KG
11365
593

1908phae.proj..594w

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1908phae.proj...594w

KG 11365.5 93

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KG 11365.59B

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1908phae.proj..594N

Nov. 21, 1908 (Saturday)

R. Z. Draconis

18 21
23 41
5 20

+58.8

W. Obs. Bowl Rec. Phot T

Index left. X. B. Comp. Star Obs. I.

30.2 12.3 ✓
102.5 46 8 ✓
2252 119.1 ✓ +1.21 ✓
2720

+1.22 ✓
~~1.30~~

41.9 48.7 ✓
90.6 6 45 ✓
214.2 ~~213.9~~ 113.2 +1.34 ✓
278.7

Index Right X A.

308.4 70.5 ✓
10.9 48.4 ✓
132.2 118.9 ✓ +1.22 ✓
180.6

+1.23 ✓

312.3 49.6 ✓
1.9 68.3 ✓
122.5 117.9 ✓ +1.24 ✓
190.8

Mean +1.26 ✓

7 26 30

7 36 30

6 3 0, ✓
7 31 30. ✓
+r 0 42. ✓
12 32 12. ✓
+267. r223 ✓

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1908phae.proj...594N

Nov. 21, 1908.

Same Again

	Lidey Right A.	II
7 39 15	302 3	68.5
	10.8	48.8 v
	133.2	117.3 v +1.25 v
	182.0	
		+1.26 v
	312.9	47.7
	0.6	68.7 v
	121.4	116.4 v +1.27 v
	190.1	

	Lidey Left. B.	
	212.1	66.4 v
	278.5	45.5 v
	42.6	111.9 v +1.37 v
	88.1	
		+1.34 v
	224.0	45.3 v
	269.3	68.8 v
	31.2	114.1 v +1.32 v
	100.0 ~~98.8~~	

Mean +1.30 v

7 46 40

Δ v v.

7 42 v.

+v 0 42.

12 43 40.

Δ 267. v 30 4 v

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1908phae.proj..594

Nov 21, 1908.

Same Again III

Index Left B.

213.9	64.5	
278.4	46.0	
42.8	110.5	+1.41
88.8		
		+1.38
224.6	47.3	
268.9	68.8	
38.6	113.1	+1.38
99.4		

Index Right A.

121.3	66.5	
187.8	46.2	
314.2	112.7	+1.36
0.4		
		+1.34
132.5	47.0	
179.5	67.3	
302.4	114.3	+1.32
9.7	8.5	

Mean +1.36

7 50 20

7 57 5

7 27.

7 3 42.

+ 0 42.

12 4 24.

A267.3720

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1908phae.proj...594W

Nov. 21, 1908

Same Again. II

Index Right. A.

121.9	66.9 ν	
188.8	45.8 ν	
314.1	112.7 ν	+1.36 ν
359.9		
131.5	49.3 ν	+1.34 ν
180.8	65.2 ν	
303.0	114.5 ν	+1.31 ν
8.2		

8 2 0

Index Left. B.

33.4	67.4 ν	
100.8	44.7 ν	
223.6	112.1 ν	+1.37 ν
268.3		+1.40 ν
43.1	44.7 ν	
87.8	64.3 ν	
213.9	108.0 ν	+1.54 ν
278.2		

Mean +1.37 ν

8 9 20

	11	20. ν
8	ν	40. ν
+ν	0	42. ν
13	6	22. ν

8267. ν 461 ν

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1908phae.proj..594

Nov. 21, 1908

Same Again V

Index Left. B.

33.5	63.0	
96.5	44.0	
223.2	107.0	+1.49
267.2		

+1.48

43.2	44.8	
88.0	63.1	
213.6	107.9	+1.47
276.7		

Index Right. A.

302.5	65.4	
7.9	45.8	
133.0	111.2	+1.39
178.8		

+1.38

313.4	46.4	
359.8	65.7	
122.8	112.1	+1.37
188.5		

Mean +1.43

8 13 45

8. 22 5

3 √ √0. √

8 17 √√. √

+√ 0 42. '

13. 18 37 √

Δ267. √√46 "

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1908phae.proj...594W

Nov. 21, 1908.

Same Again VI

Index Right. A.

302.2	65.9
8.1	45.3
135.0	111.2 +1.39
180.3	

+1.44

313.8	43.2
357.0	64.1
124.4	107.3 +1.48
188.5	

Index Left. B.

213.5	63.3
276.8	43.8
43.8	107.1 +1.49
87.6	

+1.48

224.6	44.6
269.2	63.0
33.5	107.6 +1.47
96.5	

Mean +1.46

8 26 10

8 33 10

	79	20.
δ	29	40.
+v	0	42.
13	30	22.

δ 267. v 62.0

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1908phae.proj..594

Nov. 21, 1908

Same Again. XII

Index Left. B.

213.6	61.8°	
275.4	43.4°	
44.4	105.2°	+1.53°
87.8		
		+1.56°
225.0	41.1°	
266.1	61.7°	
34.3	102.8°	+1.59°
96.0		

Index Right A.

124.4	63.8°	
188.2	45.3°	
313.5	109.1°	+1.44°
358.8		
		+1.46°
133.1	45.7°	
178.8	61.8°	
304.9	107.5°	+1.48°
6.7		

Mean +1.51°

8 42 0

8. 50 5

92 5.°

α 46 2.°

+v 0 42.°

13 46 44.°

α 267.5741°

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1908phae.proj..594W

Nov. 21, 1908

Same Again. VIII

Index Right. A.

9 4 50

125.9	59.5	
185.4	45.8	
312.3	105.3	+1.53
358.1		
		+1.54
133.6	45.4	
179.0	58.9	
305.7	104.3	+1.55
4.6		

Index Left. B.

36.3	60.8	
96.3	41.8	
224.8	101.8	+1.61
266.6		
		+1.68
46.5	39.3	
85.8	57.4	
216.8	96.7	+1.74
274.2		

Mean +1.61

9 14 5

	10	55.
9	9	20.
55	0	42.
14	10	10.

267. 904

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1908phae.proj..594

Nov. 21, 1908.

Same Again.

Index Left. B. ~~EX~~

36.2	57.0'	
93.2	39.2'	
225.6	96.2'	+1.75'
264.8		

46.2	40.8'	+1.75'
86.2	56.3'	
217.2	96.3'	+1.75'
273.5		

Index Right. A.

307.6	56.1'	
3.7	40.9'	
136.0	97.8'	+1.73'
176.9		

		+1.72'
316.0	40.1'	
356.1	57.4'	
127.0	97.5'	+1.72'
184.4		

Mean +1.74'

P 20 20

9. 27 50

	42	10.'
9	24	5.'
+5	0	42.'
14	24	47.'

£267.6006'

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1908phae.proj..594W

Nov 21, 1908

Same Again.

Index Right A. ∓

308.0	53 4 ˅	
1.4	40.2 ˅	
136.6	93.6 ˅	+1.82 ˅
176 8		

+1.75 ˅

313.8	42.1 ˅	
355.9	56.8 ˅	
127.9	98.9 ˅	+1.68
184.7		

Index Left. B.

220.3	51.1 ˅	
271.4	38 8 ˅	
45.7	89.9 ˅	+1.92 ˅
84.5		

+1.94 ˅

227.2	37.3 ˅	
264.5	51 3 ˅	
39.4	88.6 ˅	+1.94 ˅
907.		

Mean +1.84 ˅

9 33 15

9 41 20

74 35. ˅

9 37 14. ˅

+˅ 0 42. ˅

14 32 0. ˅

α 267. 6097 ˅

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1908phae.proj..594W

Nov. 21, 1908

Same Again XI

Index Left B.

9 48 55

220.4 47.9"
268.3 32.1"
50.0 80.0" +2.19"
82.1

+2.16"

229.5 34.0"
263.5 48.7"
40.6 82.7" +2.12"
89.3

Index Right A.

130.9 51.6"
182.5 37.5"
316.6 89.1" +1.94"
3541

+1.96"

137.2 37.2"
174.4 50.7"
310.2 87.9" +1.97"
0.9

9. 57 25
106 20.
9 ✓3 10.
+✓ 0 42.
14 ✓3 ✓2.
267.6207

Mean +2.06"

S.T 2 22
HA 7 59
Dec +59.2
P.A 260.3 Vernier B
Sprocket – 2.5 A, –1.5 B, –1.0 C

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1908phae.proj...594

Nov. 21, 1908

δ Arietis

5 27 −0.4
2 37
2 50 Wills. Roux Rec
9 10 Phot W.

Index L+B A.
368 ← South + Brit Dros
10 25 0 50.6 13.8 ✓
216.7 14.7 ✓
231.4 28.5 ✓ −4.52 ✓

362 15.5 ✓ −4.49 ✓
51.7 13.7 ✓
217.5 29.2 ✓ −4.46 ✓
231.2

Index R+a A.
307.6 13.0 ✓
320.6 16.3 ✓
125.7 29.3 ✓ −4.45 ✓
142.0

−4.37 ✓

306.6 14.7 ✓
10 30 48 321.3 16.9 ✓
✓✓ 40. ✓ 125.2 31.6 ✓ −4.29 ✓
10 . 27 ✓0. ✓ 142.1
+✓ 0 ✓2. ✓
1✓ 2✓ 32. ✓
✓267.644✓

Mean −4.43 ✓

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1908phae.proj..594N

Nov. 21, 1908

Same Again

Index R+a A.

307.1	13.4	
320.5	15.8	
1266	29.2	−4.46
1424		

−4.48

307.0	13.7	
320.7	14.9	
1263	28.6	−4.51
141.2		

Index L+B B.

217.3	13.4	
230.7	13.6	
364	27.0	−4.63
50.0		

−4.61

216.8	14.5	
231.3	13.0	
37.3	27.5	−4.59
50.3		

10 32 25

10 38 25

7 0 ∨0.

10 3∨ 2∨.

+∨ 0 ∓2.

1∨.36 7.

+267.6∨01

Mean −4.54

General " −4.48

W's watch used for timer.
Wdch 42 secs slow.

L. P. P.

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1908phae.proj..594

~~Nov. 23, 1908. (Monday).~~

R. Z. Cassiop.

2 36 +69.0
0 6
2 30 W. Obs. Power Rec. Phot. T.
9 30

Clouds. Stars gone. I.

Index Lta B.

139.2 ← Var. Dus
176.6 37.4 ✓
323.2 23.2 ✓
346.4 60.6 ✓ −2.84 ✓

7 54 35

146.7 22.0 ✓ −2.88 ✓
168.7 36.4 ✓
316.0 58.4 ✓ −2.92 ✓
352.4

Index R+B A.

47.0 37.9 ✓
84.9 22.1 ✓
235.5 60.0 ✓ −2.86 ✓
257.6

−2.91 ✓

54.1 22.9 ✓
77.0 34.6 ✓
227.5 57.5 ✓ −2.96 ✓
262.1

Mean −2.90 ✓

8 1 20
11 ✓ ✓✓. ✓
7 ✓7 ✓2. ✓
+✓ 0 ✓2 ✓
12 ✓2 ✓0. ✓
269.✓409 ✓

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1908phae.proj..594W

Nov 23, 1908

Same Again

Index R+B A. H

8 4 0.	493	38.7	
	88.0	23.5	
	234.6	62.2	2.78
	258.1		
			2.86
8 5 55	55.1	21.7	
	76.8	360	
	227.6	57.7	2.95
	263.6		

Index L+a B.

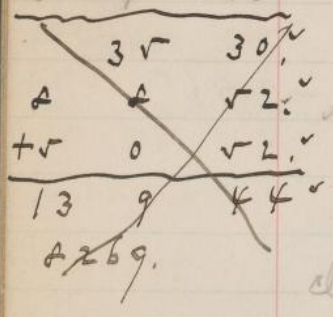
8 8 26	317.1	34.9	
	352.0	232	
	144.6	58.1	2.93
	167.8		

Clouds

~~3242~~

~~347~~.8

8 17 15



clouds thick and images varying greatly in brightness

Reject above partial group. Troubled by clouds continually and impossible to finish it.

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1908phae.proj..594

Nov. 29, 1908.

Index I+a B. III

	139.7	35.5 ✓
8. 40 15	175.2	22.0 ✓
	324.2	57.5 ✓ -2.96 ✓
	346.2	

-2.96 ✓

	146.4	23.2 ✓
8 42 35	169.6	34.4 ✓
	317.3	57.6 ✓ -2.95 ✓
	351.7	

Index R+B A.

	54.6	24.9 ✓
8 46 10	79.5	34.8 ✓
	227.9	59.7 ✓ -2.87 ✓
	262.7	

-2.90 ✓

	48.5	36.1 ✓
8 49 6	84.6	22.0 ✓
	235.2	58.1 ✓ -2.93 ✓
	257.2	

17h 0 ✓
h 44 30. ✓
+✓ 0 ✓2. ✓
13 4✓ 22. ✓
h269. ✓732 ✓

Mean -2.93 ✓

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1908phae.proj..594W

Nov. 23, 1908

Same Again

Index R + B A. Tr

8 52 45

55.6 22.1
77.7 36.1
227.1 58.2 −2.93
263.2

−2.92

8 55 0

49.2 36.3
85.5 22.6
234.9 58.9 −2.90
257.5

Index L + a B.

8 57 25

3227 25.3
347.0 35.9
139.9 60.2 −2.81
175.8

−2.81

8 59 35

314.8 37.9
352.7 23.4
146.0 61.3 −2.81
169.4

Mean −2.81

22 4 4
A 6 18
+ 0 2
13 7 3
A 269. A 12

1908phae.proj...594

Nov. 23, 1908

By an error in computing the ephemeris it has just been found that the minimum does not come until about two o'clock to night so that the preceding observations are those of full brightness These observations were made both more or less difficulty through cloud and haze.

S.T. 1 41
H.A. -1 3
Dec. + 68.9
P.A. 28°.0 Vernon B
Sprocket -3.5 B, -2.5 C

Σ Aronno

5	27	-0.4
1	47	
3	40	
8	20	

W. Abs. Bowen Rec. Phot W.

9.5 in cap. used.

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1908phae.proj..594W

Nov. 23, 1908

Index Rta A.

10 0 45

124.0 I
138.3 14.3
304.1 13.9
318.0 28.2 −4.54

−4.56

124.6 14.0
138.6 13.8
304.1 27.8 −4.57
317.9

Index Rta B.

34.5 13.3
48.0 13.8
214.9 26.5 −4.67
227.9

−4.68

34.8 13.2
48.0 13.0
215.1 26.2 −4.70
228.1

Mean −4.62

10 7 45

[illegible]

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1908phae.proj...594w

Nov 23, 1908

Same Again

Index L+B	B. H
34.9	13.8 v
47.9	13.1 v
214.7	26.1 v −4.71 v
227.8	
	−4.68 v
34.6	13.4 v
48.0	13.7 v
214.0	27.1 v −4.64 v
227.7	

Index R+a	H.
304.6	13.2 v
317.8	13.6 v
124.5	26.8 v −4.65 v
138.1	
	−4.62 v
304.3	13.7 v
318.0	13.9 v
124.5	27.6 v −4.59 v
138.4	

10 10 35

10 17 55

A 30, v

10 14 17. v

+v 0 v2, v

17 17 7. v

A269.63 v v −v

Mean −4.65 v

−4.62 v

Gen. mean −4.64 v

Phot. W. is used for the first time tonight on this series of observations of 5 Orionis. The telescope is also diaphrammed down for the first time on this series of observations on above star.

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1908phae.proj..594

Nov 23, 1908.

The previous observations in this series, having been made with Phot R and the telescope at full aperture. This will probably make a little systematic difference in the new series relatively to the old, but the new arrangement will probably be the better.

Troubled by cloud and haze throughout evening in all the observations

Ws watch used for times
Watch 5½ secs. slow.

L. A. P.

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1908phae.proj..594W

Nov 24, 1908 (Tuesday)

R 2. Draconis

18 21 +588

23 46

5 2 5 W. Obs. Rough Rec. Phot T

Index Left B.

213½ Comp Star Dis

7 21 55 277.2 63.6 ✓

42.9 46.7 ✓

89.6 110.3 ✓ +1.41 ✓

+1.41 ✓

225.2 43.3 ✓

268.5 67.2 ✓

31.4 110.5 ✓ +1.41 ✓

98.6

Index Right A.

121.7 68.7 ✓

~~7 27 10~~ 190.4 49.3 ✓

310.6 118.0 ✓ +1.24 ✓

359.9

+1.26 ✓

131.7 49.9 ✓

7 30 0 181.6 66.6 ✓

301.8 116.5 ✓ +1.27 ✓

8.4

✓1 ✓✓ ✓

7 2✓ ✓2. ✓

+✓ 0 ✓2. ✓

12 26 ✓✓ ✓

A270.✓1A7'

Mean +1.34 ✓

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1908phae.proj..594W

Nov. 24, 1908

Same again #

Index Right A.

119.4	72.5	
191.9	48.1	
310.4	120.6	+1.18
358.5		+1.22
		+.19

7 32 55

131.3	51.6	
182.9	64.9	
304.4	116.5	+1.28
93		

Index Left B.

28.5	72.9	
101.4	41.5	
225.0	114.4	+1.32
266.5		+1.33

43.3	48.1	
91.4	65.1	
212.9	113.2	+1.34
278.0		

7 41 38

7 34 25.

7 37 12.

+ 0 +7.

12 34 9.

A270. +26 +

Mean +1.28

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1908phae.proj..594W

Nov. 24, 1908

Same Aquila III

Index Left A.

34.2	61.8 ✓	
96.0	47.2 ✓	
221.4	109.0 ✓	+1.44 ✓
268.6		

+1.40 ✓

48.9	47.7 ✓	
88.6	65.3 ✓	
212.2	113.0 ✓	+1.35 ✓
277.5		

Index Right A.

302.5	65.5 ✓	
8.0	47.7 ✓	
131.8	113.2 ✓	+1.34 ✓
179.5		

+1.27 ✓

311.6	48.9 ✓	
360.5	70.8 ✓	
121.2	119.7 ✓	+1.20 ✓
192.0		

Means +1.34 ✓

7 49 40

7 57 55

107 3 ✓ ✓

7 ✓3 ✓ ✓

✓ 0 ✓7 ✓

2 ✓4 ✓ ✓

A270. ✓321 ✓

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1908phae.proj..594

Nov. 24, 1908

Same Again IV

Index Right A.

303.7	65.4	
9.1	48.4	
132.3	113.8	+1.33
190.7		

+1.24

311.4	48.4	
359.8	73.4	
118.2	121.8	+1.15
191.6		

Index Left B.

212.4	66.6	
279.0	46.1	
42.9	112.7	+1.36
89.0		

+1.36

223.2	45.9	
269.1	66.1	
31.8	112.0	+1.37
97.9		

Mean +1.30

8 3 8

8.12 50

	15	50.
8	7	55.
15	0	57.
13	8	52

8270.5 K 78

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1908phae.proj...594w

Nov 24, 1908

Same Again E

Index Left B.

212.9	65.0 ✓	
277.9	43.9 ✓	
44.1	108.9 ✓	+1.44 ✓
88.0		
		+1.39 ✓
224.6	43.1 ✓	
267.7	70.4 ✓	
30.0	113.5 ✓	+1.34 ✓
100.4		

Index Right A.

122.3	67.3 ✓	
189.6	47.2 ✓	
311.4	114.5 ✓	+1.31 ✓
358.6		
		+1.28 ✓
132.3	49.0 ✓	
181.3	68.1 ✓	
301.7	117.1 ✓	+1.26 ✓
9.8		

Mean +1.34 ✓

8 15 35

8 22 5

37 40. ✓
2 18 50. ✓
+✓ 0 57. ✓
13 19 47. ✓
2370. ✓✓✓✓✓+ ✓

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1908phae.proj..594W

Nov. 24, 1908

Same Again. VI

Index Right A.

121.8	67.6	
189.4	47.4	
310.6	115.8	+1.30
358.0		

+1.32

133.6	47.8	
181.4	65.9	
301.7	113.7	+1.33
7.6		

Index Left. B.

32.5	66.4	
98.9	43.5	
224.0	109.9	+1.42
267.5		

+1.42

43.3	46.4	
89.7	64.1	
214.1	110.5	+1.41
278.2		

Mean +1.37

8 29 10

8 37 15

	66	29.
A	33	12.
tr	0	7.
13	34	9.

A270.764

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1908phae.proj...594W

Nov. 24, 1908.

Same Again.

Index Left B. VII

30.6	67.4	
98.0	43.1	
224.2	110.3	+1.41
267.3		

+1.44

43.1	44.9	
88.0	63.0	
213.0	107.9	+1.47
276.0		

Index Right A.

123.8	65.5	
189.3	46.4	
311.9	111.9	+1.37
358.3		

+1.34

132.6	49.7	
182.3	65.0	
302.2	114.7	+1.31
7.2		

Mean +1.39

8 42 40

1 8 53 10

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1908phae.proj..594

Nov 24, 1908

Same Again. VIII

Index Right A.

