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KG
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Record of Observations

by

Wm Maxwell Reed

Volumn III

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Wednesday Nov. 4 1891

Camb. Stand. Time

h

7.2 β Lyrae

γ 2 β

L. E

δ Cygni

γ 1 δ

δ 4 ε

7.3 L. E

η Aquilae

ε 2 η

β 5 η

7.4 L E

γ 4 ν

10 Sagittae

c 1 ν

ν 4 b

7.4 B

χ Cygni

l 1 ν

ν 3 m

8.3 L L

V = 6R

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Wednesday November 4 1891

R Vulpeculae I

a 56

Pholometer R

Measurements of Prismatic Companion with bright star in the field. Wm. R Nov. 5'91

Star 3 Magn + Companion

3	13.0	
	38.3	
	217.9	
	14.8	
	34.6	18.3
4.0 ✓	199.1	
	216.X	17.3
	16.3	35.6
	17.7	15.4
4.2 ✓	33.1	
	198.9	18.0
	216.9	33.4
	16.9	19.2
3.9 ✓	36.1	
	198.1	18.1
	216.2	37.3
	16.0	
	37.9	21.9

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Wednesday Nov. 4. 1891.

3.7 ✓	197.8	21.9
	216.9	19.1
		41.0
	16.0	
4.0 ✓	35.1	35.1 19.1
	215.4	~~93.6~~
	199.0	16.4
		35.5
	15.9	20.5
4.0 ✓	36.4	
	199.1	15.8
	214.9	36.3

Star 4 mag. + Companion.

3.7 ✓	106.0	22.2
	128.2	
	286.3	19.9
	306.2	42.1
	105.4	22.5
3.5 ✓	127.9	
	285.8	21.8
	307.6	44.3
	106.2	20.9
~~5.9~~ ✓	127.1	
3.9	287.4	17.6
	305.0	38.5

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1891phae.proj..449R

Wednesday Nov. 4. 1891

	108.9	
4.0 ✓	127.0	18.1
	287.0	18.1
	305.1	36.2
	104.0	22.4
	126.4	
3.6 ✓	284.7	20.4
	305.1	42.8
	106.7	20.4
3.8 ✓	127.1	
	287.3	19.0
	306.3	39.4
	108.4	18.6
3.8 ✓	127.0	20.5
	306.9	~~19.5~~
	286.4	~~39.1~~
	107.7	20.1
	127.8	
3.9 ✓	287.8	17.2
	305.0	37.3
	107.0	18.8
	125.8	3
3.9 ✓	286.8	20.3
	307.1	39.1

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1891phae.proj..449R

Wednesday Nov 4, 1891.

	108.0	
3.9	127.8	19.8
	287.4	17.6
	305.0	37.4

Star 4.5 mag. + Companion

7.1	37.8
44.9	
161.2	60.6
221.8	98.4

11.6	32.5
44.1	
190.0	30.2
220.2	62.7

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1891phae.proj..449R

Friday November 6 1891

η Aquilae ✓

8.9 η 5 β / δ = η L. E

β Lyrae ✓

8.9 δ 4, β / β 3 ξ L. E

10 Sagittae ✓

9.0 ν = c L. B

δ Cephei ✓

9.1 δ 3 ε / δ 2 ξ L. E

R Vulpeculae

a 4 b

b 4 e

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1891phae.proj..449R

Friday Nov. 6. 1891.

[eclipse of Jupiters Satellite Re. of No I,

a 4
a 2
1 a
2 a
3 a f

} prismatic appearances.

---

f 4
f 3
f 3
2 c
2 c
f 3
f 3

Without tip Var. 2 c
c. 1/10 in diam from Jupiter
Var. 1/2 diam. from Jupiter





Mr. Davis Recorder.

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1891phae.proj..449R

Friday November 6 1891

β Persei ✓
α Cand 2ᵛ
β Cand. 1ᵛ
10.8 γ Cand 3ᵛ ·L
α Cristis 4ᵛ

Taurus ✓
10.9 Normal Brightness ·L.

Coronofeice ✓
10.9 Invisible.

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1891phae.proj..449R

Saturday November 7 1891

Stars for Prism Photometer + Meridian Photometer

Bright Star No. ~~5~~ 3

~~b~~ ~~a~~ 2 α_c
α_c 4 ~~b~~ a

L

Bright Star No. 1.

~~α_c a 4 b~~ α_c 4 a
~~α_c a 6~~ α_c 6 b

L

Bright Star No. 2

α_c 2 a
α_c 3 b
c 3 α_c

L C

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1891phae.proj..449R

Wednesday November 11 1891

Jupiter's Satellites

III d ⊼ 7 α IV

11.0

IV α | β II

II β 4 γ I

α β γ δ

IV II I III

β Persei

β = v = α Cncl

11.1

γ Cncl ± 1 * v

α Arietis 2 v

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1891phae.proj..449R

Thursday Nov. 13 1891

γ Aquilae

8.2 δ 4 γ
γ 2 β L.

δ Ophei

8.3 3 4 δ
1 2 δ L.

10 Sagittae

8.3 h = ν
ν 4 c L.

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1891phae.proj..449R

Sunday Nov. 15, 1891

~~Jupiter~~

Chronograph; first minute $21^h 57^m$

Occultations

Corresponding Comb. Sidereal Time	Comb. Stand. Time.			
$22^h 29^m$	81	6 41	E	late 2^s
22 31	89	6 43	i	late 1^s.
h m s 22 39 51	80	51 30	E	~~obtuse~~
22 45 51	102	57 30	i	
	84^a not seen			
22 48 24	108	703	i	$1^s 30$ mtue
	117 saw star, but could not observe it			
23 10 6 21 45	obs + watte at 21 45 not good; probable good after all			
23 18 ?	96?	29 40		½ S +

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Sunday Nov. 15 1891

Corresponding Camb. sidereal time.

Camb. Stand. Time

h	m	s			
23	36	21	10 2	7 48	1s late
23	50	26	10 8	8 2 5	on time

finish 8h 12m 40s-45 with the

watch about 3 second fast

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1891phae.proj..449R

Wednesday 18 Nov 1891.

δ Bootis ✓ M I

7.5 Invisible
b visible

R Camelop. ✓

7.6 b 3 V I M
V 5 C

R Mon. ~~Mon~~ Minoris (?) I. ΔΔ

7.6 V = c
d 5 V
v = b

R draconis ✓

7.7 ~~M~~ 3 V

7.7 S Cygni ✓
Invisible

T Cephei ✓

7.8 12 5 V
V 5 l

S Cephei ✓

7.9 L 2 V I M
V 5 ~~2~~

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1891phae.proj..449R

Wednesday Nov. 18, '91.

8.0 ν Cassiop. I M

8.1 τ Persei L M

8.1 ζ Persei I M

8.1 R Aurigae L M

R Lyncis

8.2 R Urs. Maj. Z L M
Invisible

8.2 S Urs. Maj. Z L M.
V less than 10 mag.

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1891phae.proj..449R

Wednesday Nov. 18 1891.

6.6 New var. no. 9, Cygnus ✓
V = 0 R
V 2 γ
I M
X

6.8 New var. no. 10, ✓ Aquarius I M Z
V = β about
L

9.0 New var. no 12, ✓ D Inc. 5° 8.268 I N
V = 2 R
V 2 δ
L

9.2 New var. no. 1, ✓ Perseus I M.
q = V
V = δ R
L

9.2 θ Lyrae ✓
γ 2 β
L M

9.2 δ Cephei ✓
L 3 δ
δ 5 γ
L M

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1891phae.proj...449R

Wednesday Nov. 18, 1891.

New var. no. 4, Camelopardus I. M.

9.4

V = 10 R

d 4 V

L

L V

9.6

New var. no. 13, Delphinus I. M.

α = V

V = β

V = 9 mag.

V = 0 R

L.

R Cassiop.

9.7

q = V

V 3 R

I. M

V Cassiop.

9.7

V = e

V = 5 R

V 3 f

I. M

Mass selected for measuring prismatic comparison.

Bright star no. 7 X

d c 3 b

f c 4 a

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1891phae.proj..449R

Nov. 18. 1891

Bright star no. 1.

α_c 3 a

α_c 5 b

Bright star no 2

α_c 2 a

α_c 3 b

$c = \alpha_c$

Bright star no. 3

α_c 4 a

b | α_c

~~Bright star no. 4~~

Bright star no. 12.

2 35.3 +68° 15' 0 43 west

a 4 & α_c

α_c 4 b

Bright star no. 6.

α_c 4 a

α_c | b

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1891phae.proj...449R

Nov. 18, 1891.

Jupiter's satellites ✓

3.0 II d 2 ☌ I

d almost touching 2, separated by dark line

Identification doubtful.

Taurus ✓

3.0 Normal brightness L.

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1891phae.proj..449R

Nov. 24, 1891

δ Cephei

10.1 L 6 3 δ
δ 3 γ

L

T Cephei

10.3 V 4 ~~nn~~
l 3 V
V = 1^R

I

S Cephei

10.X g 2 V
V 1 h
V = 1^Q

I

R Cassiop.

10.5⁻ o 3 V

I

T Cassiop.

10.5⁻ V = 6^R
V 4 e
e = 7^B
d 5⁻ V

I

S Cassiop.

10.6 h 3 V
V = l
V 2 nn

L

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1891phae.proj..449R

Nov. 24. 1891.

10.6 ✓ T Persei ✓
V = 2^R
C 2 V
I.

10.7 δ Persei ✓
V = 5^√2
C = V
6 6 V

10.8 R Aurigae ✓
V = 4^R
V 4 d
C 3 V

10.8 R Lyncis ✓
V invisible ~~below~~ fainter than 12.5 2mag.

R Sus. Mag.

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1891phae.proj..449R

Friday Nov. 27 1891

8.4

Jupiter

IV I III II

8.5

Normal Brightness

9.4

L.

L m

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1891phae.proj...449R

Monday Nov. 30 1891

10.8

δ Cephei

c 5 d
d 3 f

L.

R Tauri

X

a a 6 b
b b 4 c
c c 5 d
d d 7 e
e e 5 f
f f 6 g
g g 7 h
h h 6 k
k k 4 m
l m 5 n'
m n' 5 n
n n 3 0 0

L
H



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1891phae.proj..449R

Tuesday December 1 1891

δ Cephei L.

9.3

δ = γ

S Ceti

a	a	3	b
b	b	4	& b
c	b	6	f
d	f	5	g
e	g	4	h
f	h	3	k
g	k	6	l
h	l	5	m
k	m	5	n
l	n	4	o
m	o	7	p n

U orionis.

a	a	a	3 b
b	b	b	4 c
c	c	c	3 d
d	d	d	7 e
f g	e	e	3 f & f 5 g
g h	g	g	3 h
h	h	h	3 k
k l	k	k	7 l
l m	l	l	5 m'
m	m'	m'	5 n'
n	n'	n'	5 o'

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Tuesday December 1 1891

T Hydrae

b a & b
c b & c
e c 5 d
f d 3 ~~4~~ abandoned ~~but recalled in name of f'~~
~~4~~ d 5 f
k f 4 g
~~g 5 h~~
l g 4 h m
old "h" abandoned.





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Dec. 3, 1891

δ Cygni

l 3 m
m 4 n

H

b = β Cc

a 5 βc
βc 6 c

I

T Aquilae

V = R Z
m 1 V
V 4 m

I

9.6

R 3 S
S 4 T

H

O 4 dc
dc 5 p

hc 3 T
S 3 hc

lc = A
lc 4 S

H

~~7.2~~ ~~β Lyrae~~

β Lyrae

S 3 B
C 1 δ

L

7.2

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Thursday Dec. 3, 1891,

δ Cephei

10.0 δ 2 δ d.

δ Cephei

10.4 ν Cassiop. I

ν 4 e

d 4 V

V 4 R

10.5 δ Cassiop. I

m 2 V

V = m

10.7 δ Persei. I

V = χ R δ

V 3 c

b 2 V

10.7 δ Persei I

V = 3 R

c 3 V

V 2 d

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Monday Dec. 7 1891

R Tynes

17.0

X n 40
0 3/2
invisible

L

// $a_c = n$
$a_c 5 0$

L

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Tuesday Dec 8. 1891.

α 4 V

α 2 V

α 3 V

α 3 V

α 3 V

α 3 V

C.M.T. (watch) $6^h\ 51^m\ 0^s$ P.M. to $6^h\ 51^m\ 10^s$

These (the above) observations useless, chronograph was not connected.

Jupiter's Satellites

Jupiter

8.0

II γ 3 δ IV

IV δ 2 α III

III α 3 β I

α - . ε . - β . - δ . - γ

III I II

1891phae.proj..449R

Tues. Dec. 8. 1891.

δ Cephei

δ.2 X m 4 m HM.
m 5 o
o 3 p

β Persei ✓

δ.3 + Androm 2 V m

Measurements of prismatic comp.
Phot. R
Images made as short as possible

Bright star 3 magn
Bright star in field of view. m

Ac − A	10.9	161.1
4.1	172.0	
	190.9	164.6
	355.5	325.7
	10.9	164.1
4.4	175.0	
	190.5	166.1
	356.6	330.2

d
IV

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1891phae.proj..449R

Tuesday Dec. 8 1891.

Bright star 3 mag.

Bright Star and prismatic comp.

$\Delta_c - \Delta$		
4.3	9.5	164.6
	174.1	
	191.1	163.8
	354.9	328.4
4.3	9.1	165.1
	175.0	
	191.4	163.4
	354.8	328.5
4.1	9.9	163.2
	173.1	
	189.9	163.0
	191.6	326.2
	354.6	
4.2	9.9	165.1
	175.0	
	192.5	162.6
	355.1	327.7
4.4	10.0	164.1
	174.1	
	191.0	165.5
	306.5	329.6

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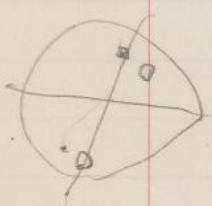
1891phae.proj...449R

Tues. Dec. 8, 1891

$\Delta_c - \Delta$		
4.2	9.9	165.5
	175.4	
	194.1	161.2
	355.3	326.7
4.3	10.4	163.8
	174.2	
	191.6	164.4
	356.0	328.2

Bright star is Sirius and companion
Red glass

4.0	352.4	161.3
	12.5	
	173.8	163.0
	189.4	324.3



9.1

Prismatic comp. caused by blue glass.
Sirius and blue glass comp.

W/p on Tower	4.9
	5.5

Experiments on the effect of different parts of field

	10.0 W/p on Tower
	11.1

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Tuesday Dec. 8, 1891

apparent ⌀ of field	9.9
Lower " " "	11.0
upper	35 3.4
lower	35 3.1
upper	35 3.0
lower	35 2.8

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Thursday Dec. 10, 1891.

T Ursa Maj. ✓

9.6

V 2 R
V = 0 R
7 5 V

S Ursa Maj. ✓

9.7

V = k
V = 0 R

R Aurigae ✓

9.8

~~V = 5 7 R~~ V = 6 R
V 3 e
d 3 V

R Cassiop. ✓

9.9

V = 4 R
V 2 0

T Cassiop. ✓

10.0

d 4 V
V 5 e
e = 8 B
V = 8 R

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1891phae.proj..449R

Thurs. Dec. 10. 1891.

δ Cephei ✓ 1. Qu

10.0 L 2 δ
δ 3 γ

β Persei. ✓ 2.

