

1919phae.proj. 628C

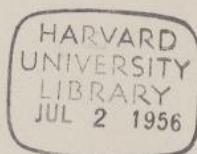
KG
11365
627

2203

15

KG 11365.627

KG 11365.627



Continued from Book 202

1

Oct 18, 1919

Ceres.

VI

PA 240
 13 11 14 335.6
 44.2 68.6
 166.0 50.1
 216.1 118.7 -1.22

344.7
 38.2 53.5 -1.22
 157.6 64.6
 222.2 118.1 -1.23

PA 60 mean -1.26
 70.4
 128.4 58.0
 251.5 57.1
 308.6 115.1 -1.30

73.0
 124.0 51.0 -1.30
 247.4 64.0
 311.4 115.0 -1.30

13 14 58
 6 12
 13 13 6
 55 11

Oct 18, 1919

Ceres

VII

13 15 53 PA 60

68.2

134.4

250.6

307.9

66.2

57.3

123.5

- 1.12

70.1

131.0

246.2

312.8

60.9

66.6

127.5

- 1.08

- 1.03

PA. 240

154.2

225.2

342.3

37.1

71.0

54.8

125.8

- 1.07

mean - 1.06

?

159.8

223.4

337.2

42.6

63.6

65.4

129.0

- 1.04

- 1.00

13 14 20

Oct 18, 1919

Ceres

VIIIPa 240
13.21.00 158.8

222.0

342.2

35.6

63.2

53.4

116.6

- 1.27

161.2

216.9

337.8

40.4

55.7

- 1.25

62.6

118.3

- 1.23

Pa 60

- 1.22

246.6

312.2

72.1

125.6

65.6

53.5

119.1

- 1.21

252.6

305.6

65.4

133.2

53.0

- 1.20

67.8

120.8

- 1.18

13 24 32

5 32

11 22 46

55

4

Oct 18, 1919

Cores

IX

20 Pa 60
13 25 20 244.4

312.0 67.6

71.7 55.5

127.2 123.1 - 1.13

252.1

303.6 51.5

67.4 69.4

136.8 120.9 - 1.17

Pa 240

Mean - 1.18

~~242.2~~

334.4

42.8 68.4

164.4 57.6

215.5 119.5 - 1.20

340.4

37.2 56.8

161.3 63.0

224.3 119.8 - 1.20

13 29 58

#8

13 27 39

561

Oct 18, 1919

Ceres

X

13 34 07 Pa 240
 334.8
 44.4 69.6
 161.7 57.5
 219.2 127.1 - 1.04

343.7
 39.6 55.9 - 1.20
 160.6 58.8
 219.4 112.9 - 1.35

Pa 60 Mean - 1.19
 67.2
 129.4 62.2
 249.4 57.8
 307.2 120.0 - 1.19

73.3
 126.4 53.1 - 1.18
 243.7 68.5
 13 38 31 312.2 121.6 - 1.16

13 36 19

567

Same Comp * as last night
 (Oct 17 1919)

Oct 18, 1919

Ceres.

XI

13 51 01 P.A. 60

65.8

132.2

248.6

307.0

66.4

58.4

124.8

-1.09

72.6

125.8

243.6

313.0

53.2

69.4

122.6

-1.12

-1.14

P.A. 240

158.8

223.6

343.6

37.2

64.8

53.6

118.4

-1.23

Mean = -1.19

165.5

216.2

328.6

42.2

50.7

73.6

124.3

-1.26

-1.10

~~13 55 12~~

335.6

40.0

50.7

64.4

115.1

-1.30

13 56 16

7 17

13 53 38

579

Oct 18, 1919

Ceres

XII

14 00 08 Pa 240
 154.2
 222.6 68.4
 343.7 55.9
 39.6 124.3 - 1.10

166.1
 224.4 58.3 - 1.10
 338.2 66.4
 44.6 124.7 - 1.09

Pa 60 Mean - 1.19

248.2
 310.6 62.4
 73.6 54.2
 127.8 116.6 - 1.27

255.5
 306.2 50.7 - 1.28
 68.2 65.0

14 04 10 133.2 115.7 - 1.29
 14 02 9
 585

14 00 00 H's watch 33 sec slow.

Oct 18, 1919

Ceres

XIII

14 14 38

PA ~~98~~

249.2

303.8

69.8

126.7

54.6

56.9

111.5

-1.38

~~251.4~~~~304.8~~~~65.4~~~~131.6~~~~53.4~~~~66.2~~

-1.37

PA ~~60~~

243.8

309.8

72.4

128.8

56.0

56.4

112.4

-1.36

Mean = -1.30

PA 240

345.1

37.4

156.2

224.3

52.3

68.1

120.4

-1.18

336.6

43.0

165.8

214.6

66.4

48.8

115.2

1.30

-1.24

14 19 41

14 17

Oct 18, 1919

9

Ceres.

XIV

PA 240

14 21 29 339.3

39.6

60.3

157.7

64.7

222.4

125.0

-1.08

341.4

43.8

62.4

-1.20

167.1

52.1

219.2

114.5

-1.31

PA 60

Mean: -1.18

72.0

126.8

54.8

243.4

70.2

313.6

125.0

-1.08

65.4

-1.18

131.8

66.4

255.6

51.2

-1.25

14 25 30

306.8

117.6

+0.3

14 23 30

6.00

10

Oct 18 / 1919

Ceres

XV14 ²⁸
~~33~~ 28

Pa 60

72.4

126.4

243.4

309.6

54.0

66.2

120.2

-1.19

67.2

134.8

251.0

307.5

67.6

56.5

124.1

-1.14

-1.10

Pa 240

165.5

216.4

335.3

45.1

50.9

69.8

120.7

-1.18

-1.16

158.4

225.8

342.3

35.2

67.4

52.9

120.3

-1.18

-1.19

14 32 38

14 30 33

6.5

Pa = 237.2

Spr. 3.2

Wed. Oct. 22-1919

L.C. Obs 15" E. 29. N.C.H. Rec.

Ceren

Phot T.

11	27	34	PA 290	23	5-3	-164	
			34.4	← Comp. dis.			I
			77.6		43.2	✓	
			211.6		47.9	✓	
			259.5		91.1	✓	+ 188

3	8.8	assumed ✓	
	81.2	42.4	✓
	216.7	37.3	✓
	254.0	749.7	✓

reject due to uncertainty in reading.
(+)

PA 110

640
 $\mu_{\text{mean}} = +1.68$
 8.08

299.3		✓
352.0	52.7	✓
117.2	55.6	✓
172.8	108.3	✓

+ 146

148

292.4	
352.2	59.8
123.4	46.6
170.0	106.4

+ 150

11 32 26

11 3500

.479

Oct 22, 1919

Ceres

II

Pa. 110

11 36 21 302.2

342.0

39.8

121.8

53.0

174.8

92.8

+ 1.84

300.4

1.82

349.8

49.4

124.9

45.3

170.2

94.7

+ 1.79

Pa. 290

36.9

78.6

206.4

267.2

41.7

60.8

102.5

+ 1.60

$$\begin{array}{r} \text{mean} = + \frac{640}{1.71} \\ + 8.11 \end{array}$$

27.6

1.60

84.0

56.4

214.3

45.7

11 40 04

260.0

102.1

+ 1.61

11 38 12

485

Oct 22 1919

Ceres

III

11 49 02 Pa 290

32.4

80.6

207.3

260.4

48.2

53.1

101.3

+ 1.62

27.3

84.6

216.7

257.9

57.3

41.2

98.5

+ 1.66

+ 1.69

Pa 110

123.3

170.2

296.4

353.6

~~120.2~~

46.9

57.2

104.1

+ 1.56

$$\text{Mean} = + \frac{6.40}{8.06}$$

120.2

171.1

303.6

348.1

50.9

44.5

95.4

+ 1.66

+ 1.77

11 53 13

11 51

.494

14

Oct 22, 1919

Leres

JK

Pa 110

12 01 05

121.6

172.2

297.4

352.6

50.6

55.2

105.8

+ 1.52

116.6

173.8

302.7

349.8

57.2

47.1

104.3

+ 1.54

+ 1.55

Pa. 290

215.0

261.4

31.3

81.3

46.4

50.0

96.4

+ 1.75

6.40
 Mean = $+1.67$
+ 8.07

~~207.6~~~~258.4~~~~31.4~~~~84.2~~~~50.8~~~~52.8~~~~103.6~~

Reject - Reversal?

~~+ 1.57~~

+ 1.80

~~12 05 05~~12 04 24

.503

~~240.4~~

261.6

35.3

76.6

57.2

41.3

92.5

+ 1.85

12 07 42

Oct 22, 1919

Ceres

V

12 15 56 Pa 290
 212.8
 257.4 44.6
 29.2 56.3
 85.5 100.9 + 1.63

206.0
 265.0 59.0 1.56
 33.3 47.5
 80.8 106.5 + 1.50

Pa 110

Mean

640
 + 1.56
 7.96

301.1
 350.2 49.1
 120.0 54.3
 174.3 103.4 + 1.57

298.6 + 1.56
 356.3 57.7
 124.0 46.4
 170.4 104.1 + 1.56

12 20 04

12 18

512

Oct. 22, 1919

Ceres

VI

PA 110

12 21 22

303.8

345.4

117.2

174.6

41.6

57.4

99.0

+ 1.66

300.0

353.2

124.0

172.2

53.2

48.2

101.4

+ 1.64

+ 1.62

PA 290

34.3

74.7

204.8

259.4

40.4

54.6

95.0

Mean

$$\begin{array}{r} 640 \\ + 1.66 \\ \hline 8.06 \end{array}$$

+ 1.78

~~+ 2.05~~

+ 1.68

27.2

85.1

211.7

257.0

57.9

45.6

103.5

+ 1.57

12 24 50

12 23

57.6

Oct 22, 1919

Ceres

VII

PA 290
 12 28 32 35.2
 77.1 41.9
 207.8 54.8
 262.6 96.7 + 1.74

29.8
 81.4 51.6 + 1.76
 213.8 43.4
 257.2 95.0 + 1.78

PA 110 Mean + 1.68
 123.6 6.40
 170.0 8.08
 298.9
 351.2 98.7 + 1.69

116.2
 174.9 58.7 + 1.60
 301.4 47.4
 12 32 40 348.8 106.1 + 1.51

12 30 36
 522

Comp $\times = -16^{\circ}.6394 (6.2) = 6.40$

Comp \times of Oct 18: $-16^{\circ}.6408 (8.8)$:

Oct 22, 1919

Ceres

VIII

12 43 33 Pa 110
 121.8
 170.2 48.4
 298.7 51.1
 349.8 99.5 + 1.67

122.9
 176.0 53.1 + 1.68
 306.0 45.1
 351.1 98.2 + 1.70

Pa 290

mean

6.40
 + 1.69
8.09

211.4
 259.8 48.4
 32.8 48.6
 81.4 97.0 + 1.73

211.1
 258.8 47.7 + 1.70

12 47 30 29.0 52.2
 81.2 99.9 1.66

12 45 32
 532

Oct 22, 1919

Ceres

IX

12 58 00 P.A. 290
 215.6
 259.0 43.4
 31.4 50.9
 82.3 94.3 +1.80

208.6
 258.6 50.0 +1.74
 31.0 49.4
 80.4 99.4 +1.62

RA 110
 298.8
 357.0 52.2
 120.4 50.4
 170.8 102.6 +1.59

Mean = $\frac{6.40 + 1.68}{8.08}$

299.8
 348.8 50.0 +1.62
 122.4 50.5
 172.9 100.5 +1.64

13 02 13
 .542

13 00 00 H's watch 20 sec fast.

Oct 22, 1919

Ceres

X

13 17 06 Pa. 110

304.0

351.4

121.6

172.0

47.4

50.4

97.8

+1.71

~~+1.84~~

302.1

350.0

121.6

170.4

47.9

48.8

96.7

+1.72

+1.74

Pa. 290

32.9

78.8

208.7

261.8

45.9

53.1

99.0

+1.68

Mean =

6.40

+1.65

8.05

27.7

87.9

212.6

259.1

60.2

46.5

106.7

+1.58

+1.49

13 21 20

13 17 13

55.4

2.5c

Oct 22, 1919

Ceres

XX

13 36 07 Pa 240

31.2

80.4

213.6

263.1

49.2

49.5

98.7

+1.69

28.4

82.6

215.2

261.6

54.2

46.4

100.6

+1.66

+1.64

Pa 110

121.7

168.2

301.5

352.9

46.5

51.4

97.9

+1.71

$$\begin{array}{r} \text{mean} = + \frac{6.40}{1.72} \\ 8.12 \end{array}$$

122.4

169.8

303.4

348.4

47.4

45.0

92.4

+1.78

+1.85

13 40 33

568

Oct 22, 1919

Ceres

XII

13 42 58 PA 110
 119.6
 170.4 50.8
 296.8 53.3
 350.1 104.1 + 1.56

117.7
 171.4 53.7 + 1.58
 302.8 48.8
 351.6 102.5 + 1.60

PA 290

214.4
 256.7 42.3
 31.8 51.4
~~88.9~~ 93.7 + 1.82
 83.2

mean = $\frac{640}{+1.68}$
 $+8.08$

209.1
 260.8 51.7 + 1.78
 32.2 45.0
 13 47 35 77.2 96.7 + 1.74

13 45
 573

Oct 23 1919

Ceres

XIII

13 58 00 PA 290

211.2

259.7

30.0

79.6

48.5

49.6

98.1

+ 1.70

211.1

260.1

30.2

80.8

49.0

50.6

99.6

+ 1.68

+ 1.67

6.40

PA 410

303.6

348.8

118.8

173.2

45.2

54.4

99.6

Mean = + 1.69

8.09

+ 1.67

299.9

349.9

121.4

167.9

50.0

46.5

96.5

+ 1.70

+ 1.74

14 07 58

14 00

583

24

Oct 22, 1919

Ceres

XIF

PA 110

14 11 55 298.2

350.2 52.0

120.8 52.2

173.0 104.2 +1.55

300.0

350.0 50.0 +1.66

124.9

45.2

170.1

95.2

+1.78

PA 290

31.2

76.7

210.4

260.8

45.5

50.4

95.9

+1.76

Mean = $\frac{6.40 + 1.70}{8.10}$

34.4

82.8

210.0

258.2

48.4

48.2

96.6

+1.74

175

14 15 36

14 13 46

593

Oct 22, 1919

Ceres

XVPa 290
14 25 15 209.8

257.9

32.6

78.8

48.1

46.2

94.3

+ 1.80

211.2

263.0

33.0

78.8

51.8

45.8

96.8

+ 1.77

+ 1.74

Pa 110

301.6

347.8

120.8

173.0

46.2

52.2

98.4

1.70

Mean =

$$+ \frac{6.40 + 1.80}{8.20}$$

301.5

348.9

124.8

166.9

47.4

42.1

89.5

+ 1.82

+ 1.93

14 29 05

~~14~~

14 27 10

603

Oct 22, 1919

Ceres.

XVI

14 31 11 Pa 110

299.0

348.2

120.4

170.8

49.2

50.4

99.6

+1.67

300.0

349.1

121.0

168.1

49.1

47.1

96.2

+1.71

+1.75

Pa 290

33.3

78.8

209.9

260.6

45.5

50.7

96.2

+1.75

Mean =

640

+ 1.74

+ 8.14

32.0

84.0

215.1

258.2

52.0

43.1

95.1

+1.76

+1.78

14 34 45

58

14 32 58

606

Oct 22, 1919

Ceres

XVII

PA 290
 14 55 28 30.8
 77.4 46.6
 216.2 44.6
 260.8 91.2 + 1.88

29.8
 79.8 50.0 + 1.87
 213.2 42.2
 255.4 92.2 + 1.86

PA 110

6.40
 Mean = + 1.82
 + 8.22

120.0
 168.0 48.0
 297.9 49.9
 347.8 97.9 + 1.71

121.1
 168.0 46.9 + 1.76
 298.8 47.1
 14 59 15 345.9 94.0 + 1.81

14 57 22

623

Oct 22, 1919

Ceres

XVIII

15 01 44 PA 110

123.8

168.0

293.7

345.9

44.2

52.2

96.4

+1.75

120.1

170.2

302.6

348.8

50.1

46.2

96.3

+ 1.75

+ 1.75

PA 290

213.1

256.9

35.8

81.8

43.8

46.0

89.8

+1.92

Mean = $\frac{640}{+1.82}$
8.22

213.2

258.6

32.2

80.0

45.4

47.8

93.2

+ 1.88

+ 1.83

15 05 12

15 03 28

627

Oct 22, 1919

HOE Obs.