121.9	66.4	
188.3	47.6	
311.3	114.0	+1.33
358.9		
		+1.35
133.3	48.1	
181.4	64.8	
303.9	112.1	+1.37
7.9		

8 57 55

Index Left B.

32.5	64.2	
96.7	42.4	
223.8	106.6	+1.50
266.2		
		+1.53
45.3	42.6	
87.9	61.2	
214.8	103.8	+1.56
276.6		

Mean +1.44

9 · 6 10

	4	5.
9	2	2.
5	0	7.
14	2	9.

270.5454

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1908phae.proj..594W

Nov. 24, 1908

Same Again. IX

Index Left. B.

38.4	66.5	
96.9	41.1	
225.8	107.6	+1.47
266.9		

1.48

43.2	45.2	
88.4	61.2	
214.8	106.4	+1.58
276.8		

Index Right. A.

304.0	63.8	
7.8	43.8	
134.8	107.6	+1.47
178.6		

1.46

311.8	46.6	
357.8	63.2	
123.8	109.2	+1.48
187.0		

Mean +1.47

9 13 35

9 21 20

3 K

9 17 24.

+ 0

14 18 25.

α 230.5961

ΔT · 2h 2m

HA. +7 48

Dec +59.2

P.A. 260.7 Vernier B

Sprocket −2.5 B, −1.5 C.

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1908phae.proj..594W

Nov 24, 1908.

δ Aquilae

5	27	-0.4
2	27	
3	0	
9	0	

W. Abs Bouw Rec

9.5 in cap used Phot W.

	Index R+A	A.	
	126.1		
9 58 30	139.6	13.5	
	306.1	13.5	
	319.6	27.0	-4.63
	126.2	13.2	-4.66
	139.4	13.1	
	305.8	26.3	-4.69
	318.9		

	Index L+B	B.	
	36.5	13.1	
	49.6	13.9	
	216.3	27.0	-4.63
	230.2		
			-4.62
	35.8	14.1	
	49.9	13.1	
	216.7	27.2	-4.62
	229.8		

Mean -4.64

10	6	10
	4	40.
10	2	20.
5	0	5.
15	2	9.

270.6271

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1908phae.proj...594W

Nov. 24, 1908

Same Aquarii II

Index L+B B.

10 8 20

366 12.8 v
49.4 13.6 v
216.3 26.4 v -4.68 v
229.9

-4.66 v

35.9 14.0 v
49.9 13.1 v
216.4 27.1 v -4.64 v
229.5

Index R+a A.

3067 12.3 v
319.0 13.4 v
126.4 25.7 v -4.74 v
139.8

-4.69 v

305.9 13.8 v
319.7 13.1 v
126.6 26.9 v -4.64 v
139.7

18 14 20
22 40. v
10 11 20. v
+v 0 v7. v
1v 12 17. v
Φ270.633v+v

Mean -4.68 v
General " -4.66 v

W's watch used for times.
Watch 57 secs. slow

L.P.P.

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1908phae.proj..594

Nov. 27, 1908. (Friday).

7 5 Sky thickly cloudy everywhere. Clouds came suddenly.

W. Abs Bore Per

8 45 Sky still thickly cloudy.

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1908phae.proj..594W

Nov. 22. 1908. (Saturday.)

δ Orionis. Kr. obs.

√ 27 −0.4

R + A.	A.		
124.4			
139.0	14.6 √		
304.1			
318.8	14.7 √ / 29.3 √	−4.4 √	√

9 √√ 20

124.9		
139.0	14.1 √	−4.√4 √
304.9		
317.9	13.0 √ / 27.1 √	−4.6 4 √

L. + B.	B.	
34.9		
48.2	13.3 √	
214.0		
228.2	14.2 √ / 27.√ √	−4.√9 √

341		
448	14.7 √	−4.√7 √
215.3		
228.7	13.4 √ / 28.1 √	−4.√√ √

Mean = 4.√6 √

10	14	40
	10	0.
10	√	0.
+√		1√.
1√	√	1√. √

δ 274.6246 √

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1908phae.proj..594

Nov. 28, 1908.
L. & B. B.
Same again.

10 22 40

34.6
44.6 14.0
214.4
224.6 14.2 / 28.2 = 4.54

34.2
44.9 14.7 = 4.53
214.5
224.2 13.7 / 26.4 = 4.52

R & A. A.
30 46
31 41 13.5
124.8
134.6 13.8 / 27.3 = 4.61

30 43 14.1 = 4.58
31 41
124.9
134.6 13.7 / 27.9 = 4.56

10 41 20
64 0..
10 · 32 0.
+5 15.
15 32 15.
£274.6473

Mean = 4.56
Gen. " = 4.56

H's watch used for times.
" " . 15 secs. slow.

L. P. A.

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1908phae.proj...594

Dec. 1, 1908 (Tuesday)

R. Z. Draconis

18	21	+5.88
24	15	
5	5.4	

Wolfe Bouw Rec Phot T.

Index Left B. I

216.4 ← Comp Star Dec

7 22 45	272.2	55.8 ✓
	44.5	41.5 ✓
	86.0	97.3 ✓ +1.72 ✓

	226.8	40.3 ✓ +1.66 ✓
7 25 40	267.1	62.3 ✓
	33.8	102.6 ✓ +1.59 ✓
	96.1	

Index Right A.

	127.5	57.5 ✓
7 28 40	185.0	40.9 ✓
	315.1	98.4 ✓ +1.70 ✓
	356.0	

+1.72 ✓

	136.2	41.1 ✓
7 31 15	177.3	55.0 ✓
	308.6	96.1 ✓ +1.75 ✓
	3.6	

Mean +1.69 ✓

10 & 20 ✓

7 27 ✓. ✓

+5 +30. ✓

12 27 35. ✓

&277.5192 ✓

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1908phae.proj..594

Dec. 1. 1908.

Same Again II

Index Right. A.

	127.4	58.0 ✓	
7 35 40	185.4	39.7 ✓	
	315.4	97.7 ✓	+1.71 ✓
	355.1		
			+1.78 ✓
	137.2	39.8 ✓	
7 39 0	177.0	54.2 ✓	
	308.6	94.0 ✓	+1.81 ✓
	2.8		

Index Left. B.

	38.2	54.8 ✓	
7 42 30	93.0	36.2 ✓	
	228.8	91.0 ✓	+1.89 ✓
	266.0		
			+1.95 ✓
	47.1	37.5 ✓	
7 44 45	84.6	49.0 ✓	
161 ✓✓ ✓	221.0	86.5 ✓	+2.01 ✓
7 40 29 ✓	270.0		
+✓ 0 +30 ✓			
12 40 ✓9 ✓			
£277.✓20✓- ✓			

Mean +1.85 ✓

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1908phae.proj...594w

Dec 1, 1908

Same Again. ##

Index Left B.

41.2 48.5 ✓
89.7 39.6 ✓
22.92 82.1 ✓ +2.13 ✓
26.28

+2.16 ✓

7 58 50

48.1 31.8 ✓
79.9 48.3 ✓
222.0 80.1 ✓ +2.19 ✓
270.3

8 3 10

Index Right A.

310.5 47.9 ✓
358.4 33.4 ✓
140.4 81.3 ✓ +2.16 ✓
173.8

+2.13 ✓

8 6 45

318.9 34.5 ✓
353.4 48.6 ✓
132.0 83.1 ✓ +2.10 ✓
180.6

8 10 20

249 ✓ ✓
2 2 16. ✓
+✓ 0 30. ✓
13 2 46. ✓

Mean +2.14 ✓

2277. ✓ ÷ 37 ✓

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1908phae.proj..594

Dec. 1, 1908

Same Again II

Index Right A.

8 17 48	313.0	45.2 ✓
	358.2	33.3 ✓
	139.9	78.5 ✓ +2.24 ✓
	173.2	
		+2.14 ✓
8 21 45	318.2	34.7 ✓
	352.9	50.6 ✓
	131.3	85.3 ✓ +2.04 ✓
	181.9	

Index Left B.

8 25 20	222.2	47.3 ✓
	269.7	34.0 ✓
	47.9	81.5 ✓ +2.15 ✓
	81.9	
		+2.12 ✓
	229.3	33.0 ✓
	262.3	50.4 ✓
8 28 50	39.2	83.4 ✓ +2.10 ✓
	89.6	

	93	3 ✓. ✓
A	23	24. ✓
+✓	0	30. ✓
13	23	✓4. ✓

A277. ✓✓A2 ✓

Mean +2.13 ✓

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1908phae.proj..594

Dec. 1, 1908

Same Again E

Index Left A.

220.9	47.3 ✓	
268.2	33.8 ✓	
48.0	81.1 ✓	+2.16 ✓
81.8		

8 36 40

+2.10 ✓

228.6	35.2 ✓	
263.8	50.1 ✓	
39.4	85.3 ✓	+2.04 ✓
89.5		

8 39 25

Index Right A.

130.9	50.6 ✓	
181.5	34.4 ✓	
317.8	85.0 ✓	+2.05 ✓
352.2		

8 42 20

+2.03 ✓

137.9	36.8 ✓	
174.7	49.6 ✓	
311.1	86.4 ✓	+2.01 ✓
0.7		

8 45 25

163 ✓0. ✓

2 40 ✓2. ✓

+✓ 0 30. ✓

13 41 22. ✓

2277. ✓704 ✓

Mean +2.06 ✓

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1908phae.proj..594W

Dec. 1, 1908

Same Again VI

Index Right A.

126.7	56.4 ✓	
183.1	36.7 ✓	
317.8	93.1 ✓	+1.83 ✓
354 5		

8 53 25

+1.83 ✓

137.4	39.2 ✓	
176.6	53.9 ✓	
368 6	93.1 ✓	+1.83 ✓
2.5		

8 56 25

Index Left B.

35.6	57.3 ✓	
92.9	35.8 ✓	
228.0	93.1 ✓	+1.83 ✓
263.8		

8 59 25

+1.85 ✓

46.8	37.4 ✓	
84.2	54.4 ✓	
217.9	91.8 ✓	+1.87 ✓
272 3		

9 3 50

Mean +1.84 ✓

	233	✓ ✓
~~Sup~~	✓2	16. ✓
+✓	0	30. ✓
1K³	✓2	46. ✓

2 277 - ✓2 2✓ - ✓

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1908phae.proj..594W

Dec. 1, 1908

Same Again. XII

Index Left A.

	35.6	57.9 ✓
9 15 15	93.5	42.3 ✓
	224.7	100.2 ✓ +1.65 ✓
	267.0	

+1.68 ✓

	46.0	39.4 ✓
9 17 40	85.4	58.9 ✓
	216.2	98.3 ✓ +1.78 ✓
	275.1	

Index Right A.

	306.0	59.7 ✓
9 20 30	5.7	43.9 ✓
	134.6	103.6 ✓ +1.57 ✓
	178.5	

+1.56 ✓

	314.9	43.1 ✓
9 23 5	358.0	61.3 ✓
	125.8	104.4 ✓ +1.55 ✓
	187.1	

Mean +1.62 ✓

	76	30. ✓
9	19	2. ✓
+r	0	30. ✓
14	19	32. ✓

2277. ✓ 969 ✓

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1908phae.proj..594W

Dec. 1, 1908

Same Again VIII

Index Right. A.

3857	61.5	
7.2	45.4	
133.4	106.9	+1.49
178.8		
		+1.46
314.0	45.6	
359.6	64.5	
123.6	110.1	+1.42
188.1		

9 29 35

9 32 15

Index Left B.

215.0	63.1	
278.1	41.4	
42.9	104.5	+1.55
84.3		
		+1.52
222.5	45.8	
268.3	61.1	
33.3	106.9	+1.49
94.4		

9 35 0

9 38 30

	13	20.
9	33	0.
+5	0	30.
14	34	20.

£277.6071

Mean +1.49

S.T. 2h 43m

H.A. +8 20

Dec. +59.2

P.A. 80.2 Vernier B

Sprocket -2.5 B, -1.5 C

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1908phae.proj...594

Dec. 1, 1908

δ Arcturis

5	27	-0.4
2	52	
2	25	W. Obs. Rowe Rec. Phot W.
9	35	9.5 in cap. used.

Index R+A A.

10 0 55

124.0		
137.8	13.8 ✓	
303.4	15.2 ✓	
318.6	29.0 ✓	-4.48 ✓
124.2	14.2 ✓	-4.54 ✓
138.4	13.4 ✓	
304.0	27.6 ✓	-4.59 ✓
317.4		

Index R+B B.

34.1	13.9 ✓	
48.0	13.7 ✓	
214.3	27.6 ✓	-4.59 ✓
228.0		
		-4.57 ✓
34.1	14.3 ✓	
48.4	13.8 ✓	
214.4	28.1 ✓	-4.55 ✓
228.2		

Mean -4.56 ✓

10 10 0

10	√√. ✓
10 √	20. ✓
+√ 0	30. ✓
1√ √	√2. ✓

Δ277.6292 ✓

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1908phae.proj..594W

Dec 1, 1908

Same Again

Index L+B B.

34.0	14.1 ✓
48.1	13.6 ✓
214.2	27.7 ✓ −4.58 ✓
227.8	

−4.56 ✓

34.1	14.5 ✓
48.6	13.7 ✓
214.4	28.2 ✓ −4.54 ✓
228.1	

Index R+a A.

304.6	13.2 ✓
317.8	14.2 ✓
124.2	27.4 ✓ −4.60 ✓
138.4	

−4.60 ✓

304.4	13.7 ✓
318.1	13.9 ✓
124.2	27.6 ✓ −4.59 ✓
138.1	

Mean −4.58 ✓

~~General~~ −4.57 ✓

10 12 35

10 20 20

	32	√√ ✓
10	16	24 ✓
+√	0	30 ✓
1√	16	√24 ✓

277.6364 ✓

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1908phae.proj...594

Dec 1, 1908

Same Again

Index R+a A.

124.2	14.2 ✓
138.4	14.0 ✓
304.4	28.2 ✓ −4.54 ✓
318.4	

10 31 45

−4.56 ✓

124.1	14.2 ✓
138.3	13.6 ✓
304.4	27.8 ✓ −4.57 ✓
318.0	

Index L+B B.

342	14.1 ✓
483	13.9 ✓
2143	28.0 ✓ −4.55 ✓
2282	

−4.56 ✓

341	14.1 ✓
482	13.7 ✓
214.5	27.8 ✓ −4.57 ✓
2282	

10 36 55

£ K 0. ✓

10 3K 20. ✓

+✓ 0 30. ✓

1✓ 34 ✓0. ✓

£277.6492 ✓

Mean −4.56 ✓

Gen. mean 4.✓7 ✓

Ws watch used for times.

Watch 30. secs slow

L. A. P.

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1908phae.proj..594W

Dec. 2, 1908. (Wednesday)

R. Z. Draconis.

18 21 +58.8

24 21

6 0

Wolbo Bouc Rec. Phot T

Index Left

32.1 ← Comp Star Dec.

97.2 65.1 ✓

223.9 45.2 ✓

269.1 110.3 ✓ +1.41 ✓

7 23 10

41.9 47.1 ✓ +1.40 ✓

89.0 64.0 ✓

214.2 111.1 ✓ +1.39 ✓

278.2

Index Right

300.8 69.0 ✓

9.8 46.8 ✓

132.4 115.0 ✓ +1.30 ✓

178.4

+1.35 ✓

314.6 46.8 ✓

1.4 64.0 ✓

124.0 110.8 ✓ +1.40 ✓

188.0

Mean +1.38 ✓

7 31 10

✓4 20. ✓

7 27 10. ✓

+✓ +30 ✓

12 27 40. ✓

278. ✓192 ✓

~~The previous group was tried merely as an experimental way to see if anything could be done with a long bar. tonight, the moon~~

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1908phae.proj...594W

Dec. 2, 1908

S.T. 0 45
H.A 6 22
Dec +59.1
P.A 260.2 Vernier B
Sprocket −2.5 B, −1.5 C

The previous group was tried merely in an experimental way to see if anything could be done with the above Variable tonight but the seeing is so extremely bad, the wind very high, the air rather cold, moon bright, altitude some what low and object rather faint and delicate, that it is impossible to do anything with this variable tonight.
Previous Group rejected.

Fourth Type Star +38° 1539.

6	27	+38.5
1	27	
5	0	
7	8	Wolbs. Rowe Rec. Phot. T.

Color 6 with ordinary eyepiece

9.5 in. cap. used

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1908phae.proj..594W

Dec. 2, 1908.

Index R+a A.

319.6 Fourth Type Dis.
351.0 31.4ᵛ
144.9 24.9ᵛ
169.2 55.7ᵛ −3.03ᵛ

322.1 25.3ᵛ −2.97ᵛ
347.4 33.5ᵛ
140.0 58.8ᵛ −2.91ᵛ
173.6

Index L+B B.

229.8 32.2ᵛ
262.0 21.7ᵛ
54.1 53.9ᵛ −3.11ᵛ
75.8

−3.10ᵛ

234.6 21.8ᵛ
256.4 32.7ᵛ
48.9 54.5ᵛ −3.08ᵛ
81.6

Mean −3.04ᵛ

8 34 40

8 43 0
77 40. ᵛ
α 38 ᵛ0. ᵛ
+ᵛ +30. ᵛ
13 39 20. ᵛ
α 270. ᵛ690ᵛ

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1908phae.proj...594w

Dec. 2, 1908.

Same Aq axis. II

Index L+B B.

8 50 50

230.2	29.6 ✓	
259.8	22.1 ✓	
53.9	51.7 ✓	−3.20 ✓
76.0		
		−3.11 ✓
234.5	24.5 ✓	
259.0	31.4 ✓	
49.6	55.9 ✓	−3.02 ✓
81.0		

Index R+a A.

139.0	33.2 ✓	
172.2	24.5 ✓	
3233	57.7 ✓	−2.95 ✓
347.8		
		−2.92 ✓
144.7	26.6 ✓	
171.0	32.3 ✓	
320.0	58.9 ✓	−2.90 ✓
3523		

Mean −3.02 ✓

8 58 30

109 20. ✓

+ √4 40. ✓

+√ +30. ✓

13 √√ 10. ✓

Δ27Δ. √Δ00 ✓

Seeing blurry but great care exercised and observations considered good.

S.T. 2 6

H.A. −4 25

Dec 38.2

P.A 11.3 Vernier B

Sprocket. −5.5 B, −4.5 C

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1908phae.proj..594N

Dec. 2, 1908

E Chromo

5	27	−0.4
2	12	
3	15	
8	45	

4-Abs Rowland Phot VK.
9.5 m cap. used

Index Rta A.

124.8	← Southern Orion Dis	
137.7	12.9	
304.3	13.7	
318.0	26.6	−4.67

124.4	13.8	−4.66
138.2	13.3	
304.4	27.1	−4.64
317.7		

Index L+B B.

34.6	13.5	
48.1	13.8	
214.6	27.3	−4.61
228.4		

−4.59

34.3	14.2	
48.5	13.6	
214.6	27.8	−4.57
228.2		

Mean −4.62

9 18 45

9 28 10

	46	√√.
9	23	2A.
+√		+30.
14	23	√A.

A27A.6000

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1908phae.proj...594w

Dec. 2, 1908

Same tgain II

Index Lt B B.

34.4	13.5 v
47.9	14.1 v
214.3	27.6 v -4.59 v
228.4	

-4.59 v

34.1	14.1 v
48.2	13.4 v
214.6	27.5 v -4.59 v
228.0	

Index Rta A.

304.5	13.3 v
317.8	13.8 v
124.2	27.1 v -4.64 v
138.0	

-4.62 v

304.4	13.4 v
317.8	14.8 v
124.0	27.4 v -4.60 v
138.0	

Mean -4.60 v

Gen. " -4.61 v

9 30 35

9 39 40

70 1v. v

9 3v A. v

v +30. v

14 3v 3A. v

A27A.6040 v

Seeing bad, images blurry but all possible care exercised.

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1908phae.proj..594W

Dec 2, 1908.

Double Star (New List) = Burnham's Cat 2294.

4 32 -13 3
3 17 U. Obs. Bore Rec.
1 15 -
10 45 Phot IV

P.A. 170° Dist 12" Magn. 6.7, 7.2

Index Right

184.0 North, Prec. + Brt Obs
256.9 72.9
2.0 76.6
78.6 149.5 0.58

182.4 78.4 0.54
260.8 75.8
3.5 153.4 0.51
78.5

Index Left.

94.8 73.2
168.0 77.1
271.9 150.8 0.56
349.5

0.52

92.8 78.0
170.8 76.5
272.2 154.5 0.49
348.7

Mean. 0.53

10 24 25

10 32 45

+7 10.
10 24 35.
+5 +30.
15 29 5.
227.

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1906phae.proj..594

Dec. 2, 1906

Seeing on this last double a little better than on previous objects this evening. Wind progressively coming more quiet

W's watch used for times
Watch 30 secs. slow.

L. P. P.

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1908phae.proj..594N

Dec. 3. 1908 (Thursday)

R.T. Aurigae = Astbury's Variable = 48 Aurigae

6	19	+ 38.6
0	39	Ub. Obs Bouw Rec. Phot T
5	40	
6	28	9.5 in cap. used

7 44 15

Index L+a B.