γ Androm. 3 V
10.1 β Andron. 3 V
α Andron. 1 V
α Ariatis 1 V

δ Cassiop. ✓ I M

10.2 m 1 V

δ Persei ✓

10.2 V = 9R
V 2 C
b 4 V

τ Persei ✓ I M

10.3 V = 2R
C 4 V
V 2 d

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1891phae.proj..449R

Thursday Dec. 10. 1891.

R Camelop. ✓ I M

10.3 V 2 c

6 β Ø 6 V/R

V = 0

R Ursa. Inin. ✓ I

10.4 V = c

d 5 V

V 3 f

ξ Seminarum ✓ M

10.4 L 4 ξ R.

ξ 2 V

Jupiter's Satellites. I M

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1891phae.proj..449R

Friday December 11 1891

5 Seminorum ✓

9.5 — c 2 3 / 3 5 V — L — m

S.T.
3h 30m E 5m — 45'
∴ RA = 3h 35m − 0° 45'

Eclipses of Jupiter

16	16	~~Disappeared~~ ~~Satellite~~	~~b V~~
		d 1	
17	10	b 2	b V
18	25		d 4
			b 3
18	V6		d 3
19	10		d 2
19	20		d =
19	36		b =
20	2		d =
20	45		1 d
21	8		1 d
21	30		a 3
21	46		a 2
21	58		2 b

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1891phae.proj...449R

Dec. 11, 1891.

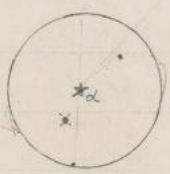
22 24 3d
22 48 a=
23 13.5 a=
23 46 3d
~~24~~ 25 0
25 10

Seeing very poor
Jupiter seen thrizm.
Strong moon light.
Nebulæ Comparisons invisible.

bright star R.A. $3^h\ 35^m$ — $0°\ 45'$

64 α_c
α_c 2 e

No. 20



a.

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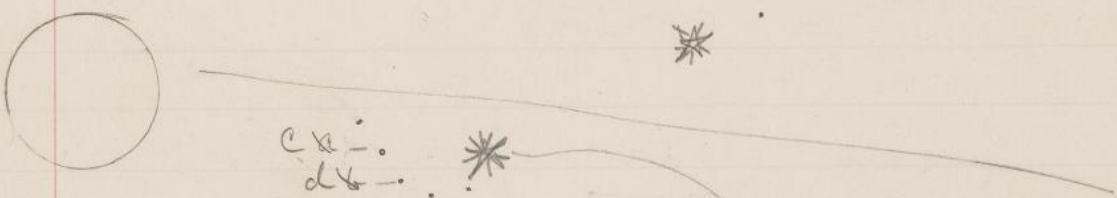
1891phae.proj..449R

Friday Dec. 11 1891

Bright star — Orion's Belt, South

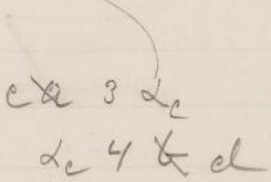
No. 21

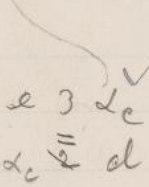


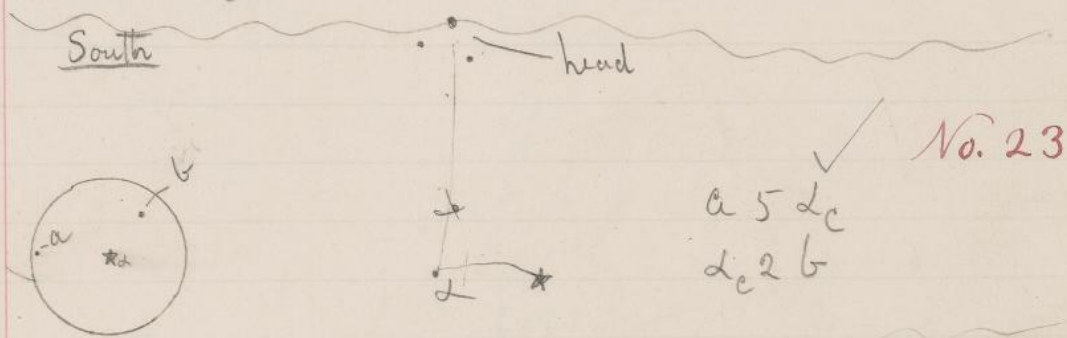


No. 22

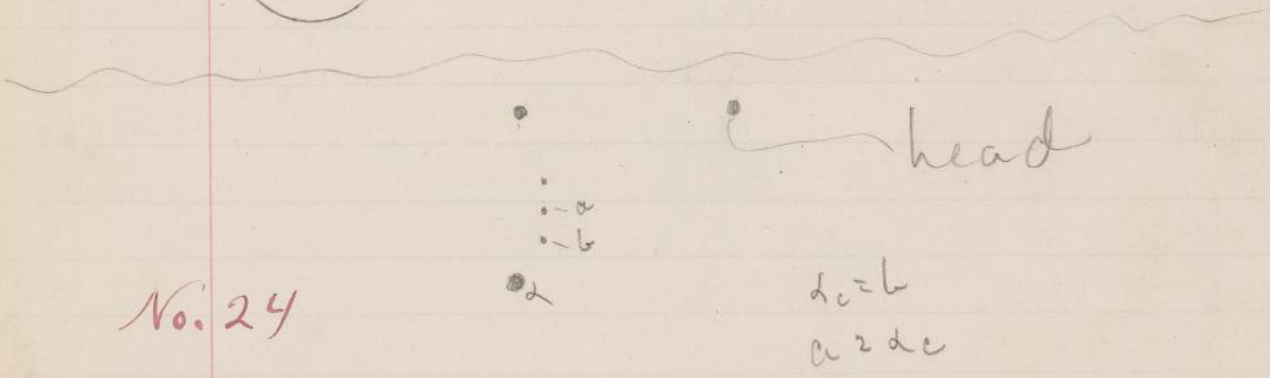
No. 28







No. 23



No. 24

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1891phae.proj..449R

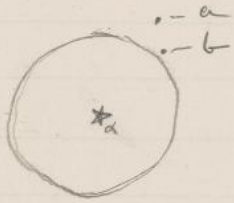
Friday Dec. 11 1891

South

Stem 5 mags S.T. 4h 24.3m W 2h 26.5m + 10°0



a 2 d_c
d_c = b



No. 25

4 24.5
2 26.5

Auriga

Capella



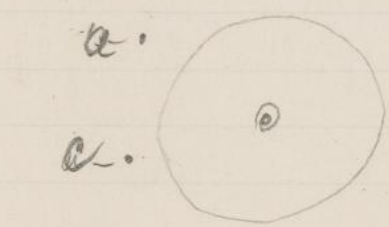
South

No. 26

a = d_c
b 4 d_c 4 b



β Persei ✓
South



16.0
4 X 4

a 5 V_c
V_c 2 b
V_c 4 c

No 27

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1891phae.proj..449R

Sunday December 13 1891

I Seminorum

λ 4 5
δ 2 3 c

10.5

E m / x

αc Zug Wedge Photometer.

αc	m
~~4.95~~	
3.60	
3.60	
3.35	
3.37	
3.43	ε = 24.67
3.82	N₀ = 7
3.50	ε/N₀ = 3.52

α = 84 Aqm	
9.13	
8.91	
8.81	
9.21	
9.04	ε = 63.44
9.04	N₀ 7
9.30	ε/N₀ 9.06

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1891phae.proj...449R

Sunday Dec. 13 1891

α_c

2.60
2.43
2.89
2.54
2.82
2.69
2.63
2.65 $\quad \frac{\Sigma}{N_0} = 2.72$
2.80 $\quad N_0 = 10$
2.99 $\quad \Sigma = 27.24$

$\alpha = 5^{h}$ mapn.

5.57
5.50
5.80
6.05
5.94
5.55
5.75
6.10 $\quad \frac{\Sigma}{N_0}$ 5.83
5.90 $\quad N_0$ 10
6.13 $\quad \Sigma$ 58.29

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1891phae.proj..449R

Friday Dec. 18 1891

I Semiovum ✓

8.9 ζ = ν L E m

α Cephei ✓

9.0 ζ 6 α L E m
α 2 ξ

Bright Stars No. 24
Orion's head.

~~α 1 2c~~
2c 1 a
2c 3 b L m

10.2 δ Persei ✓
b R = ν
ν 3 c
ν = 5-R

ε Persei ✓ L M

10.3 J/ ν = χ R 3
c 5 ν
ν 1 d

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1891phae.proj...449R

Friday Dec. 18, 1891.

S Cephei ✓

10 4

V 3 h
g 1 V
V = 2 R

T Cephei ✓

10.4

m 4 V
r 2 m
V = 1 R

R ♐ Cassiop ✓.

10.5

V = 3 R
m 6 V
V 10

T Cassiop ✓.

10.5

V = 6 R
e = 8 B
V 4 e
d 4 V

S Cassiop ✓.

10.7

m 2 V
V 3 0

R Lyncis

L M

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1891phae.proj..449R

Friday Dec. 18. 1891.

10.8 T Ursa Inf. CZ I M

v = ~~q~~ ~~k~~ h

g 3 v

10.9 ℓ Urs. Inaj. CZ I M

v = h

g b v

v 5 k

R Camelop.

b 7 v

v = e

11.3 L M

β Persei

a 4 βc

βc 2 b

11.3 βc 4 c

Z. L M

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1891phae.proj...449R

Monday Dec. 28 1891

ζ Serpentis

9.4 L 4 5
5 1 U

S Cygni

9.8 X m 5 V
V 1 n H

X ~~n 3 A~~
~~A n~~
l 3 m H
m 5 n

α_c = ~~n~~ l H
α_c 3 m

T Cephei

10.3 n 4 V L
V 2 0
V = 0 R
(warmed up)

S Cephei

10.7 g = V L
V 4 h

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1891phae.proj..449R

Monday Dec. 28 1891

S Cephei

X $b_c = n$ (circum) L

0 3 p H

R Cassiop ✓ L

n 5 v

11.1 v = n

v = 3R

T Cassiop ✓

d 2 v

11.3 v 5 e L

v = 4R

S Cassiop ✓

11.5 X n 1 v

v 3 n/2

n 4 q

q 5 R H

R 4 S

S Persei ✓

11.7 b 3 v L

v 3 c

v = 3R

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1891phae.proj...449R

Monday Dec. 28 1891

γ Persei

11.7 e 4 V
v 3 d
v = 0 R

β Persei

a 4 V
v = b (circum)
Difficult to examine
V = white
b = yellow

11.56 v 3 e

R Canis Sec

12.6 X e 3 V
v 5 f

h 5 k
l 4 m
m 2 n
n 30
v = 0 R

1891phae.proj..449R

Wednesday Dec. 30 1891

S Persei ✓

10.5

b 5 v
r = c
c = 6^R

L

T Persei ✓

c 4 v
r 2 d
v = 2^R

L

10.5

δ Cephei ✓

γ 3 d
δ 3 }

L

10.6

T Ursae Majoris ✓

k 3 v
v 4 l

L

10.8

S Ursae Majoris ✓

f 3 v
v 2 g
v = 0^R

L

10.9

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1891phae.proj...449R

Wednesday Dec. 30 1891

S Bootis ✓

11.3

V = l
v 6 m

H

h 6 k
k 5 l
l 5 m

H

R Camelopardi ✓

11.7

C = V

L

g 3 h
h 4 k
k 3 l
l 4 m

L

S Bootis

a 6 b
b 5 c
c 3 d
d 4 e
e 6 f
f 5 g
g 2 h
h 5 k
k 3 l
l 5 m
m 4 n

L

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1891phae.proj..449R

Wednesday Dec. 30 1891

, S Bootis

a_c 1 l
k 4 a_c L

b_c 2 m
l 4 b_c L

c_c 3 0
n 3 c_c H

α n 5 0
0 3 p H

β Persei ✓
a 3 v
v 2 b
v 4 c L

14.9 (?)

S Ursae Maj:

n 4 0
0 3 p H
p 6 g

ι Geminorum ✓

3 v 2 0
ι 5 v 3 f.

15.7

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1891phae.proj...449R

Thursday Dec. 31 1891

ι Geminorum ✓

10.8 6 5 5
5 1 V

S Persei ✓

C = V
6 4 V
V = 7 R

10.8

Jupiter ✓

10.8 Normal brightness

β Persei ✓

10.9 a 6 v
v 1 6
v 3 c

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1891phae.proj..449R

Monday January 4 8 1892

ζ Seminorum ✓

9.4 δ 15 L
ζ 41c

S Persei ✓

9.9 b 2 V
v 2 c L C
v = 3R

β Persei ✓

14.6 a 3 vc
vc 1 b L
v 3 cc L

S Boutej ✓

n 4 0 H
~~n 5~~ 0 5 p H
m 5 n H

cc 2 p H
0 2 bc

ac 2 l
k 2 hc H

bc = m
l 4 bc H

15.7 v = k
h 5 v H

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1891phae.proj..449R

Monday January 4 1892

R Cameron and ✓

X 16.2 V 2 d L

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1891phae.proj..449R

Tuesday January 5 189X

10.5

O Ceti ✓

$q = \frac{3}{r}$

$r = t \quad c$

Secretion

$V = 3^R$

R Semicomm ✓

X

a 6 b
b 6 c
c 7 d
d 4 e
e 3 f
f 4 g
g 2 h
h 4 k
k 4 l
l 4 m
m 3 n
n 4 o
o 4 p

v invisible

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1891phae.proj..449R

Tuesday January 5 1892

S Canis Minoris ✓

a 4 b
b 4 c
c 3 d
d 4 e
e 5 f
f 4 g
g 5 h
h 3 k
k x³ l
l 4 m
m 3 n
n 5 o
o 5 p

L

L

~~Abandoned~~ Abandoned old g and put in a new one elsewhere variable

p 5 q
q 3 R

H
H

V = m
l 5 V

H
H

12.7

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1891phae.proj..449R

Tuesday January 5 1892

R Canes ✓

d a 4 b
e b 5 c
f c 4 d
g d 2 e
h e 4 b f
i f 5 g
m g 3 h
n h 4 k
o k 2 l
p l 4 m
q m 2 n
R n 4 o s

b 2 v
v 2 c
v = 6 R

$V_c = 0$

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1891phae.proj..449R

Thursday Jan. 7. 1892.