Ceres.

NCH Rec
Experimental.

1508 10 Pa 290

29.6

78.7

214.0

260.4

49.1

46.4

95.5

+1.77

32.8

79.0

213.3

258.4

46.2

45.1

91.3

+1.82

+1.88

Pa. 110

124.2

166.6

299.3

349.6

42.4

50.3

92.7

+1.84

Mean.

+ 1.81

8.21

121.3

171.3

302.8

348.8

50.0

46.0

96.0

+1.80

+1.76

15 16 40

11-12 25

623

Tues. Oct. 28, 1919

LC 00h 15" E. 2g.
Mackin Nova 18 09 11

18 > + 10.8

18 0 + 9.5

21 10
3 00 W

NCH Rec.

a 10 a' 3c 3d 2f 6g 3e 4g 4h.

~~4h~~ above ests taken in 5" finder

~~h 5l 4m~~

15" estimates

12 20 h 5l 5m 2g 3o 3n 2p 5g' 3r
n 3s 4 + 3m

est - 41 nova 2e.

Measure of comparison stars
with phot. T.

Oct 28, 1919

Nova with $\alpha = +11^{\circ}33'7''$

Pa 150
 12 32 09 30.0 $\angle a$ dis
~~32 09~~ 80.2 50.2
 209.2 55.6
 264.8 105.8 + 1.52

27.4 60.8 + 1.52
 88.2 45.4
 212.2 106.2 + 1.51
 257.6

Pa 330 Mean = + 1.92
 130.4 6.76
 164.2 33.8
 301.6 45.0 Nova 8.68
 346.6 78.8 + 2.23

127.1 + 2.31
 167.3 40.2
 308.4 33.4
 12 37 47 341.8 73.6 + 2.39

Pa 331 a
 Spr. 5.3

Oct 28, 1919

a with a^2

12 42* 16 ~ 15.3 \angle a dis.
 Pa 340
 94.8 79.5
 201.4 71.9
 273.3 151.4 + 0.55

14.2
 102.8 88.6 + 0.36
 195.4 82.9
 278.3 171.5 + 0.16

Pa 160

118.6
 178.6 60.0
 290.5 69.3
 359.8 129.3 + 0.99

Mean = +

6.76
 0.76
~~7.27~~
~~8.03~~
 6.51
 7.52

118.8 + 1.16

172.7 53.9

296.6 60.2

12 46.00 356.8 114.1 + 1.32

Pa 161a
 Spr 9.4

Oct 28, 1919.

Nova with c

12 5938 Pa 250
 109.6 \angle c dis. Nova fainter *
 184.2 74.6
 293.8 63.6
 357.4 138.2 + 0.81

113.3
 181.8 68.5 + 0.82
 290.4 68.4
 358.8 136.9 + 0.84

Pa. 70 Mean. + 0.67
 192.8
 282.8 90.0
 255.5 66.7
 92.2 156.7 + 0.44
 c = $\frac{P.6A}{935} = A.01$

203.6 + 0.52
 269.8 66.2
 16.6 82.9
 12 5757 99.5 149.1 + 0.59

Pa 65a
 spr. ~~5~~ 5.8

Oct 28, 1919

~~#~~ C with d

13 04 07 PA 100

103.6

< C dis.

189.6

86.0

290.6

69.2

359.8

155.2

+0.47

116.2

177.8

61.6

+0.50

278.4

90.4

368.8

152.0

+0.54

PA 280

187.2

294.2

107.0

7.8

91.4

99.2

198.4

161.6 :

- 0.35

Vacuum +0.13

8.01

d = 8.14

193.6

281.6

~~188.0~~

-0.24

1.8

99.2

101.0

187.2

172.8

- 0.14

13 08 32

PA 282.2

Sp. 6.6

Oct 28, 1919

35

C with f

13 14 09 Pa 220

10.2

C dis

102.6

92.4

185.3

100.0

285.3

192.4

167.6

-0.24

20.4

105.0

84.6

-0.05

190.8

88.2

279.0

172.8

+0.14

Pa 40

105.5

189.0

288.2

366.0

83.5

77.8

161.3

Mean +0.18

S. 01

F. 19

+0.36

108.2

194.3

290.8

360.8

86.1

70.0

156.1

+0.41

+0.46

13 20 02

Pa 39a
Sp. 3.8

Oct 28, 1919

C with g

13 24 17 Pa 30
 114.8 - c dis
 180.6 65.8
 297.2 55.0
 352.2 120.8 +1.18

117.6
 177.8 60.2 +1.18
 296.0 67.8
 363.8 128.0 + 1.02

Pa 210 Mean +0.88
 205.8
 266.2 60.4
 17.2 80.1
 97.3 140.5 + 0.76

193.4 +0.65
 281.0 87.6
 22.2 64.4
 13 27 48 86.6 152.0 +0.54

Pa 209 a
 Spr 7.1

Oct 28, 1919

e with nova

13 34 15	Pa 240		
	191.2	- e dis	
	279.2	88.0	
	5.3	98.5	
	103.8	186.5	
		173.5	- 0.12
	192.2		
	280.0	87.8	+ 0.02
	16.8	84.0	
	100.8	171.8	+ 0.16

Pa 60		Mean	+ 0.22
291.2		8.68	
367.6	76.4		
105.8	75.0	8.90	
180.8	157.4	46	
		+ 0.55	

13 37 53	288.2		
	363.3	75.1	+ 0.42
	102.0	90.2	
	192.2	165.3	+ 0.28

Pa. 59.2
Spr. 7.3

Oct 28, 1919

e with h

e = the brighter

13 47 22 Pa 170
 205.2 \hookleftarrow e dis
 267.3 62.1
 22.8 63.6
 86.4 125.7

+ 1.07

203.2

269.8

21.6

98.8

66.6

67.2

133.8

+ 0.98

+ 0.90

Pa 350

289.6

363.6

106.2

178.1

74.0

71.9

145.9

+ 0.66

Mean + 0.84

8.46

9.30

297.2

357.6

105.5

186.6

60.4

81.1

141.5

+ 0.70

+ 0.74

13 51 46

I not a good star - has faint companion

Pa. 351 a

Spr. 7.2

Oct 28, 1919

h with m

PA 80
 14 01 00 287.2 < h dis
 364.2 77.0
 114.8 65.6
 180.4 142.6 + 0.72

296.6
 354.6 58.0 + 0.76
 166.4 80.4
 186.8 138.4 + 0.81

PA 260
 55.8
 100.2 94.4
 200.0 67.9
 267.9 162.3 + 0.34
 Mean + ~~0.66~~ 0.59
 930
989

22.0
 84.2 62.2 + 0.42
 190.2 91.2
 14 05 40 281.4 153.4 + 0.51

P.A. 262 a
 Spr. 48

Oct 28, 1919

14 2 2 26		pr	m with m
		pa 270	m dis
		9.8	m dis
		99.4	89.6
		196.9	79.3
		276.2	168.9
			+0.21
			Reject.
		16.2	
		89.6	73.4
		188.2	96.6
		284.8	170.0
			+0.19
			Mean
		pa 90	
		92.6	
		180.0	87.4

Impossible to finish this
group - region too low and
stars too faint.

14 2

pa
sp.

Wed. Oct. 29-1919

L.C. Ulls

15" E 2g

N.H. Rec.

Nova Ophiuchi 180911

m with ~~u~~?

17 54 20 PA 90

285.4

367.2

124.6

181.2

4 m dis
81.8

56.6

138.4

+0.81

297.4

359.6

106.3

189.6

62.2

83.3

145.5

+0.74

+0.66

PA 270

Mean = +0.52

13.2

102.6

196.2

270.6

89.4

74.4

163.8

+0.31

21.2

96.6

192.8

281.2

75.4

88.4

163.8

+0.31

+0.31

11 59 05

PA 265-a
Spr. 7.8

Oct 29, 1919

12 05.8

Pa 290

m with 0

197.1

- m dis.

279.8

82.7

26.4

67.9

94.3

150.6

+ 0.56

208.4

+ 0.62

269.8

61.4

16.6

83.4

100.0

144.8

+ 0.68

Pa 110.

mu = 0.50

Mean + 0.83

10.83

294.0

355.5

61.5

118.2

58.4

176.6

119.9

+ 1.19

297.9

357.0

59.1

+ 1.04

106.1

74.7

180.8

133.8

0.90

12 10.7

Pa. 105a
Spr. 4.0

Oct 29, 1919

O with p.

PA 190
 12 21.2 178.4 \angle p dis.
 292.4 114.0
 11.6 96.4
 108.0 210.4
 149.6

-0.58

196.4
 280.6 84.2
 46. 108.8
 113.4 193.0
 167.0

-0.42

-0.25

PA 10

275.8
 23.8 108.0
 104.4 89.6
 194.0 197.6
 162.4

-0.33

Mean: $\frac{-0.32}{f = 11.15}$

273.0
 8.8 95.8
 104.8 90.0
 12 28.3 194.8 185.8
 174.2

-0.22

-0.11

pns the fainter.

PA 8a
 spr. 7.2

Oct 29, 1919

m with n

12 35.6 Pa 280
 19.6 arm dis
 93.3 73.7
 191.6 88.0
 279.6 161.7 +0.35

17.4
 98.8 81.4 +0.38
 199.2 76.6
 275.8 158.0 +0.42

Pa 100
 111.2
 180.8 69.6
 294.4 65.4
 359.8 135.0 +0.88

m = 10.00
 Mean = 0.54
 n = 10.54

102.8 +0.70
 187.7 84.9
 291.2 68.0
 12 39.7 359.2 152.9 +0.52

Pa 97a
 Sp. 3.6

Oct 29, 1919

h with m

12 45.3 Pa 80
 288.0 h dis.
 354.8 66.8
 185.9 65.1
 181.0 131.9 + 0.94

290.2
 362.2 72.0 + 0.79
 105.4 74.8
 180.2 146.8 + 0.64

Pa.

Pa 260

mean + 0.66

12.6

9.34

97.2

84.6

10.00

209.8

59.0

268.8

143.6

+ 0.70

25.2

+ 0.52

92.0

66.8

191.4

95.2

12 48.6

286.6

162.0

+ 0.34

Pa 261a
 Sps. 4.8

Oct 29, 1919

e with h.

12 53.2

PA 180

21.6

e dis.

87.2

65.6

192.0

87.2

279.2

152.8

+0.52

15.2

101.6

86.4

+0.51

203.6

67.4

271.0

153.8

+0.50

PA 0

113.2

173.3

288.8

360.0

60.1

71.2

131.3

+0.95

mean +0.76

E 8.58

h 9.34

112.4

179.6

294.8

12 57.3

353.8

67.2

59.0

126.2

+1.06

1.00

PA 352 a

Sp. 7.2

Oct 29, 1919

e with nova

13 0.1

Pa 240

14.2	e dis
98.8	84.6
194.2	90.6
284.8	<u>175.2</u>

+ 0.09

5.9

+ 0.08

99.8	93.9
198.0	81.7
279.7	<u>175.6</u>

+ 0.08

Pa 60

Mean + 0.24

113.6	
176.0	62.4
282.0	90.0
12.0	<u>152.4</u>

+ 0.53

102.0

193.3

91.3

+ 0.40

287.4

74.2

13 03.8

361.6

165.5

0.27

Pa 61a

Spr. 7.2

Oct 29, 1919

C with g.

13 06.2 Pa 30
 112.8 c dis.
 180.8 68.0
 299.7 57.7
 357.4 125.7 +1.07

115.6
 176.3 60.7 +0.94
 288.6 76.8
 365.4 137.5 +0.82

Pa 210 C.F. 11
 Mean +0.95
 206.6 ~~9.06~~
 270.4 63.8
 17.7 73.1
 90.8 136.9 +0.84

204.8
 277.2 62.4 0.96
 26.4 63.4
 3 17 10.4 89.8 125.8 +1.07

Pa 210.2
 Spr. 7.0

Oct 29, 1919

C with f

PA 220

13 13.5	13.2	C dis.	
	102.2	89.0	
	193.4	89.9	
	283.3	<u>178.9</u>	+ 0.02

17.4			
104.8	87.4		+ 0.01
192.4	92.4		
284.8	<u>179.8</u>		± 0.00

C = f. 11

+ 0.05

PA 40

101.3			
183.3	82.0		
283.8	88.6		
372.4	<u>170.6</u>		+ 0.18

f 2.06

	99.2		
	193.7	94.5	0.09
	283.2	86.6	
13 17.5	369.8	<u>180.1</u>	± 0.00

Pa	39.2
Spn.	6.8
Spn.	3.2

50

Oct 29, 1919

C with d

13	20.3	PA 100		
		101.8	c dis.	
		193.0	91.2	
		290.6	70.2	
		360.8	161.4	+0.35

106.3		
178.4	72.1	+0.41
284.8	83.4	
368.2	155.5	+0.47

PA 280

188.0	
284.8	96.8
13.2	85.4
98.6	182.2
+	177.8

Mean

C A. 11
+0.18
d = A. 29

+0.04

197.7		
282.6	84.9	-0.05
36.8	98.6	
105.4	183.5	
	176.5	-0.06

13 24.7

PA 282.2
Sps. 6.8

Oct 29, 1919

nova with ~~A~~ C

PA 250
 13 29.1 ~~304.2~~ L C dis.
~~13 2~~ 360.8 56.6
 103.6 74.0
 177.6 130.6 +0.97

287.8
 356.8 69.0 +0.85
 110.9 73.3
 184.2 142.3 +0.73

PA. 70
 18.1
 92.4 74.3
 198.8 74.1
 272.9 148.4 +0.61

Mean = +0.71
 Nova = $\frac{2.82}{2.11}$
 C =

24.8
 88.9 64.1 +0.57
 194.6 88.4
 13 32.7 283.0 152.5 +0.53

Pg 65.2
 Apr. 5.8

Oct 29, 1919

nova with a

13	36.4	pa 330		
		12.68	a dis	
		165.6	38.8	
		305.8	<u>40.0</u>	
		345.8	78.8	+ 2.23

	128.4		
	171.2	42.8	+ 2.26
	309.4	<u>33.9</u>	
	343.3	76.7	+ 2.29

	pa 150		Mean : + 2.06
	215.8		<u>676</u>
	259.8	44.0	a.f.2
	33.0	<u>50.2</u>	
	83.2	94.2	+ 1.80

	213.4		+ 1.85
	259.2	45.8	
	35.5	<u>44.7</u>	
13	41.3	80.2	90.5 + 1.90

pa 150. a
 Spr. 5.6

Oct 29, 1919

 a with a^2

13 43.3 PA 160
 293.8 a dis.
 357.2 63.4
 117.4 65.5
 182.9 128.9 + 1.00

292.2
 361.8 69.6 + 0.94
 116.2 64.6
 180.8 134.2 + 0.89

PA 340
 15.2
 99.3 84.1
 194.6 76.6
 271.2 160.7 + 0.37

a 6.76
 Mean + 0.62

 a^2 7.38

 16.2
 98.8 82.6 + 0.30
 191.8 86.0
 13 47.2 277.8 168.6 + 0.22

PA 342.9
 Spr. 9.8

Oct 29, 1919

22 Caphei 00 53.3 (I

PA 20

14 24 16

120.2 \angle Var dis

173.2 53.0

297.1 53.6

350.7 106.6 - 1.50

114.2

180.4 66.2 - 1.37

297.1 51.7

348.8 117.9 - 1.24

PA 200

~~259.2~~31.2 ~~2.0~~

78.8 47.6

201.4 65.3266.7 112.9 - 1.35

23.4

83.4 60.0 - 1.37

213.2 51.014 29 43 264.2 111.0 - 1.39

8.21

Mean = $\frac{-1.37}{6.84}$

Oct 29, 1919

U Cephei

II

PA 200
 14 49 38 27.4
 84.4 57.0
 202.2 66.6
 268.8 123.6 - 1.11

29.4
 86.2 56.8 - 1.26
 209.4 53.0
 262.4 109.8 - 1.42

PA. 20
 120.2
 167.2 47.0
 302.8 50.7
 353.5 97.7 - 1.71

8.21
 - 1.46
 6.75

118.8 - 1.67
 171.0 52.2
 303.6 49.0
 14 53 13 352.6 101.2 - 1.63

15 00 00 H's watch OK

Pa 15 a
 Spr. 3.7

Sun Nov. 2, 1919.

hC Obs.

hC.A. Rec.

