

KG
11365
402

16/5
12

KG 11365.402

156 11365.400

Record
of
C. S. Peirce's
Photometric Observations

Duplicate
Vol. X 13

12

KG 11365.402



1873 June 8th Sunday
 Moderate S.E. wind. Moonlight
 Groups XXV/// & XXX

15 Canum Venaticorum

+19.3	2.73	~~2.45~~
+164.0	3.18	~~2.45~~
-162.9	3.02	~~2.41~~
	2.98	2.67

* 17 Canum Venaticorum

+19.0	2.77	~~2.48~~
+162.6	2.98	~~2.67~~
-160.7	2.73	~~2.45~~
	2.83	2.53

(2)

11 H Canna Venaticorum

+36.1	1.30	~~1.17~~
+146.1	1.44	~~1.29~~
-142.5	<u>1.22</u>	~~1.23~~
	1.32	

19 Canna Venaticorum

+23.1	2.31	~~2.07~~
+155.7	2.19	~~1.87~~
-159.1	<u>2.54</u>	~~2.28~~
	2.35	~~2.08~~

20 Canna Venaticorum

+35.4	1.35	~~1.21~~
+142.8	1.24	~~1.11~~
-140.6	<u>1.12</u>	~~1.01~~
	1.24	~~1.11~~

23 Canum Venaticorum

+ 23.6	2.32	~~2.08~~
+ 156.6	2.28	~~2.05~~
- 155.3	<u>2.15</u>	~~1.97~~
	2.25	~~2.03~~

150B C. Venaticorum

+ 14.6	3.40	~~3.05~~
+ 161.7	2.86	~~2.56~~
- 162.6	<u>2.98</u>	~~2.47~~
	3.08	~~2.78~~

* 170 Canum Venaticorum

+ 15.8	3.21	~~2.48~~
+ 163.5	3.10	~~2.29~~
- 163.8	<u>3.15</u>	~~2.83~~
	3.15	~~2.83~~

21 H Canum Venaticorum

+19.8	2.67	~~2.40~~
+159.3	2.56	~~2.30~~
-160.2	<u>2.67</u>	~~2.40~~
	2, 63	~~2.37~~

Following 21 H

+24.0	2.22	~~2.99~~
+155.4	2.16	~~1.84~~
-154.9	<u>2.12</u>	~~1.80~~
	2.17	~~1.94~~

20 H Canum Venaticorum

+19.4	2.72	~~2.44~~
+159.3	2.56	~~2.30~~
-160.6	<u>2.72</u>	~~2.44~~
	2.67	~~2.39~~

21

Companion of 20H

+7.9	4.89	~~4.89~~
+169.8	4.27	~~3.83~~
-170.9	<u>4.55</u>	~~4.08~~
	4.57	~~4.11~~

174B Canum Venaticorum

+ 18.0	2.90	~~2.68~~
+159.1	2.54	~~2.68~~
-162.7	<u>2.99</u>	~~2.68~~
	2.81	~~2.52~~

210B Canum Venaticorum

+ 12.9	3.70	~~3.32~~
+164.4	3.24	~~2.91~~
-164.4	<u>3.24</u>	~~2.91~~
	3.39	~~3.05~~

[Faint, illegible handwriting]

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[Faint, illegible handwriting]

Groups XXVIII & XXX.

* 17 Canum Venaticorum is
2/10 of a mag. brighter than 15

+ Clouds in the neighborhood

210 B is the southernmost
of three.

Images of stars are bad
to night.

1873 June 13th Friday
Clear, moonless night. Rather strong W. wind.
Groups XXX & XXXI

150 B

+13.0	3.68.	~~3.30~~
+166.7	3.62	~~3.65~~
-167.9	3.85	~~3.46~~
-14.8	<u>3.37</u>	~~3.12~~
	3.63	~~3.26~~

170 B

+13.4	3.61	~~3.23~~
+167.5	3.77	~~3.39~~
-166.5	3.59	~~3.22~~
-13.6	<u>3.57</u>	~~3.28~~
	3.64	

20 H

+17.4	2.98	~~2.47~~
+162.7	2.99	~~2.48~~
-162.5	2.96	~~2.66~~
-16.4	<u>3.12</u>	~~2.80~~
	3.01	~~2.70~~

