KG
11365
613

KG 11365.613

KG 1136.5.6 B

HARVARD
UNIVERSITY
LIBRARY
JUL 2 1956

Wed. Nov. 3, 1915.

L.C. Obs. 15" E. Eq. Phot T.

R Coronae 15 44 28

2139

5 55 W+28.8

p.a. 150

6 45 ~~169.8~~

→307.1 < ~~Var~~ Comp* dis

357.4

129.2 503

171.7 425

928 + 1.84

307.2 + 1.91

349.9 427

126.2 450

171.2 87.7 + 1.98

p.a. 330 mean = +1.70

214.7 7.18

266.2 515 8.88

31.2 562

87.4 107.7 + 1.47

214.7 + 1.50

264.1 494

33.6 55.6

6 52 89.2 1050 + 1.54

6 48.5

Nov. 3, 1915

P.a. 330

6 59	267.2 ∠Van dis			
	31.6	124.4		
	89.9	122.5		
	212.4	246.9		
		113.1	+1.35	
	268.1			
	31.8	123.7	+1.32	
	90.6	120.8		
	211.4	244.5		
		115.5	+1.29	
	P.a. 150			
			mean = +1.38	
			18	
	179.6			
	302.8	1232	8.56	}
	356.0	1272	~~8.88~~	}
	123.2	2504	8.72	
		1096	+1.43	
	181.6			
	382.6	1210	+1.44	
	355.2	1302		
7 07	125.4	2512		
		1088	+1.45	

Identification O.K.

Ha. 6 29 w

S.T. 22 14

est in Pos. = 6.1

Dec +28.8

Something appears wrong in Phot.

P.a 152.0

Look into this tomorrow.

Spr. 6.4

Nov. 3, 1915

R Scuti 184205 Phot T.

2222
34° −5.8

P.a. 30

> 23 348.7 < Van dis
127.6 138.9
171.9 136.7
308.6 275.6
844 +2.07

P.a. 210

mean = +1.75 ?

271.2 127.6 7.07
38.8 122.8 8.82
88.6 250.4
> 26 211.4 109.6 +1.43

P.a. 34
Sfr 210.0
Dec −5.8
H.A. 3.4 & W
S.T. 22.31

Var surely > comp ✱ but photom obs as far above make it fainter.
Clds near ~~set~~ phot. removed after one set.

Phot T evidently out of order

1 244

Sun Nov. 7, 1915

LC Obs J.D. 20809 15"E. 89/

X Monoc 065208 est 7.9

1X 30 0538

1142 −8.9 "

Y Monoc 065111 est 10.2

0560

101 +11.4

V Can Min 070109 est 9.4

551

110 +9.0

R Can Min 070310 est 9.7

RR Monoc 071201 <13.3

seeing poor for ft stars

V Gemini 071713 + est 10.1

S Can Min 072708 est 8.9

T Can Min 072811 est 10.8

U Can Min 073508 ~~est~~ 9.9

S Gemini 073723 est 12.0

T Gemini 074323 est 9.1

Nov. 7 1915

U Gem 074922 est 13.9

R Cancri 081112 est 11.1
6 38
1 33 +12.0

V Cancri 081617 est 12.7
6 43
1 33 +17.6
Impossible to separate Var & comp prec.

U Cancri 083019 est 9.7
6 50
1 40 +19.2

~~U P.~~ Z Puppis 072820 = 11.8
6 53
0 35 ε -20 8

Star α comp to bright star near reddish & mag. about 11.5

U Puppis 075612 est 12.5

S Hydrae 084803 est 10.0
T Cancri 085120 est 8.9 4"

T Hydrae 085008 est 8.4 4"
7 14
1 36 ε -8.8

S Pyxidis 090024 est 12.1
7 20
1 40 -24.9

Nov. 7, 1915

X Hydrae 093014 est 12.5
7 22
2 8 -14.2

RR Hyd. 094023 f 5 m
7 26
2 14 2 -23.6

Y Hydrae 094620 est 6.8
7 31
2 15 -26.6 4"

W Cancri 090425 est 12.8
7 44
1 202 +25.8

R Leo Min 093934 est 10.4
7 47
1 52 +35.0

R Leonis 094211 est 6.0
7 54
1 48 +11.9 4"

V Leonis 095421 est 9.7
7 57
1 57 +21.7

Nov 7, 1917

W Leonis 104814 est 9.2
8 06
2422 +14.2

δ Leonis 110506 est 11.9
8 15
2 50 +6.0

R Com. Ber 115919 est 13.3
8 18
3 41 +19.3

SU Virg 120012 est 12 3

T Can Ven 122532
8 25
4 0 +32.0

17 25 Too much daylight

(32) (276) L.

~~Experiments~~

Mon Nov. 8, 1915

L.C. 10b. MD. 20810 15" E Eq

Experiments with phot T.

R aquilae 190108 est 7.4 14"

2318

4 17 W +8.1

8 10 Too cldy for Photom

1 - 277

Tues. Nov. 9, 1915

L.C. Obs JD 20811 15" Eq.

R Coronae 154428 (est 5.9 / 14.9.) Phot T.

	P.a. 150			
6 23	260.8 < Van dis			
	311.4	506		
	80.2	55.2		
	135.4	105.8	— 1.52	
	257.4			
	311.7	543	— 1.50	
	82.2	53.5		
	135.7	107.8	— 1.47	
	P.a. 330		mean —	1.07
	344.6			7.18
	56.4	718	Magn =	6.11
	158.7	745		
	233.2	146.3	— 0.65	
	341.8		—0.64	
	55.5	737		
	158.6	736		
6 29	232.2	147.3	— 0.63	
6 26				

H.a. = 6:23 W
S.T. 22:05
Decl = +28.8
P.a. = 149.5
Spr. = 6.4

Nov. 9, 1915

R Scuti 184205 — Phot T

	R Scuti	184205		
		22 07		
		3 25	W −5.8	
			est a 4 Var = 49	
	209°			
6 44	174.7 < Vandis			
	215.6	409		
	357.4	414		
	38.8	82.3	— 213	
	175.8		— 210	
	215.9	401		
	355.8	438		
	39.6	83.9	— 208	
	P.a. 29		mean =	— 224
	266.6			207
	305.3	387		4.83
	87.8	344		
	122.2	73.1	— 2.41	
	266.8			
	305.6	388	— 2.38	
6 52	88.8	365		
6 49	125.3	75.3	— 2.34	

Pa = 29°
Spr = 3.4
HA 3:38W
Dec — −58
S.T. 22:22

Nov. 9, 1915

S Urs Maj 123961 Plot T
2 2 26 est 9.5
9 47 W+61.9

P.a. 249

7 13 315.4 ∠ conf + dis.
72.6
142.1
25 3.3 abandoned, Plot off again.

V Lyrae 190529 est <13.8
2300
7 33 3 55 W+29.5

S Lyrae 190925 est <13.5
2305
3 56 +25.8

TY Cygni 192928 est 13.6
2309
3 40 W+28.2

χ Cygni 194632 est 9.7
2317
3 31 +32.7

RU aquilae 200812 est 9.7
2320
3 12 +12.7

Nov. 9, 1915

V Delph 204318 est 9.4
2336
2 53 +18.9

R Delph 201008 est 13.1
2338
3 28 +8.8

Z Delph 202817 est 11.9
23 40
3 12 +17.2

Y Delph 203611 est 13.3
2342
3 06 +11.0

S Delph 203816 est 11.2
2343
3 5 +16.8 est 13.0

T Delph 204016

SX Cyg 201130 est 13.8
2348
3 37 + 30.9

WX Cygni 201437b est 10.4
2352
3 38 +37.0

X Delph 205017 est 12.5
2358 susp Var? = 13.2
3 8 +17.3

Nov. 9, 1915

210129 TW Cyg. est 12.1
2403
3 2 + 29.2

SS Cygni 213843 est 11.8
2408
2 30 + 43.6.

RR Pegasi 214024
2409
2 29 +24.4

9 10 Hopelessly cldy

20 297

Wed Nov. 10, 1915

LC Obs. JD 20812
15" E. Eq.

RT Sagitt $\underline{185512}$ est 12.2

6 oG $\frac{2130}{2\ 35}$ W −12.9

m(11.9) = 10.4, or 0.4 > than f the (10.8)

R Sagitt $\underline{191019}$ est 7.0 in 4"

$\frac{2138}{2\ 28}$ W −19.2

RW Sagitt = 9.7
RX Sagitt = 11.2
S Sagitt = 10.8
— Sagitt = 12.2
Z Sagitt. = 12.0

T Sagitt $\underline{191017}$ est 10.2

$\frac{2148}{2\ 38}$ −17.2

W aquilae $\underline{191007}$ = 14.0
— aquilae near W = 10.3

RT Herc 170627 est 13.1

$\frac{2157}{4\ 51}$ +27.2

RS Herc 171723 est 8.8

$\frac{2202}{4\ 45}$ +23.2

RT Oph 175111 est 13.6

$\frac{2204}{4\ 13}$ +11.0

Nov. 10. 1915

RY Herc 175519 = 11.8
2207
4 12 +19.5

T Urs Maj 123160 est 9.3
22 14
9 43 W +60.2

RS Urs Maj 123459 est 11.9

T Urs Min 133273 est 10.3
2223
8 57 W +73.9

U Urs Min 1~~3~~41567 est 9.0
2226
~~7 41~~ W +67.5
8 11

RT aquilae 193311 est 13.6
2236
4 3 +11.7

RV aquil 193509 est 11.8

X aquil 194604 est 13.7
2243
2 57 +4.0

look up 202574 – Drac – is it Long Per.

Nov. 10, 1915

X Cephei 210382 est 9.5
2253
150w +82.7

S Cephei 213678 est 10.4
2257
121 +78.2

24 321

20815

Sat. Nov. 13, 1915

~~L.C.~~ Obs. 15" E. Eq.

X Androm 001046 est f1 N

$\frac{22\ 23}{1\ 47}$ ε +46.6 <14

Y Cephei 003179 est 10.2

$\frac{22\ 31}{2\ 00}$ ε +79.8

δ' Cass. 011272 est 13.5

$\frac{22\ 36}{2\ 36}$ ε +72.2

RZ Persei ~~022~~ 012350 est 12.8

$\frac{22\ 38}{2\ 45}$ ε +50.3

RU And 013238 est 10.8

Y And 013338 est 10.2

U Persei ~~or~~ 015354 est 8.4

$\frac{22\ 48}{3\ 05}$ ε +54.3

W Andr. 021143 x 3 var = 13.6~~th~~

$\frac{22\ 51}{3\ 20}$ +43

Z Cephei 021281 est 13.8 if seen

$\frac{22\ 55}{3\ 17}$ ε +81.2

Nov-13, 1915

RR Cephei 023080 est 13.6

RR Persei 022150 est 11.5
2302
3 19 ε+50.8

R Triang. 023133 est 10.9
2308
3 23 ε+33.8

W Persei 024356 est 9.3
2310
3 33 +56.6

Y Persei 032043 est 9.7
2315
4 05 +43.8

R Persei 032335 est 10.0
2318
4 05 +35.3

T Camelop 043065 = 13.3
2320
5 10 ε+65.9

X Camelop 04327x est 8.0 4"
look up faint chart

Nov. 13, 1915

R Aurigae 050953 est 13.7
2329
5 40 ε +53.5

δ Camelop 065068 est 8.5
23 33
5 5-57 +68.8

V Camelop 054974 est π 3 Var
23 36
6 13 ε +74.0

13.5

Z Aurigae 055353 est 9.4
23 41
6 12 +53.3

X Aurigae 060450 est 10.3
23 46
6 18 +50.0

SS Aurigae 060547 est u 3 n

< 13.8

V Aurigae 061647 est = 8.8
23 53
6 23 +47.8

U Lyncis 063159 est 13.0
0008
6 23 +59.8

Nov. 13, 1915

S Lyncis 063558 est 11.1
00 11
6 24 +58.0

R Lyncis 065355 est 13.2
0 13
6 40 +55.5

S Piscium 011208 est 11.6
0 38
0 34 ε +8.4

U Pisc 011712 est n3,30
043 or 12.8
0 34 +12.3

R Pisc 012502 est 9.1
0047
0 38 +2.4

S Arietis 015912 <~~#~~ 14.0
00 ~~4~~9
1. 10 ε +12.0

R Ceti 022000 est 12.0
0 55
1 25 ε −0.8

Nov. 13, 1915

o Ceti 021403 Phot R.

020

1542 −3.6

Above

8 45 294.4 Var dis

316.2 21.8

114.2 21.6

135.8 43.4 − 3.59

294.2 −3.56

316.6 22.4

113.8 22.2

136.0 44.6 — 3.53

Below Mean = −3.52

205.4 9.19

226.8 21.4

24.4 22.0 Magn. = 5.67

46.4 43.4 −3.59

201.9 −3.48

25.1

227.0

23.8 23.0

~~7~~ 8 51 46.8 48.1 −3.36

8 48

Nov. 13, 1915

U Ceti 022813 est 8.0
100
128 E −13.6

X Ceti 031401 est 8.0
104
210 −1.4

U Arietis 030514 est 13.8
105
200 +14.4

T Tauri 041619 est 11.0
113
3 3 +19.3

R Tauri 042209 est 13.4

S Tauri 042309 est = 14.8
117
306 +9.9

W Tauri 042215 est 12.3

RX Tauri 043208 est 9.1
125
307 +8.0

Extra Var n.p. RX = <13.0

Nov. 13, 1915

V Tauri 044617 est 11.4
01 30
3 16 +17.5

R Orionis 045307 est 13.3
1 33
3 20 +7.5

(43) (363) ests Var to plate
952 setts to date

L

Thur. Nov. 16. 1915

L.C. Obs 15" Eq.

R Coronae 154428 Phot I.

Pa 328 $\frac{21\ 50}{6}$ 6 W + 28.8

6 05 310.6 < Vandis

20.2 59.6

134.3 64.5

198.8 124.1 — 1.10

315.8 65.4 — 1.08

21.2

139.3 60.9

200.2 126.3 — 1.06

Pa. 148 Mean — 1.33

7.18

230.6 5.85

281.5 50.9

54.4 55.4

109.8 106.3 — 1.50

235.4 — 1.58

279.6 44.2

6 11 52.4 55.8

6 08 108.2 100.0 — 1.66

Pa 149.0

Skr 63

Ha 6 22

S.T. = 22 0 6

Dec = +28.8

Nov. 16, 1915

R Scuti 184205 Phot T.

22 12
3 30 W -5.8

Pa. 30

6 23 57.4 < Van der.
96.2 38.8
241.6 34.2
275.8 73.0 — 2.41

60.3 — 2.40
96.2 35.9
239.3 37.3
276.6 73.2 — 2.40

Pa. 210 Mean = -2.29
328.7 37.5 7.07
366.2 Magn. = 4.78
150.8 39.9
190.7 77.4 — 2.28

329.0
366.2 37.2 — 2.18
148.2 46.4
6 29 194.6 83.6 — 2.09
6 26

HA 3.42 W
Dec - 5.7
S.T. 22.25
Pa. 208.5
Shr + 3.6

Nov. 16, 1915

R Cygni ★ 193449 Phot R

22 34
3 00 +49.9

Below

6 49 12.8 < comp + dis.

56.6 43.8
191.8 46.4
238.2 90.2 + 1.91

9.8
57.8 48.0 ± 1.78
186.2 52.1
238.3 100.1 + 1.65

Above
281.2 mean = + 1.61
337.3 56.1 9.90
96.6 53.6 magn = 11.51
150.2 109.7 + 1.42

280.8 + 1.44
338.8 58.0
99.6 50.0
6 57 149.6 108.0 + 1.46

6 53

Ha = 3:20w
Dec = + 50.0
S.T. = 22 54

Nov. 16 1915 –

RW Cygni 200938 ~~at~~ Phot R

2255
2 46 +38.4

Above

7 05 172.2 < Var dis
266.6 94.4
349.8 90.6
80.4 185.0
175.0 + 0.09

169.2
261.2 92.0
348.8 96.4 + 0.12
85.2 188.4
Below 171.6 + 0.16

78.2
172.8 94.6 Mean = +0.14
87.0 7.25
262.8 181.6 Magn = 7.39
349.8 178.4 + 0.03
76.4

172.4 96.0 + 0.16
99.6
254.2 195.4
7 11 353.6 164.6 + 0.29
7 08

HA 2:59 W
Dec + 387
S.T. = 23:10

Nov. 16, 1915.

χ Cygni 194632 Plot

23 | 12
3 | 26 W + 32.7

Comp x = x y = 9.9

Pa 60

~~7 47~~ ~~199.0~~
7 49 ~~120.4~~ 200.8 < var dis
142.6 313.2 1124
21.6 1142
135.8 226.6
133.4) + 0.91

202.2
316.5 1143.
20.2 1148 + 0.94
135.0 229.1
Pa 240 130.9 + 0.96
285.3 Mean + 1.35
51.4 126.1
100.4 136.3
236.7 262.4
97.6 + 1.72

279.4
53.8 134.4 + 1.76
131.5
103.3 265.9
7 59 234.8 94.1 + 1.81

Doubtful, perh the wrong star measured. (9.6 a) y by 0.3 mag
var = [illegible]

Nov. 16, 1915

Reexam. of field shows the correct wire measured, but something is wrong with the photometer.

~~f 34 91-2~~

Frod. 3424 Belo 103
9 08.475 9 09.00

Recop. Jup. I Phot. R L.C. Obsr.
~~L. B.~~ O. O. Rec.

Comp. with Sat II

~~17 53 208.6~~ on same side

~~18 14~~ 221.6 & nearer.

