January 13, 1910.

Exam. of Plates to det. amt. of variation in No. 15245 (B 38749) Pd -59° 1591. R.A. 9h 55m 54.0 Dec. -59° 37.1 (1875.)
9 56.7 -59 44 (1900.

Plate	Date	Exp.	Est.	Plate	Date	Exp.	Est.
B 38749 Sp Nova	April 24, 1908	60m	8.0	B 15383	March 7, 1896	25	10.0
B 12787	Jan. 17, 1895	10	9.9	B 12809	Feb. 20, 1895	10	9.6
B 15352	Feb. 7 1896	11	9.6	B 26030	May 13, 1905	10	9.7
B 12400	Oct. 27 1894	10	10.1	B 18316	Jan. 15, 1897	25	9.7
B 22414	April 3 1899	11	10.0	B 11149	May 17, 1894		10.1
B 19468	June 9, 1897	12	9.4	B 15799	May 12, 1896	10	8.6
B 21066	March 25, 1898	10	9.5	B 26972	Feb. 26, 1901	64	8.7
B 18426	Jan 28, 1897	10	10.1	B 15209	Dec. 7, 1895	10	9.1
B 33054	" 16, 1904	59	9.1				
B 12936	Apl. 8, 1895	11	9.5				
B 13517	June 3, 1895	10	9.3				
B 21359	May 2, 1898	24	9.6				
B 18262	January 4, 1897	30	9.4				
B 18463	Feb. 10 1897	25	9.2				
√ B 10658	Nov. 17 1893	11	9.6				
√ B 38496	March 26 1908	10	9.6				
B 15018	Oct. 29 1895	10	9.5				
B 15349	Feb. 7 1896	20	10.0				
B 12534	Nov. 12 1894	10	9.4				
B 12720	Dec. 13 1894	10	10.0				
B 16213	June 10, 1896	39	9.6				

The above plates show a var. of about 1.5 magn. Est limit magn. 8.6 - 10.1 (Sp. 8.0). Variability Confirmed by L. D. Wells. W. P. T.

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1906phae.proj..819F

January 13, 1910.

Exam. of Plates to det. amt. of variation in

Wm-50°6814. No. 15765. Sp. Na var on B 38799. R.A. 12 7 57.6 Dec. -50° 50'.5 (1875) 8.0

12 9.3 - 50 59 (1900).

Plate	Date	Ex.	Est.
B ~~16165~~ 38799 Sp.	May 1 1908	62m	7.9
B 16082	June 3 1896	10	10.8
B 24816	March 1 1900	16	9.7
B 19748	July 3 1897	11	9.4
B 29806	May 26 1902	10	9.6
B 38992	May 25 1908	22	10.0
B 7859	~~June 10~~ Jan. 8 1893	~~2~~ 4	17	9.9
B 11428	June 15 1894	12	10.1
B 29270	April 3 1902	10	9.5
B 13205	May 9 1895	10	10.5
B 10879	~~Mar. 23~~ April 11 1894	12	9.9
B 21123	April 2 1898	12	10.2
B 13255	May 10 1895	10	10.1
B 9634	~~Oct. 9~~ June 22 1893	~~10~~ 60	10.1
B 08788	April 29 1908	15	9.6
B 5904	May 15 1891	10	10.6
B 18565	Feb. 9 1897	11	9.5
B 25061	April 10 1900	10	9.3

The above plates show a var. of about 1.5 magn. Est. limit. magn. 9.3 to 10.8. (Sp. 7.9) Variability Confirmed by L.D. Wells. W.P.F.

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1906phae.proj..819F

January 13, 1910.

Eclam. of plates to det. amt. of var. in No 143 23
Sp. Mc 5d on B 37609. CDM. -43° 8554 RA. 13h 41.2 Dec. -43° 53'.5 (1875) 9.7
1342 39.4 -44 1.1 (1900)

Plate	Date		Eq.	Est.
B 37609 8f	June 8	1907	60	9.5
B 19829	July 15	1897	11	9.6
B 11200	May 21	1894	10	10.1
B 16087	June 3	1896	10	10.4
B 25147	April 18	1900	16	9.6
B 28031	July 26	1901	10	10.3
B 27319	May 15	1901	60	10.1
B 15854	May 13	1896	10	10.0
B 23458	July 14	1899	10	10.1
B 14073	July 10	1895	11	9.9
B 7454	April 22	1892	60	9.9
B 32252	July 16	1903	68	10.0
B 25695	July 3	1900	10	9.8
B 22994	June 5	1899	12	10.2
B 31876	May 28	1903	61	9.7
B 29241	April 1	1902	10	9.4
B 7605	May 13	1892	12	9.9
B 6291	June 13	1891	70	9.4
B 5227	May 19	1890	63	10.0
B 22447	April 4	1899	10	9.9
B 18660	March 13	1897	11	9.9

The above plates show a var. of about 1.0 magn.
Est. limit. magn. 9.4 to 10.4. Confirmed by L.D. Wells. W.P.F.

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1906phae.proj..819F

January 14, 1910.

Exam. of plates to det. amt. of var in star in R.A. 14h 27m 38s Dec. -60° 33'.4 (1900). Found by Miss J.C.S. Mackie. (See her note book No. 1 p. 17.).

Plate	Date		Exp. m.	Est.
B 11201	May 21	1894	10	12.7
B 35747	April 1	1904	10	12.6
B 33613	May 4	1904	15	10.9
B 15818	May 12	1896	10	13.1
B 23845	Aug. 15	1899	10	11.7
√ B 37731	July 3	1907	11	12.9
B 22524	April 7	1899	7	13.3
B 30103	June 17	1902	10	11.7
B 19049	May 10	1897	12	11.4
B 31940	June 3	1903	10	12.6
B 19429	June 8	1897	10	12.7
√ B 9304	May 2	1893	10	10.8
B 18783	April 9	1897	12	11.2
B 13966	July 8	1895	10	13.2
B 10849	April 4	1894	10	12.6
B 18834	April 20	1897	11	12.7
B 11089	May 3	1894	10	12.6

The above plates show a var. of about 2.^{5}X mags.
Est limits: mags. 11.2 - 13.3 (105)

Confirmed by W.P.F. & D.W. W.P.F.

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1906phae.proj..819F

January 15, 1910.

Exam. of Plates to det. mult. of var. in (Sp.) Md 5 on B 40315 / Dm. -24° 10977 Rd 13h 27m 24.0 Dec -24° 44' 8 (1875) 8.3
Md ? var ? on B 13132 13 28 46.5 -24 52 .6 (1900)

Plate	Date	Exp.	Est.	
Md 5 B 40315 Sp.	May 22, 1909	121m	9.0	Md 5
Md ? B 13390 Sp.	" 21, 1895	61	8.8	Md ?
Md ? Dec. B 13165 Sp.	" 2, 1895	60	8.7	Md ? Dec.
B 13149 Sp.	Apr. 30, 1895	60	8.7	Md Var ?
B 13142 Sp.	" 27, 1895	57	8.6	Md ? Var ?
B 37406	May 15, 1907	10	8.1	
B 16675	July 6, 1896	12	8.8	
am 1146	Jan. 17, 1902	60	9.6	
am 2931	Aug. 8, 1904	73	8.7	
am 5019	July 28, 1907	121	8.9	
am 6093	May 8, 1909	60	9.6	
am 1269	May 26, 1902	60	8.7	
am 3559	May 25, 1905	60	9.3	
am 4975	July 4, 1907	77	8.9	
am 778	May 10, 1901	85	9.3	
am 5516	June 4, 1908	60	9.5	
am 1806	Jan. 16, 1903	68	9.5	
am 6043	Apr. 21, 1909	62	9.5	
am 2650	May 13, 1904	63	9.1	
am 3782	Aug. 11, 1905	63	9.0	
am 4289	June 11, 1906	64	9.3	
am 6226	June 14, 1909	67	9.2	

The above plates show a variation of about 1.5 magn. Est limit magn. 8.1 to 9.6 Var. confirmed by L. D. Wells W. P. F.

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1906phae.proj..819F

January 17, 1910.

Exam. of Plates to det. amt. of var. in No. 7380
Sp. Mc5 vdh. or I 35887. +33° 2482 R.A. 14h 33m 10.2 Dec. +33° 9.6 (1855) 8.3
14 35 4.1 +32 57.8 1900.

Plate	Date	Ey.	Est.	
I 35887 Sp.	March 15 1909	62	9.8	Sp Mc5
I 6356	May 28 1892	13	8.8	
AC 4885	May 4 1904	64	8.8	
AC 2363	Feb. 23 1902	63	9.6	
AC 1416	April 26 1901	64	8.8	
AC 10218	Feb. 6 1909	64	10.0	
AC 8333	March 7 1907	58	8.9	
AC 6232	March 30 1905	65	8.2	
AC 796	April 5 1900	68	9.0	
AC 8435	April 18 1907	66	9.0	
AC 8379	March 25 1907	70	9.0	Erythl.
AC 8325	March 6 1907	66	9.0	
AC 9292	Feb. 24 1908	71	9.8	
AC 7559	May 18 1906	57	8.3	
AC 4810	April 5 1904	60	8.5	
AC 1105	Dec. 28 1900	68	8.8	
AC 1545 ?	June 16 1901	105	8.5	
AC 10424	April 11 1909	60	9.7	
AC 6299	April 18 1905	69	8.4	
AC 6362	May 8 1905	71	9.1	
AC 10308	March 14 1909	60	9.9	
AC 906	July 1 1900	74	9.7	

The above plates show a variation of about 1.8 magn.
Est. limit, magn. 8.2 to 10.0. Var. confirmed by L.D. Wells. W.P.F.

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1906phae.proj..819F

February 12, 1910.

Expos. of plates to det. amount of variation in Type IV? var.ⁿ No 9995 on B 19160. R.A. 15 13.2 - Dec - 75° 29' (1875) 10.0
C.P.D. -75° 1158 R.A. 15 16.1 — 75° 34' (1900)

Plate	Date	Exp	Est.	
B 19160 sp.				Type IV?
B 19316	June 1, 1897	16m	10.7	
B 25362	May 21, 1900	60	11.3	
B 29693	May 15, 1902	10	10.2	
V B 40225	May 9, 1909	10	10.8	
B 33527	May 2, 1904	10	10.7	
B 36394	July 11, 1905	11	10.9	
B 35-621	March 27, 1905	10	11.5	
B 23494	July 17, 1899	10	11.7	
B 37561	June 1, 1907	15	10.3	
B 27625	June 8, 1901	60	10.2	
B 27229	April 22, 1901	10	10.5	
B 23464	July 14, 1899	10	11.1	
V B 16187	June 6, 1896	16	10.9	
B 16255	June 11, 1896	15	11.1	
B 35-644	March 28, 1905	10	11.8	
B 33328	Apr. 12, 1904	10	10.3	
B 27270	Apr. 25, 1901	65	10.4	

The above plates show a variation of more than 1.6 magn. Est. limit: magn. 10.2 to 11.8.
Var. conf. by L. D. Wells W.P.F.

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1906phae.proj..819F

February 12, 1910.

Exam. of plates to det. amount of variation in No. 15545, Sp. Md 8, var. on B39202. R.A. 16h 59m.5 - 31° 40' (1875)
17 1.1 - 31 42 (1900).

Plate	Date	Exp.	Est.	
B39202 Sp	'08, June, 19	65m		Md 8.
B37437	'07, May, 16	11	12.6	
B27174	'01, Apr., 13	60	9.3	
B25486	'00, May, 28	60	10.8	
B18919	'97, Apr. 22	12	12.3	
B31855	'03, May, 20	60	10.0	
B23690	'99, July, 27	10	12.2	
B32317	'03, July, 24	70	11.5	
B31395	'03, March, 30	71	12.5	
B19442	'97, June, 8	11	12.9	
B20446	'97, Sept. 18	10	12.7	
B27720	'01, June, 21	62	11.6	
B12917	'95, Apr., 6	10	11.5	
B25334	'00, May, 18	10	10.9	
B23168	'99, June, 26	10	12.0	
B30812	'05 Apr. 12	10	12.3	
B19080	'97, May 12	11	12.5	
B32636	'03, Sept. 18	60	12.5	

The above plates show a variation of ~~93~~ 3.4 magn. about more than
Est limits 9.3 to 12.7. 12.9
Variability conf. W.P.F.

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1906phae.proj..819F

Feb. 12, 1910.

Exam. of plates to det. amount of variation in No. 16162, Md. var. on B 39298. R.A. $17^h\ 57^m.3$ Dec. $-38^\circ\ 15'$ (1875)
$17\ 59^s.3$ $-38\ 14$ (1900).

Plate	Date	Eff.	Est.
* B 19113	97, May 13	10m	< 12.3
√ B 39090	08, June 5	10	10.9
B 33886	04, May 24	10	< 12.3
B 32491	03, Aug. 20	69	< 12.3
√ B 16037	96, May, 30	21	11.6
B 29605	02, May 2	60	10.0
B 25424	00, May 23	11	< 11.9
B 36868	05, Sept. 1	10	11.9
B 29853	02, May 27	10	10.3
B 32650	03 Oct. 8	10	11.4
B 38031	07 Aug. 25	64	11.1
B 27154	01, Apr. 11	10	< 12.2
B 22510	99, Apr. 6	10	10.8
B 29570	02, Apr. 30	10	10.2
B 39298 Sp.	08, July 2	56	Md Var.

The above plates show a variation of more than 2.3 magn. Est. limiting magn. 10.0 to < 12.3.
Variability confirmed by L. D. Wells. W.P.F.

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1906phae.proj..819F

February 12, 1910.

Gfams. of plates to det. amount of variation in No. 13453a. on B23252. Sp. Mc5d, var? CDM -26° 11477 R.A. 16 34 6.1 Dec. -26° 52.1 (1875) 8.6
16 35 38.6 -26° 55.2 (1900).

Plate	Date	Eff.	Est.	Plate	Date	Eff.	Est.
B 3875	89 July 22	63	8.8	AM 2556	04, Apr. 18,	67m	9.2
B 27149	01, April 11	10m	9.0	AM 5000	07, July 15	120	9.8
B 25115	00, April 11	10	9.8	AM 5694	08 July 27	131	9.6
B 17076	96, Aug. 7	13	9.4	AM 5749	08, Aug. 14	63 5	9.5
B 15525	96, Apr. 6	5	9.3	AM 2486	04, Mar. 18	63	9.6
B 19841	97, July 16	10	9.3				AM. 8.9-9.0
B 38644	08, Apr. 9	10	9.6				B 8.8-9.8
B 32063	03, June 29	62	9.4	B 23252			Sp. Mc5, var?
B 36660	05, Aug. 17	10	9.7				
B 15481	96, Mar. 16	10	9.7				
B 15607	96, Apr. 13	20	9.3				
B 27851	01, July 11	60	(8.6)	assumed 8.8			
B 9993	1893 July 27	10	9.2				
B 36784	05, Aug. 22	12	9.7				
B 21058	98, Mar. 24	10	9.4				
AM 4079	06, Jan. 30	67	8.9				
AM 45-34	06, Aug. 25	60	9.7				
AM 904	01, July 6	60	8.9				
AM 4392	06, July 12	68	9.6				
AM 3447	05, Apr. 7	63	9.6				
AM 2677	04, May 24	60	9.8				
AM 643	00, Sept. 11	63	9.6				

The above plates show a variation of about 1.0 magn.
Est. limiting magn., 8.8 to 9.8.
Var. conf. by L. D. Wells. ~~Found independently from Harvard Map, by~~ Miss W. P. L. Feb. 12, 1910.

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1906phae.proj..819F

February 14, 1910.

Exam. of plates to det. amt. of variation in No 15309, Sp. Nb, var?, on B39395. -7° 4633 R.A. 18 29 13.2 Dec. -7° 43' 0 (1855) 9.0
18 31.8 -7 41 (1900).