R Piscium

a 4 b
b 3 c
c 3 d
d 3 e
e 4 f

L H m

L

V Canem

a 5 b
b 5 c
~~c 5 d~~ c 4 3 d
d 3 e
e 3 f
f 6 g
g h 3 h
h k 4 k
k 4 l
l 5 m
m 5 m

L H m

Variable invisible L

S Hydrae

a 4 b
b 5 c
c 4 d
d 3 e
e 3 f

L m

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1891phae.proj..449R

Thursday January 7 1892

S Hydrae

f 5 g

g 4 h

h 6 k

k 5 l

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1891phae.proj...449R

Friday January 8 1892

R Cruchmedae

b=Phe a 4/6 Phe F m
c=Phe b 6 c F m
d=Phg c 6 d 4 m

10.5 S Persei ✓ I 4 m
V = 3/8 R
V 3 c
V = b

10.5 T Persei ✓.
c 6 V
V d = d
V = 1 R

10.6 R Cassiop ✓.
V = 8 R
m 2 V
V 4 m

10.7 T Cassiop ✓.
V = 8 R
c 10 R
d 5 V
V 6 c I VI

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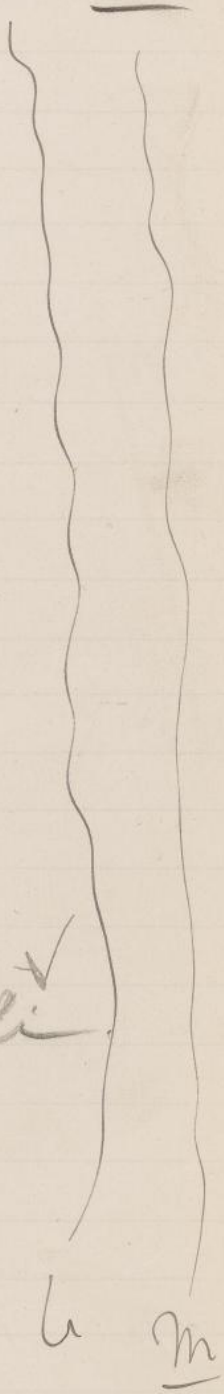
Friday Jan. 8, 1892.

10.7 δ Cassiop ✓ — v invisible — q " — R Aurigæ ✓ — e 6 v — v 1 f R — v = 3 R

10.8 T Ursæ Maj. ✓ — k 3 v — v 3 l

10.8 δ Ursæ Maj. ✓ — v 2 g — f 4 v — v = 0 R

10.d.a R Camelopardi ✓ — k C 5 v — d = v — v > 0 R



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1891phae.proj...449R

Friday January 8 1892

V Cancri

a 5 b
b 6 c
c 4 d
d 3 e
e 2 f
f 4 g'
g' 3 g

g

L m

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1891phae.proj..449R

74

Sunday Jan. 17 1891

R Cassiop

12.0

K 5 r
r 2 l
V = 4R

4 M C

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1891phae.proj..449R

Wednesday Jan. 20, 1892

S Persei ✓

12.2 b 1 v
v 3 c
L [C]

ζ Seminorum ✓

12.3 c 3 x ζ
ζ x 3 v
x E

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1891phae.proj..449R

Thursday Jan. 21, 1892

9.0 T Ursa. Maj. ✓ L

k 3 V

V 2 L

S Ursa. Maj. ✓ L

9.1 V = f

V 4 g

V = oR

9.2 √ Cephei ✓ L

m 3 V

V = o

V = oR

T 3 h_c H

R 3 e_c

S = e_c

S Cephei ✓ H

9.4 ~~k 3 V~~

k 2 V

k = V

m 4 b_c L

p 4 q H

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1891phae.proj..449R

Thursday Jan. 21, 1892.

R Cassiop. ✓

9.8

V = 4R

V 3 L

k 4 ✓

T Cassiop. ✓

9.8

V = e

V 3 f

V = 4R

e = 6B

S Persei ✓

9.9

V $2 L

b 1 V

V = 3R

R Aurigae ✓

10.4

V 1 g

f 2 V

V = 1R

k 4 l

l 5 m

m 5 m

m 3 o

o 5 f

f 4 g

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1891phae.proj..449R

Thursday Jan. 21, 1892.

δ Bootis ✓

10.6 h 1 ≡ V ZL

R Camelop. ✓

10.6 L 4 V L
V 1 f

R Ursa. Min. ✓

10.7 L
L = V
d 5 V
f = V

7: 43
1 52
5 50

New Variable No 1. ✓

11.4 Invisible L
It may be about 11 mags. L.
for I have at hand no
chart of these faint stars.

Camelopardus New Variable No. 4 ✓

12.2 L L
e = V
V 3 f
V = 8 R L

1891phae.proj..449R

Thursday Jan. 21 1892

X Virginis

a 3 b
b 5 c
c 4 d
d 4 e
X e 5 f
f 5 g
g 4 h
h 6 k

4 m

R Corvi

a 4 b
b 5 c
c 2 d
d 5 e
e 4 f
f 5 g
g 4 h

4 m

L.

$V = \frac{e}{R}$

$V = 0$

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1891phae.proj..449R

Jan. 27, 1891 ~ Wed.

~~9~~ 10.0 W Geminorum L. L C

V 3 m

0 2 V

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1891phae.proj...449R

Sunday Jan. 31 1892

☆
S Cephei ✓

10.3 X h 3 v
v = k

4

4 q.

R Camelopardi ✓

X e 4 v
v = f

g 4 h
h 6 k
k 3 l
l 5 m

β Persei

11.1 β a 3 v_c
v_c 1 b
v_c 3 c

R Ursae Majoris ✓

X r 1 g
0 2 n
n 3 h

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1891phae.proj..449R

Sunday Jan 31 1892

R Ursae Majoris

p	5 q	H
q	3 R	L
R	3 S	H
S	5 T	H
T	4 U	H

S Persei

13.2

V = 6 G
V 2 C
V = 1 R

[k	2 l]	~~l 2 m~~
l	3 m	~~m~~
m	4 n	
n	3 0	

H
|
H

R Aurigae

q	5 V	
V =	f	G

V = 1 R

l	5 m	
m	3 n	
n	4 0	
0	3 p	

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1891phae.proj..449R

Sunday Jan. 31 1892 83

R Aurigae

14.3

ζ Geminorum

R Lyncis

Variable

Invisible

T Ursae Majoris

S Ursae Majoris

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Sunday Jan. 31 1892

Sirius Mujoris ✓

14.6

e 4 ✓
r 3 f

L

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1891phae.proj...449R

Monday Feb 11 1892

10.7 δ Persei ✓ L
b 1V
V 2 e/R
V = 3R

10.7 T Cassiop ✓ L
V = e
V = √R
e = 7B
V 1

10.8 R cassiop ✓ L
V 1 g/R
V = 3R

R Auriga ✓ L
10.9 ~~f 1V~~ g 2V
~~f 6~~ V 1h
~~f g V~~

11.0 R Virgo Inq. ✓ L
V = g
V = 0R

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1891phae.proj..449R

Monday February 1 1892

T Ursae Majoris

T invisible
or very faint

11.2 + k 2 l
l 1 h L

S Ursae Majoris

e 4 v
v 3 f 11.2 L

S Bootis
v 1 h 12.9 L

3493 R Leonis

variable Invisible < 11 L

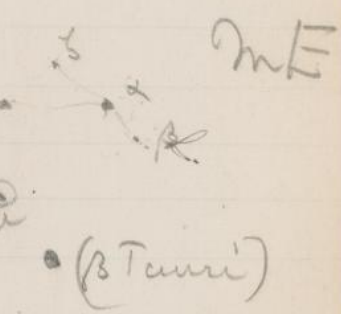
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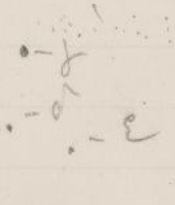
Thursday Feb. 4 1892

Nova in Aurigae

8.1 b (a) χ = V ✓ mE
a ∠ 3 V
V 1 β. β

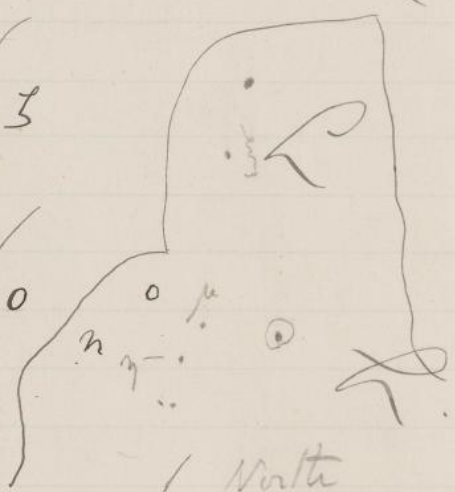


8.7 γ γ2 V ✓ mE
V 1 δ δ
V ~ Σ ε



8.8 V 3 ζ ζ ✓ mE

9.2 νe 1 μ 0 ✓ mL
η γ 6 νe
ξ ξ = νe



S Persei

9.9 b = V mL
V 3 c

1577 R Tauri
10.4 Variable invisible on visible

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1891phae.proj..449R

Thursday Feb. 4, 1892.

10.5 1582 δ Tauri ✓ m L.
V=m L.

10.6 2100 ν Orionis ✓
d 3 V
V 1 e
V = 4R L.

10.8 ~~p 3 Vc~~ 0 3 Vc
~~q = Vc~~ p = Vc
p is fully two mags. brighter than q

2528 R Geminorum

2684 δ Canis Minoris ✓ M L
10.9 h 1 V
V 3 k
V = 0R

11.2 2946 R Cancri ✓
d = r
c 3 r
r = 3R

11.3 3170 S Hydrae ✓
g 4 r
r 1 h

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1891phae.proj..449R

February 4 Thursday 1892

3477 R Leonis Minoris ✓

11.5 Perhaps ~~vainly~~ just glimsed
if so about 12.5 Magn. L M

4300 X Virginis ✓

11.6 h 3 V
V = k H M

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1891phae.proj..449R

Friday Feb. 5. 1892.

10.2 T Carsioj- M L

10.2 Nova in Aurigae M E

10.4 ~~Wendell's and Reid's Comp. Stars. Notation I~~

10.4 M L

10.4 S Persei M L

10.5 T Persei

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1891phae.proj..449R

Friday Feb 5, 1892

10.5 — R Persei ✓ Jm L
a = Vc
Vc = b
Vc 5 c

4315 R Comae ✓
10.9 Variable invisible
a visible
S. C. C. notation

4377 T Virginis ✓.
10.9 m 3 V L m
V 1 n

4407 R Crvi ✓
e 3 V
11.1 V = f

4492 γ Virginis (4492) ✓
11.2 V = c ± S. C. Notation m L

4521 R Virginis ✓
11.3 ∠ & 5 V m L
V = β
Preliminary Notation

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1891phae.proj..449R

Friday February 5 1892

4596 μ Virginis ✓

11.4 b 2 v m L
v 1 m
S.e.c. Notation

4805 W Virginis ✓

11.5 ~~b~~ = l & 1 V m L

4816 ✓ Virginis ✓

11.5 Variable Invisible L m
" < 11 Mag.

4847 S Virginis ✓

11.7 V = R L m

ζ Geminorum ✓

12.7 c 2 ζ
ζ 5 V

Davis Suspected Variable ✓
12 ~~48~~ 47.6 + 8 42

L 3 V L ~~m~~
v = c

11

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1891phae.proj..449R

Friday February 5 1892

Nova Aurigae

7.4 $\frac{v}{v} \; 4 \; \chi \; b$ M.B.
$v = \alpha \; a$
α as given on Feb. 4 1892.

7.9 $\frac{v}{v} \; 3 \; \chi \; b$ M.B.
$v = \alpha \; a$
These were taken at Belmont.
Original Record

Friday Feb. 5 1892.
Nova Aurigae
Camb. Standard Time
χ 7.4 M.B.
$\frac{v}{v} \; 4 \; \chi$ Aurigae
$v = \alpha$
α as given in my record book of Feb. 5 1892