~~31~~
~~58~~

~~58 221.6~~

14 23 48 9	23	36	~~200~~		
58	23	46	208.2	15.1	+4.39
24 08		56	223.3	28.0	3.02
	~~24~~	~~06~~	~~206.2~~		
31	24	19	195.3	45.9	1.87
41		29	241.2	49.2	1.70
50		38	192.0	50.2	1.65
58		46	242.2	54.8	1.43
25 05		53	187.4	63.8	1.03
14	25	02	251.2	64.2	1.01
23		11	182.0	62.6	1.08
31		19	249.6	66.4	0.92

Nov. 16. 1915

14 25 39		27	183.2	68.4	0.84
46		35	251.6	68.6	0.83
57		45	183.0	71.6	0.71
26 07		55	254.6	78.3	0.45
17	26	05	176.3	79.2	0.41
29		17	255.5	78.5	0.44
41		29	177.0	81.4	0.33
14 26 52		41	258.4		
		56	173.3		
14 27 10.5 12.5	27	04	259.6	86.3	
14 27 23		17	168.4	92.4	
		25	260.8	178.7 89.4	0.02
		36	174.4		
27 50.0 12.5		44	262.2	87.8	
28 02		55	173.3	86.5	
	28	05	259.8	174.3 87.2	0.11
		14	174.8		
28 28.8 12.5		24	258.6	83.8	
28 41.3		35	175.5	83.3	
		42	258.8	167.1 83.6	0.24
		53	175.8		
29 6.8 12.5	29	02	263.3	87.5	
29 19.3		12	173.4	87.0	
		20	260.4	174.5 87.2	0.11
		30	174.8		
29 44.8 12.5		40	260.6	85.8	
29 57.3		49	177.8	81.0	
	30	00	258.8	166.8 83.4	0.25
30 25.5 12.5		10	171.5		
14 30 38.0		~~22~~	260.6	89.5 87.5 176.6	0.06

Nov. 16, 1915

			31	172.7		
			39	260.2		
			48	175.5		
31 02.0 12.5 14.5			58	261.3	85.8	
14 31 14.5		31	07	175.1	84.8 170.6	0.18
			15	259.9	85.3	
			25	174.0		
31 38.0 12.5			35	261.6	87.6	
31 50.5			43	174.2	86.4 174.0	
			49	260.6	87.0	0.11
14 32 47.2 ~~37~~			56	174.8		
12.5		32	04	260.0	85.2	
14 32 59.7		33	29	172.7	91.3	
	9	33	40	264.0	176.5 88.2	+0.06

L, ~~B~~ V

	9	34	05	24.1		
		~~34~~	18	47.6	23.5	
14 34 21.2 12.5			27	23.8	21.3 44.8	+ 3.52
14 34 33.7	9	34	35	45.1	22.4	

Frod 3424 Ball 10.3

9 47 .475 9 48 0.0

Frod = 1.25 slow

20819 JD

819!

Wed ~~Sept~~ Nov 17, 1915

AC Olb 15" E. Eq.

U Sagittae 191419 Phot R.

		2254	
	above	340 +19.4	
7 10.0	231.4	< Var dis	
	257.4	26.0	
	51.2	29.0	
	80.2	55.0	− 3.06
	232.8		− 3.02
	259.9	27.1	
	50.3	29.5	
	79.8	56.6	− 2.99
	Below		mean = − 3.01
	139.8		
	169.0	29.2	
	321.6	27.0	
	348.6	56.2	− 3.01
	137.6		
	~~142.4~~ read wrong direction		− 3.00
	168.3	31.7	
	322.2	25.1	
7 16.8	347.3	56.8	− 2.98
7 13.4			

20819.509
818.652
0.857

Nov. 17, 1915

Same again.

II

Below

7 21.6	140.0		
	167.8	27.8	
	320.3	27.4	
	347.7	55.2	— 3.05
	140.1		
	170.0	29.9	— 3.00
	318.9	28.1	
	347.0	58.0	— 2.94

Above — mean = — 3.06

	50.6		
	77.2	26.6	
	231.3	26.4	
	257.7	53.0	— 3.14
	50.6		— 3.12
	75.8	25.2	
	230.2	28.4	
7 28.7	258.6	53.6	— 3.11

7 28.7

7 25.2 603

20819.517

818.652

0.865

Nov. 19 1915

	Above		~~III~~
7 29.5	50.0		
	77.2	27.2	
	229.4	29.0	
	258.4	56.2	− 3.01
	47.6		
	78.7	311	− 295
	228.6	280	
	256.6	59.1	− 289
	Below		Mean = − 3.00
	321.2		− 301
	349.4	28.2	− 306
	142.8	26.4	Final Mean − 3.02
	169.2	54.6	- 307
	319.9		
	349.2	29.3	− 3.04
	141.3	26.9	
7 36.0	168.2	56.2	− 3.01
6.55			
7 32.8			
20819.523			
818.652			
0.871			

7
Nov. 16, 1915

U Cephei 005381
2338
1 15 2 Abandoned

S Y Cygni 194232 Phot R
2342
4 8 +32 5

Below Comp * dis Comp with h on Hagen.

7 58.0
210.2
282.4 72.2
25.3 78.0
103.3 150.2 + 0.57

210.0
278.9 68.9 + 064
28.4 74.9
103.3 143.8 + 070

Above
115.4 Mean = + 056
195.1 79.7
296.8 76.0
12.8 155.7 + 0.46

117.4 + 0.49
192.8 75.4
295.2 77.6
8 06.0
12.8 153.0 + 0.52

8 02.0

Nov. 19. 1915

	Same again		II
	Above		
δ 07.0	116.6		
	193.2	76.6	
	294.6	78.9	
	13.5	155.5	+ 0.47
	119.2		
	193.1	73.9	+ 0.54
	298.2	74.2	
	12.4	148.1	+ 061
	Below		mean = + 0.53
			0.56
	23.4		Final Mean = + 0.54
	100.6	77.2	
	208.2	73.1	
	281.3	150.3	+ 0.57
	25.8		+ 0.52
	104.2	79.4	
	206.2	76.6	
δ 14.5	282.8	156.0	+ 046
δ 10.8			

7
Nov. 16 1915

UZ Cygni 215543 Phot R
2450
2 5 5 W + 43.9

Comp with * d
above
(Star x = 9.1 Var?)

I

9 03.8 109.4 < Var dis.
198.8 890
292.6 817
14.3 170.7 − 0.17

111.6
196.6 850 − 0.20
292.2 827
14.9 167.7 − 0.23

Mean = − 0.18

Below
22.6
103.6 810
203.2 856
288.8 166.6 − 0.25

20.9 − 0.17
107.8 869
198.2 882
9 11.2 286.4 175.1 − 0.09

9 7.5

Nov. ~~16~~ 17 1915

Same again

II

Below

9 13.0 18.4
108.2 89.8
201.3 84.1
285.4 173.9 — 0.11

22.2
108.3 86.1 — 0.12
199.2 86.6
285.8 172.7 — 0.14

above mean = — 0.11
291.8 0.18
180 86.2 0.14
110.6 89.0
199.6 175.2 — 0.09

290.6 — 0.10
18.8 88.2
112.9 85.3
9 20.0 198.2 173.5 — 0.12

9 16.5

17
Nov. ~~16~~ 1915

R Urs Min 163172

25 26
8 53 W + 72.8

"p" comp to R, too faint to see well in phot R. will try "T."

Pa 220

9 49 121.5 < Var dis. Comp with "e" on Hagen. = 9.62
201.4 79.9
302.8 82.6
25.4 162.5 − 033

128.8 − 028
204.8 840
303.7 837
27.4 167.7 − 023
Pa 40 mean = − 0.03
206.3 9.62
9.59
297.2 909
23.4 989
122.3 189.8
170.2 + 0.18
207.7
301.0 933
24.2 1004 + 0.22
9 56 124.6 193.7
9 52.5 166.3 + 0.26

Nov. 17, 1915

Same Again II

	Pa 40			
10 00	20.6			
	117.2	96.6		
	201.7	97.7		
	299.4	194.3		
		165.7	+ 0.27	
	24.8			
	117.0	92.2	+ 0.18	
	205.3	93.3		
	298.6	185.5		
		174.5	+ 0.10	
	Pa 220			
	~~202.0~~		Mean	= 0.09
	306.0			− 0.03
	24.7	78.7		− 0.06
	122.6	80.0		
	202.6	158.7	− 0.41	− 0.09
				9.62
	305.6			9.53
	27.0	81.4	− 0.36	9.59
	120.2	82.2		9.56
10 08	202.4	163.6	− 0.31	
10 04				

1234 phot. ~~sets to date~~

367 Vis sets to date.

L. ~~to date~~

Vis & photos.

Spr = 3.4

Pa 220.0

S.T. 2:07

~~H.a.~~ 9:36 W

Dec. +72.8

20820"

Thurs Nov. 18, 1915

L.C. Obs. 15" Eq.

U Sagittae 191419 ~~at~~ Ph8R

2224
3 10 +194

Ci watch = 0.5m slow

Below

138.8 ∠ Vardis

I

6 31.6	165.2	264	
	319.2	276	− 3.10
	346.8	540	
	140.6		− 3.07
	167.8	27.2	
	318.2	28.1	
	346.3	55.3	− 3.04
	Above		
	44.8		mean = − 2.88
	78.6	31.8	
	225.5	33.0	
	258.5	64.8	− 2.68
	48.4		
	78.4	30.0	− 2.70
	227.6	33.6	
6 38.0	260.2	63.6	− 2.73

6 34.8
6 35.3

20820.483
818.652
+1.831
+1.846

Nov. 18, 1915

Same Again

Above — II

6 39.0	45.8		
	81.2	35.4	
	226.9	31.7	
	258.6	67.1	— 2.60
	46.2		
	78.4	32.2	— 2.73
	229.2	27.7	
	256.9	59.9	— 2.86

Below — mean = — 2.66

	316.9		
	349.3	32.4	
	134.8	36.0	
	170.8	68.4	— 2.56
	318.4		
	349.8	31.4	— 2.60
	135.2	34.4	
6 45.2	169.6	65.8	— 2.65
6 42.1			
6 42.6			

20820. 488
818. 652
1. 836
1. 851

Nov. 18, 1915

	Below			III
6 522	318.8			
	350.8	320		
	137.8	32.6		
	170.4	64.6	— 269	
	315.2			
	354.4	39.2	2.44	
	132.4	409	—	
	173.3	~~79~~		
		80.1	— 2.19	
			mean	— 2.51
	above			
	227.3			
	262.5	352		
	46.6	348		
	81.4	70.0	— 251	
	228.6		— 2.58	
	262.8	342		
	48.2	314		
6 57.8	79.6	65.6	— 2.66	
6 55.0				
6 55.5				
20F 20.497				
8F.652				
1.845				
1.860				

Nov. 18, 1915

Same Again IV

	above		
6 59.0	229.6		
	259.9	30 3	
	44.1	36 3	
	80.4	66.6	— 262
	226.6		— 2.58
	261.4	348	
	44.8	346	
	79.4	69.4	— 253
	Below		mean = — 248
	132.8		
	171.8	390	
	316.4	338	
	350.2	728	— 242
	133.3		
	173.2	39.9	— 2.38
	315.6	357	
7 05.4	351.3	75.6	— 233
1244			
7) 02.2			
02.7			
20820.502			
818.652			
1.850			
1.865			

Nov. 18. 1905

	Same	Again		
	Below			V
7 06.3	133.8			
	173.2	39.4		
	317.8	320		
	349.8	71.4		
			− 2.46	
	130.4		− 2.36	
	171.9	41 5		
	315.2	364		
	351.6	77.9	− 2.26	
	Above		Mean = − 2.44	
	46.4			
	79.4	330		
	228.3	333		
	261.6	66.3	− 263	
	42.2		− 2.52	
	80.6	38.4		
	226.8	348		
7 12.4	261.6	73.2	− 2.40	

7 09.4
7 08.9
208 20.507
81 8.652
1.855
1.870

Nov. 18. 1915

Same again — VI

	Above		
7 28.5	43.6		
	83.3	397	
	227.8	316	
	259.4	71.3	— 2.46
	48.0		
	81.2	332	— 2.55
	229.2	330	
	262.2	66.2	— 2.64
	Below		Mean = -2.50
	318.2		
	351.3	331	
	133.6	386	
	172.2	71.7	— 2.45
	316.9		
	351.4	345	— 2.44
	135.5	377	
7 34.3	173.2	722	— 2.43
62.8			
7 31.4			
7 31.9			
20820.522			
818.652			
1.870			
1.885			

Nov. 18, 1915

Below VII

7 380 315.6
350.2 346
134.4 358
170.2 70.4 — 2.49

317.3
350.3 330 — 2.48
133.3 379
171.2 70.9 = 248

Above Mean = -2.51
226.9
259.9 330
46.6 32.7
79.3 65.7 — 2.65

227.3
263.1 35.8 — 2.54
43.8 36.6
7 444 80.4 72.4 — .43
.824
7 41.2
7 41.7
208 20.529
818.652
1.877
1.892

Nov. 18, 1915

above

VIII

7 45.0

224.6
263.6
42.6
78.8

390
362
752 — 2.34

226.2 — 2.37
261.2
44.7
83.1

350
38.4
73.4 — 2.40

Below Mean = — 2.51

135.2
168.4
315.2
350.8

332
356
688 — 2.55

137.9
169.5
316.3
347.2

311 — 2.65
30.9
625 — 2.75

7 51.0

960
48.0
48.5

20820.533
818.652
+1.881
1.896

Nov 18, 1915

	Below		
803.5	138.0		1X
	169.1	311	
	316.6	333	
	349.9	644	— 270
	133.7		
	170.4	367	— 2.62
	317.3	31.9	
	349.2	68.6	— 2.55
	above		Mean = — 2.57
	45.6		
	78.3	327	
	227.6	372	
	264.8	69.9	— 2.51
	45.7		
	78.5	328	— 2.56
	227.7	339	
809.0	261.6	66.7	— 2.62
806.2			
806.7			
20820.547			
818.652			
1.895			
1.910			

Nov. 18, 1915

X

Above

δ 10.0	46.0		
	79.9	33.9	
	226.6	34.0	
	260.6	67.9	-258
	44.4		-260
	77.4	33.0	
	225.6	34.0	
	259.6	67.0	-261

Below Mean -255

	316.9		
	351.6	34.7	
	134.1	36.7	
	170.8	71.4	-246
	314.1		-250
	347.6	33.5	
	133.0	35.4	
α 16.0	168.4	68.9	-254

α 13.0
δ 13.5

20820.551
818.652
1.899
1.914

Nov. 18, 1915

	Below		XI
8 26.4	318.4		
	347.3	289	
	134.7	339	
	168.6	628	— 2.76
	318.1		— 2.85 —
	346.8	287	
	138.8	292	
	168.0	579	— 2.94
	above	Mean —	- 2.88
	227.5		
	259.6	321	
	47.4	278	
	75.2	599	— 2.86
	230.4		— 2.91
	258.8	284	
8 335	47.6	291	
59.9	76.7	57.5	— 2.96

8 300
8 305
208 20.562
818.652
1.910
1.925

Nov. 18, 1915

XII

Above

8 34.4	227.9		
	254.4	265	
	47.7	299	
	77.6	564	− 300
	225.8		− 2.90
	257.4	316	
	46.2	297	
	75.9	61.3	− 281

Below Mean = − 2.84

	136.2		
	167.2	310	
	317.8	294	
	347.2	60.4	− 2.84
	136.7		− 2.77
	169.9	332	
	318.7	312	
8 41.2	350.0	644	− 270

75.6
8 37.8
8 38.3
20820.568
818.652
1.916
1.931

Nov. 18, 1915

	Below		XIII
8 46.3	138.2		
	167.4	292	
	317.4	279	
	345.3	57.1	— 2.97
	139.4		— 2.86
	170.2	308	
	316.4	318	
	348.2	62.6	— 2.76
	Above	Mean = -2.81	
	46.4		
	77.9	315	
	230.8	278	
	258.6	59.3	— 289
	44.3		
	78.6	343	— 2.76
	227.9	323	
8 54.2	260.2	66.6	— 262

8 50.2
8 50.7
20820.577
818.652
1.925
1.940

Nov. 18, 1915

	Above			XIV
8 55.0	47.7			
	78.7	310		
	228.8	298		
	258.6	60.8	— 283	
	46.8		-291	
	76.2	294		
	229.6	273		
	256.9	56.7	— 299	
	Below		Mean - 290	
	317.4			
	345.1	277		
	136.6	290		
	165.6	56.7	— 299	
	319.2			
	347.9	287	— 288	
	134.8	334		
9 02.2	168.2	62.1	— 278	

1172
8 58.6
8 59.1

20820.583
818.652
+1.931
1.946

Region too low to continue with advantage

Ha. 5 52 W
Dec +19.6
S.T. 1:06

Nov. 18/1915

~~B~~ U Cygni 201647 Phot R

25 36

5 20 +47.6

Right

9 40 → ~~68~~

112.8 < Var dis

198.8   86.0

294.7   80.5

166.5 − 0.25

15.2

112.2

199.8   87.6 − 0.24

296.7   80.9

17.6   168.5 − 0.22

Comp ✕ = companion = e = 7.77

Left

Mean = −0.22

7.77

7.55

17.7

101.6   83.9

203.3   81.3

284.6   165.2 − 0.28

18.8

107.2   88.4 − 0.21

199.6   84.0

9 46   283.6   172.4 − 0.14

9 43

HA 5 34 W

Dec +47.8

S.T. 1:51

Clamp Rope

Light cord fouling

Nov - 18, 1915

o Ceti 021403 Phot R

Below

9 58 53.8 < Var dis
69.8
16.0
235.0
15.8
250.8 31.8 — 4.27

53.7 — 4.17
70.6 16.9
232.7 18.0
250.7 34.9 — 4.07

above
Mean = -4.07
9.19
Mag = 5.12

324.2
340.8 16.6
143.7 17.4
161.1 34.0 — 4.13

323.3 — 3.97
342.0 18.7
142.4 20.6
10 05 163.0 39.3 — 3.81

10 02

Mon Nov. 22, 1915

L.C.Obs. J.D. 20824 15" E Eq.
U Sagittae 191419 Phot R

2252
338 + 19.4

Cs W = $0^m.3$ slow
Index above
43.4 L Vandis

6 40.4	75.2	318	
	225.2	334	
	258.6	65.2	— 2.67
	47.2		— 2.74
	76.6	294	
	226.2	321	
		61.5	— 2.80
	258.3		
	Below		Mean = — 2.58
	316.8		
	349.8	330	
	131.8	359	
	167.7	68.9	— 2.54
	314.8		
	351.2	366	— 2.42
	129.8	404	
6 47.4	170.2	76.8	— 2.29
7.8			
6 43.9			
6 44.2			

20824.489
2201.8
2.471 cf. 1578

Nov. 22, 1915

II

	Below		
6 48.2	317.7		
	350.0	323	
	130.4	408	
	171.2	731	− 2.41
	312.3		
	348.2	359	− 2.44
	131.3	354	
	166.7	71.3	− 2.46
	above		mean = − 2.52
	225.3		
	260.4	351	
	42.7	31.7	
	74.4	66.8	− 2.61
	225.4		
	258.4	330	− 2.59
	42.2	350	
6 54.2	77.2	680	− 2.57
1024			
6 51.2			
6. 51.5			