Plate	Date	Exp.	Grade	Pl.	Date	Exp.	Est.
B39395 Sp.				Stn			
B19242	'97 May 28	10m	9.9	B29905	'02, May 29	10m	9.8
B25392	'05, " 22	10	9.8	B32184	'03, July 14	10	10.4
B27086	'01, June 6	10	9.6	B15897	'96, May 14	10	11.2
B14086	'95, July 10	10	9.7				
B34248	'04, July 1	12	9.7				
B36086	'05, May 22	10	9.8				
✓ B 6117	'91, May 29	10	10.2				
B22796	'99, May 9	12	12.0				
B29529	'02, Apr. 29	10	9.7				
B32625	'03, Sept. 3	10	9.9				
B16162	'96, June 5	10	11.3				
B23663	'99, July 26	11	11.4				
B17145	'96, Aug. 14	10	10.6				
B14743	'95, Sept. 28	10	11.0				
B9878	'93, July 22	10	10.6				
B16569	'96, July 1	12	11.9				
B15749		Too poor					
B16938	'96, July 20	12	10.7				
B21286	'98, Apr. 26	13	9.9				
✓ B36921	'05, Sept. 8	11	9.8				

The above plates show a variation of about 2.3 magnitudes.
Est. limit. magn. 9.7 - 12.0

Var. confirmed by L. D. Wells. W.P.F.

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1906phae.proj..819F

February 15, 1910.

Exam. of plates & det. amt. of variation in
No 7380[a] Sp. Mc 5, var? on I 35887. +32°2504. R.A. 14 35 6 +32 10.6 (1855).
14 37 0 +31 58.9 (1900).

Plate	Date	Exp.	Est.	Plate	Date	Exp.	Est.
I 35887 Sp.				Mc 5			
			7.8				
AC 10392	'09, April 1	60m	8.7	AC 906	'00, July 1	74m	9.0
			7.9				
AC 7443	'06, " 3	11	8.8	AC 2363	'02, Feb. 23	63	7.8
			8.1				
AC 2551	'02, May 15	70	9.0	AC 1416	'01, Apr. 26	64	7.8
AC 8599	'07, July 9	60	9.8	AC 796	'00, Apr. 5	68	7.9
AC 9292	'08, Feb. 24	71	9.3	AC 6232	'05, Mar. 30	65	7.9
AC 5843	'05, Jan. 15	94	8.8	AC 8833	'07, Mar. 7	08	8.0
AC 3393	'03, Mar. 4	60	7.9	AC 10308	'09 Mar. 14	60	7.7
AC 4579	'04 Jan. 27	70	7.5	AC 6299	'05 Apr. 18	69	8.0
AC 10502	'09, May 12	62	9.3	AC 10424	'09, Apr. 11	60	7.8
AC 183	'99, Jan. 27	63	9.1	AC 4810	'04, Apr. 5	60	9.8[1]
AC 690	'00, Jan. 23	63	8.8	AC 4885	'04, May 4	64	9.4[2]
			8.8				
AC 7313	'06 Feb. 22	63	7.9	AC 8379	'07, Mar. 25	70	9.3
AC 10367	'09, Mar. 28	60	7.6	AC 10218	'09, Feb. 6	64	7.8
AC 4593	'04, Feb. 1	67	7.7	AC 6362	'05, May 8	71	9.4
AC 9431	'08, Apr. 19	62	8.0	AC 1545	'01, June 16	105	7.7
AC 8114	'06, Dec. 18	45	7.8	AC 1105	'00, Dec. 28	68	8.0
AC 8435	'07, Apr. 18	66	9.1	AC 7559	'06, May 18	54[7]	9.4
AC 6267	'05, Apr. 6	64	7.8	I 34483	'07, Jan. 20	10	9.1
				I 24642	'00, Feb. 20	28	9.1
AC 6602	'05, Aug. 17	60	9.0	I 25206	00, Apr. 20	65	8.8
AC 10652	'09, July 22	60	8.1	I 6356	'02, May 28	13	9.2
I 22493	'99, Feb. 25	16	9.5				
I 10832	'94, Mar. 16	14	9.3	I 24814	'00, Mar. 12,	10	9.5
I 20680	'98, Apr. 8	10	8.6	I 34610	'07, Mar. 22,	10	9.1

The above plates show a variation of about 2.3 magnitudes.
Est. limit: magn. 7.5 to 9.8

Variables Cont. by L. D. Wells. W.P.F. Feb. 15, 1910.

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1906phae.proj..819F

Feb. 16, 1910.

Exam. of plates to conf. amt. of variation in No. 691 on A 8329, Sp. Mc 5, var? Com -43° 11' 57" R.A. 17 34.4 Dec -43 42 (1875) 10
17 36.2 -43 44 3/4 (1900)

Plate	Date	Exp.	Est.
A 8329 Sp.	'07, June 1	60m	
B 19083	97, May 12	10m	11.1
B 17259	96, Aug. 26	27	12.4
✓ B 3867	~~91, July 21~~ 89. July 21	~~22~~ 66.	12.8
B 15435	96, Mar. 16	30	11.8
✓ B 40062	09, Apr. 9	13	12.5
B 37539	07, May 31	10	11.7
B 113444	94, June 1	10	11.2
B 14292	95, Aug. 3	10	11.8
B 15704	96, May 4	20	11.9
B 113445	94, June 1	10	11.1
B 5394	90, June 9	60	12.0
A 7656	06, May 4	11	11.7

The above plates show a change of about 1.7
Est. limit. magn. 11.1 to 12.8

Variability confirmed by L. D. Wells. W. P. F.

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1906phae.proj.819F

Feb 16, 1910.

Est to det. amt. of var. in No. 10728 on B 39659
Sp. Md? var. ? brn. -47° 12488 R.A. 18 34.6 Dec. -47° 22' (1875) 9.5
18 36.5 - 47 21 (1900.

Plate	Date	Exp.	Est.	Sp. Md?	Plate	Date	Exp.	Est.
B 39659 Sp.					B 14497,	'05, Sept. 5	10m	10.8
B 25388	'00, May 22	10m	10.3		B 37974	'07, Aug. 15	15	10.0
B 28567	'01, Sept. 20	60	10.0		B 38258	'07, Oct. 17	10	9.9
B 16166	'96, June 5	10	9.9		B 25968	'00, Sept. 4,	11	10.1
B 36896	'06, Sept. 6	10	10.0		B 22513	'99, Apr. 6,	10	10.1
B 34234	'04, July 1	96	10.0		B 32629	'03, Sept. 3	10	10.0
B 27444	'01, May 27	10	10.5		B 16572	'96 July 1,	11	10.0
B 4069	'89, Aug. 22	60	10.1		B 33336	'04, Apr. 12	10	9.9
B 3755	'89 July 8	10	10.6		B 19176	'97, May 22	11	10.3
✓ B 39040 (latest)	'08, May 28	10	9.8	*	B 27846	'01, July 9	52	9.9
B 21552	'98, May 31	10	10.0					
✓ B 3716 (earliest)	'89 July 3	60	10.2					
B 33492	'04, Apr. 23	10	9.6					
B 31954	'03, June 3	10	10.0					
B 31732	'03, May 7	10	10.0					
B 23065	'99, June 16	10	10.4					
B 30872	'02, Oct. 11	10	10.1					
B 24413	'99, Oct. 14	10	10.1					
B 38151	'07, Sept. 16	10	9.6					
B 9694	'93 June 24	10	10.7					
B 12506	'94, Nov. 12	10	10.0					

* Shows very ff. plate

The above plates show a change of about 1.2 magn.
Est. limit. magn. 9.6 to 10.8

Variability confirmed by L. D. Wells. W. P. F.

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1906phae.proj..819F

February 18, ~~17~~, 1910.

Exam of plates to det. cmt. of variation in No. 15470 on B39478. Sp. Mc5, var.? Dm -16° 50'4. R.A. 18 46 32.4, Dec -16° 42' 8?
1900 R.A. 18h 49m.1 Dec -16° 39'.

Plate B39478. Sp.	Date	Exp.	Est. Pl. Mc5. var.?	Date	Exp	Est.
AC 1462	'01 May 13	55m	8.7 B23414	'99, July 11	16m	8.3
AM 1010	'01, Aug. 23	60	9.0 B23213	'99, June 29	16	8.4
AM 5089	'07, Aug. 25	61	8.4 B17557	'96 Oct. 6	12	8.4
AM 5391	'08, Apr. 10	55	8.1 B25827	'00, Aug. 31	11	8.3
~~AM 42196~~ ~~AC 2521~~	'96 '02, June 12	67	9.0 B36435	'05, July 12	10	8.5
AC 2521	'02, May 3	14	8.4 B33495	'04, Apr. 23	10	8.4
AM 1594	'02, Oct. 4	60	9.0 B36061	'05, May 15	10	8.7
AC 9608	'08, July 6	60	8.6 B9944	'93, July 25	10	8.3
AC 8685	Aug 13	70	8.5 B6546	'91, July 15	10	8.6
AC 3825	'03, Aug. 14	67	8.6 B10039	'93, July 31	10	8.6
AC 8557	'07, June 19	63	8.5 B22010	'98, Oct. 8	10	8.5
AC 1655	'01, Aug. 14	70	8.4 B5996 (earliest)	'91, May 20	10	8.4
AM 2052	'03, June 18	60	8.6 B18953	'97 Apr. 23	13	8.5
AM 5065	'07, Aug. 15	60	8.7 B14087	'95 July 10	27	8.7 8.E.B. 8.4
			B12546	'94, Nov. 13	10	8.0 8.E.B. 7.8 8.1

The above plates show a variation of about 0.9 magn. on AC & AM plates and 0.7 magn. on B plates. Est. limit. 2 magn. ~~8.0 to~~ on Cooke plate 8.1 to 9.0.
Variation confirmed by L D Wells, A J Cannon, S. E. Breslin, and E. F. Leland.

W. P. F. Feb 18, 1910

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1906phae.proj..819F

Feb. 21, 1910.

Exam. of plates to det. amt. of variation in ~~No. 15470~~ in No 15592 Sp. Md? var? on B39372. C.D.M. -51° 12676 R.A. 20h 33m 13.7s Dec. -51° 31.9 (1875.0) 10.0
20h 35m 14s -51° 27' (1900).

Plate	Date	Exp.	Est.	Plate	Date	Exp.	Est.
B 39372 Sp.				Md ? Var ?			
B 15023	'95, Oct. 30	10m	9.5	B11805	'94, Aug. 11	10m	10.1
B 15090	'95, Nov. 1	10	9.7	B17624	'96, Oct. 12	10	10.9
B 22045	'98, Oct. 13	10	10.2	B8530	'92, Sept. 8	10	10.2
B 15470	'96, March 26	19	10.8	B3870	'89, July 21	60	10.5
B 6183	'91, June 2	10	10.3	B3879	'89, July 22	60	10.0
B 3616	'89, June 20	10	10.8	B9731	'93, June 27	10	10.0
B 14406	'95, Aug. 20	10	10.8	B14512	'95 Sept. 6	10	10.8
B 10047	'93, July 31	10	9.9	B6523	'91, July 13	8m 25s	10.3
B 13550	'95, June 3	10	10.6	B24495	'99, Nov. 13, 11		10.7
B 40954	'09, Oct. 21	13	9.9				
B 23085	'99, June 17	10	10.2				
B 39690	'08, Oct. 4	16	10.0				
B 30502	'02, July 31	68	10.6				
B 28285	'01, Aug. 23	10	10.7				
B 26124	'00, Sept. 13	10	10.8				
B 25509	'00, May 31	60	10.1				
B 16116	'96, June 4	31	10.6				
B 36198	'00, June 13	10	10.5				
B 36069	'00, May 15	11	10.6				

A.F.

	E.E.B.	E.F.L.	A.J.C.	L.D.W.	
B17624	~~9.8~~ 10.7	10.8	10.9	10.8 1011	10.9
B15090	9.8	9.7	9.6	9.7 1010	9.7
B14406	10.8	10.8	10.8	10.8 0000	10.8
B15023	9.4	9.3	9.2	9.4 0121	9.5

Miss Leland says that intervals between comparison incline to be small.
W.P.F.

The above plates show a variation 1:4 magnitude
Est. limit. magn. 9.5 to 10.9.
Variation confirmed by L. D. Wells, ; A. J. Cannon, ; E. F. Leland, ;
L. E. Breslin, ; W. P. Fleming. Feb. 21, 1910

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1906phae.proj..819F

Feb. 22, 1910.

Exam of plates to det. amount of var. in No. 15640 Sp. Md 4 var? on B 39382. RA 21h 21.5m Dec. -54° 30'
21 23.4 -54 24 (poor)

Plate	Date	Eff.	Est.	
No 15640 on B 39882 Sp.	'08, July 28	129m	8.3	Md 4 var.
B 13948	'06, " 3	10	8.8	
B 32035	'03, June 22	60	8.6	
B 30880	'02, Oct. 11	10	8.3	
B 16728	'96, July 8	14	8.7	
B 23225	'99, June 29	10	11.1	
B 6272	Too poor			
B 25761	'00, July 30	60	11.0	
latest B 32703	'03, Oct. 9	10	< 11.9	
B 20768	'97 Stor. 18	10	8.1	
B 28314	'01 Aug. 24	10	8.4	
earliest B 11214 B 17914	'94, May 21 '96, Stor. 13	10 10	10.7	
B 17914	'96, Stor. 13	10	10.5	
B 30224	'02, June 27	56	11.3	
B 28516	'01, Sept. 11	60	9.7	

The above plates show a variation of about 3.8 magn.
Est. limit. magn. 8.1 to < 11.9
Variability Confirmed by L. D. Wells. W. P. Fleming

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1906phae.proj..819F

February 25, 1910.

Meas. & det. values for publication in H.C. 154.

Dispersion Interval	Interval	Robs	~~Frdc.~~	Fobs.	
X 2 Prisms	Hγ – Hδ	41.8	13.9		
" 1 Prism	"	22.0	7.3		
C 2 Prisms	"	34.4	~~4.6~~	34.4	11.5
" 1 Prism	"	16.6	5.5	16.2	
A 1 Prism	"	5.2	1.7		
B 13° Prism	"	5.2	1.7		
" 5° Prism	"	1.9	0.6		
I 13 "	"	5.2	1.7		
" 5(?) "	"	1.4	0.5		
H "	"	1.5	0.5		

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1906phae.proj..819F

February 26 1910.

Exam. 8 plates to det. amt. of variation in star found by Miss J. C. S. Mackie. (See Harvard Circular 1, page 16.) found later independently by its spectrum by W. P. F. Sp. Md var? on B 39382. No. 15642. R.A. 21h 5m.4, Dec. -53° 32' (1875)
21 7.2 -53 26 (1900).

Plate	Date	Eff.	Est.	Plate	Date	Eff.	Est.
B 39382 Sp.			Md	B 23225	'99, June 29	10m	9.8
B 13948	'95, July 3	10m	8.6	B 16728	'96, July 8	14	9.6
B 26138	'00, Sept. 14	11	10.6	B 32703	'03, Oct. 9	10	9.8
B 30351	'02, July 12	60	9.2				
B 10048	'93, July 31	10	10.8				
B 22935	'99, May 30	10	8.9				
B 29722	'02, May 16	10	10.7				
B 6272	'91, June 11	10	9.4				
B 25761	'00, July 30	60	9.8				
B 20768	'97, Nov. 18	10	10.7				
B 28314	'01, Aug. 24	10	9.1				
B 17914	'96, Nov. 13	10	11.0				
B 11214	'94, May 21		8.6				
B 30224	'02, June 27	56	9.3				
B 28516	'01, Sept. 11	60	9.6				
B 32035	'03, June 22	60	10.2				
B 23881	'99, Aug. 17	10	10.2				
B 27530	'01, May 29	10	10.3				
B 21725	'98, June 20	10	10.6				
B 30880	'02, Oct. 11	10	10.4				

The above plates show a variation of about 2.4 magn.
Est. limit. magn. 8.6 – 11.0

Variability confirmed by W. P. F. & L. D. W.

W. P. F.

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1906phae.proj..819F

February 26, 1910.

An examination of my series of miscellaneous records contained in my books numbered (to date) 1 to 19 (inclusive) also my series of record books in which my lists of peculiar spectra are recopied (Draper work), together with earlier published results in Vols. 18, 26, 27, 47 pt I., miscellaneous articles in Scientific Publications, in H.C. Circulars, etc, will give some idea of my research work in which I have been, and am now engaged, besides the ~~equivalent~~ work I have done and the aid I have given in preparing work for printing and in following it through the press.

Wilhelmina P. Fleming.

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1906phae.proj..819F

April 2, 1910.

Exam. of plates to det. amt. of var. in
No. 7212. Sp. Mc5d var? on I 36465. BD +45° 2913 $19^h 25.^m9$ +45 51.4 (1855) 7.0
$19^h 27.^m2$ +45 57 (1900).

