

KG
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802

F
ords

HENRY DRAPER MEMORIAL.

M. S. F.
No 2

KG 11365.802

FD 11365.802



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1	25	bl.	7			cn	13	27	cul	19	7																				
2	25	bc	8	22	2c	14	11		7	20	6																				
3	25	cb	9	22	62	15	14			21	9																				
4	28	bb	10	22	26	16	32			22	4																				
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4^{1st} 2nd
1.45 2.45

Measurements of Nova Aurigae on spectrum plates
and two adjacent comparison stars. Wedge of Rhode
glass used.

April 2, 1892

Designation of Comparison stars
d and e have been changed
to α and β respectively. The series
now being $\alpha \beta \gamma \delta \epsilon \zeta \eta \theta$ etc.

Plate No.

No. 27
2nd 1st

Ext.

(Comparison
stars marked
on this plate)

5507	a 4.5	N 5.0	α 5.2
5783	b 7.0	N 7.0	α 6.8 β 7.2
5904	h 7.0	N 7.5	k 8.0
5705	a 4.7	N 5.1	α 5.4
5921	h 6.7	N 7.5	k 7.7
5758	b 5.5	N 5.8	c 6.0
5504	a 6.3	N 6.3	α 6.8
5510	a 4.4	N 4.6	α 5.2
5797	β 6.2	N 6.7	c 6.7 f 7.6
5859	f 6.1	N 7.0	g 7.0 h 7.2
5542	a 5.4	N 5.3	α 5.7
5571	a 5.5	N 5.8	α 6.1
5761	α 5.2	N 5.3	b 5.3 β 5.4
5952	r 6.4	s 6.8	N 7.7
5605	a 5.5	N 5.8	α 6.1
5886	g' 6.2	N 6.7	h 6.7 k 7.5
5611	a 5.3	N 5.7	α 5.9
5875	f 5.8	N 6.4	g' 6.4 h 6.7
5619	a 5.5	N 6.0	α 6.1
5763	β 5.7	N 5.8	f 6.8 ? c
5965	r 6.0	s 6.5	N 7.7
5638	α 5.1	N 5.2	b 5.2 β 5.3
5670	β 5.3	N 5.4	f 6.5 ? c
5531	a 5.4	N 5.4	α 5.8
5863	f 6.0	N 6.4	g' 6.6
5558	a 5.4	N 5.7	α 6.0
5731	α 5.3	N 5.4	b 5.4 β 5.5
5892	g' 6.6	N 7.0	h 6.9 k 8.0
5877	f 6.5	N 6.8	g' 6.8 h 7.1

a 4.5	N 4.9	α 5.1
α 6.7	b 6.9	N 6.9 β 7.0
h 6.8	N 7.3	k 8.0
a 4.8	N 5.0	α 5.2
h 6.5	N 7.4	k 7.7
α 5.3	N 5.4	b 5.4 β 5.5
α 6.3	N 6.3	α 6.9
a 4.6	N 4.7	α 5.1
β 6.2	N 6.6	c 6.6 f 7.8
f 6.2	N 6.6	g' 6.7
a 5.2	N 5.2	α 5.7
a 5.5	N 5.7	α 6.1
α 5.3	N 5.4	b 5.4 β 5.5
r 6.4	s 6.8	N 7.8
a 5.3	N 5.6	α 5.9
g' 6.2	N 6.5	h 6.6 k 7.8
a 5.3	N 5.5	α 5.9
f 5.9	N 6.3	g' 6.3 h 6.6
a 5.5	N 6.0	α 6.0 b 6.1
b 5.6	N 5.7	β 5.7 c 6.1
r 6.2	s 6.6	N 7.9
α 5.1	N 5.2	β 5.3 ? b
β 5.3	N 5.4	c 5.7
a 5.3	N 5.3	α 5.8
f 6.0	N 6.4	g' 6.5
a 5.4	N 5.5	α 5.9
α 5.3	N 5.4	b 5.4 β 5.5
g' 6.3	N 6.7	h 6.7 k 7.8
f 6.4	N 6.8	g' 6.8 h 7.1

April 2, 1892.

Plate No. 1st Est.

5919 h 6.0 N 6.8 k 7.2

5934 h 6.2 N 7.1 k 7.2

5532 a 5.3 N 5.2 α 5.8

5942 s 8.0 N. not seen.

5819 β 5.7 N 6.0 f 6.8 ^{2c}

5658 a 6.2 N 6.5 α 6.7

5557 a 5.7 N 5.7 α 6.2.

2nd Est

h 6.0 N 6.8 k 7.0

h 6.1 N 7.3 k 7.4

a 5.3 N 5.3 α 5.9

s 8.0 N. not seen

β 5.5 N 5.9 c 5.9 f 6.8

a 6.3 N 6.5 α 6.8

a 5.6 N 5.7 α 6.3

1st Est.
h
2.442nd Est.
h
3.35

a	α	h	β	c	f	g'	h	K	r s
76	2	2	5	9	9	2	10		4
66	2	1	5	12	5	5	12		4
75	1	1	4		6	4	10		5
44	1	1	11		4	3	12		4
55	1	1	4		6	3	8		
66	1	1	12		5	3	12		
85	1	1	4		3	4	11		
55	2		11		4	3	11		
36	1	1	4	9		3	12		
55	1	1					10		
65							10		
65							13		
67									
6									

g' which equals.

Dm + 30° 949.5^h 27.1 + 30° 29 8.2was measured by
mistake instead of

g which equals

Dm + 30° 944^h 526.1 + 30° 30 8.2

6	158	11	10	26	30	42	30	131	17
24	9	9	6	3	8	9	12	4	
28	9	9	6	3	8	9	12	4	
56	.12	.11	.43	1.00	52	33	1.09	.42	
	20		113						

Measures of spectra of faint comparison stars of Nova Aurigae

No. 20.

April 2, 1892.

Plate 1st 4th Sept.2nd Oct. 3rd Oct.

5875	f 5.8	5.7	5.9
	g' 6.3	6.3	6.4
	h 6.8	6.8	6.8
	k 7.9	8.0	8.0
	N 6.6	6.3	6.4

f g h

f g h k

5 5 11

6 5 12

5 6 12

5 5 14

6 4 13

5 4 14

5 5 11

6 5 11

6 4 12

6 5 11

5 5 14

6 5 12

4 5 12

6 4 13

6 4 12

82 71 184

15 15 15

.55 .47 1.23

5919	f 5.3	5.4	5.4
	g' 5.8	6.0	5.9
	h 6.3	6.4	6.3
	k 7.7	7.7	7.7
	N 7.6	7.5	7.5

5904	f 5.8	5.7	5.8
	g' 6.3	6.3	6.4
	h 6.8	6.8	6.8
	k 7.9	7.9	8.0
	N 7.4	7.4	7.5

5934	f 5.3	5.3	5.3
	g' 5.9	5.8	5.9
	h 6.4	6.3	6.4
	k 7.5	7.7	7.6
	N 7.4	7.6	7.4

5921	f 5.9	5.7	5.8
	g' 6.3	6.3	6.4
	h 6.8	6.7	6.8
	k 8.0	8.0	8.0
	N 7.9	7.8	7.9

1st 2nd 3rd
h h h
2.20 2.30 2.40

Measures of spectra of brighter comparison stars of Nova Aurigae

7

Observer M.S.F.
Recorder

No. 19

April, 5, 1892.

	1st	2nd	3rd
Plate a	4.7	4.7	4.6
5731 a	5.2	5.1	5.1
β	5.4	5.3	5.2
c	5.7	5.7	5.7
γ	6.3	6.3	6.2
δ	6.6	6.6	6.6
η	5.0	5.2	5.2

a α β c γ δ

5 2 3 6 3

4 2 4 6 3

5 1 5 5 4

5 2 4 4 3

5 1 4 4 1

5 2 1 5 3

5 1 4 4 3

5 1 4 5 3

6 1 3 4 3

5 1 4 4 4

5 1 3 4 4

5 2 3 4 3

5 1 3 5 3

6 1 3 4 4

4 1 4 5 3

5558 a	5.3	5.3	5.2
α	5.8	5.8	5.7
β	6.0	5.9	5.9
c	6.4	6.3	6.0
γ	6.8	6.7	6.5
δ	7.1	6.8	6.8
η	5.5	5.5	5.4

Sum 75 20 52 69 47

Mean 5.0 ~~4.0~~ ~~5.0~~ 4.1 3.0

5.0 1.3 3.5 4.6 3.1

5611 a	5.2	5.2	5.2
α	5.7	5.7	5.8
β	5.8	5.8	5.9
c	6.2	6.2	6.2
γ	6.6	6.7	6.6
δ	6.9	7.0	6.9
η	5.5	5.4	5.5

a α .50 .52 -2

α β .13 .11 +2

β c .35 .42 -7

c γ .46 .42 +4

γ δ .31 .22 +9

δ γ .55 .44 +11

γ h .47 .53 -6

h k 1.23 1.03 +20

4.00 3.69

5619 a	5.4	5.5	5.3
α	5.9	6.0	5.8
β	6.0	6.1	6.0
c	6.4	6.4	6.3
γ	6.8	6.8	6.7
δ	7.2	7.2	7.0
η	5.7	5.8	5.7

8

2nd 3rd
 2.37 2.46

April 5, 1892

	1 st	2 nd	3 rd
5605 a	5.3	5.3	5.3
α	5.8	5.9	5.7
β	5.9	6.0	5.8
c	6.2	6.3	6.2
γ	6.7	6.7	6.7
δ	7.0	7.1	7.0
η	5.7	5.7	5.6

1st 2nd 3rd
 2.30 2.40 2.48

$\alpha\alpha$	.50	010 000 001 000 011	α	00	470	470
$\alpha\beta$	.13	110 101 000 001 000	α	.50	553	503
βc	.35	101 003 001 011 110	β	63	571	508
$c\gamma$	.46	110 110 101 111 010	c	.98	638	540
γf	.31	001 020 000 110 010	γ	144	705	561
$f g$	.53	101 101 100 010 200	f	175	740	565
$g h$	.47	001 011 001 000 011	g	230	811	581
$h K$	123	100 212 110 120 010	h	277	896	619
			K	400	975	575

$\frac{61}{120}$
 .05

1st
h
2.50
2nd
h
3.00
3rd
h
3.09

Measures of spectra of faint comparison stars of Nova Aurigae 9

No. 21.

April 5, 1892.

Plate.	1 st Est.	2 nd Est.	3 rd Est.
5875 f	5.8	5.8	5.7
g	6.2	6.2	6.1
g'	6.4	6.4	6.3
h	6.7	6.7	6.5
δ	7.1	7.3	7.3
k	7.7	7.9	7.9
N	6.3	6.3	6.3

f	g	g'	h	δ	k
4	2	3	4	6	
4	2	3	6	6	
4	2	2	8	6	
4	2	3	4	7	
4	2	5	4	6	
4	2	4	3	8	
4	2	3	5	7	
4	2	4	6	6	

5919 f	5.3	5.3	5.3
g	5.7	5.7	5.7
g'	5.9	5.9	5.9
h	6.2	6.4	6.3
δ	6.6	6.8	6.6
k	7.3	7.4	7.4
N	7.3	7.3	7.3

5	2	3	6	5	
4	2	4	6	6	
4	2	3	5	6	
5	1	4	4	7	
4	2	4	5	7	
4	2	2	6	6	
3	2	4	5	7	

Sum 61 29 51 77 96

Mean 4.0 1.1 3.0 5.0 6.0

.41 .19 .34 .51 .64

5904 f	5.8	5.8	5.8
g	6.2	6.2	6.3
g'	6.4	6.4	6.5
h	6.7	6.8	6.8
δ	7.2	7.4	7.4
k	7.9	8.0	7.9
N	7.5	7.4	7.4

5934 f	5.3	5.3	5.3
g	5.7	5.7	5.8
g'	5.9	5.9	5.9
h	6.3	6.2	6.3
δ	6.9	6.7	6.7
k	7.5	7.3	7.4
N	7.4	7.3	7.4

April 5, 1892

Plate	1 st Est.	2 nd Est.	3 rd Est.
5921	f 5.7	5.7	5.8
	g 6.1	6.1	6.1
	g' 6.3	6.3	6.3
	h 6.7	6.5	6.7
	δ 7.2	7.1	7.2
	k 7.9	7.7	7.9
	N 7.7	7.5	7.6

1 st L	2 nd L	3 rd L
3.00	3.09	3.17

Ima
sel
is
per
t
im
de

1st 2nd 3rd
3.25 3.40 3.49

Measures of comparison stars of Nova Aurigae. 11

Trail Plates.

{Dwing to its brightness the image of a is difficult to measure on all plates

No. 14^{at}
Plate Est. 2nd Est. 3rd Est.
April 5, 1892.

5917 a 3.8 3.8 3.8
~~a 5.2~~
~~β 5.2~~
c 5.5 5.2 5.1 5.1
γ 5.9 6.0 5.8
f 6.3 6.3 6.3
D.C. 3102 5.2 5.2 5.2

5940 a 4.0 4.0 3.9
~~a 5.2~~
~~β 5.3~~
c 5.5 5.2 5.2
γ 6.3 6.0 6.2
f 6.8 6.8 6.7
D.C. 3102 5.3 5.4 5.3

5963 a 3.9 4.0 3.8
~~a 5.2~~
~~β 5.3~~
c 5.5 5.3 5.2
γ 5.8 5.8 5.7
f 6.3 6.2 6.2
D.C. 3102 5.2 5.4 5.3

Image of
D.C. 3102
is defective
perhaps owing
to clouds or
imperfect
developer.
5950 a 4.1 4.3 4.5 4.3
~~a 5.3~~
~~β 5.5~~
c 5.4 5.5 5.5
γ 6.7 6.7 6.5
f n.s. n.s. n.s.
D.C. 3102 5.9 5.9 5.9

a c 3102 γ f

17 -3 7 4

14 0 8 3

13 1 6 5

15 2 10 5

12 2 6 8

13 1 9 5

16 3 6 5

13 1 9 4

14 1 9 5

13 5 8

12 4 8

10 4 6

12 1 4 4

14 1 3 4

13 1 4 4

12 1 5 5

13 1 4 4

13 2 3 5

14 2 2 4

13 2 2 4

15 2 2 3

12 6 1 5

13 2 3 6

12 1 5 4

308 41-7 130 46
24 24 24 24

1.32 .14 .54 .46

April 5, 1892

Plate		1 st Est.	2 nd Est.	3 rd Est.
5991	a	4.2	4.0	4.0
	A	5.1		
	B	5.2		
	C	5.4	5.4	5.3
	γ	5.9	5.8	5.8
	δ	6.3	6.2	6.2
D.C. 3102		5.5	5.5	5.4

5980	a	3.9	4.0	3.9
	C	5.1	5.3	5.2
	γ	5.7	5.8	5.7
	δ	6.2	6.2	6.2
3102		5.2	5.4	5.4

6003	a	4.0	4.1	3.8
	C	5.4	5.4	5.3
	γ	5.8	5.8	5.7
	δ	6.2	6.2	6.0
3102		5.6	5.6	5.5

5933	a	3.9	3.9	4.0	
	c	5.1	5.2	5.2	
	γ	5.8	5.7	5.8	
	δ	6.3	6.3	6.2	
3102		5.7	5.4	5.3	5.4

1 st h	2 nd h	3 rd h
3.40	3.49	4.00

		H_{α}	δ_{α}	$+32^{\circ}20'$	$-7^{\circ}31'$		$-47^{\circ}6'$			
-18	5917	1 51	65.	66.6	33.9	33.9	65.6	18.6	00	33.9 -13.7
-19	5940	2 16	61.	36.2	31.4	31.3	61.2	13.6	-02	31.4 -16.2
-19	5963	2 19	60.	8	60.7	30.9	60.8	13.2	-02	30.8 -16.8
-20	5950	2 37	57.6	57.6	57.2	28.6	57.5	9.9	-04	28.6 -19.0
-20	5991	2 33	58.3	58.2 ³	58.0	29.3	58.2	10.6	-02	29.2 -18.4
-20	5980	2 30	58.6	58.5	29.5	29.5	58.6	11.0	-03	29.5 -18.1
-21	6003	2 41	56.9	56.9	56.5	28.2	56.6	9.8	-04	28.2 -19.4
-18	5933	1 51	65.	66.6	33.9	33.9	65.6	18.6	.00	33.9 -12.7
		$0^h 00^m$		79.7	40.1				.00	-14

14

L.
0.00

Special Plates. Estimate of Chart Images, to
determine magn. of D.C 3102

April 8, 1892

No. 15

Plate 1st Est.2nd Est

6	6033	C 4	3102	3102	3 C		C 3102	γ	f
		3102	3	γ	γ 4	3102	6	4	3
		γ	4	f	f 4	γ	3	4	4
						3	3	4	4
3	5963	C 3	3102	3102	2 C		2	5	4
		3102	4	γ	γ 5	3102	1	3	4
		γ	4	f	f 4	γ	2	5	3
						5	1	5	4
1	5933	C 3	3102	3102	2 C		2	6	4
		3102	4	γ	γ 5	3102	2	4	3
		γ	4	f	f 3	γ	3	5	3
						4	2	3	4
5	5991	C 1	3102	3102	2 C		2	5	4
		3102	5	γ	γ 6	3102	0	35	53
		γ	4	f	f 4	γ	12	12	12
							.25	.44	.38
2	5950	C 3	3102	3102	3 C				
		3102	4	γ	γ 5	3102			
		γ	3	f	f 3	γ			
4	5980	C 2	3102	3102	2 C				
		3102	3	γ	γ 5	3102			
		γ	4	f	f 4	γ			

h
0.08

1st L 2nd 3rd Estimator of brightness of Nova as compared with 15
 3.00 4.11 4.50 next brighter comparison star. Prismatic companions also
 compared where visible April 9, 1895

Observer, M.S.F.
 Recorder, M.C.S.

Plate	No. 5 1 st Est.	No. 2 2 nd Est.	No. 3 3 rd Est.	Prismatic Compan.	No. 1 1 st Est.	No. 2 2 nd Est.	No. 3 3 rd Est.
5981	w1N	w1N	w1N				
5897	g4N	g4N	g3N				
5818	α 3N	α 2N	β 3N	α 4N	α 2N	β 3N	α 4N
5796	β 2N	β 3N	β 2N	β 3N	β 3N	β 2N	
5617	a3N	a3N	a2N	a2N	a3N	w1N	
5874	f4N	f2N	f2N				
5920	85N	84N	85N				
"	No k	No k	No k				
5560	N2a	N1a	a1N	N3a	N2a	a0N	
5876	f4N	f4N	f4N				
5636	N1a	N1a	a2N	N1a	N1a	a2N	
5867	f1N	f1N	f2N				
5533	N5a	N2a	N4a	N4a	N3a	N5a	
5864	f1N*	f1N	f1N	*Image of Nova elongated near edge of plate.			
5603	a2N	a1N	a3N	a2N	a0N	a2N	
5891	g4N	g4N	g3N				
6004	w1N*	w2N	w1N	Plate badly fogged by moonlight.			
5858	f1N	f3N	f3N				
5609	a2N	a4N	a2N	a1N	a3N	a2N	
6005	x4N*	x3N	x4N	Plate fogged by moonlight.			
5566	N2a	N3a	N3a	N3a	N2a	N3a	
5885	g2N	g2N	g3N				
5889	g3N	g3N	g2N				
5223	N5a	N5a	N5a	N6a	N6a	N5a	
5187	N2a [†]	a3N	N1a	N3a	a2N	N2a	
"	[†] as in corners. Nova near edge.						
5305	a1N	a2N	a3N	a2N	a2N	a2N	
5479	N2a	N1a	N0a	N2a	N2a	N2a	
"	Images near edge of plate.						

16^{2nd} 3rd
30 425 5.0h

April 9, 1892

Plate	1 st Est.	2 nd Est.	3 rd Est.	Prismat. Companion.	2 nd Est.	3 rd Est.
5937	m3N	m3N	m3N [↓]			
5555	N1a	N1a	N1a [↓]	N0a	N2a	N1a [↓]
5936	m3N	m4N	m4N [↓]			
5744	a1N	a3N	a3N [↓]	a2N	a2N	a3N [↓]
6016	y1N	y1N	y1N [↓]			
"	Plate fogged. Spoiled in developer.					
5935	m2N	m3N	m2N [↓]			
5757	a3N	a4N	a4N [↓]	a4N	a3N	a3N [↓]
5878	f1N	f4N	f3N [↓]			
5734	N1a	a0N	N1a [↓]	N2a	a0N	N2a [↓]
5982	u4N	u4N	u4N [↓]			
5782	a4N	a4N	a5N [↓]	a4N	a4N	a4N [↓]
"	Plate fogged.					
5728	N0a	N1a	a1N [↓]	N1a	N2a	a1N [↓]
5992	w1N	w1N	w1N [↓]			
5716	N0a	N0a	N1a [↓]	N0a	N1a	N2a [↓]
5702	N1a	a1N	N1a [↓]	N2a	a0N	N1a [↓]
5771	a1N	a1N	a3N [↓]	a0N	a1N	a2N [↓]
5687	a3N	a3N	a2N [↓]	a4N	a3N	a2N [↓]
5568	a3N	a2N	a2N [↓]	a2N	a2N	a2N [↓]
"	Plate fogged. Image of a elongated.					
5762	a3N	a3N	a4N [↓]	a4N	a3N	a3N [↓]
5615	a1N	a1N	a0N [↓]	a2N	a0N	a0N [↓]
5760	a3N	a1N	a1N [↓]	a3N	a2N	a1N [↓]
5508	a1N	N1a	N1a [↓]	a1N	N1a	N1a [↓]
5941	m4N	m4N	m4N [↓]			
5922	δ5N	δ4N	δ4N [↓]			
5918	δ4N	δ5N	δ5N [↓]			
5523	N1a	N1a	N1a [↓]	N2a	N1a	N1a [↓]

1st 2nd 3rd
3.55 4.43 5.20

17

c π April 9, 1892 p.c. π

Plate	1st Est.	2nd Est.	3rd Est.	1st Comp.	2nd Est.	3rd Est.
5906	h3 π	h3 π	h3 π '			
5829	β 2 π	β 2 π	β 3 π '	β 3 π	β 3 π	β 3 π '
5953	m5 π	m4 π	m4 π '			
"	π 01	π 01	π 01'			
5902	h3 π	h4 π	h4 π '			
5964	u2 π	u1 π	u2 π '			
5951	m3 π	m4 π	m3 π '			
5188	a1 π	a0 π	π 1a'	a0 π	a0 π	π 2a'
5943	m4 π	m4 π	m3 π '			
"	Plate spoiled. Region of Nova may be affected.					
5421	a2 π	a2 π	a2 π '	a1 π	a1 π	a1 π '
5847	c3 π	c4 π	c4 π '	c3 π '	c4 π '	c3 π '
5809	β 4 π	β 2 π	β 3 π '	β 4 π	β 3 π	β 4 π '
"	π 0c'	π 0c'	π 0c'	π 0c'	π 0c'	π 0c'
"	Plate fogged. Nova probably affected.					
5793	a5 π	a4 π	a4 π '	a5 π	a3 π	a4 π '

1st 2nd 3rd
4.10 4.50 5.25

When different comparison stars were used or when there was any gap, extra measures have been made and entered in ink and used in the discussion.

This same note applies to the following comparisons of the Nova up to page 24.

Measurements of Nova Aurigae on Chart Plates.

April 11, 1892.

~~N^o 8~~
N^o 10

Plate	N ^o 6			N ^o 10			N ^o 12			N ^o 14			N ^o 16			N ^o 18			N ^o 20		
	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.
5981	N ⁴ γ	N ⁴ γ	N ³ γ	N ³ h	N ⁰ g	N ¹ g															
5897	N ³ h	N ³ h	N ³ h																		
5818	N ² γ	N ⁴ γ	N ⁴ γ																		
5796	N ³ γ	N ⁴ γ	N ² c																		
5617	N ² α	N ³ α	N ³ α																		
5874	N ² g	N ³ g	N ² g																		
5920	N ³ h	N ¹ h	N ¹ h																		
5560																					
5876	N ² g	N ¹ g	N ¹ g																		
5636	N ⁴ α	N ³ α	N ⁴ α																		
5867	N ¹ g	N ¹ g	N ² g																		
5533																					
5864	N ⁴ g	N ⁴ g	N ⁴ g																		
5603	N ⁴ α	N ⁴ α	N ⁴ α																		
5891	N ³ h	N ³ h	N ³ h																		
6004																					
5858	N ¹ g	N ² g	N ² g																		
"	Image due to aux. prism is elongated. Perhaps may be defect.																				
5609	N ⁴ α	N ³ α	N ⁴ α																		
6005	N ¹ h	N ¹ h	N ¹ h																		
5566	N ⁵ α	N ⁵ α	N ⁵ α																		
5885	N ⁴ h	N ⁵ h	N ⁴ h																		
5889	N ⁴ h	N ³ h	N ³ h																		
5223																					
5187																					
"	Aux. images not comparable with chart images.																				
5505	N ⁴ α	N ³ α	N ³ α																		
5479																					

* This quantity is an additional measure of C pN and belongs on page 23 with measures reversed, as h5N.

April 11, 1892

Plate	π c			π pc			ρ π c		
	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.
5937	π_{21}	π_{31}	$\pi_{2\alpha}$	π_{2f}	π_{3f}	π_{3f}	..	..	..
5555	..	..	..	..	..	π_{3f}	π_{3k}	π_{4k}	π_{5k}
5936	π_{31}	π_{31}	π_{31}	π_{2f}	π_{2f}	π_{1f}	..	..	..
5744	$\pi_{4\alpha}$	$\pi_{3\alpha}$	$\pi_{3\alpha}$	..	..	..	π_{3k}	π_{3k}	π_{4k}
6016	π_{16}	π_{16}	π_{16}	..	..	..	..	..	..
5935	π_{31}	π_{21}	π_{31}	π_{2y}	π_{1y}	π_{2y}	..	..	..
5757	$\pi_{3\alpha}$	$\pi_{2\alpha}$	$\pi_{2\alpha}$	..	..	..	π_{1k}	π_{2k}	π_{3k}
5878	π_{5h}	π_{5h}	π_{4h}	..	..	..	..	..	..
5734	$\pi_{6\alpha}$	$\pi_{4\alpha}$	$\pi_{4\alpha}$	..	..	..	π_{4k}	π_{5k}	π_{3k}
5982	π_{0w}	π_{1w}	π_{1w}	π_{1g}	π_{1g}	π_{1g}	..	..	..
"	π_{1x}	π_{0x}	π_{0x}	..	..	..	..	..	..
5782	$\pi_{3\beta}$	$\pi_{2\beta}$	$\pi_{2\beta}$	..	..	..	π_{4k}	π_{5k}	π_{5k}
5728	$\pi_{5\alpha}$	$\pi_{3\alpha}$	$\pi_{4\alpha}$	..	..	..	π_{3k}	π_{4k}	π_{3k}
5992	π_{3y}	π_{3y}	π_{3y}	..	..	..	..	..	..
5716	..	..	..	..	..	..	$\pi_{1\delta}$	$\pi_{3\delta}$	$\pi_{2\delta}$
5702	..	..	..	..	..	..	$\pi_{1\delta}$	$\pi_{2\delta}$	$\pi_{2\delta}$
5771	π_{4c}	π_{3c}	π_{5c}	..	..	..	π_{1l}	π_{1l}	π_{1l}
5687	$\pi_{3\alpha}$	$\pi_{2\alpha}$	$\pi_{4\alpha}$	..	..	..	π_{1k}	π_{1l}	π_{1l}
5568	$\pi_{4\alpha}$	$\pi_{3\alpha}$	$\pi_{4\alpha}$	..	..	..	$\pi_{2\delta}$	$\pi_{1\delta}$	$\pi_{1\delta}$
5762	$\pi_{2\alpha}$	$\pi_{2\alpha}$	$\pi_{2\alpha}$	..	..	..	π_{3k}	π_{3k}	π_{3k}
5615	$\pi_{4\alpha}$	$\pi_{3\alpha}$	$\pi_{4\alpha}$	..	..	..	π_{4k}	π_{4k}	π_{4k}
5760	$\pi_{4\alpha}$	$\pi_{5\alpha}$	$\pi_{4\alpha}$	..	..	..	π_{1k}	π_{3k}	π_{1k}
5508	$\pi_{3\alpha}$	$\pi_{4\alpha}$	$\pi_{3\alpha}$	..	..	..	π_{4k}	π_{4k}	π_{3k}
5941	π_{11}	π_{11}	π_{21}	π_{2f}	π_{2f}	π_{3f}	..	..	..
5922	π_{1k}	π_{1k}	π_{2k}	π_{3c}	π_{3c}	π_{3c}	..	..	..
5918	π_{2l}	π_{1l}	π_{1l}	π_{4c}	π_{2c}	π_{4c}	..	..	..
5523	..	..	..	..	..	..	$\pi_{2\delta}$	$\pi_{2\delta}$	$\pi_{2\delta}$
5906	π_{5k}	π_{5k}	π_{5k}	$\pi_{4\alpha}$	$\pi_{2\alpha}$	$\pi_{2\alpha}$	..	..	..
5829	π_{4y}	π_{3y}	π_{4y}	..	..	..	π_{1l}	π_{1l}	π_{1l}

*Note: ... that they are not comparable with Ans. images.

April 11, 1892.

	π c			π pc.			$p\pi$ c		
Plate	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	
5953	$\pi 2u$	$\pi 2m$	$\pi 2m$	$\pi 4g$	$\pi 4g$	$\pi 4g$	..	..	..
5902	$\pi 6k$	$\pi 5k$	$\pi 5k$	..	..	..	..	..	..
5964	$\pi 3w$	$\pi 2w$	$\pi 2w$	$\pi 1g$	$\pi 1g$	$\pi 1g$	..	..	..
5951	$\pi 4m$	$\pi 2m$	$\pi 3m$	$\pi 1f$	$\pi 2f$	$\pi 1f$	..	..	..
5188	..	..	..	..	..	..	..	..	..
5943	$\pi 1i$	$\pi 1i$	$\pi 2i$	..	..	..	..	..	..
5421	$\pi 5\beta$	$\pi 5\beta$	$\pi 5\beta$	..	..	..	..	..	..
5847	$\pi 6f$	$\pi 5f$	$\pi 4f$	..	..	..	$\pi 1l$	$\pi 1l$	$\pi 1l$
5809	$\pi 2c$	$\pi 2c$	$\pi 2c$	..	..	..	$\pi 5k$	$\pi 5k$	$\pi 5k$
5793	$\pi 2\alpha$	$\pi 1\beta$	$\pi 2\alpha$	..	..	..	$\pi 1k$	$\pi 4k$	$\pi 2k$
	$\frac{h}{4.15}$	$\frac{h}{0.13}$	$\frac{h}{1.10}$						

22^h
18 3.30 22.0No. 8
pK pcNo. 7 April 14 1892
C No. 9 pK pc No. 11

Plate.	1 st Col.	2 nd Col.	3 rd Col.	1 st Col.	2 nd Col.	3 rd Col.	1 st Col.	2 nd Col.	3 rd Col.
5981	..	..	..	..	..	..	f5N	f4N	f5N
5187	..	..	..	..	..	..	..	..	..
5744	73α	73α	73α	δ3N	δ3N	δ3N	..	..	..
6016	..	..	..	..	..	..	g3N	g3N	g3N
5935	..	..	..	..	..	..	c4N	c2N	c2N
5757	74α	72α	73α	δ5N	δ4N	δ3N	..	..	..
5878	..	..	..	..	..	..	..	..	..
5734	75α	74α	74α	δ4N	δ3N	δ3N	..	..	..
5782	72c	73c	73c	δ3N	δ2N	δ3N	..	..	..
5728	74α	74α	74α	δ2N	δ2N	δ3N	..	..	..
5992	..	..	..	..	..	..	g2N	g2N	g2N
5716	..	..	..	h3N	h4N	h2N	..	..	..
5702	..	..	..	h3N	h3N	h3N	..	..	..
5771	72α	71α	71α	δ6N	δ5N	δ5N	..	..	..
5687	74α	73α	73α	δ4N	δ4N	δ5N	..	..	..
5568	73α	73α	72α	h5N	h4N	h3N	..	..	..
5982	..	..	..	..	..	..	f5N	f4N	f5N
5762	72α	74α	72α	δ3N	δ2N	δ4N	..	..	..
5615	74α	74α	74α	δ2N	δ2N	δ3N	..	..	..
5760	73α	75α	73α	δ3N	δ1N	δ3N	..	..	..
5508	76α	75α	74α	h5N	h4N	h4N	..	..	..
5941	..	..	..	..	..	..	c5N	c4N	c4N
5922	..	..	..	..	..	..	β3N	β2N	β3N
5918	..	..	..	..	..	..	β3N	β3N	β2N
5523	..	..	..	h4N	h3N	h4N	..	..	..
5906	..	..	..	..	..	..	..	..	..
5829	72c	73c	72c	δ6N	δ5N	δ6N	..	..	..
5953	..	..	..	..	..	..	γ2N	γ2N	γ1N
5902	..	..	..	..	..	..	..	..	..

April 14, 1892.

Plate	p n			pc			c			p n			pc			n		
	1 st Est	2 nd Est	3 rd Est	1 st Est	2 nd Est	3 rd Est	1 st Est	2 nd Est	3 rd Est	1 st Est	2 nd Est	3 rd Est	1 st Est	2 nd Est	3 rd Est	1 st Est	2 nd Est	3 rd Est
5964	..	..	..	..	..	..	..	..	..	f3n	f3n	f3n	c4n	c4n	c4n	..	..	..
5951	..	..	..	..	..	..	..	..	..	f2n	c4n	c4n	f2n	f2n	f1n	..	..	..
5943	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5421	n4β	n4β	n4β	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5847	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5809	n3γ	n4γ	n3γ	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5793	n1α	n2α	n2α	δ3n	δ3n	δ3n	..	..	..	..	..	..	..	..	..	..	..	..
5876	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5864	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5603	n3α	n4α	n5α	δ2n	δ3n	δ2n	..	..	..	..	..	..	..	..	..	..	..	..
5891	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5858	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5609	n4α	n4α	n3α	h5n	h4n	h4n	..	..	..	..	..	..	..	..	..	..	..	..
6005	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5566	..	..	..	h4n	h3n	h4n	..	..	..	..	..	..	..	..	..	..	..	..
5885	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5889	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5223	..	..	..	g4n	g4n	g4n	..	..	..	..	..	..	..	..	..	..	..	..
5505	n4α	n4α	n4α	h2n	h2n	h2n	..	..	..	..	..	..	..	..	..	..	..	..
5937	..	..	..	..	..	..	..	..	..	c4n	c4n	c4n	..	..	..	..	..	..
5555	..	..	..	h5n	h5n	h5n	..	..	..	..	..	..	..	..	..	..	..	..
5936	..	..	..	..	..	..	..	..	..	c3n	c3n	c3n	..	..	..	..	..	..
5897	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5818	n3c	n1c	n2c	δ5n	δ4n	δ5n	..	..	..	..	..	..	..	..	..	..	..	..
5796	n5γ	n4γ	n4γ	δ3n	δ4n	δ5n	..	..	..	..	..	..	..	..	..	..	..	..
5617	n3α	n3α	n4α	δ4n	δ4n	δ3n	..	..	..	..	..	..	..	..	..	..	..	..
5874	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5920	n4β	..	..	..	..	..	..	..	..	β2n	β2n	β2n	..	..	..	..	..	..
5560	n5α	n4α	n5α	h5n	h4n	h4n	..	..	..	..	..	..	..	..	..	..	..	..

(h5n) See page 18*

* The first set belongs with the third set of measures of Plate 5920. page 18.

April 14, 1892.

pN pc c pN pc N.