12 12

5" finder
a¹⁰a²6c 5f 3d 3e 4g 4h 5l 3m
m4n 1o

15" EEq.

o 0g 4p 6q 4r 3s 7t 4u

5" finder.

a²4, 3c nova brighter than on last
observation. Confirmed in 15"

Nova with a

12 25.1

pa. 150

198.4

a dis.

277.2

78.8

22.8

64.2

87.0

173.0

+ 0.71

208.3

263.2

17.2

95.1

54.9

77.9

132.8

+ 0.82

+ 0.92

pa 330

293.8

352.7

119.2

176.3

58.9

57.1

116.0

+ 1.28

295.8

357.8

118.0

175.9

62.0

56.9

118.9

+ 1.25

12 29.5

+ 1.22

6.76
Mean + 1.04
7.80

Mon. Nov 10-1919

LC Obs.

15th E.Eg

N.C.H. Rec

G.M.T

Nova Oph. IV

12 02

est

f 3.39
f 1.39L.C.
H.O.E.

Nova with a.

Pa 150

Phot T

12 07 55

222.6

axis

267.2

44.6

42.2

40.6

82.8

85.2

+ 2.05

219.4

+ 1.92

266.7

47.3

41.8

46.9

+ 1.80

88.7

94.2

+ 2.31

Pa 330

309.8

352.3

135.2

168.8

42.5

33.6

76.1

Mean

6.76
+ 2.09
8.85

+ 2.31

312.8

352.8

132.6

171.8

40.0

39.2

79.2

+ 2.26

+ 2.22

12 11 23

Nov 10, 1919

Nov. Aprilth 3 with Comp* 623

12 37 35 PA. 220
 210.4 \angle Comp* dis.
 268.2 57.8
 22.8 72.3
 95.1 130.1 + 0.98

204.2
 276.4 72.2 + 1.03
 36.2 53.2
 89.4 125.4 + 1.08

PA 40 Mean 6.23
 309.6 + 1.32
 354.7 7.55
 125.2
 179.8 99.7 + 1.66

305.5 + 1.60

12 41 37 361.2 55.7
 125.9 48.8
 174.7 104.5 + 1.55

Lengthen cord.

PA 39.2
 Spr. 5.2

Friday, Nov. 14, 1919

LC Obs.

WCH Rec.

11 46

Nova Oph #4

est 8.9 (5")

Sasaki Comet 231307

Comp $\star = 7^{\circ} 23' 8'' - 7^{\circ} 29' (1855)$

S.T.

23	07	17	*		23	07	34
	07	51	*	34			
	08	10	☞		23	08	26
	08	42	☞	32			

23	08	55	*				
	09	29	*	34	23	09	12
	09	47	☞	28	23	10	01
	10	15	☞				

23	11	07	*				
	11	37	*	30	23	11	21
	11	58	☞	31	23	12	14
	12	29	☞				

PA readjusted slightly.

23	14	33	*		23	14	48
	15	04	*	31			
	15	26	☞	29	15	40	
	15	55	☞				

Nov 14, 1919

S.T.

23	23	54	*			
	24	25	*	24	10	
	24	50	☐	25	03	53
	25	16	☐			

23	25	26	*			
	26	01	*	25	44	54
	26	29	☐	26	38	
	26	47	☐			

23	27	04	*			
	27	29	*	27	16	56
	27	57	☐	28	12	
	28	28	☐			

Nov. 14, 1919

Not Ceres 2345-15. I

13 07 18 Pa 60
 216.8 \angle Ceres dis. Phot T.
 263.6 46.8
 42.7 43.7
 86.4 90.5 - 1.90

219.7
 266.1 46.4 - 1.92
 44.6 42.8
 87.4 89.2 - 1.94

Pa. 240 Mean - 2.00
 309.8
 353.2 43.4
 132.6 37.6
 170.2 81.0 - 2.17

309.8
 357.4 47.6 - 2.08
 132.2 39.4
 171.6 87.0 - 2.00

13 10 45
 18 03
 13 9 02
 2277 546

see p. 75.

Nov. 14, 1919

gmt. Ceres II

13 18 22 PA 240

312.2		
353.4	41.2	
130.6	42.5	
173.1	<u>83.7</u>	- 2.09

310.2		
357.1	46.9	- 2.07
133.1	<u>38.3</u>	_{1.5}
171.4	<u>85.2</u>	- 2.05

PA 60 Mean = -1.92

41.4		
86.1	44.7	
221.4	<u>47.4</u>	
268.8	92.1	- 1.86

~~36.2~~ ~~56.4~~ Reject. #7

~~92.6~~ ~~48.1~~ Rptd

13 ~~21~~ 46 ~~219.6~~ ~~104.5~~ below

~~267.7~~ - 1.76

41	51	
13	20	56
227.7	55.6	
38.4		
88.8	50.4	
217.2	<u>49.4</u>	
13	23	29
266.6	99.8	- 1.66

Nov 14, 1919

Ceres

III

13 25 13 PA 60

37.4

89.2

217.9

264.9

51.8

47.0

98.8

-1.69

39.8

84.4

215.9

272.3

44.6

56.4

101.0

-1.66

-1.63

PA 240

Mean = -1.81

132.8

173.2

309.4

358.2

40.4

48.8

89.2

-1.94

128.1

173.6

310.8

352.8

45.5

42.0

87.5

-1.96

-1.98

13 29 18

13 27 16

227.560

Nov 14, 1919

			lens		<u>1K</u>
13 33 37	PA 240				
	133.6				
	172.8	39.2			
	309.4	48.0			
	357.4	87.2	-1.99		
	127.4				
	175.4	48.0	-1.98		
	312.3	40.3			
	352.6	88.3	-1.96		
	PA 60		Mean =	-1.80	
	223.6				
	264.6	41.0			
	39.3	48.7	Repeat		
	88.0	89.7	1.92		
	214.2				
	269.4	55.2			
	41.8	46.6			
13 37 18	88.4	101.8	-1.61		
	90				
13 36 15					
.567	215.2	53.0	1.62		
	268.2	48.2			
	41.8	101.2	-1.63		
13 38 53	90.0				

Nov 14, 1919

Ceres

V

PA 60

13 48 12

216.2

267.8

51.6

37.8

50.6

88.4

102.2

-1.60

219.4

266.0

46.6

-1.66

37.3

50.4

87.7

97.0

-1.73

PA 240

mean -1.75

311.8

357.2

45.4

130.9

44.7

175.6

90.1

-1.91

309.6

356.1

46.5

-1.84

128.6

48.8

13 51 46

177.4

95.3

-1.77

99 58

13 49 59

.576

Nov. ¹⁴~~14~~, 1919

Ceres

RT

14 02 30 PA 240
~~310.2~~
~~354.4~~ 442
~~131.2~~ 42.1
~~173.3~~ 86.3
 Reject. ~~-2.01~~

311.1
 359.9 48.8
 128.4 49.2
 177.6 98.0
 1.71

PA 60
 308.4
 359.8 51.4
 129.2 45.8
 175.0 97.2
 mean -1.74
 -1.72
 -1.73

14 05 00 PA 60
 45.4
 87.8 42.4
 217.6 50.0
 267.6 92.4
 -1.85

38.0
 88.4 50.4
 216.1 49.1
 14 07 30 265.2 99.5
 -1.76
 -1.67

Nov 14, 1919

Ceres

VII

14 15 28 PA 60

38.2

91.8

221.1

267.4

53.6

46.3

99.9

-1.66

36.8

89.8

216.6

266.6

53.0

50.0

103.0

-1.62

-1.58

PA. 240

129.8

173.6

312.6

354.8

43.8

42.2

86.0

-2.02

Mean -1.86

131.4

173.1

311.8

350.6

41.7

38.8

80.5

-2.10

-2.18

14 19 03

14 17 16

.595

Nov 14, 1919

Ceres

VIII

PA 240

14 21 00

129.6

173.8

310.8

354.6

44.2

43.8

88.0

-1.97

129.1

171.2

309.6

356.2

42.1

46.6

88.7

-1.96

-1.95

PA 60

219.8

263.3

37.3

91.9

43.5

54.6

98.1

-1.70

Mean -1.82

215.4

267.6

40.2

88.2

52.2

48.0

100.2

-1.68

-1.65

14 24 39

5 39

14 22 48

5.99

Nov. 14, 1919

69

Ceres

IX

14 33 08

PA 60

219.6

263.2

35.2

89.6

43.6

54.4

98.0

-1.71

214.2

269.6

42.4

89.2

55.4

46.8

102.2

-1.66

-1.60

PA 240

311.6

355.4

731.2

176.1

43.8

44.9

88.7

-1.95

-1.82

310.6

356.8

133.2

174.2

46.2

41.0

87.2

-1.97

-1.99

14 36 46

9 54

14 34 57

566

608

Nov. 14, 1919

Ceres

X

14 40 29 PA 240
 310.2
 354.2
 128.4
 173.3
 44.0
 44.9
 88.9 - 1.94

308.2
 354.2
 133.8
 174.7
 46.0
 40.9
 86.9 - 2.00

PA 60 Mean - 1.86
 38.7
 89.8
 217.0
 266.2
 51.1
 49.2
 100.3 - 1.65

- 1.74

14 44 30
 40.7
 86.7
 218.1
 265.7
 46.0
 47.6
 93.6 - 1.82

14 44 30

613

Nov. 14, 1919.

7 Cols. HBR rec.

XI

14
53 25

Ceres.
PA 60
39.2
87.4 482
218.8 504
269.2 986

-1.69

33.8
91.6 578
215.6 508
266.4 1086

-1.57

-1.45

PA 240

Mean = 1.78

132.2
173.2 440
310.2 }
354.3 } 441
851

-2.05

130.4
180.8 504
313.2 390
352.2 894

-1.99

-1.93

14 57^m 58^s

f 3

14 55 42

622

72

Nov. 14. 1919

15^h PA 240 Ceres. H. obs. HOB rei
 0 31 129.8 XII
 175.6 55.8
 310.2 498
 360.0 1056 1152

1
 124.6 - 1.72
 175.2 50.6
 313.2 389
 352.1 895 - 1.93

PA 60

mean - 1.78

220.4
 264.4 44.0
 36.6 54.0
 90.6 980 171

217.7 183
 266.2 485
 41.8 40.0
 81.8 885 195

15 4 43

15 2 36

627

Mar. 14, 1919

Ceres

H. ob. H. E. sec.

XIII15^h

60

8 30

220.0

267.2 472

35.5 571

92.6 1043

- 1.55

212.8

- 1.66

269.2 564

43.2 390

82.2 954

- 1.77

240

mean = ~~1.78~~
1.71

310.4

350.4 40.0

129.3 521

181.4 921

186

304.6

1.76

360.8 56.2

127.6 442

171.8 1004

1.65

15^h

12 21

10 26

6.33

Nov. 14, 1919

Ceres.

8006 HBS rec.

XV15
21 28

60

40.0		
84.9	44.9	
214.6	572	
271.8	1021	-161

33.7		-164
90.0	563	
217.6	430	
260.6	993	-167

240

136.4	
171.1	34.7
306.6	540
360.6	887

~~177~~
Mean -1.77

195

128.0 190

177.0 490

312.6 435

356.1 925 185

15

25 14

15- 23 21
641

PA 241a SPR 6.7

Object measured for Ceres = *at 2348 -13.9
= -13° 6485 (7.2) (1855)

Compared with -13° 6490 (8.3)

Stat Nov. 15, 1919

RC Oph

15" E. & E.

NCH Rec.

S.M.T.

Nova Oph IV

11 20

180911

est A. 4

f 2, 2 e

Ceres Plot T I

23 48 - 15.0

22 18

1 30 E

P.A. 300

11 59 05

127.8

Comp. & dis.

174.6

46.8

310.8

48.0

358.8

94.8

+ 1.79

125.1

175.2

50.1

+ 1.74

306.9

48.6

355.5

98.7

+ 1.69

PA 120

~~120.4~~

~~263.8~~

~~32.2~~

~~86.7~~

~~43.4~~

~~54.5~~

~~97.9~~

mean

+ 1.58

~~7.58~~

+ 1.71

+ 1.41

~~7.50~~

~~8.54~~

214.1

272.8

32.8

87.7

58.7

54.9

113.6 + 1.34

+ 2

219.2

269.2

37.7

93.2

52.0

55.5

107.5

+ 1.48

~~12 01 08~~

12 02 46

Nov 15, 1919

Ceres

II

PA 120

1205 33

214.1

274.2

33.6

85.6

60.1

52.0

112.1

+1.37

215.4

270.2

32.2

89.6

54.8

57.4

112.2

+1.37

+1.37

PA 300

127.2

180.0

307.7

359.4

52.8

51.7

104.5

+1.55

Mean =

6.96

~~5.92~~~~6.00~~

+1.48

~~7.48~~~~7.40~~

6.44

+

129.4

175.9

306.8

361.8

46.5

55.0

101.5

+1.58

+1.62

1209 27

$$\text{Comp } \alpha = -15^\circ 65' 0'' \left(\frac{7.3}{6.0} \right) = 6.96$$

Nov 15, 1919

12 15 06 PA 300 Ceres III

127.8		
181.7	53.9	
305.9	57.9	
357.8	<u>105.8</u>	+1.52

1

123.8		
175.9	52.1	
303.6	53.6	
357.2	<u>105.7</u>	+1.52

PA 120 Mean + 69.6

217.6			
275.2	57.6		5.92
38.2	44.4		<u>7.44</u>
82.6	<u>102.0</u>	+1.61	2.48

217.4		
269.6	52.2	
30.8	<u>61.5</u>	+1.53

12 19 07 94.6

93.3	.7	
	52.2	
	<u>56.5</u>	
	108.7	+1.45

Nov. 15, 1919

Ceres

IK

PA 120

12 36 29 212.6

272.2

39.2

89.2

59.6

50.0

109.6

+1.43

218.9

268.6

35.2

91.0

49.7

55.8

104.5

+1.49

+1.55

696

~~592~~

PA. 300

Mean =

+1.58

124.8

185.6

311.1

351.4

60.8

40.3

101.1

+1.63

~~752~~

254

132.4

176.2

303.8

+1.68

43.8

53.1

96.9

+1.73

12 40 52

356.9

12 38 40

Nov 15, 1919

Ceres

V

PA 300

12 53 25	129.2		
	174.8	45.6	
	309.8	<u>50.4</u>	
	360.2	96.0	+1.76

133.1			
178.7	45.6		+1.82
308.1	<u>46.1</u>		
354.2	91.7		+1.87

PA 120

Mean

$$\begin{array}{r} 696 \\ +1.72 \\ \hline 2.68 \end{array}$$

216.4			
269.8	53.4		
39.4	<u>47.0</u>		
86.4	100.4		+1.65

~~216~~

217.9			+1.62
-------	--	--	-------

266.9	49.0		
-------	------	--	--

35.3

53.9

12 57 42	89.2	102.9	+1.59
----------	------	-------	-------

539

Nov 15, 1919

Ceres

VI

12 59 24 PA 120
 219.6
 266.8 47.2
 36.4 50.4
 86.8 97.6 + 1.72

218.6
 269.7 51.1 + 1.64
 40.8 53.0
 93.8 104.1 + 1.56

PA 300
~~312.2~~
~~355.9~~ 43.7
~~131.8~~ 41.5
~~123.3~~ 85.2 + 2.05

Mean = + $\frac{6.96 + 1.73}{2.69}$

13 04 00
 309.4
 356.8 47.4
 128.6 49.0
 177.6 96.4 + 1.75

13 05 25
 309.7
 360.4 50.7 1.82
 133.8 40.6
 174.4 91.3 + 1.88

Nov 15, 1919

Leres

VII

13 15 00 PA 300
 312.8
 354.7 41.9
 127.8 46.4
 174.2 88.3 + 1.96

306.8
 358.8 52.0 + 1.84
 128.9 46.7
 175.6 98.7 + 1.69

PA 120
 38.4
 84.8 46.4
 213.8 60.6
 274.4 107.0 + 1.49

mean $\frac{69.6}{+ 1.68}$
 2.64

36.9
 87.8 50.9 + 1.52
 216.3 53.1
 13 19 12 269.4 104.0 + 1.56

Nov 15, 1919

Ceres

VIII

PA 120

13 27 03

41.8

83.8

213.9

273.8

44.0

59.9

103.9

+ 1.56

36.45

91.8

221.1

269.8

55.4

48.7

104.1

+ 1.56

+ 1.56

PA 300

132.3

176.7

306.6

357.6

44.4

51.0

95.4

+ 1.77

Mean

$$\begin{array}{r} 6.96 \\ + 1.64 \\ \hline 8.60 \end{array}$$

1

124.8

178.4

311.2

13 30 55

357.8

53.6

46.6

100.2

+ 1.71

+ 1.65

Nov. 15 1919

Ceres

IX

13 42 58

PA 300

130.9

177.4

310.8

357.4

46.5

46.6

93.1

+1.83

~~732.2~~~~183.8~~~~306.7~~~~361.7~~~~51.6~~~~55.0~~~~106.6~~~~+1.50~~

174

~~PA 120~~

127.1

178.6

311.2

360.0

51.5

48.8

100.3

+1.65

696
 Mean = 174
 8.70

PA 120

220.8

264.8

39.4

86.8

44.0

47.4

91.4

+1.88

217.2

272.2

39.6

86.4

55.0

46.8

101.8

+1.61

1.74

13 47 43

Nov 15, 1919

Ceres

X

PA 120

13 49 30

220.4

267.6

37.4

89.8

47.2

52.4

99.6

+1.67

215.2

270.8

38.2

86.2

55.6

48.0

103.6

+1.62

+1.57

PA 300

310.4

356.6

129.8

177.8

46.2

48.0

94.2

+1.80

mean

$$\begin{array}{r} 696 \\ + 1.76 \\ \hline 8.72 \end{array}$$

311.2

358.2

132.6

13 53 14

173.3

47.0

40.7

87.7

+1.89

+1.98

Nov 15, 1919

Ceres

XI

14 07 49 PA 300
 312.6
 354.7 42.1
 127.4 52.8
 180.2 94.9 + 1.79

307.1
 358.4 51.3 + 1.82
 132.6 41.2
 173.8 92.5 + 1.85

PA 120
 38.4
 87.4 49.0
 216.2 53.6
 269.8 102.6 + 1.59

Mean

6.96
16.67
 8.63

14 11 43 35.5
 89.0 53.5 + 1.52
 215.4 57.0
~~272.4~~ 110.5
 270.1 54.7
 108.2 1.46