20824. 494
22. 018
2.476

Nov. 22, 1915

			III
	above		
6594	228.3		
	257.1	28.8	
	47.7	32.1	
	79.8	60.9	— 2.83
	225.6		
	257.8	32.2	— 2.70
	44.6	35.6	
	80.2	67.8	— 2.58
	Below		Mean — 2.62
	133.1		
	170.4	37.3	
	314.2	33.0	
	347.2	70.3	— 2.50
	1		
	134.8		— 2.54
	168.6	33.8	
	314.8	33.8	
7 06.2	348.6	67.6	— 2.59
125.6			
7 02.8			
7 03.1			
20f24.502			
22.018			
2.484			

Nov. 22, 1915

	Below		IV
7 07.5	134.8		
	168.8	340	
	314.7	311	
	345.8	65.1	— 2.67
	131.3		
	169.4	381	- 2.64
	316.9	285	
	345.4	66.6	— 2.62
	above		mean = — 2.70
	45.2		
	77.2	320	
	225.9	315	
	257.4	63 5	— 2.73
	47.6		
	79.2	316	- 2.76
	225.9	305	
7 14.5	256.4	62.1	— 2.78
7 11.0			
7 11.3			

20824.508
22018
2.490

Nov. 22, 1915 —

above V

7 21.2

45.0
80.0
227.5
~~262.8~~
260.4

35.0
32.9
67.9 — 2.57

44.8
79.3
224.2
260.6

— 2.53

345
364
709 — 2.48

Below Mean = — 2.66

318.7
344.8
135.3
168.4

261
331
592 — 2.59

316.3
348.4
134.9
167.6

321 — 2.78
327
648 — 268

7 28.2

94
7 247
7 25.0

20824.517
22.018
2.499

Nov. 22 1915

	Below		VI
7 28.8	314.6		
	348.2	336	
	137.8	31.8	
	169.6	654	— 266
	315.6		— 260
	349.9	343	
	134.6	347	— 254
	169.3	690	
	above		Mean — 263
	224.6		
	257.4	328	
	45.2	320	
	77.2	648	— 268
	226.4		
	259.7	333	— 2.66
	45.6	330	
7 35.8 →	7 78.6	66.3	— 2.63

— 64.6

7 32.3

7 32.6

20824.523

22.018

2.505

Nov. 22, 1915 —

	above		VII
	225.8		
7 46.0	260.1	343	
	43.3	35.3	
	78.6	69.6	— 2.52
			— 2.60
	225.2		
	259.4	342	
	46.6	31.1	
	77.7	65.3	— 2.67
	Below	Mean =	-2.68
	135.0		
	169.2	342	
	317.7	277	
	345.4	61.6	— 2.80
	138.2		— 2.76
	169.2	310	
	315.3	330	
7 52.3	348.3	64.0	— 2.71
983			
7 49.2			
7 49.5			
20824.534			
22.018			
2.516			

Nov. 22, 1915

	Below		VIII
7 5 3.0	135.6		
	168.1	325	
	316.0	30.4	
	346.4	62.9	−275
	135.8		−277
	168.3	325	
	318.4	294	
	347.8	619	−279
	Above		Mean = −276
	45.6		
	78.6	330	
	228.3	291	
	257.4	621	−278
	45.8		−274
	77.2	314	
	225.8	33.2	
7 59.0	259.0	646	−269
7 56.0			
7 56.3			

20824.539
22.018
2.521

Nov. 22, 1915

	Above			IX
8 05.6	45.6			
	77.3	31.7		
	225.2	30.2		
	255.4	61.9	— 279	
	45.5			
	77.9	32.4	— 2.71	
	224.6	34.0		
	258.6	66.4	— 2.63	
	Below		Mean = − 2.69	
	314.6			
	346.6	32.0		
	133.0	34.7		
	167.7	66.7	— 2.62	
	316.6		— 267	
	346.4	29.8		
	134.4	34.1.		
8 11.2	168.7	63.9	— 272	
16.8				
8 08.4				
8 08.7				
208 24 548				
22.048				
2.530				

Nov. 22, 1915

	Below		X	
8 12.5	315.6			
	347.7	321		
	138.6	330		
	169.6	65.1	— 267	
			— 2.7~~4~~3	
	315.4			
	346.6	312		
	137.6	306		
	168.2	61.8	— 2.79	
	Above		Mean =	— 2.70
	225.4			
	257.3	319		
	44.8	330		
	77.8	649	— 268	
	225.3		— 266	
	258.2	329		
	45.4	334		
8 19.0	78.8	66.3	— 2.63	
11.5				
8 15.8				
8 16.1				
20824.553				
22 018				
2.535				

Nov. 22, 1915 —

	above		XI
8 325	227.4		
	255.9	285	
	43.4	320	
	75.4	60.5	— 284
	225.6		2.82 —
	258.4	328	
	46.6	288	
	75.4	61.6	— 280
	Below		Mean = — 288
	137.7		
	166.6	289	
	317.2	282	
	345.4	57.1	— 297
	137.6		— 295
	167.4	298	
	315.8	285	
8 39.0	344.3	58.3	— 293
115			
8 35.8			
8 36.1			

20824.567
22.018
2.549

Nov 24 1915

	Below		XII
δ 41.0	133.3		
	165.1	31.8	
	317.3	28.3	
	345.6	60.1	— 2.86
	138.4		2.89
	167.0	28.6	
	316.8	29.9	
	346.7	58.5	— 2.92
	above		Mean = − 2.92
	45.6		
	76.4	30.8	
	226.6	28.2	
	254.8	59.0	— 2.90
	46.3		− 2.96
	75.1	28.8	
	227.4	27.2	
δ 47.8	254.6	56.0	— 3.02

88
δ 44.4
δ 44.7

20824.573
22.018
2.555

Ep. 1518 = 0822.017872
" 1519 = 0825.398476

Nov. 22, 1915

above XIII

f 5.5 Too low to count with advantage

S.T. 1:12
R.A. 5:57
Dec. +19.7

It looks as though this comp star was a variable.

~~Below~~

See next page

Nov. 22, 1915

o Ceti 021403 Phot R

9 18	Below		
	55.2 < Vardis	0130	
	67.9	127 0448	−3.6
	233.3	153	
	248.6	28.0	−4.55
	53.8		
	67.4	136	−4.61
	235.3	130	
	248.3	266	−4.67
	Above		Mean = −4.50
	323.3		9.19
	337.5	142	
	142.4	159	Mag = 4.69
	158.3	30.1	−4.~~32~~ 40
	324.4		−4.40
	338.6	142	
	143.6	157	
9 2^5	159.3	299	−4.41
9 21.5			
~~9~~			
20824.			

Thurs. Nov. 25, 1915 —

L.C. Obs. J.D. 20827 15" E. Eq.

U Sagittae 191419

21 5.8

e's W = 13^2 slow.

244 W + 19.6

Below

X^5 36.2 315.2 < Van dus

346.7 31.5 —

135.4 31.8

167.6 63.3 — 2.74

312.7 — 2.54

347.3 36.6

130.4 40.2

170.6 74.8 — 2.35

Above mean = — 2.44

226.1

263.2 37.1

42.8 38.9

81.2 76.0 — 2.82

224.4 — 2.34

259.6 35.2

40.4 39.8

5 435 80.2 75.0 — 2.35

797

5 39.8

5 40.0

20827.444

25.417

2.027

Nov. 25, 1915

	Above		II
5 44.3	228.3		
	260.4	321	
	42.8	37.6	
	80.4	69.7	− 252
	226.4		− 242
	261.4	350	
	42.6	404	
	83.0	75.4	− 233
	Below		mean − − 2.41
	133.8		
	166.2	324	
	306.3	404	
	346.7	72.8	− 242
	131.3		− 2.40
	171.4	401	
	312.6	33.8	
5 50.0	346.4	73.9	− 2.38

943
5 47.2
5 [illegible]7.4

20827.449
25.417
2.032

Nov. 25, 1915

Below III

5 51.0 130.4
168.8 38.4
311.6 34.8
346.4 73.2
— 2.40

130.3
— 2.38
170.4 40.1
313.6 34.8
348.4 74.9 — 2.35

Above mean = — 2.32
42.6
77.6 35.0
220.8 40.0
260.8 75.0 — 2.31

41.6 — 2.27
79.8 38.2
220.8 41.8
5 56.5 262.6 80.0 — 2.19
7.5

5 53.8
5 54.0
20827.454
25.417
2.037

Nov. 25, 1915

	Above		IV
6 06.5	43.0		
	81.2	38.2	
	220.6	40.0	
	260.6	78.2	— 2.25
	42.2		
	78.8	36 6	— 2.29
	224.2	38 8	
	263.0	75.4	— 2.33
	Below		Mean = — 2.30
	313.6		
	348.2	34.6	
	132.8	40.2	
	173.0	74.8	— 2.35
	312.7		
	348.6	35.9	— 2.31
	130.4	41.8	
6 13.0	172.2	77.7	— 2.27

19.5

6 9.8

20827.465

25.417

2.048

Nov. 25, 1915

	Below			V
6 14.0	312.8			
	347.2	344		
	130.6	41.6		
	172.2	76.0	—	232
	314.7			
	348.3	336	— 2.32	
	126.9	420		
	168.9	75.6	—	2.34
	above	Mean =	— 2.38	
	223.8			
	259.2	354		
	41.2	381	2.38	
	79.3	739	—	
	227.0		2.45	
	262.0	350	—	
	44.0	346		
6 21.1	78.6	69.6	— 252	
351				
6 17.6				
6 17.8				
2 08 27.471				
25.417				
2.054				

Nov 25, 1915

	~~Below~~		VI
	Above		
6 25.4	228.6		
	259.8	31.2	
	44.6	34.3	
	78.9	65.5	— 2.66
	223.9		— 2.50
	258.7	34.8	
	40.8	40.3	
	81.1	75.1	— 2.34
	Below		Mean = — 2.44
	131.2		
	170.4	39.2	
	310.8	36.0	
	346.8	75.2	— 2.34
	130.4		
	171.8	41.4	— 2.39
	314.6	30.6	
6 31.7	345.2	72.0	— 2.44
57.1			
6 28.6			
6 28.8			
20827.478			
25.417			
2.061			

Nov. 25, 1915

Below ~~VIII~~ VII

6 39.1 | 132.8

168.4 | 35.6

311.4 | 32.4

343.8 | 68.0

— 25.7

132.7 — 2.62

167.3 | 346

315.2 | 30.6

345.8 | 65.2 — 2.67

above Mean = — 2.51

43.0

78.4 | 35.4

224.2 | 33.6

257.8 | 69.0 — 2.54

37.0

77.8 | 408 — 2.60

222.2 | 37.1

6 45.4 | 259.3 | 77.9 — 2.26

8.45

6 42.2

6 42.4

20 8 27.487

25.417

2.070

Nov. 25, 1915

	above		IX ~~VIII~~
6 46.2	448		
	79.6	348	
	220.0	41.0	
	261.0	75.8	−2.32
	40.2		
	77.2	370	−2.32
	222.2	384	
	260.6	754	−2.33
	Below		mean = −2.36
	315.1		
	344.9	298	
	128.4	418	
	170.2	71.6	−245
	313.0		
	345.8	328	− 2.40
	128.4	418	
6 51.7	170.2	74.6	− 2.36

979

6 49.0

6 49.2

20827492

25.417

2.075

Nov. 25, 1915

	Below		~~IX~~	X
6547	132.2			
	166.8	34.6		
	313.1	31.3		
	344.4	65.9	— 2.65	
	128.8		— 2.58	
	167.9	39.1		
	314.7	30.4		
	345.1	69.5	— 2.52	
	above		mean — -2.70	
	44.0			
	74.8	30.8		
	228.2	29.7		
	257.9	60.7	— 2.84	
	42.4		— 2.83	
	74.4	32.0		
	227.7	29.2		
7000.0	256.9	61.2	— 2.82	
1147				

6 57.4

6 57.6

20827.499
25.817
2.082

Nov. 25, 1915

	above		XI
7 7.0	42.7		
	77.0	348	
	224.8	330	
	257.8	678	— 258
	41.9		— 255
	78.8	369	
	227.4	326	
	260.0	695	— 252
	Below		Mean = − 2.58
	312.6		
	343.8	312	
	132.8	365	
	169.3	677	— 259
	313.2		− 2.60
	342.9	297	
	130.2	37.6	
7 13.2	167.8	673	— 2.60
20.2			
7 10.1			
7 10.3			
20827.507			
25.417			
2.090			

Nov. 25. 1915 —

	Below		XII
7 15.7	314.6		
	340.8	262	
	136.0	32.0	
	168.0	57.2	-2 9 3
	314.6		— 2.81
	343.6	290	
	130.6	35.6	
	166.2	64.6	— 2.69
	above		Mean = -2.70
	225.4		
	256.2	308	
	41.8	36.6	
	78.4	67.4	— 259
	225.8		— 260
	256.2	304	
	41.8	368	
7 21.1	78.6	67.2	— 260

36 8
7 .18.4

20827.512
25.417
2.095

H.A. = 4.39 w
S.T. = 23.55
Dec = -19.6

Fri Nov 26, 1915

L.C. Obs Phot R 15" E Eq

C'w = 10 parts. U Sagittae 19149

22 38
24 + 19 7

Above

6 11.4 43.3 < var dis
77.8 34.5
223.3 37.9
261.2 72.4 - 2.43

42.6
78.4 35.8 - 2.52
228.2 31.1
259.3 66.9 - 2.61

Below mean - - 2.56
312.4
343.8 31.4
129.2 37.1
166.3 68.5 - 2.56

312.2
340.8 28.6 - 2.61
129.8 36.8
6 17.8 166.6 65.4 - 2.66
9.2
6 14.6
6 14.4

20828 .468
25.417
3.051

Nov. 26, 1915

	Below			II
6 19.0	311.4			
	345.7	34.3		
	129.8	38.6		
	168.4	72.9	− 2.41	
	310.8		− 2.40	
	346.4	35.6		
	129.4	38.4		
	167.8	74.0	− 2 38	
	Above		Mean = − 2 34	
	218.2			
	257.4	39.2		
	41.7	39.3	− 2 24	
	81.0	78.5		
			− 2.28	
	222.2			
	258.7	36.5		
	38.8	39.4		
6 25.7	78.2	75.9	− 2 32	
6 22.4				
6 22.2				
20828.474				
25.417				
3.057				

Nov. 26, 1915

	Above			III
6 31.1	221.5			
	256.4	349		
	40.8	38.0		
	78.8	729	— 2.41	
	222.2		— 2.26	
	260.2	380		
	35.4	444		
	79.8	82.4	—2.12	
	Below		Mean = −2.26	
	12~~7~~^{9}8			
	174.0	442		
	~~307.8~~			
	312.8	316		
	344.4	75.8	— 2.32	
	123.8		— 2.25	
	171.0	472		
	313.6	33.4		
6 40.0	347.0	80.6	— 2.18	
6 35.6				
6 35.4				
20828 48^{3}				
25.417				
3.066				

Nov 26, 1915

	Below		IV
6 41.1	125.3		
	171.6	46.3	
	307.8	36.4	
	344.2	82.7	− 2.12
	127.0		− 2.17
	171.3	44.3	
	315.6	34.7	
	346.3	79.0	− 2.22
	above		Mean = − 2.30
	40.4		
	77.3	36.9	
	222.2	34.2	
	256.4	71.1	− 2.47
	39.2		− 2.44
	77.3	38.1	
	222.1	35.3	
6 49.4	257.4	73.4	− 2.60
105			
6 45.2			
6 45.0			
20828.490			
25.417			
3.073			

Nov. 26, 1915

	Above			V
7 01.0	41.8			
	74.2	324		
	218.0	422		
	260.2	746	— 236	
	39.4		— 240	
	73.3	339		
	223.8	380		
	261.8	719	—244	
	Below	Mean = — 2.86		
	317.6			
	340.6	230		
	135.5	275		
	163.0	505	— 325	
	316.3		— 3.13	
	342.6	263		
	133.5	299		
7 09.0	163.4	562	— 3.01	
7 05.6				
7 04.8				

20828 503
25.417
3.086

Nov. 26, 1915

VI

below
~~above~~

7 9.7	315.6		
	341.9	26.3	
	133.8	30.0	
	163.8	56.3	— 3.00
	311.8		— 2.82
	343.8	32.0	
	130.6	34.2	
	164.8	66.2	— 264

above
~~Below~~ Mean = — 3.00

	226.6		
	249.8	23.2	
	44.4	26.8	
	71.2	50.0	— 3.27
	226.4		— 3.19
	252.2	25.8	
	45.2	28.1	
7 17.5	73.3	53.9	— 3.11

27.2
7 13.6
7 13.4

208 28.509
25.417
3.092

Rope on clk wts. broken

Nov. 26, 1915

	Above			VI
7 240	227.4			
	254.4	270		
	45.8	27.2		
	73.0	54.2	– 309	
	226.6		– 3.06	
	253.9	27.3		
	44.2	28.2		
	72.4	55.5	– 3.04	
	Below	Mean = – 3.00		
	134.4			
	162.8	28.4		
	313.6	27.2		
	340.8	55.6	– 3.03	
	135.3			
	164.8	29.5	– 2.94	
	313.4	30.4		
7 32.0	343.8	59.9	– 2.86	
7 28.0				
7 27.8				
20828519				
25.417				
3.102				

Nov. 26, 1915

	Below		VII
> 34.6	128.8		
	166.4	37 6	
	317.7	22 1	
	339.8	59.7	— 2.87
	134.6		— 2.90
	164.4	29.8	
	313.4	28.0	
	341.4	57.8	— 2.94
	Above		Mean = −2.98
	40.0		
	74.3	34 3	
	227.4	24.7	
	252.1	59.0	— 2.90
	45.8		— 3.06
	70.0	24 2	
	225.4	27 0	
> 42.1	252.4	51.2	— 3 22
76.7			
> 38.4			
> 38.2			
20828.526			
25.417			
3.109			

Nov. 26, 1915

	above		IX
751.4	45.1		
	73.7	28.6	
	225.4	266	
	252.0	54.2	— 305
	44.9		— 3.14
	71.4	265	
	226.6	262	
	250.8	50.7	— 3.24
	Below	mean =	— 3.01
	311.8		
	340.8	290	
	130.8	31.0	
	161.8	600	— 2.86
	313.2		
	340.4	272	— 2.88
	131.8	318	
7584	163.6	59.0	— 2.90
9.8			
7549			
7547			
538			
25.417			
3.121			

20828

Nov. 26, 1915 —

	Below		X
8 00.2	312.8		
	340.4	276	
	132.4	288	
	161.2	56.4	− 3.00
	314.2		— 3.03
	340.8	266	
	132.4	28.4	
	160.8	55.0	− 3.06
	above	Mean = − 2.94	
	223.7		
	253.4	297	
	41.4	317	
	73.1	61.4	− 2.81
			− 2.84
	223.8		
	253.7	299	
	42.2	296	
8 06.4	71.8	59.5	− 2.88

8 03.3

8 03.1

20828.544
25.417
3.127

Too low in fog to continue with ~~advantage~~

Ha 5:32 W
S.T. 0:41
Dec +19.7

Nov. 26. 1915

	o Ceti Phot R		021403
	Below		
8 38.0	50.8 < Var dis		
	63.8	13.0	
	229.4	13.6	
	243.0	26.6	−467
	50.4		−4.72
	62.9	125	
	230.4	130	
	243.4	25.5	−4.76
	Above		Mean = −4.59
			919
	320.1		Magn − 4.60
	334.2	141	
	139.6	159	
	155.5	300	−440
	319.8		−4.46
	334.5	147	
	140.2	13.6	
8 46.0	153.8	28.3	−4.53
8 4.0			
8 42.0			
8 41.8			

20828 1 571

20823 - Nov. 26, 1915

	Above		II	
8 49.0	321.8			
	333.0	11.2		
	140.2	14.6		
	154.8	25.8	— 473	
			—468	
	320.3			
	332.6	12.3		
	139.4	14.6		
	154.0	26.9	— 464	
	Below		Mean = —	4.61
	229.7			9.19
	244.2	14.5		4.58
	49.8	14.2	— 4.50	4.60
	64.0	28.7	Mean Mags =	4.59
			454	
	229.4			
	243.4	14.0		
	49.4	13.6		
8 55.8	63.0	27.6 —	459	
8 52.4				
8 52.2				

20828.578

20828

Nov. 26, 1915

R Leporis - 045514 est 6.9

4" finder

V Orionis 050003 est 12.8

S Orionis 052404 est 8.0
0204
3 20 -4.8

T Orionis 053005 est 9.8

T Leporis 050022 est 8.9
2 10
2 502 -22.6

RR Tauri 053326 est 10.8
2 16
3 178 +20.8

SU Tauri 054319 est 10.1
2 20
3 23 +19.1

10 00

7 370 ests var
(192) (2066) setts photos

L.P.