Plate	Date	Ex.	Est. Mb	Date	Eyp.	Est.
I 36465 Sp.	Aug. 28, 1908	60^m	8.4 Mc5d			
I 26079 06	Nov. 14, 1900	11	~~8.4~~ 9.0 aC 8530	June 3, 1907	85^m	8.3
aC 3960	Sept. 8, 1903	60	8.9 aC 4084	Oct. 22, 1903	77	7.8
aC 3789	July 27, 1903	118	7.3 aC 4116	Oct. 28, 1903	88	7.8
aC 4959	June 12, 1904	62	7.7			
aC 4998	June 20, 1904	120	8.4			
aC 3973	Sept. 23, 1903	129	7.8			
aC 9613	July 8, 1908	5-6	8.4			
aC 8750	Sept. 12, 1907	9	8.6			
aC 7739	Aug. 22, 1906	61	7.6			
aC 7833	Sept. 21, 1906	31	8.7			
aC 3495	Apr. 11, 1903	84	8.5-			
aC 3646	May 18, 1903	60	8.5-			
aC 3813	Aug. 10, 1903	81	8.3			
aC 7731	Aug. 19, 1906	49	8.0			
aC 10063	Dec. 16, 1908	81	8.5-			
aC 8726	Aug. 28, 1907	61	8.4			
aC 9876	Nov. 2, 1908	60	8.1			
aC 8497	May 13, 1907	62	8.5-			
aC 9831	Oct. 17, 1908	65	8.4			
aC 7799	Sept. 7, 1906	61	8.5-			

The above plates show a variation of about ~~7.3~~ 1.7 magn.
Est. limit magns. 7.3 to 9.0. on 23 plates. 1900-1908.
Variability confirmed by Miss L. D. Wells. W. P. F.

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1906phae.proj..819F

April 4, 1910.

Exam. of plates to det. amt. of var in
No 1, McSd. B40591. DM -5°5288 RA 20h 25.m7 Dec. -5° 14.'3 (1855) 9.0
20 25.0 -5 5.5 (1900).

Plate	Date	Exp.	Est.	Pl.	Date	Exp.	Est.
				McSd.			
B40591 Sp. earlier	July 12, 1909	126m					
B23329	July 6, 1899	10	9.9	am 4207	May 4, 1906	65m	10.0
am 5664	July 21, 1908	120	10.0	am 5403	Apr. 23, 1908	58	10.4
am 4821	May 10, 1907	60	10.2	am 3162	Oct. 31, 1904	69	9.6
am 5506	May 29, 1908	120	10.4	am 3569	May 26, 1905	61	9.7
am 4671	Nov. 9, 1906	87	10.3	ab 7838	Sept. 24, 1906	60	10.3
am 3600	June 7, 1905	64	10.0				
ab 10037	Dec. 12, 1908	42	10.1				
am 5498	May 27, 1908	66	10.5				
ab 10629	July 11, 1909	60	9.8				
am 3517	May 10, 1905	60	9.8				
ab 10635	July 16, 1909	60	9.9				
ab 6486	July 4, 1905	64	10.1				
ab 8727	Aug. 28, 1907	59	9.9				
am 3656	June 22, 1905	61	10.0				
am 6096	May 8, 1909	60	10.1				
am 4381	July 10, 1906	62	9.9				
am 2867	July 22, 1904	68	10.2				
am 4932	June 20, 1907	63	9.9				
ab 10534	May 30, 1909	60	9.6				
am 2161	July 27, 1903	61	9.9				

The above plates show a change of about 0.9 magn.
Est. limit. magn. 9.6 to 10.5. No. pls. 25. 1899-1909.
Variability confirmed by L. D. Wells. W. P. F.

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1906phae.proj..819F

~~Aff~~ April 5, 1910.

Exam. of plates to det. amt. of var. in No 15859, Sp. Md8, on B39669 RA. $21^h 35^m.4$ Dec. $-5° 3' 18''$ (1875).
21 37.1 -53 11 (1900).

Plate	Sp.	Date	Ex.	Est.	
B39669		Sept. 22, 1908	10^m	10.0	Md8
B36584		Aug. 10, 1905	10	11.9	(Sequence selected).
B32077		June 30, 1903	63	12.1	
B28549		July 18, 1899	13	9.6	
B30503		July 31, 1902	60	12.9	
B34033		July 30, 1904	11	9.5	
B34734		Aug. 20, 1904	40	9.6	
B16667		July 3, 1896	12	11.3	
B28008		July 25, 1901	10	12.8	
B10189		Aug. 21, 1893	10	11.6	
B34416		July 21, 1904	10	9.6	
B24292		Oct. 2, 1899	11	10.9	

The above plates show a change of about 3.4 magn.
Est. limit. magns. 9.5 to 12.9. 11 plates 1893 – 1908.5

Variability confirmed by L. D. Wells. W. P. F.

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1906phae.proj..819F

April 6, 1910.

Exam. of plates to det. amt. of var. in No. 15566
Def. Md. var. on B 39361. CWM. -42°15413 R.A. 21h 14m 58s Dec -42° 29'.8 (1875) 10,0
21 16 35 -42 23.5 (1900).

Plate	Date.	Ef.	Est.	
B39361 5p.	July 25, 1908	129m	10.8 Md	
B15053	Oct. 31, 1895	10	11.6	C.S. marked.
B32067	June 29, 1903	57	11.8	ft-C.S. marked.
B16812	July 11, 1896	16	10.4	
B16666	July 3, 1896	12	10.3	
B26137	Sept. 14, 1900	11	10.4	
B23224	June 29, 1899	14	12.9	
B33749	May 12, 1904	10	11.8	
B20694	Nov. 3, 1897	11	12.0	
B6283	June 7, 1891	10	10.9	
B17809	Nov. 10, 1896	15	< 13.0	
B22102	Nov. 2, 1898	11	< 13.0	
B36176	June 12, 1905	10	< 13.5	
B20367	Sept. 15, 1897	12	< 13.5	
B30598	Sept. 20, 1902	10	< 13.0	
B28315	Aug. 24, 1901	11	13.3	
B4195	Sept. 11, 1889	10	12.3	
B26617	Nov. 17, 1900	10	12.8	
B6039	May 22, 1891	10	< 12.4	
B37504	May 29, 1907	10	13.5	
B37938	Aug. 7, 1907	60	< 13.5	

The above plates show a change of about 3.2+ magns.
Est. limit. mags 10.3 to < 13.5. No. pl. 20. 1889 - 1908.
Variability confirmed by L. D. Wells.

W.P.F.

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1906phae.proj..819F

April 6, 1910.

Exam. of plates to det. amt. of Change in No. 5801
Sp. M'd, var., on B 33791 BD +40° 5026. RA 23h 7.m9 Dec. +40° 0'.4 (1855) 90.
23 10.0 +40 15 (1905)

Plate	Date	Exp.	Est.	Plate	Date	Exp.	Est.
(33791 sp.	Jan. 12, 1906	60m	8.1	M AC 2241	Jan. 25, 1902	60m	9.2
l 23376	Aug. 17, 1899	27	9.0	AC 6922	Stor. 1, 1905-	65	9.9
l 16454	Stor. 3, 1896	16	9.0	AC 5744	Dec. 18, 1904	52	10.0
l 21076	Aug. 16, 1898	21	9.3	AC 1892	Oct. 21, 1901	60	9.3
l 18546	Aug. 13, 1897	12	9.2	AC 7857	Sept. 28, 1906	65-	8.8
l 31117	Stor. 8, 1903	15-	9.4	AC 9547	June 13, 1908	61	9.3
l 13147	July 30, 1895-	13	9.3	AC 7820	Sept. 17, 1906	81	9.2
AC 10848	Sept. 30, 1909	64	9.6	AC 10098 ~~9510~~	Dec. 26, 1908 ~~June 2, 1908~~	69 ~~60~~	9.2
AC 1985-	Stor. 20, 1901	60	9.3	AC 6864	Oct. 21, 1905-	66	10.0
AC 5374	Oct. 16, 1904	78	9.0	AC 4178	Stor. 8, 1903	70-	9.7
AC 9040	Dec. 2, 1907	66	9.5-	AC 2979	Stor. 7, 1902	67	9.5-
AC 5174	Aug. 24, 1904	75-	9.2	AC 8700	Aug. 15, 1907	78	9.2
AC 396	Aug. 15, 1899	70	8.5-	AC 10851	Sept. 30, 1909	60	9.3
AC 5092	July 21, 1904	55	9.6	AC 9058	Dec. 11, 1907	75-	9.5-
AC 4276	Stor. 25, 1903	108	9.5-	AC 3785	July 26, 1903	61	9.2
AC 8717	Aug. 25, 1907	65-	9.2	AC 2909	Oct. 19, 1902	61	9.4
AC 2867	Oct. 7, 1902	125-	9.4	AC 7027	Stor. 21, 1905-	87	9.7
AC 11210	Dec. 27, 1909	60	9.6	AC 8799	Sept. 26, 1907	68	9.6
AC 6709	Sept. 22, 1905-		10.0	AC 8938	Oct. 30, 1907	69	9.7
AC 1833	Oct. 5, 1901	102	9.3	AC 8683	Aug. 12, 1907	60	9.3
AC 10738	Aug. 21, 1909	60	9.1	AC 5285	Sept. 26, 1904	60	9.1
AC 8877	Oct. 16, 1907	54	9.7	AC 9870	Stor. 1, 1908	60	8.9
AC 3092	Dec. 23, 1902	72	9.9	AC 6840	Oct. 14, 1905-	66	10.0

The above plates show a change of about 1.5 magn. Est. limit. magn. 8.5-10.0
Nov. 45. 1895-1909.

Variability Confirmed by L. D. Wells.
Found independently on AC Plates by A. J. Cannon.

W. P. F.

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1906phae.proj.819E

November 26, 1910

Examn. of A.C. & A.M. plates for variability of +3° 330. See letter of R.G. Aitken Nov. 17, 1910.

An examination of this star on about forty plates (I.C. and A.M.) shows a small variation of about 0.35 magn. which seems to be real and not photographic. This change was confirmed by E.E. Barnard.

W.P. Fleming.

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1906phae.proj..819F

Exam. of plates for Comp. Star "b" - R W Sagittarii, 190819.

Plate	Date	Ep.
AM 919	July 16, 1901	437 mv
AM 992	July 19, 1901	61
AM 994	Aug. 13, 1901	301
AM 1433	July 8, 1902	445
AM 2143	July 20, 1903	395
AM 2745	June 13, 1904	484
AM 3677	June 30, 1905	464
AM 4410	July 11, 1906	542
AM 4908	June 7, 1907	60
AM 5627	July 5, 1908	475
B 9552	June 7, 1893	60
I 20612	April 3, 1898	16

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1906phae.proj..819E

January 6, 1911.

Exam. of plates for faint star in Region of R R Persei 022150.

(uncharted 12.0 observed 2½ times further from the var. than 13.2 is, ↑ in same direction.
See Letter of D. P. Todd.

Plate	Date	Ecc.
I 2146	Oct. 31, 1890	10
I 3209	March 1, 1891	12
I 5267	Dec. 19, 1891	16
I 9295	Aug. 22, 1893	15
I 15790	Aug. 27, 1896	10
I 15976	Sept. 20, 1896	10
I 16692	Dec. 7, 1898	12
I 18493	Aug. 12, 1897	16
I 18510	Aug. 12, 1897	13
I 21740	Nov. 21, 1898	10
I 21760	Nov. 23, 1898	11
I 22278	Feb. 1, 1899	61
I 23527	Sept. 15, 1899	10
I 24565	Feb. 6, 1900	18
I 27676	Oct. 3, 1901	19
I 29683	Dec. 18, 1902	18
I 33507	Oct. 7, 1905	21.

January ~~27~~ 28, 1911.

Plate	Date	Ecc.	
MC 861	Jan. 12, 1911.	20.	Too poor to show on either star, or star ^
MC 868	Jan. 16, 1911.	20.	0.4 faintr than star. Magn. 13.2. (W.P.F.)

0.3 faintr than Magn. 13.2 (E.F.L.)

~~I 33507.~~ An examination of the above plates shows a faint star approximately in the position indicated by D.P. Todd. ~~In all that~~ It appears on all the plates sufficiently good to show such a faint star, and when visible is always about 0.4 fainter than ~~13.2~~ the star whose magnitude is 13.2. It is probably a red star (W. P. Fleming.
as the image on I 33507 is smaller than others of the same brightness).

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1906phae.proj..819F

January 9, 1911

Nova Lacertae.

Plate	Date	Exp.	Est.	Rem.
F 31044			R 0 35	35 1 bz. 34.
B 1974	Dec 1 1887	2h 23	33 3 2 35	35 2 34 hazy slightly diffuse
MC 841		15		35 1 34
MC 845		60		35 2 34
MC 846				35 2 34

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1906phae.proj..819F

Selection of Sequences in Harvard Standard 143

Regions. Br. stars selected on Dc or Am plates; marked on them and not recorded.
Faint stars selected on Dc or MC plates. Marked on paper prints recorded here and
intervals estimated. Sequences selected and spectra classified by W. P. Fleming. Recorded
by E. C. Pickering, and selection checked 12 when questioned. W.P.F. January 26, 1911.
January 12, 1911.

(For br. stars see B 23 p 4.)

Cent. of interval of stars in sequence

C2 MC 834		C5 MC 116	
13	3	13 (b)	4
14	1	14 (3)	3
15	3	15	2
16	2	16	4
17	3	17 (b)	1
18	3	18 a	4
19	4	19 b	3
20	2	20 c	5
21 a	4	21 d	4
22 b	2	22	4
23 c	3	23 e	3
24 d	2	24	4
25	4	25	1,5
26 e	1.5	26	2.5
27	4	27	3
28	1,5	28	3
29	4	29	4
30	4	30	3
31	3	31	2
32	2	32	2.5
33	2	33	5.25
34			

Stars 32, 33 not marked on prints or on original plates. Prints were measured. New stars 32, 33, 34 selected by H.S.L. May 19, 1915

Ink used when it is required in making charts

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1906phae.proj..819F

January 13, 1911.

Color intensities of exposures by W. F.

	C6 MC 121	C8 MC. X 317
20	4	18a 3
21	3	19 2.5
22	4	20 2
23	4	21 3
24d	3	22 c 2
25	2.5	23 b 1.5
26	3	24d 4
27	4	25e 2.5
28	2.5	26 2
29	3	27 3
30	2	28 2
31	2.5	29 3.5
32	2	30 2.5
33	2.5	31 2
34	3	32 2
35	2.5	33 2.5
36	2 a 7650 .1	34 2
37		35 2
		36 1.5 a 7679
		37

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1906phae.proj..819F

January 13, 1911.

marked on I 1363.

(For br stars see Bk 23, pp. 5)

4 37 C9 McC475

13	3	
14	4	
15	2.5	
16a	6	
17	4.5	
18 b	2	
19	4	
20	3	
21	2.5	
22	2	
23	2	
24	3.5	
25	2	
26	2	
27	4	
28	2.5	
29	2	
30	2.5	
31		
32		
33		

C3 McC157.

16 (P)	2.5	+14	822	94
17 (6)	2.5	+14	828	92
18 (10)	3	+14	830	95
19	6	"	"	
20 (2)	1.5	+15	731	93
21 a	2	"	"	
22	4 ~~2.5~~	"	"	
23	1.5	"	"	
24	3	+14	827	94
25 b	3~~4~~	"	"	
26 c	3.5	"	"	
27 d	2	"	"	
28 e	3.5	"	"	
29	2.5	+14	829	95
30	2.5	"	"	
31	2	"	"	
32	1.5	"	"	
33				

See also 7867

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1906phae.proj..819F

Jan. 12, 1911.

C11. Q 8104.