7.9 $\frac{v}{v} \; 3 \; \chi$ M.B.
$v = \alpha$

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1891phae.proj..449R

Saturday ~~Nov~~ February 6 1892

Andromeda

10.0 Nova Aurigae

b χ 2 v C m E
v 3 β β
Original Record

1892
Feb. 6 10.0 C m E
χ 2 v
v 3 β β

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1891phae.proj..449R

Tuesday Feb 9 1892

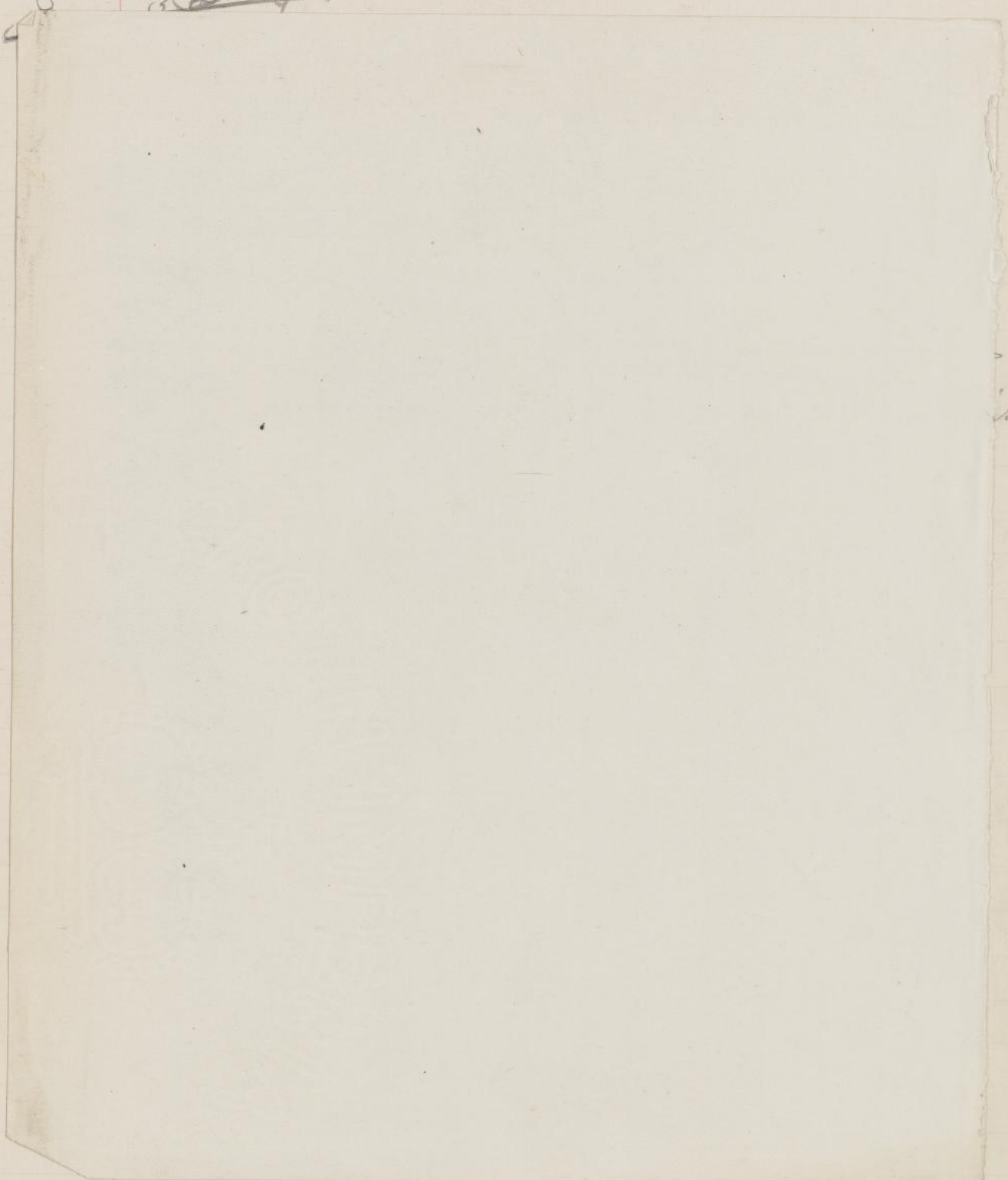
5h 3m 4s

visible

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Tuesday Feb 9 1892



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Tuesday Feb 9 1892

~~5h 3m 4~~

~~41~~
~~213~~

Tuesday Feb 9, 1892

$5^h 36^m 7^s$
$5^h 39^m 20^s$

Sat. disappears, prism. comp. invisible completely

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1891phae.proj..449R

Tuesday Feb. 9 1892

O Ceti

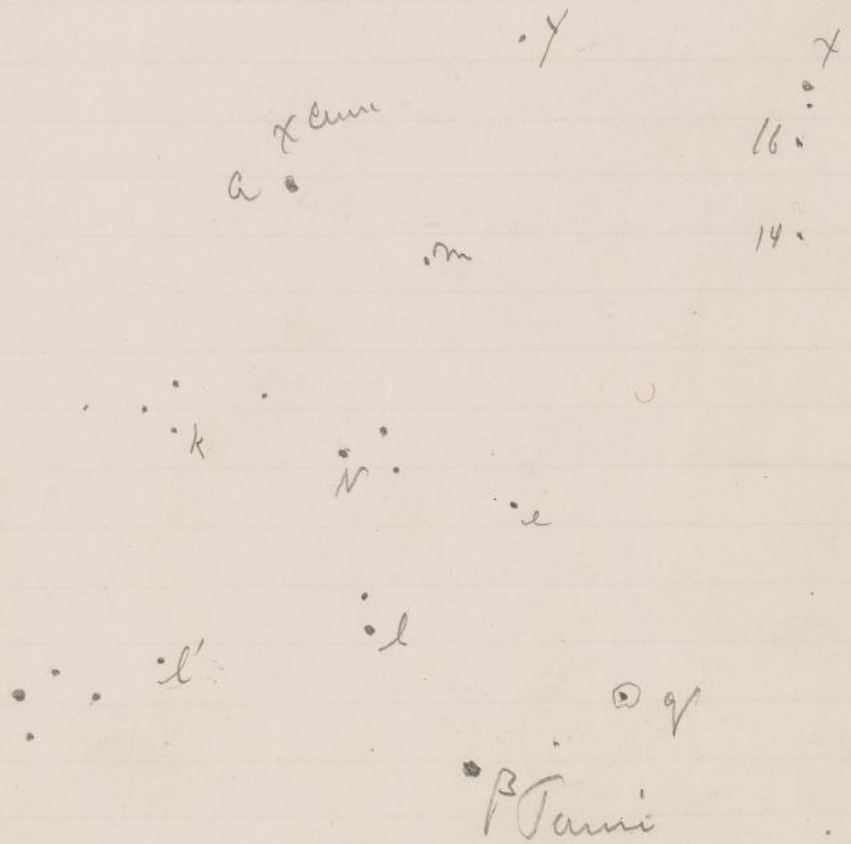
73½" Ceti m 5 m

65½' Ceti n 7 0

Ceti 0 7 p

Ceti p 3 q

Ceti q 4 R 75 Ceti

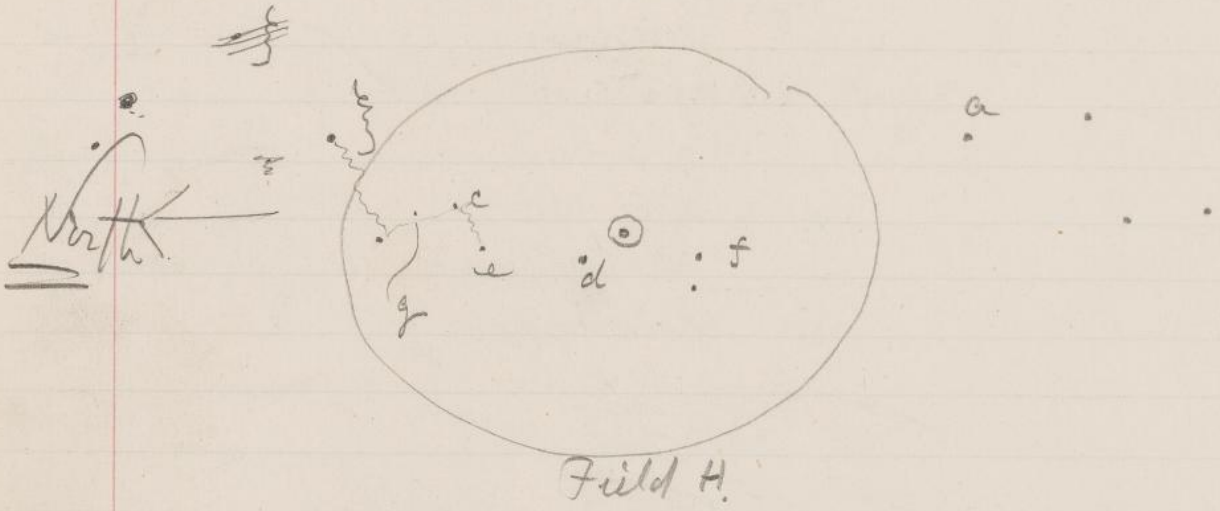


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Tuesday Feb. 9 1891

Faint stars (bright comp. stars)



Nova Aurigae

The above notation is used.

9.2

b χ 3 v ✓ — m opera glasses
3 γ 1 v — .χ
β 14 Aurigae = v ✓ — ⊙v
δ δ = v — ε (see Feb. 4) .p

9.6

b χ 4 v ✓ (aurigae) — m opera glasses
ε ε 1 v
v 2 X c

9.9

v_c 3 q o ✓ — L m
ζ ζ = v_c
π p 4 v_c

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1891phae.proj.449R

Tuesday February 9 1892

10.3 R Cassiop. ✓ M L

V 1 f

V_c & = 0

10.3 T Cassiop. ✓

e 2 V

V 2 f

V = 3 R

10.4 S Persei ✓

b 1 V

V 4 e

V = 2 R

10.45 R Aurigae ✓

g 4 V

~~V = b~~ h 1 V

V 1 k

V = 0 R

10.6 R Ursae Maj. ✓ M L

V 3 g

V = f M F

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1891phae.proj..449R

Tuesday Feb. 9. 1892.

S ☆ Ursae Maj. ✓ M L

10.7

v = e
v 7 f
v = 0R
d 6 v

S Boötis ✓

10.8

v 3 h
g = v

R Camelopardi

10.8

v = f ✓
e 6 v
v 3 g

R Ursae Minoris ✓

10.9

v = d
v 3 e

e 3 f

R Draconis ✓

10.9

v = d

t m

β Persei

11h 8m

a 3 v ✓
v 2 b
v 5 c

L m

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1891phae.proj.1449R

Tuesday February 9 1892

12.5 — S Canis Minoris
g 3v
v 1h ✓ L m

12.6 — R Canori
d 3v ✓
v 1e L m
v=3R

12.7 — V Canori
v=g ✓
v 4h L m

12.8 — S Hydrae
g 3v ✓
v 3h L m

Nova Aurigae ✓

12.9 — a χ 3 v
χ/v = 1(4) β E m

13.9 — R Leonis Minoris
K visible
Z invisible ✓ L m
S.C.C, Notation

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1891phae.proj..449R

Tuesday February 9 1892

R Leonis

14.1 α 1 V ✓ L m
V 37
S.e.c
V=8R

X Virginis ✓

14.2 variable Invisible L m
g visible.

R Coronae Bora ✓

14.3 variable Invisible L m
b visible (S.C.)

T Virginis

14.4 m 2 V ✓ L m
V 2 n

R Ursae ✓

14.5 e 3 V L m
V = f

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1891phae.proj..449R

Tuesday Feb. 9 1892

R Virginis

14.8 $h = v$ ✓ L m
$v \mid g$
$v = 0^R$

U Virginis

14.9 b 4 v (scc) ✓ L m
v 2 0 (w m R)

S Virginis ✓

15.1 $p 2 v$ L m

h — a
g — b
R — c
S — d
T — e
U — f
W — g
~~W — h~~

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1891phae.proj..449R

Wednesday February 10 1892

Nova Cunjaca

b χ cunjan 3 ν ✓ m apex flavus

ν 1 β β

ν = γ 3

~~χ~~

n p 2 $\frac{\nu_c}{\nu_c}$ 3 $\frac{}{q}$ 0 ✓ m = L

~~8. 7.3~~

8. 3

7.7

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1891phae.proj.1449R

Friday February 11 1891

New Notation

Nova Aurigae

n 4 v
v 3 0

m 4 ✱ Twilight

6.1

x b 2

b = v

a 3 v

y 2 y

v 2 y 3

B m Twilight

6.2

The auxiliary stars, not in the regular sequence of comparison stars, are designated by letters after by Greek letters. The six previous observations have been altered in ink (black) in conformity with the following chart and the so called "new Notation". The New Notation is the one given on P 56 of Mr Wendell's Record book No. 61.

Notation of auxiliary stars

(χ Aurigae) .5 a

b .β

⊙

δ. .γ

✱ p Tauri

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1891phae.proj..449R

Friday February 11. 1892

Nova Aurigae

10.2 ~~x 3 v~~ ✓
b 2-3 v
v = 3
v = β
C m o

10.3 δ = 1 v ✓
ε = v
m o

10.4 b-3 v ✓
v 1 β
v 1 3
v 2-3 ε
m B

10.4 δ 2 v
v = ε
m B

11.7 ~~x~~ b 3 v ✓
m F

12.0 η 4 v_c ✓
3 4 v_c
v_c 2 0
m L

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1891phae.proj.1440R

Friday February 11 1892

Nova Aurigae

a 3b
b 5c

m B

R Draconis ✓

14.9

v = d

m L

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1891phae.proj..449R

Saturday February 13 1892

The following observation was made at Andover Mass.
Nova Aurigae

10.7 b 4 v v m B
v = β
v | c

Original Record

Nova Aurigae
Saturday February 13 1892
Central Standard Time
10.7 b 4 v m B
v = β
v | c

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1891phae.proj.1449R

Monday ~~June~~ February 15 1892

Nova Aurigae

7.5

C 3 V
V 2 d

B
belonging to Obs.

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1891phae.proj..449R

Tuesday February 16 1892

Nova Aurigae

7.7 0 5 v_2 ✓ L
v_2 = h
v_2 4 g

7.7 c 4 v ✓ B (Absenalong)
v = e

8.0 d i v ✓ B (absenalong)
v 4 f

8.3 d 2 v ✓ B (m. Wendell's)
e = 1 v
v 3 f

Nova just barely seen with the Naked eye.

a 3 b ✓ B m. Wendell's
b 6 c
c 3 d
d 1 e
e 3 f
f 3 g h
g 3
h 6 k

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1891phae.proj.1449R

Tuesday February 16 1892

Nova Aurigae.

+ + K 4 l ✓ B
l 3 m Am. Wendells
m 4 n 4
n 6 o
o 4 p

+ + l 5 m ✓ 4
m 5 n 4

+ + p 5 q ✓ 4
q 3 R
R 5 S Am
S 2 T m
T 4 U m H
U 4 W m H

+ +

S Persei ✓

~~d = b~~ Am L
v = b
v 3 c
v = 5^R

9.8

R Persei ✓

n = V_c
V_c 3 o Am L

10.2

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1891phae.proj...449R

Thursday February 16 1892

δ Cassiop ✓

11.3 — e 3v — m L
v 1 f
v = 5R

ι Cassiopeiae ✓

11.5 — Invisible. — m L

R Canis ✓

11.6 — h 2v — m L
v = k

R Ursae Majoris

11.8 — v 4 f ✓ — m F
v = e — F

τ Ursae Majoris ✓

12.0 — Invisible — m L

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1891phae.proj..449R

Thursday February 16 1892

S Ursae Majoris

12.0 α d 3 $\underline{v}$ ✓ m 4
$\underline{v} = e$

S Bootis ✓

12.1 $\underline{v} = f$ m 4
$\underline{v}$ 6 g

R Canes Venatici ✓

12.2 $\underline{v} = g$ m 4

R Draconis ✓

12.3 α d 3 $\underline{v}$ m 4

1 Draconis ✓

12.4 $\frac{6}{7}$ 3 $\frac{3}{5}$ m E
$\underline{v}$

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1891phae.proj...449R

Tues. Wednesday Feb. 17 1892

Nova Aurigae

8,5

b 3 v ✓ B
c 1 v m. Wendell's
v 6 d B

8,7

n 3 v_c ✓ L
v_c 3 o L

8,9

γ 1 v B
γ_c 2 v m. Wendell's
γ 1 v B

a 3 b B
b 6 5 c m. Wendell
c 6 d ✓
d 2 e
e 2 f
f 2 g
g 2 h
h 5 k R
k 5 l L
l 5 m
m 3 n
n 6 o
o 5 p
p 5 q
q 3 R L

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1891phae.proj.1449R

Wednesday February 17 1892

Nova Aurigae

m 4 b2 ✓ 4
b2 = n ≀
b2 5 0 2

10.5

v 15 ✓ E
v 1 β
b 3 r

e2 = p ✓ m L
e2 4 g

R 5 S ✓ m H
S 3 T ≀
T 4 U H
U 4 W
m

β Persei

11.9

& a 3 V2 ✓ mL
V2 1 b
V2 5 c

a 5 b mL
b 3 c ≀
c 4 d
d 3 e
e 3 f 2

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1891phae.proj...449R

Wednesday February 17 1892

β Persei (continued)

f 4 g m L

S Persei

12.5 v 4 c m L
b = v
v = 2R

14.2 Nova Aurigae

b 3 v v m B
v = 1 m Wendell.
v 3 c

New Var No. 4 Camelopardalus

14.4 d 3 v m L
~~12.4~~
v 1 e
v = 8R

R Canum Venatici

0 = v
1503 v 3 p m L

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Wednesday February 17 1892

5770 R Herculis ✓

15.5 Invisible m Lo
g visible.

5889 U Herculis

15.7 g 1v ✓ Lm
v 3h

5950 W Herculis

15.8 Invisible ✓ Lm
In visible.

15.9 β Lyrae ✓
γ 4 β/ε (Em
β = 3/

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Thursday Feb. 18. 1892.

Nora Aurigae E

8.3

b 3 V V
V = c

8.4

b 5 V Windell's B
c 2 V V
V 4 d

a 3 b Windell's B
b 5 c
c 6 d V
d 2 e
e 2 f
f 2 g
g 2 h
h 3 k

b 3 ψ V
ψ 1 c
b 4 β
β 2 c

γ 3 b V
α 1 γ
b 2 δ
δ 3 c
ε 4 c
b 1 ε

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1891phae.proj.1440R

Thursday Feb. 18, 1892

Nora Auriga ✓ I

8.9

~~V_c b_c = o~~ $\underline{n} = V_c$

~~n b V_c~~ V_c b $\underline{o}$

$\underline{V_c}$ b f

✗ b_c 3 o ✓

n 3 b_c

~~f~~ f 3 $\underline{f_c}$

✗ f_c 2 $\underline{q}$

f k b $\underline{l}$

$\underline{l}$ 5- m ✓

m 3 $\underline{m}$

m b $\underline{o}$

f o 5- ~~f~~ $\underline{p}$

~~f~~ $\underline{p}$ 5- $\underline{q}$

$\underline{q}$ 4 $\underline{R}$ L

R b $\underline{S}$ ✓ H

$\underline{S}$ 3 $\underline{T}$

$\underline{T}$ 4 $\underline{U}$ U east of one of the pair

U 3 W

West U = East ~~U~~ U

All previous comp. of U have been with the west U

1891phae.proj...449R

Thursday Feb. 18. 1892.