Nov. 28, 1915 — (Sunday)

L.C. Obs. 15" E. Eq.

Phot R. U Sagittae 191419

(L.C. Jr. aid)

	P.a. = 30°		
5 39.0	220.8 < var dis		
	255.5	34.7	
	39.6	35.4	
	75.0	70.1	— 2.50
	218.4		— 2.44
	251.4	33.0	
	34.3	41.1	
	75.4	74.1	— 2.37
	P.a. 50°		Mean = — 2.38
	127.4		
	170.4	43.0	
	307.0	36.6	
	343.6	79.6	— 2.21
	128.4		— 2.32
	167.2	38.8	
	307.8	33.6	
5 45.0	341.4	72.4	— 2.43
5 42.0			
5 41.5			

30.446
28.797
1.649

Cis W = 28^{s} fast

Nov. 28, 1915

	P.A. 50°		II	
5 48.0	123.8			
	165.8	420		
	308.8	334		
	342.2	75.4	− 233	
	120.4		− 228	
	164.8	444		
	309.0	347		
	3437	79.1	− 222	
	P.A. 230		Mean = − 2	32
	37.4			
	71.2	338		
	215.3	413		
	256.6	75.1	− 234	
	35.2		− 2.36	
	76.3	411		
	217.4	330		
5 54.0	250.4	74.1	− 237	
5 51.0				
5 50.5				
30.452				
28.797				
1.655				

Nov. 28. 1915

P.a. 230 — III

6 9.6 — 35.5
70.8 — 35.3
221.2 — 31.0
252.2 — 66.3
— 2.63

35.6 — — 2.50
75.2 — 39.6
219.4 — 34.8
254.2 — 74.4 — 2.36

Pa 50° — Mean = — 2.37
310.4
337.6 — 27.2
119.6 — 46.6
166.2 — 73.8 — 2.38

306.4 — — 2.24
360.4 — 34.0
118.4 — 49.3
6 15.8 — 167.7 — 83.3 — 2.10

6 12.7
6 12.2
30.467
28.797
1.670

Nov. 28, 1915

β Persei eye obs. L.C.Ch

					Reduced magn.
6	20	.472	b 3, 3 c	= 2.6	2.58
6	31	.480	b 3, 3 c	= 2.6	2.58
6	52	.494	b 5, 1 c	= 2.8	2.78
7	12	.506	b 5, 0 c	= 2.9	2.8$\overset{2}{3}$
7	30	.521	Clouds over β Persei region.		
7	35	.524	d 2, e 1, 4 f	= 3.2 clearer now	3.22
7	52	.536	e 2, $\overset{4}{7}$ f	= 3.2	3.24
8	07	.547	e 2, 3 f	= 3.3	3.29
8	18	.554	e 3, 3 f est	3.3	3.34
8	30	.562	e 3, 2 f	3.4	3.39
8	48	.574	e 4, 2 f	3.4	3.44 Copied from
9	12	.592	e 3, 2 f	3.4	3.39 L.C.'s note book
9	30	.604	e 4, 1 f	3.5	3.49 obs. made at home.
9	52	.619	e 3, 3 f	3.3	3.34 Copied Nov. 29, 1915 L.C.
10	20	.639	e 2, 4 f	3.2	3.24 Fidel.
11	00	.667	b 5, 0 c	2.9	2.8$\overset{2}{3}$

Nov. 28, 1915 —
U Sagittae Cont.

		P.a. 50		IV
6	22.4	303.4		
		335.5	321	
		122.2	356	
		157.8	67.7	— 2.58
		303.8		
		330.4	346	— 2.48
		122.2	396	
		161.8	74.2	— 237
		P.a 230		mean — 2.48
		214.9		
		249.2	34.3	
		30.4	39.4	
		69.8	73.7	— 2.39
				— 2.69
		215.6		
		247.4	318	
		33.3	356	
6	28.3	68.9	67.4	= 2.59
6	25.4			
6	24.9			
30.476				
28.797				
1.679				

Nov. 28, 1915

	Pa. 2:30			V
6 33.3	214.8			
	249.8	350		
	32.4	356		
	68.0	70.6	— 2.49	
	213.4		— 2.48	
	249.2	358		
	32.2	352		
	67.4	71.0	— 2.47	
	Pa. 50		mean = — 2.39	
	119.4			
	157.2	388		
	302.8	372		
	339.6	760	— 2.32	
	119.8		— 2.30	
	162.2	424		
	301.3	349		
6 39.0	336.2	773	— 2.28	
6 36.2				
6 35.7				
30.483				
28.797				
1.686				

Nov. 28, 1915 —

	P.a. 50			VI
6 41.9	121.1			
	157.4	363		
	303.8	33.0		
	336.8	693	— 2.53	
	122.4			
	160.4	380	— 2.56	
	305.0	296		
	334.6	676	— 2.59	
	P.a 230		mean = - 2.64	
	34.4			
	65.2	308		
	216.6	31.1		
	247.7	61.9	— 2.79	
	35.3		— 2.72	
	66.4	31.1		
	214.4	350		
6 47.8	249.4	66.1	— 264	
9.7				
6 44.8				
6 44.3				
30.487				
28797				
1.692				

Nov. 28, 1915

Pa. 230 VII

6542 32.2

67.4 352

216.4 312

247.6 66.4 — 2.62

33.3 — 2.68

65.6 323

216.6 30.6

247.2 62.9 — 2.75

Pa. 50 Mean = — 2.61

305.8

333.9 281

127.4 295

156.9 57.6 — 2.59

302.4 — 2.54

334.4 320

121.8 38.6

7 01.8 160.4 70.6 — 2.49

6 58.0

6 57.5

30.498

28.797

1.701

Nov. 28, 1915 —

	P.a 50			VIII
7 04.3	301.8			
	335.6	33.8		
	119.2	38.2		
	157.4	72.0	— 2.44	
	303.8		— 2.38	
	339.6	35.8		
	120.4	40.0		
	160.4	75.8	— 2.32	
	P.a 230		Mean = — 2.44	
	214.2			
	244.4	30.2		
	28.2	40.6		
	68.8	70.8	— 2.48	
			— 2.50	
	214.4			
	247.4	33.0		
	30.8	36.8		
7 10.0	67.4	69.8	— 2.58	
7 07.2				
7 06.7				
30.505				
28.797				
1.708				

Nov. 28, 1915

	P.a. ~~50~~ 230		IX
7 17.2	214.8		
	246.6	31.8	
	36.6	30.8	
	67.4	62.6	— 2.73
	217.7		— 2.76
	245.6	27.9	
	34.9	33.9	
	68.8	61.8	— 2.79
	P.a. 50	Mean — 2.70	
	123.3		
	154.9	31.6	
	302.3	33.5	
	335.8	65.1	— 2.67
	122.4		
	~~16~~		— 2.64
	157.2	34.8	
	305.0	31.8	
7 22.4	336.8	66.6	— 2.62
39.6			
7 19.8			
19.3			
30.513			
28.797			
1.716			

Nov. 28, 1915 —

P.a 50 X

7 23.9

121.4
157.6
305.8
339.6

362
338
700 — 2.51

123.6
156.6
306.3
334.2

— 2.67

33.0
27.9
60.9 — 2.83

P.a 230

Mean = — 2.72

36.8
67.4
216.8
247.2

30.6
30.4
61.0 — 2.82

— 2.78

33.8
66.8
215.2
245.4

33.0
30.2
63.2 — 2.74

7 29.5
7 26.7
7 26.2
30.518
28.797
1.721

Nov. 28, 1915

	P.a. 230		XI
7 44.7	36.8		
	66.4	29.6	
	212.4	33.8	
	246.2	63.4	– 2.73
	33.8		– 2.70
	65.0	31.2	
	212.8	34.4	
	247.2	65.6	– 2.66
	P.a. 50		Mean – – 2.74
	303.8		
	331.8	28.0	
	124.4	32.2	
	156.6	60.2	– 2.85
	302.8		– 2.79
	333.3	30.5	
	123.6	33.0	
7 50.8	156.6	63.5	– 2.73

955
7 47.8
7 47.3

30.533
28.797
1.736

Nov. 28, 1915

	P.a. 50		XII
7 54.0	302.2		
	334.4	32.2	
	121.8	36.3	
	157.6	68.5	— 2.56
	304.9		
	332.8	279	— 2.52
	123.3	326	
	155.9	705	— 249
	P.a. 230	Mean = — 2.60	
	215.6		
	244.2	28.6	
	32.9	33.5	
	66.4	62.1	— 278
	212.4		— 2.69
	246.7	343	
	33.8	329	
7 59.7	66.7	67.2	— 2.60
137			
7. 56.8			
7 56.3			
30.539			
28.797			
1.742			

(19 2) (2 2 58) Plate
(15) (385) Ext Var

L.

Tues ~~Mon~~ Nov. 30, 1915

R.C.db. 15" E ~~Eq~~

191419 U Sagittae Phot R.

23 54
4 40

C's W = 6^s fast at 6:43 E.M.T.

Below P.a. 230

7 00.8 118.4 < Var dis. I
144.2 25.8
296.7 27.5
324.2 53.3 — 3.13

115.8 — 2.92
149.4 33.6
294.6 30.7
325.3 64.3 — 2.70

Above P.a. 50 Mean = - 2.84

29.8
59.6 29.8
207.6 31.0
238.6 60.8 — 2.83

25.1 — 2.76
62.0 36.9
7 7.8 209.2 27.3 — 2.70
236.5 64.2

8 b
7 4.3 20832.503
7 4.2 32.178
0.325

Nov. 30, 1915

Above P.a. 50 II

> 8.9 24.9

57.4 325

208.3 283

236.6 608 — 283

29.6 — 2.92

59.4 298

208.9 261

235.0 55.9 — 3.02

Below P.a. 230 Mean — 2.98

293.4

323.6 302

119.8 224

142.2 52.6 — 3.16

294.2 — 3.05

324.6 306

117.8 274

> 14.6 145.2 57.8 — 2.94

2.35 Comp with 9.6 * close to U.

> 11.8

> 11.7

208 32.508

32.178

0.330

Nov. 30, 1915 —

Phot I. U × Sag. 191419

U Comp with 8.2* n f. U.

	~~725.5~~ P.a. 235		
7 25.5	324.4 ∠ Vandis		I
	5.6	412	
	140.6	37.1	
	177.7	78.3	— 2.24
	327.2		- 2.34
	2.2	350	
	143.2	37.2	
	180.4	72.2	— 243
	P.a. 55		mean = - 1.82
	42.8		
	104.3	615	
	225.4	544	
	279.8	115.9	— 1.28
	42.8		— 1.31
	100.6	578	
	227.2	558	
7 33.0	283.0	113.6	— 1.34
58.5			Δm = 2.7
7 29.2			P.a = 235°.0
7 29.1			
32.520			

Nov. 30, 1915 —

Phot I.

9.6 comp with 8.2

P.a. 70°

I

> 35.8 320.6 ∠8.2 dis.

3.2 426

141.8 450

186.8 876 + 1.98

322.2 + 2.01

3.7 415

141.6 440

185.6 855 + 2.04

P.a. 250° Mean = + 1.62

43.6

100.4 568

225.3 601

285.6 1169 + 126

41.8 + 1.22

100.6 588

223.6 612

> 42.8 284.8 1200 + 119

78.6

> 39.3

> 39.2

32.527

Dis = 2.7

P.a. = 247°

Nov. 30, 1915

u with ~~[illegible]~~ 9.6 again

Phot R ~~III~~

	above		
7 54.0	202.4 < Var dis		
	234.6	322	
	21.6	33.6	
	55.2	65.8	— 265
	202.6		— 2.60
	233.6	310	
	19.9	385	— 256
	58.4	68.5	
	Below		Mean = — 2.62
	114.6		
	143.8	292	
	290.8	345	
	325.3	637	— 2.73
	110.9		— 265
	144.4	335	
	291.7	347	
8 1.2	326.4	68.2	— 257
115.2			
7 57.6			
32 540			
32 178			
0.362			

Nov. 30, 1910

U 8 9.6 IV

Below

8 150 110.2
142.8 326
290.8 31.4
322.2 64.0 — 2.71

110.2
144.9 34.7 — 2.70
290.8 30.0
320.8 64.7 — 2.69

above Mean = — 2.58

19.8
~~59.6~~ 36.1
55.9 34.2
202.4 70.3 — 2.50
236.6

18.8
~~59.6~~ 37.6 — 2.46
56.4 35.4
200.8 73.0 — 2.41
8 224 236.2

37.4

8 18.7

32.555
32.178
0.377

Nov. 30, 1915

	Above			V
8 31.8	22.6			
	54.4	32.0		
	202.8	28.8		
	231.6	60.8	— 2.83	
	18.8			
	53.3	34.5	— 2.80	
	206.0	27.8 ~~27~~		
	233.8	62.3	— 2.77	
	Below	Mean = -2.79		
	290.0			
	~~32~~			
	323.3	33.3		
	109.2	29.7		
	138.9	63.0	— 2.75	
	291.4			
	321.8	30.6	— 2.78	
	111.1	31.8		
8 37.4	142.9	62.2	— 2.81	

~~8 34.2~~
8 34.1

~~Too low to Count.~~

HA 6:13 W
Dec +19.7
S.T. 1:28

32.565
32.178
0.387

11 2 (2370)
(385)

~~Nov~~ Wed Dec. 1, 1915

β Persei. eye-ests L.C.Ab

5 58	e 4, 1 f	3.49 ✓	33.4~~44~~ 57	-0.171
6 07	e 3, 2 f	3.39 ✓	463	-0.165
6 21	e 5, 0 f	3.59 ✓	473	-.155
6 45	e 4, 0 f	3.54 ✓	490	-138
7 03	e 3, 2 f	3.39 ✓	502	-126
7 21	d ~~e~~ 3, ~~2~~ e 2 3 f	3.3{5/7} ✓	515	-113
7 41	d 1, 0 e, 5 f	312	528	-100
8 03	c 2 0 d	3.12 ✓	544	-084
8 41	b 4, 2 c, 3 d	271 ✓	570	-058
8 57	b, 4, 2 c	268 ✓	581	-047
~~9~~8 23	b, 3, 3 c	258 ✓	599	-029
9 53	b, 2, 4 c	248 ✓	620	-008
10 38	b, 0, 5 c	2.33 ✓	651	+0.023

Dec. 1, 1915

L.C.Clf Phot Tow 15" Eq.

U Sagittae 191419

comp with (8.12) ~~Phot~~

	P.a. 60		
6 22.8	31.0 < Van dis		
	104.8	738	
	220.8	660	
	286.8	139.8	— 0.78
	35.5		
	99.4	639	— 0.90
	222.7	637	
	286.4	127.6	— 1.03
	P.a. 240		Mean = − 1.42
	141.6		
	184.3	427	
	318.8	468	
	5.6	89.5	— 1.93
	142.2		
	187.8	456	— 1.94
	319.4	432	
6 29.4	2.6	888	— 1.95
122			
6 26.1			

~~Dec~~ 1, 1915

Phot T.

9.6 with 8.12

P.a. 240°

~~6 30.8~~	~~102.3~~		
6 31.4	227.2	(8.12 dis	
	279.6	524	
	42.8	588	
	101.6	111.2	+ 1.39
	2		
~~6 25.4~~	2~~8~~6.6		+ 1.54
	276.9	503	
	49.8	480	
	97.8	98.3	+ 1.70

Reverse P.a. = 60°   mean = +1.92

	324.3		
	356.3	320	
	140.8	428	
	183.6	748	+ 2.35
	325.6		+ 2.31
	361.8	362	
	→ 140.8	x1.4	
3 6			
6 ~~2~~9.~~4~~	182.2	77.6	+2.27
6 35.5			

Dec 1, 1915.

