

KG
11365
680

C. S. Peirce's
Photometric Observations

Vol 5

1873 Sept^r 6th to Oct^r 15th

Original Record.

15G 11365.680

1873phae.proj.631P

C. L. Peirce's

Photometer Observations

at

Station Hoosac

VOL. ~~IV~~.

1873 Sep 6 to

15G 11365.688

HARVARD
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Saturday

Sept. 6th 1873 Remarkably Clear & Calm. Moon nearly full.297^B Hercules
Cap 0 Pinhole 5336^B Hercules
Cap 0 Pinhole 5Groups 40 + 42
S.P. 336^B Hercules
Cap 0 Pinhole 5

1	+20.3	2.34
	20.9	
2	+159.1	2.28
	20.9	
3	-159.1	2.28
	-21.4	2.23
4		
	<u>33</u>	
	2.28	

$$\begin{array}{r} 253 \\ 25 \\ \hline 278 \end{array}$$

	+15.5	2.92
	15.5	2.92
	+164.5	~~1.87~~
	14.7	
	-165.3	3.04
	-14.1	3.13
	<u>3.00</u>	

331

	+13.4	3.23	3.64	1
	14.6			
	+165.4	3.05	3.40	2
	15.5			
	-164.5	2.92	3.25	3
	-14.3	3.10	3.45	4
	<u>30</u>		1.71	
	3.07		.43	

$$\begin{array}{r} 343 \\ 23 \\ \hline 366 \end{array}$$
F⁸ Hercules
Cap 0 Pinhole 5P⁸ Hercules
Cap 2 Pinhole 5L⁸ Lyrae
Cap 0 Pinhole 5

1	+25.3	1.88
	27.8	1.69
2	+152.2	~~1.69~~
	29.8	
3	-150.2	1.55
	-31.9	1.41
4		
	<u>253</u>	
	1.63	

$$\begin{array}{r} 182 \\ 16 \\ \hline 198 \end{array}$$

	+27.4	1.72
	23.5	
	+156.5	2.04
	25.	
	-155.	1.91
	-32.7	1.36
	<u>303</u>	
	1.76	
	<u>1.52</u>	
	+24	

195

	+26.3	1.80
	25.5	
	+154.5	1.87
	28.9	
	-151.7	1.61
	-29.6	1.56
	<u>284</u>	
	1.71	

190

F⁸ Hercules is the S. f. of 3.

3B Lyræ

Capo Pinhole 5

1	+17.7	2.64
2	^{18.3} ~~+16.7~~	2.56
3	^{16.7} ~~-163.5~~	2.79
4	-20.3	2.34

3B Lyræ is the foll^g
one of two.

233
2.58

288
35
9

8B Lyræ

Capo Pinhole 5

+16.3	2.81
^{17.7} +162.3	2.64
^{16.3} -163.7	2.81
-21.4	2.23

299

2.62

292
29
3

5B Lyræ

Capo Pinhole 5

+20.4	2.33
^{22.4} +157.6	2.13
^{21.1} +58.9	2.26
-25.1	1.90

62

2.15

240
25

XL

XLII

0	.24	-1.80	μ	1.71	-.38
♀	1.63	-.41	Gr.	1.40	-.69
297B	2.28	+.24	5B	2.15	+.06
326Bn	3.00	+.96	3B	2.58	+.49
326Bs	3.07	+1.03	6B	2.62	+.53
	10.22			46	
	2.04			2.09	

$$XL - XLII = -.05$$

$$\frac{1.03}{2.26\frac{1}{2}}$$

Groombridge

Capo Pinhole 5

1	+30.7	1.49
2	^{29.5} +150.5	1.57
3	^{32.6} -147.4	1.37
4	-36.5	1.15

155

158

1.40

$$XL - XLII (3 stars) = -0.41$$

$$4 stars = -0.22\frac{1}{2}$$

13.5

2.45

Monday Sept 8th 1873.

Group 31+32

 θ Bootis ϵ Bootis κ Bootis

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

1 40.0 +42.4 0.87

38 $\frac{1}{2}$ ^{+29.1}~~38~~ 1.6038 $\frac{1}{2}$ +37.7 1.09

2

3

4

 λ Bootis λ Bootis η Bootis

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

1 37 27.1 1.74

36 43.3 0.83

32 28.3 1.65

2

3

4

114B Bootis

Capo Pinhole 5

 γ Bootis

Cap 2 Pinhole 5

1 33 +20.9 2.28

2

3

4

203
25

34 26.9

156

Monday Sept 8th Cont-

Groups

38+39

2 Hercules

2 Hercules

2 Hercules

Cap 0 Pinhole 5

Cap 1 Pinhole 5

Cap 2 Pinhole 5

$$1 \quad +59.4 \quad 0.33$$

$$2 \quad \begin{array}{r} 47.6 \\ +132.4 \end{array} \quad 0.67$$

$$3 \quad \begin{array}{r} 52.8 \\ -127.2 \end{array} \quad 0.50$$

$$4 \quad \begin{array}{r} -56.0 \\ 150 \\ \hline 0.50 \end{array} \quad 0.41$$

$$\begin{array}{r} 1.01 \\ 51.5 \\ \hline 52.5 \end{array}$$

$$+39.3 \quad 1.01$$

$$\begin{array}{r} 37.3 \\ +142.7 \end{array} \quad 1.11$$

$$\begin{array}{r} 41.8 \\ -138.2 \end{array} \quad 0.90$$

$$\begin{array}{r} .02 \\ 1.01 \\ 36 \\ \hline .65 \end{array}$$

Clouds formed.

$$\begin{array}{r} 1.01 \\ 50 \\ \hline 51 \end{array}$$

$$+22.1 \quad 2.16$$

$$\begin{array}{r} 20.4 \\ +159.6 \end{array} \quad 2.33$$

$$\begin{array}{r} 22.3 \\ -157.7 \end{array} \quad 2.14$$

$$\begin{array}{r} 63 \\ 2.21 \\ 1.01 \\ \hline 1.52 \\ 1.20 \\ \hline 0.69 \end{array}$$

~~22~~22.5
2.1

y Hercules

x Hercules

74 Hercules

Cap 0 Pinhole 5

Cap 0 Pinhole 5

Cap 0 Pinhole 5

$$1 \quad +21.0 \quad 2.27$$

$$2 \quad \begin{array}{r} 25.7 \\ +154.3 \end{array} \quad 1.85$$

$$3 \quad \begin{array}{r} 23.0 \\ -157.0 \end{array} \quad 2.08$$

$$4 \quad \begin{array}{r} 20 \\ 2.07 \end{array}$$

$$\begin{array}{r} 230 \\ 23 \\ \hline 7 \end{array}$$

$$+17.1 \quad 2.71$$

$$\begin{array}{r} 20.9 \\ +159.1 \end{array} \quad 2.28$$

$$\begin{array}{r} 18.3 \\ -161.7 \end{array} \quad 2.56$$

$$\begin{array}{r} 155 \\ 2.52 \end{array}$$

$$\begin{array}{r} 281 \\ 28 \\ \hline 3 \end{array}$$

$$+21.8 \quad 2.19$$

$$\begin{array}{r} 23.1 \\ +156.9 \end{array} \quad 2.07$$

$$\begin{array}{r} 20.0 \\ -160.0 \end{array} \quad 2.37$$

$$\begin{array}{r} 63 \\ 2.21 \end{array}$$

$$\begin{array}{r} 247 \\ 23 \\ \hline \end{array}$$

p. XVII. 69. Herculis

Cap o Pinhole 5

271B Herculis

228B Herculis

Cap o Pinhole 5

Cap o Pinhole 5

$$\begin{array}{r}
 1 \quad +17.3 \quad 2.68 \\
 2 \quad \begin{array}{r} 17.4 \\ +162.6 \end{array} \quad 2.67 \\
 3 \quad \begin{array}{r} 19.5 \\ 20.2 \\ -154.8 \\ -166.5 \end{array} \quad \begin{array}{r} 2.43 \\ 2.55 \end{array} \\
 4 \quad \quad \quad 1.78 \\
 \quad \quad \quad 2.59
 \end{array}$$

S of tree

288
23

$$\begin{array}{r}
 +20.5 \quad 2.32 \\
 23.8 \\
 +156.2 \quad 2.01 \\
 21.6 \\
 -158.4 \quad 2.21 \\
 54 \\
 2.18
 \end{array}$$

243
23

$$\begin{array}{r}
 +26.8 \quad 1.46 \\
 31.8 \\
 +148.2 \quad 1.46 \\
 29.0 \\
 -151.0 \quad 1.60 \\
 182 \\
 1.61
 \end{array}$$

178
18Groombridge
Cap o Pinhole 5 η Herculis
Cap 2 Pinhole 5

Alt.

 σ Herculis
Cap o Pinhole 5

$$\begin{array}{r}
 1 \quad +16.2 \quad 2.83 \\
 2 \quad \begin{array}{r} 17.9 \\ +162.1 \end{array} \quad 2.61 \\
 3 \quad \begin{array}{r} 16.6 \\ -163.4 \end{array} \quad \begin{array}{r} 2.77 \\ 2.21 \end{array} \\
 4 \quad \quad \quad 2.74
 \end{array}$$

308
3)

$$\begin{array}{r}
 47^\circ \quad 24.7 \quad 1.93^\dagger \\
 27.3 \\
 45 \quad 152.7 \quad 1.72 \\
 27.6 \\
 43 \quad -152.4 \quad 1.70 \\
 25 \\
 1.78 \\
 1.52
 \end{array}$$

 $\dagger$ Time 9.13 (7.40 = 1.062^m)188
26

$$\begin{array}{r}
 +33.5 \quad 1.32 \\
 41.8 \\
 +138.2 \quad 0.90 \\
 46.3 \\
 -133.7 \quad 0.72 \\
 2.94 \\
 0.98
 \end{array}$$

108
11
98

Tuesday Sept 9th 1873. Group 39 & 40

Flying Clouds -

z Herculis		y. Herculis		x Herculis	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
1	+39.5 1.00	+20.2 2.35		+19.3 2.45	
2	^{55.2} +124.8 .44	^{26.6} +153.4 -1.78		^{22.4} +157.6 2.13	
3	^{52.7} -127.3 .51	^{22.9} -157.1 -2.09		^{17.7} -162.3 2.64	
4	-59.7 0.32	-22.6 2.12		-20.1 2.36	

1.95
0.65

227
577

.22
2.07

232
23
1

and go 2
122
2.41

262
27
48

x Herculis		74 Herculis		of 74 Herculis	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5

1	+13.7 3.19	+22.7 2.11	+16.3 2.81	3.13
2	^{17.6} +162.4 2.65	^{23.9} +156.1 2.00	^{13.9} +166.1 3.16	3.52
3	^{14.4} -165.6 3.08	^{22.9} -157.1 2.09	^{15.0} -165.0 2.99	3.33

4 -16.2 2.83

8.92

2.97

further dis prevented by clouds

230

2.07

Lamp blown by the wind

2.86

2.95

98
338

333

33

P XVII 69 Hercules

P.XVII.69 Hercules		A Hercules		F Hercules	
Capo	Pinhole 5	Cap 2	Pinhole 5	Capo	Pinhole 5
1	+15.2 2.96	+24.5 1.95		+27.4 1.72	
2	^{18.5} +161.5 2.54	^{23.4} +156.6 2.05		^{28.3} +151.7 1.65	
3	^{16.4} -163.6 2.80	²² -158.0 2.17		^{24.9} -155.1 1.91	
4					

S of tree.

