1899phae.proj. 8148

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Book 13

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Date	Object	Page
March 26, 98	New Variable Star $20^h\ 3.3^m - 60^\circ\ 14'$ (1900)	4 – 17
" " "	" " " $16^h\ 54.3^m - 54^\circ\ 53'$ (1900)	18 – 28
Apr. 27, "	Meas. of new star θ Apodis (Cir. No 24)	29 – 44
Aug. 30, 99	Washington Put. Naval Obs. Greenwich Put.	45 –
Oct. 24, 99	I. 5689 $9^h\ 17.4^m + 6^\circ\ 31'$ (Appro 1875) Reflect? N.P.D.	46.
Feb. 19, 1900	Exam. of plates for evidence of variation in star $13^h\ 4.9^m - 51^\circ\ 12'$ (Appro 1875)	47
June ? 1900	Exam. of plates to show change in position or magn. in B.D. $-14^\circ 5677$	48
July 20 "	Exam of $+27^\circ 2404$. $14^h\ 32.9^m + 27^\circ\ 26$ (1855) Susp. var.?	49
" " "	" to confirm variation of Mme Ceraski's new var. $18^h\ 32^m\ 44^s.1 + 25^\circ\ 57'\ 54''$ (1900)	51
" 21 "	" of plates to conf. var. in ft. star south prec. B.D. -12° 3759	52
" " "	Exam. " " " determine var. in B.D. 5° 366 $2^h\ 28^m\ 24^s.1 + 5^\circ\ 48'\ 38''.3$ (1855)	53
" " "	" " " to confirm var. in C.D. No. -41° 3380 Magn. 9.8. $7^h\ 42^m\ 40^s.2 - 41^\circ\ 45'$	54
Oct. 10, 1900	Plates examined for Algol Var.? $+42^\circ$ 628	56
Nov. 21, 1900	Exam. of Plate containing image of Sun.	57
Nov. 21, 1900	" " " " images of stars in Pleiades	58.
Jan. 14, 1901	" " photographs for $+34^\circ$ 447 $2^h\ 22.3^m + 34^\circ\ 2'$ (1855)	59
Jan. 22, 1901	Exam. of Plates for star observed by Prof. Searle on Apr. 6, 1889	60 – 61
Feb. 13, 1901	" " plates to determine var. of Anderson's var in R.A. Dec. South preceding $+43^\circ$ 462 $2^h\ 8^m.92$ Dec. $+43^\circ\ 38'.6$	62
Feb. 22, 1901	Exam of Plates for Nova Persei. Disc. by Anderson, Edinburgh	64
Mar. 27, 1901	" " " to determine var. of $+79^\circ$ 305 Pos. $9^h\ 14^m.4 + 78^\circ\ 5'$ (1900)	65
April 19, 1901	Exam of Asteroid trails on A Plates for variation in Light.	66
May 23, 1901	Exam of Spectra of Nova Persei No 2 on 8 inch Draper plates.	67
June 21, 1901	" " " " " " " " " " " " "	68 – 90

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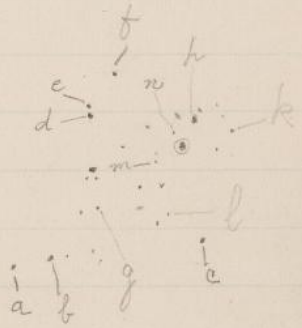
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March 22, 1898.

New var. star in
Sp. Mcsd. m. B19013 No. 10100. A.G.C. 27560 $20^h\ 3.3^m$ $-60°\ 14'$ (1900)

Plate B14501 March 25, 1898

	a	6.6	
	b	7.2	
	c	7.5	
9.44	d	7.8	9.54, 9.54 = 9.54 00 00
9.84	e	8.1	9.74
	f	8.4	
	g	8.7	
	h	9.0	
	k	9.4	
	l	9.7/10.0	
	m	~~10.0~~	
	n	10.3	
	var.	7.9	



S

9.44 d 2 v 9.64, 9.64 = 9.64 00 00
9.64 v 1 e 9.74

B 14401

9.09 c 2 v 9.29, 9.24 = 9.26 .03 .02
9.24 v 2 d 9.44

B 12924

9.09 c 2 v 9.29, 9.34 = 9.32 .03 .02
9.34 v 1 d 9.44

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1898phaa.proj..814f

New var. Star in

B 13752 ✓

9.09 C3v 9.39, 9.44, 9.44 = 9.42 .03 .02, .02,
9.44 v0d 9.44
9.44 v3e 9.74

B 11641 ✓

8.81 f3v 9.11, 8.99 = 9.05 .06 .06
8.99 v1c 9.09

B 17694 ✓

9.09 C2v 9.29, 9.24 = 9.26 .03, .02
9.24 v2d 9.44

B 16418 ✓

9.09 C3v 9.39, 9.44, 9.44 = 9.42 .03, .02 .02
9.44 v0d 9.44
9.44 v3e 9.74

B 14829 ✓

9.44 d2v 9.64, 9.64 = 9.64 00 00
9.64 v1e 9.74

B 19977 ✓

9.09 C3v 9.39, 9.34 = 9.36 .03, .02
9.34 v1d 9.44

B 4421 Sp. Two Groups ✓

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1898phae.proj..814F

March 25, 1898 (Cont-

New Variable Star in

B 12177 ✓

9.09 C 2 V 9.29, 9.24 = 9.26 .03, .02
9.24 V 2 d 9.44

B 15452 ✓

9.74 e 2 V 9.94, 9.86 = 9.90 .04, .04
9.86 V 1 f 9.96

B 19857 ✓

9.44 d 1 V 9.54, 9.54 = 9.54 00 00
9.54 V 2 e 9.74

B 3411 ✓ Sp. too poor -

B 19696 ✓

9.09 C 2 V 9.29, 9.34 = 9.32 .03 .02,
9.34 V 1 d 9.44

B 14214 ✓

9.09 C 2 V 9.29, 9.24 = 9.26 .03, .02
9.24 V 2 d 9.44

B 5101 ✓ Sp. too poor -

B 20291 ✓

9.09 C 2 V 9.29, 9.34 = 9.32 .03 .02
9.34 V 1 d 9.44

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1898phaa.proj..8148

Cont 7

New Variable Star in

B 20752 ~~030~~ ✓

9.44 d 1 v 9.54, 9.54 = 9.54 00 00
9.54 v 2 e 9.74

B 5104 Sp. too poor ✓

B 6845 Sp. too poor ✓

B 13217 ✓

9.44 d 2 v 9.64, 9.64 = 9.64 00 00
9.64 v 1 e 9.74

B 17146 ✓

9.44 d 2 v 9.64, 9.64 = 9.64 00 00
9.64 v 1 e 9.74

B 6253 ✓

9.09 c 2 v 9.29, 9.24 = 9.26 .03, .02
9.24 v 2 d 9.44

B 6254 ✓

9.09 c 1 v 9.19, 9.24 = 9.22 .03 .02,
9.24 v 2 d 9.44

B 13219 ✓

9.44 d 2 v 9.64, 9.64 = 9.64 00 00
9.64 v 1 e 9.74

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1898phae.proj..814f

March 25, 1898 (Cont.

New variable Star in

B 18776 ✓

9.96 f 2 v 10.16, 10.18 = 10.17 = .01 .01
10.18 v 1 g 10.28

B 18972 ✓

9.96 f 1 v 10.06, 10.08 = 10.07 .01 .01,
10.08 v 2 g 10.28

B 17655 ✓

9.44 d 1 v 9.54, 9.54, = 9.54 00 00
9.54 v 2 e 9.74

B 18641 ✓

9.74 e 1 v 9.64, 9.76 = 9.70 .06 .06,
9.76 v 2 f 9.96

B 16886 ✓

9.44 d 2 v 9.64, 9.64 = 9.64 00 00
9.64 v 1 e 9.74

B 6256 ✓

9.44 d 1 v 9.54, 9.54 = 9.54 00 00
9.54 v 2 e 9.74

B 5408 ✓

9.09 c 2 v 9.29, 9.24 = 9.26 .03, .02
9.24 v 2 d 9.44

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1898phae.proj..814f

Cont

New variable Stars in

B 13265

a 5.8
b 6.4
c 6.7
d 7.0
9.74 e 7.3 9.84, 9.86 = 9.85 = .01 .01 ✓
9.86 f 7.5 9.96
g 7.8
h 8.2
K 8.5
l 8.7
m 9.3
n 9.7
var 7.4

9.74 e 1 v 9.84, 9.76 = 9.80 .04, .04 ✓
9.76 v 2 f 9.96

B 16581

9.44 d 2 v 9.64, 9.64 = 9.64 00 00 ✓
9.74 v 1 e 9.74

B 13892

9.44 d 1 v 9.54, 9.54 = 9.54 00 00 ✓
9.54 v 2 e 9.74

B 3965

9.44 d 2 v 9.64, 9.64 = 9.64 00 00 ✓
9.64 v 1 e 9.74

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1898phae.proj..814F

March 25, 1898

Cont.

Meas. New Variable Star in

B 7963 Sf. too poor. ✓

B 7845 ✓

9.44 d 2 v 9.64, 9.64 = 9.64 00 00
9.64 v 1 e 9.74

B 16369 ✓

9.44 d 2 v 9.64, 9.54 = 9.59 .05, .05
9.54 v 2 e 9.74

B 7973 Sf. too poor ✓

B 3944 ✓

9.44 d 1 v 9.54, 9.54 = 9.54 00 00
9.54 v 2 e 9.74

B 8223 Sf. too poor ✓

B 16234 ✓

9.44 d 1 v 9.54, 9.54 = 9.54 00 00
9.54 v 2 e 9.74

B 16111 ✓

9.09 c 2 v 9.29, 9.24 = 9.26 .03, .02
9.24 v 2 d 9.44

B 8361 Sf. too poor ✓

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1898phae.proj..814f

(Cont.

Meast. New variable Stars in

B 3582 ✓

9.09 C 2 v 9.29, 9.24 = 9.26 .03, .02
9.24 v 2 d 9.44

B 15896 ✓

9.09 C 3 v 9.39, 9.34 = 9.36 .03 .02
9.34 v 1 d 9.44

B 8523 ✓

9.09 C 4 v 9.49, 9.44, 9.44 = 9.46 .03, .02 .02
9.44 v 0 d 9.44
9.44 v 3 e 9.74

B 8522 ✓

9.09 C 3 v 9.39, 9.34 = 9.36 .03, .02
9.34 v 1 d 9.44

B 15744 ✓

9.44 d 1 v 9.54, 9.54 = 9.54 00 00
9.54 v 2 e 9.74

B 15533 ✓

9.44 d 2 v 9.64, 9.54 = 9.59 = .05, .05
9.54 v 2 e 9.74

B 3538 ✓

9.09 C 3 v 9.39, 9.34 = 9.36 .03, .02
9.34 v 1 d 9.44

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1898phae.proj..814F

March 25, 1898 (Cont.

Meas. New variable Star in

B 13776 Sp.

9.74 e1v 9.84, 9.76 = 9.80 .04, .04
9.76 v2f 9.96

B 17995

9.74 e1v 9.84, 9.76 = 9.80 .04, .04
9.76 v2f 9.96

B 10,229

9.09 c2v 9.29, 9.24 = 9.26 .03, .02
9.24 v2d 9.44

B 17229

9.09 c3v 9.39, 9.34 = 9.36 .03, .02
9.34 v1d 9.44

B 3541

9.09 c3v 9.39, 9.34 = 9.36 = .03, .02
9.34 v1d 9.44

B 4098

9.44d2v 9.64, 9.64 = 9.64 00 00
9.64 v1e 9.74

B4244

9.44 d2v 9.64, 9.54 = 9.59 .05, .05
9.54 v2e 9.74

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1898phae.proj..814f

Cont.

Meas. New Variable Star in

B12511 ✓

9.09 c 4 v 9.49, 9.44, 9.44 = 9.46 .03, .02 .02
9.44 v 0 d 9.44
9.44 v 3 e 9.74

B13543

a ~~6.4~~ 6.0 ✓
b 6.6

~~9.09~~ c 6.9 ~~9.49~~,
9.44 d 7.3 9.44, 9.44 = 9.44 00 00
9.44 e 7.6 9.74
f 7.8
g 8.1
h 8.4
K 8.7
l 8.9
m 9.4
n 9.8
var ~~7.3~~

9.44 d 2 v 9.64, 9.64 = 9.64 00 00
9.64 v 1 e 9.74

✓

B 3760

9.44 d 1 v 9.54, 9.34 = 9.44 10 10
9.34 v 4 e 9.74
c not on plate ✓

B4233 too near edge of plate -

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March 25, 1898

Cont.

Meas. New variable Star in

B 11,855 ✓

9.09 @ 1 v 9.19, 9.14 = 9.16 .03. 02
9.14 v 3 d 9.44

B 11,664 ✓

9.44 d 1 v 9.54, 9.54 = 9.54 00 00
9.54 v 2 e 9.74

B 19,334 ✓

9.09 @ 3 v 9.39, 9.34 = 9.36 .03, .02
9.34 v 1 d 9.44

B 11,511 Sp. ✓

9.44 d 2 v 9.64, 9.54 = 9.59 .05, .05
9.54 v 2 e 9.74

B 19285 ✓

9.09 @ 2 v 9.29, 9.24 = 9.26 .03, .02
9.24 v 2 d 9.44

B 11,513 Sp ✓ too poor —

B 4080 ✓

9.09 @ 3 v 9.39, 9.34 = 9.36 .03, .02
9.34 v 1 d 9.44

B 11,528 Sp. ✓

9.44 d 3 v 9.74, 9.66 = 9.70 .04, .04
9.66 v 3 f 9.96

2 not easily seen —

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Meas. New Variable Star in

B 19,151 ✓

9.09 c 2 v 9.29, 9.24 = 9.26 .03, .02
9.24 v 2 d 9.44

B 11,529 Sq. 1 ✓

9.44 d 3 v 9.77, 9.66 = 9.72 .05, .06
9.66 v 3 f 9.96
2 not easily seen.

B 4092. Sq. too poor ✓

B 12,056 Sq. too poor ✓

B 17489 ✓

9.44 d 2 v 9.64, 9.64 = 9.64 00 00
9.64 v 1 e 9.74

B 10233 ~~12,055~~ ✓

9.09 c 1 v 9.19, 9.14 = 9.16 .03, .02
9.14 v 3 d 9.44

B 10,232 ✓

9.09 c 2 v 9.29, 9.24 = 9.26 .03, .02
9.24 v 2 d 9.44

B 10,228 ✓

9.09 c 2 v 9.29, 9.24 = 9.26 .03, .02
9.24 v 2 d 9.44

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March 25, 1898

(Cont.

Meas. new variable Star in

B 8622 Sp - too poor ✓

B 4029 ✓

9.44 d 2 v 9.64, 9.54 = 9.59 .05, .05

9.54 v 2 e 9.74

B 11,996 Sp. too poor ✓

B 19,456 ✓

9.09 c 3 v 9.39, 9.34 = 9.36 .03, .02

9.34 v 1 d 9.44

B 6677 Sp. too poor ✓

B 5661 Sp - too poor ✓

B 14613 Sp. too poor ✓

B 14612 Sp. too poor ✓

B 6255 ✓

9.09 c 2 v 9.29, 9.24 = 9.26 .03, .02

9.24 v 2 d 9.44

B 11,564 ✓

8.81 b 2 v 9.01, 8.99 = 9.00 .01, .01

8.99 v 1 c 9.09

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Cont –

Meas. new Variable Star in
B 17386 Sp. too poor –

B 13223

9.09 C 2 v 9.29, 9.24 = 9.26 .03, .02
9.24 v 2 d 9.44

B 20571

9.09 C 2 v 9.29, 9.24 = 9.26 .03, .02
9.24 v 2 d 9.44

B 6692 Sp. too poor –

B 4090 Sp. too poor –

B 4091 Sp. too poor –

B 19978

a 6.7
b 7.2
9.09 c 7.4 9.29, 9.24 = 9.26 .03, .02
9.24 d 7.8 9.44
e 8.1
f 8.3
g 8.7
h 9.0
K 9.3
l 9.5
m 10.0 9.09 C 2 v 9.29, 9.24 = 9.26 .03, .02
n 10.4 9.24 v 2 d 9.44
Var. 7.6

B 19013 Sp.

9.44 d 6 v 10.04, 9.86 = 9.95 .09, .09
9.86 v 1 f 9.96
e Not Easily Examined.
a = 6.6 Sp K
b = F
c = A5
d = F
e = F2
f = A2
g too faint –

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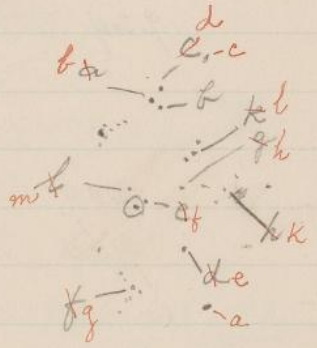
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March 26, 1898.

New var star in Type IV on B 13824 16.7618. Alg. C. 23m05 $16^h 54^m.3 - 57° 55'$ (1900). A.D.N. 32/160)

Plate B 17430 April 12, 1898

	a	7.4	
	b	7.8	
	c	8.1	
	d	8.4	
	e	8.8	
	f	9.1	
10.54	g	9.3	10.74, 10.72 = 10.73 .01, .01
10.72	h	9.6	10.82
	k	9.9	
	l	10.2	
	m	10.5	
	var	9.5	



✓

10.54 g 2 v 10.74, 10.72 = 10.73 .01, .01
10.72 v 1 h 10.82

✓

B 3531 too poor on edge of plate –

B 3738

✓

10.02 h 1 v 10.12, 10.12 = 10.12 00 00
10.12 v 2 f 10.32 on edge of plate –

✓

B 3779 too poor – on edge of plate

B 3782

✓

10.54 g 1 v 10.64, 10.62 = 10.63 .01, .01
10.62 v 2 h 10.82

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1898phae.proj..8141

April 12, 1898

(Cont.

(60)

Meas. New Var. Star in

B 4955 Sp. too poor - ✓

B 4007 ✓

10.54 g 2 v 10.74, 10.72 = 10.73 01, 01

10.72 v 1 h 10.82

B 4009 ✓

10.54 g 2 v 10.74, 10.62 = 10.68 .06, .06

10.6 z v 2 h 10.82

B 4088 Sp too poor - ✓

B 11630 ✓

10.82 h 1 v 10.92, 10.92 = 10.92 00 00

10.92 v 2 K 11.12

B 1992 6 Sp. too poor ✓

B 5949 too poor - ✓

B 6807 Sp. too poor - ✓

B 6754 ✓

10.82 h 1 v 10.92, 10.92 = 10.92 00 00

10.92 v 2 K 11.12

B 8315 Sp. too poor - ✓

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1898phae.proj..814F

April 12, 1898

Cont.

Meas. new vals. Stab in

B 9810 Sp. ✓

9.70 d 2v 9.90, 9.92 = 9.91 .01 .01
9.92 v 1e 10.02

B 11597 ✓

10.54 g 2v 10.74, 10.72 = 10.73 .01, .01
10.72 v 1h 10.82

B 8708 ✓

10.32 f 2v 10.52, 10.44 = 10.48 .04, .04
10.44 v 1g 10.54

B 9161 ✓

10.02 e 2v 10.22, 10.22 = 10.22 00 00
10.22 v 1f 10.32

B 4047 ✓

10.82 h 1v 10.92, 10.92 = 10.92 00 00
10.92 v 2k 11.12

B 7606 too poor — ✓

B 9599 Sp. too poor — ✓

B 11993 Sp — too poor — ✓

B 9638 ✓

10.32 f 1v 10.42, 10.34 = 10.38 .04, .04
10.34 v 2g 10.54

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1898phae.proj..8145

Meas. new variable star in

B 8287 Sp. too poor — ✓

B 16281 ✓

9.70 pd 2 v 9.90, 9.92 = 9.91 .01 .01

9.92 v 1 e 10.02

B 9112 Sp- ✓

9.70 d 2 v 9.90, 9.92 = 9.91 .01, .01

9.92 v 1 e 10.02

B 9447 Sp- ✓

9.70 d 2 v 9.90, 9.92 = 9.91 .01 .01,

9.92 v 1 e 10.02

B 12093 ✓

10.54 g 2 v 10.74, 10.72 = 10.73 .01; .01

10.72 v 1 h 10.82

B 4885 Sp - too poor — ✓

B 7699 Sp - too poor — ✓

B 9646 ✓

10.02 e 2 v 10.22, 10.22 = 10.22 00 00

10.22 v 1 f 10.32

B 12966 ✓

10.82 h 2 v 11.02 11.02 = 11.02 00 00

11.02 v 1 K 11.12

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1898phae.proj..814F

April 12, 1898

Cont.

Meas. new variable Star in

B 11596 ✓

10.82 h 1 v 10.92, 10.92 = 10.92 00 00

10.92 v 2 K 11.1[illegible] x edge of plate –

B 9368

a 7.4
b 7.7
c 8.0
d 8.3
e 8.6
f 8.9 ✓
10.54 g 9.1 10.74, 10.72 = 10.73 .01, .01
10.72 h 9.4 10.82
K 9.7
l 10.0
m 10.3
[illegible] 9.3

10.54 g 2 v 10.74, 10.72 = 10.73 .01, .01 ✓
10.72 v 1 h 10.82

B 6284 ✓

10.54 g 2 v 10.74, 10.72 = 10.73 .01, .01
10.72 v 1 h 10.82

B 11416 ✓

10.32 f 2 v 10.52, 10.44 = 10.48 .04, .04
10.44 v 1 g 10.54

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1899phac.proj - 8145

(Cont'd)

Wendell - New variable Stars in

B 5985 ✓

10.32 f 2 v 10.52, 10.44 = 10.48 .04, .04
10.44 v 1 g 10.54

B 11,994 Sp. too poor -

B 17,431 ✓

10.54 g 1 v 10.64, 10.62 = 10.63 .01, .01
10.62 v 2 h 10.82

B 12223 Sp. too poor -

B 9644 ✓

10.54 g 2 v 10.74, 10.62 = 10.68 .06, .06
10.62 v 1 h 10.82

B 9687 ✓

~~f~~ v 10.54 g 1 v 10.64, 10.62 = 10.63 .01, .01
~~v 2~~ 10.62 v 2 h 10.82

B 15871 ✓

10.32 f 1 v 10.42, 10.34 = 10.38 .04, .04
10.34 v 2 g 10.54

B 13528 ✓

10.54 g 2 v 10.74, 10.72 = 10.73 .01, .01
10.72 v 1 h 10.82

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1898phae.proj..814F

April 12, 1898 (Gr.

Meas Nov Vol. Star in

B 13101 ✓

10.8z L, v 10.9z, 10.9z = 10.9z 00 00

10.9 z v, K 11.1z on edge of plate

B 13530 ✓

10.54 g z v 10.74, 10.7z = 10.73 .01, .01

10.7z v, L 10.8z

B 16358 too poor - on edge of plate ✓

B 19918 Sf - ✓

9.70 d z v 9.90, 9.9z = 9.91 .01 .01

9.9z ~~10.1z~~ v, e 10.0z

B 9460 Sf. too poor ✓

B 6841 Sf. too poor ✓

B 11499 Sf - too poor ✓

B 12889 Sf. too poor ✓

B 17553 too poor ✓

B 6100 ✓

10.0z L z v 10.2z, 10.2z = 10.2z 00 00

10.2z v, f 10.3z

B 7816 ✓

10.8z L z v 11.0z, 11.0z = 11.0z 00 00

11.0z v, K 11.1z

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1898phae.proj.. 8140

Cont.

Ueat - New variable Star in

B 9685 ✓

10.54 g 1 v 10.64, 10.62 = 10.63 .01 .01

10.62 v 2 h 10.82

B 19895 Sp. too poor - ✓

B 3805 ✓

10.82 h 2 v 11.02, 11.02 = 11.02 00 00

11.02 v 1 K 11.12

B 17442 ✓

10.54 g 2 v 10.74, 10.72 = 10.73 .01, .01

10.72 v 1 h 10.82

B 13492

a 7.1

b 7.4

c 7.7

d 8.0

e 8.4 ✓

f 8.7

10.54 g 8.9 10.64, 10.62 = 10.63 .01, .01

10.62 h g 2 10.82

K 9.5

l 9.7

m 10.0

var - 9.0 ✓

10.54 g 1 v 10.64, 10.62 = 10.63 .01, .01

10.62 v 2 h 10.82

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1898phae.proj..814f

April 12th 1898

Cont.

Meas. new variable Stars in

B 11629 ✓

10.54 g 2 v 10.74, 10.72 = 10.73 .01, .01
10.72 v 1 L 10.82

B 16443 ✓

10.02 L 2 v 10.22, 10.22 = 10.22 00 00
10.2 2 v 1 f 10.32

B 6273 ✓

10.02 L 2 v 10.22, 10.22 = 10.22 00 00
10.22 v 1 f 10.32

B 15336 Sq. too poor ✓.

B 11848 ✓

10.54 g 1 v 10.64, 10.62 = 10.63 .01 .01
10.62 v 2 L 10.82

B 12957 ✓.

10.82 L 1 v 10.92, 10.92 = 10.92 00 00
10.92 v 2 K 11.12

B 19872 Sq. ✓

9.90 d 2 v 9.90, 9.92 = 9.91 .01 .01
9.92 v 1 e 10.02

B 9684 ✓

10.54 g 1 v 10.64, 10.62 = 10.63 .01 .01
10.62 v 2 L 10.82

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1898phae.proj..814F

Cont.

Meas - new variable star in

B 3956 Sf - too poor ✓

B 3957 Sf. too poor - ✓

B 3954 Sf too poor - ✓

B 3953 ✓

10.32 f 1 v 10.42, 10.34 = 10.38 .04, .04

10.34 v 2 g 10.54

B 3942 ✓

10.54 g 2 v 10.74, 10.72 = 10.73 .01, .01

10.72 v 1 r 10.82

B 3918 Sf - too poor - ✓

B 3860 ✓

10.32 f 1 v 10.42, 10.34 = 10.38 .04, .04

10.34 v 2 g 10.54

B 3901 Sf. too poor - ✓

B 3695 Sf - too poor ✓

~~3d~~ B 7983 Sf - too poor - ✓

See next page

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1898phae.proj..814f

April 12th 1898 Cont—

Meas - new Var. Star in

B 19164

a 7.2
b 7.5
c 7.8
d 8.1
e 8.3
f 8.6
10.54 g 8.9 10.64, 10.72 = 10.68 .04, .04
10.72 h 9.1 10.82
k 9.4
l 9.7
m 10.0
var. 9.0

10.54 g 1 v 10.64, 10.62 = 10.63 .01, .01
10.62 v 2 h 10.82

B 18824 Sep -

9.70 d 2 v 9.90, 9.92 = 9.91 .01, .01
9.92 v 1 e 10.02

a Class a
b " a
c " d
d " a
e " a?
f too faint
Var. is Na

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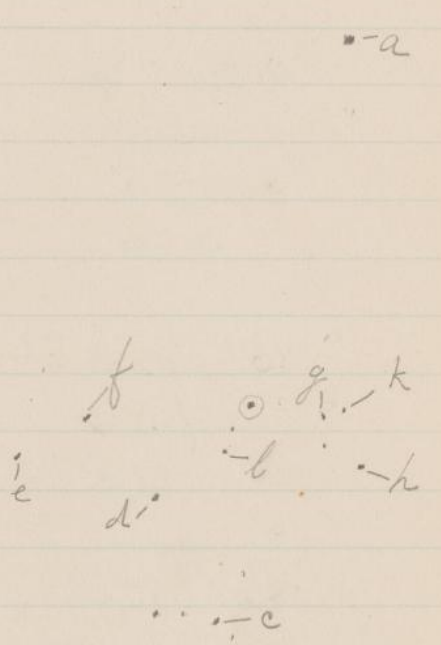
1898phae.proj..814f

April 27, 1898.

Meas. of var. Star, & Apodis (Circ No. 24).
Sp. McAd on B19035 No. 9933

Plate B5403

a	3.4
b	3.9
c	4.4
d	4.8
e	5.1
f	5.6
g	6.0
h	6.5
k	6.9
l	7.2
var.	4.2



f3r
r2c

· B11844
a4r
r4c
b not on plate

· B11716 Sp.
r5c
b not on plate

· B9271
r6c
b not on plate.

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1898phae.proj..814F

April 27, 1898.

Measure of θ Apodis.

B 5885 S/.
a 5 r
r a b
r 5 c

B 13763 S/.
b 2 r
r 3 c

B 3390 S/.
Too poor.

B 13468 S/.
a 5 r
r 5 c
b not on plate.

B 10822 S/.
a b r
b c not on plate

B ~~3055~~ 5035 S/.
Too poor.

B 9491 S/.
r 1 b
r b c
c not on plate.

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1898phae.proj..814F

April 27, 1898.

Measure of θ Ophiuchi.

· B 11140
b 3 r
r 2 c

· B 11112
r 3 c
a & b not on plate

· B IX 169
r 4 c
a & b not on plate.

· B 13208
b 4 r
r 1 c

· B 3387
b 4 r
r 1 c

· B 11061
b 3 r
r 2 c

· B 15819
b 2 r
r 3 c

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1898phae.proj..814F

April 27. 1898.

Measure of θ Apodis.

B 15543
b 1 r
r 4 c

B 15541
r 2 b
r 6 c
a not on plate.

B 3322
a 5 r
r 5 c
b not on plate

B 12997
b 3 r
r 3 c

B 5067
a 5 r
r 5 c
b not on plate.

B 13210
b 3 r
r 3 c

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1898phae.proj..814f

April 27, 1898.

Measure of θ Apodis.

B 9362
a 4 r
r 1 f

B 16269
a 3.7
b 4.4
c ~~5.0~~
d 5.1
e 5.4
f 5.9
g 6.3
h 6.7
k 7.1
l 7.5
var 4.5
f 1 r
r 5 c

B 11005
f 1 r
r 4 c

B 5064
a 5 r
r 0 f
r 5 c

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1898phae.proj..814F

April 27, 1898.

Measure of θ Aquilæ.

B 6540
a 5 r
r 5 c
b not on plate.

B 3858
a 6 r
r 4 c
b not on plate

B 3989
a 1 r
r 8 c
b not on plate

B 12996
b 3 r
r 3 c

B 10932
r 3 c
b not on plate

B 11113
f 2 r
r 3 c

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1898phae.proj..814f

April 27, 1898.

Measure of θ Aquilae.

· B 5005
b 2 r
r 3 c

· B 4794
a 5 r
r 5 c
b not on plate.

· B 4905 S/.
Typ poor.

· B 9309
b 2 r
r 4 c

· B 18639
b 3 r
r 2 c

· 5028 S/.
a 4 r
r 1 b

· 7286 S/.
Typ poor.

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1898phae.proj..814F

April 27, 1898.

Measure of θ Aquilæ.

· B 6348
a 3 r
r 2 f
Ondge of pl.

· B 19160 Sf.
b 2 r
r 3 c

Class
a a
b F ~~D~~
c a
d a
e a
f a
g a
h a
k K
l a
var. M f 5 c

· B 11093
b 3 r
r 3 c

· B 11074
b 2 r
r 4 c

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1898phae.proj..814f

April 27, 1898.

Measure of δ Aquilis.

B 19825
f 1 r
r 5 c

B 12948
a 5 r
r 5 c
b not on plate

B 6341
f r 6 c
B not on plate

B 7631
b 1 r
r 5 c

B 11717
r 6 c
b not on plate

B 5438 S/.
f 3 r
r 3 c

B 8192 S/
f 1 r
r 5 c

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1898phae.proj..814F

April 27, 1898.

Measure of θ Aquilæ.

B 11841
b 2 r
r 3 c
On edge of pl.

B 3468 Sf.
b 2 r
r 4 c

B 15620 Sf.
a 4 r
r 1 b

B 12881
r 4 c
b not on plate

B 8301 Sf
a 4 r
r 1 b

B 12880 Sf
b 3 r
r 2 c

B 11157
r 3 c
On edge of plate

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1898phae.proj..814f

Measure of δ Apodis

· B 7710 Sf
On edge of plate

· B 16187
r 5 c
b not on plate

· B 9594
b 3 r
r 3 c

· B 8033 Sf.
On edge of pl.