16	3
17	2.5
18	2.5
19 a	2 a
20	3
21	3.5
22 b	2
23	3
24 c	2
25 d	4
26 e	2
27	2
28	4
29	2
30	2.5
31	1.5
32	3
33	2
34	2.5
35	2
36	1.5
37	2
38	1.5
39	1.5
40	

C12 Q 8100

13	7.5	0
14 (4)	2.5	7.5
15		5.0
16	3.5	10.5
17	2.5	14.0
18	2.5	16.5
19	4	19.
20	2	
21	4	
22 c	1.5	
23 b	3	
24 d	1.5	
25 e	2	
26	4.5	
27	2.5	
28	3.5	
29	2	
30	2	
31	2.5	
32	2	
33	2	
34		

39 40
38
39
33

C11

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1906phae.proj..819F

Jan. 16, 1911. marked on I 29177

B1

14(b)	3.5	0
15	4	3.5
16 (10 −1.5)		7.5
17 (8)	0	6.0
18 a	4	7.5 ~~9.0~~
19	2	
20 c	3	
21	3	
22	2.5	
23	4.5	
24	4	
25 d	3	
26	4.5	
27	2	
28	25	
29	25	
30	4	
31	1.5	
32	3.5	
33	1.5	
34	2	
35		

B1

1	+44° 304 (a)	7.77	2	a	00	7.77	2
2	+46 363	7.41		a5	17	7.58	
3	+45 404	6.66		G5	91	7.57	
4	+46 334	..		a5	17	..	7.7
5	+44 310	..		a	00	..	8.5
6	+44 296 (4)	8.22	4	a	00	8.22	4
7	+44 311	..		F	32	..	8.5
8	+44 312 (3)	8.12	03	K	117	9.29	0
9	+45 333	8.97		a	00	8.97	
10	+44 297	..		a	00	..	9.2
11	+44 299 (5)	8.57	8	G5	91	9.48	9
12	+44 306	..		a	00	..	9.0
13	+44 300 (6)	8.92		K	117	10.09	
14	+44 303 (7)	9.19		K	117	10.36	
15	+44 291	9.49	52	G5	91	10.40	10.43
16	+44 301 (10)	10.65		a?	00	10.65?	
17	+44 292 (8)	10.08		G7	99	11.07	
18	.. " (a)			a			
19	.. .			a			
20	.. ..						

also 45° 359, +44 322

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1906phae.proj..819F

Jan. 17. 1911.

		B3				B3	Marked on I 28205
16		2.5	1	+46 1205	5.96 6.03	K 117	7.13 7.20
17		3.5	2	+46 1202	6.48	K 117	7.57 7.65
18		2.0	3	+43 1615	7.27	A5 17	7.44 ~~7.27~~
19		2.5	4	+44 1528 (3)	~~7.58~~ 7.60	G 71	8.31 8.29
20	a	2.0	5	+44 1525	6.80 7.73	K 117	7.90 7.97
21	b	3.5	6	+43 1608	..	A 00	.. 8.0
22		4.0	7	+45 1365	..	A 00	.. 8.4
23		3.0	8	+44 1520 (4)	8.68 9	G 71	9.40 ~~9.09~~
24		2.0	9	+44 1533 (5)	~~8.37~~ 8	G5 91	9 ~~9.28~~ 8.5
25	c	2.5	10	+44 1524 (7)	9.48 4	A 00	4 9.43 9.1
26		2.0	11	+44 1517	9.32	~~G5~~ 91	32 9.64 ~~10.28~~
27	d	~~1.5~~ 2.0	12	+44 1531 (8)	9.06 12	K 117	10.29 ~~10.23~~
28		~~2.5~~	13	+44 1519 (6)	9.39 40	K 117	7 10.56
29		2.5	14	+45 ~~1315~~ 1351	..	Ma 1.68	
30		2.5	15	+45 1352 (2)	9.80	K 117	10.97 9.3
31		2.5	16	+45 1350 (1)	9.76 77	A 00	7 9.76
32		2	17	+44 1534 (10)	10.43 52	A 00	10.52 ~~10.43~~
33		3	18	+44 1535 (9)	9.65 6	K 117	10.83 ~~9.65~~ 9.3
34		2.5	19	.. ..	..		..
35		2.5	20	.. ..	a		
36			21	.. ..	b		

also +45 1331 +44 1508 +44 1509 +46 1192 +46 1197

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1900phae..proj..819f

Jan 18, 1911.

	B4				B4	marked on I 28208	
18 (10)	3.0	00		1	+45 1726 7.13 (6) A2 07 7.49 (23)		
19 (6)	4.5	3.0		2	+43 1915 7.37 A5 17 7.54		
20 b	3.0	5.5	7.5	3	+45 1708 6.62 K 117 7.79		
21 (9)	-2 00	7.5	6.0	4	+44 1873 7.62 G 71 8.33		
22 a	3.0	5.5	7.5	5	+42 2016 7.81 F2 (40) 32 (8.21) 8.18		
23 c	2.5	5.5	10.5	6	+45 1688 7.52 G2 79 8.31		
24	2			7	+43 1921 " A2 (5) 17 "		8.1
25 "	4			8	+45 1717 (1) 7.84 K 117 9.01		
26 d	3			9	+44 1861 (8) 8.02 K 117 9.19		
27	2.5			10	+45 1713 (4) 9.00 (8) F8 (5.51) 6.2 9.59		9.0
28 e	2			11	+45 1718 " G "		9.0
29	2			12	+45 1715 (3) 9.27 (82) K 117 10.39		8.8
30	3.5			13	+45 1719 (2) 8.84 (3) K 117 10.07		8.5
31	3.0			14	+45 1720 (5) 9.92 (10.00) G 71 9.92 (10.71)		9.0
32	3.			15	+45 1722 (7) 10.06 (10.14) K? 117 10.06 (11.31?)		9.5
33	2			16	+45 1714 " " "		9.5
34	2			17	" " " "		-
35	15			18	+44 1860 (10) 10.27 (10.32) " 10.27 (32)		9.4
36	2.5			19	+45 1721 (6) 10.85 (10.93) " 10.85 (93)		9.5
37				20	" " (b) " "		"
				21	+44 1862 (9) 11.31 (9) " 11.31 (9)		9.3
				22	" " (a) " "		
				23	" " (c) 11.31 " 11.31		

also +45 1700 9.97 K 117 11.14

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1906phae.proj..819F

Jan. 19, 1911

	A1		A1					
14	3.5	1	+74 ~~+74~~ (4)	7.96	A5	17	~~8.13~~ 8.08	
15	2.5	2	+74 184 (3)	7.~~32~~ 28	F5	51	7.~~83~~ 79	
16	2.0	3	+73 210	6.72	K	117	7.~~63~~ 89	
17	3.0	4	+74 186	6.86	K	117	8.03	
18 b	2.0	5	+73 220	..	A	..	..	8.8
19 a	3.0	6	+74 196 (6)	~~8.67~~ 8.62	A8	26	~~8.67~~ 8.93 8.98	
20	2	7	+74 181 (7)	8.6~~1~~ 8	A~~2~~	07	8.7~~8~~ 8 8.8	
21	4	8	+74 188 (5)	8.5~~8~~ 2	A	00	8.5~~8~~ 2	
22	2	9	+75 167	8.62	G1	71	9.33	
23 c	4	10	+7~~5~~ 6 150	9.27	G2	79	10.06	
24	2	11	+75 169	9.17	F	32	9.49	
25	1.5	12	+74 190 (10)	9.~~98~~ 97	A1	00	9.~~99~~ 97	
26	3.5	13	+74 185	9.~~36~~ 10	G5	91	10.2~~7~~ 1	
27	1.5	14	.. ..	..	A	..	..	
28	1.5	15	+74 189 (9)	10.~~28~~ 5	A	..	10.~~28~~ 5	9.5
29		16	+75 163 (2)	9.~~53~~ 49	G?	71	10.~~24~~ 19?	9.4
~~30~~		17	.. ..		A?	..	..	
31		18	.. .. (b)		..	..	..	
		19	.. .. (a)		..	..	..	

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1906phae.proj..819F

Jan. 20, 1911.

	B2				B2	marked on I 28203
16	4.5	00	1 +45° 881	7.07	a o 7.07	
17	2.5	4.5	2 +43 894 (*8)	..	a ..	7.7
18	2.0	7.0	3 +44 826	..	a ..	7.7
19	1.5		4 +44 862	7.64	b2 79 8.43	
20	2.0		5 +43 916	..	a	8.1
21	2.5		6 +43 912	..	b ..	8.5
22	2.5		7 +45 887	7.69 7.77	b 32 8.01 71 8.48	
23	(10) 2.5		8 +45 868 (2)	8.85 8.48	a o 8.85 8.48	
24	3.5		9 +44 856 (3)	9.02 8.66	a o 9.02 8.66	
25	2.5		10 +45 886	9.01 8.97	a o 9.01 8.97	
26	c 1.5		11 +45 8.76 (1)	8.51 8.48	K 117 9.65	
27	d 2.0		12 +44 863 (5)	9.50 9.48 9.01	a o 9.48 9.01	
28	e 2.5		13 +44 8.53 (4)	9.28 9.01	a o 9.28 9.01	
29	2.0		14 +44 8.55	..	a o ..	9.2
30	3.0		15 +45 871	..	a ..	9.5
31	4.0 ~~4.5~~		16a +45 870	..	K ..	9.2
32	2.0 ~~3.0~~		16b +44 860	10.18	a? 10.18?	9.4
33	1.5		17 +44 861 (6)	9.85	K 117 11.02	9.2
34	1.5 ~~2.0~~		18 +45 880	..	.. ..	9.5
35			19 +44 847 (9)	10.86	a 50 10.86	9.5
~~36~~			20		..	
~~37~~			21		..	
~~38~~			22		..	
			23 +44 858 (10)	10.74	.. 10.74	9.5

*Corrected March 31, 1914

(8) double
(7)
(9)

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1906phae.proj..819F

Jan. 24, 1911.

	B6				B6					marked on I 28550
15		3.5	00		1	+45	2214	6.84	A8	23 (6) 7.10 7.07
16	(8)	3.0	3.5		2	+43	2422	6.70	F5	51 7.21
17	(5)	1.5	6.5		3	+43	2417	6.82	A	0 6.82
18	(7)	2.5	8.0		4	+44	2376	5.92	~~G5~~ K	~~91~~ 117 7.09 6.83
19		1.0	10.5		5	+42	2531	7.24	~~G2~~ F	~~79~~ 32 7.56 8.03
20		4.0	11.5		6	+45	2229	7.78	~~G2~~ G5	~~79~~ 91 8.69 8.57
21		4.0	15.5		7	+45	2228	~~8.02~~ 7.98	~~G2~~ G2	~~79~~ 71 8.69 8.81
22		2.5	19.5		8	+45	2209(1)	8.11	G5	91 ~~8.98~~ 9.02 +.8
23		1.5	22.0		9	+45	2218(2)	8.77	G	71 9.48
24	c	1.0	23.5		10	+44	2393	"	G2	79 " 9.0
25	d	1.5	24.5		11	+45	2212(3)	9.15	G5	91 10.06 10.11
26	b	3.5	26.0		12	+44	2385(9)	9.26	G5	91 10.17 8.7
27		2.5	29.5		13	+45	2210(4)	9.90	G	71 10.61 9.2
28		2.5	32.0		14	+45	2216(6)	10.51	G	71 11.22 9.3
29		2.0			15	+44	2388(10)	10.48	G2	79 11.27 9.5
30		2.0			16	+45	2215(8)	10.34	G5	91 11.25 9.5
31		3.5			17	+45	2211(5)	10.14	G5	91 11.05 9.2
32		2.5			18	+45	2219(7)	10.75	"	" " 9.4
33		2.5			19	+44	2384	11.28	"	" " 9.5
34		2.0			20	"	"	(a)		
35		3.0								
36		2.5								
37		1.0								
38										

(a) +44° 2389 9.48 and +44 2368 9.07.

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1906phae.proj..819F

Jan. 25, 1911.

		A2				A2			Marked on I 28288	
16	(8)	2.0	0.0	1	+75° 469 (1)	6.36	F5	51	6.87	6.7
17	(6)	2.5	2.0	2	+74 476	6.78	F5	51	7.29	6.7
18		2.5	5.5	3	+73 549	6.55	G5	91	7.46	6.5
19	a	2.5	8.0	4	+72 565	6.44	G5	91	7.35	6.5
20	(9)	4.5	5.5	5	+73 561	7.44	F5	51	7.95	7.0
21	(10)	2.5	10.0	6	+73 559	7.39	A	0	7.39	7.2
22	c	2.5	12.5	7	+74 484	7.58	K F5	117 91	8.75 8.49	7.2
23	d	2.0	15.0	8	+74° 485	..	F	32	..	8.6
24		3.0	17.0	9	+75 467 (2)	8.62	F5	51	9.09 9.13	8.6 8.5
25		3.5		10	+74° 552	7..	F	32	..	7.6
26		3.0		11	+73° 550	..	G2	79	..	9.0
27		3.0		12	+75° 465 (4)	9.44	F	32	9.76	9.4
28		3.5		13	+75° 466 (3)	9.14	K	117	10.31	9.1
29		2.5		14	+75° 464 (5)	9.96	F?	32	10.28?	9.5
30		2.0		15	+74 481 (7)	10.74	A1	0	10.78	9.5
31		2.0		16	+75° 463 (8)	..	G5? K	91	..	9.5
32		1.5		17	+75° 468 (6)	10.10	K?	117	11.27?	9.5
33		2.5		18	" "		G5?	91	..	"
34				19	" " a		A?	00	..	"
~~35~~				20	" " (9)		..			"
~~36~~				21	" " (10)		..			"
37										

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1906phae.proj..819F

B7 Jan 27, 1911.

21	(5)									
22		2.5	00							
23	a	2	25							
24	d	4	4.5							
25	~~#~~	2.5	8.5							
26	#b	20	110							
27	e	1.5	130 ~~140~~							
28	c	3.5	14.5							
29		2.0	18.0							
30		2.5	20.0							
31		2.0	22.5							
32	Carbon	2.5	24.5							
33		1.5	27.0							
34		3.5	28.5							
35		1.5	30.0							
36		3.5	33.5							
37		4.0	37.0							
38			38.0							
39										

B7 marked on I 9000

1	+45	2521	6.65	F	32	6.97			
2	+45	2509	7.44	B5–~~23~~ 17		7.21 7			
3	+46	2293	5.77	K5p	143	7.20			
4	+45	2573	7.64	F2	40	8.04			73
5	+47	2491	7.28	G	71	7.99			
6	+46	2339	..	A	00	..			7.8
7	+45	2524(1)	8.02 4	A	00	8.02 4			
8	+44	2698 5	6.94	G8	~~91~~ 71	~~7.85~~ 7.65			
9	+46	2295	7.62	G5	~~91~~ 71	8.53			
10	+45	2517	..	A	00	..			8.6
11	+44	2703(6)	8.43	A?	00	8.43?			
12	+45	2511(2)	7.98	M6					
13	+45	2531	8.30	K	117	9.47			8.0
14	+44	2692	..	F	32	..			8.3
15	+44	2705	..	G5	91	..			9.0
16	+44	2697(7)	9.55	F?	32	9.87?			9.1
17	+44	2701(8)	9.92	F?	32	10.24?			9.4
18	+44	2693(10)	10.06	"		"			9.5
19	+45	2523(4)	9.78	K?	117	10.95?			
20	+44	2707(9)	10.21	K?	117	11.38?			9.4
21	+45	2522(5)	10.52	"		"			9.5
22	"	"							
23	"	"	(a)						
24	"	"	(d)						
25	"	"	(b)						
26	"	"	(c)						

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1906phae.proj..819F

Jan 3 & 4 1911.