Nov 15, 1919

Ceres

XII

14 15 58 PA 120

37.4

86.0

216.8

268.6

48.6

51.8

100.4

+1.65

38.8

89.1

220.8

268.2

50.3

47.4

97.7

+1.68

+1.71

PA 300

130.8

175.2

308.1

359.2

44.4

51.1

95.5

+1.77

Mean

6.96

1.71

8.67

126.6

175.8

310.2

358.7

49.2

48.5

97.7

+1.74

+1.71

14 19 43

.596

Nov 15, 1919

Ceres

XIII

Pa 300

14 30 41

131.0

177.2

310.6

358.6

46.2

48.0

94.2

+1.80

128.6

180.2

309.8

355.2

51.6

45.4

96.0

+1.78

+1.76

Pa 120

217.8

268.8

34.8

88.1

51.0

53.3

104.3

+1.55

mean =

6.96

+1.64

8.60

217.6

272.3

35.6

90.2

54.7

54.6

109.3

+1.49

+1.43

14 34 31

.606

Nov 15, 1919

Ceres

XIV

14 47 48 PA 120
 219.8
 265.4 45.6
 37.8 52.8
 90.6 98.4 + 1.70

212.4
 270.0 57.6 + 1.62
 41.2 47.6
 88.8 105.2 + 1.53

PA 300

Mean

6.96
 1.69
 8.65

312.6
 359.7 47.1
 128.0 52.6
 180.6 99.7 + 1.66

307.6 + 1.76
 357.3 49.7
 130.8 42.0
 14 51 44 172.8 91.7 + 1.87

Nov 15, 1919

Ceres

XV

PA 300

15 00 01

304.3

357.2

52.9

130.8

43.4

174.2

96.3

+1.75

309.6

354.8

50.2

+1.82

132.6

40.2

172.8

90.4

+1.90

PA 120

Mean

39.8

89.0

50.0

216.2

52.2

268.4

102.2

+1.60

37.3

94.0

56.7

+1.60

219.4

45.2

15 03 45

264.6

101.9

+1.61

6.96

1.71
8.67

Nov 15, 1919

Ceres

XVI

15 15 19 PA 120
 38.4
 86.8 48.4
 215.6 53.0
 268.6 101.4 + 1.62

32.8
 90.4 57.6 + 1.54
 218.9 50.7
 269.6 108.3 + 1.46

PA 300

mean

6.96
 + 1.58
 8.54

130.8
 178.0 47.2
 306.8 54.0
 360.8 101.2 + 1.63

122.2
 177.8 55.6 + 1.63
 310.9 45.3
 15 19 27 356.2 100.9 + 1.63

.637

Nov 15, 1919

Ceres

XVII

PA 300

15 29 14

133.1

172.8

305.6

358.2

39.7

52.6

92.3

+1.85

124.0

177.4

308.2

354.8

53.4

46.6

100.0

+1.76

+1.66

6.96

PA 120

215.6

269.8

41.1

92.4

54.2

51.3

105.5

+1.52

mean

1.65

8.61

218.2

268.4

37.8

92.0

50.2

54.2

104.4

+1.54

155

15 33 18

.647

Nov 15, 1919

Ceres

X V I I I

PA 120
 15 42 48 215.2
 269.0 53.8
 38.0 52.8
 90.8 106.6 + 1.50

214.2
 267.7 53.5 + 1.53
 37.7 50.5
 88.2 104.0 + 1.56

PA 300
 310.0
 358.8 48.8
 131.3 44.5
 175.8 93.3 + 1.83

Mean 6.96
 + 1.66
 8.62

307.8
 360.6 52.8 + 1.78
 132.8 44.6
 15 47 04 177.4 97.4 + 1.72

Nov 15, 1919

Ceres

~~XXX~~

PA 300

15 53 54

311.2

357.7

46.5

126.4

53.0

179.4

99.5

+1.67

308.4

359.6

51.2

+1.70

129.4

46.2

175.6

97.4

+1.72

PA 120

41.4

89.3

47.9

216.6

54.6

271.2

102.5

+1.60

38.9

90.4

51.5

+1.62

219.4

49.0

15 58 42

268.4

100.5

+1.64

696
 +1.66
 862

PA 1102
 Apr 6.9

Sun Nov 16 - 1909

15^h 28^m 22^s

L.C. Ob

Nova Oph IV

180911

11 00

est S. 2

Tuesday Nov. 18, 1919

LC Obs.

WCH Rec.

Nova Oph #IV

est 9.0 (5")

G.M.T.

Ceres

Phot T I

12 32 10	PA. 80		
	41.8	Comp* dis	
	83.2	41.4	
	218.8	53.3	
	272.1	94.7	+1.79

34.8		+1.66
93.6	58.8	
220.2	46.4	
266.6	105.2	+1.53

PA 260		696
132.2		Mean +1.74
173.2	41.0	8.70
308.6	54.0	
362.6	95.0	+1.78

126.1		
177.2	51.1	+1.81
312.0	38.4	
12 36 43	353.8	89.5
		418
	92.9	+1.84

Same Comp* as Nov 15, 1919 = 6.96

Nov 18, 1919

Ceres

II

12 57 42	Pa 260			
	130.2			
	172.8	42.6		
	310.0	<u>46.2</u>		
	356.2	88.8	+1.95	
	127.8			
	176.8	49.0	+1.90	
	311.6	<u>43.0</u>		
	354.6	92.0	+1.86	
	Pa 80		Mean	6.96
	218.4			+ 1.70
	265.6	47.2		<u>8.66</u>
	36.2	<u>54.8</u>		
	91.0	102.0	+1.61	
	211.6		+1.49	
	274.8	63.2		
	37.2	<u>49.0</u>		
	86.2	112.2	+1.37	
13 02 03				

Nov - 18, 1919

Ceres

111

PA 80

13	20	38	219.8		
			266.0	46.2	
			34.8	<u>54.4</u>	
			89.2	100.6	+ 1.64

			213.8		
			272.2	58.4	+ 1.53
			36.0	<u>51.4</u>	
			87.4	109.8	+ 1.42

PA. 260

Mean

696
+ 1.68
8.64

			314.4		
			351.2	36.8	
			127.9	<u>49.9</u>	
			177.8	86.7	+ 2.00

			305.2		
			360.8	55.6	+ 1.88
			131.2	<u>44.1</u>	
13	25	06	175.3	99.7	+ 1.66

Nov 18, 1919

Ceres

1K

PA 260

13 35 11

312.6

350.8

127.8

182.6

38.2

54.8

93.0

+ 1.83

310.8

359.6

134.2

173.4

48.8

39.2

88.0

+ 1.90

+ 1.97

PA 80

37.6

84.2

213.7

275.2

46.6

61.5

108.1

+ 1.46

$$\text{Mean} = \frac{6.96 + 1.68}{8.64}$$

33.7

91.1

215.7

265.8

57.4

50.1

107.5

+ 1.47

+ 1.48

13 39 14

100

Nov 18, 1919

Cres

K

13 49 08 PA 80

36.0

84.8

211.8

266.0

48.8

54.2

103.0

+1.58

33.7

88.2

215.4

266.4

54.5

57.0

105.5

+1.55

+1.52

PA 260

135.8

175.1

309.6

357.8

39.3

48.2

87.5

+1.98

Mean =

+1.74

8.70

128.1

177.8

313.2

49.7

42.0

91.7

+1.92

13 53 15

355.2

+1.87

Images quite faint.

Nov 18, 1919

Ceres

VI

13 58 47 PA 260

134.8

174.8

308.6

360.8

40.0

52.2

92.2

+ 1.56

127.8

177.7

313.4

354.8

49.9

41.4

90.3

+ 1.88

+ 19.1

6.96

PA 80

mean = +

1.68

8.64

216.6

270.3

36.4

93.6

53.7

57.2

110.9

+ 1.40

215.3

270.6

36.4

86.1

55.3

49.7

105.0

+ 1.47

+ 1.54

14 03 11

Fix clock rope.

102

Nov, 18, 1919

Ceres

VII

14 14 44 PA 80
 220.2
 270.6 50.4
 35.8 57.2
 93.0 107.6 +1.47

214.6
 268.8 54.2 + 1.52
 39.6 49.2
 88.8 103.4 + 1.57

PA 260
 309.6
 357.4 47.8
 131.7 48.0
 179.7 95.8 + 1.76

6.96
 mean = +1.68
 8.64

309.4
 357.8 48.4 + 1.85
 131.4 40.7
 14 19 11 172.1 89.1 + 1.94

Nov 18, 1919

Ceres

VIII

PA 260

14 31 26

314.2

355.4

129.1

174.6

41.2

45.5

86.7

+ 2.00

310.6

357.4

131.1

176.2

46.8

45.1

91.9

+ 1.93

+ 1.86

PA 80

37.8

85.5

214.2

269.6

47.7

55.4

103.1

+ 1.58

34.7

92.7

216.2

265.8

58.0

49.6

107.6

+ 1.52

+ 1.47

6.96

mean = + 1.72

8.68

14 36 04

Nov. 18, 1919

Ceres

IX

44 43 PA 80

14 44 43 38.8

88.8

50.0

214.6

58.0

272.6

108.0

+ 1.46

35.5

90.7

55.2

+ 1.50

217.2

49.1

266.3

104.3

+ 1.55

PA 260

133.3

172.2

307.7

357.4

38.9

49.7

88.6

+ 1.95

125.8

175.4

49.6

+ 1.96

315.1

38.7

14 53 36

353.8

88.3

+ 1.96

$$\text{Mean} = \frac{6.96 + 1.73}{8.69}$$

Nov. 18, 1919

Ceres

X

PA 260
 15-01 54 133.2
 170.4 37.2
 309.2 50.2
 359.4 87.4 + 1.98

131.1
 178.0 46.9 + 1.94
 311.8 44.0
 353.8 90.9 + 1.89

PA 80
 Mean = $+ \frac{6.96}{8.66} + 1.78$

~~221.2~~ Reject.
~~263.2~~ 42.0
~~35.6~~ 54.4
~~90.0~~ 96.4 + 1.75

~~217.2~~ Hold
~~270.8~~ 53.6 + 1.64
~~35.9~~ 51.8
~~87.7~~ 105.4 1.53

~~15-06-03~~

215.6
 269.8 54.2 + 1.47
 33.6 56.2
 15-08-03 89.8 110.4 1.41

Nov 18 1919

Ceres

XT

PA 80

15 28 33

217.4

269.2

40.6

88.0

51.8

47.4

99.2

+ 1.68

218.8

265.8

31.7

91.7

47.0

60.0

107.0

+ 1.58

+ 1.49

PA 260

313.2

350.7

129.3

175.2

37.5

45.9

83.4

+ 2.10

308.6

356.4

132.2

171.8

47.8

39.6

87.4

+ 2.04

+ 1.98

15 33 22

6.96
 Mean = $\frac{+1.81}{8.87}$

Nov. 18, 1919

Ceres

XII

PA 260
 15 35 20 312.1
 355.5
 127.6
 176.0

43.4
 48.4
 91.8 + 1.87

311.2
 354.2 43.0 + 1.98
 133.3 40.5
 173.8 83.5 + 2.09

PA 80

Mean

6.96
 1.73
 8.69

41.4
 86.3 44.9
 209.3 61.9
 271.2 106.8 + 1.49

32.6
 89.8 57.2 + 1.48

15 39 41 217.2 50.2
 267.4 107.4 + 1.48

PA 71 a
 Lpr 7.0

Thurs Nov. 20 - 1919

Rolls

15" E 22.

Smt.

Core

Plot T.

PA 160

11 24.0

17.8 < comp x obs

109.1

91.3

196.7

89.5

286.2

180.8

179.2 - 0.02

16.1

112.3

96.2

- 0.09

196.8

92.0

288.8

188.2

171.8 - 0.16

PA 340

109.8

194.8

85.0

288.6

85.2

13.8

170.2 + 0.19

109.4

194.8

85.4

286.9

89.0

15.9

174.4 + 0.11

11 29.8

138

11 26.9

11 24.8

22283.

Seeing very poor

Nov. 20-1919

Cores

Pa 340

II

11 34.0	114.3	comp & dis	
	196.2	81.9	
	285.6	93.4	
	19.0	<u>175.3</u>	+ 0.09

112.8			+ 0.14
200.0	87.2		
290.4	82.0		
12.4	<u>169.2</u>		+ 0.20

Pa 160

Mean = +0.06

~~288.6~~
12.2

110.4	98.2	
202.6	79.0	
281.6	<u>177.2</u>	+ 0.05

21.6		
106.2	84.6	- 0.02
192.3	100.1	

11 39.6	292.4	184.7	
		<u>175.3</u>	- 0.09

136

11 36.8
11 34.7

222.3

Comp & = -14.6563

C's watch used to here. 2 min 04 sec fast.

Nov 20, 1919

Ceres

III

11 49 08 PA 160

12.8

< Comp. x dis.

110.2

97.4

203.1

80.2

283.3

177.6

+ 0.05

20.9

106.3

85.4

- 0.04

191.6

102.0

~~+ 0.10~~

293.6

187.4

172.6

+ 0.14

+ 0.07

PA 340

Mean

~~+ 0.14~~

107.0

196.6

89.6

291.4

81.0

372.4

170.6

+ 0.18

111.3

~~120.4~~

78.7

190.0

69.6

+ 0.18

285.7

91.5

11 53 58

177.2

~~160.1~~

169.8

170.2

+ 0.19

Nov 20, 1919

Ceres

IV

PA 340

12 05 47

196.6

L Ceres dis

286.9

90.3

13.3

101.9

115.2

192.2

167.8

+0.23

191.0

296.3

105.3

22.8

86.0

+0.22

108.8

191.3

168.7

+0.21

PA 160

Mean = +0.15

280.4

20.0

99.6

106.2

89.0

195.2

188.6

177.4

+0.16

291.6

17.4

85.8

+0.08

105.6

93.6

12 10 08

199.2

179.4

-0.01

Nov 20, 1919

Ceres

I

PA 160
12 32 51 198.6

Comp. dis.