9.~~7~~ 6 with (8 1 2)

P.a. 60°

6 47.6 ~~1~~ 45.2
1 83.4 382
3 19.4 439
~~3~~ 3.3 821 + 2.11

1 44.6 +2.07
1 85.3 407
3 18.4 450
3.4 857 + 203

Reverse P.a. 240°
mean = +1.76

2 17.3
2 75.3 580
44.4 544
98.8 1124 + 1 36

~~2 31.1~~ 225.7
2 76.0 50.3 + 1.46
48.0 53.2
6 52.5 101.2 103.5 + 1.57

6 50

Dec. 1915

u with f. 12

	P.a	240°	
6 5~~8~~3.1	143.0		
	184.2	412	
	318.1	417	
	359.8	829	—2.11
	133.6		
	185.5	519	—1.96
	322.8	425	
	5.3	944	—1.80

Reverse P.a. 60° mean = —1.59

	41.8		
	102.2	604	
	220.8	590	
	279.8	1194	—1.21
	46.6		
	99.8	532	—122
	221.2	646	
6 57.~~5~~4	285.8	1178	—124

105

6 55.2

497

Dec. 1, 1915

9.$\overset{6}{2}$ & 8.12

7 04.36	141.4	P.a. 60°	
	181.3	39.9	
	322.8	40.5	
	3.3	804	+ 2.18
	140.4		
	183.8	434	+ 2.13
	321.6	40.6	
	3.2	840	+ 2.08
	Reverse	P.a. 240°	
	227.2		mean + 1.72
	278.3	511	
	40.2	660	
	104.2	115.1	+ 1.30
	226.2		
	279.2	53.0	+ 1.31
	42.2	61.1	
7 09.23	103.3	114.1	+ 132
13 59			
7 7 0			

Dec. 1, 1915 —

u + 8.12

	P.a. ~~60~~ 240°			
7 09.9	141.3			
	183.6	42.3		
	317.4	48.5		
	5.9	90.8	— 1.89	
	143.3			
	186.4	43.1	— 1.88	
	316.4	48.0		
	4.4	91.1	— 1.88	
	Reverse P.a. 60°			
	~~277.4~~			Mean = −1.58
	~~276.6~~			
	224.4			
	285.0	60.6		
	47.3	51.5		
	98.8	112.1	— 1.37	
	221.4			
	282.6	61.2	— 1.29	
	43.6	57.8		
7 16.~~21~~ 4	101.4	119.0	— 1.21	
26 3				
> 13.2				

Dec 1, 1915

	$9.\overset{6}{\cancel{2}}$	& 8.12	
	P.a. 60°		
7 23.29	141.6		
	186.8	45.2	
	322.2	40.6	
	2.8	85.8	+ 2.03
	141.1		
	179.4	38.3	+ 2.16
	323.3	38.3	
	1.6	76.6	$+ 2.\cancel{2}^{30}$
	Pa 240	Reverse	240° Mean = +1.94
	226.6		
	275.3	48.7	
	47.6	47.4	
	95.0	96.1	+ 1.75
	227.8		
	274.6	46.8	+ 1.73
	47.4	51.0	
7 27.39	98.4	97.8	+ 1.71
	P.a	64.7	
7 21.6	Sprocket	2.7	

Dec. 1, 1915

N & f. 12

7 28.14 Pa – 240°
138.7
183.3 446
320.4 432
3.6 87.8
— 1.97

140.0
185.8 458 — 1.85
315.2 574
6.6 97 2 — 1.73

P.A. 60° Reverse mean = – 1.54
40.7
104.3 636
220.8 574
278.2 121 0 — 1.17

45.6
100.1 545 — 1.24
219.8 596
7 32.26 279.4 114.1 — 1.32
7 30

P.A. ~~A~~ 56.3
Sprocket ~~A~~ 2.8

C's W = A. slow 7.45
34 24 [illegible]
7 45 13.3

Ball 103
7 46.00

Dec. 1, 1915

○ $^{IV \cdot III \cdot II}$

Dis. Jup. ~~#~~ IV
Phot. R. - 15 inch Equat.
Compared with Sat. II = L.C. Obsr.
more ~~distant~~ on same side O.O. Recorder

	08 57.48	255.3		
7 58 30	58 09	182.8		
5 48	27	254.2	71.4	
12 59 18	39	185.8	650	
	~~58~~ 46	250.8	136.4	+0.85
7	~~59~~ 02	185.6		
7 59 18 5 48	12	247.8	622	
13 00 06	25	187.6	626	
	35	250.2	124.8	+1.09
	47	183.2		
7 59 58 5 48	54	249.2	66.0	
13 00 46 8	~~59~~ 00 02	182.8	660	
	10	248.8	132.0	0.94
8 00 34 5 48	19	188.4		
13 01 22	28	248.9	60.5	
	40	186.3	643	
	48	250.6	124.8	1.09
01 13 48	08 01 0	185.2		
13 02 01	9	249.3	641	
	17	184.8	648	
	26	249.6	128.9	1.00
01 59 48	43	184.4		
13 02 47	54	252.2	678	
	02 05	182.1	695	
	08 14	251.6	137.3	0.83
	08^{2} 56	179.6		

Dec. 1, 1915 —

	3	~~0~~6	252.6	730	
8 03 10		16	181.2	732	
13 03 58		23	254.4	146.2	0.65
		36	179.7		
03 50		47	254.7	750	
13 04 38		55	183.3	681	
	4	04	251.4	143.1	0.71
		16	181.6		
04 29 48		25	252.2	706	
13 05 17		34	185.5	63.2	
		42	248.7	133.8	0.90
		51	182.6		
	5	01	252.2	696	
05 07		14	181.4	744	
13 05 55		23	255.8	144.0	0.69
		35	181.6		
05 49 48		42	252.2	706	
13 06 37		52	180.4	715	
	6	04	251.9	142.1	0.73
		13	180.0		
06 32 48		28	250.8	648	
13 07 20		38	187.7	639	
		48	251.6	128.7	1 00
		56	184.4		
	7	04	253.3	689	
07 15 48		26	187.0	642	
13 08 03		33	251.2	133.1	091
13 07 56 48		42	184.4		
13 08 44		48	249.8	654	
8 8		01	182.4	709 136.3	085

Dec 1, 1915

	13	253.3		
8 8 40	25	181.8		
~~18~~ 13 9 28	34	251.8	700	
	46	185.0	698	
	54	254.4	139.4	079
9	05	182.2		
8 9 21	18	250.8	686	
13 10 09	25	183.0	678	
	35	250.4	136.0	0.86
8 10 02	44	184.0		
13 10 50	55	248.6	686	
10	07	184.2	656	
	23	249.8	130.2	097
8 9 10 48	33	186.3		
48	43	249.0	627	
~~14~~ 11 36 13	52	185.8	652	
08 11	03	251.0	127.9	1.07
	~~12~~	~~186.9~~		
8 12 0	46	184.0		
13 12 48	56	252.2	682	
12	06	187.8	618	
	14	249.6	130.0	0.98
8 12 35	22	187.5		
15 48	31	246.4	569	
13 13 23	40	188.8	572	
	48	246.0	114.1 —	132
	57	187.0		
13	09	247.3	603	
17 13 48	18	188.9	577	
13 14 01	27	246.6	118.0	1.24

Mean of 1st 19 ratios = 0.89

Dec. 1, 1915

13	37	188.0	58.3	
8 13 51 48	45	246.3	~~56.5~~	
13 14 39	57	189.8	53.2 111.5	1.38
14	06	243.0	~~52.6~~	
	15	190.4	55.6	
14 28 48	22	246.0	~~57.2~~	
13 15 16	31	188.8	56.0 111.6	1.38
	42	244.8	~~55.8~~	
	56	189.0	55.4	
15	08	244.4	~~54.8~~	
15 12 48	18	189.6	55.1	
13 16 00	26	244.7	110.5 ~~55.5~~	1.41
	35	189.2	58.2	
5 8 16 48	43	247.4	~~57.1~~	
13 16 36	53	190.3	54.7 112.9	1.35
	59	245.0	~~55.5~~	
16	09	189.5	53.8	
16 23 48	20	243.3	~~52.5~~	
13 17 [illegible]	27	190.8	53.2 107.0	1.49
	36	244.0	~~53.1~~	
	46	190.9	52.9	
17 00 13 17 48	55	243.8	~~50.8~~	
17	05	193.0	50.2 103.1	1.58
	13	243.2	~~50.8~~	
	33	192.4	49.2	
17 47 48	42	241.6	~~49.8~~	
13 18 35	51	191.8	51.1 100.3	1.65
18	01	242.9	~~50.8~~	
	10	192.1	50.5	

Dec 1, 1915

f 18 26 48 13 19 14	18	18	242.6	50.5 ~~493~~	
		32	193.3	481	1.69
		42	241.4	986 ~~478~~	
		53	193.6	432	
	19	01	239.8	~~46.6~~	
19 06 13 19 54		09	194.2	442	1.98
		19 →	238.4 →	824 ~~436~~	
13 20 16		28	194.8	448	1.92
24		36	239.6	443	1.95
36		48	195.3	441	1.96
51 20		03	239.4	433	2.01
58		10	196.1	413	2.12
21 9		21	237.4	41.6	2.10
27		39	195.8	41.6	2.10
36		48	237.4	41.2	2.12
43		55	196.2	41.1	2.13
54 21		06	237.3	404	2.17
22 05		17	196.9	359	2.45
16		28	232.8	330	2.64
26		38	199.8	35.0	2.51
36		48	234.8	35.6	2.47
44		56	199.2	34.8	2.52
53 22		05	234.0	34.2	2.56
59		11	199.8	35.0	2.51
23 11		23	234.8	~~38.4~~ 334	2.61
20		32	2014? 19~~8~~6.~~9~~4	~~36.9~~ 31.9	2.73
		~~47~~			
46		58	233.3	332	2.63
13 23 56 23		08	209.1	337	2.59

Dec. 1, 1915

18 24 6				
23	18	233,8	35.8	246
22	34	198,0	322	270
31	43	230,2	29.8	287
39	51	200,4	29.9	287
53 24	05	230,3	27.3	307
25 04	16	203,0	28.8	.295
15	27	231,8	28.9	294
27	39	202,9	27.8	303
37	49	230,7	29.1	293
47	59	201,6	28.4	298
59 25	11	230,0	24.6	331
26 7	19	205,4	24.1	335
20	32	229,5	25.9	319
29	41	203,6	26.1	317
41	53	229,7	26.8	311
50 26	02	202,9	26.0	318
58	10	228,9	23.9	337
27 9	21	205,0	224	352
19	31	227,4	22.5	351
30	42	204,9	22.3	353
39	51	227,82	22.3	353
49 27	01	204,9	21.9	3.57
57	09	226,8	20.9	367
28 10	22	205,9	19.7	380
20	32	225,6	19.0	3.88
28	40	206,6	20.6	370
39	51	227,2	193	385
13 28 48 28	0	207,9	161	4.25
58	10	224,0	158	4.29

Dec. 11, 1915

13 29 07	19	208.2	17.7	404
17	29	225.9	18.0	400
27	39	207.9	15.4	435
41	53	223.3	14.4	449
53	29 05	208.9	14.1	455
30 03	15	223.0	13.1	470
11	23	209.9	13.1	470
26	38	223.0	13.0	472
38	56	210.0	14.0	455
44	30 06	224.0	14.1	454
31 11	23	209.9	12.3	484
25	37	222.2	11.8	493
37	49	210.4	12.4	482
48	31 00	222.8	11.1	506
59	11	211.7	10.2	525
32 08	20	221.9	10.9	5.10
18	30	211.0	9.8	533
29	41	220.8	9.4	543
39	51	211.4	8.4	567
49	32 01	219.8		
13 32 54	32 06	Gone		

L, ~~B,~~ V.

G.M.T. of [illegible] = $13^h\ 39^m\ 12^s$

13 33 20 48	33 04	30.4		
13 38 08	16	41.2	10.8	
	24	29.8	13.2	
8 33	34	43.0	24.0	4.89

Assume error of Tod 3424 as 48^s slow for the above eclipse.

Dec. 1, 1915

o Ceti 021403
1 57
0 17 Σ

Phot. R.

Above

09 07 13 300.4 < var. dis
311.6 11.2
120.3 10.5
130.8 21.7 — 5.11

300.5
311.1 106 — 5.15
121.0 103
131.3 209 — 5.19

Below mean = — 5.25
9.19
3.94

210.2
221.4 112
32.1 8.7
340.8 19.9 — 5 30

211.8
221.4 96 — 5.35
32.4 94
41.8 19.0 — 5 40

13
09 ~~08~~ 16
9 10

Dec 1, 1915

δ

	Below			
9 14 57	211.3			/
	220.9	9.6		
	31.2	10.4		
	41.6	20.0	−5.29	
	211.2			
	220.8	9.6	−5.30	
	31.3	10.3		
	41.6	19.9	−5.30	
	Above		Mean	−5.27
	1$\overset{2}{3}$1.3			9.19
	131.8	10.5		3.92
	301.2	10.4		3.54
	311.6	20.9	−5.19	3.93
	121.4			
	131.2	9.8	−5.24	
	301.4	10.2		
9 18,19	311.6	20.0	−5.29	
9 17				

New light for Photo I.

Dec. 1, 1915

SS Cygni 21 38 43
26 30
45 2W

9 40 est. = 11.9 ☿

Reap. of Jup. IV
L. C. Obsr.
O. O. Recorder
15 inch Equ. Photo. R

Comp. with fainter of two Sats. on same side = Sat. ~~II~~

15	15 03	10 14 11	seen				
	11		*19	318.8	26.0	3.18	~~as seen in tel~~ =
	30		38	292.8	23.8	3.38	I· ⊖ IV· :II IV
	42		50	316.6	24.4	333	
	54	15	02	292.2	24.9	3.28	
16	4		12	317.1	26.7	3.12	
	12		20	290.4	28.9	287	
	25		33	319.3	271	309	
	35		43	292.2	29.6	289	
	45		53	321.8	32.4	268	
	53	16	01	289.4	29.4	2.91	
17	1		09	318.8	29.7	288	
	09		17	289.1	31.6	274	
	19 ~~24~~		27	320.7	31 ~~26.8~~	270 ~~3.11~~	
	30		38	2~~93~~.9 88	30 ~~25.5~~	290 ~~3.23~~	
	41		49	319.4	310	279	
	52	17	0	288.4	33.3	2.62	
18	01		09	321.7	33.9	258	
	15		23	287.8	34.9	251	

Dec. 1, 1915

15	18	27		35	322.7	35.3	249
		37		45	287.4	344	255
		45		53	321.8	352	249
		54	18	02	286.6	374	223
	19	11		19	324.0	356	247
		20		28	288.4	35.5	247
		29		37	323.9	379	232
		39		47	286.0	373	236
		50		58	323.3	364	242
	20	00	19	08	286.9	37.9	232
		14		22	324.8	388	227
		25		33	286.0	36.4	242
		34		42	322.4	38.2	230
		49		57	284.2	40.6	216
	21	01	20	09	324.8	404	217
		14		22	284.4	41.4	211
		23		31	325.8	406	216
		34		42	285.2	39.7	221
		45		53	324.9	40.5	217
		57	21	05	284.4	42.3	206
	22	06		14	326.7	44.6	194
		20		28	282.1	43.7	1.98
		30		38	325.8	434	2.00
		42		50	282.4	448	1.92
		52	22	0	327.2	45.0	191
	23	8		16	282.2	524	1.54
		18		26	329.8	478	1.77
		32		40	282.0	461	1.86
		43		51	328.1	48.7	1.72

Dec. 1, 1915

	23	08	279.4		
10 23 23		21	328.8	494	
15 24 15		31	280.1	502	
		41	330.3	99.6	1.67
24 15		55	279.2		
15 25 7	24	10	328.8	496	
		22	279.4	498	
		34	329.2	99.4	1.67
		44	277.2		
25 00 15 25 52		55	329.9	52.7	
	25	06	277.7	529	
		17	330.6	1.05.6	1.52
		28	277.6		
25 47		40	329.9	52.3	
15 26 39		54	279.9	525	1.54
	26	05	332.4	104.8	
		19	276.8		
26 37		32	333.8	570	
15 27 29		42	274.8	592	1.28
		54	334.0	116.2	
	27	10	276.2		
28 01	28	02	336.4	602	1.25
15 28 53		18	276.9	570 117.2	
		33	333.9		
		43	280.1		
28 59 15 29.51		54	335.5	554	
	29	03	276.2	576	1.35
		15	333.8	113.0	
29 45		26	273.0		
15 30 37		38	335.4	624 604 122.8	1.13

Full brightness count?

4 groups only

Dec. 1, 1915

	29	56	274.4
	30	10	334.8
10 15	31 or 31 52	~~2~~36	140.4
		51	142.2
10	31	11	140.3
10	31	24	139.8

} L.N 31.8
29.5
61.3 = 2.81

assume error of Frod 3424 as 52^s slow for above [illegible].
Obs. more difficult towards end, as region was quite low

Frod 3424 Ball 103
10 46 7.4 10 47 00

G.M.T. of Reap. = 15 13 20

(14) - (399) L

(~~299~~ 1438) - (2808)

Sat. Dec. 4, 1915

LC Obs. JD. 20836 15" E. Eq.

) 10

T Herc. 180531 est 10.4
2415
6 10 w + 31.0

W Lyrae 181136 est 11.1
2418
6 07 + 36.6

SV Herc 182224 est 10.2
2422
6 00 + 24.4

RZ Herc 183225 est 11.7
24 25
5 53 + 26.0

RY Lyrae 184134 est 13.1
2428
5 47 + 34.4

RX Lyrae 185032 est <13.5
24 30
5 40 + 32.8

Z Lyrae 185634 <13.5
2433
5 37 + 34.6

RT Lyrae 185737 est 12.2
2437
5 40 + 37.4

Dec. 4, 1915 —

X Draconis 180666 est 10.4
W Draconis 180561 est 9.2
2440
6 35 + 66.0

T Draconis 175458 est 10.1
– Drac var T =)
→ 11. 3
2444
6 50 + 58.2

V Drac. 175654 est 9.8
2447
6 51 + 54.9

SV Drac. 183149 est 13.8
2449
6 18 + 49.2

RW Lyrae 184243 est 12,0
2457
6 15 + 43.
Olsen Pere

V Lyrae 190529 est <13.6
25 0
5 55 + 29

R. S. Lyrae 190933 est 14.0
2504
5 55 + 33

Dec. 4, 1915

~~S Lyrae~~

S. Lyrae 190525 est < 13.8
2503
558 + 25~~9~~

R.U. Lyrae 190941 est 7.8
2511 select bright. stars
602 + 41

U. Draconis 190967 est 11.6
~~25~~
2530
621 + 67

T. Z. Cygni 191350 est 10.4

R Cygni 193449 est 11.8
2516
542 + 49

T. Y. Cygni 192928 est 13.7
2517
548 + 28

R T Cygni 194048 est 8.9~~7~~
~~2520~~
540 + 48

T. U. Cygni 194348 est 9.7
~~252~~

X Cygni 194632 est 9.5
2525
539

Dec. 4, 1915

Z Cygni 19 58 49 est 10.0
25 28
5 30 + 49

S. Cygni 20 03 57 est 12.7
25 31
5 28 + 57

~~W Capricorni 20 08 36 est~~
25
Too low

~~R. T~~ Z Delph. 20 28 17 est 13.3
2 $\overset{5}{\cancel{6}}$ 38
5 ~~6~~ 10 + 17.