		B9		B9	marked on I 34267
18	(10)	20	∞	1 +43 4298 7.04 a o 7.04	
19	(6)	4.0	20	2 +43 4258 7.01 a o 7.01	
20		2.5	6.0	3 +44 4185 6.45 K 117 7.62	
21		2.5	8.5	4 +44 4197 7.12 a o 7.12	
22		3.0	11.0	5 +45 4032 7.42 F 32 7.74	
23		~~2.5~~ 1.5	14.0	6 +45 4051 7.97 a o 7.97	
24		~~2.5~~ 1.5		7 +43 5 4047 6.80 K 117 7.97	
25	e	2.5		8 +45 4065 ~~8.42~~ 8.38 a o ~~8.42~~ 8.38	
26	a	~~3.0~~ 1.5		9 +43 4288 7.34 G2 798 8.13	
27	c	3.0		10 +44 4224 (3) 8.90 a o 8.90	
28	~~b~~ c	2.0		11 +44 4217 (2) 8.93 G0 71 9.64	
29	b	2.0		12 +44 4189 .. a ..	8.8
30		3.0		13 +45 4035 ~~9.32~~ 9.40 a o ~~9.32~~ 9.40	
31		2.5		14 +44 4209 (1) 798 K 117 9.15	8.3
32		2.5		15 +44 4216 (9) 9.62 a ∞ 9.62	9.5
33		2.0		16 +44 4215 (5) 9.49 a ∞ 9.49	9.1
34		1.5		17 +44 4202 (7) 9.67 a ∞ 9.67	9.3
35		2.5		18 +44 4223 (10) 1001 Ma? 168 1169?	9.5
36				19 +44 4218 (6) 962 G? 71 10.33?	9.1
				20 +44 4205 .. G5	9.1
				21	..
				22 +44 4207 1004 K? 117 11.21?	9.4
				23 .. .. (d)	

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1906phae.proj..819F

~~February 1, 1911.~~ Marked on I 35316

Mags.						
		35				
6.7	1	+43° 2182	6.83	RG2	79	7.62
6.8	2	+45° 1983	7.47	RA5	17	7.64
7.8	3	+44° 2162	7.91	sf	32	8.29
8.0	4	+45° 1985	..	RA5	17	..
7.8	5 (1)	+45° 1996	8.47	sf	32	8.72
6.8	6	+43° 2187	8.10	RG5	91	9.01
8.7	7	+44° 2156	..	RA	32	..
8.0	8 (2)	+45° 1991	8.38	sG5	91	9.29
8.3	9 (8)	+44° 2160	8.87	sG	71	9.58
8.5	10 (9)	+44° 2159	9.07	sf	32	~~9.39~~ 9.56
8.0	11	+43° 2184	..	K	117	..
9.0	12 (3)	+45° 1994	9.57	sG5	91	~~10.48~~ 10.61
9.5	13 (6)	+45° 1989	10.54	f	32	10.86
9.5	14 (5)	+45° 1988	10.59	f	32	1.091
9.2	15 (10)	+44° 2161	10.42	f	32	10.74
9.3	16 (4)	+45° 1995	10.46	f?	32	10.78?
	17	~~(7) +45° 1992~~				
	18	" "				
	19	" "				

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1906phae.proj..819F

February 1, 1911.

B5 BmC 195

14	(5)	1.5	5.0
15	(6)	2.5	1.5
16	(4)	2.0	4.0
17	~~(4)~~	2.5	6
18		2.0	8.5
19	a	2.5	
20		1.0	
21	b	2.5	
22		1.5	
23		2.0	
24	e	1.5	
25	c	1.5	
26	d	1.5	
27		3.5	
28		3.5	
29		2.5	
30		2.0	
31		2.0	
32		2.0	
33		1.5	
34		1.0	
35		2.0	
36			

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1906phae.proj..819F

February 2, 1911. Marked on I 23374

		α 3			δ D	
7.5	1 v	+72° 934	7.70	lα	0	7.70
6.8	2 v	+72° 943	7.11	Lα8	26	7.37
8.5	3 v	+74° 829	7.77 (8)	sα2	07	7.84 (5)
6.7	4 v	+73° 897	6.86	lK	47	7.57 8.03
6.0	5 v	+76° 771	~~6.43~~	~~[illegible]~~	117	7.60 ~~8.11~~
8.0	6 v	+75° 726	8.12	G	71	8.83 ~~9.03~~
7.2	7 v	+75° 718 ~~726~~ 721	~~7.32~~ (29) ~~8.57~~	sK 5	143 47	8.66 8.49
8.8	(3) v (2)	+75° ~~[illegible]~~ 721 ~~747~~	8.80	F	71	9.51
8.5	9 (2) v	+75° 717	8.95	F	00	8.95
8.0	10	+73° 900	..	R F5	51	..
8.5	11 (6) v	+74° 845	8.92	R F	32	9.24
9.1	12 ~~(4)~~ v	+75° 716	9.32 (3)	G?	32	9.64
9.0	13 ~~(1)~~ v	+75° 723	9.32 (27)	G5	91	10.23 (18)
9.2	14 v	+75° 724	9.42	G	71	~~10.19~~ 10.33
9.4	15 (7) v	+74° 844	9.74	R F?	32	10.06?
9.4	16 (5) v	+75° 719	9.66	R F?	32	9.98?
9.5	17 (8) v	+74° 843	10.26	..	..	..
	18 ~~(9)~~	.. ..		..		..
	19	.. ..		..		..
	20	.. ..		..		..
	21 a	.. ..		..		..

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1906phae.proj..819F

February 2, 1911.

		a 3	
16	(5)	2.0	0.0
17	(8)	2.0	2.0
18		3.5	4.0
19		2.5	7.5
20		10	10.0
21		3.5	11.0
22		2.5	14.5
23		2.0	17.0
24	a	2.0	19.0
25	b	2.5	21.0
26		2.5	23.5
27		2.0	26.0
28		1.5	28.0
29		2.0	29.5
30		2.5	31.5
31		1.5	
32		2.0	
33		3.5	
34		1.5	
35		2.5	
36		1.5	
37		(30) (15)	
38		4.5)	
39		(10) ?	
40			

Extends 16 to 37 from Ph.C. 477

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1906phae.proj..819F

February 1, 1911. marked on I30221

B 8

7.2	1		+42° 3562	7.29	la	oo	7.29
7.9	2		+43° 3422	..	4a	oo	..
7.9	3	(1)	+45° 3038	7.5	la	oo	7.5
8.2	4		+45° 3044	..	sB	-31	..
8.0	5		+44° 3349	..	sa0	oo	..
8.0	6	(3)	+44° 3340	8.31	sa	oo	8.31
8.6	7		+45° 3056	..	sa	oo	..
8.8	8	(2)	+45° 3045	8.94	~~sbc~~	oo	8.94
8.4	9	(5)	+44° 3332	8.94	sa	oo	8.94
8.5	10		+45 3061	8.78	rF	32	9.10
9.1	11		+45 3053	..	ra	oo	..
9.0	12	(6)	+44° 3329	9.49	ra	oo	9.49
9.2	13		+44° 3334	9.77	F	32	10.09
9.3	14	(7)	+44° 3336	9.86	ra	oo	9.86
9.5	15		+44° 3323	..	ra	oo	..
9.4	16	(8)	+44° 3331	10.22	ra?	oo	10.22?
9.5	17		+44° 3319	10.19	ra	oo	10.19
9.5	18	(10)	+44° 3326	10.70	..		
9.5	19	(9)	+44° 3325	10.45	..		
	20	*	" "		..		
	21	b a	" "		..		
	22	b	" "		..		
	23	c	" "		..		

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1906phae.proj..819F

February 2, 1911.

B 8

17		3.5	50
18	(a)	2.0	35
19	(g)	3.5	55
20	f	3.5	90
21	fa	1.0	125
22	b	3.0	135
23	c	2.0	165
24		2.5	185
25	~~d~~ e	1.5	210
26	d	2.0	225
27		2.0	245
28		3.0	265
29		2.5	295
		2.0	
30		~~3.0~~	320
31			340

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1906phae.proj..819F

February 4, 1911. marked on B22109

4 9.6							
7.0			−16° 206	D	7.30	Fz 40	7.70
7.2	15		−13° 247		7.41	F 32	7.73
7.0	2		−16° 177		7.30	G 5, 91	8.21
7.5	3		−13° 196		7.63	G 71	8.34
7.0	4		~~−14° 202~~		~~7.51~~	~~G 2 79~~	~~8.30~~
6.8	5		−14° 203		7.51	G2 79	8.30
8.0	6		−14° 225		7.67	Kas ..	..
8.0	7		−16° 200		..	F? 32	..
8.2	8	(1)	−14° 191		8.56	F 32	8.88
7.2	9	(2)	−14° 216		8.32	G 71	9.02
8.5	10		−15° 210		8.28	G5 91	9.18
8.6	11	(3)	−15° 191		9.26	G 71	9.97
8.5	12		−14° 252		9.47	F? 32	9.79?
9.0	13	~~(6)~~	~~−15° 194~~ −15° 199		..	G 71	..
8.5	14	(6)	−15° 199		9.63	F5 51	10.14
9.2	15	(4)	−15° 196		9.40	K? 117	10.57?
9.5	16		−15° 187		.	F 32	..
9.6	17	(8)	−15° 190		..	.. ..	..
9.8	18	(9)	(8) −15° 193		11.08	.. ..	..
9.9	19	(10)	(9) −15° ~~202~~ 194		11.20	.. ..	..
9.4	20	(9)	(10) −15° 189		11.14	.. ..	..
	21		(9) −15° 195		10.96	.. ..	..
	22		" "				
	23	C	" "				
	24		" "				

Also −15° 200, ~~210, 211~~ −14° 172, 173.

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1906phae.proj..819F

Autumn 1906

D 1

19		20	00
20		3.5	20
21		3.0	57
22		20	
23		20	
24		25	
25		30	
26	(d)	25	
27	(b)	3.0	
28		3.5	
29		25	
30	e	20	
31		1.5	
32	e	3.0	
33		2.0	
34		3.0	
35		20	
36		25	
37		30	
38		25	
39		20	
40			

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1906phae.proj..819F

February 7, 1911.

B12210 marked on B+1884

3 55±

			D2	Ptm.		Ptg.	
6.5	1	-14° 604	G	7.16	71	7.87	✓
7.6	2	-14° 601	l 72	"	"		✓
6.3	3	-16 587	K	6.50	117	7.57 (6 7)	✓
8.0	4	-14° 611	a2	8.27	07	8.23 (34)	✓
6.9	5	-14° ~~625~~ 576	g5	7.42	91	~~8.96~~ 8.23	✓
7.8	6	-14° 591 ~~-14° 576~~	K x g5?	"	"		
8.2	7	(1) -14° 598	g2	8.16	79	~~9.00~~ 8.95	✓
7.7	8	~~-14° 603~~ ~~-15° 574~~	l g5	7.90	91	~~9.00~~ ~~8.87~~ 8.61	✓
8.0	9	(4) -15° 532	K l g5?	8.70	117	9.87	
8.3	10	-16 586	x f	"	"		
8.9	11	(3) -14° 592	G	9.28	71	9.99 10.07	✓
9.0	12	(6) -15° 535	l g2	9.22	79	10.01 ~~9.94~~	✓
8.8	13	(5) -15° 537	x ~~N~~ g?	9.68	71	10.39?	
9.4	14	-15° 544	x ~~g~~ f?	"	"		
9.7	15	(9) -15° 542	x g?	10.52	71	11.23?	
9.2	16	(7) -15° 539	x g5	10.01	91	10.92	
9.5	17	(8) -15° 536	G?	10.35	71	11.06? 1077	✓
9.8	18	(10) ~~-14° 609~~ -15° 534	1F?	11.30	32	11.62	
	19	a " "		"			
	20	c " "		"			
	21	d " "		"			

B39703

"

20

Also (2) -14° 589

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1906phae.proj..819F

February 7 1911

D2 S0

16	(7)	20	00
17	(8)	25	20
18	(10)	15	45
19	a	20	60
20	c	25	80
21	d	35	105
22		15	140
23	b	25	
~~24~~	e	20	
25		15	
26		35	
27		15	
28		30	
29		20	
30		15	
31		15	
32		30	
33		15	
34		20	
35		20	
36			

5 03

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1906phae.proj..819F

February 9, 1911. marked on B 20 343

D 3

7.1	✓	1	✓	-14°	1045	6.99	2	0	6.99
6.0	✓	2	✓	-16°	992	5.82	G5	91	6.73
7.0	✓	3	✓	~~-16°~~	~~991~~	~~5.80~~	~~G5~~	91	6.71
6.5	✓	4	✓	-17°	1001	6.60	A2	07	6.67
7.7	✓	5	✓	-15°	950	6.62	G5	91	7.53
~~8.7~~ 7.7	✓	6	✓	-15°	910	7.50 ~~6.62~~	~~G5~~	~~91~~	~~7.53~~
				-16°	991	7.44	A5	17	7.6×7
7.7	✓	7	✓			"	A F	32	"
7.0	✓	8	✓	-15°	903	7.72	F	32	8.04
8.0	✓	9	✓	-14°	1029	6.90 77	A K	117	7.94 ~~8.07~~
			(1)	-14°	1035	7.55	K2	1.27	~~8.88~~
8.5	✓	10	(2)	-14°	1025	8.54	A8	26	~~8.77~~ 8.80
7.5	✓	11	✓	-14°	1051	8.14	G5	91	9.05
7.5	✓	12	✓	-15°	938	7.60 44	K	117	8.67
						8.26	K	117	9.36
8.5	✓	13	(3)	-14°	1039	~~7.50~~	K	117	~~8.67~~
9.1	✓	14	~~(4)~~	~~-14° 1034~~	~~-15° 994~~	"	A G?	71	"
9.1	✓	15	~~(5)~~	~~-14° 1023~~	~~-15° 934~~	"	A G?	71	"
9.1	✓	16	(5)	-15°	934	9.93	A F	32	10.25
9.4	✓	17	✓	-15°	936	"	A F	32	"
9.9	✓	18	(10)	-15°	942	10.81	A	"	"
9.2	✓	19	(6)	-15°	940	9.91		"	"
9.5	✓	20	(8)	-15°	~~942~~ 937	10.34		"	"
9.4	✓	21	(7)	-15°	935	10.70		"	"
	✓	22	(9)					"	
	✓	23	a						

4	—	
2	10	
1	9	
3	13	
5	16	
6	19	
10	18	
7	21	
8	20	
9	22	

2 stars combined in one

2 stars combined in one

* No. 19 and fol. & Northern companion identify equally well with -15° 940. Perhaps they were obs. as combined in D M. W. P. F. April 17, 1911.

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1906phae..proj..819F

D3

18	(10)	3.5	8.0		21	(7)	1.5	2.0	7.5
19	(9)	2.0	3.5		23	a		3.0	9.5
20	(8)	2.0	5.6		24	b		1.5	12.5
21	(7)	1.5	7.5		22	(9)			14.0
22	(9)	4.0	9.0 ~~8.5~~ 13.0						
23	a	3.0	~~12.5~~						
24	b	3.0	~~16.~~						
22	(9)	2.5	14.0						
25	e	4.0	16.5						
26	d	2.5	17.0						
27		1.0							
28		2.5							
29		2.5							
30		2.0							
31		2.0							
32		2.5							
33		1.5							
34		2.0							
35		3.0							
36		3.0							
37		1.5							
38		2.0							
39									

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1906phae.proj..819F

February 10, 1911.

marked on B26671

D4

			-15° 1681	7.03		696	5 (5)	8.16 8.28
			-12° 1809	7.00		694	7 (1)	8.53
			-13° 1741	636 K		6.36	9 (4)	8.65
							18 (6)	9.57
7.2	✓	1	-15° 1671	7.04	a2 07	7.01	15 (3)	10.08
8.2	✓	2	-15° 1695	..	B5 -17	..	.. (7)	10.11
8.0	✓	3	-15° 1597	8.06	a0 00	8.06	16 (8)	10.16
7.5	✓	4	-15° 1657	7.25	75 51	7.76	.. (10)	10.20
8.5	✓	5 (5)	-15° 1629	8.35 28	B8 -07	8.28 1	18 (9)	10.31
8.7	✓	6	-14° 1688	8.36 5	a3 11	8.4 76	.. (2)	10.70
8.2	✓	7 (1)	-14° 1710	7.70	a2 95	8.61		
8.9	✓	8 (2)	-14° 1717	..	a	..		
8.0	✓	9 (4)	-15° 1617	6.97	K 117	8.14		
9.0	✓	10	-14° 1716	8.91 88	a 00	8.88 8.91		
9.2	✓	11	-14° 1714 ~~1636~~	8.91	a 00	8.91		
9.0	✓	12	-14° 1711	..	a95 91	..		
8.8	✓	13 (6)	-15° 1636	8.44	K 117	9.61		
9.8	✓	14	-14° 1701	..	a 00	..		
9.4	✓	15 (3)	-14° 1703	9.86	a5 32	10.18		
9.1	✓	16 (8)	-15° 1620	8.91 9.86 00	K 117	10.17 10.08		
..		17	" "	..	a 00	..		
9.8	✓	18 (9)	-15° 1634	10.23	a 00	10.23		
9.8	✓	19	-14° 1696	10.05	..	..		
9.8	✓	20	-14° 1699	..	..			
		21 a	" "					
		22	" "					
		23 c	" "					
		24 b	" "					

also 25 and 26(d) (2) (7) (10)

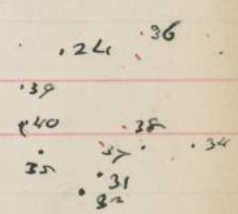
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1906phae.proj..819F

February 10, 1911

D4

	19		~~5.0~~
est 2	~~20~~		
McC220	21 (c)	3.0	~~0~~
	22	2.0	3.0
	23 (c)	2.5	5.0
	24 b	2.5	
	25	2.0	
	26 d	3.0	
	27 e	1.5	
	28 e	1.5	
	29	3.0	
	30	2.5	
	31	1.5	
	32	2.5	
	33	1.5	
	34	2.5	
est in	35	2.5	
a6294	36	1.5	
	37	1.0	
	38	1.5	
	39	2.0	
	40		