308¹⁴ 230
277

229 17
23 2.06
1.52
+ 0.54

196 22.8
20 1.76

P F
P.F. Hercules
Capo Pinhole 5

PP F
P.F. F Hercules
Capo Pinhole 5

336 B Hercules
Capo Pinhole 5

1 +18.9 2.49
2 ^{22.1}
+157.9 2.16
3 ^{19.0}
-161.0 2.48

+14.2 3.11 347
^{13.8}
+166.2 3.17 353
^{13.4}
-166.6 3.23 361

+17.4 2.67
^{15.5}
+164.5 2.92
^{13.5}
-166.5 3.22

4 260 113
238

355 51 354
351 3.17
319

327 281
294

Tuesday Sept. 9th Cont^dGroups 39+40 Cont^d

K 336 B Herculis

297 B Herculis

Capo Pinhole 5

Capo Pinhole 5

+17.2 2.70

$$\begin{array}{r} 18.2 \\ +161.8 \end{array} 2.58$$

$$\begin{array}{r} 15.3 \\ -164.7 \end{array} 2.95$$

223

2.74

* +16.5 2.79

$$\begin{array}{r} 23.5 \\ +156.5 \end{array} 2.04$$

$$\begin{array}{r} 22.4 \\ -157.6 \end{array} 2.13$$

96

2.32

* Cloud Susp.

$$\begin{array}{r} 305 \\ 31 \end{array}$$

$$\begin{array}{r} 258 \\ 2.6 \\ \hline 232 \end{array}$$
Wednesday Sept. 10th 1873. Groups 37+38

z Herculis

y Herculis

x Herculis

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

1 +36.9 1.13

+16.3 2.81

Sky clouded over.

2

3

4

l Herculis	0.65	-1.34
4 "	2.07	+0.08
74 "	2.07	+0.08
x "	2.41	+0.42
Pxvii 69	2.77	+0.78
	<u>9.97</u>	
	1.99	
Px x	2.97	+0.98
s 74	2.95	+0.96

θ Herculis	+0.54	-1.52
φ	1.76	-0.30
297B	2.32	+0.26
326B n	2.74	+0.68
326Bs	2.94	+0.88
	<u>10.30</u>	
	2.06	
pr. f.	2.38	+0.32
pr. pr f	3.17	+1.11

xxxix 1.99

xl 2.06

$$xxxix - xl = -0.07$$

Thursday September 12th 1873 Groups 37+39

z Herculis

y Herculis

x Herculis

Cap 1 Pinhole 5

Cap 0 Pinhole 5

Cap 0 Pinhole 5

1	+37.7	1.09	+24.5	1.95	+18.4	2.55
2	^{35.3} +144.7	1.21	^{24.9} * +155.1	1.91	^{23.4} +156.6	2.05
3	^{41.1} -138.9	0.93	^{24.0} -156.0	1.99	^{19.1} -160.9	2.47
4	-39.8	0.99	-23.8	2.01	-22.3	2.14
		22		^{3.86}		1.21
		1.05	* wind blows lamp			2.30
		36		1.96		
		0.09				
	¹¹⁷ 12		²¹⁹ 22		²⁵⁷ 25	
	1.05		97			

Lalande

Σ 2063 ~~Herculis~~

Σ 30328 ~~Herculis~~

42 Herculis

Cap 0 Pinhole 5

Cap 0 Pinhole 5

Cap 0 Pinhole 5

1	+14.9	2.61	+19.1	2.47	+29.5	1.57
2	^{19.6} +160.4	2.42	^{19.9} +160.1	2.39	^{31.2} +148.8	1.46
3	^{22.2} -157.8	2.15	^{20.1} -159.9	2.36	^{30.8} -149.2	1.48
4	-22.0	2.17	-20.1	2.36	-35.6	1.19
		1.35		1.58		1.70
		2.34		2.39		1.42
	²⁶¹ 26		²⁶⁷ 27		¹⁵⁸ 15	
	0.5		40		53	

74 Hercules		P + VII 69 Hercules		52 Hercules	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5

+23.7 2.02

$$\begin{array}{r} 22.8 \\ +157.2 \\ \hline \end{array} \quad 2.10$$

$$\begin{array}{r} 25.7 \\ -154.3 \\ \hline \end{array} \quad 1.85$$

$$\begin{array}{r} -27.9 \\ \hline \end{array} \quad 1.68$$

74 is Reddish.
1.91

$$\begin{array}{r} 213 \\ 21 \\ \hline 92 \end{array}$$

+16.1 2.84

$$\begin{array}{r} 17.3 \\ +162.7 \\ \hline \end{array} \quad 2.68$$

$$\begin{array}{r} 17.4 \\ -162.6 \\ \hline \end{array} \quad 2.67$$

$$\begin{array}{r} -18.3 \\ \hline \end{array} \quad 2.56$$

$$\begin{array}{r} 2.75 \\ \hline \end{array}$$

30 2.69

+23.7 2.02

$$\begin{array}{r} 28.0 \\ +152.0 \\ \hline \end{array} \quad 1.67$$

$$\begin{array}{r} 32.7 \\ -147.3 \\ \hline \end{array} \quad 1.36$$

$$\begin{array}{r} -34.6 \\ \hline \end{array} \quad 1.25$$

$$\begin{array}{r} 2.28 \\ \hline \end{array}$$

$$\begin{array}{r} 176 \\ 18 \\ \hline 158 \end{array}$$

1.57

P42 Hercules

42 Herc 1.42 -0.54 -610 0.69 -1.86 -1.22

52 " 1.57 -0.36 -464 1.96 -0.6 + 05

Σ2063 2.34 +0.33 +374 1.91 -0.9 00

Σ 30328 2.39 +0.38 +36x 2.30 +30 +39

3.72 17

$$\begin{array}{r} 46 \\ 2 \\ \hline \end{array}$$

allowing for
n f 52 = +0.40

3.72

1.93

2.03

P + VII 69 2.69 +69 +78

9.98

2.00

9.55

1.91

xxxvii - xxxix = +.01

+.12

Thursday Sept-12th Cont'd

Groups 41 + 42

Z Herculis

F 328 foll ~~Z Herc.~~F 328 Puc ~~Z Herc.~~

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

1 +11.1 3.65

+10.5 3.77 4.20

+12.4 3.41

2 +^{13.3}166.7 3.25+^{13.9}166.1 3.16 3.50+^{13.6}166.4 3.203 -^{12.4}167.6 3.41-^{10.3}169.7 3.81 4.25-^{12.8}167.2 3.34

4 1.31

1.74 2.97

95

3.44

3.58 3.99

3.32

382

395

365

38

40

33

4

55

33

Groombridge

5B Lynae

8B Lynae

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

1 +24.4 1.96

+20.4 2.33

+15.8 2.88

2 +^{26.5}153.5 1.79+^{18.5}161.5 2.54+^{16.9}163.1 2.733 -^{27.3}152.7 1.72-^{18.0}162.0 2.60278 -^{13.8}166.2 3.17 2.1

4 2.47

1.47

2.78

1.82

2.49

2.88

203

278

326

33

33

360 B Hercules
Capo Pinhole 5

$$\begin{array}{r}
 +12.1 \quad 3.46 \quad 3.85 \\
 +4.2 \\
 +165.8 \quad 3.11 \quad 3.47 \\
 +12.3 \\
 -167.7 \quad 3.42 \quad 3.81 \\
 \hline
 99 \quad 213 \\
 3.33 \quad 71
 \end{array}$$

$$\begin{array}{r}
 363 \\
 333 \\
 \hline
 30
 \end{array}$$

PXVII 353 Hercules
Capo Pinhole 5

$$\begin{array}{r}
 +16.9 \quad 2.73 \\
 +18.9 \\
 +161.1 \quad 2.49 \\
 +18.0 \\
 -162.0 \quad 2.60 \\
 \hline
 1.82 \\
 2.61
 \end{array}$$

$$\begin{array}{r}
 291 \\
 29 \\
 \hline
 262
 \end{array}$$

$$\begin{array}{r}
 1.93 \\
 1.64
 \end{array}$$

386 B Hercules
Capo Pinhole 5

$$\begin{array}{r}
 +10.6 \quad 3.75 \\
 +12.1 \\
 +167.9 \quad 3.46 \\
 +12.8 \\
 -167.2 \quad 3.34 \\
 \hline
 1.55 \\
 3.52
 \end{array}$$

$$\begin{array}{r}
 352 \\
 332 \\
 \hline
 20
 \end{array}$$

XL1

$$\begin{array}{r}
 PXVII 353 \quad 2.61 \quad -0.63 \\
 360 B \quad 3.33 \quad +0.09 \\
 F328pr \quad 3.32 \quad +0.08 \\
 386 B \quad 3.52 \quad +0.28 \\
 Z \quad 3.44 \quad +0.20 \\
 \hline
 1.22 \\
 3.24 \\
 F328f \quad 3.58 \quad +0.34
 \end{array}$$

XLII

$$\begin{array}{r}
 \mu \text{ Lyrae} \quad 1.95 \quad -0.39 \\
 Gr 2517 \quad 1.82 \quad -0.52 \\
 SB \text{ Lyrae} \quad 2.49 \quad +0.15 \\
 3B \quad 2.64 \quad +0.30 \\
 8B \quad 2.80 \quad +0.46 \\
 \hline
 1.70 \\
 2.34
 \end{array}$$

$$XL1 - XLII = +0.90$$

$$XL1 - XLII / 3 \text{ places} = +.60$$

whole comparison
to Set of Obs

$$\begin{array}{r}
 1.88 \\
 2.47
 \end{array}$$

$$4 \text{ places} = +.77$$

μ Lyrae
Capo Pinhole 5

$$\begin{array}{r}
 +23.5 \quad 2.04 \\
 +25.5 \quad 1.87 \\
 +154.5 \quad 2.92
 \end{array}$$

* Stopped by clouds

$$\begin{array}{r}
 213 \\
 23 \\
 \hline
 190
 \end{array}$$

$$1.95$$

3B Lyrae
Capo Pinhole 5

$$\begin{array}{r}
 +17.5 \quad 2.66 \\
 +17.8 \\
 +162.2 \quad 2.62
 \end{array}$$

$$\begin{array}{r}
 284 \\
 28 \\
 \hline
 256
 \end{array}$$

$$2.64$$

* leave ~~at~~ because vibrated by clouds

Tuesday September 16th 1873. Strong North wind
 Certain Doubtful Stars

2 Hercules		θ Hercules		θ Hercules	
Cap 1 Pinhole 5		Cap 1 Pinhole 5		Cap 2 Pinhole 5	
1	+62.6 0.26	+78.6 0.04		+34.1 1.28	
2	29				1.48
3		S-			
4	1.35 26 1.09				

Estimations with the Cometsaker

z & θ Hercules nearly the same brightness

θ a little the brighter S wrong DM nearer

θ is yellowish

y is considerably brighter than 74 DM wrong

The Northern star of 336B is the brighter

The star preceding x is considerably brighter than either DM wrong

That between Hq5 & Hq9 is brighter than either

PXVII 353 is one mag. brighter than Hq5 & is 0.5 brighter

than star bet Hq5 & Hq9 DM wrong

Star S. of H118 is much fainter than 386B

DM about right

ϵ Herculis
Cap 2 Pinhole 5

1 +33.3 1.32

2 +32.2 1.39

3

4 $\begin{array}{r} 1.57 \\ 15 \\ \hline 6 \end{array}$

F 328 is about as bright as ρ Pk. All says brighter

H 01 B is $\frac{1}{3}$ mag. brighter than 360 B. All says is brighter

ϵ is a little brighter than Lalande. All says equal

F is equal to Groombridge 2517. All says diff of $\frac{1}{5}$

3 B is somewhat brighter than H 168 All right

H 168 is a little brighter than 8 B All wrong

The middle one of three is much fainter than ρ XVIII 254
and is somewhat fainter than 206 B All right

Tuesday Sept. 16th 1873 Cont

Group 42 & 44.