Plate	1 st Ent.	2 nd Ent.	3 rd Ent.	1 st Ent.	2 nd Ent.	3 rd Ent.			
5636	$\eta 5\alpha$	$\eta 3\alpha$	$\eta 5\alpha$	$\delta 2\eta$	$\delta 3\eta$	$\delta 1\eta$	..	..	..
5867	"	"	"	"	"	"	"	"	"
5533	"	"	"	$h 2\eta$	$h 3\eta$	$h 3\eta$	"	"	"

$$\begin{matrix} h & h & h \\ 3.20 & 7.00 & 22.55 \end{matrix}$$
34..12.2.23¹⁷

Estimates of the brightness of the Comparison Stars of 25

the Nova

April 15, 1895

April 16 1.15

C	C											
5981	5920	5760	5874	5734	5935	5889	5771	5885	5906	5728	Σ 66	
a6α	a5α	a5α	a6α	a6α	a6α	a6α	a7α	a6α	a7α	a6α	.6001100001010	Σ 12
α2β	α2β	α1β	α1β	α1β	α1β	α1β	α0β	α1β	α1β	α1β	.1111000001000	Σ 43
β4c	β4c	β4c	β4c	β4c	β4c	β4c	β4c	β4c	β4c	β3c	.3900000000010	Σ 46
c5γ	c4γ	c4γ	c4γ	c4γ	c4γ	c4γ	c4γ	c4γ	c4γ	c5γ	.4210000000001	Σ 24
γ2f	γ2f	γ2f	γ2f	γ2f	γ2f	γ2f	γ3f	γ2f	γ2f	γ3f	.2200000001001	Σ 46
f4g	f4g	f4g	f4g	f4g	f4g	f4g	f4g	f5g	f5g	f4g	.4200000000110	Σ 53
g5h	g5h	g5h	g5h	g4h	g5h	g5h	g5h	g5h	g4h	g5h	.4800001000010	Σ 45
h4δ	h4δ	h4δ	h4δ	h5δ	h4δ	h4δ	h4δ	h4δ	h4δ	h4δ	.4100001000000	Σ 55
δ5k	δ5k	δ5k	δ5k	δ4k	δ5k	δ5k	δ5k	δ5k	δ5k	δ6k	.5000001000001	Σ 13
k1l	k2l	k1l	k1l	k1l	k1l	k1l	k1l	k1l	k2l	k1l	.1201000000010	Σ 49
l4m	l5m	l4m	l4m	l5m	l4m	l5m	l5m	l5m	l5m	l4m	.4501001011100	Σ 49
m51	m41	m41	m51	m41	m41	m41	m51	m41	m51	m51	.4510010001011	Σ 23
13n	11n	12n	12n	12n	13n	12n	11n	12n	12n	13n	.2111000101001	Σ 29
n4w	n4w	n4w		n4w	n5w	n4w				n4w	.410000100	Σ 3
w1X	w0X				w0X	w1X				w1X	.0601100	Σ 3
X3y											.300	Σ 1
y1b											.100	Σ 0
b0f											.000	Σ 0

a.d. .025

C	PC											
h3a	h4a	h4a	h4a	h5a	h4a	h3a	h4a	h4a	h5a	h5a	Σ 45	
k3α	k2α	k1α	k3α	k2α	k1α	k2α	k2α	k3α	k2α	k1α	.4110001010011	Σ 20
l1β	k3β	l1β	k2β	k0β	k1β	k1β	k2β	k3β	k2β	k1β	.1810112100101	Σ 19
l5c	k7	k5	k5		k4	k4	k3	k7	k5	k5	.1701002110101	Σ 58
m2γ	m1γ	m1γ	m3γ	m1γ	m2γ	m3γ	m3γ	m4γ	m4γ	m3γ	.5012001112200	Σ 31
n1f	n0f	n1f	m5f	m3f	n2f	n1f	m5f	n1f	n1f	m5f	.2812202100110	Σ 66
n3g	n2g	n2g	n2g	n2g	n2g	n2g	n2g	n2g	n2g	n3g	.5102002100000	Σ 2
o6b	o7b	o7b	o7b	o7b	o7b	o7b	o7b	o7b	o7b	o7b	.10111	Σ 13
a3k	a3k	a2k	a2k	a2k	a3k	a4k	a4k	a3k	a2k	a2k	.3140111011011	Σ 54
β5m	β2m	β3m	β3m	β2m	β2m	β1m	β1m	β3m	β4m	β4m	.4942111100201	Σ 46

p.C.C.										
5981	5920	5760	5874	5734	5935	5889	5771	5885	5906	5728
<u>5.1</u>	<u>5.1</u>	<u>5.1</u>	<u>4.1</u>	<u>5.1</u>	<u>5.1</u>	<u>7.1</u>	<u>8.1</u>	<u>5.1</u>	<u>5.1</u>	<u>6.1</u>
C51	C41	C1m	C0m	C1m	C51	C3m	C4m	C51	C1m	C1m
X2m	X2m	X1m	C51	X41	X3m	X41	X11	X21	X2m	X21
f4w	f5w	f1m	X11	f21	f1w	f4w		f1w	f2m	f2m
f5w		f6w	f2m		g2w				g1w	
g0w										
g3y										
						0.00			1.35	

X2m	X2m	X1m	f3u	f6u	f3u	f6u	f3u	f4u	f4u	f4u	Σ
f4w	f5w	f5w	f6w	f8w	f5w	f8w	...	...	f5w	f6w	38.35 22312121000
f5w	...	...	...	...	f2w	...	...	...	g1w	...	52.57 21102121000
g3y	...	...	...	...	...	...	...	...	...	...	3.10 11111111000

Scale Measures

1.45

No. 13.

April 16. 3.10

	C	p.C	C	p.C	C	p.C	C	p.C	C	p.C	C	p.C	C	p.C	C	p.C	C	p.C	C	p.C
	5981	5920	5760	5874	5935	5889	5885	5906	5728											
a	6.3	7.3	7.4	7.3	7.3	7.2	7.4	7.4	7.2											
b	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1											
c	7.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0											
d	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0											
e	7.0	8.0	8.0	8.1	8.0	8.0	8.3	8.3	8.1											
f	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.3											
g	2.6	3.4	3.6	3.6	3.3	3.4	3.3	3.7	3.1											
h	0.6	0.5	0.8	0.4	0.5	0.5	0.6	0.6	0.5											
i	3.2	4.2	4.4	4.4	4.0	4.0	4.2	4.3	3.7											
j	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.6											
k	3.7	4.7	5.0	4.4	4.4	4.4	4.9	4.3	4.3											
l	0.7	0.7	0.7	0.6	0.6	0.6	0.7	0.7	0.7											
m	4.4	5.4	5.5	5.6	5.2	5.2	5.5	5.4	5.0											
n	0.5	0.8	0.7	0.7	0.6	0.6	0.7	0.7	0.7											
o	4.9	6.2	6.2	6.3	5.8	5.8	6.1	6.1	5.7											
p	0.6	0.8	0.7	0.6	0.7	0.7	0.8	0.7	0.8											
q	5.5	7.0	6.9	6.9	6.8	6.5	6.9	6.8	6.5											
r	0.7	0.8	0.9	0.9	0.9	0.9	1.1	0.9	1.1											
s	6.2	7.8	7.8	7.8	7.7	7.7	8.0	7.7	7.6											
t	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.1											
u	6.4	7.9	8.0	8.0	7.9	8.0	8.3	8.0	7.7											
v	0.6	0.5	0.5	0.6	0.5	0.5	0.5	0.6	0.6											
w	7.0	8.4	8.5	8.6	8.4	8.5	8.8	8.6	8.3											
x	1.0	0.7	0.5	0.6	0.8	0.7	0.5	0.6	0.6											
y	8.0	9.1	9.0	9.2	9.2	9.2	9.3	9.2	8.9											
z	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3											
aa	8.3	9.3	9.3	9.5	9.5	9.5	9.5	9.5	9.2											
ab	0.5	0.5	0.7	10.0	10.0	10.0	10.0	10.0	10.0											
ac	8.8	9.8	10.0																	
ad	0.1	0.0																		
ae	8.9	9.8																		
af	0.6																			
ag	9.4																			
ah	0.1																			
ai	9.5																			
aj	0.2																			
ak	9.5																			

2.5 3.0 3.5 4.0 4.5 5.0

4.8 4.7

2.25 3.33 00

Scale 2-15

4.

3

4

4

4

5

4

4

4

6.7 -1

6.6 -2

6.7 -1

7.0 +2

7.0 +2

7.1 +3

6.5 -3

6.8 0

6.4 14

6.8 ± 1.8

Estimates of faint Comparison Stars of Nova Aurigae

Plates having over 60^m Exposure.

April 18 1892

Not

I 5981			I 5982			I 5992			I 6031		
1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.	1 st Est.	2 nd Est.	3 rd Est.
u 5w	u 5w	u 5w	u 5w	u 6w	u 6w	u 6w	u 6w	u 5w	u 5w	u 5w	u 5w
w 1X	w 1X	w 1X	w 1X	w 1X	w 0X	w 0X	w 0X	w 0X	w 0X	w 0X	w 0X
X 5y	X 5y	X 5y	X 3y	X 4y	X 4y	X 5y	X 4y	X 4y	X 5y	X 4y	X 4y
y 1.6	y 1.6	y 1.6	y 2.4	y 0.8	y 0.8	y 0.8	y 0.8	y 0.8	y 0.6	y 1.6	y 1.6
y 1.6	6 0.8	6 0.8	y 0.8	8 1.6	8 1.6	8 1.6	8 1.6	8 1.6	6 1.8	6 1.8	6 1.8
6 0.8	8 2 10	8 2 10	8 1.6	6 3 10	6 3 10	6 3 10	6 3 10	6 3 10			
8 2 10			6 3 10								

23.18

x y	y .6	y .8	6 .8	8 .10	6 .10
4	1		0	2	
5	1		0	2	
5	1		0	2	
5		0	-1		3
4		0	-1		3
4		0	-1		3
5		0	-1		3
4		0	-1		3
4		0	-1		3
5	0		1		
4	1		1		
4	1		1		
<hr/>					
52					
12					
44					

1892phae.pdf:803F

t.
 w Σ_{64} $w w .53$ 00001110000
 X Σ_5 $w X .04$ 111110000000
 y Σ_{53} $X y .44$ 011100100100
 6 Σ_5 $y 6 .08$ 000.....100
 8 Σ_0 $y 8 .00$...000000...
 Σ_{-3}
 8 6 Σ_{18} $8 6 .02$ 00011111111
 6 10 Σ_6 $6 10 .30$...000000...
 8 10 Σ_6 $8 10 .20$ 000.....

330 h 23.56 h .26 h 0.17 h 0.29 h 0.37

No. 17

Plate.

le N.

No. 18

N le

April 18, 1892. 11 inch telescope

(Rev. sign)

faintest
edge
visible

	1 st	2 nd	3 rd	1 st	2 nd	3 rd			
✓ 4653	6.1N	6.2N	6.2N	.	.	.	.17	100	...
✓ 4650	8.2N	8.1N	8.2N	.	.	.	.17	010	...
✓ 4629	6.2N	6.2N	6.2N	.	.	.	.20	000	...
✓ 4622	X3N	X1N	X2N	N3y	N3y	N4y	.20	110	.33 001
✓ 4563	m2N	m3N	m3N	N4.1	N4.1	N4.1	.27	100	.40 000
✓ 4553	k1N	k1N	k1N	N1L	N2L	N2L	.10	000	.17 100
✓ 4613	X1N	X1N	X1N	.	.	.	.10	000	...
4517	Now too bright to be compared with any star on plate.								
✓ 4577	m5N	m5N	m5N	N01	N01	N01	.50	000	.00 000
✓ 4551	k1N	k0N	k1N	N2L	N2L	N2L	.07	010	.20 000
✓ 4532	f4N	f4N	f5N	N1g	N2g	N2g	.43	001	.17 100
✓ 4569	m3N	m4N	m4N	N21	N31	N21	.37	100	.23 010
✓ 4542	f8N	f7N	f8N	N4h	N4h	N5h	.77	010	.43 001
✓ 4579	m5N	m5N	m5N	N21	N21	N21	.50	000	.20 000
✓ 4530	f4N	f5N	f3N	N6h	N7h	N9h	.40	011	.73 102
✓ 4565	m2N	m2N	m4N	N41	N51	N51	.27	111	.47 100
✓ 4524	f1N	f2N	f2N	N7h	N9h	N8h	.17	100	.80 110
"	L is on very edge of the plate.								
✓ 4500	.	.	.	N0β	N1β	N2β	.	...	.10 101
✓ 4605	u5N	u5N	u6N	N1w	N2w	N1w	.53	001	.13 010
✓ 4567	m4N	m3N	m4N	N31	N31	N31	.37	010	.30 000
✓ 4536	.	.	.	N6h	N6h	N8h	.	...	.67 111
✓ 4503	β2N	β2N	β2N	N.	.	.	.20	000	...
✓ 4528	Now near edge of plate.						.	...	.80 101
✓ 4604	u6N	u6N	u6N	N0w	N0w	N0w	.60	000	.00 000
✓ 4556	δ6N	δ6N	δ6N	N1k	N1k	N1k	.60	000	.10 000
✓ 4513	β2N	β2N	β3N	.	.	.	.23	001	...
"	Now near edge of plate.								
✓ 4591	u2N	u3N	u3N	N3w	N4w	N3w	.27	100	.37 101
✓ 4548	δ5N	δ5N	δ5N	N2L	N2L	N2L	.50	000	.20 000

23.55 h .26 h 0.16 h 0.29 h 0.37 h 0.42

14.2	14.15	.24	..	14.39	14.39	"
14.2	14.15	.24	"	14.39	14.39	"
14.2	14.15	.28	..	14.43	14.43	"
14.2	13.56	.28	14.07 .46	13.84 13.61	13.72	+12
14.2	11.52	.38	12.33 .56	11.90 11.77	11.84	+6
12.3	10.60	.14	10.80 .24	10.74 10.56	10.65	+11
13.6	13.56	..	..	13.70	13.70	"
..
12.3	11.52	.70	12.33 .00	12.22 12.33	12.28	-6
13.5	10.60	.10	10.80 .28	10.70 10.52	10.61	+9
12.7	7.40	.60	8.11 .24	8.00 7.87	7.94	+6
12.3	11.52	.52	12.33 .32	12.04 12.01	12.02	+2
12.7	7.40	.108	8.96 .60	8.48 8.36	8.42	+6
12.7	11.52	.70	12.33 .28	12.22 12.05	12.14	+8
13.5	7.40	.56	8.96 .102	7.96 7.94	7.95	+1
13.6	11.52	.38	12.33 .66	11.90 11.67	11.78	+12
13.6	7.40	.24	8.96 .112	7.64 7.84	7.74	-10
"	"	"	"	"	"	"
13.6	..	..	5.71 .14	4.97 4.97	4.97	"
14.2	12.70	.69	13.58 .18	13.39 13.40	13.40	-1
13.6	11.52	.52	12.33 .42	12.04 11.91	11.98	+6
13.5	"	"	8.96 .94	8.02 8.02	8.02	"
13.6	5.71	.28	" ..	5.99 5.99	5.99	"
12.7	"	"	8.96 .112	7.84 7.84	7.84	"
13.5	12.70	.84	13.58 .00	13.54 13.58	13.56	-2
	9.75	.84	10.60 .14	10.59 10.46	10.52	+7
12.7	5.71	.32	" ..	6.03 "	6.03	"
14.2	12.70	.38	13.58 .52	13.08 13.06	13.07	+1
12.3	9.75	.70	10.80 .28	10.45 10.52	10.48	-3

Time Begin.

Estimates of Differences of Comparison Stars of Nova Aurigae April 21, 1892

No. 16

6 4591. 64622. 64629. 64650 64653

m61	m61	m61	m61	m61	.60	0 0 0 0 0	30.
14m	13m	12m	12m	12m	.26	1 0 1 1 1	13
m6w	m5w	m5w	m5w	m5w	.52	1 0 0 0 0	26
w1X	w0X	w1X	w1X	w0X	.06	1 0 0 0 1	3
X4y	X3y	X2y	X3y	X4y	.32	1 0 1 0 1	16
y18	y18	y16	y06	y06	$y \frac{8}{6}$.06	0 0 0 1 1	3
	816		618	X38			

 $\frac{12}{20}$ h
0.40

	11m	8m
m1	6.3	4.8
1u	2.6	2.1
u6w	5.6	4.8
wx	.6	.5
x y	3.6	4.3
y b	0.6	1.0

$$\begin{array}{r}
 19.3 \quad 17.5 \\
 \hline
 .16 \\
 \hline
 11.58 \\
 193 \\
 \hline
 3.088 \quad | 17.5 \\
 \hline
 175 \\
 1338 \\
 \hline
 1400 \\
 1462
 \end{array}$$

$$\begin{array}{r}
 17.5 \\
 16 \\
 \hline
 1050 \\
 175 \\
 \hline
 2500 \quad | 193 \\
 \hline
 193 \\
 870 \\
 \hline
 198
 \end{array}$$

m	0.0	00.00	11.52	N.5.2	11.52	+19
1	6.3	94.173	12.28	11.15	11.34	+1
u	8.9	13.41.50	12.62	11.02	11.28	-5
w	14.5	21.82.61	13.39	11.68	11.21	-12
x	15.1	22.62.72	13.47		11.21	-12
y	18.7	25.03.37	14.16		11.36	+3
6	19.3	27.03.47	14.27		11.37	+4
					7/229	7-27
					11.93	±.08

30
Zhu
Si

$$\begin{array}{r} 5.3 \\ 9.7 \\ 5.5 \\ 6.7 \\ \hline 1.2 \\ \hline 28.4 \end{array}$$

29

April 23, 1892.

Examination of Spectrum of Companion
Stars for Nova Aurigae.

5921 (1934 5982 5875 1965

a	A	(A Bee) Hydrogen line 95 to narrow line bet. 7.6 G=3, 7.6 H=4.
2	B	A Fine bright wedge of greater wavelength (R, B 2133).
3	C	A
c	D	A
e	E	A
f	F	A
g	G	A
g'	H	H
h	K	A
l	L	A? A
k	M	A? A? A? A?
l	O	A
m	P	A
i	Q	A?
u	R	A?
v	S	
x	T	
y	U	
6	W	
8	X	
10	Y	

In measuring Nova Aurigae on the spectrum plates
the star $\alpha = \text{DM} + 30^{\circ} 963 \quad 6.0$
On chart-plates $\alpha = \text{DM} + 31^{\circ} 1048 \quad 6.4$

W. C. Stevens.

Chart plates of
Nova not included
in measurements.

6029 } neither over
6031 } from Laboratory
 } when others
 } were measured.

Spectrum plate
I 5788. not measured
with others on account
of its being recorded.
Chart plate.

May, 10, 1892

See also page 42

I6231

I6232

I6228

~~62249~~~~62250~~~~62246~~

a	0	6.6	7.2	6.3	0	6.55	7.12
	1	6.7	7.4	6.2	1	6.60	7.10
	2	6.7	7.1	6.1	2	6.55	7.00
	3	6.7	6.9	6.1	3	6.48	7.00
	4	6.8	7.3	6.2	4	6.60	7.20
	5-2	6.6	7.3	5-1 6.1	5	6.60	7.12

b	0	6.6	7.4	6.2	0	6.22	6.55	7.32	+2	-1	+3	+1
	1	6.6	7.4	6.2	1	6.25	6.60	7.30	+5	+4	+1	+3
	2	6.6	7.3	6.1	2	6.15	6.55	7.20	-5	-1	-9	-5
	3	6.5	7.5	6.1	3	6.15	6.48	7.20	-5	-8	-9	-7
	4	6.6	7.5	6.1	4	6.20	6.60	7.40	0	+4	+11	+5
	5-3	6.7	5-2 7.5	5-3 6.2	5	6.22	6.60	7.32	+2	+4	+3	+3

c	0	6.5	7.5	6.2
	1	6.5	7.3	6.2
	2	6.5	7.4	6.1
	3	6.3	7.3	6.0
	4	6.4	(7.4)	6.1
	5-1	6.5	7.4	6.2

d	0	6.5	7.2	6.2
	1	6.6	7.1	6.4
	2	6.4	7.0	6.3
	3	6.4	7.1	6.4
	4	6.6	7.3	6.4
	5-3	6.6	5-4 7.1	5-3 6.4

119 334 174
6.20 6.56 7.29

End.
3.55

0	2	13	9	.05	.12	24	.20	+02
1	4	12	10	.10	.10	26	.21	+03
2	2	8	6	.05	.00	16	.13	-05
3	-1	8	6	-.02	.00	13	.11	-07
4	4	16	8	.10	.20	28	.23	+05
5	4	13	9	.10	.12	26	.22	+04

May 17, 1892

for position
 Measures of new variable in Anologium
 and its companion stars. App. 1900 Z.C. 1055 2 38.3 -51 20
 (approx 1900) 2^h 49^m 5^s -50° 10'

Plate B 5691

	α	δ	$\frac{\Delta \alpha}{\cos \delta}$	$\Delta \delta$	μ	α	δ	$\frac{\Delta \alpha}{\cos \delta}$	$\Delta \delta$	μ
a	36.30	69.0	11.46	2.70	1055	2	38.5	-51	23	5 1/2
a'	37.50	22.70	11.84	68.10	1060	2	38.2	-51	18	7 1/2
b	7.20	21.80	02.27	65.40	1307	2	47.7	-50	21	7
c	6.80	14.90	02.15	44.70	1310	2	47.8	-50	41	7 1/2
d	9.65	12.90	03.05	38.70	1285	2	47.0	-50	47	8 1/2
e	2.60	15.65	00.82	46.95		2	49.2	-50	39	
f	2.60	20.85	00.82	62.55		2	49.2	-50	23	
g	7.50	16.55	02.37	49.65		2	47.6	-50	36	
h	3.25	20.05	01.03	60.15		2	49.0	-50	26	
k	2.00	19.55	00.63	57.65		2	49.4	-50	28	
var.	1.10	21.50	00.35	64.50		2	49.6	-50	22	
β	3.10	18.80	00.98	56.40		2	49.0	-50	30	

Unpublished see B3, p. 43.

See p. 50

May 17, 1892.

Measures to determine position of new variable
in Octans and comparison stars.apparent (1900) $17^h 23^m - 86^\circ 45'$ Plate B 3920 $\frac{x \times 2}{86.7} = 0.576$ $y \times 3$

	x	y		abc	18°	90°				
a	595	4065	02.07	121.95	23696	17 30.0	-85 11.64	-7.5	289	21 122.0
b	37.90	2.55	13.16	7.65	22090	16 23.0	-87 24.70	-24.0	156	13.2 7.6
c	27.5	14.40	00.95	43.20	24659	18 10.3	-86 16 7.8	5.8	224	1.0 43.2
d	27.75	3.40	09.64	10.20	23627	17 6.1	-87 18 8	2.6	162	9.6 10.2
e	27.15	5.85	09.43	17.55	23025	17 54	-87 11 8 1/4	13.5	169	9.4 17.6
f	16.85	14.30	05.85	42.90				1.4		5.8 42.9
g	23.00	9.75	07.99	29.25						8.0 29.2
h	24.30	2.70	08.44	8.10						8.4 8.1
k	19.75	9.50	06.86	28.50						6.9 28.5
var	19.80	11.95	06.88	35.85						6.9 35.8

Re measured on
page 50.

	a	b	c	d	e
		-24.0 5.8			
a	-7.5		2.6	13.5	13.6
$\frac{p}{3}$	96.3	52.0	74.7	54.0	56.3
$\log_3 p(a)$	1.9836	1.7160	1.8733	1.7324	1.7505
$\log_3 \tan \alpha(b)$	9.1157	9.6093	8.6567	9.3682	9.3713
(a) + (b)	1.0993	1.3253	0.5300	1.1006	1.1218
$\log^{-1}(a) + (b)$	12.57	21.15	3.39	12.61	13.24
					χ
$\log_{10} \alpha(c)$	9.9963	9.9607	9.9996	9.9878	9.9876
(u) + (c)	1.9799	1.6767	1.8729	1.7202	1.7381
$\log_{10} (u) + (c)$	95.48	47.50	74.63	52.50	54.71

May 18, 1892.

Measures to determine position of new
variable in Sagittarius and comparison stars.

Found on
7012/
B 6949

approx = $\alpha 90, 27271$. $19^{\text{h}} 49.8 - 29^{\text{m}} 27.8\frac{1}{2}$.
Plate B. 4350.

	x	y	$x \times 2$ 29.3 287.21	$y \times 3$ 4x3		$19^{\text{h}} 54.5 - 28^{\text{m}} 52$		x	y
a	24.85	1.75	05.70	5.25	$19^{\text{h}} 2172$	$19^{\text{h}} 52.9 - 28^{\text{m}} 56.72$		47.2	51
b	18.50	5.90	04.24	17.70	2113	$19^{\text{h}} 53.0 - 29^{\text{m}} 7.83$		47.2	54
c	3.10	12.70	00.71	38.10	1995	$19^{\text{h}} 51.4 - 29^{\text{m}} 12.8\frac{1}{2}$		47.3	54
d	2.15	10.45	00.49	31.35	1985	$19^{\text{h}} 49.6 - 29^{\text{m}} 28.83$		47.2	54
e	11.70	10.40	02.66	31.20	2063	$19^{\text{h}} 48.0 - 29^{\text{m}} 32.8\frac{1}{2}$		47.2	54
f	9.60	17.55	02.20	52.65	2048	$19^{\text{h}} 49.3 - 29^{\text{m}} 21.83$		47.2	54
g	1.65	10.00	00.38	30.00		$19^{\text{h}} 51.5 - 29^{\text{m}} 31.93$		47.2	53
h	2.65	12.05	00.61	36.15		$19^{\text{h}} 49.9 - 29^{\text{m}} 15.9\frac{1}{2}$		47.2	53
k	6.60	12.00	01.51	36.00		$19^{\text{h}} 51.5 - 29^{\text{m}} 42.5\frac{1}{2}$		47.2	53
var	4.00	12.35	00.92	37.05		$19^{\text{h}} 49.2 - 29^{\text{m}} 19$		47.2	53
						$19^{\text{h}} 47.6 - 29^{\text{m}} 23$			
						$19^{\text{h}} 49.4 - 29^{\text{m}} 25$			
						$19^{\text{h}} 47.8 - 29^{\text{m}} 29$			
						$19^{\text{h}} 50.3 - 29^{\text{m}} 25$			
						$19^{\text{h}} 48.7 - 29^{\text{m}} 29$			
						$19^{\text{h}} 49.7 - 29^{\text{m}} 26$			
						$19^{\text{h}} 47.9 - 29^{\text{m}} 30$			

Plate B 7072

[illegible]

* This var. identified as C.P.D. -66° 38' 16" 23 50.9 - 66 41.9 ^{mag} _{310.4} ₁₀₀
23 52.2 - 65 57 (1900 ₁₀₀)
Low checked identification Oct. 8 1906

May 23, 1892.

Examination of stars in ~~light~~ near
Castor made at request of
G.E. Hummelen, 719 Ontario Street. See postal card.



Rough sketch

Copy

Plate	Date	Exp.
Plates I 894	March 27, 1890	9 m
" " 914	April 1, 1890	17 m
" " 954	April 5, 1890	10 m
" " 5647	Feb. 15, 1892	10 m
" " 5738	Feb. 17, 1892	11 m
" " 5806	March 6, 1892	13 m
" C 4728	May 18, 1892	11 m

The presence of the stars in question is
confirmed on all of the above plates
and no evidence of variation shown.

I = Central Portion Plate
 II = Measures near outside.
 III = Intermediate portions.

May 25, 1892 See also p 36

I 6228 Plate 2246				I 6231 Plate 2249				I 6232 Plate 2250			
I	II	III	IV	I	II	III	IV	I	II	III	IV
1	6.3	6.2	6.3	6.3	6.8	6.8	6.9	7.2	7.4	7.4	7.5
2	6.3	6.3	6.3	6.4	6.8	6.9	7.0	7.3	7.4	7.5	7.7
3	6.3	6.4	6.4	6.5	6.9	6.9	7.0	7.4	7.5	7.4	7.5
4	6.4	6.4	6.3	6.4	6.8	6.9	6.7	7.4	7.5	7.3	7.5
5	6.2	6.3	6.3	6.4	6.8	6.8	6.8	7.4	7.5	7.3	7.7
6	6.2	6.3	6.2	6.4	6.9	6.8	6.9	7.5	7.6	7.6	7.7
7	6.3	6.4	6.4	6.5	6.9	6.8	6.8	7.5	7.5	7.2	7.6
8	6.4	6.4	(6.2)	6.3	6.9	7.0	6.8	7.4	7.5	7.3	7.4
9	6.2	6.3	6.4	6.5	6.8	6.8	6.8	7.5	7.5	7.3	7.5
10	6.3	6.4	6.4	6.5	6.9	6.9	7.0	7.3	7.4	7.5	7.8
	6.29	6.34	6.32	6.42	6.85	6.86	6.85	7.39	7.48	7.38	7.59
	±.05	±.06	±.06	±.06	±.05	±.06	±.07	±.07	±.04	±.10	±.11

6.29	6.34	6.32	6.42	0	5	3	13	±.06	0
6.85	6.86	6.85	6.96	0	1	0	11	±.06	1
7.39	7.48	7.38	7.59	1	10	0	21	±.08	5
				0	+5	+1	+15		

9	14	12	22
5	6	5	16
9	18	8	29

.06

June 24, 1892.

Examination of plates containing region of Espin's
inspected variables and of Deneb II 15, see
Espin's letter of April 27, 1892

$\text{Dm} + 55^\circ 18' 70'' 16'' 39'' 49.1'' + 55^\circ 11.8'' \text{ Magn } 9.2.$

Plates	Date
B 1970	Dec. 1, 1887
B 2254	Jan. 24, 1888
B 2328	Feb 9 1888
I 3693	June 8 1891
I 3717	June 12 1891
I 6389	June 1, 1892

An examination of
these plates shows
no evidence of variation
the star being always brighter
photographically than $\text{Dm} + 55^\circ$
1874 magn. 9.5 fainter than
 $\text{Dm} + 55^\circ 18' 70'' 16'' 39'' 49.1''$ magn 8.3

about equal to $\text{Dm} + 55^\circ 18' 64''$ Magn. 8.7.

(approx 1855) $18^\circ 35' 36'' + 55^\circ 29'$

Plates	Date
B 1946	Nov. 30, 1887
B 1970	Dec. 1, 1887
I 2194	Nov. 5, 1890
I 4037	Aug. 19, 1891
I 6390	June 1, 1892.

An examination of these
plates shows no evidence
of variation the star being
always fainter than
 $\text{Dm} + 54^\circ 20' 25''$ magn 9.3 which
is photographically the fainter
 Dm star near, and

slightly brighter than a faint star which
follows $\text{Dm} + 55^\circ 21' 00''$ by about 0.2 m, S 8'.

E. Kinn 13 Deneb II 15 Over.

June 4, 1892.

Annex II, 15. Variable.

sp.	Plates	Date	Spec.	Spec.
	I 689	Feb. 20	1890	TV Type
	I 2317	Nov 20	1890	IV Type
	I 2720	Jan 7, 1891		IV Type
	I 2819	Jan 14, 1891		IV Type
	I 3207	March 7, 1891		IV Type

Ch.	Plates	Date	Mag.	Notes
	B 351	Feb 5	1866	0.7 for than star fold. extm, S. 4.
	I 612	July 19 1886 Feb 13, 1891	0.5	br. " " " " "
	I 3063	Feb 13, 1891	0.3	br. " " " " "
	I 5221	Dec. 17, 1891	0.2	for. " " " " "
	I Jan 5372	Jan. 8 1892	0.3	br. " " " " "

July 6, 1892.

Examination of Chart plates for
A. W. Roberts Variable ~~W Cyg~~ Barinae

Charts B 5012 taken

and

B 5108 taken

show no evidence

of variation. Position estimated $9^h 19^m 3 - 55^\circ 30' (1900)$

August 10, 1892.

Examination of Charts for A. W. Roberts
 Suspected variable L6887 RA. Dec.
 $16^h 31.5^m - 56^{\circ} 47' (A9C 22473)$

The star is certainly variable see plates
 B3805 & B4009. Comparison stars to be
 selected and measures made.
 measure at same time L6743 which
 A.W.R. also suspects of variability.

			S.A.		μ mag	
at	3714	July 3 1889	$15^h 50'$	0	8.0	22.0
4	3805	July 13 "	17°	0	8.0	
4	3953	Aug 6 "	$16^{\circ} 28'$	2	7.6	
4	4009	Aug 12 "	$16^{\circ} 14'$	4	7.3	
5	4047	Aug 20 "	$16^{\circ} 40'$	4	7.0	
3	6261	June 11 1891	$19^{\circ} 07'$	4	7.3	
5	6277	June 12 "	$18^{\circ} 20'$	4	7.3	
4						
	<u>29</u>					
	7					

August 13, 1892

Estimates of A. W. Roberts - variable 46887.

Plate B3714 taken July 3, 1889 S.T. 15^h 50^m

$b = 30.16^h 1888$ v o b =

16 27.4 - 58 22 8

$\alpha = a.g.c. 22490 = a$ 4 v

16 02.3 - 58 40 7.3

Plate B3805 taken July 13, 1889 S.T. 17^h 00^m

v o b

a 4 r

Plate B4009 taken August 12, 1889 S.T. 16^h 14^m

v 5 b

v o a

Plate B 3953 taken Aug. 6, 1889 S.T. 16^h 28^m

v 2 b

a 2 r

Plate B 4047 taken Aug. 20, 1889 S.T. 16^h 40^m

v 3 b

a o r

Plate

Plate B 6261 June 11, 1891 S.T. 19^h 07^m

v 5 b

a o r

Plate 6277 June 12, 1891 S.T. 18^h 30^m

v 4 b

a o r

August 23, 1892.

Measures of A. W. Roberts new variable
star in Vela $20^{\text{h}} 8^{\text{m}} 28.02^{\text{s}}$ $8^{\circ} 33' 37'' - 46^{\circ} 55' 5''$ 8
See letter of July 1892

Plate B 4835 taken

measured for position of var. & comp. stars

	x	y	x^2	y^2	xy	$\frac{1}{x}$	$\frac{1}{y}$
var.	4.65	6.20	01.36	18.60	29.82	0.215	0.161
a	21.00	10.75	06.16	32.25	22.57	0.048	0.093
b	8.15	8.80	02.39	26.40	19.72	0.123	0.114
c	12.30	10.20	03.61	30.60	25.51	0.081	0.098
d	6.10	2.80	01.79	8.40	17.08	0.164	0.357
e	1.90	2.30	00.55	6.90	4.37	0.526	0.435
f	2.70	3.80	00.79	11.40	10.26	0.370	0.263

Plate ^B 4643 taken

	Wing	Tail	Culmen	Weight	Age	Sex	Locality	Date	Collector
4643	186	69	8.7	132	218	♂	Nov 18, 1889	S. J. G. T.	
4835	187	70	8.7	132	218	♂	Apr 1, 1890	S. J. G. T.	
5013	189	71	8.7	132	218	♂	May 2, 1890	S. J. G. T.	
7602	189	71	8.7	132	218	♂	May 16, 1892	S. J. G. T.	
7624	189	71	8.7	132	218	♂	" 17 "	S. J. G. T.	

August 23, 1892.
Meas. of A. W. Roberts new var. in Tela (Continued)

Plate B 4835 taken

var. 6.8 87

a 5.5

b 6.3

c 7.0

d 7.5

e 8.0

f 8.8

			mm
ab	6	8	7
bc	6	7	8.7
cd	4	5	8.4
de	5	5	5
ef	6	8	7

ef 7 cd 4 de 5

Plate B 5013 taken

var

a not on pl.

b on edge of pl.

c not on pl.

d 7 var.

e 4' var. 9.6 9.6a

f var 6 9.5

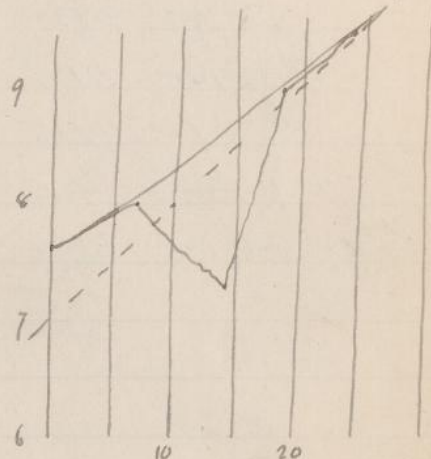


Plate B 760³⁶ taken

Images not comparable with scale.

c 3 v 8.7

v 1 d 8.7

v 5 c

Plate B 76⁵⁸ taken

Images not comparable with scale.

d 4 v 9.2 9.3

v 1 c 9.4

v 6 f

Dec 1, 38

August 23, 1892

Meas. to determine position of new variable in Octans and comparison stars.

* approx 1900. $17^{\text{h}} 23^{\text{m}} - 86^{\circ} 45'$

Plate B 3920 taken

	α	δ	α_{true}	δ_{true}		α	δ		
a	23.20	2.30	05.54	6.90	23696	17 30.0	-85 11.64	5.5	6.9
b	2.25	46.65	00.99	139.95	22090	16 23.0	-87 24.70	1.0	140.6
c	33.25	26.75	10.81	80.25	24659	18 10.3	-86 16.78	10.3	80.2
d	12.10	44.10	05.14	132.30	23027	17 6.1	-87 18.8	5.1	132.3
e	12.00	41.50	04.91	124.50	23025	17 54	-87 11.84	4.9	124.5
f	19.70	38.70		92.10		17 28	-86 38.73		
g	14.00	36.90		110.70		17 11	-86 59		
h	14.65	44.05		132.15		17 19	-87 18		
k	18.20	36.10		108.30		17 26	-86 54		
l	36.10	18.20							
var.	17.50	33.70		101.10		approx 17 23	-86 45		

a	-8.10	-29.60	-19.35	-88.80	14.4	40
b	+12.70	+14.70	+55.95	+44.10	19.0	40
c	-18.25	-5.30	-55.05	-15.90	15.3	(32)
d	+2.85	+12.20	+118.9	+36.60	18.0	41
e	+3.00	+9.55	+12.27	+28.65	17.7	42
f	-4.65	-1.03	-15.68	-3.09	28.9	41
g	+1.00	+4.95	+3.82	+14.85		
h	+0.30	+12.10	+1.27	+36.30		
k	-3.20	+4.20	-11.83	+12.60		
l	-3.80	+0.65	-11.83	+1.95		
var.	-2.50	+1.70	-8.96	+5.10	17 25.9	-86 46 (1900).