V Delph. 20 36 11 est 13.5
25 40
5 04 + 11

S Delph. 20 38 $\overset{16}{\cancel{28}}$ est 10.3
25 42
5 04 + 16

T Delph. 20 40 $\overset{16}{\cancel{43}}$ est 13.4
25 44
5 04 + 16

V Delph. 20 43 18 est 10.6
25 46
5 03 + 18

Dec. 4, 1915

X Delph. 2$\overset{0}{8}$ 50 17 est 13.2
2548
4 58 + 17

Var? = 12.0

S. X Cygni 20 11 30 est 14.0
2549
5 38 + 30

W ~~X~~ Cygni 20 14 37 est 9.0
2556
5 42 + 37

V Cygni 20 38 47 est 8.2
25 58 wrongly recorded!
5 20 + 47

S. T. Cygni 20 29 54 est 10.7
26 0
5 31 + 54

R. Z Cygni 20 48 46 est 12.0
2602
5 14 + 46

U. ~~X~~ Cygni 20 50 30 est 13.3
new chart needed
26 06
5 16 + 30

R Vulpeculae 20 59 23 est 8.7
26 09
5 14 + 23

Dec. 4 1915

R Equulei 210812 est 11.6
2619
5 11 + 12

X Pegasi 211614 est 14.3
2624
5 08 + 14

V Pegasi 5 215605 est < 13.5
2627
45 31 + 05

T.W. Cygni 210129 est < 13.8
2638
5 3~~2~~7 + 29

R.R. Pegasi 214024 est < 14.0
new chart needed
2624
5 04 + 24

S S Cygni 213843 est 12.0
2647
5 09 + 43

T Pegasi 220412 est < 13.8
2631
4 27 + 12

Y Pegasi 22 0~~7~~6 13 est < 13.8
26 35
4 29 + 13

R.S. Pegasi 220714 est 8.9

Lee 4'19'15

S' N' Aurigae 06054 > est < 13.5

250

315 + 47

9 5 3

(52) (451) L

20839

Tues Dec 7, 1915

L.C. Obs. O.O. Rec.

Reap. Jup II. 15" E Eq.

Ball 103 Thod 345

6 31 00 6 31 40

0 6h ~~8~~3m 58s Sat. ~~visible~~

Sat. reapeared about on time but no sat. convientely near for measurements

Seeing ~~quite~~ wretched

Where is Thod 3K2V ?

~~Est~~ Var

L.C. Obs O.O. Rec.

7h 05m 222129 RV Pegasi ~~est~~ 12.4

24 21

20 +29.9

225914 R.W. Pegsii est 10.8

~~23~~

231508 S Pegasi est 13.3

wrong star obs for Var on prec. observation.

233956 Z Cassiopeiae est 14.0

27 19 very faint but surely seen

3 40 W +560

235855 Y Cassiopeiae est 14.0 if seen

27 25

3 27 W +55

Dec 7, 1915

213843 SS Cygni est 12.0

213678 S Cephei est 10.2

210382 X Cephei est 11.0

003179 Y Cephei est 9.4

011272 S Cassiopeiae est 13.8

021281 Z Cephei est < 13.5

023080 R R Cephei est. 13.7

surely seen

043065 T Camelop. est 13.7

043274 X Camelop. est 10.3

$8^h 04^m$ Olcott's star est 9.0

053068 S Camelop. est 8.9

0549784 V Camelop. est 9.7

the 10.9 = 10.3

022000 R Ceti est 10.6

1 32

0 48 E

031401 X Ceti est 9.1

01 49

1 25 E

Dec, 7, 1915

030514 U Arietis est 9.3 Var

1 52

1 13 E

041619 T Tauri est 11.0

042309 S Tauri est < 14.0

042209 R Tauri est 13.8

042215 W Tauri est 11.8

look up ~~chart~~ star near f. about equal ~~to other~~ comp to f.

04 3208 RX Tauri est 9.1

04 46 17 V Tauri est 10.0

04 53 ~~35~~ 07 R Orionis est 13.3

050003 V Orionis est 11.8

---

05 2200 — 0.2

9 12 Comet = ~~10th~~ see below mag. 2.28

521

~~seen~~ with difficulty in 2.53 E

finder more clear seen in 15" = Taylor's Comet

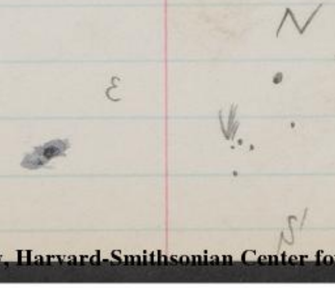
c = 4 >

a 1 magn

b 3/4 "

} ∴ 11.5

9 39



a = Dm + 0.1064 9.4

b = Dm + 0.1072 9.5

c = * close to a about 11th magn

Dec. 7, 1915

o Ceti 021403 Phot R.

0304

0 50 W -3.6

09 5$\overset{3}{8}$ 25   297.8 < Var above
<Var dis
306.4   8.6
117.3   8.9
126.2   17.5 — 5.58

296.8   — 5.50
305.8   9.0
117.2   9.8
127.0   18.8 — 5.43

Revrs. below   Mean = — 5.64
208.4   9.19
215.6   7.2   Mean = +13.55
27.4   8.3
35.7   15.5   — 5.85

207.3   — 5.78
215.8   8.5
27.2   8.1
9 58 35   35.3   16.6 — 5.70
00
9 57
10 17   06 0547 S S Aurigae est × 3 N

03 28

2 37 E

2$\overset{9}{6}$ - 4$\overset{80}{77}$ Var
16 - 2824 setts

D20843

Sat - Dec. 11, 1915

L.C. Ob. 15" E. Eq.
O.C. Rec

11h 20m S.S. Aurigae 060547 est x 3 Var.
0445
1 20 E
12 00
10 40

11h 25m U. Gemin 074922 est 13.8
454
2 55 E
12 00
9 05

R Cancri 08 11 12 est 10.6
5 01
3 10

V Cancri 08 16 17 est 9.9
65 5

U. Cancri 08 3019 est 11.6

R.T. Hydrae 08 2405 est 8.7

S Hydrae 08 4803 est 8.0

T Hydrae 08 50 08 est 8.4

Dec 11, 1915

8 51 20 T Cancri est 8.7

07 56 12 U. Puppis est 13.8

07 28 20 Z Puppis est 12.9

09 04 25 W Cancri est 14.0

09 39 34 R Leo. Min, est 8.2

09 42 11 A^{R} Leonis est 6.1 finder

09 54 21 V Leonis est 9.2

10 48 14 W Leonis est 10.8

11 05 06 S Leonis est 10.9

5 50

5 15

6 45

11 05

6 35

4 30

09 30 14 X Hydrae est 11.4

09 00 24 S Pyxidis est 9.9

X 11 59 19 R Comae est 13.9

6 39

5 20

12 25 32 T Can Ven est 11.8

6 40

5 45

Dec 11, 1915

09 40 23 6 45 2 55	R.R. Hydrae est 15.8
09 46 22	Y Hydrae est 6.8 finder
10 46 20 8 23 2 23	V Hydrae est 7.3 finder
12 00 12 8 27 3 33 8 27	S.U. Virgin. est 12.4
12 09 05	T Virg. est 13.8
12 20 01 8 34 3 46	SS Virg. est 7.0 finder
12 28 03 8 37 3 51	Y Virg. est 11.4
12 33 07 8 39 3 54	R Virg est 8.8

Dec 11, 1915

124204 R U Virg. est 12.1

124606 U Virg est 12.2

12 14 18 R Corvi est 12.0
8 48
3 26

134440 R Can. Ven. est 8.6
8 54
4 50

130212 R V Virg, est 13.3
8 57
4 55

13 22 02 V. Virg. est < 13.0
9 04
4 18

13 2706 S Virg. est 8.8
9 07
4 20

(36) -(5-16) L.

Tues Dec 14, 1915

~~Ball 103 . R.T.D.~~
~~8 59 00 8 59 7.0~~

O's W Ball 103
9 00 00 9 00 26.0

Rep. of Jup. II | L.C. Obser
Comp with Sat III second from | O.O. Rec.
Jup on other side.

14 15 43	9h 15m	17sec	seen		Colt. used.
50		24	288.0	29.2	Phot R 2.92
16 07		41	317.2	33.9	15 4 Eq 2.58
21		55	283.3	40.3	2.18
32	16	06	323.6	45.3	1.90
49		23	278.3	48.4	1.69
58		32	326.7	48.3	1.69
17 09		43	278.4	50.4	1.64
20		54	328.8	53.6	1.48
30	17	04	275.2	57.6	1.29
41		15	328.0	8 56.5	1.35
56		30	271.5	62.3	1.09
18 04		38	333.8	63.4	1.05
15		49	270.4	64.7	0.99
27	18	01	335.1	66.3	0.92
38		12	268.8	68.4	0.84
47		21	337.2	69.8	0.78
56		30	267.4	67.4	0.89
19 06		40	334.8	68.6	0.83
16		50	266.2	70.1	0.77

Dec. 14, 1915

14 19 25		59	336.3	71.0	073
9 35	19	09	265.3	71.1	073
45		19	336.4	7~~9.2~~0.8	0.74
56		30	265.6	71.6	0.71
20 06		40	337.2	70.4	0.76
16		50	266.8	73.8	0.62
14 20 25		59	340.6		
	20	13	264.6	77.6	
20 29		25	342.2		
26 14 20 55		34	264.7	72.5 150.1	0.57
		43	337.2		
		52	264.4		
14 21 07	21	04	341.4	77.0	
26		13	262.9	76.3	
14 21 33		20	339.2	153.3	0.51
		27	264.3		
14 21 39		35	340.4	76.1	
26 14 22 05		43	264.0	76.1	
		50	340.1	152.2	0.53
		59	263.8		
22 11	22	07	338.8	75.0	
26		15	266.0	75.3	
14 22 37		23	341.3	150.3	0.57
		32	261.8		
22 47 26		40	342.2	80.4	
14 23 13		52	265.8	78.2	
9	23	04	344.0	158.6	0.41
14 23 39 26		23	266.8	76.8	
14 24 05		35	343.6	79.7 156.5	0.45

Dec 14 1915

9	23	45	263.8		
		54	343.5		
14	24	02	266.8		
~~9~~ 24 15		11	340.9	741	
26		19	266.0	741	+0.61
~~9~~ 24 41		29	340.1	148.2	
14		37	264.8		
14 ~~9~~ 24 48		45	340.9	761	
26		52	265.8	760	0.53
~~8~~ 14 25 14	25	0	341.8	1521	
	25	20	291.1	L.V.	
14 25 35		30	312.2	211	
26		39	290.2	-215	
14 26 01		51	311.7	42.6 +3.63	
9	26	0	end		

Seeing poor & obs. more diff towards close.

CSW = Ball 103

9 31 04 9 31 30

Dec 14, 1915

ο Ceti 021403 Phot R

0320 est. Naked eye 3.1

16 w − 3.6 $9^h 35^m$

above

9^h 38 297.2 < Var dis

306.1 8.9

114.4 120

126.4 20.9 − 5.19

295.6 − 5.22

306.1 105

116.0 98

125.8 20.3 − 5.26

Below ~~Reverse~~ Mean = −5.39

205.8 9.19

216.1 10.3 3.82

27.6 77

35.3 18.0 − 5.52

206.6 − 5.52

214.9 8.3

27.2 9.6

9 43 36.8 17.9 − 5.53

9 40

Dec. 14, 1915

Same again — II

Below

9 48 206.6
215.2 8.6
27.4 7.9
35.3 16.5 — 5.71

207.4
215.3 7.9 — 5.71
27.2 8.6
35.8 16.5 — 5.71

mean = — 5.68
9.19
3.51
3.82
133
3.66

above

117.4
125.0 7.6
296.6 9.5
306.1 17.1 — 5.63

117.8 — 5.64
126.0 8.2
~~295.9~~ 8.7
9 54 296.8 16.9 — 5.66
305.5
9 51

Troubled by clds making Obs. diff. Possibly angle too large to measure in this ~~photometer~~.

20847

Wed. Dec. ~~1~~ 15, 1915

LCCo 15'' E Eq.

RT aquilae 193311 est 13.6

6 15 2400 / 4 27 W +11.6

RV aquilae 193509 est 12.8

2407 / 4 32 +9 7

X aquilae 194604 est <13.5

2413 / 4 27 W +4.0

RR aquilae 195202 est 10.1

2417 / 4 25 -2.3

RS aquilae 195308 est 10.8

SY aquilae 200212 est [illegible] <13.5

2423 / 4 21 +12 6

S aquilae 200715a est 9.2

2427 / 4 20 +15.0

RW aquilae est 9.0

R Delph 201008 est 13.4

2431 / 4 21 +8.8

Dec. 15, 1915

Z Aquilae 200906 est 9.6
2433
4 26 - 6.4

W Aquarii 204104 Est 9.7
2436
3 55 - 4.4

T Aquarii 204405 est 12.4
2439
3 55 - 5.5

Y Aquarii 203905 est 9.5 n

S S Cygni 213843
7^h 15^m est 9.0

7^h 45 SS Aurigae 060547
1 30 est ×3 n
4 35 E+4)5

Dec. 15, 1915

R S Cygni 200938 Phot R
2500 ss
451 w +38.5
2553
5 43 +38.5

Index above

~~8h~~ ~~07~~
8 08 ~~163.3~~
260.6 < comp * dis.
343.6 830
81.4 866
168.0 169.6 + 0.20

256.8 + 0.18
343.6 868
77.4 842
161.6 171.0 +0.17

Below mean = + 0.12
725
7.37

166.9
257.2 903
348.6 868
75.4 177.1 +0.05
~~168~~
168.7
254.6 859 + 0.06
347.3 901
8h 11 77.4 176.0 + 006

Dec. 15, 1915

U Cygni 201647 Phot R

2608

5 52 +475

below

~~8 20~~ ~~156.6~~

8h 21m 268.8 < Var dis.

338.6 69.8

88.6 66.2

154.8 136.0 — 0.86

266.1 — 0.81

338.6 72.5

87.2 68.4

155.6 140.9 — 0.76

above mean = — 0.80

7.77

6.97

178.4

243.8 65.4

355.2 71.0

66.2 136.4 — 0.85

177.9 — 0.78

249.8 71.9

356.2 70.8

8h 25 67.0 142.7 — 0.72

Dec 15, 1915

o Ceti 021403 Phot R.

344

1 30 w - 3.6

Below

8 57 208.1 < var dis:

213.8 5.7

27.8 7.0

34.8 12.7 -6 28

207.8 — 6.20

214.1 6.3

27.4 7.5

34.9 13.8 -6.11

above

mean = -6.06

9.19

magn = 3.13

117.7

123.9 6.2

296.6 8.0

~~305.2~~ 14.2 - 6.04

304.6

— 5.92

117.2

124.4 7.2

~~9~~ 296.1 8.7

9h 03 304.8 15.9 - 5.79

9 00

Dec. 15, 1915

Dis. Jup III   15" E. Eq. Plat R.

Ball 103   Cs watch DEOb.
9 09 50   9 08 23.0 0.0 Rec

Comp with Sat ~~II~~ I nearby.

09h 32	54	255.5		
33	02	350.6	951	
09 33 10	11	254.8	920	−0.13
14 33 48	34	346.8	187.1 172.9	
	51	252.2		
34	10	350.6	984	
34 16 38	22	255.4	929	
14 34 54	41	348.3	191.3 168.7	−0.21
	57	252.4		
35	15	350.2	978	
35 22 38	30	253.3	919	
14 36 00	48	345.2	189.7 170.3	−0.18
36	02	255.4		
36 24	16	347.2	918	
38 14 37 02	32	254.2	930 184.8	
	44	347.2	175.2	−0.09
3	58	255.8		
37	12	347.7	919	
37 18 38	25	251.8	964	
14 37 56	37	348.2	188.3 171.7	−0.16
3	49	254.8		
38	04	347.2		

Dec. 15, 1915 –

14 38 10 38				
14 38 48			924	
38	17	255.2	949	
	31	350.1	187.3 172.7	−0.14
	49	249.2		
39	06	349.9	100.7	
39 14 38	24	252.8	970 197.7 162.3	−0.34
14 39 52	36	349.8		
40 06	48	252.6		
14 40 44	59	350.0	97.4	
40	13	252.8	960 193.4	
	26	348.8	166.6	−0.25
	36	248.4		
40 52 38	47	352.2	1038	
14 41 30	57	251.9	929 201.7	
41	08	349.8	158.3	−0.41
	22	251.8		
41 42 38	36	350.0	982	
14 42 20	49	254.2	960 194.2	
42	02	350.2	166.8	−0.27
	13	253.4		
	26	350.0	966	
42 32 38 14 43 10	38	252.8	970 193.6	
	50	349.8	166.4	−0.26
43	05	252.8		
	19	352.0	992	
43 28 38	36	248.8	103.2 202.4	
14 44 06	50	352.0	157.6	−0.43
44	10	247.2		
			1048	
44 32 38	27	352.0	1006	
14 45 10	40 53	249.8 350.4	205.4 154.6	−0.49

Dec. 15, 1915

	44	53	350,4			
	45	04	251,2	100.0		
14 45 26 38		18	351,2	103.6 203.6		
14 46 04		34	251,8	156.4		— 0.65
		47	355,4			
	46	01	251,4			
46 24		17	350,2	98 8		
78		33	250,0	98 2 197.0		
14 47 02		47	348,2	153,0		— 0.52
	47	04	248,8			
		16	350,0	101 2		
21 78		27	252,0	97 2 198.4		
14 47 59		37	349,2	161.6		— 0.35
		47	251,2			
cat 04 78		59	349,2	98.0		
	48	09	252,8	97 2 195.2		
14 48 42		21	350,0	164.8		— 0.29
		32	247,4			
		45	352,0	1046		
48 49 38 14 49 27		57	248,8	101 2 205.8 154.2		— 0.49
	49	11	350,0			
14 50 01		23	252,4	97.6	+2.4	— 0.29
17		39	350,0	97.6	+2.4	— 0.29
28 39		50	252,4	96.4	83.6	— 0.24
	50	01	348,8	95.2	84.8	— 0.20
52		14	253,6 84	94 4	85.6	— 0.17
51 6		28	348,0	95 8	84.2	— 0.22
17		39	252,2	95 1	84.9	— 0.19
27		49	347,3	90.1	89.9	0.00

Dec. 15 1915

14 51 39	51 01	257.2	90.5	89.5	−0.02
50	12	347.7	~~101.7~~ 91.7	88.3	−0.06
52 3	25	256.0	86.2		+0.14
17	39	342.2	83.4		+0.25
25	47	258.8	82.2		+0.30
52 39	01	341.0	83.1		+0.26
51	13	257.9	83.1		+0.26
53 03	25	341.0	82.1		+0.30
13	35	258.9	75.9		+0.54
26	48	334.8	72.4		+0.68
53 39	01	262.4	77.6		+0.47
48	10	340.0	80.2		+0.37
54 00	22	259.8	74.2		+0.61
12	34	334.0	69.2		+0.81
22	44	264.8	68.2		+0.85
33	55	333.0	68.0		+0.86
54 44	06	265.0	65.2		+0.97
56	18	330.2	61.4	~~+0.92~~ +1.13
55 12	34	268.8	61.2		~~+0.93~~ +1.14
24	46	330.0	65.8		+0.94
36	58	264.2	65.8		+0.94
55 6 49	11	330.0	60.2		+1.18
56 01	23	269.8	59.0		+1.24
12	34	328.8	57.4		+1.31
23	45	271.4	56.3		+1.36
35	57	327.7	53.7		+1.48
56 47	09	274.0	52.0		+1.56
(4 56) 50	22	326.0	53.2		+1.50
12	34	272.8	52.0		+1.56

324.8

Dec. 15, 1915

14	57	31	53	324.8	47.4	+1.79
	58	40	02	277.4	43.6	+1.99
		52	14	321.0	40.6	+2.16
	58	6	28	280.4	37.8	+2.33
		17	39	318.2	36.2	+2.43
		28	50	282.0	38.1	+2.31
14	58	42	04	320.1	32.6	+2.67
		51	13	287.5	28.9	+2.94
	59	04	26	316.4	27.6	+3.05
		15	37	288.8	25.4	+324
		26	48	314.2	24.4	+333
		35	57	289.8	22.2	+3.54
14	59	47	09	312.0		
			15	gone		
14	59		32	289.4	P N	23.6
	59	50 38	46	313.0		34.1
15	00	28	56	289.9		27.7 + 3.38
10	00		08	314.0		47.7

New wire on reading light

Repair clamp cord

Van. Rdg.