	α Lyrae	ϵ Lyrae S.	ϵ Lyrae N
	Cap 2 Pinhole 1	Cap 0 Pinhole 5	Cap 0 Pinhole 5
1		+44.5 0.79	+43.9 0.81
2	Too bright to measure.		
3			
4			
	μ 0.91 - 83 - 38	79 - 80	
	Gr. 1.04 - 70 - 56	81 - 78	
	5B 2.08 +.34	147 - 12	
	3B 2.52 +.78	253 +94	
	8B 2.16 +.42	235 +76	
	<u>3.71</u>	<u>795</u>	
	1.74 XII-XIV = +.15	1.59	

	μ Lyrae	3B	8B
	Cap 0 Pinhole 5	Cap 0 Pinhole 5	Cap 0 Pinhole 5
1	41.6 0.91	+18.7 2.52	+22.1 2.16
2	vj		
3			
4			

Note. ϵ Lyrae ~~S~~ seems to be very slightly brighter than ϵ Lyrae ~~S~~
 N

65 B

Capo Pinhole 5

+18.6 2.53

84 B

Capo Pinhole 5

+20.2 2.35

92 B

Capo Pinhole 5

+31.0 1.47

			Mean		
u	0.91	-0.83	-37	-0.46	-
Qr	1.01	-0.70	-58	-0.12	-0.84
SB	2.08	+0.34	+14	+0.30	+0.22
3B	2.52	+0.78	+39	+0.39	+0.66
8B	2.16	+0.42	+50	-0.08	+0.30

8.71

1.74

4.80

3.37

2.00

1.86

2.34

+0.48

$$\begin{array}{r} 1.86 \\ 9 \\ \hline -0.95 \end{array}$$

New 1

5 B

Capo Pinhole 5

+23.0 2.08

Between 5 + 8 B

Capo Pinhole 5

+20.3 2.34

Groombridge *

Capo Pinhole 5

38.6? 1.04

Before measuring this
star, lamp was blown
out and was relit.

* Lamp very much blown by the wind

Tuesday Sept. 17th 1873

Group 64+66

✓ Androm				39 Androm.				44 Androm			
Cap 2		Pinhole 5		Capo		Pinhole 5		Capo		Pinhole 5	
1	+16.4	2.80	-23.12	+23.2	2.06	-2		+23.1	2.07	+21	
2	^{15.6} +164.4	2.91	+93.24	^{21.7} +168.3	2.20	+12		^{26.7} +153.3	1.77	-9	
3	^{17.1} -162.9	2.71	-113.02	^{23.0} -157.0	2.08	0		^{23.8} -156.2	2.01	+15	
4	-15.8	2.88	+63.21	-24.2	1.97	-11		-29.0	1.60	-16	
		<u>10</u>	<u>59</u>		<u>31</u>				<u>3.45</u>		
		2.82	3.15		2.08						
	3/7	1.52		232				207	1.86		
	<u>32</u>	<u>1.30</u>									
	314										

Preceding one of the triangle				S. P. I. 69.				164 B Androm.			
Capo		Pinhole 5		Capo		Pinhole 5		Capo		Pinhole 5	
1	+16.6	2.77		+15.4	2.93			+20.0	2.27	+23	
2								^{24.7} +155.3	1.93	-21	
3								^{18.9} -161.1	2.49	+35	
4								-26.6	1.78	-36	
									<u>57</u>		
									2.14		
								239			
								<u>25</u>			
								210			

Superb night

41 Androm.			P.I. 69.			Midd. one of Triangle		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
+34.5	1.26	0	+23.5	2.04	-3	+15.6	2.91	
^{35.0} +145.0	1.23	-3	^{23.8} +156.2	2.01	-6	~~+155.3~~		
^{34.5} -145.5	1.26	0	~~+17.5~~ ~~-162.5~~	~~2.66~~	-1			
			~~-136.8~~	2.06				
-34.2	1.28	+2	-21.9	2.18	+11	321		
	<u>1.26</u>			<u>2.07</u>				
146			231					
<u>17</u>			<u>27</u>					
			08					

Groomer.			141 B Androm.			18 H Androm.		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
+15.7	2.89	+30	+17.2	2.70	+21	^{36.8} +16.8	^{1.13} 2.75	+1
^{17.6} +162.4	2.65	+6	^{22.3} +157.7	2.14	-35	^{36.} +144.0	^{1.18} ~~2.85~~	+6
^{18.4} -161.6	2.55	-4	^{17.1} -162.9	2.71	+22	^{35.8} -144.2	1.19	+7
-21.0	2.27	-32	-19.7	2.41	-8	-29.9	0.98	-14
	<u>2.36</u>			<u>1.96</u>			<u>8</u>	
288			247			168	208	1.12
<u>29</u>	2.59		<u>28</u>	2.49		<u>17</u>	32	
59			249			<u>112</u>		

P.I. 69 is the following one of a triangle

Wednesday Sept. 17th 1873

Groups 64 + 66 Cont'd

17 H Androm

Cap 0 Pinhole 5

$$1 \quad \begin{array}{r} 33.0 \quad 1.34 \\ +23.0 \quad 2.08 \quad +3 \end{array}$$

$$2 \quad \begin{array}{r} 34.8 \\ +145.2 \quad 1.24 \quad -7 \end{array}$$

$$3 \quad \begin{array}{r} 29.0 \\ -151.0 \quad 1.60 \quad +29 \end{array}$$

$$4 \quad \begin{array}{r} -37.9 \quad 1.08 \quad -23 \end{array}$$

$$\overline{126}$$

$$1.31$$

$$2.80 \quad 2.0$$

$$\begin{array}{r} -2 + -137 \\ 15 \\ \hline 139 \end{array}$$

-2	+9	-11	+6	-12	+15	-21	+18
-2	+12	0	-11	-12	+18	-10	+1
+21	-9	+15	+6	+11	-3	+5	+18
0	-3	0	+2	-10	+3	-10	+14
-3	-6	-1	+11	-13	0	-17	+23
+23	-21	+35	-36	+13	-15	+25	-24
+30	+6	-4	-32	+20	+12	-14	-20
+21	-35	+22	-8	+11	-29	+12	+4
+3	-7	+29	-23	-7	-1	+19	-21

98	27	+101	19
7	81	-16	126
+91	-54	+85	107
+10	-6	+10	-12

LXIV

17H And	1.31	-45
18 "	1.12	-64
141B "	2.49	+73
Cr "	2.59	+83
v "	1.30	-46
	<u>3.81</u>	
	1.76	

Mudhloqtri 2.91

P q tri 2.77

Sp 21.

LXIV - LXVI = -0.12

LXVI

164B	2.114	+26
41	1.26	-62
39	2.08	+20
44	1.86	-02
P.I.Gg.	2.07	+19
	<u>4.41</u>	
	1.88	
Sp P.I.Gg.	2.93	
	2.91	1.04
	2.77	0

Wednesday Sept. 18th 1873

Groups 41 & 61.

3 Andromedae

7 Androm.

8 Androm.

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

~~+36.1 2.19~~~~+36.8 2.13~~~~+37.6 2.09~~

2 Hercules

F328 pr.

360B Hercules

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

~~+15.7 2.89~~~~+15.9 2.87~~~~+13.3 3.25~~

11 Androm.

4 Androm.

Betw 4+2 but fol.

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

~~+26.3~~ 1.80~~+26.3~~ 1.79~~+26.3~~ 1.80

386 B Herculis

PXVII 353

Capo Pinhole 5

Capo Pinhole 5

~~+13.4~~ 3.23

Sunday September 22nd 1873

Groups 41+61.

x Herculis			F328			360B		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+15.4	2.93	+12.2	3.44	3.83	+13.7	3.19	
	+12.0	3.48	3.87			+14.0	3.14	
2	+169.5	3.77	4.20	+166.6	3.23	3.61	+166.0	3.14
	18.5							
3	-169.9	3.69	4.11	-168.8	3.63	4.04	-168.6	3.59
4	-10.3	3.87	4.25	-13.0	3.30	3.68	-12.4	3.41
		2.75	4.3		160	3.16		1.33
		3.69	4.11		3.40	79		3.33
400								
40								
60								
			3.79			3.71		
			384					
			38					
			48					

3 Andromedae			7 Andromedae			bet 3+7 but S.		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+31.1	1.46	+31.8	~~1.42~~	1.42	+16.3	2.81	
2	+149.1	1.47	+149.6	1.51		+162.5	2.66	
3	+148.3	1.42	-149.6	1.51		-165.1	3.01	
4	-32.0	1.41	-34.3	1.27		-18.8	2.51	
		1.6		1.71			2.99	
		1.44		1.43			2.75	
161			160			306		

PXVII 353		386 B		Mid. one of three	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
+17.7	2.64	+12.2	3.44	+12.6	3.37
^{20.5} +159.5	2.32	^{13.2} +166.8	3.27	^{17.4} +162.6	2.67
^{20.4} -159.6	2.33	^{11.7} -168.3	3.53	^{14.9} -165.1	3.01
-19.7	2.41	-15.5	2.92	-14.7	3.04
	<u>170</u>		<u>116</u>		<u>9</u>
	2.42		3.29		3.02
270		367		337	

8 Andromedae		11 Andromedae		4 Andromedae	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
+25.7	1.85	+21.4	2.23	+17.9	2.61
²⁶ +154.0	1.82	^{22.4} +157.6	2.13	^{13.2} ~~+167.2~~	2.46
^{23.4} -156.6	2.05	^{19.7} -160.3	2.41	^{18.9} -161.1	2.49
-25.8	1.84	-18.8	2.51	-23.4	2.05
	<u>3.56</u>		<u>128</u>		<u>161</u>
211	1.89	258	2.32	267	2.40

11 And. is the N. preceding of two. 4 is the Northernmost of two.

Bet 4+2 but fol 9

Capo Pinhole 5

1 +15.4 2.93

2 +16.2
+162.8 2.833 -14.5
-165.5 3.07

4 -19.7 2.41

324

2.81

313

I_{xvii} 353 2.42 -.51

360B 3.33 +.10

F328_{pr} 3.40 +.17

386B 3.29 +.06

Z 3.69 +.46

13

3.23

middle of 3 3.02 -.21

7 And 1.43 -.74

8 " 1.89 -.28

4 " 2.40 +.23

2.32 +.15

11 " 2.81 +.64

Bet 4+2 " 85

2.17

1.44 -.73

3 And
Bet 3+72.75 +.58

$$XL1 - LX1 = +1.06$$

$$\begin{array}{r} \cancel{+90} \quad \cancel{-57} \\ +30 \quad -22 \\ +91 \quad -37 \\ +76 \quad -09 \\ +11 \quad -41 \\ +\cancel{50} \quad -56 \\ +33 \\ \hline +291 \quad 165 \\ \underline{165} \\ 1.26 \\ \underline{1.06} \\ .20 \end{array}$$

Wednesday September 24th 1873.

Groups

μ Lyrae		3B Lyrae		8B Lyrae	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
1	~~+26.4~~ 1.80	~~+16.8~~ 2.75		~~+14.3~~ 3.10	
2	+33.0 1.34	+21.6 2.21		+17.0 2.72	
3		2.46		3.03	
4	1.50 .87				

5B Lyrae			
Capo	Pinhole 5	Capo	Pinhole 5
1			
2			
3			
4			

42 + 44

5B Lyrae		Groombridge		e Lyrae N	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
~~+17.7~~	~~2.64~~	~~+20.4~~	~~2.33~~	*	~~~~~
+18.6	2.53	+			
2.89					

*Seeing excessively bad

Thursday September 25th 1873

μ Lyrae		3B Lyrae		8B Lyrae	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
1	+28.1 1.67	+14.9 3.01		+15.4 2.93	
2		1.34	1.67	- .74	
3	1.86	3.35	1.94	- .47	327
4			2.48	+ .07	
			3.01	+ .60	
			2.93	+ .52	
			12.03		
			2.41		

Groups 58 + 60

* μ Lyrae S.		o Andromedae		o Andromedae	
Capo	Pinhole 5	Capo	Pinhole 5	Cap 2	Pinhole 5
1	29.6 1.86	+58.6 0.35		+21.5 2.22	
2	0.52			1.52	
3				0.70	
4					

2.22
85
1.87

* Wind blows lamp very badly

Groups 42 and 44

5 B Lyrae
Capo Pinhole 5

+19.0 2.48

277

Groombridge
Capo Pinhole 5

+24.6 1.94

216

c Lyrae ~~A~~ S *

246 1.56

Groups 58 & 60

2 Andromedae
Capo Pinhole 5

+20.8 2.29

255

16 Lacertae
Capo Pinhole 5

+17.9 2.61

291

14 Lacertae
Capo Pinhole 5

+14.7 3.04

338

* Clouded up on the ~~E~~ side. Wind from the East spoiling observations

Friday
Thursday September 25th Contd

Groups

15 Lacertae	Groombridge	13 Lacertae
Capo Pinhole 5	Capo Pinhole 5	Capo Pinhole 5
+ 21.9 2.18	+14.5 3.07	* +21.7 2.20
1		
2		
3		
4		