317.2	Var. Dec)	
353.2	36.0 ✓	
142.3	27.3 ✓	
169.6	63.3 ✓	−2.74 ✓
322.0	26.9 ✓	−2.78 ✓
348.9	39.8 ✓	
137.6	65.9 ✓	−2.65 ✓
176.6		

Index R+B A.

226.2	40.2 ✓	
266.4	25.7 ✓	
52.2	65.9 ✓	−2.65 ✓
77.9		
		−2.70 ✓
234.2	24.2 ✓	
258.4	38.6 ✓	
46.2	62.8 ✓	−2.76 ✓
84.8		

Mean −2.70 ✓

7 53 10

97 27 ✓

7 48 42. ✓

+5 28. ✓

12 49 10. ✓

279. ✓ 341 ✓

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1908phae.proj...594

Dec 3, 1908

Same Again II

Index R+B B.

2267 39.1 ✓
265.8 24.9 ✓
53.0 64.0 ✓ −2.71 ✓
77.9

−2.70 ✓

234.0 25.8 ✓
259.8 38.6 ✓
45.6 64.4 ✓ −2.70 ✓
84.2

Index Δ A.

135.6 39.4 ✓
175.0 27.6 ✓
321.8 67.0 ✓ −2.61 ✓
349.4

−2.64 ✓

142.0 27.0 ✓
169.8 38.1 ✓
316.2 65.1 ✓ −2.67 ✓
354.3

Mean −2.67 ✓

7 56 25

8 5 10
121 3√. ✓
Δ 0 4Δ. ✓
+√ 2Δ. ✓
13 1 16. ✓
Δ279.√4Δ26 ✓

S.T. 1 19
H.A −5 6
Dec. +30.1
P.A. 102.3 Vernier B
Sprocket −6.5A, −5.5B, −5.0C.

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1908phae.proj..594

Dec. 3, 1908.

Double Star New List) = Burnham's Cat. No 3732

6 51 +37.3
1 41 U. Obs. Rough Rec.
5 10 Phot W
6 50

P.A. 56° Dist 26"

Tidy L+a

92.4 ← South, Prec. + Brt Dis
171.0 78.6 ✓
269.3 84.0 ✓
353.3 162.6 ✓ 0.33 ✓

8 40 10

89.7 81.0 ✓ 0.36 ✓
170.7 78.8 ✓
270.2 159.8 ✓ 0.38 ✓
349.0

Tidy R+B

2.7 75.5 ✓
78.2 86.4 ✓
176.2 161.9 ✓ 0.34 ✓
262.6

0.36 ✓

359.5 83.0 ✓
82.5 77.8 ✓
182.0 160.8 ✓ 0.37 ✓
259.8

8 48 15

A 27. ✓
A 44 12. ✓
+5 +26. ✓
13 44 40. ✓
A279.5727 ✓

Mean D. 36 ✓

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1908phae.proj...594W

Dec. 3, 1908

δ Orionis

5	27		-0.4
2	17	W. Obs.	Rome Rec.
3	10		Phot VE
8	50		

Kidey L+B. B.

343

9 16 20

48.0	13.7 ✓		
215.1	13.3 ✓		
228.4	27.0 ✓	-4.63 ✓	
34.5	13.8 ✓		-4.64 ✓
48.3	13.3 ✓		
215.1	27.1 ✓	4.64 ✓	
228.4			

Kidey R+a A.

304.0	13.6 ✓		
317.6	13.6 ✓		
124.4	27.2 ✓	-4.62 ✓	
138.0			
			-4.64 ✓
304.5	13.3 ✓		
317.8	13.2 ✓		
124.7	26.5 ✓	-4.67 ✓	
137.9			

9 22 50

	39	10. ✓
9	19	3 ✓
+✓		+2 A. ✓
14	20	3 ✓

Mean -4.64 ✓

#279. ✓972 ✓

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1908phae.proj..594N

Dec. 3, 1908

Same Again II

Index R+a	A.
304.4	13.3
317.7	13.4
124.5	26.7 -4.66
137.9	

-4.65

304.2	13.6
317.8	13.3
124.5	26.9 -4.64
137.8	

Index R+B	B.
214.5	13.4
227.9	13.1
34.6	26.5 -4.67
47.7	

-4.66

214.8	13.2
228.0	13.5
34.5	26.7 -4.66
48.0	

9 25 20

9 32 0

√7 20.

9 2A K0.

+√ +2A.

14 29 A.

A279.6036

Mean -4.66

General " -4.65

Seeing during measurements of ε Aurigae pretty good. Measurements considered first class.

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1908phae..proj...594W

Dec. 3, 1908

Double Star (New List) = Burnham's Cat, 4949

9 3 +62.2
3 13 26 Cls Rowe Rec. Plate IV
5 50
6 10

P.A. 26° Dist 25'

Index R+B
179.4 South. Proc + Brbt. Dio.
10 17 30 259.8 80.4 ✓
9.2 65.4 ✓
74.6 145.8 ✓ 0.66 ✓

184.7 64.9 ✓ 0.68 ✓
249.6 79.3 ✓
358.0 144.2 ✓ 0.69 ✓
77.3

Index L+a
91.6 78.2 ✓
169.8 68.3 ✓
277.9 146.5 ✓ 0.64 ✓
346.2

0.71 ✓

98.4 63.4 ✓
161.8 76.3 ✓
271.9 139.7 ✓ 0.78 ✓
348.2

10 23 0
K0 30. ✓
10 20 IV. ✓
+v +2A. ✓
IV 20 K3. ✓
α279.6394 ✓

Mean 0.70 ✓

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1908phae.proj..594W

Dec. 3, 1908.

Seeing very bad again [although it was quite good on δ Aribris], becoming cloudy and observations made with considerable difficulty through clouds and bad seeing. Will try this double again under better conditions

W's watch used for times
Watch 28 secs slow

L. P. P.

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1908phae.proj...594

Dec. 5, 1908 (Saturday)

R.T. Aurigae = Astbury's Variable = 48 Aurigae

6 19 +30.6
0 29
5 50
6 10

W. Obs. Rowe Ret Phot. T.
9.5 in cap. used
Tidey Lt a B.

~~44.5~~	145.4 ←	Var Dus
~~170.9~~	166.8	21.4 ✓
~~323.4~~	318.6	30.8 ✓
	349.4	52.2 ✓ − 3.17 ✓

7 30 5
~~7 21 50~~

140.2	31.3 ✓	− 3.14 ✓
171.5	22.2 ✓	
324.2	53.5 ✓ − 3.12 ✓	
346.4		

Tidey R+B Lt.

50.2	30.2 ✓	
80.4	20.6 ✓	
236.2	50.8 ✓ − 3.24 ✓	
256.8		

− 3.24 ✓

56.2	19.8 ✓	
76.0	30.7 ✓	
229.4	50.5 ✓ − 3.25 ✓	
260.1		

7 27 20
67 27 ✓
7 33 42 ✓
+v 30 ✓
12 34 12 ✓
220.5237 ✓

Mean − 3.19 ✓

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1908phae.proj..594W

Dec. 5, 1908.

Same again. II

Index A

50.7	30.6 ✓	
81.3	19.8 ✓	
237.0	50.4 ✓	−3.25 ✓
256.8		
		−3.28 ✓
55.5	20.7 ✓	
76.2	28.6 ✓	
231.6	49.3 ✓	−3.30 ✓
260.2		

Index B

319.8	30.8 ✓	
350.6	21.7 ✓	
144.4	52.5 ✓	−3.16 ✓
166.1		
		−3.15 ✓
325.3	21.3 ✓	
346.8	31.6 ✓	
146.3	53.1 ✓	−3.14 ✓
171.9		

Mean −3.22 ✓

7 39 45

7 46 45

46 30. ✓

7 43 15. ✓

+5 30. ✓

12 43 45. ✓

221. ✓ 30 ✓ − ✓

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1908phae.proj..594

Dec. 5, 1908.

Same Again III

Index L+a.	B	
319.8	29.8 ✓	
349.6	21.5 ✓	
144.8	57.3 ✓	−3.22 ✓
166.3		
		−3.13 ✓
324.0	23.4 ✓	
347.4	32.0 ✓	
140.0	55.4 ✓	−3.04 ✓
172.0		

Index R+B.	A.	
231.0	30.7 ✓	
261.7	20.8 ✓	
53.3	50.7 ✓	−3.24 ✓
75.3		
		−3.26 ✓
236.0	22.0 ✓	
258.0	27.8 ✓	
51.2	49.8 ✓	−3.28 ✓
79.0		

Mean −3.20 ✓

8 1 35

8 8 35

10 10. ✓

A ✓ ✓. ✓

+✓ ~~30.~~ ✓

13 ✓ 35. ✓

A2A1. ✓4✓✓+✓

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1908phae.proj..594

Dec. 5, 1908

Same Again

Rdg R+B

230.8 29.5 ✓

260.3 21.1 ✓

55.0 50.9 ✓ −3.24 ✓

76.4

−3.16 ✓

235.4 22.7 ✓

258.1 32.2 ✓

48.9 54.9 ✓ −3.07 ✓

81.1

Rdg L+a B.

138.6 32.6 ✓

171.2 23.8 ✓

324.2 56.4 ✓ −3.00 ✓

348.0

−3.08 ✓

~~3.02~~

144.7 23.2 ✓

167.9 ~~32.0~~ 29.6 ✓ −3.15 ✓

319.3 ~~55.2~~ 52.8 ✓ ~~3.05~~

348.9 ~~351.0~~

−3.12 ✓

Mean ~~3.09~~

8 11 20

8 19 0

30 20. ✓

2 15 10. ✓

+ ✓ 30. ✓

13 15 40 ✓

2281. ✓✓ 26 ✓

Seeing Bluwy.

S.T. 1 48

H.A. −4 37

Dec. +30.0

P.A. 102.3 Vernier B

Sprocket −6.5 A −5.5 B, −5.0 C

9

9

+ ✓

14

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1908phae.proj..594

Dec, 5, 1908

δ Orionis

5 27 −0.4
2 12 W. Obs. Bouw. Rec. Phot. VI
8 15 9.5 in cap. used.
45

Index R+a A.

124.4	Southern + Brtr. Grs.	
137.3	12.9	
304.0	13.8 ✓	
317.8	26.7 ✓	−4.66 ✓
124.4	13.6 ✓	−4.64 ✓
138.0	13.6 ✓	
304.1	27.2 ✓	−4.62 ✓
317.7		

Index L+B B.

34.4	13.2 ✓	
47.6	13.3 ✓	
214.7	26.5 ✓	−4.67 ✓
228.0		
		−4.66 ✓
34.4	13.6 ✓	
48.0	13.3 ✓	
214.7	26.9 ✓	−4.64 ✓
228.0		

Mean −4.65 ✓

9 0 40

9 9 30
10 10. ✓
9 ✓ ✓.
+✓ +30. ✓
14 ✓ 30✓.
220.✓872✓

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1908phae.proj..594M

Dec. 5, 1908

Same Again #

Index L+B	B.	
343	13.4	
47.7	13.1	
214.6	26.5	-4.67
227.7		
		-4.64
343	13.8	
48.1	13.4	
214.5	27.2	-4.62
227.9		

Index R+a	A.	
304.3	13.1	
317.4	13.3	
124.3	26.4	-4.68
137.6		
		-4.66
304.2	13.6	
317.8	13.4	
124.2	27.0	-4.63
137.6		

Mean -4.65

9 12 45

9 20 0

32 Kr.

9 16 22.

+r +30.

14 16 r2.

£2£1. r9r0

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1908phae.proj..594

Dec 5 1908.

Same Aquila III

Index R+a A.

304.2	13.6 ✓	
317.8	13.3 ✓	
124.5	26.9 ✓	−4.64 ✓
137.8		
		−4.62 ✓
304.2	13.7 ✓	
317.9	13.7 ✓	
124.1	27.4 ✓	−4.60 ✓
137.8		

9 22 55

Index L+B B.

214.8	13.0 ✓	
227.8	13.3 ✓	
34.5	26.3 ✓	−4.69 ✓
47.8		
		−4.67 ✓
214.1	13.5 ✓	
227.6	13.3 ✓	
34.3	26.8 ✓	−4.65 ✓
47.6		

9 29 55

√2 √0. ✓

9 26 2√. ✓

+√ +30. ✓

14 26 √√. ✓

A2A1.6020 ✓

Mean −4.64 ✓

Gen. " −4.6√ ✓

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1908phae.proj..594

Dec. 5, 1908.

o Cti

2. 12 −3.6
3 27 W. dbs. Four Rec.
1 15 Phot VE

Index R+a A

125.7 ← Var. Dec.
136.9 11.2 ✓
303.5 14.8 ✓
318.3 26.0 ✓ −4.72 ✓

10 15 0

124.4 13.9 ✓ −4.70 ✓
138.3 12.6 ✓
304.7 26.5 ✓ −4.67 ✓
317.3

Index L+B B

35.0 11.5 ✓
46.5 14.9 ✓
213.7 26.4 ✓ −4.68 ✓
228.6

−4.74 ✓

34.4 13.9 ✓
48.3 11.3 ✓
215.3 25.2 ✓ −4.79 ✓
226.6

Mean −4.72 ✓

10 24 25

39 2V. ✓
10 19 42. ✓
+V. +30.
1V 20 12. ✓
λ2A1.6390 ✓

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1908phae.proj..594

~~Dec~~ 5, 1908

Same Agaue. H

Ridley L & B	B
35.4	11.0 ✓
46.4	13.7 ✓
214.3	24.7 ✓ −4.83 ✓
228.0	

10 27-6

−4.76 ✓

33.7	14.2 ✓
47.9	12.2 ✓
214.7	26.4 ✓ −4.68 ✓
226.9	

Ridley R & a.	A.
304.6	12.0 ✓
316.6	14.1 ✓
123.8	26.1 ✓ −4.71 ✓
137.9	

−472 ✓

303.9	13.9 ✓
317.8	12.0 ✓
125.0	25.9 ✓ −4.73 ✓
137.8	

10 34 50

−6 ~~4~~ vv. ✓

10 30 ~~5~~ 2a. ✓

+ ~~+~~ +30. ✓

10 31 2a. ✓

a2a1.6466a ✓

Mean −4.74 ✓

General " −4.73 ✓

Seeing very blurry during observations on ♀ Leti. Observations difficult. Moon about full and not very far from this region. Temperature 18°

W's watch used for time

Watch 30 secs slow

L. P. A.

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1908phae.proj..594

Dec 7, 1908 (Monday).

R.T. Auriga = Asthy. Variable = 48 Auriga
+30.6

6	19	
0	29	
5	50	
6	10	

Storm cleared suddenly, much cold, barometer rising rapidly, air very moist, and moisture covering and running on the walls of the dome. Temperature 40°.

W. Obs. Rowe Rec. Phot T.

9.5 m. cap used.

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1908phae.proj..594W

Dec. 7, 1908

Index 4+a B.

136.9	Var. Dis	I
174.5	37.6	
318.1	30.9	
349.0	68.5	−2.56

140.5	28.8	−2.56
169.3	39.7	
314.2	68.5	−2.56
353.9		

Index R+B A.

48.7	35.2	
83.9	23.8	
235.0	59.0	−2.90
258.8		

52.8	25.8	−2.88
78.6	33.8	
229.2	59.6	−2.87
263.1		

Mean −2.72

7 25 5

7 34 30

9 35

7 29 40

+ 31

12 30 19

+2 & 3. 21

1908phae.proj..594

Dec 7, 1908

Same Again #

Index R+B A.

46.5	36.5 ✓	
83.0	25.3 ✓	
234.5	61.8 ✓	−2.79 ✓
259.8		
		−2.80 ✓
53.5	24.7 ✓	
78.2	36.5 ✓	
228.4	61.2 ✓	−2.81 ✓
264.9		

Index R+a. B.

316.8	37.1 ✓	
353.9	29.8 ✓	
141.0	66.1 ✓	−2.64 ✓
170.0		
		−2.72 ✓
321.4	26.6 ✓	
348.0	35.4 ✓	
138.3	62.0 ✓	−2.79 ✓
173.7		

Mean −2.76 ✓

7 37 45

7 48 0

Δ ✓ 4 ✓ ✓

7 42 ✓2. ✓

+✓ +31. ✓

12 43 −23. ✓ ✓

Δ2Δ3. ✓301

S.T. 1. 15

H.A − 5 8

Dec +30.1

P.A 102.0 Vernier B

Spec −6.5 A, −5.5 B, −5.8 C.

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1908phae.proj...594w

Dec. 7, 1908.

W's watch used for times
Watch 31 secs. slow

5 drums

5	27	± 0.4
2	57	
2	30	
9	30	

W. Obs. Rough Rec.

Phot. IV

9.5 in cap. used.

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1908phae.proj..594N

Dec 7, 1908.

Index Rta 4. I

124.2 ← Southern & Brts Dis
137.9 13.7
303.8 14.3
318.1 28.0 − 4.55

123.8 14.6 − 4.54
138.4 13.6
304.2 28.2 − 4.54
317.8

Index L & B 3.

34.3 13.5
47.8 13.6
214.5 27.1 − 4.64
228.1

− 4.66

34.5 13.2
47.7 13.1
214.7 26.3 − 4.69
227.8

Mean − 4.60

9 37 10

9 47 25
24 35
9 42 10
+31
14 42 49
2243.6131

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1900phae.proj...594N

Dec 7 1908

Same Again #

Index Lt B B.

9 50 25

34.1	13.6 v	
47.7	13.4 v	
214.4	27.0 v	−4.63 v
227.8		
		−4.64 v
34.4	13.4 v	
47.8	13.3 v	
214.5	26.7 v	−4.66 v
227.8		

Index R+a. A.

304.1	13.8 v	
317.9	13.6 v	
124.4	27.4 v	−4.60 v
138.0		
		−4.59 v
304.0	14.0 v	
318.0	13.7 v	
124.1	27.7 v	−4.58 v
137.8		

Mean −4.62 v

9 56 15

106	40. v	
9 √3	20. v	
+r	+31. v	
14 √3	√1. v	

∠2A3. 6207 v

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1908phae.proj..594W

Dec 7, 1908

Same Again III

Index Rta A.

303.8	14.8	
317.8	14.2	
124.0	28.2	−4.54
138.2		
		−4.53
304.1	14.2	
318.3	14.3	
124.0	28.5	−4.52
138.3		

Index Rta B.

214.5	13.6	
228.1	13.3	
34.5	26.9	−4.64
47.8		
		−4.65
34.2	13.5	
47.7	13.2	
214.3	26.7	−4.66
227.5		

Mean −4.59

9 58 50

10 · 5 10

	4	0.
10	2	0.
+√		+31.
1√	2	31.

£2 £3.6.2.6d

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1908phae..proj...594W

Dec. 7, 1908

Same Again IX

Index L+B B.

345	13.3	
47.8	13.3	
214.3	26.6	−4.67
227.6		
		−4.66
34.2	13.6	
47.8	13.3	
214.6	26.9	−4.64
227.9		

Index R+a. A.

304.3	13.5	
317.8	13.8	
124.2	27.3	−4.61
138.0		
		−4.62
304.3	13.4	
317.7	13.7	
124.2	27.1	−4.64
137.9		

10 7 35

10 13 10

20 4√.

10 10 22,

+√ +31.

√ 10 √3.

22 3.632√

Mean −4.64

Genral " −4.61

Somewhat troubled by thin swiftly moving clouds in first groups but obs. waited until images were well seen. Although there was some wind in connection with all the groups and the moon was at the full and in this general region (yet not

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1908phae.proj..594W

Dec 7, 1908.

very close) the images were in general pretty steady and pretty well defined so that observations are considered good.

W's watch used for times.
Watch 31 secs. slow.

L. P. P.

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1908phae..proj..594W

Dec. 8, 1908 (Tuesday).

Fourth Type star +34° 4500.

21 36 +34.8

24 51

3 15

U Ms. Rowe Ree Phot T

9.5 in cap used

Color 5 with ordinary eyepiece

Index Right A.

224.6 < Fourth Type Do

7 51 35

266.1 41.5 ✓

49.4 34.1 ✓

83.5 75.6 ✓ −2.33 ✓

230.5 32.3 ✓ −2.22 ✓

262.8 50.1 ✓

40.9 82.4 ✓ −2.12 ✓

91.0

Index Left. B.

137.1 35.6 ✓

172.7 48.2 ✓

308.6 83.8 ✓ −2.08 ✓

356.8

−2.16 ✓

131.8 47.5 ✓

179.3 30.9 ✓

318.6 78.4 ✓ −2.24 ✓

349.5

7 58 30

11.0 ✓.✓

7 ✓✓ 2.✓

+✓ +32.✓

12 ✓✓ 34.✓

#2#4.✓3#6✓

Mean −2.19 ✓

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1908phae.proj..594

Dec. 8, 1908.

S T 1 29
H.A. +3 50
Dec +35. 3
P.A. 71.0 Vernier B
Sprocket -1.5 B, -0.5 C

Fourth Type Star +2° 4709

23	39	+ 2.7
25	44	
2	5	

Color 7 with ordinary eyepiece

W. Obs Rough Rec. Phot T
9.5 in Cap. used

Index Lt a B.