R Cassiop.

9.6 $\underline{w} = v_c$ I

v_c 6 $\underline{o}$

9.7 $v = \underline{e}$ Obs'tory R

$\underline{v}$ 6 f

$V = 4^R$

Glass no. II.

9.8 V 5- f L

v_c | o

w 6 v_c

T Cassiop. L

e 5- $\underline{v}$

9.9 $\underline{f}$ 8 v

$V = \underline{g}$

$V = 5^- R$

Glass no. I.

$\underline{g}$ ~ V

Glass no. II.

10.0 $V = \underline{g}$

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Thursday Feb. 18, 1892.

10.1

β Persei ✓

a 4 V_c

V_c ~~1~~ 2 b

V_c ~~V_c~~ 4 c

Stairs for determining principal comparison

Bright star no. 2 ✗.

a = α_c

α_c 3 b

Bright star no. 23

α_c ~~4~~ 2 b

a 4 α_c

10.3

δ Persei

V 5 c

r 1 b

a 6 V ✓

Glass no. I.

V 2 c

b 2 V

Glass no. II.

V 6 c

r 2 b

a 3 r

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Thursday Feb. 18, 1892.

Glass no. I. is a round green glass. Glass not II is a rectangular orange glass, with one edge concave to the center.

10.7 — 78 R Aniatis ✓ L
V = h (S.C.C.)
X ~ V

10.8 — 15 77 R Tauri ✓ L
Invisible
no visible

10.8 — 1582 δ Tauri ✓ L
Invisible
no visible

10.9 — 8105 ν Orionis L
V = R + b ✓
V ~ e
d ~ V

11.0 — 0 3 V_c L
V_c 1 p

Bright Star 22 ✓
e 4 d_c L
d_c = d

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Thursday February 18 1892

Bright star No 28

c 3 d d
d 2 d

L

Bright star No 21

b 4 d
d 1 a

L

2684 S Canis Minoris

11.5 g = r ✓
r 4 h

L

2946 R Cancri

11.6 e 2 r ✓
r 2 f
r = 4 R

L

S Cassiop. ✓

p 4 q
q 4 R
R 5 S

12.0 Var. Invisible

M H

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Thursday February 18 1892

2976 V Cancri

12.5 f 4 V, ✓ mL
v = g
g V = g
V = 0R

3170 S Hydrae

14.5 f 6 V ✓ mL
V = g

3477 R Leonis Minoris ✓

14.6 Invisible
x visible (scc) mL

3493 R Leonis

14.7 f 2R ✓ mL
R 4 B
✓R = 4R

4300 X Virginis

15.0 h 3 V ✓ mL
V 2 k

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Thursday February 18 1892

15.3 4315 R Comae ✓ mL
Invisible
b visible (sec)

15.4 4377 T Virginis
n 2 v ✓ mL
v 2 0

15.5 4477 R Corvi
f 2 v ✓ Lm
v 3 g

15.7 4492 Y Virginis ✓ Lm
Invisible
y visible (sec)

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Friday February 19 1892

Nova Aurigae

7.7 b G v (Clouds) c L

Nova seen through dense but fairly evenly distributed clouds.

I looked at the two stars for some time in order to eliminate any effect due to temporary openings.

7.8 v G e v c L

This comparison was made under the conditions and in the manner stated above.

8.3 b 2-3 v c L

A trifle clearer.

v too bright to be comparable with e.

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1891phae.proj..449R

Saturday February 26/27 1892

Nova Aurigae

7.7 0 3 Vc / Vc 4 h L

7.9 C 3 V / V 4 d B
M. Wendell's B

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1891phae.proj..449R

Friday March 4 1892

Nova Aurigae

9.6 $\frac{1}{V_c} \sim \frac{V_c}{q}$ ✓

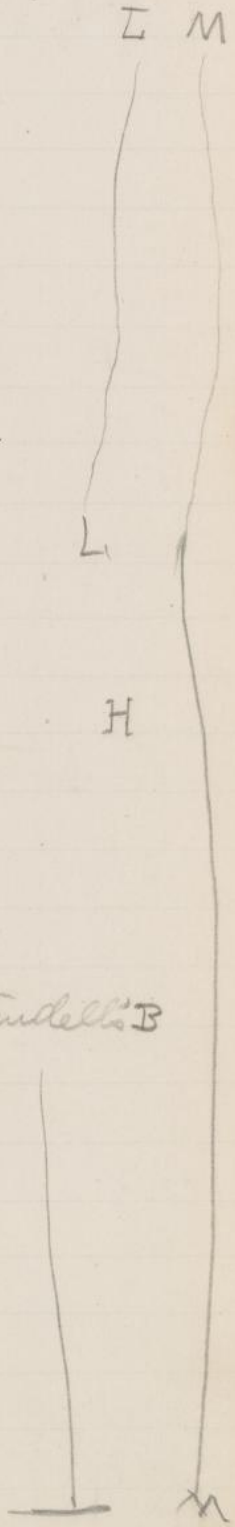
$k \sim l$
$l \sim m$
$m \sim n$
$n \sim o$
$o \sim p$
$p \sim q$
$q \sim R$
~~$R \sim S$~~

$R \sim S$
$S \sim T$
$T \sim U$
$U \sim W$

10.1 $\frac{e}{V} \sim \frac{V}{f}$ ✓

10.2 $\frac{e}{d} \sim \frac{V}{V}$ ✓

$a \sim b$
$b \sim c$
$c \sim d$



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Friday March 4, 1892

Nova Aurigae (continued)

Wendell's B M.

d 1 e
e 3 f
f 5 g
g 3 h
h 6 k

γ = a
γ 2 b

b 1 δ
δ 4 c

ε 4 c
b 2 ε

ζ = c
β 2 c
b 5 ζ
b 4 β

ζ Persei L M

10.8

v 3 c
v 2 R
b = v

ζ Cephei

l 4 v
v 1 m

L m

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Friday March 4 1892

T Cephei ✓

12.1 V 2 K L M
V = 0 R

T Cassiopeiae ✓

12.4 g 1 V L M
V 1 h

Midnight dinner Moon set.

13.7 R Aurigae ✓

n = V L

R Lyncis ✓

13.9 k = V L
V 6.l

R Ursae Majoris ✓

14.1 v_c = g L
V + 3 f B mine.

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Friday March 11 1892

S Ursae Majoris ✓

d 3 ✓
✓ = 4R

14.2 ~~B~~

L

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1891phae.proj..449R

Saturday March 5 1892

Nova Aurigae

7.9 c 5 v ✓ ✓ ✓
v 1 d
v 2 e
v 5 f

m B
Mr. Wendell's

B c Persei ✓

8.2 a 2 v c L m
v c 2 b
v 2 3 4 c

Nova Aurigae

8.3 0 4 v c ✓ L m
v c 2 b

Moon about half and eight degree from Nova.

Taurus ✓

8.4 Round brightness m

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1891phae.proj..449R

Saturday March 5 1892

S Persei ✓

8.5 a 3 v
v 1 b
v 3 e
L m

R Persinfeiae ✓

8.7 n ✗ 2 v
v 40
L Dm

8.7 & v 2 e
L B

T Cassiop ✓

8.9 2 v
v 3 h
V = 2R
L m

S Cassiop ✓

8.9 Invisible
A visible
L m

R Cancri ✓

9 10 v = l
v 3 m.
L m

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1891phae.proj...449R

Saturday March 5 1892

R Lyncis ✓

V = h
V 4 k

L m

T R Ursae Majoris ✓

Invisible L m

S Ursae Majoris ✓

d 3 V
V 2 e
V = X X 4 R

L m

S Bootis ✓

V = e

L m

R Pegasi ✓

k 2 V
V 2 L

H m

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1891phae.proj..449R

Saturday March 5/1892

R Hercules ✓

9 & 14 d 2v
v = e
L m

R Draconis ✓

9 & 8.5 e 2v
v 5 h
L m

9 & 7.6 S Cygni atmosphere two unsteady

S Cephei ✓

9.7 e 3v
v 4 m
L m

T Cephei ✓

9.7 e 3v
v 3 m
L m
atmosphere very unsteady.

Nova Aurigae ✓

10.0 e 5v
v 2 + d
v 4 e
L m

Mrs Wendell's B

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1891phae.proj...449R

Saturday March 5 1892

New Variable No 1

10.3 below 10 mag

Correspond New Variable No 4

d 5 V
V = e
V = R

11.3 L m

New Var. No 13

11.3 a = V
V 4 b
L m

2266 V Arnaeudtis

11.4 V 3 d (sec) L m

3170 S Hydrae

e 1 V
V 4 f
V = 0 R

12.3 L m

3184 T Hydrae

a 3 V
V = b
V = 0 R

12.5 L m

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1891phae.proj..449R

Saturday March 5 1892

3493 R Leonis ✓

12.6 v = 4/R L m

v 3 β

4300 X Virginis ✓

12.76 h 3v / v 2k L m

4377 T Virginis ✓

12.7 v = 0 L m

4407 R Comæ ✓

~~4~~ 12.8 v = 4 L m

12.8 4521 R Virginis ✓

v 3 4 / v = 0R L m

13.0 4596 U Virginis ✓

~~U~~ v = 9 (sec) L m

4847 S Virginis ✓

13.2 k 2v / v 1 l L m

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1891phae.proj...449R

Saturday March 5 1892

Nova Aurigae

13.3 c 5 v ✓ Rud's B Z N
v 4 e

Vc Invisible
o Visible.

Passing clouds.

1948 R Canis Venatici ✓

15.6 V Q = p L

β Lyrae ✓

15.6 γ 4 β E
p 1 }

15.8 5237 R Bootis ✓
α 3 v L

5501 S Serpentis ✓

16.0 n 2 v sec L

16.1 5-504 S Coronae ✓
h 3 v sec L

5-484 u Coronae ✓

16.2 v = f sec L
v 3 o

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1891phae.proj.1449R

Saturday March 5 1892

16.2 5504 · S Coronae ✓ L

$\frac{V_c}{V_c} = \frac{d}{3\ \beta}$

5667 R Coronae ✓

16.4 V 4 e L

7120 χ Cygni ✓

16.6 $\frac{\delta\ 3v}{v\ 1\gamma}$ L

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1691phae.proj...449R

Sunday March 6 1692

Nova Curiæ

0 5 Vc ✓ L M

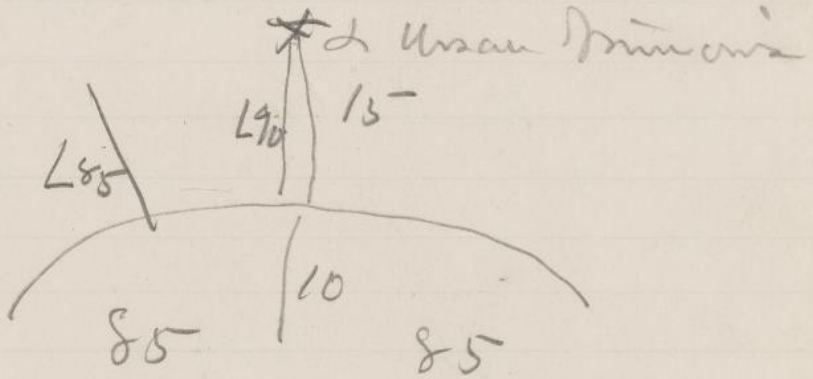
Vc 1 T2

7.7

Yellowish star

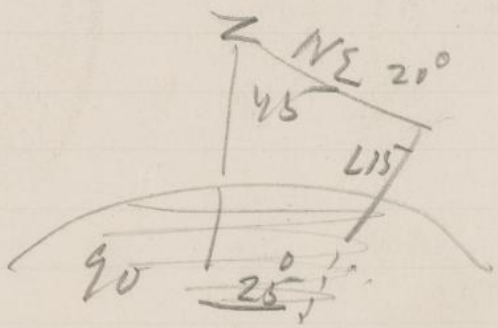
Common type

Mr. W M Davis agrees with the above determination of color.



Quite irregular

Cyrus clouds.



L

Shreiner Courage toward Zenith

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1891phae.proj..449R

W 1 2 55.8

W 3 12 70.8

E 0 10 56.6

E 1 16 74.1

W 3 25 +48.1

W 4 45 52.0

E 4 53 59.2

E. 8 40 35.1

6 12 52.3

13 44 49.2

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1891phae.proj...449R

2242 56.2 LC

18 41 ~~18~~ 19.6 LC

~~24~~ 27

16 ~~18~~ 64:0 LC

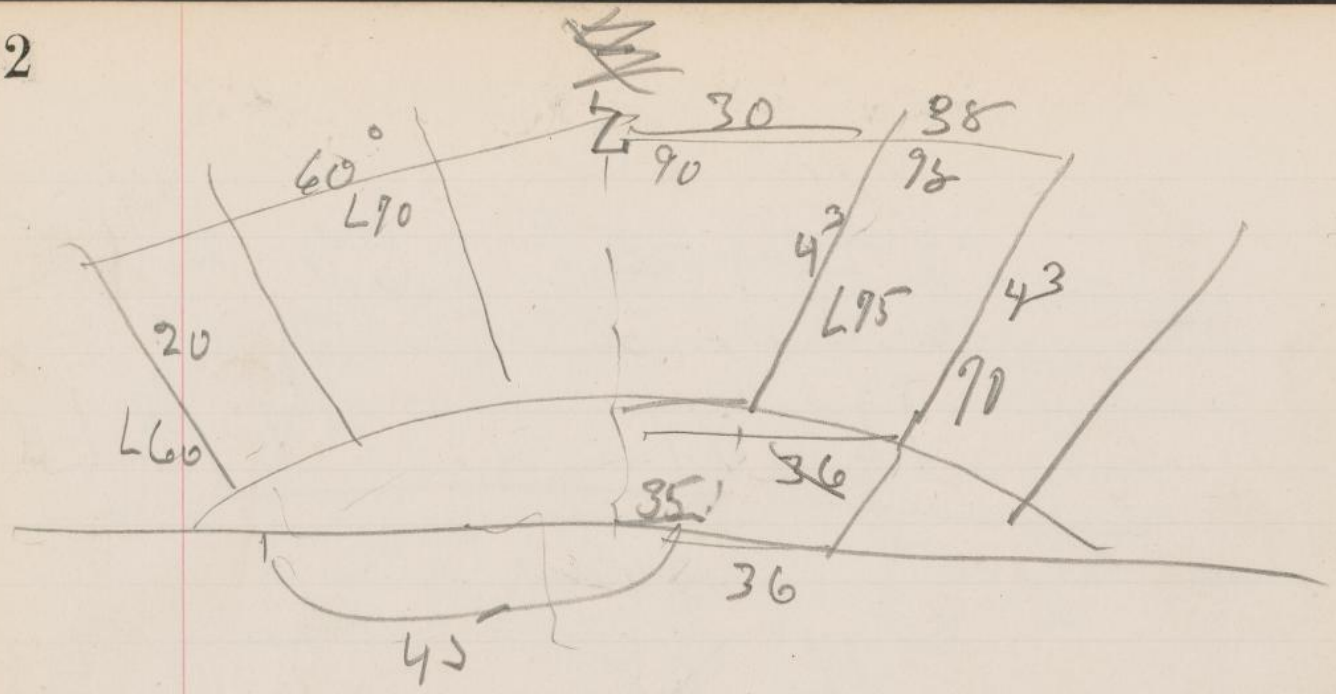
Cuda

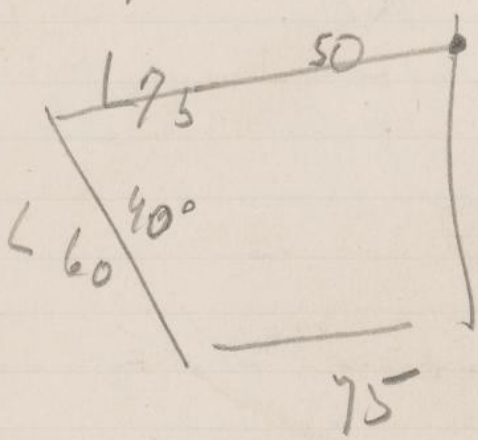
16 ~~3~~ 1 36.1

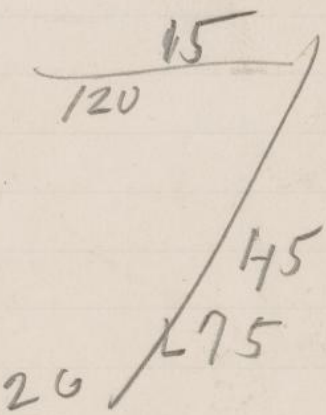
1635 50.0

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1891phae.proj..449R







Send monument to mount tent.