10B Lacertae	HB Lacertae	This is the star after ward taken for 10B Brightest of 3 betw L + 10B Lacertae **
Capo Pinhole 5	Capo Pinhole 5	Capo Pinhole 5
+11.6 3.55	+18.7 2.52	+30.5 1.50
1		
2		
3		
4		

+ Setting bad 10B is a double star - measured the foll 3 Components

** This star is reddish

58+60 Cont'd

11 Lacertae		6 Lacertae		22B Lacertae	
Cap 0	Pinhole 5	Cap 0	Pinhole 5	Cap 0	Pinhole 5
+35.9	1.18	+28.4	1.64	+16.5	2.79

LVIII		872 Sep 16	
11 Lac	1.18	- .79	- .50 - .29
6	1.64	- .33	- .43 + .10
10B	1.50	- .47	- .06 - .41
13	2.20	+ .23	+ .04 + .19
22B	2.79	+ .82	+ .42 + .40
4B	2.52	+ .55	+ .55 0
	5.83		
	1.97		

false 10B

3.55 + 1.58

LVIII - LX = - 0.31

LX	
0 And	0.52 - 1.76
15 Lac	2.18 - .10
2 And	2.29 + .07
16 Lac	2.61 + .33
14 "	3.04 + .76
Cr	3.07 + .79
	13.71
	2.28

- 0.29 + 0.50
- 0.44 + 0.33

73 83
+ .00
- .31
41

This is a poor comparison
Had better be rejected.
+ .09

Notes 1874 Aug 3

Friday Sept 26th 1873 Contd

Groups

40° 5043

41° 4752

9 Andromedae
S.P.

9 Andromedae NF

13 Androm.

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

1 +16.7 2.76

+18.2 2.58

+16.0 2.85

2 +15.7 2.89

+19.1 2.47
~~+19.4 2.44~~

+19.3 2.45

3 2.82

2.53

2.65

4 315
87
83281
28

295

Qu are not 23 and
328 transposed? This
is not a likely order and
the maps seem transposed

41° 4933

16 Androm

23 Androm.

40B Androm.

Cap 2 Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

1 +17.2 2.70 3.00

+14.8 3.02

+14.6 3.05

2 +12.9 3.32 3.70

15.4 2.93
~~+16.4 2.80~~12.5 3.39
~~+11.2 3.63~~3 3.01
1.53

2.98

3.22

4 69
2.32332
39358
36
22335
36
2951.48
69
2.17
1.08

62+64.

i Andromedae

Capo Pinhole 5

+38.3 1.06

$$\begin{array}{r} +45.0 \quad 0.47 \\ \hline 1.83 \end{array}$$

100 0.91

K Androm.

Capo Pinhole 5

+46.5 0.71

$$\begin{array}{r} 47.6 \quad 0.67 \\ \hline 0.69 \end{array}$$

77

$$\begin{array}{r} 3.03 \\ \hline 91 \\ \hline 2.12 \end{array} \quad \begin{array}{r} 3.01 \\ \hline 69 \\ \hline 2.32 \end{array}$$

i Androm.

Cap 2 Pinhole 5

+16.7 2.76

$$\begin{array}{r} +13.0 \quad 3.30 \\ \hline 0.6 \end{array}$$

$$\begin{array}{r} 3.03 \\ \hline 91 \\ \hline 2.12 \end{array}$$

3.03

1.53

1.50

91

2.41

1.20

338
35

41 4920

Prec 3 last.

Capo Pinhole 5

+13.0 3.30 368

$$\begin{array}{r} +11.4 \quad 3.59 \quad 4.00 \\ \hline 3.44 \quad 8.80 \end{array}$$

$$\begin{array}{r} 384 \\ 88 \\ \hline 46 \end{array}$$

41° 4925

N of Last.

Capo Pinhole 5

+13.6 3.20

$$\begin{array}{r} 10.9 \quad 3.69 \\ \hline 3.45 \end{array}$$

$$\begin{array}{r} 384 \\ 38 \\ \hline 46 \end{array}$$

32B Androm.

Capo Pinhole 5

+14.9 3.01

$$\begin{array}{r} +19.2 \quad 2.46 \\ \hline 5.47 \end{array}$$

2.74

$$\begin{array}{r} 304 \\ 81 \\ \hline 73 \end{array}$$

1873p
Friday Sept. 26th 1873 Contd

Group

✓ Androm.	Groombridge	114 ³ B Androm.
Capo Pinhole 5	Capo Pinhole 5	Capo Pinhole 5
1 + 25.2 1.89	+ 13.9 3.16	+ 13.7 3.19
2 + 29.2 <u>1.59</u>	+ 15.0 <u>2.99</u>	+ 14.5 <u>3.07</u>
3 1.74	3.08	3.13
4 183 15	347 35	348 35

Saturday Sept 27th 1873

Groups

[illegible]

62+64 Contd

LXII

18H Androm.

17H Androm.

Capo Pinhole 5

$$+23.0 \quad 2.08$$

$$+23.3 \quad 2.05 \\ \hline 2.07$$

230
23

58459

5 Lacertae

Capo Pinhole 5

$$+37.6 \quad 1.09$$

$$+41.2 \\ +138.8 \quad 0.92$$

$$-39.0 \\ -141.0 \quad 1.02$$

$$-44.7 \quad 0.78 \\ \hline 3.81$$

106

$$0.95$$

143
14

1.28

211
21

1.89

$$\begin{array}{r} 9 \text{ And } 2.53 + 19 \\ 13 \text{ " } 2.65 + 31 \\ \text{L " } 1.20 + 14 \\ \text{K " } 1.08 + 26 \\ \text{ " } 2.74 + 40 \\ \text{ " } 3.22 + 88 \\ \text{ " } 2.98 + 64 \\ \hline 16.430 \\ 2.34 \end{array}$$

XIV

$$\begin{array}{r} .07 - 37 \\ 74 - 70 \\ .19 - 25 \\ .13 + 69 \\ .08 + 64 \\ \hline .21 \\ 44 \end{array}$$

$$IV = -0.10$$

Please send me

some blank cheques

Send me three

squares - for

triples - stable

+ closer heli -

respectively -

the latter only 85

(- been running since

Sep -) Send some

envelopes with this

Pinhole 5

$$24.3 \quad 1.97$$

$$26.7 \\ 53.3 \quad 1.77$$

$$24.4 \\ 55.6 \quad 1.96$$

$$25.4 \quad 1.87 \\ \hline 357$$

62+64 Contd

LXII

18H Androm.

17H Androm.

Capo Pinhole 5

$$+23.0 \quad 2.08$$

$$+23.3 \quad 2.05$$

$$2.07$$

230
23

58+59

5 Lacertae

Capo Pinhole

$$+37.6 \quad 1.09$$

$$+41.2$$

$$+138.8 \quad 0.92$$

$$-39.0$$

$$-147.0 \quad 1.02$$

$$-44.7 \quad 0.78$$

$$3.81$$

$$106 \quad 0.95$$

$$\begin{array}{c} \sim \\ \sim \\ \sim \\ \sim \\ \sim \end{array}$$

$$\begin{array}{c} \sim \\ \sim \\ \sim \\ \sim \\ \sim \end{array}$$

$$\sqrt{x}$$

$$\begin{array}{r} 2810 \\ 04 \\ \hline 161 \end{array}$$

$$\begin{array}{r} 123 \\ 14 \\ \hline \end{array}$$

$$1.28$$

$$\begin{array}{r} 9 \text{ And } 2.53 + 19 \\ 13 \text{ " } 2.65 + 31 \\ \text{ " } 1.20 + 14 \\ \text{ " } 1.08 + 26 \\ 2.74 + 40 \\ 3.22 + 88 \\ 2.98 + 64 \\ \hline 16.430 \\ 2.34 \end{array}$$

$$n, n+2 \quad n+1, n+2$$

XIV

$$\begin{array}{r} 2.07 - 37 \\ 1.74 - 70 \\ 2.19 - 25 \\ 3.13 + 69 \\ 3.08 + 64 \\ \hline 2.21 \\ 2.44 \end{array}$$

$$\begin{array}{c} n+1, n+3 \\ -n+1, n+3 \\ -n+2, n+3 \end{array}$$

$$XIV = -0.10$$

5

Pinhole 5

$$+24.3 \quad 1.97$$

$$+26.7$$

$$+153.3 \quad 1.77$$

$$-24.4$$

$$-155.6 \quad 1.96$$

$$-25.4 \quad 1.87$$

$$3.57$$

$$\begin{array}{r} 211 \\ 21 \\ \hline \end{array}$$

$$1.89$$

62+64 Contd

LXII

18H Androm.

17H Androm.

Capo Pinhole 5

Capo Pinhole 5

+23.0 2.08

+20.9 2.28

+23.3 2.05

+22.9 2.09

+28.7 1.62

2.072.19230
23243
24

58459

9 And 2.53 +19
 13 " 2.65 +31
 " 1.20 +14
 K " 1.08 +26
 32B " 2.74 +40
 40B " 3.22 +88
 23 " 2.98 +64
16.430
 2.34

LXIV

18H 2.07 -37
 V 1.74 -70
 17H 2.19 -25
 141B 3.13 +69
 Cr 3.08 +64
12.21
 2.44

LXII - LXIV = -0.10

5 Lacertae

2 Lacertae

F65

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

+37.6 1.09

+36.8 1.13

+24.3 1.97

+41.2
+138.8 0.9236.0
+144.0 1.18+26.7
+153.3 1.77+39.0
-147.0 1.0232.1
-147.9 1.40+24.4
-155.6 1.96

-44.7 0.78

-31.6 1.43

-25.4 1.87

3.811.143.57

106 0.95

143 1.28

211 1.89

14

21

Saturday September 27th Contd

T 64			11 Lacertae			6 Lacertae		
Capo	~~26.7~~	Pinhole 5	Capo	Pinhole 5		Capo	Pinhole 5	
1	+26.7	1.77	+35.9	1.18		+31.5	1.44	
2	^{27.3} +152.7	1.72	^{34.2} +145.8	1.28		^{33.4} +146.6	1.32	
3	^{29.9} -150.1	1.54	^{40.0} -140.0	0.98		^{37.0} -143.0	1.12	
4	-28.7	1.62	-43.1	0.84		-37.5	1.10	
		<u>25</u>		<u>28</u>			<u>98</u>	
		1.66		1.07			1.25	
	185		118			138		
	<u>19</u>		<u>12</u>			<u>14</u>		

Groups 58 + 59 Contd

4B Lacertae
Capo Pinhole 5

+19.5 2.43

+^{24.1}155.9 1.98

-^{20.3}159.4 2.34

-21.0 2.27

$$\begin{array}{r} 251 \\ 25 \\ \hline 276 \end{array}$$

$$\begin{array}{r} 2 \\ \hline 2.25 \end{array}$$

LVIII

11 Lac	1.07	- .67
6 "	1.25	- .49
10B "	1.81	+ .07
13 "	-	[+ .04]
22B "	2.30	+ .56
4B "	2.25	+ .51

$$\begin{array}{r} 3.68 \\ \hline 1.74 \end{array}$$

$$\begin{array}{r} 19 \\ \hline 1.93 \end{array}$$

$$\begin{array}{r} 19 \\ \hline 1.93 \end{array}$$

$$\begin{array}{r} 165 \\ 67 \\ \hline 97 \\ 19 \\ \hline 116 \end{array}$$

LVIII - LIX = +0.44

10B Lacertae
Capo Pinhole 5

+23.9 2.00

+^{26.3}153.7 1.80

-^{25.4}154.6 1.87

-29.2 1.59

$$\begin{array}{r} 206 \\ 20 \\ \hline 181 \end{array}$$

$$\begin{array}{r} 3.26 \\ \hline 1.81 \end{array}$$

LIX

7 Lac	0.67	- .66
5	0.95	- .38
F64	1.66	+ .33
2	1.28	- .05
4	1.53	+ .20
F65	1.89	+ .56

$$\begin{array}{r} 1.98 \\ \hline 1.33 \end{array}$$

$$\begin{array}{r} 1.33 \end{array}$$

22B Lacertae
Capo Pinhole 5

+23.1 2.07

+^{49.3}160.7 2.45

-^{18.8}161.2 2.51

-21.9 2.18

$$\begin{array}{r} 256 \\ 20 \\ \hline 236 \end{array}$$

$$\begin{array}{r} 121 \\ \hline 2.30 \end{array}$$

$$\begin{array}{r} 2.30 \end{array}$$

+0.50 +29

+0.33 +41

$$\begin{array}{r} 83 \\ \hline 79 \end{array}$$

$$\begin{array}{r} 13 \end{array}$$

+0.60

-0.44

+0.16

10B Lacertae is the Southernmost of two: following it is a double.