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1906phae.proj..819F

February 11, 1911.

marked on B 2.5159

D5

7.2	1	−16° 2701	7.08	F	32	7.40	8 (1)	8.66
~~8.3~~ 7.2	2	−14° 2757	7.26	F2	40	7.66	9 (2)	9.06
6.8	3	−15° 2712	6.58	G5	91	7.49	11 (60)	9.42
8.0	4	−14° 2772	~~7.56~~ 7.64	A3 1		7.75	10 (3)	9.42
8.1	5	−16° 2694	~~7.56~~	~~A3~~ 2 F2	40	"	12 (6)	9.91
8.3	6	−14° 2722	"	2 F?	32	"	14 (4)	1033
	~~7~~	~~−14° 2773~~					16 (5)	1070
8.3	7 (1)	−14° 2733	8.27	2 F	32	8.59	15 (8)	1076
8.5	8	−14° 2729	7.53	2 F	32	7.85	19 (7)	1099
8.4	9 (2)	−14° 2726	8.08	2 G	71	8.79	21 (9)	1211
8.5	10 (3)	−14° 2732	8.36	2 G?	71	9.07?		
8.6	11 (10)	−15° 2685	8.64	2 G2	79	9.43		
9.1	12 (6)	−14° 2738	9.26	2 F?	32	9.58?		
9.3	13	−15° 2689	"	2 F?	32	"		
9.1	14 (~~11~~)	−14° 2737 2734	9.17	2 G5	91	10.08		
9.7	15 (8)	−14° 2739	10.15	"		"		
9.1	16 (5)	−14° 2727	9.30	"		"		
9.5	17	−14° 2730	"	"		"		
9.5	18	−15° 2679	"	"		"		
9.6	19 (7)	−14° 2736	10.24	"		"		
	20 a	"	"	"		"		
9.8	21 (9)	−14° 2738	1059	"		"		

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1900phae.proj..819F

February 13, 1911

DS — A 6303

16	(5)	3.0	0.0
17		2.5	3.0
18		2.0	5.5
19	(7)	4.0	7.5
20	a	2.5	11.5
21	(9)	3.0	14.0
22	c	4.5	17.0
23		1.5	21.5
24		2.0	23.0
25		2.0	
26		3.5	
27	e	2.5	
28		1.5	
29	d	1.5	
30		1.5	
31		2.0	
32		2.5	
33		2.0	
34		1.5	
35		1.5	
36		2.0	
37		3.5	
38		1.5	
39		1.5	
40			.-35
41			

.-37

30 31

Stars 38, 39, 40, 41 are not marked on any plate or print. Here stars 38, 39, 40, 41, 42, 43 selected on A 6303 and MC 8279.

H.L.L. May 19, 1915

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1906phae.proj..819F

February 14, 1911. marked on B27202

D6

7.0	1	−12° −15° 3333	6.37 (52)	g2	79	7.16 (31)	
7.2	2	−13° 3321	7.05	F	32	7.37	7 (4)
7.0	3	−15° 3178	6.54 (62)	K	1.17	7.71 (9)	11 (6)
6.5	4	−15° 3174	6.16	Ma	1.68	7.84	19 (1)
8.0	5	−14° 3245	7.94 (88)	K	1.17	9.08 (5)	15 (4)
7.9	6	−15° 3206	7.90 (84)	F	52	8.13 (8) 8.16	18 (3)
8.2	7	(1) −14° 3263 ?	777	F	63	8.40	20 (2)
8.2	8	−14° 3237	..	g2	..	..	21 (4)
8.5	9	−14° 3255	..	F5	..	..	
9.0	10	−13° 3308	..	a8	..	..	
8.9 8.9	11	(6) −15° 3194	8.69	a5	26	8.95	
8.6	12	−14° 3266	..	g0	..	..	
9.1	13	−14° 3260	..	g5?	..	..	
8.6	14	−14° 3188 (15°)	8.56	K	117	9.73	
9.2 8.83	15	(7) −14° 3262 −15° 3199	..	K	117	..	
9.1	16	(7) −15° 3190	9.43	g?	71	10.14?	
9.2	17	−14° 3248	..	..	..	..	
9.7	18	(36) −14° 3256	..	..	..	..	
9.5	19	(5) −15° 3188	..	..	..	..	
9.4	20	(2) −14° 3252	10.18	..	..	..	
10.	21	(4) −14° 3258	11.07	..	..	..	
"	22	" "		..	..	..	
"	23	" "		..	..	..	
9.8	24	(20) −14° 3257	11.21	..	..	..	

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February 14, 1911.

D6

19	(5)	30 00
20	(2)	25
21	(4)	30
22		20
23		25
24	(3a)	15
25	10	20
26	a	15
27	c	20
28	b	20
29	(8)	15
30	d	20
31	(9)	15
32	e	20 ~~15~~
33		20
34		25
35		25
36		25
37		20
38		25
39		20
40		20
41		10
42		10
43		35
44		20
45		10
46		

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1906phae.proj..819F

February 15, 1911 — marked on B24872

D ***7

7.2	1	~~-15°~~ -16°	3612	7.02	A8	26	7.28	4 (1)	7.92
7.5 ~~8.2~~	2	~~-16~~ -14°	~~3607~~ 3606	7.09	F	32	7.41 ~~6.82~~	10 (2)	8.14
7.3	3	-12°	3779	7.52	F2	40	7.92	~~10~~ 12 (4)	8.97
8.0	4 (1)	-15°	3589	7.62	l F2.5	51	8.13	13 (5)	9.28
7.3	5	-14°	3644	7.21	G	71	7.92	14 (3)	9.43
7.1	6	-14°	3715	7.20	G	71	7.91	17 (6)	9.78
7.5	7	-13°	3671	~~7.68~~	F8	63	8.31	18 (9)	10.16
7.5	8	-13°	3662	7.72	G	71	8.43	" (7)	10.18
7.9	9	~~-13~~ -14°	3665	7.86	G0	71	8.57 ~~7.96~~	~~20~~ (8)	10.70
8.5	10 (2)	-15°	3609	8.59	l A5	17	8.76	22 (10)	11.15
~~8.2~~	11	-16	~~3603~~ 3597	"	lK	117	"		
8.8	12 (4)	-14°	3640	8.99	l F5	51	9.50		
9.1	13 (5)	-14°	3634	9.26	F	32	9.58		
8.7	14 (3)	-15°	3578	8.81	K	117	9.98		
~~9.0~~	15	-14°	3626	"	R G?	71			
9.0	16	-15°	3596	9.21	G5	71	9.92		
9.2	17 (6)	-14°	3632	9.66	G?	32	~~10.37~~ 9.98?		
~~9.9~~	18 (9)	-14°	3638	10.29	"	"	"		
~~10~~ 9.5	19	-14°	3637	10.69	"	"	"		
~~9.5~~ 10	20 (8)	-14°	3634	10.26	"	"	"		
	21	"	"		"	"	"		
10 ~~9.4~~	22 (10)	-14°	3637	11.08	"	"	"		

10.01?

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February 15, 1911.

07

17	(6)	3.0	0.0
18	(9)	3.0	3.0
19		1.5	6.0
20	(8)	2.5	7.5
21		20	100
22	(10)	25	120
23	~~a~~	15	
24	a	20	
25	e	10	
26	b	30	
27	d	35	
28	~~e~~	15	
29	e	25	
30		25	
31		20	
32		15	
33		25	
34		20	
35		15	
36		20	
37		25	
38		25	
39		20	
40			

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February 15, 1911 marked on B29371

Dec

Asn 5568

7.0	1	-12° 4198	7.32	A0 00	7.32		6 (3) 7.54
7.3	2	-12° 4192	7.57	A0 00	7.57		7 (1) 7.56
7.5	3	-13° 4081	7.42	A5 17	7.59		9 (2) 7.86
7.8	4	-13° 4015	..	R A? 00	..	← (I 25273 edge 7th)	4 (4) 10.10
7.8	5	-14° 4123	..	R A 00	..		15 (7) 10.17
8.0	6 (3)	-14° 4109	7.71	R A5 17	7.88	7.54	16 (6) 10.36
7.8	7 (1)	~~-14° 15. 4198~~ -14° 15. 4102	8.01 (4)	A 00	8.01 (4)	7.56	.. (5) 10.48
7.7	8	-14° 4120	7.61 (0)	F A0 32	7.93 (2)		20 (8) 11.26
8.0	9 (2)	-14° 4105	7.96 (2)	F5 51	8.47 (3)	7.86	21 (9) 11.86
8.7	10	-15 4038	8.35 (40)	A5 17	8.52 (7)		23 (10) 12.48
8.7	11	-14° 4085	8.82 (3)	F 32	~~8.14~~ 9.15		
8.4	12	-14° 4119	..	R G5 91	..		
8.0	13	-14° 4121	..	R Ma5	..		
9.1	14 (4)	-14° 4101	9.52	R G5 91	10.43		
9.3	15 (7)	-14° 4106	9.83	.. ..	..		
9.2	16 (6)	-14° 4115	9.74	R G5 91	10.65		
9.4	17	-14° 4103	9.89	..	..		
9.5	18 G	-14° 4100	..	..	..		
9.8	19	-14 4112	..	..	..		
9.5	20 (8)	-14° 4104	10.41	..	..		
9.8	21 (9)	-14° 4116		..	..		
	22 a	" "		..	..		
10	23 (10)	-14° 4114		..	..		
	~~24~~						
	~~25~~						

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D8. A5916.

18	20	00				
19	25	00	20			
20 (8)	20	25	45	00		
21 (9)	25	4.5	65	20	23 - 22	1.5
22 a	15	7.0		4.5	22 - 24	2.5
23 10	25 40	5.5		3.0		
24		9.5		7.0		
25	40	120		9.5		
26	20	16.0		13.5		
27	25					
28	30					
29	15					
30	20					
31	15					
32	15					
33	15					
34	20					
35	25					
36	20					
37	30					
38	20					
39	20					
40						

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1906phae.proj..819F

marked on B19079

D9

		~~-14° 4509~~				~~7.78~~		.7	(1)	8.53
		~~-15° 4488~~				~~6.80~~		"	(2)	9.40
		~~-12° 4678~~				~~6.84~~		~~11~~	(3)	9.49
7.0	1	-13° 4528	6.93	F8	63	7.56		17	(8)	10.25
7.3	2	-16° 4436	7.47	A5	17	7.64		19	(10)	10.75
7.3	3	-13° 4543	7.35	F2	40	7.75		22	(9)	11.34
6.8	4	-14° 4565	7.26	G	71	7.97		"	(4)	11.75
8.0	5	-14° 4568	~~7.90~~ 8.02	A	0	~~7.90~~ 8.02		25	(5)	12.12
	~~6~~	~~-15 4438~~				~~7.96~~			(7)	12.33
7.5	6	-16° 4460	~~8.35~~ 7.54	A	0	~~8.35~~ 7.54			(6)	12.49
8.2	7 (1)	-14° 4538	8.84 R	A	0	8.84	8.53			
7.5	8	-16° 4434	7.41	G3	83	8.22				
6.9	9	-14° 4607	7.27	K	117	8.44				
8.3	10	-14° 4528	" R	G	71	"				
8.6	11 (3)	-14° 4531	9.30 R	A	0	9.30				
8.9	12	-15° 4435	" R	A	0	"				
~~9.1~~ 8.5	13	~~-14° 4550~~ ~~-15° 4443~~	" R	G5	91	"				
8.8	14	-14° 4527	" R	G	71	"				
9.1	15	-15° 4443	" R	G	71	"				
9.0	16	~~-15°~~ -16° 4449	" R	G	71	"				
~~8.7~~	17 (8)	-15° 4444	8.95 R	K	117	10.12				
9.1	18	-15° 4440	" R	G?	71	"				
9.2	19 (10)	-15° 4448	10.38 R	G5	91	11.29				
9.5	20	-15° 4458	" R	A?	0	"				
9.5	21	-14° 4546	" R	G5?	91	"				
9.0	22 (9)	-15° 4444	9.84 R	G?	71	~~11.02~~ 10.55				
9.6	23	-14° 4549	" R	G5?	91	"				
9.9	24	-15° 4450	" "	"	"	"				
9.5	25	~~-16~~ -14° 4545	10.85 "	"	"	"				

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D9

21		2.5	0.0
22	(g)	3.0	2.5
23		2.0	5.5
24		2.5	7.5
25	(5)	3.0	10.0
26	b	3.0	13.0
27	a	2.0	16.0
28	c	3.0	18.0
29	d	3.0	21.0
30		1.5	
31	e	3.0	
32		3.0	
33		1.0	
34		3.5	
35		6.5	
36		2.0	
37		1.0	
38		1.0	
39		2.5	
40		1.0	
41			

Not a Catalogue star.

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1906phae.proj..819F

~~1911.~~ 1911.

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D10

7.5	1	−15°5154	7.16	A	00	7.16	8(3) 8.56
6.5	2	−15°5185	6.32 (8)	G2	79	7.17	12(4) 8.83
7.7	3	−15°5290	7.86	A0	00	7.86	14(1) 9.32
7.5	4	−14°5231	7.66	A	00	7.66	16(2) 9.66
7.8	5	−14°5334	7.81	F5	51	8.32	~~18(5)~~ 9.86
8.2	6	−14°5313	..	₀A0	00	-	23(6) 10.83
8.3	7	−15°5199	8.16 8.18	A0	00	8.16	21(7) 10.87
8.4	8(3)	−15°5242	8.69	₁A0	00	8.69	22(8) 11.05
8.7	9	−15°5265	..	₂A0	00	..	24(10) 11.20
6.8	10	~~−15°5259~~ −14°5317	7.36	K	117	8.53	26(9) 11.93
7.5	11	~~−15°~~ −15°5259	7.62 7.75	Ma5			
8.8	12(4)	−15°5228	8.83	₁A2	07	8.90	
7.8	13	−15°5231	..	₂K	117	..	
8.0	14(1)	−14°5281	7.89 8.00	K	117	8.06 ~~8.17~~	
9.1	15	−14°5295	..	₂Fa	00	..	
8.5	16(2)	−14°5277	8.32	₁K	117	9.49	
9.5	17	−14°5278	..	₂Fa	00	..	
9.0	18(5)	−15°5226	8.81	K	117	10.03 ~~9.98~~	
"	19	" "	..	₂A5	17	..	
9.5	20	−14°5296	10.89	₂G5?	91	11.80	
9.5	21(7)	−15°5229	10.37	₂G2	79	11.16	
9.1	22(8)	−15°5233	10.57	₂A	00	10.57	
9.2	23(6)	−15°5240	9.98	₁K	117	11.15	
10.	24(10)	−15°5218	11.00	₂A	00	11.00	
"	25	" "	..	..	..	..	
9.8	26(9)	−15°5227	10.21	₂K	117	11.38	
	27						

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1906phae.proj..819F

D10 a 6172

~~19~~		0.0	
~~20~~			
21 (7)	20	0.0	
22 (8)	35	2.0	
23 (9)	25	5.5	
~~24~~ (10)	35	3.0	
25 a	20	9.0	
26	2.0	11.0	
27	2.0	13.0	R K?
28	1.5	15.0	R a?
29	2.5	16.5	R a
30 b	2.0	19.0	
31 ~~a~~	3.0	21.0	
32	15	24.0	
33 c	20	25.5	2.0
34 ~~k~~	30	27.5	
35 d	30	30.5	
36	~~30~~ 20	34.0	
37	20	36.0	
38	2.5	38.0	
39	2.0	40.5	
40	1.5	42.5	
41	15	44.0	
42	25	45.5	
43	20	48.0	
44	20	50.0	
45		52.0	

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Feb 20, 1911 Marked on B37507

D11

7.0	1	−14° 5908	6.63	g0	71	7.34	
8.0	2	−13 5837	..	a	00	..	
6.5	3	−13° 5891	6.52	K	117	7.43	
7.8	4	−15° 5911	7.68	a5	17	7.82	
7.2	5	−14° 5936	7.24	g5	91	8.15	
7.5	6	−15° 5913	7.24	g	71	7.95	
7.8	7	−14° 5940	8.01	a2	07	8.08	
7.3	8	−16° 5798	7.49	f5	51	8.00	
8.2	9	−15° 5897	..	a	00	..	
7.2	10	−16° 5769	7.90	g5	91	8.67	
7.4	11 (2)	−15° 5884	7.92	g5	91	8.83	8.57
8.2	12	−16 5795	..	f	32	..	
8.2	13 (3)	−15° 5881	8.30	K	117	9.47	8.80
9.0	14	−14° 5917	9.26	a?	00	9.26?	
9.2	15	−15 5878	..	af	32	..	
8.9	16 (1)	−14° 5925	9.15	..	..	..	
8.6	17	−15° 5874	9.17	K	117	10.34	
9.1	18	−15 5875	..	f?	32	..	
9.2	19 (5)	−15° 5883	10.01	..	..	..	
9.3	20 (7)	−15° 5886	10.06	..	..	..	
9.4	21	−14 5929		..	..		
9.2	22 (6)	−15 5893		..			
9.4	23 (8)	−15 5885		..			
9.2	24	−15 5889		..			
	25	.. ..		..			
	26 a			..			
	27 b	.. ..					
9.8	28 (9)	−15 5880		.			