8 29 50

137.6	← Fourth Type Obs	
175.6	37.4 ✓	
322.6	26.8 ✓	
349.4	64.2 ✓	-2.71 ✓
143.0	27.6 ✓	-2.74 ✓
170.6	35.1 ✓	
317.8	62.7 ✓	-2.76 ✓
352.9		

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1908phae.proj..594N

Dec 8, 1908

Lindey	R+B	A.
48.5	34.1 ✓	
82.6	25.0 ✓	
234.6	59.1 ✓	−2.89 ✓
259.6		
		−2.96 ✓
53.9	24.9 ✓	
78.8	30.9 ✓	
231.4	55.8 ✓	−3.02 ✓
262.9		

Mean −2.85 ✓

8 35 30

6 ✓ 20. ✓

A 32 40. ✓

+ ✓ +32. ✓

13 33 12. ✓

A 24. ✓647 ✓

S.T. 2 6

H.A. +2 23

Dec. +3.0

P.A. 167.°0 Vernier B

Sprocket. −11.5 B, −10.5 C

or

Sprocket +12.5, +13.5 C

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1908phae.proj..594

Dec. 8, 1908

δ Arietis

5	27	−0.4
2	27	
3	0	U. Obs. Bonn Rec. Phot VI
9	0	9.5 in cap used

Index R+A A.

124.4 ←	Southern + Brit Dec	
138.0	13.6 v	
303.7	14.7 v	
318.4	28.3 v	−4.53 v

9 6 50

124.1	14.4 v	−4.54 v
138.5	13.8 v	
304.2	28.2 v	−4.54 v
318.0		

Index L+B B.

34.5	13.3 v	
47.8	13.6 v	
214.4	26.9 v	−4.64 v
228.0		

−4.62 v

34.0	14.3 v	
48.3	13.0 v	
215.0	27.3 v	−4.61 v
228.0		

9 14 45

	21	3 v. v
9	10	4 A. v
+v		+32. v
14	11	20. v

A 2 A 4. v 9/2 v

Mean −4.58 v

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1908phae.proj..594

Dec 8, 1908

Same Aquarii
Index A+B B. II

9 18 15

34.2 13.6
47.8 13.7
214.5 27.3 -4.61
228.2

-4.59

34.0 14.0
48.0 13.8
214.2 27.8 -4.57
228.0

Index R+a

384.2 13.5
317.7 13.5
124.4 27.0 -4.63
137.9

-4.60

304.2 14.2
318.4 13.7
124.3 27.9 -4.56
138.0

9 25 25

43 40.
9 21 5 0.
+v +32.
14 22 22.
2244. 9999

Mean -4.60

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1908phae.proj..594W

Dec. 8, 1908

Same Again III

Index Rta A.

304.1	13.7	
317.8	14.2	
124.2	27.9	−4.56
138.4		
		−4.54
303.8	14.5	
318.3	14.1	
124.0	28.6	−4.51
138.1		

9 28 45

Index LtB B.

214.7	12.9	
227.6	13.9	
34.2	26.8	−4.65
48.1		
		−4.64
214.5	13.5	
228.0	13.7	
34.4	27.2	−4.62
48.1		

9 38 20

67

9 33 32

+32

14 34 4

Δ24.6070

Mean −4.59

General " −4.59

Seeing rather blurry but Obs. waited for moments of somewhat better definition.

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1908phae.proj..594

Dec 8, 1908

Fourth Type Star +59° 2810

23	54	+59.6
27	14	
3	20	

0	2	+58.3
3	47	
3	45	

9.5m cafs. used

Color 7 with ordinary eyepiece.

U. Obs. Bouv. Rec. Phot T

Dudley R+B A.

24.8 ← Fourth Type Obs.

10 26 20

107.0	82.2	
212.4	65.0	
277.4	147.2	-0.63

32.8	67.2	-0.62
100.0	81.7	
206.9	148.9	-0.60
2886		

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1908phae.proj..594W

Dec. 8, 1908.

Index Eta B.

294.9	83.4	
18.3	70.1	
119.4	153.5	−0.51
189.5		
		−0.48
299.0	69.7	
8.7	87.0	
111.2	156.7	−0.44
198.2		

Mean −0.55

18	32	55
	59	15
10	29	32
+5		+32
15	30	10

α 224.64 δ 9

S.T. 4 4
H.A. +4 8
Dec. +60.1
P.A 78.7 Vernier B
Sprocket. −2.5 B, −1.5 C

L. P. P.

W's watch used for times
Watch 32 secs slow.

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1908phae.proj..594

Dec. 9, 1908 (Wednesday)

R. T Aurigae = Astbury's Variable = 48 Aurigae

6	19	+30.6
0	49	
5	38	
6	38	

Abandoned. Too near moon.

5 drivers.

5	27	-0.4
0	47	
4	40	
7	20	

W. Obs. Rowe Ref. Plate IV

9.5 in cap. used.

Index R+~~B~~ A.

124.1	← Southern + Bate Dis	
138.2	13.1 ✓	
304.1	13.9 ✓	-4 ✓ ✓ ✓
318.0	2~~1~~.0	4.63

7 43 40

-4. ✓ 2 ✓
4.62

124.4	13.6 ✓	
138.0	13.7 ✓	
304.1	27.3 ✓	-4.61 ✓
317.8		

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1908phae.proj..594

Dec. 9, 1908

Index Lt B B.

34.3	13.9	
48.2	13.7	
214.5	27.6	-4.59
228.2		

-4.59

34.5	13.7	
48.2	13.9	
214.3	27.6	-4.59
228.2		

4.60

Mean ~~4.60~~

7 52 35

96 3V.

7 4A 1A.

+V +30

12 4A 4A.

A2AV. V339

Same Again II

Index Lt B B.

34.4	13.6	
48.0	13.5	
214.6	27.1	-4.64
228.1		

-4.62

34.4	13.9	
48.3	13.7	
214.3	27.6	-4.59
228.0		

7 56 5

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1908phae.proj..594N

Dec 9, 1908

Index R+a A.

304.3	13.5 v	
317.8	13.7 v	
124.3	27.2 v	−4.62 v
138.0		
		−4.58 v
304.1	13.9 v	
318.0	14.3 v	
124.0	28.2 v	−4.54 v
138.3		

8 3 50

119 vv. v

7 v 9 va. v

+v +30: v

13 6 24. v

22 v. v +20 v

Mean −4.60 v

Same Again III

Index R+a A.

304.2	13.9 v	
318.1	13.7 v	
124.2	27.6 v	−4.59 v
137.9		
		−4.56 v
304.2	14.0 v	
318.2	14.2 v	
124.0	28.2 v	−4.54 v
138.2		

8 6 40

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1908phae.proj..594W

Dec. 9, 1908

Index	L+B	B.
214.6		13.4 v
228.0		13.7 v
34.4		27.1 v
48.1		

−4.64 v

214.4		13.7 v
228.1		13.4 v
34.5		27.1 v
47.9		

−4.64 v

8	14	30
	21	10. v
2	10	3 v. v
+v		+30. v
13	11	v.

2 2 v. v 4 9 4 v

Mean −4.60 v

Gen. mean 4. v 9 v

Fourth Type Star +11° 305

+ 12 3

2	11
2	11
0	0

Also 3 with ordinary eyepiece

W Abs Power Res Phot T.

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1908phae.proj..594

Dec. 9, 1908

Index R+a Comp Star Dis

207.8

9 8 15

2863 78.5 ✓

363 58.3 ✓ +0.84 ✓

94.6 136.8 ✓

+0.92 ✓

218.7 56.1 ✓

274.8 73.5 ✓

27.9 129.6 ✓ +0.99 ✓

101.4

Index L+B B.

Clouds

115.3 81.2 ✓

196.5 61.3 ✓

126.8 142.5 ✓ +0.72 ✓

188.1

+0.72 ✓

304.5 60.7 ✓

5.2 81.9 ✓

116.0 142.6 ✓ +0.72 ✓

197.9

Mean +0.82 ✓.

9 21 35

29 √0 ✓

9 14 √√ ✓

+√ +30 ✓

14 1√ 2√ ✓

α 2 A√. √9 4 0 ✓

S.T. 2 5 8

H.A +0 46

Dec +12.2

P.A 74.5 Vernier B

Sprocket −6.5 B. −5.5 C

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1908phae.proj..594

Dec. 9, 1908.

Fourth Type Star +25° 205

1	6	+238
3	6	U. Obs. Bouw Rec. Phot T
2	0	Color 4 m photometer

Index L+a B.

	223.6	← Fourth Type Dis
9 51 45	268.5	44.9 ✓
	49.3	31.9 ✓
	81.2	76.8 ✓ −2.29 ✓
	232.9	29.1 ✓ −2.30 ✓
	262.0	47.5 ✓
	41.3	76.6 ✓ −2.30 ✓
	888	

Index R+B A.

	134.4	44.1 ✓
	178.5	31.9 ✓
	320.4	76.0 ✓ −2.32 ✓
	3523	

−2.30 ✓

	141.2	31.3 ✓
9 58 15	172.5	46.1 ✓
	311.9	77.4 ✓ −2.27 ✓
	358.8	

	110	0. ✓
9	✓✓	0. ✓
+✓		+30. ✓
14	✓✓	30. ✓

Δ2Δv. 62/0 ✓

Mean −2.30 ✓

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1908phae.proj..594

Dec. 9, 1908

S.T. 3 31
H.A. 2 18
Dec +25.8
P.A. 214.2 Vernier B
Sprocket.

Double Star (New Leal) = Burnham's Cat 11862

22 33 +722
27 58
5 25

P.A. 137° Dist 42" Mags
W. Obs. Boone Rec Phot VC

Index R+a
92.6
10 33 40 167.4 74.8
275.7 67.7
341.4 140.5 0.76

99.2 67.2 0.75
164.4
273.4 76.6
350.8 141.2 0.74

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1908phae.proj..594W

Dec. 9, 1908

Kuby L+B

4.0
77.0 73.0
1922 6.0
2490 129.0 0.90

10.0 61.2 0.44
71.2
1798 3.0
262.8 144.2 0.69

mean 0.40

10 39 25
73 1.
10 36 32.
+1 +30.
1 37 2.
2 2 1. 6 1 07

W's watch used for times
Watch 30. secs. slow.

L. P. P.

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1908phae.proj...594W

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1908phae.proj..594W

Dec. 21, 1908 (Monday)

R.T Aurigae = 48 Aurigae = Astbury's Variable.

6	19	+30.6
1	29	W. Obs Rowe Ree. Phot T
4	50	9.5 in cap used
7	10	

Index L+a B.

148.2	← Var. Obs	
182.1	33.9 ✓	
3323		
358.0	25.7 ✓ / 59.6 ✓	−2.47 ✓

153.6	24.0 ✓	−2.40 ✓
177.6		
326.2	39.1 ✓	
5.3	63.1 ✓	−2.74 ✓

Index R+B A.

55.8	36.3 ✓	
92.1		
247.0	22.0 ✓	
269.0	18.3 ✓	−2.93 ✓

64.0	24.4 ✓	−2.44 ✓
88.4		
238.2	38.9 ✓	
277.1	63.3 ✓	−2.74 ✓

mean −2.82 ✓

7 11 45

7 19 50

	31	3✓ ✓
7	1✓	4A ✓
+✓		+20. ✓
	12 16	A ✓

A297. ✓112 ✓

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1909phea.proj...50W

Dec. 21, 1908.

Same Again II

Index R+B A.

57.4 34.9 v
92.3

245.7 24.2 v
269.9 √9.1 v −2.89 v

63.6 24.2 v −2.91 v
87.8

240.3 33.9 v
274.2 √4.7 v −2.93 v

Index L+a B.

325.7 37.9 v
3.6

158.0 20.4 v
178.8 √4.3 v −2.93 v

331.7 27.2 v −2.84 v
358.9

147.4 35.9 v
183.3 631 v −2.78

Mean −2.88 v

7 22 15

7 31 25

√3 40. v
7 26-√0. v
+√ +20. v

12 27 10. v

A297. √189 v

S.T. 2 1
H.A. −4 24
Dec. +30.0
P.A. 102.2 Vernier B
Sprocket. −6.5 A, −5.5 B, −6.0 C

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1908phae.proj..594w

Dec. 21, 1908.

$\bar{\alpha}$ Orionis

5	27	−0.4
2	7	Wr. Obs. Power Rec. Phot ✓✓
3	20	
8	40	9.5" in cap. used

7 54 55

Index L+B B.

2150 12.6 ✓
2276
34.4
47.9 13.5 ✓ / 26.1 ✓ −4.71 ✓

214.4 13.4 ✓ −4.6 α ✓
227.8
34.5 13.4 ✓ / 26.α ✓ −4.6 r ✓
47.9

Index R+α A.

124.2 13.r ✓
137.7
304.0 14.2 ✓ / 27.7 ✓ −4.r α ✓
318.2

124.1 14.2 ✓ −4.r α ✓
1383
3045 13.3 ✓ / 27.r ✓ −4.r 9 ✓
317.8

mean −4.63 ✓

8 / 20
116 1r. ✓
7 r α α. ✓
+r +20. ✓
13 r α 2α. ✓
~~α29.r622~~ ✓
α297.r406 ✓

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1908phae.proj...594w

Dec. 21, 1908

Same Again II

Index R+A. A.

124.2
138.0 13.8 v
304.2
317.9 13.7 v
27.5 v -4.59 v

124.3 14.1 v -4.59 v
138.4
304.1 13.4 v
317.5 27.5 v -4.59 v

Index L+B B.

34.6
47.6 13.0 v
214.5
228.1 13.6 v
26.6 v -4.67 v

34.4 13.9 v -4.67 v
48.3
215.0 12.6 v
227.6 26.5 v -4.67 v
mean -4.63 v
Gen. " -4.63 v

8 4 5

8 9 53

14 0. v
α 7 0. v
+v +20. v
13 7 20. v
α 297.5467 v

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1908phae.proj..594W

Dec. 21, 1908.

Susp. Var. =
Comp. Star = Comp. Star for W Cephei =

0	5.0	+81.2
3	10	U. Obs. Bruce Ref. Phot T
2	20	9.5 in cap used

Index Right A.

31.5 ← Susp. Var. Obs

115.7	84.2 v	
226.6		
288.3	61.7 v / 145.9 v	−0.66 v

45.4	60.5 v	−0.6 5 v
105.9		
213.1	46.2 v	
299.3	146.7 v	−0.64 v

Index Left B.

311.4	64.5 v	
15.9		
118.2	93.0 v	
211.2	157.5 v	−0.43 v

298.1	92.5 v	−0.44 v
30.6		
134.3	64.0 v	
198.3	136.5 v	−0.45 v

Mean −0.54 v

9 8 15

9 17 55

	26	10. v
9	13	5. v
+5		+20. v
14	13	25. v

297.5 927 v

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1908phae.proj...504

Dec. 21, 1908

Same Again II

Index Left B.

9 21 10

313.4 63.6′
17.0
120.0 91.4′
211.4 155.0′ −0.4″

298.7 49.4′ −0.7″
28.1
133.6 63.6′
197.2 153.0′ −0.72″

Index Right A.

213.0 45.6′
298.6
45.3 62.0′
107.3 147.6′ −0.62″

227.6 72.3′ −0.66″
285.9
32.2 45.6′
117.8 143.9′ −0.70″

Mean −0.72″

9 28 15
− 49 27.
9 24 42.″
+ 20.′
14 27 2.′
297.6007′

S.T. 3h 57m
H.A. +3 0
Dec. +81.°9
P.A. 342.2 Vernier B
Sprocket −1.5 B, −0.6 C.

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1908phae.proj..594W

Dec. 21, 1908.

Double Star (New-Leal) = Burnham's Cat. 2666

5 14 -18.6
4 14 U Obs. Rowe Rec. Phot W.
1 0
11 0

P.A. 17° Dist. 40" Mags. 7.0, 7.1.

Index R+a

175.9 ← North, Foll, + Fainter Dis.

10 3 50

268.2 92.3 v
356.4
85.2 92.2 v
177.7 v
177.9 v +0.02

175.1 90.3 v
265.4 +0.04 v
355.3 92.3 v
87.6 182.6 v
177.4 v +0.0 v v

Index L+B

84.6 91.2 v
176.4
264.4 92.6 v
357.0 184.4 v
177.6 v +0.02 v

84.8 94.0 v
178.8 +0.02 v
265.6 90.2 v
355.8 184.2 v
177.4 v +0.02 v

10 10 40
14 30. v
10 7 17 v v
+v +20. v
17 7 37. v
297.6303 v

Mean +0.06 v

∴ North fol. comp. is the ftr. by means. (L. P. P.)

Ws watch used for times. Watch 20 secs slow -

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1908phae.proj..594w

Dec. 23, 1908. (Wednesday).

R. T. Aurigae = 48 Aurigae = Astburg's Variable

6 19 +30 6
1 39 W. Abs. Poor Rec. Phot. T.
4 40
7 20 9.5 in cap used

Index A+B A.
62.9 ← Var Dec.
88.2 2v.3v
248.9
265.3 16.Kv / K1.7v −3.6Av

67.9
84.9 17.0v −3.6v v
244.6
270.3 2v.7v / K2.7v −3.62v
Clouds.

Index L+a B.
329.9 2A.0v
357.9
156.4
174.0 17.6v / Kv.6v −3.4A
Clouds.
336.6
355.1 1A.v −3.44
151.7
180.5 2A.Av / 47.3v −3.40v

Mean −3.v4v

7 20 35

7 29 40

v 0 1v.v
7 2v A.v
+v +1A.v
12 2v 26.v
A299.v177v

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1908phae.proj..594W

Dec 23, 1908

Same again 4

Index Sta B.

7 33 25

329.4
0.1 30.7
156.5
174.3 17.8 / 48.5 -3.34

336.8
354.8 18.0 -3.33
149.6
180.6 31.0 / 49.0 -3.32

Index R+B A.

242.2
271.5 29.3
65.7
83.0 17.3 / 46.6 -3.43

248.9
266.4 17.5 -3.47
60.4
88.7 28.3 / 45.8 -3.47

Mean -3.39

7 43 20
7 6 45.
7 38 22.
+5 +18.
12 38 45

299.5 269

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1908phae.proj..594W

Dec. 23, 1908

Same Again. III

Index R+13 A.

242.9
270.4 27.7 ✓
66.2
83.4 17.2 ✓
44.7 ✓ — 3.72 ✓

247.7
266.8 19.1 ✓ −3.46 ✓
60.8
88.8 28.0 ✓
47.1 ✓ −3.40 ✓

Index R+a B.

151.0
180.3 29.3 ✓
336.0
354.3 18.3 ✓
47.6 ✓ −3.32 ✓

151.4
174.6 18.2 ✓ −3.36 ✓
329.4
359.5 30.1 ✓
48.3 ✓ −3.37 ✓

Mean −3.41 ✓

7 51 50

8 2 10

11K 0. ✓
7 ✓7 0. ✓
+✓ +1A. ✓
12 ✓7 1A. ✓

A299.✓39A ✓

ST 2 33
HA −3 51
Dec. +30.1
P-A. 103.6 Vernier 03
Sprocket: −6.5 A, −5.5 B, −5.0 C.

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1908phae.proj..594N

Dec. 23, 1908

I Draconis

5	27	−0.4
2	57	W. Obs Bouvier Rec. Phot W
2	30	9.5 m. Caps. used.
9	30	

Index S+B B.

8 44 55

33.9		
48.1	14.2	
214.4		
228.0	13.6 / 27.8	−4.57
34.5		
48.2	13.7	−4.59
214.5		
228.1	13.6 / 27.3	−4.61

Index R+a A.

304.3		
318.3	14.0	
124.4		
137.9	13.5 / 27.5	−4.59
304.5		
318.2	13.7	−4.57
124.0		
138.3	14.3 / 28.0	−4.55

Mean −4.58

8 55 30

	10 0	25.
+	50	12.
+5		+14
	13 .50	30.

+299.5768

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1908phae.proj..594W

Dec 23, 1908

Same Again. II

Index Rta A.

3838
3180 14.2
1246 13.6
1382 27.8 −4.77

3042
3185 14.3 −4.77
1240 14.0
1380 28.3 −4.73

Index Lt B. B.

2146 13.3
2279
347 13.1
478 26.4 −4.62

2146 13.4 −4.66
2280
344 13.6
480 27.0 −4.63

Mean −4.60

8 38 20

9 8 45

127 7.
9 3 32.
+7 +8.
14 3 70.

A299.7A60

1908phae.proj..594

Dec. 23, 1908.

Same Again III

Indep L+B B.

214.3 13.6
227.9
34.5 13.2
47.7 26.8 −4.6

214.3 14.0 −4.61
228.3
34.3 13.8
48.1 27.8 −4.57

Rider R+A. A.