· B 7992 Sf.
r 4 c
b not on plate

· B 20051
b 4 r
r 2 c

· B 10821 Sf.
b 1 r
r 4 c

· B 7241
Too poor

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1898phae.proj..814F

April 27, 1898.

Measure of θ Aquilæ

B 3751
a 5.0
b . 7.0 var.?
c 6.0
d 6.2
e 6.5
f 7.0
g 7.3
h 7.7
k 8.1
l 8.4
var 6.1
c l r
r l d

B 12994
r l b
r 4 c
a not on plate

B 18936
r 2 b
r 6 c
a not on plate.

B 19316
a b r
r 4 c
b not on pl.

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1898phae.proj..814f

April 27, 1898

Measure of θ Aquilæ.

B 16218
b 1 r
r 4 c

B 11007
a 6 r
r 4 c
b not on plate

B 6441
r 2 b
r 6 c
a not on plate

B 16674
a 4 r
r 6 c

(a 6 b
b 4 c)

B 18948
e 1 r
r 3 f
On edge of plate

B 16255
a 7 r
r 4 c
b not on pl.

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1898phae.proj..814F

April 27, 1898.

Measure of θ Aquilæ.

· B 19211 Sf
a 6 r
r 4 c

· B 9333
r 0 b
r 5 c

· B 5025 Sf.
Too poor.

· B 9332
b 1 r
r 4 c

· B 9272
a 3 r
r 6 c
b not on plate

· B 7374 Sf
b 1 r
c not on pl.

· B 9303
b 2 r
r 3 c

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1898phae.proj..814f

April 27, 1898.

Measure of θ Apodis

B 7321 Sf.
Too poor.

B 7284 Sf.
b 2 r
r 4 c

B 9495
b 2 r
x c obscured by mountain tops

B 7271 Sf.
Too poor.

B 7273
Too poor

B 6349
a 5 r
r 4 c
b not on plate

B 19035 Sf.
a 8 & r
r 4 c
b not on pl. over.

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1898phae.proj..814F

April 27, 1898.

Measure of θ Ophiuchi

B 3768

a a 8 r
r 2 c

a 8 b
b 2 c

B 3788

a 5.6
b 6.3
c 6.8
d 7.0
e 7.3
f 7.7
g 8.1
h 8.4
k 8.8
l 9.1
var. 5 7.3

c 2 r
r 0 d
r 3 e

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1898phae.proj..814f

August 30, 1899

	Washington Pub. Naval Obs.	Greenwich Pub.	
1875	63	74	11
76	42 + 52 94	80	-14
77	47 Eclipse	69	22
78	32 + 43	65	-10
79	25	69	44
80	28	74	46
81	~~21~~ 20	57	37
82	26	66	40
83	~~38~~ 28	71	43
84	38 (37)	78	40
85	60 (57)	79	19
86	32	74	38
87	41	97	56
88	35	77	42
89	18	66	48
90	38	70	32
91		74	
92		82	
93		113	
94		104	
95		104	
96		108	

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1898phae.proj..814F

"Image on plate I 5689. 9^{h} 17.4 +6° 31 (Approx 1855) marked by W.P.F on Oct 3, 1899. Not on I 17768, 3320, 8232, 5794, 14683, 19549 and 10246. Plate I 5745 taken two days later fails to show any object near this position. Probably defect on I 5689"

The above note copied from cover of I 5689. Oct 24 1899
E.L.

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1899phae.proj..0147

February 19, 1900.

Obtain A plates for evidence of variation in place
South preceding ~~C.D.M. -51° 7341 13h 4m.8 - 51° 13' 9".0 mag.~~ C.D.M. -51° 7339 13h 4m.7 - 51° 13' 10" mag. which is No. 3056 Ma.
B9422 compared with B20038 and var. in this obj. susp.
var suspected on Nov. 29, 1899.

Plates

B22446
18637
21872
15544
9150
3477
15767
16179
19924
13449
22992
21234
9422
20038
18935

Bd. 13h 4m.7 - 5i 12'(3)(1875).
These plates examined and show slight if any variation in the above star.

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1898phae.proj..814f

June ? 1900.

Mag.	α 1890	δ 1890
Weiss (8)	$20^h\ 8^m\ 0^s.40$	$-13°\ 58'\ 35''$
W.C. (8.5)	8 0.49	58 10
Sj.	8 0.72	−14 13 27

BD. −14° 5677 mag. 8.7 (Sj.)

Plate	Date	Ef.
B 6145		
9898		
10448		
10971		
13670		
13902		
15748		
16114		
16429		
19489		
19604		

An examination of the above plates fails to show any change in position or magnitude in BD-14°5677.

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1898phae.proj..814F

July 20, 1900.

Exam. of plates of +27° 2404 RA 14 32.9 Dec +27° 26' 1855.0 87 Descr. Frac. by (?)

Plate	Date	Exp	Comp with a = +27° 2412 8,5
I 2757	April 26, 1898	11 m	0.5 br.
I 12669	April 16, 1895	11	0,5 br.
I 1134	May 2, 1890	18	0,2 br.
I 1311	June 18, 1890	9	0,6 br.
I 11114	May 15, 1894	11	0,5 br.
I 1271	June 9 1890	10	0,1 str.
I 1637	August 15, 1890	26	0,2 br.
I 3687	June 8, 1891	16	0.7 br.
I 6343	May 27, 1892	18	0.4 br.
I 6447	June 12, 1892	10	0.7 br.
I 14559	February 25, 1896	10	0.4 br.
fp. I 698	February 28, 1890	67	0,3 br. Cl. 7.

The above examination shows the star +27° 2404 to be variable but being bright it is difficult to find suitable adjacent comparison stars and to ~~estimate~~ the

Measure.

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1898phae.proj..814F

July 20, 1900.

Eqtn of plates for var. in −4° 5381. Ins pg var by (?)

Plate	Date	Eqt. −4° 5381	
B 13713	June 8 1895	10m	ft.
B 6047	May 22, 1891	10.	br.
B 20715	Nov. 10, 1897	10,	br.

Var of about 1 magn. Measure.

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1898phaeo.proj.:814F

July 21, 1900

Exam. of plates to confirm variation of Mrs. Cranke's new var. R.A. 18h 32m 44s.1 Dec. +25° 57' 54" (1900). See Astron. Nach. 153 p. 35.

Plate	Date	Exp.	var.
I 9057	Aug. 3, 1893	11m	N.S.
I 20942	July 1, 1898	15m	N.S.
I 6631	July 21, 1892	19m	~~N.S.~~ (?).
I 11646	Oct. 15, 1894	10m	ft.
(Erythus) I 18923	Sept. 1897	10m	ft.
I 6621	July 20, 1892	21m	br.
I 23463	Sept. 12, 1899	10m	br.

Var. conf.: Measure (?).

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1898phae.proj..814f

July 21, 1900.

Exams of plates to conf. var. in 5th star South prec. BD −12° 3759
Rd 13 0 22,3 Dec. −12° 23' 9.6. See letter of E. E. Markwick (?) May 9 (?)
Comp with BD −12° 3758 mag. 10.

Plate	Date	Exp.	Magn
B 13657	June 6, 1895	10m	10,0
B 13930	July 3, 1895	10	10,5
B 19556	June 17, 1897	10	<11
I 973	April 7, 1890	13	10,4
B 22535	April 8, 1899	11	11,5
B 16176	June 6, 1896	10	<11,5
B 18635	March 12, 1897	15	<11,5
B 21370	May 9, 1898	8	11,3
B 16796	July 11, 1896	12	<11
B 16481	June 26, 1896	10	<10,4
B 15763	May 11, 1896	10	<10,3
B 11580	July 16, 1894		<11,3
B 9750			<11,2

Var. confirmed. Ent. in Card Cat.

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1898phae.proj..814

July 21, 1900. 1855 1855

6 pairs of plates to determine var. in BD +5°366 $2^h 28^m 24^s.1$ +5° 48' 38".3
Comp. of var. in the M.P. Comp with BD +6° 398 magn 6.5

Plate	Date	Exp.	Magn.
I 13822	Nov 15, 1895	11	6.8
I 9395	Sept. 4, 1893	13	7.0
I 21583	Oct. 31, 1898	17	6.9
I 7896	Jan 17, 1893	14	6.7
I 2702	Jan 3, 1891	10	6.6
I 4878	Nov. 27, 1891	14	7.0
I 11896	Nov. 15, 1894	10	7.1
I 13690	Oct. 10, 1895	16	6.4
I 7563	Nov. 20, 1892	10	7.3
I 21582	Oct. 31, 1898	10	6.3
I 21457	Oct. 17, 1898	12	6.8
I 3232	March 5, 1891	11	7.0
I 4742	Nov. 6, 1891	20	6.8
I 19955	Jan. 5, 1898	12	6.5
I 16334	Oct. 26, 1896	11	6.5
I 18975	Sept. 21, 1897	14	6.9

The image is bright on the above plates and the comparison is difficult. The star shows evidence of variation of about one magn. (?)

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1898phae.proj..814f

July 21, 1900.

Exam. of plates to conf. var. in CDm −41° 3380 magn. 9.8
R.A. 7h 4m 40.2s Dec. −41° 4'.5. Comp. with −41° 3397 magn 10

Plate	Date	Ef	Magn
B 15494	April 2, 1896	10m	10.4
B 15342	Feb 3, 1896	11	10.3
B 13011	April 11, 1895	10	10.2
B 15460	March 25, 1896	10	10.3
B 14971	Oct. 25, 1895	10	10.0
B 14990	Oct. 28, 1895	10	10.3
B 15076	Oct. 31 1895	10.	9.9
B 15228	Dec. 16, 1895	10	9.7
B 15303	Jan. 11, 1896	10	10.3
B 15415	March 16, 1896	10	9.8
B 15305	Jan 11, 1896	10	10.0

The above plates seem to show a variation of about half a magnitude in −41° 3380.

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1898phae.proj..814f

July 21, 1900.

Exam. of plates to conf. var. in

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1898phae.proj..814F

October 10, 1900

Plates examined for Algol Var? +42°628

I 19997	Jan. 8, 1898			
I 24475	Jan. 23, 1900			
I 25851	Sept. 24, 1900			
I 25852	" 24, "			
		Time Ex.		Time Cl.
I 25865	" 25, "	20 20	–	20 31
I 25866	" 25, "	20 33		21 52
I 25875	" 26, "	19 28		20 28
I 25876	" 26, "	20 33		21 06
ac 564	Dec. 4, 1899			
ac 959	Aug. 10, 1900			
ac 1006	Sept. 19, "			
ac 1007	" 19, "			
ac 1015	" 24, "			
ac 673	Jan. 10, "			
ac 680	" 21, "			
ac 684	" 22, "			
ac 698	" 30, "			
ac 703	Feb. 1, "			
var? b 12865	Sept. 25, 1900	22 39	–	23 43
bright b 12866	Sept. 25, 1900	1 42	–	2 11
I 25835	Sept. 22, "			
I 25836	" 22, "			
I 25837	" 22, "			

The above plates were examined on Oct. 10, and failed to show conclusive evidence of variation in +42° 628. W. P. Fleming. Oct. 11, 1900.

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1898phae.proj..814

November 21, 1900. Obs. W.

Contact-points of Eclipse plates taken by S. P. Langley

Examination of Plate containing image of Sun.
Star images in south-following corner of plate.
Eclipsed Sun on following edge of plate.

Vol. XLV	D.M.	Magn.	
5.66	+16° 586	6.0	faint
3.90	+17 712	3.7	good image
4.94	+17 714	4.8	bright circular image which may be partly defect
4.31	+17 719	4.7	good image, fairly bright.
—	+17 705	8.7	not seen.
—	+17 703	7.7	" "
6.74	+18 629	7.0	very faint.
6.00	+18 624	6.0	faint
3.54	+18 640	3.7	bright, fairly good, on edge of plate.
5.96	+18 633	6.5	faint
—	+18 623	7.9	not seen.
6.86	+16 579	7.3	" "

No star image found outside of 18 c.m. from either edge of this corner of plate.
Best defined images are those of +17° 712 and +18° 640
Image marked with red on this plate does not appear to resemble in any way the images due to above stars.

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1898phae.proj..814F

November 21, 1900

Exam. of Plate containing images of stars in Pleiades. Star images found only in north-preceding portion of plate.

	D.M.	Magn.	
5.91	+21 535	6.5	faint
6.57	+22 523	6.8	"
6.69	+22 518	7.0	very faint, if visible.
5.51	+22 563	6.9	good image
5.95	+23 473	6.2	faint, on edge of plate.
—	+24 527	7.7	faint.
6.15	+24 529	6.7	faint.
7.46	+24 537	7.3	— image affected by defect.
5.63	+24 546	6.3	good image.
4.30	+24 547	5.0	bright.
5.42	+23 505	6.5	good image.
3.80	+23 507	4.7	bright
4.07	+23 516	4.8	"
4.30	+23 522	4.5	"
2.94	+23 541	3.2	"
6.57	+23 556	7.0	faint.
3.73	+23 557	4.0	bright
5.16	+23 558	6.2	good image
6.11	+23 563	7.2	faint.
6.71	+23 569	7.5	faint
5.32	+25 624	6.0	good image
7.16	+25 641	6.6	faint.
6.12	+20 621	6.2	not seen?

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1898phae.proj..814

January 14, 1901.

Exam. of photographs for +34°447 $2^h 22.^m3$ +34° 29' (1855).
On list of comp. stars for Eros but not obs. by O.C. Wendell.

Plate I 5265 Dec. 19, 1891,
I 4794 Nov. 19, 1891,
I 11753 Oct. 19, 1894,
I 7566 Nov. 20, 1892
I 25709 Aug. 31, 1900
I 25742 Sept. 3, 1900

} These plates show no trace of +34°470.

W.P.F.

+34°447 $2^h 22.^m3$ +34° 29' 1900 9 4
on list but Not obs. by O.C.W. Sept. 4, 1900.

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1898phae.proj..814F

January 22 1901.

6 Exam. of plates for star observed by Prof Searle on April 6, 1889 "Not seen" March 1897.

& SD −13° 3008 $9^h 55^m 39^s.7$ −13° 37′ 48″.7 } 1890.0
Unknown star 9 55 35.7 −13 41 14.4 }

Plates

B 11182
B 24701 Feb. 21, 1900.
I 282 Dec. 9, 1889
B 10967
B 20936 Dec. 20, 1897
B 22905 May 22, 1899
B 18114 Nov. 28, 1896
B 15266 Dec. 23, 1895
B 22865 May 20, 1899

These plates have been examined and fail to show any image in the position given for the "unknown star" SD −13° 3009 magn 8.8 - follows 3008 2ˢ.3, and is south 4′.0. These plates show stars of about the twelfth magnitude.

S.D. −13 3008 $9^h 55^m 39^s.7$ −13° 37′ 48″.7
−13 3009
Unknown star 9 55 35.7 −13 41 14.4

Position 1890.0

March 16, 1897
March 28 "
" 29 "
and 31 "
} 3008 and 3009 seen. Unknown star. W.S.

!

See M. Circle record book.

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1898phae.proj..814F

A Seeliger star

Observed April 6 - 1884 } Not identified
Not seen March 1897

1890.0 position
9h 55 35.69 } mag 9.0
−13° 41' 14".42

Position & Fundamental star
9h 59 43.808 near by
−12° 31 46.2

approximated 1833.0 places

9.0 star 9h 53 56.6 −13° 31.3

Fundamental 4.5 mag } 9h 58 4.7 −12° 21.9

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1898phae.proj..814f

February 13 1901

Exam. of photos. to determine var. of Andersons var. in
RA Dec. South preceding +43°462. RA 2h 8m.6 +43°38.

Plate	Date	Exp.	Andersons var. Est. magn.	Var. compared with.
I2382	Nov. 28, 1890	12m	11.0	+43°461 2h 8m.3 +43° 42' 9".5
I3208	Mar. 1, 1891	12m	7.4	+43°457 2 7.3 +43 46 8.9
I4914	Dec. 1, 1891	13m.	<11.0	+43°459 2h 7m.7 +43° 6'3 7".7
I5138	Dec. 13, 1891	11m.	<10.0	
I5195	Dec. 17, 1891	16m	<10.3	
I5240	Dec. 18, 1891	10m.	<10.5	
I7531	Nov. 16, 1892	25m	<10.3	
I7567	Nov. 20, 1892	21m.	<10.4	
I7800	Dec. 30, 1892	15m.	<10.3	
I9294	Aug. 22, 1893	10m.	9.5	
I11607	Oct. 11, 1894	17m.	10.0	
I11850	Nov. 11, 1894	13m.	10.5	
I11899	Nov. 15, 1894	16m.	10.3	
I14119	Dec. 20, 1895	10m.	<10.0	
I15789	Aug. 27, 1896	10m.	6.9	
I19646	Nov. 27, 1897	70m.	9.2	
I21997	Dec. 23, 1898	12m.	9.2	

+43°462 shows no evidence of variation on the above plates. Var. of Andersons star confirmed and magns. estimated by direct comparison with the above named stars.

W. P. Fleming.

I. 26651 Feb. 18, 1901 10m 9.0

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1898phae.proj..814F

D. M. numbers

No 95 bleach 3208
0.9 unreed in red. plate
7.7 " "

Photo. Sp. 2 8.6 +43 38 9.5
+43°462 Close comp to A's var. is
also var.?

Hagens letter Feb, 11, 1901.

I 2382 var ft 14119 21997
3208 var br
4914 var ft. N.S.?
15789 var br.

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1898phae.proj..814F

February 22, 1901.

Exam. of plates for Nova Persei. Disc. by Anderson, Edinburgh.
Rd. 3h 24m 24s Dec + 43° 34' (1900)
Ra 3 21.4 Dec + 43 25 (1855).

Plates	Date	Gf	
A.I. 99	Feb. 2, 1901	76	If vis. fts than 9.
A.I. 107	Feb 6 1901	67m	If vis fts than 9.5
A.C. 1128	Jan 5, 1901	64	If vis. fts than 10.3
A.C. 1225	Feb. 18, 1901	56	If vis. fts than 10.3
A.C. 1258	Feb. 18 1901		If vis. fts than 10.+
A.C. 1260	Feb. 19, 1901		If vis fts than 10.5
AD 121	Feb 18, 1901		If vis fts than 9.

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1898phae.proj..814F

March 27, 1901

Exam. of plates to determine var. of +79° 305
Found double by S. I. B. Rs. 9h 14.4 +78 51 (1900) Single in D.M.

Plate.	Date.	Ex.
I 23596	Sept 20, 1899	10
I 22709	Apr. 19, "	15
I 16646	Dec 1, 1896	14
I 3155	Feb 22, 1891	19
I 16615	Nov. 30 1896	15
I 19727	Dec. 12 1897	17
I 25152	Apr. 14, 1900	10

The above plates have been examined by W.P.F and E.F.L. Found no evidence of variation in either component.

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1898phae.proj..814F

April 19, 1901.

Exam of asteroid trails on A Plates for variation in light. For record see Margin of list Made by Dr. Stewart in Peru.

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1898phae.proj..8145

May 23, 1901.

~~April 4~~

Exam. of Spectra of Nova Persei No. 2 on 8 inch Draper plates.

I 26791 March 16, 1901. Exp. 39m.

Fine dark hydrogen lines towards violet. Edges of bright lines hazy towards the red. well defined towards the violet. W. P. F. April 4, 1901.

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1898phae.proj..814F

June 21, 1901.

Examination of Spectra of Nova Persei No. 2. on 8 inch Draper plates.

Plate	Date	Exp.	Hβ	Hγ	Hδ	Hε	K	Hζ	Hη
I 26675	Feb 22, 1901		~~10~~	~~10~~ 8	8	5			
I 26674	Feb 22.	3							
I 26676	Feb 22.								
I 26677	Feb 22.	23							
I 26678	Feb 22.	3	60, 10;	40, 8;		20, 5;			
I 26679	Feb 22.	25	60, 10;	70, 10;	50, 8;	40, 0;			
I 26680	Feb 22.	113	50, 10;	60, 10;	40, 9;	40, 8;		20, 0;	
I 26688	Feb 24.	10	3, 6;	3, 10;	2, 8;	10, 8;	10, 4;	10, 2;	
I 26690	Feb 24.	22							
I 26691	Feb. 24.	14	0, 5;	2, 10;	1, 6;	10, 5;	0, 2;		
I 26692	Feb 24.	40	4;	10;	6;	4;			
I 26693	Feb. 24.		4;	10;	8;	6;			
I 26697	Feb. 25.	49	4;	10;	9;	10;			
I 26698	Feb 25.	20	10;	10;	8;	1;			
I 26699	Feb. 25.	60	10;	10;	8;	6;			
I 26700	Feb. 25.	68	10;	10;	9;	1;			

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1898phae.proj..8145

The intensities of the lines will be estimated with reference to the bright Hγ, since in the later plates the dark Hγ changes its position with regard to the bright lines and at times ~~does~~ is not seen. Lines of Sk. 1 then Hβ were measured in hundredths of an inch.

Useless.

Useless.

Useless

Isochromatic. Image too dense for examination.

7.65 g 4 ✓ (10) 50 ✓ Isochromatic. Dense image and trail spectrum. Continuous spectrum crossed by strong dark hydrogen lines. Faint bright edges towards the red.

B.65 ✓ (8) 50 ✓ Image dense and lines hazy. Examination difficult. Isochromatic

13.65 ✓ 50, 10 ✓ Isochromatic. Image good.

7 ✓ 5 ✓ (Hazy) Isochromatic. Spectrum resembles that of Iota Aurigae, except that the bright hydrogen lines Hβ, Hγ, Hδ, Hε are much more intense than the dark lines. B.40 ✓ 2 ✓; B.45 ✓ 4 ✓; B.50 ✓ 4 ✓; B.75 ✓ 7 ✓; B.90 ✓ 3 ✓; 1.30 ✓ 3 ✓; 1.45 ✓ 8 ✓ 4 ✓; 1.55 ✓ 8 ✓ 4 ✓; 1.65 ✓ 8 ✓ 4 ✓; 1.75 ✓ 8 ✓ 5 ✓; 2.6 + B .1 ✓; (nebula Lede) 5.0 + B .3 ✓ (?)

Common Plate. Spectrum same as 26688 in portion shown.

Isochromatic Spectrum same as on 26668. Definition not quite so good.

B.90 ✓ f = 3 ✓, f 1358 ✓ 75 ✓; 2.4 + B = 2 ✓; 4.9 + B = 2 ✓; B 45 ✓ f = 4 ✓; B 50 ✓ f = 3 ✓; ε = 60 = 10; B 79 ✓ f = 6 ✓; B 75 ✓ = 1 ✓; B 80 ✓ f = 5 ✓; f 455 = 3 ✓; f 500 = 4 ✓; f 608 = 3 ✓; f 485 = 3 ✓; ε = 85 = 8 ✓

Isochromatic. Spectrum same as 26691 and 26688

Isochromatic. Small prism. Spectrum same as 26691 + 26688

Isochromatic Small dispersion. Similar to 26688.

Isochromatic Small prism. Image dense. Similar to 26688.

Isochromatic. Small dispersion. Image similar to 26688. Relative intensities of bright hydrogen lines and several dark lines are not comparable with those in 26688 but no plate of similar dispersion was taken on that evening with this instrument + direct comparison cannot be made.

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1898phae.proj..814f

June 21, 1901

Examination of Nova Persei No 2 continued.

Plate	Date	Exp.	Hβ	H	Hδ	Hε	K	H3	H4
I 26701	Feb 25, 1901	116	10;	10;	8;	7, 5;	5, 3;	3;	4;
I 26704	Feb 26, "	35	6;	10;	8;	5;			
I 26705	Feb. 26, "	6	6;	10;	8;	5;			
I 26706	Feb. 26, "	6	2, 7;	3, 10;	4, 7;	7, 5;	7, 2;	4, 1;	5, 1;
I 26707	Feb. 27, "	47							
I 26711	Feb. 27, "	6							
I 26712	Feb. 27, "	111	0, 12;	2, 10;	3, 7;	4, 6;	5, 3;	4, 4;	6, 2;
I 26713	Feb. 27, "	66							
I 26727	Feb. 28, "	6							
I 26728	Feb 28, "	6							
I 26741	Mar. 6, "	16	5;	10;	7;	5;			
I 26747	Mar. 6, "	25	3, 15;	6, 10;	5, 6;	2, 4;	2, 0.5;	2, 2;	2, 1;
I 26771	Mar. 7, "	6	8, 14;	5, 10;	6, 7;	4;		2;	2;
I 26774	Mar. 7, "	20 hr. image	20;	10;	9;	4;		2;	2;
		ft. image	4;	10;	5;	3;		?;	?;
		Lines of greater λ than Hβ not est. (June 22, 1901).							
I 26775	Mar. 7, "	40	2, 14;	5, 10;	4, 7;	3, 5;	2, 1;	4, 3;	5, 2;

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1898phaa.proj..8124

B65 ✓ f 5 ✓

Image too dense for examination.
Isochromatic. Small prism: Image dense.
Isochromatic. Small prism. 2.6+B=1; 5.0+B=2
Isochromatic. Spectrum resembles that on 26688 slight changes in intensity. Lines are hazy. B.45 f=3; B.50 f=4 2.6+B=2;
5.0+B=4; +B 1.0 = 1; +B 6.8 = 2 +B 9.3 = 4
Isochromatic trail spectrum same as 26706
Isochromatic. Spectrum similar to 26706 except that the dark H 3 is much more intense. ~~H6 2~~.
H6=6,2. B.45 f 3; B.50 f 3; B.60 f 2; B.80 f 4; (broad dark band)
f.15 s 1; f.25 s 4; f.45 s 4; f.55 s 4; f.65 s 4; f.80 s 4;
0.6+B=3; 1.0+B=3; 1.8+B=7; 2.3+B=4; 4.8+B=6;
6.7+B=2; 9.1+B=3;
Isochromatic. Small prism: Spectrum similar to 26712
Isochromatic. Small dispersion. Spectrum similar to 26712 (?)
Isochromatic. Spectrum similar to 26712 (?)
Isochromatic Small prism.
Common plate. Spectrum similar to that of 26712 except the dark hydrogen lines are much more intense. 0.6+B=2;
1.0+B=2; 1.9+B=6; 2.8+B=3;
Common plate. Small dispersion.
Isochromatic. Small prism. Two images, one dense, one very faint. Intensities of the lines in these two images are not comparable, therefore have not been estimated.
Spectrum similar to that of 26712 except that the lines are all sharply defined especially on edges of shaded wave lines. Bright lines on the less refrangible edge of shaded wave lines

H 3 ✓ more intense than in 26712
0.6+B=3; 1.0+B=4; 1.9+B=6; 2.7+B=4;
4.9+B=5; 6.8+B=1; 9.2+B=1.
B.25 f .10 bright band = .3 crossed by several faint dark lines.
B.50 f=.3

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1898phae.proj..814F

June 21, 1901

Examination of Nova Persei No 2 continued.

Plate	Date	Ep	Hβ	H1	Hδ	Hε	K	Hη	Hζ
I 26791	Mar. 16, 1901	39	0, 13;	3, 10;	2, 7;	2, 4;		5, 2;	5, 5;
I 26798	Mar 17	50	2, 15;	5, 10;	5, 8;	4, 5;		3, 4;	4, 2;

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1898phae.proj...8148

Isochromatic. ("Fine dark hydrogen lines towards violet. Edges of br. lines hazy towards the red: well defined towards the violet" April 4, 1901 H δ 3 ε = 6; β.40 ∫ 3 broad and hazy; β.50 ∫ 3; β.50 ∫ 2; β.70 ∫ 2; β.75 ∫ 2. 0.6 + β = 2; 1.0 + β = 3; 1.7 + β = 5; 2.5 + β = 4; 4.9 + β = 5 6.4 + β 1.

Isochromatic. "Dark hydrogen lines very narrow but well marked on edge of shorter wave lengths than br. lines. The br. lines are sharply defined on shorter λ, and, with exception of β are hazy on edges of greater λ. April 4, 1901. β.15 ∫ = 2 β.40 ∫ = 2 broad hazy band; β.50 ∫ = 2; β.55 ∫ = 2; β.60 ∫ 1; β.65 ∫ 1; β.70 ∫ 2; β.75 ∫ 1; β.80 ∫ 1; β.85 ∫ 1; ∫ 1.85 δ 2; ∫ 2 δ 1; ∫ 3 δ 3; ∫ 4 δ 2 hazy band; δ 3.8 ε 6. 0.6 + β = 2; 1.0 + β = 3; 1.8 + β = 8; 2.5 + β = 3; 4.9 + β = 4; 6.8 + β = 3; 7.1 + β = 2 10.2 + β = 1.

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1898phae.proj..814F

June 22, 1901.

Expans. of Nova Persei No. 2 (Continued).

Plate.	Date	Ex.	Hβ	Hγ	Hδ	Hε	K	Hζ	Hη
I 27112	June 17, 1901	56	2;	10;	3;	6;			
I 27085	June 12 "	37	2;	10;	3;	5;			
I 26849	March 29 "	22							
I 27061	June 10 "	33	3;	10;	2;	5;			
~~27091~~									
I 27091	June 13 "	30	2;	10;	3;	5;			
I 26898	April 26 "	20	4;	10;	4;	5;			
I 26813	March 19 "	51	5;	10;	5;	3;		2(?)	
I 27074	June 11 "	28	3;	10;	1;	5;			
I 27060	June 10 "	30	3;	10;	1;	4;			

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1999phac.proj.:0145

Iso chromatic Small dispersion. .06 + β = 4; β.25 f = 10; βΣ.09 = 12; (Nebular lines) Hydrogen lines diminishing Nebular lines gaining in intensity especially that at shorter wavelength than Σ

Iso chromatic Small dispersion. .06 + β = 5; β.25 f = 12; Σ.09 = 15; (Neb. lines).

Iso chromatic Image too poor for examination.

~~Iso chromatic~~ Small dispersion. .06 + β = 3; β.25 f = 10; β80 f = 1; Σ.09 = 6;

Iso Chromatic. Small dispersion. .06 + β = 3; β.25 f = 9; β80 f = 1; Σ.09 = 7

Iso Chromatic Small dispersion. .06 + β = 3; β.25 f = 9; β80 f = 1; Σ.09 = 8.

Iso Chromatic Small dispersion .06 + β = 1; β.25 f = 4; β80 f = 2 (?) ~~Iso H₂~~ Σ.09 = 2 (?) Iso H₂.

Iso Chromatic. 2.3 + β = 4; β30 f = 3; β40 f = 3; β45 f = 3; Σ39 = 12. The lines f, δ, Σ and the line of greater wave length than 3 have fine dark lines centrally superposed on the br. bands. The br. f is much more intense in the centre than at the edges of the band.

Iso chromatic. A comparison of this spectrum with N.S.6 shows that the intensities of the br. lines are nearly directly comparable with the lines in that object having the same wave length.

+.06 β = 1; +24 β = 4; β30 f = 5; β40 f = 2; β45 f = 3; β75 f = 1; Σ46 = 7

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1898phae.proj..814f

June 25, 1901.

Spectr. of Nova Persei, No. 2. (Cont.)

Plate	Date	Exp.	Hβ	Hγ	Hδ	Hε	Hζ	Hη
I 26886	April 13, 1901	21	2, 6 ;	1, 10 ;	1, 5 ;	2, 3 ;	3, 2 ,	
I 26834	March 25, "	51						
I 26799	March 17, "	31	3 ;	10 ;	2 ;	7 ;		
I 27120	June 19, "	22						

B 9429 I 27120
Nyl 3418 Nova

	7.7	40	7.7	3	0	5000	5007
	8.6	20	8.3	1	+3	4950	4959
Hβ	10.0	5	10.0	3	0	4860	4862
	13.3	3	12.7	5	+6	4680	4687
			13.8	2		4600	
			14.2	3			
	20.7	2	17.0	1		4360	4364
			18.0	2			
Hγ	21.3	10	20.6	10	+6	4340	4340
Hδ	28.3	6	27.8	2	+5		4102
Hε	32.8	8	32.4	3	+4		3970
			34.1	14			3889
Hζ?	36.7	12	36.1		+1		3869

4718	4715
4653	4662
4640	4637
4500	
4456	447~

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1898phas.proj..8145

Isochromatic. "Faint dark hydrogen lines on edge of greater λ of br. lines." Apl. 19, 1901. 2.64 + B = 1 ; 4.8 + B = 1.