174 B

+16.9	3.05	~~2.73~~
+163.4	3.09	~~2.77~~
-164.5	3.25	~~2.92~~
-15.3	<u>3.29</u>	~~2.95~~
	3.17	~~2.84~~

210 B

+15.8	3.21	~~2.88~~
+165.2	3.37	~~3.02~~
-166.1	3.52	~~3.16~~
-14.1	3.48	~~3.13~~
	<u>3.34</u>	~~2.05~~

21 H preceding

+19.7	2.68	~~2.41~~
+162.7	2.99	~~2.68~~
-162.0	2.90	~~2.60~~
-18.4	2.84	~~2.55~~
	<u>2.85</u>	~~2.56~~

21 H Following

+18.9	2.78	~~2.49~~
+159.5	2.39	~~2.12~~
-158.0	2.42	~~2.17~~
-19.6	2.69	~~2.42~~
	<u>2.56</u>	~~2.30~~

γ Bootae

Cap 2

+29.9	1.72	~~1.54~~
+146.5	1.47	~~1.32~~
-150.2	1.72	~~1.55~~
-27.0	<u>1.95</u>	~~1.78~~
	1.71	~~1.54~~

149 B Bootae

+15.8	3.21	~~2.88~~
+161.7	2.86	~~2.56~~
-165.0	3.33	~~2.99~~
-17.9	<u>2.91</u>	~~2.61~~
	3.08	~~2.76~~

* F 219

+13.5	3.59	~~3.22~~
+164.4	3.24	~~2.91~~
-166.1	3.52	~~3.16~~
-14.7	<u>3.38</u>	~~3.44~~
	3.43	~~3.08~~

114 B

+13.8	3.53	~~3.17~~
+166.4	3.57	~~3.20~~
-166.8	3.64	~~3.27~~
-15.5	<u>3.25</u>	~~2.92~~
	3.50	~~3.14~~

* F 219 is the following
one of two.

$$\begin{array}{r} 1.48 \\ 2.19 \\ \hline .71 \end{array}$$

$$\begin{array}{r} 2.61 \\ 2.19 \\ \hline 4.80 \end{array}$$

1873 June 18th Wednesday
 Time = 8^h 50^m

Groups XXIII & XLI

γ Ursae Majoris

Cap 2

+32.9

1.51

~~2.19~~

+146.4

1.46

~~1.52~~

1.48

~~1.70~~

γ Ursae Majoris

Cap 2

+18.5

2.83

~~2.14~~

+157.8

2.40

~~2.15~~

2.61

~~2.34~~

.27

.03

8.4

9.4

65 Ursae Majoris

+11.2	4.04	~~3.63~~
+168.7	<u>4.02</u>	~~3.61~~
	4.03	~~3.62~~

3 Canum Venaticorum

+18.9	2.78	~~2.49~~
+160.4	<u>2.69</u>	~~2.42~~
	2.73	~~2.45~~

Z Herculis

+8.4	4.74	~~4.26~~
+170.6	<u>4.47</u>	~~4.21~~
	4.60	~~4.28~~

1873phae.proj..403P

1873phae.proj..403P

1873phae.proj..403P

1873phae.proj..403P

1873phae.proj..403P

1873phae.proj..403P

F 326 Preceding

$$+11.8$$

$$+167.5$$

$$3.91$$

$$\underline{3.77}$$

$$3.84$$

$$\cancel{3.51}$$

$$\cancel{3.39}$$

$$\cancel{3.45}$$

F 326 Following

$$+11.0$$

$$+169.3$$

$$4.09$$

$$\underline{4.05}$$

$$4.12$$

$$\cancel{3.67}$$

$$\cancel{3.03}$$

$$\cancel{3.70}$$

360 B

$$+12.7$$

$$+167.7$$

$$3.74$$

$$\underline{3.81}$$

$$3.77$$

$$\cancel{3.35}$$

$$\cancel{3.42}$$

$$\cancel{3.38}$$

Northernmost of 3

+ 8.0	4.86	~~4.37~~
+ 169.1	<u>4.11</u>	~~3.19~~
	4.46	~~4.13~~

Middle one of 3

+ 12.0	3.87	~~3.48~~
+ 165.8	<u>3.47</u>	~~3.14~~
	3.57	~~3.46~~

Southernmost of 3

+ 10.5	4.20	~~3.77~~
+ 167.7	<u>4.81</u>	~~3.42~~
	4.00	~~3.57~~

North American

1873
1874
1875
1876
1877
1878
1879
1880
1881
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1884
1885
1886
1887
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1892
1893
1894
1895
1896
1897
1898
1899
1900