124.2 13.7
137.9
304.4 13.4
318.2 27.1 −4.59

124.4 13.6 −4.60
138.0
304.3 13.7
318.0 27.3 −4.61

mean −4.60
Gen. mean −4.59

9 16 5

9 25 40

41 45.
9 20 52.
+ 14.
14 21 10.
A299.590

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1908phae.proj..594W

Dec. 23, 1908.

Double Star (New List) - Burnham's Cat. No. 2763

5 23 +18.3
4 23 W. Obs. Rowe Rec. Phot. W
1 0 9.5" ie caps used.
11 0

P.A. 23° Dist 53" Maps, 7.1, 7.5..

Index R+A

2782 South Rec. + Brh. Dis

10 11. 45

344.1 6√.9
88.4
176.3 ∠7.9 / 1√3.∠ 0.√0

267.0
354.9 ∠7.9 0.√3
99.3
162.1 6∠.∠ / 1√0.7 0.√6

Index B

192.2 60.∠
253.0
354.0
86.0 92.0 / 1√2.∠ 0.√2

172.9 93.1 0.√4
266.0
12.1 √7.4 / 1√0.√ 0.√7
695

mean 0.√K

10 19 50

31 3√. √
10 1√ 4∠. √
+√ +10. √
1√ 16 6. √

∠99.6293 √ W's watch used for times
Watch 18 secs. slow

L. P. P.

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1908phae.proj..594W

Dec. 26. 1908. (Saturday).

R J Auriga. K. obs. A. H. Fenn rec.

6	19	+30.6	9.5 in. cap.
1	46		Plat. 7.
−4	33		
12			
7	27.		

For means. see two fol. pages.

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1908phae.proj..594W

Dec. 26. 1908.

Index R + D. A. I.

			Var. dis.
7 27 18.	95.8	36.0	
	244.5		
	267.4	22.9 / 4.9	−2.90
	65.6		
	87.5	21.9	−3.06
	241.4		
	270.6	29.2 / 1.1	−3.23

Index S + A. B.

328.7	31.3	
0.0		
153.9		
177.0	23.1 / 4.4	−3.04
332.0		
358.1	26.1	−2.90
149.3		
182.6	33.3 / 9.4	−2.84

Mean −3.02

7 40 8

67 26.

7 33 43.

+ +

12 33 69.

A302.23−

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1908phae.proj..594

Dec. 26. 1908.

Same again

Index L + A B. II

7 43 38

329.6
0.8 31.2"
154.7
176.6 21.9"
√3.1" −3.14"

333.8
358.5 24.7" −3.02"
147.9
182.0 34.1"
√4.4" −2.91"

Index OR + B A.

242.0
271.0 29.0"
64.2
87.2 23.0"
√2.0" −3.12"

245.0
267.6 22.6" −3.12"
58.5
90.6 32.1"
√4.7" −3.07"

Mean −3.07"

7 55 15
9 A √3."
7 49 26."
+√ +√."
12 49 31.
£302. √344"

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1908phae.proj..594M

Dec. 26. 1908.

δ Orionis: Phot. Tr. 9.5 in. esp.
Tr. ob. Zeiss rec.

V	27	−0.4
2	V6	
2	31	
12		
9	29	

For means, see fol. pages.

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1908phae.proj..594W

Rec. 26, 1908

Index L + B. B. I

34.1 } 14.0 ✓ Southern + both. decs.
48.1 }

214.5 } 12.9 ✓
227.4 } 26.9 ✓ −4.64 ✓

34.4 } 13.8 ✓ −4.66 ✓
48.2 }

215.3 } 12.8 ✓
227.8 } 26.3 ✓ −4.69 ✓

Index R + A. A.

304.2 } 14.1 ✓
318.3 }

124.8 } 12.6 ✓
137.4 } 26.7 ✓ −4.66 ✓

304.8 } 12.6 ✓ −4.64 ✓
317.4 }

123.6 } 14.7 ✓
138.3 } 27.3 ✓ −4.61 ✓

Mean −4.65 ✓

8 29 5 ✓

8 40 0 ✓

69 ✓. ✓
Δ 34 32. ✓
+✓ +✓. ✓
13 34 37 ✓
Δ 302.✓6✓7 ✓

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1908phae.proj..594W

Rec. 26, 1908

Index R. + A A. II

8 43 5

304.0
317.9 13.9
124.8
137.6 12.8 / 26.7 −4.66

304.5
318.0 13.5 −4.62
124.0
138.1 14.1 / 27.6 −4.59

Index L + B B.

215.0
227.8 12.8
34.7
48.3 13.6 / 26.4 −4.62

215.0
228.1 13.1 −4.66
34.3
48.2 13.9 / 27.8 −4.63

Mean −4.64

8 49 55

93 0.
46 30.
+ +
13 46 30.

8302.7 40

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1908phae.proj..594W

Dec 26, 1908

Index L+B B. III

8 54 35

214.5
228.0 13.5
34.2
47.6 13.4 / 26.9 −4.64

214.5 13.9 −4.61
228.4
34.5
48.3 13.8 / 27.7 −4.58

Index R+A A.

124.0 14.1
138.1
304.4 13.5 / 27.6 −4.59
317.9

124.5 13.8 −4.57
138.3
304.1 14.3
318.4 14.3 / 28.1 −4.55
mean −4.59

9 1 5

11 5 40.
8 57 50.
+5 +5.
13 57 55.
+302.58/2

Troubled by clouds in above group

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1908phae.proj...594W

Dec. 26, 1908

Index R.+A A. IV

9-3-5

124.3
138.3 14.0
304.3
318.0 13.7 / 27.7 −4.62

124.5
138.0 13.5 −4.60
304.2
318.0 13.8 / 27.3 −4.61

Index S+B B.

34.7
47.9 13.2
214.8
227.7 12.9 / 26.1 −4.71

34.7
48.2 13.5 −4.66
214.4
228.1 13.7 / 27.2 −4.62

Mean −4.63
Gen. " −4.63

9 26 10
29 15.
9 14 32.
+5 +5.
14 14 43.

α 302.5 935+

W's watch used for times
Watch 5 seconds slow

L. A. P.

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1908phae.proj..594W

Dec. 24. 1908 (Monday).

R Tauriga. Wr. obs. A. H. Gerry, rec.
Phot. I.

6	19	+30.6	9.5 in cap.
1	6		
4	23		
7	37		

For micrets., see pp. 123, 124.

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1908phae.proj...594w

Dec. 28, 1908 (Monday)

Indey L + A B.

333.8		Var. dis.
357.9	24.1 v	
147.9		
183.4	3v.v v / v9.6 v	−2.47 v
327.0		
1.9	34.9	−2.47 v
153.9		
179.9	26.0 / 60.9	−2.43 v

Indey R + B A.

240.4	31.4 v	
272.2		
61.8		
86.2	24.4 v / v6.2 v	−3.01 v
244.0		
267.9	23.9 v	−2.94 v
55.5		
91.5	36.0 v / v9.9 v	−2.46 v

Mean −2.90 v

7 37 50

7-48-15

46 v v

7 43 2. v

+v +9. v

12 43 11. v

430 F. v 300 v

1908phae.proj..594W

Dec. 28, 1908
Same again
Index R + B A.

8 ~ 1-5

241.2
276.0
62.3
84.0
34.4 ✓
21.7 ✓
56.5 ✓
−3.00 ✓

245.5
268.7
58.8
89.0
23.2 ✓
30.2 ✓
53.4 ✓
−3.06 ✓
−3.12 ✓

Index L + A B.

151.3
183.0
331.4
359.5
31.7 ✓
28.1 ✓
59.8 ✓
−2.87 ✓

153.2
179.0
325.8
1.8
25.8 ✓
36.0 ✓
61.8 ✓
−2.03 ✓
−2.79 ✓

Mean −2.94 ✓

8 13 40
14 54 ✓
8 7 22 ✓
+5 +9. ✓
13 7 31. ✓
830.5+54.9 ✓

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1908phae.proj...594N

Dec, 28, 1908

ζ Orionis Phot. [illegible] Grenn Rec.

Index δ + B B. 9.5 in. cap.

215.0 ← 13.0 ✓ ← Guthrie + Hoff. Lec.

228.0

34.5

48.4 — 13.9 ✓ / 26.9 ✓ — −4.64 ✓

215.0 — 13.4 ✓ — −4.62

228.4

34.4

48.5 — 14.1 ✓ / 27.5 ✓ — −4.59 ✓

Index R + A A.

304.2 — 13.0 ✓

317.2

124.5

138.1 — 13.6 ✓ / 26.6 ✓ — −4.67 ✓

304.3 — 13.9 ✓ — −4.64 ✓

318.2

124.7

138.1 — 13.4 ✓ / 27.3 ✓ — −4.61 ✓

mean −4.63 ✓

8 28 5

8 36 5

6K 10.2 ✓

A 32 5.1 ✓

+V +9.1 ✓

13 32 14.3 ✓

A 304.56 40 ✓

L. P. P.

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1908phae.proj..594W

Dec. 29, 1908 (Tuesday)
R. T. Auriga Phot. I. H. obs. Green ray.
6 19 + 30.6 9 v in. exp.
1 56
4 23
7 37

Index R+B
60.2
91.7 ← 31.1 v
241.2
269.6 28.4 v / 59.9 v − 2.86 v

61.9 2 v.0 v − 2.84 v
86.9
237.9 3 v.6 v / 60.6 v − 2.84 v

Index L. + A.
225.2
2.5 37.3 v
152.3
179.1 26.8 v / 64.1 v − 2.71 v

931.3 27.3 v − 2.64 v
958.6
146.8 34.1 v / 6 v.4 v − 2.66 v
184.9

− 2.78 v

7 15 50

7 25 35
41 2 v.
7 20 42. v
+ v + 9 v
12 20 v1. v
430 v. v 14 v v −

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1908phae.proj...59.jpg

Rec. 29, 1908
Same again Index L + A.

325.2
3.1 37.9 v

151.3
178.7 27.6 v / 6 v. 3 v −2.67 v

331.6
359.1 27.5 v −2.66 v

145.8
184.4 38.6 v / 66.7 v −2.64

Index A + B.

239.1
274.6 3 v. 5 v

60.4
86.0 2 v.6 v / 61.1 v −2.42 v

243.5
269.6 26.1 v −2.40 v

56.1
91.8 35.7 v / 61.8 v −2.79 v

−2.73 v

7 27 50

7-10-20
6 8 10.
7 34 v. v
+v +9. v
12 34 14. v
830 v. v 237 v

S. T. 2.42
H. A 8h 17m
Rec. +30.0
P. A. 282.5
Sprocket −65 A
" −55 B
" −50 C

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1908phae.proj..594w

Dec. 29, 1908

δ Draconis Phot. Y. K. ob. Emm rec.

5 27 −0.4 g.r in. eq.
2 48

2 39
9 21

Index 2 + B B.

34.5
47.5 ← 13.0 v Southern + both. dec.
8 16 35
214.8
227.9 13.1 v / 26.1 v −4.71 v

34.8 13.4 v −4.70 v
48.2
215.0
227.8 12.6 v / 26.2 v −4.70 v

Index R + A. A.

304.2
317.6 13.4 v
124.8
138.2 13.4 v / 26.8 v −4.6 v v

304.4
318.4 14.0 v −4.62 v
124.8
138.2 13.4 v / 27.4 v −4.60 v

Mean −4.66 v

8 23 15

39 √0. v
4 19 √√. v
~~4 9 4√.~~
+√ +9. v
13 20 4. v
4 30 √ √ √ 7 v

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1908phae.proj..594N

Dec. 29, 1908

Same again

Ludus R + A. A.

8 26 45

304.4
318.1 13.7 v
125.0
138.2 13.2 v / 26.9 v − 4.6 v

304.4 13.v v − 4.66 v
317.9
124.9 13.1 v / 26.6 v − 4.67 v

Ludus L + B. B.

214.8
227.7 12.9 v
34.6
48.0 13.4 v / 26.3 v − 4.69 v

214.2 13.9 v − 4.64 v
228.1
34.5
48.1 13.6 v / 27.v v − 4.v9 v

8 33 45
60 30. v
A 30 1v. v
+v +9. v
13 30 24. v
A 30 v. v62A v

Mean − 4.6v

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1908phae.proj..594W

Dec. 29, 1908

ζ Orionis

Index	L + B.	B.
2	15.1	
	27.8	12.7
	34.4	
	48.1	13.7
		26.4 — 4.62

8 35 45

214.5		
228.1	13.6	−4.66
34.5		
48.0	13.5	
	27.1	−4.64

Index	R + A.	A.
124.4		
138.0	13.6	
304.1		
318.0	13.9	
	27.5	−4.59

124.6		
138.0	13.4	−4.64
304.6		
317.6	13.0	
	26.4	−4.62

Mean −4.63

8 44 35

	20	20.
2	40	10.
+5		+9.
13	40	19.

230.5 − 6.96

We watch used for times.
Watch goes slow.

L. A. P.

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1908phae.proj..594W

Dec. 31, 1908 (Thursday)

δ Orionis

5. 27 — 0.4

2 18

3 9

— 8 51

7 32 45

Index R + Δ A.

124.6 — Southern + beta dis.

137.9 13.3 ✓

304.5

317.9 13.F ✓

26.7 ✓ −4.66 ✓

124.7 13.2 ✓ −4.66 ✓

137.9

304.4

317.8 13.F ✓

26.6 ✓ −4.67 ✓

Index L + B. (B.)

34.6 13.6 ✓

48.2

215.1

228.0 12.9 ✓

26.5 ✓ −4.67 ✓

34.6 13.6 ✓ −4.66 ✓

48.2

214.9

228.4 13.5 ✓

27.1 ✓ −4.6F ✓

−4.66 ✓

7 40 50

7 3 3r. ✓

7 3 6 4A. ✓

+r +10 ✓

12 36 rA. ✓

A 307. r 2r ✓

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1908phae.proj..594w

Dec. 31, 1908 (Thursday)

Same again Index L + B B.

214.9
228.4 13.5
34.7
48.0 13.3
26.8 −4.6

215.0
228.1 13.1 −4.64
34.4
48.3 13.9
27.0 −4.63

Index R. + A. A.

124.3 13.5
137.8
304.7 13.1
317.8 26.6 −4.67

124.8 13.1 −4.66
137.9
304.5 13.6
318.1 26.7 −4.66

−4.6

7 44 20

7 51 5
9 25
7 47 42
+5 +10
12 47 25
9307.5 332

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1908phae.proj..59.tif

Dec. 31. 1908 (Thursday)

Same again

		Index R + A.	A.
7-53-45	124.4		
	138.2	13.8	
	304.6		
	317.8	13.2 / 27.0	−4.63
	124.8	12.9	−4.66
	137.7		
	304.4	13.4 / 26.3	−4.69
	317.8		
		Index L + B.	B.
	34.7	13.3	
	48.0		
	215.4		
	228.2	12.8 / 26.1	−4.71
	35.0	12.9	−4.70
	47.9		
	215.0	13.3	
	228.3	13.2 / 26.2	−4.70

Mean −4.68

Gen. Mean −4.66

8-1-25

11 r 10.

7 r 7 3r.

+r +10

12 r 7 4r.

α 307. r 402

1908phae.proj...594W

Dec. 31, 1908 (Thursday)

o Ceti

Phot. W. W. obs Gurm rec.

2 12 — 3.6
3 9
+0 57

Index R + A A:

299.8 ← 21.6 Var. dis.
321.4
120.8
142.6 21.8 / 43.4 − 3.9

299.9 22.1 − 3.8
322.0
120.6
142.3 21.7 / 43.8 − 3.7

Index K. + B. B.

210.6
232.5 21.9
31.2
51.5 20.3 / 42.2 − 3.6

211.1
232.4 21.3 − 3.66
31.3
51.7 20.4 / 41.7 − 3.6

Mean − 3.62

8 32 5

13 26 42

+307.+602

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1908phae.proj..594N

Dec. 31, 1908 (Thursday)
Same again

Lucy L + B. B.

8 35 20

211.8		
230.7	18.9 ✓	
31.2		
54.5	23.3 ✓ / 42.2 ✓	−3.65 ✓
211.3	20.3 ✓	−3.78 ✓
231.6		
31.9	19.7 ✓ / 40.0 ✓	−3.77 ✓
51.6		

Lucy R + A. A.

121.0		
142.5	21.5 ✓	
300.5		
322.2	21.7 / 43.2 ✓	−3.60 ✓
120.2	22.0 ✓	−3.60 ✓
142.2		
300.6		
321.8	21.2 ✓ / 43.2 ✓	−3.60 ✓

8 47 25

A 2 42 ✓
A 41 22. ✓
+5 +10. ✓
13 41 32. ✓
A 307. ✓ 70 ✓ −

Mean −3.68 ✓
Gen. " −3.64 ✓
with Plot. ✓

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1908phae.proj..594W

Dec. 31, 1908 (Thursday)
o Ceti again
Rhot. R. Wolz. Gumm rec.

9 3 25

Index R + A	A.
117.8	Var. dis.
	22.0 v
139.8	
296.8	23.3 v
320.1	43.3 v − 3.49 v

117.0		
139.3	22.3 v	− 3.42 v
297.4	21.6 v	
319.0	43.9 v	− 3.46 v

Index L + B.	B.
28.5	20.7 v
49.2	
207.5	20.8 v
229.3	41.5 v − 3.69 v

27.5	21.5 v	− 3.66 v
49.0		
207.8	21.0 v	
228.8	42.5 v	− 3.63 v

Mean − 3.59 v

9 13 30

16 vv. v
9 A 2A. v
+v +10. v
14 A 3A. v
A 307. vA93 v

1908phae.proj..594

Dec. 31, 1907 (Thursday)

Same again Sunday L+B. B.

9 17 5

28.0
48.9 20.9
207.9
229.5 21.6 / 42.5 − 3.63

27.6 21.4 − 3.65
49.0
208.6 20.4
229.0 41.2 − 3.67

Sunday R. + A. (A.)

298.0 21.0
319.0
117.1 22.4
139.5 43.4 − 3.59

297.5 21.5 − 3.60
319.0
117.7 21.4
139.1 42.9 − 3.61

9 27 5
44. 10.
9 22 5.
+5 +10.
14 22 15.
+307.5947

Mean − 3.62
Sun. " − 3.60
with Phot. R.
Mean of both Phot R. + A. = − 3.62

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1908phae.proj...594W

Dec. 31, 1908 (Thursday)
Double Star (new list) = Burnham's Cat. 2294
4 32 −13.3
5 11
+0 39

Index S

10 22.35

270.5 North. Prec. + bstr. dec.
352.6 ∠2.1 ✓
96.1
167.6 21.5 ✓ / √3.6 ✓ 0.√0 ✓

273.5 } 3.6 ✓ 0.√0 ✓
347.1
90.7 ∠0.3 ✓
171.0 / √3.9 ✓ 0.√0 ✓

179.4 ∠2.6 ✓
262.0
3.6 } 3.2
76.8 / √5.4 ✓ 0.46 ✓

183.6 } 3.3 ✓ 0.49 ✓
266.9
2.0 } 9.3 ✓
81.3 / √2.6 0.√2 ✓
Mean 0.√0 ✓

10-30-50
√3 2√. ✓
10 26 ∠2. ✓
+√ +10 ✓
√ 26 √2. ✓
∠307.6437 ✓

We watch each post times
Watch 10 secs slow

L. P. P.

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1908phae.proj..594W

Jan. 1, 1909 (Friday)

(E) Aurigae Phot. T. W. obs Gumnec.

4 52
2 20
2 32
9 28

+ 43.6

7 mch cap

7 34 25

Index R + A A.

154.9 ← E dis.
174.4 19.5 ✓
8 37.6
8 53.0 15.4 ✓
34.9 ✓ −4.07 ✓

15 7.8 15.5 ✓
17 3.3 −4.02 ✓
8 34.2
8 55.3 21.1 ✓
36.6 ✓ −3.96 ✓

Index L + B. B.

65.6 19.2 ✓
84.8
247.4 14.6 ✓
262.0 33.2 −4.14 ✓

68.5 13.8 ✓ −4.18 ✓
82.3
245.2 18.8 ✓
264.0 32.6 ✓ −4.22 ✓

Mean −4.10 ✓

7 48 0
A2 25 ✓
7 41 12. ✓
+5 +18 ✓
12 41 30. ✓
A30 ✓ 2 A ✓

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1908phae.proj..594w

Jan. 1, 1909 (Friday)
Same again Index L + B.

7 51 50

	66.5		B.
	84.9	18.4	
	248.4		
	261.7	13.3 / 31.7	−4.24
	69.1	13.3	−4.26
	82.4		
	244.9		
	264.0	19.1 / 32.4	−4.23

Index R. + A. A.

33	41.6	20.3	
35	41.9		
157.7			
178.0		15.3 / 35.6	−4.03
337.5		18.2	−4.06
351.7			
155.6			
176.1		20.5 / 38.7	−4.09

8 5 5

116 55.
7 54 24.
+5 +18.
12 54 46.
230A. −4.09

S.T.	3h 12m	Mean −4.16
H.A.	−1 44	Gen. " −4.13
Rec.	+43.2	
P.A	357.5	
Sprocket	−10.5A or 13.5A	
"	−9.5B " 14.5B	
"		

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1908phae.proj..594W

Jan. 1, 1909 (Friday)

δ Orionis Phot. W. W. obs. Gumm rec.

