

KG
11365
641

12-inch

1919 —

Jan - Aug

KG 11365.641

RG 11365.641



2
g
1

21975.8

Thurs. Jan. 16-1919

1

H.C. La

12" Blau

R.C. Jr. Rec

GMT	No.		est =
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12 00	220613	Y Peg.	9.8
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	220714	R.S. Peg.	10.8
--	--------	-----------	------

	222439	S. Lac.	8.6
--	--------	---------	-----

	225914	R.W. Peg.	10.7
--	--------	-----------	------

7

	230110	R. Peg.	10.0
--	--------	---------	------

	231425	W. Peg.	9.2
--	--------	---------	-----

	231508	S. Peg.	8.0
--	--------	---------	-----

12 44	235939	S. V. Andr.	10.0
-------	--------	-------------	------

January 18th 1919.
Ph

12-33-0 Ind S. E. 021403 o c t. Phot R.
 330.8
 372.4
 148.4
 196.8
 Var. ds.
 41.6
 48.4
 90.0 - 1.91

329.7
 377.7
 148.7
 196.4
 48.0 ✓
 47.7 ✓
 95.7 ✓ - 1.76
 - 1.44

Index NW ✓ Mean = -1.72
 234.4 572
 291.6 486
 59.6 105.8
 108.2
 Magn = 9.19
 7.47
 - 1.52

- 1.60

236.4
 290.4
 58.8
 103.8
 540 ✓
 450 ✓
 99.0 ✓ - 1.68

12-37-40
 20

12 35 20

21975.

✓

Jan 16-1919

12-49 031401 X Ori est 12.5-
var seen with difficulty

001046 X And est 9.1

001726 T And est 10.2

001838 R And est 11.0

004132 R And est 9.8

004958 W And est 10.0

13 10 011712 u Pic est 10.6

12-45 Too much moon phase to
continue observing.

13-00 Cs Watch = 2 m 20^s fast by bell.

4

Friday January, 17, 1919

G. M. I.

LC Obs. Ind. S. W.

13.41-55

Start of 4th Sequence

211.6 105.6 ✓

317.2 888 ✓

38.4 194.4 ✓

127.2 165.6 ✓

x d ans.
0.27

215.4 984 ✓

303.8 962 ✓

35.2 194.6 ✓

131.4 165.4 ✓

- 0.28

0.28

Ind. N. E

120.2 99.2

219.4 79.9

315.2 169.1

35.1 179.1

+ 0.02

128.4 84.9

213.3 92.5

303.8 177.4

36.3

+ 0.04

+ 0.05

47
1348-45

13 44 50

b is therefore brighter than d
by 0.12 mag.

Jan. 17 - 1919

Ind. S. R. Training 023133 Phot R
 13-57-20 57.2 Var. Dis. Comp $\mu = 9.7$ mag μ .
 91.7

242.7 34.5 ✓
 265.2 22.5 ✓
 57.0 — 298

58.8 24.4 ✓ - 3.16
 83.2 24.4 ✓
 239.2 48.8 — 3.33
 263.6

Ind. N ✓ Mean = -3.32
 328.8 24.1 ✓
 352.9 20.1 ✓
 151.6 44.2 — 354
 171.7

328.5 22.8 ✓ - 3.48
 351.3 23.7 ✓
 145.2 46.5 — 3.43
 168.9

14-216
 9 36
 13 59 48

14 00 Cs watch = 3^m 35^s fast by bell

6

Jan 17, 1919

Ind. W. 024556 W. Persei
 14-8-50 2978.1 comp * 0.65 26 ✓
 370.4 73.8 ✓
 119.4 146.4 + 0.65 ✓
 193.2

Plut R.

✓ + 0.68
 292.2 71.4 ✓
 363.6 71.4 ✓
 117.4 142.8 + 0.72 ✓
 188.8

Ind. E. ✓ mean = +0.70
 206.6 68.6 ✓
 275.2 71.1 ✓
 22.6 139.7 + 0.72 ✓
 93.7

✓ + 0.71
 204.4 73.3 ✓
 277.7 73.5 ✓
 20.4 146.8 + 0.64 ✓
 93.9

14-13-20

14 11 05

January, 17, 1919

Phot. R.

Ind E T Arietis 024217
 14-28-45 93.6 ~~conf~~ ~~far~~ ~~dis~~
 197.8 104.2
 276.2 103.1
 19.3 207.3 $\times -0.52$
 152.7

94.2 103.5
 197.7 98.6
 276.8 202.1
 15.4 157.9 $\times -0.42$
 $\bar{x} = 0.47$

Ind. W. Mean $\bar{x} = 0.62$
 353.2 9.12
 111.8 118.6
 177.2 109.0
 286.2 227.6
 132.4 $\bar{x} = 0.93$
 $\bar{x} = 0.62$
 $\bar{x} = 0.36$
 $\bar{x} = 0.02$
 $\bar{x} = 0.5$

355.3 103.6 108.3
 174.4 114.8
 289.2 223.1
 136.9 $\bar{x} = 0.88$
 $\bar{x} = 0.84$

14 26 48

8

Fri Jan 31, 1919

H.C. Alb. & Re 12" Polar

Decl wire broken, so observing
is impossible tonight.

Mar Feb 2-1899

LCCB 12" Blue

Sunt

O Ceta
North

021403

Photo R

Abdell-2A

11 30

267.4 (Vardus)

330.4

63.0

86.3

63.9

150.2

126.9

- 1.04

265.0

333.6

64.6

- 1.05

89.6

57.6

147.2

126.2

- 1.06

South

Mean = -1.00

175.2

244.7

69.5

Magn = 2.19

359.4

65.8

65.2

135.3

- 0.87

177.2

243.8

66.6

- 0.94

0.2

62.4

11 37

62.6

129.0

- 1.00

11 34.5

21992.

10

Feb. 2-1919.

11 40 V Can 230759 est 10.2
 Z And 232844 est 11.0
 ST And 233335 est 9.4
 Z Can 233956 est 12.1
 RR Can 235053 est 12.2
 R Can 235053 est 12.7
 Z Peg 235525 est < 12.8
 Y Can 235755 est 13.2
 X Androm 001086 est 8.8
 T Can 001755 est 9.5
 T And 001726 est 12.2
 R And 001838 est 11.6
 U Can 004047 est 12.8
 RW And 004132 est 8.5
 W Can 004958 est 10.3

21992.9 ✓

Feb. 2-1909.

12.20 U Pisc 011712 est 13.0

Z Ceti 010102 est 12.8

U And 010940 est < 12.8

U Z And 011041 est 12.2

RZ Per 012350 est 11.7

R Pisc 012502 est 12.8

R And 021024 est 12.0

R And 013238 est 10.1

Y And 013338 est 12.0

X Car 014958 est no star seen at place
of X < 12.5 Var? = 10.6 other var? = 11.4

U Per. 015350 est 10.4

RP Per 022150 est 11.1

Y Per 032043 est 8.4

W Per 024356 est 9.8

R Tring 023133 est 7.0

12

2¹ 9² 2.7

Feb. 2-1919

W And 021143 < 12.9

U And 030574 est 12.0

R Per. 032335 est 12.7

T Tauri 041619 est 10.3

R Tauri 042209 est 9.6

J S Tauri 042207 est < 12.8

W Tauri 042215 est 9.3

RX Tauri 043208 est 13.2

R Lepora 045574 est 8.8

V Orion 050003 est 9.3

T Lepor. 050022 est 8.3

R Aurig 050953 est 8.8

S Orion 052404 est 9.3

T Orion 053002a est 10.2

U Aurig 053531 est 9.8

Feb. 2 - 1898

U Quor 054920 est 12.2

R Quor 045307 est 11.6

S Amiga 052034 est 10.9

Z Amig 055353 est 11.3

X Amig 060450 est 8.6

13 30 SS Amiga 060547 est 12.8 if correctly ident.

V Amig 061647 est 10.8

V Mon 061702 est 11.2

13 40 U Gam 074922 est < 13.2

13 55 SS Amiga 060547 est 12.7 surely using

14

21993.7

Mon Feb. 3, 1919LC OB⁴ Rec 12" PolarG.M.T.
12 05-

S S Aurigae 060547 est 10.8

065208 X Monoc est 9.8

R Lyrae 065355- est 11.3

V Can Min 070109 est 12.3

R Gem 070122 est 9.3

R Can Min 070310 est 8.2

RR Mon 071201 est 13.0 if seen?

S Can Min 072708 est 12.2

U Can Min 073508 est 11.4

S Gem 073723 est 12.1

T Gem 074323 est 9.4

U Puffis 075612 est 9.8

R Cancer 081112 est 9.0

V Cancer 081617 est 7.7

21993.8

Feb. 3-1919

13
+ 30

U Cauri 083019 est 10.1

X An May 083350 est 11.1

S Hydree 084403 est 12.2

T Hydree 085008 est 7.8

T Cauri 085720 est 8.9

R Leonis 094211 est 10.1

X Hydree 093014 est 12.7

R Leo Min 093934 est 7.1

V Leonis 095421 est 12.2

W Leonis 104214 est 11.2

14 10 S Leonis 110506 est 10.7

16

2' 99.5.7

Wed. Feb. 5, 1919

gmt

LCCb.

12' Polar

12 20

SS Amigae 06.547 - est 11.3

0 Ceto

021403

Polar R.

South

12 260

173.5 < Var Dis

242.6

6.0

69.0

53.8

59.8

122.8

- 1.13

177.6

237.8

60.2

- 1.12

355.6

64.2

59.8

124.4

- 1.10

North

Mean = - 1.16

90.0

149.8

59.8

7.19

270.2

59.6

329.8

119.4

- 1.21

90.2

142.2

52.0

- 1.20

265.2

64.6

12 320

333.8

120.6

- 1.18

12 29.0

Feb 5-1919

R Arietis - 021924 est 10.9

R Ceti 022000 est 12.2U Ceti 022813 est (in trees)

18

Thurs Feb. 6, 1919

L.C. Ob 12" Polar

21 9 96.
Sun T

12 00

S.P. Amper 6057-11.8

O Ctr 021403 Plot R

North

12 200 265.2

337.3

84.3

153.8

721

69.5

141.6 - 0.74

267.6

329.6

80.6

156.3

62.0

75.7

137.7

- 0.78

- 0.82

South

179.3

246.2

355.5

63.2

66.9

67.7

134.6

- 0.88

177.8

241.4

0.6

60.6

63.6

600

123.6

- 1.11

12 260

12 230

Mean = - 0.89

919

Range = 2.30

1.50

Feb. 6 - 1919.

T Case 001755 Phot R.

Too far west

R. Traip 023133 Phot R.

South - pure 9.7

12 36.0

105.2 \leftarrow van der

129.4 24.2

~~288.8~~ 21.2

310.0 45.4

- 3.49

108.4

- 362

128.4 20.0

~~288.6~~ 20.6

309.2 40.6

- 374

Mean = - 3.75

North

19.8

36.8 17.0

199.6 20.6

220.2 37.6

- 391

19.8

39.8 20.0

- 388

199.7 18.5

12 42.8 218.2 38.5

- 385

Feb 6 - 1919

1 Arctis 024217 ~~est~~ Plot R.

West comp with 9)

12 52.8

0.6	< van der
57.7	57.1
179.6	57.0
	<u>1</u>
236.6	154.1 - 1.32

3.3	
60.8	57.5 - 1.26
179.8	62.4
242.2	119.9 - 1.19

East

Mean = 1.28

262.6

329.2

60.6

Mean

8.7

8.4

92.2

57.2

143.4

111.8

- 1.38

266.6

330.2

63.6

- 1.30

89.2

55.0

144.2

118.6

- 1.22

13 00.0

Feb. 6-1919.

W. Persei 024356 ~~not~~ Plot R

East
13 6.0 15.2.6 < ~~Comp~~ ~~Var~~ ~~dis~~ Comp with 9.2
260.4 107.8
340.4 100.2
So. 6 20.80 ± 0.54
152.0

154.4
263.6 109.2 ± 0.60
338.4 105.2
A 3.6 21.44
145.6 ± 0.66

West
Mean = ± 0.66

61.2
171.4 110.2
246.6 111.7
358.3 221.9
138.1 ± 0.81

67.2
171.7 104.5
246.3 109.0
355.3 213.5
146.5 ± 0.64

Var surely disappeared in
above observations.

22

21796.7

Feb 6-1919.

R Deneb 032335 - est 12.3

R Tauri 042209 est 9.8

(3 35 S Tauri 042309 - est < 12.4

15 30 S U Vir 120012 est 11.4

S S Vir 122001 est 7.8

T Car Ven 122532 est 11.3

B Vir 12330) Est 10.1

16 00 U Vir 124606 est 8.1

21997.7

Thi. Feb 7, 1919.

L.C. Alb 12" Polar.

gmt.

13 10 SS Aurigae 06054) est 12.3

Mon #Tel 10-1919

PCds 12" Plan

mut

12 00

An exam. of the region about Jupiter reveals no comet or supported by Graham, but it looks as though he has been seeing ghosts in the telescope.

12 05

SS Amigae 060547 < 12.0

Moon quite bright region does not show faint stars

Trues Feb. 11 - 1919

25

Emt. 12 00 LCClt 12" Polar CC, h Rec
 H. 3424 = 31" fast by bell.

D Jap III comp with Sat on opposite
 side. Probability = Sat. I
 Plot R.
 12" Polar.

Emt.	Reading	Sat I disappearing
12-21-48	350.2	
22-2	66.8	76.6
22	349.2	79.0
38	68.2	155.6 + 0.47
49	346.3	

Emt.	Reading	Sat I disappearing
23-3	82.0	95.7
21	346.2	92.8
36	79.0	188.5
50	344.3	171.5 - 0.16
24-4	73.2	88.9

Emt.	Reading	Sat I disappearing
18	349.8	91.6
31	81.4	180.5
43	343.8	172.5 - 0.01

Emt.	Reading	Sat I disappearing
25-2	75.8	92.0
18	346.6	97.2
39	83.8	189.2
53	347.9	170.8 - 0.17

Emt.	Reading	Sat I disappearing
26-7	76.6	88.7
22	347.6	89.6
38	77.2	178.3 + 0.03

Feb. 11-1919

$$\begin{array}{r}
 58 \quad 77.2 \\
 53 \quad 342.2 \\
 1227-6 \quad 76.0 \quad 938 \\
 21 \quad 344.4 \quad 962 \\
 \hline
 36 \quad 80.6 \quad 190.0 \\
 1227 \quad 14 \quad 160.0 \\
 1226 \quad 44 \quad -0.38
 \end{array}$$

$$\begin{array}{r}
 47 \quad 339.8 \\
 28-0 \quad 78.8 \quad 99.0 \\
 14 \quad 341.2 \quad 103.2 \\
 27 \quad 84.4 \quad 202.3 \\
 \hline
 122806 \quad 38 \quad 343.8 \quad 157.7 \\
 122736 \quad -0.43
 \end{array}$$

$$\begin{array}{r}
 50 \quad 79.2 \quad 95.4 \\
 29-3 \quad 342.8 \quad 101.4 \\
 122852 \quad 16 \quad 84.2 \quad 195.8 \\
 122828 \quad 28 \quad 339.8 \quad 164.2 \\
 42 \quad 83.2 \quad -0.30
 \end{array}$$

$$\begin{array}{r}
 103.4 \\
 122948 \quad 34 \quad 338.8 \quad 102.6 \\
 122912 \quad 30 \quad 7 \quad 81.4 \quad 2060 \\
 20 \quad 339.8 \quad 1540 \\
 30 \quad 81.6 \quad -0.50 \\
 101.8
 \end{array}$$

$$\begin{array}{r}
 123045 \\
 123015 \\
 30-58 \quad 347.8 \quad 931 \\
 13 \quad 80.2 \quad 1949 \\
 28 \quad 343.0 \quad 1651 \\
 41 \quad 73.2 \quad -0.26
 \end{array}$$

Feb. 11 - 1919

$$\begin{array}{r}
 12\ 31\ 45 \\
 12\ 31\ 15 \\
 \hline
 12\ 32 - 1 \\
 13 \\
 25 \\
 35
 \end{array}
 \begin{array}{r}
 339.4 \\
 78.8 \\
 339.8 \\
 73.8 \\
 346.4
 \end{array}
 \begin{array}{r}
 90.2 \\
 101.4 \\
 191.6 \\
 \hline
 168.4
 \end{array}
 - 0.22$$

$$\begin{array}{r}
 12\ 33\ 30 \\
 12\ 32\ 00 \\
 \hline
 46 \\
 357 \\
 38 - 6 \\
 17
 \end{array}
 \begin{array}{r}
 80.0 \\
 349.3 \\
 71.7 \\
 344.4
 \end{array}
 \begin{array}{r}
 94.0 \\
 93.6 \\
 187.6 \\
 \hline
 172.4
 \end{array}
 - 0.14$$

$$\begin{array}{r}
 12\ 33\ 17 \\
 12\ 32\ 47 \\
 \hline
 37 \\
 47 \\
 456 \\
 38 - 9
 \end{array}
 \begin{array}{r}
 76.9 \\
 343.9 \\
 67.0 \\
 346.8
 \end{array}
 \begin{array}{r}
 84.4 \\
 92.5 \\
 176.9
 \end{array}
 + 0.06$$

$$\begin{array}{r}
 37 \\
 47 \\
 456 \\
 38 - 9
 \end{array}
 \begin{array}{r}
 76.9 \\
 343.9 \\
 67.0 \\
 346.8
 \end{array}
 \begin{array}{r}
 83.1 \\
 84.8 \\
 167.9
 \end{array}
 + 0.23$$

$$\begin{array}{r}
 12\ 34\ 3 \\
 12\ 33\ 33 \\
 \hline
 20 \\
 31 \\
 40 \\
 50
 \end{array}
 \begin{array}{r}
 71.6 \\
 351.0 \\
 70.0 \\
 350.6
 \end{array}
 \begin{array}{r}
 79.0 \\
 85.2 \\
 164.2
 \end{array}
 + 0.30$$

$$\begin{array}{r}
 12\ 34\ 46 \\
 12\ 34\ 16 \\
 \hline
 345 \\
 12 \\
 29 \\
 35
 \end{array}
 \begin{array}{r}
 75.8 \\
 352.4 \\
 71.2 \\
 353.6
 \end{array}
 \begin{array}{r}
 78.8 \\
 71.2 \\
 150.0
 \end{array}
 + 0.48$$

Feb 11-1919

12 35 58	45	64.8	69.7	139.4	+ 0.79
12 36 10	355.1	66.1	132.2	0.93	
12 36 46	22	61.2	64.4	128.8	0.00
56	30	356.8	65.2	130.4	0.97
12 36 46	90	62.0	73.4	146.8	0.64
36 85					

12 36 46	50	348.6	70.2	140.4	0.77
12 36 46	2	58.8	60.0	120.0	1.19
44	10	358.8	61.2	122.4	1.14
37 82	28	60.0	60.0	120.0	1.19
*10	35	0.0	60.0	120.0	1.19

12 38 32	44	60.0	61.0	122.0	1.15
46	55	359.0	59.0	118.0	1.24
28	9	55.0	51.7	103.4	1.57
38 89	24	3.3	47.9	95.8	1.76
	33	51.2	45.0	90.0	1.91

12 38 56	45	6.2	41.0	82.0	2.14
39 49	30	47.2	27.0	54.0	3.10
39 40	51	20.2	24.9	49.8	3.28
		45.1	17.3	34.6	+ 4.10

12 39 57	3	27.8			
#8		gone			

Feb. 11-1909

L.V.