* Called SOctantis & later identified as CPD -86 346 $17^{\text{h}} 13.1 - 86^{\circ} 44' (1875)$
 (CPD not in existence at time star was discovered) $17^{\text{h}} 24.0 - 86^{\circ} 46' (1900)$
 Magn. 9.5

August 23, 1892.

Mess. to determine position of new variable
in Octans and comparison stars. Found on
B 6846

approx 1900 $5^h 58^m -86^\circ 27'$

Later identified as CPD - $86^\circ 42' 5''$ 56.4 - 86 26 (1900)

Plate B 5684 taken for chart. see B 3 p. 44.

	x	y	x_{red}	y_{+3}	alt.	h	m
b	30.20	26.65			7601	6 6.2 - 85 56	68 - 6.63 ²⁸ 596
a	50.00	37.5			9770	7 22.0 - 86 52	67 - 1 21.3 ²⁴ 28 60.7
c	0.80	10.30			5292	4 29.1 - 86 30	82 + 1 27.9 ¹⁸ (12) (570)
7.2 d	27.0	12.60			approx	4 25. - 86 26	$3 \sqrt{21.7} / 7.2 + 1$ 20.1 ¹¹
e	10.10	12.80			"	5 1. - 86 33	+ 1 20.0 + 10
f	35.15	17.40			—	6 20 - 86 25	- 23.1 - 5
g	36.35	19.55			—	6 24 - 86 19	- 26.4 - 11
h	32.30	12.40			—	6 14 - 86 37	- 15.0 + 11
k	37.05	21.05			—	6 25 - 86 14	- 27.4 - 15
l	35.15	20.40			—	6 20 - 86 19	- 22.8 - 13
m	32.75	14.50			—	6 12 - 86 32	- 15.9 + 4
var.	26.90	16.65			approx	5 58 - 86 26	+ 3.3 - 2

a	-2.35	-10.65	-6.57	-31.95
b	-22.05	+ 8.10	-81.33	+24.30
c	+27.10	+ 5.85	+87.66	+17.55
d	+25.20	+ 3.65	+80.13	+10.95
e	+17.80	+ 3.30	+80.03	+ 9.90
f	-7.30	-2.45	-23.15	-4.90
g	-8.50	-3.55	-26.36	-10.65
h	-4.45	+3.65	-15.01	+10.95
k	-9.10	-5.15	-27.45	-15.45
l	-7.35	-4.45	-22.79	-13.35
m	-4.85	+1.45	-15.90	+4.35
var.	+1.00	-0.65	+3.28	-1.95

5 56.8 86 26

4 (875)
16 (1900)
5

August 23, 1892.
 Meas. to determine position of new variable
 star in ~~Borg~~ ^{Virgo} and comp. stars.

Approx 1900 $14^h 22^m + 5^s 2'$

Plate I 6288 taken

	x	y	$x + 10.9$ 85.4 = 99.56	$y + 2.72$ 41				
a	0.30	13.25	00.33	36.04	$+5^{\circ} 28' 79''$	14 21.0 + 5 18	14 18.7 + 5 30	7.8
b	39.50	23.50	43.24	63.92	$+5^{\circ} 28' 79''$	14 28.0 + 5 46	14 25.8 + 5 58	7.2
c	7.50	22.40	08.53	60.93	$+5^{\circ} 28' 80''$	14 22.2 + 5 43	14 20.0 + 5 55	8.4
d	0.46	27.10	(00.44)	(33.71)	$(+6^{\circ} 28' 81'')$	14 20.9 + 5 57	14 18.7 + 6 9	8.7
e	15.40	21.30	46.86	57.94	$+5^{\circ} 28' 82''$	14 23.6 + 5 39	14 21.4 + 5 51	8.5
f	5.30	17.0	5.80	3.26	$+4^{\circ} 28' 63''$	14 21.9 + 4 45	14 19.6 + 4 57	9.5
g	16.30	3.55	17.84	9.66	$+5^{\circ} 28' 83''$	14 23.9 + 4 53	14 21.6 + 5 5	9.5
h	15.80	1.65	17.30	4.49	$+4^{\circ} 28' 70''$	14 21.7 + 4 46	14 19.4 + 4 58	9.5
k	13.90	1.60	15.22	4.35	$+4^{\circ} 28' 67''$	14 23.4 + 4 46	14 21.1 + 4 58	9.5
l	4.70	3.40	05.12	9.25	—	14 21.8 + 4 51	14 19.5 + 5 3	—
m	8.95	13.75	09.80	37.40	—	14 22.4 + 5 19	14 20.2 + 5 31	—
n	9.20	9.50	10.07	25.84	—	14 22.6 + 5 12	14 20.3 + 5 24	—
var	7.85	9.25	08.59	25.16	—	14 22.3 + 5 7	14 20.0 + 5 19	—

October 27, 1892

Illuminator of Chart plates for
a star which is in R.A. $11^h 35^m - 89^{\circ} 18'$ (approx 1900).
Although apparently brighter than the seventh
magnitude this star is not contained
in the Argentine General Catalogue. It is probably
a blue star giving a bright photographic
image although perhaps faint visually since
it appears on Plates B 3302, 3306, 3307, 4107, 5483,
5783 and 7463 and is always of the same
brightness.

November 14, 1892.

Examination of Chart plates for suspected
variable in Cluster N.G.C. 6242 = G.C. 4249 = 4 I 10, $\Delta 520$.
(cf. prof. 190) R.A. $16^h 48^m.7$ $-39^\circ 21'$ fol. A.G.C. 22870 and about $6''$ S.

The following plates show the star always fainter
than ^{star} "a" and "f" and brighter than c. Plates B3400,
3803, 3807, 4833, 5153, 5418, 5476, 5487, 5658, 5929, 5930, 5951,
5952, 5987 and 5988. On plate B3625 it is apparently
the brightest star in the cluster. On Plate B6762
its spectrum is of the third type having the
hydrogen line "B" bright.

Plates B3529, 6103, 7568, 7569, 7570, 7638, 7639, 7640 and
7864 also cover the region but as they could not
be found in the boxes they have not been
examined.

December 31, 1892

For discussion of R Trianguli (BD +33° 47').
by F. S. Archbold See Astron. Nach. Vol. CXXXI p. 259.

March 23, 1893.

Organization of photographic charts
for ^{fairly} star near γ Aries at request
of Prof. S. Ph. Bury, Quebec, Canada
(see letter of March 21, 1893).

The star is probably $DM + 18^{\circ} 24'$ mag. 9.1
R.A. $1^h 45^m$ Dec. $+18^{\circ} 35'$ (1855) as this corresponds
to the position of the object with regard to
that of γ .

$A = +18^{\circ} 24'$ $B = +17^{\circ} 26' 55''$ $C = +18^{\circ} 24' 2''$ $9.1 = 9.5$
Pl. B 180 taken Dec. 7, 1885

8.4 B 3 A 8.7 9.2 = 8.95

9.2 A 3 C 9.5

Pl. I 263 taken Dec. 7, 1889

8.4 B 3 A 8.7 9.2 = 8.95

9.2 A 3 C 9.5

Pl. I 2609 taken Dec. 27, 1890

8.4 B 2 A 8.6 9.2 = 8.90

9.2 A 3 C 9.5

Pl. I 4247 taken Sept. 25, 1891

8.4 B 3 A 8.7 9.3 = 9.00

9.3 A 2 C 9.5

Pl. I 4739 taken Nov. 6, 1891

8.4 B 3 A 8.7 9.3 = 9.00

9.3 A 2 C 9.5

March 23, 1893.

Pl. I 5735 taken Dec. 13, 1891.

8.4 B 3 A 8.7 9.2 = 9.00
9.2 A 2 c 9.5

May 4, 1893

Examination of photographic charts for
confirmation of A.W. Roberts new variable ^{in Carina}
in R.A. $8^h 27^m$ Dec - $58^\circ 51'$ (Letter "1893")

→ For comparison stars see B4995

Exp. 12^m Plate B4706 taken Dec. 10, 1889 $7^h 40^m$

var. = 3C, $8^h 23^m 58$ 8 $29.1 - 58 53$ 9

a = abs. C. 11213 8 $17.8 - 59 47$ $7\frac{1}{4}$

b = " 11612 8 $32.6 - 58 27$ $7\frac{3}{4}$

c = 3C $8^h 19^m 56$ 8 $24.3 - 59 6$ $8\frac{1}{2}$

7.4 r 2 b 7.8

7.2 a 4 r 7.6 7.60 magn. v. 0.0

9 m T
h m
19 07
2

.1

.4

19.5

Exp. 11^m Plate B4700 taken Dec. 9, 1889 $7^h 43^m$

7.2 a 4 r 7.6 7.5 7.55 magn. v. 0.1

7.5 r 3 b 7.8

19 11

.1

.4

19.7

Exp. 12^m Plate B4995 taken May 1, 1890 $12^h 47^m$

7.48 b 3 r 7.9 8.2 8.85 magn. v. 1.0

8.2 r 3 c 8.5

h m
14 48

.1

.4

15.3

Exp. 15^m Plate B5007 taken May 2, 1890 $10^h 00^m$

7.48 b 1 r 7.9 8.1 7.90 magn. v. 1.1

8.1 r 4 c 8.5

12. 01

.1

.4

12.5

Exp. 12^m Plate B5008 taken May 2, 1890 $10^h 46^m$

7.48 b 2 r 7.8 8.1 7.95 magn. v. 0.1

8.1 r 4 c 8.5

12 47

.1

.4

13.3

Exp. 10^m Plate B5012 taken May 2, 1890 $11^h 35^m$

Too near edge 7.48 b 4 r 7.8 8.3 8.25 magn. v. 0.1

of pl. for accurate 8.3 r 2 c 8.5 measurement.

Image in very bad focus

14.1

May 4, 1893.

A.W. Roberts var (Continued.)

Ex. 60^m Plate B 5108 taken May 7, 1890 9^h 31^m
 Too near } 7.6⁸ b 2 v 7.8⁸⁰ 8.1 7.9⁸⁵ magn. v. 01
 edge of plate } 8.1 v 4 c 8.5

11	12
	5.
	4
<hr/>	
12	1

Ex. 60^m Plate B 5907 taken May 16, 1891 11^h 39^m
 7.8⁸ b 4 v 8.2² 8.4 8.3³ magn. v. 11
 8.4 v 1 c 8.5

12	46
	5
<hr/>	
13	3

Ex. 60^m Plate B 724⁶⁵ taken March 17, 1892 9^h 43^m
 7.2 a 3 v 7.5 7.5 7.50 magn. v. 00
 7.5 v 3 b 7.8

14	43
	5
<hr/>	
15	2

Ex. 10^m Plate B 744⁷² taken April 24, 1892 10^h 10^m 12.8
 7.2 a 4 v 7.6 7.6 7.60 magn. v. 00
 7.6 v 2 b 7.8

12	40
<hr/>	
10	10

Ex. 10^m Plate B 766⁹⁶ taken May 19, 1892 11^h 00^m
 7.2 a 4 v 7.6 7.6 7.60 magn. v. 00
 7.6 v 2 b 7.8

11	52
<hr/>	
11	00

May 10 1893.
Measures of New Variable Star in Pavo
~~BA~~ 9C, 18 56 + RA 18 09 - 63 35 { 9 1/2 (1875).
9C 24674 2 1/2 C. mag. 8 { 7 1/2

near edge of pl. Plate 3995 taken August 8, 1889 24.10 m
 Images poor 7.7 6 3 r 8.0 8.2 8.10 1.1

8.2 r 2 c 8.4

Images elongated 7.7 6 3 v 8.0 8.2 8.10 1.1
8.2 v 2.0 c 8.4

8.2 ✓ 2 C 8.4

1 (Plate B 4016 taken August 13, 1889) 24.60 m

7.7 6 3 2 8.0 8.2 8.10 11
8.2 2 8.4

Imagis chrysol. 86 d 3 v 89 90 895 10
90 v 2 e 92

90 r 2 e 92

7.0	a	5	r	7.5	7.6	7.8	7.63	102
7.6	r	1	b	7.7				
7.8	r	6	c	8.4				

7.0 a 5 r 7.5 7.6 7.8 7.63 102

7.6 r 1 b 7.7

7.8 v b c 8.

	a	5.7	7.0
	b	6.4	7.7
8.6	c	7.1	8.4
5.9	d	7.3	8.6
3.0	e	8.0	9.3
3) 20.1	f	8.6	9.9
<u>6.7</u>	g	9.0	10.3
8.0	h	9.4	10.7
6.7	i	var. 6.2	7.5
1.3			

var. 6.4 7.5

(Sp.) Plate B 85⁸³~~27~~ taken Sept. 17, 1892 Ex. 89m
7.7 6 2 v 7.9

May 10, 1893.

Summary of new Var. in Pavo $9^h 18^m 56^s$ $18^{\circ} 09' - 63^{\circ} 38' 9''$

Pl.	Date	Exp. Instrum.	a	b	c	d	e	f	g	h	var.
B3995		Bache Tel.									8.10
" 4016		"									8.10
" 4048		"									8.10
" 4138		"									8.95
" 6287		"									7.63
" "		"	7.0	7.7	8.4	8.6	9.3	9.9	10.3	10.7	7.5
" 6289		"									7.60
" "		"	$\frac{7.1}{7.15}$	$\frac{7.7}{7.70}$	$\frac{8.4}{8.40}$	$\frac{8.6}{8.65}$	$\frac{9.3}{9.25}$	$\frac{9.9}{9.80}$	$\frac{10.3}{10.20}$	$\frac{10.7}{10.55}$	7.5
" 8537		"									7.9

Oct 6, 1893 B6287 selected for env. for ident see pl. B6289

June 1, 1893

Meas. of L de Ball's new variable
BD +1° 4357 20 44 19 + 2° 2' 2.3 (1890 Sept 13)

Plate I 1908 taken.

$$a = BD + 29242 \ 20 \ 38.7 + 2 \ 13 \ 8.5$$

$$b = BD + 1° \ 4370 \ 20 \ 41.3 + 1 \ 30 \ 8.3$$

$$c = BD + 1° \ 4362 \ 20 \ 40.1 + 1 \ 59 \ 9.0$$

$$d = BD + 1° \ 4357 \ 20 \ 38.0 + 1 \ 59 \ 9.3$$

Plate I 1908

4 c 1 v

r 2 d

Plate I 4153 Taken

c 1 v

r 3 d

Plate B 6024 taken

c 2 v

r 2 d

Plate B 6550 taken

c 2 v

r 2 d

Plate I 6877 taken

c 0 v

r 3 d

June 1, 1893
Meas. of L de Ball's var. (cont)

Plate I 7118 taken

c o r

v 3 d

Plate I 7205 taken

c o r

v 3 d

June, 8, 1893

Measurements of Spectra in Praesepe.

Plate I 2339.

No.	δ	κ	cl.	Rem.	Limit.	Kline.	Inters.	Fluo.	Br.
1	10.6	13.9	E		K	K=H	2	—	6.5
2	10.6	15.5	E		K	K=H	1	—	7.0
3	10.6	15.6	G		K	K=H	2	—	6.4
410,2; 434,2. 4	10.5	16.2	F	R	K	K=H	1	—	6.8
5	10.8	16.9	E		K	K=H	1	—	6.8
410,2; 434,2. 6	10.5	17.5	F	R	α	K=H	2	—	6.3
7	11.0	17.7	E		K	K=H	1	—	6.9
8	11.2	13.4	G5H		K	K=H	1	—	6.5
410,6; 434,6. 9	11.2	13.7	F	R	α	K=H	2	F	6.1
10	11.3	14.8	G		K	K=H	2	—	6.1
410,2; 434,2 11	11.2	16.0	F	R	K	K=H	1	—	6.5
12	11.3	16.7	A		E	K=.1	3	F	5.2
13	11.7	13.9	A		β	K=.5	3	—	5.8
14	11.6	14.2	A		β	K=.1	3	F	5.5
410,1; 434,1. 15	11.9	15.2	F	R	K	K=H	3	—	5.9
16	12.0	15.8	H		H	H	1	—	6.8 7.3
410,6; 434,6. 17	12.0	16.0	F	R	K	K=H	2	—	6.5
410,5; 434,5. 18	11.9	16.3	F	R	γ	K=H	2	—	6.0
410,2; 434,2. 19	11.7	16.5	F	R	β	K=H	2	—	6.2
410,3; 434,3. 20	12.0	17.0	F	R	α	K=H	2	—	6.2
410,1, 434,1. 21	11.9	17.3	F	R	K	K=H	1	—	6.7
410,2; 434,2. 22	12.3	14.9	F	R	α	K=H	2	—	6.3
23	12.1	15.1	H		H	H	1	—	7.2 7.8
24	12.4	15.4	A		γ	K=H	2	F	5.9
25	12.1	15.6	E		K	K=H	1	—	6.8

approx
1355 Position

Est. by M.C.S. B.D. 7/0. R.A. Dec. Magn.

8	27.2	+21.4	+21 1872	8	27.3	+21 19	9.0
8	30.8	+21.3	+21 1879	8	30.6	+21 18	9.3
8	30.9	+21.3	+21 1880	8	30.7	+21 18	8.6
8	31.9	+21.4	+21 1884	8	32.0	+21 21	9.2
8	33.4	+21.2	+21 1891	8	33.3	+21 12	9.3
8	34.9	+21.3	+21 1894	8	34.5	+21 20	9.1
8	35.1	+21.1	+21 1896	8	34.9	+21 8	8.7
8	26.5	+21.1	+21 1867	8	26.3	+21 4	8.9
8	27.0	+21.1	+21 1871	8	26.9	+21 3	8.6
8	29.0	+20.9	+20 2129	8	29.1	+20 59	8.0
8	31.6	+21.1	+21 1882	8	31.5	+21 4	8.9
8	33.0	+20.9	+20 2178	8	32.9	+20 59	7.0
8	27.5	+20.8	+20 2122	8	27.3	+20 49	8.7
8	27.9	+20.8	+20 2125	8	27.9	+20 51	8.1
8	30.0	+20.7	+20 2136	8	30.0	+20 43	8.0
8	31.3	+20.7	+20 2147	8	31.2	+20 41	9.0
8	31.6	+20.7	+20 2154	8	31.6	+20 41	9.0
8	32.2	+20.7	+20 2169	8	32.1	+20 42	8.8
8	32.7	+20.8	+20 2173	8	32.5	+20 47	8.7
8	33.8	+20.7	+20 2186	8	33.6	+20 41	8.9
8	34.3	+20.7	+20 2191	8	34.0	+20 41	9.0
8	29.2	+20.5	+20 2131	8	29.2	+20 31	8.8
8	29.9	+20.6	+20 2134	8	29.7	+20 38	9.2
8	30.3	+20.5	+20 2138	8	30.3	+20 30	8.4
8	30.9	+20.6	+20 2142	8	30.7	+20 37	9.0

R.A. Dec. 1900

8	29.9	+21° 10	✓
	33.2	+21 9	✓
	33.3	+21 9	✓
	34.6	+21 12	✓
	35.9	+21 3	✓
	37.1	+21 11	✓
	37.5	+20 59	✓
	28.9	+20 55	✓
	29.5	+20 54	✓
	31.7	+20 50	✓
	34.1	+20 55	✓
	35.5	+20 50	✓
	29.9	+20 40	✓
	30.5	+20 42	✓
	32.6	+20 34	✓
	33.8	+20 32	✓
	34.2	+20 32	✓
	34.7	+20 33	✓
	35.1	+20 38	✓
	36.2	+20 32	✓
	36.6	+20 32	✓
	31.8	+20 22	✓
	32.3	+20 29	✓
	32.9	+20 21	✓
	33.3	+20 28	✓

June, 8, 1893.
Plate I 2339.

No.	S.	H.	bl.	Pen.	Limit	K line	Intens.	Flue.	Br.
26	12.4	15.4	A		γ	K=H	2	F	5.9
27	12.2	15.7	G5H6		γ	K=H	1	—	6.7
28	12.2	15.9	A		γ	K=.5	3	F	5.6
29	12.3	16.0	E		γ	K=H	1	—	6.6
30	12.3	16.1	K6		γ	K=1.2	3	—	5.2 } 5.7 }
31	12.4	16.1	A		δ	K=.1	4	F	5.2
32	12.4	16.2	E		γ	K=H	1	—	6.8
33	12.4	16.6	F		γ	K=H	2	—	6.2
34	12.5	16.7	A		α	K=H	2	—	6.1
35	12.5	17.0	G5H6		γ	K=H	3	—	5.5 } 5.9 }
410,5,434,5.	36	12.2	17.3	F	R	γ	K=H	1	— 6.8
37	12.9	13.9	A		γ	K=.3	3	F	5.5
38	12.9	14.9	A		γ	γ	3	F	5.6
39	12.7	15.3	G5H6	γ	γ	K=H	1	—	6.8 { 6.9, 1
* 40	12.9	15.6	E		γ	K=H	1	—	6.7 6.6
410,6,434,6.	41	13.0	15.7	F	R	γ	K=.8	3	— 5.6
410,3,434,3.	42	12.8	15.9	F	R	γ	K=H	4	F 5.1
June 22. '93.	43	13.0	16.1	E		γ	K=H	1	— 7.3
44	12.7	16.2	A		α	γ	2	—	6.0
45	13.0	16.2	A		β	γ	3	—	5.6
410,2,434,2.	46	13.0	16.3	F	R	γ	K=H	3	— 5.6
410,4,434,4.	47	12.9	16.4	F	R	γ	K=H	3	— 5.3
410,2,434,3.	48	12.7	16.7	F	R	γ	K=H	2	— 6.3
49	13.0	16.9	G5H6	γ	γ	K=H	1	—	6.4 { 6.6 6.8 }
50	13.0	17.0	E		γ	K=H	1	—	6.6
51	13.5	15.6	E		γ	K=H	1	—	6.8
52	13.3	13.7	F		γ	K=H	3	—	5.3
410,1,434,1	53	13.3	14.6	F		γ	K=H	1	— 6.5

approp. 1855 Position

8	30.9	+20.5	+20	2141	8	30.7	+20	31	8.5
8	31.0	+20.5	+20	2145	8	31.0	+20	33	9.1
8	31.5	+20.6	+20	2148	8	31.4	+20	36	8.0
8	31.7	+20.6	+20	2155	8	31.6	+20	32	9.1
8	31.8	+20.6	+20	2158	8	31.8	+20	31	7.0
8	31.9	+20.5	+20	2159	8	31.8	+20	29	7.3
8	32.0	+20.5	+20	2161	8	31.9	+20	30	9.0
8	32.8	+20.4	+20	217 ⁴ 8	8	32.8	+20	⁶ 27	9.0
8	33.0	+20.4	+20	2179	8	32.9	+20	26	8.6
8	33.6	+20.4	+20	2185	8	33.5	+20	23	7.5
8	34.3	+20.6	+20	2189	8	34.0	+20	33	9.2
8	27.6	+20.3	+20	2123	8	27.4	+20	16	8.2
8	29.3	+20.3	+20	2132	8	29.3	+20	15	8.2
8	30.3	+20.4	+20	2137	8	30.2	+20	22	9.1
8	30.9	+20.2	+20	2140	8	30.7	+20	14	8.9
8	31.0	+20.2	+20	2143	8	30.8	+20	11	8.0
8	31.5	+20.3	+20	2149	8	31.4	+20	18	7.0
8	31.8	+20.2	+20	2157	8	31.7	+20	14	9.5
8	32.1	+20.3	+20	2168	8	32.1	+20	21	8.5
8	32.2	+20.2	+20	2165	8	32.0	+20	12	8.5
8	32.2	+20.2	+20	2166	8	32.0	+20	10	7.3
8	32.6	+20.2	+20	2172	8	32.4	+20	14	7.1
8	33.0	+20.3	+20	2177	8	32.8	+20	20	9.0
8	33.4	+20.2	+20	2182	8	33.3	+20	10	8.7
8	33.5	+20.2	+20	2183	8	33.4	+20	10	9.3
8	26.8	+20.0	+20	2117	8	26.7	+20	0	9.2
8	27.0	+20.1	+20	2118	8	27.0	+20	5	7.7
8	28.6	+20.1	+20	2128	8	28.7	+20	6	9.2
8	28.6	+20.1	+20	2128	8	28.7	+20	6	9.2

R.A.		Dec.	
8	33.3	+20° 22'	✓
	33.6	+20 24	✓
	34.0	+20 27	✓
	34.2	+20 23	✓
	34.4	+20 22	✓
	34.4	+20 20	✓
	34.5	+20 21	✓
	35.2	+20 18	✓
	35.5	+20 17	✓
	36.1	+20 14	✓
	36.6	+20 24	✓
	30.0	+20 7	✓
	31.9	+20 6	✓
	32.8	+20 13	✓
	33.3	+20 5	✓
	33.4	+20 2	✓
	34.0	+20 9	✓
	34.3	+20 5	✓
	34.7	+20 12	✓
	34.6	+20 3	✓
	34.6	+20 1	✓
	35.0	+20 5	✓✓
	35.4	+20 11	✓
	35.9	+20 1	✓
	36.0	+20 1	✓
	29.3	+19 51	✓
	29.6	+19 56	✓
	31.3	+19 57	✓

*Not on Dr. Chart

June, 22, 1893
Plate I 2339.

No.	δ	H.	Cl.	Rem	Limit	K Line.	Intens.
410,5;434,5.54	13.4	15.0	F	R	β	K=H 2	- 5.9
410,5;434,5.55	13.5	15.5	F	R	α	K=H 1	- 6.4
410,7;434,7.56	13.3	15.7	F	R	K	K=H 2	- 6.2
57	13.3	16.0	GSK		K	K=H 3	- 5.4 ^(5.4) _(5.6)
410,4;434,4.58	13.3	16.1	F	R	K	K=H 3	- 5.3
59	13.4	16.1	A		α	H 2	- 5.7
60	13.3	16.2	A		γ	H 2	F 5.8
61	13.3	16.3	A		δ	K=2 4	F 5.0
62	13.2	16.6	A		γ	K=3 3	F 5.3
63	13.6	14.0	H		H	H 1	- 7.4 8.0
64	14.0	15.0	A		β	K=2 3	F 5.2
65	13.9	16.0	A		β	K=H 2	F 5.5
410,5;434,5.66	13.7	16.3	F	R	γ	K=H 3	- 5.3
410,8;434,8.67	14.0	16.4	F	R	β	K=H 2	- 5.6
68	13.8	16.5	GSK		H	H 1	- 6.9
410,7;434,7.69	13.9	16.8	F	R	γ	K=H 2	- 5.7
410,7;434,7.70	13.6	17.2	F	R	γ	K=H 2	- 5.7
71	14.2	14.9	G		K	K=H 1	- 6.8
72	14.1	16.1	G		K	K=H 1	- 6.9
410,2;434,2.73	14.1	16.4	F	R	α	K=H 2	- 6.3
410,3;434,3.74	14.2	17.0	F	R	K	K=H 1	- 6.8
75	14.3	17.7	G		H	K=H 1	- 6.9
410,6;434,6.76	14.7	14.4	F	R	K	K=H 1	- 6.8
77	14.8	14.6	A		α	K=H 2	- 6.3
78	14.8	14.8	A		β	H 2	- 6.3
410,1;434,1.79	14.6	15.7	F		K	K=H 1	- 6.4
80	14.6	16.1	A		H	H 1	- 6.7
81	14.7	17.2	G		K	K=H 1	- 6.6
82	14.6	18.3	A		γ	K=7 2	- 5.7

approx.
1855 position

BD No.	R.A.	Dec.	Magn.
8 29.5 +20.0	+20° 2133	8 29.3 +20° 2	8.4
8 30.5 +20.0	+20 2139	8 30.5 +20 0	9.0
8 31.0 +20.1	+20 2144	8 30.8 +20 6	8.8
8 31.6 +20.1	+20 2150	8 31.5 +20 3	7.2
8 31.7 +20.1	+20 2152	8 31.6 +20 4	8.2
8 31.7 +20.1	+20 2153	8 31.6 +20 3	8.2
8 31.9 +20.1	+20 2163	8 32.0 +20 2	8.2
8 32.2 +20.1	+20 2171	8 32.1 +20 4	7.2
8 32.7 +20.1	+20 2175	8 32.6 +20 5	7.7
8 27.7 +19.9	+19 2044	8 27.5 +19 59	9.4
8 29.5 +19.8	+19 2053	8 29.5 +19 47	7.2
8 31.5 +19.8	+19 2064	8 31.4 +19 47	8.0
8 32.0 +19.8	+19 2069	8 32.0 +19 52	7.0
8 32.5 +19.7	+19 2073	8 32.3 +19 43	8.2
8 32.5 +19.8	+19 2074	8 32.5 +19 49	9.3
8 33.1 +19.7	+19 2078	8 33.0 +19 46	8.7
8 34.0 +19.9	+19 2083	8 33.8 +19 55	8.4
8 29.2 +19.7	+19 2050	8 29.1 +19 40	9.2
8 31.7 +19.7	+19 2066	8 31.7 +19 43	9.1
8 32.3 +19.7	+19 2072	8 32.2 +19 42	9.0
8 33.4 +19.6	+19 2080	8 33.3 +19 39	8.9
8 35.0 +19.5	+19 2088	8 34.8 +19 36	9.0
8 28.2 +19.4	+19 2045	8 28.2 +19 28	9.0
8 28.5 +19.3	+19 2047	8 28.5 +19 24	8.5
8 29.1 +19.3	+19 2049	8 29.0 +19 22	8.5
8 31.0 +19.4	+19 2060	8 30.9 +19 27	9.0
8 31.8 +19.5	+19 2067	8 31.7 +19 27	9.3
8 33.9 +19.4	+19 2082	8 33.6 +19 26	9.3
8 34.1 +19.4	+19 2084	8 33.9 +19 27	8.0

R.A.	Dec.
8 31.6 +19° 53' ✓	
33.1 +19 51 ✓	
33.4 +19 54 ✓	
34.1 +19 54 ✓ ✓	
34.2 +19 55 ✓	
34.2 +19 54 ✓	
34.6 +19 53 ✓	
34.7 +19 55 ✓	
35.2 +19 56 ✓ ✓	
30.1 +19 50 ✓	
32.1 +19 38 ✓	
34.0 +19 38 ✓	
34.6 +19 43 ✓	
34.9 +19 34 ✓	
35.1 +19 40 ✓	
35.6 +19 37 ✓	
36.4 +19 46 ✓	
31.7 +19 31 ✓	
34.3 +19 34 ✓	
34.8 +19 33 ✓	
35.9 +19 30 ✓	
37.4 +19 27 ✓	
30.8 +19 19 ✓	
31.1 +19 15 ✓	
31.6 +19 13 ✓	
33.5 +19 18 ✓	
34.3 +19 18 ✓	
36.2 +19 17 ✓	
36.5 +19 18 ✓	

July 11 1893.
Plate I 7923

April 20 1895

2nd Measure

No	δ	θ	ϕ	R	Line	K=H	Inten	F	730
1	11.7	23.6	G		K	K=H	2	-	6.5
2	11.8	15.2	G		K	K=H	1	-	7.1
3	11.8	15.2	G		K	K=H	2	-	6.5
4	11.7	15.9	G ⁵ H ⁶	F	K	K=H	2	-	7.0
5	12.1	16.5	F	R	K	K=H	1	-	5.9
6	11.7	17.2	F	R	K	K=H	2	-	6.5
7	12.2	17.4	Ma		K	K=H	1	-	7.3
8	12.4	13.1	G ⁵ H ⁶		K	K=H	2	-	6.7
8a	12.2	13.2	H		-?	K	1	-	7.7
9	12.4	13.4	A		γ	K=.7	2	-	6.2
10	12.5	14.5	F	R	β	K=H	2	-	6.1
11	12.4	15.7	F	R	K	K=H	1	-	6.6
12	12.5	16.4	A		δ	η	4	F	5.2
13	12.9	13.6	A		γ	K=.2	2	F	5.9
14	12.8	13.9	A		δ	K=.2	3	F	5.5
15	13.1	15.0	F	R	β	K=H	2	F	5.8
16	13.2	15.5	H		K	K=H	1	-	7.0
17	13.2	15.7	F	R	α	K=H	2	-	6.5
18	13.2	16.0	F	R	β	K=H	2	F	6.0
19	13.0	16.2	F	R	α	K=H	2	F	6.2
20	13.2	16.7	F	R	β	K=H	2	F	6.2
21	13.1	17.0	F	R	K	K=H	1	-	6.5
22	13.6	14.6	F	R	K	K=H	2	F	6.3
23	13.3	14.8	H		-?	η	1	-	7.2
24	13.6	15.1	A		γ	K=.3	2	F	5.8
25	13.3	15.3	F	R	K	K=H	1	-	6.7
26	13.6	15.3	A		β	K=.7	2	F	6.0
27	13.5	15.4	H		K	K=H	1	-	7.0
28	13.4	15.6	A		γ	K=.4	3	F	5.6

6.2

7.6 K K=H 1 7.2

410.2; 434.2

F K K=H 1 7.0

Ma K K=H 1 7.3

3rd 7.6

H K K=H 1 7.2

A γ K=H 3 6.2

F β K=H 3 6.0

410.3; 434.3

F K K=H 1 7.2

7.0

Cat. by L. D. W.

Approx. 1855 pos.

h	m	s	Am.	Mo.	R.A.	Dec.	mag.
8	27.1	+21.3	+21	1872	8	27.3 +21 19	9.0
8	30.4	+21.3	+21	1879	8	30.6 +21 18	9.3
8	30.5	+21.3	+21	1880	8	30.7 +21 18	8.6
8	31.9	+21.1	+21	1884	8	32.0 +21 21	9.2
	33.3	+21.2	+21	1891	8	33.3 +21 12	9.3
	34.3	+21.4	+21	1894	8	34.5 +21 20	9.1
	35.0	+21.1	+21	1896	8	34.9 +21 8	8.7
	26.4	+21.1	+21	1867	8	26.3 +21 4	8.9
	26.7	+21.2	+21	1869	8	26.7 +21 9	9.4
	27.0	+21.1	+21	1871	8	26.9 +21 3	8.6
	28.9	+20.9	+20	2129	8	29.1 +20 59	8.0
	31.5	+21.1	+21	1882	8	31.5 +21 4	8.9
	33.0	+20.9	+20	2178	8	32.9 +20 59	7.0
	27.1	+20.8	+20	2122	8	27.3 +20 49	8.7
	27.9	+20.8	+20	2125	8	27.9 +20 51	8.1
	30.0	+20.7	+20	2136	8	30.0 +20 43	8.0
	31.2	+20.7	+20	2147	8	31.2 +20 41	9.0
	31.7	+20.7	+20	2154	8	31.6 +20 41	9.0
	32.1	+20.7	+20	2169	8	32.1 +20 42	8.8
	32.8	+20.8	+20	2173	8	32.5 +20 47	8.7
	33.7	+20.7	+20	2186	8	33.6 +20 41	8.9
	34.1	+20.7	+20	2191	8	34.0 +20 41	9.0
	29.0	+20.5	+20	2131	8	29.2 +20 31	8.8
	29.9	+20.6	+20	2134	8	29.7 +20 38	9.2
	30.1	+20.4	+20	2138	8	30.3 +20 30	8.4
	30.5	+20.6	+20	2142	8	30.7 +20 37	9.0
	30.5	+20.5	+20	2141	8	30.7 +20 31	8.5
	31.0	+20.6	+20	2145	8	31.0 +20 33	9.1
	31.4	+20.6	+20	2148	8	31.4 +20 36	8.0

R.A. Dec.

6	29.9	+21 10	✓
28	33.2	+21 9	✓
30	33.3	+21 9	✓
54	34.6	+21 12	✓
73	35.9	+21 3	✓
87	37.1	+21 11	✓
90	37.5	+20 59	✓
1	28.9	+20 55	✓
2	29.3	+21 0	✓
4	29.5	+20 54	✓
15	31.7	+20 50	✓
42	34.1	+20 55	✓
70	35.5	+20 59	✓
7	29.9	+20 40	✓
10	30.5	+20 42	✓
24	32.6	+20 34	✓
38	33.8	+20 32	✓
44	34.2	+20 32	✓
59	34.7	+20 33	✓
65	35.1	+20 35	✓
78	36.2	+20 32	✓
82	36.6	+20 32	✓
18	31.8	+20 22	✓
23	32.3	+20 29	✓
26	32.9	+20 21	✓
31	33.3	+20 25	✓
32	33.3	+20 22	✓
37	33.6	+20 24	✓
39	34.0	+20 27	✓

July, 11, 1893.

Plate F 7923

April, 20, 1896

2nd trial

410,2;434,2

No. S. H. Cl. Rem. Limit Time. Intensity Br.