North American

1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900

North American

1873
1874
1875
1876
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1883
1884
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1886
1887
1888
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1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900

386 B

$$\begin{array}{r} + 11.7 \\ + 164.8 \end{array}$$

$$\begin{array}{r} 3.94 \\ 3.30 \\ \hline 3.62 \end{array}$$

$$\begin{array}{r} 3.13 \\ 2.86 \\ \hline 3.24 \end{array}$$

P XV 11

$$\begin{array}{r} + 18.5 \\ + 160.8 \end{array}$$

$$\begin{array}{r} 2.83 \\ 2.74 \\ \hline 2.78 \end{array}$$

$$\begin{array}{r} 2.54 \\ 2.16 \\ \hline 2.50 \end{array}$$

65 is double

40.8

08.8

28.8

2.11

2.11

11.11

28.8

15.8

25.8

2.11

2.11

11.11.11

1873 June 20th Friday
 Pretty hard N. wind. Time 8h 35^m.
 Groups XXXVIII & XL

o Herculis

color 276

+44.0	0.90	~~0.81~~
+139.8	1.08	~~0.97~~
-132.6	0.76	~~0.88~~
-47.9	0.74	~~0.66~~
	<u>0.87</u>	~~0.75~~

γ Herculis

color 314

+31.7	1.59	~~1.41~~
+148.6	1.61	~~1.44~~
-147.3	1.52	~~1.36~~
-31.9	1.57	~~1.41~~
	<u>1.57</u>	~~1.40~~

* η Herculis

cap 1
color 289

+ 51.3	0.61	~~0.55~~
+ 121.3	0.39	~~0.35~~
- 127.0	0.55	~~0.50~~
- 58.2	<u>0.65</u>	~~0.58~~
	0.55	~~0.49~~

Same Star with cap 2

cap 2

+ 25.8	2.05	~~1.84~~
+ 149.4	1.67	~~1.49~~
- 152.0	1.86	~~1.67~~
- 25.5	<u>2.08</u>	~~1.87~~
	1.91	~~1.72~~

228 B

color 293

+26.5	1.99	~~1.74~~
+154.1	2.04	~~1.83~~
-150.1	1.72	~~1.74~~
-29.1	<u>1.78</u>	~~1.60~~
	1.88	~~1.69~~

Groovinbridge

+15.0	3.33	~~2.99~~
+164.5	3.25	~~3.47~~
-167.0	3.68	~~3.80~~
-14.2	<u>3.47</u>	~~3.11~~
	3.43	~~3.12~~

271 B

$$\begin{array}{r}
 +21.8 \\
 +157.6 \\
 -158.8 \\
 -20.1 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 2.44 \\
 2.38 \\
 2.51 \\
 \underline{2.63} \\
 2.49
 \end{array}$$

$$\begin{array}{r}
 \cancel{2.18} \\
 \cancel{2.13} \\
 \cancel{2.25} \\
 \cancel{2.36} \\
 \hline
 2.23
 \end{array}$$

297 B

color 315

$$\begin{array}{r}
 +20.2 \\
 +158.3 \\
 -160.3 \\
 -19.3 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 2.62 \\
 2.45 \\
 2.68 \\
 \underline{2.73} \\
 2.62
 \end{array}$$

$$\begin{array}{r}
 \cancel{2.34} \\
 \cancel{2.20} \\
 \cancel{2.41} \\
 \cancel{2.45} \\
 \hline
 2.25
 \end{array}$$

+
F

Color 296

+29.9	1.72	~~1.574~~
+154.0	2.03	~~1.82~~
-153.9	2.03	~~1.82~~
-26.0	<u>2.03</u>	~~1.82~~
	1.95	1.80

Middle one of 3

+22.4	2.38	~~2.13~~
+162.6	2.98	~~2.67~~
-162.6	2.98	~~2.67~~
-16.8	<u>3.06</u>	~~2.75~~
	2.85	2.55