12-42 51 191.0

43 15 226.0

32 196.0

1243 45 219.8

83

35.0

23.8

58.8

+ 2.91

12 43 21

12 42 51

Sat III disappeared quite close
to limb of Jupiter, making
observations quite difficult. Sat
III had only a short time before
reappeared from occultation.

13 00 $H' 3424 = 30^{\circ}$ — fast by Bell.

Reappearance of Jup. III. L. b. Obs. Bowie Dec.
Not possible to use Phot as no data were available
2-inch eye piece used on 12-inch Polar

15

10 47 57

15 48 19

Suspected

Surely seen

Seeing excellent

16 00 $H' 3424 = 30^{\circ}$ — fast by Bell

30

Sun. Feb. 16-1909

200lb

12" Polar

HTC Rec

Dir Jap IV.

Phot R.

G.M.T.

14 40 30 252.2

Comp with mean

14 41 07

~~58~~ 53 326.3

741 of two Sat. on same

14 40 38

41 25 252.2

744 side = Sat. II

40 326.6

1465 + 0.61

55 350.3

14 42 2

47 8 326.3

760

14 41 33

25 248.2

802

42 328.4

1562 + 0.45

56 253.3

14 43 12

43 1 325.2

719

14 42 43

19 255.0

742

33 329.2

146.1 + 0.65

47 251.0

56 323.2

722

14 44 0

44 3 254.4

754

14 43 31

12 329.8

147.6 + 0.62

27 252.2

14 44 00

36 331.4

792

14 44 11

44 251.1

777

52 328.8

156.9 + 0.44

45 252.2

10 334.0

81.8

14 45 15

20 250.6

774

14 44 46

28 328.0

159.2 + 0.40

39 250.2

elab

Feb. 16 - 1919

G.M.T.

	14 46	33	327.2	770	
		46	251.6	782	
14 46 28		54	329.8	1552	+ 0.47
14 45 59	47	4	252.4		
		14	324.8	724	
14 47 18		23	252.0	780	
14 46 49		31	330.0	1504	0.57
		41	252.4		
		57	327.4	750	
14 48 01	48	8	254.0	752	
14 47 31		17	329.2	1502	0.57
		29	252.2		
		36	328.6	764	
14 48 42		48	251.2	788	
14 48 13		56	330.0	1552	0.47
	49	4	250.8		
		14	329.4	786	
14 49 24		25	250.4	778	
14 48 52		40	328.2	1564	0.45
		50	251.4		
14 50 44		59	328.2	768	
14 49 35	50	9	254.4	719	
		19	326.3	1487	0.60
		29	252.2		
		38	329.4	772	
14 50 41		42	252.1	771	
14 50 12		56	331.2	1543	+ 0.49
	51	4	249.8	768	
	11		326.6		

Feb. 16-1919

14 51 20 14	51	23	252.6	77.0	
14 50 51	42	329.6	153.8	+ 0.50	
	59				
	52	25	255.0		
14 52 42	32	330.8	75.8		
14 52 13	49	250.8	80.6		
	53	40	331.4	156.4	0.65
	53	14	253.3		
	21	323.6	70.3		
14 53 27	32	253.6	76.6		
14 52 50	41	330.2	146.9	0.64	
	50	252.4			
14 54 09	54	326.4	74.0		
53 40	54	17	252.2	73.6	
	25	325.8	147.6	0.62	
	33	251.8			
56 44	41	328.6	76.8		
54 15	49	254.2	75.4		
	53	329.6	152.2	0.53	
	55	8	253.2		
	15	327.4	77.2		
55 21	27	253.6	72.6		
54 52	35	326.2	149.8	0.58	
	45	252.5			
	54	327.6	75.1		
14 56 00	56	7	250.8	76.4	
55 31	16	327.2	151.5	+ 0.55	
	30	253.3			
	39	326.2			

Feb 16 - 1919

14 56 45	14 56	50	254.8	729	
56 16	57	0	326.2	<u>714</u>	
		16	253.2	144.3	+0.69
		19	326.2	730	
57 27		29	253.2	<u>766</u>	
56 58		38	331.2	147.6	0.58
		51	329.8		
	58	26	250.2		
58 44		38	328.2	780	
58 15		50	248.8	<u>796</u>	
	59	4	326.4	153.6	0.47
		16	251.8		
59 33		27	325.8	740	
59 04		39	253.2	<u>739</u>	
		51	327.1	147.9	0.62
	80	0	252.2		
15 00 17		10	329.8	776	
59 46		25	253.3	<u>765</u>	
		34	329.8	154.1	0.50
		45	252.2		
		56	328.0	758	
01 01	81	6	252.1	<u>787</u>	
15 00 32		16	330.8	114.5	0.49
		26	250.0		
		37	327.2	772	
01 44		49	252.1	<u>787</u>	
01 15	82	6	330.8	155.9	+0.46
		17	253.2		
		31	327.8		

34

Feb. 16-1919

					746	
15	02	37	15	X2 45	2540	72x
	02	f		55 55	326.4	147.0 +0.63
				X3 5	254.4	
				23	326.0	71.6
03	27			35	256.2	69.8
02	58			45	326.0	141.4 +0.75
				56	256.1	
04	10			X4 6	326.3	70.2
03	41			15	2540	723
				24	326.3	142.5 +0.72
				35	256.4	
				48	327.2	70.8
04	54			5	0	255.2
04	25			65 14	325.5	70.3
				25	257.4	141.1 +0.75
				33	329.2	71.8
05	39			44	255.8	68.4
05	10			54	324.2	140.2 0.77
				X6 4	257.7	
				14	321.0	62.3
06	28			26	257.0	67.8
05	51			37	324.8	131.1 0.96
				53	258.2	
07	17			X7 9	321.0	62.8
06	48			21	261.4	59.6 1.14
				34	321.0	122.4
				46	262.4	
15	08	12		8 0	320.0	59.6
07	43			18 18	260.4	58.8
						116.4 +1.27

Feb 16-1919

35

15	2	15	8	43	319.2	56.4	112.8	+1.35
	33							
8	02			55	262.8	51.4	102.1	1.59
	48							
	7	9	10		314.2	51.3	102.6	1.59
	01			24	262.9	51.1	102.2	1.60
	36							
	11			36	314.0	49.1	98.2	1.68
	44							
	26							
	53			45	264.9	53.1	106.2	1.51
9	36	10	1		318.0	52.2	108.4	1.55
10	05							
	47			9	265.8	47.2	98.4	1.80
	16							
	59			22	313.0	48.1	96.2	1.75
	28							
				35	264.9	48.1	96.2	1.75
10	14							
	43			51	313.0	48.0	96.0	1.76
	26							
	41	11	4		265.0	47.2	98.4	1.80
11	10							
	55			17	312.2	45.0	90.0	1.91
	24							
	2			30	267.2	43.7	87.4	1.98
	36							
	21			43	310.9	41.5	83.0	2.11
	58							
	35			57	269.4	40.8	81.6	2.15
12	44							
	49	12	12		310.2	40.4	80.8	2.17
	18							
	3			24	269.8	39.4	78.8	2.23
12	32							
	15			39	309.2	38.8	77.6	2.27
	44							
	27			50	270.4	38.4	76.8	2.29
	56							
12	41	13	2		308.8	38.3	78.6	2.24
13	10							
	56			18	270.5	38.2	76.4	2.30
	25							
	19			32	308.7	35.5	71.0	2.47
13	08							
	22			45	273.2	33.9	67.8	2.58
	51							
	33			57	307.1	34.3	68.6	2.55
13	02							
14	44	14	7		272.8	33.3	66.6	2.62
	13							
	57			19	306.1	33.2	66.4	2.63
	20							
	7			32	272.9	32.0	64.0	2.71
14	36							
					304.9			

36

Feb. 16-1909

15	14	19	15	41	41	304.9	29.8	59.6	+287
	15	33		56		275.1	29.9	59.8	287
		41		9		305.0	30.1	60.2	286
		10		21		274.9	27.3	58.6	307
		2		41		302.2	22.4	46.8	352
		15		54		2798	$\left\{ \begin{array}{l} \text{shot removed} \\ 3'' \text{ in piece wanted} \end{array} \right.$		
15	16	11		49	40	seen			
		31		56	0	seen			
		45			14	seen			
		53			22	seen			
	17	1			30	seen			
		9			38	seen			
		19			48	seen			
		29			58	seen			
		49	18		18	susp.			
	18	00			29	seen			
	18	09	15	18	38	gone			

L.V.

15	26	31	302.2	22.4	
		48	2798		
15	27	00	27	15	2992
		29			19.4
15	26	31	15	27	24
					2798
					41.8
					+367

Troubled by clouds at times
during early part of observations.

15 35 00 F 3425 = 29² fast by clock.

Feb 16-1908

17. 36 00 Prod $3 \times 24 = 29^2$ fact by clock.

Reap Jup IV 12" Polar

Compare with Sat II same as used
in previous observations100 Ah
Bowie Rec.

17	49 04	Susp.				
17	49 06	Seen				
17	50 24	119.4	134	37.6	39.7	46.5
	50	108.6	119.3	38.6	41.0	49.3
50	51 05	117.9	15.3	30.6	43.6	
	18	102.6	18.4	36.8	39.5	
51	31	121.0	22.2	44.4	35.4	
	45	98.8	21.0	42.0	36.6	
52	57	119.8	21.9	43.8	35.7	
	52 11	97.9	24.8	49.6	3.29	
52	23	122.7	26.3	52.6	31.6	
	36	96.4	25.6	51.2	3.22	
	49	122.0	26.0	52.0	3.18	
52	59	96.0	25.4	50.8	32.4	
	53 10	124.4	25.6	51.2	32.2	
	21	95.8	29.4	58.8	2.91	
53	31	125.2	31.4	62.8	2.76	
	43	93.8	32.1	64.2	2.71	
	55	125.9	31.1	62.2	2.78	
	54 8	94.8	39.2	58.4	2.92	
	19	124.0	31.3	62.6	2.76	
		92.7				

Sun. Feb. 16, 1919

17 54 ⁶ 35	17 54 30	92.7	33.9	67.8	+2.58
¹⁵ 44	40	126.6	34.5	69.0	2.54
17 54 ²⁵ 54	49	92.1	33.4	66.8	2.61
	59	125.5	33.7	67.4	2.59
	55 9	91.8			
55 26	20	129.6	37.8		
54 55	32	90.9	<u>38.3</u>		
	43	129.2	76.1	+ 2.31	
	55	88.4			
56 18	56 15	130.1	41.7		
55 49	25	90.8	<u>39.3</u>	2.17	
	39	130.1	81.0		
	50	87.4			
57 10	57 3	133.1	45.7		
56 41	16	87.6	<u>44.2</u>	1.92	
	30	131.8	89.9		
	40	90.2			
57 57	52	132.2	42.0		
57 28	58 3	87.0	<u>45.9</u>	+1.97	
	13	132.9	87.9		
	23	85.9			
58 39	32	136.4	50.5		
58 10	44	83.4	<u>51.0</u>	1.62	
	56	134.4	101.5		
	59 8	89.2			
59 20	20	137.7	48.5		
58 51	30	86.0	<u>48.4</u>	+ 6.73	
	41	134.4	96.9		

Sun. Feb. 16 1919

	17 59 51	84.0		
18 00 10	18 00 1	135.8	51.8	
1) 59 41	13	82.8	<u>52.4</u>	+ 1.55
	26	135.2	10x.2	
	34	84.8		
00 46	44	138.8	54.0	
00 17	55	85.1	<u>53.8</u>	
	01 2	138.9	107.8	1.47
	30	81.2		
01 44	40	138.9	57.7	
01 15	48	80.4	<u>6.04</u>	
	57	140.8	118.1	1.23
	02 7	78.1		
	15	140.0	61.9	
02 21	27	80.0	<u>81.2</u>	
01 52	36	141.2	123.1	1.13
	46	79.8		
	57	140.8	61.0	
03 03	03 8	80.0	<u>61.7</u>	
02 34	21	141.7	122.7	1.13
	32	78.8		
	41	142.0	63.2	
03 46	52	78.0	<u>64.4</u>	
03 17	59	142.4	127.6	1.03
	04 09	76.6		
	22	143.3	66.7	
04 25	31	78.0	<u>65.8</u>	
03 56	39	143.8	132.5	+ 0.93

Sun Feb. 16 1919

	18	04	49	75.9		
			59	143.0	67.1	
18	05	4				
	04	35	05	9	75.2	67.6
			21	142.8	138.7	*0.88
			31	78.0		
			45	144.0	66.0	
05	50					
05	21		55	77.8	60.2	
			06	8	138.0	126.2
			28	74.2		1.06
06	44		39	144.8	70.6	
06	15		50	71.8	74.2	
			07	01	146.0	144.8
			24	77.0		0.68
			35	144.8	67.8	
07	40		44	72.9	72.5	
07	11		54	145.4	140.3	0.77
			08	06	72.2	
08	21		18	146.0	73.8	
07	52		26	73.9	74.1	
			34	148.0	147.9	0.62
			49	74.4		
			58	146.8	72.4	
08	04					
08	35		09	10	72.2	75.6
			21	147.8	148.0	0.61
			30	70.0		
			39	147.9	77.9	
08	09	44	50	73.4	74.8	
09	15		59	148.2	152.7	0.52

Sun. Feb. 16, 1919.

	18	10	58	72.0		
18 11 14		11	10	149.8	77.2	
18 10 45			21	70.0	80.0	
			29	150.0	157.8	+0.42
			38	69.9		

			47	150.7	80.8	
12 51			55	69.8	79.4	
11 22			12	5	160.2	0.38
			12	70.0		

			20	150.0	80.0	
12 24			29	68.2	82.0	
11 55			36	150.2	162.0	0.34
			45	71.2		

			54	148.8	77.6	
12 59			13	5	80.1	
12 30			12	148.9	157.7	+0.43

L.V.

	13	34	96.8			
18 13 52		46	107.0	20.2		
18 13 23		59	96.1	21.0		
	14	11	117.1	41.2	+37.0	

No clouds.

42

Wed Feb 19-1919

Rock 12" Polar Phot-R

G.M.T.

11 33.0

	0	Calc.	0.21403
Index North			
255.3	Varialis		
322.2	66.9		
70.3	81.9		
152.2	<u>148.8</u>	-	0.60

248.8			
333.3	84.5		- 0.62
80.8	61.9		
142.7	<u>146.4</u>	-	0.61

Index South

Mean = - 0.69

172.2			
231.8	59.6		
345.5	74.1		
59.6	<u>133.7</u>	* -	0.90

9.19
<u>2.50</u>

166.4			
242.2	75.8		- 0.76
342.2	<u>71.5</u>		
53.7	147.3	-	0.63

11 39.0

11 36.0

22009

Feb. 19-1919.