Saturday September 27th 1873.

18 Andromedae
Cap 0 Pinhole 5

$$\begin{array}{r}
 1 \quad +19.2 \quad 2.46 \\
 2 \quad +155.0 \quad \frac{1.91}{37} \\
 3 \quad \quad \quad 2.18 \\
 4 \quad \quad \quad \frac{243}{24} \\
 \quad \quad \quad 19
 \end{array}$$

λ Andromedae
Cap 0 Pinhole 5

$$\begin{array}{r}
 +55.6 \quad 0.43 \\
 +126.9 \quad \frac{0.49}{0.46} \\
 \quad \quad \quad 2.67 \\
 \quad \quad \quad \frac{2.21}{21.6} \\
 \sin 9.5660 - .37 \\
 9.1320
 \end{array}$$

.135
{ This is nearly the }
{ theoretical corr. }

λ Andromedae
Cap 2 Pinhole 5

$$\begin{array}{r}
 +16.7 \quad 2.76 \\
 +161.8 \quad \frac{2.58}{2.67} \\
 \quad \quad \quad 1.53 \\
 \quad \quad \quad 1.14 \\
 \quad \quad \quad \frac{2.67}{46} \\
 \quad \quad \quad \frac{2.21}{297} \\
 \quad \quad \quad 30
 \end{array}$$

π Cassiopeiæ

Cap 0 Pinhole 5

$$\begin{array}{r}
 1 \quad +26.3 \quad 1.80 \\
 2 \quad \frac{30.7}{149.3} \quad \frac{26.2}{+153.8} \quad \frac{1.81}{+1.49} \\
 \quad \quad \quad +154.5 \quad \frac{1.87}{1.83} \\
 3 \quad \quad \quad 1.83 \\
 4 \quad \quad \quad 246
 \end{array}$$

Bradley

Cap 0 Pinhole 5

$$\begin{array}{r}
 +19.3 \quad 2.45 \\
 +18.8 \quad +6.9 \quad 2.51 \\
 +161.2 \quad +163.1 \quad \frac{2.73}{2.48} \\
 276 \\
 \frac{28}{8} \\
 18 \quad 2.18 + 63 \\
 \lambda \quad 46 - 1.09 \\
 \psi \quad 1.76 + .21 \\
 22 \quad 1.79 + .24 \\
 \quad \quad \frac{2.19}{1.55} \\
 \quad \quad \frac{2.43}{2.22} + .88
 \end{array}$$

π Cassiop.

Cap 0 Pinhole 5

$$\begin{array}{r}
 +35.7 \quad 1.19 \\
 +36.7 \quad 1.41 \\
 +148.1 \quad \frac{1.30}{1.30} \\
 \phi \text{ And } 1.02 - 63 \\
 \pi \text{ Cas } 1.83 + 18 \\
 Bradley 2.48 + 88 \\
 O \text{ Cas } 1.30 - 35 \\
 \phi \text{ Cas } 1.64 - 01 \\
 \quad \quad \frac{3.27}{1.65} \\
 \quad \quad \frac{2.10}{2.22} + .45
 \end{array}$$

+ ψ is a good deal fainter than 0

LXIII - LXV = -.10

Groups 63 and 65.

ψ Andromeda	22 Androm.	nf ~~NE~~ 22 Androm [*]
Capo Pinhole 5	Capo Pinhole 5	Capo Pinhole 5
+24.0 1.99	+27.7 1.69	2.87 +18.2 2.58
+150.0 ³⁰ 1.53	+25.2 ² 1.89	2.54 +20.9 ^{20.9} 2.28
<u>1.76</u>	<u>1.79</u>	<u>2.43</u>
196	200	2.70
20		

ξ ψ Cassiop	Bet α + ψ but β	ϕ π Andromedae
Capo Pinhole 5	Capo Pinhole 5	Capo Pinhole 5
+30.2 1.52	+22.4, 2.13	+37.5 1.10
26.8 36.2 1.76	23.2 2.06	40.9 0.94
+153.2 +143.8 <u>1.17</u>	+156.8 <u>2.10</u>	+139.1 <u>1.02</u>
1.64	2.10	1.02
182	234	113
18	21	11
	11	

22 Androm. is the preceding one of two.

* This is apparently not Heis's Star, is pointed at by 2 stars N.P. it is in a line between these stars and the last.

Sunday September 28th 1873.

π 2 Cygni			p Cygni			g Cygni		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+42.1	0.88		+47.4	0.68		+24.3	1.97
2	^{42.2} +137.8	0.88		^{50.5} +129.5	0.57		^{29.6} +150.4	1.56
3	^{52.5} -127.5	0.51		^{58.8} -121.2	0.35		^{25.1} -154.9	1.90
		<u>227</u>			<u>160</u>			<u>243</u>
4		.76			0.53			1.81
Color 100			Col. 108			Col. 121		
	85			59			201	

7 Lacertae			4 Lacertae			5 Lacertae		
Cap 2	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+21.8	2.19		+33.2	1.33		+40.0	0.98 1.09
2	^{25.1} +154.9	1.90		^{33.2} +146.8	1.33		^{40.1} +139.9	0.97 1.08
3	^{22.8} -157.2	2.10		^{39.2} -140.8	1.02		^{46.0} -134.0	0.73 0.81
		<u>19</u>			<u>68</u>			<u>268</u> 2.98
4	229	2.06			1.23			0.89 0.99
~~Color 98~~		<u>1.53</u>	Col. 93			Col. 317		
		0.53		137				
	^{0.19} <u>2.06</u>							
	1.87							

PXX1140 is wrongly placed on my map it is not on the U^a map at all but is right in ^{Heis} height 5 Lacertae is Reddish

Groups 57 and 59

P XXI. 140

Capo Pinhole 5

$$+20.9 \quad 2.28$$

$$\begin{array}{r} 24.8 \\ +155.2 \end{array} \quad 1.92$$

$$\begin{array}{r} 21.7 \\ -158.3 \end{array} \quad 2.20$$

$$\underline{.40}$$

$$2.13$$

287

Lalande

Capo Pinhole 5

$$+25.4 \quad 1.87$$

$$\begin{array}{r} 27.3 \\ +152.7 \end{array} \quad 1.72$$

$$\begin{array}{r} 22.7 \\ -157.3 \end{array} \quad 2.11$$

$$\underline{2.70}$$

$$1.90$$

211

7 Lacertae

Capo Pinhole 5

$$+59.3 \quad 0.33$$

$$\begin{array}{r} 69.4 \\ +110.6 \end{array} \quad 0.15$$

$$\begin{array}{r} 74.5 \\ -105.5 \end{array} \quad 0.08$$

$$\underline{.56}$$

$$0.19$$

$$\underline{2.06}$$

$$1.87$$

Col 92

22

2 Lacertae

Capo Pinhole 5

$$+35.6 \quad 1.20$$

$$\begin{array}{r} 37.5 \\ +142.5 \end{array} \quad 1.10$$

$$\begin{array}{r} 34.8 \\ -145.2 \end{array} \quad 1.24$$

$$\underline{.54}$$

$$1.18$$

Col 280

181

F 65

Capo Pinhole 5

$$+22.6 \quad 2.12 \quad 2.86$$

$$\begin{array}{r} 29.6 \\ +150.4 \end{array} \quad 1.86 \quad 2.07$$

$$\begin{array}{r} 25.6 \\ 154.4 \\ -155.0 \end{array} \quad 1.91 \quad 2.12$$

$$\underline{2.89}$$

$$1.96 \quad 2.18$$

218

F 64

Capo Pinhole 5

$$+23.2 \quad 2.06$$

$$\begin{array}{r} 30 \\ +150.0 \end{array} \quad 1.53$$

$$\begin{array}{r} 31.8 \\ 148.2 \\ -149.6 \end{array} \quad 1.42$$

$$\underline{4.99}$$

$$1.66$$

181

$$\begin{array}{r} 8 \quad 0.53 - 90 \\ \pi_2 \quad .76 - 67 \\ \text{Lal} \quad 1.90 + 47 \\ 2 \quad 1.81 + 38 \\ 2 \quad 1.81 + 70 \end{array}$$

P XXI 140

$$\underline{2.13}$$

$$7.13$$

$$1.43$$

$$\begin{array}{r} 11 \text{ Lac} \quad 0.42 - 0.80 \\ 5 \text{ " } \quad 0.89 - 0.33 \\ F 64 \quad 1.66 + 0.44 \\ 2 \quad 1.18 - 0.04 \\ 4 \quad 1.23 + 0.01 \end{array}$$

$$F 65 \quad 1.96 + 0.74$$

$$\underline{1.34}$$

$$1.22$$

F 64 is Reddish

Sunday September 28th 1873. contd

3 Andromedae			Bet 3 and 7 but S			7 Androm				
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5			
1	+34.1	1.28	+11	1.13	+20.4	2.33	+7	+34.3	1.27	+12
2	^{34.9} +145.1	1.24	+7	1.38	^{21.5} +158.5	2.22	-2	^{36.6} +143.4	1.14	-1
3	^{39.9} -140.1	0.98	-9	1.10	^{21.4} -158.6	2.23	-3	^{38.4} -141.6	1.05	-10
		<u>50</u>		<u>91</u>		<u>18</u>		<u>46</u>		
4		1.17		30		2.26			1.15	
		~~136~~				~~153~~			~~129~~	
		~~14~~				~~21~~			~~13~~	
						~~34~~			~~16~~	

4 Androm.			Groombridge			9 Androm S		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+27.0	1.75 - 13	+15.5	2.92 - 6		+18.5	2.54 + 2	
2	^{22.3} +157.7	2.14 + 26	^{13.6} +166.4	3.20 + 22		^{22.0} +158.0	2.17 - 35	
3	^{26.9} -153.1	1.76 - 12	^{16.3} -163.7	2.81 - 17		^{16.1} -163.9	2.84 + 32	
	<u>265</u>		<u>293</u>			<u>155</u>		
4	1.88		2.98			2.52		
	²¹⁰							
	²³							

High wind Lamp blown a little

Groombr. is the S preceding of a triangle

Groups 61 and 62

8 Androm.			11 Androm N			11 Androm S		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
+32.1	1.40	+ 8	+23.3	2.05	+ 7	+14.6	3.05	- 6
^{34.1} +145.9	1.28	+ 4	^{25.7} +154.3	1.85	- 13	^{14.4} +165.6	3.08	- 3
^{34.3} -145.7	1.27	- 5	^{23.5} -156.5	2.04	+ 6	^{13.6} -166.4	3.20	+ 9
	<u>95</u>			<u>294</u>			<u>33</u>	
	1.32			1.98			3.11	

147
10218
221
224
227747
30

9 Andromedae N			13 Andromedae			1 Andromedae		
Capo	Pinhole 5		Capo	Pinhole 5		Cap 2	Pinhole 5	
+20.8	2.29	- 3	+16.7	2.76	+ 15	+14.8	3.02	
^{20.9} +159.1	2.28	- 4	^{19.7} +160.3	2.41	- 20	^{17.8} +162.2	2.62	
^{19.9} -160.1	2.39	+ 7	^{17.6} -162.4	2.65	+ 4	^{13.9} -166.7	3.16	
	<u>96</u>			<u>182</u>			<u>280</u>	
	2.32			2.61			2.93	

218
28296
20327
93
142.93
1.53
1.40

Sunday September 28th 1873

40° 29

K Androm.				Preceding K. Androm.				23 Andromedal			
Cap 2		Pinhole 5		Capo		Pinhole 5		Capo		Pinhole 5	
1	+16.4	2.80	3.12		+18.7	2.52			+16.3	2.81	
2	^{16.8} +163.2	2.75	3.06		^{17.0} +163.0	2.72			^{21.7} +158.3	2.20	
3	^{15.6} -164.4	2.91	3.24		^{16.4} -163.6	2.80			^{18.4} -161.6	2.55	
		<u>6</u>	<u>42</u>			<u>204</u>				<u>136</u>	
4	²¹⁴ 21	2.82	14		²⁸⁸ 30	2.68			²⁸¹ 28	2.52	
	<u>93</u>	<u>1.52</u>							<u>53</u>		
		1.30									

7 And	1.15	-59	K	1.30	-1.00
8 "	1.32	-.42	L	1.40	-0.90
9 "	1.88	+14	9	2.32	+0.02
11 "	1.98	+24	13	2.61	+0.31
Butw 4+2		[+64]	32B	2.97	+0.67
	233	⁶³³	23	2.52	+0.22
	1.58	⁶⁹⁷	40B	2.96	+0.66
	<u>1.6</u>	¹⁷⁴		<u>2.08</u>	
	1.74			2.30	
3	1.17	-.57		2.52	+0.22
Butw 3+7	2.26	+52		2.68	+0.38
3 of 11	3.11	1.37			
or	2.98	1.34			
	LXII - LXII = -.56				

23 Androm. is the preceding one of two The full one is 40° 34

Groups 61 and 62.