(21)
Preceding one of 3

+14.1	3.48	~~3.13~~
+165.9	3.48	~~3.13~~
-166.2	3.53	~~3.17~~
-12.5	<u>3.77</u>	~~3.34~~
	3.56	~~3.20~~

337B

+14.9	3.35	~~3.01~~
+164.5	3.25	~~2.92~~
-165.7	3.45	~~3.10~~
-14.6	<u>3.40</u>	~~3.25~~
	3.36	~~3.02~~

336B

+13.8

3.53

~~3.10~~

+163.5

3.10

~~3.22~~

-167.6

3.79

~~3.41~~

-15.0

3.33~~2.94~~

3.44

~~3.20~~

0

0

Ceter 303

+56.3

0.45

~~0.41~~

+119.8

0.35

~~0.31~~

-110.2

0.16

~~0.14~~

-84.3

0.01~~0.01~~

0.24

~~0.22~~

~~11/1~~
~~11/2~~
~~11/3~~
~~11/4~~
~~11/5~~

8.28
3.10
3.79
3.33
3.44

4.15
4.15
4.15
4.15
4.15

~~11/1~~
~~11/2~~
~~11/3~~
~~11/4~~
~~11/5~~

4.15
4.15
4.15
4.15
4.15

4.15
4.15
4.15
4.15
4.15

Same Star cap 1

Cap 1

+ 45.7	0.82	~~0.73~~
+ 136.3	0.91	~~0.82~~
- 135.7	0.89	~~0.79~~
- 43.5	<u>0.92</u>	~~0.83~~
	0.88	~~0.77~~

Same Star Cap 2

Cap 2

+ 23.1	2.31	~~2.07~~
+ 158.5	2.48	~~2.22~~
- 159.2	2.55	~~2.29~~
- 19.5	<u>2.71</u>	~~2.43~~
	2.51	~~2.25~~

Notes on Groups XXXVIII & XL

* η Herculis taken with cap 0
was - 97.7 0.02

+ F is the following one
of 3.

1873 June 21st Saturday
Light haze -
Groups XXVIII & XXIX

η Ursae Majoris

Cap 2
Color 271

+ 38.1	1.19	~~1.07~~
+ 138.8	1.03	~~0.82~~
- 136.2	0.91	~~0.81~~
- 45.0	0.85	~~0.77~~
	<u>1.00</u>	~~0.89~~

Lalande 25355-

+ 8.1	4.83	~~4.33~~
+170.6	4.47	~~4.11~~
-170.5	4.44	~~3.99~~
-11.6	<u>3.96</u>	~~3.55~~
	4.42	~~3.97~~

D 175-B

+7.4	5.05	~~4.54~~
+171.7	4.77	~~4.21~~
-172.3	4.96	~~4.25~~
-8.2	<u>4.80</u>	~~4.21~~
	4.90	~~4.40~~

160 B

+10.9	4.11	~~3.69~~
+168.6	4.00	~~3.57~~
-168.5	3.98	~~3.57~~
-11.8	<u>3.91</u>	~~3.51~~
	4.00	~~3.59~~

Preceding 160 B

+5.8	5.65	~~5.01~~
+174.2	5.65	~~5.08~~
-174.7	5.87	~~5.58~~
-8.5	<u>5.78</u>	~~5.19~~
	5.74	~~5.16~~

*
23

(27)

$$\begin{array}{r} + 12.7 \\ + 164.9 \\ - 166.0 \\ - 14.8 \end{array}$$

$$\begin{array}{r} 3.74 \\ 3.32 \\ 3.50 \\ 3.37 \\ \hline 3.48 \end{array}$$

$$\begin{array}{r} \cancel{3.35} \\ \cancel{2.18} \\ \cancel{3.14} \\ \cancel{3.12} \\ \hline 3.12 \end{array}$$

20

$$\begin{array}{r} + 21.7 \\ + 156.1 \\ - 158.8 \\ - 22.3 \end{array}$$

$$\begin{array}{r} 2.45 \\ 2.23 \\ 2.51 \\ 2.39 \\ \hline 2.39 \end{array}$$

$$\begin{array}{r} \cancel{2.20} \\ \cancel{2.20} \\ \cancel{2.25} \\ \cancel{2.14} \\ \hline 2.15 \end{array}$$