43

RWand 004132 est 8.9

RZ Per 012350 est 9.7

RMand 013238 est 10.8

d Per 015354 est 10.8

Raurt 021024 est 8.9

RCet 022000 est 9.0

RRPer 022150 est 11.9

RTray 023133 est 6.8

WPer 024356 est 9.0

Uaurt 030514 est 10.6

XCet 031401 est 9.4

032335 RPeru est 9.9

TTauri 041619 est 10.4

RTauri 042209 est 9.4

STauri 042309 est 12.9

WTauri 042215 est 9.5

Feb. 19 - 1919

T Camelopard 043065 - est 10.0

V Tauri 044617 est 10.2

R Quon 045307 est 11.1

R Leporis 045514 est 8.0

V Quon 050003 est 10.9

T Lepor. 050022 est 8.4

R Arctis 050953 est 8.0

W Arctis 052056 est 12.0

S Quon 052404 est 8.9

T Quon 053000 est 10.0

W Arctis 053531 est 10.0

W Quon 054920 est 12.2

X Arctis 060450 est 8.4

V Arctis 061647 est 11.1

Feb. 19-1909

45

U Lyrae 063119 est 10

S Lyrae 063538 est 11.1

P^h Amiga 060547 est 12.9

U Gama 074922 est 13.0

* f with (H L Sun) Plot R

East

13 0.0

157.2	< d dis	: * b = brighter
251.6	100 %	
338.6	23.0	-
61.6	123.4	* 0.06
151.8	176.6	
243.6	91.8	* 0.06
339.4	9.06	
71.0	182.4	* 0.05
West	177.6	mean = * 0.21
53.6		
165.8	1122	
246.6	900	
336.6	202.2	-
66.6	157.8	* 0.42
154.2	87.6	* 0.36
234.4	108.8	
343.2	196.4	* 0.31
	163.6	

13 5.0
13 2.5

46

Feb. 19-1919

13:08.00 RZ Tami 043018 Shorter Var
 Index West
 149.6
 247.2
 343.6
 59.2
 173.2
 $\bar{x} = 0.13$

159.4
 242.2
 336.3
 70.0
 176.5
 $\bar{x} = 0.10$
 $\bar{x} = 0.06$

Index East
 56.4
 158.2
 245.6
 345.8
 101.8
 100.2
 202.0
 105.80
 $\bar{x} = +0.09$
 $\bar{x} = 0.42$

68.2
 156.8
 242.2
 340.2
 156.6
 98.0
 186.6
 173.4
 $\bar{x} = 0.28$
 $\bar{x} = 0.13$

22009.549
 9.514
 0.035
 Var = North 42 stars
 Group = South 42 stars

Feb. 18-1897

47

RZ Tauri 04 3014 II
 Index east
 13 1610 340.8 ^{comp} middle * obs.
 61.2 fox
 153.8 86.4
 240.2 166.8 + 0.25

338.8
 67.4 88.6 + 0.14
 156.3 90.5
 246.8 179.1 + 0.02

Index west Mean = + 0.00
 238.4
 334.0 95.6
 65.6 93.6
 159.2 189.2
 170.8 * 0.1)

245.2
 342.3 97.1
 68.4 87.8 * 0.13
 13 2200 156.2 184.9
 175.1 * 0.09
 13 1905

2200.55
 514
 041

48

Feb 19 - 1869

13 26 30	Index	West	
	243.2		
	340.2	97.0	
	61.2	<u>1000</u>	
	161.2	187.0	
		<u>163.0</u>	
			$\bar{x} = 0.32$

242.0		
338.8	96.8	
67.4	<u>85.2</u>	
152.6	182.0	
	<u>178.0</u>	
		$\bar{x} = 0.18$

Index East	Moon = $\bar{x} = 0.08$
------------	-------------------------

153.6		
240.2	21.6	
336.4	<u>86.2</u>	
62.6	172.8	$+ 0.14$

159.4		$+ 0.16$
-------	--	----------

13 33 50	242.2	82.8	
	337.4	<u>87.6</u>	
	65.0	170.4	$+ 0.18$

13 30 10

22009.568
514
<u>.048</u>

Feb. 19-1908

RZ Tauri.

Index East

III

13 3800

153.6

240.4

87.2

336.6

82.9

65.5

176.1

+ 0.07

1

154.2

+ 0.12

245.6

91.4

340.4

80.4

60.8

171.8

+ 0.16

Index West

Mean = \bar{x} 0.08

65.8

1510

85.2

2355

1057

341.2

140.9

169.1

 \bar{x} 0.20

56.2

1620

105.8

244.2

93.0

337.2

192.2

161.2

 \bar{x} 0.36

13 4450

13 4125

22009.570

514

.056

50

Feb 19-1899

RZ Tauri

~~II~~ IV

Index West

13 54 45 61.4

149.6

82.2

232.6

99.8

332.4

188.0

1720

- 0.15

61.2

154.2

93.0

234.8

103.8

332.6

196.8

163.2

- 0.32

Index East

333.2

61.6

82.4

152.2

93.5

245.7

181.9

178.1

- 0.03

329.4

63.2

93.8

155.6

84.4

+ 0.00

14 01.20

2400

178.2

+ 0.03

6 5

13 58 2

22009.582

814

.068

14 00

Circumference = 30² feet by bell

Feb. - 19-1919

RZ Tauri

	Index	East	# VI
14 of 40	337.6		
	58.4	80.8	
	152.2	<u>276</u>	
	239.8	168.4	$\bar{x} = 0.22$

337.2			
62.6	84.8	$\bar{x} = 0.18$	
151.1	<u>277</u>		
232.2	172.5	$\bar{x} = 0.14$	

Index West		Mean = $\bar{x} = 0.16$
237.4		

333.3	95.9	
61.0	<u>91.2</u>	
152.2	787.1	
	<u>172.9</u>	$\bar{x} = 0.13$

245.2		
336.6	91.4	$\bar{x} = 0.15$
54.4	<u>97.8</u>	

14 16 10	152.2	<u>189.2</u>	$\bar{x} = 0.17$
		<u>170.8</u>	

14 12 25-

22009.592
<u>514</u>
.078

52

Feb. 19-1909

RZ Tauri

VII

14 20 48 Index West
 237.2
 334.8 97.6
 58.8 93.4
 152.2 191.0
 169.0

+ 0.24

235.5
 331.8 96.3
 57.8 92.6
 156.4 194.9
 165.1

+ 0.24

+ 0.28

Index East Mean = + 0.12

14 f.p.
~~242.2~~
 239.8 91.0
 332.4 84.6
 57.0 175.6

+ 0.00

146.7
 238.4 91.8
 332.2 90.0

+ 0.02

14 27 40
 62.2 181.7
 178.3

+ 0.03

22009.600
 514
 .086

Feb. 19-1919

RZ Tauri

Index East

VII

14 3505	147.7		
	237.7	900	
	336.4	858	
	62.2	1758	+ 0.08
15			

150.7			+ 0.08
236.4	857		
328.4	894		
57.8	175.1		+ 0.07

Index West

Mean = ± 0.02

53.7			
148.4	94.7		
240.4	90.9		
331.3	185.6		
	174.8		± 0.11

60.4			
146.4	860		
234.2	99.6		± 0.11

14 x 230	333.2	185.6	
		174.8	± 0.11

$\gg 35$
 $14 3848$

22009.611

$\frac{514}{0.96}$

54

Feb. 19-1899

Index	Unit	
14 5000	61.2	$\frac{257}{174.3} + 0.11$
	149.8	
	244.6	
	330.3	

57.7		+ 0.08
145.8	88.1	
2400	88.6	+ 0.06
328.6	176.7	

Index East		Mean = +0.15
331.6		+ 0.27
56.6	85.0	
149.8	81.0	
230.8	166.0	

	328.6	+ 0.22
	51.8	
	145.6	+ 0.17
14 57.40	233.3	

14 53 50

22009.621
 $\frac{514}{.107}$

Feb. 19-1899

15 04 30 Index East X
 329.6
 52.3 82.7
 149.2 84.4
 234.2 167.1 + 0.25

331.6
 50.6 79.0 + 0.26
 146.2 87.4
~~240.3~~ 166.4 + 0.26
 233.6

Index West Mean = + 0.19
 233.2
 327.2 93.4
 52.7 87.6
 146.3 171.0 + 0.17

237.7 + 0.12
 326.4 82.7
 53.2 86.8
 15 11 40 140.0 1715.5 + 0.08

15 8 05

22009.631
 514
 117

Region too far West to continue
 to advantage. Motor is running
 too slow to carry observations.

56

Thurs Feb. 20 - 1849

R.C. Alt. 12' Polar phot R

RZ Tami 0430H

Gue. Index Unit

$$\begin{array}{r}
 11 \ 32 \ 50 \quad 230.6 < \text{~~last~~ Comp \&dis = \text{middle} \times) \\
 \quad \quad \quad 325.8 \\
 \quad \quad \quad 59.4 \\
 135.5 \quad \quad \quad 95.2 \\
 \quad \quad \quad \quad \quad 76.1 \\
 \quad \quad \quad \quad \quad \hline
 \quad \quad \quad 171.3 \quad + 0.16
 \end{array}$$

$$\begin{array}{r}
 237.6 \\
 320.0 \quad \quad \quad 82.4 \\
 \quad \quad \quad 46.8 \quad \quad \quad 95.0 \\
 141.8 \quad \quad \quad \hline
 177.4 \quad + 0.05
 \end{array}$$

Index East

Mean = +0.06

$$\begin{array}{r}
 140.7 \\
 233.8 \quad \quad \quad 93.1 \\
 324.8 \quad \quad \quad 85.6 \\
 50.4 \quad \quad \quad \hline
 178.6 \quad + 0.03
 \end{array}$$

$$\begin{array}{r}
 143.3 \\
 231.6 \quad \quad \quad 88.3 \\
 322.6 \quad \quad \quad 91.7 \\
 53.3 \quad \quad \quad \hline
 180.0 \quad 0.00
 \end{array}$$

11 40 20

11 36 35

11 36 15

$$\begin{array}{r}
 22010.483 \\
 \quad \quad .375 \\
 \hline
 \quad \quad .108
 \end{array}$$

Feb. 20 - 1919

57

East			
11 46 40	141.6		
	234.8	98.2	
	331.6	75.2	
	46.8	<u>168.4</u>	+ 0.22

	144.8		
	222.8	78.0	+ 0.26
	324.7	85.7	
	50.4	<u>163.7</u>	+ 0.31

West			Mean = + 0.31
	51.3		
	138.7	87.4	
	238.8	75.5	
	312.3	<u>160.9</u>	+ 0.36

	61.6		
	131.6	190.0	+ 0.36
	227.2	91.6	
11 53 40	318.8	<u>161.6</u>	+ 0.35

20

11 50 10

11 49 50

22010.493

375

12 00

F 3424

= 20

s feet by bell

58

Feb. 20-1909

RZ Tauri

~~g.m.t.~~~~West~~III

12 4 00

50.4

13 7.4

870

23 47

26.6

31 1.3

163.6

+ 0.31

57.2

131.4

73.6

+ 0.30

228.2

910

319.2

164.6

+ 0.29

~~East~~

Mean + 0.42

324.6

44.6

840

144.2

694

213.6

153.4

+ 0.51

328.2

32.4

69.6

+ 0.54

139.2

800

12 09 42

219.2

14.96

+ 0.58

13 42

12 6 54

12 6 34

22010.505

125

.130

Feb. 20-1919

East R Z Tauri

IV

12 14 35

~~40.6~~

141.4

221.8

328.6

37.6

80.4

~~69.0~~

149.4

+ 0.59

141.6

220.6

321.4

36.6

79.0

75.2

154.2

+ 0.49

+ 0.54

West

46.7

127.2

228.6

313.6

80.5

85.0

165.5

+ 0.27

Mean = +0.42

47.4

132.6

231.4

85.2

77.4

+ 0.30

12 21 15

30 2.2

162.6 + 0.33

35 56

12 17 55

12 17 35

22010.512

325

0.137

60

Feb. 20 - 1919

RZ Tauri

West

V

12 29 30

47.6

123.3

223.0

310.6

75.7

276

163.3

+ 0.32

44.6

126.8

231.6

303.4

82.2

71.8

154.0

+ 0.41

+ 0.50

East

Mean = + 0.54⁰

319.8

27.6

134.8

214.2

67.8

79.4

147.2

+ 0.63

318.6

34.6

139.8

204.4

76.0

69.6

145.6

+ 0.64⁰

+ 0.56

12 36 10

65 40

12 32 50

12 32 36

22010. 523
 375
 148

Feb 20 - 1919

RZ Tauri

VI

East

12 41 00

320.4

30.3

69.9

134.6

78.0

212.6

147.9

+ 0.62

315.5

33.6

78.1

+ 0.56

134.2

75.0

209.2

153.1

+ 0.51

West

Mean = + 0.51

221.0

29.4

77.4

48.4

75.2

123.6

152.6

+ 0.52

217.2

306.6

89.4

+ 0.46

49.6

69.0

12 47 00

118.6

158.4

+ 0.41

12 44 00

12 43 40

22010.531

375

.156

62

Feb. 20-1919

RZ Tauri

VII

12 57 00 West
 225.2
 297.2 72.0
 40.2 79.8
 120.0 157.8 + 0.54

221.8 + 0.57
 304.3 82.5
 49.8 66.4
 116.2 148.9 + 0.60

East Mean = +0.56
 133.3
 207.8 75.5
 305.6 80.6
 27.2 155.1 + 0.48

129.6
 207.2 77.6 + 0.55
 310.6 70.2
 20.8 147.8 + 0.62

13 02 50
 9 50
 12 59 55
 12 59 35
 22010.542
 325
 .167

Feb. 20-1919

63

RZ Tauri

East

VIII

13 11 20

126.4

203.3

76.9

303.3

79.1

22.4

156.0

+ 0.46

+

119.2

+ 0.36

207.6

88.4

306.3

78.5

24.8

166.9

+ 0.25

West

Mean = +0.37

33.3

110.2

76.9

215.2

230

298.2

159.9

+ 0.38

33.3

117.8

84.5

+ 0.38

216.4

84.8

13 17 40

291.2

159.3

+ 0.39

13 14 30

13 14 10

220 12.551

375

.176

0.04

64

Feb. 20-1909

West IX
 13 21 44 33.3
 112.2 78.9
 214.6 77.6
 292.2 156.5 + 0.45

32.3 70.46
 110.3 78.0
 213.3 77.3
 290.6 155.3 + 0.47

East Mean = + 0.50
 308.4
 19.8 71.4
 118.8 79.4
 198.2 150.8 + 0.56

298.8 + 0.54
 20.8 82.0
 121.8 71.0
 192.8 158.0 + 0.52

13 27 50

13 24 47
 13 28 27
 22 010.558
 547
 011

Feb 20 - 1919

East

X

13 33 30

299.3

12.2

112.2

197.4

) 3.5

84.6

158.1

+ 0.42

299.4

19.2

116.6

193.6

80.4

77.0

157.4

+ 0.42

+ 0.43

West

Mean = + 0.36

202.2

287.2

20.2

112.2

) 9.6

91.4

171.0

+ 0.17

202.2

293.6

24.2

107.4

91.4

79.7

171.1

+ 0.17

+ 0.17

13 39 45

13 36 38

13 36 18

22010.566

547

.019

66

Feb. 20-1917

RZ Tauri

13 46 10 West XI
 20 36
 286.4 82.8
 18.4 942
 112.6 177.0 + 00 6
 #

- 0.06

195.0
 290.0 95.0
 20.6 947
 115.3 189.7
 170.3

- 0.18

East Mean = +0.12

113.4
 184.8 71.4
 287.3 89.3
 16.6 160.7 + 0.3)

105.6
 194.6 89.0 + 0.30
 291.3 78.7
 100 167.7 + 0.23

13 53 00
 99 10

13 49 35

13 49 15

22010.576
 547
 .029

Oct. 20 - 1919

RZ Tauri

XII

East

13 58 00

111.6

192.8

291.2

368.8

81.2

776

158.8

+ 0.42

108.8

189.6

291.4

369.8

80.8

784

159.2

+ 0.41

+ 0.40

West

15.0

101.2

178.8

281.6

91.2

92.8

184.0

176.0

- 0.08

Mean = + 0.20

87.8

102.3

196.4

550

93.5

81.6

175.1

+ 0.09

14 43 30 278.0

14 01 15

14 00 55

22010.584

547

.037

68

Feb 20 - 1869

RZ Tauri

Wright

X14

14 10 30

11.3

98.0

187.7

281.0

86.7

~~92.0~~

179.7 + 0.01

A.P.

+ 0.06

98.0

190.2

275.6

89.2

85.4

174.6 + 0.10

East

Mean = + 0.14

277.6

355.3

92.6

175.2

77.7

86.6

164.3 + 0.30

279.8

368.4

150.6

184.9

88.6

84.3

172.9 + 0.13

14 17 30

14 14 50

14 13 40

22010.593.

547

.046

Feb 20 + 89
RZ Tauri.

East

~~XIV~~

14 22 45 - 201.3
360.6 79.3
92.2 91.8
1840 171.1 + 0.17

270.0
368.4 98.4
95.6 83.2
178.2 181.6
178.4 - 0.03

+ 0.07

- 0.03

Mean = ~~X~~ - 0.04

West

175.2
265.2 90.0
355.0 92.4
92.4 182.4
172.6 - 0.14

170.0
272.2 102.2
50 86.9
86.9 - 0.16

- 0.17

14 29 10

86.9

189.1

170.9

14 25 52

14 25 38

22010. 601

547

.054

70

Feb 20-1909

West

14 37 50	177.2	
	267.2	90.8
	347.2	100.0
	87.2	180.0
		<u>170.0</u>

— 0.19

173.6		
268.6	95.0	— 0.12
353.6	87.2	
80.8	182.2	— 0.04
	<u>177.4</u>	

East Mean = + 0.04

288		
168.6	79.8	
266.0	89.5	
355.5	169.3	+ 0.20

78.4		
168.6	90.2	+ 0.20
266.4	78.9	
345.3	169.1	+ 0.21

14 43 15

14 40 8
14 39 48
22010.611
547
064

Feb 20 - 1919

XVI

East
 14 50 35 79.8
 165.3
 260.6
 350.6

85.5
 89.4
 174.9

+ 0.09

75.6
 168.4
 257.6
 349.2

92.8
 92.2
 185.0
 175.0

0.00

- 0.09

West

343.3
 80.3
 169.0
 259.3

97.0
 90.3
 187.3
 172.7

- 0.14

350.3
 74.3

84.0
 95.4

- 0.06

14 56 50

259.6

179.4

+ 0.01

14 53 42

14 53 22

22010.620

547

.073

72

Feb 20-1909

RZ Tauri

XVII

15 02 25

West

339.7

78.0

166.6

251.2

98.3

84.6

182.9

177.1

- 0.05

345.2

73.2

158.0

254.8

88.0

96.8

184.8

173.2

- 0.07

- 0.09

East

Mean = - 0.06

250.4

342.8

74.8

158.6

92.4

23.8

176.2

+ 0.07

254.4

341.8

63.6

164.0

87.4

100.4

187.8

- 0.04

172.2

- 0.15

15 8 50

15 5 38

15 5 18

22010. 628

547

081

Region getting too low

Mon. Feb. 24-1919

73

RECB

12" Polu

LC Jr Rec.

RZ Tauri 043018

Plt R

3m.T.

Ind E

1149-50

255.5

Com. Har. dis.

328.1

72.6

78.8

71.0

149.8

143.6 + 0.70

I

263.3

68.5

+ 0.59

331.8

86.3

65.3

154.8 + 0.48

157.6

Ind. W

Mean = + 0.48

160.0

84.8

244.8

72.3

344.7

157.1

+ 0.44

57.0

+ 0.38

166.6

70.8

237.4

91.6

332.2

162.4

+ 0.33

1154-49

63.8

99

1152 20

1153 15

22014. 495

50

12 50.009

FF 342V =

55² slow by bell

74

Feb. 24-1919

RZ Tauri

Incl W.