410,2;434,2.	29	13.5	15.7	F	R	K	K=H	1	-	6.8	F	K	K=H	1	7.1
	30	13.5	15.8	K5L		K	K=H	3	-	5.3 5.9					
	31	13.6	15.9	A		E	K=1	4	F	5.2					
x	32	13.6	15.9	A		K	K=H	1	-	6.8	A	K	K=H	1	7.3
410,4;434,4.	33	13.7	16.2	F	R	K	K=H	2	F	6.3					
	34	13.7	16.4	A		B	K=H	2	F	6.2					
x	35	13.8	16.7	K5L		K	K=H	3	-	5.5 5.8	G5H6	K	K=H	3	5.6 5.8
410,2;434,2.	36	13.5	17.0	F	R	K	K=H	1	-	7.3					
	37	14.1	13.6	A		J	K=3	3	F	5.4					
	38	14.2	14.6	A		J	K=1	3	F	5.7					
	39	13.9	15.0	H		K	K=H	1	-	7.2 7.5					
x	40	14.2	15.2	H		K	K=H	1	-	7.2 7.5	H	K	K=H	1	7.3 7.5
410,5;434,5.	41	14.3	15.3	F	R	J	K=H	3	F	5.7					
410,7;434,7.	42	14.0	15.6	F	R	K	K=H	3	F	5.2					
	43	14.2	15.8	L		K	K=H	1	-	7.2					
	44	13.9	16.0	A		J	K	2	F	6.0					
410,7;434,7.	45	14.2	15.9	F	R	K	K=H	2	-	6.0	A	B	K=H	2	6.8
x	46	14.2	16.1	G		K	K=H	3	-	5.4	L	K	K=H	3	5.6
x	47	14.1	16.1	A		D	K=H	3	-	5.4	A	D	K=H	3	5.5
410,4;434,4.	48	13.9	16.4	F	R	K	K=H	2	-	6.5					
	49	14.3	16.6	H		K	K=H	1	-	6.7 7.1					
410,5;434,5.	50	14.3	16.7	F	R	K	K=H	1	-	6.9	F	K	K=H	1	7.1
410,1;434,1.	50a	14.2	16.9	F	R	K	K=H	1	-	7.1	F	K	K=H	1	7.1
	51	14.6	13.3	G		K	K=H	1	-	6.8					
	52	14.5	13.4	G		K	K=H	3	-	5.4					
410,2;434,2.	53	14.4	14.3	F	R	K	K=H	1	-	6.7	F	K	K=H	1	7.2
x	53a	14.5	14.5	H		K	K=H	1	-	7.0 7.3	K	K=H	1	7.1	
x	54	14.6	14.6	A		B	K=H	2	F	5.9	A	B	K=H	2	6.2
410,5;434,5.	55	14.7	15.2	F	R	K	K=H	2	F	6.5					

* $\alpha + 20^\circ 2158$ is marked double in our chart. Plate 5896 examined shows no evidence of its being double & there is no component given in our catalogue.

Est. by L. S. W.

Approx. 1855 pos.

h	m	s	Dec.	Mag.
8	51.6	+20.5	+20° 2155 8 31.6	+20.5 32 9.1
	31.8	+20.5	+20 2158 8 31.8	+20 31 7.0
	31.9	+20.4	+20 2159 8 31.8	+20 29 7.3
	32.0	+20.4	+20 2161 8 31.9	+20 30 9.0
	32.8	+20.4	+20 2174 8 32.6	+20 27 9.0
	33.0	+20.4	+20 2179 8 32.9	+20 26 8.6
	33.7	+20.4	+20 2185 8 33.5	+20 23 7.5
	34.0	+20.5	+20 2189 8 34.0	+20 33 9.2
	27.3	+20.3	+20 2123 8 27.4	+20 16 8.2
	29.1	+20.2	+20 2132 8 29.3	+20 15 8.2
	30.1	+20.4	+20 2137 8 30.3	+20 22 9.1
	30.9	+20.2	+20 2140 8 30.7	+20 14 8.9
	30.9	+20.2	+20 2143 8 30.8	+20 11 8.0
	31.2	+20.3	+20 2149 8 31.4	+20 18 7.0
	31.8	+20.3	+20 2157 8 31.7	+20 14 9.5
	32.1	+20.3	+20 2168 8 32.1	+20 21 8.5
	32.0	+20.2	+20 2165 8 32.0	+20 12 8.5
	32.1	+20.2	+20 2166 8 32.0	+20 10 7.3
	32.5	+20.3	+20 2172 8 32.4	+20 14 7.1
	33.0	+20.4	+20 2177 8 32.8	+20 20 9.0
	33.2	+20.1	+20 2182 8 33.3	+20 10 8.7
	33.3	+20.1	+20 2183 8 33.4	+20 10 9.3
	34.0	+20.3	+20 2190 8 34.0	+20 15 9.5
	26.7	+20.0	+20 2117 8 26.7	+20 0 9.2
	26.8	+20.1	+20 2118 8 27.0	+20 5 7.7
	28.6	+20.1	+20 2128 8 28.7	+20 6 9.2
	29.0	+20.1	+20 2130 8 29.1	+20 4 9.1
	29.1	+20.0	+20 2133 8 29.3	+20 20 8.4
	30.4	+20.0	+20 2189 8 30.4	+20 0 9.0

* This star is not in our chart. Error in chart.

h	m	s	Dec.	Mag.
45	34.2	+20.23	+20° 23	✓
51	34.4	+20.22	+20 22	✓
52	34.4	+20.20	+20 20	✓
53	34.5	+20.21	+20 21	✓
67	35.2	+20.18	+20 18	✓
71	35.5	+20.17	+20 17	✓
77	36.1	+20.14	+20 14	✓
83	36.6	+20.24	+20 24	✓
8	30.0	+20.7	+20 7	✓
19	31.9	+20.6	+20 6	✓
25	32.8	+20.13	+20 13	✓
33	33.3	+20.5	+20 5	✓
34	33.4	+20.2	+20 2	✓
40	34.0	+20.9	+20 9	✓
48	34.3	+20.5	+20 5	✓
60	34.7	+20.12	+20 12	✓
55	34.6	+20.3	+20 3	✓
56	34.6	+20.2	+20 2	✓
64	35.0	+20.5	+20 5	✓
69	35.4	+20.11	+20 11	✓
74	35.9	+20.1	+20 1	✓
76	36.0	+20.1	+20 1	✓
84	36.6	+20.6	+20 6	✓
3	29.3	+19.51	+19 51	✓
5	29.6	+19.56	+19 56	✓
13	31.3	+19.57	+19 57	✓
16	31.7	+19.55	+19 55	✓
20	31.9	+19.53	+19 53	✓
27	33.1	+19.51	+19 51	✓

In our chart. this star is slightly north of right position.

July. 11, 1893.
Plate I 7923

April 20, 1895

2-4 Meas.

No. 8. H. C. Rem. Limit Line Inten. Line Br.

x	56	14.4	15.3	A	β	K=H	2	-	6.3	a	β	K=.8	2	6.4	
	57	14.5	15.7	$\frac{1}{2}K$	K	K=H	3	-	$\frac{5.6}{5.7}$						
410,7;434,7.	58	14.5	15.7	F	R	α	K=H	3	-	5.4					
	59	14.6	15.8	A	β	η	3	-	5.8						
	60	14.6	15.9	A	γ	η	3	F	5.8						
	61	15.5	16.0	A	ϵ	K=.1	4	F	5.2						
	62	14.4	16.3	A	δ	K=.3	4	F	5.4						
	63	14.7	13.7	H	?	?	1	-	$\frac{7.5}{-}$						
	64	15.1	14.7	A	γ	K=.3	4	F	5.3						
x	64	15.3	15.3	H	?	η	1	-	$\frac{7.6}{-}$	16	K	K=H	1	$\frac{8.0}{-}$	
	65	15.1	15.7	A	γ	K=.4	2	F	5.8						
410,7;434,7.	66	14.9	16.0	F	R	δ	K=H	3	F	5.4					
x	67	15.2	16.2	A	γ	K=.4	3	F	5.8	a	γ	K=.5	3	F 5.7	
410,2;434,2.	68	15.0	16.2	F	R	K	K=H	1	-	7.0	F	K	K=H	1	7.2
410,7;434,7.	69	15.1	16.5	F	R	β	K=H	3	F	5.9					
x	70	14.8	16.9	A	β	K=.8	3	F	5.9	a	γ	K=.6	2	5.8	
x	70	14.5	17.2	G	K	K=H	1	-	7.0	F	K	K=H	1	$\frac{7.2}{410,7;434,7}$	
410,2;434,2.	70	14.4	17.2	F	R	K	K=H	1	-	7.0	F	K	K=H	1	$\frac{7.2}{410,2;434,2}$
410,2;434,2.	70c	14.7	17.4	F	R	K	K=H	1	-	7.0	F	K	K=H	1	$\frac{7.2}{410,2;434,2}$
410,2;434,2.	71	15.4	14.6	F	R	K	K=H	1	-	6.8	F	K	K=H	1	$\frac{6.8}{410,1;434,1}$
410,1;434,1.	71	15.5	14.7	F	R	K	K=H	1	-	7.0	F	K	K=H	1	$\frac{7.3}{410,1;434,1}$
410,2;434,2.	72	15.3	15.8	F	R	K	K=H	1	-	6.8	F	K	K=H	1	$\frac{7.2}{410,1;434,1}$
410,5;434,5.	73	15.3	16.1	F	R	β	K=H	2	F	6.5					
410,2;434,2.	74	15.4	16.7	F	R	K	K=H	1	-	6.8					
410,2;434,2.	75	15.6	17.4	F	R	K	K=H	1	-	7.1	F	K	K=H	1	$\frac{7.2}{410,2;434,2}$
410,1;434,1.	76	15.8	14.1	F	R	K	K=H	2	-	6.7					
	77	16.0	14.3	A	β	η	2	F	6.3						
	78	16.0	14.5	A	β	K=.8	2	F	6.3						
410,3;434,3.	79	15.9	15.4	F	R	α	K=H	2	F	6.3					

	Dec.	Mag.		Dec.	Mag.
30.9 + 20.1	20 2144 8 30.8	+ 20 6 8.8	35	33.4	+ 19 57 ✓
31.4 + 20.1	20 2150 8 31.5	+ 20 3 7.2	43	34.1	+ 19 54 ✓
31.5 + 20.1	20 2152 8 31.6	+ 20 4 8.2	46	34.2	+ 19 55 ✓
31.6 + 20.1	20 2153 8 31.6	+ 20 3 8.2	47	34.2	+ 19 54 ✓
31.9 + 20.0	20 2163 8 32.0	+ 20 2 8.2	57	34.6	+ 19 53 ✓
32.2 + 20.1	20 2171 8 32.1	+ 20 4 7.2	61	34.7	+ 19 55 ✓
32.7 + 20.1	20 2175 8 32.6	+ 20 5 7.7	68	35.2	+ 19 56 ✓
27.6 + 19.9	19 2044 8 27.5	+ 19 59 9.4	9	30.1	+ 19 50 ✓
29.5 + 19.8	19 2053 8 29.5	+ 19 47 7.2	22	32.1	+ 19 38 ✓
30.8 + 19.6	19 2058 8 30.6	+ 19 42 9.5	29	33.2	+ 19 33 ✓
31.3 + 19.8	19 2064 8 31.4	+ 19 47 8.0	41	34.0	+ 19 38 ✓
32.0 + 19.8	19 2069 8 32.0	+ 19 52 7.0	58	34.6	+ 19 43 ✓
32.4 + 19.8	19 2073 8 32.3	+ 19 43 8.2	63	34.8	+ 19 34 ✓
32.5 + 19.9	19 2074 8 32.5	+ 19 49 9.3	66	35.1	+ 19 40 ✓
33.0 + 19.8	19 2078 8 33.0	+ 19 46 8.7	72	35.6	+ 19 37 ✓
34.0 + 19.9	19 2083 8 33.8	+ 19 55 8.4	80	36.4	+ 19 46 ✓
34.5 + 20.0	20 2192 8 34.4	+ 20 3 9.4	86	37.0	+ 19 54 ✓
34.6 + 20.1	20 2193 8 34.4	+ 20 6 9.4	85	37.0	+ 19 57 ✓
35.0 + 19.9	19 2087 8 34.8	+ 19 57 9.2	88	37.4	+ 19 48 ✓
29.0 + 19.7	19 2050 8 29.1	+ 19 40 9.2	17	31.7	+ 19 31 ✓
29.4 + 19.6	19 2052 8 29.3	+ 19 38 9.2	21	31.9	+ 19 29 ✓
31.7 + 19.7	19 2066 8 31.7	+ 19 43 9.1	49	34.3	+ 19 34 ✓
32.2 + 19.8	19 2072 8 32.2	+ 19 42 9.0	65	34.8	+ 19 33 ✓
33.1 + 19.6	19 2080 8 33.3	+ 19 39 8.9	75	35.9	+ 19 30 ✓
34.9 + 19.5	19 2088 8 34.8	+ 19 36 9.0	89	37.4	+ 19 27 ✓
28.1 + 19.4	19 2045 8 28.2	+ 19 28 9.0	11	30.8	+ 19 19 ✓
28.5 + 19.4	19 2047 8 28.5	+ 19 24 8.5	12	31.1	+ 19 15 ✓
29.0 + 19.3	19 2049 8 29.0	+ 19 22 8.5	14	31.6	+ 19 13 ✓
31.0 + 19.5	19 2060 8 30.9	+ 19 27 9.0	36	33.5	+ 19 18 ✓

July, 11, 1893.
Plate I 7923.

No. 8. H. Cl. Rem. Limit. Line. Inters. Br.

410,6; 434,6 80 15.9 15.8 F R K K=H 1 - 7.0
410,2; 434,2 81 15.9 16.8 F R K K=H 1 - 6.9
82 15.8 17.0 Q β K=83 F 6.0

April 20, 1895

410,2; 434,2
F K K=H 1 7.2
410,2; 434,2
F K K=H 1 6.8

4.30

approx. 1855/100.

h	m	h	m	Dec.	Mag.	h	m	Dec.
8	31.7	+19	2067	8	31.7	+19	27	9.3
						8	34.3	+19 18 ✓
34.2	33.7	+19	2082	8	33.6	+19	26	9.3
						79	36.2	+19 17 ✓
	34.0	+19	2084	8	33.9	+19	27	8.0
						81	36.5	+19 18 ✓

December 16, 1893

Holmes Comet.

		¹⁸⁹⁴	¹⁸⁹⁴			¹⁸⁵⁵	¹⁸⁵⁵
Jan. 1. 1894	^L 8	^m 18.6	+ 37° 7'	^m 2.5	8	^L 8	^m 16.1 + 37° 15'
Feb 2 1894	7	48.0	+ 36 56	2.5	6	7	45.5 + 37 2

Mark on I 5899.

January 3, 1894
Hohner's Comet.

Plates I 10167 taken
" I 10196 taken
" I 10222 taken

Compared with I 5899 and no trace of
comet seen.

January 30, 1894

Meas. of Mrs L. D Wells' new variable star
near δ Cephei. R.A. ¹⁸⁵⁵ 22^h 23^m 33^s Dec. +57° 27'

Plate C 4330 taken

10.7 d 4 r 11.1 11.0 = 11.05

11.0 r 1 e 11.1

Exp.

PE. C 4330

: δ Cephei

r

a = ^{BA} +57° 2545 22 23 35.7 +57 17.7 9.0 9.3b = ^{BA} +57° 2538 22 22 39.1 +57 32.5 9.5 10.5

c = — —

d = ^{BA} +57° 2541 22 23 22 +57 22.1 9.0 $\frac{9.3}{10.0}$

Plate C 4331 taken

11.1 e 1 r 11.2 11.0 = 11.10

11.0 r 5 f 11.5

Exp.

Plate C 4338 taken

11.1 e 3 r 11.4 11.3 = 11.35

11.3 r 2 f 11.5

Exp.

Plate C 5252 taken

11.1 e 2 r 11.3 11.2 = 11.25

11.2 r 3 f 11.5

Exp.

Plate C 5253 taken

Exp.

10.4 10.2 ^{pd} 6 r 10.8 10.7 10.6 = 10.7 ~~10.7~~ 11.3 11.1 11.0 = 11.1311.1 10.7 r 0 ~~10.7~~ 11.111.0 10.3 ~~10.3~~ 11.5

January 30, 1894

Meas. of L. D. Well's var. (Cont.)

Plate C 5253 Scale meas.

r	9.6	11.4
a	7.9	9.4
b	8.5	10.0
c	8.8	10.3
d	9.2	10.7
e	9.6	11.1
f	10.0	11.5

$$\begin{array}{r} 16.0 \\ 8.5 \\ \hline 1.5 \end{array}$$

Plate C 5709 taken

bf

11.1	e	4	r	11.5	11.4 = 11.45
11.4	r	1	f	11.5	

r	10.0	11.4
a	8.5	9.4
b	8.4	10.0 9.8
c	8.8	10.4 10.2
d	9.3	10.7 10.7
e	9.7	11.3 11.1
f	10.2	11.4 11.4

$$\begin{array}{r} 10.0 \\ 8.86 \\ \hline 1.14 \end{array}$$

Plate C 5710 taken

bf

11.1	e	5	r	11.6	11.4 = 11.50
11.4	r	1	f	11.5	

r	9.6	11.3
a	7.7	9.4
b	8.3	10.0
c	8.6	10.3
d	9.0	10.7
e	9.3	11.0
f	9.7	11.4

$$\begin{array}{r} 10.0 \\ 8.3 \\ \hline 1.7 \end{array}$$

January 24, 1894

Meas. of L. D. Wells var. (Cont.)

Plate C 6414 taken

cf.

10.7 d 4 v 11.1 10.9 = 11.00

10.9 v 2 e 11.1

Plate C 6415 taken

cf.

10.7 d 4 v 11.1 10.9 = 11.00

10.9 v 2 e 11.1

Plate C 6496 taken

cf.

11.01 e 4 v 11.5 11.4 = 11.45

11.4 v 1 f 11.5

Plate C 6497 Taken

cf.

11.1 e 4 v 11.5 11.4 = 11.45

11.4 v 1 f 11.5

~~Plate I 9150~~~~d 4 v~~~~v 1 e~~

January 24, 1894
 Meas. of L.D. Wells's var. (Cont).

Plate B 2069 taken

ex

11.1 e 2 v 11.3 ~~10.9~~ 11.1 = 11.20

11.1 ~~10.9~~ v 4 f 11.5

v 8.9 11.2

a 7.42 9.4

e 7.85 9.8

c 7.8 10.1

d 8.3 10.6

e 8.7 11.0

f 9.3 11.6

Plate I 7448 taken

ex

11.1 c 2 v 11.3 11.2 = 11.25

11.2 v 3 f 11.5

Plate I 7449 taken

ex.

11.0 e 5 v 11.6 11.4 = 11.50

11.4 v 1 f 11.5

Plate I 9150 taken

ex.

10.7 d 4 v 11.1 11.0 = 11.05

11.0 v 1 e 11.1

Plate I 9196 taken

ex.

11.1 ~~e~~ 4 v 11.5 11.4 = 11.45

11.4 v 1 ~~e~~ f 11.5

Plate I 9328 taken

ex.

10.7 d 4 v 11.1 11.0 = 11.05

11.0 v 1 e 11.1

~~Plate~~ January 24 30, 1898

Mess. of L.D. Wells var. (Cont.)

Plate I 9252 taken

cf.

10.7 d 2 v 10.9 10.9 = 10.90

10.9 v 2 e 11.1

Plate I 9732 taken

cf.

11.1 ~~10.7~~ e 2 v 11.3 11.2 11.25

11.2 v 3 f ~~11.5~~

Plate I 9328 scale

v 9.1 10.9

a 7.7 9.5

b 8.1 9.9

c 8.4 10.2

d 8.8 10.6

e 9.2 11.0

f 9.6 11.4

10.0
8.2
1.8

January 30, 1894

Summary of L.D. Wells's var. R.A. Dec.

Plat ^{No.}	Date	J.D.	Eq.	a	b	c	d	e	f	var.
C 4330	Dec. 31, 1891	2,412,098	9							11.05
" 4331	" " "	" "	11							11.10
" 4338	Jan 4, 1892	" 102	11							11.35
" 5252	Dec. 23, "	" 456	12							11.25
" 5253	" " "	" "	14	7.9	8.5	8.8	9.2	9.6	10.0	11.13
Scale "	"			9.4	10.0	10.3	10.7	11.1	11.5	11.1
" 5709	July 14, 1893	" 659	11							11.45
" "	"			9.4	9.8	10.2	10.7	11.1	11.4	11.4
" 5710	" " "	" "	14							11.50
" "	"			9.4	10.0	10.3	10.7	11.0	11.4	11.3
" 6414	Jan 1, 1894	" 830	14							11.00
" 6415	" " "	" "	13							11.00
" 6496	" 20, "	" 849	10							11.45
" 6497	" " "	" "	10							11.45
Scale B 2269	Dec 19, 1887	2,419,625	15							11.20
" "	"			9.4	9.8	10.1	10.6	11.0	11.6	11.2
I 7448	Nov 3, 1892	2,412,406	17							11.45
" 7449	" " "	" "	16							11.50
" 9150	Aug 9, 1893	" 685	18							11.05
" 9196	" 13, "	" 689	10							11.45
" 9328	" 29, "	" 705	10							11.05
Scale "	"			9.5942	9.9990	10.2 _{10.72}	10.6 _{10.66}	11.0 _{11.07}	11.4 _{11.46}	11.8 _{11.88}
" 9252	" 15, "	" 691	10							10.90
" 9732	Oct 21, "	" 758	10							11.25

Feb.

January 12, 1894.
 Meas. of new variable star in Sculptor's
 discovered from its photographic spectrum
 which is M.C. on Feb. 9, 1894. Plates selected and
 examined by Professor on that same date and
 variability confirmed. A.C. 157 R.A. $10^h 24^m 57.4^s$ Dec $-32^{\circ} 36' 8''$.

Plate B 5734

7.0

b	a	183	0	8	34.50	-32	50	48.5	7 1/2	a.
c	b	148	0	8	34.50	-32	50	48.5	7 1/2	d
d	c	110	0	6	28.73	-32	35	39.1	8 1/4	e
a	d	167	0	9	49.34	-32	8	25.2	5.9	f
e	a								2.81	g
f	e								7.02	h
g	f									i
h	g									j
i	h									k
k	i									l
l	k									m
m	l									n
n	m									

mag. 157

Sept. 10570

Plate B 4153 taken Sept. 6, 1889

8.90 ⁸²	8.9	2	v	9.1	9.3 = 9.20	9.10 ⁸²	9.28 ⁰	9.18 ¹	9.09
9.28 ⁰	9.3	3	fg	9.6	9.58 ⁰	9.22	9.40	9.37	9.09

Plate B 4535 taken

7.27 ¹⁴	7.4	4	c	7.5	7.4 = 7.45	7.39 ¹⁴	7.42 ³²	7.40 ³²	7.02
7.42 ³⁴	7.4	5	cd	7.9	8.04	7.92 ¹⁴	7.92 ³²	7.92 ²³	7.02

Plate B 4379 taken

8.22 ¹⁴	8.2	0	v	8.2	8.4 = 8.30	8.22 ¹⁴	8.40 ³²	8.31 ²³	8.09
8.40 ³²	8.4	5	ff	8.9	8.90	8.34	8.52	8.43	8.09

~~6.7~~ 6.87
~~6.75~~ 6.8
 7.19 7.2
~~6.99~~ a
 b
 c
 d
 e
 f
 g
 h
 k
 l
 var.

5.4
 5.9
 6.5
 7.2
 7.4
 8.0
 8.8
 8.8
 9.3
 10.0
 ns.
 6.3

6.2
 6.7
 7.3
 8.0
 8.2
 8.8
 9.6
 10.1
 10.8
 7.3

7.37 7.19 7.28
~~7.3~~ ~~7.4~~ ~~7.25~~ 09 09 7.25 7.07 = 7.16 .09 .09
~~7.4~~ ~~7.27~~ 19

~~17~~ 6.99 08
~~7.2~~ 7.2 = 7.20
~~7.15~~ 7.07 = 7.11 .08 .08

23 04 04
 7.27 7.19 = 7.18 09 09

Plate B 44⁵⁶ taken

Plate B44⁵⁶ taken

$\begin{array}{r} 7.89 \\ 19 \\ \hline 7.27 \end{array} \begin{array}{r} 7.4 \\ \hline 7.52 \\ 44 \end{array} \rightarrow$

$\begin{array}{r} 7.49 \\ 804 \\ \hline 7.8 \end{array} \begin{array}{r} 7.64 \\ \hline 7.5 \\ 804 \end{array} = \begin{array}{r} 7.12 \quad 07 \quad 08 \\ 59 \quad 44 \quad 52 \\ \hline 7.07 \quad 7.52 = 7.60 \quad 07 \quad 08 \end{array}$

$\begin{array}{r} 7.92 \\ 84 \\ \hline 7.9 \end{array}$

[illegible]

$\begin{array}{r} 14 \\ 8.22 \end{array} \begin{array}{r} 8.34 \\ 8.2 \end{array}$
 $\begin{array}{r} 8.84 \\ 72 \end{array} \begin{array}{r} 8.8 \\ 8.92 \end{array}$
 $\begin{array}{r} 8.7 \\ 8.9 \end{array} \begin{array}{r} 8.8 \\ 8.9 \end{array} = \begin{array}{r} 8.75 \\ 8.90 \end{array}$
 $\begin{array}{r} 8.72 \\ 8.84 \end{array} \begin{array}{r} 8.80 \\ 8.92 \end{array} = \begin{array}{r} 8.76 \\ 8.88 \end{array} \begin{array}{r} 04 \\ 04 \end{array}$

Feb.
January 12, 1894
Meas. of new var. in *Scaevola* (Cont.)

Plate B 5734

8.70 8.82	8.34	8.7	2	8.8	8.9	8.6	8.7 = 8.65
1.6 a	8.2	A	3.6 = 3.9	6.3	8.90	9.02	
b		a	4.2 = 4.5	6.9			
c		b	4.6 = 4.9	7.3			
d		c	5.3 5.3	7.7			
e		d	5.6 5.6	8.0			
f		e	6.3	8.7			
g		f	7.0	9.4			
h		g	7.5	9.9			
i		h	8.2	10.6			
j		i	8.8	11.2			
k		j	9.3	11.7			
l		k	9.7	12.1			
m		l	10.0	12.4			
n		m	6.0	8.4	8.6	8.6 = 8.60	
o		n					
var							

$$8.74 \quad 8.82 \quad 8.78 \quad 0.4 \quad 0.4$$

$$8.62 \quad 8.70 = 8.66 \quad .04 \quad .04$$

Plate B 6737

9.58 9.70	9.68	9.7	2	9.8	9.7 = 9.75	9.8	9.7 = 9.75
1.5 a	9.58	A	5.0 = 5.4	6.2	10.0	10.03	10.15
b		a	5.4	6.6			
c		b	6.0	7.2			
d		c	6.8	8.0			
e		d	7.1	8.3			
f		e	7.9	9.1			
g		f	8.6	9.8			
h		g	9.0	10.2			
i		h	9.4	10.6			
j		i	9.7	10.9			
k		j	10.2	11.4			
l		k					
m		l					
n		m					
var							

$$9.90 \quad 9.85 \quad 9.88 \quad 0.2 \quad 0.3$$

$$9.78 \quad 9.73 = 9.76 \quad .02 \quad .03$$

$$9.70 \quad 9.80 \quad 9.85 = 9.82 \quad .02 \quad .03$$

$$9.68 \quad 9.73 = 9.70 \quad .02 \quad .03$$

$$9.7 \quad 9.7 = 9.70$$

Feb.
January 12, 1894.

Meas of new var. in Sculptura (Cont.)
Plate B 6925

¹⁴ 8.22 8.2 ^{5.34} 8.8 = 8.95
8.80 8.8 v 1 ^{8.9} 8.9 8.90
⁷²

8.84 8.92 = 8.88 ⁰⁴ 04
⁶⁴ 8.72 8.80 = 8.76 ⁰⁴ 04

Plate B 6926

¹⁴ 8.22 8.2 ^{8.9} 8.9 = 8.93
8.90 8.9 v 0 ^{8.9} 8.9 8.90 8.2
9.08 9.1 v 5 ^{9.6} 9.6 9.58 50

8.94 9.02 9.20 9.05
⁷⁴ 8.82 8.90 8.98 8.93 .11 .03 .15

Plate B 6941

⁸² 8.90 8.9 ^{9.02} 9.0 = 9.10
9.18 9.2 v 4 ^{9.6} 9.6 9.58 9.70
^{9.20}

9.12 9.30 9.21 09 09
^{8.92} 9.00 9.18 = 9.09 ⁰⁹ 09

Plate B 6953

⁸² 8.90 8.9 ^{9.02} 9.0 = 9.05
9.18 9.1 v 5 ^{9.6} 9.6 9.58 9.70
^{9.20}

9.16 9.20 = 9.15 ⁰⁵ 05
^{8.92} 9.00 9.08 = 9.04 ⁰⁴ 04

Plate B 6954

¹⁴ 8.22 8.2 ^{8.34} 8.8 = 8.93
8.90 8.9 v 0 ^{8.9} 8.9 8.90 9.02
9.08 9.1 v 5 ^{9.6} 9.6 9.58 9.70
^{9.20}

8.94 9.02 9.20 = 9.05 ¹¹ 03 15
⁷⁴ 8.82 8.90 8.98 8.93 .11 .03 .15

Plate B 8486

¹⁴ 8.22 8.2 ^{8.34} 8.8 = 8.93
8.90 8.9 v 0 ^{8.9} 8.9 8.90 9.02
9.08 9.1 v 5 ^{9.6} 9.6 9.58 9.70
^{9.20}

8.93 9.02 9.20 = 9.05 ¹² 03 15
⁷⁴ 8.82 8.90 8.98 8.93 .11 .03 .15

Feb.
~~January~~ 12, 1894 Schepster's (Ant)
 Meas. of new var. in *Lagotis* (Ant)

Plate B10582 sp.

~~87~~
~~6.75~~ 6.8 ~~87~~ 1 v 6.9 7.0 = 6.95
 6.87 7.0 v 4 ~~87~~ 7.4 7.27
~~6.75~~ 6.99
 la bl. 55K
 et bl. 7
 de " H
 ed " 7
 fe ns.

97 99 9
~~77~~ ~~77~~ ~~88~~
 6.85 6.87 = 6.86 .01 .01
 X

Plate B10583 sp.

~~87~~
~~6.75~~ 6.8 ~~87~~ 2 v 7.0 7.1 = 7.05
 6.99 7.1 v 3 ~~87~~ 7.4 7.27
~~89~~

7.07 7.09 7.08
~~6.95~~ ~~6.97~~ = ~~6.96~~ .01 .01

Plate B10003

~~87~~ 9.70 9.6
 Too near edge
~~9.83~~ 9.8
~~75~~ 9.95
 fg 3 v 9.9 9.8 = 9.85
 v 2 gh 10.0 10.03 10.15
~~9.95~~

10.00 9.96 = 9.98 02 03
~~78~~
~~788~~ 9.83 = 9.86 .02 .03

Plate B10004

~~87~~ 9.70 9.6
 Too near edge
~~9.83~~ 9.8
~~75~~ 9.95
 fg 4 v 10.0 9.9 = 9.95
 v 1 gh 10.0 10.03 10.15
~~9.95~~

10.10 10.05 10.08 02 03
~~78~~
~~798~~ 9.93 = 9.96 .02 .03

Plate B10005

~~87~~ 9.70 9.6
 Too near edge
~~9.83~~ 9.8
~~75~~ 9.95
 fg 4 v 10.0 9.9 = 9.95
 v 1 gh 10.0 10.03 10.15
~~9.95~~

10.10 10.05 10.08 02 03
~~78~~
~~798~~ 9.93 = 9.96 .02 .03

Plate B10330

~~87~~ 9.70 9.6
 Too near edge
~~9.83~~ 9.8
~~75~~ 9.95
 fg 10 v 8.4 8.3 = 8.35
 v 1 ~~87~~ 8.2
 ed off edge of plate

8.39 8.24 = 8.32 07 08
~~8.19~~ 8.12 = 8.20 .07 .08

Feb.
Jan. 12, 1894

Mess. of new var. in Sculptor

Plate B 10570

$\begin{matrix} 6.17^{09} & 6.2 & a & 4 & v & 6.6 & 6.6 & = & 6.60 \\ 6.55 & 6.6 & v & 2 & & 6.8 & 6.75 & & \\ 47 & & & & & & 67 & & \end{matrix}$

$\begin{matrix} a & 5.2 & 6.0 \\ a & (5.3) & 6.1 \\ b & 6.0 & 6.8 \\ 7.0 & c & 6.5 & 7.3 \\ 6.2 & d & 7.2 & 8.0 \\ 8 & e & 7.6 & 8.4 \\ & f & 8.2 & 9.0 \\ & g & 8.7 & 9.5 \\ & h & 9.1 & 9.9 \\ & k & 9.5 & 10.3 \\ & l & 9.9 & 10.7 \\ & m & 10.3 & 11.1 \\ n & m & vis. (10.6?) \\ var & 5.7 & 6.5 & 6.7 & 6.5 & = & 6.60 \end{matrix}$

$\begin{matrix} 6.49 & 6.67 & = & 6.58 & 09 & 09 \\ 49 & 47 & & 48 & & \\ 6.57 & 6.55 & = & 6.56 & .01 & .01 \end{matrix}$

$\begin{matrix} 6.79 & 6.57 & = & 6.68 & 11 & 11 \\ 59 & 37 & & 48 & & \\ 6.67 & 6.45 & = & 6.56 & .11 & .11 \end{matrix}$

Plate B 10571

$\begin{matrix} 6.17^{09} & 6.2 & a & 5 & v & 6.7 & 6.7 & = & 6.70 \\ 6.65 & 6.7 & v & 1 & & 6.8 & 6.75 & 6.77 \\ 57 & & & & & & 67 & & \end{matrix}$

$\begin{matrix} 6.79 & 6.77 & = & 6.78 & 01 & 01 \\ 59 & 57 & & 58 & & \\ 6.67 & 6.65 & = & 6.66 & .01 & .01 \end{matrix}$

Plate B 10584 sp.

$\begin{matrix} 6.29 & & & & & & & & \\ 6.17^{09} & 6.2 & a & 7 & v & 6.9 & 6.9 & 6.9 & = & 6.90 \\ 6.47 & 6.8 & b & 1 & v & 6.9 & 6.87 & & & \\ 6.75 & & & & & & 6.87 & & & \\ 6.77 & 6.85 & 6.9 & v & 5 & c & 7.4 & 7.27 & 7.39 \\ 69 & & & & & & 79 & & \end{matrix}$

$\begin{matrix} 6.99 & 6.87 & 6.85 & = & 6.87 & 04 & 02 & 06 \\ 79 & 77 & 78 & & 75 & & 11 & 01 \\ 6.87 & 6.85 & 6.77 & = & 6.83 & .04 & .02 & .06 \end{matrix}$

Plate B 4672.

$\begin{matrix} 6.75 & 6.87 & & & & & & & \\ 6.75 & 6.8 & & & & & & & \\ 7.27 & 7.4 & & & & & & & \\ 7.54 & 7.42 & 7.9 & & & & & & \end{matrix}$

$\begin{matrix} 6.87 & 7.47 & 7.39 & 7.54 & = & 7.47 & 00 & 08 & 07 \\ 27 & 19 & 34 & 27 & & & & & \\ 7.35 & 7.27 & 7.42 & 7.35 & .00 & .08 & & & \end{matrix}$

Images elongated

New variable in Sculptor. A.C. 1570 104-3236

Summary

Inst.	Pl. No.	Date	J. D.	var.	a	b	c	d	e	f	g	h	k	l	m	n	o
					A	a	b	c	d	e	f	g	h	k	l	m	n
8 th Baehr	B 4153	Sept. 6, 1889	2411,252		6.2	6.4											
	4379	Oct. 8 "	284														
	4456	" 17 "	293														
	4518	" 28 "	304	7.3	6.2	6.7	7.3	8.0	8.2	8.8	9.6	10.1	10.8				
	4525	" 29 "	305		6.3	6.9	7.3	7.7	8.0	8.7	9.4						
	4672	Nov. 29 "	336	(7.40) 7.50													
	5726	Sept. 13, 1890	624														
	5734	" 15 "	626	8.4	6.3	6.9	7.3	7.7	8.0	8.7	9.4	9.9	10.6	11.2	11.7	12.1	12.4
	6737	Aug. 18, 1891	963		6.2	6.6	7.2	8.0	8.3	9.1	9.8	10.2	10.6	10.9	11.4		
	6925	Sept. 17 "	993														
	6926	" " "	"														
	6941	" " "	"														
	6953	Sept 19 "	995														
	6954	" " "	"														
	8486	Sept. 5 1892	2,347														
	10003	July 27 1893	672														
	10004	" " "	"														
	10005	" " "	"														
	10330	Sept. 27 "	734														
	10570	Oct. 28 "	765	6.5	6.0 6.20	6.8 6.75	7.3 7.38	8.0 7.92	8.4 8.22	9.0 8.90	9.5 9.58	9.9 10.02	10.3	10.7	11.1	7	
	10571	" " "	"														
Sp.	10572	Nov. 1 "	769														
Sp.	10583			7.05													
Sp.	10584			6.90													

February
January 13, 1894,

Meas of new variable star in Ophiuchus
DM + 1° 3417 RA 17^h 12^m Dec. δ + 1° 40' (1255) mag. 9.5
Found from its photographic spectrum which
is M2 Dec; Chart on plate B9571 (No. 3374).
Chart plate examined and variability confirmed
by E. A. Pickering Feb. 8, 1894

Plate B10216

a	DM +1° 3421	17	13	48.8	+ 1 35.4	7.2	7.2	K
b	" " 3422	17	13	54.1	+ 1 43.1	7.8	7.8	K
c	" " 3427	17	16	10.8	+ 1 37.9	8.3	8.4	K
d	" " 3423	17	14	59.4	+ 1 34.4	8.5	8.7	K
e	" " 3415	17	11	22.5	+ 1 9.0	8.5	8.7	K
f	" " 3412	17	10	48.4	+ 1 23.7	9.3	9.9	-
g	" " 3420	17	12	48.3	+ 1 43.5	9.5	10.5	-
							<u>16.12</u>	

$$\frac{16.12}{8.94}$$

L.D.W. star.

v2

h.
e
g
d
v' DM + 13417

h

k

l

m

n

var.