Too poor.

Isochromatic – Useless.

A comparison with N Gb = on B 9429 shows a close agreement of the intensities of the lines in the Nova with those in this object except for the lines between B and γ

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1898phae.proj..814f

July 1, 1901.

Exam. of Spectra of Nova Persei No. 2 (Cont).

Plate	Date	Ex.	Hβ	Hγ	Hδ	Hε	K	Hζ	Hη
I 26897	April 26, 1901	17	4;	10;	4;	5;		7(?)	
I 27141	June 26	17	2;	10;	4;	7;			
I 27139	June 26	41	1;	10;	05;	6;			
I 27100	June 16	66	3;	10;	2;	8;			
I 27095	June 15	47	3;	10;	3;	7;			
I 27043	June 6	47	3;	10;	1;	4;			
I 26851	Mar. 30	2m.							
I 26846	Mar 29	58.	9;	10;	6;	4;		2;	

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1898phas.proj...8145

Isochromatic. Small prism. Lines recorded as ξ may be br. line of shorter λ 0.6+ β= 4; β35 j = 8; β75 j = 2;
Isochromatic Small prism. 0.6+ β= 3; 08− ξ = 15;
β35 j = 9; β75 j = 1.
Isochromatic 2.4+ β= 3; β35 j = 5; β45 j = 2. 38−ξ = 9;
β75 j = 05 Slight traces of dark lines superposed on the br. lines j, ξ and 38−ξ. Image faint.
Isochromatic 1.6+ β= 1; 2.4+ β= 3; 9.8+ β= 1;
10.9+ β= 1; β35 j = 5; β45 j = 4; β55 j = 1; β65 j = 1;
β75 j = 2; j + 38−ξ = 12. Dark lines superposed centrally on the lines j, ξ and 38−ξ. Br. Line j has also an intensely bright central line superposed on the broad, bright band.
Isochromatic. 1.64 β= 2; 2.4+ β= 4; 9.5+ β= 1;
11.0+ β= 1; β35 j = 3; β70 j = 1; β45 j = 3; β55 j = 1;
β65 j = 1; β75 j = 2. j 60 ξ = 1; 38−ξ = 12. The lines ξ and 38−ξ have a fine dark line centrally superposed. j has a strong, br. line centrally superposed on the br. band the edges of the br. line being defined by dark lines
Isochromatic 2.3+ β= 3; β35 j = 4; β45 j = 3;
β75 j = 1; 38−ξ = 5. Image faint.
Isochromatic. Very small dispersion. In comparison
Isochromatic β 45 j = 2; β55 j = 2; β75 j = 2;
β95 j = 1

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1898phae.proj..814F

Exam. of Spectra of Nova Persei cont. No 2

Plate	Date	Ep	Hβ	Hγ	Hδ	Hε	K Hε	Hη
I 26823	Mar. 23, 1901	37	10;	18;	6;	5;	2,1;	4; 3
I 26819?	Mar. 22	NN	12;	10;	8;	3;		
I 27015	May 23	37						
I 26975	May 8	68	9;	10;	5;	3		
I 26850	Mar. 30	44	3,9;	2,10;	1,6;	2,4;	1,0;	3; 1;
I 26835	Mar. 27	32	7;	10;	6;	4;	5,1?;	3;
I 26818	Mar. 22	35	14;	10;	7;	5;	4,1?;	4;

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1898phaa.proj..8145

Isochromatic. "Dark hydrogen lines wanting" 1.2+ β = 1; 2.6+ β = 3; 4.5+ β = 3; 6.2+ β = 1; 8.1+ β = 1. β35 ϳ = 1; β40 ϳ = 2; β45 ϳ = 4; β50 = 3; β55 ϳ = 2; β60 ϳ = 3; δ45 = 1; β60 ϳ = 1. All lines hazy except β and ϳ

~~Isochromatic~~ "Dark hydrogen lines faintly seen on edge of greater λ than of br. hydrogen lines β, ϳ, δ, ε (stronger) and ξ (stronger). Other br. lines have dark line on edges of greater λ" April 4, 1901. 38 − ξ = 4. 1.1+ β = 2; 2.4+ β = 3; β35 ϳ = 3; β45 ϳ = 5; β40 ϳ = 3; β70 ϳ = 3; β75 ϳ = 3; β95 ϳ = 1

Isochromatic Lyngg too poor.

Isochromatic. 2.2+ β = 1; 2.4+ β = 3; β35 ϳ = 4; β40 ϳ = 2; β45 ϳ = 3; β75 ϳ = 2; 38 − ξ = 2.

Isochromatic "K line dark. Nova appears to have dark hydrogen lines on edge of greater λ of br. lines. Other br. lines dark on edge of greater λ. The br. lines are sharply defined on edge of greater λ" April 4, 1901

1.1+ β = 1; 2.4+ β = 3; 4.4+ β = 2; β35 ϳ = 1; β45 ϳ = 3; β50 ϳ = 1; β55 ϳ = 2; β60 ϳ = 2; β65 ϳ = 1; β70 ϳ = 1; β75 ϳ = 4; β90 ϳ = 1; δ60 ε = 3

Isochromatic "Dark hydrogen line gone" Apr. 4, 1901

2.4+ β = 2; 4.4+ β = 1; 6.8+ β = 1; β40 ϳ = 2; β50 ϳ = 1; β55 = 1; β75 = 3; 45 = 1?

"Dark hydrogen lines wanting" 0.7+ β = 5; 1.1+ β = 3; 1.8+ β = 4; 2.3+ β = 4; β35 ϳ = 4; β40 ϳ = 4; β45 ϳ = 6; β50 ϳ = 3; β55 ϳ = 1; β60 ϳ = 1; β65 ϳ = 1; β70 ϳ = 2; β75 ϳ = 4; 45 = 1; 55 = 2

δ35 ε = 3; δ90 ε = 4

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1898phae.proj..814F

Exam of Spectra of Nova Persei No 2 Cont.

Plate	Date	Exp.	Hβ	Hγ	Hδ	Hε	K	Hζ	Hη
I 26805	Mar. 18, 1901	62	7;	10;	5;	2;		1;	
I 27101	June 16	38	3;	10;	3;	6;			
I 27075	June 11	30	4;	10;	3;	5;			
I 27051	June 8	65	4;	10;	5;	5;			
~~I 26985~~	~~May 13~~	~~85~~							
I 26928	Apr. 28	30	5;	10;	2;	3;			
I 26852	Mar 30	59	8;	10;	8;	4;		3	
I 26847	Mar. 29	20							
I 26824	Mar. 23	48	12;	10;	10;	5;		3;	2
"	Ft. image		6;	10;	9;	5;			
I 26808	Mar. 19	30	12;	10;	7;	5;			

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1898phae.proj..814F

Isochromatic. Small dispersion B35 f = 4; B75 f = 2.
Isochromatic. Small dispersion 0.6+B = 5; B35 f = 9;
B80 f = 1; 0.9-ζ = 12.
Isochromatic Small dispersion. 0.6+B = 5; 0.9-ζ = 9;
B35 f = 10.
Isochromatic 1.6+B = 1; 2.4+B = 3; B35 f = 3; B40 f = 2;
B45 f = 3; B75 f = 1; B95 f = 2; 38-ε = 7. The lines f, δ
and 38-ε have dark lines centrally superposed. ζ has
strong br. lines having dark edges superposed on the
broad, br. band.

Isochromatic B+ 1.2+B = 1; 2.4+B = 3; B27 f = 2; B30 f = 2;
B35 f = 1; B40 f = 3; B45 f = 4; B50 f = 4; B55 f = 1;
B75 f = 2; B85 f = 1 f has well marked dark br.
line superposed on br. band.
Isochromatic. Small prism. 0.6+B = 2; 1.3+B = 1;
B35 f = 3; B75 f = 2.
Isochromatic. Good spot for comparison.
Isochromatic. Small prism. Br. image 0.6+B = 2;
2.2+B = 2; B35 f = 5; B75 f = 3
Isochromatic. "Br. lines broader than in 26798.
Dark hy drogen lines wanting". 1.1+B = 1; 2.6+B = 3;
4.8+B = 3; 9.4+B = 2; 10.9+B = 2; B30 f = 3; B35 f = 2;
B45 f = 5; B50 f = 5; B55 f = 3; B60 f = 1; B75 f = 3;
B95 f = 2. f 45 δ = 2; f 55 δ = 1; δ 40 ε = 5; δ 80 ε = 4;
ε-38 = 5

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1898phae.proj..814F

Exam of Spectra of Nova Persei No 2 cont.

Plate	Date	Exp.	Hβ	Hγ	HδA	Hε	K	Hζ	H 32
I 27111	June 17	64	3;	10;	1;	7;			
I 27084	June 12,	51	4;	10;	2;	7;			
I 27052	June 8	31	4;	10;	3;	5			
~~I 26998~~	~~May 16~~	~~64~~							
I 26941	May 3	54	6;	10;	3;	4			
I 26877	Apr. 12	30	4, 10;	2, 10;	3, 6;	3, 5;		4;	

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Isochromatic 1.6+B = 1; 2.4+B = 4; B35 f = 5; B45 f = 3; B75 f = 05; 38-ε = 12. The lines ε and 38-ε are well defined dark lines centrally superposed. Line f has an intense br. line having dark edges centrally superposed on the br. band.

Isochromatic 1.6+B = 1; 2.5+B = 4; B35 f = 5; B45 f = 3; B75 f = 1; ε-38 = 11. The lines δ, ε and 38-ε have well marked dark lines centrally superposed. Line f is an intense br. line having dark line of greater λ; these are centrally superposed on br. band.

Isochromatic. 0.5+B = 1; 2.4+B = 3; B30 f = 1; B35 f = 3 1; B40 f = 1; B45 f = 4; B65 f = 1; B75 f = 2; Lines δ ε and 38-ε have well defined dark lines centrally superposed. f is an intense br. line having well defined dark line centrally superposed on the broad br. band.

1.4+B = 1; 2.4+B = 3; B35 f = 3; B45 f = 4; B75 f = 1; 38-ε = 4.

Isochromatic. "Dark hydrogen lines on edge of greater λ of br. lines and dark line f has an accompanying fine well defined br. line on edge of greater λ. For the reversion of these last two line toward the edge of shorter λ of the broad br. line f see I 26798 and 26791 Apr. 12, 1901. 0.9+B = 1; 2.4+B = 3; 4.8+B = 2; 10.1+B = 2; B30 f = 3; B40 f = 2; B45 f = 5; B50 f = 3; B70 f = 4; B75 f = 3; B90 f = 3.

B95 f = 3. Line f & have fine dark lines superposed.

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Expan of Spectra of Nova Persei No 2 cont.

Plate	Date	Exp	Hβ	Hγ	Hδ	Hε	K	Hζ	Hη
I 26848	Mar. 29	90	7;	10;	4;	2;		1;	
I 27138									
I 27137			2;	10;	3;	7;			
~~I 26833~~									
I 26833	Mar. 25	30							
I 26811	Mar. 19	53	8;	10;	7;	5		4;	
I 27126			2;	10;	1;	8;			

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Isochromatic. Br. Hβ dark on edge of greater λ = 0.4, also. H~~β~~γ dark on edge of greater λ = 6.4 Image fuzz. Out of focus pretty.

Isochromatic ~~Small~~ Small Prism. 0.6 + β = 4; β 35 J = 9; β 75 J = 1; ε - 0.9 = 15

Isochromatic. Image too fuzz.

Isochromatic 0.6 + β = 2; 1.4 + β = 1; β 35 J = 7; β 75 J = 3; 2.4 + β = 3; β 35 J = 5; β 45 J = 3; β 75 J = 1; 38 - ε = 14

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1898phae.proj..814f

July 12, 1901

Exam of Spectra of Nova Persei No 2 cont.

Plate	Date	Exp	Hβ	Hγ	Hδ	Hε	K	Hζ	Hη
27176	July 2 1901	15	2	10	2	8			
27175	July 2 "	18	2	10	2	5			
27148	June 27 "	52	2	10	1	7			
27149	June 28 "	90	2	10	1	8			
27163	June 29 "	40							
27162	June 29 "	45							

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1898phae.proj..814

~~Isochromatic~~

Isochromatic $\beta+2.6=\underline{4}$; $\beta+1.6=\underline{1}$ $\beta 25f=\underline{3}$; $\beta 75f=\underline{1}$;
$\varepsilon-3.8=\underline{20}$.

Isochromatic. Small prism $\beta+0.6=\underline{5}$; $\beta 25f=\underline{8}$;
$\beta 45f=\underline{4}$; $\beta 75f=\underline{1}$; $\varepsilon-0.9=\underline{20}$

Isochromatic $\beta+2.6=\underline{3}$; $\beta 3f=\underline{4}$; $\beta 45f=\underline{2}$; $\beta 75f=\underline{1}$;
$\varepsilon-3.8=\underline{12}$.

Isochromatic. $\beta+1.7=\underline{1}$; $\beta+2.4=\underline{3}$; $\beta 25f=\underline{3}$; $\beta 75f=\underline{1}$;
$\varepsilon-3.9=\underline{12}$. Narrow dark lines superposed on
β δ?, ε and $\varepsilon-39$

Isochromatic. Nova too faint.

Isochromatic. Nova too faint.

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1898phae.proj..814F

September 4, 1901.

Exam. of Spectra for stars 5.5 1 and Br. 20° 0' to -30° 0', having bro Cl. of Sp.

Plate B 8553	H.P. 2275	Mgn. var.	Cl. Md.	R Hydrae.
B 3630	3737	5.35	K	
B 3630	~~3767~~ 3770	5.47	K, K.	
B 5443	3822	5.32	G3K	
B 5443	3880	5.42	A	
B 5870	1870	5.08	K5M	
B 5896	1862	5.32	K3M	
B 8964	1718	var.	A8?	δ Antliae
B 8843	1595	5.04	G	
B 8826	1556	~~5.11~~ 5.46	K5M	
B 18553	1042	5.32	F3G	
B 5610	469	5.41	A3?	
15h 15m.6 -20° 2'	—	—	~~var~~ Md	δ Librae

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1898phaa.proj..8145

April 7, 1902.

Exam of plates for New Stars & Dimis.
See letter to David Gill March 7, 1902. Also earlier letter.

c 11.76 m 12.11 n 12.56

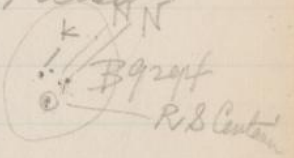


Plate	Date	Exp. m		N'	N²
B 9294	May 2, 1893	10	N' h3.1 m. N² n3 N² 1. (12.06 12.01)	12.04	12.76
B 15-101	Nov. 4, 1895	N	N' l2 m N² n3 N² 1. (11.96 12.01)	11.98	12.76
			~~h 1, N' & N² N.S.~~	<11.1	
Am 782	May 13, 1901	60	h 1, N' & N² N.S.	<11.1	<11.1
Am 806	May 27, 1901	67	N' l2.1 m N² N.S.	11.98	7
Am 846	June 11, 1901	60 m	h3 N' & N² N.S.	<11.3	<11.3
(2 ef). Am 928	July 23, 1901	62 m.	N' l2 m N.S. N² N.S	11.96	<11.9

Am 806

May 24, 1902.
m = .1 N² N.S. <12.6

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Estimated magns. ent. before pl. No. and Date was recorded thus rendering estimates independent. W.P.F. April 24, 1902.

April 24, 1902.

Exams. of plates for new variable in Spec. Dr. +43°4101 21 h 3 25.5 +43° 39.1 9.1 about 1m North & 1' or is identical with +43°4101. Found by W.P. Fleming on April 24, 1902, while examining charts plates I and I for Brooks Comet.

		Plate	Date	Ex.	Est.	Grad Scale	S.T.		J.D.
G.M.T.	I	28630	April 3 1902	10m	8.8				
11 42	I	16060	Sept 30 1896	17m	10.6	10.6	19	38	3833.818 (487)
12 47	I	16088	Oct 3, 1896	10	8.9	8.8	20	55	3836.872 (533)
19 20	I	16079	Sept. 30 1896	11	<11.0	<11.2	3	18	3833.137 (806)
13 37 (5)	I	16085	Oct. 1 1896	10	11.2	11.1	21	36	3834.900 (568)
12 47	I	16655	Dec. 3 1896	9	9.6		0	55	3897.538 (533)
12 15	I	16399	Oct. 31 1896	12	9.3		22	14	3864.926 (510)
20 59	I	17803	April 6 1897	10	<11.2		17	18	4021.721 (874)
19 34	I	18069	May 7 1897	16	11.4		17	55	4052.747 (815)
11 02	I	20033	January 13 1898	15	11.4		1	51	4303.077 (460)
10 51	I	16967	January 2 1897	23	10.8		0	57	3927.540 (452)
21 43	I	24708	March 7 1900	12	10.6		16	01	5086.667 (905)
	I	24406	Jan 8 1900	10	8.8				
	I	24417	Jan 9 1900	11	8.8				
	I	24783	March 11 1900	16	8.9				
	I	24418	Jan 9 1900	26	8.9				
	I	24422	Jan 10 1900	30	8.9				
	I	18386	Aug. 2 1897	13	8.9				
	I	18433	Aug 5 1897	21	8.8				
	I	18457	Aug. 6 1897	13	9.1				
	I	18483	Aug. 7 1897	15	8.8				
	I	18485	Aug 11 1897	10	9.1				

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1898phae.proj..8145

April 24 1902.

Expan of var. (Cont'd).

	Plate	Date	Hr	Est.
✓	I 18515	Aug. 12, 1897	11	8.9
✓	I 18534	Aug 13, 1897	19	9.0
✓	I 18556	Aug 17, 1897	12	8.9
✓	I 18560	Aug 17 1897	16	8.8
✓	I 18603	Aug. 26 1897	13	8.8
✓	I 18609	Aug 28 1897	15	8.9
✓	I 18615	Aug 31 1897	21	8.9
✓	I 18628	Sept 2 1897	12	8.8
✓	I 18700	Sept. 6 1897	18	8.9
✓	I 18714	Sept. 8 1897	18	9.0
✓	I 18769	Sept 13 1897	11	8.9
✓	I 18819	Sept. 14, 1897	10	8.8
✓	I 18843	Sept 15 1893	16	8.9
Do	✓ I 18879	Sept. 17 1897	12	8.8
	✓ I 18934	Sept 18 1897	10	8.8
	✓ I 18947	Sept 19 1897	13	8.8
Do	✓ I 18949	Sept 19 1897	10	8.8
Do.	✓ I 18967	Sept 21 1897	12	8.8
	✓ I 18990	Sept 24 1897	11	8.9
	✓ I 19168	Oct 5 1897	10	8.8
Do	✓ I 19169	Oct 5 1897	10	8.8
Do	✓ I 19181	Oct 6 1897	18	8.8
	✓ I 19184	Oct 6 1897	16	8.8
	✓ I 19199	Oct. 8 1897	10	8.8
Do	✓ I 19201	Oct. 9 1897	11	8.9
Do.	✓ I 19212	Oct. 9 1897	10	8.9

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April 25, 1902.

Plan of van. Cont.

	Plate	Date	Exp.	Est.
11.050 m ✓ I	19220	Oct. 9, 1897	13m	9.0
✓	19234	Oct 12, 1897	15	9.1
✓	19246	Oct. 13, 1897	10	8.8
✓	19260	Oct. 14, 1897	14	8.8
✓	19263	Oct. 15, 1897	19	8.8
✓	19270	Oct. 15, 1897	13	8.8
✓	19278	Oct. 15, 1897	15	8.8
✓	19297	Oct. 17, 1897	19	8.9
✓	19312	Oct. 18, 1897	27	8.9
✓	19313	Oct. 18, 1897	17	8.9
✓	19319	Oct. 18, 1897	19	8.9
✓	19330	Oct. 22, 1897	10	8.8
✓	19341	Oct. 23, 1897	12	8.8
~~I. 2. O~~ ✓	19350	Oct. 23, 1897	13	9.0
✓	19353	Oct. 25, 1897	14	8.8
✓	19370	Oct. 26, 1897	10	8.8
✓	19375	Oct. 27, 1897	10	8.8
✓	19380	Oct. 29, 1897	12	8.9
✓	19020	Sept. 25, 1897	11	8.8
✓	19035	Sept. 27, 1897	15	8.9
✓	19036	Sept. 27, 1897	20	8.8
✓	19037	Sept. 27, 1897	11	8.8
I. 2. O ✓	19040	Sept. 27, 1897	20	8.9
I. 2. O ✓	19042	Sept. 27, 1897	10	8.9
I. 2. O ✓	19047	Sept. 28, 1897	10	8.9
I. 2. O ✓	19052	Sept. 28, 1897	13	8.9

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1898phae.proj..814f

April 25, 1902.

Exam of var. (Cont.

I	Plate	Date	Exp	Est.
Leo.	19054	Sept. 28, 1897	12m	9.0
Leo.	19056	Sept. 28, 1897	12	8.8
Leo.	19058	Sept. 28, 1897	10	8.9
Leo.	19060	Sept 28, 1897	15	8.8
Leo	19062	Sept. 28, 1897	10	9.0
Leo	19065	Sept 29, 1897	10	8.9
Leo	19095	Sept 30, 1897	10	9.0
Leo.	19099	Sept 30, 1897	10	8.8
Leo	19101	Sept. 30, 1897	15	8.8
	16865	~~Sept~~ Dec. 24, 1896	11	8.8
	16903	~~Sept~~ Dec. 28, 1896	17	8.8
	16932	Dec. 30, 1896	10	8.9
	16093	Oct. 6, 1896	11	8.9
	16096	Oct 7, 1896	15	8.9
	16106	Oct. 8, 1896	10	8.8
	16118	Oct. 8, 1896	15	8.9
	16145	Oct. 9, 1896	10	8.8
	16211	Oct 27, 1896	11	8.8
	16545	Nov. 5, 1896	13	8.9
	16574	Nov. 22, 1896	10	8.9
	16580	Nov. 22, 1896	15	9.0
	16600	Nov. 24, 1896	10	8.8
	16603	Nov. 27, 1896	29	8.8
	16624	Dec. 1, 1896	23	8.9
	16683	Dec. 5, 1896	10	8.9
	16686	Dec. 7, 1896	12	8.8

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1898phae.proj..814F

April 25, 1902.

Exam of var. (Cont.

I	Plate	Date	Exp	Est.	
	✓16723	Dec. 9, 1896	20	8.8	
	✓16727	Dec. 11, 1896	10	9.0	
	✓16746	Dec 12, 1896	14	8.8	
	✓16763	Dec. 14, 1896	18	8.8	
	✓16802	Dec. 17, 1896	12	8.9	
	✓16834	Dec. 19, 1896	15	8.9	
	✓4377	Sept. 28, 1891	15	8.9	
	✓4076	Aug 20, 1891	12	8.8	
	✓4075	Aug 20, 1891	13	8.9	
	✓2556	Dec 22, 1890	10	9.0	
	✓2779	Jan 12, 1891	10	8.8	
Iso	✓19117	Oct. 1, 1897	11	8.8	
Iso	✓19119	Oct 1, 1897	16	8.8	
	✓21186	Sept 13, 1898	18	8.8	
	✓21601	Nov. 1, 1898	10	8.8	
	✓21682	Nov. 11, 1898	10	88	
Iso	✓19122	Oct. 1, 1897	16	8.8	
Iso.	✓19127	Oct 2, 1897	9	8.8	
Iso	✓19134	Oct 2, 1897	17	8.8	
Iso.	✓19137	Oct 2, 1897	14	8.8	
Iso.	✓19142	Oct 3, 1897	13	8.8	
Iso	✓19145	Oct. 3, 1897	16	8.9	
Iso	✓19152	Oct 4, 1897	13	8.8	
	✓19156	Oct. 4, 1897	10	8.9	
Iso	✓19157	Oct. 4, 1897	10	8.9	
Iso.	✓19159	Oct. 4, 1897	11	8.9	

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1898phae.proj..814f

April 25, 1902.

Exam of rad. Cont.

I	Plate	Date	Exp.	Ext.
✓	19165	Oct. 4, 1897	13	8.9
✓	20080	Jan 27, 1898	14	8.9
✓	20074	Jan. 24, 1898	21	8.8
✓	20067	Jan. 18, 1898	13	8.8
✓	20051	Jan. 17, 1898	19	8.8
✓	19944	Jan. 5, 1898	12	8.8
✓	18362	July, 20, 1897	17	8.8
✓	18371	July, 30 1897	14	8.8
✓	18355	July, 16, 1897	25	8.8
✓	18336	July 14, 1897	16	9.0
✓	18304	July 1, 1897	11	8.8
✓	18299	June 30, 1897	12	8.9
✓	18259	June 21, 1897	10	~~8.8~~ 8.9
✓	18202	June 10, 1897	16	8.9
✓	19837	Dec. 27, 1897	37	8.8
✓	19856	Dec. 29, 1897	16	9.1
✓	18184	June 1, 1897	10	8.8
✓	18166	May 31, 1897	28	8.8
✓	15428	July 2, 1896	13	8.9
✓	15875	Sept. 4, 1896	10	8.9
✓	15990	Sept. 23, 1896	11	8.9
✓	16020	Sept 23, 1896	11	8.9
✓	16021	Sept 25 1896	12	9.0
✓	16033	Sept 26, 1896	12	8.8
✓	19857	Dec. 30, 1897	16	8.9
✓	19874	Jan. 1, 1898	21	8.8

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1898phae.proj..814F

April 25, 1902.

Exam. of rad. (Cont.

I	Plate	Date	Ex.	Est.
✓	19819	Dec. 24, 1897	16	8.9
✓	19786	Dec. 18, 1897	16	8.8
✓	19759	Dec. 16. 1897	14	8.8
✓	19710	Dec. 11, 1897	18	8.8
✓	20820	May 22, 1898	11	8.9
✓	20800	May 20, 1898	12	8.9
✓	20720	Apr. 18, 1898	12	8.9
✓	20979	July 6, 1898	14	8.8
✓	17695	Mar. 29, 1897	12	8.8
✓	17678	Mar. 28, 1897	19	8.8
✓	17671	Mar. 25, 1897	10	8.8
✓	17649	Mar. 21, 1897	12	8.9
✓	17577	Mar. 14, 1897	10	8.9
✓	17512	Mar. 10, 1897	10	8.8
✓	13145	July 30, 1895	12	8.8
✓	13369	Sept 2, 1895	12	8.8
✓	13320	Sept 1, 1895	10	9.0
✓	18109	May 16, 1897	21	8.8
✓	18112	May 16, 1897	10	8.9
✓	18127	May 19, 1897	11	9.0
✓	18141	May 25, 1897	16	8.8
✓	17909	Apr. 18, 1897	10	8.8
✓	17935	Apr. 19, 1897	13	8.8
✓	17968	Apr. 20, 1897	10	8.9
✓	17996	Apr. 21, 1897	10	9.0
✓	17740	Mar. 31, 1897	12	8.8

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1899phot.proj - 8145

April 25, 1902.

Exam of var. (Cont.

I	Plate	Date	Ex	Est.	
✓	17763	Apr. 1, 1897	11	8.9	
✓	17784	Apr. 2, 1897	12	8.9	
✓	17815	Apr. 11, 1897	13	8.8	
✓	17843	Apr. 12, 1897	10	8.9	
✓	17858	Apr. 15, 1897	14	8.9	
✓	13449	Sept 5, 1895	14	8.9	
✓	2710	Jan. 6, 1891	12	8.9	
Iso	✓ 19110	Sept. 30, 1897	10	8.9	
Sp.	✓ 21683	Nov. 11, 1898	64	8.9	Cl. A.
Iso. Sp.	✓ 19128	Oct. 2, 1897	63	8.9	
Trail	17710	Mar. 30, 1897	11	8.9	
	✓ 18052	May 4, 1897	24	8.9	
Sp.	✓ 18382	Aug. 1, 1897	63	8.9	
Sp.	✓ 18298	June 30, 1897	60	8.9	
Sp.	✓ 18407	Aug. 3, 1897	60	9.0	
Sp.	✓ 18575	Aug. 20, 1897	11	8.8	
Sp.	✓ 18607	Aug. 28, 1897	60	8.9	Cl A.
Sp.	✓ 18614	Aug. 31, 1897	61	8.9	
Sp.	✓ 19022	Sept. 25, 1897	65	8.9	
Iso. Sp.	✓ 19061	Sept. 28, 1897	74	8.9	
Iso. Sp.	✓ 19096	Sept 30, 1897	25	9.1	
Iso. Sp.	✓ 19097	Sept. 30, 1897	79	9.0	
Iso. Sp.	✓ 19129	Oct. 2, 1897	62	9.1	
Sp.	✓ 19131	Oct. 2, 1897	60	9.0	
Iso. Sp.	✓ 19132	Oct. 2, 1897	60	9.1	
Sp.	✓ 19135	Oct. 2, 1897	61	9.0	

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1898phae.proj..814F

April 25, 1902.

Exam of rat. (Cont.

I	Plate	Date	Exp.	Ext.
Iso.	Sp. ✓19136	Oct. 2, 1897	62	9.0
	Sp. ✓19143	Oct 3, 1897	65	9.1
	Sp. ✓19146	Oct 3, 1897	60	9.0
	Sp. ✓19153	Oct 4 1897	30	8.9
	Sp. ✓19154	Oct 4, 1897	46	9.0
	Sp. ✓19155	Oct. 4, 1897	60	9.0
	Sp. ✓9164	Oct. 4, 1897	69	8.9
	Sp. ✓9170	Oct. 5, 1897	30	8.9
	Sp. ✓9171	Oct. 5, 1897	33	9.0
	Sp. ✓19172	Oct. 5, 1897	69	8.9
	Sp. ✓9173	Oct. 5, 1897	41	8.9
Iso.	✓19175	Oct. 5, 1897	10	Too poor
	Sp. ✓19182	Oct. 6, 1897	60	9.0
	Sp. ✓19120	Oct 1, 1897	61	Too poor
	✓21349	Oct. 6, 1898	20	Too poor
	Sp. ✓18032	Apr. 30, 1897	52	Too poor.
	✓18074	May 7, 1897	10	Too poor.
	✓19908	Jan. 3, 1898	24	Too poor
	✓18583	Aug. 20, 1897	~~10~~	Too poor
Iso.	Sp ✓19066	Sept. 29, 1897	8	Too poor
	Sp. ✓19133	Oct. 2, 1897	60	Too poor.
Iso.	Sp ✓19144	Oct. 3, 1897	92	Too poor
	Sp. ✓19163	Oct. 4 1897	60	Too poor
	Iso. ✓19180	Oct. 5, 1897	46	Too poor

12.30

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	Plate	Date	Exp	Est.			
A	4776	Oct. 3, 1900	10m	8.9			
a	1695	Sept. 17 1895	12	8.9			
a	1638	Sept 1, 1895	10	8.8			
a	1658	Sept. 12, 1895	16	8.8			
a	823	Aug 18, 1894	20	8.9			
a	877	Sept. 23, 1894	11	8.9			
a	1673	Sept 13, 1895	12	8.8			
I	27760	Oct 6, 1901	30	8.9			
I	27783	Oct. 15, 1901	10	8.9			
I	27552	Sept 24, 1901	14	8.9			
GMT I	27647	Sept. 30, 1901	10	8.8		8.7	J.D
15h 32m I	27335	Aug. 21, 1901	26	H = 0.2 v mb		20 46	5618.647
I	27865	Mar. 30, 1901	10	8.8			
I	26559	Feb. 6, 1901	19	8.9			
I	26113	Nov. 16, 1900	16	8.8			
I	26022	Nov. 10, 1900	13	8.8			
I	25999	Oct. 29, 1900	15	8.8			
I	25991	Oct. 24, 1900	12	8.8			
I	25867	Sept 25, 1900	52(?)	8.8			
I	25640	Aug. 9, 1900	11	9.1			
I	25555	July 14, 1900	10	8.8			
I	25530	July 4, 1900	14	8.9			
I	25519	July 2, 1900	23	8.8			
I	25507	June 29 1900	11	8.8			
I	25290	May 5, 1900	11	8.9			
I	25277	May 1, 1900	16	8.8			

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I	Plate	Date	Exp.	Est.
✓	25267	Apr. 30, 1900	10m	8.8
✓	25256	Apl. 29, 1900	14	8.9
✓	25248	Apl. 28, 1900	17	8.8
✓	25240	Apl. 26, 1900	16	8.8
I ✓	7384	Oct. 22 1892	14	~~10.1~~
I ✓	28692	April 24, 1902		8.9
I ✓	28691	April 24, 1902		8.9

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1898phaa.proj..8145

April 26, 1902 Exam. of Var. Cat.