11-58-54

162.0

239.6

342.8

49.6

776

67.8

145.4 + 0.6)

+ 0.64

163.6

237.4

~~340.4~~

51.2

738

450.8

126.6

144.6

+ 0.64

Incl E

751.6

140.4

245.8

328.8

mean + 0.64

648

830

147.8

+ 0.62

+ 0.59

67.2

144.8

248.2

321.2

77.6

730

150.6

+ 0.56

12-2-50

12 0 52

~~11 57 57~~

12 01 47

22014.501

500

- 003

Feb 24-1919

III

12-8-10 *Ind E*
 681.4
 141.2
 2482.6
 325.0

72.8 ✓
 82.4 ✓
 155.2 ✓ + 0.47

64.0
 145.3
 296.3
 327.7

81.3 ✓
 81.4 ✓
 162.7 ✓ + 0.33

+ 0.40

Ind W
 335.2
 51.3
 150.0
 239.6

166.1
 89.6
 105.7 + 0.27

+ 0.32

+ 0.23

326.7
 60.0
 153.6
 12-12-35 230.4

93.3
 76.8
 170.1 + 0.19

12 10 18

12 11 13

22014.508
 504
 + 0.04

76

Feb. 24-1919

Index W IV

12-17-0

326.2	83.4 ✓	
49.6	89.8 ✓	
147.4	173.2 ✓	+ 0.13
237.2		+ 0.18

323.2	91.0 ✓	
54.2	76.7 ✓	
151.0	167.7 ✓	+ 0.23
227.7		

Index E Mean = +0.34

448.2	66.0 ✓	
314.2	86.4 ✓	
56.4	152.4 ✓	+ 0.33
142.8		

239.7	845	+ 0.50
324.2	715	
64.7	156.0	+ 0.46

12-21-37 136.2

12 19 12

12 20 13

22 014 514

500

+010

Feb. 24-1919

	Index	Σ	\bar{V}
122612	245.6	74.0 ✓	
	319.6	91.6 ✓	
	54.8	165.6 ✓	
	146.4	+ 0.27	

	232.6	693.6 ✓	+ 0.30
	326.2	679.4 ✓	
	64.2	173.0 ✓	32
	133.6	+ 0.13	

Index	\bar{W}	Mean	
147.8	820 ✓		+ 0.16
229.8	95.2 ✓		
318.8	1772 ✓	+ 0.05	
54.0			

	140.6	987.6 ✓	+ 0.01
	238.2	242 ✓	
	322.2	181.8 ✓	
123510	46.4	1782 ✓	- 0.03

5722
 12 28 41
 12 29 36
 22014.524
 50X
 +.017

78

Feb. 24-1949

✓
13-40-5Ind. W.
146.4
226.8
323.2
50.480.4 ✓
87.2 ✓
167.6 + 0.23
0.05

IV

+ 0.20 + 0.14

141.2
236.8
327.2
48.495.6
81.2
176.8 ✓ + 0.06

Ind. E

60.4
136.4
231.4
322.276.0 ✓
90.8 ✓
166.8 ✓ + 0.25

Mean = + 0.147

✓ + 0.20

52.6
141.2
232.8
316.688.6
83.8
172.4 + 0.14

12-45 0

12 42 32

12 43 27

22014.530
500

+ 026

Feb. 24-1919

79

	Index	Σ	γ	VII
1251-50	54.7	89.1		
	133.8	93.8		
	229.4	178.9	+0.13	
	323.2			

	49.8	92.0	✓	+0.10
	141.8	84.5	✓	
	232.7	176.5		+0.06
	317.2			

	Index	W	Mean = +0.09
	324.7	78.1	
	42.8	90.8	
	145.0	168.1	+0.22
	235.0		

	325.7		+0.08
	44.6	78.9	
	136.2	103.9	
1256-20	240.1	182.8	
10		177.2	-0.05

125405

125500

22014.538

50X

+0.34

80

Feb. 24-1919

VIII

13 09 00

Index W

314.8

56.3

140.4

229.2

101.5

88.8

~~180~~

190.3

169.7

- 0.20

319.3

49.6

134.2

238.6

90.3

104.4

194.7

165.3

- 0.24

- 0.28

Index E

229.2

317.6

52.8

128.8

88.4

76.0

164.4

+ 0.30

Mean = - 0.04

234.2

321.4

48.4

140.6

87.2

92.2

179.4

+ 0.16

+ 0.01

13	16	10
<hr/>		10
25		

13 12 35

13 13 30

22014.550

504

+ 0.46

Feb 24-1919

	Index E		<u>IX</u>
13 27 10	229.8		
	322.7	92.8	
	51.7	<u>831</u>	
	134.8	1759	+ 0.08

23 22		846	0.00
316.8		<u>1000</u>	
400		1846	
1400		<u>1754</u>	- 0.09

	Index W		Mean = + 0.00
13 5.5-			
230.6	951		
323.2	<u>76.0</u>		
49.2	171.1	+ 0.17	

13 33 30	138.0		- 0.01
	226.8	88.8	
	311.4	<u>100.9</u>	
	53.3	1897	
		<u>170.3</u>	- 0.19

13 30 20		
13 31 10		
22014.563		
<u>50.0</u>		
+ 0.59		

82

Feb. 24-1919

RZ Tann

Index W

X

13 44 30

137.2

231.8

317.8

47.4

94.6

89.6

184.2

175.8

-0.08

137.4

226.2

316.3

50.8

88.8

94.5

183.3

176.7

-0.07

-0.06

Index E

Mean = -0.02

45.8

138.2

231.4

313.2

92.4

81.8

174.2

+0.11

45.6

133.3

229.8

323.8

87.7

94.0

181.7

178.3

+0.04

-0.03

13 51 40

13 48 05

13 49 00

22014.576

504

+0.072

Feb. 24-1919

RZ Tauri

	Index	Σ		\overline{XI}
14 01 20	47.7			
	132.2	851		
	230.2	820		
	312.2	167.1	+ 0.24	

53.3			+ 0.22
134.0	80.7		
225.2	88.6		
313.2	169.3	+ 0.20	

Index	W		Mean = +0.02
317.7			
51.3	93.6		
134.3	99.3		
233.6	192.9		
	167.1	- 0.24	

315.6		
53.2	97.6	
141.2	87.6	- 0.17
228.2	185.2	
	174.2	- 0.10

14 07 00

14 06 10

14 07 05

22014.588

500

508.5

84

Feb 24 - 1909

14 15 50

Index West	
320.3	
43.2	82.9
136.6	<u>91.2</u>
227.8	174.1 + 0.11

XII

315.3		+ 0.06
47.2	91.9	
137.6	<u>88.2</u>	
225.8	180.1	
	<u>179.9</u>	0.50

Index East

233.8		Mean = + 0.100
321.6	87.8	
51.2	<u>84.0</u>	
135.2	171.8 + 0.16	

229.8		+ 0.15
325.5	95.7	
51.6	<u>76.6</u>	
128.2	172.3 + 0.14	

14 19 00
14 19 55

22014.597
504
+ 0.093

Feb. 24-1909

Index East

XIII

14 26 50	232.7		
	316.6	839	
	45.2	<u>98.6</u>	
	136.2	175.5	+ 0.09

230.4			+ 0.21
315.2	848		
53.3	<u>779</u>		
131.2	1627		+ 0.33

Index West

Mean = +0.05

135.2			
222.6	868		
315.2	<u>98.6</u>		
53.2	1854		
	<u>174.6</u>		- 0.10

135.0			- 0.10
231.2	1018		
322.0	<u>836</u>		

14 33 00	45.6	<u>185.4</u>	- 0.10
		<u>174.6</u>	

59 50

14 29 55

14 30 50

22014.605

500

+ .001

86

Feb. 24-1919

14 44 30

141.0	
223.6	226
314.4	95.4
49.8	<u>178.0</u>

+ 0.04

XIV

131.0	
232.0	101.0
312.2	93.0
45.2	<u>194.0</u>
	<u>166.0</u>

- 0.12

- 0.27

East

53.3	
127.4	74.1
224.8	88.4
313.2	<u>162.5</u>

Mean = +0.09

+ 0.33

46.4	
132.2	85.4
230.4	80.4
310.8	<u>165.8</u>

+ 0.30

+ 0.27

14 50 10

14 47 20

14 48 15

22014.617

504

7.113

Feb. 24-1919

87

EastXV

14 01 20

51.7

134.2

22.8

312.6

83.1

83.8

166.9

+ 0.25

47.4

134.7

229.6

309.8

87.3

80.2

167.5

+ 0.24

+ 0.24

West

Mean = + 0.18

314.2

43.2

139.2

223.2

88.4

84.6

173.0

- 0.13

316.0

42.4

136.6

224.8

86.4

88.2

174.6

+ 0.12

+ 0.10

15 07 00

15 04 10

15 05 05

22014.62

50.4

+ 0.124

88

Feb. 24-1919

RZ Tauri

XVI

Gmt. No. Unit

15 12 30	314.6		
	40.6	86.0	
	131.3	94.5	
	225.8	<u>180.5</u>	- 001
		179.5	

321.2		+ 0.20
45.0	72.8	
148.0	<u>85.0</u>	
225.0	158.8	+ 0.40

So. East

Mean = + 0.29

228.8		
306.6	77.8	
49.8	<u>81.4</u>	
131.2	159.2	+ 0.40

238.0		
313.8	83.8	+ 0.38
50.8	<u>77.6</u>	

15 18 50	128.4	161.4	+ 0.36
----------	-------	-------	--------

15 15 40

15 16 35

22014.68)

504

0.133

Wed Feb 26-1909

89

LCdb 12" Polar

15-20 SSaurigae 060547 ext L12.8

15-25 U Gemi 074922 ext L13.0

S. C. b. of U Gemi Region photR
comp with $\star d$

East $\star d$ dis

229.4	
307.2	77.8
38.6	95.2
133.8	173.0
	+ 0.13

217.6		
312.6	101.0	
45.2	84.6	
129.8	185.2	+ 0.11
	174.4	
West		

134.3		
221.4	87.1	mean - + 0.14
305.5	102.9	
48.4	190.0	+ 0.19
	170.0	

121.4		
228.2	106.8	
310.8	92.5	+ 0.28

15 36 00	43.3	199.3	
15 33 05		160.7	+ 0.37

15 34 10

22016.649

90

Feb. 26-1919.

15-45 R Lyrae 065355 - ext 9.4

R Gen 070122a ext 10.1

R Can Ven 070310 ext 8.0

S Can Ven 072708 ext 12.6

U Can Ven 073508 ext 10.1

S Gen 073723 ext 12.8

T Gen 074323 ext 10.2

/ U Puppis 075612 ext 10.3

R Carina 081112 ext 8.3

V Carina 081617 ext 8.1

U Carina 082019 ext 10.0

X UMa 083350 ext 10.2

S Hyd 084503 ext 12.6

T Hyd 085008 ext 8.1

✓ Feb. 26-1899

X Hyd 093014 est 12.8

R Leo Min 093934 est 7.8

R Leon 094211 est 9.6

V Leon 095421 est 13.1

W Leon 100814 est 13.0

S Leonas 10506 est 10.4

R Comae 115719 est 13.0 sup.

S Virg 120012 est 10.8

T Virg 120905 est 10.6

R Coma 121458 est 10.9

SS Virg 122001 est 8.2

T Can Ven 122532 est 11.7

Y Virg 122803 est 9.5

T Vir Maj 123160 est 7.4

S Vir Maj 12346 rest 8.0

RS Vir Maj 123459 est < 13.0

17 00

Thursday Feb. 27, 1919
Phot. R.

LC Obs. Ind. N.
11-48.20 134.8
224.4
324.0
32.2

12" Polar
Var. dis.

89.6
6A.2
157.8 — 0.42

0 Cto
021403

LC. In Rec

139.2
210.0
318.4
40.6

780.8
82.2
153.0 — 0.52

— 0.47

Ind. S
50.6
122.8
233.2
307.4

722 ✓
742 ✓
146.4 — 0.62

mean — 0.58 ✓
2.19
8.63

53.2
119.2
226.4
307.2

66.0
80.8
146.8 — 0.64

— 0.64

1153-20

10 1 40

11 50 50

11 51 55

22017. 494

Feb 27-1919

Ind. E

g.m.t. * b of U Gem Seg. with * d. Phot R.
 12-3-33 317.8 Star B. dis.

$$\begin{array}{r}
 32.867 \times 12.2 \\
 130.8 \\
 220.2 \\
 \hline
 750 \\
 894 \\
 \hline
 164.4 - 0.30
 \end{array}$$

$$\begin{array}{r}
 310.2 \\
 92.4 \\
 129.8 \\
 218.0 \\
 \hline
 922 \\
 88.2 \\
 \hline
 180.4 \\
 129.6 \\
 \hline
 - 0.14 \\
 + 0.01
 \end{array}$$

Ind. W

Mean = - 0.21

$$\begin{array}{r}
 225.2 \\
 300.2 \\
 40.0 \\
 130.2 \\
 \hline
 75.0 \\
 90.2 \\
 \hline
 165.2 - 0.28
 \end{array}$$

$$\begin{array}{r}
 221.9 \\
 312.2 \\
 48.4 \\
 123.2 \\
 \hline
 90.8 \\
 54.8 \\
 \hline
 165.6 - 0.27
 \end{array}$$

16 31
 12 8 16
 12 9 21

Star b has a close & fainter comp.

22017.506

94

Feb. 27-1919.

for N

~~Ind 8~~

W un maj.

Phot

12-44-45-

130.0

186.2

311.2

363.8

9

34

+ 52.6

~~for S~~ Var. dis.

552

526

108.8

- 1.45

132.8

182.2

311.3

366.1

49.4

548

1042

- 1.50

- 1.55

Spr. S

~~Ind 8~~

212.8

281.6

44.6

93.6

68.8

49.0

117.8

mean - 1.36

667

- 1.24

224.9

275.3

34.8

50.4

68.8

119.2

- 1.22

- 1.21

12-44-55-

108.6

103.6

12 46 50

12 47 55

22017.533

✓

Feb. 27-189

12 5335 $\begin{matrix} \text{Spr } \text{A}^{\text{S}} \\ 214.6 \\ 279.2 \\ 42.4 \\ 98.8 \end{matrix}$ W Wm May $\begin{matrix} 646 \\ 56.4 \\ \hline 121.0 \end{matrix}$ — 1.17 II

$\begin{matrix} 224.6 \\ 274.2 \\ 34.6 \\ 104.4 \end{matrix}$ $\begin{matrix} 496 \\ 69.8 \\ \hline 1194 \end{matrix}$ — 1.19
— 1.21

$\begin{matrix} \text{Spr N.} \\ 302.8 \\ 361.6 \\ 134.6 \\ 183.6 \end{matrix}$ $\begin{matrix} 5 \\ 888 \\ 490 \\ \hline 1078 \end{matrix}$ Mean = — 1.34
— 1.47

$\begin{matrix} 311.8 \\ 361.2 \\ 131.8 \\ 187.9 \end{matrix}$ $\begin{matrix} 49.4 \\ 561 \\ \hline 1055 \end{matrix}$ — 1.50
— 1.52

12 55 56

12 57 01

22017.540

13 00 $\text{FF } 3624 = 1^m 5^s$ slow by bell

96

Feb. 27-1919

W-Lin May

G.M.T. Spr. N.
 13-2-25 307.2
 365.6
 137.2
 182.8

5
~~884~~ ✓
 456 ✓
 104.0 ✓ — 1.55

111

— 1.52

315.4
 361.8
 125.8
 186.9

464 ✓
 611 ✓
 1075 ✓ — 1.48

Spr. S.
 28.6
 107.6
 222.6
 272.8

790
 502 ✓
 1292 ✓ — 1.00

Mean = 1.20

— 1.04

40.9
 96.3

55.4
 70.4

125.8 — 1.07

213.2

283.6

13-11-50
 14 15

13 7 8
 13 8 13

22017.547

✓

Feb. 27 - 1902
W. W. Waj.

13 2540 3 3 3

Stars gone. cloudy

98

22024

Thurs Mar. 6-1919

G.M.T. LCClb 12" Polar

12 07 SS Aurigae 060547 est < 12.8

12 16 U Gemini 074922 est < 12.7

12 44 R Leonis 09424 est 8.9 LC
- - - - 8.9 Jordan

Comp with 9.0 nearby.

12 03 R Cancer 081112 est 8.6 Jordan
LC LC1 3 20 U Gemini 074922
est < 13.5 var resp. LC
- - - - Jordan

13 30 U Orion 054920 est 12.4 LC

13 45 R Leo Min 093936 est 8.0 LC
- - - - est > 9 Jordan

Mar. 6-1909.

14 15	RVing	(2330)	ent	f 3	Jordan
				f 3	RC.

100

Mon Mar 10, -1919

PC Ab 12" Polar

Emt

18 48 SS Aurigae 060547
est 10.9

12 04 W Gem 074922 est <12.7

P.A. Hare & Star b withd

12 12 00 304.3 < * ~~dis~~ ^{Fox star} W Gem
37.3 93.0 ^{low} Regulus

12 00 104.3

224.3 197.3
162.7

* -0.33

Phot R

305.3

46.6

101.3

* -0.29

123.3

91.9

215.2

193.2

* -0.25

P.A. Emt

166.8

218.7

Mean = * -0.24

306.6

P.A. 9

300

105.5

135.5

194.4

165.6

* -0.27

213.2

313.3

100.1

* -0.22

38.2

88.6

126.8

188.7

171.3

* -0.16

12 180

12 15.0

12 13.5

22028.509

Mar. 10-1919.