11 (2) 8.59
13 (3) 8.80
16 (1) 9.65
17 (4) 9.77
19 (5) 10.12
40 (7) 10.13
22 (6) 10.35
23 (8) 10.49
28 (9) 11.23
.. (10) 11.49

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1900phae.proj..819F

Aug. 22, 1911

O 11

23	(8)	20	00
24		30	2.0
25		35	5.0
26	a	20	8.5
27	b	25	10.5
28	(9)	25	13.0
29		20	15.5
30		35	17.5
31		20	21.0
32	c	15	23.0
33	c	30	24.5
34	d	20	27.5
35		15	29.5
36		25	31.0
37		20	33.5
38		20	35.5
39		25	37.5
40		10	40.0
41		25	41.0
42		10	43.5
43		25	44.5
44		20	47.0
45		20	49.0
46			51.0

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1906phae.proj..819F

Feb. 20, 1911. marked on B 37964

D12

							6 (2)	8.86
8.0	1	-16° 6208	..	lF0	..	..	10 (3)	9.32
6.5	2	-13° 6318	6.27	K	117	7.44	12 (4)	9.32
7.5	3	-15° 6325	7.44	K	117	~~8.59~~ ~~7.44~~ 8.61	11 (5)	9.35
8.3	4	-15° 6355	..	lF	32	..	13 (1)	9.44
7.5	5	-14° 6413	7.21	a	00	7.25 1	16 (6)	10.12
8.0	6 (2)	-15° 6343	8.19	2g5	91	9.10	(7)	10.27
8.2	7	-15° 6332	8.30	K	117	9.47 ~~8.43~~	14 (8)	10.87
8.5	8	-15° 6335	..	2g	71	..	19 (10)	10.90
8.5	9	-15° 6341	..	2g	71	..	21 (9)	11.33
8.5	10 (3)	-15° 6342	8.77	2g2	79	9.56		
8.9	11 (5)	-15° 6346	9.00	2g	71	9.71		
8.7	12 (4)	-15° 6339	9.18	2F8	63	9.81		
8.6	13 (1)	-14° 6399	8.81	K	117	9.98 ~~10.03~~		
9.3	14	-15° 6344	..	2g5	91	..		
8.9	15	-14° 6398	..	2g	71	..		
9.0	16 (6)	-15° 6347	9.61	2g	71	10.32		
9.7	17	-15° 6338	..	2F	32	..		
9.5	18 (8)	-15° 6337	10.47	..	..	..		
9.9	19 (10)	-15° 6349	10.92	F:	32	11.24?		
	20	.. ..		..		..		
9.8	21 (9)	-15° 6336		..		..		
	22			..		..		
	23			..		..		

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1900phae.proj.819f

February 20, 1911.

D 12

18	(8)		1.0 00
19	(10)	~~1.5~~ 2.0	1.0
20		20	3.0
21	(9)	25	5.0
22		25	7.5
23		25	10.0
24	b	15	12.5
25	c	15	14.0
26	a	25	15.5
27	d	25	18.0
28	e	15	20.5
29		25	22.0
30		25	24.5
31		25	27.0
32		20	29.5
33		20	31.5
34		10	33.5
35		25	34.5
36		20	37.0
37		15	39.0
38		20	40.5
39		25	42.5
40		15	45.0
41		20	46.5
42			48.5

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1906phae.proj..819F

Feb. 22, 1911.

E1

marked on B4056

6.7	1	-44° 171	7.37	A8 26	32	7.63
7.0	2	-43° 153	8.03	A	60	8.03
7.2	3 a	-45° 157	6.38	K	117	7.55
7.4	4 b	-45° 149	7.62	F0	32	7.94 b
7.2	5	-46° 166	6.90	G2	79	7.69
7.4	6 c	-45° 168	7.90	F8	63	8.53 c
* 8.0	7	-45° 143		F		
7.9	8	-44° 162	8.32	F2	40	8.72
7.7	9	-45° 186	7.95	F0	32	8.27
7.4	10	-46° 154		K		
8.6	11	-46° 138		A		
8.4	12	-46° 146		K		
8.8	13	-45° 146		K		
9.0	14	-45° 152		G2		
9.2	15	-45° 158		K		
9.0	16 d	-45° 154		G5		
9.6	17	-45° 151		K		
10.2	18 e	-45° 155		..		
	19			..		
	20			..		
	21 f			..		
	22			..		
	23			..		
	24 g			..		

Also -45° 140, -44° 188, -45° 176.

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1906phae..proj..819F

Feb. 22, 1911.

E 1

Assumed Plate A 8180
Plotted Sheet 58

19		15	0.0
20		20	1.5
21	f	25	3.5
22		20	6.0
23		20	8.0
24	g	25	10.0
25		15	12.5
26	h	25	14.0
27	k	25	16.5
28		15	19.0
29	l	15	20.5
30		20	22.0
31		25	24.0
32	m	20	26.5
33	n	20	28.5
34		25	30.5
35		15	33.0
36	o	20	34.5
37		20	36.5
38	p	20	38.5
39		30	40.5
40	r	20	43.5
41	s	25	45.5
42		20	48.0
43		15	50.0
44		15	51.5
45			53.0

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1906phae.proj..819F

March 3, 1911.

g8

7.4	n 1	-43° 9739	G	7.41
7.6	n 2	-44° 9707	a2	7.93 8.22
7.6	n 3	-43° 9166	a8	8.22
7.8	n 4	-43° 9165	1 G2	
7.9	5 a	-45° 9857	a8	8.06
7.5	n 6	-46° 9855	1 [illegible]	
7.4	n 7	-45° 9847	G5	7.67
7.8	n 8 c	-44° 9714 -45° 9866	a2 f2	8.47 8.54
8.1	9			
8.3 8.8	n 10	-45° 9883 9884	1 G5	
8.3	11 e	-44° 9727	f5	8.98
8.3	12 b	-44° 9722	G	8.83
8.3	n 13	-44° 9731	1 G5	
8.6	n 14	-44° 9717	G5	9.36
8.9	15	-45° 9857	1 f	
8.6	16 d	-44° 9725	G5	9.25
9.0	17	-45° 9880	1 f8	
8.9	n 18	-45° 9879	1 G5	
9.6	19 f	-45° 9878	G2	10.35
9.5	20 g	-45° 9860	2 [illegible]	10.56 10.25
9.6	21	-44° 9729	1 G?	
10.0	22	-45° 9862	1 G?	
10.3	23	-45° 9856		
10.3	24	-45° 9868		
10.3	25 h	-45° 9870		
	26			
	27			

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1906phae.proj..819F

March 8, 1911

E 8

Assumed Plate R 6047

Plotted sheet 59

~~24~~		~~0.0~~
23	2.5	0.0
24	3.5	2.5
25 h	~~2.5~~	6.0
26	2.5	~~8.5~~
27 K	1.0	11.0
28	2.5	12.0
29	1.5	14.5
30 l	1.0	16.0
31	2.0	17.0
32 m	2.0	19.0
33	2.0	21.0
34 n	2.0	23.0
35	2.0	25.0
36	3.5	27.0
37 o	3.5	30.5
~~38 P~~	1.5	34.0
39 p	2.0	35.5
40	3.0	37.5
41 q	3.0	40.5
42 r	2.0	43.7
43 s	1.5	~~45.5~~
44	1.5	47.0
45 t	2.0	~~48.5~~
46 u	1.5	50.5
47		52.0

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1906phae.proj..819F

February 22, 1911.

δ 3

~~1 -45° 1040 A2 7.12~~

~~2 -45° 1041 A0 6.85~~

7.6	1	3	a	-44° 1018	7.74	A	00	7.74
7.6	2	4		-43° 1036	7.53	A2	07	7.60
7.6	3	5		-43° 954		A0		
7.8	4	6		-44° 1007		A0		
8.0	5	7		-44° 1000	7.99	A0	00	7.99
8.0	6			-45° 967		A0		
8.2	7			-45° 975		A0		
8.2	8		c	-44° 1037	8.74	A5	17	8.91
8.4	9		d	-45° 993	9.00	A5	17	9.17
8.6	10			-45° 1035		G		
8.3	11		h	-44° 1086	8.24	K	117	9.41
8.6	12			-45° 981		2K		
9.0	13		e	-44° 1021	9.14	G	71	9.85
9.0	14			-45° 44° 1003		2F		
9.2	15		f	-44° 1044		2A		
9.4	16			-45° 963		2G?		
9.6	17			-44° 1030		2G5		
9.5	18		g	-45° 1013		2A		
10.0	19			-45° 994		"		
9.8	20		h	-45° 1000		2K:		
9.6	21		K	-45° 1002		2G2		
9.8	22			-45° 995		"		
10.2	23			-45° 1014		2A?		
10.2	24			-45° 992		"		
	25		l			"		

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1906phae.proj..819F

G7

LSp. B37261. Sm B38414.
Assumed Plate A 6252

9.8	20	h	−20	00
9.6	21	K		−20
9.8	22		30	
			20	30
10.2	23		30	80
10.2	24		15	8.0
	25	L	15	9.5
−21° 1012) 10.2	26	m	35	11.0
	27		10	14.5
	28	n	35	15.5
	29		15	19.0
	30		30	20.5
	31		15	23.5
	32	o	20	25.0
	33	p	10	27.0
	34	q	25	28.0
	35		10	30.5
C	36		25	31.5
	37	r	25	340
	38		10	36.5
	39		20	37.5
	40		20	39.5
	41		15	41.5
	42		20	43.0
	43		15	45.0
	44		20	46.5
	45			48.5

Identification of Star 45 uncertain. Estimate
Rejected Nov. 4, 1916.

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1906phae.proj..819F

October 23, 1911

G4

7.7	✓ 1	-45° 3698	6.00	G5	91	6.91	
7.8	n 2	-43° 3688		R a0			
8.2	✓ 3	-44° 3732		R a0			
7.8	n 4	-45° 3799	6.74	G5	91	7.65	
7.7	n 5	-44° 3686		R K			
8.3	n 6	-45° 3814	8.28	a	00	8.28	
8.2	n 7	-45 3749		R a0			
8.2 ~~8.7~~	n 8	-45° 3758		R a0			
8.9	✓ 9	-45° 3739		R a3			
8.9	✓ 10 c	-44° ~~5445~~ 3747	9.64	a0	00	9.64	
8.9	✓ 11 d	-45° 3740	9.64	a0	00	9.64	
9.2	12 f	-45° 3693	9.78	a	00	9.78	
9.0	13 a	-44° 3761	8.14	ma	168	9.82	
9.2	14 b	-44° 3766	8.94	R ~~K~~ g5	117	10.11	
9.2	15	-44° 3713		R a			
9.4	16	-44 ~~45°~~ 3771		R a			
9.4	17	-45° 3715		R g			
9.7	18	-44° ~~45°~~ 3763		R a			
9.4	19 e	-45° 3708	9.64	K	117	10.81	
9.8	20	-45° 3725		F			
10.0	21	-44° 3718		F:			
10.2	22 g	-45° 3727		K:			
10.4	23 h	-45° 3703		..			
10.5	24 K	-44° 3740		..			

Cont. K 24 Also -45° 3476 ~~3740~~

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1906phae.proj..819F

Feb 23, 1906

E 4

Assumed Plate A 8669
Plotted sheet 89.

19	a	20	00
20		20	20
21		30	40
22	g	15	70
23	h	20	85
24	K	20	105
10.b -44°37'33 25		15	125
26	l	15	140
27		25	155
28	m	20	180
29	n	30	200
30		15	230
31	o	25	245
32		20	270
33	p	15	290
34		15	305
35	q	10	320
36	r	30	330
37	s	15	360
38	t	30	375
39		15	405
40	u	20	420
41		20	440
42			460

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1906phae.proj..819F

Feb. 23. 1911

g5

7.8	v 1 b	-44° 5827	7.24	a2	00	7.24
7.4	n 2	-45 5722	6.78	f8	63	7.47
7.8	n 3	-44° 5917		b a8?		
7.4	n 4	-44° 5866	6.48	g5	91	7.39
~~7.4~~	~~n 5~~	~~-44° 5839~~ ~~-44° 5866~~		~~g5~~		~~7.39~~
8.2	n 6	-45° 5819		1 g		
8.3	n 7	-44° 5775		1 f5		
8.4	v 8 d	-45° 5773		1 a		
8.2	n 9	-45° 5673		1 a5		
8.5	n 10	-44° 5764		1 a5		
8.8	n 11 (2)	-45° ~~5698~~ 5678	9.08	a	o	9.08
~~9.44~~	~~12 (1)~~	~~-45° 5792~~ ~~-44° 5757~~				~~9.95~~
9.4	v 12 e	-45° 5792	~~8.78~~	1 a K	117	~~9.95~~
9.0	n 13 (1)	-44° 5757	8.78	K	117	9.95
9.2	v 14 f	-44° 5820		1 f		
9.7	15 g	-45° 5759		f		
9.6	16	-45° 5754		1 K		
9.8	v 17 c	-44° 5827	9.54	K	117	10.71
~~9.9~~	18 k	~~-44° 5804~~ -44° 5802		a?		10.73
~~10.0~~	~~19 k~~	-44° 5817		..		
10.3	20	-44° 5802		K?		
10.3	21	-45° 5770		..		
	22			..		

Also -44° 5748, -45° 5254, -43° 5682, -44° 5887. C

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1906phae.proj..819F

Feb 23. 1911

E 5

Assumed Plate a 8356

17	c	20	0.0
18	h	20	2.0
19	k	35	4.0
20		10	7.5
21		35	8.5
22		20	12.0
23	l	30	14.0
24	m	20 ~~30~~	17.0
25		25	19.0
26	n	25	21.5
27		15	24.0
28	o	10	25?
29	1	35	26.5
30	p	20	30.0
31	q	25	32.0
32		20	34.5
33	r	15	36.5
34		20	38.0
35		15	40.0
36		20	41.5
37		15	43.5
38		20	45.0
39		10	47.0
40		10	48.0
41		15	49.0
42			50.5

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1906phae.proj..819F

Aug. 28, 1911. marked on B7452

72

7.1	n 1	−74° 839	6.52	78	63	7.15	7.1	
7.6	n 2	−76° 726		2F2				
7.2	n 3	−74° 927	7.47	2A2	07	7.54	7.2	
7.6	n 4 b	−73° 924	6.32	K	117	7.49	7.6	
7.5	n 5	−74° 927	7.87	F	32	8.19	7.5	
7.7	n 6	−74° 917		2A				
7.7	n 7	−76° 688		2A0	00			
7.4	n 8	−73° 968		2A				
7.8	n 9	−72° 1283		2A				
8.1	n 10	−74° 843		2A0				
8.7	n 11	−75° 722		2K				
8.2	n 12	−75° 792		2F0				
8.5	v 13 c	−74° 875	7.92	K	117	9.09	8.5	
8.7	n 14	−73° 922		2A?				
8.8	v 15 f	−74° 870		2F2A?				
9.0	v 16	−74° 863		2K				
8.8	v 17 h	−75° 780		2K				
9.1	v 18 h	−74° 877		2F5?				
9.5	19	−75° 781						
9.3	20 K	−74° 872						
9.6	21	−74° 873						
9.6	22	−75° 774						
9.6	23	−74° 883						
9.6	24	−74° 878						
9.6	25	−74° 879						
9.6	26	−74° 876						

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1900phae.proj..819F

Assumed Plate A 5912
Plotted on sheet 19

17		25	0.0
18		40	+2.5
19		25	6.5
20		30	9.0
21		10	12.0
22		30 10	13.0
23		15	14.0
24		20	15.5
25		20	17.5
26		25	19.5
27		15	22.0
28		20	23.5
29		10	25.5
30		20	26.5
31		30	28.5
32		25	31.5
33		15	34.0
34		35	35.5
35		25	39.0
36		15	41.5
37		20	43.0
38		20	45.0
39		25	47.0
40		15	49.5
41		25	51.0
42		25	53.5
43		25	56.0
44		15	58.5
45		20	60.0
46		10	62.0

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1906phae.proj..819F

Feb. 23 1911

67

6.9	✓ 1	a	-44° 8441	6.82	A	32	7.14	
7.4	✓ 2		-44 8546		A0			
7.1	n 3		-45° 8477	7.10	A0	00	7.10	
7.9	✓ 4	b	-44° 8492	7.44	A	00	7.74	
8.2	n 5		-44° 8634		B8			
8.2	n 6		-44° 8590		A			
8.1	~~7.6~~ n 7		-45° 8678	80	~~A2~~ B?			
	8.1 n 8		-44° 8401		A2			H lines narrow
8.1	✓ 9	d	-45° 8556	8.16	A2	07	8.23	
8.4	✓ 10		-44° 8484		A			
8.3	✓ 11	e	-44° 8521	8.72	A	0	8.72	g = 11 on chart
8.3	✓ 12	c	-44° 8468	7.90 8	K	117	8.07	
8.2	n 13		-44° 8402		K?			
8.8	✓ n 14		-44° 8538		A0			
8.8	✓ 15		-44° 8545		A0			
8.8	✓ 16		-45° 8620		A			
8.8	✓ 17	f	-45° 8622	9.26	A5a		~~9.76~~	
9.0	✓ 18		-44° 8502		A			
9.0	✓ 19	g	-44° 8514	9.36	G2	79	10.15	No letter corresponds to 19 on chart
9.0	✓ 20		-44° 8470		A			
9.3	21		-44° 8460		G			
9.4	22		-45° 8570		A			
9.4	23	h	-44° 8508		A			
9.4	24	k	-44° 8515		G?			