283.2

84.6 ✓

12.8

100.4 ✓

113.2

185.0 ✓

175.0

- 0.09 ✓

~~199.8~~~~284.8~~~~20.4~~~~106.2~~~~85.0~~~~85.8~~~~170.8~~repeated
repeated

- 0.08 ✓

PA 340

198.9

284.2

12.6

111.8

85.3 ✓

99.2 ✓

184.5 ✓

175.5 ✓

- 0.08 ✓

Mean + 0.06 ✓

PA 340

294.9

18.2

112.4

200.3

83.3 ✓

87.9 ✓

171.2 ✓

+ 0.17 ✓

288.2

21.3

116.9

192.8

193.1 ✓

85.9 ✓

169.0 ✓

+ 0.19 ✓

+ 0.21 ✓

12 37 48

Nov. 20, 1919

Ceres

VI

PA 340
 12 48 09 293.3
 12.8
 110.6
 197.6
 Comp. & dis.
 79.5
 87.0
 166.5
 +0.25

292.2
 20.4
 114.4
 196.3
 88.2
 81.9
 170.1
 +0.22
 ~~0.22~~
 +0.19

PA 160
 109.8 / Cereridis
 204.8
 288.8
 17.2
 95.0
 88.4
 183.4
 176.6
 Mean
 +0.15
 ~~+0.08~~
 +0.06

108.9
 198.4
 284.0
 12 51 47 19.4
 89.5
 95.4
 184.9
 175.1
 +0.02
 ~~+0.08~~
 +0.09

Nov 20 1919

Ceres

VII

13 00 12 PA 160
 105.2
 197.6
 290.2
³⁷13.4
 Ceres dis.
 92.4
 83.2
 175.6
 $\bar{x} = 0.08$

116.8
 201.2
 284.0
³⁸20.0
 84.4
 96.0
 180.4
 179.6
 $\bar{x} = 0.04$
 $+ 0.01$

PA. 340
 Mean = $+ 0.15$

189.7
 293.0
 19.6
 110.2
 103.3
 90.6
 193.9
 166.1
 $+ 0.26$

196.8
 284.6
 10.8
 92.8
 $+ 0.34$

13 04 43 119.8
 109.0
 201.8
 158.2
 $+ 0.42$

Nov 20, 1919

Ceres

VIII

PA 340

13 08 16

194.8 Ceres dis:

295.4 100.6

18.6 87.6

106.2 188.2

171.8

+ 0.16

200.4

290.8 90.4

11.3 107.9

119.2 198.3

161.7

+ 0.26

+ 0.35

Mean = + 0.17

PA 160

290.4

379.6 89.2

105.2 91.6

196.8 180.8

179.2

+ 0.02

282.8

18.6 95.8

108.8 92.0

200.8 187.8

172.2

+ 0.15

13 11 35

Nov 20, 1919.

Ceres.

13	17	51	PA 160	284.6	Ceres dis. (sun)	
				18.4	93.8	
				107.7	91.7	
				199.4	185.5	
					174.5	0.10
				284.4		
				19.8	95.4	
				109.6	89.2	0.10
				198.8	184.6	
					175.4	0.09
			PA 340			
				9.8		
				112.6	102.8	
				191.6	97.0	
				288.6	199.8	
					160.2	
			20.4			
				19.4	88.1	
				107.5	97.9	
				192.4	186.0	
13	21	30		290.3	174.0	

Reject - object glass half cut off

Nov 20, 1919

Lues

IXPA 340
1324 08 12.4. / Corcor dis

117.2

104.8

196.2

93.2

289.4

198.0

162.0

+ 0.34

18.8

111.6

92.8

193.3

98.1

291.4

190.9

169.1

+ 0.20

PA 160

mean + 0.18

107.2

199.4

92.2

286.4

96.9

23.3

189.1

170.9

+ 0.17

105.2

195.7

90.5

287.8

91.2

0.10

1327 33

19.0

181.7

178.3

+ 0.03

Nov 20, 1919

Ceres

X

13 47 04 PA 160
 22.0 \angle Comp* dis.
 101.4 79.4
 147.2 88.4
 285.6 167.8 + 0.23

19.6 + 0.18
 104.8 85.2
 148.6 87.7
 286.3 172.9 + 0.13

PA 340 Mean \angle 0.16
 111.4
 148.8 87.4
 286.2 85.3
 11.5 172.7 + 0.14

109.3
 198.1 88.8 + 0.14
 288.2 83.6
 13 50 56 11.8 172.4 + 0.14

Comp* = star at 2344.1 -14.8° (1855)

Nov 20, 1919

Ceres

XI

14 00 10 PA 340
 103.2
 191.3 78.1
 287.6 86.2
 83.8 164.3 + 0.30

~~118.1~~
~~191.4~~ 73.3
~~293.3~~ 80.1
~~13.4~~ 153.4 + 0.18

~~Reject~~
~~Revised~~

PA 160 Mean = + 0.12
 111.9
 195.8 83.9
 282.8 93.1
 15.9 177.0 + 0.06

PA 160
 197.8
 286.8 89.0
 18.7 89.7
 108.4 178.7 + 0.02

200.0 + 0.06

286.7 86.7

17.4 88.4

14 05 27 105.8 175.1 + 0.09

Nov 20, 1919

Ceres

XII

PA 160
 14 13 23 196.2
 286.4 90.2 ✓
 17.3 87.9 ✓
 105.2 178.1 ✓ + 0.03

202.2
 286.8 84.6 ✓ + 0.04
 16.9 92.0 ✓
 108.9 176.6 ✓ + 0.06

PA 340

Mean + 0.0 ⁷~~2~~

286.2
 17.3 91.1 ✓
 108.2 89.2 ✓
 197.4 180.3 ✓
 179.7 - 0.01

292.2 + 0.10
 15.9 83.7 ✓
~~0.00~~

14 17 46 110.8 85.4 ✓ + 0.20
 196.2 179.1 ✓ ~~+ 0.02~~
 6

Nov 20, 1919

Ceres

XIII

PA 340
 14 20 30 286.6
 12.4 85.8
 112.8 80.4
 193.2 16.6.2 + 0.26

294.6
 14.2 79.6 + 0.20
 106.2 92.6
 198.8 172.2 + 0.15

PA 160
 13.3
 109.6 96.3
 200.2 87.2
 287.4 183.5
 176.5 - 0.06

20.8
 106.5 85.7 0.00
 198.1 91.0
 14 24 13 289.1 776.7 + 0.06

Nov. 20, 1919

Ceres

XIV

Pa 160

14 37 22

13.4

110.4

203.3

285.8

97.0 ✓

82.5 ✓

179.5 ✓

+ 0.01

19.6

107.7

193.8

295.9

88.1 ✓

102.7 ✓

190.2 ✓

169.8 ✓

- 0.19

- 0.09

- Pa 340

Mean

+ 0.02

109.2

198.2

288.6

37 15.3

89.0 ✓

86.7 ✓

175.7 ✓

+ 0.08

±

113.6

196.2

288.8

82.6 ✓

86.6 ✓

169.2 ✓

+ 0.28

+ 0.14

14 42 03

15.4

+ 0.20

Nov 20, 1919

Ceres

XV

14 49 18 PA 340
 104.8
 198.0 93.2
 291.4 81.0
 12.4 174.2 + 0.11

112.3
 193.3 81.0 + 0.14
 284.1 90.0
 14.1 171.0 + 0.17

PA 160 Mean. + 0.08
 192.8
 290.7 97.9
 20.6 81.6
 102.2 179.5 + 0.01

201.8
 283.6 81.8 + 0.03
 14.6 95.8
 14 53 15 110.4 177.6 + 0.05

Nov 20, 1919

Ceres.

XVI

15 03 38 PA 160
 194.4
 289.6 95.2
 22.2 84.0
 106.4 179.2 + 0.02

198.3
 284.4 86.1
 15.4 98.8
 112.2 183.9
 176.1 - 0.02
 - 0.02

PA 340 Mean + 0.07

288.8
 717.4 88.6
 113.2 79.6
 192.8 168.2 + 0.22

290.5 + 0.16
 15.7 85.2
 105.2 89.8

15 07 48 200.0
 195.0 175.0 + 0.09

Nov 20, 1919

Ceres

XVII

PA 340

15 14 17

286.2

16.3

90.1

106.4

83.4

189.8

173.5

+ 0.12

290.6

15.7

85.1

+ 0.12

111.2

88.0

199.2

173.1

+ 0.13

pa 160

12.8

114.0

101.2

199.3

88.9

288.2

190.1

169.9

- 0.19

15.9

108.4

92.5

- 0.08

201.4

86.4

15 18 12

287.8

178.9

+ 0.02

PA 159.2

Sp 5.0

Mon Nov. 24 - 1909

Leclb 15" Eeg NCH Rec

sym.T.

Uranus

Phot T.

22 0 -1 2.9

22 43

0 42 W

Pa. 90

I

11 28.5

230.0 (Uranus dis

256.8 26.8

47.4

322

79.6

59.0 - 290

228.1

-2.98

256.8

28.7

49.4

264

75.8

55.1 - 305

Pa. 270

Mean = -3.15

322.2

345.4

232

140.8

24.0

164.8

47.2 - 340

318.6

-3.32

347.2

28.6

141.2

22.1

11 35.0

163.3

50.7

-324

63.5

11 31.8

11 31.5

Comp $\star = -13.^\circ$ 2 m

Pos $\star = 21.59 -13.^\circ 12'$

22287.480

Nov. 24-1919

Uranus

II

S.M.T. Pa 270

11 43.0 322.0

344.2 22.2

137.8

164.8

27.0

49.2

- 3.31

320.6

- 3.26

349.8

29.2

140.0

22.2

162.2

57.4

- 3.21

Pa 90

51.2

Mean = - 3.16

73.6

22.4

226.9

29.7

256.6

52.1

- 3.18

- 3.06

48.4

28.4

30.0

228.4

27.9

11 48.0

256.3

57.9

- 2.94

11 45.5

11 45.2

12 00 00. C's watch used to here. 20 sec fast.

222 27.490

Nov 24, 1919

Uranus

III

Pa 90

11 55 47

48.3

75.0

26.7

227.0

29.0

256.0

55.7

- 3.03

47.6

76.2

28.6

- 3.04

228.9

26.9

255.8

55.5

- 3.04

Pa 270

Mean: - 3.14

141.7

163.6

21.9

316.3

29.7

20

346.0

51.6

- 3.20

140.6

165.6

25.0

- 3.24

322.2

20.6

12 00 54

342.8

45.6

- 3.48

321.1

25.0

12 02 05

345.6

24.5

117 52

49.5

- 3.29

11 58 56

11 59 56

22287.499

Nov 24, 1919

Uranus

IV

Pa 270

12 11 57

141.1

162.8

21.7

320.6

23.2

343.8

44.9

- 3.51

138.7

163.8

25.1

- 3.42

320.7

23.9

343.6

49.0

- 3.32

Pa 90

Mean

- 3.32

229.8

255.6

25.8

- 3.29

48.4

28.8

77.2

54.6

- 3.07

~~223.7~~~~258.6~~~~24.9~~~~- 3.22~~~~51.4~~~~23.0~~~~12 16 58~~~~74.4~~~~47.9~~~~- 3.37~~

231.0

- 3.16

253.2

22.2

49.8

28.0

77.8

50.2

- 3.26

12 19 22

12 15 30

Nov 24, 1919

Uranus

IV

Pa 90

12. 20 25

227.7

259.6

49.6

74.6

31.9

25.0

56.9

- 2.98

227.8

254.4

49.2

77.3

26.6

28.1

54.7

- 3.02

- 3.07

Pa 270

mean = - 3.20

317.7

343.6

141.4

164.2

25.9

22.8

48.7

- 3.33

322.6

345.0

138.6

162.8

22.4

24.2

46.6

- 3.38

- 3.43

12 24 25

12 22 25

22287.615

Nov 24, 1919

Uranus

VI

PA 270
 12 33 41 321.8
 343.6 21.8
 140.6 24.4
 165.0 46.2 - 3.45

320.7
 344.8 241 - 3.34
 139.2 27.0
 166.2 51.1 - 3.23

PA 90 Mean - 3.29

48.6
 74.8 262
 230.0 23.8
 253.8 50.0 - 3.27

50.8
 74.2 23.4 - 3.24

228.4 28.0
 12 37 50 258.0 57.4 - 3.21
 256.4

12 35 46

2228.525

Nov. 24, 1919

Uranus

VII

PA 90

12 44 13

47.4

77.7

228.0

258.0

30.3

30.0

60.3

- 2.85

49.2

76.0

226.6

257.7

26.8

31.1

57.9

- 2.90

- 2.94

PA 270

mean -3.20

138.6

165.0

322.2

340.4

26.4

18.2

44.6

- 3.53

14.2.6

163.2

320.4

12 48 26

345.5

20.6

25.1

45.7

- 3.50

- 3.47

12 46 20

12 46 40

22287.533

Nov 24, 1919

Mannus

VIII

PA 270

12 56 17	139.6		
	167.1	27.5	
	322.2	<u>20.6</u>	
	342.8	48.1	-3.36

	141.4		
	162.2	20.8	-3.38
	320.9	<u>26.3</u>	
	347.2	47.1	-3.40

PA 90

Mean. -3.18

	226.4		
	258.6	32.2	
	49.0	<u>25.6</u>	
	74.6	57.8	-2.94

	229.6		
	254.6	25.0	-2.99

	48.4	<u>30.4</u>	
13 00 20	78.8	55.4	-3.04

12 58 12

22287540

Nov 24, 1919

Uranus

IX

PA 90

13 08 53

226.8

258.7

51.6

74.8

31.9

23.2

55.1

-3.05

-23.1,1

251.8

49.6

79.8

20.7

30.2

50.9

-3.14

-3.24

PA 270

318.2

346.8

141.2

164.0

28.6

22.8

51.4

-3.21

Mean - 3.21

322.7

343.0

139.6

167.8

20.3

28.2

48.5

-3.28

-3.34

13 13 18

22 11

13 11 06

13 11 36

22 28 55.50

Nov 24, 1919

Mannus

X

13 28 30 Pa 270

317.8

346.4

142.2

162.8

28.6

20.6

49.2

-3.31

319.8

340.6

139.2

162.6

20.8

23.4

44.2

-3.43

-3.55

Pa 90

49.2

75.8

231.0

255.6

26.6

24.6

51.2

-3.22

Mean

-3.28

50.6

73.2

226.8

259.2

22.6

32.4

55.0

-3.14

-3.06

13 33 01

61 31

13 30 46

21 28 56.3

H's watch 20 sec slow.

Nov. 24, 1919

Uranus

XI

Pa 290

13 40 28

46.2

80.0

230.0

253.0

33.8

23.0

56.8

-2.98

52.0

75.1

225.6

257.6

23.1

32.0

55.1

-3.02

-3.05

Pa 290

141.8

167.0

320.7

341.7

25.2

21.0

46.2

Mean -3.18

-3.45

~~141.8~~~~164.4~~~~318.6~~~~348.2~~~~Rejected
Repted.~~~~22.6~~~~29.6~~~~52.2~~

-3.35

-3.17

too low to continue
to advantage.

138.8

168.0

320.6

342.0

29.2

21.4

30.6

-3.25

Pa
Sps

271a

4.7

13 46 28

13 42 28

22287.572

Sunday Nov, 30, 1919.

15" E Eq. Howard Eaton, Obs. and rec.

181031 TV Hercules.

connect A and e. A > e.

(2 4)

309.2

353.4

129.7

175.1

Reject

Clouds

P.A. = A 166°

lfr. ~~\$~~ 3.6

S = 32°

HA —

Thursday Dec. 4, 1919,

15th E. Eq. Obs. T. HOS obs + rec.

181031 TV Herulis. Compare A and E. e

Pa 168

11 38

312.5

A dis

→ 352.2

39.7

133.4

35.9

A 168°

169.3

75.6 + 2.35

B

312.8

+ 2.24

351.8

39.0

130.9

43.5

174.4

82.5 + 2.12

11 45

Pa 348

Mean = 1.90

36.6

88.0

51.4

216.5

52.7

269.2

104.1 + 1.56

3 48°

38.5

+ 1.56

86.3

47.8

214.7

56.2

11 53

270.9

104.0 + 1.56

A

Dec. 4, 1919

Phot T.

139

245 ob + rec.

181031 TV Here. A and B A > B

PA 77

Sp. 2.0

A dis.

12:10 34.2

90.4

56.2

219.0

48.3

268.3

104.5

+ 1.55

A

36.5

+ 1.51

89.0

52.5

215.9

55.2

271.1

107.7

+ 1.47

PA 257

Mean + 1.70

12:20

127.5

178.5

51.0

309.9

42.3

352.2

93.3

+ 1.83

130.5

+ 1.90.