19

$$\begin{array}{r}
 +12.4 \\
 +167.0 \\
 +168.8 \\
 -14.6 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 3.79 \\
 3.68 \\
 4.04 \\
 \underline{3.40} \\
 3.73
 \end{array}$$

$$\begin{array}{r}
 \cancel{3.41} \\
 \cancel{3.48} \\
 \cancel{3.43} \\
 \cancel{3.55} \\
 \hline
 3.39
 \end{array}$$

+ 11 H

$$\begin{array}{r}
 +19.5 \\
 +158.7 \\
 -162.9 \\
 -20.7 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 2.71 \\
 2.50 \\
 3.02 \\
 \underline{2.56} \\
 2.70
 \end{array}$$

$$\begin{array}{r}
 \cancel{2.48} \\
 \cancel{2.24} \\
 \cancel{2.71} \\
 \cancel{2.35} \\
 \hline
 2.42
 \end{array}$$

17

+10.6	4.18	~~3.75~~
+167.7	3.81	~~3.42~~
-168.4	3.96	~~3.55~~
-12.3	<u>3.81</u>	~~3.42~~
	3.94	~~3.53~~

15

+12.4	3.79	~~3.41~~
+168.7	4.02	~~3.61~~
-170.4	4.42	~~3.76~~
-11.0	<u>4.09</u>	~~3.67~~
	4.08	~~3.66~~

Notes on Groups XXV III & XXIX

* 23 is $\frac{1}{10}$ brighter than 19

+ 21 is $\frac{2}{10}$ brighter than 11 H

17 is $\frac{1}{10}$ brighter than 15

1873 June 25th Wednesday

Groups XXIII & XXV

Cool clear. Moderate East wind.

Time 8^h 35^m 1

& Ursa Majoris

Cap 2

alt.

	+33.3	1.48	~~1.33~~
50	+140.5	1.12	~~1.00~~
48	-148.2	1.58	~~1.42~~
4	46 - 36.0	1.31	~~1.18~~
-3		<u>1.37</u>	~~1.23~~
		2.27	
		-0.85	

2
0

X Ursae Majoris

Cap 1

alt

	+ 34.4	1.41	~~1.26~~
49	+ 143.0	1.25	~~1.12~~
	- 141.0	1.14	~~1.02~~
	- 38.1	<u>1.19</u>	~~1.07~~
- 3		1.25	<u>1.12</u>
		0.78	
		<u>0.53</u>	

283 B

	+ 11.6	3.96	~~3.55~~
<u>Time</u>	+ 166.9	3.66	~~3.29~~
H. m.			
9. 25	- 167.3	3.74	~~3.35~~
alt. 45		<u>3.62</u>	~~3.25~~
alt. 42 1/2	- 13.3		<u>3.36</u>
- 4		3.74	

*65-

$$\begin{array}{r}
 + 8.8 \\
 + 169.8 \\
 - 170.0 \\
 - 9.3
 \end{array}$$

-3

$$\begin{array}{r}
 4.63 \\
 4.27 \\
 4.32 \\
 \underline{4.50} \\
 4.43
 \end{array}$$

$$\begin{array}{r}
 \cancel{4.10} \\
 \cancel{3.83} \\
 \cancel{4.11} \\
 \cancel{4.04} \\
 \cancel{4.03}
 \end{array}$$

3 Cannum Venaticorum

$$\begin{array}{r}
 + 17.4 \\
 + 160.5 \\
 - 161.8 \\
 - 20.9
 \end{array}$$

-2

$$\begin{array}{r}
 2.98 \\
 2.71 \\
 2.87 \\
 \underline{2.54} \\
 2.77
 \end{array}$$

$$\begin{array}{r}
 \cancel{2.67} \\
 \cancel{2.43} \\
 \cancel{2.58} \\
 \cancel{2.28} \\
 \cancel{2.49}
 \end{array}$$

56 B

$$\begin{array}{r}
 + 11.6 \\
 + 167.7 \\
 - 168.6 \\
 - 10.8
 \end{array}$$

$$\begin{array}{r}
 3.96 \\
 3.81 \\
 4.00 \\
 \underline{4.13} \\
 3.97
 \end{array}$$

$$\begin{array}{r}
 \cancel{3.55} \\
 \cancel{3.42} \\
 \cancel{3.59} \\
 \cancel{3.52}
 \end{array}$$