	Plate	Date	Exp. m	Est.
D ✓	19412	Nov. 3 1898.	12	8.8
✓	20880	June 17, 1898	17	Tr Dm
Sp. ✓	2819	May 22, 1898	66	Tr Dm
✓	20816	May 12, 1898	10	9.3
Sp. ✓	2060	Oct. 22, 1890	66	Tr Dm
✓	18701	Sept. 6, 1897	11	8.8
✓	18629	Sept. 2, 1897	12	8.8
✓	17999	April 22, 1897	12	8.9
✓	~~17428~~ 17482	March 7, 1897	10	8.9
✓	17433	Feb. 4, 1897	10	9.0
✓	17314	Feb. 13, 1897	10	9.0
✓	17306	Feb. 11, 1897	12	9.0
✓	17294	Feb. 10, 1897	17	9.0
✓	17221	Jan. 30, 1897	16	8.9
✓	17213	Jan. 29, 1897	13	8.8
Sp. ✓	17188	Jan. 25, 1897	65	9.1
✓	17184	Jan. 25, 1897	10	9.1
Sp ✓	17175	Jan. 21, 1897	15	Tr Dm
✓	17174	Jan. 21, 1897	12	8.9
✓	17091	Jan. 18, 1897	10	8.9
✓	7402	Oct. 23, 1892	11	8.8
✓	7346	Oct. 13, 1892	15	9.2
✓	7227	Sept. 30, 1892	12	9.0
✓	7216	Sept. 29, 1892	18	8.9
✓	7014	Sept. 12, 1892	16	9.2
✓	6990	Sept. 11, 1892	11	8.8

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April 26, 1902

Exam. of Plates Cont.

	Plate	Date	Exp.	Est.
I	✓6953	Sept. 9, 1892	18	8.9
Sp.	✓19247	Oct. 13, 1897	74	8.9
Sp.	✓23946	Oct. 26, 1899	73	9.0
	✓23733	Oct. 4, 1899	22	8.8
	✓23794	Oct. 14, 1899	16	8.8
	✓23407	Aug 30, 1899	10	9.3
Sp.	23766	Sept. 27, 1899	60	Tr Pm ?
	✓23385	Aug. 18, 1899	10	8.8
	✓23400	Aug. 26, 1899	10	8.8
	✓23607	Sept. 21, 1899	13	8.8
Sp.	✓23299	Aug. 7, 1899	64	9.1
	✓23154	July 12, 1899	16	8.8
	✓23153	July 11, 1899	31	8.9
	✓23149	July 11, 1899	14	8.8
	✓22870	May 11, 1899	62	9.0
	✓22877	May 12, 1899	14	8.9
	✓24890	March 17, 1900	10	8.9
	✓24118	Nov. 21, 1899	21	8.8
	✓24037	Nov. 13, 1899	29	8.8
	✓24038	Nov. 13, 1899	11	8.9
Sp	✓23969	Nov. 4, 1899	71	9.1
	✓23945	Oct. 26, 1899	25	8.8
	✓ 86	Nov 6, 1889	10	9.0
Sp.	✓I1455	July 15, 1890	65	Tr Pm
	✓1849	Sept. 24, 1890	13	8.8
	✓2066	Oct. 25, 1890	15	9.0

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April 26, 1902

Exam of Plates Cont

	Plate	Date	Exp.	Est.
Sp. I	✓ 2162	Nov. 1, 1890	82	8.8
	✓ 2095	Oct. 30, 1890	12?	8.8
	✓ 22884	May 14, 1899	10	8.9
	✓ 22925	May 24, 1899	10	9.1
	✓ 2257	Nov. 14, 1890	13	8.9
	✓ 2284	Nov. 19, 1890	20	8.8
	✓ 2301	Nov. 20, 1890	11	8.8
	✓ 2456	Dec. 9, 1890	23	8.8
	✓ 2556	Dec. 22, 1890	10	8.9
	✓ 24823	March 12, 1900	12	8.9
Sp.	✓ 19158	Oct. 4, 1897	61	9.0
	✓ 16057	Sept 28, 1896	15	8.8
	✓ 16035	Sept. 27, 1896	10	9.1
	✓ 16044	Sept. 28, 1896	11	8.8
	✓ 16165	Oct. 10, 1896	21	8.9
	✓ 16124	Oct. 9, 1896	12	8.9
Sp.	✓ 19057	Sept 28, 1897	60	9.0
	✓ 18734	Sept 9, 1897	12	9.6
	✓ 18760	Sept 11, 1897	16	8.8
	✓ 18404	Aug. 3, 1897	25	8.9
	✓ 15464	July 12, 1896	16	8.8
	✓ 16476	Nov. 9, 1896	10	8.8
	✓ 22823	May 3, 1899	17	8.8
	✓ 19439	Nov. 4, 1897	8	8.8
	✓ 19473	Nov. 6, 1897	10	8.9
	✓ 19500	Nov. 7, 1897	10	9.0

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April 26, 1902

Meas. Var. Coirt.

I	Plate	Date	Exp.	Est.	
	✓ 19523	Nov. 9, 1897	14	8.9	
	✓ 19558	Nov. 10, 1897	19	8.8	
	✓ 19615	Nov. 18, 1897	14	8.9	
	✓ 19623	Nov. 23, 1897	14	8.8	
	✓ 19632	Nov. 24, 1897	21	8.9	
Sp.	✓ 19642	Nov. 27, 1897	65	8.8	
	✓ 19659	Nov. 30, 1897	10	8.8	
	✓ 19662	Nov. 30, 1897	8	8.9	
	✓ 19665	Nov. 30, 1897	12	8.9	
	✓ 19671	Nov. 30, 1897	26	8.9	
	✓ 19684	Dec. 2, 1897	16	8.9	
	✓ 19688	Dec 5, 1897	18	8.9	
	✓ 19692	Dec. 6, 1897	10	8.9	
	✓ 19970	Jan. 7, 1898	10	8.8	
	✓ 19744	Dec. 9, 1897	17	8.9	
Sp.	✓ 9902	Nov. 9, 1893	60	Edge spl.	
	✓ 9751	Oct. 24, 1893	12	Too Dim	
Sp.	✓ 9675	Oct. 15, 1893	62	—	
	✓ 9372	Sept 2, 1893	14	8.9	
	✓ 9303	Aug 25 1893	11	8.9	
	✓ 9302	Aug. 25, 1893	14	8.9	
	✓ 9089	Aug 4, 1893	39	8.8	
	✓ 9068	Aug 3, 1893	14	8.9	
	✓ 9017	Aug 1, 1893	13	8.8	
	✓ 8916	July 23, 1893	11	9.0	
	✓ 8886	July 21, 1893	10	8.8	

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April 26, 1902

Meas. Var. Cont.

I	Plate	Date	Exp.	Est.
	✓6903	Sept 7, 1895	10	8.9
Sp	✓13509	Sept 20, 1895	65	9.4
	✓13188	Aug 5, 1895	18	9.1
	✓13146	July 30, 1895	14	8.8
Sp	✓5114	Dec 12, 1891	68	Edges of Cl.
	✓4609	Oct. 23, 1891	19	8.9
	✓4597	Oct. 21, 1891	11	9.0
	✓4507	Oct. 19, 1891	15	Tr. Prm
	✓4435	Oct. 3, 1891	10	8.9
Sp.	✓3695	June 6, 1891	74	Tr. Prm
	✓4362	Sept 26, 1891	15	9.0
	✓4132	Sept. 2, 1891	20	8.8
	✓4054	Aug 19, 1891	30	8.8
	✓4053	Aug 19, 1891	12	8.8
	✓4022	Aug 17, 1891	16	9.3
	✓22856	May 9, 1899	6	8.9
	✓22863	May 10, 1899	17	8.8
	✓22867	May 11, 1899	20	8.8
	✓22841	May 5, 1899	13	8.9
	✓22842	May 6, 1899	13	8.8
	✓22845	May 7, 1899	30	8.8
	✓22144	Jan. 17, 1899	11	8.8
	✓22138	Jan. 12, 1899	11	9.0
	✓22131	Jan. 11, 1899	17	8.8
Sp	✓22829	Jan. 11, 1899	17	—
Sp	✓22838	May 5, 1899	60	—

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April 26, 1902

Meas. Var. Cont.

I	Plate	Date	Exp.	Est.
"	✓21520	Oct 27, 1898	12	8.9
"	✓21350	Oct 26, 1898	18	Too Poor
"	✓21689	Nov 12, 1898	16	8.8
"	✓21529	Oct 28, 1898	10	8.9
Sp.	✓21150	Sept 6, 1898	61	—
I	✓21075	Aug 16, 1898	18	8.9
AC	✓1850	Oct. 8, 1901	76	9.6
"	✓1843	Oct. 7. 1901	72	8.9
"	✓1834	Oct 6. 1901	58	<9.5?
"	✓1737	Sept. 11, 1901	32	Too Poor
"	✓1850	Oct. 8. 1901	76	9.3
"	✓1803	Sept 30, 1901	63	88?
"	✓1783	Sept. 25, 1901	83	9.1
"	✓1768	Sept. 22, 1901	55	Too Poor
"	✓1753	Sept. 19, 1901	44	8.8
"	✓1736	Sept 11, 1901	98	Too Poor
"	✓1731 2	Sept 6, 1901	116	89?
"	✓1695	Aug 29, 1901	126	89
"	✓1684	Aug 27, 1901	61	9.0
"	✓1667	Aug 18, 1901	63	Too Poor
"	✓1662	Aug 16, 1901	70	8.8
"	✓1646	Aug 8 1901	54	Too Poor.
"	✓1642	Aug 7, 1901	69	Too Poor
"	✓1639	Aug 4, 1901	108	Too Poor
"	✓1635	Aug 2, 1901	62	90 88
"	✓886	June 15, 1900	24	9.0

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April 26. 1902

Meas. Dav. Cont.

AC	Plate	Date	Exp.	Est.
✓	830	April 20, 1900	62	9.1?
✓	825	April 19, 1900	60	9.1
✓	577	Dec. 9, 1899	87	9.0
✓	668	Jan. 8, 1900	85	9.2
✓	570	Dec. 6, 1899	30	Too Poor
✓	487	Oct. 21, 1899	70	8.9
✓	434	Sept. 14, 1899	61	9.0
✓	399	Aug. 16, 1899	71	9.1
✓	396	Aug. 15, 1899	70	9.1
✓	391	Aug. 14, 1899	76	9.0
✓	389	Aug. 9. 1899	127	8.9
✓	388	Aug. 8, 1899	105	8.8
✓	386	Aug. 8. 1899	112	8.9
✓	385	Aug 8, 1899	66	9.1
✓	384	Aug 6. 1899	61	8.9
✓	373	July 30, 1899	87	<9.7?
✓	354	June 7, 1899	64	8.9
✓	316	May 6, 1899	67	8.9
✓	302	April 22, 1899	50	9.0
✓	136	Dec. 23, 1898	82	<9.5?
✓	103	Dec. 7, 1898	34	9.0
✓	84	Oct. 26, 1898	63	Too Poor
✓	67	Oct 20, 1898	60	9.0
✓	66	Oct. 20, 1898	14	Too Poor
✓	2241	Jan. 25, 1902	60	—
✓	2171	Jan. 9, 1902	70	8.9

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April 26, 1902

Measures of Van Cook.

A.C.	Plate	Date	Exp.	Est.
✓	2100	Dec. 22 1901	126	Too Poor
✓	2076	Dec. 15, 1901	67	8.9
✓	2074	Dec. 12, 1901	94	—
✓	2062	Dec. 6, 1901	91	8.9
✓	2048	Dec. 4. 1901	105	9.0
✓	2037	Dec. 2 1901	58	8.9
✓	2015	Nov. 28 1901	64	8.9
✓	459	Sept. 27, 1899	382	—
✓	1153	Jan. 18, 1901	115m 30s	—
✓	406	Aug 18, 1899	50	Too Poor
✓	2000	Nov. 22, 1900	77	9.0
✓	1985 ~~23~~	Nov 20, 1901	60	8.8
✓	1984	Nov. 20 1901	81	9.0
✓	1957	Nov 5, 1901	58	<9.4?
✓	1942	Nov 2, 1901	63	8.8
✓	1919	Oct. 28 1901	74	Too Poor
✓	1900	Oct 24, 1901	74	8.8
✓	1628	July 23, 1901	31	Too Poor
✓	1619	July 15 1901	67	Too Poor
✓	1613	July 14 1901	64	Too Poor
✓	1597	July 3 1901	60	9.0
✓	1583	June 29, 1901	63	—
✓	1579	June 28, 1901	115	9.0
✓	1577	June 27, 1901	43	—
✓	1573	June 26, 1901	35	—
✓	1399	April 11, 1901	50	—

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April 26, 1902

Eureas. Var. Cmt.

AC	Plate	Date	Exp	Est.
✓	1240	Feb. 11, 1901	61	—
✓	1170	Jan. 24, 1901	50	Too Dim
✓	1125	Jan. 3, 1901	63	—
✓	1106	Dec. 29, 1900	60	9.0
✓	1064	Dec. 17, 1900	71	—
✓	1052	Dec. 11, 1900	59	29.6?
✓	1014	Sept. 24, 1900	69	8.8
✓	985	Sept. 4, 1900	60	29.3?
✓	954	Aug. 24, 1900	27	Too Dim
✓	902	June 27, 1900	85	9.0
✓	951	Aug. 2, 1900	240	—
✓	1864	Oct. 15, 1901	101	9.0
✓	1870	Oct. 16, 1901	59	9.5?
✓	1881	Oct. 19, 1901	71	8.9
✓	1892	Oct. 21, 1901	60	8.9
✓	2030	Dec. 1, 1901	62	8.9
I ✓	18609	Aug. 28, 1897	15	8.9
" ✓	19313	Oct. 18, 1897	17	8.8
" ✓	19341	Oct. 23, 1897	12	8.8
B ✓	1862			—
" ✓	1837			—

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April 26. 1902.

5 30

✓	I 22127	Jan 10	1899.	12	8.9	
✓	20531	Mar 24	98	10	8.9	
✓	20005	July 29	98	20	8.8	too poor.
✓	20529	March 21	98	13	8.8	
✓	20146	Feb. 4	98	16	8.9	
✓	20068	Jan. 18	98	70	8.8	Sp.
✓	19394	Oct 30	97	12	8.9	
✓	20611	April 3	98	15	8.8	
✓	20568	Mar. 31	98	10	8.9	
✓	20599	Mar. 25	98	10	8.9	
✓	20530	Mar. 24	98	64	too poor	Sp.
✓	20528	Mar 21	98	46	too poor	Sp.
✓	20510	Mar 15	98	10	8.8	
✓	20499	Mar 14	98	17	8.8	
✓	25521	July 3	00	13	8.9	
✓	25644	Aug 9	00	16	9.2	
✓	26556	Feb 2	01	10	9.0	
✓	28389	Feb 3	02	22	8.9	
✓	28388	Feb 3	02	10	8.8	
✓	25257	Aug 29	00	12	8.9	
✓	24863	Mar 16	00	8	too poor.	
✓	25233	Aug. 25	00	15	8.8	
✓	27725	Oct 21	93	10	8.8	
✓	11397	Aug 6	94	66	—	Sp.
✓	16314	Oct 26	96	12	8.8	
✓	18544	Aug 3	97	10	8.9	

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April 28, 1902

Plate	Date	Exp.	Est.
A 1017	Oct. 10, 1894	15m	8.8

Cont. on next page

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1898phae.proj..814F

April 29 1902

Exam. of Plates of Algol var. (Cont).

Plate	Date	Ex.	Ht.
✓ AC 2142	1901, 1, 3	71	8.9
✓ " 852	1900, 5, 7	73	8.9?
✓ " 1572	1901, 6, 26	65	9.6?
✓ " 1603	1901, 7, 12	85	8.9?
✓ " 935	1899, 5, 26	57	8.9
✓ " 914	1900, 7, 4	51	8.8
✓ " 509	1899, 11, 9	68	8.8
✓ L 28696	1902, 4, 28	15	11.3
✓ L 28697	" " "	29	11.2
✓ L 28698	" " "	17	11.1
✓ L 28699	" " "	14	11.1
✓ L 28700	" " "	10	11.0
✓ L 28701	" " "	18	11.0
✓ AC 2511	" " "		<10.5?
✓ AC 2510	" " "		<10.1
✓ L 23796	1899, 10, 14	18	8.8
✓ L 16406	1896 " 31	10	9.9
Inspln superpos. AC. 1966	1901 11 7	70	8.8?

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1898phae.proj..8145

May 2 1902

Determination

	Plate	Date	Aper.	Est.
✓	L28729	'02, 5, 1	10^{mm}	8.8
✓	L28727	" " "	11	8.8
✓	L28725	" " "	20	8.8
✓	L28724	" " "	11	8.8
✓	L28723	" " "	24	8.8
✓	L28728	" " "	20	8.8
✓	L28726	" " "	10	8.9

A 1833 Oct. 5 1901 72 9.3

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1898phae.proj..814F

May 16, 1902.

Exam. of photos. for -12°3501 R.A. 11h 44m 40s Dec. -13° 5' 44" (1900
Magns 6.9, 7.9, 8.0 (Meridian Circle), Dusp. of Var. by Mrs. I. Eddy.

Plate	Date	Ex. m
B 25621	June 27 1900.	10
B 25406	May 23, 1900	60
B 1947	June 30 1897	10
B 9500	May 31, 1892	10
B 24867	March 21 1900	11
B 19543	June 16, 1897	10
B 21762	June 23, 1898	10
B 23563	July 19, 1899	10
B 6032	May 22, 1891	10
B 13289	May 11, 1895	10
B 18209	Dec. 2 1896	10
B 1242	May 31 1890	11
I 1210	May 22 1890	10
I 24730	March 8 1900	60
I 24732	March 8 1900	54
B 29080	Jan 6 1902.	10

by W.P.F.

An examination of the above plates shows no evidence of variability in -12°3501, On all of these it is about 0.4 magn. ~~brighter~~ than -13°3458 7.7, and about 0.4 magn. ~~fainter~~ brighter than -12°3504 8.3

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1898phaa.proj..8145

May 16, 1902

Exam. of photos. for -13° 2401. R.A. 8h 3m Dec. -13° 12'. (1900).
Magns. 6.7, 7.6, and 8.2 (meridian circle). Susp. of var. by Mrs. I. Eddy.

Plate	Date	Exp.	
I 14817	April 8 1896	11m	0.3 magn. fr than -13° 2381 7.5
B 18169	Dec. 1, 1896	12	
B 18742	April 5, 1897	10	
B 17806	Nov. 9, 1896	15	
B 19041	May 10 1897	10	
B 15476	March 31, 1896	10	
B 21016	March 16, 1898	10	
B 25246	May 8 1900	11	
B 27062	April 6 1901	10	
I 377	Dec. 23 1889	67	about 0.1 br than -13° 2381 7.5
B 25373	May 22 1900	11	
B 15669	April 29 1896	10	
B 21204	April 13. 1898		

The above plates have been examined for -13° 2401. Owing to brightness of photographic image the comparison was difficult and uncertain. The star shows slight evidence of variation, being about 0.1 brighter than -13° 2381 mag. 7.5 on ↓ and about 0.3 fainter than that star on ↑

W. P. F.

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1898phae.proj..814F

July 5, 1902.

Result of exam. of plates for the asteroid Terciduka.

Plate	Date	Exp.	R.A. (1855)	Dec. (1855)
I 28936	June 29, 1902	10^m	$21^h 12^m 28^s$	$-0° 35.5$
I 28950	July 1, 1902	59	21 11 46	−0 29.5
I 28956	July 3, 1902	60	21 10 59	−0 25.0
I 28957	July 3, 1902	10	" " "	" "

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1898phaa.proj.8145

July 8, 1902

Result of exam. of plates for the asteroid Sirona.

Plate	Date	Exp	R.A. 1875	Dec. 1875
~~I 28960~~ 28945	July 1 1902	10m		−25° 46.5
I 28946	" 1 1902	12		−25 41.2
I 28953	July 3 1902	14	−25	25.5 −25 30.3
I 28960	July 4 1902	10		12.8

17 15 46.5 No. −25° 12132
17 17 ~~57.5~~ 55.2 12.8 12152
17 18 44.4 25.5 12158
25 30.3
25 41.2

−25° 12132.	17° 15′ 46.5	0.0	0.0	17	15 46.5	46.5
July 4		12.8	46.3	16	32.8	.9045
July 3		25.5	92.3	17	18.8	.905 4
−25° 12152	17 55.2	30.3	109.7	17	36.2	362
−25° 12158	18 44.4	41.2	149.1	18	15.6	110 56 4
July 1		46.5	168.3	18	34.8	442.4

0.0	17	15	46.5	
56.6		16	43.1	16 42 16 39
112.7		17	39.2	17 36 17 38
133.9		18	0.4	+57
182.1		18	48.6	+4.2
205.5		19	12.0	19 6 19 6

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1898phae.proj..814F

July 21, 1902

Examn. of plates taken for Susp. var. in Dm +58° 1773.

Plates Le 13914 and Le 13915, taken on July 12, 1902, fail to show any evidence of variation in +58° 1773. R.A. Dec.

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1898phae.proj..814F

Exam. of Plates of 70 Ophiuchi (For Prof.)
H.P. 3037 18 0.4 +2 32 (1900).

Plate	Date	Ex
I 1013	April 13, 1890	?
I 3870	July 21, 1891	10
I 25381	May 28, 1900	11
I 28678	April 18, 1902	12

Plates taken in 1890 and 1891, superposed on plates taken in 1900 and 1902 show no evidence of change or motion?.

C 8309	Sept. 30 1895	15m
C 10178	April 1 1897	15
C 10507	Sept 13 1897	14

The two last plates superposed in turn on the first plate fails to show any evidence of change or motion.

C 5003	Sept. 9, 1892
C 10507	Sept 13, 1897

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1898phae.proj..814f

December 29, 1902.

Eclam. of plates for +15° 2083 for Fr. Hagen.

Plates	Date.	Eff. m	
I 20144	Feb. 3 1898	14	On these plates the star is about 0.2 brighter than +16° 1997 Magn. 7.8
I 22585	March 20, 1899	15	
I 24224	Dec. 12, 1899	18	
I 26405	Jan. 1, 1901	12	
I 387	Dec. 26, 1889	61	On these plates the star is about 0.2 brighter than +16° 1997 Magn. 7.8, and about 0.7 fainter than +17° 2109, mag. 6.3.
I 3321	March 25, 1891	10	
I 5690	Feb. 16, 1892	10	
I 5795	March 5, 1892	11	
I 14884	April 10, 1896	13	
I 17769	April 2, 1897	22	
I 20616	April 6, 1898	13	
I 24724	March 8, 1900	11	
I 28502	Feb. 15, 1902	10	
AC 93	Oct 31, 1898	60	On these plates the star is about equal to +16° 1997 magn. 7.8 and about 1.0 magn. fainter than +17° 210.9 magn. 6.3.
AC 123	Dec. 15, 1898	77	
AC 201	Feb. 14, 1899	122	
AC 271	April 6 1899	87	
AC 568	Dec. 4 1899	?	
AC 708	Feb. 5 1900	568	
AC 1236	Feb. 10 1901	72	
AC 1359	March 19 1901	64	
AC 2303	Feb. 9 1902	-	
AC 2557	May 17 1902	85	

W. P. F.

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1898phae.proj..814F

December 29, 1902.

Ordered plates of -13° 1192-3 For Burnham.

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1898phae.proj..814F

February 27, 1903.

-12° 2974. 9 37 35 -12 35 30

Insp of Proper Motion by Miss Michaelis.

Inspan. of Plate B 2245, January 24, 1888 superposed on Plate B 25096, April 11, 1903, fails to show any Proper Motion, or change in position in the image of the star -12° 2974.

W. P. L. Feb. 27, 1903.

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1898phae.proj..8145

March 18, 1903.

Means to det. var. in New Algol var. Mm Cracki. +73° 5733.
See A. N.

Sequence selected and marked on I 30187. Stars 10.5 11.0 11.5 11.9
Marked on A.C. 3154 identify with b, c, d, and e, respectively.

Plate	Date	
? AC	18 5 64	10.9
?	31 54	10.6 –
	24 21	11.2:
	24 74	10.7 –
	28 21	10.8
	26 61	<# 10.8
	24 84	10.9
	21 21	12.1
	19 39	<# 11.3
	17 43	10.8
	15 43	10.8
	13 60	10.7 –
	32 94	10.9
	28 70	10.7 –
	10 67	10.7 –
	23 13	11.0
	5 86	<# 11.2
	75	Too poor
?	2 15 v	10.6 –
?	34 38 v	10.4 –
?	34 36 v	10.4 –
A	30187	10.5 –
	30183	10.6 –
AC.	18 89	10.7 –
AC.	3309	10.7
AC.	818 3	10.9

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1898phae.proj..814F

March 18, 1903

	Ac. 2020	11.0
	Ac. 1915	11.1
	Ac. 1808	<11.5
	Ac. 289	10.6
	Ac. 3296	10.8
	Ac 1241	10.7
	Ac. 3308	12.5
	Ac. 2873	11.0
Drachm.	Ac. 2812	10.6
	Ac. 2654	10.6
	Ac. 2626	10.7
	Ac. 2991	11.1
	Ac. 2914	10.8
	Ac. 3400	10.6
	Ac. 3010	10.8.
	Ac 3013	10.8.
	I 28798	12.2.
	I 16916	10.6.
	Ac. 804	11.1.
Rej.	~~I 28798~~	~~11.8~~
	I 3161	10.7.
Cont. H+K strong.	I 3368	10.6.
	Ac 793	10.8.
	Ac 790	11.0.
	Ac 167	10.7.
	Ac 3103	10.7.

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1898phae.proj..8145

March 19, 1903.

AC.	1812	Too near edge
	1856	11.0.
	1988	10.8. near edge
	2010	10.7.
	2161	10.7.
	2212	11.2.
A.	25343	11.2..
	1090	11.4.
	2443	10.7 v
AC	1553	10.6 v
A	22930	10.7 v
AC	338	10.7 v
	2475	10.7 v
	2932	10.6 v
	3097	10.6 v
	3114	10.8 v
	3187	10.7 v
	2611	10.6 v
	2566	10.9 v
	1419	10.8 v
	1196	10.8 v
	1137	11.5.
	999	10.7 v
	859	11.0 v
	1485	11.0 v
	1457	11.4.
	1450	10.5 v
	1081	12.2.
	1444	10.8 v

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1898phae.proj..814F

March 19, 1903.

a.c.	2315	12.3.
	2286	<12.5.
d	994	10.7
	2393	10.6
	28161	<12.6.
a.c.	1451	<11.0.
	1422	<11.3.
	2915	10.7
	2513	10.6
	2483	10.7
	2453	11.1.
	1179	11.1.
a.c.	440	<11.3
a.c.	247	11.1
1894. Jan. 30. a	201	12.0

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1898phae.proj..814F

April 11, 1903

Examn. of Plates for Leslie's Nova (?).
R.A. = Dec. =

Bright July 2, 1896.

Plate I 16397 Oct 3 1896.
n = 2
Nova N.S.

I 2349 Nov 26, 1890.
n = .1
Nova N.S.

n = .2 I 16937.
Nova N.S.

I 18921 Sept. 18, 1897.
n = .2
Nova N.S.

Plate I 23091 June 27, 1899
0 = .1 Nova N.S.

Plate I 25916 Oct 20, 1900. (Leq).
0 = .2 Nova N.S.

Plate I 18879. Sept. 17, 1897.
n = .1 Nova N.S.

Plate I 15422 July 2, 1896. (Leq)
k = .1

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1898phae.proj..814f

Ophan. A Plates for Seeligers Nova(?)

Plate I 29345 Oct 9, 1892
n=2 Nova N.S.

AC. 1493
~~I 15493~~ July 2, 1896.
k=2 Nova N.S.

Sp. A 27913 Nov. 2, 1901.
h=1 Nova N.S.(?)

A 29145 Aug. 23 1902
-g2 Na 12.3 12.5 12.6 = ~~12.5~~ 12.4?
N o k h
k N 2k

B 636 July 28, 1886 Ex 10m
m=.1
N m s.

B 680 August, 19, 1886. Ex 26m
m=.2 Nova

B 644 August 6, 1896 Ex. 50m
m=.1 Nova N.S.

A 981 Oct 6, 1894
m=.1 Nova N.S.

I 29190 Aug 28, 1902
h3N 12.4 12.5 12.7 = 12.5?
N o k
N 3 k

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1898phae.proj..814

H.P. 3037 18 0.4 +2 32 (1900)

70 Ophiuchi, early & late plates. Mark star. (For Prey)

+15° 2083 9 29 21.4 +15 53.5 (1855). For Hagen.

-13 1192, 1193 Jan 24, Oct. 18 1888 Oct. 8, Dec. 3, 1901 For Burnham.

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1898phae.proj..814

AC 2871 Oct. 8, 1902.
l = .1
N n.s.

AC 2764 Aug 19, 1902.
c = .2
N n.s.

AC 2838 Sept 14, 1902.
k = .1
N n.s.

AC 2677 July 10, 1902.
k = .2
N n.s.

additional exposure on pole.

I 2370 Nov. 28, 1890
c = .2
N n.s.

AC 2779 Aug 26 1902
k = .1
N n.s. ?

I 2285 Nov. 19. 1890.
k = .2
N n.s.

I 2394. Dec. 2, 1890
w = .2
N

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1898phae.proj..814f

I 4242 Sept 19, 1900
K = .1
N N.S.

AM 1623 Oct. 9, 1902.
k = .2
N n.s.

AC 2803 Sept 2, 1902
Useless Iso.

AC. 2826 Sept 10, 1902
k = .2
N n.s.
~~k = #~~

AC 2705 July 28, 1902
c = .2
N n.s.

AC 2802 Sept 2, 1902
Plate poor region near edge
does not show Ring Nebula

AC 2710 July 30 1902
c = .2
N n.s.

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1898phae.proj..814F

AC 2973 Nov. 3, 1902.
-g 2 N 12.3 12.5 = 12.40
N o h
k n.s.

I 21262 Sept 28, 1898.
-o = .2
N m s. (?)

A 1726 Sept 24, 1895

s 2 N (?) 14.9 14.9 = 14.90
N, o t.

A 840 Sept 6, 1894.
m = .2
N m s.

X 509
m 3 N 13.5 13.4 = 13.45
N 1 m

AC. 1649 Aug. 11, 1901.
k = 1 N n.s. < 12.9

AC, 1013 Sept. 24, 1901. 6h 56m
l = 1 N n.s. < 13.1

AC. 501 Nov. 6, 1899 6h 63m
l = 1 N n.s. < 13.1

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April 11, 1903.

Comm. of Seeliger's Nova (Cent.).