Nus, var. L.D.W.

Plate I. 1043

9.9 f = 4

v' n.s. < 10.3

Plate I 1544

9.2 e 3 v' 9.5 9.6 = 9.55

9.6 v' 3 f 9.9

Feb. 13, 1894,
Meas of new var in *Sphinctus* (Cont).

Plate I 1716

92 e 5 v' 9.7 9.9 10.0 = 9.87
9.9 v' 0 f 9.9
10.0 v' 4 g 10.4

Plate B 2577

n 2

12.5 v' 1 v' 12.6
v' on limit of visibility
(v') 5 h
g too near edge for comp.

Plate I 3854

9.2 e 3 v' 9.5 9.6 = 9.55
9.6 v' 3 f 9.9
g 1 v'
v' 4 h

Plate I 4172

10.4 g 3 v' 10.7 10.8 = 10.75
10.7 v' 1 h 10.8
f 3 v'
v' 1 g

Plate I 4273

10.8 h 1 v' 10.9 11.1 = 11.00
11.1 v' 3 K 11.4 K = 1
f 3 v'
v' 1 g

Feb. 13, 1894
 Meas. of new var. in Ophiuchus (Cont).

Plate 42714

10.8 h 1 r' 10.9
 r' on limit of vis
 v2 0 g
 v2 3 h

Plate B5959

8.6 d 5 r' 9.1 9.1 = 9.10
 9.1 r' 1 e 9.2
 f 4 v2
 v2 4 g

8.9
 6.5
 v2

a	5.0	7.2
b	5.5	7.7
c	5.7	7.9
d	6.2	8.4
e	7.0	9.2
f	7.6	9.8
g	8.2	10.4
h	8.7	10.9
k	9.3	11.5
l	9.5	11.9
m	9.8	12.0
n	10.3	12.5
v'	6.9	9.1
v2	8.0	10.2

Feb. 13, 1894

Meas. of new var. in Ophiuchus (Cont).

Plate B 5960

8.6 d 5 v' 9.1 9.1 = 9.10
 9.1 v' 1 e 9.2
 f 5 v²
 v² 1 g

Plate B 6088

8.6 d 3 < v' 8.9 8.9 = 8.90
 8.9 v' > 3 e 9.2
 v² 0 g
 v² 5 h

Plate B 6469

8.0 c 3 > v' 8.3 8.5 = 8.40
 8.5 v' > 1 d 8.6
 f 4 v²
 v² 1 g

Plate B 6557

9.2 e 2 v' 9.4 9.5 = 9.45
 9.5 v' 4 f 9.9
 g 1 v²
 v² 3 h

Plate B 6638

9.2 e 4 v' 9.6 9.7 = 9.65
 9.7 v' 2 f 9.9
 g 2 > v²
 v² > 2 h

Feb. 13, 1894
 Meas. of new var. in *Ophiuchus* (Cont.)

Plate B 6748

92	e	6	v'	9.8	9.9	9.9 = 9.86
99	v'	0	f	9.9		
99	v'	5	g	10.4		
	f	5	v ²			
	v ²	0	g			
	v ²	5	h			

Plate B 6753

99	f	3	v'	10.2	10.1 = 10.15
10.1	v	3	g'	10.4	
	f	5	v ²		
	v ²	0	g		
	v ²	4	h		

a	5.4	7.3
b	6.0	7.9
c	6.0	7.9
d	6.7	8.6
e	7.3	9.2
f	7.9	9.8
g	8.4	10.3
h	8.9	10.8
k	9.5	11.4
l	9.9	11.8
m	10.4	12.3
n	11.5	13.
v'	8.2	10.2
v ²	8.5	10.4

8.7
 6.8
 1.9

Feb. 13, 1894
Meas. of new var. in *Ophiuchus* (Cn.)

Plate B 8465

10.4 g 2 v' 10.6 10.5 = 10.55
10.5 v' 3 h 10.8

g 1 2 v'
v' 2 4 h

Plate B 8467

10.4 g 3 v' 10.7 10.6 = 10.65
10.6 v' 2 h 10.8

f 4 v'
v' 1 g

Plate I 8629

9.2 e 4 v' 9.6 9.6 = 9.60

9.6 v' 3 f 9.9

f 5 v'
v' 1 g

Plate I 8664

9.2 e 5 v' 9.7 9.8 = 9.75

9.8 v' 1 f 9.9

v' 0 g

Plate I 8699

9.9 f 2 v' 10.1 9.9 = 10.00

9.9 v' 5 g 10.4

v' 0 g

Feb. 13, 1894.
 Meas. of new var. in Ophiuchus (Cont).

Plate I 8808

9.2	e	7	r'	9.9	9.9	9.9 = 9.90
9.9	r'	0	f	9.9		
9.9	r'	5	g	10.4		
	r ²	0	g			

Plate I 8922

9.9	f	4	r'	10.3	10.2 = 10.25
10.2	r'	2	g	10.4	
	f	6	r ²		
	r ²	1	g		

a	5.0	6.9
b	5.8	7.7
c	6.0	7.9
d	6.8	8.7
e	7.4	9.3
f	8.0	9.9
g	8.5	10.4
h	8.9	10.8
k	9.3	11.2
l	9.9	11.8
m	10.2	12.1
n	N.S.	N.S.
r'	8.1	10.0
r ²	8.4	10.3

8.7
 6.8
 1.9

Feb. 13, 1894.
Meas. of new var in *Ophiuchus* (Cont).

Plate I 8947

9.9 f 5 v' 10.4 10.2 = 10.30
10.2 v' 2 g 10.4
v² 0 g

Plate I 9048

9.9 f 5 v' 10.4 10.3 = 10.35
10.3 v' 1 g 10.4
f 5 v²
v² 1 g
v' 0 v²

Plate I 9154

10.4 g 2 v' 10.6 10.4 = 10.50
10.4 v' 4 h 10.8
v² 0 g

Plate B 9155

8.0 c 4 v' 8.4 8.0 = 8.45
8.5 v' 1 d 8.6
f 4 v²
v² 1 g

a 5.0 7.0
b 5.7 7.7
c 6.1 8.1
d 6.6 8.6
e 7.2 9.2
f 8.0 10.0
g 8.4 10.4

8.7
6.1
2.6

Plate 957X2

9.2 e 3 v' 9.5 9.5 = 9.50
9.5 v' 4 f 9.9
a g
b f
c A
d f
e H
f f
g ns
v' ML
v² ns

Feb. 13, 1894.
 Meas. of new var. in *Ophiurus* (Cont.).
 Plate B915 (Cont.).

h	8.9	10.9
k	9.3	11.3
e	9.6	11.6
m	10.1	12.1
n	10.5	12.5
r'	6.5	8.5
r''	8.3	10.3

Plate B9393
 8.6 d 3 > r' 8.9
 e off plate
 r'' 0 g

Plate B9394
 8.6 d 3 > r' 8.9
 e off plate
 r'' 6 g

Plate B9845
 9.9 f 4 r' 10.3 10.2 = 10.25
 10.2 r 2 g 10.4
 g 1 > r'
 r'' 4 h

Plate B10216

10.8	h 4 r'	11.2 11.1 = 11.15
11.1	r' 3 k	11.4
	r'' 0 g	
a	5.8	7.1
b	6.7	8.0
c	7.0	8.3
d	7.4	8.7
e	7.8	9.1
f	8.3	10.96
8.7	g 8.8	10.1
$\frac{74}{13}$	h 9.1	10.4
1.	k 9.5	10.8
	e 9.9	11.2
	m 10.1	11.4
	n 10.4	11.7
	r' 8.92	10.5
	r'' 8.7	10.0

February 13, 1894.
 Summary of new variable in *Opshuchus*.
 $DM + 1^{\circ} 34' 17'' 12'' + 1^{\circ} 40' 18'' 9.5$

Inst.	Pl. No.	Date	J.D.	$\frac{v}{v'}$	v^2	a	b	c	d	e	f	g	h	k	l	m	n
	B2577																
	I1043																
	I1544																
	I1716																
cc. 8	B5959			9.1	10.2	7.2	7.7	7.9	8.4	9.2	9.8	10.4	10.9	11.5	11.7	12.0	12.5
	B5960																
	B6088																
	I3854																
	B6748																
	B6753			10.2	10.4	7.3	7.9	7.9	8.6	9.2	9.8	10.3	10.8	11.4	11.8	12.3	N.S.
	I4172																
	I4273																
	I4274																
	I6469																
	I6557																
	I6638																
	B8465																
	B8467																
	B9155			8.5	10.3	7.0	7.7	8.1	8.6	9.2	10.0	10.4	10.9	11.3	11.6	12.1	12.5
	B9393																
	B9394																
sp.	B9572																
	I8629																
	I8664																
	I8699																
	I8808																

Feb. 13, 1894.

Summary (Cont).

Inst. Plate No.	Date	J.D.	Ex.	v'	v''	a	b	c	d	e	f	g	h	k	l	m	n
B9845																	
I8922				10.0	10.3	6.9	7.7	7.9	8.7	9.3	9.9	10.4	10.8	11.2	11.8	12.1	N.S.
I8947																	
I9048																	
I9154																	
B10216				10.5	10.0	7.1	8.0	8.3	8.7	9.1	9.6	10.1	10.4	10.8	11.2	11.4	11.7
				7.0		7.10	7.76	7.95	8.58	9.22	9.88	10.38	10.85	11.35	11.92	12.12	12.50

Rejected

February 16, 1894.

Meas. of new var in Scorpions, Sp. M. d. m. pl. 9765.

R. d. est. $16^h 50^m 2$ Dec. - $30^\circ 28'$ 1900

discovered independently by L. Drinker in Penn, and by Prof. E. C. Pickering in Cambridge

Plate B 5989

var	—	apparent	$16^h 48^m 7$	1875	1875	$-30^\circ 20'$		
a	=	Obs.	22873	16 47	7.71	-31 11	4.4	6.9 7 7.0
b	"		22896	16 47	50.79	-31 15	55.8	7 1/4 6 7.5
c	g.c.		3424	16 48	12.27	-31 18	55.6	-8 1/2 8.5
d	g.c.		3347	16 47	8.13	-31 0	56.9	-8 1/2 8.5
e	—	—	—	—	—	—	—	7.75
f	—	—	—	—	—	—	—	—
g	—	—	—	—	—	—	—	—
h	~	—	—	—	—	—	—	—
k	—	—	—	—	—	—	—	—
l	—	—	—	—	—	—	—	—
m	—	—	—	—	—	—	—	—
n	—	—	—	—	—	—	—	—
o	—	—	—	—	—	—	—	—

Plate B 3802

11.5^{85}	$l 4 v$	11.8^{75}	11.5^{65}	$= 11.5^{70}$	.85	.05
11.5^{65}	$v 1 m$	11.8^{75}				

Plate B 4058

9.8^{80}	$f 4 v$	10.2^{80}	10.0^{10}	$= 10.10^9$	.09	.09
10.0^{10}	$v 2 g$	10.2^{80}				

Plate B 5931

6.9^{80}	$a 6 v$	7.5^{80}	7.5^{60}	$= 7.5^{70}$	.01	.01
7.5^{60}	$v 1 b$	7.6^{60}				

Feb. 16, 1894.
Meas. of new var. in Scorpis (Cont.)

Plate B 5989

6.98 a 4 v $7.387.36 = 7.38^7$.01 .01
7.36 v 3 t 7.66

var 4.5 4.8 7.3

a 4.0 4.3 6.8

7.48 $7.46 = 7.47$.01 .01

t 4.7 5.0 7.5

c 5.6 8.1

d 6.2 8.7

e 7.0 9.5

f 7.5 10.0

g 8.0 10.5

h 8.4 10.9

k 8.8 11.3

l 9.2 11.7

m 9.6 12.1

n 10.0 12.5

o 10.4 12.9

7.8
5.3
2.5

Plate B 6073

6.98 a 6 v $7.587.56 = 7.58^7$.01 .01
7.56 v 1 t 7.66

Images elongated

Plate B 6775

9.38 c = 1

v n.s. < 9.4

Plate 7671

9.88 f 5 v $10.38^{80} 10.2^{34} 10.3^5 = 10.2^7$.04 .04 .01
10.230 v 0 g 10.280
10.35 v 3 h 10.65

Feb. 16, 1894

Meas. of new var. in Scorpens (Cont.).

Plate B7671 Cont

var	8.1	9.7
a	5.2	6.8
b	6.0	7.6
c	6.5	8.1
d	6.9	8.5
e	7.4	9.0
f	7.8	9.4
g	8.2	9.8
h	8.5	10.1
k	8.9	10.5
l	9.2	10.8
m	9.7	11.3
n	10.2	11.6
o	n.s.	

$$10.18 \quad 10.20 = 10.19 \quad .01 \quad .01$$

Plate 7672

10.230	g 1	r	10.3 ⁴⁰	10.3 ⁵ = 10.30 ⁸	.02, .03
10.355	r 3	h	10.6 ⁵		
var	8.2		10.5		
a	4.4	4.7	7.0		
b	4.9	5.2	7.5		
c		5.8	8.1		
d		6.4	8.5		
e		7.1	9.4		
f		7.7	10.0		
g		8.1	10.4		
h		8.5	10.8		
k		8.9	11.2		
l		9.2	11.5		
m		9.5	11.8		
n		9.9	12.2		
o		n.s.			

$$10.40 \quad 10.35 = 10.38 \quad .02, .03$$

$$0.98 \quad .05 \quad .01$$

Feb. 16, 1894
 Meas. of new var. in Scorpens (Cont).

Plate B 8627

98.8 f 3 v $10.18^{18} 10.0^{20} = 10.08^{19}$.01 .01

10.8²⁰ v 2 g 10.430

a A

b A

c A

d H

e A

f A?

g H?

h n.s.

Plate B 9206

11.4³⁵ l 3 v $11.8^{65} 11.5^{65} = 11.50^{65}$.00 .00

11.8⁶⁵ v 1 m 11.875

on edge of plate

Plate B 9207

11.4³⁵ l 2 v $11.4^{55} 11.3^{45} = 11.35^{50}$.05 .05

11.3⁴⁵ v 3 m 11.875

on edge of plate but
 images more distinctly
 vis. than in B 9206.

Plate B 9595

10.4³⁰ g 2 v $10.4^{50} 10.2^{50} = 10.30^{8}$.12 .13

10.2⁵⁰ v 4 h 10.6^{50}

Plate B 9765

8.6⁷³ d 2 v $8.8^{93} 9.0^{8} = 8.9^{90}$.07 .08

9.0⁸ v 3 e 9.3^{8}

Sp. Md. $h\gamma = .6$; $g\gamma = .2$

Feb. 16, 1894

Meas. of new var. in Scorpions (Cont).

Plate B9993

8.1²¹ c 2 r 8.3⁴¹ 8.3⁴³ = 8.30⁴² .01 .01
 8.3⁴³ r 3 d 8.673

Plate B10059

8.1²¹ c 1 r 8.2³¹ 8.1²³ = 8.15²⁷ .04 .04
 8.1²³ r 5 d 8.673

var. 6.3 8.2

a 5.0 6.9

t 5.7 7.6

c 6.2 8.1

d 6.7 8.6

e 7.3 9.2

f 8.0 7.6 9.7

g 8.3 8.2 10.1

h 8.7 8.5 10.4

k 9.0 8.8 10.7

l 9.1 11.0

m 9.5 11.4

n 9.9 11.8

o 10.3 12.2

8.31 8.33 = 8.32 .01 .01

Plate B10060

8.1²¹ c 2 r 8.3⁴¹ 8.3⁴³ = 8.30⁴² .01 .01
 8.3⁴³ r 3 d 8.673

Feb. 16, 1894
 Meas. of new. var. in Scorpens (Cont.)

Plate B10104

8.8²¹ c 2 v 8.3⁴¹ 8.4⁵³ = 8.35⁴² .16 .06
 8.45³ v 2 d 8.67³

Sp Md $\bar{g} = .6$; $h\delta = 1.0$

Plate B10238

6.9⁸ a 3 v 7.2⁸ 7.3⁸ = 7.25³³ .05 .05
 7.3⁸ v 3 b 7.66

Sp Md $\bar{g} = .7$; $h\delta = 1.0$

Plate 9765

8.0⁷³ d 1 v 8.7⁸³ 9.0⁹⁶ 8.85⁸
 9.0⁸ v 3 e 9.3⁸ .13 .4

Measure positions on plate B5989.

February 17, 1894
 Summary of New Tav. in Scorp. Rd. $16^{\text{h}} 50^{\text{m}} \text{ Dec. } -30^{\circ} 28'$ (1900)

Dist.	Plate No.	Date	J.D.	Eq.	var.	a	b	c	d	e	f	g	h	k	l	m	n	o
P	B 3802				11.56													
	B 4058				10.10													
	B 5931				7.50													
	B 5989				7.30													
					7.3	6.8	7.5	8.1	8.7	9.5	10.0	10.5	10.9	11.3	11.7	12.1	12.5	12.9
P	B 6073				7.50													
	B 6775				4.94													
					10.27													
	B 7671				[9.7]	6.8	7.6	8.1	8.5	9.0	9.4	9.8	10.1	10.5	10.8	11.3	11.8	N.S.
					10.30													
	B 7672				10.5	7.0	7.5	8.1	8.5	9.4	10.0	10.4	10.8	11.2	11.5	11.8	12.2	N.S.
	B 8629				10.05													
	B 9206				11.50													
	B 9207				11.35													
P	B 9595				10.30													
					(8.85)													
	B 9765				8.90													
	B 9993				8.30													
					8.15													
	B 10059				8.2	6.9	7.6	8.1	8.6	9.2	9.7	10.1	10.4	10.7	11.0	11.4	11.8	12.2
	B 10060				8.30													
P	B 10105				8.35													
	B 10238				7.25													

February 24, 1894
 Meas. of new variable star in Anguilla.
 RA +4° 4250 mag. 9.5 RA 19 46.5 Dec. +4° 13' (1900)
 Sp. M. on B10129 No. 3872.

Plate I 9359

Sp	112	var.	130 +4° 4250	19 44 16.5	+4 5.9	9.5	
I	a	"	+3° 4172	19 44 13.7	+3 43.6	6.8	6.8
A	b	"	+3° 4186	19 47 3.5	+3 35.1	8.9	9.1
Ma	c	"	+4° 4243	19 43 38.3	+4 40	7.8	7.8
H	d	"	+3° 4178	19 45 31.9	+3 53.0	9.4	10.2
H	e	"	+3° 4177	19 45 20.7	+3 40.1	9.5	10.5
2. H.F?	f	"	+4° 4255	19 44 55.4	+4 12.2	9.5	10.5
9.2	g						6) 54.9
	h						9.15
	k						

New sequence selected for this
 star by W.P.F. For correct identification
 time, see cover of I 9359 (Nov 8, 1905)

Plate I 1583

11.0 g = 2
 v not seen L112

Plate I 1752

9.9 e 5 v 10.4 10.3 = 10.35
 10.3 v 1 f 10.4

Plate I 4193

9.6 d 2 v 9.8 9.8 = 9.80
 9.8 v 1 e 9.9

var. 9.8 9.8 = 9.80

9.2
 9.5
 9.7

var. 8.0 9.7
 a 6.2 7.9
 b 6.9 8.6
 c 7.1 8.8
 d 7.8 9.5

e 8.1 9.8
 f 8.7 10.4
 g 9.5 11.2
 h 9.3 N.S.

Feb. 24, 1894.

Meas. of new. var. in Aquila (Cont).

Plate I 6805

near edge of pl.

10.4	f 3 v	10.7	10.7 = 10.70
10.7	v 3 g	11.0	

Plate I 6827

near edge of plate

9.9	e 5 v	10.4	10.3	10.4 = 10.37
10.3	v 0 f	10.4		
10.4	f 6 g	11.0		

Plate I 6860

9.9	e 5 v	10.4	10.3 = 10.35
10.3	v 1 f	10.4	

Plate I 7002

9.9	e 5 v	10.4	10.3 = 10.35
10.3	v 1 f	10.4	

a 6.3 8.0

b 7.0 8.7

c 7.3 9.0

d 7.8 9.5

e 8.2 9.9

f 8.6 10.3

g 9.2 10.9

h 9.9 11.6

k n.s. n.s.

var 8.5 10.2

10.2 10.3 = 10.25

$$\begin{array}{r} 9.2 \\ 1.5 \\ \hline 1.7 \end{array}$$

$$\begin{array}{r} 6.732 \\ 7.53 \\ \hline \end{array}$$

Feb. 24, 1894
 Meas of new var. in Aquila (Cont.).

Plate B7677

11.6 $h = .1$

var. n.s. < 11.7

Plate B7678

12.1 $k = 2$

var. n.s. < 12.3

near edge of pl. Plate I 8781

10.4 $f 4 v$ 10.8 10.8 = 10.80
 10.8 $v 2 g$ 11.0

Plate I 8846

9.9 near edge of pl. $e 2 v$ 10.1 10.1 = 10.10
 10.1 $v 3 f$ 10.4

Plate I 9030

8.9 near edge of pl. $c 7 v$ 9.6 9.6 9.4 = 9.53
 9.6 $v 0 d$ 9.6
 9.4 $v 5 e$ 9.9

Plate I 9060

8.9 $c 7 v$ 9.6 9.6 9.4 = 9.53
 9.6 $v 0 d$ 9.6

var. 9.7 9.6 = 9.65

9.4 $v 5 e$ 9.9

$e 8.2$ 10.0

9.2 a 5.8 7.6

$f 8.7$ 10.5

b 6.6 8.4

$g 9.2$ 11.0

c 7.0 8.8

$h 9.9$ 11.7

d 7.8 9.6

$k 10.3$ 12.1

9.2
 7.4
 1.8

6 2.1
 35

Feb. 24, 1894.
 Meas. of new. var. in Argulus (Cont.).

Plate I 9115

8.9 c 7 v 9.6 9.5 = 9.55
 9.5 v 1 d 9.6

a 6.0 7.9

b 6.6 8.5

c 7.1 9.0

d 7.7 9.6

e 8.1 10.0

f 8.5 10.4

g 9.1 11.0

h 9.6 11.5

k 10.1 12.0

var. 7.7 9.6

~~10.5~~ 9.5 9.6 9.5 = 9.57

Plate I 9359

9.6 d 5 v 10.1 9.9 9.9 = 9.97

9.9 v o e 9.9

9.9 v v f 10.4

a 5.7 7.9

b 6.2 8.4

c 6.7 8.9

d 7.4 9.6

e 7.7 9.9

f 8.2 10.4

g 8.8 11.0

h 9.2 11.4

k ~~9.7~~ 11.9

var. 7.8 10.0

10.0 10.0 = 10.00

Feb. 24, 1894.
 Meas. of new var in Aquila (Cont.).

Plate B 10128

9.9 c 1 v 10.0 10.0 = 10.00
 10.0 v 4 f 10.4
 var. Md $h\delta = .5$; $h\gamma = .3$
 a J
 b A
 c Ma
 d H
 e H
 f H?
 g ns.

Plate B 10129

9.6 d 5 v 10.1 9.9 9.9 = 9.97
 9.9 v 0 e 9.9
 9.9 e 5 f 10.4
 var. Ma $h\delta = .5$; $h\gamma = .3$
 a J
 b A
 c Ma
 d H
 e H
 f F?
 g ns.
 h

Feb. 24, 1894.

Summary of New. Var. in Aquila.
 Bd. $+4^{\circ}42'50''$ Rd. $19^{\circ}46.5''$ Dec. $+4^{\circ}13'$ (1900).

Inst.	Pl. No.	Date.	J.D.	Eq.	Var.	a	b	c	d	e	f	g	h	k	l	m
I 1583																
I 1752																
I 4193						9.7	7.9	8.6	8.8	9.5	9.8	10.4	11.2	n.s.		
I 6805																
I 6827																
I 6860																
I 7002						10.2	8.0	8.7	9.0	9.5	9.9	10.3	10.9	11.6	n.s.	
B 7677																
B 7678																
I 8781																
I 8846																
I 9030																
I 9060						9.7	7.6	8.4	8.8	9.6	10.0	10.5				
I 9115						9.6	7.9	8.5	9.0	9.6	10.0	10.4	11.0	11.7	12.1	
I 9359						10.0	7.9	8.4	8.9	9.6	9.9	10.4	11.0	11.4	11.9	
Adopted mag.						7.46	8.52	8.90	9.56	9.92	10.40					
						7.86	8.52	8.90	9.56	9.92	10.40	11.02	11.55	12.00		
						7.86	8.52	8.90	9.56	9.92	10.40	11.02	11.60	12.07		

March 9, 1894

Examination of photographic charts
for confirmation of variability of
star in R.A. $1^h 15^m$ Dec. $+9^\circ 7' 0.894$ per
letter of J. de M. Pereira of Jan. 17, 1894; also
page 49 of his copy of observations.
The star equals B.D. $+8^\circ 215' 1'' 14.0 + 8^\circ 55' 9.5 (1855)$

Date	Plate No.	B.D. $+8^\circ 215'$
Dec. 28, 1890.	I 2616	N.S. ftr the 10. $+8^\circ 210' 9.5$ & $+8^\circ 219' 9.5$ Seen
Jan. 15, 1891.	I 2874	N.S. $\angle 10$. $+8^\circ 210' 9.5$ & $+8^\circ 219' 9.5$ Seen
Jan. 24, "	I 2904	N.S. " $\angle 10$. " " " " " Seen
Feb. 5, "	I 3000	N.S. " $\angle 11$ stars 1.0 ftr than $+8^\circ 210'$ & $+8^\circ 219'$ Seen
Oct. 28, 1892.	I 7428	N.S. " $\angle 10$ $+8^\circ 210' 9.5$ & $+8^\circ 219' 9.5$ Seen
Nov. 20, "	I 7557	N.S. " $\angle 10$ " " " " " Seen
Aug. 8, 1893.	I 9129	N.S. " $\angle 10$ " " " " " Seen
" 14, "	I 9226	N.S. " $\angle 10$ " " " " " Seen
Sept. 2, "	I 9381	N.S. " $\angle 10$ " " " " " Seen
" 9, "	I 9432	N.S. " $\angle 10$ " " " " " Seen
Oct. 2, "	I 9567	N.S. " $\angle 10$ " " " " " Seen
" 7, "	I 9600	N.S. " $\angle 10$ " " " " " Seen
Nov. 25, "	I 10052	N.S. " $\angle 11$ stars 1.0 ftr than $+8^\circ 210'$ & $+8^\circ 219'$ Seen
" 25, "	I 10054	N.S. " $\angle 10.5$ stars 0.5 ftr than $+8^\circ 210'$ & $+8^\circ 219'$ Seen
Dec. 23, "	I 10254	N.S. " $\angle 10$ $+8^\circ 210' 9.5$ & $+8^\circ 219' 9.5$ Seen
Jan. 2, 1894	I 10360	N.S. " $\angle 11.5$ stars 1.5 ftr than $+8^\circ 219' 9.5$ Seen
" 19, "	I 10446	N.S. " $\angle 10.5$ stars 0.5 ftr than $+8^\circ 210'$ & $+8^\circ 219'$ Seen
" 19, "	I 10450	N.S. " $\angle 10$ $+8^\circ 210' 9.5$ & $+8^\circ 219' 9.5$ Seen
" 20, "	I 10505	N.S. " $\angle 10$ " " " " " Seen
" 22, "	I 10527	N.S. " $\angle 10$ " " " " " Seen
Aug. 18, 1891	B 6734	N.S. " $\angle 10$ " " " " " Seen
" 18, "	B 16735	N.S. " $\angle 10$ " " " " " Seen
Nov. 18, 1893	B 10660	N.S. " $\angle 11$ stars 1.0 ftr than $+8^\circ 210' 9.5$ Seen

March 9, 1894

Examination of photographic charts for confirmation of variability of SD. -3°37'. See letter of J. de M. Pereira, ~~March 9, 1894~~ Jan. 17, 1894.

Date	Plate	-3°37'
Dec. 24, 1890.	I 2595	N.S.
Jan. 3, 1891	I 2701	N.S.
" 10, "	I 2767	N.S.
Feb. 11, "	I 3039	N.S.
Mar. 1, "	I 3265	N.S.
Jan. 20, 1892	I 5414	N.S.
Nov. 5, "	I 7472	N.S.
" 16, "	I 7525	N.S.
" 20, "	I 7562	N.S.
Jan. 17, 1893	I 7895	N.S.
Aug. 22, "	I 9292	N.S.
Sept. 4, "	I 9394	N.S.
" 10, "	I 9451	N.S.
Oct. 7, "	I 9605	N.S.
Jan. 19, 1894	I 10460	N.S.
Oct. 11, 1892	B 8772	N.S.

All of these plates show the faintest SD stars and many of them stars one and two magnitudes fainter

March 13, 1894

Meas. of new variable star in Carinae
R.A. $10^h 19^m 16^s$ Dec. $-58^\circ 47'$ Spectrum Md on
plate B 9374 (No. 2966). Comp. stars selected
on pl. B 5250

Identified
as CD M. - 383108
10 9.6-58 1W
Maga. 10 1/2
Feb. 1917
This C.D.M. was
not published
at time var.
was announced
over twenty
years ago.

B 5250

var 10.2 12.3 - 12.2 12.4 12.3 = 12.30

a 5.5 7.6 = 3.1 10 542 10 7 18.68-58 12 41.8 7 6.8

8.1 b 5.9 8.0 = 5.71 10 7 41.34-58 20 15.0 9 8.2

6.0 c 6.6 8.7 = 5.59 10 7 31.25-58 13 31.7 9 8.1

7.1 d 7.0 9.1

e 7.3 9.4

f 7.6 9.7

g 8.0 10.1

h 8.4 10.5

k 9.0 11.1

l 9.4 11.5

m 9.8 11.9

n 10.2 12.3

o 10.5 12.6

12.03 11.8 m 4 v 12.2 12.4 12.4 = 12.37 .04 .03 .01

12.3 12.48 n 1 v 12.450

12.48 v 2 o 12.68

n 2

v 1

Plate B 3315

11.13 k 1

v n.s. < 11.23

3601 →

Plate B 4748

8.78 c 4

v n.s. < 9.122

9 k
10 k
11 k
12 k
13 k
14 k
15 k
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197 k
198 k
199 k
200 k

March 13, 1894

Meas. of new var. in barinas (Cont.)

5001 → Plate B 5249

10.5⁷² h 1

r n.s. < 10682

Plate B 5251

var. 10.2 12.4

12.4 12.4 = 12.40

a 5.6 7.6

b 6.0 8.0

c 6.7 8.7

d 7.0 9.0

e 7.3 9.3

f 7.6 9.6

g 8.0 10.0

h 8.4 10.4

k 8.7 10.7

l 9.2 11.2

m 9.5 11.5

n 10.1 12.1

12.50 12.48 = 12.49 .01 .01

o 10.4 12.4

12.5⁴⁰ n 2 r 12.5⁶⁰ 12.5⁸ = 12.50⁹ .01 .0112.5⁴ r 1 0 12.68

Plate B 5295

12.40 n 1

r n.s. < 12.50

7107 →

Plate B 7140

Stars trailed, var. not found

14

Trans. 1894

Meas. of new var. in Carina (Cont.)

Plate B7264

⁷²
10.58 h 4 r ¹² 10.9 ³ 11.0 = ^{11.08} 10.95 .04 .05
11.03 v 1 k 11.13
k 2 lns.

Plate B7520

⁷² 1st mag 10.5 h 4 r ^{11.12} 10.9 ³ 10.9 = ^{11.02} 10.90 .10 .09
10.9 3 v 2 k 11.13
k 1
⁷² 2nd mag 10.5 h 4 r ^{11.12} 10.9 10.9
k ns.

Plate B7107

⁵⁵ 11.4 l 2
v ns. < 11.875

Plate B3601

⁴⁰ 12.8 n 2
v ns. < 12.860

Plate B5001

⁵⁵ 11.4 l 3 v ? ^{85?} 11.7 defect?
v 1 ?
m ns.

Plate B8982

^{12.03} 11.8 m 2
v ns. < 12.8²³

March 14, 1894
 Meas. of new var in barium (Cont).

Plate B 8983

⁷²
 10.50

h 1

r ns. $\angle 10.682$

Plate B 9289

⁶²
 9.3

e 5 r

^{10.12} ⁸⁷ = 10.00
~~9.8~~ 9.5 = 9.65

.12 .13

9.547

r 1 f

9.697

Plate B 9374 Sp

a m+

b f

c f

d f?

e A?

f H

⁹⁷
 9.3 9.6

f 2 r

^{10.17} ^{10.15} ^{10.16}
~~9.8~~ 9.5 9.4 = 9.45

.01 .01

⁹⁴
 10.15

r 2 g

9.6 10.35

Plate B 10559

h 3

r ns. $\angle 8.480$

Plate B 10642

⁷²
 10.5

h 2

r ns. $\angle 10.792$

Plate B 10644

⁵⁵
 11.4

h 1 r?

⁶⁵
 11.5? defect?

m ns.

obs. uncertain

r ns. limit of visibility. This may be a defect.

March 14, 1894

Meas. of new var. in Carmin (cont).

Plate B 10658

12.03
H.8

m 3

r ns. $\angle 12.X^{33}$ 8.1
6.5
1.6

a 6.0 7.6

b 6.5 8.2

c 7.1 8.7

d 7.5 9.1

e 7.6 ~~7.2~~ 9.2

f 7.9 9.5

g 8.4 10.0

h 9.0 10.6

k 9.6 11.2

l 10.0 11.6

m 10.4 12.0

var. ns.

March 14, 1894
 Summary
 New variable in Carinae R.A. 10 g. $-58^{\circ} 17'$ (app. 1875)

var.	Plate No.	Date	J.D.	a	b	c	d	e	f	g	h	k	l	m	n	o
<11.2	B 3315															
<12.5	3601															
<9.1	47 88															
11.7?	5001															
<10.6	5249															
12.37 12.30	5250			7.6	8.0	8.7	9.1	9.4	9.7	10.1	10.5	11.1	11.5	11.9	12.3	12.6
12.50 12.40	52 45 ⁵¹			7.6	8.0	8.7	9.0	9.3	9.6	10.0	10.4	10.9	11.2	11.5	12.1	12.4
<12.5	5295															
<11.6	7107															
—	7140															
10.95	7264															
10.90 10.9	7520															
<12.0	8982															
<10.6	8983															
9.65	9289															
9.45	9374 8															
<8.4	10559															
<10.7	10642															
<11.5 defect?	10644															
<12.1	10658															

	7.6	8.2	8.7	9.1	9.2	9.5	10.0	10.6	11.2	11.6	12.0	—	—
	7.60	8.07	8.70	9.07	9.30	9.60	10.03	10.50	11.07	11.43	11.80	12.20	12.50
	.47	.63	.37	.23	.30	.43	.47	.57	.37	.37	.50	.30	
Adapt. Mgno	7.60	8.07	8.70	9.07	9.30	9.60	10.03	10.50	11.07	11.44	11.81	12.31	12.61

March 19, 1894

Mess. of new var. in Carina (Cont.)

Plate B 3566 (Sp.)

8.X⁸² c 1

v n.s. $\angle 8892$

Plate B 3605 (Sp.)

very poor plate

Plate B 4825 (Sp.)

8.X⁵⁰ b 5

v n.s. $\angle 869.00$

Plate B 4899 (Sp.)

8.X⁵⁸ b 3

v n.s. $\angle 8480$

Plate B 5119 (Sp.)

Short exposure! Does not show faint stars

Plate B 5879 (Sp.)

8.X⁸² c 0 v ? 8.X⁹²?

c 1

v 1 ?