5 27. −0.4 I

3 27

−2 0

δ 38.25

Index R + A Δ. Southern + both. dec.

126.7 — 12.9 ✓

139.6

306.1

318.5 12.4 ✓ / 25.3 ✓ −4.78 ✓

126.6 12.5 ✓ −4.76 ✓

139.1

306.0

319.3 13.3 ✓ / 25.8 ✓ −4.73 ✓

Index L + B. B.

96.0 14.0 ✓

50.0

216.9 12.3 ✓ / 26.3 ✓ −4.69 ✓

36.4 13.0 ✓ −4.71 ✓

49.4

216.6 12.8 ✓ / 25.8 ✓ −4.73 ✓

9 17 5

11 ✓ 30. ✓

8 ✓7 4✓. ✓

+✓ +/8.

13 ✓8 3. ✓

δ30 8. ✓8 19 ✓

Mean −4.74 ✓

Delayed by clouds in above group.

Sky quite clear, however, when settings were made.

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1908phae.proj..594W

Jan. 1, 1909 (Friday)
Same again Sky clear.

Index L + B. B. II

36.2
49.6 13.4 ✓
216.5
229.1 12.6 ✓ / 26.0 ✓ −4.72 ✓

36.5
49.4 12.9 ✓ −4.74 ✓
216.8
229.4 12.6 ✓ / 25.5 ✓ −4.76 ✓

Index R. + A. A.

306.4
319.4 13.0 ✓
126.7
139.5 12.8 ✓ / 25.8 ✓ −4.73 ✓

306.4 13.1 ✓ −4.72 ✓
319.5
126.4 13.1 ✓ / 26.2 ✓ −4.70 ✓
139.5
Mean −4.73 ✓

9 19 20

9 37 35
56 55.1 ✓
9 28 28.✓
+5 +18.1 ✓
14 28 46.1 ✓
£304.6034 ✓

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1908phae.proj..594w

Jan. 1, 1909 (Friday)
Same again Sky clear.

Index	R. A.	A.
	306.3	
	319.4	13.1
	126.7	
	139.5	12.8 / 25.9 −4.73

306.3	13.1	−4.74
319.4		
126.7	12.6	
139.3	25.7	−4.74

Index	L. A.	B.
	216.4	13.0
	229.4	
	36.5	13.0
	49.5	26.0 −4.72

216.6	12.9	−4.72
229.5		
36.3	13.1	
49.4	26.0	−4.72

mean −4.73

Watch 18 Sec. slow

Gen. mean −4.73

L. A. A.

9 31 15

9 40 5

71 20.

9 3 40.

+5 +14.

14 38 54.

A 30 A. 60 A 3

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1908phae.proj..594W

Jan. 2, 1909 (Saturday)

Fourth Type +38.1539 W. obs. Germ rec.

6 27 +38.6 9.5 inch cap
2 29
−3 58
8 2 Color 6 in photometer. I

Index R + A A.

7 35 45

327.7 ← 4th type dec.
1.6 33.9 ✓
153.5
179.0 $\frac{25.5}{\sqrt{9.4}}$ ✓ −2.44 ✓

332.5
356.7 24.2 ✓ −2.46 ✓
148.2
184.2 $\frac{36.0}{60.2}$ ✓ −2.47 ✓

Index L + B. B.

238.8 32.2 ✓
271.0
64.4
85.2 $\frac{20.8}{\sqrt{3.0}}$ ✓ −3.14 ✓

244.1
266.2 22.1 ✓ −3.13 ✓
60.1
91.5 $\frac{31.4}{\sqrt{3.5}}$ ✓ −3.12 ✓
mean −3.00 ✓

7 45 50
A1 3√. ✓
7 40 44. ✓
+√ +20. ✓
12 41 A. ✓
A309.√246 ✓

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1909phae.proj...594w

Jan. 2. 1909
Same again

Lindsey L + B. B. II

7 54 35

240.6
270.4 29.8 v
63.4
80.9 22.5 v / 2.3 v = 3.17 v

241.0
267.4 26.4 v = 3.12 v
60.0
88.2 28.2 v / 8.6 v = 3.07

Lindsey R + A. (A.)

1418.5
182.7 35.2 v
332.4
356.6 24.2 v / 8.4 v = 2.92 v

154.4
179.8 25.4 = 2.94 v
328.6
0.8 32.2 / 7.6 = 2.95 v

Mean = 3.03 v
Gen. " = 3.02 v

8 2 0
116 35. v
7 5 + 18. v
+5 +20. v
12 58 38. v

+309. 5 +07 v

S. D. B 13"
N. A. −3 18
Dec. +38°.1
P. A 11°.3
Spruchet −5.5 B
−4.5 C

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1908phae.proj..594W

I

Jan. 2, 1909

δ Orionis

Phot. W. W. obs Gunn rec.

9.5 m cap.

5	27	−0.4
3	24	
2	3	
9	57	

8 26 35

Index δ + B B.

36.5
50.0 Southern + brtr. dec.
216.8 13.5 ✓
229.6 12.8 ✓ / 26.3 ✓ −4.69 ✓

36.6
49.4 12.8 ✓ −4.72 ✓
216.7
229.4 12.7 ✓ / 25.5 ✓ −4.76 ✓

Index R. + A. A.

306.6 12.6 ✓
319.2
126.6
139.5 12.9 ✓ / 25.5 ✓ −4.76 ✓

306.4
319.3 12.9 ✓ −4.74 ✓
126.3
139.5 13.2 ✓ / 26.1 ✓ −4.71 ✓

mean −4.73 ✓

8	35	5	
	61	40.	✓
+	30	0.	✓
		20.	✓
13	31	10.	

+309.5633 ✓

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1908phae.proj...594W

II

Jan. 2, 1909
Same again Sudy R + A.
A.

8 38 10

306.2
319.2
126.5
139.2 — 13.0 v, 12.7 v, 25.7 v, −4.74 v

306.3
319.5
126.4
139.4 — 13.2 v, 13.0 v, 26.2 v, −4.72 v, −4.70 v

Sudy K + B.
B.

216.9
229.5
36.6
49.4 — 12.6 v, 12.4 v, 25.4 v, −4.77 v

216.7
229.3
36.5
49.4 — 12.5 v, 12.9 v, 25.4 v, −4.77 v, −4.79 v

Mean −4.76 v

8 45 55
α K v. v
α K2 2. v
+v +20. v
13 K2 22.
α 309. v 711 v

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1908phae.proj..594w

III

Jan. 2, 1909

SBruins again

Sinks L. + B. B.

216.6
229.3 12.7 v

36.6
49.4 12.8 v
25.5 v −4.76 v

216.6
229.4 12.8 v −4.76 v

36.6
49.4 12.8 v
25.6 v −4.75 v

Sinks R + A. A.

126.6
139.4 12.8 v

306.4
319.2 12.8 v
25.6 v −4.75 v

126.6
139.5 12.9 v −4.74 v

306.5
319.3 12.8 v
25.7 v −4.74 v

Mean −4.75 v
Gen. " = −4.74 v

8 50 5

8 57 55

10 2 0. v
4 54 0 v
+5 +20. v
13 54 20. v
4 309.5794 v

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1908phae.proj...594w

Jan. 2. 1909.

Fourth Type +14° 1203. Fr. ob. Gunn rec.
Phot. I. 9.5 cap.

6 17 +14.8
5 19
=0 5.8
11 2

Color 5 in Photometer

Index L+B B.

40.6 ← Fourth Type drift
110.2 69.6 v
222.6
259.5 66.9 v
136.5 v −0.4 v

41.1 66.8 v −0.6 v
107.9
221.4 64.3 v
259.7 135.1 v −0.7 v

Index R+A. A.

314.6
24.0 69.4 v
127.1
202.9 75.8 v
145.2 v −0.7 v

310.2 72.8 v −0.4 v
23.0
127.7
203.1 75.4 v
142.2 v −0.6 v

10 34 45

10 41 45

76 30. v
10 38 15. v
+5 +20. v
15 38 35. v
+309.6 5 15 v

Mean −0.7 v

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1908phae.proj..594W

Jan. 2, 1909

S. T. 5h 50m
H. A. −0h 31m
Dec. ~~A. A.~~ +14.3
P. A. 23.6 Ver. B
Sprocket −7.5 B
" −6.5 C'

W's watch used for times
Watch 20 secs. slow.

L. A. P.

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1908phae.proj...594w

Jan. 4 1909. (Monday)

α Orionis

5	27	-0.4
2	27	
3	8	W. Obs. Power Rec
9		

8 0 0 Continuously cloudy since opening dome and now sky completely covered everywhere and clouds pretty thick

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1908phae.proj..594W

Jan. 6. 1909. (Wednesday)

δ Orionis

5 27 −0.4
2 27 W. Obs. Bonn Rec. Phot W.
3 0
9 0 9.5 in cap used

Clouds.

Index L+B B.

216.2 Bottom + both. dia.
229.4 13.2"
36.6
49.1 12.5" / 25.7" −4.74"

216.8
229.3 12.5" −4.76"
36.8
49.4 12.6" / 25.1" −4.79"

Index R+a A.

126.6 13.1"
139.7
306.3 13.2" / 26.3" −4.69"
319.5

126.4 13.3" −4.69"
139.4
306.3 13.0" / 26.2" −4.69"
319.3

−4.72"

7 26 10

7 31 50

√A 0.
7 29 0."
+√ +36."
12 29 36"

−313.√20√"+

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1908phae.proj...594W

Jan. 6, 1909

Same Again. II

Index R+a A.

126.4
139.5 13.1v
306.5
319.3 $\frac{12.8v}{2v.9v}$ -4.73v

126.8
139.6 12.8v -4.74v
306.4
319.3 $\frac{12.9v}{2v.7v}$ -4.74v

Index L+B. B.

36.3 13.1v
49.4
216.6
229.3 $\frac{12.7v}{2v.8v}$ -4.73v

36.6 12.8v -4.74v
49.4
216.6
229.5 $\frac{12.9v}{2v.7v}$ -4.74v

Mean -4.74v

7 34 35

7 40 20

74 vv.v

7 37 28.v
+v +36.v

12 3A 4.v

Ø313.v26v=

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1908phae.proj..594W

Jan. 6, 1909

Same Again III

Kidey L+B. B.

7 44 20

36.5
49.3 12.8v
216.8
229.3 12.5v / 25.3v −4.78v

36.7
49.5 12.8v −4.78v
216.8
229.4 12.6v / 25.4v −4.77v

Kidey R+a A.

3063
319.6 13.3v
126.7
139.7 13.0v / 26.3v −4.69v

306.4
319.5 13.1v −4.70v
126.4
139.5 13.1v / 26.2v −4.70v

mean −4.74v
Gen. " −4.73v

7.51 10
9v 30.v
7.47 47v.v
+v +36.v
12 4A 21.v
∂313.v336v

1908phae.proj...594W

Jan. 6, 1909

Fourth Type Star -36° 1884

4	43	-364
3	43	
1	0	
11	0	

W Abs. Rowa Rec.

Cloudy.

Abandoned. Moon bright + clouds also in this region.

Fourth Type Star +34° 56

0	29	+32.9
4	9	
3	40	

Color 5 with ordinary eyepiece

W. Abs. Rowa Rec. Phot. I.

For means, see two fol. pages.

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1908phae.proj...594W

Jan. 6, 1909.

Index above A.

135.1 ← Fourth Type Dió
193.2 +2.1
325.5
6.2 +0.7 / 92.8 −1.69

145.0 +3.0
188.8 −1.62
317.8
13.1 +6.1 / 99.1 −1.62

Index Below B.

48.0 +2.2
100.8
236.1 39.1 / 91.9 −1.26
275.2

54.0 +1.0 −1.23
95.0
228.6 +3.2 / 92.2 −1.26
281.8

Mean −1.76

9 0 15

9 6 55
7 10.
9 3 3
+36.
14 4 11.
313. 62

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1908phae.proj...594w

Jan 6, 1909

Same Again

Index Below B.

9 15 50

50.9
98.9 48.0

236.4 40.0
276.4 88.0 −1.99

54.9 41.0 −1.92
95.9

229.9 91.1
281.0 92.1 −1.86

Index Above A.

317.4
13.1 55.7

143.7 52.1
185.8 93.8 −1.71

3266
6.0 39.4 −1.70

135.5
195.8 99.2 −1.68

Mean −1.81

9 21 35
37 25
9 18 42
+5 +36
14 19 18
A 313.5967

S.T. 4 46
H.A 4 23
Dec 35.2
P.A 3.35.2 Vernier B
Sprocket −3.5 B, −2.5 C

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1908phae.proj..594W

Jan. 6, 1909.

Double Star (New Stat) = Burnham's Cat. 2666

5 14 − 18.6
4 59 W. Obs. Rowe Rec.
0 15 Phot. ~~XX~~ W.
11 43 P.A. 17° Dist 40″, Mags 7.5, 7.6,

Index L+B B.
1792 ← South. Prec. + Brte. Dec.
9 45 25
268.4 Δ9.2″
1.9
83.5 Δ1.6″
170.2″ −0.17″

182.2 Δ3.2″ −0.16″
265.4
359.2 Δ4.4″
88.0 172.0″ −0.15″

Index R+a A.
~~177.5~~ 271.7 Δ3.9″
~~267.5~~ 355.6
88.5
176.0 Δ7.5″
171.4″ −0.16″

270.4 Δ6.8″ −0.14″
357.2
89.7 Δ6.9″
176.6 173.7″ −0.12″
Mean −0.13″

9 52 5
97 30.″
9 48 49″
+″ +36.″
14 49 21.″
Δ313.6177″

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1908phae.proj...594W

Jan 6, 1909.

Double Star (New List) = Burnham's Cat. 2833

5 29 −6.1
5 29 W. Obs. Rowe Rec.
0 0 Phot W.

P.A. 223° Dist 36". Mags. 7.7, 6.6

Index R+a A. North fol. + brtr. Lic.

189.4 66.9 ✓
256.3
10.2 6✓.6 ✓
75.8 132.✓ ✓ −0.93 ✓

10 8 50

190.6 6✓.7 ✓ −0.94 ✓
255.3
9.9 66.✓ ✓
76.3 131.1 ✓ −0.96 ✓

Index L+B. B.

98.2 6✓.0 ✓
166.2
280.9 64.✓ ✓
345.4 132.✓ ✓ −0.93 ✓

99.2 67.3 ✓ −0.90 ✓
166.5
279.6 67.6 ✓
347.2 134.9 ✓ −0.88 ✓

L. P. P. Mean −0.92 ✓

10 −14 50
23 ✓0. ✓
10 11 ✓8. ✓
+✓ +36. ✓
1✓ 12 26. ✓
+313.6336 ✓ W3 watch used for time Watch 36 secs slow

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1908phae.proj..594W

Jan. 7, 1908 (Thursday)

Ω Orionis

5	27	-0.4
2	37	W Obs. Rough Rec. Phot W.
2	50	9.5 M cafe. used.
9	10	

Delayed a little by bad seeing. Opened door to equalize temperature

Index R & A.

7 20 35

126.3		
139.5	13.2 v	
306.2		
319.4	13.2 v	
	26.4 v	-4.62 v

126.5		
139.6	13.1 v	-4.70 v
306.4		
319.2	12.8 v	
	25.9 v	-4.73 v

Index L & B B.

36.4		
49.6	13.2 v	
216.7		
229.4	12.7 v	
	25.9 v	-4.73 v

36.3		
49.5	13.2 v	-4.70 v
216.3		
229.7	13.4 v	
	26.6 v	-4.67 v

Mean -4.70 v

7 29 50

	√0	2√. v
7	2√	12. v
+√		+38. v
	12 25	√0. v

$314.√/0 v

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1908phae.proj..594W

Jan. 7, 1909.

Same Again II

Index L+B B.

7 33 20

36.2
49.6 13.4
216.6
229.6 13.0 / 26.4 −4.68

36.6
49.8 13.2 −4.69
216.8
229.8 13.0 / 26.2 −4.70

Index R+a A.

3063
319.6 13.3
1266
139.6 13.0 / 26.3 −4.69

306.4
319.6 13.2 −4.67
1262
1398 13.6 / 26.8 −4.6

Mean −4.68

7 42 10

7 30.
7 37 47.
+ +38.
12 38 23.

δ 31 4. −26 7

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1908phae.proj..594W

Jan 7, 1909.

Same Again III

Index R+a A.

306.3
319.3 13.0
126.4
139.7 13.3 / 26.3 −4.69″

306.5
319.7 13.2 −4.69″
126.5
139.6 13.1 / 26.3 −4.69″

Index L+B. B.

216.4
229.7 13.3
Clouds
36.4 13.1 / 26.4
49.5 −4.68″

216.6
229.8 13.2 −4.69″
36.6
49.6 13.0 / 26.2 −4.70″

Mean −4.69″
Sum. " −4.69″

7 45 55

7 57 30

103 2√.″
7 √1 42″
+√ +34.″
12 √2 20.″

Σ314. √363″

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1908phae.proj...594W

Jan. 7, 1909

Fourth Type Star. +34° 56

0 29 +32.9

4 19 W. Obs. Bouw Rec. Phot I.

3 50

9 7 5

Index above A.

317.3 ← Fourth type dis.

13.2 ν ν 5.9 ν

143.5 44.4

187.9 100.3 ν −1.6 ν ν

323.2 43. ν −1.60 ν

6.7

133.2 61. ν ν

194.7 105.0 ν −1.54 ν

Index Below B.

225.5 ν 6.6 ν

282.1

53.4 36.3 ν

89.7 92.9 ν −1.84 ν

247.0 31.0 ν −1.89 ν

278.0

44.6 ν 8.1 ν

102.7 89.1 ν −1.94 ν

Mean −1.74 ν

9 +

9 19 0

26 ν. ν

9 13 2. ν

+ν +38. ν

14 13 40. ν

8 314. ν 929 ν

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1908phae.proj..594W

Jan. 7, 1909.

Same Again
Index Below
228.8
285.0
57.7

Clouds.

9 21 55

S.T. 4 5.2
H.A. 4 29
Dec. 35.3 +
P.A. 155.4 +
Sprocket. -3.5 B, -2.5 C

Ws watch used for times.
Watch 38 secs slow

L. A. P.

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1908phae.proj..594W

Jan. 2. 1909. (Friday).

Dio. Jup. I. ~~Phot.~~ W & Obs Bonn Rc
comp ~~with~~ Sat. near Jup. I and ~~immediately~~ prec. it =

B + C. 11 hr.			Ballou 103.		
17	17	0.5	17	17	0.0
	10	0.7		10	0.0

		17	35	3		87.0	
22	35	40.5	35	20	99.0'	186.0	1
			35	44	101.0 / 200.0	85.2	
			36	31	100.0 -0.4	186.2	
			36	48		84.2	
37	2.		37	1	99.3	182.5	
			37	13	98.2 / 197.5	85.1	2
			37	30	98.8 -0.3	183.3	
			38	11		84.1	
38	27.		38	20	98.7	182.8	3
			38	29	97.8 / 196.5	85.2	
			38	49	98.2 -0.3	183.0	
			39	1		84.0	
39	22.		39	14	98.2	182.2	4
			39	30	97.9 / 196.1	84.9	
			39	43	98.0 -0.3	182.8	
			39	56	99.1	84.0	
40	17.		40	10	99.8 / 198.9	183.1	
					99.4 -0.4		

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1908phae.proj..594W

Jan. 5, 1909.

		17	40	24			82.7	
			40	39			182.5	
			40	54			83.3	
22	41	10.	41	2	99.8		183.1	
			41	15	92.5		83.5	6
			41	28	99.2	−0.4	182.0	
	41	41.	41	41	92.5	−0.1	87.5	
	41	52.	41	52	92.0	−0.1	180.0	
	42	2.	42	2	93.0	−0.1	88.0	
	42	11.	42	11	91.9	−0.1	181.0	
	42	24.	42	24	82.1	+0.1	89.1	
	42	38.	42	38	87.4	+0.1	177.2	
	42	52.	42	52	83.2	+0.3	89.5	
	43	13.	43	13	77.5	+0.5	173.0	
	43	28.	43	28	72.6	+0.7	95.5	
	43	41.	43	41	63.7	+1.0	168.1	
	44	0.	44	0	52.6	+1.3	104.4	
	44	12.	44	12	55.2	+1.4	162.0	
	44	22.	44	22	48.1	+1.8	106.2	
	44	33.	44	33	41.8	+2.1	154.3	
	44	46.	44	46	39.5	+2.2	112.5	
	44	56.	44	56			152.0	
	45	25.	45	25			Not seen later.	