W. W. W. Maj.

~~Ref.~~ Spr handle NW 093456

12 39 00 218.1 comp & dis.
 282.4 64.3
 32.2 77.4
 109.6 141.7 + 0.74

Phot T.
I

208.4
 283.6 75.2 + 0.72
 33.8 68.0
 101.8 143.2 + 0.71

Spr wheel handle SE

Mean = + 1.30

318.3
 361.8 45.5
 137.2 46.4
 183.6 71.9 + 1.86

312.8
 362.2 49.4 + 1.87
 138.0 41.8
 179.8 91.2 + 1.88

12 46 30

85 30

12 42 45
1 32Comp * = bright star nearly
same decl as var & 1/2 degree from12 41 13
22028.520

102

Mar 10-1919

GMT

W. W. May
Pa. S.E.

II

12 55 20

318.8

367.6

133.3

183.9

42.8

50.6

99.4

+ 1.6)

316.8

369.2

139.2

178.4

52.4

39.2

91.6

+ 1.77

+ 1.87

Pa. NW

Mean = + 1.24

39.2

105.8

209.8

285.7

666

759

142.5

+ 0.72

6.67

7.91

30.2

107.2

208.3

279.8

770

715

148.5

+ 0.66

+ 0.60

(3) 0000.

12 57 40

1 32

12 56 8

22028.539

13 000

✓

C's Watch = 1^m 32^s fast by bell

Mar. 10-1919

Wm. May

III

1450.00

Pa. NW

270.4

48.6

36.3

65.9

102.2

114.5

+ 1.31

219.8

+ 1.31

280.4

60.6

40.7

54.2

94.9

114.8

+ 1.31

Pa. SE

320.0

Mean = +1.84

356.4

36.4

139.6

40.2

179.8

76.6

+ 2.30

$$\frac{667}{8.41}$$

318.6

41.8

+ 2.38

360.4

29.6

163.7

71.4

+ 2.46

144.6

173.3

142.3

-1.5

140.8

22020.58 4

Sfr = 4.4

104

Mar 10-1919

W Mr May

Pa 82

IV

14 ~~14~~
10 60

319.8

357.2

137.7

178.6

37.6

40.9

78.3

+ 225

326.8

+ 220

361.8

41.0

139.2

40.8

179.8

81.8

+ 214

Pa NW

Mean = + 1.80

428

96.6

220.0

277.7

53.8

57.7

111.5

+ 138

378

95.6

222.2

274.4

57.8

52.2

110.0

+ 1.40

+ 1.42

14 15 30

14 7 40

1 32

14 6 13

22028, 587

Mar. 10-1919

105

W U M Maj.

V

PA NW

14 24 40

35.7

99.2

635

220.4

55.2

275.6

118.7

+ 1.22

38.4

103.3

220.4

274.2

649

538

118.7

+ 1.22

+ 1.22

PA SE

144.4

178.4

318.8

360.0

340

412

75.2

Mean = + 2.78

$$\frac{6.67}{2.45}$$

+ 2.34

139.3

178.7

322.2

358.8

394

366

76.0

+ 2.33

+ 2.32

14 38.30

14 27 35

14 26 03

220 28.601

106

Mar 3¹⁰ - 1889

W m m a y

Pass

VII

14 39 30

139.2

172.2

319.3

352.2

384

395

779

+ 226

137.3

173.6

319.3

352.2

463

395

858

+ 214

+ 203

P. R. N. W.

Mean + 1.66

221.6

277.9

382.2

102.4

56.3

63.6

119.9

+ 1.19

6.67

8.33

217.2

276.3

37.6

58.5

63.4

121.9

+ 1.17

+ 1.15

14 45 10

101.0

14 42 20

1 32

14 40 48

220 22.612

Mar. 10-1919

W in May

P. 9.24

VII

14 49 40

221.2

27.8

35.0

102.4

57.5

67.4

124.9

+ 1.09

213.8

284.8

40.4

101.2

71.0

60.8

131.8

+ 1.02

+ 0.94

Pa = SE

Mean = +1.53

321.7

357.8

135.8

180.8

361

450

81.1

+ 2.17

$$\frac{6.67}{F. 20}$$

316.3

358.6

136.4

184.3

42.3

47.9

90.2

+ 2.04

+ 1.91

14 55 50

14 52 20

32

14 50 48

22028.619

108

Fri Mar 14-1919

LCCb

12" Polar

LCP Rec

12 10 SP Aurigae 060547 est 11.9

12 12 U Gem 0749 22 est < 12.0

Star b with * d of U Gem Log
P.A. E. Photo R

12-27-50

199.8

301.2

18.8

118.8

Star Dis. (lower)

101.4

1.500

201.4

138.6

- 0.41

206.2

301.8

22.2

115.1

95.6

92.9

148.5

171.5

- 0.28

- 0.16

P.G.W.

110.6

204.4

289.6

32.6

93.8

103.0

126.8163.2

Mean = - 0.24

- 0.32

- 0.21

22032-521

210.0

297.0

19.8

102.8

82.7

185.5

174.5

- 0.10

12-32-50

12 30 10

Mar. 14-1919.

Ind Huddle N.W

09 3456
 12-46-20 38.6
 98.8
 219.6
 280.4

W hrs mag

Compar + dis.

60.2
 60.8
1210

+ 117

Phot T

I

+ 1.05

29.8
 102.4
 218.6
 278.4

72.6
 59.2
1324

+ 093

Ind S.E

Mean = + 1.08

132.8
 186.4
 304.8
 14.2

536
 694
1230

+ 113

6.67
7.75

127.8

+ 1.12

192.9

65.1

309.6

58.2

+ 1.12

12-50-30 367.8

123.3

12 48 20

1.55

12 46 30

22032.533

110

Mar. 14 - 1919

W Urs Maj II
Index S E

13-5-40

8130.6		
183.7	531	
307.6	620	
369.6	115.1	+ 1.30

125.7		+ 1.22
192.2	665	
312.3	575	
369.8	124.0	+ 1.11

Index NW	Mean = + 117
2090.8	
274.4	536
39.8	64.6
105.5	65.7
	130.3
	+ 0.97

219.6		1.12
280.0	604	
40.8	564	
99.2	116.8	+ 1.26

13-9-0

13	7	20
	1	55
13	05	25
22032	545	

Mar. 14-1919

W. W. May

Index

NW

III

1324-40

219.0

273.8

32.4

101.4

548

690

1238

+ 1.11

288.1

279.2

32.7

103.6

61.1

70.9

1320

+ 1.02

+ 0.96

Index N.E.

Mean = +1.20

309.8

359.8

128.9

194.2

450

653

110.3

+ 1.41

+ 1.39

311.2

368.8

131.7

186.1

57.6

544

1120

+ 1.37

13-27-50

$$\begin{array}{r} 13 \quad 26 \quad 65 \\ 13 \quad 26 \quad 20 \\ \hline 22032.558 \end{array}$$

112

Mar. 14-1919

W. Lutz. Mag.

IV

13-34-45 Index

313.4

11.7

132.0

185.6

323

536

111.9 + 1.37

312.3

367.8

133.0

182.7

555

497

1052

+ 1.45

+ 1.53

Index

NW

Mean = + 1.27

38.8

101.0

218.0

280.6

62.2

62.6

124.8 + 1.09

6.67
7.94

41.4

103.6

217.2

279.6

62.2

62.6

124.8 + 1.09

13-38-30

13 36 34
22032.566

✓

Mar. 14-1919

W the May

Index NW

V

13-5320

38.8

102.2

219.6

275.5

634

539

119.3 + 1.21

38.8

98.4

220.8

278.7

59.6

579

117.5 + 1.23

Index SE

Mean = +1.45

136.8

182.2

310.8

368.0

454

572

102.6 + 1.59

6.67
2.12

137.2

187.2

317.9

500

461

+ 1.67

13-57-30

363.8

961

+ 1.75

(35425)

155

13 5230

22032.57

1400

Co Watch = 1^m 55^s fast by bell

114

Mar. 14, 1909

W. W. May

VI

14-12-5 Index SE

138.8		
180.6	41.8	
312.8	68.0	
360.8	<u>89.8</u>	+ 1.92

137.7		+ 1.93
182.8	45.1	
316.2	63.8	
360.0	<u>88.9</u>	+ 1.94

Index NW

222.2			Mean = +1.74
271.2	49.0		<u>667</u>
40.2	56.0		8.41
97.2	<u>105.0</u>	+ 1.54	

223.2		+ 1.56
272.8	49.6	
42.4	<u>53.4</u>	
95.8	103.0	+ 1.55

14-16 35

1414	20
1	55
<u>1412</u>	25

22042.592

Mar. 14-1919

W in Maj

VII

Index NW

C 7h 30

221.4

275.8

41.4

98.2

544

56.8

1112

+ 1.39

217.8

277.4

42.4

99.8

596

57.4

1170

+ 1.32

+ 1.26

Index

SE.

Mean = + 1.59

317.7

361.8

134.7

185.4

441

507

948

+ 1.79

6.67

2.26

314.2

362.1

138.7

180.0

47.9

413

892

+ 1.86

14-24-6

100 25 15

1 55

104 23 20

22032.599

116

Mar 14-1919

W. W. Maj

VIII

14-35-15 Index SE

317.7	
358.8	411
132.8	500
182.8	<u>911</u> + 129

313.3		+1.84
364.7	514	
138.8	430	
181.8	<u>944</u> + 180	

Index N.W.

Mean = +1.62

45.5		6.67
94.6	491	<u>6.67</u>
221.7	529	2.28
280.6	<u>1020</u>	

+1.46

37.8		
101.0	63.2	
221.0	51.2	+1.39
272.2	<u>1144</u>	+1.32

14-39-15

14	37	15
		55

14	35	20
----	----	----

22032.608

✓

Mar. 14 - 1869

W Wm May

IX

1447-10

Index NW
 42.8
 97.6
 218.6
 281.0

548
 624
 1172 + 125

35.5
 100.0
 224.0
 272.8

645
 488
 1133 + 134

1.30
 + ~~2.0~~

Index SE

137.4
 181.4
 315.8
 364.8

440
 490
 930 + 183

Mean = +1.56
 6.67
 2.23

+ 1.83

135.7
 183.0
 314.4

473
 460
 933 + 183

(14-51-0

360.4

14 49 05
 1 55

14 47 10

220 82. 61)

Moon too bright to continue
 with advantage

S.T. 9:33

Sp = 45

1st = 3rd part

Dec = 56.4

118

Sat Mar, 15, 1919

L.C. Obs

12" Polar

L.C. Rec

L.C. Obs. Ind B. 12-20-15 117.8 Star B. dis (Upper) 1-0 Jr Rec
 198.0
 290.0
 24.6 Star B of U Zen Reg
 with X d. phot R

$$\begin{array}{r} 80.2 \\ 94.6 \\ \hline 174.8 \end{array}$$

- 0.10

115.6
 210.2
 295.0
 22.8

$$\begin{array}{r} 94.6 \\ 87.8 \\ \hline 182.4 \\ 177.6 \end{array}$$

- 0.02

+ 0.05

Ind W

Mean = -0.08

31.4

109.8

199.6

294.0

78.4

94.4

172.8

-0.14

-0.14

18.6

117.2

214.2

122445

288.0

12 20 30

98.6

73.8

172.4

-0.14

22033.515

12 00

55 Amipe 060547 est 12.3

12 05

U Zen 074922 est 12.2

to Mar 15-1919

119

093106

W Uru mag

Phot 7.

I

12-39-10 Ind N.W.
 206.8
 289.0
 31.8
 106.2
 Compar. star dis
 772
 744
 157.6 + 0.54

210.8
 285.4
 35.0
 103.3
 746
 683
 1429 + 0.63
 + 0.72

Ind S.E.
 314.8
 366.4
 134.6
 185.4
 51.6
 508
 1024
 Mean = +1.14
 667
 7.81
 + 1.60

312.8
 369.2
 137.4
 181.6
 544
 442
 98.6
 + 1.65
 + 1.70

12 41 12

 22033.510
 .528

Mar. 15-1919

Index (Spr) SE.

II

12-48-40

315.9

363.1

133.3

185.2

472

519

99

+ 1.68

312.4

370.6

131.8

182.4

582

5-06

1088

+ 145

Index NW

$$\text{Mean} = +1.24$$

35.5

106.8

213.6

280.0

213

664

137.7

4082

 $+0.91$

40.2

106.0

218.8

282.2

658

634

12 9 2

+ 1.50

12-52-5

12 50 22

22033.535

12-50-^{H.}~~CLOUDS~~
Clouds

Mar. 15-1919

W Urr Maj.
Index NWIII

12-50-

13 1

Too Cloudy to continue.

~~+3 -1 -15~~13 00 Co watch = 6^m 0^s fast by bell.

Index SE

Mean = +

Troubled by clouds at times in two previous groups on W Urr Maj.

122

Mon Mar 24-1919

20 Alb. 12" Polar

g.m.t. 12 15 W. Gemini 07 49 22
~~est~~ 13.2

12 20 S. P. Aurigae 06 05 47
~~est~~ 13.0

W. U. Mag. 09 31 56

12 30.0 Sp. Index NW
 35.8 < comp & div
 104.3 62.5
 266.8 79.5
 286.3 148.0 + 0.61

phot
 I.

29.4
 106.4 77.0 + 0.71
 219.6 61.0
 288.6 138.0 + 0.81

Index SE Mean = +1.08
 136.4 6.67
 179.6 43.2
 310.0 62.2
 372.2 105.4 + 1.53
 7.75

131.2
 189.6 52.4 + 1.44
 309.3 54.7
 364.0 113.1 + 1.35

12 37.0
 335
 22042.523

Mar. 24-1909.

Index NW
SE

13 00 221.8
280.4 57.6
36.6
108.8 722
130.8 +

223.3
283.3 60.0
42.4 65.4
127.8 125.4 +

Index NW
209.6
289.6 800
38.4 649
103.3 1449 +

Repeat
Not correct

13 100 223.0
282.4 59.4
33.3 750
108.3 1344 +

124

Mar 24 1919

Index NW
 13 - 35-45
 220.4
 280.8
 31.6
 108.6

60.4
 77.0
 137.4

+0.83

214.8
 285.9
 38.7
 99.4

71.1
 60.7
 131.8

+ 0.88
 +0.94

Index SE

310.4
 366.9
 131.9
 190.3

56.5
 58.4
 114.9

131

+ 1.05
 6.67
 7.72

310.0
 366.16
 132.8
 188.9

56.6
 56.1
 112.7

113

+ 1.22

13 - 20-10

75-55
 13 37 52

2204 p. 568

177.

Mar. 26-1899

125

Index NW
 13580 35.5
 106.3 70.8
 216.3 641
 280.4 1349 + 0.88

144

35.8
 109.3 73.5
 220.6 53.8
 276.4 129.3 + 0.99

+ 0.94

Index SE

Mean = + 1.48

142.4
~~179.6~~
 182.6 402
 315.3 460
 361.3 862 + 202

667
8.15

141.4 + 202
 186.3 449
 318.8 412
 143.6 3600 86.1 + 202

1.6
 14 0.8

22042.589

✓

126

Mar 24-1919

W. W. Wray

Sun T.
14 136

Index S.E.

185.6

312.6

11.2

131.4

x

188.6

312.6

132.2

188.0

127.0

120.2

247.2

112.8

1

224.0

55.8

279.8

58.6

58.2

112.8

+

+ 1.35

124.0

34.0

55.8

89.8 +

~~Index NW~~

389.6

366.2

130.6

188.2

56.6

59.6

116.2

+ 1.32

Mean = + 1.35

1.34

Index NW

41.2

97.4

223.6

275.2

56.2

59.6

107.8

+ 1.4)

43.2

97.8

216.6

278.8

54.6

62.2

116.8

+ 1.26

14-19-0

Project
Albrecht
confirmed

Mar. 24-1919

W U n May

G.M.T.	Index	MV	IV
14-25-40	38.6		
	79.8	61.2	
	226.2	47.1	
	273.3	<u>108.3</u>	+ 1.45

44.4			
47.4			+ 1.52
97.2	49.8		
222.4	53.2		
275.6	<u>103.0</u>		+ 1.58

Index	S. E.	Mean
136.3		+ 1.62
187.8	51.5	<u>6.67</u>
318.4	42.2	2.29
360.6	<u>93.7</u>	+ 1.82

	136.6		+ 1.72
	185.8	49.2	
	311.2	52.0	
	363.2	<u>101.2</u>	+ 1.63

14-30-00
5-5-00

14 27 50

22042.

. 603

128

March 24 1919

W hrs. mag

3 Int.

14-41.00

Index 35

133.3

188.6

309.8

366.8

55.3

57.0

11213

+ 136

V

136.4

185.2

311.4

360.4

48.8

49.0

97.8

+ 154

171

Index NW

222.8

276.6

44.0

94.8

43.8

50.8

94.6

mean = + 1.62

6.67

8.29

+ 80

+ 1.79

225.5

272.8

42.4

97.4

47.3

55.0

102.3

+ 170

+ 160

14-44.45

5 45

14 42 52

22042.613

✓

Mar. 24-1909

W. C. W. W.

GMT	Index	XU	VI
14-59-30	222.6		
	280.0	58.4	
	41.8	52.6	
	94.4	<u>111.0</u>	+ 1.39

221.6		+ 1.37
276.0	54.4	
39.8	58.4	
98.2	<u>112.8</u>	+ 1.35

Index	SE	Mean = + 1.36
310.8		<u>667</u>
366.8	56.0	2.03
139.2	52.6	
181.8	<u>108.6</u>	+ 1.45

312.2		+ 1.34
368.8	56.6	
133.6	56.2	
189.8	<u>118.8</u>	+ 1.22

15-01-40

Mn = 4.5

22042.626

Var

Comp = + 56.0 1400 (7.3)

Comp = + 56.0 1397 (6.6) 6.6

130

Tue. Mar. 25-1919

200 lb 12" Polar

W. W. Maj 093156 Phot. 75

Z. M. T.

11 56 10

NW

Comp $\times = 6.6$

41.8

< comp \times di

108.6

66.0

219.2

67.8

287.0

134.6 + 0.88

37.0

+ 0.96

106.8

69.8

225.4

57.0

282.4

126.8 + 1.05

SE

Mean + 1.13

135.0

6.67

191.4

56.4

314.2

57.4

7.80

371.6

113.8 + 1.33

137.8

193.7

55.9

+ 1.30

319.2

50.6

12 00 00

369.8

116.5

+ 1.27

11 58 05

11 57 10

22043-498

P2 ✓

~~Co. Watch~~

FF. 3420 = 55" fast by ball

Mar. 25-1919.