Plate B 6501 (Trails)

9.62 c 2 v ? 9.82?

v 1 ?

March 19, 1894
Ideas of new var. in *leucum* (Cont).

Plate B7584

10.5⁷² h 2

v ns. $< 10.5^{92}$

Plate B7748 (Sp.)

9.1²⁴ d 2

v ns. $< 9.3^{44}$

Plate B ~~945~~ 7959

12.03
~~11.8~~

m 3 v

12.1³³ 12.1²⁰

= 12.1²⁶

.07 .06

12.1²⁰

v 2 n

12.1⁴⁰

Plate B9115 (Sp.)

9.1²⁴

d 3 v

9.4⁵⁴

v 1

Plate B ~~9284~~ (Sp.)

Plate B7475 (Sp.)

9.1²⁴

d 4

v ns.

$< 9.5^{64}$

Plate B7526 (Sp.)

10.5⁷²

h 3 v

10.8^{1.0} 2?

v 1 ?

Plate B74⁶26 Trails
var. not identified

March 19, 1894
 Meas. of new. var. in Carina (cont.)

Plate B 7727 Trail
 var. not identified

Plate B 9420

⁶²
^{10.22}
⁹⁷ ⁹⁵ ^{10.05}
^{9.8} e b r ^{9.9} ^{9.8} ^{9.8} = ^{9.74} .17 .08 .10
^{9.897} r o f ^{9.897}
^{9.695} fr 4 g ^{10.035}

Plate B 9431 (Sp.)

²⁴
^{9.8} d 2 r ^{9.844} ^{9.52} = ^{9.488} .04 .04
^{9.52} r 1 e ^{9.62}

March 22, 1894
 Meas. of new var. in learning (No. 2).
 sp. Midion plate B 9284 No. 2855 and on
 plate B 9374 No. 2963. ~~Ad.~~ Als. C. 13624
 R.A. $9^h 54.8$ Dec $-58^\circ 23'$ (1900).

Plate B 5250

8.22	7.90	a 3 r	$8.52 \quad 8.44 = 8.48$ $8.70 \quad 8.12 = 8.15$	.04 .04	
8.44	8.12	r 3 b	8.42 8.74		
	a	5.8 7.9	= 30.4150	9 53 57.59 - 58 29 24.5	8 1/2
	b	6.3 8.4	= 4212	9 54 41.10 - 58 9 45.0	9.2
	c	6.8 8.9	= 4065	9 52 44.26 - 58 12 52.1	8 1/2
	d	7.3 9.4	-	-	-
	e	7.8 9.9	4090	9 53 6.29 - 58 28 55.7	9
	var.	6.1	$8.52 \quad 8.54 = 8.53$ $8.70 \quad 8.12 = 8.15$	13624	.01 .01
					8.8

adopted M_{gas}
 7.92
 8.42
 8.92
 9.44
 9.94

8.8
 6.1
 2.1
 41267
 6.1

Plate B 3559

8.74	8.42	b 10 r ?	$9.74, 10.06 = 9.90$ $9.12, 9.74 = 9.55?$	.16 .16	
10.06	9.74	r 2 e ?	9.94 10.26		
		c r d not on plate			

Too near edge of plate

Plate B 4863 sp.
 r and comp. stars not seen

Plate B 4996

8.22	7.90	a 4 r	$8.62 \quad 8.54 = 8.58$ $8.30 \quad 8.2 = 8.25$	.04 .04	
8.54	8.22	r 2 f	8.42 8.74		

Plate B 5155

8.74	8.42	b 3 r	$9.04 \quad 9.04 = 9.04$ $8.72 \quad 8.72 = 8.72$		
9.04	8.72	r 2 c	8.72 9.24		

March 22, 1894
 Meas. of new var. in Carina (No. 2) Cont.

Plate B 5249

$\begin{array}{r} 8.74 \\ \hline 8.42 \end{array}$ b 3 r $\begin{array}{r} 9.04 \\ \hline 8.72 \end{array}$ $\begin{array}{r} 9.04 \\ \hline 8.72 \end{array} = 9.04$.00 .00
 9.04 $\begin{array}{r} 8.72 \\ \hline 8.42 \end{array}$ r 2 c $\begin{array}{r} 8.72 \\ \hline 8.42 \end{array} = 9.24$

On edge of plate

Plate B 5251

$\begin{array}{r} 8.74 \\ \hline 8.42 \end{array}$ b 2 r $\begin{array}{r} 8.94 \\ \hline 8.62 \end{array}$ $\begin{array}{r} 8.94 \\ \hline 8.62 \end{array} = 8.94$.00 .00
 8.94 $\begin{array}{r} 8.62 \\ \hline 8.42 \end{array}$ r 3 c $\begin{array}{r} 8.72 \\ \hline 8.42 \end{array} = 9.24$

Plate B 5295

$\begin{array}{r} 8.22 \\ \hline 7.90 \end{array}$ a 4 r $\begin{array}{r} 8.62 \\ \hline 8.30 \end{array}$ $\begin{array}{r} 8.54 \\ \hline 8.22 \end{array} = 8.58$.04 .04
 8.54 $\begin{array}{r} 8.22 \\ \hline 8.42 \end{array}$ r 2 b $\begin{array}{r} 8.42 \\ \hline 8.74 \end{array}$

Plate B 5869 Sp

$\begin{array}{r} 8.74 \\ \hline 8.42 \end{array}$ b 2 r $\begin{array}{r} 8.94 \\ \hline 8.62 \end{array}$ $\begin{array}{r} 9.04 \\ \hline 8.72 \end{array} = 8.99$.05 .05
 9.04 $\begin{array}{r} 8.72 \\ \hline 8.42 \end{array}$ r 2 c $\begin{array}{r} 8.72 \\ \hline 8.42 \end{array} = 9.24$

Plate B 7416 Sp
 Images too faint

Plate B 8982

$\begin{array}{r} 9.24 \\ \hline 8.72 \end{array}$ c 4 r $\begin{array}{r} 9.64 \\ \hline 9.32 \end{array}$ $\begin{array}{r} 9.56 \\ \hline 9.24 \end{array} = 9.60$.04 .04
 9.56 $\begin{array}{r} 9.24 \\ \hline 9.44 \end{array}$ r 2 d $\begin{array}{r} 9.44 \\ \hline 9.76 \end{array}$

a 6.2 8.0

b 6.7 8.5

c 7.2 9.0

d 7.6 9.4

e 8.1 9.9

var 7.5

$\begin{array}{r} 9.54 \\ \hline 9.22 \end{array}$ $\begin{array}{r} 9.66 \\ \hline 9.34 \end{array} = 9.60$

$\begin{array}{r} 9.22 \\ \hline 9.34 \end{array} = 9.28$.06 .06

$\begin{array}{r} 8.8 \\ 7.0 \\ \hline 1.8 \end{array}$

$\begin{array}{r} 42.82 \\ 70 \\ \hline 1.8 \end{array}$

March 22, 1893
 Meas. of new var. in Carni (No. 2) Cont.

Plate B 8983

9.24 ~~8.92~~ c 4 r ~~9.64~~ ~~9.46~~ = ~~9.55~~ ~~7.32~~ ~~9.14~~ = ~~9.24~~ .09 .09
 9.46 ~~7.44~~ r 3 d ~~7.44~~ 9.76

Plate B 9284 (Sp.)

8.22 ~~7.90~~ a 4 r ~~8.62~~ ~~8.74~~ ~~8.84~~ = ~~8.73~~ ~~8.30~~ ~~8.42~~ ~~8.52~~ = ~~8.44~~ .11 .01 .11
 8.74 ~~8.42~~ r o b ~~8.42~~ 8.74
 8.84 ~~8.52~~ r 4 c ~~8.92~~ 9.24

Plate B 9287

On edge of plate 8.74 ~~8.42~~ b 4 r ~~9.14~~ ~~9.24~~ ~~9.16~~ = ~~9.18~~ ~~8.82~~ ~~8.92~~ ~~8.84~~ = ~~8.83~~ .04 .06 .02
 9.24 ~~8.92~~ r o c ? ~~8.92~~ 9.24
 9.16 ~~8.84~~ r 6 d ~~7.44~~ 9.76

Plate B 9288

On edge of plate 8.74 ~~8.42~~ b 4 r ~~9.14~~ ~~9.24~~ ~~9.16~~ = ~~9.18~~ ~~8.82~~ ~~8.92~~ ~~8.84~~ = ~~8.83~~ .04 .06 .02
 9.24 ~~8.92~~ r o c ~~8.92~~ 9.24
 9.16 ~~8.84~~ r 6 d ~~7.44~~ 9.76

Plate B 9289

This est. prob. correct. 8.74 ~~8.42~~ b 1 r ~~8.84~~ ~~8.84~~ = ~~8.84~~ ~~8.52~~ ~~8.52~~ = ~~8.52~~ .00 .00
 8.84 ~~8.52~~ r 4 c ~~8.92~~ 9.24

Plate B 9374 (Sp.)

8.74 ~~8.42~~ b 1 r ~~8.84~~ ~~8.94~~ = ~~8.89~~ ~~8.52~~ ~~8.62~~ = ~~8.58~~ .05 .05
 8.94 ~~8.62~~ r 3 c ~~8.92~~ 9.24

Plate B 10492

near edge of plate 9.24 ~~8.92~~ c 3 r ~~9.54~~ ~~9.46~~ = ~~9.50~~ ~~9.22~~ ~~9.14~~ = ~~9.18~~ .04 .04
 9.46 ~~9.14~~ r 3 d ~~9.44~~ 9.76

March 22 1893
Meas. of new var. in Cassini (No. 2) Cont.

near edge of plate

Plate B 10493

9.24
~~8.92~~ c 2 v $9.44 \quad 9.46 = 9.45$
~~9.12~~ ~~9.14~~ ~~9.14~~ .01 .01
9.46 ~~9.14~~ v 3 d ~~9.44~~ 9.76

Plate B 10550

Too faint for comp. very poor plate

near edge of plate

Plate B 10617

9.24
~~8.92~~ c 3 v $9.54 \quad 9.36 = 9.45$
~~9.22~~ ~~9.04~~ ~~9.14~~ .09 .09
9.36 ~~9.04~~ v 4 d ~~9.44~~ 9.76

Plate B 10462

9.24
~~8.92~~ c 1 v $9.34 \quad 9.26 = 9.30$
~~9.02~~ ~~8.94~~ ~~8.94~~ .04 .04
9.26 ~~8.94~~ v 5 d ~~9.44~~ 9.76

8.8
6.7
2.1
a 5.7 7.9
b 6.3 8.4
c 6.8 8.9

4.26
6.7
2.1
d 7.4 9.5
e 7.9 10.0

var 7.0 $9.44 \quad 9.36 = 9.40$
 $9.12 \quad 9.04 = 9.08$.04 .04

Plate B 10644

9.24
~~8.92~~ c 1 v $9.34 \quad 9.26 = 9.30$
~~9.02~~ ~~8.94~~ ~~8.94~~ .04 .04
9.26 ~~8.94~~ v 5 d ~~9.44~~ 9.76

Plate B 10658

9.24
~~8.92~~ c 2 v $9.44 \quad 9.26 = 9.35$
~~9.12~~ ~~8.94~~ ~~9.04~~ .09 .09
9.26 ~~8.94~~ v 5 d ~~9.44~~ 9.76

8.8
7.3
1.5
a 5.4 7.9
b 6.9 8.4
c 7.4 8.9
d 8.0 9.5

e 8.5 10.0
var 7.5 $9.34 \quad 9.26 = 9.30$
 $9.08 \quad 8.94 = 9.01$.04 .04

March 31, 1894.

Meas. of new variable in Centaurus
R.A. 12^h 28^m 0^s Dec. -54° 2' (Oppolzer, 1900).
Sp. Md on plate B 9520 No. 3265.

Plate B 9576

Adopting var. 76 ~~76~~ 9.2 9.1 = 9.15

83	a	6.7	8.2
15 8.8	b	7.1	8.6
9.0	c	7.4	8.9
9.4	d	7.9	9.4
9.8	e	8.3	9.8
10.2	f	8.7	10.2
10.6	g	9.1	10.6
11.0	h	9.5	11.0

$$9.38 \ 9.30 = 9.34 \ .04 \ .04$$

e
c
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cx
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gj
gk
gl
gm
gn
go
gp
gq
gr
gs
gt
gu
gv
gw
gx
gy
gz
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Sub 9 pt

11.4 k 9.9 11.4 9.25 9.25 = 9.25 00 00
8.95 9.25 9.48 9.44 = 9.44 .04 .04
9.18 9.2 7.7 7.7 = 7.7 9.3 9.2 = 9.25
9.25 9.2 7.7 7.7 = 7.7 9.4 9.45

Plate B 3358

10.59 10.2 10.3 10.5 10.3 = 10.40 10.89 10.64 = 10.76 13 12
10.64 10.3 10.6 10.94

Plate B 3379

on edge of plate 10.52 10.64 10.94 10.6 8.8 10.3 10.52 10.64
10.64 10.6 10.94 10.6 8.8 10.3 10.52 10.64

on edge of plate 11.36 11.24 11.36

very faint 11.36 11.24 11.36

March 31, 1894
 meas. of new var in Centaurus (Cont).

Plate B 3510

near edge of plate
 10.94 ~~10.82~~ 10.6 ~~10.9~~ 11.26 ~~11.41~~ var
 a
 b
 c
 d
 e
 f
 g
 h
 k

11.34 11.26 = 11.30 04 04
~~11.0 10.9 = 10.95 11.22 11.14 = 11.18 04 04~~
 11.0 ~~11.24~~ 11.36

Images to poor

Plate B 4826

~~10.50~~ 10.2 ~~10.2~~ $\times = 3$
 var n.s. ? ~~10.5~~ ~~10.80~~ 10.89

Plate B 4998

near edge of plate
 10.59 ~~10.50~~ 10.2 ~~10.2~~ $\times = 2$ v
 10.79 10.74 = 10.76 03 02
~~10.4 10.4 = 10.40 10.70 10.60 = 10.66 04 04~~
 10.74 ~~10.62~~ 10.4 ~~10.4~~ $\times = 2$ v
 10.6 10.94 ~~10.82~~

Plate B 5279

8.95 ~~9.18~~ 9.2 ~~9.2~~ $\times = 3$ v
 9.25 ~~9.40~~ 9.2 ~~9.2~~ $\times = 2$ g
 9.25 9.25 = 9.25 00 00
~~9.3 9.2 = 9.25 9.48 9.40 = 9.44 04 04~~
 9.4 ~~9.60~~ 9.45

Plate B 7333

Sp. pl

March 31, 1894
 Meas. of new var. in Centaurus (Cont.)

Plate B 7570

10.27 ~~10.02~~ 9.8 ~~10.12~~ 10.19 = 10.28 09 09
 10.19 ~~10.10~~ 9.8 ~~10.12~~ 10.10 = 10.11 .01 .01
 10.19 ~~10.10~~ 9.8 ~~10.12~~ 10.10 = 10.11 .01 .01
 10.19 ~~10.10~~ 9.8 ~~10.12~~ 10.10 = 10.11 .01 .01

Plate B 7859

11.36 ~~11.24~~ 11.0 ~~11.3~~ 11.3 = 11.30 11.66 11.54 = 11.60 06 06
 11.54 ~~11.46~~ 11.3 ~~11.4~~ 11.4 = 11.50 04 04
 11.54 ~~11.46~~ 11.3 ~~11.4~~ 11.4 = 11.50 04 04
 11.54 ~~11.46~~ 11.3 ~~11.4~~ 11.4 = 11.50 04 04

0.9
 a 7.5 8.4
 b 8.0 8.9
 c 8.3 9.2
 d 8.6 9.5
 e 9.0 9.9
 f 9.3 10.2
 g 9.6 10.5
 h 10.0 10.9
 k 10.4 11.3

Plate B 8004 Sp 5°

9.45
 9.60 ~~9.4~~ 9.4 ~~9.4~~ 9.45
 v ns. ~~9.7~~ 9.90

Plate B 8956 Sp 15°
 ns.

March 31, 1894
 Dress of new var in Centauri (Cont.)

Plate B 8957

10.94			11.24	11.116 = 11.20	04 04	
10.82	10.6		10.7	10.8 = 10.85	11.12	11.04 = 11.08 .04 .04
11.16						
11.04	10.8		11.0	11.36 + 1.24	11.04	

Plate B 9520 Sp. 50

8.95			9.25	9.35 = 9.30	05-05
9.18	9.0		9.3	9.3 = 9.30	9.48 9.50 = 9.49 .01 .01
9.35	9.50	9.3	9.4	9.60	9.45

a A
 b A-7
 c A-7
 d H
 e A?

Plate B 9633

8.95			9.25	9.25 = 9.25	00 00
9.18	9.0		9.3	9.4 = 9.25	9.48 9.40 = 9.44 .04 .04
9.25					
9.46	9.2		9.4	9.45	9.60

~~Draw~~ April 4, 1894

Meas. of comp. stars for new var. in Centaurus
see pp. 134

Plate B 9516

2 \times 6.5 8.0

1 \times 6.9 8.4

4 \times 7.3 8.8

3 \times 7.7 9.2

5 \times 8.2 9.7

a 6.7 8.2 ~~10.4~~

b 7.2 8.7

c 7.5 9.0

d 7.9 9.4

[6.7 0
7.1 1
7.4 1
7.9 0

g.c. 1528 12" 9

1632 " 9

1524 " 8

1426 " 8.5

1629 " 9.5

8.80

Plate B 7859

1 7.5 8.4

2 7.7 8.6

3 8.0 8.9

4 8.4 9.3

5 8.8 9.7

a 7.7 8.6

b 8.0 8.9

c 8.2 9.2

d 8.5 9.4

[7.5 2
8.0 0
8.3 1
8.6 1

14
April 5 1894

Measure of variable star R_{12} Cygni Plate I 7167

var.	9.3	11.3	11.3 = 11.3	+38°	3957	20	8	7.4	+38	17.4	(8.2)
a	6.3	8.3		+38°	3952	20	7	48.0	+38	2.3	8.8 9.0
b	6.9	8.9		+37°	3827	20	7	27.6	+37	57.0	8.9 9.1
c	7.3	9.3		+38°	3964	20	9	3.8	+38	2.9	9.0 9.3
d	7.7	9.7		+38°	3968	20	9	31.4	+38	0.8	9.0 9.3
e	8.0	10.0		+38°	3954	20	8	1.6	+38	10.1	9.0 9.3
f	8.4	10.4		+38°	3966	20	9	22.1	+38	2.4	9.2 9.7
g	8.7	10.7		+38°	3960	20	8	20.4	+38	16.6	9.4 10.2
h	9.0	11.0									$\frac{65.9}{9.56}$
k	9.6	11.6									
l	10.2	12.2									

$$11.2 \quad h \quad 4 \quad r \quad 11.6 \quad 11.3 = 11.45$$

$$11.3 \quad \cancel{h} \quad r \quad 3 \quad k \quad 11.6$$

Plate B 1658

9.3 $c = 4$
 $r \text{ n.s.} < 9.7$
 $e \approx r$
 \cancel{r}

Plate I 2801

10.0 $c \quad 2 \quad r \quad 10.2 \quad 10.2 = 10.20$
 10.2 $r \quad 2 \quad f \quad 10.4$

Plate I 4064

10.6 $g \approx r \quad 10.8$
 $r = 1$
 $h \text{ n.s.}$

April 14, 1894.

Meas. of var. R.S. bygni (Cont).

Plate I 6808

10.6 g 1 v 10.7 10.7 = 10.70
10.7 v 3 h 11.0

Plate I 6980

10.2 e = .2
v n.s. L 10.4

Plate I 8714 Sp.

10.4 f = .1
v n.s? ^{40.5} faint trace of one bright line, but no continuous spectrum

Plate I 8849

9.6 d 3 v 9.9 9.8 = 9.85
9.8 v 2 e 10.0

Plate I 8879

var 8.3 9.7 9.8 = 9.75

a 6.8 8.2

b 7.4 8.9

c 7.8 9.3

d 8.2 9.5

e 8.5 10.0

f 8.7 10.2

g 9.0 10.5

h 9.5 11.0

k 10.0 11.5

l 10.4 11.9

April 14, 1894.

Mass. of var. *R. S. bygnii* (Cont).

Plate I 8879 (Cont).

9.6 d 2 r 9.8 9.8 = 9.80
9.8 r 2 e 10.0

near edge of pl. Plate I 9300
9.6 d 3 r 9.9 9.9 = 9.90
9.9 r 1 e 10.0

Plate I 9457

10.0 e 2 r 10.2 10.2 = 10.20
10.2 r 2 f 10.4
var 7.2 10.2 10.2 = 10.20

9.6
6.5
3.1

a 5.1 8.2
b 5.7 8.8
c 6.2 9.3
d 6.5 9.6
e 7.0 10.1
f 7.4 10.5
g 7.7 10.8
h 8.0 11.1
k 8.5 11.6
l 8.9 12.0

456
6.51

Plate I 9980

10.6 g 5 r 11.0 10.9 = 10.95
10.9 r 1 h 11.0

April 17, 1894 -

Meas. of variables in 47 Tucanae (Cont from B p

Plate X ~~5500~~ 5453

9.9 b 2 a 10.1 9.8 = 9.95
 9.8 a 12 c 11.0
 11.0 c 2 P 11.2 11.1 = 11.15
 11.1 P 6 e 11.7
 11.0 c 3 H 11.3 11.1 = 11.20
 11.1 H 6 e 11.7
 11.7 e 4 Q 12.1 12.3 = 12.20
 12.3 Q 2 f 12.5
 12.1 d 1 W 12.2 12.3 = 12.25
 12.3 W 4 f 12.7
 (f 1 g) J n.s. < 12.7
 g n.s. 8
 11.7 b 3 S 12.0 12.1 12.2 = 12.10
 12.1 S 0 S 12.1
 12.2 S 3 f 12.5 1
 11.7 e 1 R 11.8 11.6 = 11.70
 11.6 R 5 d 12.1

Plate X 5476

11.0 c 4 P 11.4 11.3 = 11.35
 11.3 P 4 e 11.7
 9.9 b 3 a 10.2 10.2 = 10.20
 10.2 a 8 c 11.0
 11.0 c 4 H 11.4 11.3 = 11.35
 11.3 H 4 e 11.7
 11.7 e 4 Q 12.1 12.1 12.3 = 12.17
 12.1 Q 0 d 12.1
 12.3 Q 2 f 12.5

April 1894.
 Meas. of variables in 47 Tucanae (Cont.).

$\begin{array}{llll} 11.7 & e & 3 & W \\ 12.1 & W & 0 & d \\ 12.3 & W & 2 & f \\ 12.8 & g & 1 & j \\ 13.0 & f & 2 & h \\ 12.5 & f & 5 & s \\ 12.8 & s & 0 & g \\ 12.8 & s & 4 & h \\ 11.7 & e & 2 & R \\ 11.9 & R & 2 & d \\ 12.1 & R & 4 & f \end{array}$
 $\begin{array}{llll} 12.0 & 12.1 & 12.3 & = 12.13 \\ 12.1 & & & \\ 12.5 & & & \\ 12.9 & 13.0 & & = 12.95 \\ 13.2 & & & \\ 13.0 & 12.8 & 12.8 & 12.87 \\ 12.8 & & & \\ 13.2 & & & \\ 11.9 & 11.9 & 12.1 & = 11.97 \\ 12.1 & & & \\ 12.5 & & & \end{array}$

Plate 5500

$\begin{array}{llll} 9.9 & b & 4 & a \\ 10.2 & a & 8 & c \\ 11.0 & c & 4 & P \\ 11.3 & P & 4 & e \\ 11.7 & e & 4 & W \\ 12.0 & W & 1 & f \\ 12.1 & d & 4 & h \\ 12.5 & h & 0 & f \\ 12.4 & h & 4 & g \\ 12.8 & g & 2 & j \\ 13.0 & j & 2 & h \\ 13.2 & h & 4 & s \\ 13.4 & s & 1 & l \\ 11.7 & e & 4 & R \\ 12.0 & R & 1 & d \\ 11.0 & c & 6 & o \\ 11.5 & o & 2 & e \end{array}$
 $\begin{array}{llll} 10.3 & 10.2 & & = 10.25 \\ 11.0 & & & \\ 11.4 & 11.3 & & = 11.35 \\ 11.7 & & & \\ 12.1 & 12.0 & & = 12.05 \\ 12.1 & & & \\ 12.5 & 12.5 & 12.4 & = 12.47 \\ 12.5 & & & \\ 12.8 & & & \\ 13.0 & 13.0 & & = 13.0 \\ 13.2 & & & \\ 13.6 & 13.4 & & = 13.5 \\ 13.5 & & & \\ 12.1 & 12.0 & & = 12.05 \\ 12.1 & & & \\ 11.6 & 11.5 & & = 11.55 \\ 11.7 & & & \end{array}$

April 17, 1894

Meas. of new variables in 47 Tucanae (Cont.)

Plate X 5501

9.9	b	1	a	10.0	9.8 = 9.90
9.8	q	12	c	11.0	
11.0	c	2	p	11.2 11.1 = 11.15	
11.1	p	6	e	11.7	
13.2	h	3	s	13.5 13.4 = 13.45	
13.4	s	1	l	13.5	
12.5	f	3	h	12.8 12.5 = 12.65	
12.5	h	3	g	12.8	
11.0	c	6	q	11.6 11.5 = 11.55	
11.5	q	2	e	11.7	
12.1	d	1	w	12.2 12.3 = 12.25	
12.3	w	2	f	12.5	
12.8	g	4	j	13.2 13.2 13.1 = 13.17	
13.2	j	0	h	13.2	
13.1	j	4	l	13.5	
11.7	h	0	a	9.9 9.5 = 9.70	
11.8	R	3	d	12.1	
	R	1	R	11.8 11.8 = 11.80	

Plate X 5502

9.9	b	0	a	9.9 9.5 = 9.70	
9.5	a	15	c	11.0	
11.0	c	6	q	11.6 11.6 = 11.60	
11.6	q	1	e	11.7	
11.0	c	3	p	11.3 11.2 = 11.25	
11.2	p	5	e	11.7	
11.0	c	5	R	11.5 11.5 = 11.50	
11.5	R	2	e	11.7	

April 17, 1894

Meas. of new variables in 47 Tucanae (Cont.)

Plate X5502 Cont.

11.7 W o e 11.7 = 11.7
 e = 1
 T ns < 11.8
 S ns. < 11.8

Plate X5504

11.0 c 6 B 11.6 = 11.55
 11.5 B 2 e 11.7
 9.9 f 3 a 10.2 10.0 = 10.10
 10.0 a 10 c 11.0
 11.0 c 4 P 11.4 11.3 = 11.35
 11.3 P 4 e 11.7
 11.7 e 4 W 12.1 12.1 12.2 = 12.13
 12.1 W o d 12.1
 12.2 W 3 f 12.5
 12.5 f 3 u 12.8 12.5 = 12.65
 12.5 u 3 g 12.8
 12.8 g 1 j 12.9 12.9 = 12.90
 12.9 j 3 h 13.5 13.2
 S n.s. < 13.6
 11.7 e 1 R 11.8 11.8 = 11.80
 11.8 R 3 L 12.1
 e = 1

Plate B10747

11.0 c 5 W 11.5 11.4 = 11.45 c 6 Q 11.6 11.5 = 11.55 c 8 P 11.8 11.7 11.7 = 11.73
 11.7 W 3 e 11.7 11.0 Q 2 e 11.7 11.7 P o e 11.7
 11.7 P 4 d 12.1

May 2, 1894

Examination of plates for Hartwig's variable
at $2^h 6.6 + 157^{\circ} 50' (18^{\circ} 55')$ cont.

Plates I 10442, 10673, 10844, 10901, and 10932
taken on Jan. 19, Feb. 16, March 19, March 26,
and March 27, 1894, show no evidence of
variation.

May 4, 1894

Examination of photographic charts to determine
the variation if any in position suspected
star ~~at~~ R.A. $19^h 15^m 2.7^s$ Dec. $+37^\circ 36.6'$ (~~95~~) (1855).
See postal card of April 6, 1894.

Plate No.	Date
I 985	April 7, 1890.
1749	Aug. 30, "
3758	June 23, 1891.
4150	Sept. 4, "
4239	" 18, "
8823	July 19, 1893
8903	" 23, "
9282	Aug. 22, "
9283	" 22, "
9299	" 25, "

These plates have been
examined and show
no evidence of variation in
any of the stars visible upon
the plates and within $15''$ of the position given above.
To make the examination
more complete each plate
has, in turn, been superposed
on I 8903 and a second
comparison made. On all
of them a star about the
tenth magnitude appears in
about the required position.

June 2, 1894

Confirmation of Geminus Dns. var's. see
Astron Nachr. 1128 p. 235.

- 1 BD +40° 4191
- 2 " +40° 4215
- 3 +44° 3543
- 4 +46° 3019
- 5 +40° 4307
- 6 +43° 3449
- 7 +42° 3891

Plate I 7289 taken

Compared with I 4071 taken

Shows no evidence of change

in any of these objects except

the suspicion of a slight change

in +44° 3543.

Other plates covering region not
examined here.

Several other plates were examined
and also failed to show variation.

June 11, 1894

Examination of plates for confirmation
of Espin's variable BD +36° 3168
R.A. Dec.

Plate	Date
I 6680	July 27, 1892
8817	July 19 1893
8954	" 27 "
9024	Aug 2 "
8794	July 16 1893
6640	July 23 1892
9357	Sept. 2 1893
9058	Aug. 3 1893

An examination of
these plates shows that
the star BD +36° 3168
does not appear on any
of them although most
of them show stars as
faint as the thirteenth
magnitude.

June 11, 1894

Measurement of Espino's new variable star
BD +36° 3243 R.A. Dec.

Plate I 8817, taken July 19, 1893

var.	9.2	10.6	+36° 3243	(18 36.9 + 36 36 8.5) 8.7
a	6.7	8.1	+36° 3236	(18 37.4 + 36 47 8.1) 8.2
f	7.5	8.9	+36° 3241	(18 37.2 + 36 44 8.8) 9.0
c	8.0	9.4	+36° 3237	
d	8.4	9.8	+36° 3251	18 39.4 + 36 53 9.4 10.2
e	8.8	10.2		4) 36.1 9.02
f	9.2	10.6		
g	9.5	10.9		
h	9.9	11.3		
k	10.2	11.6		
e	n.s.	n.s.		
10.2	e 4 r	10.6	10.6 10.6 = 10.60	
10.76	r 1 f	10.9	10.9	

f.
g.
h.
i.
j.
k.
l.
m.
n.
o.
p.
q.
r.
s.
t.
u.
v.
w.
x.
y.
z.

Plate I 6640 July 23, 1892

9.3	c 5 r	9.8	9.6 = 9.70
9.6	r 2 d	9.8	

Plate I 6914 Sept. 8, 1892

var. 8.3 9.9 9.9 = 9.90

a 7.6 8.2

f 7.2 8.8

c 7.6 9.2

d 8.2 9.8

e 8.6 10.2

f 9.2 10.8

g 9.5 11.4

9.8 d 1 r 9.9 9.8 = 9.85
9.8 r 4 e 10.2

June 11, 1894

Meas. of Espar's var (Cont). BD +36° 32' 3

Plate I 8794 July 16, 1893

10.2 e 4 v 10.6 10.6 = 10.60

10.6 v 1 f 10.7

Plate I 8873 July 21, 1893

10.2 e 4 v 10.6 10.7 10.5 = 10.60

10.7 v 0 f 10.7

10.5 v 5 g 11.0

Plate I 9058 Aug. 3, 1893

10.2 e 2 v 10.4 10.4 = 10.40

10.4 v 3 f 10.7

Plate I 9357 Sept. 2, 1893

10.2 e 2 v 10.4 10.4 = 10.40

10.4 v 3 f 10.7

Plate I ~~1218~~ 1216 May 22, 189010.2 e 1 v ~~10.3~~ 10.3 10.3 = 10.3010.3 v 4 f ~~10.7~~ 10.7

Plate I 2370 Nov. 28, 1890

9.80 d 4 v 10.2 10.2 = 10.2

10.2 v 0 e 10.2

10.2 e 5 f 10.7

June 11, 1894

Espino's New Variable Star BD+36° 3243

Pl. No.	Date	J.D.	Est. Scale var.	a	b	c	d	e	f	g	h	k	l
I 1216	May 22, 1890		10.30 ..										
" 2370	Nov. 28, 1890		10.20 ..										
6640	July 23, 1892		9.70 ..										
6914	Sept. 8, 1892		9.90 9.90	8.2	8.8	9.2	9.8	10.2	10.8	11.1	11.4		
8794	July 16, 1893		10.60 ..										
8817	July 19, 1893		10.60 10.73	8.1	8.9	9.4	9.8	10.2	10.6	10.9	11.3	11.6	11.9
8873	July 21, 1893		10.60 ..										
9058	Aug 3		10.40										
9357	Sept. 2, 1893		10.40										
				adpt. mag.	8.15	8.85	9.30	9.80	10.20	10.70	11.00	11.35	11.65

July 23, 1894.

Examination of E. E. Barnard's "New
Nebulous Star" BD-19° 4953 76. See
Astron. Nachr. Vol. 130 p 77.

Plate B 4027 shows the edge of the
image of this star to be slightly hazy.

Plate B 5275 shows the spectrum to
be class A 2 B; K line, or line near
K distinctly seen.

Plate B 7730 shows the lines of this
spectrum to be slightly bright towards
their edge of shorter wavelength.

August 13, 1894.
Examination of plates for Meteors.

Plates Date Time

I // 331

11332

11333

11334

11341

examined for meteors fail to show
any trace of one. M. F.

August 13, 1894.

Examination of plates for suspected variable
 $BD + 9^{\circ} 38' 09''$ $18^h 33^m 11^s$ $+ 9^{\circ} 51' 8.0''$ See B. 75 p. 20

Plates I 1560
 I 3862
 I 8814
 I 6629
 I 9055
 I 3795
 I 11154
 I 11226

examined, show no evidence of variability
 in $BD + 9^{\circ} 38' 09''$ it being brighter than BD
 $BD + 9^{\circ} 38' 14''$ 8.5 and fainter than $BD + 9^{\circ} 38' 16''$ 8.5
 on all of these plates. The comparison
 stars differ about 0.6 magn. photographically

August 28 1894

Meas. of new variable in Perseus ϵ .No. ~~2575~~ 2575 - α B 8622 - Abs. ~~27193~~ ²⁷¹⁹³ 19 46.8 - 59 27 7.5 var.?

Plate B 6253

var.	6.3	8.2	^{8.2 + 8.1 = 8.15} 27193	19	^{46.8} 53.5 - 59	27
a	6.0	7.9	27333	19	53.5 - 59	43 8
b	6.4	8.3	27251	19	49.3 - 59	47 $\frac{8.1}{8.1}$
c	7.1	9.0				
d	7.3	9.2				
e	8.0	9.9				
f	8.7	10.6				
g	9.1	11.0				
h	9.6	11.5				

7.9 a 3 r 8.2 8.1 = 8.15

8.1 r 1 b 8.2

a . . . c b

d . . . x

e . . . h

f . . . o

J Plate 3538

8.2 b r r 8.7 8.7 = 8.70

8.7 r 3 c 9.0

Plate 3760

8.2 b 7 r 8.9 8.9 = 8.90

8.9 r 1 c 9.0

Plate 3944

9.2 d 1 r 9.3 9.4 = 9.35

9.4 r 6 e 10.0

August 28, 1894
 Meas of Alse. ²⁷¹⁹³ ~~21793~~ (Cont.)

Plate 4080

9.2 d 4 r 9.6 9.7 = 9.65
 9.7 r 3 e 10.0

Plate 4097

9.2 d 3 r 9.5 9.5 = 9.50
 9.5 r 5 e 10.0

Plate 4131

9.2 d 3 r 9.5 9.6 = 9.55
 9.6 r 4 e 10.0

Plate 4233

9.2 d 3 r 9.5 9.6 = 9.55
 9.6 r 4 e 10.0

Plate 6249

7.9 a 2 r 8.1 7.9 = 8.0
 7.9 r 3 b 8.2

Plate 6250

7.9 a 4 r 8.3 8.2 8.4 = 8.30
 8.2 r 0 b 8.2
 8.4 r 6 c 9.0

6253

Plate 6254

7.9 a 4 r 8.3 8.2 8.3 = 8.27
 8.2 r 0 b 8.2
 8.3 Ho 7 c 9.0

August 28, 1894.
 Meas. of α 18, 27193 (Cont.).

on edge of plate

Plate 6255

7.9 a 4 v 8.3 8.2 8.3 = 8.27
 8.2 v o b 8.2
 8.3 v 7 c 9.0

Plate 6256

7.9 a 4 v 8.3 8.2 8.3 = 8.27
 8.2 v o b 8.2
 8.3 b 7 c 9.0

Plate 7845-

8.2 b 4 v 8.6 8.7 = 8.65
 8.7 v 3 c 9.0

Plate 8522

8.2 b 5 v 8.7 8.8 = 8.75
 8.8 v 2 c 9.0

Plate 8523

8.2 b 6 v 8.8 8.9 = 8.85
 8.9 v 1 c 9.0

B8622

Plate 10226

8.2 b 4 v 8.6 8.6 = 8.60
 8.6 v 4 c 9.0

Plate 10227

8.2 b 4 v 8.6 8.6 = 8.60
 8.6 v 4 c 9.0

August 28 1894
 Meas. of abs. ²⁷¹⁹³ 21993 (Cont.)