+ 60 B

+ 21.8

+ 158.1

- 159.8

- 21.9

2.44

2.43

2.62

2.43

2, 48

~~2.14~~

~~2.18~~

~~2.25~~

~~2.18~~

~~2.22~~

D 82 B

+ 16.0

+ 162.8

- 164.3

- 15.4

3.18

3.00

3.22

3.27

3.17

~~2.85~~

~~2.80~~

~~2.74~~

~~2.73~~

~~2.84~~

81 B

$$\begin{array}{r} + 14.0 \\ + 167.7 \\ - 167.2 \\ - 12.0 \\ \hline 3.50 \\ 3.81 \\ 3.72 \\ 3.87 \\ \hline 3.72 \end{array}$$

$$\begin{array}{r} 3.14 \\ 3.42 \\ 3.34 \\ 3.48 \\ \hline 3.34 \end{array}$$

77 B

$$\begin{array}{r} + 15.5 \\ + 163.4 \\ - 165.4 \\ - 15.0 \\ \hline 3.25 \\ 3.09 \\ 3.40 \\ 3.33 \\ \hline 3.27 \end{array}$$

$$\begin{array}{r} 2.82 \\ 2.77 \\ 3.05 \\ 2.78 \\ \hline 2.93 \end{array}$$

11 South

+10.7	4.15	~~3.73~~
+169.0	4.09	~~3.67~~
-170.2	4.35	~~3.82~~
-10.8	4.13	~~3.71~~
	<u>4.18</u>	~~3.76~~

11 North

+10.4	4.22	~~3.99~~
+168.6	4.00	~~3.69~~
-170.5	4.44	~~3.99~~
-10.3	4.25	~~3.81~~
	<u>4.23</u>	~~3.79~~

Notes -

Stars are not steady. Observer has a violent headache

~~Notes on Groups XXIII & XXV~~

* 65 is double; the preceding component measured.

+ 60B is very red

25

11 22 11

~~2.14~~	2.14	1.14
~~2.08~~	2.08	0.08
~~2.84~~	2.84	0.11
~~8.14~~	8.14	2.01
~~15.14~~	15.14	

11 22 11

~~2.14~~	2.14	1.14
~~2.08~~	2.08	0.08
~~2.84~~	2.84	0.11
~~8.14~~	8.14	2.01
~~15.14~~	15.14	

Groups XXIX & XXX

Fy Ursa Majoris

Cap 2

+44.0	0.90	~~0.81~~
+138.4	1.01	~~0.91~~
-129.8	0.65	~~0.58~~
-48.1	0.73	~~0.65~~
	<u>0.82</u>	~~0.74~~

Lalande 25,355

+9.3	4.50	~~4.04~~
+170.7	4.50	~~4.04~~
-170.7	4.50	~~4.04~~
-8.8	4.63	~~4.16~~
	<u>4.53</u>	~~4.07~~

175B

+ 8.1
+ 171.9
- 172.1
- 9.8

4.83
4.83
4.89
4.37

4.73

~~4.34~~
~~4.34~~
~~4.09~~
~~3.92~~
~~4.25~~

160B

+ 12.2
+ 167.4
- 168.9
11.4
- 13.9

3.83
3.76
4.06
4.00
3.52

3.83

~~3.44~~
~~3.37~~
~~3.05~~
~~3.59~~
~~3.16~~
~~3.44~~

© Made, but afterwards
thought bad.

150 B

+10.6	4.18	~~3.75~~
+169.1	4.11	~~3.49~~
-170.5	4.44	~~3.99~~
-10.0	<u>4.32</u>	~~3.88~~
	4.25	3.83

170 B

+9.9	4.34	~~3.90~~
+169.2	4.13	~~3.71~~
-170.3	4.39	~~3.74~~
-11.4	<u>4.00</u>	~~3.59~~
	4.21	3.78

21 H preceding

+12.9	3.70	~~3.32~~
+162.6	3.43	~~3.28~~
-167.0	3.68	~~3.30~~
-14.6	<u>3.40</u>	~~3.25~~
	3.55	~~3.18~~

⊕ 21 H Following

+15.2	3.30	~~2.96~~
+163.6	3.12	~~2.80~~
-162.9	3.02	~~2.71~~
-16.0	<u>3.18</u>	~~2.88~~
	3.15	~~2.83~~