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1906phae.proj..819F

March 24, 1911.

67

Assumed Plate A 5920
Plotted plate 59.

	19	g	2.0	0.0
	20		4.0	2.0
	21		2.0	6.0
	22		2.0	10.0
	23	h	2.5	12.0
	24	K	2.0	14.5
-43° 8608	9.6	25	2.5	16.5
-44° 8500	9.8	26	B	2.0	19.0
-44° 8504	9.8	27	m	1.0	21.0
-44° 8506	9.9	28	m	2.0	22.0
-45° 8555	9.8	29		3.5	24.0
-44° 8518	10.0	30		3.0	27.5
-44° 8512	10.0	31	o	1.5	30.5
		32	p	2.5	32.0
		33		1.5	34.5
		34	q	2.5	36.0
		35	r	3.0	38.5
		36		1.5	41.5
		37	s	3.0	43.0
		38	t	2.5	46.0
		39	u	1.0	48.5
		40	w	2.5	49.5
		41		1.5	52.0
		42	x	1.0	53.5
		43	y	3.5	54.5
		44	z	1.5	58.0
		45	a	1.0	59.5
		46	b	1.5	60.5
		47	c	2.0	62.0

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1906phae.proj..819F

E2

Marked on B 11884

			E2	E2	
✓	7.0	x 1	-46° 409	G0	7.57
✓	7.3	x 2	-44° 416	G2	749
✓	7.5	✓ 3	-a -45° 397	A2	7.65
✓	7.2	x 4	-46 396	R A5	
✓	7.6	x 5	-46 391	R G5	
✓	7.8	✓ 6	c -45° 396	A2	8.39
✓	8.2	7	-43° 405	R [illegible]	
✓	8.0	8	-43° 404	K	879
✓	8.0	✓ 9	b -44° 423	G0	893
✓	8.8	✓ 10	-44° 422 ~~-43 404~~	R A	
✓	8.1	✓ 11	-44° 420	R G	
✓	8.2	x 12	-45° 401	R [illegible]	
✓	8.1	✓ 13	-44° 428	R G	
✓	8.6	✓ 14	-44° 419	G	978
✓	8.8	✓ 15	a -44° 425	G0	969
✓	9.2	✓ 16	d -45° 399	K	951
✓	9.0	✓ 17	-44° 427	"	
✓	8.8	x 18	-44° 414	R G5	
✓	9.2	✓ 19	-45° 394	R G2	
✓	9.4	x 20	-44° 415	G	999
✓	10.0	✓ 21	-44° 424	R G2	
✓	10.4	✓ 22	-44° 418	"	
✓	10.3	✓ 23	g -45° 398	"	
✓	10.4	✓ 24	-44° 429	"	

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1906phae.proj..819F

~~E~~ E2 . Assumed Plate A6280
sheet no 67

19		4.0	3.0	
20		2.0	4.0	
21		3.0	6.0	
22		1.5	9.0	
23	g	2.0	10.5	
24		3.0	12.5	
25		2.0	15.5	
26		3.0	17.5	
27	h	2.5	20.5	
28		2.0	23.0	
29	K	3.0	25.0	
30		2.5	28.0	
31		1.5	30.5	
32	l	1.5	32.0	
33		2.0	33.5	
34		2.5	35.5	
35		2.0	38.0	
36	m	3.0	40.0	3.0
37	n	1.5	43.0	
38	~~n~~	2.5	44.5	
39		1.0	47.0	
40	o	2.5	48.0	
41	q	1.0	50.5	
42	p	2.5	51.5	
43	r	2.5	54.0	
44	s	2.5	56.5	
45		1.0	59.0	
46			60.0	

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1906phae.proj..819F

Oct. 27, 1911

69

66	1		-45° 10371	A2	7.45
			~~-47° 9903~~	~~A5~~	~~7.01~~
7.0	2		-44° 10238	B5	7.63
7.2	3		-44° 10308	B2	771
7.2	4	b	-45° 10337	F8	8.13
7.3	5		-45° ~~10341~~ 10366	F1	
7.6	6		-45° 10341	A	8.12
7.6	7		-45° 10334	F	
7.8	8		-45° 10320	F	
8.2	9		~~-45°~~ 10321	A8	9.34
8.0	10		-45° 10318	F	
7.9	11		-45° 10340	G	
8.2	12		-44° 10259	F	
8.2	13	d	-44° 10282	~~A~~ K	9.40 ~~10.59~~
8.4	14	e	-45° 10339	K	10.11
..	15		-44° 10264	~~F~~ G5	~~10.33~~ ~~10.11~~
8.7	16		-44° ~~10302~~ 10261	F1	
9.2	17		-45° 10336	..	
9.1	18		-45° 10326	K?	
9.2	19	e	-44° 10267 9.76	K	10.95?
9.4	20	f	-45° 10330	..	
9.6	21	g	-45° 10328	..	
9.6	22		-45° 10329		
9.6	23		-45° 10331		
	24	~~84~~ h			
	25				
	26	~~26~~ K			

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1906phae.proj..819F

Oct 27 1911

89 α6166. Plotted sheet 59

9.6	21	g	25	0.0			
9.6	22		30	2.5			
9.6	23		1.5	5.5			
	24	h	10	7.0	24	1.0	7.0
	25		~~35~~	8.0	25	2.5	8.0
	26	k	~~2.5~~	~~4.5~~ 12.0	26	2.5	10.5
	27		25	~~12.0~~ 10.5	27	1.5	~~12.0~~
	26	l	1.5	10.5			
	27	k	25	12.0			
	28		15	14.5			
	29	m	25	16.0			
	30	m	20	18.5			
	31		20	20.5			
	32		25	22.5			
	33	o	25	25.0			
	34	p	25	27.5			
	35	q	20	30.0			
	36	r	15	32.0			
	37	s	15	33.5			
	38	t	20 ~~35~~	35.0			
	39	u	20	37.0			
	40	~~u~~ v	15	39.0			
	41	w	20	40.5			
	42		15	42.5			
	43		20	44.0			
	44			46.0			

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1906phae.proj..819F

Feb 27, 1911 marked on B5760

F1

7.4	n 1 (3)	-75° 244	7.12	f	32	7.44
7.4	n 2	-72° 311	6.98	a2	07	7.05
	~~3 -75 254~~					
7.2	n 3	-74° 250	7.18	f	32	7.50
7.4	n 4 a	-75° 251	7.44	f	32	7.76
7.7	n 5 (2)	-75° 236	7.74	a2	07	7.81
7.5	n 6	-74° 271		l a		
7.6	n 7 (1)	-75° 231	8.08	a8	26	8.34
8.0	n 8 b	-75° 275	8.24	f	32	8.56
8.3	n 9	-74° 270		l r a		
8.5	n 10	-74° 268		l g5		
8.7	n 11	-75° 238		l f r		
8.5	n 12	-74° 280		a?		
	n 13 c	~~-75° 254~~ -76° 251		r a		
8.5	n 14 ~~d~~	~~-75° 254~~		r k5		
8.7	n 15 e	-75° 259		r g		
8.9	n 16	-74° 291	9.58	f	32	9.90
	n 17 d	-75° 256		r a		
9.4	n 18	-74° 277		a		
	n 19	-75° 255		"		
9.4	n 20	-75° 252		"		
9.9	21	-74° 282		"		
9.9	22 f	-75° 257		"		
	23 g			"		
	24			"		
	25 k			"		
	26 l			"		
	27 m			"		
	28 m			"		

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1906phae.proj..819F

F1 Q6276. Plotted sheet 59

23	g	3.0	0.0
24		2.0	3.0
25	k	3.5	5.0
26	l	1.0	8.5
27	~~m~~	3.5	9.5
28	m	2.5	13.0
29	~~k~~ l	1.0	15.5
30	o	1.5	16.5
31	n	2.5	18.0
32	~~k~~ p	2.5	20.5
33	~~n~~	2.5	23.0
34	g	1.5	25.5
35	r	1.0	27.0
36	s	2.0	28.0
37		2.0	30.0
38	t	1.5	32.0
39	u	2.5	33.5
40		1.5	36.0
41		2.0	37.5
42			39.5

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Ara 26

7.0	n 1	-46° 6899	G	691
7.2	n 2	-45° 7082	a	
7.4	J 3	-44° 6947	a	
7.4	n 4	-45° 6987	a	
7.6	n 5	-43° 6702	K	7.51
7.6	n 6	-44° 7015	F5	
8.1	n 7 a	-45 7024	a	8.15
8.4	n 8	-44° 7030	a	
8.2	n 9	-45° 6973	F	8.36
8.2	n 10	-45° 6953	F5?	792?
8.5	J 11	-45 7004	G	949
8.7	n 12	-45° 7000	a	928
8.7	J 13 b	-45° 7039	a	926
9.1	J 14 d	-45° 7040	F	976
8.9	J 15	-44° 6941	a	950
8.9	16 c	-44° 7013	a	937
8.9	17 e	-44° 7011	a8	1003
9.2	18	-44° 6953	F?	
9.2	19 g	-45° 7025	a	
9.2	20	-44° 6948	G?	
9.6	21	-44° 6958	G5a	
9.6	22 f	-45° 7034	G?	
9.6	23 h	-45° 7010	F?	
9.7	24	-44° 6950		
9.8	25	-44° 6945		
9.8	26	-44° 6959		

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Assumed Plate A 5911
Plotted sheet 90

21	20	0.0	
22 f	15	2.0	
23 ~~f~~	2.5	3.5	
24	1.5	6.0	
25	35	7.5	
26	35	11.0	
−43° 7014 9.9 27	30	14.5	
−44° 6937 10.6 28	20	17.5	
29	30	19.5	
30	15	22.5	
31	15	24.0	
32	15	25.5	
33	25	27.0	
34	15	29.5	
35	25	31.0	
36	15	33.5	
37	15	35.0	
38	20 ~~15~~	36.5	3.0
39	25	39.5	
40	25	42.0	
41	20	44.5	
42	15	46.5	
43	15	48.0	
44	25	49.5	
45	25	52.0	
46	15	54.5	
47		56.0	

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March 1, 1911. Marked as B 3761

7.0	a 1	−75° 1644	G	7.27	
7.0	a 2	−76° 1434	6.14 Re.		
7.4	a 3	−73° 2067	R F		
7.6	a 4	−73° 2061	R a		
7.7	a 5 (1)	−74° 1857	R G5	7.25?	
7.6	6	−74° 1874	R g		
7.8	a 7	−74° 1845	R F8		
7.7	a 8	−74° 1849	7.85?	8.17?	
8.0	a 9	−74° 1838	a F?		
~~8.0~~	a 9a	−75° 1572	G5	8.11	
8.0	10				
8.0	11	−75° 1537	R g2		
8.0	12	−75° 1541	R g		
8.2	13	−75° 1621	R a8		
8.5	14 b	−75° 1561	K	~~8.77~~	
8.6	15 d	−75° 1587	R g		
8.6	16 de	−75° 1589	R g2		
8.7	17	−74° 1855	R a		
8.7	18	−75° 1586	R a?		
9.0	19 f	−75° 1579	R K5		
9.2	20 g	−75° 1575	R K		
9.2	21 c	−74° 1872	R g?		
9.2	22	−74° 1860	R g?		
9.3	23	−75° 1570	g?		
9.2	24	−74° 1880	..		
9.3	25 h	−74° 1882	..		

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73

Assumed Plate A 7868
Plotted sheet 59.

	20 g	30	0.0
	21 c	30	3.0
	22	25	6.0
	23	20	8.5
	24	25	10.5
	25 h	35	13.0
-75° 1582	7.8 26 k	25	16.5
-75° 1583	7.7 27	15	19.0
-75° 1580	7.8 ~~28~~ l	30	20.5
	29	15	23.5
	30 m	30	25.0
	31 n	30 15	28.0
	32 ~~30~~	15	310 29.5
	33 o	25	32.5
	34	20	35.0
	35 q	15	37.0
	36 p	20	38.5
	37	15	40.5
	38 s	15	42.0
	39 t	20	43.5
	40	10	45.5
	41 u	25	46.5
	42	20	49.0
	43	20	51.0
	44	15	3 52.0
	45	20	4 53.5
	46	10	5 57.5
	47	25	6 58.5
	48		7 61.0

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1906phae.proj..819F

May 4, 1911

Exam. of Plates for variability of COM. -33° 16843 82
R.A. 23h 59m.9 Dec. -33° 30'.4 (1875), Sp. M2 4 on B 41874 & B 41900.

Plate	Date	Exp.	Est.
B 41900 S	Sept. 11, 1910	148	
B 41874 S	Sept. 4, 1910	115	
B 14524	Sept. 6. 1895	10	
B 17574	Oct. 6, 1896	20	
AM 158	Sept. 26, 1899	66	
AM 1111	Nov. 12, 1901	60	
AM 1676	Nov. 6, 1902	60	
AM 1719	Nov. 26, 1902	60	
AM 2105	July 6, 1903	60	
AM 2377	Nov. 18, 1903	60	
AM 2752	June 16, 1904	60	
AM 2997	Sept. 1. 1904	66	
AM 3152	Oct. 27, 1904	64	
AM 3280	Dec. 8, 1904	62	
AM 3317	Jan. 12, 1905	60	
AM 3635	June 13, 1905	62	
AM 3824	Aug. 22, 1905	62	
AM 3895	Sept. 18, 1905	61	
AM 7254	Sept. 2, 1910	120	
AM 5678	July 23, 1908	60	
AM 3957	Oct. 20, 1905	73	
AM 4025	Dec. 15, 1905	63	
AM 4567	Sept. 11, 1906	65	
AM 5100	Aug. 27, 1907	60	
AM 5258	Nov. 26, 1907	73	
~~AM 5678~~	~~July 23, 1908~~	~~60~~	
AM 5788	Sept. 2, 1908	120	
AM 6664	Oct. 12, 1909	63	
AM 6742	Nov. 3, 1909	120	
AM 6785	Nov. 20, 1909	60	
B 12696	Dec. 13, 1894		
B 14235	July 31, 1895	12	
B 14625	Sept. 13, 1895	10	
AM 1457	July 11, 1902	60	
AM 5803	Sept. 6, 1908	63	
AM 7276	Sept. 7, 1910	60	

An examination of the above plates shows a variation of at least 1.0 2.7 magn. { AM 5678 ft. AM 7254 br. / AM 3152 ft

W.P.F.

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1906phae.proj..819F

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