Plate 10228

8.2 b 5 v 8.7 8.7 = 8.70
 8.7 v 3 c 9.0

var. 7.5 8.6 8.6 = 8.60

8.1
 7.0
 1.1

a 6.8 7.9

b 7.1 8.2

c 7.9 9.0

d 8.2 9.3

e 8.9 10.0

f 9.3 10.4

g 9.4 10.5

h 9.9 11.0

Plate 10229

8.2 b 5 v 8.7 8.7 = 8.70
 8.7 v 3 c 9.0

Plate 10232

8.2 b 5 v 8.7 8.7 = 8.70
 8.7 v 3 c 9.0

Plate 10233

8.2 b 5 v 8.7 8.7 = 8.70
 8.7 v 3 c 9.0

Plate 8622 (sp.)

8.2 b 3 v 8.5 8.6 = 8.55
 8.6 v 4 c 9.0

Oct. 3, 1894

B. 3965

9.2 d 2 v 9.4 9.5 = 9.45
 9.5 v 5 c 10.0

Plate B 8223

8.2 b 3 v 8.5 8.6 = 8.55
 8.6 v 4 c 9.0

August 28, 1894. *Panpis*
 Summary of new var. in *Telescopium*?
 age ²⁷¹⁹³ ~~21793~~ 19 46.8 - 59 27 7.5 var.?

Plate No.	Date	J.D.	a	b	c	d	e	f	g	h	var.
Ch. B 3538	1889 June 13	11167									8.70
" 3760	July 8	11920									8.90
" 3944	Aug. 5	1220									9.35
" 3965	" 25	1240									9.45
" 4080	" 25	1240									9.65
" 4097	" 28	1243									9.50
" 4131	Sept. 3	1249									9.55
" 4233	" 16.	1262									9.55
" 6249	1891 June 10	1894									8.00
" 6250	" 10	1894									8.30
" 6253	" 10	1894									8.27
" "	" 10	1894									(8.15)
" 6254	" 10	1894									8.15
" 6255	" 10	1894									8.27
" 6256	" 10	1894									8.27
Sp " 7845	1892 June 8	2258									8.65
" 8223	Sept. 8	2350									8.55
" 8522	" 8	2350									8.75
" 8523	" 8	2350									8.85
Sp 8622	" 22	2364									8.55
Ch. 10226	1893 Aug. 26	2702									8.60
" 10227	" 26	2702									8.60
" 10228	" 26	2702									8.70
" "	" 26	2702									(8.60)
" 10229	" 26	2702									8.70
" 10232	" 26	2702									8.70
" 10233	" 26	2702									8.70

September 17, 1894,

Examination of photographs to determine
photographically the amount of variation in
Hartwig's new variable star BD +15° 3311 6.8
See Cablegram received Saturday Sept. 15,
"d"

I 1721

I 1721

Corr. mean

a = BD + 15° 33 27 17 54 24.3 + 15 7.1 6.5 6.5

b = BD + 14° 33 74 17 51 45.0 + 14 31.5 6.5 6.5

c = BD + 14° 33 78 17 52 12.6 + 14 52.2 7.0 7.0

d = BD + 15° 33 17 17 53 13.7 + 15 19.2 8.3 8.5

7.12

69 ~~7.0~~ b 2 v $\frac{7.1}{7.2}$ 7.0 = ~~7.10~~ 7.05
7.0 v 2 c $\frac{7.2}{7.2}$

Plate I 3871

69 $\frac{70}{71}$ $b \ 3 \ v$ $\frac{72}{73}$ $\frac{71}{72} = \frac{72}{73}$ $\frac{71}{75}$
 $\frac{71}{72}$ $v \ 1 \ c$ $\frac{72}{72}$

Plate I 4064

6.6 a 3 v 6.9 ~~6.8~~ ~~6.85~~ 6.80
6.7 ~~6.8~~ v 2 b ~~7.0~~ 6.9

Plate I 65-12

near edge $\begin{matrix} 6.6 \\ a \end{matrix}$ 3 $\begin{matrix} 6.9 \\ v \end{matrix}$ $\begin{matrix} 7.0 \\ 6.9 \end{matrix} = \cancel{6.90}$ 6.95
 $\begin{matrix} 7.0 \\ 6.9 \end{matrix}$ $\begin{matrix} 6.9 \\ v \end{matrix}$ 1 $\begin{matrix} 7.0 \\ 6.9 \end{matrix}$

Plate I 65-3169

$\frac{6.6}{\text{near eye}} \quad \text{plate } I \quad 6.5 - 3/69$

$a \ 4 \ r \quad 7.0 \neq 6.8 = \cancel{6.95} \quad 6.90$

$69 \cancel{7.0} \quad v \ o \ b \quad \cancel{7.0} \ 6.9$

$6.8 \quad r \ 4 \ c \quad \cancel{7.8} / 2$

Sept. 17, 1894.

Meas. of Hartwig's new var. (Cont.)

Plate I 6576

near edge 7.2 c 1 v 7.3 ~~7.3~~ = ~~7.35~~ 7.30
 7.3 ~~7.3~~ v 4 d ~~7.3~~ 7.7

Plate I 6608

6.9 7.0 b 3 v ~~7.2~~ 7.2 ~~7.3~~ = ~~7.27~~ 7.20
 7.2 v 0 c 7.2
 7.2 7.3 v 5 d ~~7.8~~ 7.7

a 5.1 6.7

b 5.4 7.0

c 5.7 7.3

d 6.2 7.8

7.12
 5.55
 1.57
 1.6

var. 5.7 ~~(7.3 7.2 7.3)~~ = ~~7.27~~ 7.2 7.2 7.2 = 7.20

Plate I 8746

7.2 c 1 v 7.3 ~~7.3~~ = ~~7.40~~ 7.35
 7.4 ~~7.3~~ v 3 d ~~7.8~~ 7.7

a 5.7 6.6

b 6.0 6.9

c 6.3 7.2

d 6.8 7.7

7.12
 6.20
 .92
 0.9

var. 6.4 ~~7.3 7.4~~ = ~~7.35~~ 7.3 7.3 = 7.30

Plate I 8764

7.2 c 2 v 7.5 ~~7.5~~ = ~~7.50~~ 7.45
 7.4 ~~7.5~~ v 3 d ~~7.8~~ 7.7

September 17, 1894.

Meas. of Hartwig's new var. (Cont.)

Plate I 8838

near edge $\frac{7.2}{7.4}$ c 2 v $7.4 \frac{7.4}{7.5} = \frac{7.45}{7.45} 7.40$
 $7.4 \frac{7.5}{7.5}$ v 3 d ~~7.5~~ 7.7

Plate B 1443 Sp.

a 5.8 6.5 bl. 7 50 h = .2
 b 6.2 6.9 " A
 c 6.5 7.2 " 7 98 h = .3
 $\frac{7.12}{6.38}$ d $\frac{7.0}{7.7}$ " a
 $\frac{.74}{.07}$ var 6.5 " 7 K=H; 95 h = .1
~~(7.3 7.1 7.3) = 7.27~~ $7.2 \cdot 7.2 \cdot 7.2 = 7.20$

Plate B 1549 Sp.

a 6.8 6.5 bl. 7 90 h = .2
 b 7.1 6.9 " A
 c 7.5 7.2 " 7 90 h = .3
 $\frac{7.12}{7.88}$ d ~~7.5~~ 8.1 7.8 " A
 $\frac{.26}{-.03}$ var 7.5 " 7 90 h = .1
~~6.8 7.2 7.5 = 7.15~~ $7.2 \cdot 7.2 \cdot 7.1 = 7.17$

September 18, 1894.

Second set of mens. of Hartwig's new
algal variable BD +15° 3311. 62.

Plate I 1603

6.9 ~~7.0~~ b 2 v ~~7.1~~ 7.1 = 7.15 7.10
7.1 v 1 c 7.2

Plate I 1721

6.9 ~~7.0~~ b 2 v ~~7.1~~ 7.1 = 7.15 7.10
7.1 v 1 c 7.2

Plate B 1443 sp.

6.9 ~~7.0~~ b 3 v ~~7.2~~ 7.2 ~~7.3~~ = 7.27 7.20
7.2 v 0 c 7.2
7.2 ~~7.3~~ v 5 d 7.8 7.7

Plate B 1549 sp.

6.9 ~~7.0~~ b 3 v ~~7.3~~ 7.2 ~~7.3~~ = 7.27 7.20
7.2 v 0 c 7.2
7.2 ~~7.3~~ v 5 d 7.8 7.7

Plate B I 3871

6.9 ~~7.0~~ b 1 v ~~7.0~~ 7.0 = 7.10 7.00
7.0 v 2 c 7.2

Plate I 6512

6.6 a 3 v 6.9 ~~7.0~~ 6.9 = 6.95 6.90
6.9 ~~7.0~~ v 1 b 7.0 6.9
6.9 v 3 c 7.2

September 18, 1894
 Second set of meas. of Hartung's var. (Cont.)

Plate I 6531

6.6 a 3 v 6.9 ~~7.0~~^{6.9} 6.9 = ~~6.93~~ 6.90
 6.9 ~~7.0~~ v 0 t ~~7.0~~ 6.9
 6.9 v 3 c 7.2

Plate I 6576

7.2 c 2 v 7.4 ~~7.4~~^{7.3} = ~~7.40~~ 7.35
 7.3 ~~7.4~~ v 4 d ~~7.8~~ 7.7

Plate I 6608

6.9 ~~7.0~~ b 2 v ~~7.1~~^{7.1} 7.1 = ~~7.15~~ 7.10
 7.1 v 1 c 7.2

Plate I 8746

6.9 ~~7.0~~ t 3 v ~~7.3~~^{7.2} 7.2 ~~7.3~~^{7.2} = ~~7.27~~ 7.20
 7.2 v 0 c 7.2
 7.2 ~~7.3~~ v 5 d ~~7.8~~ 7.7

Plate I 8764

7.2 c 2 v 7.4 ~~7.4~~^{7.3} = ~~7.40~~ 7.35
 7.3 ~~7.4~~ v 4 d ~~7.8~~ 7.7

Plate I 8838

7.2 c 1 v 7.3 ~~7.4~~^{7.3} = ~~7.35~~ 7.30
 7.3 ~~7.4~~ v 4 d ~~7.8~~ 7.7

Plate I 4064

6.6 a 3 v 6.9 ~~7.0~~^{6.7} = ~~6.85~~ 6.80
 6.7 ~~6.8~~ v 2 b ~~7.0~~ 6.9

October 4, 1894.

An examination of the spectrum plate B 11048 and the chart plate B 5773 shows that the spectrum of the object at in R.A. $15^h 10^m 8^s$ Dec. $-45^\circ 17'$ (1900) announced in the Astron. Nach. Vol. 135 p. 195 is that of a gaseous nebula and not of a star of the fifth type since the strong bright line at wavelength (about) 500. is distinctly shown and is the most marked line in the spectrum. It is also the most distinctive feature in the spectra of gaseous nebulae and is not present in the spectrum of the fifth type.

Identified later as

C.D.M. $-45^\circ 9' 789$ 18 10.0-45-17 (1900) 10.0

- Sagittarius Variable, $20^h 11^m - 39^\circ 25'$

An ^{examination} of the plate B 3579, with the Cordoba D.M. Charts shows that this star is identical with C.D.M. $-39^\circ 13' 722$ magn. 9.7 and that the epoch as announced in the Astron. Nach. Vol. 125 p. 366 ~~is 1875~~ is 1875 and not 1900. The ¹⁹⁰⁰ position of the variable is in R.A. $20^h 11^m - 39^\circ 25'$

October 5, 1894

Additional meas. of Hartwig's new Algol Variable
BD. +15° 33 11 6.8 Continual from p. 165.

Plate B1443

6.9 b 3 v 7.2 7.2 7.2 = 7.20
7.2 v 0 c 7.2
7.2 c 5 d 7.7

Plate B1549

6.9 b 3 v 7.2 7.2 7.2 = 7.20
7.2 v 0 c 7.2
7.2 c 5-d 7.7

Plate I 1603

6.9 b 3 v 7.2 7.2 7.2 = 7.20
7.2 v 0 c 7.2
7.2 c 5-d 7.7

Plate I 6608

7.12
5.58
1.54
1.5

a	5.1	6.6
b	5.4	6.9
c	5.7	7.2
d	6.1	7.6

mean 5.7 7.2 7.2 7.2 = 7.20

Plate I 8746

7.12
6.01
1.11

a	5.6	6.7
b	5.9	7.0
c	6.2	7.3
d	6.7	7.8

mean 6.2 7.2 7.2 7.2 = 7.20

October 5, 1894

Meas. of Hartnup's Algol var, BD +15° 33' 11 (Cont).

Plate I 11495

6.9 b 3 v 7.2 7.1 = 7.15
7.1 v 1 c 7.2

a 5.0 6.6

b 5.3 6.9

c 5.6 7.2

d 6.1 7.7

var. 5.6

7.2 7.2 7.2 = 7.20

7.12
5.50
1.62

Plate I 11454

6.8 b 2 v 7.0 7.1 = 7.05
7.1 v 1 c 7.2

a 6.1 6.6

b 6.4 6.9

c 6.7 7.2

d 7.2 7.7

var 6.7

7.2 7.2 7.2 = 7.20

7.12
6.60
0.52
0.5

Plate I 11471

7.2 c 1 v 7.3 7.3 = 7.30
7.3 v 4 d 7.7

a 5.4 6.6

b 5.7 6.9

c 6.0 7.2

d 6.5 7.7

var 6.1

7.3 7.3 7.3 = 7.30

7.12
5.90
1.22

October 9, 1894

Meas. of Hartwig's Algol var. (Cont).

Plate I 11454

6.9 b 3 v 7.2 7.1 = 7.15
7.1 v 1 c 7.2

a 6.2 6.6
b 6.5 6.9
c 6.8 7.2
7.12
6.70
42
d 7.3 7.7
var 6.8 7.2 7.2 7.2 = 7.20

Plate I 11471

7.2 c 1 v 7.3 7.3 = 7.30
7.3 v 4 d 7.7

a 5.3 6.6
b 5.6 6.9
7.12
5.80
1.32
c 5.9 7.2
d 6.4 7.7
var 6.0 7.3 7.3 7.3 = 7.30

Plate I 11495

6.9 b 3 c 7.2 7.1 = 7.15
7.1 c 1 v 7.2

a 5.0 6.6
b 5.3 6.9
7.12
5.50
1.62
c 5.6 7.2
d 6.1 7.7
var 5.5 7.1 7.1 7.1 = 7.10

October 10, 1894.

Meas. of new variable in Microscopium

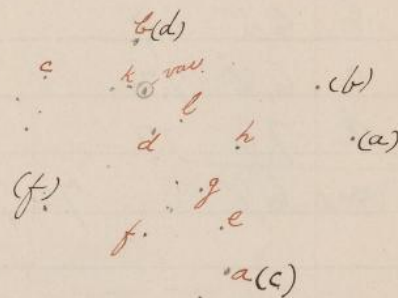
R.A. $20^h 33^m 9^s$ Dec. $-29^\circ 9'$ Ser B 9814, No. 3602, Mol.

Ref. stars for meas. of position marked in black ink. Companion stars in red ink
Plate B 9869.

a	5.6	7.6
b	6.3	8.3
c	6.9	8.9
d	7.4	9.4
e	7.8	9.8
f	8.0	10.0
g	8.5	10.5
h	9.0	11.0
k	9.6	11.6
l	10.1	12.1

var 7.3 $9.3 \ 9.3 = 9.30$

$3.9 \ 20^h 1034 \ 20 \ 31 \ 27 \ -28 \ 51.7 \ 7.4-8$ (e)
" $1072 \ 20 \ 32 \ 33 \ -29 \ 18.6 \ 8$
 7.93



Red ink indicates Companion stars.

Black, " " stars selected to determine pos.

$\sqrt{8.83 \ 8.9}$ $\sqrt{9.38 \ 9.4}$ $\sqrt{9.1 \ 9.2}$ $\sqrt{9.15}$ $9.03 \ 9.38 = 9.20$ 17 18
9.38 $\sqrt{9.4}$ $\sqrt{9.4}$ 9.58

✓ Plate 3764

11.08 11.2 $\sqrt{11.3}$ 11.5 $\sqrt{11.38}$
v n.s. $\sqrt{11.5}$

Plate 3924

11.2 $\sqrt{11.5}$ 11.7 11.6 = 11.65 ? -
11.6 $\sqrt{11.8}$

Plate 3945

11.2 $\sqrt{11.5}$ 11.7 11.6 = 11.65 ? -
11.6 $\sqrt{11.8}$

October 10, 1894.

Meas. of new variable in

(Cont.)

✓ Plate 4245

$\begin{array}{l} 8.83 \text{ } \cancel{8.9} \text{ } d \\ 9.48 \text{ } \cancel{9.5} \text{ } v \end{array}$
 $\begin{array}{l} 5 \text{ } r \\ 1 \text{ } l \end{array}$
 $\begin{array}{l} 9.4 \text{ } \cancel{9.5} = 9.35 \\ 9.4 \end{array}$
 $\begin{array}{l} 9.33 \\ 9.58 \end{array}$
 $\begin{array}{l} 9.48 = 9.40 \text{ } 07 \text{ } 08 \end{array}$

Plate 4353

$\begin{array}{l} 9.8 \text{ } f \\ 10.0 \text{ } r \end{array}$
 $\begin{array}{l} 4 \text{ } v \\ 1 \text{ } f \end{array}$
 $\begin{array}{l} 10.2 \text{ } 10.0 = 10.10 \text{ } ? \\ 10.1 \end{array}$

Plate 5267

$\begin{array}{l} 10.7 \text{ } k \\ 11.2 \text{ } r \\ 11.3 \text{ } v \end{array}$
 $\begin{array}{l} 5 \text{ } r \\ 0 \text{ } l \\ 5 \text{ } k \end{array}$
 $\begin{array}{l} 11.2 \text{ } 11.2 \text{ } 11.3 = 11.27 \\ 11.2 \text{ } ? \\ 11.8 \end{array}$

"Kon limit of visibility"

On edge

$\begin{array}{l} 8.83 \text{ } d \\ 9.8 \text{ } f \\ \text{plate } 500 \end{array}$
 $\begin{array}{l} = .4 \\ n.s. \end{array}$
 $\begin{array}{l} 10.2 \\ 10.2 \end{array}$
 $\begin{array}{l} 9.23 \end{array}$

✓ Plate 6018

$\begin{array}{l} 11.08 \text{ } 11.2 \text{ } l \\ 11.08 \text{ } 11.2 \end{array}$
 $\begin{array}{l} = .5 \\ n.s. \end{array}$
 $\begin{array}{l} 11.7 \\ 11.7 \end{array}$
 $\begin{array}{l} 11.58 \end{array}$

✓ Plate 6141

$\begin{array}{l} 10.58 \text{ } 10.7 \text{ } k \\ 10.58 \text{ } 10.7 \end{array}$
 $\begin{array}{l} = .3 \\ n.s. \end{array}$
 $\begin{array}{l} 11.0 \\ 11.0 \end{array}$
 $\begin{array}{l} 10.88 \end{array}$

✓ Plate 6142

$\begin{array}{l} 10.58 \text{ } 10.7 \text{ } k \\ 10.58 \text{ } 10.7 \end{array}$
 $\begin{array}{l} = .2 \\ n.s. \end{array}$
 $\begin{array}{l} 10.9 \\ 10.9 \end{array}$
 $\begin{array}{l} 10.78 \end{array}$

October 10, 1894.

Meas. of new. var. in

(Cont.)

✓

Plate 6187

10.58 ~~10.7~~ $k = .4$ ~~11.1~~10.98r n.s. $\angle 11.1$

✓

Plate 6188

11.08 ~~11.2~~ $k = .4$ ~~11.6~~11.48r n.s. $\angle 11.6$ Plate 6125⁵

10.1

 $k = .3$

10.3

var. n.s. $\angle 10.3$

Plate 8526

10.1

f 4 r

10.5 10.5 = 10.50

10.5

r 2 g k

10.7

Plate 8527

9.8

d 6 r

10.4 10.1 10.2 = 10.23

10.1

r 0 f

10.1

10.2

r 5 g k

10.7

Plate 9243

11.6

k = .1

11.9

r n.s. $\angle 11.9$

October 10, 1894.

Meas. of new variable in (Cont.)

✓ Plate 9244

$$11.08 \text{ } \pi_{1.6} \quad \Delta = .4 \quad \pi_{1.6} \quad 11.48$$

$$v \text{ ns. } \pi_{1.6}$$

✓ Plate 9868

$$8.83 \text{ } 8.9 \quad d \quad 5 \quad v \quad 9.4 \quad 9.2 = 9.30 \quad 9.33 \quad 9.38 = 9.36 \quad 0.3 \quad 0.2$$

$$9.38 \text{ } 9.4 \quad v \quad 2 \quad d \quad 9.4 \quad 9.58$$

✓ Plate 9953

$$8.88 \text{ } 8.9 \quad d \quad 4 \quad v \quad 9.3 \quad 9.2 = 9.25 \quad 9.23 \quad 9.38 = 9.30 \quad 0.7 \quad 0.8$$

$$9.38 \text{ } 9.2 \quad v \quad 2 \quad d \quad 9.4 \quad 9.58$$

793	a	5.6	7.6
590	b	6.2	8.2
Mag 2.03	c	7.0	9.0
Mag 2.03	d	7.5	9.5
near edge	e	8.0	10.0
7 plate	f	8.3	10.3
	g	9.0	11.0
	h	9.5	11.5
	k	10.1	12.1
	l	10.4	12.4
	var	7.4	

 $9.39.3 = 9.30$

October 10, 1894.

Meas. of new var. in (Cont).

↓

Plate 9954

$\begin{array}{l} 8.83 - 8.9 \\ 9.48 - 9.5 \end{array}$
 $\begin{array}{l} d \\ v \end{array}$
 $\begin{array}{l} 5 \\ 1 \end{array}$
 $\begin{array}{l} r \\ d^2 \end{array}$
 $\begin{array}{l} 9.4 \\ 9.4 \end{array}$
 $\begin{array}{l} 9.3 \\ 9.4 \end{array}$
 $\begin{array}{l} = 9.35 \\ 9.58 \end{array}$
 $\begin{array}{l} 9.33 \\ 9.48 \end{array}$
 $\begin{array}{l} 9.40 \\ 9.40 \end{array}$
 $\begin{array}{l} 07 \\ 08 \end{array}$

↓

Plate 10973

$\begin{array}{l} 9.58 - 9.4 \\ 9.23 - 9.4 \end{array}$
 $\begin{array}{l} d \\ v \end{array}$
 $\begin{array}{l} 1 \\ 4 \end{array}$
 $\begin{array}{l} r \\ d^2 \end{array}$
 $\begin{array}{l} 9.5 \\ 9.8 \end{array}$
 $\begin{array}{l} 9.4 \\ 9.6 \end{array}$
 $\begin{array}{l} = 9.45 \\ 9.63 \end{array}$
 $\begin{array}{l} 9.68 \\ 9.23 \end{array}$
 $\begin{array}{l} 9.46 \\ 9.46 \end{array}$
 $\begin{array}{l} 22 \\ 23 \end{array}$

Plate 9869 (2nd meas.)~~98~~

$$\begin{array}{r} 7.93 \\ 5.95 \\ \hline 1.98 \end{array}$$

a 5.6 7.6
 b 6.3 8.3
 c 6.9 8.9
 d 7.4 9.4
 e 7.8 9.8
 f 8.1 10.1
 g 8.6 10.6
 h 9.1 11.1
 k 9.7 11.7
 l 10.0 12.0

var. 7.3 $9.3 \ 9.3 = 9.30$

$\begin{array}{l} 8.83 - 8.9 \\ 9.38 - 9.4 \end{array}$
 $\begin{array}{l} d \\ v \end{array}$
 $\begin{array}{l} 3 \\ 2 \end{array}$
 $\begin{array}{l} r \\ d^2 \end{array}$
 $\begin{array}{l} 9.4 \\ 9.4 \end{array}$
 $\begin{array}{l} 9.4 \\ 9.4 \end{array}$
 $\begin{array}{l} = 9.40 \\ 9.58 \end{array}$
 $\begin{array}{l} 9.13 \\ 9.38 \end{array}$
 $\begin{array}{l} 9.30 \\ 9.30 \end{array}$
 $\begin{array}{l} 26 \\ 13 \end{array}$
 $\begin{array}{l} 12 \\ 12 \end{array}$

October 10, 1894.

Meas. of new var. in (Cont).

Plate 9953 2nd meas.

793 600 1.9	a	5.7	7.6
	b	6.3	8.2
	c	7.0	8.9
	d	7.4	9.3
	e	7.9	9.8
	f	8.2	10.1
	g	8.8	10.7
	h	9.3	11.2
	k	10.0	11.9
	l	10.3	12.2
	var	7.3	

$$9.2 \ 9.3 = 9.25$$

Plate 7906 (4x5)

9.63 + 10.4	f	4	v	10.5	10.6	= 10.55	10.03
- 10.6	v	1	g	k	10.7		

October 11, 1894.

Meas. of new variable star in Lupus
 R.A. $14^h 45^m 2^s$ Dec. $-46^\circ 6'$ (approx. 1875) Sp. M d? on
 plate B 11298 (No 4548).

Cat. Stars for meas. of position marked in black ink. Comparison stars in red ink.

Plate B 11272

a	6.5	8.4	2843	$14^h 44^m 7^s - 46^\circ 7'$	$8\frac{3}{4}$	8.8
b	6.8	8.7	2906	$14^h 45^m 6^s - 45^\circ 45'$	$9\frac{1}{4}$	9.2
c	7.1	9.0	2733	$14^h 43^m 1^s - 45^\circ 58'$	$9\frac{1}{4}$	9.2
d	7.5	9.4	2861	$14^h 44^m 9^s - 46^\circ 27'$	$8\frac{1}{2}$	8.5
e	7.9	9.8				8.92
f	8.2	10.1				
g	8.5	10.4				
h	8.9	10.8				
k	9.4	11.3				
l	9.8	11.7				
m	10.1	12.0				
n	10.3	12.2				
r	7.8					

(c) 6.29067²

(A) 2733

2913. $\frac{h}{a} \pm$
 $\frac{e}{c} \frac{k}{f} \frac{l}{m}$
 $\frac{g}{n}$

d(B) 2861

892
 698
 194

$$9.7^{69} 9.7^7 = 9.70^3 \quad .04 \quad .04$$

$$9.4^{39} d 4 r \quad 9.8^{79} 9.8^7 9.8^9 = 9.80^5 \quad .06 \quad .02 \quad .04$$

$$9.8^7 v o e \quad 9.8^7$$

$$9.8^9 v 4 f \quad 10.2^9$$

Plate 35²

$$12.1^{09} l = .1 \quad 12.2$$

$$r \text{ n.s.} \quad < 12.2^{19}$$

October 11, 1894.

Meas. of new variable star in Lupus (Cont.)

Plate 3523

$$12.1^{09} h 2 v \quad 12.3^{29} 12.2^2 = 12.25^6 \quad .03 \quad .04$$

$$12.2 v 1 m \quad 12.32$$

Plate 3703

$$12.32 m 2 v \quad 12.5^2 12.4^0 = 12.45^6 \quad .06 \quad .06$$

$$12.4 v 2 n \quad 12.60$$

Plate 5068

$$11.63 k = .4 \quad 12.0$$

$$v \text{ ms.} \quad < 12.03$$

Plate 5237

$$12.32 m 2 v \quad 12.5^2 12.5^0 = 12.50^1 \quad .01 \quad .01$$

$$12.50 v 1 n \quad 12.60$$

Plate 5908

$$11.63 k = .2 \quad 11.8$$

$$v \text{ ms.} \quad < 11.83$$

Plate 5979

$$11.13 h 4 v \quad 11.53 11.63 = 11.55^8 \quad .05 \quad .05$$

$$11.63 v 0 k \quad 11.63$$

$$k = .1$$

Plate 6242

$$10.29 f 5 v \quad 10.79^{49} 10.7^{49} 10.73 = 10.70^4 \quad .05 \quad .05 \quad .01$$

$$10.769 v 0 g \quad 10.769$$

$$10.73 v 4 h \quad 11.13$$

October 11, 1894

Meas. of new var. in Lupus (Cont.)

Plate 6243

$$10.7^{69} g = 11 \quad 10.8$$

$$v \text{ ns.} \quad < 10.879$$

Plate 6261

$$10.7^{69} g 4 v \text{ ~~6261~~ } 11.1^{09} 10.9^3 = 11.02^1 \quad .08 \quad .08$$

$$10.93 v 2 h \quad 11.13$$

Plate 6403

$$10.7^{69} g 1 v \quad 10.8^{79} 10.7^3 = 10.75^6 \quad .03 \quad .03$$

$$10.73 v 4 h \quad 11.13$$

a	6.4	85
b	6.6	87
c	6.9	90
d	7.2	93
e	7.7	98
f	8.0	10.1
g	8.4	10.5
h	8.9	11.0
k	9.4	11.5
l	9.9	12.0
m	10.2	12.3
n	10.5	12.6
var	8.4	

$$\begin{array}{r} 6.92 \\ 6.78 \\ \hline 2.14 \end{array}$$

$$10.6^{69} 10.7^{69} 10.6^3 = 10.63^7 \quad .02 \quad .02 \quad .04$$

October 11, 1894

Meas. of new var. in *Lupus* (Cont.)

Plate 6404

$$10.27 f 3 v \quad 10.57 \overset{49}{10.5} = 10.58^4 \quad .05 \quad .05$$

$$10.549 v 2 g \quad 10.764$$

Plate 6514

$$9.87 e 3 v \quad 10.179.99 = 10.08^8 \quad .09 \quad .09$$

$$9.99 v 3 f \quad 10.29$$

Plate 6515

$$9.87 e 3 v \quad 10.179.99 = 10.08^8 \quad .09 \quad .09$$

$$9.99 v 3 f \quad 10.29$$

Plate 6876

$$9.87 e 4 v \quad 10.27 \overset{23}{10.19} = 10.15^{\overset{23}{}} \quad .04 \quad .04$$

$$10.19 v 1 f \quad 10.27$$

$$a \quad 6.5 \quad 8.5$$

$$b \quad 6.7 \quad 8.7$$

$$c \quad 7.0 \quad 9.0$$

$$d \quad 7.3 \quad 9.3$$

$$e \quad 7.9 \quad 9.9$$

$$f \quad 8.4 \quad 10.4$$

$$g \quad 8.8 \quad 10.8$$

$$h \quad 9.3 \quad 11.3$$

$$k \quad 9.8 \quad 11.8$$

$$l \quad 10.3 \quad 12.3$$

$$m \quad n.s. \quad 7$$

$$n \quad n.s. \quad 7$$

$$o \quad 8.3$$

$$10.27 \overset{23}{10.19} = 10.15^{\overset{23}{}} \quad .04 \quad .04$$

892
692
200

October 11, 1894,
 Meas. of new var. in Rupes. (Cont.)

Plate 7358

$10.7^{69} g = .1$ 10.879
 or ns. < 10.879

Plate 7464

$12.1^{09} l \sim v$ $12.3^{29} 12.2^2 = 12.25^6$ $.03 .04$
 $12.2^2 v \sim m$ 12.3^2

Plate 7642

$10.7^{69} g = .4$ 11.1
 or ns. $< 11.1^{08}$

Plate 7646

$11.6^3 k = .3$ 11.9
 or ns. $< 11.9^3$

Plate 9146

$11.6^3 k = .5$ 12.1
 or ns. $< 12.1^3$?

Plate 9196

$11.6^3 k \sim v$ $11.8^3 11.7^{69} = 11.75^6$ $.07 .07$
 $11.7^{69} v \sim l$ 12.1^{09}

Plate 9390

$10.2^9 f = .1$ 10.3
 or ns. $< 10.3^9$

October 11, 1894.

Meas. of new var. in Lupus (Cont.)

Plate 938⁹11.13 ~~h~~ h 2 v 11.33
k m.s.

Plate 9538

10.2⁹ f 4 v 10.6⁹ 10.6⁵⁹ = 10.60⁴ .05 .05
10.6⁸⁹ v 1 g 10.7⁶⁹

Plate 9671

9.4³⁹ d 5 v 9.8⁸⁹ 9.8⁷ 9.7⁹ = 9.80⁵ .04 .02 .06
9.8⁷ v 0 e 9.8⁷
9.7⁹ v 5 f 10.2⁹

a 6.6 8.5

b 6.8 8.7

c 7.1 9.0

d 7.4 9.3

e 7.9 9.8

f 8.3 10.2

g 8.8 10.7

h 9.2 11.1

k 9.7 11.6

l 10.1 12.0

m 10.3 12.2

n 10.6 12.5⁸⁹var 7.9 9.9 9.8⁷ 9.8⁹ = 9.83⁸ .01 .01 .018.92
69.8
1.94

October 11, 1894,

Meas. of new. var. in Lupus (Cont.)

Plate 10893

11.13 h 4 v 11.53 11.53 = 11.50³ .00 .00
 11.53 v 1 k 11.63

Plate 10955

11.13 h 4 v 11.53 11.43 = 11.48⁸ .05 .05
 11.43 v 2 k 11.63

Plate 11298 (Sp)

a \$ Cl. g

b A

c A

d J

e J?

9.4³⁹ d 4 v 9.8⁷⁹ 9.67 = 9.70³ .06 .06

9.67 v 2 e 9.887

var. Md. 5th bright

Plate 11272 (2nd. meas.)

a 6.4 8.4

b 6.7 8.7

c 7.0 9.0

d 7.4 9.4

e 7.8 9.8

f 8.3 10.3

g 8.7 10.7

h 9.1 11.1

k 9.6 11.6

l 10.0 12.0

m 10.2 12.2

n 10.5 12.5

o 7.8

9.4³⁹ d 4 v 9.8⁷⁹ 9.77 = 9.78⁸ .01 .01
 9.77 v 1 e 9.87

9.8⁷⁹ 9.87 9.77 = 9.77⁸² .03 .04 .03

8.92
 6.88
 2.04

October 11, 1894.

Meas. of new var in Lupus Cont
Plate 6403

a	6.3	8.5
b	6.5	8.7
c	6.8	9.0
d	7.2	9.4
e	7.7	9.9
f	8.1	10.3
g	8.5	10.7
h	8.9	11.1
k	9.4	11.6
l	9.9	12.1
m	10.1	12.3
n	10.4	12.6
var	8.4	

$$\begin{array}{r} 8.92 \\ 6.70 \\ \hline 2.22 \end{array}$$

$$10.59^{59} 10.6^{59} = 10.55^{79} \quad .00 \quad .00$$

$$\begin{array}{l} 10.29^{50} f 5 v \quad 10.79^{69} 10.6^{69} = 10.67^{70} \quad .09 \quad .01 \quad .07 \\ 10.76^{69} v 0 g \quad 10.76^{69} \\ 10.63^{69} v 5 h \quad 11.13 \end{array}$$

Plate 6876

$$\begin{array}{l} 10.29^{69} f 1 v \quad 10.39^{29} 10.3^{29} = 10.30^{44} \quad .05 \quad .05 \\ 10.32^{69} v 4 g \quad 10.76^{69} \\ \text{over} \end{array}$$

Oct. 11, 1894
Meas. of new var. in Lupus.

Plate 6876

a	6.6	8.5
b	6.8	8.7
c	7.2	9.1
d	7.5	9.4
e	7.9	9.8
f	8.4	10.3
g	8.8	10.7
h	9.3	11.2
k	9.8	11.7
l	10.3	12.2
m	ns	7
n	ns	7
var	8.4	

10.3⁷ 10.2⁹ 10.3²⁹ 10.2³² .05 .03 .03

Plate 9671

a	6.4	8.5
b	6.6	8.7
c	6.9	9.0
d	7.2	9.3
e	7.7	9.8
f	8.2	10.3
g	8.6	10.7
h	9.0	11.1
k	9.5	11.6
l	10.0	12.1
m	10.2	12.3
n	10.5	12.6
var	7.6	

³⁹ 9.4 d 4 r ⁷⁹ 9.8 ⁸ 9.77 = 9.75 .01.01
9.77 r 1 e 9.87

⁷⁹ 9.8 ⁷ 9.77 = 9.75 ⁸ .01 .01

October 14³, 1894

Meas. of new run. in Lupus. (Cont.)

Plate 3703 (2nd Est)

12.8⁹ 2 2 v 12.3²⁹ 12.3² 12.3⁰ = 12.30. .01 .02 .00
 12.3² v 0 m 12.3²
 12.3⁰ v 3 n 12.6⁰

October 14³, 1894

11 30 Examination of Chart plates for
traces of meteor trails. Request of
Professor Elkin See letter Oct. 1894.