II $P_a = 5 \text{ E.}$

(205-40	139.0		
	187.8	4.88	
	309.8	6.40	
	373.8	112.8	+ 1.35

1346			
194.4	59.8		+ 1.23
311.3	6.40		
375.3	123.8		+ 1.11

 $P_a = 1 \text{ W}$ $\text{Mean} = + 1.14$

221.4		
283.4	62.0	
44.8	60.1	
1049	122.1	

	6.67
Mean	7.81
	+ 1.14

220.8			+ 1.04
286.4	65.6		
36.8	65.6		
121030	102.4	141.2	+ 0.95

120805

120710

22083.505

C

132

Mar 25-1909

W. L. M. Maj

Pa = N.W.

III

12 13 40

215.9

288.2

44.2

107.6

72.3

63.4

135.7 + 0.86

221.2

285.8

40.4

110.6

64.5

70.2

134.8 + 0.87

Pa = SE

Mean = +1.06

129.8

194.8

315.6

373.2

65.0

57.6

123.2

2mag = 7.73

+ 1.12

138.8

187.8

310.6

373.8

49.0

63.2

122.2

+ 1.24

+ 1.37

12 19 00

12 16 20

12 13 25

22043.510

✓

Mar 25-1919

J. S. Dole Rec

warm mag

S.M.T. Pa = Σ

12-2230	132.9		
	196.2	63.3	
	314.2	55.6	
	36 Pa	118.9	+ 1.22

IV

138.2		+ 1.26
191.4	53.2	
309.2	62.4	
372.2	115.6	+ 1.29

Pa = Σ

216.4		
284.2	67.8	
39.6	60.2	
109.8	128.0	+ 1.02

Mean = + 1.11
 Group $\times 2$ = 6.67
 Group = 7.7 A

221.4		+ 0.96
287.4	66.0	
43.3	67.5	
12,29.00	110.8	+ 0.90
1130		

12-25-45

12-24-50

220.43.517

✓

134

Mar. 25-1919

12 38 00

Pa. = NW

K

221.2

288.4

43.3

106.4

67.2

63.1

130.3

~~65.1~~

+ 0.97

223.0

284.4

39.8

108.3

61.4

68.5

129.9

~~64.9~~

+ 0.98

+ 0.98

Pa. = SE.

Mean = + 1.05

309.7

375.4

134.0

190.4

65.7

56.4

122.1

Comp. = 6.67

+ 7.72

+ 1.14

+ 1.12

313.6

374.6

134.7

198.4

61.0

63.7

124.7

+ 1.09

12 48 55

79 55

12 39 5A

12 39 03

22043.527

✓

Mar 25 1919

135

PA = S.E.

II

12 46.47	309.4		
	375.8	66.4	
	136.8	<u>55.6</u>	+115
	192.4	122.0	121

318.9		
374.3	55.4	
134.7	<u>61.2</u>	+127
195.9	116.6	

PA = N.W.

Mean +1.08
 Comp + $\frac{6.67}{7.75}$

38.2		
109.1	70.9	
224.0	<u>63.6</u>	089
287.6	134.5	94

410.8		
105.8	65.0	098
220.9	<u>64.8</u>	
12 49.37	285.7	129.8

15 24

12 48 12

(12 47 17)

22043.533

136

Mar 25 1919

III

P.A. = N.W.

<u>12,53,15</u>	34.4		
	109.6	75.2	
	223.8	<u>60.2</u>	
	284.0	135.4	+0.87

38.7			
108.6	69.9		+0.82
217.4	<u>70.4</u>	+0.77	
287.8	140.3		

P.A. = S.E.

 Barn + 0.95
 Comp = $\frac{6.67}{7.62}$

135.2		
196.6	61.4	
314.6	<u>50.6</u>	
373.2	120.0	+1.19

134.0		+1.08
195.6	61.6	
309.8	<u>68.2</u>	+0.97
<u>12 56 55</u>	378.6	130.4

12 55 5

12 54 10

22043.537

✓

Mar 25 1919

137

VIII

D A = SE

~~12~~ 13 1.23, 132.8
 195.8 63.0
 307.8 64.1
 371.9 127.1 -1.04

134.4
 196.8 62.4 +1.08
 312.2 61.6
 373.8 124.0 +1.11

P.A. NW

214.6
 284.4 69.8
 41.4 64.8
 106.2 134.6 +0.88

Mean = 40.94

Cr. cap = 6.67
 7.61

+ 0.79

219.4
 287.4 68.0
 33.8 75.6
 109.4 143.6 + 0.70

~~12~~
 13.5. 10

13 3 16
 13 2 21

22 043.543

✓

138

Mar 25 1919

IX

PA = NW

13.8, 50
 assumed \rightarrow 214.2
~~289.4~~
 42.4
 107.7

7
~~45.2~~
 65.3
~~110.5~~
 140.5

1.41
 + 0.76

224.4
 285.4
 36.0
 106.0

61.0
 70.0
~~131.0~~

+ 0.96

+ 0.86
~~1.22~~

PA = SE

311.8
 370.8
 134.8
 188.4

59.0
 53.6
~~112.6~~

+ 1.36

+ 1.11
 Mean 1.29
 Comp $\frac{6.67}{7.96}$
 7.78

+ 1.36

314.7
 368.4
 135.4
 194.8

53.7
 59.4
~~113.1~~

+ 1.35

13 12 46
 13 10 48
 13 09 53

22043.549

✓

March 25 1919

139

X

PA = SE

13.18.35	309.6		
	371.4	61.8	
	139.8	58.0	
	197.8	<u>119.8</u>	+ 1.20

313.6			
371.4	57.8		+ 1.16
131.4	65.2		
196.6	<u>123.0</u>	+ 1.13	

PA = NW

Mean	+ 1.00
Corr	<u>6.67</u>
	7.67

36.8		
111.4	74.6	
220.3	66.5	
286.8	<u>141.1</u>	+ 0.75

	40.2		
	107.8	67.6	+ 0.85
	222.2	63.6	+ 0.95
13.22.15	285.8	<u>131.2</u>	

13 20 25
 13 19 30
~~13 20 19~~
 22043.556

140

Mar 25 1919

~~21~~

PA = NW

13 27 35

40.2

108.4

224.8

284.8

68.2

60.0

128.2

+ 1.02

+ 1.08

43.8

103.8

221.6

283.6

60.0

62.0

122.0

+ 1.15

PA = SE

134.4

197.7

310.8

367.4

63.3

56.6

119.9

+ 1.19

Mean + 1.17

Comp 6.67

7.84

+ 1.26

1372

191.2

312.8

372.2

54.0

59.4

113.4

+ 1.34

13. 31 50

13. 29. 42

13 28 47

220 42.567

✓

Mar. 25, 1919

141

III

P.A. = SE

13.34.40

135.6

196.4

316.4

369.8

60.8

53.4

114.2

+ 1.32

138.8

194.2

311.2

373.3

55.4

62.1

117.5

+ 1.25

+ 1.28

P.A. = N. W.

Mean = + 1.10

Corr. = 6.67

+ 7.77

214.9

286.9

41.4

104.0

72.0

62.6

134.6

+ 0.88

+ 0.93

221.6

283.3

37.2

105.6

61.7

68.4

130.1

+ 0.97

13.38.20

13 36 30

13 35.35

22043.567

✓

142

Mar 25 1919

~~2111~~

PA, NW

13. 41.15 218.8
 285.8 67.0
 44.0 61.6 +1.01
 105.6 128.6

+1.06

225.4
 284.6 59.2
 42.2 64.4 +1.11
 106.6 123.6

PA = SE

Mean 126
 Comp. 6.67
 7.93

312.8
 370.4 57.6
 138.4 50.4
 188.8 108.0 +1.46

+1.45

319.8
 371.8 52.0
 135.8 36.9
 192.7 108.9 +1.44

13. 45. 15

13 43 15

13 42 20

22043 ✓ 571

Mar 25 1959

143

~~114~~

PA = SE

13.50,00

313.3

369.8

139.4

192.2

56.5

52.8

119.3

+ 1.21

+ 1.25

314.6

367.8

133.6

196.1

53.2

62.5

115.7

+ 1.29

PA = NW

Mean + 1.12²

corrpt + 6.67

32.8

106.6

222.8

283.8

63.8

61.0

124.8

+ 1.09

7.77

7.79

40.8

107.6

217.9 217.4

13.53.50 286.0 287.8

13.51.55

13.51.00

66.8

70.4

137.2

68.1

134.9

+ 0.83

+ 0.85

+ 0.96

22043.577

troubled by haze.

144

Mar 25 1919

~~IV~~

P.A. = NW

13, 58.50

35.8

104.8

223.8

285.2

69.0

61.4

130.4

+ 0.97

+ 1.04

39.2

102.4

222.4

283.3

63.2

60.9

124.1

+ 1.10

P.A. = SE

138.9

191.6

318.8

369.8

52.7

51.0

103.7

+ 1.57

Mean + 1.28

Comp + 6.67

7.95

7.132

14.2. 15

73.

139.8

188.7

318.7

370.4

48.9

58.7

107.6

+ 1.47

14.0. 32

13 59.37

22043.583

✓

Sky covered with thin clouds

Mar 25, 1919

145

~~ZVI~~

PA = SE

14.7.20

133.9

92.0

318.8

368.2

58.1

49.4

107.5

+ 1.48

+ 1.52

139.4

191.2

317.7

370.4

51.8

52.7

104.5

+ 1.55

PA = N.W.

Mean + 1.35
Comp 6.67

8.02

223.9

284.0

45.5

100.0

60.1

54.5

114.6

+ 1.31

+ 1.18

223.3

283.9

38.4

102.0

62.6

63.6

126.2

+ 1.06

14 11 25

13

14 09 22

14 08 27

22043.589

146

Mar. 25 1919

FVII

S.A. NW

14 19 42

221.4

282.0

40.0

100.8

60.6

60.8

121.4

+1.16

+1.26

227.4

280.7

41.4

107.2

53.3

59.8

113.1

+1.35

~~D~~

P.A. = SE

Mean +156.

316.8

367.2

144.4

185.0

50.4

40.6

91.0

+1.89

Comp

6.67

8.23

+1.85

320.0

362.0

141.8

193.8

42.0

52.0

94.0

+1.81

14, 23.50

14, 21.46

14, 20.51

22043 598

above group difficult

on account of clouds.

Sprocket wheel reads 4.5

14 ✓ 30 22 Gemini 074922 est < 12.0

Tues April 1-1949

147

20.0b 12" Polar

3 20 J. J. Amegil 060547
ext < 12.5

3 23 U Gami 074922
ext < 12.6

Both exts made thru clear
patches in clouds & diff
Vars surely not bright.

148

X Wed. April 2, 1919

~~Reappearance~~

12" Polar

L.C. Alb.

R. R. Miller Rev

2^d Int.Reap. Imp II
Phot R.~~12~~
12^h 3^m 46^s sceneComp with Sat. on
opposite side = Sat. I.

12.4.36 308.4

12.4.55 3.6

12.5.10 309.6

12.5.19 10.4

12.5.33 301.6

5.43 18.2

5.49 297.2

5.60 20.4

6.10 290.8

6.14.1 22.2

6.27 295.8

6.38 23.1

6.48 291.2

6.57 26.4

7.06 298.8

7.15 21.8

7.22 296.8

7.32 27.4

7.40 293.3

7.47 23.8

7.56 291.0

8.09 24.0

8.17 292.2

8.32 22.6

8.45 293.1

April 2-1919.

S.M.T. Reef Exp. II cont.

12. 9:00	25.1
9:10	294.2
9:16	22.2
9:30	293.8
9:35	22.8
9:40	291.4
9:53	25.2
10:09	298.5
10:19	26.8
12 10:29	297.4

L.V.

12 10:40	317.7
10:57	351.0
11:08	319.8
12 11:19	350.9

Thrust ext. (seen) made with low power
eyepiece (not photometer)

Observed thumps Sat. may have exp.
sooner, but clouds prevented same being
seen earlier.

Muller's watch used = 24^h fast
Boat 105 12 19 00 watch = 12 19 24.0.

150

April 2-1919.

G. M. T. Add 4^h to clock time to
obtain Greenwich M. T.

12 2A Fr 3024 and henceforth.

12 2A S⁸ Aurigae 060547
est < 12.5

clouds near region.

12 33 U Gemin 074922
est < 13.0

Star b (U Gemin Peg) with star d.

P.A. = W.

Phot R.

12 48.15 → 18.2 < Star d dis (upper
118.4 < 100.2
213.2 < 67.4
280.6 167.6 * -0.24

36.0
102.8 L 66.8 * -0.26

198.8 98.2
P.A. 297.0 165.0 * -0.29

P.A. = E.

mean = -0.04

285.7

28.4 L 102.7

115.6 88.8

204.4 124.5 + 0.22

296.4 168.5

25.6 L 89.2

111.2 97.2 + 0.17

12 52.35 208.4 186.4 + 0.12

12 50 50.25 173.6

April 2-1919

Star b (W. Gene) again II

PA = East

12. 58.5 292.6 / Star b disc

22.4

89.8

113.2

92.1

205.3

181.9

178.1

+ 0.03

291.4

23.6

92.2

+ 0.01

117.4

873.

204.7

179.5

- 0.01

Mean = \bar{x} 0.11

P.A. - W.

204.9

292.4

87.5

29.8

785.4

105.2

172.9

- 0.32

205.9

- 0.23

282.8

76.9

20.4

95.8

13. 03.15

116.2

172.7

- 0.14

12 12 1 20

13 0 40

.542

Mean 2 groups = - 0.08

2

152

April 2-1919

093156

W use Way

Phot T

PA = North

I

13 20 30

45.0

115.3

225.2

288.0

< dis comp * dis

70.3

62.8

133.1 + 0.91

40.2

104.4

225.2

282.9

64.2

57.7

121.9

+ 1.03

+ 1.15

PA = South

Mean = + 1.14

133.2

191.4

310.9

371.8

58.2

60.9

119.1

Comp * = 6.67

Magn = 7.81

+ 1.21

132.8

195.1

315.9

369.8

62.3

53.9

116.2

+ 1.24

+ 1.28

13 25 35

46

5

13 23 2

22051.558

✓

April 2-1919

Pa = South W. Am. Mag. II

131,30:25	137.9		
	190.4	525	
	316.6	576	
	374.2	110.1	+ 142

137.8			+ 136
197.6	59.8		
312.4	560		
368.4	115.8		+ 129

Pa = North		Mean = + 123
224.6		6.67
284.9	603	
38.6	663	
104.9	126.6	+ 1.05

222.8		+ 1.10
282.7	599	
45.2	616	
13.36.5	106.8	121.5 + 1.16

13 33 15

22051, 565

New Battery for Torch.

154

April 2-1919.

W. W. W. W. W.

	Pa. - N.		III
13. 40.50	222.8		
	284.2	614	
	39.8	<u>65.7</u>	
	105.5	127.1	+ 1.04

	223.6		+ 1.14
	283.7	60.1	
	44.4	<u>57.8</u>	
	102.2	117.9	+ 1.24

Pa. - S.		Mean =	+ 1.25
312.6			<u>6.67</u>
370.0	57.4	Mean =	7.92
133.8	<u>56.8</u>		
190.6	114.2		+ 1.32

	316.2		+ 1.36
	375.0	52.8	
	137.2	<u>52.5</u>	
13. 44.20	189.7	111.3	+ 1.39

13 42 35

22051.571

✓

April 2-1919

P.A. - ^{W. W. Maj.} S. IV

13.49.5	320.4		
	12.8	52.4 ✓	
	141.2	<u>45.4</u> ✓	
	186.6	97.8 ✓	+ 1.71 ✓

324.4			+ 1.73 ✓
11.4	470 ✓		
140.0	<u>49.4</u> ✓		
189.4	96.4 ✓		+ 1.75 ✓

P.A. - N

42.2			Mean = + 1.46 ✓
101.8	59.6 ✓		
225.1	<u>61.7</u> ✓		Magn = $\frac{667}{2.13}$ ✓
286.8	121.3 ✓		+ 1.16 ✓

	45.0		
	99.8	58.8 ✓	+ 1.10 ✓
	224.8	<u>65.0</u> ✓	
13.52.35	289.8	119.8 ✓	+ 1.20 ✓

101 40

13 50 50

.577

22051.577

14 50

Fluor

3424

= 2nd slow by bill ✓

156

April 2-1919

Pa. - N W. W. W. W. V

14. 1.35 38.8
 104.4 65.6
 227.2 56.6
 283.8 122.2 + 1.14

42.8 + 1.20
 100.3 57.5
 226.0 58.8
 284.8 116.3 + 1.27

Pa - S Mean = + 1.41
 141.8 6.67
 192.6 50.8 8.08
 318.2 53.2
 11.4 104.0 + 1.56

138.4
 190.8 52.4 + 1.62
 318.2 47.0
 14. 4.50 365.2 99.4 + 1.67
 6 25

14 3 12

14 3 14

22051.585

✓

April 2-1919.

P. q. - 5. W. um Maj.

VI

14,9,20	142.2		
	192.3	50.1	
	317.8	<u>53.6</u>	
	11.4	103.7	+ 1.57

136.7		+ 1.61
189.8	53.1	
318.5	<u>47.1</u>	
365.6	100.2	+ 1.65

$P_a - n$

228.0	53.8	7	132
281.8			
42.7	56.7		
99.4	<u>110.5</u>		+ 141

$$\begin{array}{r} 14.12.50 \\ \hline 22 \ 10 \\ 14 \ 11 \ 05 \\ 14 \ 11 \ 07 \\ \hline 22051.591 \end{array}$$

✓

April 2 - 1919,

W Un Maj VII,
P.a. - 11

14. 21. 20	228.9		
	287.2	52.3	
	43.8	<u>62.9</u>	
	106.7	121.2	+ 1.17

	226.9		+ 1.24
	286.6	59.7	
	47.8	<u>55.0</u>	
	102.8	114.7	+ 1.31

P.a. - 5

Mean = +163

326.4

6.67

366.2

39.8

Magr = 8.20

141.6

49.4

191.0

89.2

+ 1.94

321.6

366.9

45.3

+ 2.02

145.1

37.7

182.8

83.0

+ 2.11

14. 24. 35

5 55

14 22 58

14 23 00

22051.599

✓

April 2 - 1907

W Un Maj
P.A. - S.