Ball 103	Cs Watch
10 10 00	10 09 22.0

Thur Dec. 16. 1915

R.C. Obs. 15" E. Eq. O.O. Roc.

R Urs Min. Phot T.

163172
2515
8 44 w +72.8

7 23 S S Cygni 213843
2515 est 8.4
3 37 w

R. Urs. Min. Phot. T.

8h 01' 298.6 < Var dis. Position A. 20
25.7 871
116.8 838
200.6 1709 +0.17

300.2 +0.14
26.4 862
119.8 883
208.1 1745 +0.10

~~[illegible]~~ P.A. 40 Mean = -0.22
9.62
9.40

~~126.4~~
199.8 1029
302.7 1044
19.8 2073
124.2 1527 -0.52

198.8 1052 -0.57
304.0 1071
15.1 2123
8 08 122.2 1477 -0.62

P.a. 40°.1
3.5
8hr = 9.33
9.28
40 Dec +7
N.T. = 2.08

Dec. 16, 1915

δ Cephei. 213678 Phot T

26 11 (9h 05m) est 10.6

4 35 w +78.8

P.a. 90

08h ~~1~~20 297.5 < var dis

27.7 90.2

120.8 86.0

204.8 176.2 − 0.11

296.3 − 0.04

30.6 94.3

117.6 87.1

204.7 181.4

178.0 +0.03

P.a. 270 mean +0.47

194.8 10.22

308.8 1140 10.69

18.2 1094

127.6 2234

1366 +0.84

190.8

314.0 1232 +0.98

12.2 1124

08h 25 124.6 2356

1244 +1.10

Correctly identified.

+78.5

5.23 w

3.02

P.a. 90 Sfz 5.2

Dec 16, 1915

o Ceti 021403 PhotR

03 04

050w − 3.6

19 ? Above ~~P. A.~~

09h ~~24~~ 117.7 < vardis

124.2 6.5

297.1 7.1

304.2 13.6 − 613

118.3 − 6.35

123.2 4.9

297.8 6.2

304.0 11.1 − 657

below mean = − 632

9.19

27.8 2.87

33.9 6.1

207.8 6.4

214.2 12.5 − 631

28.2 − 628

33.9 5.7

208.1 7.1

09h 24 215.2 12.8 − 626

Dec 16, 1915

Same again

Below

09 28 27.4

34.3 6.9

207.6 6.0

213.6 12.9 —625

27.4 —6.22

34.4 7.0

208.1 6.2

.214.3 13.2 —620

above Mean —6.19

297.9 9.19

304.7 6.8 350

118.2 6.6 287

124.8 13.4 —616 2.94

—6.16

297.6

305.2 7.6

118.2 5.8

09^h 34 124.0 13.4 —616

at N.E. = 3.0

Moon near and bright.

Dec. 16, 1915

SS Aurigae 060547
335
230 E
est < 13.5

U. Gemin. 074922
342
1002 est 13.8 407 E +22

R

Wed. Dec. 22, 1915

P.C.Ob. 15" E. Eq. O.C. Rec.

o Ceti 021403 Phot R.

above est 3.1 N.E.

07h 11m 298.2 < Var dis

304.6 6.4

118.3 6.5

124.8 12.9 — 6.25

298.3 — 6.28

304.4 6.1

117.7 6.5

124.2 12.6 — 6.30

Below Mean = — 6.28

208.2 9.19

214.4 6.2 Magn = 2.91

28.3 6.4

34.7 12.6 — 6 30

208.3 — 6 29

214.7 6.4

28.4 6.3

07 16 34.7 12.7 — 6 28

7 13.5

SS Aurigae 060547

7 23 est < 13.0

Moon br. sky hazy here.

Dec. 22, 1915

S U Draco. 11 32 67 Phot T.

01 38

9 54 E + 68.0

07h Var. is to faint, strong Moon light + haze
to observation visable

L

Sun. Dec. 26, 1915

L.C.Ob. J.D. 20858

15" E. Eq.

X Cephei 210382 est 11.4

25 36

4 33 W +82.7

S Cephei 213678 est 9.5 ✓

25 46

4 10 w +78.2

SS Cygni 213843 est 9.0 ✓

RT Pegasi 215934 est 12.5 ✓

(Use 11.7 = 11.5)

W Drac 180565 est 9.4 ✓

X Drac 180666 est 10.8 ✓

25 58

7 52

SV Drac 183149 est 13.5 ✓

U. Drac 190967 est 10.7 ✓

R Cygni 193449 est 11.9 ✓

26 11

6~~7~~ 37

R T Cygni 194048 est 10.6 ✓

26 16

6 36

Dec 26, 1915.

✓
TU Cygni 194348 est 10.7

X Cygni 194632 ✓ est 7.0
2619 in finder Var. Red
633

Z Cygni 195849 est 8.8
2625 in finder ✓
627

S Cygni 200357 est 10.6 ✓
26

WX Cygni 201437b est 9.5
2631 ✓
617

ST Cygni 202954 est 12.6 ✓

V Cygni 203847 est 9.1 ✓

R ~~X~~ Z Cygni 20 ~~2~~ 4 846 est 11.4 ✓

d 11

* ? between 10.0 + 11.1 = 11.0

UX Cygni 205030 est 11.5 ✓
26~~46~~
5 56

RV Pegasi 222129 est < 13.5 ✓

Dec 26, 1915.

S La$\overset{c}{c}$ertae 22$\overset{v}{3}$439 est 11.8

R Lacertae 22 $\overset{3}{\cancel{2}}$841 est 9.9

X Andro 00 10 46 est < 13.8

R Andr. 00 1838 est ~~18~~ 13.8

RW Andr 00 4132 est 14.0
3 16 if seen diff.
2 35

SS Aurigae 0605 47 est 13.8
0331
2 30 E + 47.5

-U Gem. 074922 est 13.7
Dec + 22.0
Ha 9.3h 57 E
S.T. 03 54

9 20

Dec 26, 1915

o Ceti   02 1403

Below   Photo R

8^h 5~~2~~3^m 241.3 < Var dis

246.9   5.6

61.0   6.2

67.2   11.8 — 644

240.4

247.3   6.9   — 6.31

60.4   6 4

66.8   13.3 — 6.18

above   Mean = — 6.32

919

151.2   2.87

157.3   6.1   mag = 2.87

331.5   5 7

337.2   11.8   — 6.44

151.4   — 6.34

158.0   6.6

331.4   6 3   6.25

8   58   337.7   129

est o = 3.1   N. E.

L

20862

Thur Dec. 30, 1915

LC Obs ~~pl~~ 20862 15" E Eq.

SS Aurigae 060547
00 45
5 15 E

6 50 w 3 n LV = w 3 ✓

T Herc 180531 = 8.5
2455
6 50 w + 31.0

W Lyrae 181136 = 9.3 ✓
2501
6 50 + 36.6

SV Herc 182224 est 11 3 ✓
25 02
6 40 + 24 8

RT Herc 183225 est 12.1 ✓
25 05
6 33

RY Lyrae ~~18~~ 184134 est 11.4 ✓
25 13
6 32 + 34 4

RX Lyrae 185032
at L.V. = x1 Var. 2516 /
6 26 + 32.8

Dec. 30, 1915

Z Lyrae 185634 est 13.6

$\frac{25\ 20}{6\ 24}$ +34.6 ✓

LV = $(\overset{9}{13.8})$ 3

RT Lyrae 185737 Var 13.4

b 13.6 at L.V. ✓

RW Lyrae 184243 est 12.4

$\frac{25\ 32}{6\ 50}$ +43.5 ✓

e 2 = L.V.

V Lyrae ~~184~~ 190529 est c2N

$\frac{25\ 35}{6\ 30}$ +29.8 ✓

c 2 = L.V.

S Lyrae 190925 = g 2 N

$\frac{25\ 39}{6\ 30}$ +25.6 ✓

g 2 = L.V.

Dec 30, 1915

RS Lyrae 190933 est < 13.8

(13.4) 4 – L.V. ✓

RU Lyrae 190941 est (θ 12.3) 4 Var ✓

Look up prev. Obs. I think I have lately been observing Comp. star due south for RU.

TZ Cygni 191350 est 10.8
2551
6 38 W + 50.0 ✓

L.V. = ~~a~~ n (12.5) 8

U Lyrae 191637 est 11.8 ✓
2556
6 40 + 37.7

TY Cygni 192928 est 11.4
2559
6 30 + 28.0 ✓

L.V. = (u) (12.9) = 8

SX Cygni 201130 est < 13.0 ✓
2603
5 52 + 30.9

L.V. (13.3) 5

Dec. 30, 1915 —

TW Cygni 210129 est 9.4 N ✓

2608

5 7 + 29.2

S S Cygni 213843 est 10.1 ✓

26 14

4 36 w

RR Pegasi 214024 < 13.8 ✓

2617

(134) 4 = L.V. 4 37 w + 24.6

V Pegasi 215605 — est 12.6 ✓

26 22

4 26 + 5.5 —

L.V. = (132) 3

(73) (58 9)

(365) (3191) L

Fri. Dec 31, 1915

L.C.J.Ob JD. 20863 15^4 E.Eq

R U Aquilae 200812 est 11.5

6 Ho

.25 28
5 20 +12.7

Y Delphini 203611 est 13.6

S' Delph 203816 ~~est~~ 10.6

T Delphi 204016 est 13.5

V Delph 204318 est 11.4

X Delph 205017 est 13.6

sup Var South = 13.0

R Equulei 210812 est 13.2

25 49
4 41 w +12.5

X Pegasi 211614 est 13.3

25 53
4 37 w +14.0

T Pegasi 220412 est t I n
<13.4

25 56
3 52 +12.0

Dec. 31, 1915.

Y Pegasi 220613 = 13.8 ✓ L.V. = 14.0

R S Pegasi 220714 = 9.0

RW Pegasi 225914 ✓ ~~est 9.0~~
2636
~~3 44~~ +14.8
3 37

S Aquarii 225120 est 9.8
2605 ✓
3 14

R Aquarii 233815 ~~est 9.4~~
2608
2 30 −15.8

V Ceti 235209 est 9.8
2612
2 20 −9.5

W Ceti 235715 est if seen 14.0

Z Ceti 010102 est 13.0
2 31
1 30 W −2.5

Dec 31, 1915

W Pegasi 231425 est 11.8
2640
326 W +25.8

S Pegasi 231508 est 13.8
2646
331 +8.5

Z Pegasi 235525 est 8.9
2650
255 W +25.4

S S Cygni 213843 est 10.4
2655
517 +43.6

SS Aurigae 060547
405
200

9 11 x 1 n

X Aurigae 060450
est 8.7

Dec. 31, 1915

o Ceti 021403 phot R

est N.E. = 3.0 02.8
044W -3.6

est B
8 11 60.6 < Vardis.
66.9 6.3
240.2 7.1
247.3 13.4 — 6.16

60.4 6.16
67.1 6.7
240.4 6.8
247.2 13.5 — 6.15

Red.
331.5 Mean = -6.23
337.2 5.7 9.19
151.1 6.3 — 6.40 2.96
157.4 12.0 magn.

330.6
337.2 6.6 — 6.30
150.6 6.6
8 19 157.2 13.2 — 6.20

Dec. 31, 1915.

V Aurigae 061647
4 11
2 5 3 +478

Cldy, too much

9 25 so to Continue

25 — 614
16 — 1407 L

Thurs Jan. ~~7~~ 6, 1916

L.C. Obs. 15" E. Eq.

6 00 clouds

o Ceti Phot R. 021403

0124

0502 – 3.6

est 3.1 N.E.

Below

6 30 243.3 < Var dis

249.8 6.5

63.7 6.6

70.3 13.1 – 6.21

244.2 – 6.22

250.8 6.6

63.4 6.4

69.8 13.0 – 6.23

above 6.17

153.2 assumed 7 9.19

16~~X~~0.3 ~~8~~1 3.02

333.3 6.8

340.1 13.9 – 6.08

153.3 6.12

160.4 7.1

333.5 6.3

6 36 339.8 13.4 – 6.16

6 33

Sky hazy & some passing clds.

New Battery.

208692

Jan. 6, 1916

	06 05 47 2 46 ~~4~~3~~4~~19	SS Aurigae est <XIN
	06 16 47	V Aurigae est 9.5
	06 31 59	U Lyncis est 14.0 L.V. = 14.2
	06 35 58	S Lyncis est 9.1 L.V. = ~~9~~9 5
	06 53 55 3 07 3 46	R Lyncis est 8.8 L.V. = 13.8 S.T 3h 09m 347 = H.A.
	08 33 50 3 10	X Ur~~sa~~ Mag. est
8 00	5 23 – 50 6 37	Too Cloudy

No use to continue

6 – 620

16 – 1423

L

Fri. Jan 7, 1916.

LCAb JD. 20870. 15" E Eq.

C's Watch = 12s slow at 6:56 E.S.T.
Est U Cephei 4" = 7.8 at 7:13 or 3>(8.1)
U Cephei. 005381 Phot. R.
0223
1 30 w + 81.3

Below
Comp * = the 10.3 n.f. var.
7 15.0 145.3 < Var dis. * = +81.26 (9.5)
169.2 23.9
325.5 24.3
349.8 48 2 — 3.35

144.4 — 3.20
169.4 25.0
322.4 30.0
352 4 55.0 — 3 06

Above Mean = — 2.90
52.6 1040
82.2 29 6 750
229.8 35.0
264.8 646. — 2.69

48.5 — 2.60
88.7 40 2
230.4 30.0
7 23.4 260.4 70.2 — 2.50
7 19.2

Jan. 7, 1916

Above

II

7 30.4 | 51.2

81.3 | 30.1

230.3 | 31.1

261.4 | 61.2 — 2.81

52.8 — 2.82

81.3 | 28.5

230.4 | 32.2

262.6 | 60.7 — 2.84

Below | mean = — 3.06

324.7 | 10.40

349.3 | 24.6 | 7.34

144.8 | 24.0

168.8 | 50.6 — 3.24

324.7 — 3.30

348.8 | 24.1

144.8 | 23.8

7 38.0 | 168.6 | 47.9 — 3.37

7 34.2

7 ⁎ 39 est = 2-37 (8.1) in H''

Jan 7, 1916

Below

III

7 47.4 323.3
346.7 23.4
144.8 23.6
168.4 47.0 — 3.41

324.0 — 3.40
347.6 23 6
144.4 23 9
168.3 47.5 — 3.39

Above = – 3.25
233.3 10.40
$2\overset{5}{\cancel{8}}9.6$ 26.3 7.15
55.0 25 4
80.4 51.7 – 3 20

231.3 — 3.10
261.5 30 2
53.4 26.4
7 54 2 — 79.8 56.6 — 299
10 1 6
7 50.8

7 55 est = 27(8.1) in 4''

Jan 7, 1916

Above

7 58.8 230.8

261.6 30.8 IV

52.2 30.6

82.8 61.4 — 281

229.8

262.2 324 — 276

50.2 320

82.2 644 — 270

Below Mean = — 281

10.40
7.59

322.5

351.3 288

142.2 309

173.1 597 — 287

322.2

351.3 291 — 286

139.8 316

8 06.2 171.4 607 — 284

1250

8 02.5

8 07 u = 17(8.1)

Jan 7, 1916

U Cephei

Phot T. Comp with 8.4

Below
P. Cl. 2 ~~70~~
~~II~~ I

8 19.2 = 133.6 < Vandis
193.3 597
314.8 540
8.8 1137 − 1.33

131.7 − 1.30
191.9 602
314.8 564
11.2 1166 − 1.27

~~above~~ P a 20 Mean = −0.99
8.41
7.42

214.6
283.8 69.2
33.2 75.6
108.8 144.8 − 0.68

− 0.68
217.6
288.4 708
34.8 744
8 26.6 109.2 145.2 − 0.67
.458

8 22.9
8 23.1
20.8 > 0. ~~599~~
558
8 28.5 U = 0 (8.1)
.748
− 0.1897

Jan. 7, 1916

P.A. 20

II

8 36.8

210.6
288.5 77.9
35.3 71.3
106.6 149.2 −0.59

212.8
286.8 74.0 −0.58
32.3 76.5
108.8 150.5 −0.57

P.A. 270° Mean = −0.92
312.9 8.41
11.4 58.5 7.49
134.4 56.2
190.6 114.7 −1.31

313.6 −1.27
11.3 57.7
131.6 60.7
8 44.4 192.3 118.4 −1.23

8 40.6
8 40.8

208 70 .5705
747
−0.175
8 45

est Var (8.1) 0.6 (8.4)