Plates taken with 8 inch Draper telescope
between Aug. 7 and Aug. 12

Plate I 9091 Region $20^h 6^m + 30$ taken

- | | | | |
|---|---|---|---------------------------------|
| | $\begin{smallmatrix} v \\ 12.5 \end{smallmatrix}$ | $\begin{smallmatrix} H \\ 12.5 \end{smallmatrix}$ | |
| 1 | 12.5 | 12.5 | faint trail |
| 2 | 21.3 | 9.3 | faint image with tail (defect?) |

R.A. $\begin{smallmatrix} 64 \\ 50 \end{smallmatrix}$ Dec.

Plate I 9092 Region $20^h 8^m + 32.9$ taken

- | | | | |
|---|------|------|---------------------------------|
| 3 | 10.6 | 13.4 | faint elongated image (defect?) |
|---|------|------|---------------------------------|

R.A. $\begin{smallmatrix} 64 \\ 50 \end{smallmatrix}$ Dec.

Plate 9094 Region $20^h 30^m + 26.9$ taken

- | | | | |
|---|------|------|-------------------|
| 4 | 14.1 | 13.9 | ft. line of light |
|---|------|------|-------------------|

R.A. $\begin{smallmatrix} 64 \\ 50 \end{smallmatrix}$ Dec.

Plate 9045 Region $20^h 26^m + 16.9$ taken

- | | | | |
|----|------|------|---------------------|
| 5 | 10.9 | 14.1 | faint line of light |
| 6 | 11.1 | 14.1 | faint line of light |
| 7 | 11.3 | 14.4 | faint line of light |
| 8 | 11.7 | 13.7 | faint line of light |
| 9 | 11.8 | 14.5 | faint line of light |
| 10 | 13.1 | 16.6 | faint line of light |

R.A. $\begin{smallmatrix} 64 \\ 50 \end{smallmatrix}$ Dec.

Plate 9096 Region $22^h 27^m + 6.8$ taken

- | | | | |
|----|------|------|-------------------|
| 11 | 16.0 | 7.5 | ft. line of light |
| 12 | 16.8 | 20.6 | ft. line of light |
| 13 | 20.0 | 22.5 | ft. line of light |

R.A. $\begin{smallmatrix} 64 \\ 50 \end{smallmatrix}$ Dec.

October 13, 1894.

Exam. of Plates for meteor trails (Cont.)

Plate I 9097 Region $22^h 27^m - 30^o$

R.A. 44^h Dec.

- 14 14.8 15.0 faint line (defect?)
15 19.3 15.5 3 ft. line of (defect?)

Plate I 9098 Region $23^h 6^m + 27.5^o$

R.A. 44^h Dec.

- 16 11.6 16.4 ft. trail
17 11.7 17.9 ft. line of light
18 13.8 20.0 faint image
19 15.5 20.7 faint elong. image
20 16.1 12.9 ft. elong. image
21 16.6 13.0 ft. elong. image

Plate I 9100 Region $23^h 6^m + 7^o$

R.A. 44^h Dec.

- 22 6.4 11.4 Peculiar objects

Plate I 9101 Region $23^h 14^m + 2^o$

R.A. 44^h Dec.

- 23 14.3 22.8 faint trail
24 16.0 21.7 ft. trail (defect?)
25 17.2 23.0 ft. trail
26 20.6 20.9 two ft. trails (scratched)

Plate I 9102 Region $17^h 46^m + 6.8^o$

R.A. 44^h Dec.

- 27 14.1 15.9 faint trail

Plate I 9103 Region $17^h 48^m + 48^o$

44^h

- 28 18.0 9.7 elong. image
29 18.5 10.1 elong. image (short trail)
30 18.5 17.1 elong. image
31 21.2 11.2 elong. image (defect?)

October 13, 1899.

Exp. of plates for meter trails (Cont.).

- Plate ± 9104 Region $18^h 8^m -6.9$
- 32 10.7 6.5 well marked trail
- 33 12.7 5.2 well marked trail

R.A. $8^h 10^m$ Dec.

- Plate ± 9105 Region $18^h 7^m +3.2$
- 34 8.2 9.7 elong. image (br.)
- 35 13.6 19.1 ft. image with tail
- 36 17.8 12.6 ft. elong. image
- 37 18.3 12.2 ft. image with tail
- 38 20.6 9.8 ft. image with spreading tail

R.A. $8^h 10^m$ Dec.

- Plate ± 9108 Region $18^h 8^m +33.2$
- 39 7.9 8.1 ft. elong. image
- 40 10.3 8.7 ft. image elong.
- 41 19.3 7.7 ft. elong. image
- 42 20.0 19.1 ft. elong. image
- 43 20.6 16.9 ft. irregular image

R.A. $8^h 10^m$ Dec.

October 14, 1894

Exp. of plates for meteor trail (cont.)

Plate I 9119 Region $18^h 8^m + 43.1$

Exp. Dec.
RA

- 44 $8.2 \ 10.6$ long. image (defect?) dust?
45 $8.9 \ 12.8$ long. image short trail
46 $9.1 \ 22.6$ long. image dust?
47 $12.0 \ 8.6$ short trail
48 $12.9 \ 16.5$ short trail (defect?)
49 $22.6 \ 20.1$ long. image (dust-defect?)
50 $23.9 \ 19.9$ short trail (dust-defect?)

Plate I 9115 Region $19^h 46^m + 3.0$

Exp. Dec.
RA

- 51 $16.1 \ 7.4$ trail of light
52 $6.7 \ 11.2$ trail (scratch?)
53 $17.2 \ 12.1$ short trail
54 $17.4 \ 12.7$ short trail
55 $17.5 \ 14.7$ broken trail
~~56~~

57 Plate 9116 Region $22^h 57^m + 3.3$

Exp.

- 56 $7.2 \ 10.6$ short trail of light

Plate I 9117 Region $22^h 58^m + 7.5$

Exp.

- 57 $12.0 \ 11.7$ short trail (dust defect?)
58 $6.8 \ 12.3$ short trail (dust defect?)
59 $9.1 \ 13.7$ long. image
60 $23.6 \ 20.4$ large narrow trail

Plate I 9619? or 9119? Region $22^h 56^m + 28.2$

Exp.

- 61 $7.3 \ 19.6$ short curved trail (dust defect?)

October 14, 1894

Exp. of plates for meteor trails (Cont.)

62 Plate I 9120 Region $22^{\text{h}} 46^{\text{m}} + 61.7^{\circ}$ ex. exp. sec.
 9.8 24.5 fine trail of light over 12 cm. in length.

63 Plate I 9125 Region $23^{\text{h}} 46^{\text{m}} + 11.9^{\circ}$ ex.
 13.8 16.9 elong. object (defect?)
 64 16.7 19.7 faint trail of light about 1.2 cm.

65 Plate I 9128 Region $1^{\text{h}} 26^{\text{m}} + 1.6^{\circ}$ ex.
 10.8 18.6 series of images connected by very faint trail

66 Plate I 9129 Region $1^{\text{h}} 27^{\text{m}} + 11.9^{\circ}$ ex.
 11.0 10.7 short trail (defect?)
 67 22.2 14.2 short trail (defect?)

68 Plate I 9131 Region $17^{\text{h}} 6^{\text{m}} + 8.1^{\circ}$ ex.
 19.3 9.1 round hazy image (defect) several other nights

69 Plate I 9139 Region $19^{\text{h}} 6^{\text{m}} + 13.0^{\circ}$ ex.
 6.4 7.6 image having tail (defect?)
 70 6.5 7.2 " " " "
 71 6.7 16.9 " " " "
 72 6.8 17.3 " " " "

73 Plate I 9141 Region $19^{\text{h}} 8^{\text{m}} + 33.0^{\circ}$ ex.
 6.7 12.0 peculiar image having faint tail 0.5 cm.

Cont. on p 191

October 14, 1894.

Ex. of plates for meteor trails (Cont).

Plate 9141

74 ²⁵ 6.3 ^H 76 very short trail?
 75 10.2 11.6 peculiar image (defect?)
 76 12.8 7.3 very short trail?
~~77~~

October 15, 1894

Exam. of plate for meteor trail (Cont).

Plate I 9147 Region $23^{\text{h}} 28^{\text{m}} - 8.1$ 77 12.8 faint trail about 3.5 cm.

R.d. 44. Dec.

Plate I 9148 $20^{\text{h}} 18^{\text{m}} + 58.0$ 78 17.5 12.2 faint broken trail (scratch?)Plate I 9149 $21^{\text{h}} 18^{\text{m}} + 58.0$ 79 18.0 14.8 short trail (scratch?)Plate I 9167 $21^{\text{h}} 20^{\text{m}} + 83.0$ 80 16.4 17.7 Pec. image (defect?)81 17.7 20.7 Pec. image (defect?)82 18.6 21.1 Pec. image (defect?)83 22.1 19.9 elong. image (defect?)Plate I 9169 $20^{\text{h}} 24^{\text{m}} + 72.8$ 84 8.2 18.8 short trail85 10.0 9.2 elong. image86 15.9 10.0 elong. imagePlate I 9172 $19^{\text{h}} 46^{\text{m}} + 63.0$ 87 16.1 18.8 faint trailPlate I 9175 $22^{\text{h}} 46^{\text{m}} + 63.0$ 88 6.8 17.3 ft. trail (scratch?)89 10.0 15.8 ft. trail (scratch?)

October 15, 1894.

Exam. of plate for meteor trails (Cont.)

Plate I 9156 $17^h 26^m + 18.0$

RA. Oct. Dec.

90 10.1 10.1 broken trail about 4.0 cm. long (defect?)

91 10.2 16.4 broken trail about 4.6 cm. (defect?)

Plate I 9157 $17^h 28^m + 28.3$

RA. Oct. Dec.

92 18.6 20.5 ft. long. image

Plate I 9159 $17^h 21^m + 48.0$

Oct.

93 16.5 11.9 ft. long. image

Plate I 9161 $19^h 46^m - 7.0$

Oct.

94 11.5 8.9

Plate I 11328 $18^h 50^m - 7.5$

Oct.

95 18.2 21.9

Plate I 11339 $18^h 10^m - 2.5$

Oct.

96 14.8 20.4 ft. trail

October 16, 1894.

Meas. of new variable star in Centaurus.
 Abt. 18609^{RA} 13^h 36.0^m Dec -33° 6' (1900) Pl. B 11295 (4597) Mol

Plate B 9721

a	d	5.4	6.7	34.52115	13 35.2	-33 21	7.7	u.a.
b	a	6.2	7.5	34.2033	13 33.9	-33 49	7.7	
e	b	6.5	7.8	" 2003	13 33.3	-33 43	7.7	
d	c	7.1	8.4	" 1838	13 30.5	-33 40	8.7	
f	e	7.6	8.9	" 2082	13 34.6	-33 8	8.7-9	
c	f	8.2	9.5	" 2039	13 34.0	-33 2	8.7-9	
g	f	8.7	10.0				8.7	
		6.5		7.6 7.7 7.7 7.7			7.70	

A (added Sept. 14, 1896) Plate J 4660
 34.1710 13 37.7 -32 28.4 70

7.4	x 3 v	7.7 7.7 7.7	= 7.70	.01 .01 .01
7.7	v 0	7.7		
7.7	v 6	7.7		

Plate B 3331

7.7	x 1 v	7.8 7.7	= 7.75	.04 .04
7.7	v 6	7.7		

Plate B 3542

7.4	x 3 v	7.7 7.7 7.7	= 7.70	.01 .01 .01
7.7	v 0	7.7		
7.7	v 6	7.7		

Plate B 3725

7.4	x 2	7.6	= 7.6	
-----	-----	-----	-------	--

October 16, 1894.

Meas. of new var. in Centaurs (Cont.)

Plate B5136

7.4 ~~4~~^b 3 v 7.7 7.7 7.7 = 7.70 .01 .01 .01
 7.7 v 0 ~~4~~^c 7.7
 7.7 v 6 ~~4~~^d 8.3

Plate B5191 (Sp.)

7.4 ~~4~~^b 1 v 7.5 7.5 = 7.50 .00 .00
 7.5 v 2 ~~4~~^c 7.7

c b d cl. g
 d c b " 7.5 g
 var " Mtsc?

Plate B5241

7.7 ~~4~~^c 1 v 7.8 7.8 = 7.80 .01 .01
 7.8 v 5 ~~4~~^d 8.3

Plate B5305

7.7 ~~4~~^c 2 v 7.9 7.8 = 7.85 .04 .04
 7.8 v 5 ~~4~~^d 8.3

Plate B5307

7.7 ~~4~~^c 1 v 7.8 7.8 = 7.80 .01 .01
 7.8 v 5 ~~4~~^d 8.3

Plate B5364

7.9 v 12 ~~4~~^c 8.9 = 7.9

on edge of plate. ~~4~~^c & ~~4~~^d not covered by plate

October 16, 1894

Meas. of new var. star in

(Cont.)

Plate B5981

a	d	5.4	6.5
b	e	6.3	7.4
c	f	6.6	7.7
d	e	7.2	8.3
e	d	7.8	8.9
f	e	8.4	9.5
g	f	9.0	10.1

var. g

$$7.8 \quad 7.8 = 7.80 \quad .01 \quad .01$$

$$7.7 \quad 7.9 = 7.90 \quad .01 \quad .01$$

$$7.9 \quad 8.3$$

Plate B6431

$$7.7 \quad 8.2 = 8.20 \quad .01 \quad .01$$

$$8.2 \quad 8.3$$

Plate B6432

a	k	5.3	6.6
b	e	6.1	7.4
c	f	6.4	7.7
d	e	7.0	8.3
e	d	7.6	8.9
f	e	8.2	9.5
g	f	8.8	10.1

var. g

$$8.1 \quad 8.1 = 8.10 \quad .01 \quad .01$$

$$7.7 \quad 8.1 = 8.10 \quad .01 \quad .01$$

$$8.1 \quad 8.3$$

October 16, 1894.

Meas. of mini var. in

(Cont.)

Plate B 11237

$$6.7 \overset{a}{\cancel{4}} v \quad 7.1 \quad 7.2 = 7.15 \quad .08 \quad .07$$

$$7.2 \quad v \quad 2 \quad \overset{b}{\cancel{4}} \quad 7.4$$

Plate B 11295 (Sp.)

$$6.7 \overset{a}{\cancel{4}} v \quad 7.1 \quad 7.3 = 7.20 \quad .12 \quad .13$$

$$7.3 \quad v \quad 1 \quad \overset{b}{\cancel{4}} \quad 7.4$$

a	d	Cl.	F
c	b	"	G
d	c	"	G
e	d	"	F
f	e	"	F?

Plate B 11297

$$6.7 \overset{a}{\cancel{3}} v \quad 7.0 \quad 7.2 = 7.10 \quad .12 \quad .13$$

$$7.2 \quad v \quad 2 \quad \overset{b}{\cancel{4}} \quad 7.4$$

Plate B 9721 (2nd meas.)

a	b	5.3	6.7
c	b	6.0	7.4
d	c	6.3	7.7
e	d	6.9	8.3
f	e	7.5	8.9
g	f	8.1	9.5
h	g	8.7	10.1

$$\begin{array}{r} 8.1 \\ 6.7 \\ \hline 1.4 \end{array} \quad 6 \overline{) 40.1} \quad \begin{array}{r} 6.68 \\ 6.68 \\ \hline 1.4 \end{array}$$

change var again

$$7.4 \quad \overset{a}{\cancel{3}} v \quad 7.8 \quad 7.8 = 7.80 \quad .01 \quad .01$$

$$7.7 \quad v \quad 0 \quad \overset{b}{\cancel{4}} \quad 7.7 \quad 7.7 \quad 7.7 = 7.70 \quad .01 \quad .01$$

$$7.7 \quad v \quad 6 \quad \overset{c}{\cancel{4}} \quad 8.3$$

October 16, 1894.

Meas. of new var. in

(Cont.)

Plate B 5981 (2nd meas.)

a			
b	a	d	5.7 6.8
c	b	a	6.3 7.4
d	c	a	6.6 7.7
e	d	c	7.2 8.3
f	e	d	7.9 9.0
8.1	7.0	f	8.5 9.6
1.1	6.422	f	9.1 10.2
	70.3		

var 6.8 $7.9 \ 7.9 = 7.90 \ .01 \ .01$
 $7.7 \times 1.2 \ 7.8 \ 7.9 = 7.85 \ .06 \ .06$
 $7.9 \times 4 \ 8.3$
Plate B 6432 (2nd meas.)

a			
b	a	d	5.5 6.7
c	b	a	6.2 7.4
d	c	a	6.5 7.7
e	d	c	7.2 8.4
f	e	d	7.7 8.9
8.1	6.9	f	8.3 9.5
1.2	6.414	f	8.9 10.1
	66.0		

var 7.0 $8.2 \ 8.1 = 8.15 \ .04 \ .04$
 $7.7 \times 4 \ 8.1 \ 8.1 = 8.10 \ .01 \ .01$
 $8.1 \times 2 \ 8.3$

November 17, 1894.

Additional meas. of variable in Persens (Not),
 γ Persen, R.A. $1^h 56^m + 56^\circ$

Plate B 1953 taken

1st image
 2nd image
 3rd image

r 10 c

r 10 c

r 11 c

region of a and b not contained on plate.

Plate B 1979 taken

a	5.8	5.8	8.3
b	6.3	6.3	8.8
c	7.7		10.2
d	9.8		12.3
e	9.2		11.7
f	9.0	9.0	11.5
var.		21.1	7.03

95
 7.0
 1/2
 2.5

8.8 r 23 r 9.1 9.1 = 9.10
 r 10 c 10.1

Plate B 2068 taken

a	4.7	4.7	8.3
b	5.1	5.1	8.7
c	6.3		9.9
d	8.9		12.5
e	8.1		11.7
f	7.9	7.9	11.5
var.	5.2	17.7	5.9

95
 15.9
 1/2
 7.9

8.5 9.0 = 8.75

9.0 8.9 = 8.95

November 17, 1894.

Additional meas. of var. in Perseus No. 1.

Plate B 3042 taken

8.8 $b = 1.0$

r n.s. $\angle 9.8$

c n.s.

Plate B 957 taken

8.8 $b = .5$

r n.s. $\angle 9.3$

c n.s.

November 17, 1894.

Summary of Variable in Perseus No. 1 = γ Perseus.
R.A. $1^h 56^m$ Dec. $+56^\circ$ (1900).

Plate No.	Date	J.D.	lf.	var.	a	b	c ^d	d ^g	e ^h	f ^e	g ^c
Ch. B 103	Nov. 3, 1885			< 13.4	7.8	8.1	8.8	13.4	12.6	12.5	
Sp. " 957	Dec. 21, 1886										
Sp. " 1818	Nov. 3, 1887										
Ch. " 1953	" 30, "										
" " 1954	" " "				8.0	8.4	9.8	13.0	12.2	12.0	
" " 1977	Dec. 1, "				8.0	8.5	10.6	13.0	12.2	12.0	
" " 1979	" " "				8.3	8.8	10.2	12.3	11.7	11.5	
" " 2068	" 19, "				8.3	8.7	9.9	12.5	11.7	11.5	
Sp. " 3042	Oct. 21, 1888										
Ch. I 1901	Sept. 29, 1890				8.3	8.9	10.0	7	7	11.3	
Ch. I 2101	Oct. 30, "				8.2	8.7	10.0	12.4	11.6	11.5	9.6
Ch. " 2293	Nov. 19, "				8.6	9.0	10.1	11.8	10.8	10.8	10.0
" " 2560	Dec. 22, "				8.4	8.8	9.9	11.7	11.1	10.9	10.0
" " 2856	Jan. 16, 1891				8.5	8.9	10.2	11.8	11.3	11.2	10.9
3186	Feb. 24, "				8.5	8.9	10.2	12.0	11.4	11.0	10.3
3186	" " "				8.5	8.9	10.2	12.0	11.3	11.0	10.2
3270	Mar. 11, "				8.7	9.1	10.0	7	10.9	10.7	10.0
3308	" 25, "				8.5	8.9	10.1	11.9	11.1	10.8	10.3
3401	Apr. 9, "				(8.5)	(8.8)	(10.8)	(12.8)	(11.7)	(11.3)	(10.3)
3541	May 3, "				8.3	8.8	10.2	7	11.3	11.3	10.2

Comparison star "^dc" examined on the above plates B 103 to I 3541
and shows no evidence of variation being always about .1 fainter than $1^h 53^m + 56^\circ 8'$ (approx. 1855)
and generally .1 brighter than $1^h 57^m + 56^\circ 16'$ (approx. 1855).

November 27, 1894.

Meas. A Espino's new variable star in
R.A. of 49.0^h Dec. $+58^\circ 1'$ (1900). See Wolsingham Observatory
Circular No. and Astron. Journal No.

$2 + 57^\circ 164$

Plate I 2289 taken

$1 = b.$

3	a	6.6	9.9	$= +57^\circ 167$	0 46 31.0	$+57^\circ 42.5$	93.99	...
4	b	7.0	10.3	$57^\circ 164$	0 45.4	28.8	$+57^\circ 56.1$	9.5 10.5
4	c	7.4	10.7	$57^\circ 171$	0 47 21.8	$+57^\circ 43.0$	9.5	$\frac{10.5}{10.3}$
	d	7.9	11.2					
	e	8.5	11.8					
	f	8.9	12.2					
	g	9.3	12.6					
	h	9.8	13.1	$+57^\circ 165$				
	var	8.4		11.98	11.98	$= 11.98$	$+57^\circ 165$	.00 .00

$$11.4^8 d \ 4 \sim 11.8^8 11.9^8 = 11.85^3 \quad .05 \quad .05$$

$$11.8^7 v \ 3 \sim 12.0^8$$

Plate I 1793 taken

$$12.0^8 e = .3$$

$$v \text{ n.s. } \angle 12.3^8$$

Plate I 2275

$$11.4^8 d \ 1 \ v \quad 11.5^8 11.6^8 = 11.55^6 \quad .05 \quad .05$$

$$11.6^8 v \ 4 \ e \quad 12.0^8$$

Plate I 2309

$$11.4^8 d \ 3 \ v \quad 11.7^8$$

$$e \text{ n.s.}$$

$$v = .1$$

November 27, 1894.

Meas. of Epstein's new var. (Continued)

Plate I 2597

Several exposures changed in dec.
not identified

Plate I 2600 taken

11.48 d 1 r 11.58

c ns.

v = .4

Plate I 2847

10.80 c 2 v 11.00 11.08 = 11.04⁴.04 .04

11.08 v 4 d 11.48

d = .2

Plate I 3253

a 7.0 9.8

b 7.5 10.3

c 8.0 10.8

d 9.1 11.9

e 9.7 12.5

f ns. 7

g ns. 7

h ns. 7

10.80 c 2 v

10.98 v 5 d

11.00 10.98 = 10.98⁹

11.48

.01 .01Decid. of mag. changes.
d. " shd. be showing
mag. changes diff.
in the plates.10.3
9.5
2.8

Nov. 27, 1894.

Meas. of Espin's new var. (Continued)

very poor plate
Plate I 3928 taken
10.26 $b = .4$
 r ns. < 10.66

Plate I 5070
10.80 c 4 r 11.20 11.28² = 11.24²⁴ .04 .04
11.08 r 2 d 11.48 ~~.06~~ ~~.06~~

Plate I 5071
10.80 c 4 r 11.20 11.28⁴ = 11.24⁴ .04 .04
11.28 r 2 d 11.48

Plate I 5118
10.80 c 3 r 11.10 11.18⁴ = 11.14⁴ .04 .04
11.18 r 3 d 11.48

Plate I 7769
11.48 d 2 r 11.68 11.68⁸ = 11.68⁸ .00 .00
11.68 r 4 c 12.08

Plate I 7770
11.48 d 3 r 11.78 11.78⁸ = 11.78⁸ .00 .00
11.78 r 3 c 12.08

103
97
2.6

a	7.2	9.8
b	7.6	10.2
c	8.2	10.8
d	8.9	11.5
e	9.4	12.0
f	9.9	12.5
g	10.3	12.9
h	10.8	13.4
i	11.2	13.9
j	11.6	14.4
k	12.0	14.9
l	12.4	15.4
m	12.8	15.9
n	13.2	16.4
o	13.6	16.9
p	14.0	17.4
q	14.4	17.9
r	14.8	18.4
s	15.2	18.9
t	15.6	19.4
u	16.0	19.9
v	16.4	20.4
w	16.8	20.9
x	17.2	21.4
y	17.6	21.9
z	18.0	22.4

11.78 11.88⁸³ = 11.75⁸³ .05 .05

November 27, 1894

Meas. of Espin. new var. (Cont.)

Plate I 9337

$$12.08 \text{ c } 4 \text{ v } 12.48 \text{ } 12.3 \text{ }^{43} = 12.35 \text{ }^{46} \text{ }^{.02} \text{ }^{.03}$$

$$12.3 \text{ }^{43} \text{ v } 1 \text{ f } 12.453$$

Plate I 9780

$$11.48 \text{ d} = .2$$

$$\text{v ns. ? } < 11.68$$

Plate I 9781

$$12.08 \text{ c } 1 \text{ v } 12.18$$

$$\text{f ns.}$$

$$\text{e} = .2$$

Plate I 9940

$$12.453 \text{ f } 5 \text{ v ? } 12.9 \text{ }^{13.03} \text{ }^{95} 12.8 = 12.85 \text{ }^{99} \text{ }^{.04} \text{ }^{.04}$$

$$12.8 \text{ }^{95} \text{ v } 0 \text{ g ? } 12.895$$

$$g = .1?$$

Plate I 10201

$$12.8 \text{ }^{95} \text{ g } 2 \text{ v } 13.0 \text{ }^{15}$$

$$\text{h ns}$$

$$g = 1$$

Plate 11720

$$12.08 \text{ c} = .1 < 12.018$$

$$\text{v ns. } \#$$

November 27, 1894

Meas. of Espino's new var. (Cont).

Plate I 2289

a	6.4	9.8
b	6.8	10.2
c	7.4	10.8
d	7.9	11.3
e	8.5	11.9
f	8.9	12.3
g	9.4	12.8
h	9.9	13.3
var.	8.4	

$$11.9^8 11.9^8 = 11.9^8$$

.00 .00

$$11.4^8 d 3 v \quad 11.7^8 11.6^8 = 11.65^7 \quad .05 \quad .05$$

$$11.6^8 v 4 e \quad 12.0^8$$

Plate I 7770

a	7.0	9.8
b	7.4	10.2
c	8.0	10.8
d	8.6	11.4
e	9.3	12.1
f	9.8	12.6
g	10.2	13.0
h	11.5	14.0

$$var. 9.2 \quad 12.0^8 11.9^8 = 11.95^2 \quad .05 \quad .05$$

$$11.4^8 d 4 v \quad 11.8^8 11.8^8 = 11.8^8 \quad .05 \quad .05$$

$$11.8^8 v 2 c \quad 12.0^8$$

November 28, 1894.

Camp N.

Meas. of Skinner's new variable star

BD -14° 2893 R.A. \tilde{g}^{286} Dec. -14° 3' (1855).

See letter of Nov 1894.

Plate B 2246

a 6.1 8.4 = -14° 2897 \tilde{g}^{293} -14° 10' 8.5

b 6.6 8.9 = -14° 2899 \tilde{g}^{298} -14° 0' 9.1

c 7.0 9.3 = -14° 2894 \tilde{g}^{287} -14° 10' 9.2

d 7.4 9.7 = -14° 2887 \tilde{g}^{274} -14° 3' 9.6

e 7.8 10.1 = -14° 2890 \tilde{g}^{283} -14° 9' $\frac{10}{9.28}$

f 8.3 10.6 =

g 8.6 10.9 =

h 9.2 11.5 =

k 9.5 11.8 =

var 7.2 9.5 $\tilde{g}^{95}=9.50$ = -14° 2893 \tilde{g}^{286} -14° 3' 9.6

9.3 c 2 v 9.5 9.5 = 9.50

9.5 v 2 d 9.7

Plate B 2555

10.1 e 3 v 10.4 10.5 = 10.45

10.5 v 1 f 10.6

Plate I 282

10.6 f 2 v 10.8 10.7 = 10.75

10.7 v 2 g 10.9

Plate I 1001

10.9 g = .1

v ns. \angle 11.0

g. i. f. b.
d. o. k.
e. c. a.

549
98
93
7.0
2.3

near edge of plate

near edge of plate

November 28, 1894

Meas. of A. N. Skinner's var. (Cont.)

Plate B 2246

a 6.0 8.3

b 6.6 8.9

c 7.0 9.3

5) $\frac{48}{96}$ d 7.4 9.7

e 7.8 10.1

93) $\frac{70}{23}$ f 8.3 10.6

g 8.5 10.8

h 9.1 11.4

k 9.4 11.7

var. 7.2 9.5 9.5 = 9.50

Plate B 9190

11.7 k = .2 11.7

k = .2

Plate B 10909

near edge 11.5 h = .1

r = 1 ? 11.5 ?

Plate B 10957

near edge 10.9 g = .2 11.1

r ns. < 11.1

See also next page

November 28, 1894.

Meas. of A. N. Skinner's new variable (Cont.)

Plate B 2246

a	6.1	8.4
b	6.6	8.9
c	7.0	9.3
d	7.4	9.7
e	7.8	10.1
f	8.3	10.6
g	8.5	10.8
h	9.2	11.5
k	9.4	11.7
var	7.1	9.4 9.4 = 9.40

9.3 C 2 r 9.5 9.5 9.50
9.5 r 2 d 9.7

B 2246 is the only Chart plate covering the region which gives images sufficiently good for comparison with scale. It has therefore been measured three times independently on that plate to determine photographic magnitude of comparison stars.

6
December 11, 1894.

Measure of Aaron N. Skinner new variable star
BD-15° 6531 8.4 R.A. Dec. (1855)
See letter of Dec. 1, 1894.

Plate B9741

a	8.5	7.5	8.8	=	-15° 6536	23 56.8	-15° 44'	9.1
b	9.0	8.0	9.3	=	-15° 6529	23 54.5	-15 47	9.1
c	9.5	8.5	9.8	=	-15° 6533	23 56.2	-15 41	9.6
d	9.1	10.4	—					9.27
e	9.4	10.7	—					
f	9.7	11.0	—					
g	9.9	11.2	—					
h	10.3	11.6	—					

var 8.3 9.6 9.6 = 9.60 = -15° 6531 23 54.7 -15 30 8.4

9.396 b 3 v 9.6 9.6 = 9.60
9.6 v 2 c 9.8

Plate B2214

11.1 g = 1.3
v n.s. < 11.4

Plate I 256

11.6 h = 1.1
v n.s. < 11.7

Plate I 258

11.1 g = 1.2
v n.s. < 11.3

a. c. b
g. h
f. e
d.

December 6, 1894.
Meas. of A. N. Skinn's new var. BD-15°6531 (Cont)

Plate I 271

9.8

$c = 1.5$

d ns. /

v ns. $\angle 10.3$

Plate I 333

11.1

$g = 1.3$

v ns. $\angle 11.4$

Plate I 1971

10.3

$d = 1.1$

v ns. $\angle 10.4$

Plate I 2360

9.8

$c = 1.2$

v ns. $\angle 10.0$

Plate I 2602

11.1

$g = 1.2$

v ns. $\angle 11.3$

Plate I 2681

10.6

$c = 1.3$ x

v ns. $\angle 10.9$

Plate I 2859

10.3

$d = 1.4$

v ns. $\angle 10.7$

December ⁶ 7, 1894.

Meas. of A. N. Skinnia new var. BD-15° 6531 (Ant)

Plate B6605

9.3 b 3 r 9.6 9.6 = 9.60
9.6 r 2 c 9.8

Plate B9741

a 7.5 8.8
b 8.0 9.3
c 8.5 9.8
d 8.9 10.2
e 9.3 10.6
f 9.6 10.9
g 9.7 11.0
h 10.2 11.5

var 8.3 9.6 9.6 = 9.60

9.3 b 3 r 9.6 9.6 = 9.60
9.6 r 2 c 9.8

Plate B 6606

9.3 b 3 r 9.6 9.6 = 9.60
9.6 r 2 c 9.8

Plate B 6909

9.8 c = .4
r n.s. < 10.2

December 7, 1894.

Mens. of A. N. Skinner's new var. BD-15° 6531 (Cont.)

Plate B 6950

11.1 $g = 1.1$
or ns. < 11.2

Plate B 6951

10.6 $g = 1.3$
or ns. < 10.9

Plate B 9742

9.3 $b 3 r$ 9.6 9.6 = 9.60
9.6 $r 2 c$ 9.8

Plate B 10567

11.1 $g = 1.4$
or ns. < 11.5

Plate B 9741

a 7.5 8.8

b 8.1 9.4

c 8.5 9.6

d 8.9 10.2

e 9.3 10.6

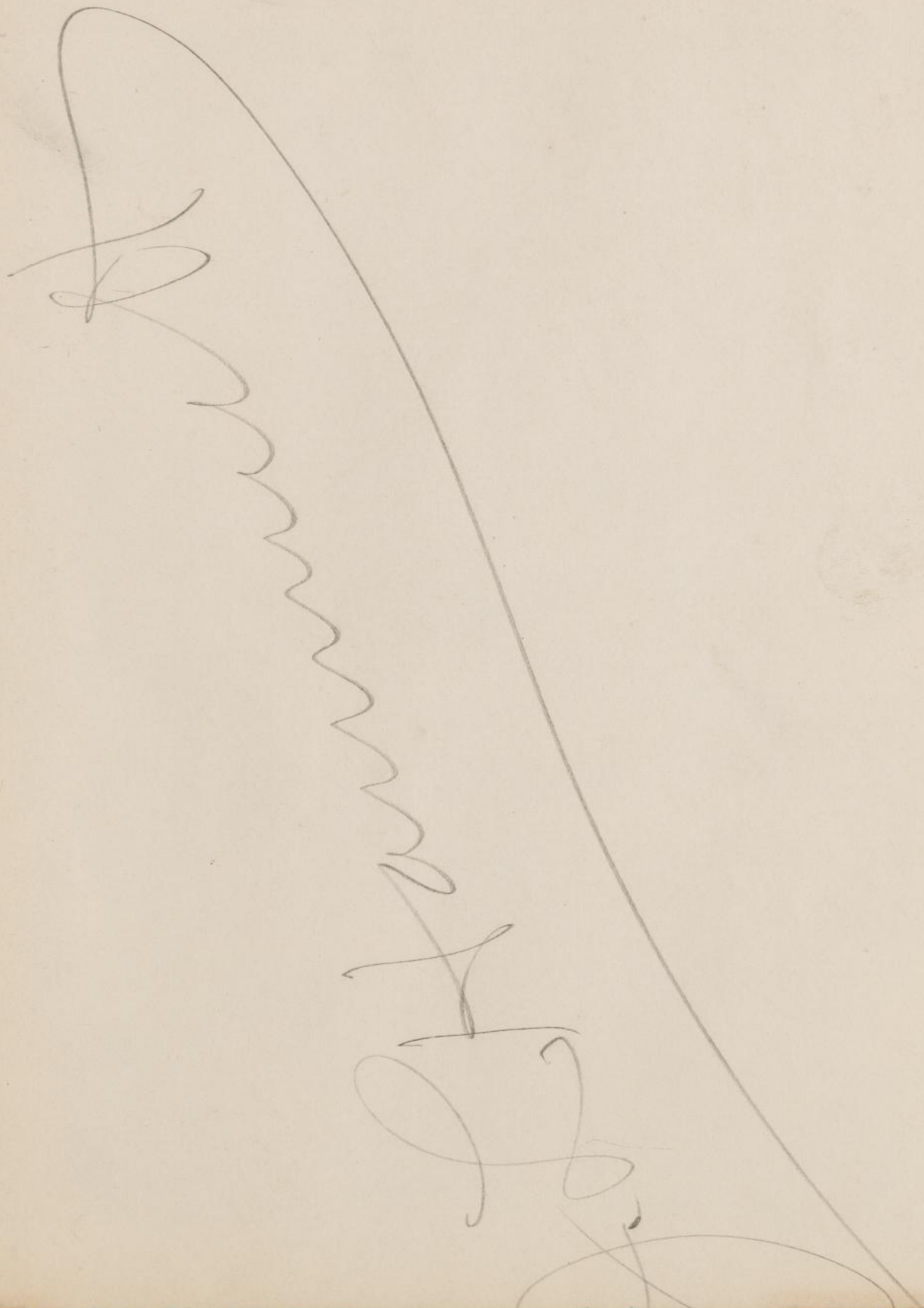
f 9.6 10.9

g 9.7 11.0

h 10.3 11.6

var. 8.3 ~~9.5~~ 9.5 9.6 = 9.559.3 $b 3 r$ 9.6 9.6 = 9.609.6 $r 2 c$ 9.89.3
9.0
1.3

Observations of magnitudes of variables
continued in Book. 5.



32) $\frac{96}{42}$

1982phae, proj. 803F