VIII

14.27.30	322.2		
	364.2	420	
	141.7	445	
	186.2	<u>865</u>	+ 2.01

	319.2		+ 1.90
	366.8	476	
	143.4	406	
	184.0	<u>882</u>	+ 1.96

P.A. - N.			Mean = + 1.65
45.8			<u>6.67</u>
101.8	560		Major = 8.32
226.0	<u>58.2</u>		
284.2	114.2	+ 1.32	

	42.2		+ 1.32
	102.1	599	
	224.7	55.0	
14.30.50	279.7	<u>114.9</u>	+ 1.31
<u>20</u>			

14 29 10

14 29 13

22051.603

 $\frac{S}{2} = 4.6$

2

160

Sat. April 19, 1919

RCOB 12" Polar

13 50 S.S. Cyg Aurigae 060547
 est = 13.2
 var. mag. only.

13 55-22 Gem 074522
 est < 13.3

RRM 093156 W Urs Maj Phot T. Comp. star which has been ^{used}
 P.A. = North East in previous measures
 13. 37. 30. 319.2 The variable disk appears to be double,
 368.4 49.2 will therefore take the
 137.4 54.2 other other star to the
 191.6 103.4 — 1.57 north of the variable

312.8
 376.2 63.4 — 1.50
 141.6
 187.2 45.6
 109.0 — 1.44

P.A. = South West mean = -1.15

13.40.20 46.4 57.3
 103.7 77.4
 212.4 134.7 — 0.88
 22068.569 289.8 — 0.80

35.2 80.2
 115.4 63.0
 221.6 143.2 — 0.71

✓
 13. 42.50
 13. 40.10 569

Sat. April 19, 1919.

W. Urs. maj. Group 2.
P.A. = South West

13. 49.45	³ 4 4.4	assumed	
	105.2	780.8	
	216.2	<u>69.9</u>	
	286.1	1840.7	- 0.76

	40.6		
	112.4	71.8	- 0.83
	220.8	<u>62.2</u>	
	283.0	134.0	- 0.90

143.0		Mean = -1.12
191.6	48.6	
310.0	<u>67.4</u>	
307.4	116.0	- 1.28

138.7		
196.0	57.3	- 1.40
318.6	<u>48.2</u>	
366.8	105.5	- 1.52
13. 54.30		
104.15		

13. 52. 08
13. 52. 18
220168.578

Frustrated by thin clouds in this group.

14.00 Fringe. 3424 = 10 sec. slow by bell.

162

Sat. April 19, 1919.
Have done 15-in. cleaned.

Wass. maj. Group 3,
P.A. = North East.

134. 7. 40

137.7

188.4

313.3

377.2

50.7

63.9

114.6

- 1.31

130.2

199.4

318.6

367.7

69.2

49.1

118.3

- 1.23

- 1.27

P.A. = South West.

224.9

284.8

34.0

112.4

59.9

78.4

138.3

- 0.81

Mean = -1.10

216.7

288.4

42.4

102.8

71.7

69.4

132.1

- 0.94

- 0.92

14. 11. 5

14. 9. 22

14. 9. 33

22068.590

Sat. April 19, 1919.

M. W. mag.

Group 4.

14. 18.15 217.5 64.9
 282.4 79.3
 35.5
 114.8 144.2 — 0.69

214.8 — 0.75
 293.3 78.5
 45.0 59.9 — 0.81
 104.9 138.4

316.2 Mean = — 0.98
 372.2 56.0
 130.6 66.6 — 1.14
 197.2 122.6

312.9
 376.4 63.5 — 1.22
 135.4 52.0
 14. 22.30 187.4 115.5 — 1.29

14. 20.77

14. 20.32

22068.598

164

Sat. April 19, 1919,

W. L. W. May

Group 5

P.A. = North East

14. 32.05

313.9.

371.4

131.4

196.2

57.5

6 48

12 23

— 1.14

312.3

375.2

135.2

193.3

62.9

58.1

121.0

— 1.17

— 1.16

47.4

102.2

215.2

289.1

54.8

73.9

138.7

— 0.80

Mean = 0.98

35.9

108.8

220.0

286.0

73.1

66.0

139.1

— 0.79

— 0.80

14. 36.05

14. 34.05

14. 34.15

22068.607

✓

Tues. April 22, 1919.

LCCb
SS

1.2 - Polar.

Dirigae 06054) Group 1.

KRMP.A. =

est < 12.6

12. 37

Twilight strip

Comp. star dis. P.A. = N.

W lens mag 1093156 Phot.

12.42.40

223.3

289.2

65.9

32.2

76.2

+ 0.73

I,

108.4

142.1

+ 0.78

218.8

291.4

72.6

40.7

64.7

+ 0.83

105.4

137.3

P.A. = S.

Mean = +1.18

320.0

368.0

48.0

140.4

55.3

+ 1.58

195.7

103.3

mag. $\frac{6.67}{7.85}$

316.8

371.2

54.4

140.6

48.3

+ 1.59

12.46.30

188.9

102.7

12.44.35

22071.531

166

Apr. 22, 1919

W. W. Maj.

TT

P.A. = South

12 52 45	320.9	
	366.9	46.0
	139.8	54.8
	193.6	<u>100.8</u> + 1.64

315.2		
371.0	55.8	+ 1.61
141.1	47.5	
188.6	<u>103.3</u> + 1.58	

38.6		
107.8	69.2	Mean = + 1.16
216.2	74.6	6.67
290.8	<u>143.8</u> + 0.70	<u>7.83</u>

36.4		+ 0.72
115.6	79.2	
223.4	61.8	
285.2	<u>141.2</u> + 0.75	

12. 56. 50
 12. 54. 48
 220 71. 538

Apr. 22, 1919.

W. Ans. mag.

P.A. = north

~~III~~

13.02.55

39.8

106.7

222.4

285.2

66.9

62.8

129.7 + 0.99

42.4

110.0

217.7

287.7

67.6

70.0

137.6 + 0.82

+ 0.90

140.7

188.8

318.7

367.9

48.1

49.2

97.3 + 1.70Mean = +1.2⁸₅

6.67

79.35

139.7

191.8

320.7

370.9

52.1

50.2

102.3 + 1.60

+ 1.65

13.06.50

13.04.52

22071.546

168

April 22-1909
W. W. W. W. W.

IV

Pa = South

B, 26, 25

136.8

194.3

316.6

371.6

57.5

55.0

112.5 + 1.36

138.4

193.8

313.8

365.9

55.4

52.1

107.5 + 1.48

+ 1.42

Pa North

Mean = + 1.14

227.4

285.2

39.6

110.4

57.8

70.8

128.6 + 1.01

Magn.

$$\begin{array}{r} 1.14 \\ 6.6 \\ \hline 7.8 \end{array}$$

215.7

289.8

38.4

106.8

74.1

68.4

142.5 + 0.72

+ 0.86

13. 30. 0

13. 28. 12

22071.562

✓

April 22-1919

W. C. W. Maj.

V

Pa North

13, 35, 05	218.2	
	288.9	7 0.7
	36.6	7 0.0
	106.6	<u>14 0.7</u> + 0.76

217.9		+ 0.75
291.3	73.4	
35.2	<u>6 8.4</u>	
103.6	141.8	+ 0.74

Pa South

mean + 1.24

324.9		
363.6	38.7	
137.7	<u>5 7.2</u>	
194.9	95.9	+ 1.76

mean

6.67
<u>7.91</u>

311.6		+ 1.72
372.2	6 0.6	
145.3	<u>3 8.6</u>	
13.38.55	183.9	<u>9 9.2</u> + 1.68

13. 37. 0

22071.568

170

April 22, 1919

Wus May

H.

P.a. = South

13. 47. 20

320.4

363.8

136.9

194.4

43.5

57.5

101.0 + 1.63

315.0

373.6

143.2

192.3

58.6

49.1

107.7 + 1.47

+ 1.55

P.a. = North

38.4

106.3

221.8

283.8

67.9

62.0

129.9 + 0.98

Mean = +1.20

66.7

7.87

40.2

110.3

218.4

291.7

70.1

73.3

143.4 + 0.71

+ 0.84

13. 51. 0

13. 49. 10

22071.576

14.0 Greenwich 3424 = 48 seconds slow by bell.

✓

April 22, 1919.

W. W. May.

VII,

P.a. = North.

14.0.10

43.8

104.8

216.7

286.8

61.0

60.1

121.9 + 1.17

35.1

112.2

216.3

287.4

77.1

71.1

148.2 + 0.61

+ 0.89

P.a. = South,

141.9

184.9

318.0

373.3

43.0

55.3

98.3 + 1.70

Mean = +1.26

~~+1.6~~6.67
7.93

138.8

191.9

317.2

368.4

53.1

51.2

104.3 + 1.551

+ 1.62

14.3.50

14.2.0

22071.585

172

April 22, 1919.

W. W. Maj.

~~IV~~

P. a. = South

14. 11, 20

136.9

187.2

316.2

365.2

50.3

49.0

99.3 + 1.67

141.3

187.2

316.2

370.6

45.9

54.4

100.3 + 1.65

+ 1.66

P. a. = North

224.8

283.7

39.2

106.8

54.9

67.6

122.5 + 1.14

Mean = $\frac{1}{2}$ 1.34

+

667

801

223.6

288.8

38.7

107.2

65.2

68.5

133.7 + 0.90

+ 1.02

14, 15, 1014, 13, 15

22071.593

✓

April 22, 1919.

W. W. W. W.

TX

P. a. = North

14. 22.10

221.7

280.4

36.3

108.4

58.7

72.1

130.8 + 0.96

214.8

286.1

35.6

113.2

71.3

77.6

148.9 + 0.60

+ 0.78

P. a. = South

Mean = +1.31

324.8

366.8

142.2

188.8

42.0

46.6

848.6 + 1.95

6.67

7.98

318.2

364.2

139.4

191.0

46.0

51.6

97.6 + 1.72

+ 1.84

14.26.15

14.24.12

22071.601

174

April 22, 1919,

W. H. S. May,

X

P. a. = South,

14. 37.20

318.6

368.3

138.4

190.6

49.7

52.2

101.9 + 1.61

314.2

363.6

137.9

188.8

49.4

50.9

100.3 + 1.65

+ 1.63

P. a. = North

40.8

100.7

223.6

285.2

59.9

61.6

121.5 + 1.16

Mean = 1.42

6.67

8.89

42.4

104.0

225.9

281.0

61.6

55.7

116.7 + 1.27

+ 1.22

14. 40.50

14. 39.05

22071.611

✓

April 22, 1919.

W Urs maj.

~~XI.~~

P. a. = North

14. 49.05	41.4	65.8	
	107.2	59.6	
	220.4		
	280.0	125.4	+ 1.08

	36.1		+ 1.12
	103.0	66.9	
	227.3	54.7	
	282.0	121.6	+ 1.16

P. a. = South

Mean = +1.52

	141.0		66.7
	188.8	47.8	8.19
	321.3	43.5	
	364.8	91.3	+ 1.88

	142.4		+ 1.92
	191.0	48.6	
	322.2	39.2	
	361.4	87.8	+ 1.97

14. 53.0
14. 51.02
22071.619

176

April 23, 1919

S.S. Aurigae 060⁵⁴~~57~~

MMm

12.5

12. 42.5

W Mrs Major

Ampt

Camp Staudise

P.A. = North

12. 45.0

225.8

284.1

58.3

35.7

75.7

111.4

134.0 + 0.90

221.4

+0.88

295.4

74.0

41.6

62.3

103.9

136.2 + 0.85

P.A. = South

316.4

Mean = +1.05

370.8

54.4

135.6

62.2

197.8

116.6 + 1.276.67
7.72

306.9

+1.22

375.2

68.3

137.6

52.7

190.3

121.0 + 1.17

12. 48.35

12. 46. 48

22072.533

L

April 23, 1919.
W. W. May Group II.

P.g. = Smith.

12,54.20	312.4	
	371.2	58.8
	127.3	<u>70.5</u>
	197.8	129.3 + 0.99

306.1		+ 1.02
374.4	68.3	
134.2	<u>58.4</u>	
192.6	126.7	+ 1.05

P.g. = North

44.6		Mean + 1.00
105.0	60.4	6.67
221.6	<u>64.3</u>	<u>7.67</u>
285.9	124.7	+ 1.09

	38.9	
	107.4	68.5 + 0.99
	220.4	<u>66.0</u>
	286.4	134.5 + 0.89
<u>12,57.40</u>		
12,56.0		
22072.540		

17.0 Furtakami 3424 = 53 sec. shown by bell.

178

April 23, 1919.

Wans May,

III.

13. 01.50

p.a. = North.

40.6

103.0

62.4

217.8

70.4

288.2

132.8 + 0.92

32.4

+0.90

110.0

77.6

223.6

56.8

280.4

134.4 + 0.89

p.a. = South

134.0

mean +0.88

192.9

58.9

304.4

84.4

388.8

144.3 + 0.69

66.7

75.5

129.6

197.6

68.0

+0.87

314.8

58.4

13. 05. 15

373.2

126.4 + 1.05

13, 03, 32

22072.544

✓

April 23-1919

Wan May

IV

South
 13 9 00 135.6
 195.8 60.2
 305.3 72.1
 377.4 132.3 + 0.93

126.6 + 0.89
 202.8 76.2
 311.4 60.2
 371.6 136.4 + 0.85

North
 224.4
 281.6 57.2
 39.8 61.6
 101.4 118.8 + 1.22
 Mean = + 1.06
 6.67
 Mean = 7.73

223.3 + 1.24
 284.8 61.5
 45.5 55.8
 101.3 117.3 + 1.25

13 14 00
 13 11 30
 53
 13 12 23
 22072.550

180

April 28 - 1919

Winn mag. ∇ ∇

13. 21. 15 North
 $\begin{array}{r} 282.4 \\ 36.4 \\ 103.6 \end{array}$
 $\begin{array}{r} 63.6 \\ 67.2 \\ \hline 130.8 \end{array} + 0.96$

$\begin{array}{r} 222.8 \\ 284.2 \\ 42.6 \\ 102.4 \end{array}$
 $\begin{array}{r} 61.4 \\ 59.8 \\ \hline 121.2 \end{array} + 1.17$
 $+1.06$

South $\text{mean} = +1.10$
 $\begin{array}{r} 318.6 \\ 363.0 \\ 125.9 \\ 200.4 \end{array}$
 $\begin{array}{r} 44.4 \\ 74.5 \\ \hline 118.9 \end{array} + 1.22$
 $\begin{array}{r} 66.7 \\ 7.77 \end{array}$

$\begin{array}{r} 309.0 \\ 378.0 \\ 133.3 \\ 190.2 \end{array}$
 $\begin{array}{r} 69.0 \\ 56.9 \\ \hline 125.9 \end{array} + 1.07$
 $+1.14$

13. 25. 0
 $\begin{array}{r} 13.23.8 \\ 22072.558 \end{array}$

✓

april 23-1919

W. W. Smith

VII

13.40.0

310.6

371.4

60.8

132.0

68.5

200.5

129.3

+0.99

310.2

+1.01

381.0

70.8

133.6

56.6

190.2

127.4

+1.03

mean = +1.08

42.6

103.1

227.2

284.0

60.5

56.8

117.3

+1.25

$$\frac{667}{7.75}$$

41.4

+1.16

104.8

63.4

225.2

62.6

287.8

126.0

+1.06

13.43.35

13.41.48

22072.572

182

April 23, 1919.

W hrs mag

VII

P. 9. - North, focus slightly altered

13. 50.45

35.6

106.2

222.2

285.9

70.6

63.7

134.3 + 0.89

38.9

103.8

218.6

293.8

64.9

75.2

140.1 + 0.77

+ 0.83

Mean = +1.22

140.2

192.8

318.8

368.9

52.6

50.1

102.7 + 1.59

66.7

7.89

140.6

192.4

317.8

367.7

51.8

49.9

101.7 + 1.61

+ 1.60

13. 54.35

13. 52.40

22072.579

✓

April 23, 1919

W. H. May

VII.

3
14.50

South

139.2

192.4

316.3

366.8

53.2

50.5

103.7 + 1.57

136.9

194.4

315.8

367.5

57.5

51.7

109.2 + 1.44

+ 1.50

North

219.7

288.0

38.0

105.4

68.3

67.4

135.7 + 0.86

Mean = +1.16

667

7.83

220.4

283.8

33.6

110.4

63.4

76.8

140.2 + 0.77

+ 1.82

14.07.35

14.05.42

22072.586

184

April 23, 1919.

W. W. Major

IX,

P. q. = North

14, 16, 15

220.8

293.3

38.2

107.4

72.5

69.2

141.7 + 0.74

218.4

288.3

37.9

106.8

9

68.9

68.9

137.8 + 0.80

+ 0.77

P. q. = Smith

Mean + 1.24

319.8

362.8

134.4

186.4

43.0

52.0

95.0 + 1.78

6.67

7.91

316.3

369.8

140.0

185.8

53.5

45.8

99.3 + 1.67

+ 1.72

14, 20.55

14, 18.35

22072.597

✓

April 23, 1919.

W. W. Major

~~X~~

P.g. = South

14.34.45 315.5
 364.4 48.9
 144.8 42.4
 187.2 91.3 + 1.88

313.8 + 1.77⁴
 369.8 56.0
 144.3 46.6
 190.9 102.6 + 1.59

P.g. = North

Mean = +1.43

39.6
 103.0 63.4
 225.2 64.6
 289.8 128.0 + 1.02

667
 8.10

41.8
 102.2 60.4 + 1.12
 224.8 57.8
 282.6 118.2 + 1.23

14.38.15
 14.36.30
 22072.609

186

April 23, 1919.
Wass Major

~~XX~~

14,45.45

North

40.7

103.6

~~326.2~~

284.8

62.9

58.6

121.5 + 1.16

40.7

110.0

223.6

285.9

~~11~~

+1.06

69.3

62.3

131.6 + 0.95

South

142.2

183.6

317.4 + 90.4

~~364.4~~ ~~319.8~~

41.4

47.0

88.4 + 1.96

Mean = +1.50

6.67

8.17

144.6

191.2

320.4

363.6

46.6

43.2

89.8 + 1.92

+1.94

14.51.15

14.48.30

22072.617

✓

April 25, 1919,

RRm

12. 31 - S. S. Amigae . 060547

Variable not seen 12.0 twilight strong.