Limits of Iris

		17	45	53			114.2	
22	46	14.	46 ~~45~~	8	38.8		153.0	
			46 ~~45~~	23	40.6 / 39.7	+2.2	113.5	
			46 ~~45~~	38			154.1	

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1908phae.proj...594W

Jan 5 1909

Seeing very hurry observations difficult

	B + C. 1102			B. 394	
17h	5A	V9.V	17h	V9	0.0
17	V9	V9.6	18	0	0.0

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1908phae.proj...594M

Jan. 11, 1909. (Monday)

δ Orionis

5	27	-0.4
3	17	W. Obs Bouw Ref. Phot W
2	10	
9	50	9.5 m cap used

Index R+a A. I

306.3 — Southern + Brtr. Dis

319.9 13.6 v

127.2

139.9 12.7 v

26.3 v -4.69 v

306.8

319.7 12.9 v -4.62 v

126.6

148.1 13.5 v

26.4 v -4.62 v

Index L+B. B.

216.4

230.0 13.6 v

36.7

50.2 13.5 v

27.1 v -4.64 v

216.8

229.7 12.9 v -4.66 v

36.4

49.8 13.4 v

26.3 v -4.69 v

Mean -4.67

7 43 45

7 50 15

94 0. v

7 47 0. v

+ +11. v

12 47 11. v

δ 31A. v 327 v

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1909phae.proj...594W

Jan. 11, 1909

Same Again II

Index L+B B.

7 52 35

216.8
229.8 13.0 v
369
50.1 13.2 v
26.2 v −4.70 v

216.8
229.7 12.9 v −4.70 v
36.5
49.8 13.3 v
26.2 v −4.70 v

Index R+A A.

126.8
148.4 13.6 v
306.8
319.9 13.1 v
26.7 v −4.66 v

126.8
148.0 13.2 v −4.66 v
306.5
320.0 13.5 v
26.7 v −4.66 v

Mean −4.68 v

7 58 50
111 25. v
7 vv 42. v
+v +11. v
12 vv v3. v
231.8 v 32.8 v

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1908phae.proj..594

Jan. 16, 1909.

Same Again

Index R+A A. III

126.5
140.2 13.7 v

306.8
319.8 13.0 v / 26.7 v — 4.66 v

126.9 13.0 v — 4.68 v
139.9

306.7 13.3 v
320.0 26.3 v — 4.69 v

Index L+B B.

36.6 13.6 v
50.2

216.4
229.8 13.4 v / 27.0 v — 4.63 v

36.7 13.4 v — 4.64 v
50.1

216.7 13.4 v
230.1 26.8 v — 4.65 v

8 0 35

8 · 6 45

7 20. v
3 40. v
+v +11. v
13 3 v1. v
231. v443

Mean — 4.66 v
Gen. " — 4.67 v

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1906phae.proj...594w

Jan. 11, 1909

Double Star (New List) = Burnham's Cat. 4202

7 34 +65.4
4 14 W. Obs. Power Rec. Phot. W.
3 20
8 40

P.A. 5° Dist. 15" Mags. 7.1, 7.2.

Index R+B A.

177.8 — Southern + Slightly Brt. Pri

8 42 10

271.0 93.2 ✓
2.2
89.0 ℰ6.ℰ ✓
180.0 ✓ 0.00 ✓

183.0 ℰ7.6 ✓ −0.03 ✓
270.6
358.9
87.9 ℰ9.0 ✓
176.6 ✓ −0.06 ✓

Index L+a B.

89.8
181.7 91.9 ✓
270.8
359.8 ℰ9.0 ✓
180.9 ✓ +0.02 ✓
179.1 ✓

90.0
180.7 90.7 ✓ 0.00
270.3
359.1 ℰ6.ℰ ✓
179.5 ✓ −0.01 ✓

Mean −0.02 ✓

8 49 15
11 2✓. ✓
ℰ ℰ✓ ℰ2. ✓
+✓ +11. ✓
13 ℰ✓ ✓3. ✓

ℰ31ℰ.✓73✓+ Altitude rather high but much care exercised. The two components are of about same brightness but the

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1908phae.proj..594w

Jan. 11, 1909.

southern component was assumed to be slightly the brighter and was made to disappear between first and second readings. This southern component is also slightly brighter by measurements tonight.

Fourth Type Star +24° 1686

7	36	+24.8
4	46	
2	50	
9	10	

Color 5 with ordinary eyepiece.

W. Obs. Bowl Rec. Phot. T.

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1908phae.proj...594w

Jan. 11, 1909.

Index R+a A.

2220 ← Fourth Type Disc

9 26 10

290.1 60.1 v
466
100.8 v 7 K.2 v / 122.3 v −1.1 K v

230.7 v 0.9 v −1.16 v
281.6
39.6 69. v v
109.1 / 120.K v −1.12 v

Index L+B B.

126.0 77.7 v
203.7
316.2 v 7.2 v
14.0 / 13 v.v v −0.29 v

138.2 v K.6 v −0.26 v
192.8
304.6
26.0 £1.4 v / 136.0 v −0.26 v

9 33 20
v 9 30. v
9 29 K v. v
+v +11. v
14 29 v6. v
£31A.60K1 v

Mean −1.01 v

S.T. 5 24
H.A. −2 4
Dec +23.9
P.A. 166.2 Vernier B
Sprocket −8.5 B, −7.5 C.

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1908phae.proj..594W

Jan. 11, 1909.

Double Star (New List) = Burnham's Cat. 5356

10 8 +71.7
5 28 W. Obs. Rowe Ree. Phot W.
4 40
7 20

P.A. 167° Dist. 17" Mags. 6.3, 7.0

Index R+A A.

10.6 ← North. Prec + Brh Dec

9 57 10

80.0 69.4 ✓
188.8
260.0 71.2 ✓ 0.76 ✓
1K0.6 ✓

8.5
78.7 70.2 ✓ 0.76 ✓
190.4
260.5 70.1 ✓ 0.77 ✓
1K0.3 ✓

Index L+B B.

279.0
351.5 72.5 ✓
98.0
169.7 71.7 ✓ 0.69 ✓
1K1.2 ✓

279.6 69.1 ✓ 0.62 ✓
348.7
100.0 76.2 ✓
176.8 76.9 ✓ 0.66 ✓
1K4.9 ✓

L. P. S. Mean 0.72 ✓

10 3 55
12 1 5. ✓
10 0 32. ✓
+5 +11. ✓
15 0 43. ✓

231A. 6255 - ✓ W's watch used for times. Watch 11 secs slow

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1908phae.proj...594W

S Orionis Jan. 15, 1909 (Friday)

5	27	-0.4
3	7	W Obs. Rouv. Rec. Phot. W
2	20	9.5 m cafs. used
9	40	

7 24 20

Index R+a A. 1

307.4	13.3 v	
320.7		
128.7	12.1 v	
140.8	25.4 v	-4.77 v

307.9	12.5 v	-4.72 v
320.4		
127.7	14.0 v	
141.7	26.5 v	-4.67 v

Index L+B B.

217.8	13.0 v	
230.8		
38.0	13.0 v	
51.0	26.0 v	-4.72 v

218.4	12.6 v	-4.72 v
231.0		
37.7	13.5 v	
51.2	26.1 v	-4.71 v

Mean -4.72 v

7 32 25

	56	44 v
7	28	22 v
+v		+9 v
12	28	31. v

2322.5 192 v

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1908phae.proj..594W

Jan. 15, 1909.

Same Again II

Index S+B. B.

218.3
231.2 12.9ᵛ
38.5
51.1 12.6ᵛ
25.5ᵛ −4.76ᵛ

218.4
231.2 12.8ᵛ −4.74ᵛ
37.9
51.1 13.2ᵛ
26.0ᵛ −4.72ᵛ

Index R+a A.

127.8
141.3 13.5ᵛ
308.5
320.8 12.3ᵛ
25.8ᵛ −4.73ᵛ

128.5
140.8 12.3ᵛ −4.75ᵛ
307.9
321.0 13.1ᵛ
25.4ᵛ −4.77ᵛ
Mean −4.74ᵛ

7 34 40

7 41 0
7ᵛ 40.ᵛ
12 37 ᵛ0.ᵛ
+ᵛ +9.ᵛ
12 37 ᵛ9.ᵛ
322.ᵛ264ᵛ

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1908phae..proj...594W

Jan. 15, 1909.

Same Again. III

Index R+a A.

7 44 55

127.9
141.1 13.2ᵛ

308.0
320.8 12.8ᵛ
26.0ᵛ −4.72ᵛ

128.2 13.1ᵛ −4.71ᵛ
141.3

307.7 13.1ᵛ
320.8 26.2ᵛ −4.70ᵛ

Index L+B. B.

37.9
51.4 13.5ᵛ

218.5 12.4ᵛ
230.9 24.9ᵛ −4.73ᵛ

38.2 12.8ᵛ −4.72ᵛ
51.0

217.8 13.2ᵛ
231.0 26.0ᵛ −4.72ᵛ

Mean −4.72ᵛ
Gen. " −4.73ᵛ

7 53 10

92 5.ᵛ
7 49 2.ᵛ
+5 +9.ᵛ
12 49 11.ᵛ

Δ322.ᵛ341ᵛ

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1908phae.proj..594W

Jan. 15, 1909.

Suspected Var. Near U Cephei. = +

0 50 +81.1
4 25 W Obs. Rowe Rec. Phot T.
3 35 95 in cap w

Index R+a A.

211.6 Susp Var. Obs
296.6 2√.0
46.0
104.7 √8.7 / 143.7 −0.70

226.0
285.9 √9.9 −0.7
35.2
114.9 79.7 / 139.6 −0.7

Index L+B. B.

119.6 9√.6
214.2
311.4 6√.6 / 160.2 0.3

133.2
198.2 6√.0 −0.6
298.6
30.8 92.2 / 157.2 0.43

Mean −0.√7

8 46 45

8 56 25

103 10. √
8 √1 35. √
+√ +9. √
13 √1 44. √
8322.√776 √

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1908phae.proj...594W

Jan 15, 1909

Same Again II

Index L+B B.

118.6
210.8 92.2
312.7
14.8 62.1 / 15.43 −0.49″

132.0
197.5 6 V.V −0.46″
298.2
29.9 91.7 / 157.2 −0.43″

Index R+a A.

32.7
1188 A6.1
223.0
288.4 6V.6 / 151.V −0.VV″

44.0
105.1 61.1 −0.60″
214.4
299.2 &4.2 / 14V.9 −0.66″

Mean −0.V3″
Gen. " −0.VV″

8 59 50

9 8 0
7 V0. ″
9 3 VV. ″
+V +9. ″
14 4 4. ″
A322.VA62″

S.T. 5 12
H.A. +4 13
Dec. +81.9
P.A. 341.0 Vernier B.
Sprocket −2.5 B, −1.5 C

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1908phae.proj..594w

Jan. 15, 1909.

Double Star Nova Lost) = Burnham's Cat. No 2883 AB:

5 33 -2.7 (A B + D measured.)
6 3 W Obs. Brown Res Phot W
0 30 PA 85° Dist 13" Mags. 4.0, 7.1

Index Below B.

31.2 Prec + Brtn Dus
57.1 25.9 ✓
211.2
239.8 28.6 ✓ / √4.3 ✓ 3.0 A ✓

30.9
59.0 28.1 ✓ 3.0 A ✓
210.7
237.3 26.6 ✓ / √4.7 ✓ 3.07 ✓

Index Above A.

300.9
327.0 26.1 ✓
120.7
148.8 28.1 ✓ / √4.2 ✓ 3.09 ✓

299.1
328.7 29.6 ✓ 3.03 ✓
121.7
149.3 27.6 ✓ / √7.2 ✓ 2.97 ✓

mean 3.06 ✓

10 13 5

10 18 15

31 20. ✓
10 15 40. ✓
+√ +9. ✓
15 15 49. ✓
£322.6360 ✓

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Jan. 15, 1909

Double Star (New List) = Burnham's Cat. 2883, AB, E.
P.A. 61° dist 42", mags. 6.9, 6.6 (AB + E measured).
W. Obs. Rough Rec. Phot. W.

Index R+a A.

300.6 — South. Prec. + Bisb Obs
327.8 27.2 v
118.0
150.3 32.3 v / 59.5 v 2.00 v

298.3 32.7 v 2.07 v
331.0
120.3
148.6 28.3 v / 61.0 v 2.02 v

Index L+B B.

211.8 26.6 v
238.4
27.6 32.0 v / 58.6 v 2.91 v

208.8 31.1 v 2.90 v
239.9
30.8 28.4 v / 59.2 v 2.00 v

Mean 2.00 v

10 20 10

10 25 40

4v 50.
10 22 vv.
+v +9.
1v 23 4.

A322.6411 v

M measurement of two preceding pairs of doubles, seeing bluvy, but Obs. wanted for as good intervals of seeing as might be.
L. A. B.

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1908phae.proj..594W

Jan. 15, 1909.

W's watch used for times
Watch 9 secs. slow

L. P. P.

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1908phae.proj...594W

Jan. 18, 1909. (Monday)

ξ Orionis

5	27	-0.4
3	17	
2	10	W. Obs. Rowe Ree
9	50	Phot W.

Index
127.2
141.5

7 41 50

Abandoned for the present
for
U. Cephei

U. Cephei

0	50	+81.2
3	50	
3	0	

W. Obs. Rowe Ree.
Phot T
9.5 in cap. used.

For measts. see fol. pages.

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1908phae.proj..594w

Jan 18. 1909.

Index R+a d. I

200.0 ← Van Dis

8 25 20

312 2 112.2

27.8

123.2 9√.4 ✓

2076 ✓

1√24 ✓ +0.√3 ✓

208.6

8 27 35

303.4 9√.2 ✓

21.3 110.4 ✓ +0.√0 ✓

131.7 20√.2 ✓

1√4.2 ✓ +0.42 ✓

Index L+B B.

104.3

8 30 25

228.7 12√.4 ✓

295.7 96.1 ✓

31.8 220.√ ✓

139.√ ✓ +0.72 ✓

117.2

213.9 96.7 ✓ +0.72 ✓

287.0

43.9 116.9 ✓

213.6 ✓

16.4 ✓ +0.6√ ✓

Mean +0.61 ✓

8 32 35

11√ √√ ✓

2 2 √9. ✓

+√ +16. ✓

13 29 1√. ✓

2 32√. √619 ✓

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1908pmae.proj..594w

Jan. 18, 1909

Same Again II

Index L+B B.

104.0
2238 119.3 v
297.4 9 v.1 v
32.5 214.4 v
145.6 v +0.66 v

119.4
213.2 93.8 v +0.61 v
2861
41.3 11 v.2 v
209.0 v
1 v 1.0 v +0.v6 v

8 36 30

8 38 55

Index R+A A.

18.7 112.0 v
130.7
211.9 86.3 v
298.2 198.3 v
161.7 v +0.3v v

8 41 45

34.5 83.1 v
117.6 +0.32 v
197.9
310.8 112.9 v
196.0 v
164.0 v +0.30 v

8 48 25
160 3v. v
8 40 9. v
+v +16. v
13 40 2v. v
832 v. v 697 v

Mean +0.46 v

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1908phae.proj..594W

Jan 18, 1908

Same Again III

Index R+a. A.

18.9

8 46 50 130.1 111.2 ✓

212.8

295.9 83.1 ✓

194.3 ✓

16 ✓.7 ✓ +0.27 ✓

33.5

8 48 50 117.7 84.2 +0.24 ✓

199.7

316.7 111.0 ✓

19 ✓.2

16 4.4 +0.29 ✓

Index L+B B.

287.8

8. 51 50. 39.2 111.4 ✓

120.6

208.3 87.7 ✓

199.1 ✓

160.9 ✓ +0.36 ✓

297.4

8. 33 35 30.6 91.2 ✓ +0.39 ✓

201 ✓ ✓

108.2

218.9 110.7 ✓

201.9 ✓

4 ✓0 16. ✓ 1 ✓4.1 ✓ +0.42 ✓

+✓ +16. ✓

13 ✓0 32. ✓

Mean +0.34 ✓

4 32 ✓. ✓ 76 4 ✓

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1908phae.proj..594w

Jan. 18, 1909

Same Again

Index L+B B.

8 55 40

291.1
39.4 — 102.3 v
122.5
206.6 — 84.1 v
192.4 v
167.6 v — +0.2K v

8 58 0

306.6
26.8 — 80.2 v — +0.22 v
109.0
219.7 — 110.7 v
190.9 v
169.1 v — +0.20 v

Index R+a A.

9 1 50

203.8
304.2 — 100.4 v
38.4 — 76.4 v
~~21.1~~
114.8 — ~~101.0~~ v
176.8 v — +0.06 v

9 3 55

218.0
293.5 — 75.5 v — +0.08 v
25.9
125.2 — 99.3 v
174.8 v — +0.10 v

239 — 2 v. v
8 v 9 — v 1. v
+v — +16. v
14 0 — 7. v
8 32 v. v = 8 34 v

Mean +0.1 v. v

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1908phae.proj..594W

Jan. 18, 1909.

Same Again V

Index R+A A.

210.5			
301.7	91.2 ✓		
36.4			
112.3	75.9 ✓		
	167.1 ✓	−0.24 ✓	
221.0			
294.2	73.2 ✓	−0.22 ✓	
27.9			
124.8	96.9 ✓		
	170.1 ✓	−0.19 ✓	

Index L+B. B.

115.4			
214.9	99.5 ✓		
307.0			
21.9	74.9 ✓		
	174.4 ✓	−0.11 ✓	
128.1			
202.4	74.3 ✓	−0.12 ✓	
296.3			
35.2	98.9 ✓		
	173.2 ✓	−0.13 ✓	

Mean −0.17 ✓

9 7 10

9 9 0

9 12 30

9 15 10

43 ✓0. ✓

9 10 ✓8. ✓

+✓ +16. ✓

14 11 14. ✓

832✓. ✓911 ✓

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1908phae.proj..594w

Jan. 18, 1909.

Same Again. VI

Index L+B. B.

9 19 25

114.1
215.0 100.9 ✓
310.0
19.0 69.0 ✓
169.9 ✓ −0.19 ✓

9 21 55

131.5 70.1 ✓ −0.2 ✓
201.6
296.9 96.0 ✓
32.9 166.1 ✓ −0.26 ✓

Index R+A. A.

9 24 55

30.8 49.9 ✓
120.7
223.6 64.4 ✓
288.0 154.3 ✓ −0.49 ✓

9 26 50.

41.2 66.8 ✓ −0.48 ✓
108.0
210.3 102.7 ✓
299.0 155.5 ✓ −0.47 ✓

93 ✓. ✓
9 23 16. ✓
+✓ +16. ✓
14 23 32. ✓
A32✓. ✓997 ✓

Mean −0.3✓ ✓

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1908phae.proj..594W

Jan 18, 1908

Same Again VIII

Index R + a A.

33.9

9 32 50 113.3 79.4 v

219.7

290.9 71.2 v / 1 v 0.6 v −0.v6

40.7

9 34 35 109.8 69.1 v −0.v6

214.6

296.0 41.4 v / 1 v 0.v v −0.v7

Index L + B B.

300.9

9 37 20 29.5 −20.6 v

129.6

200.6 71.0 v / 1 v 9.6 v −0.39

312.6

9 39 30 18.8 66.2 v −0.4 v

120.8

207.9 87.1 v / 1 v 3.3 v −0.v1

24 1 v v

9 36 4. v

+v +16. v −0.v0

14 36 20. v

α 32 v. 60 α v + v

S T 5 50

H. A +4 54

Dec +82.0

P. A 196.5 Vernon B

Spacked −4.5 B, −3.5 C

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1908phae.proj..594w

Jan. 18, 1909.

Double Star (New List) = Burnham Cat No 2883. A B, E

5 ° 33 −2.7
6 18 W. Obs. Power Res. Phot W.
0 45 P A 61° Dist 42". Mags. 4.0, 6.7

Index Above

119.2 ← South, Pres. + Brtr. Dis.
10 16 20
150.0 30.0 ✓
299.2
328.5 29.3 ✓
60.7 ✓ 2.06 ✓

118.2
1508 32.6 ✓ 2.96 ✓
2988
3316 32.8 ✓
6 ✓.F ✓ 2.66 ✓

Index Below

29.2
58.9 29.7 ✓
209.6
239.3 29.7 ✓
✓9.F ✓ 2.08 ✓

29.1 30.3 ✓ 2.06 ✓
59.4
10 22 25
2088 30.2 ✓
239.0 60.✓ ✓ 2.04 ✓

Mean 2.01 ✓

3 8 F ✓. ✓
10 19 22. ✓
✓ +16. ✓
✓ 19 38. ✓
8 32 ✓. 63 8 6 ✓

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1908phae.proj..594W

Jan. 18, 1909.

Seeing extremely blurry most of the time throughout the evening. Air very cold, thermometer three (3°) degrees above zero.

W's watch used for times.
Watch 16. secs. slow.

L. P. P.

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1908phae.proj..594W

Jan. 20, 1909. (Wednesday)

δ Orionis.

5	27
3	37
1	50
10	10

-0.4

W. Obs. Roux Rec. Phot. IV.
9.5 in cap. used

Index R+a A.

307.2 Southern + Brit. Obs.
320.6 13.4 v
128.2
140.9 12.7 v
26.1 v -4.71 v

308.5 12.2 v -4.72 v
320.7
127.8 13.5 v
141.3 25.7 v -4.74 v

Index L+B B.