40B Androm.		32B Androm.			
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
+16.3	2.81	+16.5	2.79		
+15.5		14.6	3.05		
+164.5	2.92	+165.4	~~1.94~~		
-14.0		-14.5	3.07		
-166.0	3.14		2.91		
	<u>2.87</u>		2.97		
	2.96				
329		331			
33		33			
<u>96</u>		<u>8</u>			

40B is at the right angle of a triangle and is therefore
 $41^{\circ}49'20''$ and not the same as the 40B of the 26°
 but is pr 40B

Tuesday September 30th 1873.

ε Lyrae N		ε Lyrae S		μ Lyrae	
Cap 1	Pinhole 5	Cap 1	Pinhole 5	Cap 1	Pinhole 5
1	+26.2 1.81	+24.1 1.98		+17.8 2.62	u
2	^{28.2} +151.8 1.66	^{26.7} +153.3 1.77		^{19.2} +160.8 2.56	
3	^{30.8} -149.2 1.48	^{28.7} -151.3 1.62		^{25.0} -155.0 1.91	u
4	-25.4 1.87	-31.1 1.46		-24.4 2.05	
	<u>282</u>	<u>283</u>		<u>104</u>	
	1.70	1.71		2.26	
190				257	
				<u>25</u>	
				26	

Groombridge		3B Lyrae		42B Lyrae.	
Cap 1	Pinhole 5	Cap 1	Pinhole 5	Cap 1	Pinhole 5
1	+21.7 2.20	+11.4 3.59		+17.4 2.67	
2	^{26.5} +153.5 1.79	^{15.6} +164.4 2.91		^{20.2} 159.8 2.35	
3	^{26.8} -153.2 1.76	^{18.2} -161.8 2.58		^{19.9} -160.1 2.39	
4	-23.6 2.03	-14.3 3.10		-20.8 2.29	
	<u>216</u>	<u>339</u>		<u>276</u>	
	<u>22</u>	<u>34</u>		<u>27</u>	
	94	304		242	
	378	18		170	
	1.94	3.04			

ε Lyrae S appears slightly brighter than ε Lyrae N

ε Lyrae N is very slightly bluer than ε Lyrae S.

3B is the full flare of a triangle

Groups 42 and 44

8B Lyrae
Cap 1 Pinhole 5

$$+12.8 \quad 3.34$$

$$+15.0 \\ +165.0 \quad 2.99$$

$$-14.6 \\ -165.4 \quad 3.05$$

$$-15.3 \quad 2.95$$

$$\underline{33}$$

$$3.08$$

$$\begin{array}{r} 343 \\ 34 \\ \hline 09 \end{array}$$

5B Lyrae
Cap 1 Pinhole 5

$$+14.8 \quad 3.02 \quad \psi$$

$$+19.0 \\ +161.0 \quad 2.48$$

$$-19.2 \\ -160.8 \quad 2.46$$

$$-18.7 \quad 2.52$$

$$\underline{248}$$

$$2.62$$

$$\begin{array}{r} 292 \\ 29 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 3.00 \quad 2.74 \\ 2.78 \quad .91 \end{array}$$

84B Lyrae
Cap 1 Pinhole 5

$$+13.9 \quad 3.16$$

$$+13.6 \\ +166.4 \quad 3.20$$

$$-14.4 \\ -165.6 \quad 3.08$$

$$-14.4 \quad 3.08$$

$$\underline{52}$$

$$3.13$$

$$\begin{array}{r} 349 \\ 35 \\ \hline 14 \end{array}$$

65B Lyrae
Cap 1 Pinhole 5

$$+13.6 \quad 3.20 \quad 3.57$$

$$+14.1 \\ +165.9 \quad 3.13 \quad 3.48$$

$$-15.9 \\ -164.1 \quad 2.87 \quad 3.19$$

$$-15.0 \quad 2.99 \quad 3.33$$

$$\underline{19} \quad 157$$

$$3.04$$

$$3.89$$

$$\begin{array}{r} 343 \\ 34 \\ \hline 09 \end{array}$$

Bet. 5B + 8B but Pres.
Cap 1 Pinhole 5

$$+11.1 \quad 3.65 \quad 4.06$$

$$+16.6 \\ +163.4 \quad 2.77 \quad 3.09$$

$$-14.0 \\ -166.0 \quad 3.14 \quad 3.50$$

$$-14.5 \quad 3.07 \quad 3.42$$

$$\underline{63} \quad 207$$

$$3.13 \quad 3.52$$

$$\begin{array}{r} 302 \\ 301 \\ \hline 117 \end{array}$$

XLII

$$\begin{array}{r} \mu \quad 2.26 - 33 \\ Cr. \quad 1.94 - 65 \\ 5B \quad 2.62 + 03 \\ 3B \quad 3.04 + 45 \\ 8B \quad 3.08 + 49 \end{array}$$

$$\underline{2.94}$$

$$Weil \quad 2.59 \quad +.54$$

$$\underline{3.13} \quad XLIV$$

$$C_1 \quad 1.70 - 70$$

$$C_2 \quad 1.71 - 69$$

$$92B \quad 2.42 + 02$$

$$65B \quad 3.04 + 64$$

$$84B \quad 3.13 + 73$$

$$\underline{2.00}$$

$$2.40$$

$$XLII - XLIV = +0.89$$

$$XLII - XLIV = +.51$$

$$\begin{array}{r} 41/2 \\ 30 \end{array}$$

8B is the Northern one of a triangle

5B is the Southernmost of a triangle

1877 Tuesday September 30th cont'd

S Cygni	66B Cygni	66B Cygni
Cap 2. Pinhole 5	Cap 0 Pinhole 5	Cap 1 Pinhole 5
1 +29.1 1.60	+27.7 1.69	+ 21.9 2.18
2 +151.0 1.60	+153.0 1.75	+156.3 2.02
3 60° -157.8 1.66	-155.5 1.95	-158.9 2.26
4 -33.3 1.34	-27.9 1.68	-24.1 1.98
<u>220</u>	<u>307</u>	<u>44</u>
1.55	1.77	2.11
Cap 2 ? 1.63	2.11 1.22 0.35	<u>46</u>
- .08		1.65
173	1.71	2.80

10B Cygni			10B Cygni			6B Cygni		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+17.4	2.67		+13.6	3.20		+17.7	2.64
2	^{18.1} +161.9	2.59		^{15.0} +165.0	2.99		^{18.2} +161.8	2.58
3	^{15.4} -164.6	2.93		^{15.4} -164.6	2.93		^{17.0} -163.0	2.72
4	-22.9	2.09		-16.2	2.83		-20.8	2.29
	<u>22.1</u>	2.28		<u>39.5</u>			<u>22.3</u>	
	2.57			12.99			2.56	
		RH .42			46			

6 B Cygni has 3 stars following it and is itself the foll^g of a Quadrangle.

$$\begin{array}{r} 2.88 \\ 2.57 \\ \hline .42 \end{array}$$

33

$$\begin{array}{r} 285 \\ 29 \\ \hline 56 \end{array}$$

Groups 45 and 47

54B Cygni
Cap 1 Pinhole 5

+18.1 2.59

^{22.2}
+157.8 2.15^{21.4}
-158.6 2.23

-23.6 2.03

2.25
1.71
54

1.00

2.25

46

2.79

251
25
226

PH .54

2.75

54B Cygni
Capo Pinhole 5

+26.8 1.76

^{27.2}
+152.8 1.73^{26.5}
-153.5 1.79

-29.3 1.58

1.71

181
19
227B Cygni *
Capo Pinhole 5

+12.7 3.35

^{13.2}
+166.8 3.27^{14.3}
-165.7 3.10

-14.3 3.10

82

3.20

357
06
21θ Cygni
Capo Pinhole 5

+34.8 1.24

^{30.8}
+149.2 1.48^{40.1}
-139.9 0.97

-37.0 1.12

1.71

1.20

51

81

1.20

PH 0.51

θ Cygni
Cap 1 Pinhole 5

+28.5 1.64

^{23.5}
+156.5 2.04^{30.1}
-149.9 1.53

-28.8 1.62

1.71

253

0.51

46

16 Lyrae
Capo Pinhole 5

+29.7 1.55

^{29.3}
+150.7 1.5851° ^{31.0}
-149.0 1.47

-29.2 1.59

19

1.55

PH 1.8

* 27B Cygni is a double - measured the Southern Star; it must have been much brighter in Argelander's day
 θ Cygni has a faint companion preceding it

134
19
121150
19
171172
17

16 Lyrae

B Lyrae

Cap 1 Pinhole 5

Cap 1 Pinhole 5

Pinhole 5

$$1 \quad +23.0 \quad 2.08$$

$$2 \quad +157.5 \quad 2.12$$

$$3 \quad -158.0 \quad 2.17$$

$$4 \quad 26.9 \quad 1.76$$

$$\begin{array}{r} 13 \\ 2.03 \\ 1.55 \\ \hline .48 \end{array}$$

$$\begin{array}{r} 2.03 \\ 46 \\ \hline 1.57 \end{array}$$

$$\begin{array}{r} 227 \\ 23 \\ \hline 250 \end{array}$$

Cap 1-0

$$\begin{array}{r} .34 \\ .54 \\ .42 \\ .51 \\ .48 \\ \hline 2.29 \\ .46 \end{array}$$

$$+35.4 \quad 1.21 \quad 1.35$$

$$+143.3 \quad 1.14 \quad 1.27$$

$$-144.3 \quad 1.19 \quad 1.33$$

$$-40.5 \quad 0.95 \quad 1.06$$

$$\begin{array}{r} 69 \\ 9.47 \\ \hline 9.46 \\ \hline 0.71 \end{array}$$

Cap

$$\begin{array}{r} 125 \\ 13 \\ \hline 112 \end{array}$$

Pxviii 254

$$\begin{array}{r}
 62 \\
 60 \\
 50 \\
 55 \\
 \hline
 227 \\
 3) 57 \\
 \hline
 19
 \end{array}$$

R Lyrae 0.71 -1.09
 16 " 1.56 - .24
 6B $\frac{2.55 + .75}{4.82}$

1.61
 19

 1.80
 10B $2.55 + .75$

S Cygni -0.08 -1.49 -1.24
 0 " 1.25 - .16 +0.09
 66B 1.71 + .30 +0.55
 54B $\frac{4.75 + 1.34 + 0.59}{4.89}$
 1.46
 27B 3.20 +2.04

XLV-XLVII +0.64 [Pxviii 254 assumed +57]

Tuesday September 30th Cont^d

α Cygni			55 Cygni			236B Cygni		
Cap	2	Pinhole 5	Cap	0	Pinhole 5	Cap	0	Pinhole 5
1	+86.1	0.01	+29.4	1.57		+20.4	2.33	2.60
2	^{72.5} +107.5	0.10	^{33.5} +146.5	1.32		^{22.3} +157.7	2.14	2.39
3		05		1.44			2.23	
4	06		$\frac{161}{16}$ 5			$\frac{250}{25}$ 5		

ω_3 Cygni			51 Cygni			O, Phec, Cygni		
Cap	0	Pinhole 5	Cap	0	Pinhole 5	Cap	0	Pinhole 5
1	+20.9	2.28	+19.1	2.47		+24.6	1.94	
2	^{17.5} +162.5	2.66						
3		2.47						
4	$\frac{275}{28}$ 47							

The star regarded as 236B Cygni may be some other star; if so 236B Cygni is not now in the heavens.