Plate A.C. 1815 – Oct 3, 1901.
h = 2 N nrs. < 12.7

Plate A.C. 2973
h | N 12.6 12.7 = 12.65
N | k

Plate A.C. 2999. < 12.7
h 2 N nrs.
=

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1898phae.proj..8145

AL.

Afri

Exam. of plates for confirmation of var. 13, 1903. Gemminian.
R.A. $7^h\ 12.2^m$, Dec. $+31°\ 9'$ (1855) south of $+31°1547$ Astron. Nach.
R.A. 7 15.1, Dec. +31 4 (1900). N.W. of $+31°1549$.

I 16994. January 6, 1897 Ex. 18 m. var. vis. Magn. 9.8
A.M. 280. November 13, 1899 Ex. 63 m. var vis. Magn. 10.2
A.C. 3458. March 29, 1903. Ex. 23 m var v.s. < 10.5

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1898phae.proj..814

April 22, 1903

Est. of Nova Geminorum

B obs 7 rec.

I 30351

c 3 N ~~8.87~~ 8.28 8.30 = 8.29

N 2 d 8.49 8.67 = 8.58. 09, 09

I 30334

c 2 N 8.18 8.30 = 8.24

N 2 d 8.39 8.67 = 8.53 14,

I 30308

d 1 N 8.60 8.62 = 8.61

N 2 e 8.97 9.02 = 9.00 03.

I 30320

c 2 N 8.18 8.30 = 8.24

N 2 d 8.39 8.67 = 8.53 14, 14

I 30344

c 3 N 8.28 8.30 = 8.29

N 2 d 8.49 8.67 8.58 09, 09

I 30351

c 3 N 8.28 8.30 = 8.29

N 2 d 8.49 8.67 = 8.58 09, 09

I 30308?

d 1 N 8.60 8.62 = 8.61

N 2 e 8.97 9.02 9.00 03, 02

H

I 30365

d 2 v B 9.07 03 } 9.10
9.12 02 }

v 1 e

d 3 v f 9.17 01 02 }
9.22 08 }
9.32 } 9.24

v 0 e

v 3 f

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1898phae.proj..814F

April 22, 1903

Est. of Nova Geminorum

Bd.

I 30351

c 3 N ~~8.87~~ 8.28 8.30 = 8.29

N 2 d 8.49 8.67 = 8.58. 09,

I 30334

c 2 N 8.18 8.30 = 8.24

N 2 d 8.39 8.67 = 8.53 14, 14

I 30308

d 1 N 8.60 8.62 = 8.61

N 2 e 8.97 9.02 = 9.00 03. 02

I 30320

c 2 N 8.18 8.30 = 8.24

N 2 d 8.39 8.67 = 8.53 14. 14

I 30344

c 3 N 8.28 8.30 = 8.29

N 2 d 8.49 8.67 8.58 09. 09

I 30351

c 3 N 8.28 8.30 = 8.29

N 2 d 8.49 8.67 = 8.58 09, 09

I 30308?

d 1 N 8.60 8.62 = 8.61

N 2 e 8.97 9.02 9.00 03. 02

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1898phae.proj..814F

F.obs. & re

I 30357	~~April~~	5 N 1 d		8.69 8.77 = 8.73 ✓ 04, 04	
		4 N 1 d	8.48 8.40 = 8.44	8.59 8.77 = 8.68 ✓ 04, 09	
I 30308	~~c 4 N = 3~~		8.38 8.40 = 8.39		April 21
		c 6 N, 0 d 3 e	8.79 8.87 8.92 = 8.86 = 8.53	07, 01, 06	
			8.58 8.50 8.52		April 19
I 30334	c 4 N, N 2 d		8.38 8.30 = 8.34	8.59 8.67 = 8.63 ✓ 04, 04	April 19
I 30344	c 4 N 2 d		8.38 8.30 = 8.34	8.59 8.67 = 8.63 04, 04 ✓	April 20
I 30320	c 5 N 2 d		8.48 8.30 = 8.39	8.69 8.67 = 8.68 01 ✓, 01	April 18
I 30309	No f	= 9.14		1 9.62 ✓ 2 - -	April 17.
I 30321	e 3, 2 f	9.12 8.94 = 9.03		2 9.52 9.42 = 9.47 ✓ 05, 05	April 18,
I 30345	d 3, 0 e, 3 f	8.80 8.82 8.84 = 8.82		4 9.17 9.22 9.32 = 9.24 07 02 08	April 20, 1903
I 30335	d 4, 0 e, 3 f	8.90 8.82 8.84 = 8.85		3 9.27 9.22 9.32 9.25 00 05 05	April 19, 1903
I 30352	e 4 of, 2 g	9.22 9.14 9.16 = 9.17		5 9.62 9.62 9.56 9.00 02 02 04	April 21

Spectrum

Original estimates of Nova Geminorum April 22, 1903.

9.14	17
9.03	18
8.85	19
8.82	20
9.17	21

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1898phae.proj..814F

April 25, 1903

Est. of Nova Geminiorum

Bohs. Fren. Plate I 30365

d 2 N 8.70 8.72 = 8.71 ✓

N 1 e 9.07 9.12 = 9.10 03 02

F. Obs. & rec. Plate I 30365

d 3 N 8.80 8.82 8.84 = 8.82 ✓

N 0 e 9.17 } 9.24 07

N 3 f 9.22 } 02

9.32 08

I 30289

7.98 c3 N 8.28 8.30 = 8.29 01 01 ✓

8.30 N 2 d 8.50 8.49 8.67 = 8.58 09, 09

I 30294

7.98 c3 N 8.28 8.40 = 8.34 06 06 8.49 8.77 = 8.63 14, 14 ✓

8.40 N 1 d 8.50

Sp. I 30290 Spectrum.

7.98 c3 N 8.28 8.30 - 8.29 01 01 8.49 8.67 = 8.58 09. 09

8.30 N 2 d 8.50

I 30403 ✓

9.36 9.1 N 9.46 9.51 = 9.48 02 03 9.77 10,00 = 9.88 11, 12

9.51 N 2 h 9.71

Sp. I 30395

~~2 N 8.82~~ 2 3 N 9.12 8.94 = 9.03 09 09 9.52 05 } 9.47

~~N 1 2~~ 8.94 N 2 2 9.14 9.42 05

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1898phae.proj..814F

I 30394
8.82 e3 N 9.12 9.04 = 9.08 04 04
9.04 N 1 f 9.14 9.52 952 = 9.52 00, 00 ✓

I 30383
9.36 g2 N 9.56 9.41 = 9.48 08 07 ✓
9.41 N 3h 9.71 9.96 9.90 = 9.93 03, 03

Sp I 30377
8.82 e3 N 9.12 8.94 = 9.03 09 09 ✓
8.94 N 2 f 9.14 9.52 942 = 9.47 05, 05

Plate trail I 30376
9.14 f2 N 9.34 9.26 = 9.30 04 04 ✓
9.26 N 1 g 9.36 9.82 9.66 9.74 08, 08

I 30367
N
N

Sp. I 30368
8.82 e2 N 9.02 8.84 = 8.93 09 09 ✓
8.84 N 3 f 9.14 9.42 932 = 9.37 05, 05

Sp. I 30301
8.50 d2 N 8.70 8.52 = 8.61 09 09 ✓
8.52 N 3 e 8.82 9.07 8.92 = 9.00 07, 08

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1898phae.proj..8145

I 30300 Tr-ov Jroor

ac 3527
7.98 c3 N 8.28 8.30 8.29 0 1 0 1
8.30 N 2 d 8.50 8.49 867 = 8.58 09, 09

ac 3520
7.98 c2 N 8.18 8.30 = 8.24 06 06
8.30 N 2 d 8.50 8.39 8.67 = 8.53 14, 14

ac 3505
7.98 c3 N 8.28 8.30 = 8.29 01 01
8.30 N 2 d 8.50 8.49 8.67 8.58 09, 09

ac 3478
7.98 c2 N 8.18 8.20 = 8.19 01 01
8.20 N 3 d 8.50 8.39 857 = 8.48 09, 09

ac 3485
7.98 c3 N 8.28 8.30 = 8.29 01 01
8.30 N 2 d 8.50 8.49 867 = 8.58 09. 09

ac 3489
7.98 c3 N 8.28 8.49
~~N~~ d m.s.

ac 3496
7.98 c3 N 8.28 8.30 = 8.29 01 01
8.30 N 2 d 8.50 8.49 867=858 09,09

ac 3497
7.98 c3 N 8.28 8.30 = 8.29 01 01
8.30 N 2 d 8.50 8.49 867 = 8.58 09,09

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1898phae.proj..814F

aI 966.

aI 968. Too near edge

aI 979.

aI 981 Too near edge

aI 987. Too near edge of film.

aI 988.

I 30410

8.60 - d 3 IV 880 862 = 8.71 09 09

8.62 IV 1e 882 9.17 9.12 = 9.14 03, 02.

Spectrum

Observations re-reduced June 7, '18 M.A.V.

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1898phae.proj..8145

June 4th, 1903.

– Canis Majoris $6^h\ 50^m.6$ $-24°\ 3'$ (1900) Max. 8.7 Min. 9.3 Innes.

Examination of chart plates for variable Spectrum D on B 12631.

Chart plates:			
B 4337	Oct. 2, 1889	B 21199	April 13, 1898
4515	Oct. 27, "	22421	April 4, 1899
4629	Nov. 13, "	24544	Nov. 20, "
10524		26575	Nov. 13, 1900
10826		26670	" 19, "
14777	Oct. 7, '95.	27081	April 8, 1901
17686	Oct. 13, '96	27275	" 26, "
18219	Dec. 7, '96	28792	Nov. 12, "
20457	Sept. 18, '97	29380	April 15, 1902

The above plates have been examined and show no evidence of variation in C.P.D. –24° 1753, – Canis Majoris.

W. P. F. June 4, 1903.

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1898phae.proj..814f

Jme 6, 1903. "Berlin Gesellschaft"

Exam. of plates for var. in A.G.C. 13177
R.A. 22h 23m 43s.63 Dec. +57° 1' 24".0 (1875) See letter
of E. E. Barnard, Jme 3, 1903. C.S. +56 2781 8.0.

	Plate	Date	Bef.
8	I 23521	Sept. 15, 1899	10m
	~~I 11922~~	~~Nov. 16, 1894~~	~~13~~
7	I 15890	Sept. 4, 1896	10
5	I 11465	Sept. 20, 1894	15
3	I 9352	Aug. 31, 1893	14
6	I 11838	Nov. 11, 1894	16
4	I 9716	Oct. 20, 1893	11
11	I 29347	Oct. 9, 1902	21
9	I 25637	Aug. 9, 1900	13
10	I 27823	Oct. 20, 1901	19
12	I 29513	Nov. 7, 1902	10 "a little brighter"?
2	I 9150	Aug. 9, 1893	18
1	I 7448	Nov. 5, 1892	17 "a little brighter"?
13	A.C. 3101	Dec. 24, 1902	68
15	A.C. 3190	Jan. 19, 1903	64
14	A.C. 3146	Jan. 8, 1903	65

An examination of the above plates fails to show any decided variation in A.G.C. 13177. On plates I 7448 and I 29513 it is about 0.4 brighter than +56° 2781 magn. 8.0. On the other plates it is about 0.2 brighter than +56° 2781

16	A.C. 3630	May 13 1903	A.G.C. 13177 is about equal to +56° 2781 on these plates.
17	A.C. 3668	May 22 1903	It is certainly not brighter than the comparison star.

W.P.F. Jme 10/1903

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1898phae.proj...814F

June 11, 1903.

Exam of plates for +19° 2773 $14^h 7^m 53^s.1$ +19° 48'.8 p.5 (1855).
"Missing from position given on the chart and in the Catalogue".
See letter of F. Daniel May 23, 1903.

Plate	Date	Exp
I 3661	May 23 1891	10m
I 10785	March 7 1894	11
I 15263	June 4 1896	19
I 12878	May 10 1895	16
I 18262	June 22 1897	11
I 20219	February 12 1898	14
I 22944	May 26 1899	15
I 24855	March 16 1900	10
I 30262	March 31 1903	34

An examination of the above plates fails to show any image near in or near the position of +19° 2773.

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1898phae.proj..814

March 18, 1904

+58°1346. 7.5

Exam. of Plates of region of star marked by Mr. E.S. King on spectrum plate I 31549. on March 17.

Rd. 11h 48m 56.1 Dec. +58° 40.3 (1855).

March 17. The spectrum is Md and therefore the star is probably a variable of long period. W.P. Fleming.

March 18. An examination of the following plates confirms the variability of +58°1346, with a variation of at least 1.5 mags.

Plate.	Date.	Ref.
AC 319	May 11 1899	82m
AC 333	May 26 1899	74
AC 558	Nov. 25 1899	57
AC 610	Dec. 19 1899	59
AC 1341	March 16 1901	75
AC 1372	March 23 1901	74
AC 1387	March 30 1901	87
AC 3097	Dec. 23 1902	93
AC 3114	Dec. 28 1902	186
AC 4340	Dec. 10 1903	64
AC 4460	Dec. 28 1903	62
AC 4516	Jan 10 1903	89
AC 4654	Feb. 17 1904	74
AC 4702	March 4 1904	79
I 23175.	July 18 1899	17
I 24473.	Jan. 22 1900	69
I 25316	May 10 1900	11
I 22927.	May 25 1899	12
I 25062.	April 7 1900	11
I 28340	Jan. 25 1902	11
I 19544	Nov. 9 1897	15

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1898phae.proj..814f

March 18, 1904

Examn of Plates for Star of Type IV marked by W.P.F. on Plate I 31463 and Suspected of variability

+42°1571 6h 24 22.9 +42 36.5 9.3 (1855).

The following plates examined show variation of about 0.8 magn.

Plate	Date	Ef.
I 20317	March 3 1898	14m
I 24043	Nov. 13 1899	16
I 10326	Dec. 28 1893	10
I 14753	March 28 1896	11
I 10305	Dec. 26 1893	15
I 5515	Feb. 4 1893	11
I 7841	Jan. 3 1893	12
I 728	March 3 1890	14½
I 16992	Jan. 6 1897	14
I 26620	Feb. 8 1901	14

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1898phae.proj..814f

See Plate Note Book 3 page ~~111~~ 68

March 18 1904

Chas. A Plates for Var. marked by Miss L.D. Wells on I 24175.

Approx. for 1855 Ra 7h 40.x4 + 5s Dec 50' 53". The following plates examined by E.C. Pickering and W.S.F. and variation of about 0.5 mags. Confirmed. Variability to be announced.

	Plate	Date	Ef.
	I 24175	Dec. 4 1899	12m
	5165	Dec. 13 1891	11
	24719	March 8 1900	10
	23916	Oct. 21 1899	11
x	30026	Feb. 19, 1903.	11
	22544	March 8 1899	14
	22431	Feb. 24 1899	12
	24317	Dec. 24 1899	60
	848	March 18 1890	10
	23880	Oct. 20 1899	15
	20207	Feb. 10 1898	15
	26837	March 27 1901	10
	20404	March 8 1898	13
	24487	Jan. 27 1900	63
	24328	Dec. 26 1899	69
	21630	Nov. 2 1898	10
	24905	March 21 1900	10
x	B 379	Feb. 22, 1886.	
	B 27235	April 23 1901	10
	I 14799	April 2 1896	11
	I 14647	March 13 1896	18
	I 5683	Feb. 16 1892	11

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1899phaa.proj - 8145

March 18, 1904.

Exam of Plates to det. var. if any in Alg. C. 10113
R.A. $7^h\ 47^m.7$ Dec. $-37°\ 44'$ (1900). ε Puppis. Marked by
Miss L. D. Wells on Plate B17936.

See Law's Note Book 3 page 83

An examination of the following plates by E. C. Pickering and W. P. T. shows slight, if any, variation in this star, although on B17936 ~~this~~ it is apparently fainter. This difference may be photographic and due to difference in Color of the stars Compared

Plate	Date	Magn.
B 17936	Nov. 13 1896	11
18435	Jan. 29 1897	60
A.M. 317	Nov. 27 1899	60
1767	Nov. 24 1902	61
1786	Jan. 3 1903	60
1798	Jan. 15 1903	60
1832	March 5 1903	60
1896	May 21 1903	60
1160	March 12 1902	62
1932	May 14 1903	61
1957	May 19 1903	60
349	Dec. 5 1899	60
1581	Sept. 26 1902	60
1291	May 29 1902	60
723	Nov. 20 1900	65
735	March 25 1901	21 ?
785	May 14 1901	64
1113	Nov. 12 1901	60
1231	May 1 1902	60
721	Nov. 17 1900	60
391	March 28 1900	60
382	March 10 1900	58

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1898phae.proj..814f

March 18, 1904.

Exam. of Plates to confirm variation of CDM -50° 12918 20h 18m.1 -50° 12' (1875). marked by Miss L. D. Wells on B. 4081. . It is a known fourth type star. An examination of the following plates shows a variation of about 0.7 magn.

See Low's Note Book 3 Page 76

Plate	Date	Ef.
B 4081	August 25, 1889	
13100	April 24 1895	10 m
30243	June 28 1902	61
29533	April 29 1902	10
30496	July 30, 1902	65
12142	Sept. 14 1894	10
23823	Aug 14 1899	10
25729	July 5 1900	62
28241	Aug. 17 1901	60
16442	July 3 1896	12

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1898phae.proj..8149

March 18, 1904.

Exam. of Plates to confirm variation of
CDM -45° 11383 R.A. 17h 9m 9.8 Dec. -45° 50m (1855, Found
by Miss L. D. Wells on Plate " known as Lyle IV.
See LDW's Note Book 3 page 81 On examination of the following Plates shows a variation of about 1/2 magnitude.

	Plate	Date.	Ex.
B	20280	Sept. 13 1897	20m
	20447	Sept. 18 1897	10
	17366	Sept. 5 1896	13
-	23169	June 26, 1899	10
	11284	May 23 1894	
-	27711	June 20, 1901,	60
-	9686	June 24, 1893	9
	19685	July 1 1897	23
	21917	Sept. 3 1898	10

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1898phae.proj..814f

March 18, 1904.

Exam. of plates for suspected variability of asc 24888 Ra. 18 10.9 Dec. -36 48 Mag. 3.3r Suspected by L.D. Wells. on.

See L.D.W's Note Book No. 3 67 & page ##

An examination of the following plates shows a slight variation which may be due to the photographs owing to difference in spectra of stars compared.

B

Plate	Date	Exposure.
B 19873	July 20 1899	49
17652	Oct. 13 1899	10
AM 15	July 26 1899	71
33	July 31 1899	300
137	Sept. 6 1899	75
154	Sept. 21 1899	82
461	May 8 1900	62
802	May 22 1901	60
808	May 27 1901	51
817	May 28 1901	60
907	July 9 1901	60
1028	Sept. 4 1901	67
1043	Sept. 6 1901	60
1236	May 21 1902	60
1252	May 15 1902	60
1278	May 27 1902	60
614	Sept. 17 1900	70
1414	July 2 1902	60
2280	Sept. 18 1903	63
1422	July 3 1902	60
1960	May 19 1903	61
1433	July 9 1902	60
1952	May 18 1903	60
1461	July 12 1902	60
1589	Sept. 30 1902	60
1470	July 14 1902	60
1543	Sept. 17 1902	60
1487	July 29 1902	383

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1898phaa.proj..8145

March 26, 1904.

Plate A 6447, July 13, 1903. Exp. 60 m.
Moving object (asteroid ?) R.A. $12^h\ 47^m.4$ $-1°\ 40'$ (1855).

Ref.	Date	Exp.	R.A.	Dec.
B 27050 + B 31975	June 6, 1903	10 m	$12^h\ 46^m$	$-2°.0$

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1898phae.proj..814

April 30, 1904.

Exam. of Plates for variation in +13° 2045 90 magn.
Rd. 9h 0m 29.2 Dec. +13° 48'.4 (1855) Dp Merton I 31560.

Plate	Date	Exp.
I 5717	Feb. 17 1892	12m
I 620	Feb. 6 1890	
I 837	March 17 1890	15m
I 280	Dec. 9 1889	
I 5830	March 7 1892	11
I 15124	May 16 1896	13
I 15107	May 13 1896	11
I 17724	March 31 1897	12
I 8389	April 11 1893	10m
I 8245	March 18 1893	13m
A.C. 3433	March 15 1903	60m
A.C. 3559	April 28 1903	75m
A.C. 11107	Oct. 26 1903	82m
A.C. 11142	Oct. 30 1903	60m
A.M 1142	April 17 1900	61m
A.M. 748	April 6 1901	60m
A.M. 772	May 9 1901	66m
A.M 1196	April 9 1902	60m
A.M. 1216	April 29 1902	60m
A.M 1340	June 12 1902	72m
A.M 1378	June 18 1902	60m
A.M 1647	Oct. 11 1902	60m
A.M. 1890	April 28 1903	61m
A.M 2006	June 6 1903	60m
A.M. 2040	June 16 1903	60m
A C 591	Dec. 13 1899	68m
A.C. 540	Nov. 16 1899	48m
A C 3389	March 2 1903	61
I 20726	April 21 1898	12

An examination of the above plates shows slight changes, about 0.4 magn. in the images of BD +13° 2045, which may be due to the photographs.
Not to be announced. W.P.F.

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1898phae.proj..8145

May 2, 1904.

Exam. of Plates for var. if any in star in ~~I 31565~~
in I 31565 Sp. Rec. Rd 3h 23m.7 Dec. +45° 16' (1855).

Plate	Date	Ref.
I 11614	Oct. 11 1894	16m
I 7958	Jan. 25 1893	18m
I 29772	Dec. 31 1902	14m
I 26687	Feb. 24 1901	10m
I 26686	Feb. 24 1901	10m
I 26584	Feb. 7 1901	10m
I 21764	Nov. 23 1898	10m
I 19998	Jan. 8 1897	17m
I 10261	Dec. 23 1893	17m
I 2185	Nov. 4 1890	9m
I 26053	Nov. 12 1900	13m
I 23552	Sept. 16 1899	10m
I 16163	Oct. 9 1896	10m
I 20151	Feb. 4 1898	11m
I 17095	Jan. 18 1897	13m
I 24699	March 7 1900	16m
I 5031	Dec. 10 1891	15m
I 2071	Oct. 26 1890	10m
I 3269	March 11 1891	18m
I 16965	Jan. 1 1897	13m
I 26743	March 6 1901	74m

An examination of the above plates shows slight change about 0m.3 in the images of the star in Rd 3h 23m.7 Dc. +45° 16'. The change may be due to the photographs. Not to be measured. W.P.F.

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1898phae.proj...814f

May 2, 1904.

Eform of plates to determine var. of +56° 1615 Sf Mes d
var? on I 31562. Rd. 12h 33m 44s.2 Dec. +56° 38'.3 (855) 8,27 mgn.

Plate	Date	Eof.
I 15177	May 27 1896	15m
I 10496	Jan. 19. 1894	11m
I 12493	March 9 1895	11m
I 6319	May 24 1892	12m
I 3617	May 23 1891	11m
I 925	April 1 1890	11m
I 6256	May 16 1892	11m
I 23176	July 18 1899	20m
A.C. 1341	March 16 1901	7.5m
A.C. 1372	March 23 1901	7.4m
A.C. 1387	March 30 1901	8.7m
A.C. 2932	Oct. 24 1902	7.2m
A.C. 3097	Dec. 23 1902	9.3m
I 1133	May 2 1890	15m
I 1115	April 30 1890	12m
I 15087	May 11 1896	30m
I 10717	Feb. 26 1894	10m
I 964	April 5 1890	20m
I 998	April 11 1890	19m
I 25407	June 6 1900	12m ~~11m~~
I 16793	Dec. 14 1896.	13m

An examination of the above plates shows a variation of at least 1.0 magn. in +56° 1615.

~~Measure and~~ Add to list for announcement and measure.

N. P.

This star was suspected of variation by Miss F. on I 1142 where she is rec. but apparently no clear plates were examined then. & variability was not confirmed until now.

Also found by Espin - See Monthly Notices 56 & Chandler's Third Catalogue "Unconfirmed List"

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1898phaa.proj..8145

May 24, 1904.

Exam. of Plates to determine var. if any in
$-2°3280$ $10^h 56^m 14^s.9$ $-2° 25'.5$ (1855) Magn. 9.0
Sp Mc5d var? in I 31618.

Plate	Date	Exp.
B 27023	March 29 1901	10
B 11450	June 19 1894	
B 15835	May 13 1896	10
B 31592	May 4 1903	10
B 30052	June 14 1902	10
B 11187	May 21 1894	
B 27213	April 17 1901	60
I 10571	Jan. 25 1894	10
B 25133	April 17 1900	29
B 31707	May 7 1903	10
B 29100	Jan. 17 1902	10
B 13699	June 8 1895	10
B 27508	May 29 1901	11

An examination of the above plates fails to show any variation exceeding about 0.3 magn., and this may be due to photographic images.
Not to be measured or announced. W.P.F.

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1898phae.proj..814f

June 3, 1904.

Exam. of plates to det. var. if any in +4°949
R.a. 5h 22m.7, Dec. +4° 5.1 (1855). Sp. K5 Md. Rec. Taylor
B20484.

Plate	Date	Exp	Plate	Date	Exp.
A.I 1999	Jan. 17 1904	60m	A.M. 708	Nov. 1 1900	71m
A.I 1877	Dec. 22 1903	61m	A.M. 717	Nov. 13 1900	60
A I 1676	Nov. 18 1903	97m	A.M. 178	Sept. 29 1899	67
A I 738	Feb. 12 1903	10m	A.C. 3225	Jan. 30 1903	62
A.I 2019	Jan. 24 1904	79	A.M. 170	Sept. 27 1899	60
A.I 2015	Jan. 19 1904	62	A.M. 2386	Nov. 19 1903	61
A I 2192	March 6 1904	60	A.C. 3284	Feb. 12 1903	64
A.I 7444	Feb. 13 1903	79	I 27514	Oct. 19 1901	10
A.I 835	Feb. 26 1903	84	A.C. 3320	Feb. 19 1903	64
A.I 2087	Feb. 8 1904	71	A.C. 4263	Nov. 25 1903	70
A I 1596	Oct 30 1903	94	A.C. 2156	Jan. 3 1902	73
A.M 2386	Nov. 14 1903	60m	A.C. 2390	March 6 1902	73
A.M 2295	Sept. 29 1903	60m	A.C. 1779	Sept. 24 1901	52
A.M 1810	Jan. 20 1903	75	A.C. 2057	Dec. 5 1901	86
A.M 1723	Nov. 26 1902	60	A.C. 1894	Oct. 21 1901	72
A.M. 1705	Nov. 24 1902	60	A.C. 3449	March 25 1903	65
A.M. 1683	Nov. 7 1902	60	A.C. 4785	April 2 1904	72
A.M 1108	Nov. 14 1901	60	A.C. 2174	Jan. 9 1902	100
A.M 187	Sept. 30 1899	62	A.C. 2953	Oct. 30 1902	107
A.M 726	Nov. 23 1900	60			
A.M. 315	Nov. 23 1899	60			
Dupe. A.M. 3418	Dec. 5 1899	67			

An examination of the above plates shows a variation of about 07n 0.3 mags. This variation has been confirmed by Miss L. L. Leavitt

W. P. Fleming.

(The last thirteen plates on the list were the ones examined by Miss Leavitt)

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1899phae.proj..8148

June 7, 1904

Eton. of plates for susp. nova of Lamplm (Flagstaff). Tel. by P. Lowell.

R.A. 16 4.0 + 26 47 (1855) Seen June 4, 1904.

Plates	Dates							
AC 4922	May 21, 1904	62	8.0	Obj.	16	8.8 9 ? + 26 ~~12~~	Var?	(Appt 1855).
AC 4833	April 13, 1904	~~64~~						
AC 4892	May 6, 1904	1						
I 31724	May 16, 1904							
AC 3724	June 16, 1903							
A 3057	June 1, 1898	10						
A 3074	June 7, 1898	10						
× A 5405	June 25, 1901	60						
I 28967	July 8, 1902	17						
I 31740								
I 28962	July 6	1902	25	Obj.	16	36 + 26 50	(1855)	E.C.P.*
AC 2672	July 8	1902	58		N.S.			
AC 2667	July 4	1902	58		N.S			

Marked also on I 25750 + I 26946.

No evidence of var. in star marked on chart sent by Percival Lowell was found on any of the above plates, and no trace of either of the objects marked by Mrs Fleming and Prof. E.C. Pickering was ~~found~~ seen except on the plates on which they were found.

W. P. F. June 9, 1904.

* Another exp. On plate 28962 there are other bright & faint stars which do not appear on plates examined in same region. W.P.F. Sept. 1905

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1898phae.proj..814f

October 20, 1904.

Exam. of plates for var. in V Cephei.

a' +82°703 22 47 9 +82 23 50 ; a +83°640 22h 55m 5s +83° 34' 50" ; b +81°13 0 29.0 +81 42 6.5

Assumed Mag. a' = 50, a = 5.5, b = 6.5

	Plate	Date		Ex.	East.
aI	656	Jan. 21,	1903	69	5.8
[aC	5356	Oct 13	1904	79	5.8]
aI	828	Feb 26,	1903	62	6.0
	882	Mar. 12,	1903	58	6.1
	944	Apr. 1,	1903	70	6.1
	1129	May 25,	1903	78	6.1
	1163	June 2,	1903	85	6.1
	1181	" 26,	1903	73	6.2
	1249	July 27	"	66	6.1
	1268	Aug 7	"	60	6.2
	1329	" 31	"	70	6.0
	1372	Sept. 11	"	77	6.0
	1546	Oct. 24	"	74	6.1
	1664	Nov 14	"	65	6.1
	1617	" 3	"	73	6.1
	1828	Dec. 14	"	44	6.0
	1805	" 11	"	57	6.1
	1889	" 23	"	68	6.1
[I	8281	Mar 26	1892	52	4.8]

On the A.C. plates, where the stars are in the same part of the plate, and the images are well defined, the star V Cephei is always fainter than +83°640 and brighter than +81°13. I am not certain that even the small variation shown above is not due to the character of the images on the plates.

W. P. Fleming, Oct. 20, 1904.

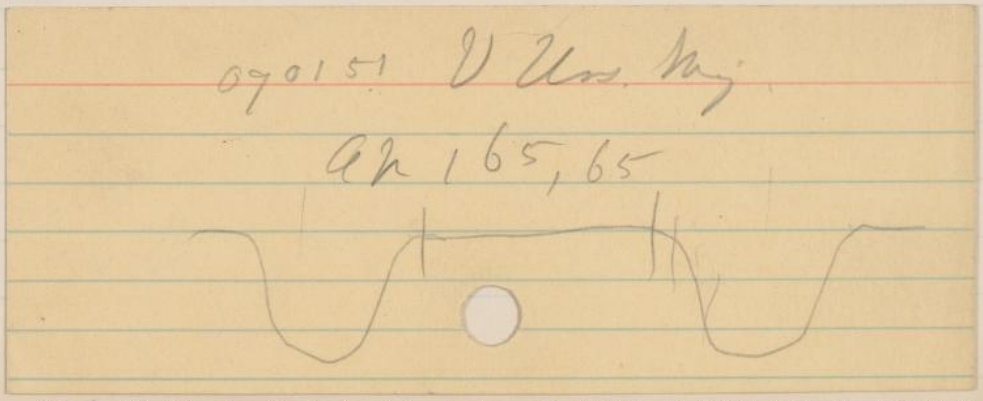
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1898phae.proj..8145

October 20, 1904.

Drawings of plates for variation V, Ursae Majoris. (AN. 165, 65.)

Plate	Date		Ex.	Est. mags.
I 12473	March	5, 1895	10	9.5
aC 129	Dec.	16, 1898	63	11.0
184	Jan.	30, 1899	65	9.5 11.5
635	Dec.	29, "	66	<12.
642	Jan.	1, 1900	90	11.5
653	"	3, "	64	11.4
812	Apr.	11, "	60	9.5?
2454	"	3, 1902	95	11.2
3141	Jan.	1, 1903	64	9.5
3195	"	19 "	146	9.4
3306	Feb	17 "	62	9.4
3354	"	24 "	63	9.5
3374	"	28 "	72	9.6
3381	Mar.	1, "	64	9.5
3399	"	6, "	65	9.8
3471	April	1, "	62	11.5
3506	"	17 "	71	11.5
3546	"	25 "	60	<11
3586	May	2 "	68	10.5
4793	April	3 1904	60	9.7



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1898phae.proj..814F

November 25, 1904.