W us maj Group I.

P. 9. = north

12. 36.10 221.6 } comp. star dis.
 284.9 63.3
 40.0 66.4
 106.4 129.7 + 0.99

223.6 + 0.92
 288.6 65.0
 37.4 71.0
 108.4 136.0 + 0.86

mean = +1.15
 6.67
 7.82

311.8 Clouds
 364.0 52.2
 136.3 Clouds 57.9
 194.2 Clouds 110.1 + 1.42

309.8 +1.38
 377.7 67.9
 142.2 Clouds 45.2
 187.4 113.1 + 1.35

12. 40.45
 12. 38.28
 2074.527

Considerably better clouds in last half of group.

188

April 25, 1919.

W. H. Major.
P. a. = South.

II

12. 46. 05 312.4
 372.4 60.0
 134.6 6 1.2
 195.8 Clouds 121.2 + 1.17

313.6
 373.8 60.2 +1.34
 143.7 455
 189.2 105.7 + 1.52

P. a. = North

42.7 Mean = +1.00
 106.8 64.1 667
 219.8 76.6 7.67
 296.4 140.7 + 0.76

33.3 Clouds
 113.6 Clouds 80.3 + 0.67
 218.6 Clouds 69.4
 12. 51. 35 288.0 149.7 + 0.58

12. 48. 50
 22074.535

✓

Bothered considerably by clouds.

April 25, 1919.

W. Mrs. May.

III

 $\frac{13}{2} \cdot 7:10$

P. a. = North

40.0

108.2

215.9

289.8

68.2

73.9

 $142.1 + 0.73$

35.7

106.8

225.3

284.2

Clouds 71.1

58.9

 $130.0 + 0.98$ $+0.85$ P. a. = ~~the~~ South

145.3

185.9

312.4

375.4

40.6

63.0

 $103.6 + 1.57$

Mean 71.13

6.67

7.80

130.6 Clouds

 $+1.42$

193.2

313.8

367.8

62.6

54.0

 $116.6 + 1.27$

$$\begin{array}{r} 10 \\ 13, 5.50 \\ 13, 6.30 \\ \hline 22074.549 \end{array}$$

190

April 25, 1919.

W. Urs May

IV

P.a. = South

13. 44. 25

137.4

194.2

313.3

376.8

56.8

63.5

120.3 + 1.19

134.8

197.2

313.0

373.3

62.4

60.3

122.7 + 1.13

+1.16

P.a. = North

226.0

283.4

36.3

106.4

59.4

70.1

127.5 + 1.03

Mean = +1.10

667

7.77

222.6

291.2

42.2

99.8

Clouds 68.6

+1.04

57.6

126.2 + 1.06

13. 48.5

13,46.15

22074.574

✓

April 25, 1919.

W. Urs May.

V.

P. 9. - North

13. 53, 15

224.9

284.3

39.2

109.4

59.4

7 0.2

129.6 + 0.99

220.4

287.9

42.2

104.0

+ 0.99

6 7.5

6 1.8

129.3 + 0.99

316.8

369.8

136.4

194.6

Mean ± 1.17

53.0

58.2

111.2 + 1.39667

7,84

311.3

372.4

135.7

189.4

61.1

+ 1.35

53.7

114.8 + 1.31

13. 57.35

13. 55.25

22074.581

192

may 6,
~~April 26,~~ 1919.

Perm

(new batteries for 12-in.)
 Asteroid Bellona, Disg. Mex. E. Phil. T.

I.

13. 28. 10

31.4

111.6

204.8

296.8

80.2

92.0

17 2.2 + -0.15

30.4

119.4

208.6

291.0

89.0

82.4

171.4

- 0.16

- 0.16

P. q. = W.

121.2

200.8

310.9

369.8

79.6

58.9

138.5

- 0.80

Mean = -0.52

136.8

192.0

300.8

377.2

55.2

76.4

131.6

- 0.95

- 0.88

13. 34. 05

13. 31. 08

22085.565

~~April 2~~ May 6, 1919.

Asteroid Bellona Dis.

II,

Pa. = W.
 13.39.45 127.8
 194.0 66.2
 308.7 63.1
 371.8 129.3 - 0.99

132.4 - 0.95
 192.7 60.3
 302.8 73.4
 376.2 133.7 - 0.90

Pa. = E.
 206.8 Mean = -0.59
 296.2 88.4
 32.8 99.4
 112.2 167.8 - 0.23

214.2
 294.3 80.1 - 0.22
 25.7 88.7
 13.42.45 114.4 168.8 - 0.21
 13.41.45
 22085.572

194

May 6, 1919,

Asteroid Bellma Die

III,

13. 47. 40

P.a. = E,

209.4

296.6

29.6

110.2

87.2

80.6

167.8

-0.23

211.4

292.9

26.7

125.4

82.5

98.7

181.2178.8

-0.10

+0.02

P.g. = W

302.2

380.4

127.6

187.8

78.2

60.3

138.4

-0.81

mean = -0.51

311.4

371.2

129.2

196.4

59.8

67.2

127.0

-0.92

-1.04

13. 51. 30

13. 49. 35

14.0 Frodsham 3424 = 1 min. 49 sec. slow.

22085.577

✓

May 6, 1919.

Bellman

IV,

¹³
~~14~~. 59.20 P.a. - W. Julian Day 22085
 308.2
 379.8 71.6
 129.8 623
 192.1 133.9 - 0.90

309.6 - 0.86
 374.2 64.6
 125.9 73.8
 199.7 138.4 - 0.81

P.a. = E,

12 33.0

Mean = -0.55

119.6 86.6
 211.6 78.4
 290.0 165.0 - 0.29
 - 34.9

34.9
 109.8 74.9 - 0.24
 203.2 95.4
 298.6 170.3 - 0.18

14.3.15
 14.1.18
 1.49

14.3.07
 22085.585

196

May 6, 1919.
Bellona

IV

14, 8.15

Pa. = E.

29.8

107.7

213.6

288.9

77.9

75.3

153.2 - 0.51

38.8

113.6

208.6

294.2

74.8

85.6

160.4 - 0.37

- 0.44

Pa. = W.

125.2

198.8

313.2

374.0

73.6

60.8

134.4 - 0.89

Mean = -0.64

129.4

188.6

296.1

374.2

61.2

78.2

139.4 - 0.79

- 0.84

14 12.40

14.10 - 28

1.49

14.12.17

22085.592

✓

May 6, 1919,
Ballmer.VI,P_q = W.

14,2415

129.2

195.9

309.6

370.4

66.7

60.8

127.5 - 1.03

128.9

195.8

309.2

376.3

66.9

67.1

134.0 - 0.90

- 0.96

P_q = E.

204.0

294.0

34.9

114.0

90.0

79.1

169.1 - 0.20

Mean = 0.57

215.4

298.0

25.5

114.4

82.6

88.9

171.5 - 0.16

- 0.08

14,28.10

14,26.12

1.49

14,28.01

22085.603

198

May 6, 1919.
Bellma

VII

$$\begin{array}{r}
 14.34.35 \\
 203.3 \\
 296.3 \\
 36.9 \\
 115.2 \\
 \hline
 93.0 \\
 78.3 \\
 \hline
 171.3 - 0.16
 \end{array}$$

$$\begin{array}{r}
 210.6 \\
 292.6 \\
 28.8 \\
 114.2 \\
 \hline
 820 \\
 85.4 \\
 \hline
 167.4 - 0.24
 \end{array}$$

— 0.20

$$\begin{array}{r}
 Pa. = W \\
 307.7 \\
 374.9 \\
 128.8 \\
 196.8 \\
 \hline
 67.2 \\
 68.0 \\
 \hline
 135.2 - 0.87
 \end{array}$$

Mean — 0.58

$$\begin{array}{r}
 307.6 \\
 372.2 \\
 131.6 \\
 194.8 \\
 \hline
 64.6 \\
 63.2 \\
 \hline
 127.8 - 1.03
 \end{array}$$

— 0.95

$$\begin{array}{r}
 14.38.15 \\
 14.36.25 \\
 \hline
 1.49 \\
 14.38.14 \\
 22085.610
 \end{array}$$

$$Spz. = 4.75.3$$

✓

May 13, 1919.Rem

Wms May. 93156

I.

P.g. = N.E.

13. 33. 10

41.6 > C.S. Dis.

100.6

59.0

215.9

68.5

284.4

127.5 + 1.03

31.2

+ 0.96

105.6

74.4

223.0

59.6

282.6

134.0 + 0.90

P.g. = S.W.

138.6

Mean ± 1.11

191.9

53.3

310.6

64.6

375.2

117.9 + 1.24

+ $\frac{667}{7.78}$

129.6

199.2

69.6

+ 1.26

323.0

46.8

369.8

116.4 + 1.27

13. 37.45

13. 35.28

22092.568

200

May 13, 1919.

Wkes mag.

II.

P.a. = S.W.

13. 51.45

136.8

190.6

306.6

374.2

53.8

67.6

121.4 + 1.16

127.4

195.9

310.2

369.8

68.5

59.6

128.1 + 1.02

+ 1.09

P.a. = N.E.

218.8

284.0

29.8

110.8

65.2

81.0

146.2 + 0.65

Mean = 0.92

6.67

7.59

213.4

286.6

40.0

102.8

73.2

62.8

136.0 + 0.86

+ 0.76

13. 55.15

22092.582

✓ 14,0.0 Foxsham 3424 = 2 min. 16 sec. slowly bell.

May 13, 1919.

W use maj

III.

P. a. = N.E.

14. 12.45	222.2	
	280.0	57.8
	42.4	63.8
	106.2	<u>121.6</u> + 1.16

218.6		+ 1.10
284.0	65.4	
38.2	62.4	
100.6	<u>127.8</u> + 1.03	

P. a. = ~~S~~ W.

317.8		mean = + 1.22
370.8	53.0	<u>667</u>
131.2	61.8	7.89
193.0	<u>114.8</u> + 1.31	

310.8		
372.8	62.0	+ 1.34
136.9	50.0	

14. 16.05	186.9.	
14. 14.25		
22092.595	<u>112.0</u> + 1.37	

202

2.43

Mon May 19, 1919,

Kmm

Bellona (28)

Note: - Star measured for Bellona (28)
 or May 6, 1919 was not

Bellona or proven by
 an examination of the region
~~tough~~ but $\Delta m + 7^\circ$ (12 1-35-47 70)
 comp with $\Delta m + 6^\circ$ (12 5-6 +6 46)

13 25 Bellona not found with
 certainly ~~tough~~

Variations
³
 14

W. Lerner 104814
 Est. 12.7 Observation very difficult in acct. clouds

R Lerner 94211
 Est. 7.0 color 8

R. Cmae 115919.
 Est. 9.3

J. Cand Vew 122532
 Est. 10.0

May 19, 1919.

J. Urs. May. 123160
Est. 10.3

S. Urs. May. 123961
Est. 10.7

R. S. Urs. May. 123459
Est. 10.9

R. U. Virginus 124204
Est.

Why too cloudy to continue.

13.48.35

Clouds practically everywhere

204

Tuesday May 27, 1919.

Rmn

R. Bootis 143227 - Est. 11.1

14. 27.25

U. Bootis 144918 Est 11.2

S. Serpent 151714 Est 11.4 : 21

S. Corone 151731 Est 10.9.

14. 46.05

R. Carme 154428 Est 6.1

Mon. June 15, 1919

XII

A.C.C.

12" Polar.

22/25

No pencil at hand so
used pen. !!!

1550

SS Cygni 213 & 43 at 11.5

206

22/28

Wednesday, June 18, 1919.

Alcorae 1159 19.

R Comae

14. 49.50 est ~~4~~ 8.0

J. Can Ven 12 25 32

14. 50. 40

est 9.7

Clouds.

U. Virginis 12 46 06

Z. Bootis 14 01 13

Too cloudy.

R. Bootis 14 32 27

Southern send appearing in all parts of sky.

22, 29

Thursday, June 19, 1919

R Leonis 09 42 11

13. 24.55

Twilight too strong.

13. 26.50 S. Urs maj. 12 39 61 est 10.0

13. 27.45 J. Urs maj 12 31 60 est 11.7

13. 29.15 R. S. Urs maj. 12 34 59 est 8.8

13. 33.50 W. ~~the~~ Virginus 12 46 06 est 10.913. 40.50 S Virginus 13 27 06 est 10.8

13. 45.25 S. Bootis 14 19 54 est 9.6

13. 47.10 R S Virginus 14 22 05 est 7.5

13. 48.45 V Bootis 14 25 39 est 7.5

208

Thursday, June 19, 1919

13.50.25	R Bootis	14 32 27	est 7.7
13.53.25	<u>V Librae</u>	<u>14 34 17</u>	est 10.1
13.54.30	V Bootis	14 49 18	est 11.8
13.57.35	<u>R J Librae</u>	<u>15 00 18</u>	est 10.3
13.59.30	<u>J Librae</u>	<u>15 05 19</u>	est 12.5 (J/ser)
14. 5 01.20	<u>S Librae</u>	<u>15 15 20</u>	est 11.6
14.07.15	S Serpentes	15 27 14	est 12.4
14.08.30	S Coronae	15 17 31	est 11.2
14.11.25	<u>R S Librae</u>	<u>15 18 22</u>	est 9.8
14.18.05	<u>R V Librae</u>	<u>15 27 14</u>	est 12.8

Resilver mirror

209

LOOK!

Thursday, June 19, 1919.

~~X Librae~~

14. 21. 15

V Librae 15 36 20 est 9.3

14.

Z Librae 15 40 20 est

14. 27. 30

R Serpentis 15 46 15 est 9.8

14. 29. 55

V Comae 15 46 39 est 10.7

14. 33. 05

R Librae 15 47 15 est 12.8 (difficult)

14. 34. 55

RR Librae 15 50 18 est 8.4

14. 36. 20

R3 Scorpii 15 58 23 est 11.8

14 37. 30

3 Scorpii 16 00 21 est 13.0

14. 39. 35

V Serpentis 16 02 10 est 9.3

210

Thursday, June 19, 1919.

14. 40. 35	X Scorp	<u>16 02 21</u> est 9.3
------------	---------	-------------------------

14. 42. 40	W Scorp	<u>16 05 19</u> est <u>12.5</u>
------------	---------	---------------------------------

14.	R X Scorp	16 05 24 est
----------------	----------------------	-------------------------

14. 45. 55	R U Herc	16 06 25 est 10.7
------------	----------	-------------------

14. 50. 10	R Scorp	<u>16 11 22 a</u> est 11.2
------------	---------	----------------------------

14. 50. 20	S Scorp	<u>16 11 22 b</u> est 12.5 (frozen)
------------	---------	-------------------------------------

14. 52. 45	W Coronae	16 11 38 est 12.8
------------	-----------	-------------------

14. 54. 35	V Herc	16 21 19 est 11.8
------------	--------	-------------------

Friday, July 11, 1919

g.m.T.	LC Obs.	2 CH Rec.
13-26	S Serpentis 15 17 14	15-17-14 est 10.5
	R Comae 11 59 19	est 8.8
	SS Virginus 12 20 01	est 7.4 R = 9
	T Canven 12 25 32	est 10.2 R = 6
13-36	γ Virginus <u>12 28 03</u>	est 12.2 if seen.
	R Virginus. 12 33 07	est 8.9
	U. Virginus 12 46 06	est 10.0
	R. U. Virginus 12 42 04	est 11.4
	S Virginus. <u>13 27 06</u> True interferes.	
13-51	R Canven 13 44 40	est 8.3

212

Friday 11 July 1919.

S. Bootis

141954 -

est 9.6

14 00 00

R. Bootis

143227

est 7.3

V Coronae

154639

est 9.5

R=8

14-13

5 Herculis.

164715-

est 8.2

Thurs July 24, 1919

2164

Schubert's 5" Tel. at Berwick Maine.

Copied from Memoir July 29 - 1919.

15 00 SS Cygni 213843 est 11.2

214

Stat. Aug. 9-1919.

S.M.T.

12" Polar

ACells.

16 ∞

SSCephei, 213843, est 11.2

Copied for memory

Fri. Aug. 15-1919

215

S.M.T.

R.C. Alb

12" Polar

22186

14.30

S.P. Cygni ext 11.1

216

2291

Wed. Aug 20-1919

12" Polar.

g m T	LC Obs.		McK Rec.
	213843	SS Cygni	est 11.2

184308

Nova Aquilae 3 est. 6.9

Photometer T

Comparison star = 6.27

Index S E

44-37-00 - 220.6 Comp & dis

→ 289.8 69.2

m 39.2 68.4

107.6 137.6 + 0.82

10.1 - 216.7

10.1 - 284.8 68.1 + 0.80

0.5 - 37.7 71.1

0.5 - 108.8 139.2 + 0.79

Index NW

Mean - +1.02

$$\begin{array}{r} 6.27 \\ 7.29 \end{array}$$

316.1

369.6 535

134.2 60.2

194.4 113.7 + 1.33

✓ 317.8

11.4

536

+ 1.25

127.2

68.6

14-41-10

195.8

122.2

+ 1.17

14 78 10

14 39 52 191 610

Wed Aug 20-1919

II

14 45 10 Index NW
 310.8
 14.7
 132.8
 195.2

63.9
 62.5
 126.3 + 1.06

315.1
 12.8
 133.8
 198.4

57.7
 64.6
 122.3 + 1.14

+ 1.10

Index S.E. mean = +1.00

40.6
 107.9
 222.4
 286.9

67.3
 64.5
 131.8 + 0.94

1.02
 1.01
 6.27
 7.28
 727

50
 41.6
 107.3
 217.8
 14 48 40 288.3

65.7
 70.5
 136.2 + 0.85

+ 0.90

14 9 3 50

14 4 6 55

.616

spr = 3.4

PHOT. OBSERVATIONS LEDGERED IN THIS BOOK.

$H_{1,23}$



h

h

h

0.172067
1.032402

1919phae.proj..642C