Groups ^{51 and 53} ~~55 and 57~~

217B Cygni
Capo Pinhole 5

+17.3 2.68

+^{18.9}16.1 2.49

2.58

288
29
57

ω , Cygni
Capo Pinhole 5

+18.7 2.52

+^{21.9}158.1 2.18
2.35

262
26
36

ω_2 Cygni
Capo Pinhole

+25.7 1.85

+^{28.3}151.7 1.65

1.75
195

ϕ , Foll. Cygni
Capo Pinhole 5

+43.0 0.85

94

ϕ_2 Cygni
Capo Pinhole 5

+41.1 0.93

103

178B Cygni
Capo Pinhole 5

+13.5 3.22

307

The star called 236B is not that but 47° 3188
236B is certainly variable

If a line be drawn from midway bet 356 + 57 thro 55 it will strike
the star which is called 236B

Observations stopped by clouds.

	165B Cygni	182B Cygni	Bet. 178 and 155
	Capo Pinhole 5	Capo Pinhole 5	Capo Pinhole 5
1	17.0 2.72	+20.3 2.34	15.2 2.96
2	303	261	330
3			
4			

L I

$$o_1 f \quad 0.85 - 1.29$$

$$o_2 \quad 0.93 - 1.21$$

$$o_{pr} \quad 1.94 - .20$$

$$182 B \quad 2.34 + .20$$

$$165 B \quad 2.72 + .58$$

$$\text{Bahr } 170 \text{ 255} \quad 2.96 + .82$$

$$178 B \quad \underline{3.22 + 1.08}$$

$$14.9^8$$

$$2.14$$

L III

$$\alpha \quad \underline{-1.62} \quad -3.38$$

$$55 \quad 1.57 - .19$$

$$\omega_3 \quad \underline{2.28} \quad + .52$$

$$\omega_2 \quad 1.85 + 9$$

$$236 B \quad 2.33 + 57$$

$$51 \quad 2.47 + 71$$

$$\omega_1 \quad 2.52 + 76$$

$$217 B \quad \underline{2.68} \quad + 92$$

$$8) 14.0^8$$

$$1.76$$

$$L - L III + 0.38$$

No doubt ω_3 is variable

ω_3 as I remember
 ω_2 them next
 ω_1 morning

Wednesday October 1st 1873

420B Hercules		401B Hercules		Lalande	
Capo Pinhole 5		Capo Pinhole 5		Capo Pinhole 5	
1	+14.7 3.04		+15.1 2.98		
2			3132		
3	338				
4					

Groups 43 and 44

Wednesday October 8th 1873.

3 Andromedae		Bet 3 + 7 but 5		7 Andromedae	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
1	+31.0 1.47		+21.1 2.26		+28.9 1.61
2	^{35.0} 145.0 : 1.23		^{20.9} +159.1 2.28		^{34.4} +145.6 1.26
3	<u>1.35</u>		<u>2.27</u>		<u>1.43</u>
4	150 15		<u>253</u> 21		160 16

Bet 7 and 4 but f		Bet 4 and the next ~~Groombridge~~		Bet 4 + 2 but foll ~~Bay from H~~	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
	+11.6 3.55 3.96		+15.0 2.99		+15.0 2.99
	^{15.2} +164.8 2.96 3.30		^{18.1} +161.9 2.59		^{18.1} +161.9 2.59
	<u>3.25</u> 12.6		^{16.1} +163.9 2.84		^{16.1} +163.9 2.84
	263 36 327		<u>2.91</u>		<u>2.91</u>
			324 32		324 32

Groups 61 and 63

8 Androm

Capo Pinhole 5

+ 30.5 1.50

^{34.2}
+145.8 1.28

1.39

154
12

11n Androm.

Capo Pinhole 5

+18.6 2.53

^{22.4}
+157.6 2.13

2.33

260
26
4

4 Androm

Capo Pinhole 5

+24.7 1.93

^{24.1}
+155.9 1.98

1.95

218
22
6

mostly of a triangle

Capo Pinhole 5

+15.3 2.95

^{16.1}
+163.9 2.84

^{13.1}
166.9 3.29

3.12

347
35

8 Pr. of triangle

Capo Pinhole 5

+12.8 3.34

^{12.4}
+167.6 3.41

3.37

375
38
37

full of triangle

Capo Pinhole 5

+11.7 3.53

^{13.6}
+166.4 3.20

3.36

375
38
37

4 is the Northernmost of two

In the place of Gr. is a triangle of 8 Stars

A single reading of the Star betⁿ 11n & 11s but p. gave 170.6 ^{9.4} 4.01 }

Wednesday October 8th 1873 Contd

λ Androm		λ Androm		λ Androm.	
Capo	Pinhole 5	Cap1	Pinhole 5	Cap2	Pinhole 5
1	+53.3 0.49	+37.9 1.08		+20.3 2.34	
2	^{50.6} +129.4 0.59	^{38.7} +141.3 1.04		^{22.5} +157.5 2.12	
3	0.54	$\frac{1.06}{53}$	1.06	$\frac{2.23}{1.06}$	$\frac{2.23}{1.53}$
4		$\frac{118}{12}$ 106	0.70	$\frac{249}{25}$ 224	0.70

It seemed to observer that
Cap 1 made an unusually
great difference

$$\begin{array}{r} 70 \\ 70 \\ 54 \\ 194 \\ \hline 0.65 \end{array}$$

22 Androm.		nf 22 Androm.	
Capo	Pinhole 5	Capo	Pinhole 5
1	+27.0 1.75 1.95	+18.8 2.51	
2	^{26.2} +153.8 1.81 2.102	^{14.0} +166.0 3.14	
3	1.78 3.97	2.82	
4	$\frac{194}{19}$ 175	$\frac{314}{31}$ 283	

N.f 22 is pointed at by a ^{pair of} ~~double~~ stars which are n. f. it

Groups 61 and 63 Contd.

ψ Androm
Capo

$$\begin{array}{r} +28.4 \quad 1.64 \quad 1.83 \\ +26.3 \\ +153.7 \quad 1.80 \quad 2.01 \\ \hline 1.67 \quad 1.92 \end{array}$$

$$\begin{array}{r} 192 \\ 19 \\ \hline 170 \end{array}$$

LXI

n.f. ψ Androm
Capo Pinhole 5

$$\begin{array}{r} +16.3 \quad 2.81 \\ +15.3 \\ +164.7 \quad 2.95 \\ \hline 2.88 \end{array}$$

$$\begin{array}{r} 321 \\ 32 \\ \hline 289 \end{array}$$

LXIII

18 Androm.
Capo Pinhole 5

$$\begin{array}{r} +19.4 \quad 2.44 \\ +22.0 \\ +158.6 \quad 2.17 \\ \hline 2.30 \end{array}$$

$$\begin{array}{r} 257 \\ 26 \\ \hline 231 \end{array}$$

$$\begin{array}{r} \gamma \text{ And} \quad 1.43 \quad -57 \\ 8 \text{ " } \quad 1.39 \quad -61 \\ 4 \text{ " } \quad 1.95 \quad -05 \\ \text{" } \quad 2.33 \quad +33 \\ \text{Beta 4x2} \quad 2.91 \quad +91 \\ \hline 01 \\ 2.00 \\ \text{Beta 3x7} \quad 2.27 \quad +27 \\ 1.35 \quad -65 \\ 3 \quad 2.25 \quad +125 \\ \text{Anon} \quad 4.01 \quad +2.01 \\ \text{Cetina 11x11} \quad 3.12 \quad +1.12 \\ +4304373 \quad 3.87 \quad +1.87 \\ \text{Hess II} \quad +4343683 \quad 3.86 \quad +1.36 \\ +434378 \end{array}$$

$$LXI - LXIII = +0.40$$

$$\begin{array}{r} \lambda \text{ And} \quad 0.65 \quad -1.19 \quad -0.95 \\ \psi \text{ " } \quad 1.67 \quad -1.17 \quad +0.07 \\ 22 \text{ " } \quad 1.78 \quad -1.06 \quad +0.18 \\ 18 \text{ " } \quad 2.30 \quad +1.46 \quad +0.79 \\ \hline 2.82 \quad +.98 \\ \text{n.f. 22} \quad 9.22 \\ 1.84 \\ \hline 2.88 \\ \text{n.f. 4} \quad 6.40 \\ 1.60 \\ \hline 2.82 \\ \text{n.f. 22} \quad 2.88 \\ \text{n.f. 4} \end{array}$$

$$\begin{array}{r} +1.22 \\ +1.28 \end{array}$$

$$\begin{array}{r} 6.40 \\ 1.60 \end{array}$$

Wednesday October 8th Contd

π Cassiop.			Bradley			o Cassiopeae		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+29.4	1.57	+16.4	2.80		+28.5	1.64	
2	^{25.3} +154.7	1.88	^{18.8} +161.2	2.51		^{32.6} +147.4	1.37	
3	^{27.5} -152.5	1.71	^{18.0} -162.0	2.60		^{26.2} -153.8	1.81	
4	-27.1	<u>1.74</u>	-19.5	<u>2.43</u>		-38.9	<u>1.41</u>	
		290		<u>234</u>			<u>223</u>	
		1.73		2.58			1.56	
	208 21		288 29 5.9			173 17 6		

164 B Andromedae			41 Andromedae			44 Androm.		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+18.5	2.54	+27.2	1.73		+19.4	2.44	
2	^{15.5} +164.5	2.91	^{27.4} +152.6	1.72		^{22.4} +157.6	2.13	
3	^{18.3} -161.7	2.56	^{25.8} -154.2	1.84		^{19.6} -160.4	2.42	
4	-20.1	<u>2.36</u>	-29.1	<u>1.60</u>		-19.9	<u>2.39</u>	
		238		<u>9</u>			<u>138</u>	
		2.60		1.72			2.35	
	288 29		192 19 3			261 26		

Groups 65 and 66

 ξ Cassiop.

Capo Pinhole 5

$$+24.5 \quad 1.95$$

$$+31.6 \\ +148.4 \quad 1.43$$

$$+24.8 \\ -150.5 \quad 1.92 \\ -155.2$$

$$-31.4 \quad 1.44 \\ \hline 274$$

$$188 \\ 19 \\ \hline 169$$

$$1.68$$

 ϕ Andromedal

Capo Pinhole 5

$$+44.7 \quad 0.78 \quad 87$$

$$+37.4 \\ +142.6 \quad 1.10 \quad 123$$

$$-38.7 \\ -141.3 \quad 1.04 \quad 116$$

$$-43.8 \quad 0.81 \quad 91$$

$$\hline 3.73 \quad 17$$

$$0.93 \quad 1.04$$

$$1.44 \quad 104 \\ 93 \quad 10 \\ \hline 0.51 \quad 94 \quad .68$$

 ϕ Androm.