20 H

$$\begin{array}{r}
 +12.5 \\
 +165.5 \\
 -166.5 \\
 -12.2 \\
 \hline
 3.77 \\
 3.42 \\
 3.59 \\
 3.83 \\
 \hline
 3.65
 \end{array}$$

$$\begin{array}{r}
 \cancel{3.38} \\
 \cancel{3.27} \\
 \cancel{3.42} \\
 \cancel{3.44} \\
 \hline
 \cancel{3.28}
 \end{array}$$

194 B

$$\begin{array}{r}
 +10.6 \\
 +168.7 \\
 -168.6 \\
 -10.4 \\
 \hline
 4.18 \\
 4.02 \\
 4.00 \\
 4.22 \\
 \hline
 4.10
 \end{array}$$

$$\begin{array}{r}
 \cancel{3.75} \\
 \cancel{3.61} \\
 \cancel{3.59} \\
 \cancel{3.79} \\
 \hline
 \cancel{3.68}
 \end{array}$$

(41)

$\uparrow$ 210 B

+ 8.9	4.60	~~4.13~~
+ 168.0	3.87	~~3.48~~
- 169.6	4.22	~~3.79~~
- 8.6	4.42	~~3.86~~
	4.28	3.84

Notes on Groups XXIX & XXX

* γ Ursae Majoris is very blue

⊕ 21 H following, is between $\frac{1}{10}$ & $\frac{2}{10}$ brighter than 21 H preceding

$\uparrow$ 210 is the south preceding of six.

1873

July 1st Tuesday.

Calm very clear fine night.

Groups XXV and XXVII

24 Can. Pen.

Time

	+25.1	2.12
9h 26 ^m 1/2	+158.4	2.46
9-38 1/2	-155.0	2.12
9-50	-26.0	2.03
		2.18

21 Can. Pen.

	+17.3	2.99
9-27 1/4	+160.0	2.65
9-39	-164.3	3.22
9-51 1/2	-16.4	3.12
		2.99

P. XII 105

	+10.8	4.13
9-28	+169.8	4.27
9-39 1/2	-169.2	4.18
9-52	-10.7	4.15
		4.17

Time N. foll. 24.

h. m.	+10.7	4.45
9-28 1/2	+168.5	3.98
9-40 1/2	-170.2	4.37
9-52 1/2	-11.0	4.09
		4.15

147 B.

	+13.7	
9-29 1/4	+166.3	3.55
9-41 1/2	-167.2	3.55
9-54	-11.7	3.72
		3.94
		3.69

P XII 71 foll.

	+9.5	4.44
9-30	+158.6	4.00
9-42 1/4	-170.5	4.44
9-54 1/4	-10.5	4.20
		4.27

PXIII 71 Proceeding.

Time

~~9-30 3/4~~ + 9.8	4.37
9-30 3/4 + 163.4	4.18
9-43 1/2 - 171.0	4.58
9-55 1/4 - 10.7	4.15
	4.32

92 B

+15.7	3.22
9-31 1/2 + 164.0	3.18
9-44 1/2 - 162.5	2.96
9-56 1/4 - 15.9	3.19
	3.14

81 B

+12.8	3.72
9-32 1/2 + 167.7	3.81
9-45 1/4 - 168.2	3.91
9-57 - 12.4	3.79
	3.81

77. B

Time

h m +14.3	3.45
9-33 1/2 +164.9	3.32
9-46 -164.8	3.30
9-57 1/2 -13.8	3.53
	3.40

11 South.

+10.9	4.11
9-34 1/4 +169.4	4.18
9-46 1/2 -169.4	4.18
9-58 -10.0	4.32
	4.20

11 North-

+10.6	4.18
9-38 +168.5	3.98
9-47 1/2 -171.1	4.60
9-58 1/2 -10.3	4.25
	4.25

60 B.

Time

h m +18.8	2.79
9-36 +160.2	2.67
9-48 -161.1	2.78
9-59 1/2 -17.6	2.95
	2.80

56 B.

+10.7	4.15
9-36 1/4 +168.7	4.02
9-48 1/2 -169.1	4.11
10-0 -11.2	4.04
	4.10

N. preceding 60 B.

+8.3	4.77
9-36 3/4 +171.9	4.83
9-49 -171.4	4.69
10-0 1/2 -8.9	4.60
	4.72

P_{XIV} 105 is the northernmost
of two