173.2

42.7

308.7

45.6

354.3

88.3

+ 1.96

B

12:30 ±

140

Dec. 4. 1919. 15th Phot. T.
 181031 TV/Herc. H&E obs + rec.
 Comp. b and u Pl 223, Apr 4.4

12 39 294.1
 b dis. 4.0
 118.2
 184.4

297.1
 6.6
 118.9
 185.5

198.0
~~282.1~~

12 58

Too low to be certain of
 stars.

Wednesday Dec. 10, 1919 141

181031 TV Hercules, 15^{km}. Phot T.

Compare A and e. A > e. H&E. obs tree.

PA 170

1050

309.2

353.4

Adis

132.9

171.2

442

383

825

+ 212

2.07

B

312.1

353.5

414

129.1

44.7

173.8

86.1

+ 202

PA 350

Mean = +1.79

1055

33.5

89.4

219.0

268.4

86.1

85.2

559

49.4

1053

+1.53

1.51

A

35.7

85.3

215.3

272.4

496

571

1067

+1.49

1107

Dec. 10, 1919. HBE obs & rec.
181031 TV Here: Compare A and b A>b

11 15 RA 70

$$\begin{array}{r} 32.5 \\ 92.0 \\ 218.1 \\ 268.0 \end{array} \begin{array}{r} \text{comp A dis} \\ 59.5 \\ 49.9 \\ \hline 109.4 \end{array} + 1.43 \quad A$$

$$\begin{array}{r} 38.5 \\ 88.9 \\ 211.1 \\ 273.5 \end{array} \begin{array}{r} 50.4 \\ 62.4 \\ \hline 112.8 \end{array} + 1.39$$

$$+ 1.35$$

11 19 P.A. 250

$$\begin{array}{r} 127.2 \\ 173.8 \\ 311.2 \\ 349.8 \end{array} \begin{array}{r} 46.6 \\ 38.6 \\ \hline 85.2 \end{array} + 2.05$$

$$\text{Mean} = +1.64$$

$$\begin{array}{r} 130.0 \\ 173.4 \\ 306.4 \\ 358.8 \end{array} \begin{array}{r} 43.4 \\ 52.4 \\ \hline 95.8 \end{array} + 1.90 \quad B$$

$$+ 1.76$$

22242

Dec. 10-1919.

Finder of 15"

11 32 Nova Oph IV est 91 PC.

11 38 Nova Aquil III ^{1843¹⁰} est 79 PC
est 76 HQ2.

- Lyrae 1917 3) (near U Lyrae)

11.48 ⁴⁹²

$$\begin{array}{r}
 19\ 16 + 37.7 \text{ est } 109 \\
 \underline{24\ 16} \\
 5\ 00
 \end{array}$$
 PC Ch

$$\begin{array}{r}
 19\ 16 \\
 26\ 31 \\
 \hline
 7\ 15 \text{ W.}
 \end{array}$$

15" E Ey.

 4
 13 05 - Lyrae 1917 3) est 10.1 PC

Wednesday Dec. 17, 1919.
15" E. Eq.
H + 7705

Tried out Dr. Hook's photometer,
without the field micol.
Seeing very bad. Artificial
star not in center of field.
Eye-micol (analyser) interfered
with real star - changed its shape.

Sun. Jan. 4 - 1920

15" E_g.

L.C.C.B.

Occultation of a star by Venus

15 58 - 19.5 -

W.H. Rec.

23 11 At 23-11 star seen not far from disc of Venus.

23 16 Phot T put on. No star seen.

23 20 Phot removed - still no star seen.

23 34 No star seen near Venus & the brighter star a little distance off, just barely visible. Twilight very strong.

✓ Wed. Mar. 10-1920

15" E 27.

Root

NCH-Rec,

13 00

R And. 001838

est. 12.0

R.W. Androm. 004132

est. 8.8

V. Androm 004435-

est. 9.1

R.R. Androm. 004533

est 9.9

R. V. Cass 004746a est. 9.9

Variable just North of R. V. 004746b est 10.2
Decidely bright.

U. Cass. 004047

est 11.9

W. Cass. 004958

est 10.6

RX Androm 005840

est. 10.7

Var brighter than usual

U And 010940 est

13.3

~~003179~~

Y. Cephei

003179

est. r. 3 Var.
14th

S Cass

011272

est 8.3

13 45.

RZ Persei

012350

est 10.2

✓ March 10, 1920

13 50	Y Androm	013338	est 12.8
	RU Androm	013238	est 11.4
	X Cass	014958	est 11.6
	Suspected Var. near X		est 10.8
	U Persei.	015354	est 7.8 (5")
	W Androm	021143a	est 13.6
	RR Persei.	022150	est 10.1
	T Camel	043065	est 8.8
	X Camel	043274	est. 8.8
	S Camel	053068	est. 8.9
	V Camel	054974	est. 11.2
	Z Cephei	021281	est 13.7
14 35	RR Cephei.	022980	est. 13.9

148

2 2402 ✓

Thurs Mar. 18, 1920

Rob

15" E 2g.

NCH Rec

gmt.

12 20

J Drac

09 3178

0721

210 E

est. 13.4

R. Urs. Maj.

103769

est 8.5

T Urs. Maj.

123160

est 12.6

S Urs. Maj.

123961

est 9.0

RS Urs. Maj.

123459

est 9.3

T Urs. Min.

133273

est 12.1

U Urs. Min.

141567

est 11.6

S Bootis.

141954

est 9.5

R Camel

142584

est 8.9

S. Urs. Min.

153378

est 10.0

R Lrac

163266

est 7.7

ST Lrac

163357

est 10.8

13 28

RW Drac

163358

est 12.3

extension of sequence $\alpha 2$ (9.6) $\beta 3 \alpha$ (9.6) γ r 6-10-9 1096 Δ StarX 4y. Is X variable

March 18, 1920

149

LC Obs.

net Rec

14 05 V Drac 175654 est. 13.5

T Drac 175458a est 9.5

U Y Drac 175458b. est 11.6

W Drac 1805-65 est 11.0

X Drac 180666 est 9.9

U Drac 190967 est 13.4

R Comae 115919 est 14.0

Object at +18.8 2.22 East at 9.39 = cluster

S U Virg. 120012 est 12.4

R Virg 123307 est 10.5

Object at +7.8 2.44 East at 9.50 = *a X

Object at +7.9 2.46 East at 9.51 = ? X

Object at +7.8 2.22 East at 10.03 = NGC 4526

+7.3 2.16 East at 10.15 = R Virg.

150

22421 ✓

Tues. April 6, 1920

LEOB

15"

Eg.

NC Head

13 05

R Us Min

163172

est 10.2

Pa 140

Phot T.

13 17 18

-160.6

Comp * dis

233.8

73.2

324.4

88.4

57.8

161.6

+ 0.35

156.3

+ 0.39

237.8

81.5

339.2

76.0

55.2

157.5

+ 0.43

Pa. 320

261.0

307.0

84.3

123.4

46.0

39.1

85.1

+ 2.05

263.3

307.2

43.9

76.6

54.3

+ 1.92

~~13 22 12~~~~130.8~~~~95.2~~

+ 1.78

13 24 00

127.9

Observed declination 71.5

Pa 320 a
Sp. 7.5

April 6, 1920

U Cephei 005381

PA 200

13 38-55

274.4

Var dis

307.7

33.3

85.8

35.0

120.8

68.3

-2.56

269.8

304.4

34.6

-2.47

81.2

39.2

120.4

73.8

-2.38

PA 20

331.1

57.7

164.4

227.2

86.6

62.8

149.4

-0.59

Mean

8.41

-1.60

16.81

343.3

49.2

158.4

228.9

65.9

70.5

136.4

-0.72

13 44 09

-0.85

152

April 6, 1920

Same

II

13 46 00 Pa 20 Focus changed
 346.6
 48.2 61.6
 168.0 57.4
 225.4 118.0 -124

348.2
 44.7 56.5 -1.14
 165.5 70.1
 235.6 126.6 -1.05

Pa 200 mean 8.41
 265.8 -1.65
 308.8 6.76
 85.5
 125.3

43.0
 39.8
 82.8 -2.11

266.2
 305.6 39.4 -2.16
 86.6 39.8
 126.4 79.2 -2.22

13 50 21

Pa 195a
 Spr 3.7
 Focus 5.4

Thursday, April 8, 1920

LC Obs.

Net Rec.

T Pyxides. 090032 est. var. 5α

PA 200

1/3 22 08

147.6

Var dis.

T Pyx with α

245.8

98.2

Phot T.

324.4

107.4

71.8

205.6

154.4

+0.49

142.7

246.8

104.1

316.7

101.7

+0.49

68.4

205.8

154.2

+0.49

PA 80

mean

-0.06

246.8

6.90

319.2

72.4

6.8 x

69.3

75.4

144.7

147.8

-0.62

257.0

-0.62

321.4

70.4

70.2

77.2

13 26 24

147.4

147.6

-0.62

$\alpha =$ bright \times at 8:57.7 $-31^{\circ}55'$ C.D. chart = 6.90

Obs decl. -31.3

Sps 6.4

HA

1.40^{min} at 10:00 S.T.

PA 81a

Focus 5.4

154

22423.

April 8, 1920

L.C. Obs

Net Rec

13 52

R 7 Herc 170627

est 12.8

~~RH Orph~~

R 8 Herc. 171723

est 12.2

Region very low.

14 00

T Herc

180531

est 8.9

15 15

X Drac

180666

est 10.8

W Drac

180565

est 10.0

15 25

R Z Herc

183225

est 9.6

22424'

Friday, April 9, 1920

LC Obs.

net Rec.

TPyxidis 090032

at 7.0

PA260

13 06 50

81.6

Comp x dis

131.8

50.2

257.0

71.2

322.2

121.4

+ 1.16

72.0

139.0

67.0

+ 1.08

255.8

61.4

317.2

128.4

+ 1.01

PA ~~260~~80

Mean

$$\begin{array}{r} 6.90 \\ + 0.48 \\ \hline 7.38 \end{array}$$

157.3

243.6

86.3

326.7

97.7

64.4

184.0

176.0

- 0.08

146.6

246.6

100.0

- 0.11

329.6

87.3

(3 10 31

56.9

187.3

172.7

- 0.14

April 9, 1920

LC Obs.

Net Rec

005381

U Cephei

PA 20

13 37 50

349.6

Vandis.

Phot T

40.6

51.0

167.2

60.6

227.8

111.6

-1.38

343.8

45.0

61.2

-1.44

173.8

45.8

219.6

107.0

-1.49

PA 200

86.6

127.6

263.4

302.4

41.0

39.080.0

-2.19

86.4

127.7

265.8

301.8

41.3

36.077.3

-2.28

13 43

12

8.41

Mean

-1.84

6.57

April 9, 1920

LC Obs.

Net Rec.

R Urs Min 16 31 72

PA 320

Comp

~~dis~~

13 50 54

~~264.0~~~~366.8~~~~2.8~~

Phot T,

13 52 10

263.2

Comp & dis

311.6

48.4

82.7

49.5

132.2

97.9

+1.71

258.9

313.0

54.1

+1.67

83.3

46.9

130.2

101.0

+1.63

PA 140

Mean

335.2

48.6

73.4

159.4

70.0

229.4

143.4

+0.71

343.2

54.6

71.4

+0.76

161.4

67.2

13 56 23

228.6

138.6

+0.80

0.75
~~8.68~~
~~8.68~~
~~0.56~~
~~10.00~~
 9.97

Sat. April 10 - 1920

LC Ob.

15" Eq.

H. Kimpflee

S.M.T.

T Pyxis

09003¹/₂

Phot.

13
8

00 30 PA 260

250.8 (Comparison Star Dark)

319.3

68.5

70.4

145.3

74.9

143.4 + 0.71

246.4

+ 0.62

325.8

79.4

73.3

140.8

67.5

146.9 0.64

PA 80

316.0

72.0

137.8

252.6

146.0

115.8

230.8

129.2 - 1.00

317.2

78.3

121.1

- 0.92

141.1

13

8

4 14 249.7

108.6

229.7

- 0.97

Est. 6.7

130.3

Sat. April 10, 1920

γ Hydrae

G. M. T.	Obs.	094622	Print T	H. Ring Rec.
13 30 40	PA.50 344.6	variable dist		
	45.4	x60.8		
	173.3			
	221.2	47.9		
		<u>108.7</u>	- 1.45	
	353.4			
	35.5	42.1	- 1.68	
	170.4			
	218.2	47.8		
		<u>89.9</u>	- 1.92	
	PA.230			9.00
	88.8			mean 2.427
	120.8	32.0		<u>5.53</u>
	274.7			
	295.6	20.9		
		<u>52.9</u>	- 3.14	
	93.3			
	120.8	27.5	- 3.06	
	270.6			
	300.0	29.4		
		<u>56.9</u>	- 2.98	
13.35.27				

S.P.R. 1.0

P.A. 227.0 A

Sat. April 10, 1920

V. 1 Hydrae

G.M.T. 13.45.59
 14th H

L.C. Obs. YA 200
 48.4

10.46.20 Phat.T

H. King Rec

160.0 Variable Disk
² 335.6 X 75.6
 337.8
 50.2
82.4
 158.0 - 0.42

159.3
 239.8 80.5 - 0.50
 344.4
 54.0
69.6
 150.1 - 0.57

Y.A. 20
 265.1
 312.2
 79.8
 131.4

mean 1.11
7.09

47.1
 51.6
98.7 - 1.69

263.7 1.72

312.2 48.5
 83.3 47.5
96.0 - 1.76

13.49.45 130.8

SPR 4.7
 PA 22 A

April 10 - 1920

Ball 103 S.M.T. FF. 3x24
 14 07 00 14 05 51.5

Reef Jap TV Photo

[LC obs] } see 12" look
 [H.H. Roe]

~~Comp with Sat~~

S.M.T. -

	h	m	s	
<u>glimpsed</u>	14	33	25	
				H.O.E. obs.
certainly seen	14	33	31	H.O.E.

Sunday April 11, 1920

L.C. Obs.

15" 2.8g.

net Rec

→ M.T.

13 32 Faintest star Trapezium Orion neb. est B2 *
star certainly fainter than on previous nights
but not decidedly so.

T Pyxidis 090032

est 7.0

Pa 80

Phot T.

13 39 55 242.2 Vardis
333.4 91.2
70.8 76.4
147.2 167.6

- 0.24

246.4
327.7 81.3
60.0 99.4
159.4 180.7
179.3

- 0.12

+ 0.01

Pa 260

313.6
73.8 120.2
144.6 107.6
252.2 227.8
132.0

+ 0.94

317.7

72.4 114.7
139.0 118.2

+ 0.99

13 43 34
13 41 44

257.2 232.9
127.1

+ 1.04

6.90
Mean = $\frac{+0.44}{7.34}$

Wednesday April 14, 1920

L. C. Obs.		15" Equat	HK. Rec.
G.M.T	T Pyxidis	690031	Phot T
12, 45.45	PA 260		Est. 7.5 ^h 12.4 ^m 9.5 ^s 0
	305.5	Variab. Dis	
45.15	78.2	132.7	
45.48	137.8	123.0	
46.03	260.8	255.7	
		<u>104.3</u>	+ 1.55
46.15	315.2		
46.25	78.9	123.7	
46.44	133.6	126.0	+ 1.48
46.55	259.6	2x9.7	
		<u>110.3</u>	+ 1.41
	PA 80		
47.39	55.5		Mean = + 0.89
47.50	153.2	97.7	6.90
48.06	239.4	92.8	<u>7.79</u>
48.20	332.2	190.5	
		<u>169.5</u>	+ 0.20
48.31	57.8		+ 0.30
48.42	156.2	98.4	
48.58	233.8	102.8	
12, 49.09	336.6	201.2	+ 0.40
		<u>158.8</u>	

Wednesday April 28, 1920

G.M.T.	L.C. obs.	15" Equat	H.K. rec.
	T. Pyridis 090031	Phot	
	PA 80		
13.6.00	333.2	Comp. standard.	
	60.0	86.8	
	152.6	95.4	
	248.0	182.2	- 0.04
		177.8	
	327.8		
	65.2	97.4	± 0.00
	154.6	81.0	
	235.6	178.4	+0.03
	PA 260		mean +0.60
	80.8		6.90
	132.6	51.8	<u>7.50</u>
	255.8	60.4	
	316.2	112.2	+1.39
	72.8		+1.19
	146.6	73.8	
	259.8	55.8	
13.10.50	315.6	129.6	+0.99

Est. 7.5

moonlight makes sky quite quite bright

Apr 28, 1920

L.C. obs

15" Equat

HK rec.