217.1 14.1 v
231.2
37.7 13.6 v
51.3 27.7 v -4.62 v

218.5 12.9 v -4.62
231.4
37.8 13.9 v
51.7 26.8 v -4.62 v
Mean -4.67 v

1 23 10

1 30 15

	13	25 v
7	26	42. v
+v		+19. v
12	27	1. v

A 327. v 100 v

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1908phae.proj..594W

Jan. 20, 1909

Same Again II

Index L+C B.

218.5		
231.2	12.7"	
37.7		
51.3	13.6"	
	26.3"	−4.69"

218.4		
231.2	12.8"	−4.71"
38.1		
51.2	13.1"	
	25.9"	−4.73"

Index R+a A.

127.7		
141.4	13.7"	
307.8		
320.5	12.7"	
	26.4"	−4.68"

128.0		
141.5	13.5"	−4.65"
307.5		
321.2	13.7"	
	27.2"	−4.62"

Mean −4.68"

7 32 45

7 38 45

7 1 30."

7 3" 4" "

+" +19."

12 36 4."

P 327."2"1"

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1908phae.proj...594W

Jan. 20, 1909

Same Again. II

Index R+a A.

7 42 0

127.6
141.3 13.7"
307.9
320.7 12.8"
26.5" -4.67"

128.4
141.2 12.8" -4.67"
307.6
321.3 13.7"
26.5" -4.67"

Index R+B. B.

38.0
51.3 13.3"
218.5
231.5 13.0"
26.3" -4.69"

38.0
51.2 13.2" -4.67"
217.6
231.2 13.6"
26.8" -4.67"

7 48 58
90 50."
7 45" 25."
+5" +19."
12 45" 44."

A327."-317." Seeing good.

Mean -4.67"
Gen. " -4.67"

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1908phae.proj..594w

Jan 20, 1909.

Double Star (New List) = Burnham's Cat. 2883, AB, + II,

5	33	-2.7	(AB and D.)
4	13	W. Obs. Rough Rec. Phot W.	
1	20	P.A. 84° Dist 13" Mags. 4.0, 7.2	
10	40		

Index Below: B. I

8 2 55

30.2 Rec. + Brth Dis

59.1 24.9 ✓

210.3

2383 24.0 ✓

√6.9 ✓ 2.92 ✓

30.1

58.5 24.4 ✓ 2.92 ✓

210.2

238.4 24.2 ✓

√6.6 ✓ 2.99 ✓

Index Above 4.

300.9

328.9 24.0 ✓

120.2

148.5 24.3 ✓

√6.3 ✓ 3.00 ✓

8 9 35

12 30. ✓

Δ 6 1 ✓

+ν +19. ✓

13 6 34. ✓

Δ327.

300.2

328.6 24.4 ✓ 3.00 ✓

120.2

148.2 24.0 ✓

√6.4 ✓ 3.00 ✓

mean 2.99 ✓

Clouds:

L. P. P.

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1908phae.proj...594W

Jan. 20, 1908

W's watch used for times
Watch 19 secs. slow.

L. P. P.

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1908phae.proj..594W

Jan. 22, 1909 (Friday)

0 Arions

5	27	−0.4
3	27	U Obs. Rough Rec. Phot 20
2	0	
10	0	9.5m cap used

Clouds
Index R+a.

8 40 Sky still thickly cloudy

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1908phee.proj...594W

Jan. 25, 1909. (Monday)

Σ Draws

5	27	−0.4
3	37	W. dbs Bouw Rec Phot W
1	50	
10	10	9.5 in cap. used

Index R+a A. I

129.6 ← Southern + Brtr. dis.

7 14 10

141.5 11.9 v

307.4

320.9 13.5 v / 25.4 v −4.77 v

127.6

140.4 12.8 v −4.73 v

307.5

321.0 13.5 v / 26.3 v −4.69 v

Index L+B. B.

37.8

50.9 13.1 v

218.0

231.1 13.1 v / 26.2 v −4.70 v

37.9

51.4 13.5 v −4.68 v

218.0

231.0 13.0 v / 26.5 v −4.67 v

mean −4.70 v

7 20 38

34 40. v

7 17 20 v

+v −2 3v.

12 14 4v v

α 332, v 103 v

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1908phae.proj..594W

Jan 25, 1909

Same Again. II

Index L+B. B.

37.9
51.3 13.4
2183
231.1 12.8 / 26.2 −4.70

37.8 13.4 −4.70
51.2
218.2
231.0 12.8 / 26.2 −4.70

Index R+a. A.

307.5 13.5
321.0
128.0
141.2 13.2 / 26.7 −4.66

308.0 13.3 −4.65
321.3
127.4
141.2 13.8 / 27.1 −4.64
Mean −4.65

7 23 0

7 · 29 0

0
2
7 26 0
+2 −2 3
12 23 23
332.3 163

1908phae.proj..594W

Jan. 25, 1909.

Same Again. III

Index R+a A.

308.1
321.2 13.1
1282
1488 12.6 / 25.7 -4.74

307.5 13.3 -4.72
320.8
127.8
140.8 13.0 / 26.3 -4.69

Index L+B. B.

217.8 13.4
231.2
37.8
50.9 13.1 / 26.5 -4.67

218.0 13.1 -4.62
231.1
37.9
51.2 13.3 / 26.4 -4.60

mean -4.70

7 31 35

7 39 5

70 40.

7 3 20.

+ -2 3 1.

12 32 4.

α 332, δ +22

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1908phae.proj..594W

Jan. 25, 1909.

Same Aq air. IV

Index	L & B	B.
218.2		
230.3	12.1	
38.0		
50.9	12.9 / 25.0	−4.80
218.3		
231.1	12.8	−4.76
37.9		
51.2	13.3 / 26.1	−4.71

Index	Rta.	A.
127.4		
141.2	13.8	
308.2		
320.9	12.7 / 26.5	−4.67
128.1		
141.2	13.1	−4.67
307.9		
321.3	13.4 / 26.5	−4.67

Mean − 4.72

Gen. " − 4.70

7 47 55

7 54 5

	102	0.
7	51	0.
+5	−2	3.
12	48	2.

A 332. − 336 Sewingbury.

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1908phae.proj..594W

Jan 25, 1909.

Double Star (New List) = Burnham's Cat. No 5120

9 24 +67.3
5 44 W. dbs Rowe Rec. Phot W.
3 40
8 20 P.A. 246° Dist 10.″ Imag. 7.3, 7.4

Index Left.

1.0 Smooth fol. & brtr. dia.

9. 25. 30

88.4 87.4 ✓
Clouds
181.0 88.3 ✓
269.3 175.7 ✓ 0.08 ✓

358.3 91.4 ✓ 0.07 ✓
89.7
182.4 88.3 ✓
267.7 176.7 ✓ 0.06 ✓

Index Right.

Clouds
91.1 87.9 ✓
179.0
268.6 91.0 ✓
359.6 174.9 ✓ 0.02 ✓

89.0 90.2 ✓ 0.02 ✓
179.2
270.2 89.1 ✓
359.3 179.3 ✓ 0.01 ✓

Mean 0.04 ✓

9 44 25
69 ✓✓. ✓
9 34 ✓8. ✓
+✓ -2 3✓. ✓
14 32 23. ✓
8332, 60✓8 ✓

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1908phae.proj..594W

Jan. 25, 1909.

W's watch used for times
Watch 2 mins. 35 secs fast

L. P. P.

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1908phae.proj..594W

Jan. 26, 1909. (Tuesday)
5 Orionis.

5	27	-0.4
3	52	W. Obs. Bowa Rec. Phot W.
1	3.5	9.5 m. cap used.
10	25	

Index R+a A. I.

7 22 40

127.6	13.6	
141.2		
307.6	13.2	
320.8	26.8	-4.65

127.7	13.2	-4.66
140.9		
308.0	13.3	
321.3	26.5	-4.67

Index L+B B.

38.0	13.2	
51.2		
218.1	12.8	
230.9	26.0	-4.72

7 30 45

38.1	13.0	-4.72
51.1		
218.2	13.0	
231.2	26.0	-4.72

Mean -4.69

√3 2√
7 26 42.
+√ -2 37.
12 24 √.
£333, √168

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1908phae.proj..594w

Jan. 26, 1908

Same again. II

Index L+B. B.

38.1
50.9 12.8 v

218.1
231.0 12.9 v / 25.7 v −4.74 v

38.0
51.2 13.2 v −4.70 v

217.9
231.2 13.3 v / 26.5 v −4.67 v

Index R+a A.

307.9
321.1 13.2 v

128.0
141.1 13.1 v / 26.3 v −4.69 v

308.1
320.8 12.7 v −4.72 v

128.0
141.0 13.0 v / 25.7 v −4.74 v

Mean −4.71 v
Gen. " −4.70 v

7 34 0

7 · 41 10

7 v 10. v
7 3 7 3 v. v
+v −2 37. v
12 34 v 8 v
8333. v 243 v

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1909phae.proj...594W

Jan 26, 1909.

Double Star (New List) = Burnham's Cat. 2883 E + D. (E + S)

5	33.	-2.7	
4	23	W. Obs Rowe Res.	Phot W.
1	10		
10	50	P.A. 231°	Dist. 30"

Index R + a

3597		E Dis.
86.6	Δ6.9 ✓	
181.8		
264.7	Δ7.9 ✓ / 169.8 ✓	0.19 ✓
1.6	Δ7.4 ✓	0.20 ✓
87.0		
181.6		
265.5	Δ3.9 ✓ / 169.3 ✓	0.20 ✓

8 11 55

Index L + B

267.6		
356.6	Δ9.0 ✓	
92.4		
175.5	Δ3.1 ✓ / 172.1 ✓	0.15 ✓
274.6		
354.3	79.7 ✓	0.18 ✓
89.4		
179.3	Δ9.9 ✓ / 169.6 ✓	0.20 ✓

Mean 0.19 ✓

8 28 40

	40	37. ✓
Δ	20	18. ✓
+✓	-2	37. ✓
	13 17	41. ✓

Δ 333. ✓✓ 40 ✓ ∴ By means, E is the brtr.

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1908phae.proj..594W

Jan. 26, 1909

Double Star [New list] = Burnham's Cat. 4972

9	6	+53.2
5	46	W. dec. Powr. Rec. Phot W.
3	2 8	
8	40	P.A. Dist.

Index R+B

1818	← South. Prec. + Brh. Dec.	
9 18 25	266.8	Δ7.0 ✓
	3586	
	86.4	Δ7.0 ✓ / 172.0 ✓ — 0.14 ✓
	1803	Δ7.4 ✓ — 0.14 ✓
	267.7	
	1.8	
	87.0	Δ7.2 ✓ / 172.6 ✓ — 0.14 ✓

Index t+a

	91.4	Δ6.0 ✓
	177.4	
	269.2	Δ6.6 ✓
	357.8	Δ6.6 ✓ / 174.6 ✓ — 0.10 ✓
	91.0	Δ7.6 ✓ — 0.14 ✓
	176.6	
	269.7	Δ6.6 ✓
	3563	172.2 ✓ — 0.15 ✓

Mean 0.14 ✓

9 26 5

Δ 44 30. ✓

9 22 17. ✓

+δ −2 37. ✓

14 19 3Δ ✓

Δ 333. δ 69 ✓

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1908phae.proj..594W

Jan. 26, 1909.

The P.A. of prec. double is given in Burnham's Cat. (if correctly copied therefrom in double star book) as 48°.4. The altitude of the star is somewhat high and Obs. twisted somewhat with respect to meridian, but it would seem as if the P.A were more than this. — perhaps 65°. There is, however, no other such double as is indicated by Burnham's Cat, in this region and it is practically certain that this is the double wanted. The Obs would estimate the Mags. as 7.4, 7.5 and the Dist as 20". which confirms the fact that this is the double wanted.

Square bar micrometer put on. By first letting one component of double run on bar and then turning position circle so that both components lie on bar, the P.A. of this pair come out 67°. It is possible that Burnham's P.A. of 48°.4 is a mis print for 68°

L. P. A.

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1908phae.proj..594W

Jan. 26, 1909

B+C 1182			Ballou 103		
9	49	52.5	9	50	0.0
9	50	52.2	9	51	0.0

Dis. Sup. I. Phot. W. 26 Obs. Rowe Rec.
Compared with next. Prec. Sat. (Fairly near Sat I)
on same preceding side = Sat. II.

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1908phae.proj...594w

Jan. 26, 1909.

	10	5	45		85.0	
15 6 15.		6	6	96.2	181.2	1
+10.		"	29	9 5.1	86.5	
15 6 25		"	41	9 5.6 −0.2	181.6	
		7	17		86.0	
15 7 41.		"	33	97.2	183.2	2
+11		"	49	9 4.5 11.7	87.5	
15 7 52.		8	5	9 5.2 −0.2	182.0	
		9	12		84.7	
15 7 35.		"	25	9 2.2	183.5	3
+11.		"	45	9 5.7 14.5	86.8	
15 7 46		"	58	97.2 −0.3	182.5	
		10	22		86.5	
15 10 42.		"	37	9 5.5	182.0	
+11.		"	48	9 2.2 13.7	85.3	4
15 10 53		11	3	9 6.2 −0.3	183.5	
		"	27		87.0	
15 11 52.		"	44	9 5.2	182.8	
+15.		"	58	9 5.3 9 5.6 −0.2	86.5	5
15 12 3.		12	19		181.8	
		"	37	9 5.0	87.0	
15 13 1		"	56	9 5.7	182.0	
+12.		13	9	9 5.4 −0.2	86.8	6
15 13 13		"	23		182.5	
		"	54	9 4.0	87.8	
15 14 14.		14	8	9 4.4	181.8	
+12.		"	20	9 4.2 −0.2	87.5	7
15 14 26		"	35		181.9	

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1908phae.proj..594W

Jan. 26. 1909

	10	15	9			85.0	
15 15 37.		"	32	100.0		185.0	
+12		"	48	96.9		86.1	8
15 15 49		16	0	96.4	−0.3	183.0	
		"	17			85.0	
15 16 46.		"	36	98.2		183.2	
+12.		"	58	98.0		86.1	9
15 16 58		17	14	98.1	−0.3	184.1	
		"	29			85.4	
15 18 10.		18	13	97.1		182.5	
+13		"	37	94.1		87.7	10
15 18 31.		"	51	95.6	−0.2	181.8	
		19	24			85.0	
15 19 54.		"	42	97.0		182.0	
+13.		20	7	96.7	−0.3	88.2	11
15 20 7.		"	21	96.4		184.2	
		"	41			87.1	
15 21 14.		"	59	94.2		181.3	
+13.		21	27	96.0		86.1	12
15 21 27		"	48	96.1	−0.2	184.1	
		22	5			88.0	
15 22 26.		"	19	95.3		183.3	
+13		"	35	94.7		87.7	13
15 22 39.		"	47	95.0	−0.2	182.4	
		23	8	94.6		87.2	
15 23 24.		"	20	90.4		181.8	
+13.		"	38	95.0		92.0	14
15 23 41.		"	48	92.5	−0.1	182.4	

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1908phae.proj..594W

Jan. 26, 1909

15	24	18.″	10	24	4	90.0″	0.0″	90.0
15	24	32″		"	18	89.7″	0.0″	180.0
15	24	45″		"	31	88.8″	0.0″	91.3
15	25	6″		"	52	87.6″	+0.1″	180.1
15	25	27″		25	13	83.3″	+0.3″	92.5
15	25	43″		"	29	77.0″	+0.5″	175.8
15	25	57″		"	43	73.4″	+0.6″	98.8
15	26	14″		26	0	66.3″	+0.9″	172.2
15	26	34″		"	20	59.3″	+1.2″	105.9
15	26	48″		"	34	52.4″	+1.5″	165.2
15	27	2″		"	48	44.2″	+2.0″	112.8
15	27	16″		27	2			157.0
15	27	40″		"	26			Not seen later
					Limit of Visibility			1′
			10	27	38.	41.3″		112.8
15	28	20″		28	21	42.9″		154.1
		+14″		"	33	42.2″		113.2
15	28	34.′		"	48	42.1″	+2.1″	156.1

Seeing blurry, observations rather difficult. The blurry character of the seeing became most objectionable as Sat. grew faint and approached the planet so that at those times the observations became pretty difficult and settings had to be made very slowly as images at equalization would at times go out of sight. Last setting a little uncertain, wind high, thermometer falling.

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1908phae.proj..594W

Jan. 26. 1909.

W's watch used for times.
Watch 2 min. 37 seco. fast.

B+C. 1182.			Ballon 103.		
10	41	43.4	10	42	0.0
10	42	43.5	10	43	0.0

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1908phae.proj..594W

Jan. 26. 1909.

B. + C. 1182. Ballon 103.

13 16 46.0 13 17 00
17 47.2 18 00

Dis. Jasp. II Phot R Hv. Obs Bowie Rec.
Comp. with Sats on fol. side = ~~Sat III~~.

13

~~41 12~~ ~~2315~~
~~25~~

42	17			23.5
	30	47.5		102.0
	40	57.6		23.5
	54	42.0	+0.5	101.1
43	7	79.0		22.0
	20	79.9		101.0
	31	79.4	+0.4	21.9
	40			101.8
44	20	47.7		21.3
"	31			107.0
"	44	40.2 / 6.5	+0.3	22.2
	58	43.2		103.0
45	14			20.1
"	32	42.2		98.9
"	56	72.9		20.2
	~~46~~	78.4	+0.4	98.1
46	12			21.6
"	27	77.2		99.4
"	39	27.3 / 13.1		22.0
	54	76.6	+0.5	

18 42 3V. +1V. 18 42 V0

18 43 24. +1V. 18 43 39.

18 44 30. +1V. 18 44 V3.

18 4V 44. +1V. 18 4V V9.

18 46 48. +1V. 18 47 3.

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1908phae.proj..594w

Jan. 26, 1909.

13	47	12			97.3
	"	36			19.4
1h 47 v9.		49	42.1		101.5
+15.	48	2	29.2		19.0
1h 48 1K.	"	28	1.3 +0.6	+0.4	98.2
	"	51			21.0
1h 49 10.	49	1	77.1		95.1
+15.	"	16	75.5		22.5
1h 49 25.		30	12.6 76.3	+0.5	98.0
	"	44			19.8
1h 50 7.	50	2	74.4		98.2
+15.	"	14	74.6	+0.4	21.5
1h 50 22.	"	29			100.3
	"	44			21.8
1h 51 2.	"	56	77.3		99.1
+15.	51	9	77.6		20.6
1h 51 17.	"	21	77.4	+0.5	98.2
	"	43			22.1
1h 52 0.	"	54	76.3		98.4
+15.	52	7	77.0		21.9
1h 52 15.	"	20	76.6	+0.5	98.9
	"	31			20.8.
1h 52 51.	"	43	77.7		95.5
+15.	"	58	76.0		21.9
1h 53 6.	53	12	76.8	+0.5	97.9
		28	75.0		21.2
1h 53 50.		41	74.6		96.2
+15.			74.8	+0.6	
1h 54 5.					

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		13	53	59			22.1	
			54	12			96.7	
			"	37			22.1	
6	12	54	59	"	53	72.9	95.0	13
			+10	55	4	75.0	21.0	
	12	55	14	"	21	74.0 +0.6	96.5	
				"	42		23.7	
7	12	56	4	"	56	71.1	94.8	14
			+15	56	13	71.3 +0.7	24.0	
	12	56	19	"	24		95.5	
				"	43		21.8	
8	12	57	2	"	56	75.3	97.1	15
			+15	57	8	72.7 2.0	22.5	
	12	57	17	"	20	74.0 +0.6	95.2	
	12	57	45	"	30	69.3 +0.8	24.4	
9	12	57	57	"	42	69.7 +0.8	93.7	
	12	58	4	"	52	69.0 +0.8	24.0	
	12	58	19	56	4	66.9 +0.9	92.0	
	12	58	32		17	64.1 +1.0	26.1	
10	12	58	42		27	60.3 +1.2	90.2	
	12	58	52		37	60.1 +1.2	29.9	
	12	59	3		45	59.7 +1.2	90.0	
	12	59	13		55	53.8 +1.5	30.3	
11	12	59	31	59	16	45.9 +1.9	84.1	
	12	59	42		27	42.9 +2.0	38.2	
	12	59	57		42	39.1 +2.2	81.1	
12	13	0	10		55	37.1 +2.4	42.0	
	13	0	22	14	0	7 34.0 +2.6	79.1	

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	19	0	32.v	14	0	17	27.1v +3.1v	45.1
14	19	0	43 v			28		72.2
	19	0	v2		0	37		Not seen later
14						Limit of Vis.		
				14	0	48		45.4
14	14	1	9. v	14	1	4	25.9 v	71.3
			+15.		4	18	26.2v / 12.1v	45.5
14	14	1	24.v		"	26	26.0 v +3.2v	72.0

Seeing blurry and images somewhat elongated. Observations somewhat difficult.

B. + C. 1142.

14 12 44.4
14 13 44.5

Ballou 103.

14 13 0.0
14 14 0.0

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