Jan 7, 1916

Pa. 220° ~~III~~

856.6 315.4
17.7 623
132.4 553
187.7 1176 — 1.25

313.6
7.9 543 — 1.30
130.4 580
188.4 1123 — 136

Pa 20 Mean = — 0.90
28.7 8.41
107.7 790 7.51
211.3 745
285.8 1535 — 051

33.8 051
109.6 758
213.3 773
9030 290.6 1531 — 051
1196

8 59.8
9 000

20870.583
745
—.162

Jan. 7, 1916

P.a. 20

IV

9 8.0

36.0
108.8 72.8
211.3 75.6
286.9 148.4 −0.61

36.2
109.3 73.1 −0.61
212.0 75.3
287.3 148.4 −0.61

P.a. 200

Mean = −0.90
8.41
7.51

134.8
188.9 54.1
309.8 62.6
12.4 116.7 −1.27

132.0 −1.20
191.0 59.0
311.9 64.0 −1.12
15.9 123.0

9 14.6
9 11.3
9 11.5

20870.592
345
9 16
−0.153

est (8.1) 0.5 (8.4)

Jan 7, 1916

9 32 Ext = (8.1) o, s(8.4)

Pa 200

~~P.a.~~ V

9 33.0 135.4
192.9 575
310.2 625
127 1200 −1.19

134.3
190.9 56.6 −122
312.0 608
12.8 1174 −125

Pa 20 Mean = −0.89
212.2 8.41
284.6 724 7.52
30.8 765
107.3 148.9 −0.60

212.0 −0.56
286.1 741
32.2 78.6
9 39.0 110.8 152.7 −0.52
9 36.0
9 36.2

20870.608
70.745
−0.137

Jan 7, 1916

	P.a. 20			
				VI
9 59.6	213.3			
	286.3	73.0		
	34.8	76.0		
	110.8	149.0	− 0.59	
	212.2		− 0.54	
	288.4	76.2		
	34.0	76.6		
	110.6	153.8	− 0.50	
	P.a. 200		Mean = − 0.6~~7~~6	
	127.4			8.41
	194.9	67.5		7.74
	306.2	72.6		
	18.8	140.1	− 0.77	
			− 0.~~80~~79	
	123.8			
	193.8	70.0		
	306.6	68.2		
10 6.6	14.8	138.2	−0.81	
125.6				
10 02.8				
10 03.6				
20870.627				
7.45				
−0.118				
10 25	~~est~~ u = (8.1) 2, 3 (8.4)			

Jan 7, 1916

	Pa-200		VII	
10 27.0	127.2			
	198.2	71.0		
	306.2	70.1		
	16.3	141.1	−0.75	
	127.3			
	194.8	67.5	− 0.78	
	307.0	70.8		
	17.8	138.3	−0.81	
	Pa. 20		mean --	−0.58
	211.4			841
	286.8	75.4		7.83
	27.2	81.7		
	108.9	157.1	− 0.44	
	210.4		− 0.38	
	291.2	80.8		
	32.6	82.6		
10 33.6	115.2	163.4	− 0.32	
10 30.3				
10 30.5				

20870.646
745
−.099

Jan 7, 1916

Pa. 20

XXXI

10 53.0

206.6 < Var dis
296.8 90.2
25.4 87.2
112.6 177.4 −.005

206.2
292.8 86.6 −0.02
26.2 93.6
119.8 180.2
179.8 +.001

Pa 200

6.8 < comp + dis
130.6 123.8
187.8 128.4
316.2 252.2
297.8 −

9.8
132.9 123.1
189.8 125.1
314.9 248.2
111.8 −

11 1.0
10 57.0

Reject this group all mixed up on settings

11 ∂ 3 (8.1) 3, 2(8.4)

11

Jan 7, 1916

P.a. 200

~~IX~~

VIII

11 06.8 120.6 < Van dir

197.6 772

303.3 780

21.3 155.2 − 0.47

118.6

196.2 77.6 − 0.44

301.2 81.6

22.8 159.2 − 0.40

Pa. 20 Mean − 0.22

201.7 8.41

292.6 91.9 8.19

29.6 83.2

~~119.3~~ 175.1 − 0.09

112.8

− 0.00

206.0

296.2 902

24.3 949

11 12.8 119.2 185.1

1749 + 0.09

11 9.8

11 10.2

208 ≥ 0.674

11 145

−0.071

(8.1) 4 − 1 (8.4)

Jan 7, 1916

IX

P.a. 20

11 200 201.8

296.2 94.4

26.2 96.2

122.4 190.6

169.4 + 0.20

200.4

297.4 97.0 + 0.21

24.4 94.4

119.8 191.4

168.6 + 0.22

P.a. 200 Mean = 000

298.8 841

24.0 85.2 8.41

120.2 81.1

201.3 166.3 − 0.26

298.2

24.9 86.7 − 0.22

120.4 84.0

11 27.4 204.4 170.7 − 0.17

11 23.7

11 23.9

20870.683

745

−0.062

11 28

(8.1) 4 − 0 (8.4)

Jan 7, 1916

P.a. 200 — X

11 30.0 — 301.2

24.8

120.6 — 83.6

208.8 — 88.2

171.8 — 0.16

300.8

20.2 — 79.4 — −0.26

120.4 — 82.4

202.8 — 161.8 — −0.35

P.a. 20 — Mean = +0.04

200.0 — 8.41

118.6 — 98.6 — 8.45

200.2 — 99.0

299.2 — 197.6

162.4 — +0.33

23.6

120.4 — 96.8

199.3 — 101.5 — +0.34

11 37.0 — 300.8 — 198.3

11 33.5 — 161.7 — +0.35

11 33.7

20870.690

.745

11 39 (84) 1, 0 (85)

−0.055

JD 20880

Mon Jan 17, 1916

L.C.Obs. 15" E Eq.

U Cephei 005381 phot T.

A pretty cold night, but will try a few groups.

for Photom setts see fol page.

7 18 (7.2) 3, 1 (7.7) 6 (8.1) 7.6 4" finder

sequence = (7.2) 4 (7.7) 6 (8.1) 5 (8.4) 1 (8.5) 0 (8.6)

7 35 est Var. 4 (8.1) 7.7

7 48 est Var 3 (8.1) 7.8

~~7 50~~

7 56 est Var 3 (8.1) 7.8

x8 21 est Var ~~3~~4 (8.1) 7.7

x8 34 ~~54~~ est Var 2 (8.1) 7.9 5 (8.4) 7.9

9 03 est Var 2 (8.1) 5 (8.4) 7.9

9 20 est Var 2 (8.1) 5 (8.4) 7.9

Jan. 17, 1916.

~~f~~ P.a 20 I

7 25.00 − 222.4 < Var dis
282.2
39.4 59.8
101.6 62.2
122.0 − 1.15

− 221.2
288.8 67.6 − 0.99
35.5 69.5
105.0 137.1 − 0.83

P.A. 200

308.2 mean = − 1.06
10.5 62.3 8.41
132.2 58.6 7.35
− 190.8 120.9 − 1.17

309.6 − 1.14
13.6 64.0
134.8 60.2
7^{h} 33^{m} 32 − 195.0 124.2 − 1.10

7 29.3

20[illegible].520
20.717
− 0.197

Jan. 17, 1916

Pa - 200

II

07h 42 12 310.6
14.4 63.8
127.7 661
193.8 129.9 − 0.98

07 43 44 308.8
−
14.4 656 − 0.99
127.8 63.7
191.5 129.3 −1.00

Pa 20 Mean = − 0.8$\overset{5}{\cancel{4}}$
~~8.44~~
218.8 8.41
284.8 660 7.57
31.6 740
07h 46 22 10$\overset{5}{\cancel{8}}$.6 1400 − 0.77

217.2 −0.71
288.8 716 −0.6~~8~~
32.4 744
07h 47 39 106.8 1460 −0.65
−

19 117
57
07 44 59
20880.531
80.717
−0.186

Jan. 17, 1916.

	P.a 20			
07 ~~48 15~~	216.8	~~est Var~~		III
50^m 37	285.6	68.8		
	32.4	72.9		
	105.3	141.7	− 0.74	
07 51 46	213.3			
	292.0	78.7	− 0.64	
	33.3	73.6		
	106.9	152.3	− 0.53	
	P.a. 200		mean = − 0.83	
				8.41
	130.6			
	189.8	59.2		7.58
	306.2	69.4		
$07^h\ 54^m\ 35$	15.6	128.6	− 1.01	
	129.2		− 1.02	
	192.3	63.1		
	308.2	64.6		
$07^h\ 55^m\ 33$	12.8	127.7	− 1.03	

12 21

07 53 05

20880.537

80.717

− 0.180

Mon. Jan 17, 1916

P. a. 200

IV

08h 22 27 130.0
190.8 60.8
308.3 69.9
18.2 130.7 − 0.96

08h 23 44 128.0
192.4 644 — 0.95
307.7 67.6
135.3 132.0 − 0.94

P. a. 20

34.8 ~~[illegible]~~ − 0.76
108.2 73.4 0.41
213.6 73.2 7.65
26 30 286.8 146.6 − 0.64

33.3
107.7 744 − 0.58
213.3 77.9
08 27 36 291.2 152.3 − 0.53

20 17
08 25 04
20880.559
80.717
− 0.158

Jan 17, 1916

P. A. 20

08^{h}29 14	28.2		V
	108.3	80.1	
	211.6	76.6	
	288.2	156.7 – 0.44	
30 30	33.0		
	104.6	71.6 – 0.55	
	215.0	74.0	
	289.0	145.6 – 0.66	

P. A. 200

		Mean =	– 0.80
	310.0		8.41
	13.2	63.2	7.61
	127.3	66.5	
08 32 57	193.8	1297 – 0.99	
	311.2		
	14.2	63.0 – 1.04	
	129.8	62.0	
08 33 51	191.8	125.0 – 1.08	
6 32			
08 31 38			
2080.564			
80.717			
– 0.153			

Jan. 17, 1916.

P.A. 200

VII

09h 04m 13sec. 310.0
14.7 64.7
128.0 64.8
192.8 129.5 − 0.99

09 05 42 309.8
15.0 65.2 − 0.94
128.6 68.7
197.3 133.9 − 0.90

P.A. 20 mean − 0.90
8.41
212.8
288.7 75.9 magn = 7.51
42.0 60.9
9h 08 37 102.9 136.8 − 0.84

224.0 − 0.86
276.3 52.3
28.9 82.0
9 10 22 110.9 134.3 − 0.89

28 54

9 07 14

20880.588
80.717
−0.129

Jan 17, 1916.

	P.A. 20		
09h 13 43	214.3		
	286.9	72.6	
	43.0	56.8	
	99.8	129.4	–
15 20	221.2		–
	274.8	53.6	
	~~291.9~~	79.6	
	30.2	133.2	–
	109.8		
	P.A. 200	Mean –	–
	198.0		
	194.2	66.2	
	317.0	48.8	
20 06	5.8	115.0	–
	137.0		–
	188.3	51.3	
	310.6	58.2	
9 21 32	8.8	109.5	–

Reject. mixed up in 2nd ~~set~~.
Clouds near region also

Jan 17, 1916

	P.A. 200		VII
09 25 15	130.2		
	194.4	64.2	
	311.6	69.6	
	11.2	133.8	— 0.90
26 36	130.2		
	190.8	60.6	— 0.99
	312.6	64.7	
	7.3	125.3	— 1.08
	P.A. 20		
	32.2		mean — 0.66
	108.1	75.9	8.41
	209.8	80.6	magn 7.75
29 23	290.4	156.5	— 0.45
	28.8		— 0.33
	114.0	85.2	
	207.7	83.6	
9 30 32	290.3	168.8	— 0.21
31 46			
9 27 56			

20880.603
80 7.7
— 0.114

Jan. 17, 1906

P.a. 20 VIII

09 36 58 33.6
111.8 78.2
217.2 72.7
289.9 150.9 − 0.56

~~36~~
38 36 35.5 − 0.53
108.9 73.4
210.8 80.7
291.5 154.1 − 0.50

P.a. 200 Mean = − 0.68
307.8 8.41
18.2 70.4 7.73
128.0 68.3
41 10 196.3 138.7 − 0.80

308.9 − 0.82
17.7 68.8
127.8 68.0
09 42 20 195.8 136.8 − 0.80

38 54
9 39 44

20 880.611 Clouds, impossible to continue
80.717
− 0.106

2088'

Tues. Jan. 18. 1916

L.O. Obs. 15" E Eq. Phot T.

u Cephei.

005381 δ = +81.27

0303

210W + 813

P.a. 200° u with (8.4)

7 01.0 1346 < Var dis I

~~188.8~~ 542 (Var to Right)

315.8 519

77 1061 — 1.51

131.8 — 1.46

189.6 578

315.6 527

8.3 1105 — 1.41

P.a. 20° mean — 1.39

42.8 8.41

100.8 580 mag = 7.02

218.8 574 — 1.29

276.2 1154

43.4 — 1.32

98.3 549

220.0 578

7 09.0 277.8 1127 — 1.36

7 05.0

Jan. 18, 1916

U with (8.4) again

II

7 13.8	P.A. 20°		Var to Left	
	48.9			
	97.4	48.5		
	226.2	49.5		
	275.7	98.0	−1.71	
	50.0		−1.74	
	97.9	47.9		
	228.2	47.4		
	275.6	95.3	−1.77	
	P.A. 200°		Mean =	−1.91
	320.8			8.41
	0.3	39.5	Magn =	6.50
	139.6	41.6		
	181.2	81.1	−2.16	
	319.8		2.08	
	3.1	43.3		
	139.8	44.0		
7 21.0	183.8	87.3	−1.99	
7 17.4				

In all obs. preceding this date, the images have not been reversed as regards right and left side either before or after the reversal of photometer. From here on this rule will be held to, viz

$\underset{2}{R}$, $\underset{2}{L}$ | $\underset{2}{L}$ $\underset{2}{R}$ | | $\underset{2}{R}$ $\underset{2}{L}$ | $\underset{2}{L}$ $\underset{2}{R}$ |

Jan. 18, 1916

U with (8.4) III

7 25 56 316.8 P. A. 200
7.7 50.9
138.8 43.1
181.9 94.0
−1.81

317.8
5.3 47.5 −1.75
~~132.6~~
135.8 51.1
7h 28 45 186.9 98.6 −1.69

P. A. 208 mean = −1.61
7 29 30 221.9 8.41
280.4 58.5 magn = 6.80
47.2 47.2
94.4 105.7 −1.52

229.0
279.4 50.4 −1.47
39.7 59.6
7 32 32 99.3 110.0 −1.42
36 43
7 29 11

above taken first 2 sets Var right
next 6, left, next 2 right & same
order after reversal.

Jan 18, 1916

(8,1) Compared with the Var.

P. A. = 60 U. Cephei

7h 40 18 Var to Right. Var dis. 8.1 = +81.30
(1) 213.6
(2) 291.2 776 I
Var to left
(3) 39.7 629
(4) 102.6 1405 − 0.76
~~2~~
(5) 220.7 − 0.72
(6) 282.4 617
Var to R 820
(7) 28.8 1442 − 0.69
(8) 111.3 Mean − 0.99

P. A. = 240
Var to R.
126.6 68.2
194.8 545
Var to Left 1227 − 1.13
316.2
10.7 − 1.26
130.1 < Var to R
~~7h 46 29~~ 193.6 63.5
Var to L 480
318.8 111.5 − 1.38
7 48 07 6.8
) 40 ~~12~~

Jan. 18, 1916

8.1 + U

II

P.A. = 240

Var R

7^h 55 32
~~2~~ ~~54~~

122.8 (Var dis

197.7 69.9

Var L

51.6

314.8 121.5 — 1.16

6.4

135.5 50.9 — 1.20

186.4

Var R

66.4

310.8 117.3 — 1.25

12.2

P.A. 60 mean — 1.02

Var R

28.8

112.3 83.5

Var L

55.9

221.8 139.4 — 0.79

277.7

44.0 — 0.85

101.3 57.3

Var R

76.2

212.6 133.5 — 0.91

8^h 03 15 288.8

18 47

7 59 24

Jan. 18, 1916

(8.4) 8U

~~IIII~~

P.A. = 20

8h 09 11 Var R ~~38.8~~

38.8 < Var dis

99.9 61.1

Var L 49.2

226.2 110.3 −1.41

275.4

46.7

96.6 49.9 −1.36

65.4

Var R 115.3 −1.30

218.3

283.7

P.A. = 200

Mean = −1.54

8.41

magn = 6.87

Var R

133.4

189.4 56.0

Var L 39.7

323.2 95.7 −1.76

2.9

140.4 −1.71

183.8 43.4

Var R 56.6

314.8 100.0 −1.66

8 17 21 11.4

8 13 16

Jan. 18, 1916

(8.1) = +81.30
(8.4) = +81.27

(8.1) & (8.4)

I

P. a. = 160
(8.1) to Right
08h 37 24 119.6 < 8.1 dis.
198.8 79.2

(8.1) to Left 56.0
313.4 135.2 − 0.87
9.4

− 0.80

131.4
190.5 59.1
(8.1) to Right 83.2
295.5 142.3 − 0.73
18.7

mean = − 0.6^3

P. A. = 340
(8.1) to Right
~~27.2~~
25.0 84.8
109.8 70.0
154.8 − 0.48
(8.1) to Left
21~~4~~3.0 − 0.46
283.0
36.6
[illegible] 67.6
(8.1) to Right 88.8
267.7 ~~15~~6.4 − 0.45
8 48 15 296.4
8 42 50

Jan. 18, 1916

(8.1) + (8.4)

II

P.a. 340

(8,1) to Right

08h 52 10 26.2 ∠ 8.1 dis

112.8 86.6

(8,1) to Left 73.5

214.2 160.1 − 0.38

287.7

34.8

106.7 71.9 0.34

(8,1) to Right 91.7

207.1 163.6 — 0.31

298.8

P.a = 160 Mean = −0.56

(8,1) to Right

300.6

20.2 79.6

(8,1) to Left 62.9

127.7 142.5 − 0.72

190.6

307.2

11.7 64.5 — 0.78

(8,1) to Right 72.8

123.4 137.3 − 0.83

08h 58 40 196.2

8 55 25

Ledgered throughout