Meas. of Meteor trail on A.C. 5530

(Marked at Laboratory)

The trail extends from R.A. $9^h\ 8^m.8$ $+29°\ 52'$ to R.A. $9^h\ 17^m.2$ Dec. $+28°\ 57'$ (approx. 1855). (Est. by W. P. T.)

A line prolonged to R.A. 9 57 (1855) gives the Dec. Dec (1855).

Bisecting meteor.

$24°\ 15'$	+1
$24°\ 13'$	−1
$24°\ 14'$	0

with meteor parallel.

$24°\ 14'$	0
$24°\ 16'$	+2
$24°\ 14'$	0

$14' \pm 1'$

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1898phae.proj..8148

November 25, 1904.

Meteor trail on A.C. 5527. Marked by W. P. Fleming.

The trail extends from R.A. $4^h\ 52.^m5$ Dec. $+0°\ 52'$ to R.A. $5^h\ 4^m\ 10.^s7$ Dec. $-4°\ 39'$ (approx. 1855.7) Obst. by M. E. D.

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1898phae.proj..814f

November 26, 1904.

Examn. of photos to determine variation if any

DM +3° 4597 $21^h\ 59.^m7$ Dec. +3° 39.'0 (1855 pos.) Aff. Memo I 32243

Note entered Oct. 19 1904 Additional plates on which the var was found by Miss Leavitt are I 32484 marked "Ille var." Jan. 23 1906 I 33699 marked "Mixed Var." (Dec. 15 1905 I 33776 marked "Mixed Var." Jan. 3 1906 and I 33548 marked "Mixed Var." Feb. 27 1906 I 34423 marked "Mild." Jan. 1907

Plate	Date	Ex.	Est.		Plate	Date	Ex.	Est.
I 16263	Oct. 24 1896	10m			A.C. 3801	Aug. 3, 1903	7/8m	8.2
I 21501	Oct. 25 1898	10m	8.8		A.C. 2015	Nov. 28, 1901	6h	9.0
I 7401	Oct. 23 1892	12m	9.0		A.C. 5090	July 21 1904	6h	8.5
I 2557	Dec. 22 1890	10m	9.1		A.C. 5446	Oct. 29 1904	8h	8.6
I 27,12	Jan. 6 1891	10m	8.2	8.1	A.C. 2593	May 30 1902	5h	9.2
I 23503	Sept. 14 1899	13m	8.4		A.C. 6743	Sept. 27 1905	8h	8.2
I 16049	Sept. 28 1896	32m	8.5					
I 26178	Dec. 8 1900	20m	8.5					
I 18888	Sept. 17 1897	16m	Isochromatic					
I 7098	Sept. 18 1892	10m	9.0					
I 29211	Aug. 31 1902	13m	8.6					
I 18966	Sept. 21 1897	10m	9.0					
I 9520	Sept. 20 1893	14m	8.9					
I 7383	Oct. 22 1892	8m	8.9					
I 9767	Oct. 25 1893	11m	8.8					
I 27553	Sept. 24 1901		8.4					
I 9371	Sept. 2 1893	20m						

An examn. of the above plate shows a slight change about 0.5 mgn. in the light of this star.

W.P.F.

Do not announce or announce without further confirmation

An examination of the above AC plates shows a small variation and since the variation of about 0.7 magn. has been found by H.S. Leavitt* the star will be announced as variable.

W.P.F.

Oct. 10, 1907

*See Miss Leavitt's Book #2, p. 84

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1898phae.proj..8145

November 28, 1904.

Exam. 5 photos to determine variation if any in DM +50° 3362 RA, 21h 28m.6 (1855 pos.) Dec. +50° 57'.5 9m.4 Sp. Nld: on plate I 32244. The spectrum is probably defective.

Chart Plates	Date	Exp.
I 7523	Nov. 16 1892	10m
I 13167	Aug 2 1895	12m
~~I 7523~~	~~Nov. 16 1892~~	~~10m~~
I 9004	July 30 1893	11m
I 11869	Nov. 12 1894	23
I 12710	April 17 1895	18
I 13657	Oct. 8 1895	17
I 23523	Sept. 15 1899	11
I 11397	Aug. 22 1894	19
I 9275	Aug 21 1893	17
I 21499	Oct. 25 1898	16m
I 4443	Oct. 5 1891	17m
I 4360	Sept. 26 1891	16m
I 4016	Aug. 17 1891	16m
I 3985	Aug. 10 1891	15m
I 5304	Jan. 1 1892	13m

Chart Plates	Date	Exp.
I 4804	Nov. 20 1891	11m
I 13086	June 20 1895	12m
I 7815	Jan. 2 1893	10m
I 9304	Aug 25 1893	10m
I 11384	Aug 21 1894	13m

An examination of the above plates fails to show any variation in the above star, or in the faint star in same R.A. and South.

W. P. F. Nov. 28, 1904.

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1898phae.proj..814F

November 28, 1904.

Exam. of plates to determine variation if any in the star Approx 1855 pos. R.A. 20h 20.0m Dec. +25° 45' Sp. M2 on I 32239.

Plate	Date		Exp.
I 23645	Sept. 23	1899	10m
I 29508	Nov. 7	1902	12m
I 6946	Sept. 9	1892	10m
I 15879	Sept. 4	1896	10m
I 21121	Aug. 27	1898	10m
I 8878	July 21	1893	12m
I 13756	Oct. 20	1895	10m
I 7090	Sept. 18	1892	10m
I 25196	April 19	1900	10m
I 22896	May 23	1899	12
I 9037	Aug. 2	1893	19m
I 18929	Sept. 18	1897	10
~~I 23645~~ I 31319	Dec. 21	1903	31
I 27642	Sept. 30	1901	10
I 6770	Aug. 19	1892	31
I 4045	Aug. 19	1891	10m

Plate	Date		Exp.
I 31007	Oct. 19	1903	30m
I 31071	Oct. 27	1903	38m
I 25330	May 10	1900	11m
I 25162	April 14	1900	10m
I 23076	June 25	1899	11m
I 22789	April 27	1899	17m
I 25971	Oct. 20	1900	16m
I 8800	July 16	1893	10m
I 16142	Oct. 9	1896	10

An examination of the above plates shows a certain variation of about 0.6 of a magn. Look up more plates before accepting it as a variable.

W. P. F. Nov. 28, 1904.

Nine more plates examined show about the same variation. Measure before announcing.

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1898phac.proj...814F

December 1, 1904.

Exam. of plates to determine var. if any in
Dm +49° 32 2 RA. 20h 8m.5 Dec. +49° 1'.1, 8.7 (1855.)
Sp Mc5d var? on I 32311.

	Plate	Date		
I	32311	Nov. 12	1904	84m Spectrum plate on which var. was found.
I	19873	Jan. 1	1898	11m
I	8735	July 10	1893	10m
I	25327	May 10	1900	15m
I	14520	Feb. 24	1896	15m
I	14711	March 24	1896	26m
I	4047	Aug 19	1891	13m
I	13045	July 10	1895	11m
I	15963	Sept. 20	1896	11m
I	26024	Nov. 10	1900	16m
I	25952	Oct. 19	1900	10m
I	7754	Dec. 28	1892	12m
I	7490	Nov. 8	1892	21m
I	15539	July 28	1896	10m
I	15155	May 19	1896	18m
I	14981	April 22	1896	11m

Chart plates.

On Examination of the above plates shows a variation of about a magnitude in the above star, Add to list, announce, and measure. W.P.F. Dec. 1, 04.

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1898phae.proj..814f

December 1, 1904.

Exam. of plate to determine var. if any in No 4798 Md ? var,
and No. 4802 Md var, or
on I 32313, the one preceding or south is variable

Approx 1855 pos.
Ra. $22^h\ 35.8^m$ Dec. $+38°\ 27'$

There are two stars about 0.1" apart in Ra. & less than 1' apart in Dec. either of which might be identified as D.M. $+38°\ 4920$ 22 N3.N + NO 15.8 (1855)

Chart

	Plate	Date		Of.
I	7127	Sept. 20	1892	20m 8.2 9.4
I	21471	Oct. 24	1898	10m 8.2 9.4
I	23799	Oct. 14	1899	13m 9.1
I	7019	Sept. 12	1892	16m 9.2
I	23818	Oct. 16	1899	18m 9.1
I	25611	July 31	1900	59m 9.4
I	11879	Nov. 12	1894	10m 8.86
I	29499	Nov. 2	1902	11m 9.0
I	11456	Sept. 20	1894	10m 9.7
I	7524	Nov. 16	1892	11 8.7
I	4805	Nov. 20	1891	11 8.2
I	9442	Sept. 10	1893	18 9.1
I	7260	Oct. 2	1892	11 9.1

An examination of the above plate fails to show any evidence of variation in No 4798 on I 32313. "May be defect" W. P. F.

~~limit 8.2 to 9.4~~

An examination of the above plates shows a variation of about 1.5 magnitude in No. 4802 on I 32313.
Add to list of variables, announce & measure. W. P. F.

limit 8.2 to 9.7

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1898phaa.proj..8147

December 9, 1904.

Examination of Plates for description of probable Satellite of Saturn, (No. 12), found on plate A6979 by W. P. Fleming on December 5, 1904. Confirmed on plate A6978 by Professor E. C. Pickering where the same object appears and shows direction of motion.

Plate A6979. Sept. 29, 1904 Ex 120 m.
The image of No 12 is a trail about the magnitude 13.5, and slightly brighter (0.1) than Phoebe with which the character of the image closely agrees. 15.9

Plate A6978. Sept 28, 1904. Ex. 120 m
The image of No 12 has a distinctly broken appearance and might be mistaken for a double star, the following (?) of the two being slightly brighter. While the image of Phoebe does not show a marked separation it shows the same difference in brightness in the two ends of its trail. No 12 is slightly brighter (0.1) than Phoebe and is about magn 13-14.

Plate A6997 Oct. 12 1904. Ex 120 m.
The image of No. 12 is faint and somewhat irregular but is of the same general character as Phoebe. It is about = 0.45 magn. fainter than Phoebe, but is distinctly marked and at least about 14 magn.

Plate A6853
The image of No 12 is a faint but distinctly marked trail about 0.4 fainter than a closely adjacent star in same Dec. of about magn 13-13.5. No 12 magn 14?
Phoebe not on Plate.

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1898phae.proj..814F

December 9, 1904

Examn. of Plates of Saturn for No. 12(?) Cont.

Plate A 6856 August 16, 1904 Exp. 150 m
Images of No. 12 and Phoebe circular and of same general Character, Stars elongated.
No. 12 about 0.4 fainter than Phoebe and about est magn. 14.

Plate A 6812 July 20, 1904 Exp. 210 m
Images of No 12 and Phoebe trails, star images circular. No. 12 about 0.3 fainter than Phoebe and est magn. about 14.5

Plate A ~~6812~~ 6908
Image of No. 12, very faint trail, about on limit of visibility and difficult. Phoebe not on plate.
Magn. difficult 14.5—?

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1898phae.proj..814F

December 10, 1904.

Exam. of Plates to confirm var. of star Spectrum M2 I on plate I32390. R.A. 4h 30.m4 Dec. +8° 3' (1855)

Plate	Date	Exp.	Magn.
I 9882	Jan. 1, 1897	10 m.	< 12
I 7684	Dec. 16, 1892	13 m.	10
I 10523	Jan 22, 1894	10 m	< 12
B 29030	Dec. 28, 1901	11 m	9

The above star is surely variable

Measure & announce!

W. P. F.

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1998phae.proj...814F

December 13, 1904.

Exam. of plates to determine var. if any in
+36° 341 Rd. 1h 45m.8 Dec. +36° 25'.6 9.3. Sp. McDonald I 32278.

Plate	Date	Ex.
I 7943	Jan. 22 1893	10m
I 8030	Feb. 8 1893	13
I 4216	Sept. 11 1891	22
I 5399	Jan. 16 1892	12
I 8160	March 2 1893	12
I 8039	Feb. 12 1893	10
I 4351	Sept. 25 1891	11
I 7626	Dec. 5 1892	16
I 10206	Dec. 18 1893	10
I 19454	Nov. 4 1897	19
I 19479	Nov. 6 1897	15
I 22343	Feb. 20 1899	9
I 24605	Feb. 15 1900	10
I 19978	Jan. 7 1898	17
I 30019	Feb. 19 1903	31

On examination of the above plates shows a variation of about 0.5 of a magnitude. This variation appears to be real and not photographic but the range is so small that it will not be announced or measured with further evidence.

W. P. Fleming.

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1898phae.proj..814F

December 24, 1904.

Count of Spectra on 8-inch plates Class O

I 32383 Dec. 2, 1904.

No of ~~stars~~ Spectra which might be classified.

Edge of Pg	5.	1	27
"	7.	2	23
"	9.	3	28
"	11.	4	34
"	13.	5	20
"	15.	6	7

139 × 8 = 1112

B 19932

..	
48	
53	
41	
49	
20	

211 × 8 = 1,688

I 32254

Edge of Pg.	5.	1	20
"	7.	2	17
"	9.	3	22
"	11.	4	16
"	13.	5	15
"	15.	6	7

97 × 8 = 776

B 23761

..
23
19
23
8
9

84 × 8 672

1,112
776
1688
672
4)4248
1062

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1898phae.proj..814F

January 11, 1905.

Examn. of plates for image of CDM − 29° 1987. 9 Dec.
R.A. 4h 54m 32.8 Dec. −29° 52′.3 (1875). See letter of D.J.B. Nov. 1904.

Plate	Date	Ef.
B 20741	Nov. 15, 1897	10 m
B 31095	Nov. 19, 1902	10 m
B 17852	Nov. 11, 1896	13 m.
B 24057	Sept. 5, 1899	11
B 14633	Sept. 13, 1895	10
B 29057	Jan. 3, 1902	11

Plate B 20741 shows a faint image near enough to the above position to be assumed to be this star. The object is very faint but is present on most of the other plates examined, certainly on all good enough to show it. On these it does not show any evidence of variation.

W. P. Fleming.

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1898phaa.proj..814F

January 16, 1905

Exam. of plates for var of star Sp. Mdg in A 6930
marked by W.P.F. Jan. 13, 1905. = C.P.D. -57° 400 2h 7m.4, -57° 44'.5 9.2 (1875).

Plate	Date	Ex.
B 28308	Aug. 23 1901	60m
B 32562	Sept. 1 1903	10m
B 30216	June 26 1902	10m
B 28605	Sept. 24 1901	10m
B 17018	July 29 1896	13m
B 28337	Aug 24 1901	10m

✓ An examination of the above plates shows a variation of about 2.5 magn (from 7.5 to 10.0).

Measure & announce. W.P.F.

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1898phae.proj..814F

January 16, 1905.

Eform. of plates to det. var. in star Sp. Type IV, Na, on Plate I 32360 (No. 4853). +49°41 0h 9m.9 +49°29 9.0 (1855)

	Plate	Date	Ef.	
I	13745	Oct. 28 1895	18m	
I	423	Jan. 3 1890	14m	
I	5002	Dec. 8 1891	28m	
I	5258	Dec. 19 1891	12m	
I	19104	Sept. 30 1897	10m	→ Isochromatic
I	27976	Nov. 20 1901	9m	
I	28069	Dec. 11 1901	43m	
I	23524	Sept. 15 1899	10m	
I	13808	Nov. 7 1895	13m	
I	15783	Aug. 27 1896	15m	
I	21751	Nov. 23 1898	14m	
I	27653	Sept. 30 1901	15m	
I	2122	Oct. 31 1890	10m	
I	29627	Dec. 6 1902	13m	
I	29684	Dec. 19 1902	19m	
I	9938	Nov. 18 1893	14m	

✓ An examination of the above plates shows a variation of about 1.5 magn., 7.5 to 9.0.

Measure & announce. W. P. F.

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1898phaa.proj..8147

January 17, 1905

Exam. of plates to det. var. in star Sp M d
on I 32360. $0^h\ 2.0^m + 50^\circ\ 45'$ (appx. 1855.

	Plate	Date	Ex.
I	29627	Dec. 6 1902	13m
I	21751	Nov. 23 1898	14m
I	23524	Sept. 15 1899	10m
I	27653	Sept. 30 1901	15m
I	28069	Dec. 11 1901	43m

v An examination of the above plates shows a variation of 2.5 magn., 9.0 to 11.5
Measure and announce. W.P.F.

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1898phae.proj..814F

January 17, 1905.

No. 4855, ~~No.~~

Extenn. of plates for var. if any in star Sp. Mc.? (maybe due to defect) on I 32360. R.A. (approx 1855) 3.2 Dec. +5° 2'

Plate	Date	Ext.
I 29684	Dec. 19 1902	19m
I 9938	Nov. 18 1893	14m
I 423	Jan. 3 1890	14m
I 27976	Nov. 20 1901	9m
I 13808	Nov. 7 1895	13m
I 2122	Oct. 31 1890	10m
I 15783	Aug. 27 1896	15m
I 29627	Dec. 6 1902	13m
I 21751	Nov. 23 1898	14m
I 23524	Sept. 15 1899	10m
I 28069	Dec. 11 1901	43m
I 27653	Sept. 30 1901	15m
I 5258	Dec. 19 1891	12m
I 5002	Dec. 8 1891	28m

An examination of the above plates fails to show any evidence of variation in the above star.

Not to be measured or announced. W. P. F.

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1898phae.proj...814

January 18, 1905.

Exam of plates to det. var. if any in No 4905 m I 32375,
Sp. Md? var? +34°3864 19h 59.7 +34° 53.'9 9.4 (1855).

Plate	Date	Ex.	
I 32375	Dec. 1 1904	123 m	Spectrum plate on which above star was suspected of var.
I 23131	July 11 1899	23	
I 1755	Aug. 30 1890	11	
I 1660	Aug 20 1890	13	
I 1262	June 2 1890	27	
I 25881	Sept. 26 1900	26	
I 7457	Sept. 12 1893	28	
I 30981	Oct. 6 1903	10 m	
I 8849	July 20 1893	11	
I 7167	Sept 26 1892	10	
I 13205	Aug. 8 1895	22	
I 15241	June 2 1896	18	
I 21321	Oct. 3 1898	12	
I 25328	May 10 1900	13	
I 12676	April 16 1895	11	
I 30986	Oct. 14 1903	10	

These plates

An examination of the above plates fails to show any evidence of variation in the above star.
Not to be measured or announced. W. P. F.

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1898phae.proj..814

January 18, 1905

Exam of plates to det. var. if any in No. 4893, Sp. Nd. on I 32372.

Approx (1855) R.A. 9h 2.8m Dec. +23° 46'

	Plate	Date		Exp.
I	26754	March 12	1901	10m
I	5737	Feb. 18	1892	14m
I	25268	May 1	1900	10m
I	20691	April 16	1898	15m
I	247	Dec. 6	1889	4m
I	5565	Feb. 6	1892	13m
I	9874	Nov. 1	1893	17m
I	8055	Feb. 15	1893	11m
I	16995	Jan. 6	1897	21m
I	14821	April 8	1896	10m
I	24048	Nov. 13	1899	32m
I	14720	March 27	1896	13
I	12590	April 5	1895	12
I	376	Dec. 23	1889	5

An examination of the above plates shows slight if any variation (.05 mgn.) in the above star. Exam another spectrum plate to see if Sp Nd is due to defect.

Not to be measured or announced. W. P. F.

"Probably due to defect as star is Class A on I 32549" which was examined today by Mrs. F. March 13 1905

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1898phae.proj...814f

January 19, 1905.

Exam. of plates to det. var. if any in No. 4881 Gp. Md on I 32443.

Dm +56° 3133 R.A. 23h 54m.8 Dec. +56° 27'.3 9.4 (1855).

Plate.	Date	Expo.
I 12061	Dec. 13 1894	10m
I 29553	Nov. 20 1902	21m
I 31032	Oct. 21 1903	51m
I 27834	Oct. 21 1901	18m
I 23520	Sept. 15 1899	12m
I 23965	Nov. 2 1899	24m
I 25633	Aug. 9 1900	13m
I 11839	Nov. 11 1894	13m
I 11466	Sept. 20 1894	21m
I 21189	Sept. 13 1898	10m
I 7454	Nov. 3 1892	13m
I 9723	Oct. 21 1893	10m
I 9177	Aug. 10 1893	11m
I 18746	Sept. 9 1897	14m
I 9353	Aug. 31 1893	13m

Plate	Date	Exp.
I 32413	Dec. 11 1904	76m
~~I 29553~~	~~Nov. 20 1902~~	~~21m~~
I 6894	Sept. 6 1892	13m
I 31169	Nov. 20 1903	48
I 9737	Oct. 21 1893	17m
I 15658	Aug. 10 1896	11m
I 11941	Nov. 16 1894	11m
I 15605	Aug. 14 1896	24m
I 12071	Dec. 13 1894	14
I 15347	June 22 1896	10m
I 3224	March 2 1891	12
I 5258	Dec. 19 1891	12m
I 15891	Sept. 14 1896	11
I 2559	Dec. 22 1890	18m
I 16223	Oct. 22 1896	10m
I 18003	April 22 1897	10m
I 424	Jan. 3 1890	18m
I 1987	Oct. 14 1890	10m
I 1805	Sept. 5 1890	25m

Sp. gr. I 31314 Cl. F. may be differences I 32413.
These plates show no greater range of variation than those examined on Jan. 19. W.P.F. Jan. 20, 1905.

An examination of the above plates shows slight evidence of variation, 0.5 magn., in the above star. Examine other plates and a spectrum plate.

Not yet to be measured or added to list for announcement. W.P.F.

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1898phae.proj..814f

January 20, 1905.

Exam. of plates to det. var. if any in No. 4992 on I 32387 Sp Md?. R.A. (Approx. 1855.0) 10h 40m Dec. +77° 48'

	Plate	Date	Exp.
I	16648	Dec. 1 1896	14m
I	28532	Feb. 27 1902	26m
I	30609	June 2 1903	15m
I	3428	April 21 1891	27
I	22778	April 26 1899	32
I	25318	May 10 1900	19m
I	28687	April 24 1902	10m
I	14390	Jan. 30 1896	10m
I	17868	April 16 1897	10m
I	9238	Aug 15 1893	10m
I	3155	Feb. 22 1891	19m
I	22709	April 19 1899	15m
I	850	March 18 1890	61m

An examination of the above plates fails to show any evidence of variation in the above star. The spectrum is crossed by scratches to I 32387 and these may cause the effect of banding and apparent bright lines. Exam. another good spectrum plate.

W. P. F.

Not to be measured or announced.

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1898phae.proj..814f

January 23, 1905.

Spectrum of plates to det. var. if any in No. 4873 on I 32238. Sp Md. var. Appar position Rd. = 21h 48.0 Dec. = +26° 39' (1855).

Probably the star +22°.4508 No. 4820 on I32238 (p185). was examined by mistake as a later spectr. of these same plates shows only a slight change in the images of No. 4873. The peculiarity in this spectrum may be due to defect, since the image is very faint on I32238

Plate	Date	Spf.
I 32238	Oct. 27 1904	68 mm
I 29552	Nov. 20 1902	15 mm
I 23649	Sept. 23 1899	15 mm
I 1586	Aug. 21 1890	18 mm
I 7302	Oct. 10 1892	10 mm
I 27715	Oct. 5 1901	12 mm
I 23605	Sept. 21 1899	15 mm
I 23356	Aug. 16 1899	17 mm
I 7195	Sept. 27 1892	12 mm
I 7012	Sept. 12 1892	12 mm
I 21802	Nov. 1 1898	11 mm
I 15881	Sept. 21 1896	10 mm
I 23767	Oct. 12 1899	30 mm
I 8914	July 23 1893	11 mm
I 18932	Sept. 18 1897	17 mm
I 26156	Dec. 8 1900	20 mm
I 30691	Aug. 1 1903	7.5 mm

An examination of the above plates shows a variation of about 2.0 magn. (8.0 to 10.0) in the above star.
Measure and announce. W. P. F.

Not to be measured or announced. W.P.F.

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1898phae.proj..814f

January 25, 1905.

Exam. of plates to det. change if any in No. Hagen 17 for V Leonis.

Plate	Date	Ef.	
l 419	Jan. 2, 1890	60^{m}	#1
l 21703	Nov. 14, 1898	54^{m}	45
l 15245	June 3, 1896	13^{m}	23
l 28618	April 3, 1902	22^{m}	7
l 30115	Feb. 26, 1903	13^{m}	8
l 32489	Jan. 7, 1905	33^{m}	9
l 21686	Nov. 11, 1898	68^{m}	5
l 17750	April 1, 1897	11^{m}	64
l 10900	Mar. 26, 1894	14^{m}	2

An examination of No. 17 of Hagen's comp. stars for V Leonis on the above plates shows no evidence of variation. 17 is about a magnitude brighter than 15 and certainly a magnitude and a half brighter than 19. The star is always fainter than a (=Hagen 11 DM. +21° 2141. 9^{h} 52.3 +21° 3' 2 Magn 9.5 and brighter than b = (follows. DM +21° 2141 0.2 & north 5') on these plates.

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1898phae.proj..814

January 28, 1905.

Exam of plates for supposed Nova in Perseus. Tel. of J. A. Brashear. Observer Gray saw new star in Perseus at 8 PM. Jan. 25, 1905. on Jan. 26 the star had changed color.

Plate A.C. 5881 R.A. 3^h Rec. $+45^\circ$ Jan. 23, 1905
superposed on A.C. 5709 3^h $+45^\circ$ Dec. 11 1904
Shows not trace of new obj. (if bright).

A.C. ~~5892~~ 5901 3^h $+45^\circ$ Jan. 27, 1905
superposed on A.C. 4180 $2^h 57^m$ $+43.7$ Nov. 8 1903.
No trace of new obj (if bright

{ A.C. ~~5894~~ 5903 5^h $+45^\circ$ Jan. 27 1905
{ A.C. 2322 $4^h 54^m$ $+45^\circ$ Feb. 12 1902.
No trace of new obj, if bright.

for southern portion of plate { A.C. ~~5894~~ 5903 5^h $+45^\circ$ Jan 27, 1905
{ A.C. 3337 $4^h 53^m$ $+14.4$ Feb. 22. 1903
No trace of new obj., if bright.

{ A.C. ~~5893~~ 5902 1^h $+60^\circ$ Jan. 27, 1905.
{ A.C. 5127 0 $+60^\circ$ Aug. 8, 1904
no trace of new obj, if bright.

In pol. portion of plate { A.C. ~~5893~~ 5902 1 $+60$ Jan. 27 1905
{ A.C. 5902 2 58 $+60$ Oct. 21, 1904
No trace of new obj. if bright

W. R. F.

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1898phae.proj..814

January 31, 1905.

Exam. of plates to det. var. if any in −2° 642
R.A. 3h 25m 21.8 Dec −2° 26' 5 9.3 (1855). No. 4999 on I 32389.
Sp Mc 5d var?

Plate	Date	Exp.
B 30723	Sept. 27 1902	10m
B 25891	Sept. 1 1900	10m
B 14995	Oct. 29 1895	12m
B 14866	Oct. 15 1895	10m
B 14344	Aug. 6 1895	10m
B 26509	Nov. 1 1900	11m
I 13996	Dec. 3 1895	10m
B 11955	Aug. 16 1894	10m
B 14977	Oct. 26 1895	10m
B 12616	Nov. 16 1894	10m
I 13899	Nov. 28 1895	10m

Plate	Date	Exp.
I 25874	Sept. 25 1900	20m
I 15622	Aug. 7 1896	12m
I 10083	Nov. 26 1893	10m
I 15959	Sept. 17 1896	10m
I 13886	Oct. 16 1895	11m
I 14106	Dec. 19 1895	11m
I 16528	Nov. 14 1896	11m
I 16339	Oct. 26 1896	10m
I 16737	Dec. 11 1896	12m
I 17052	Jan. 12 1897	9m
I 18470	Aug. 6 1897	21m
I 17514	March 11 1897	10m
I 17282	Feb. 15 1897	10m
I 18869	Sept. 15 1897	10m
I 19460	Nov. 4 1897	17m
I 19668	Nov. 30 1897	14m
I 16300	Oct. 25 1896	10m
I 28308	Jan. 24 1902	47m
I 19218	Oct. 9 1897	12m
I 9540	Sept. 20 1893	21m
I 2623	Dec. 28 1896	14m

The above plates fail to show sufficient evidence of variation in −2° 642. Examine more plates. W.P.F.

The later plates examined fail to show any change amounting to more than 0.5 magnitude, and even this change may be due to the character of the images according to position on the plate.
Not to be measured or announced. W.P.F.

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1898phaa.proj..814f

January 31, 1905.

Exam of plates to det. var. if any in +22° 4508
Aq. 21h 49m.6 Dec. +22° 10,8 8.1 (1855) Sp Type IV Nā var?. No 4820
on I 32238.

Plate	Date.	Exp.	Est.
Sp I 32238	Oct. 27 1904	65m	8.5
26177	Dec. 8 1900	13m	8.2
7097	Sept. 18 1892	12m	9.0
7225	Sept. 30 1892	10m	9.2
7400	Oct. 23 1892	16m	9.0
8884	July 21 1893	11m	7.8
9764	Oct. 25 1893	10m	8.1
16264	Oct. 24 1896	10m	9.4
23846	Oct. 19 1899	18m	8.8

An exam. of the above plates shows that the star +22° 4508 varies at least a magnitude and a half, 8.1 to 9.4 being the limits by estimates. The range from direct examination is certainly greater.

Measure and announce W. P. F.

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1898phae.proj..814

January 31, 1905.

Exam. of plates to det. var. if any in the stars CDM −44° 14637 $21^h\,39^m.9$ −44° 35′ 95 (1875) and A.G.C. 29939 $21^h\,48^m.2$ − 41° 44′ 7¾ (1900) Pp. m c 5d and Mt 5c, Nos 432 and 435, in a 6950.

	Plate	Date		Exp.
B	23228	June 29	1899	10m
A	4829	Oct. 24	1900	60m
B	26622	Nov. 17	1900	11m
B	9920			
B	26377	Oct. 4	1900	11m
B	33937	June 2	1904	10m
B	31057	Nov. 8	1902	10m
B	6006	May 20	1891	10m
B	14020	July 31	1895	10m
B	4200	Sept. 11	1889	10m
B	11220	May 21	1894	
B	22240	Nov. 19	1898	10m
B	27668	June 14	1901	60m
B	28266	Aug 22	1901	10m
B	20747	Nov. 16	1897	10m
B	18094	Nov. 28	1896	15m

On Exam. of the above plates fails to show a variation of half a magnitude in either of the above stars.

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1898phae.proj..8145

~~On~~ February 4, 1905

Examn. of plates for Asteroid.

Assumed to be Nemausa (51).

	Plate	Date				
I	32557	Jan. 28, 1905	8	15.1	+6.	12
I	32556	Jan 28,	8	15.2	+6	11
I	32580/77	Feb. 2, 1905	8	10.5	+6	48

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1898phae.proj..814F

February 6, 1905.

Exam of plates for evidence of proper motion in several selected stars.
Harvard Obs. Vol. 13, 14.

p 27°. Nos 1427 & 1428.

Plate	Date	Exp.	
I 5656	Feb. 15, 1892	16m	No evidence of proper motion in either 1427 or 1428.
I 32306	Nov. 11, 1904	10m	

Feb. 6, 1905.

p 263, 264. Nos. 1068, 1071, 1112 and 1117.

I	617	Feb. 6, 1890	14m	No evidence of proper motion
I	31833	Oct. 21, 1903	36m.	
I	32192	Oct. 16, 1904	13m.	

Feb. 7, 1905 p. 272 Nos. 1505, 1507, 1510.