917.1. R Km Min 163.72 Plot T.
 13.5 48.40 PA 20 < 1131
 79.4 < comp + dis. 50 w + 72

139.2 59.8
 265.5 40.3
 305.8 100.1 + 1.65

87.2
 126.8 39.6 + 1.76
 257.2 52.6
 309.8 92.2 + 1.86

PA 140

Mean + 1.10

238.9 < var dis. 8.75
 331.8 92.9 9.85
 50.6 111.0
 161.6 203.9 + 0.46
 156.1

232.8
 338.6 105.8 + 0.44
 56.2 97.0
 153.2 202.8
 157.2 + 0.48

14.8 ±

Apr. 28-1920

S.C. Obs 15" Equat.

HK rec.

9 MT.

U Cephei 005321

Plot T

14 22 43 PA 200

11.58

11.58

~~310.2~~

81.8

127.4

264.4

305.6

Var. Disk

45.6

41.2

86.8

- 2.00

86.6

125.5

38.9

- 2.08

266.4

41.8

308.2

80.7

- 2.17

PA 20

mean - 1.58

164.8

8.41

224.9

60.1

9.99

345.3

63.3

6.83

48.6

123.4

- 1.12

162.6

- 1.08

229.0

66.4

347.0

60.4

47.4

126.8

- 1.05

14 26 35

Wednesday, May 5, 1920

G.M.T L.C. obs 15" Equat H.K. Rec
~~13~~ T. Pyxis 0.90031 Phot T
 13.18.47 PA 80

335.3 Comp standard
 57.2 81.9
 152.4 87.4 + 0.20
~~239.8~~ 169.3

333.0 +0.33
 63.2 90.2
 164.2 65.6
 229.8 155.8 + 0.46

PA 260 Av. +0.88
 84.8 6290
 131.4 46.6 7.78
 252.2 62.2
 314.4 108.8 + 1.45

72.0 +1.44
 139.2 67.2
 266.4 41.8
 308.2 109.0 + 1.44

13.21.17

Est. var. 5.8 (8.0)

Wed. May 26-1920

g.m.T

L. E. Webb

15" E. 29-

H. K. Rec.

13.30²⁶.00

Run mi 163122

Phot T.

PA 320

1231

60E

74.4
140.8
262.2
309.7

Comp * Dush

66.4
47.5
113.9

+1.33

83.3
131.4
264.2
307.2

48.1

+1.60

43.0
91.1

+1.88

T.A. 140.

mean + 1.02

156.8
237.4
334.8
58.2

80.6
184.4
165.0

+0.29

8.75
9.77

+43

159.6
232.2
337.0
54.8

72.6

77.8

150.4 + 0.57

13.30³⁰.215

Sp. + 75 7.57

May 26-1920

G.M.T.	L.C. obs.	15" Equat	H.K. Rec.
	005381	h. Cephei	
13.23.40	PA 20		
	263.8	Variable Disk	
	310.3	46.5	
	88.2	38.2	
	126.4	84.7	- 2.07
	270.2		- 2.13
	303.2	33.0	
	81.6	47.0	
	128.6	80.0	- 2.19
	PA 200	mean	- 1.57
	338.6		8.41
	50.4	71.8	6.84
	171.6	57.0	
	228.6	128.8	- 1.01
	351.4		- 1.01
	45.0	53.6	
	157.9	74.7	
13.47.30	232.6	128.3	- 1.01

May 26-1922

J.C. Obs.

Nova Sgrae.

15" Equat.

HK Rec

184929

$$\begin{array}{r} 133 \\ 1230 \\ \hline \end{array}$$

5192429

T3 Nova 2 U

L6A

14, 5-3,

$$\begin{array}{ccccccc} L4N2M & 6P1R & 5P & 2R & 5S & 3T & 6U \\ 6W & 3X & 1Y & 7Z & 2\alpha & 4\beta & 5V \end{array}$$

Letters should be all
small letters to agree
with chart.

Thurs. May 27-1920

P.C. Ob.

15" Eq.

H.R. Rec.

R. Un. Min. 163172 — Phot T.

13 22 50

PA 140

156.2

234.6

331.8

60.6

Corr. x dist

78.4

88.8

167.2

+ 0.24

12.41

3.50

8.10

Sp. 7.5

P.A. 320

155.5

239.4

331.3

55.5

83.9

84.2

168.1

+ 0.22

+ 1.23

PA 320

264.4

308.4

83.2

132.4

44.0

49.2

93.2

+ 1.83

+

1.06

8.75

9.81

266.2

309.2

85.5

130.2

43.0

44.7

87.7

1.98

+ 1.80

13.27.

Thurs. May 27, 1920

9 MT L.C. Obs

15" Equat.

HK, rec.

$13.37^{16} 20$ 00581 $21. \text{Cephei}$
 263.9 Variable Dist
 307.0 43.1
 87.2 34.6
 121.8 77.7 -2.26

272.7 -2.38
 301.4 28.7
 82.3 41.3
 123.6 70.0 -2.51

PA 200

338.8
 46.6 69.8
 168.6 58.8
 125.4 128.6 -1.01

8.41

1.64

7.27

6.77

 -0.90

344.8
 52.2 67.4
 159.6 71.4
 $13.39^{39} 40$ 2310 138.8 0.80

Thurs May 27, 1920

G. M. T.

L. C. obs

15" Equat

H.R. rec

184929 nova Lyrae

l4 m5 m6 p4 q3 r4 s4 t6 u5 w

Est in 5 in finder

Est nova = t4, 2u

Thurs May 27, 1920

G.M.T.

L.P. obs

15" Equat

H.K. rec

Star 8⁸ measured with R₁ Nova Lynce 8⁸

14.2.30

TPA 260

355.5

Star 8⁸ disk

spectrum 7, 8

38.4

42.9

174.0

43.2

217.2

86.1

+ 2.02

359.0

+ 2.11

36.8

37.2

177.2

42.6

219.8

79.8

+ 2.20

TPA 80

mean

$$\begin{array}{r}
 6.43 \\
 + 2.76 \\
 \hline
 9.19
 \end{array}$$

96.4

120.2

23.8

273.0

22.6

296.6

23

47.4

+ 3.39

272.0

+ 3.41

296.2

24.2

295.6

22.4

14.7.

118.0

46.6

+ 3.43

Thurs May 27, 1920

GMT L.C. obs 15" Equat H.R. me.

Star l measured with m.

14.17.25 PA 250

328.6 Star l disk

68.8 100.2

153.6 98.2

241.8 198.4

360

161.6

-0.35

331.2

68.2 97.0

148.2 101.1

249.3 198.1

360.0

161.9

-0.34

PA 10

77.8

135.8 58.0

258.7 56.4

315.1 114.4

-0.34

mean

+0.44

+1.32

+1.21

81.0

141.2 60.2

253.0 64.2

14.22. 317.2 124.4 ± 1.10

176

Thurs May 27

14.30.20

Star 1 measured with m

PA 60

78.0

star 1 disk

spread 8.0

134.4

56.4

256.2

73.8

320.0

130.2

+ 0.97

+ 1.02

74.0

139.2

65.2

257.4

60.8

318.2

126.0

+1.06

PA 240

mean +0.39

153.6

243.4

89.8

325.4

104.4

69.8

194.2

360.0

165.8

-0.27

148.8

249.8

101.0

- 0.24

14 40 0

329.8

89.4

59.2

190.4

360.0

169.6

- 0.20

14 35.2

Saturday May 29, 1940

Roaf. Jupiter δ . Compared with Sat. on same Side = Sat. δ .
 y.M.T.

15.9.70 10 Sust
 17 Seen
 30 314.8
 48 355.1
 10.5 311.2
 + 17 1.2
 30 307.0
 42 3.3
 52 303.8
 11 5 12.2
 17 2979
 26 8.2
 38 296.2
 48 14.8
 56 297.2
 12 7 15.6
 22 2898
 34 18.8
 47 285.2
 59 21.4
 13 12 287.1
 29 18.9
 40 290.0
 54 30.0
 14 7 280.2
 22 26.4
 37 285.0
 53 22.2

RCOB
 H.K. Rec
 Phot R
 40.3 806.5 229
 43.9 878
 50.0 1000
 53.2 106.8
 56.3 112.2
 68.4 136.8
 84.3 148.6
 70.3 140.6
 72.0 142.0
 78.6 157.2
 77.6 153.2
 78.4 156.8
 86.8 173.6
 89.0 178.0
 93.6 187.2 172.8
 96.2 192.4 167.6
 94.3 188.6 171.4
 91.8 183.6 176.4
 88.9 177.8
 100.0 200.0 160.0
 109.8 219.6 140.4
 106.2 212.4 147.6
 101.4 202.8 157.2
 97.2 194.4 165.6
 101.8 203.6 156.4

May 29 - 1920

GMT				
15.15	8	280.4	108.4	216.8 / 149.2
	20	288		
	34	280.6		
	52	282	107.6	
16	2	282.2	101.2	
	14	234	209.8	150.2
	24	283.8		
	40	282	104.4	
	56	283.3	106.5	
17	10	298	210.9	149.1
	22	278.2		
	33	238	105.6	
	46	285.4	101.0	143.4
	57	274	206.6	
18	6	282.0		
	15	253	103.3	
	25	281.2	106.8	149.9
	36	280	210.1	
	46	278.2		
	56	284	110.2	
19	3	281.0	106.2	
	14	272	216.4	143.6
	26	278.0		
	36	284	110.6	
	49	279.2	106.8	
20	0	260	217.2	142.8

May 29 - 1920

GMT	L.V.
15.20.27	0
43	3130
58	3592
21 14	3092

Frod.	3424
15 27	36

Ball	103
15 29	00

Wed June 9 - 1920

L.C. Alb 15" Eeg HOE Rev

26 Cephei 005381 ~~Phot R~~

1353

1100 E

Phot. $\alpha 20^\circ$

13 40

$\alpha 20^\circ$

157.4

nan. dis

230.8

734

350.8

562

47.0

1296

- 0.99

169.4

-1.04

222.2

528

333.8

718

55.6

1246

-1.09

$\alpha 20^\circ$

267.8

mean = ⁵⁹ - 1.64

313.3

455

89.4

383

8.41

6.82

$\alpha 20^\circ$

127.7

838

- 2.08

266.4

- 2.14

301.6

352

83.0

442

127.2

794

- 2.21

13 43

June 9, 1920.

R. Urs. Min. 163172

Robt H. B. _{ms}

Phot. T.

1400

all cloudy

Mon June 14-1920

L.C. Ob. 15" 289.

Nova Aquilae No 3 74300

est 8.9

14 10 Nova Image, though slightly fainter than the nearby Ab star appears to have a larger size and slightly diffused.

14 15 Cloud appeared, so no careful est. could be made of the diam. of the stars.

14 20 R Coronae 154428 est 6.3 7.4.
Cloud

TY Cygni 192928 est 5.9
1529
40 + 28.1 < 14.5 th

14 30 No star seen near the 12.4 as bright as the magn. 14.5

Cloud

14 5/35 J5 Cygni 203443 est 11.5
1542
556 E + 43.6

June 14-1920

UX Cygni 2050 30

75 50

5 0 + 30.0

15 00

Clock

Chart too poor to correctly

15 10

identify the comp^{*} or Var.

Stat. June 19-1920

P.A. 200 Clb 15" E Eq. R.C. Jr. Rec
 S.M.T. 20 Cephæi 00 53 81 Phot T.
 13-29-27 263.6 Var. 4 23
 309.4 45.8 10 30 E 481.1
 86.2 400 1 30
 126.2 85.8
 - 2.03

267.3 - 1.98
 308.3 410
 86.2 482
 134.4 89.2 - 1.94

P.A. 200 Mean = -1.54
 340.0 8.41
 46.8 66.8 Magn = 6.87
 173.2 531
 226.3 119.9 - 1.19

948.6 - 1.11
 43.9 553
 159.3 725
 13-33-42 231.8 127.8 - 1.03

17 31 34

June 19-1920

R Un min 16.3172

Phot 171

P. A.

1451

13-

-

Shy pretty cloudy 40 E + 72.2
 9-40

P. A.

13

Urel. June 23-1900

R. Alb.

15" 889. L.C. Jr. Rec.

Nova Lyræ 184929

14-24-55

15 31

3 14 2 + 29.0

U3, 34

14 40 Sky too poor to make measures.

Thurs. June 25-1920

L.C. Clb. 15" S. Eq. H.K. Roc
Run min 163172 Plot T
1500
1312 + 72

Pa-140

Spr 744
Pa. 320A
320A

13
14.42.40

340.6
53.8
160.2
240.8

73.2
80.6
153.8 + 0.50

343.4
58.4
167.6
229.6

75.0
62.0
137.0 + 0.66
+ 0.83

PA 320

mean

+1.14
8.75-
9.89

84.6
132.2
255.5
313.0

47.6
57.5-
105.1 + 1.53

~~85.3
136.2
267.8
304.0~~

~~40.9
36.2
77.1~~

Retaken below

+ 1.63

85.2
126.3
258.2
314.2

41.1
56.0
97.1 + 1.73

13.48.00
13 45 20

Friday, June 25, 1920

L.C. obs

15" Equat

H.K. Rec.

g. m. T U Cephei 003381

PA 20

14.3 - 20 84.8 Var. Disk

131.4 46.6

273.1 33.3

306.4 79.9

- 2.20

85.6

48.2

- 2.00

123.8

46.5

265.1

94.7

- 1.79

311.6

PA 200

mean

8.41
- 1.44

157.1

241.2

355.4

51.0

84.1

55.6

139.7

- 0.78

170.0

- 0.88

226.2

56.2

341.0

73.4

54.4

129.6

- 0.99

14.6 - 35

9 55

14.0 H 50

Tues. July 13. 1920

P.C.

15" E. Eq.

H.K. Rec

M 3

13 38

+ 28.9

13 38

16 10

16 25

2 32 W

2 47 + 29.4

Archives

14 11

+ 19.7

14 11

16 21

20.2

15 24

2 10 W

190

Friday July 16~~th~~ 1920

G.M.T.

L.C. Obs

15" Equ.

H.S.K. Tree

Standard C 10 19^h 15^m

Obs. dec. +14.3

Tels. pointing east

14.3.20 Star 7 with B

PA 100

172.2 Star 7 dish

218.4 46.2

357.8 38.8

366.6 85.0

+ 2.05

175.8

217.2 41.4

353.8 51.0

44.8 92.4

+ 1.95

1.85

PA 280

mean

+ 2.50

271.3

302.4 31.1

96.4 23.6

120.0 54.7

273.3

+ 3.07

+ 3.06

273.3

303.0 29.7

95.8 25.6

14.9.30

121.4

55.3

+ 3.04

14.6.24

July 16, 1920

B with 18

14.11.10	PA 270	Star B not disk	SM. 248
	163.2		PA. 90
	227.4	64.2	
	340.0	<u>72.0</u>	
	52.0	136.2	+0.85

161.6		+0.64
234.8	73.2	
329.8	<u>84.0</u>	
53.8	157.2	+0.43

PA 90		mean +1.37
264.4		
311.8	47.4	
91.0	<u>40.6</u>	
12 1.6	88.0	+1.97

	269.8		+2.10
	311.8	42.0	
	87.7	<u>39.2</u>	
19.17.0	124.9	79.2	+2.22
18 14.2			

192

July 16, 1920

 β with 19

141 28.30 P.A. 20 S.M. 3.8
 80.6 β disk P.A. 260
 126.4 45.8
 269.4 36.9 + 2.12
 306.3 82.7

87.6 + 2.18
 127.8 40.2
 264.8 38.4
 303.2 78.6 + 2.24

P.A. 260

mean +1.79

167.2
 224.6 57.4
 351.9 53.5
 45.4 110.9 + 1.40

172.8 + 1.28
 224.0 61.2
 347.6 60.6 + 1.15
 48.2 121.8

141 34.30

14 31 30

Other stars in square too faint to measure.

July 16, 1920

Rec(18), 4 (19), 1 (22a), 2(20), 8(22b), 7(23)
 Star close by (22b) is brighter than (22b) if (22b) is star intended

14 < 5 Est. of star = 6(22b) (higher power confirms
 these ests.)

with high power, star very close to
 22b mag.

Stat. July 17-1920

LCCB

15" 22g.