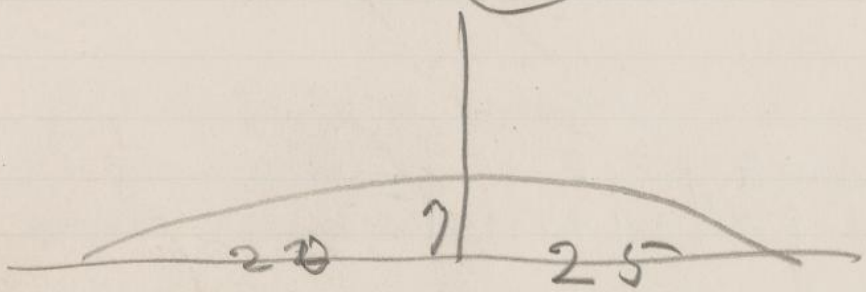
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1891phae.proj...449R

Sunday March 6 1892

Clear

Solid (with cyrus clouds)



highest point reached about
Extent of North Limb.

Corona was observed between 7:26 + 7:45
8:26? + 8:45?

8.9 Nova Aurigae

f IV (mine) B X M

Prom very close and atmosphere hazy.

9.2 Vc I/c
0 5 Vc

L m

9.2 e 5 V
f 1 V
V 39

B m

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1891phae.proj.1440R

March 6 1892

R Cassiop. ✓ L M Z

9.7

V = 5 R

Vc 2 m

m 4 Vc

Seeing very poor

Aurora

9.7

| mag | A | B | E | C | = rays parallel to ~~to~~ solid arch.
|---|---|---|---|---|
| 3 | 78° | 3 | 120 | 14 | |

Second arch.

C = 20. arch is solid E = 120

A = 77 ~~20~~ mag = 3

δ Persei ✓

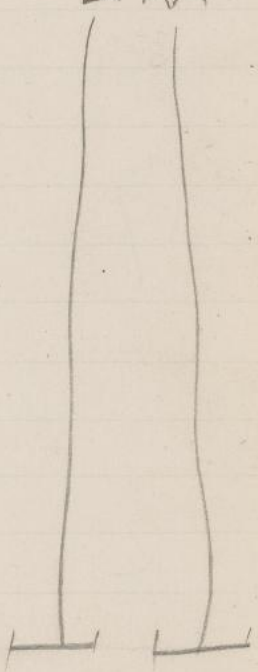
10.0

a 2 V

V 2 b

V = 5 R

L M M



ζ Cassiop. ✓

10.0

g 5 V

V = h

V = 0 R

R Aurigae ✓

10.1

L 4 V

V 1 m

V = 0 R

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1891phae.proj..449R

Sunday March 6, 1892

10,12 R.A. 0h 0m Arch +5°9.7 +64.7

10,13 +60.0 +63.9

10,1X R.A. & 5 3 W +4 9/16

10,1X R.A. & 36 W +50.1

10,15 R.A. & 38 W +48.0

10, 15 R.A. & 43 W +48.7

10 17 R.A. 9h 24 E +51.6
Arch very thin 2° wide

10 18 R.A. 9 47 E +54.0

10.19 Distinct arch disappeared when streamers came

~~Top of~~

10.4

A	B	C	N
23°	3°	1X	W

The ~~arch~~ arch seems to be rising.

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1891phae.proj.1440R

57.43
47

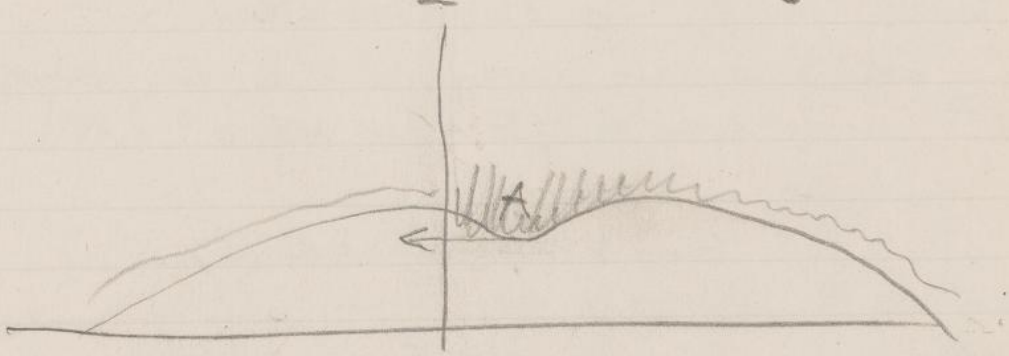
March 6 '92

Arch

Second measurements of the arch

		H.A.					
h	m	~~R.A.~~ h	m				
10	26	0	0.0	+57.0	β	α	14.7
10	26	0	0.0	+57.8		β	15.5
10	27	0	0.10	+55.X		δ	13.1

Z



Horizon

These irregularities represented by A in above figure are constantly disappearing and disappearing. They appear in the East and moved rapidly West when they disappear.

Measurement of was made at the ~~four~~ a base of one of these irregularities

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1891phae.proj...449R

March 6, 1892

Lower side read

R.A. 0h 00m 59.0 16.7

Upper side

18.76

62.6 20.3 — 3.6

Lower side

59.0 16.7

Upper side ~~60~~ 2.0

61.0 18.7

10h 38m R.A. 9h 27m W +24.8 = Lower edge read
9 14 W +57.7 = Upper " "

~~10h 6m~~

10 39 9 15 W +49.0 = Lower " "

10 39 R A 9 23 E +47.7 = " " "

10 40 8 55 E +54.4 = Upper " "

10 41 6 17 E +43.5 Lower " "

10. 41 7 52 E 42.9 Upper " "

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1891phae.proj..449R

March 6, 1892

10.8 R Lyrae ✓ L M
V 2 k
I = V
V = 0 R

R Lyrae Imaginis

S Lyrae Imaginis ✓
d 3 V
V 2 e
V = 4 R

A.S. 10.9

S Bootis ✓
11.1 V 3 e L M

arch

11:30		0h 0m	+ 62.0	L	19.7	
			+ 64.3	M	22.0	(2.3)
11:33	E	8 33	+ 54.0	M		
		9 24	+ 58.8 9	M		
	W	10 11	+ 60.1	M		
	W	7 44	+ 30.9	base of streamer		

11:40 Inclination about 80° to west horizon.

R Draconis ✓
11.8 g 5 V L M
V 2 h
V = 0 R

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1891phae.proj..449R

Sunday March 6 1892

5677 R Serpentis ✓

14.3 V 3 y — n 3 v — see ✗ L

14.5 5830 R Serpentis ✓

V 5 n H

S Serpentis ✓

14.6 5831 n = v H

T Serpentis ✓

14.7 5826 Nothing but nebulae visible. H

5889 U Ophiuchi ✓

15.0 g 4 V — V 2 h — V = 6 R L

6044 S Ophiuchi ✓

15.1 d 1 V — V 2 e — V = 7 R L

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1891phae.proj.1449R

Sunday ~~February~~ March 6 1892

Arrival each

Iris E 9 5 +42.5

9 34 +45.0

15h15 10 13 +47.5

Each rope up into patches of flashing light before I had completed its measurement.

6083 Ophiuchi

Invisible

15:4 below 11.0 magnitudes. L

6132 R Ophiuchi

15:5 m 2 V L

6572 T Herculis

15:6 d 4 V L

V = e

6733 R Scuti

15:7 h 1 V L

V 3 k

New Variable No 8 Aquilae

α 3 V F

V 2 β F

15:8 δ 4 V L

V = 10R V 3 Y L

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1891phae.proj..449R

Sunday March 6 1892

6849 R Aquilae

15.9 w 2v see
v = x

β Lyrae

16.0 γ 1 β
~~14.0~~ β 4 ξ E
ζ

η Aquilae

16.0 δ 5 η
~~14.0~~ E
η 2 β

δ ephi

16.1 δ = γ
~~14.1~~ E

Correction to these times made 93/11/28

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1891phae.proj..449R

Monday March 7 1892

β Persei

6:30 Correct time (watch) β And 2 β ME

6:45 Correct time (watch) β And 3 β ME

7:18 α Cassiop 1 β
β 5 β And 5 β ME

7:22 βc 1 b L
βc 5 c
a b βc

7:25 α Cassiop 3 β E
β 5 β Persei

7:37 βc 1 b L
βc 5 c

7:51 β And 4 β
α Cassiop 3 β
β b β Persei } E

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1891phae.proj..449R

Monday March 7 1892

8.0 : Be 4 c ✓ L
Be 1 b

Nova Aurigae

8.1 ½ 2 3 V c ✓ m L
V c 4 g

8.3 f 1 V B m
V 2 g ✓ m. nebulis,

β Persei ✓
8.23 b = ½ B c L m
B c 3 3 c

8.26 B 3 f Persei E
d Cursing 3 β

8.5 T Aurigae m
Normal Brightness ✓

~~½ V c~~
~~f Cassiop~~
~~8 P~~

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1891phae.proj.1440R

Monday March 7 1892

S Cephei ✓

$v = 7R$

8.7 $h\ 3v$ L m
$v\ 3k$

β Persei ✓

8:47 β 2 γ Persei E m

h 8 5m $\frac{Bc}{b}\ 3\ c$ L IV
$b = Bc$

T Canis Minoris ✓

8.9 $g\ 4v$ L m
$g/v = h$ ✓

S Persei ✓

9.0 $a\ 1v$ L m
$v\ 5c$
$v = 5R$

9.9 (6m fr. obs.) 9:15 β Persei ✓
9:43 $b\ 2v_c$ L m
$v_c\ 3c$

9.12 9:18 $\beta = \gamma$ Persei E
$\beta\ 2\ \varepsilon$ Persei

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1891phae.proj..449R

Thursday March 7 1889

β Persei ✓

ε 2 β
δ 2 β
β 2 γ

X 9 X 0:53 9:59 ✓ M

9:56 10:02 ~~β~~ b β c = c
b β = β c

L M

Nova Aurigae

f 5 V ✓
V = g
V 2 h

10:1 10.2 B M

Mr. Wendell's

β Persei ✓

10:15 10:21 e 1 β c
β c 4 d

C L M

β Persei. ✓

10:18 10:24 ε Persei X 4 β
δ Persei 4 β
β 3 γ Persei

E M

Nova Aurigae ✓

f 4 V c
V c = g

10.4 10.5 L M

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1891phae.proj.1449R

Monday March. 7 1892

β Persei ✓

10:35 10:41 η Persei = β
β 2 ρ Persei c E m

10:42 10:48 c 2 βe
βe 3 d I C L m

β Persei ✓
δ Persei 4 β Z e E m
β 1 η Persei
10:47 10:53 β 4 ρ Persei

Nova Aurigae ✓

11.1 11.2 f 4 V Mr. Wendell's B m
V 1 g
V 3 h

β Persei ✓
11.21 11.2 δ Persei 5 β
ε Persei 5 β Z c m E
ρ 2 η Persei
β 5 ρ Persei

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1891phae.proj..449R

Monday March 7 1892

11:13 11:19 β Persei ✓
b 3 β_e
β_e = e
β_e 4 d
Z e L m

11:17 11:23 Clock 6 minits slow.

β Persei ✓
c 1 β_e
β_e 3 d
Z L m

11:35 11:41

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1891phae.proj..449R

Wednesday March 9 1892

Nova Aurigae ✓

11.8 R 1 Vc — Vc 4 S — H m

11.9 h 3 V — V 3 k — Im. Wendell's B m

12.1 V 4 k — L m

S Persei ✓

12.2 a 4 V — V 3 G — V = 3 R — 2 L m

R Ursae Majoris ✓

12.3 e 2 V — V 4 f — L m

S Hydrae

a 3 b — b 6 c — c 6 d — L m

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1891phae.proj...449R

s Friday March 11 1892

Nova Aurigae ✓

12.4 K 4 V
V 1 l

Z C M L

The observation was much through thin and rapidly moving cyrus clouds. The variable was watched for several minutes and the average apparent brightness is recorded. The range was from k=v to v=n.

h m
13:25

Auroral arch ✓

ac = 8°
ba = 2°
cd = 50° (west)



It almost at once broke up into an irregularly ~~plotted~~ fluted band. Small bolts of light traveled over this band from west to east with mean velocity of 1° a second.

Duration not over 15 minutes.

β Lyrae

14.6 V 3 β
β 4 ε

M

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1891phae.proj.1440R

Sunday March 13 1892

Nova Aurigae ✓

10d — L 1 V
V 5 m — L m

Prismatic Companion
not seen. — H m

~~13~~
10.3

S Persei ✓

10.5 — a 3 V
V 3 b
V = 4R — L m

T Cassiop ✓

10.7 — g 5 v
V 2 h — L m

R Aurigae ✓

10.8 — v = m — L m

R Lyncis ✓

10.9 — g 2 v
V 3 h
V = 0R — L m

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1891phae.proj...449R

Sunday March 13 1892

S Ursae Majoris

11.0

e 2 v
v 6 f
v = 8 5R

L m

S Bootis

11.2

v 1 d
e 2 v
v = 0 R

L m

Nova Cunigae

12.7

l 3 v
v 4 m

L m

R Ursae Majoris

14.3

f = v
v 3 g

L m

R Ursae Minoris

14.4

d 1 v
v 2 e

L m

R Draconis

14.5

h 4 v
v = k

L m

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1891phae.proj.1440R

Sunday March 13 1892

S Cygni ✓

14.7 Invisible
Invisible L m

S Cephei

14.8 g 3 v ✓ L m
v 1 h
v = O^R

T Cephei ✓

14.9 h 3 v
v = g L m

R Cassiop ✓

15.1 V_C not seen
O seen ~~very~~ easily L m

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1891phae.proj..449R

Monday March 14 / 89

Nova Aurigae

9.2 l 4 V
V 3 m

T Cassop.