I	3348	March 26, 1891	11m	No evidence of proper motion.
I	31490	Feb. 20, 1904	17m.	

On I 3348 a moving object in R.A. $8^h 57^m.8$ Dec. +1° 12' (1855). Probably an asteroid

Feb. 7, 1905 p. 268 No. 1306.

I	4990	Dec. 7, 1891	35m	No evidence of proper motion.
I	31513	March 4, 1904	19m	

The errors in the D.M. as compared with the photographic charts are numerous, for the faint stars. The last pair of plates examined, for No 1306, show this very well, even if only the immediate vicinity of this star are examined.

No evidence of proper motion has been found from the above comparison. W. P. F. Feb. 7, 1905.

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1899phaeo.proj..8145

South var?
a
Identified on B 16425
G
North

February 10, 1905.

Eform of plates to det. var. if any in No 313, A 6961 or A 6919

Sp. Mc 5d (Am. -25° 16' 42" 22h 45m 18s -25° 5' 42" (1875).

C P D -65° 4140 23 21.7 -65 27.1 9.4 (1875 poo.) = 2C. 23h 588

Plate	Date	Exp.
B 17074	Aug. 6 1896	31m
B 16914	July 18 1896	32
B 16620	Aug. 2 1896	30
B 14859	Oct. 15 1895	14
B 21687	June 13 1898	11
B 20578	Oct. 4 1897	10
B 28124	Aug. 2 1901	10
B 33978	June 3 1904	10
B 28468	Sept. 5 1901	60
B 10464		
B 9957		
B 25829	Aug. 31 1900	11
B 30323	July 9 1902	10
B 19810	July 10 1897	10
B 20687	Oct. 29 1897	28
B 23989	Aug. 24 1899	10
B 13278	Aug. 10 1895	10
B 14519	Sept. 6 1895	11
B 16425	June 17 1896	30
B 17571	Oct. 6 1896	29
B 17734	Oct. 28 1896	30
B 18032	Nov. 25 1896	31
B 18974	April 26 1897	15
B 19583	June 18 1897	25

Plate	Date	Exp.
A M 2674	May 23 1904	60m
A.M. 2937	Aug. 10 1904	63
A.M 2790	June 30 1904	60
A.M 3172	Nov. 1 1904	60
A.M 159	Sept. 26 1899	66
A.M 319	Nov. 28 1899	73
G.M 628	Sept. 5 1900	63
A.M 703	Nov. 1 1900	61
A.M 1549	Sept. 20 1902	60
A.M. 1789	Jan. 5 1903	61
A.M. 1956	May 18 1903	60
A.M 1976	May 29 1903	64
A.M. 2132	July 15 1903	61
A.M. 2257	Sept. 2 1903	63
A.M 2283	Sept. 19 1903	60
A.M. 1687	Nov. 8 1902	60
A.M. 2706	June 3 1904	60
A.M. 2798	July 1 1904	60
A.M 2810	July 5 1904	29
A.M. 2889	July 30 1904	64
A.M. 3012	Sept. 3 1904	60
A.M 3141	Oct. 14 1904	62
A.M. 2104	July 6 1903	62
A.M 2445	Jan. 13 1904	64
~~A.M. 16425~~	~~June 17 1896~~	~~30~~
A.M. 1568	Sept. 25 1902	60
A.M. 299	Nov. 21 1899	60
A.M. 912	July 11 1901	60
A.M 936	July 23 1901	60
A.M. 1045	Sept. 6 1901	65
A.M 1429	July 7 1902	61
A.M. 1442	July 9 1902	60
A.M. 1465	July 12 1902	60

Plate	Date	Exp.
A.M 3093	Sept. 30 1904	62m
A.M 19	June 26 1899	71
A.M 1027	Sept. 3 1901	60
A.M 1104	Nov. 4 1901	61
A.M 31	July 29 1899	60
A.M 628	Sept. 3 1900	60
A.M 649	Sept 12 1900	60
A.M 2162	July 27 1903	58
A.M 3	July 18 1899	62

An Eform of the above plates shows a change of about 0.6 of a magnitude in the above star. Eforms also on A.C. plates. Meanwhile, not to be measured or announced. W.P.F.

On several B plates brighter than a, and on several A M plates, fainter than b.

The Eform of the A.M. plates seems to increase the variation by about 0.2 of a magn, but it does not seem safe to assume the variation of 0.8 as final or to announce this star as [illegible] without plates showing a greater range. W.P.F. Feb 11

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1898phae.proj..814F

February 27, 1905.

Exam. of plates to determine variation if any in Cord. -25° 16142. 22h 45m.3 -25° 57'.2 9.5 (1875).

Wc m Ac 6919

	Plate	Date	Exp.
B	3679	Sept. 7 1890	60m
B	6382	June 18 1891	10m
B	16704	July 6 1896	12m
B	16853	July 20 1896	12m
B	9737		
B	13722	June 8 1895	15m
B	23091	June 17 1899	10m
B	28479	Sept. 6 1901	62
D	6363	June 18 1891	10m
B	17984	Nov. 21 1896	10m
B	18125	Nov. 30 1896	11m
B	12090	Sept. 6 1894	60m
B	13998	July 8 1895	10m
B	13958	July 3 1895	11m
B	9736		
B	19801	July 10 1897	10m
B	12559	Nov. 13 1894	10m
B	14304	Aug. 3 1895	12m
B	20702	Nov. 3 1897	10m
B	14455	Aug. 29 1895	10m
B	11260	May 22 1894	
B	12595	Nov. 16 1894	10m
B	11290	May 23 1894	
B	3892	July 23 1889	60
B	28636	Oct. 3 1901	10m

On examination of the above plates show a variation of about 0.8 of a magnitude.

Measure.

W. P. F. Feb. 27, 1905.

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1898phaa.proj..814F

March 4, 1905.

Examn. of plates to det. var. if any in
+25°1643 R.A. $7^h 12^m 7^s.3$ Dec. +25° 15' 4 (1855) 9.2 ✱s. Type IV
in I 32476 ~~DC~~ No. 5058

	Plate	Date	Exp.
I	14821	April 8 1896	10m
I	14233	Jan. 3 1896	14m
I	5498	Feb. 1 1892	12m
I	5805	March 6 1892	12m
I	3385	April 1 1891	28m
I	8152	Feb. 28 1893	11m
I	26072	Nov. 12 1900	15m
I	5052	Dec. 10 1891	13m
I	21747	Nov. 21 1898	11m
I	5565	Feb 6 1892	13m
I	10329	Dec 28 1893	11m
I	10812	Dec. 19 1893	11m
I	16995	Jan. 6 1897	21m
I	24048	Nov. 13 1899	32m

An examination of the above plates shows slight if any variation in the above star.
Not to be announced or measured. W.P.F.

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1999phae.proj..814F

March 27, 1905.

Approx pos. 12h 55m.1 + 5° 57'.5 (1855),
12h 57m.4 + 5° 44'.3 (1900).

Very rare star in Virgo, precedes R.T. Virginis and slightly south in declination. Found by W.P. Fleming while selecting and marking plates of R.T. Virginis.

Plate.	Date	Exp.
I 20762	May 7, 1898	20
I 9774	April 7, 1890	18
I 15123	May 16, 1896	14
I 20018	June 8, 1898	13

These plates show a variation of about a magnitude: from about 10.3 to 11.5

W.P.F.

Professor E. C. Pickering.

Telephone Service during July, 1907 .18

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1898phae.proj..814F

March 27, 1905.

Exam of region of R Geminorum for ident. of the var. Z Geminorum and Mr. Wendell's Comp. star "y"

Hazens Chart

Z according to Gerhold Cat.

"y"

"y" Observed by Mr. Wendell on April 20, 21, and 24, 1897.

"y"

I ~~19391~~ 17611 March 16, 1897 shows trace of a very faint object near position of Mr. Wendell's star "y" This may be defect, or the star may be real and very faint photographically since it was not found on other plates examined. Superposing this plate on I 19391, ~~an~~ a faint trace of an image is apparent in same position. This last observation requires confirmation.

W. P. Fleming.

y N.S. or barely visible on chart taken with Yerkes or Dick tel. Probably variable. W. P. F. March 27, 1905.

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1999phae.proj..814

March 29, 1905.

χ Cassiop.

Exam. of plates for var. star χ Cassiopeiae.

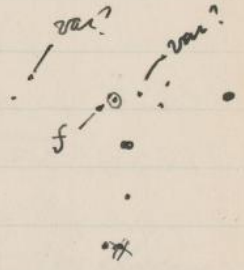
l 15542	July	28, 1896	Eff. 14m
l 10442	Jan.	19, 1894	" 11.
l 10202	Dec.	18, 1893	" 10
l 9338	Aug.	29, 1893	" 16
l 28376	Jan.	28, 1902	" 10.
l 24111	Nov.	20, 1899	" 66.
l 28108	Dec.	21, 1901	" 10.
l 10932	Mar.	27, 1894	" 10.
l 20129	Feb.	3, 1898	" 10.
l 17190	Jan.	25, 1897	" 49.
l 16525	Nov.	14, 1896	" 23.
l 17279	Feb.	9, 1897	" 14.
l 18464	Aug.	6, 1897	" 10.
l 16391	Oct.	30, 1896	" 18.
l 10759	Mar.	7, 1894.	" 10.
l 16696	Dec.	7, 1896.	" 14.
l 11641	Oct.	14, 1894.	" 13.
l 11640	"	14, 1894.	" 8.
l 16981	Jan.	6, 1897.	" 30.
l 10673	Feb.	16, 1894.	" 11.
l 16662	Dec.	3, 1896.	" 10.
l 16735	"	11, 1896.	" 10.
l 11752	Oct.	19, 1894	" 13.
l 20573	Apl.	1, 1898	" 11.
l 17553	Mar.	13, 1897	" 14.
l 20346	"	5, 1898	" 16.

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1898phae.proj..814F

March 29, 1905

I 18390 Aug. 2, 1897 Eph. 25m
I 18186 June 1, 1897 " 11.
I 18313 July 5, 1897 " 10.
I 19215 Oct. 9, 1897 " 14.
I 21541 Oct. 30, 1898 " 11.
I 10852 Jan. 1, 1894 " 10.



The examination of the above plate fails to show any trace of the star marked as x Cassiop on Miss Cannon's chart used for visual observation at 6-inch telescope, except perhaps a very faint trace of an image on I. 19459, sent to the laboratory for enlargement. Is the right star marked on Miss Cannon's chart? Two stars near the same position show evidence of variation.

W. P. F. March 30, 1905.

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1898phae.proj..814F

April 3, 1905.

Exam. of plates of R U Virginis to select plate for Enl.

Plate	Date	Exp.	Est. Mag.
B 31896	~~June 3, 1903~~ ~~03 6 2~~	10m	7.5-
B 31789	May 16, 1903	10	7.5-
B 29224	Sept. 1, 1902	10	8.6
B 29175	Mar. 19, 1902	10	8.0
B 9747			8.3
B 33466	Apr. 23, 1904	10	7.7
B 21846	July 22, 1898	10	7.5-
B 21592	June 8, 1898	10	7.4
B 22714	May 3, 1899	10	7.4
B 27543	June 5, 1901	10	7.3
B 25375	May 22, 1900	11	7.5-
B 25539	June 15, 1900	11	7.5-
B 24870	Mar. 21, 1900	11	8.0

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1898phae.proj..814F

April 5, 1905.

Exam. of spectrum of Z.C. 3h 1404 (Dec. -43° 1198) h 3 45.9 -43° 55' (1875.0)

85

No. Plate Date. Exp.
413 A 6947 Sept. 12 1904 63m. Spect. Pec. Dark band at λ 4670-80.
Same as Z.C. 18h 1935, May 9.

~~B 12268~~
B 12268 Sept 26 1894
12637

V

Known as type IV., but spectrum is similar to that of Z.C. 18h 1935. The broad bands in these stars ~~are~~ approximately at the same wavelengths as the bands in stars of class IVd, but the distribution in light in the latter class increases towards the violet end, while in the Peculiar stars the light between each band is equal in intensity throughout. W.P.F. April 6, 1905

Announced in Circular. 98

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1898phae.proj..814F

April 10, 1905.

Exam. of plates to confirm var. of R W Aquilae
for Chents of Rev. J. G. Hagen.

Plate	Date	Rs	Exp.
I 4044	Aug. 19, 1891		11
I 4128	Sept. 2, 1891		12
I 6874	Sept. 6, 1892		12
I 7054	Sept. 16, 1892		10
I 7089	Sept. 18, 1892		12
I 7165	Sept. 26, 1892		10
I 8702	July 2, 1893		19
I 8877	July 21, 1893		15
I 9038	Aug. 2, 1893		11
I 16001	Sept. 23, 1896		10
I 16102	Oct. 7, 1896		10
I 16133	Oct. 9, 1896		11
I 16258	Oct. 24, 1896		10
I 21029	Aug. 5, 1898		10
I 23579	Sept. 20, 1899		12
I 25879	Sept. 26, 1900		10
I 27468	Sept. 9, 1901		15
I 27545	Sept. 24, 1901		12
I 29152	Aug. 23, 1902		10

1
4
5
10
3
2
6
7
8
9

An examination of the above plates fails to show any variation greater than 0.5 magnitude in the star R W Aquilae.

W. P. Fleming.

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1899phaa.proj. - 8145

April 18, 1905.

Exam. of plates for new (?) variable in Md 7 or I 32992 Ra 12h 32m 7s Dec. +59° 17' (appox. 1855).

	Plate	Date.	Exp.	Est. Mags.
1	I 995	April 11, 1890	19m	<12 v
4	I 15624	Aug. 8, 1896	11	<12 v
5	I 16793	Dec. 14, 1896	13	11.3 10.3 v
10	I 32992	April 7, 1905	64	10.3 Md 7. v
3	I 8428	April 19, 1893	10	~~9.7~~ 8.8
2	I 1115	April 30, 1890	12	<12 v
6	I 19733	Dec. 12, 1897	21	<12 v
7	I 22946	May 26, 1899	15	<12.0 v
8	I 25407	June 6, 1900	12	~~10.8~~ 9.7 v
9	I 28818	May 28, 1902	15	~~11.~~ 10.0 v
	I 28848	May 31, 1902	25	10.0 v
	I 15476	July 17, 1896	11	12.0
	I 16438	Nov. 2, 1896	20	8.5
	I 13477	Sept. 10, 1895	10	10.0

On examination of the above plates shows a variation of more than 2.3 magnitudes in the above star. This variation has been confirmed by Miss M. A. Gill.

W. P. Fleming
April 18, 1905.

I 28797	May 15, 1902	10	11.5
I 23780	Oct. 13, 1899	13	10.5
I 23176	July 17, 1899	20	11.0
I 15179	May 27, 1896,	10m	11.0
I 15300	June 18, 1896,	10	12.0
I 15309	June 18, 1896,	10	12.0
I 15510	July 21, 1896,	10	11.0
I 13437	Sept. 8, 1895.	17	11.5
I 9183	Aug 13, 1893,	12	11.5

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1898phae.proj..814F

April 20, 1905.

Gpam. of No. 4952 (Br lines) on I 32399.
N.G.C. No. 40, R.A. 0h 5m.4 Dec. +71°.7 (1860), F, vS, vS mb; M, *12 s.p.
Compared with chart plate I 23614.

A superposition of the chart images on the spectra in I 32399 shows that the nebular line near 5000 is ~~faint~~ not seen in this spectrum, while the line at λ 4670 ~~&c~~, the characteristic line in spectra of type V, is a very strong bright line. Several other bright lines and bands are present and faint. These include Hβ, Hγ, Hδ, and a faint broad, bright band near Hε. A better plate, showing more detail, might possibly ~~show~~ bring out the nebular line near 5000.

W. P. Fleming.

~~For~~ Five bright lines or bands appear in this spectrum, 4101, 4340, 468 and 4861. The first band ~~of these~~ is broad, and apparently coincides with the band seen in certain gaseous nebulae. The fourth band which is the strongest of all has the position of the characteristic line in the spectra of stars of the fifth type. The nebular lines near λ 5000 are not seen. ~~It is therefore uncertain whether~~ This object may therefore be intermediate between a nebula and a fifth type star.

The second third and fifth lines are Hδ, Hγ, and Hβ

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1898phaa.proj.. 8144

April 21, 1905.

Exam of plates to determine variation if any in Md 3? Vul. on I 32997 No. . +50°2243.
Rd 15h 55m.9 Dec. +50° 15' (9.0), 1855.

Plate	Date	Exp.	Plate	Date.	Exp.
I 1538	Aug. 1, 1890	18m	I31943	Aug. 18, 1904	11m
I 1666	Aug. 22, 1890	10	I32997 Spec. plate	April 8, 1905	61
I 3692	June 8, 1891	14			
I 6104	April 13, 1892	11			
I 10930	March 26, 1894	11			
I 12709	April 17, 1895	10			
I 15343	June 20, 1896	10			
I 15572	July 31, 1896	10			
I 16064	Sept. 30, 1896	11			
I 16830	Dec. 17, 1896	10			
I 18248	June 21, 1897	17			
I 20889	June 21, 1898	21			
I 22758	April 22, 1899	11			
I 24821	March 12, 1900	10			
I 24919	March 21, 1900	17			
I 25430	June 9, 1900	20			
I 26765	March 6, 1901	10			
I 27110	June 17, 1901	21			
I 28784	May 13, 1902	12			
I 28964	July 6, 1902	16			

An examination of the above plates shows a slight change in magnitude, not greater than 0.4. The chart plate I 28784 shows that the fine bright lines present in the spectrum are apparently identical with Hγ and Hδ. The last of these lines however, may be due to defect.

Not to be announced or measured until further evidence of variability is found.

W. P. Fleming

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Dm +20° 5071 21h 57m.6 +20° 21'.0 mean 8.7 (1855 pos)

Pec. star found on I 32282 examined for Var. by Mrs. L.
in the following plates April 24 or 25 1905

I 19055
I ~~27807~~ 27807
I ~~27080~~
I 8913
I 13717
I 7381
I 27757
I 21560
I 29212
I 7011
Isochromatic I 18889

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May 3, 1905

Exam. of images of R S Ophiuchi for information regarding sudden outburst in light and bright lines in spectrum on B 21823 and B 21821 taken on July 14, and July 15, ~~19~~ 1898.

Plate B 12020 taken on August 28, 1894 shows a spectrum of Class K, and no evidence of bright lines.

Plates 21823 and 21821 have already been described in Circ No. 76.

Plates B 21944, September 7, 1890, Exp 10m
Plate A 3642 June 17, 1899, Exp 10m
Plate A 2796 October 5, 1897, Exp. 10m

These plates fail to show any trace of more than one image in the position of ~~R S~~ R S Ophiuchi.

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May 5, 1905.

Meas & det. pos. of lines in D.C. 4210
R.A. 7 228 – 22.9. Tr Circ No. 98.

Plate C 1565

MM. Scale used.

Hβ. br.	0.25	0.50	0.38	4862	1.82				
br	2.30	2.55	2.42			4728	4726	4727	
br	3.75	4.00	3.88			4640	4640	4640	
br	4.50	4.75	4.62			[4576]	4596	4594	
	6.45	6.75	6.60			4478	4477	4478	4478 Heli
Hγ	8.90	9.15	9.02	4341	1.83				
Hδ	14.35	14.55	14.45	4102	1.55				
	16.30	16.55	16.42			4023	4023 4	4024	4026
Hε ~~He~~	17.80	18.05	17.92	3970	1.98				
Hζ	20.20	20.50	2035	3889	.60				

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May 5, 1905

Meas to det. pos. of bright lines in ~~Y Hercule~~ f'Cetè. DC. q_{298} δ_{20} 56.4 +47° 8'. (1905). Fr. Circ No. 98.

Plate C. 15177 Nov. 15, 1904 Exp. 73m Mm. Scale used

br	0,15	5008	5010	5009 Ad.	neb. 5007
Hp br	2.20	~~4594~~			
br	6.45	4596	4598	4597	
br.	9.10	4440	4440	4440	
Hγ	10.85				
	15.50	~~4100~~ 4120	4121	4120	~~####~~
Hδ	16.00				
br	18.90	3994	3992	3993	
Hε	19.70	19.90			
Hζ	20.95	21.95			

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May 22, 1905

Obsrvn. of Plate I 33074, taken May 20, 1905, for image of Eunomia.

Eunomia found Approx R.A. = $8^h 47^m.5$, Dec. = +10° 33' (1855).

a1
I
I
I
I
I
I
B
B
B
B
B
B
B

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May 29, 1905.

Exam. of Plates for image or sign of variation in star No. 61 on AB 787.

	Plate	Date	Exp.
AB.	787	November 2. 1896	60m
I	2701	January 3. 1891	10
I	16325	October 26. 1896	10
I	19955	January 5. 1898	12
I	21454	October 17. 1898	12
I	24452	January 21. 1900	21
I	25873	September 25, 1900	16
B	11833	August 11, 1894 (1904)	10
B	12430	November, 6, 1894	10
B	14472	August 29. 1895	10
B	17757	November 3, 1896	12
B	18003	November 24. 1896	14
B	29019	December 28. 1901	10

On Plate A.B. 787 the object is near the position of DM. -0° 395 RA = 2h 28m.5 (1855) Dec = -0° 28' (1855) Magn. 8.8, and about the same magnitude as DM. +0° 415 Rd. = 2h 24m.0 +0° 28' (1855) 7.5 On examination of the above plates fails to show in this position any object as bright as the image on AB 787, but shows a slight change in brightness of -0°.395, 0.5 magn. which may be due to the photographs. It is not a planet, but may be a nova.

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June 6, 1905.

Exam. of plates for confirm. of variability of star in approx. R.A. $15^h\ 43^m.5$, Dec. $+36°\ 43'$ (1856) Dpart. Md 6 on I 33082, May 23, 1905, and on I 33035, May 1, 1905. Formed by W.P.F. May 29, 1905.

	Plate	Date	Exp.	Magn.	J D
5	I 22750	April 21, 1899.	10m	8.5 ✓	4766
3	I 10928	March 26, 1894.	16	10.0 ✓	2914
7	I 25288	March 5, 1900.	70	11.5 see "A"	5084
9	I 28653	April 15, 1902.	10	10.3 ✓	5855
10	I 30542	May 21, 1903.	21	8.3 ✓	6256
6	I 23384	Aug. 18, 1899.	10	10.0 ✓	4885
8	I 24888	March 17, 1900.	11	10.2 ✓	5096
4	I 18271	June 23, 1897.	10	9.2 ✓	4099
2	I 8695	July 2, 1893.	15	9.4 ✓	2647
1	I 1522	July 23, 1890	12	10.2 ✓	1572
11 Sp.	I 33035	May 1, 1905	103	9.5 ✓	6967
12 Sp.	I 33082	May 23, 1905	60	9.0 ✓	6989

An examination of the above plates shows a variation of about ~~three~~ magnitudes. 8.3 & 11.5.

Measure and announce.

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June 7, 1905.

Copies of plate I 33074 for images of Hygeia 13 26 -14 18, and Iris 13 30 -15.0

Plate I 33074 taken May 31, 1905 Exp. 41 m superposed on
Plate I 18083 May 8, 1897 10m shows two objects in

	R.A. 1855	Dec. 1855	
Hygeia	13h 30.0m	-14° ~~8~~ 37'	8.5
Iris.	13 33 15°	-14 52	9.1

on Plate I 33074 which are probably the asteroids in question.

W. P. F.

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June 17, 1905.

Examn. of plates to determine variation if any in C.P.D. -59° 233 2h 44m.4 -59° 34'.5 9.1 (1875).
Sp Mc5d (var?) on A 6931.

Plate.	Date.	Ef.	Est.	Est
B 31140	Dec. 2, 1902	60 m.	9.4	~~7.6~~ 8.0 N.S.
B 30451	July 25, 1902	~~6~~ 10 m	9.2	8.2
B 26036	Sept. 5, 1900	10 m	8.8	7.9
B 17184	Aug. 15, 1896	15 m	8.1	9.2
B 14728	Sept. 27, 1895	13 m	8.6	8.9
B 14993	Oct. 29, 1895	12 m	8.7	9.1
B 23634	July 25, 1899	13 m	9.4	8.3
A 3403	Nov. 18, 1898	60 m	8.8	8.1
Sp A 6931	Sept. 9, 1904	60	9.1 N.S.	~~9.1~~ (?)
			New	Known

CPD -54° 471 2 41.2 -54 44 (1900)

The above examination shows a variation of about 1.3 magnitude. ranging from 8.1 to 9.4 on these plates.

Announce.

W. P. F.

June 29, 1905. Wolf's Supposed Nova.

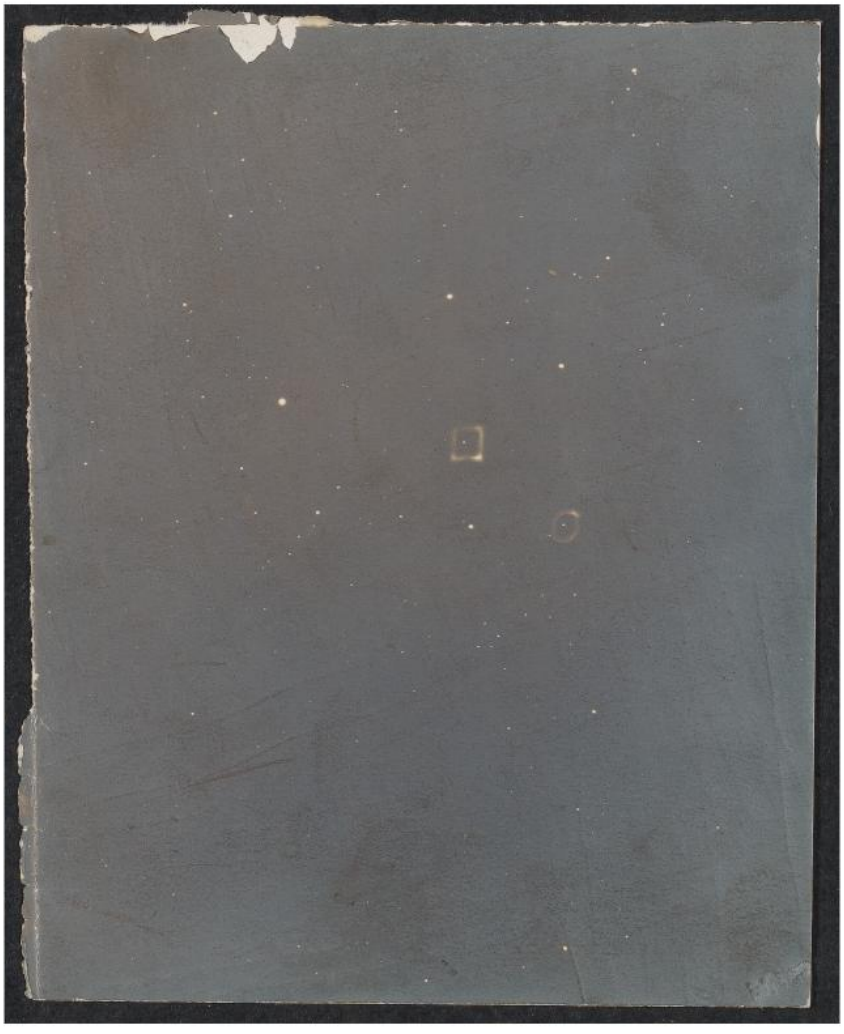
~~I 3336~~ 18h 50m.1 +36 23 (1900) SU Lyrae

The star marked by Wolf on print shows variation. On this plate it is comparable with and slightly fainter than star north, following, and about 0.6 brighter than adjacent stars, preceding and in same Dec. While on A (ACC) 4056 it is only 0.1 magn brighter than star prec. and in same Dec. Probably an ordinary variable star. "Effect too difficult on AC Plates"

See plate I 3 4075.

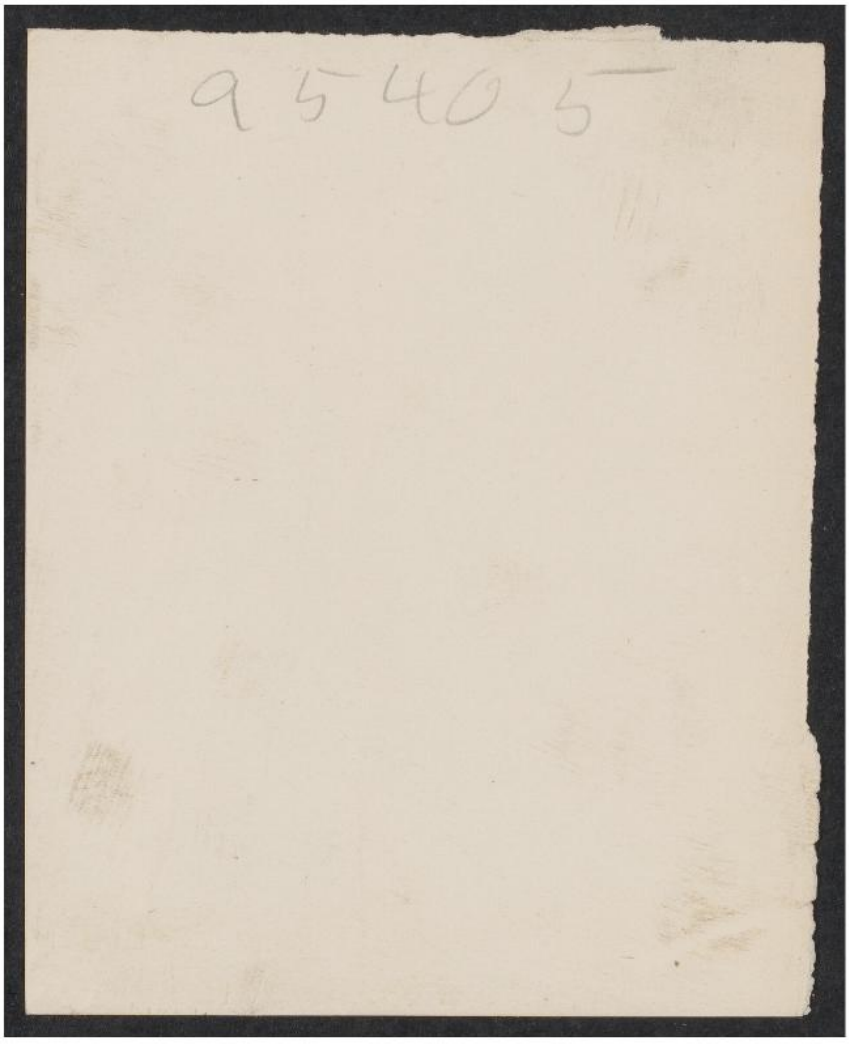
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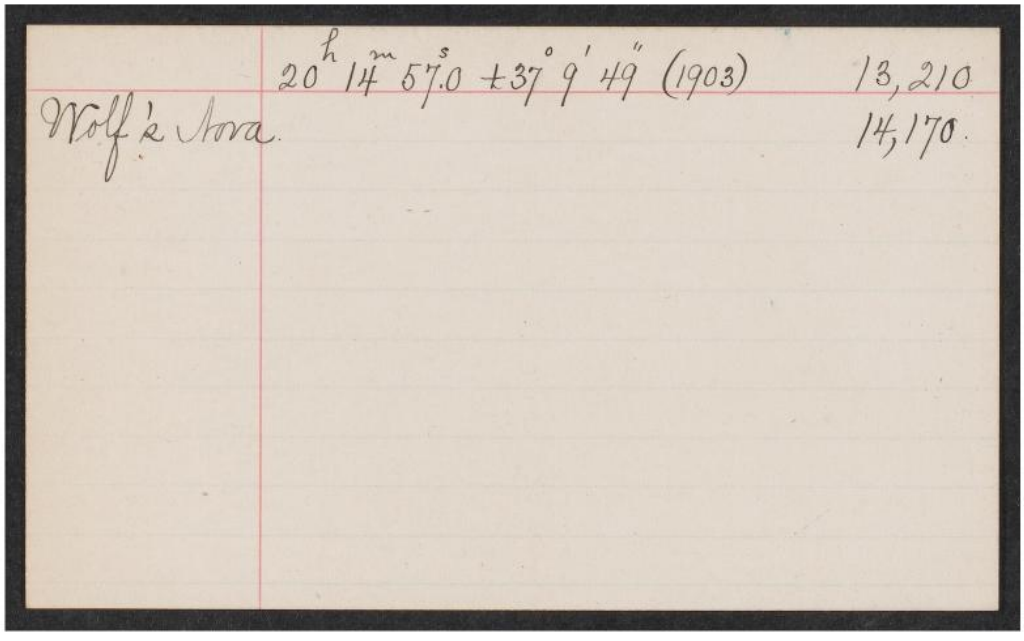
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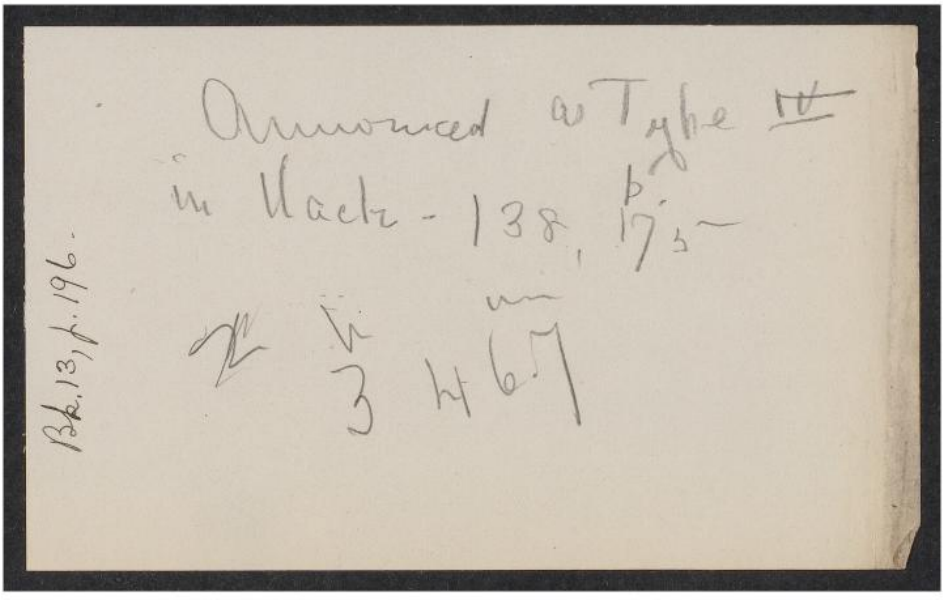
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Book, 13 page 21
Note about Wolf's
Supposed Nova - at
foot of Page - evidently
has nothing to do
With the Var. found
on A 6931

The plates referred to in note of Wolf's 3/15

~~I 3900 region 7.2 +62.7~~

I 33075 region 18.8 + 37.5

A C? 11056 region ~~17.8 - 2.5~~

The regions do not
agree with each other.
& I do not
understand note -
Would Wolf's Print
give any clue
to this mystery?