H.K. Reg

Standard Region C 10

19^h +15°

7 with 3

13.30.30 ~~28~~ PA100

281.4 Star 7 dish

332.6 51.2

105.0 40.2

145.2 91.4 +1.88

285.8

329.3 43.5 +1.91

102.2 45.5

147.7 89.0 1.94

PA280

mean

+2.50
+2.4

21.7

51.1 29.4

202.6 24.8

227.4 54.2 +3.09

+3.08

22.7

48.8 26.1

201.8 28.4 +3.08

13.36

230.2 54.5

July 17

195

 β with 18

PA 270

13.38.0

270.8

 β disk

340.0

69.2

92.0

65.6

161.6

134.8

+0.88

274.8

344.6

69.8

+ 0.84

98.9

68.9

167.8

138.7

+0.80

PA 90

mean

+1.38

12.6

65.5

52.9

200.0

37.8

237.8

90.7

1.90

+1.92

14.8

60.0

45.2

198.0

44.0

1.94

13.44.45

242.0

89.2

196

July 17, 1920

B with 19

13 52.45 PA 20

196.3 Star B dish

238.7 42.4

13.4 40.6

54.0 83.0 + 2.11

196.8

237.4 40.6

15.2 43.658.8 84.2 + 2.07

PA 260

mean + 1.60

272.8

334.7 61.9

95.7 61.3

157.0 123.2 + 1.12

+ 1.12

277.2

340.4 63.2

96.2 60.2

+ 1.12

13.58.35 156.4 123.4

Images are brighter in last half than in first half.

July 17, 1920

22523 ✓

13.15
14

Impossible to measure fainter stars.

14.27.

T Scip. 182306 est. 13.5

17 23

1 0 + 6.0

ST. Sagitt. 185512 est 14.0 Very difficult to see

RT

RX Sagitt. 190818 est 14.4 if seen.RW Sagitt 190819 est 9.5TR Sagitt 191019 est. 11.0S. Sagitt 191319 est, fainter than 13.5Z Sagitt 191321 est 11.3W. Aquilae 191007 est. 8.9 Variable close by = 10.4T Sagitt 191017 est 10.9TY Sagitt 191124 est. 10.715 0 RY Sagitt 191033 est. 6.8

Frip clock rope.

198

2252/6

Tues. July 20 - 1920

L.C. Alb.

15⁹ Eeg.

H. K. Rec

13.35

SU Virg. 120012 est 13.4

R³ +129
RY Virg. 120212 est. 12.8Y Virg. 132202 est 11.0S Virg. 132706 est 11.7RR Virg. 135908 est 13.4Z Virg. 140512 est 13 var.

Z Bootis 140113 est 9.3

RS Virg. 142205 est 10.7

Y Librae 143417 est 15 varRT Librae 150018 est 13.6T Librae 150519 est 12.8 all 4 stars near varS Librae 151520 est. 11.3Y Librae 150605 est 9.2 star just N. 12.0RS Librae 151822 est 8.5.RU Librae 152714 est 10.9

July 20, 1920

✓

X Librae	<u>153020</u>	est	11.7	
U Librae	<u>153620</u>	est.	11.8	
Z Librae	<u>154020</u>	est	h. 3 var. if seen	
R Librae	<u>154715</u>	est	10.9	
RR Librae	<u>155018</u>	est.	13.7	
RS Scuti	<u>155823</u>	est.	9.4	
Z Scapii	<u>160021</u>	est.	13.4	
X Scapii	<u>160221a</u>	est.	11.7	
W Scapii	<u>160519</u>	est	<u>h. 3 N</u>	Some cloud in region
R X Scapii	<u>160524</u>	est	11.9	
TR Scapii	<u>161122a</u>	est	10.1	
14.51 S Scapii	<u>161122b</u>	est	13.5	
	<u>Cs</u>	8.0 suff. variable near cluster	12.8.	

200

225⁵⁶ ✓Thursday, Aug, 19, 1920

15" E. Eq.

L.C. Obs.

L.C. Jr. Rec.

✓ Librae 143417 Est.1849

4 15" W

~~Est~~ Region too Low.R.S. Librae 151822 Est Region too Low.14 07 Z. Scorp 160021 Est. $\times 3$ 2X. Scorp. 160221 Est. 11.5B. Scorp 161122 Est. 10.0S Scorp 161122 Est. 13.1W. Oph 161607 Est. 11.9S. Oph. 162816 Est.T. Oph. 162815 Est.

} Pot Fanned

14 45 R. R. Oph. 164319 Est. 13.2

22000.

Sat. Oct. 2-1920

10000

15" S Sag

H&K Rec

12.52.30 Z Oph. 170215 est 12.9
 $\frac{20\ 47}{3\ 45\ W - 15.5}$

W Oph 161607 Est. ³14.4

T Oph 162815 est. Too low

T Sag. 191017 Est. 12.8

Z Sag 191321 Est. 10.4

TY Sag 191124 Est. 12.9

S Sag 191319 Est. 12.7

~~191419~~
 Camp Varhearby Est. 11.8

R Sag 191019 Est 10.6

RW Sag 190819 Est 10.1

TRX Sag 190818 Est 13.3

RR Aquil 195202 Est 12.8

RS Aquil 195308 Est 12.6

202

226W.

Oct. 2, 1920

ST Sag 185512 Est. 13.3

nova Sagit near S.T. fainter than 13.5

R Capric 200514 Est. 12.3W. Capric 200822 Est 13.5Z Aquil 200906 est 13.2RV Capric 202622 est 11.9Y Aquil 203905 est. 12.6W Aquar 204109 est 13.8U Capric 204215 est 13.7T Aquar 204405 est 8.6V Capric 200124 est 13.0X Capric 210221 est 11.5SS Aurag 060547 est 13.0

Yruman's Surf Var est 9.7

Discep prop due to redness Look up photog.

Mon Oct. 4-1920

203

LC Ob. 15" 2.29 HSK. Rec
 Uranus. phot T.

$$22 \quad 14 - 11.4 \quad Pa \quad A = 160$$

$$20 \quad 10 \quad Pa \quad B = 340$$

$$\frac{2}{2} \quad \frac{4}{4} \quad 2$$

$$Spr \quad SPR = 2.3$$

12.8. 0

$$P.A. = A(160)$$

$$182.2$$

$$236.6$$

$$212.4$$

$$54.4$$

Uranus dis.

$$54.4$$

$$\frac{52.0}{106.4}$$

$$106.4$$

$$Comp \quad \star = -11.0$$

$$(1855) \quad 22 \quad 14.4 - 11.6$$

$$-1.50$$

$$5817(7.8)$$

$$181.2$$

$$240.2$$

$$7.3$$

$$62.6$$

$$59.0$$

$$\frac{55.3}{114.3}$$

$$114.3$$

$$-1.41$$

$$-1.32$$

$$PA = 340$$

(B)

$$Mean = -2.02$$

$$282.6$$

$$316.8$$

$$102.4$$

$$133.9$$

$$34.2$$

$$\frac{31.5}{65.7}$$

$$65.7$$

$$-2.65$$

$$282.7$$

$$316.8$$

$$105.3$$

$$137.6$$

$$34.1$$

$$\frac{32.3}{66.4}$$

$$66.4$$

$$-2.64$$

$$-2.63$$

12 12.30

Oct. 4, 1920

12.30.0 *mean.*
 285.0
 316.1 31.1
 103.2 34.4
 137.6 65.5 -2.66
 -2.56

279.7
 321.7 42.0
 104.2 29.6
 133.8 71.6 -2.45

P.A. mean -2.06

7.7
 57.2 49.5
 183.7 47.9
 231.6 97.4 -1.72

-1.55

0.0
 57.8 57.8
 182.9 53.9
 12.33.40 236.8 111.7 -1.38

12.45 Sky quite cloudy in this region

13.15 All Cloudy.

Wednesday Oct 6, 1920
I

L.C. obs

12 " Equ

H.S.K. Rec.

G.M.T.

12.17.0

Uranus

PA = 180

6.8

53.8

185.5

234.8

Phot T.

Uranus dis

47.0

49.3

96.3

-1.75

Same comp. stars as on
last occasion

1.3

59.4

184.3

231.8

58.1

47.5

105.6

-1.52

-1.64

P/A = 0

mean -1.96

101.8

135.9

277.2

323.3

34.1

46.1

80.2

-2.19

100.0

144.3

285.0

316.8

44.3

31.8

76.1

-2.31

-2.25

12.21.15

Oct. 6, 1920

11

12.25.30 *manus*
 PA=0
 102.2
 132.4
 281.3
 322.8

30.2
 41.5

 71.7 -2.45

-2.47

99.1
 140.6
 285.2
 314.3

41.5
 29.1

 70.6 2.49

PA=180

mean -2.08

185.6
 233.3
 4.4
 55.9

47.7
 51.5

 99.2 -1.68

184.6

-1.68

230.0

45.4

2.3

53.8

12.2915

56.1

99.2 -1.68

Oct 6, 1920

III

Uranus

PA = 180

12.33.10

183.6

234.8

11.3

51.8

51.2

40.5

91.7 -1.87

188.4

229.6

6.1

57.6

41.2

51.5

92.7 -1.84

-1.86

PA = 0

275.5

318.6

100.8

137.2

43.1

3.6.4

79.5 2.21

mea - 2.05

283.7

322.4

100.6

139.2

38.7

3.8.6

77.3

2.24

2.28

12.37.10

208

Oct 6, 1920
V

54
12. ~~79.50~~

manus,
PA=1A0
6.2

52.1

186.0

229.3

45.9

43.3

89.1 - 1.94

6.2

52.8

184.4

234.6

46.6

50.2

96.8 1.74

-1.84

PA=0

100.2

136.2

273.1

320.0

36.0

46.9

82.9 - 2.11

man - 2.00

-2.15

95.6

137.7

279.2

42.1

38.0

80.1 - 2.19

12.58.30

317.2

Oct 6, 1920
IR

trans.

12.45.20 PA = 0
 278.0
 321.3
 102.1
 139.3

43.3
 37.2
 80.5 -2.18

282.4
 313.1
 101.1
 142.7

30.7
 41.6
 72.3 -2.43

PA = 180

mean - 2.07

~~0.8~~
 6.3
 51.4
 188.2
 232.2

45.1
 44.0
 89.1 -1.94

8.1
 52.7
 182.6
 234.4

44.6
 51.8
 96.4 -1.75

12.49.15

210

Oct 6, 1920

VI

Wrens

PA=0

13.8.30

101.1

133.6

279.8

317.6

32.5

37.8

70.3 -2.50

102.2

138.7

278.4

319.4

36.5

41.0

77.5 2.27

-2.38

PA=180

187.8

232.2

11.1

46.1

44.4

35.0

79.4 2.21

mean -2.31

191.2

228.8

9.2

49.3

37.6

40.1

77.7 2.26

-2.24

13.12.0

Oct. 6, 1920
VIImanus
PA = 120

13.14.30

187.7

228.3

7.7

49.6

40.6

41.9

82.5 -2.12

190.4

231.2

6.1

54.2

40.8

48.1

88.9 1.94

-2.03

-2.22

PA = 0

mean

-2.20

282.1

312.4

103.3

139.6

30.3

36.3

66.6 2.62

277.6

320.8

100.8

139.4

137.2

43.2

38.6

81.8 2.14

79.6

43.2 2.21~~2.38~~

2.42

13.18.0

212

Oct 6, 1920
VIII

trans

13.22.50 PA=0

278.8

317.9

100.0

134.0

39.1

39.0

78.1 -2.41

283.2

317.9

101.4

142.6

34.7

41.2

75.9 2.32

-2.36

PA=180

4.2

54.7

190.3

228.6

50.5

38.3

88.8 -1.95

mean - 2.14

1.91

11.2

52.3

183.3

233.7

41.1

50.4

91.5 1.87

13.26.50

Oct. 6, 1920

IX

13.36.20 *trans*
 PA = 180
 12.8
 52.4
 189.2
 228.9

39.6
 39.7
 79.3 2.22

9.6
 51.8
 187.3
 233.6

42.2
 46.3
 88.5 1.95

-2.08

PA = 0
 100.8
 137.8
 278.2
 317.4

37.0
 39.2
 76.2 2.31

mean - 2.19

13.40.30 97.8
 138.2
 280.6
 316.8

40.4
 36.2
 76.6 2.30

-2.30

214

Oct 6, 1920
X

trans

13.48.40

PA = 0

100.2

139.6

280.6

320.4

39.4

39.8

79.2

-2.22

100.4

142.7

280.2

323.7

42.3

42.9

85.2

-2.14

-2.05

PA = 120

190.4

226.6

6.4

53.3

36.2

46.9

83.1

-2.10

Mean -

2.06⁴

-1.94

~~-1.98~~

187.7

230.4

4.2

50.8

42.7

52.6

95.3

-1.77

13.53.0

Oct 6, 1920

XI

trans

PA = 180

13.57.0

187.4

231.4

5.6

56.6

44.0

51.0

95.0 -1.78

185.3

232.4

9.2

52.3

47.1

43.1

90.2 -1.91

-1.84

PA = 0

279.0

319.2

101.7

138.2

40.2

36.5

76.7 -2.29

mean - 2.04

278.7

321.4

102.6

139.8

42.7

37.2

79.9 -2.20

2.24

14.01.30

$$\begin{aligned} \text{Sfr.} &= 2.6 \\ \text{P/A} &= 355^\circ \text{A} \end{aligned}$$

216

Thursday Oct. 7, 1920
I

LC Obs		15" Equ	HSK Rec
G.M.T.	Uranus	Same Comp stars last night	
	PA = 0		
11.39.0	280.0		
	317.2	37.2	
	101.6	33.9	
	135.5	<u>71.1</u>	-2.47
	280.2		-2.38
	323.1	42.9	
	103.8	33.6	
	137.4	<u>76.5</u>	-2.30
	PA = 180		mean -2.01
	9.1		
	53.1	44.0	
	185.1	50.5	
	235.6	<u>94.5</u>	-1.80
			-1.64
	4.6		
	59.2	54.6	
	184.2	53.1	
11.42.50	237.3	<u>107.7</u>	-1.47

Oct. 7, 1920
II

217

11.44.50 μ ranus PA = 180

2.6		
56.2	53.6	
184.6	46.6	
231.2	<u>100.2</u>	-1.65

7.2		
54.0	46.8	-1.63
180.2	55.2	
235.4	<u>102.0</u>	1.61

PA = 0

mean - 1.94

101.8		
138.8	37.6	
278.0	43.0	
321.0	<u>80.6</u>	2.19

-2.26

99.3		
140.4	41.1	
282.2	34.2	
11.48.40 316.4	<u>75.3</u>	2.34

218

Oct. 7, 1920

III

Lunar

PA=0

12.01.50

101.1

140.0

276.6

322.6

38.9

46.0

84.9

-2.05

101.0

140.1

281.4

320.8

39.1

39.4

78.5

-2.14

2.24

PA=180

mean -1.98

192.2

237.0

5.4

51.5

44.8

46.1

90.9

-1.89

184.4

235.8

4.2

59.2

51.4

45.0

96.4

-1.75

12.05.45

-1.82

Oct. 7, 1920

17

Lunus

12.19.10 PA = 180

183.1

232.4

7.0

54.6

~~5~~ 9.3

47.6

96.9

1.73

186.6

236.6

1.2

62.6

50.0

61.4

111.4

1.39

- 1.56

PA = 0

mean - 1.98

~~180.0~~

283.0

318.6

99.8

135.9

35.6

36.1

71.7

- 2.45

281.2

318.8

101.0

137.9

37.6

36.9

74.5

- 2.36

2.340

12.23.40

220

Oct. 7, 1920
V

Zuventus

PA = 0

12.34.20

280.0

317.2

100.2

137.2

37.2

37.0

74.2

-2.37

276.8

320.1

101.8

142.7

43.3

40.9

84.2

-2.07

-2.22

PA = 180

mean - 1.91

~~23.3~~

51.2

185.2

~~232.2~~

47.9

47.0

94.9

-1.79

418

55.6

183.8

241.6

50.8

57.8

108.6

1.45

1.62

12.38.30

Oct 7-1920

Region No 2 0^h to $2^h + 40^m$ to $+60^m$

exam. with unaided eye for
bright Nova. Star as ft. as $4.5 \pm$

12.30 clearly seen No moon or haze.

No Nova

LD

Pluto exposed to hour
except Jup's eclipses.

July 7-1921

1919phae.proj..628C