9.7 g 5 V
V = h
V = 0 R

S Persei

9.7 V = 5 R
a 3 V
V 1 b

T Persei

9.7 c 6 V
V 1 d

Nova Aurigae

9.8 l 4 V
V 3 m
V = 0 R

9.9 V 1 π
P 2 V

10. 3 v visible

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1891phae.proj..449R

Monday March 14, 1892

L M

10.3 R Aurigae ✓
variable invisible
in visible

10.4 R Lyncis ✓
g 1 V
V = o R
V + 4 h

10.5 S Ursae Maj. ✓
e 2 V
V = 5 R
V 6 d

10.5 S Bootis ✓
c 2 V
V = o R
V 1 d

10.6 R Draconis ✓
V = o R
V = h
V 3 h

10.7 Nova Aurigae ✓ L M
V 4 m
l 3 V

10.8 V 1 π L M
P 2 V

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1891phae.proj...449R

Monday March 14, 1892
Nova Aurigae (continued)

10 Ap. 8

$V = \sigma$
$V = \phi$

L M

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1891phae.proj..449R

Tuesday March 15 1892

Nova Aurigae ✓

8.3

ℓ 5 ν
ν 1 m
ν = π
ρ 2 ν

L

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1891phae.proj..449R

Wednesday Jan. 16. 1892

9.3 δ Persei L

a 4 V

V 1 b

9.4 Nova Aurigae L M

V 4 m

IV 4 V

m 1 V

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1891phae.proj..449R

Saturday March 19 1892

Nova Aurigae ✓

8. 3 0 2 V
V 3 1/2

4in Clark Refractor
Abbott Academy
Andover.

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1891phae.proj...449R

Sunday March 20 1892

Nova Aurigae ✓

11.1 n 6 v (approximate) L
h 1 v
v 3 g

Nova Aurigae ✓

11.4 h 1 v L
v 4 g

Nova Aurigae ✓

12.4 h 2 v L
v 4 g

4300 X Virginis

X

a 4 b L
b 2 c
c 5 d
d 4 e
e 5 f

f 4 g
g 6 h
h 2 k L
k 3 l H

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1891phae.proj..449R

Sunday March 20 1892

4377 T Virginis

X

a 5 b L m
b 1 c
c 3 d
d 4 e abandoned former e
e 5 f
f 1 g

g 5 h abandoned former h
h 4 k
k 4 m l
l a m 4 n m
m a m 4 o n L m

R Ursae Majoris ✓

L m

16.3 g = v

S Ursae Majoris ✓

L m

e 4 v
16.4 v 3 f
v = 4 R

β Lyrae ✓

m E

16.5 j 5 β
p 1 ζ

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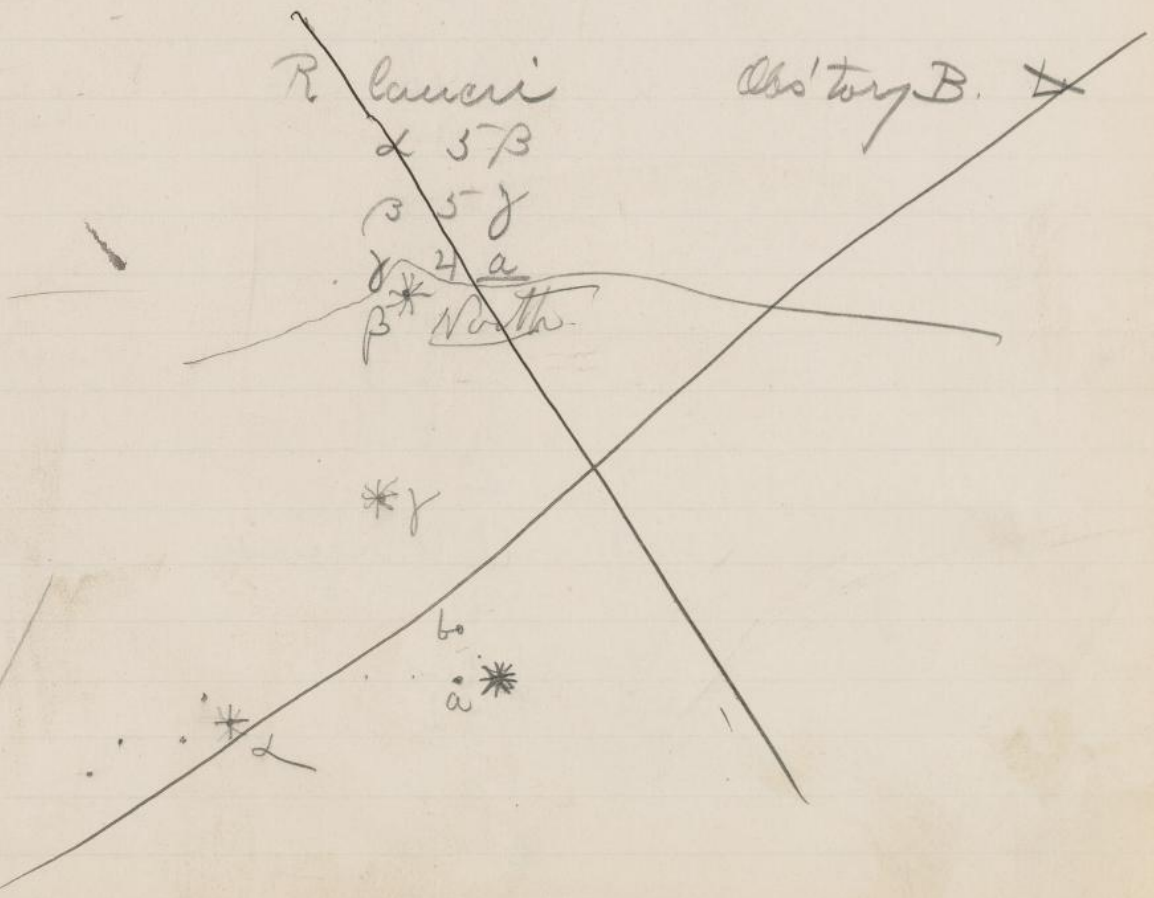
1891phae.proj..449R

Monday March 21 1892

Nova Cygni ✓

7.8	q 4 V	L
	R = V	L
	V 3 S	L
7.9	R = V ✓	H
	V 2 S	H
9.2	q 4 V ✓	L
	V 1 R	
	V + 4 S	

Nova is just as clear and distinct as the neighboring stars.



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1891phae.proj.4449R

Monday March 21 1892

~~R Cancri (continued)~~

Nova Aurigae

11.2 g 4 v ✓ L
v = R
v 3 4 S

11.3 v 2 R ✓ H
v 3 S H

4407 R Comi ✓
v = n (scc) L

X a 4 b L m
b 3 c
c 4 d
d 4 e
e 6 f
f 3 g
g 3 h L m
i

4596 U Virginis
a 4 b F m
b 4 c F m
c 3 d L m
d 2 e
e 4 f

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1891phae.proj..449R

Monday March 21 1892

U Virginis (continued)

f 5 g
g 4 h
h 4 K
K 3 d

old
d 3 m abandoned
m 4 0
l 2 m
m 3 n
n 40

β Lyrae

14.4

g = β
β 3 0

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1891phae.proj..449R

Wednesday March 23 1892.

R Lyncis ✓

14.8 g 1 v / v 5 h — L
v = 0R

R Ursae Majoris ✓

14.9 g 2 v / v 5 h — L
v = 4R

T Ursae Majoris ✓

15.0 v = q — L
doubtful about identification

S Ursae Majoris ✓

15.0 e 5 v / v 2 f — L
v = 4R

S Bootis ✓

15.1 e 1 v / v 2 d — Le
v = 2R

R Canum Venatici ✓

15.2 l 4 v — H

β Lyrae ✓

15.3 γ 6 β / β 1 γ — E

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1891phae.proj...449R

Thursday March 24/3 1892

Nova Aurigae ✓

7.4 T 1V H
V 3 u
V = oR

Nova Aurigae ✓

7.8 T 1V H
V 4 u

Nova Aurigae ✓

8.1 T 1V H
V 4 u

Nova Aurigae ✓

8.5 T 1V H
V 4 u
ψ 2 V

Aurora ✓

Auffm Arch

8.42 Lower edge above horizon at North point 15° Mean thickness 3°
Extends West of North point on horizon 50°

Lower Arch
Light 8° Extent limit 30° Thickness 2°

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1891phae.proj.1440R

Thursday March 24 1892

8.9 Nova Aurigae ✓

ψ 2 v
v = T
v 4 u

H

× R 2 S
S 6 T
T 4 u
u 3 w

H
H

Nova Aurigae ✓

9.3

ψ 3 v
T = v
v 4 u

H

Nova Aurigae

9.5

ψ 3 v
T = v
v 4 u

H

+ b 4 ζ
ζ 1 c

(o, e, w) B

Nova Aurigae ✓

9.9

ψ 3 v
T = v
v 4 u

H

+ a = γ
γ 2 b

(o, e, w) B

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1891phae.proj...449R

Thursday March 24 1892

Nova Aurigae ✓

10.2 ψ 2v
T = v
v 4 u H

δ = 6
a 2 δ (oaw) B

Aurora ✓

10.33 Thickness of arch 3°
Lower edge 17° above the horizon
at the North Point
From the North point to West end
on horizon = 60°
Element regular arch
Magn. = 2

Nova Aurigae ✓

10.8 ψ 2v
T 1u H
v 3-4 u

Aurora ✓

10:52 Arch height lower edge above horizon = 15°
Thickness = 6°
a dark band separates the two lower arches
into 2 parallel arches (concentric)
From North point to intersection of arch
with Western horizon = 60°
Magnitude = 2

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1891phae.proj..449R

Thursday March 24 1892

Nova Aurigae ✓

11.3 T I V Z H

Seeing poor ✓ seen w. some difficulty

Aurora Arch ✓

11.25 Lower edge of arch from horizon = 11°
Thickness = 4°
Intersection with western horizon from North point = 56°
The arch is still separated by a dark band into two thin concentric arches Magnitude = 2

Aurora ✓

11.8 prominent points are moving slowly toward the West.

R Ursae Majoris ✓
V I-e
d 2V
V=4R

12.0 L

Aurora ✓

12:00 arch with many streamers

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1891phae.proj...449R

Thursday March 24 1892

R Draconis ✓

12.1 $v = \frac{l}{}$ L

Aurora ✓

12:9 Irregular disk with many streams shooting from below it

S Cygni ✓

12.2 Invisible L

T Cephei ✓

$f = v$ L

12.2 $v = 6^R$

glass I rough + green

$f = 5v$

$v = h$ L

Aurora ✓

12:20 Quick gen. flutter but irregular pulsations of light.

δ Cephei ✓

12:21 $h\,4\,v$ L

$v = k$

$v = 0^R$

Aurora ✓

12:31 Irregular patches of light extending to 40° above horizon Magnitude = 3d

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1891phae.proj..449R

Thursday March 24 1892

R Cassiopeiae ✓

12.6 V = 9R I Annual

all comparison stars invisible

R Leonis ✓

V 3-4 h 2 C Li

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1891phae.proj...449R

Friday March 25 1892

Nova Cenigae ✓

7.8 T 3 V H
V 2 u

X R 2 S H
S 7 T |
T 5 u |
u 2 w H

X u 1 π_c H
π_c 3 w H

9.4 T 3 V ✓ H
V 1 u H

X ϕ_c = u

T Hydrae L

b a 3 b
c b 4 c
e c 3 d
f d 3 ~~e~~ abandoned
e 5 f
k f 4 g
l g 3 ~~h~~
m h 4 k 0

(over)

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1891phae.proj.1440R

Friday March 25 1892

T Hydrae (continued) L1

V = 4R

o k s-l p

v = e
v 4 d

10.2 ✓

p l 3 m R
R m 2 n s

10.3 assumed

R Comae L

a 2 b
b 3 e
c 5/6 d
d x 2 e
e 2 f
f 3 g
g 2 h
h 4 k

Stopped by clouds.

Red Star

S.T. 15h 20m.5 H.A.=E 3h 55m.5 −5°.0 v = 9R = 7 mag.

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1891phae.proj..449R

Friday March 25 1892

New Variable No. 8 Aquilae ✓

15.0

v 3 f L

v 2 f F

Trem Glass

v 1 f L

$\underline{v_2} = \varepsilon$ L

$\underline{v} = 10R$

New Variable No. 9 ✓

15.3

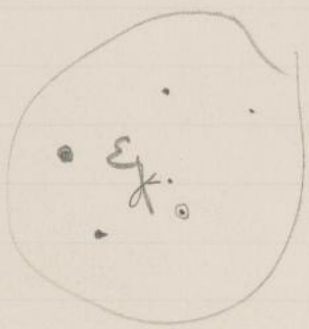
k 3 $\underline{v}$

v 1 $\underline{5}$

15.7

χ Cygni ✓

$\underline{r} = \chi^{\varepsilon}$ H



~~w 4 x~~

~~y 2 4~~ L

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1891phae.proj.1449R

Sunday March 27 1892

Nova Aurigae ✓

10.0 u 3 v
v = w

Nova Aurigae ✓

10.3 u 3 v
v = w

Nova Aurigae ✓

10.5 u 3 v
v = w

Nova Aurigae ✓

11.1 u 3 v
v = w

R Ursae Majoris ✓

11.4 g 3 v
v 5 h

v = h (p.c.w.)

g 5 v
v = h

1891phae.proj...449R

Sunday March 27 1892

Aurora

12.0 Glow in the North
extends to 20° above horizon at North
point & has magnitude of 3.
~~Cyrus~~ cirrus clouds partly above region.

Bright stars and Prism Comp.

Measurements in Ph R (Largest Field)
Bright star in field
star on Right Comp. on Left.

	94.0	
20.5	114.5	
19.3	276.6	
3.8	39.8	295.9

	94.0			
20.5	114.5			
18.3	276.9	276.0	276.0	
3.8	38.8	293.5	293.9	295.5	295.6

	95.6	
19.7	114.3	
17.8	276.4	
3.9	37.5	294.2

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1891phae.proj..449R

Sunday March 27 1892

Measurements (continued)

		94.9
	19.4	114.3
	18.0	276.5
3.9	37.4	294.5

These measurements were made on a 3d magnitude star,

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1891phae.proj..449R

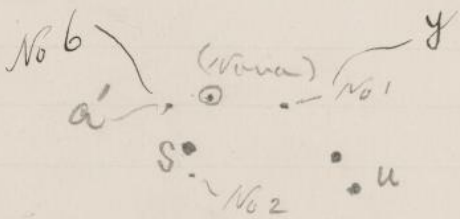
Monday March 28 1892

Nova Aurigae

9.8

w 2 v
v 4 á.
u 5-6 v

C + Z



The above observation was made when the Nova was near the horizon (about 20° above) and at clear intervals between passing cyrus clouds. á w and variable were extremely difficult to

In the above chart stars No 1 + No 2 are from memory for they were not seen at time of observation.