~~The Bruce plate~~

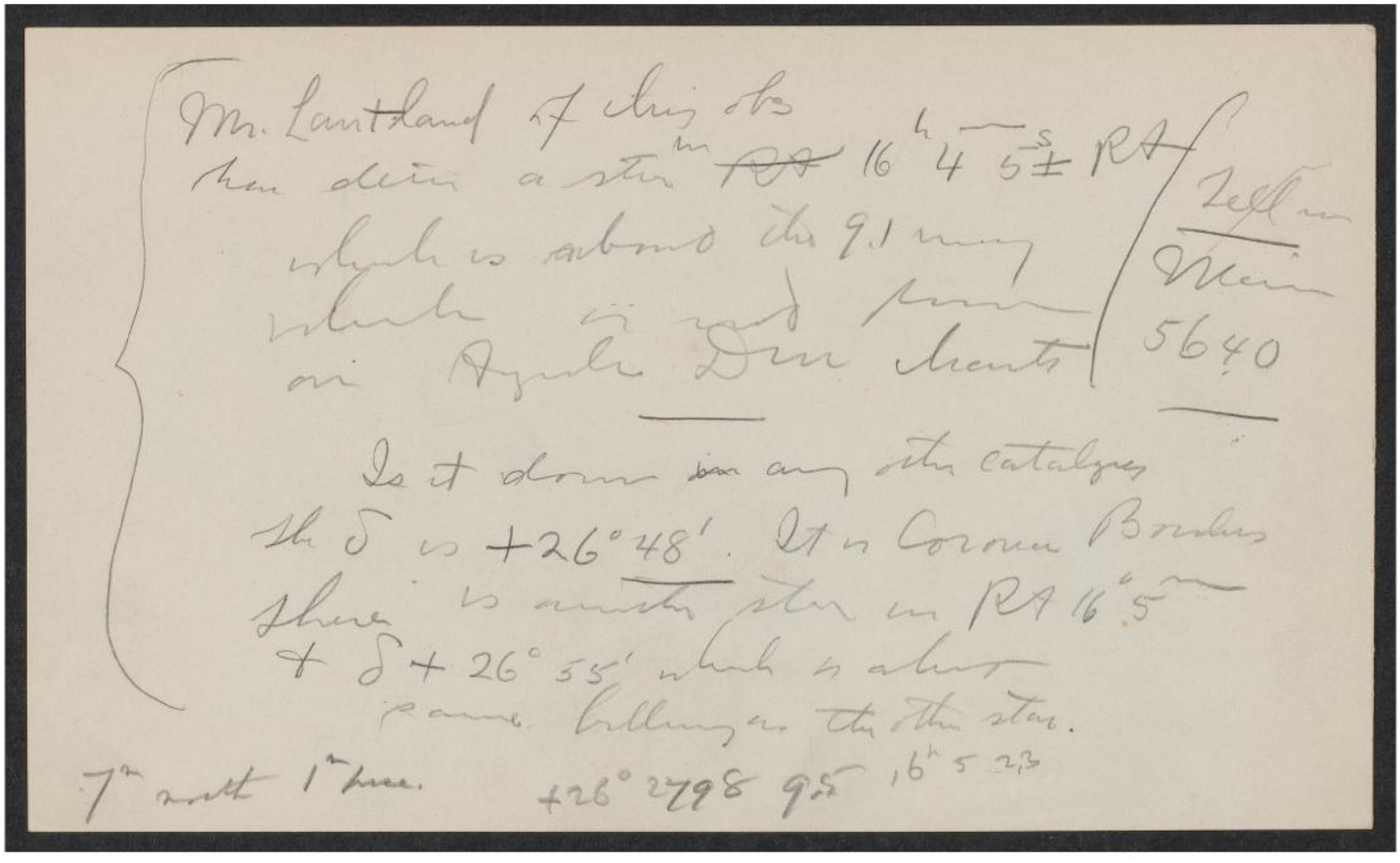
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	h	m	°
5892 = 5902 a Cb	3	09	+45
5893 = 5912	1	03	+60
5894 = 5903	5	00	+45

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Mr. Lamtland of this obs
has discov a star m RA 16h 4 5s ± RA
which is about the 9.1 mag
which is not given
on Argelander Durchmusterung

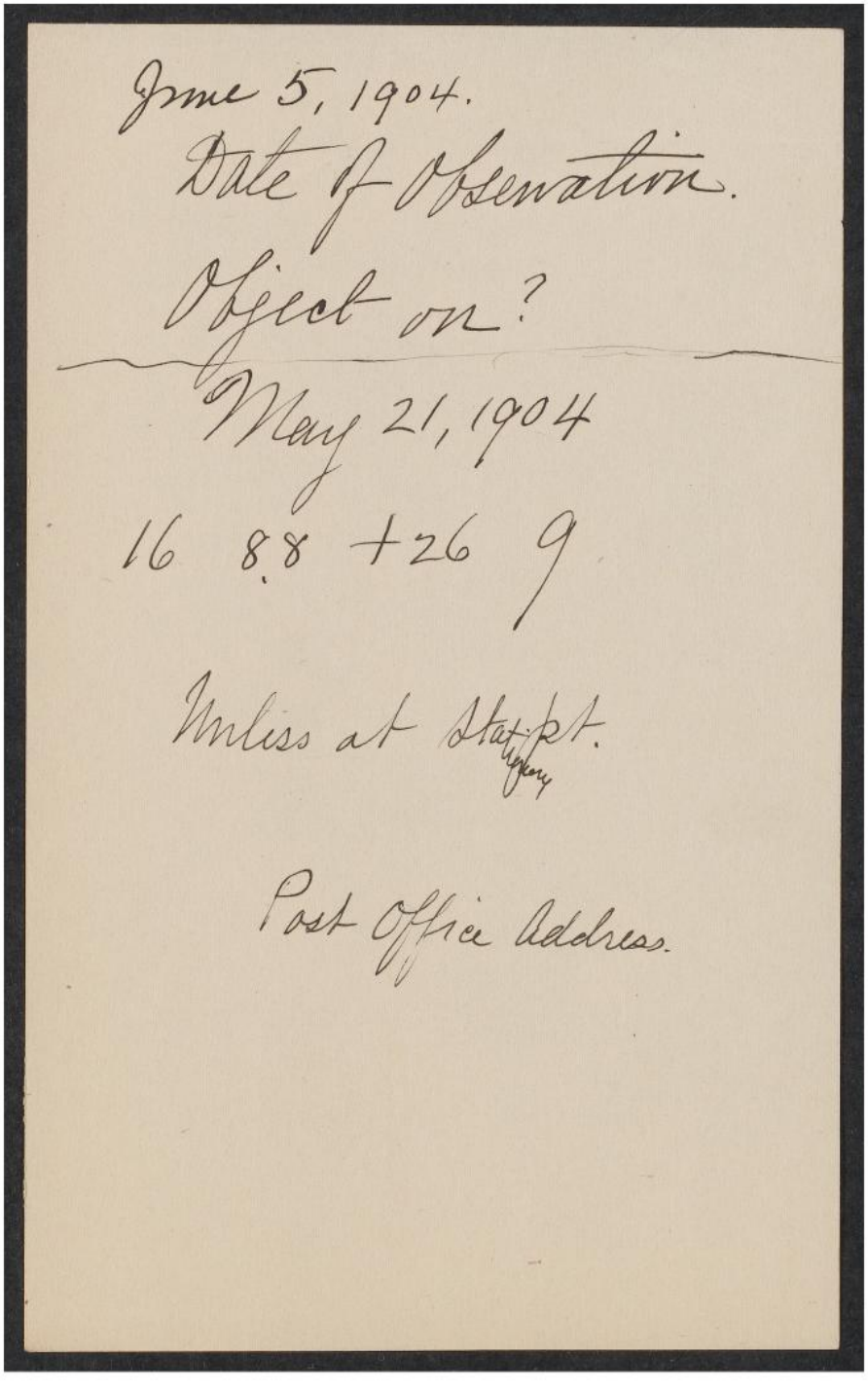
Zeller
Mean
5640

Is it shown on any other catalogues
the δ is +26° 48'. It is Corona Borealis
There is another star in RA 16h 5m
& δ + 26° 55' which is about
same brilliancy as the other star.

7th mostly 1st mag. +26° 2798 9.5 16h 5 23

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June 5, 1904.
Date of Observation.

Object or?

May 21, 1904

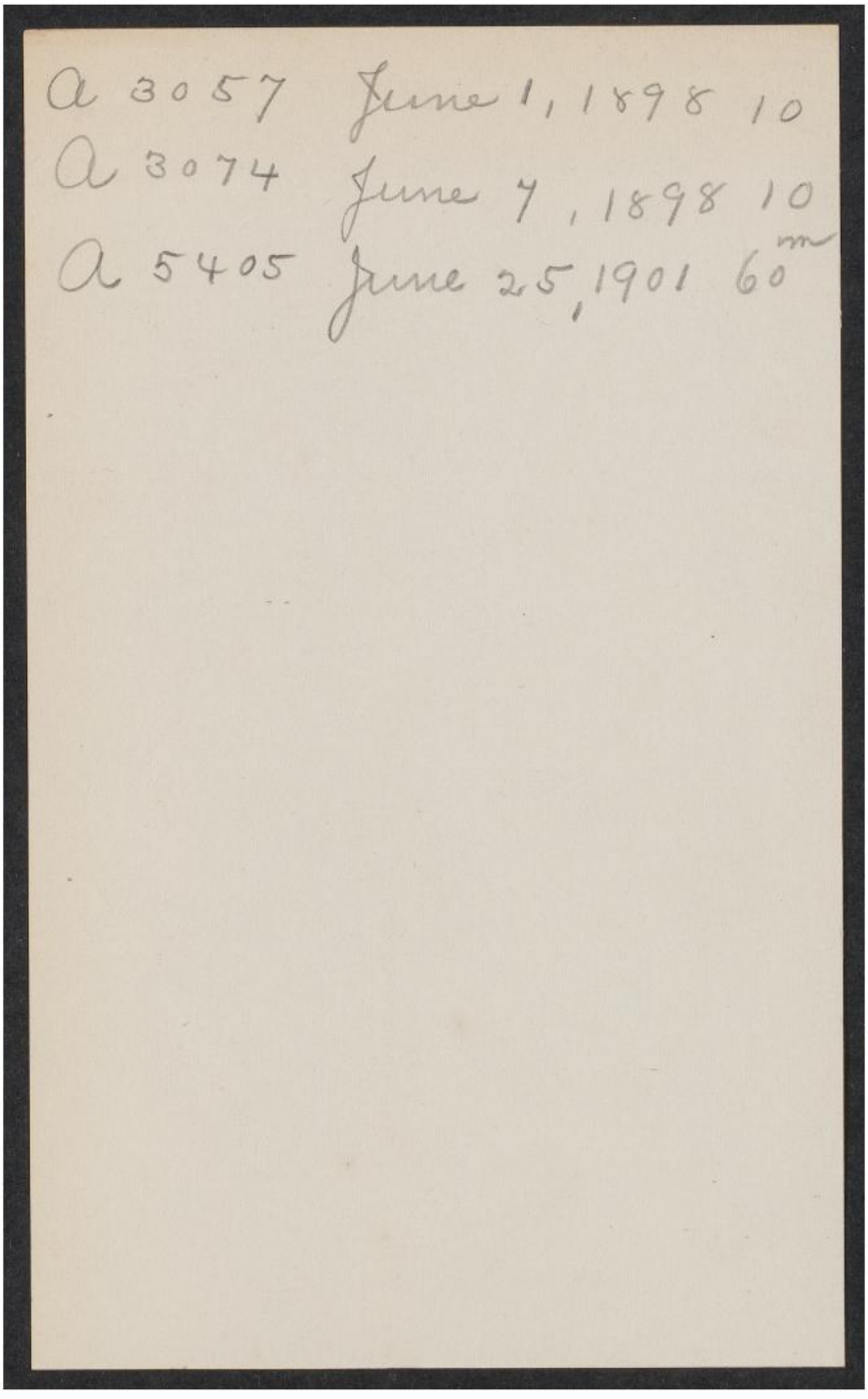
16 8.8 +26 9

Inliss at Station.

Post Office Address.

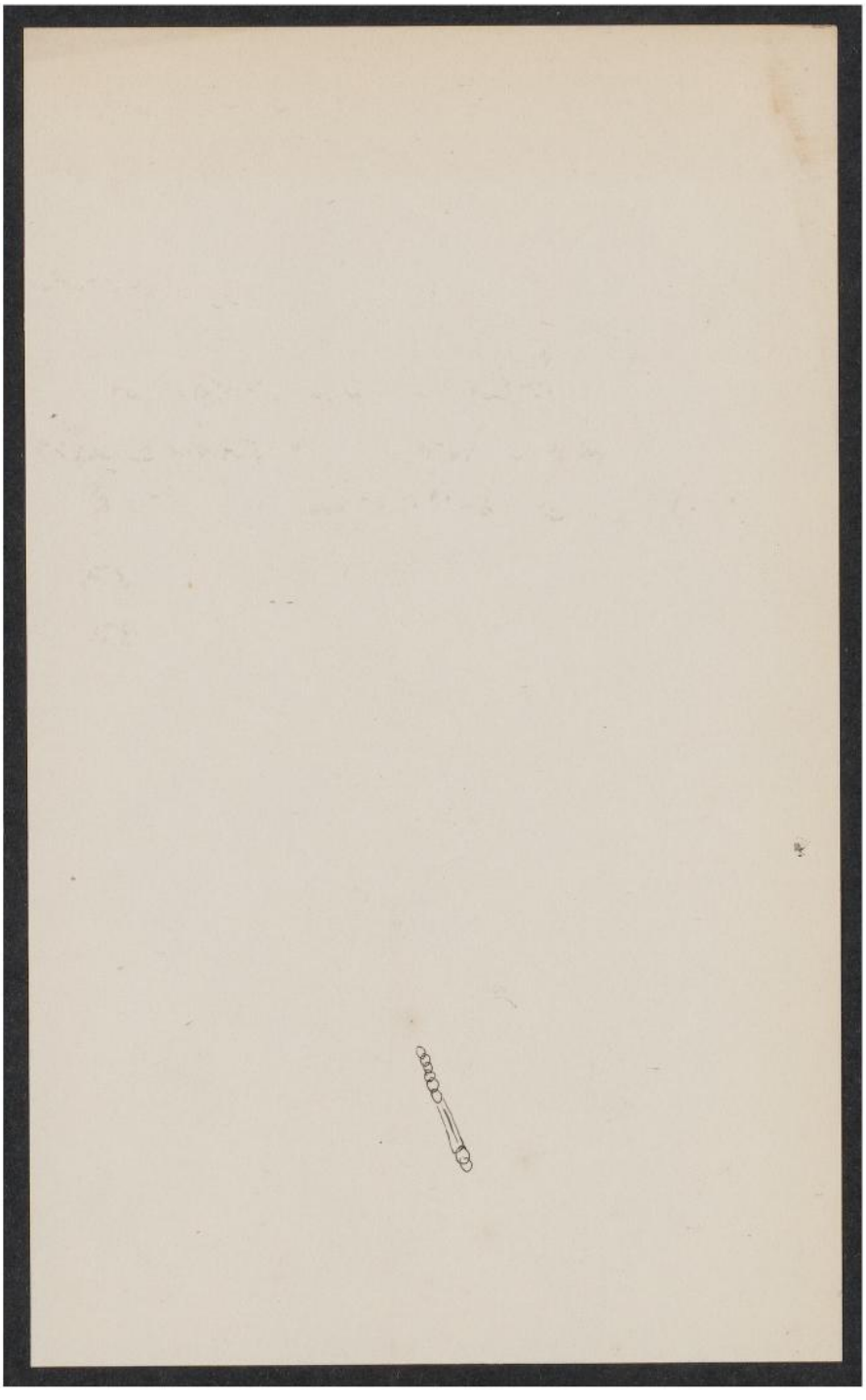
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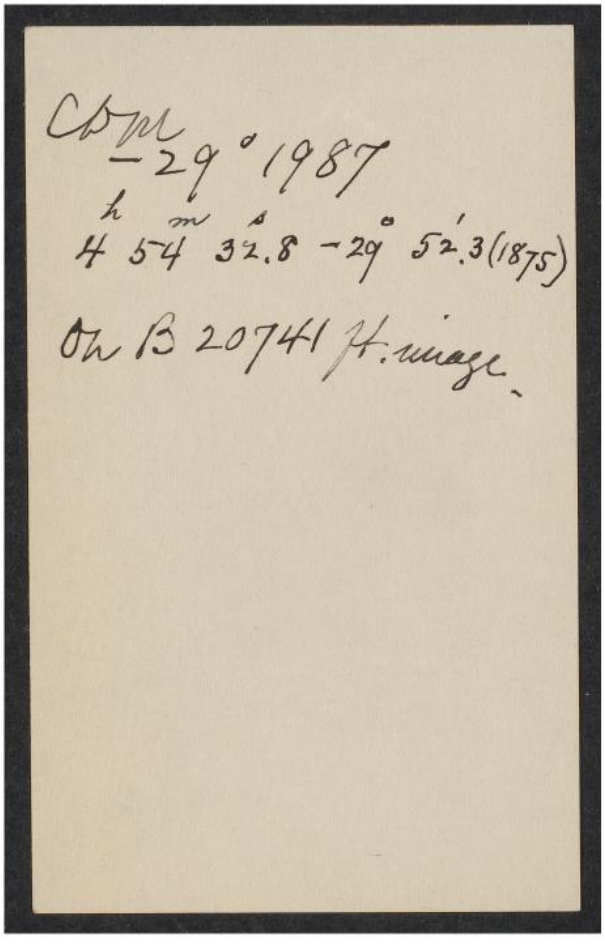
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June 29, 1905.

Epoch of plates for images of Iris.

				Obs.	Comp.
~~	June 26 1905	~~~~		$13^h\ 31.^m6$	$-13'$ ~~39~~ 39
I 33140	June 27, 1905	Exp 62m	Iris	$13^h\ 31.^m8 - 13°\ 37'$	$13^h\ 31.^m2$ $-13°\ 39'$
I 33143	June 28, 1905	54m		13 32.0 − 13 37	
I 33094	May 31, 1905			13 33 15 −14 52 (9.1)	

~~new~~ ~~star~~, 13 50.7 · −13° 18′ found while marking Iris. [P.C.]

W. P. F. June 29, 1905.

I 33094 May 31, 1905. 41m Hygeia $13^h\ 30^m$ δ 1855. $-14°\ 37'$ (8.5)

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July 1, 1905.

Etan. Of plates for variation of BD +27° 623 8.2
Ra 3h 55m 7.2 Dec +27° 45' 6 K. Found while looking for Egeria = 1 Marked on A 7115 and 7116
The latter was

Plate	Date	Exp.	Est	
a.c. 4239	Nov. 20, 1903	67	12.5	✓
ab. 2832	~~Sept.~~ 11, 1902	82	7.2	✓
ab 2966	Nov 1, 1902	60	7.3	✓
ab. 4205	Nov 12, 1903	61	7.3	✓
ab 4497	Jan. 5, 1904	58	7.2	
ab. 4728	March 10, 1904	80	< 12.5	
ab. 2155	Jan 3, 1902	59	7.2	✓
I 32430	Dec 14, 1904	18	7.3	✓
~~I 32406~~	~~Dec. 9, 1904~~	~~64~~		
ab. 5387	Oct 17, 1904	62	7.2	✓
ab. 5491	Nov. 7, 1904	68	7.2	✓
ab. 5521	Nov. 12, 1900	66	7.2	✓
ab 5625	Nov. 28, 1904	78	7.2	✓
ab 5653	Dec. 2, 1904	57	7.3	✓
ab. 5765	Dec 21, 1904	60	7.3	✓
ab 5813	Jan 8, 1905	54	7.2	✓
ab 5872	Jan 22, 1905	55	7.3	✓
ab 5966	Feb 8, 1905	80	11.0	✓
ab 6001	Feb. 14, 1905	58	7.4	✓
ab. 6081	Feb 28, 1905	81	7.2	✓
ab 6090	March 1, 1905	57	7.3	✓
ab 6111	March 3, 1905	72	7.3	✓
ab 6211	March 23 1905	70	7.3	✓
ab 4119	Oct. 28, 1903	77	7.2	✓
ab 4405			7.2	✓

Mar. 21 Mar. 23

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	Plate	Date	Cp.	Est.
Ab	4424			7.2 ✓
"	4439			7.2 ✓
"	4455			7.2 ✓
"	4541			7.2 ✓
"	4637			7.3 ✓
"	4698			7.3 ✓
"	5133	Aug 9, 1904	62	10.0 ✓ 7.2
"	5140			✗ ✓
"	5205			7.2 ✓
"	5224			7.3 ✓
"	5273			7.3 ✓
"	5348			7.2 ✓
"	5457			7.2 ✓
"	2111			7.3 ✓
~~"~~	~~2113~~			
"	2227			7.2 ✓
"	2234			7.2 ✓
"	2291			7.3 ✓
"	2344			7.2 ✓
"	2367	Feb 27, 1902	73	9.0 ✓
"	2379			9.2 ✓
"	2802	Aug 31, 1902	74	7.8 ✓
"	2805	Sept 2, 1902	68	7.3 ✓
"	2900			7.2 ✓
"	3120			7.2 ✓
"	3177			7.3 ✓
"	3224			7.3 ✓
"	3275			7.3 ✓
"	3304			7.2 ✓

Mar 24 Minn

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Plate	Date	Exp.	Est.
Ab. 3405			7.2 ✓
" 3419			7.2 ✓
" 3439			Too poor ✓
" 3871			" " ✓
" 3962			7.3 ✓
" 3992			7.2 ✓
" 4036			7.3 ✓
" 81m			7.2 ✓
" 121			7.3 ✓
" 142			7.2 ✓
" 148			7.2 ✓
" 442			7.3 ✓
" 444			7.3 Iso ✓
" 498			7.2 ✓
" 546			7.2 ✓
" 561			7.8 M ✓
" 148			7.8 M. ✓
" 602			9.4 ✓
" 603	Dec. 16, 1899	4m 50s	9.7 ✓
" 604	" 16 1899		8.8 ✓
" 643			7.2 ✓
" 769			7.3 ✓
" 1011			7.3 ✓
" 1076	Dec. 19, 1900	142	11.7 ✓
" 1128			7.2 ✓
" 1245			7.2 ✓
" 1296			7.4 ✓
" 1208			7.3 ✓

7. Mag 20 Min. 6

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Plate	Date	Eff.	Est.
AC 1319			7.3 ✓
AC 1742			7.3 ✓
AC 1838			7.3 ✓
AC 1897			7.5 ✓
AC 1997			7.3 ✓
AC 1208			Too poor ✓
AC 1178			7.3 ✓
AC 2124			7.3 ✓
AC 2113			7.3 ✓
D 5082			7.3 ✓
D 5204			7.3 ✓
~~D 5250~~			—
D 5352			7.3 ✓
D 29844			7.2 ✓
D 28266			7.5 ✓
D 28324			7.2 ✓
July 3, 1905			
A.M. 1601			7.2 ✓
A.M. 1618			7.3 ✓
A.M. 1635			7.3 ✓
A.M. 1665			7.2 ✓
A.M. 2217			7.2 ✓
A.M. 2233			7.2 ✓
A.M. 2239			7.2 ✓
A.M. 2326	Oct. 12, 1903	60	8.2 ✓
A.M. 2339			7.2 ✓
A.M. 2346			7.3 ✓
A.M. 2902			7.2 ✓
A.M. 2964			7.3 ✓

Mar 25 Min.

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July 3, 1905.

Plate	Date	Exp.	Est.
A.M. 3028			7.2 ✓
" 3053			7.3 ✓
" 3136			7.2 ✓
" 3208			7.2 ✓
" 3228	Nov. 14, 1904	62	<11.2 ✓
" 3248	Nov. 28 1904	63	<10.8 ✓
" 3257			7.2 ✓
A.C. 5806			7.2 ✓
~~5932~~			
" ~~6011~~			7.2 ✓
" 6011			7.2 ✓
" 6075			7.2 ✓
" 6131			7.3 ✓
A.M. 59			7.3 ✓
" 92			7.2 ✓
" 194			7.2 ✓
" 215			7.3 ✓
" 223	Oct. 13, 1899	64	<11.2 ✓
" 597			7.2 ✓
" 672			7.3 ✓
" 678			7.2 ✓
" 697			7.3 ✓
" 1016			7.2 ✓
" 1130			7.2 ✓
" 1315			Too poor ✓
A.C. 4374	Dec. 15 1903	93	12.4 ✓
" 4467			7.3 ✓
" 4476			7.2 ✓
" 4486			7.2 ✓

Mar 23 Min 4

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Plate	Date	Exp.	Est.
Ab. 4679			7.3 v
" 4854			Too poor v
" 5143			7.3 v
" 5193			7.3 v
" 5249			7.3 v
" 5272			7.2 v
" 5339			7.3 v
" 5368			7.3 v
" 5498			7.2 v
" 5539			7.3 v
" 5587			7.3 v
" 5642			7.2 v
" 5656			7.3 v
" 5677			7.3 v
" 5764			7.3 v
" 5796			7.2 v
" 2281			7.3 v
" 2307			7.2 v
" 2397	March 10	1902 106	11.4 v
" 2811			7.3 v
" 2868			7.3 v
" 3032			7.2 v
" 3044			7.3 v
" 3110			7.2 v
" 3119			7.2 v
" 3162			7.4 v
" 3179			7.3 v
" 3182			7.2 v

Mars to Min 6

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1898phae.proj..814F

Plate	Date	Exp	Est	
ab 3209			7.3 ✓	
ab 3264			7.3 ✓	
ab 3319	Feb. 19, 1903	65	10.0 ✓	
ab 3397			7.2 ✓	
ab 3970			Too poor ✓	
ab 4018			7.3 ✓	
ab 4195			7.2 ✓	
ab 4229			7.3 ✓	
ab 4347			7.2 ✓	
ab 4357			7.2 ✓	
ab 70			7.2 ✓	
ab 72			Too poor ✓	
ab 109			7.2 ✓	
ab 138			Too poor ✓	
ab 154			7.3 ✓	
ab 172			7.2 ✓	Leo
ab 173			7.3 ✓	
ab 227			7.3 ✓	
ab 483			7.3 ✓	
ab 547			7.2 ✓	
ab 637			7.3 ✓	
ab 674			Too poor ✓	
ab 964			Too poor ✓	
ab 1075			7.3 ✓	
ab 1189			7.3 ✓	
ab 1247			7.2 ✓	
ab 1673			7.4	
ab [illegible]	Sept. 8, 1901.	8.1	8.6	
ab 1961			7.2	

Mag 7.2 Min 2

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Plate	Date	Exp.	Est.	
Ab. 2025	Nov. 30, 1901	182	8.6	✓
ab. 2090			7.2	✓
ab. 2126			7.2	✓
ab. 2154			7.2	✓
ab. 2220			7.3	✓
ab. 2243			7.2	✓
A.M. 1515			7.3	✓
a.M. 2521			7.2	✓
aM. 261			7.2	✓
aM. 337	Dec. 2, 1899	81	8.9	✓ Leo
A.M. 674			7.2	✓
a.M. 698			7.4	✓
aM. 1131			7.3	✓
aM. 1520			7.3	✓
aM. 1610	Oct 6 1902	60	10.5	✓
aM. 1616	Oct 7, 1902	60	7.2	✓
aM. 1636			7.2	✓
a.M. 1646			7.3	✓
a.M. 2241			7.2	✓
aM. 2333			7.2	✓
a.M. 2348	Oct 26, 1903	62	9.1	✓
a.M. 3036			Too poor.	✓
a.M. 3054			7.3	✓
aM. 3144			7.3	✓
a.M. 3148	Oct 20, 1904	54	12.0	✓
aM. 3220			7.2	✓
a.M. 3235			7.2	✓
aM. 3251			7.3	✓
aM 3262			7.3	✓

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July 31 1905

Plate.	Date.	Eff.	Est.
AC 5160			7.2 ✓
AC 5263			7.2 ✓
AC 5324			7.2 ✓
AC 5358			7.3 ✓
AC 5413			7.3 ✓
AC 5423			Too faint ✓
AC 5470			7.3 ✓
AC 5481			7.2 ✓
AC 5527	Nov. 14, 1904	70m	11.8 ✓
AC 5598	Nov. 25, 1904	61m	11.9 ✓
AC 5617			7.2 ✓
AC 5688			7.3 ✓
AC 5708			7.3 ✓
AC 5724			7.3 ✓
AC 5747			7.3 ✓
AC 5855			7.3 ✓
AC 5864			7.2 ✓
AC 5878			7.2 ✓
AC 6025			7.2 ✓
AC 6084	Feb. 19, 1905	64m	11.0 ✓
AC 6115			7.2 ✓
AC 6152			7.3 ✓
AC 6263			7.3 ✓
AM 222	Oct. 13, 1899	67m	11.4 ✓
AC 3300			7.3 ✓
AC 3337			7.2 ✓
AC 3417			7.3 ✓
AC ~~3378~~			7.3 ✓
AC 3446			7.3 ✓

May 24 Mm 4

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