R Lyrae

a 4 b
b 4 c
c 3 d
d 2 e
e 3 f
f 4 g
g 3 4 h

(w, m, R.) B

B

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1891phae.proj.1449R

Monday March 28 1892

R Leonis

h 2 k
K 3 l
l 5 m
m 3 n
n 2 o
o 5 p

p 1 q

q 3 R
R 3 S
S 2 T
T 4 u
u 2 w
w 4 x
x 4 y
y 3 z

L
L
L
L
H

R Cassiopeiae ✓

15.27

n 3 v_c
v_c = 0

L
L

15.8

d 5 v
v 1 e
v = 5^R

(w m R) B
Z B

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1891phae.proj..449R

Monday March 28 1892

β Lyrae ✓

16.0

$\frac{\beta}{\beta} = \frac{1}{1} \frac{k}{0}$

E

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1891phae.proj..449R

Tuesday March 29 1892

Nova Aurigae

7.18

w 2 v, H
v 3 a' H
v 5 No 1 H

For a' + No 1 see chart on page 187
The seeing is very good, the stars were seen without great difficulty.

* u 2 Π_c H
Π_c 3 w

* u = ρ_c H
ρ_c 5 w

* u 2 ϕ_c H
ϕ_c 2 w

* u 1 m_c H
m_c 3 w

* w 3 n_c H
n_c 4 a'

* n 4 l_c L
l_c = p

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1891phae.proj..449R

Tuesday March 28/9 1892

Nova Aurigae

h 4 b_c L
b_c 2 0

R 1 S H
S 7 T
T 4 U
U 4 W H

Nova Aurigae ✓

W 1 V 15-in Equatorial
V 3 X
V 3 No 6
V 5 Y
V 5-6 No 7
V 2 No 5

10.3

over

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1891phae.proj.1449R

Tuesday March 8 '92

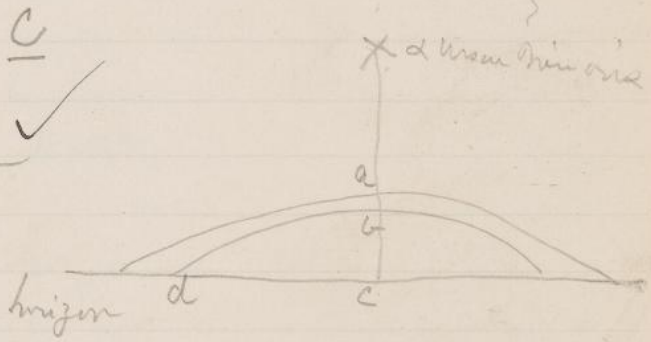
Nova Aurigae

Wendell's B

B	4'	c
b	3	B
b	5	4
4	1	c
ε	=	c
b	5	ε

b	1	d
d	4	C

Aurora ✓



11.3

ab = 2°-3°
bc = 6°
cd = 38°
magn = 3d

T Hydrae

a	a'	4	a
b	a		b
c	b	2	c'
d	c'	5	c
e	c	5	d
f	d	5	e
g	e	5	f

abandoned d for e

k

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1891phae.proj..449R

Tuesday March 2~~8~~9 '92

R Lyncis ✓

14.3 f 3 V L
V 2 g

R Ursae Majoris ✓

14.5 g 3 V
f V 5 h L

Green Stars

g 6 V L
V 3 h L

g 5 V F
f V 3 h F

V 1 h (Observatory) B

S Ursae Majoris ✓

~~e 4 V~~

e 5 V L
V 1 f
14.8 V = 2R

Green Stars

f 2 V L
V 2 g

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1891phae.proj..449R

Tuesday March 29 1892

S Bootis ✓

15.1

c 3 v
v 1 d
v = 0 R

Green Stars

c 4 v
v 1 d

L

R Draconis ✓

15.4

l 3 v
v 1 m

L

Green Stars

m 3 v
v 2 n

L

T Cephei ✓

15.6

f 2 v
v 3 h
~~v 4 g~~
v = 10 R

L

Green Stars

h 2 v
v 3 g

L

S Cephei ✓

15.8

~~h 5 v~~ k 3 v
~~v = k~~ v = l
v = 8 R

L

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1891phae.proj..449R

Tuesday March 29 1892

S Cephei ✓

Green Flare
m 3V
V = n

R Cassiopeiae ✓
m 4 Vc
Vc = 0

16.1

n 3.0

Green Flare
0 2 Vc
m 5 Vc

d 1V
V 3.e

16.2

β Lyrae ✓

0 2 β
β 4 5

16.3

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1891phae.proj..449R

Wednesday March 30 1892

9.7

Nova Cunjae ✓

~~V Tr = 1~~

v 0.5 (No 6) 15 in Equatorial

v 3 y

x 3 v

(No 5) 1 v } (estimates a little uncertain)

v 1 (No 7) }

(No 9) 4 v

T Hydrae ✓ L

a a' 6 a

b a 4 b

c b 2 c'

d c' 4 e

e c 4 d

f d 5 e g

10. v

v 2 d f

e c 1 v

g e 3 ~~f~~ ~~f'~~

h f' 4 ~~f~~ k

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1891phae.proj..449R

Wednesday March 30 1892.

Tycho ✓

k f 3 g
l g 5 k' Limited Tycho chandeneck on P35
m k' 3 k 0

V = 8^R

Green Glass.

10.8

d 2 V
V 4 e

o k 4 e
p l 2 m'
q m' 5 m
R m 3 n s

3493 R Leonis

a 3 b (O, E, W;)
b 4 c
c 5 d
d 2 e
e 3 f
f 5 g
g 5 h
h 3 k
k 3 l
l 5 m
m 4 n
n = 0
o 5 p

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1891phae.proj..449R

Wednesday March 30 1892

R Leonis ✓

k 4 l
l 4 m
m 3 n
n 3 o
o 3. p

n is a slightly red star n=2R

p 3 q
q 3 R,
R, 4 S'
S 3 S
S 3 T
T, 4 u'
u' 3 u
w 5 x'
x' 3 x
x 3 y
y 3 z

12.7

S = v
v 3 T
v = qR

Green Stars
w' 2 u

T 4 v

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1891phae.proj..449R

Wednesday March 30 1892

4315 R Coronae

a 5-a
a 3 b
b 3 c

β Lyrae

γ 4 β
β 2 }

1891phae.proj..449R

Thursday March 31 1892

Nova Aurigae ✓

8.4

a' 3v H m

Nol 4v

See Trans P 187

variable was seen only by glimpses. Observations therefore somewhat uncertain.

w 3 n_c

n_c 2 a'

u 2 π_c

π_c 1 w

R 1 S

S 7 T

T 4 u

u 4 w

w 5 a'

u = ρ_c

ρ_c 5 w

u 1 ϕ_c

ϕ_c 3 w

H m

H m

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1891phae.proj..449R

Thursday March 31 1892

Nova Aurigae

w 1 me
me 3 a' ? [w]

m H

x 0 6 ec
ec = h/q
ec 4 q

m L

m/h 3 bc
bc 3 0

l 4 Π
Π 3 m

m L

I surfect that, in my observation preceding the one above, I mistook me for another faint star.

l 3 ρ
ρ 3 m

l 5 ρ
ρ 2 m

L

β Cratis 4 mag

a 2 ℓc
ℓc = b

Can not Identify Stars →



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1891phae.proj..449R

Thursday March 31 189X 2

~~α Cornæ~~

c Virginis 5th mag



a 1 α_c

α_c 4 b

27 Comæ 5 mag

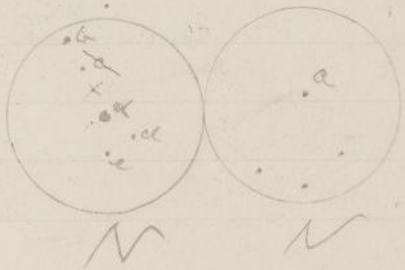


a 3 α_c

α_c 3 b

T Virginis 4 mag

13h 55m + 20° 20'



α_c 1 d

α_c 3 e

α_c 2 b

~~α_c 4 e~~

$a = \alpha_c$

f 2 α_c

Nova Cenigae

y 2v

(No 6) 4v

(No 5) 3v

(No 7) 1v

v 4 (No 8)

15in Equatorial

8.8

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1891phae.proj...449R

Thursday March 31 1892

T Cassiop ✓

14.6 l 1 v / v 3 m — L

Green Flare
m 3 v / v 2 m — L

15.9 I find my Comp. Stand time clock is one hour slow. Probably been this way all the evening.

True Time 16.0

β Lyrae ✓

~~β A 1 K~~ — E

β = γ / γ 2 β — E

β directly above γ / γ 1 β — E

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1891phae.proj..449R

Friday April 1 1892

Nova Aurigae ✓

7.0 Variable invisible & H m
to just seen with difficulty
seeing poor.

ζ Persei ✓

8.5 a 5 v m L
v = b
v 5 c

Green Slum m L
b 4 v
v 1 c

Nova Aurigae
l 2 ρ
+ ρ 5 m

l 5 φ
+ φ 3 m

l 4 π
+ π 3 m

l 4 σ
+ σ 4 m

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1891phae.proj...449R

Friday April 1 1892

New Variable No 4 Camelop.

10.4

d 3 v
v 4 e
v = 10R

Mn 4

Green Glass
d 7 v
v 2 e

New Var No 13

10.4

β 2 v
v 2 f

4521 R Virginis v

e 4 v (see)
v 2 k (see)
v = 2R

L Mn

11 00 assumed.

Ve 2 y (see Red Ink)
2 2 Ve
Green Glass
e 2 v
v 1 k

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1891phae.proj..449R

Friday April 1 1892

4826 (*) R Hydrae ✓

11.5

α 3 V
V 2 β
V = 0 R

L Am

Green Flash
β 1 V

4847 S Virginis ✓

12.2

e 4 V
V 2 f

Green Flash
e = V
V 3 h

Hydra New Variable No 6

α = V
V 3 β
V = 10 R

12.5

Green Flash
α = β

V 3 α
V 4 β

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1891phae.proj...449R

Friday April 1 1892

Byrha No 6 New Variable ✓

δ 1 $\frac{v_c}{}$ L

$v_c = \frac{}{\delta}$

5237 R Bootis ✓

12.9 h 1 $\frac{v}{}$ scc L

$\frac{v}{}$ 1 d

5494 S Librae ✓

13.0 b = v (scc)

v $\frac{3}{4}$ d

Nova Aurigae ✓

(No 6) 3 v 15 in Equatorial

v 4 v

9.4 (No 5) 2 v

(No 7) = v

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1891phae.proj..440

Sunday April 3, 1892.

In focus
~~Focus~~ ~~6~~.41

Measurements of electric lights with wedge photometer.

In focus
~~Focus~~ 6.40

Wedge

5.78
5.61
5.90
~~5.69~~ 5.66
5.91
6.34
6.19
~~6.30~~ 6.05
6.10
~~6.30~~ 6.03
6.29
6.20
6.20
6.21
6.11

$\Sigma = \frac{90}{15}.58$
$No = 15$
$\frac{\Sigma}{No}$ 6.04

Out of focus 7.19

~~7.19~~
5.80

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1891phae.proj..449R

Sunday April 3, 1892

(continued)

5.90
6.03
~~5.41~~ 6.19
6.06
5.75
6.00
5.78
5.35
~~8.20~~

$\Sigma = 52.86$
$N_0 = 9$
$\Sigma/N_0 = 5.87$

Out of focus 8.20

~~8.20~~
5.74
~~6.08~~
5.36
5.36
5.04
5.15
5.07
5.14
5.27
5.26

$\Sigma = 47.76$
$N_0 = 9$
$\Sigma/N_0 = 5.31$

Out of focus 9.21 Bars cut off part of light

5.21
5.12

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1891phae.proj..440R

Sunday April 3, 1892

(Continued)

5.20
5.20
5.22
4.90
5.26
5.01
5.08
5.11
~~9.20~~
~~9.21~~

~~Out of focus~~

9.21

~~No. 5~~ Out of focus. Bars cut off part of the light

5.19
5.02
4.84
4.99
~~5.00~~
~~5.09~~
~~4.92~~
5.20
5.30
5.38

Sun focus 6.41

5.05

~~4.10~~

Σ = ~~49~~ 51.31
N_0 = ~~9~~ 10
Σ/N_0 = 5.13

Σ =
N_0 =
Σ/N_0 =

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1891phae.proj...449R

Sunday April 3, 1892

(continued)

5.20
5.43
5.05
5.88
6.01
5.94
5.97
5.70
6.07
5.72
5.67
5.72
6.12
6.12

$\Sigma = 85.65$
$N_0 = 15.91$
$\Sigma/N_0 = 5.71$

Out 8 fours 7.19

5.88
5.49
5.73
5.62
5.71
5.73.12
5.58
5.41
5.49
5.38

$\Sigma = 55.61$
$N_0 = 10$
$\Sigma/N_0 = 5.56$

Out 06 fours 8.20

4.87

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1891phae.proj..440R

Sunday April 3, 1892

(Continued)

5.00
4.67
5.16
5.19
5.31
4.91
5.06
5.11
4.90

$\Sigma = 50.32$
$N_0 = 10$
$\bar{x}_0 = 5.03$

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1891phae.proj...449R

April 6 1892 Wednesday

Bright stars

Bright star No 21
b 1 α_c
α_c 3 a
mL

Bright star No 28
c 4 α_c
α_c 3 d
mL

Bright star No 22
d = α_c
α e 3 α_c
mL

Bright star No 23
a b α_c
α_c 1 b
mL

Bright star No 24
a 1 α_c
α_c = b
mL

Nova Aurigae
v Invisible
á seen
mH

8. 9

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1891phae.proj..449R

Wednesday April 6 1892

Nova Aurigae

l 3 Π_4
Π_4 4 m

l 3 ϕ_4
ϕ_4 4 m

l 2 ρ
ρ 5 m

l 2 σ
σ 5 m

L m

L m

9.7
10 m

Be Persei

a 3 Be
Be 2 b
Be 5 c

Z

S Persei ✓

a 4 v
v = b
v 5 c
v = 6R

9;8

1891phae.proj...449R

Wednesday April 6 1892

Green Skies
3 Persei

b 2 v
v 2 e

L M

R Leonis Minoris

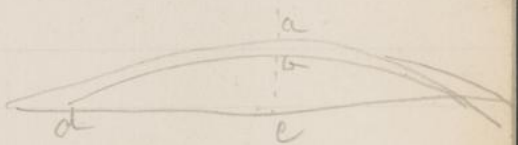
α 4 β
β 4 α
α 2 b
b 3 4 c'
~~c' 2 e~~
c' X3 d
abandoned former c
d 3 e'
e' 4 e
e 4 f'
f' 2 f
f 3 g2
g2 3 g

L M

Aurea

13.8 Faint each Magn = 3d

ab = 3°
bc = 5°
cd = 35°



Space between each and horizon noticeably darker than other parts of the sky equally near the horizon.

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Wednesday April 6 1892

15.5 New Bright No. 1
v = a

New Bright No. 9

a = V

16.0 V 2 6

Green Flare
a 4V
v = 6

β Lyrae V

16.2 β = γ E

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~~Thursday April 7 1892.~~

Lamp Light
~~Electric light~~ in Brighton.
Same light as used on April 3.

Wedge Measurement.

in focus 12.75 cm
12.60.
12.63
3 | 37.98
12.66

In focus 12.66

4.31
4.09
4.04
4.00
4.31
4.37
4.41
4.02
4.43
3.96

Out of focus 14.00
4.34
4.19

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Thursday April 7 1892.

(continued)

4.01
4.00
4.39
4.21
4.45
4.17
4.40
4.35

4.09
4.09
4.31
4.37
4.22
4.22
4.20
4.34
4.10
4.16

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