Cap 1 Pinhole 5

$$+30.3 \quad 1.51 \quad 1.69$$

$$+29.1 \\ +150.9 \quad 1.60 \quad 1.78$$

$$-26.0 \\ -154.0 \quad 1.82 \quad 2.03$$

$$-34.5 \quad 1.26 \quad 1.40$$

$$\hline 219 \quad 290$$

$$1.44 \quad 174 \quad 1.54 \quad 1.72$$

$$51 \quad 17 \\ \hline 0.93 \quad 117 \quad 36 \quad 1.08$$

$$1.00$$

LXV

$$\phi \text{ And } 1.60 \quad -0.71 \quad -77$$

$$0 \text{ Cas } 1.56 \quad -0.15 \quad -14$$

$$\xi \text{ " } 1.68 \quad -0.03 \quad -02$$

$$\pi \text{ " } 1.73 \quad +0.02 \quad +03$$

$$\text{Polar } 2.58 \quad +0.87 \quad +88$$

$$\hline 3.55$$

$$1.70$$

LXVI

$$41 \text{ And } 1.72 \quad -0.77$$

$$44 \quad 2.35 \quad -0.14$$

$$39 \quad 2.90 \quad +0.41$$

$$164B \quad 2.60 \quad +0.11$$

$$\text{P.L.G.} \quad 2.87 \quad +0.38$$

$$\hline 2.44$$

$$2.49$$

$$\text{LXV} - \text{LXVI} = -0.78$$

39 Androm.

Capo Pinhole 5

$$+14.6 \quad 3.05$$

$$+16.2 \\ +163.8 \quad 2.83$$

$$-15.4 \\ -164.6 \quad 2.93$$

$$-16.4 \quad 2.80$$

$$\hline 3.61$$

$$2.90$$

$$323 \\ 32 \\ \hline 291$$

P.L.G.

Capo Pinhole 5

$$+14.2 \quad 3.11$$

$$+16.9 \\ +163.7 \quad 2.73$$

$$-17.1 \\ -162.9 \quad 2.71$$

$$-15.5 \quad 2.92$$

$$\hline 3.47$$

$$2.87$$

$$320 \\ 32 \\ \hline 288$$

P.L.G. is the fore of a right angled triangle

Thursday October 9th 1873.

C ₂ Lyrae N			C ₂ Lyrae S			92 B Lyrae		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+24.8	1.92	+29.2	1.59		+17.5	2.66	2.96
2	^{26.5} +153.5	1.79	^{26.6} +153.4	1.78		^{25.0} +155.0	1.91	^{2.12} 2.12
3	^{31.4} -148.6	1.44	^{30.7} -149.3	1.49		^{17.8} -162.2	2.62	2.92
4	-31.3	1.45	-33.2	1.33		-20.7	2.30	2.56
		<u>2.60</u>			<u>2.19</u>		<u>1.58</u>	<u>2.56</u>
		1.65			1.55		2.52	64
		184			172		159	
		<u>18</u>			<u>17</u>			
		6						

206 B			168 B			Lalande		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+12.5	3.39	+23.5	2.04		+11.7	3.53	
2	^{14.5} +165.5	3.07	^{23.4} +156.6	2.05		^{12.5} +167.5	3.39	
3	^{15.5} -164.5	2.92	^{28.0} -152.0	1.67		^{13.3} -166.7	3.25	
4	-18.8	2.51	-27.2	1.73		-14.2	3.08	
		<u>3.87</u>			<u>3.49</u>		<u>1.25</u>	
		2.97			1.87		3.31	
		337			208			
		<u>93</u>			<u>21</u>			
					87			

206 B is the Southernmost of three

168 B is Reddish

Lalande is the α most of a small triangle

Groups 43 and 44

84B Lyrae
Capo Pinhole 5

$$+11.7 \quad 3.53$$

$$+15.5 \\ +164.5 \quad 2.92$$

$$-15.0 \\ -165.0 \quad 2.99$$

$$-14.6 \quad 3.05$$

$$\begin{array}{r} 49 \\ 3.12 \end{array}$$

348

31

65B Lyrae
Capo Pinhole 5

$$+11.5 \quad 3.57$$

$$+16.7 \\ +163.3 \quad 2.76$$

$$-15.6 \\ -164.4 \quad 2.91$$

$$-17.3 \quad 2.68$$

$$\begin{array}{r} 392 \\ 2.98 \end{array}$$

$$2.98$$

332

83

99

Pxvii 254
Capo Pinhole 5

$$+17.0 \quad 2.72$$

$$+16.4 \\ +163.6 \quad 2.80$$

$$-16.7 \\ -163.3 \quad 2.76$$

$$-19.3 \quad 2.45$$

$$\begin{array}{r} 273 \\ 2.68 \end{array}$$

$$2.68$$

299

36

XLIII

$$168B \quad 1.87 \quad -1.00$$

$$206B \quad 2.97 \quad +0.10$$

$$401B \quad 2.99 \quad +0.12$$

$$430B \quad 3.21 \quad +0.34$$

$$Lal \quad 3.31 \quad +0.44$$

$$\begin{array}{r} 1495 \\ 2.87 \end{array}$$

$$2.87$$

$$En \quad 1.65 \quad - .71$$

$$Es \quad 1.55 \quad - .81$$

$$92B \quad 2.52 \quad + .16$$

$$65B \quad 2.98 \quad + .62$$

$$34B \quad 3.12 \quad + .86$$

$$\begin{array}{r} 1182 \\ 2.36 \end{array}$$

$$2.36$$

$$XLIII - XLIV = .51$$

$$Pxvii 254 \quad 2.68 \quad -0.19$$

420B

Capo Pinhole 5

$$+12.9 \quad 3.32$$

$$+15.3 \\ +164.7 \quad 2.95$$

$$-12.8 \\ -167.2 \quad 3.34$$

$$-13.5 \quad 3.22$$

$$\begin{array}{r} 83 \\ 3.21 \end{array}$$

$$3.21$$

307

36

$$\begin{array}{r|l} -57 & +57 \\ \hline +51 & +51 \\ \hline -6 & +81 \\ +19 & +86 \\ \hline +23 & +91 \end{array}$$

401B

Capo Pinhole 5

$$+14.2 \quad 3.11$$

$$+13.5 \\ +166.5 \quad 3.22$$

$$-14.8 \\ -165.2 \quad 3.02$$

$$-17.9 \quad 2.61$$

$$\begin{array}{r} 396 \\ 2.99 \end{array}$$

$$2.99$$

-84

Thursday October 9th Cont'd

S Cygni		56B Cygni		54B Cygni	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
1	+35.1 1.22	+20.9 2.28	+24.0 1.99		
2	^{30.9} +149.1 1.47	^{24.5} +155.5 1.95	^{26.8} +153.2 1.76		
3	^{30.7} -149.3 1.49	^{24.5} -155.5 1.95	^{27.1} -152.9 1.74		
4	-33.7 1.30	-30.2 1.52	-25.6 1.86		
	1.48	3.70	3.35		
	1.36	1.92	1.84		
	1.52				
	-0.16				

PXIX.240		FL23		Groombz	
Capo	Pinhole 5	Capo	Pinhole 5	Capo	Pinhole 5
1	+20.3 2.34	+20.4 2.33		+15.0 2.99	
2	^{22.0} +158.0 2.17	^{23.1} +156.9 2.07		^{14.9} +155.1 3.01	
3	^{20.1} -159.9 2.36	^{22.6} -157.4 2.12		^{13.9} -166.1 3.16	
4	-22.4 2.13	-20.5 2.32		-15.8 2.88	
150	<u>100</u> 2.25	246 <u>28</u> 21	<u>85</u> 2.21	835 35	⁴ 3.01

PXIX.240 is S.p. two

lpr is a little reddish

lpr is the S^m one of a little Δ in a cluster

27B S	1.23	2.44
27B N	3.67	2.60
	3.52	

Groups 47 and 48

27B Cygni N	27B Cygni S	θ Cygni
Capo Pinhole 5	Capo Pinhole 5	Capo Pinhole 5
+ 9.9 3.90	+ 11.3 3.61	+ 31.5 1.44 1.60
+ ^{9.9} 170.1 3.90	+ ^{12.4} 167.6 3.41	+ ^{32.7} 147.3 1.36 1.52
- ^{8.8} 171.2 4.16	- ^{9.9} 170.1 3.90	- ^{34.5} 145.5 1.26 1.40
- 10.6 3.75	- 10.6 3.75	- 36.1 1.17 1.30
<u>3.71</u>	<u>2.67</u>	<u>1.33</u>
3.93	3.67	1.33 45
437 43	40P 41 67	145 15 130

[illegible]

Thursday October 9th Contd

α Cygni			217B Cygni			ω Cygni		
Capo	Pinhole	5	Capo	Pinhole	5	Capo	Pinhole	5
1	+73.1	0.10		+17.6	2.65		+18.1	2.59
2	^{81.2} +96.8	0.03		^{17.8} +162.2	2.62		^{20.5} +159.5	2.32
3	^{82.8} -97.2	0.02		^{17.6} -162.9	2.71		^{16.6} -163.4	2.77
4	-87.2	0.00		-17.9	<u>2.61</u>		-18.7	<u>2.52</u>
		15			19			2.20
	0.04		295	2.65		284		2.55
	1.52					28		
	-1.48					6		

236B Cygni			55 Cygni			Anonyma		
Capo	Pinhole	5	Capo	Pinhole	5	Capo	Pinhole	5
1	+15.4	2.93	3.27	+26.4	1.80		+16.8	2.75
2	^{20.7} +159.3	2.30	2.56	^{24.4} +155.6	1.96		^{17.3} +162.7	2.68
3	^{17.2} -162.8	2.70	3.00	^{27.7} -152.3	1.69		^{21.1} -158.9	2.26
4	-19.4	<u>2.44</u>	2.72	-29.2	<u>1.59</u>		-18.2	<u>2.58</u>
		247	3.55		3.04			2.27
	285	2.62	89	196	1.76	286		2.57
	29					28		
						5		

55 Cygni is the Southern one of a triangle.

α is probably about 0.2 brighter than these measures

Groups 53 and 55

 ω_2 Cygni
Capo Pinhole 5

$$+23.4 \quad 2.05$$

$$+153.3 \quad 1.77$$

$$-152.4 \quad 1.70$$

$$-26.6 \quad \frac{1.78}{3.30}$$

$$202 \quad 1.82$$

 ω_3 Cygni
Capo Pinhole 5

$$+17.5 \quad 2.66$$

$$+158.8 \quad 2.25$$

$$-158.7 \quad 2.24$$

$$-19.8 \quad \frac{2.40}{1.55}$$

$$266 \quad 2.39$$

 ω_1 Cygni
Capo Pinhole 5

$$+19.6 \quad 2.42$$

$$+160.7 \quad 2.39$$

$$-161.0 \quad 2.48$$

$$-22.0 \quad \frac{2.17}{1.46}$$

$$267 \quad 2.36$$

 F_1 Cygni
Capo Pinhole 5

$$+21.7 \quad 2.20 \quad 2.45$$

$$+154.9 \quad 1.90 \quad 2.12$$

$$-156.8 \quad 2.06 \quad 2.30$$

$$-23.2 \quad \frac{2.06}{2.2} \quad \frac{2.30}{1.17}$$

$$232 \quad 2.05 \quad 2.29$$

 F_2 is yellowish

 ϕ_0 Cygni
Capo Pinhole 5

$$+20.1 \quad 2.36$$

$$+159.5 \quad 2.32$$

$$-159.4 \quad 2.31$$

$$-22.1 \quad \frac{2.16}{1.15}$$

$$255 \quad 2.29$$

 F_2 Cygni
Capo Pinhole 5

$$+39.9 \quad 0.98$$

$$+141.1 \quad 1.03$$

$$-147.0 \quad 1.34$$

$$-39.9 \quad \frac{0.98}{3.3}$$

$$121 \quad 1.08$$

$$121 \quad 1.2 \quad 0.9$$

Thursday October 9th Cont'd

335B Cygni
Capo Pinhole 5

1 +13.3 3.25

2 ^{15.9}
+164.1 2.87

3 ^{15.4}
-164.6 2.93

4 -17.6 $\frac{2.65}{370}$
2.92

326
32
—
94

315B Cygni
Capo Pinhole 5

+15.7 2.89

^{17.5}
+162.5 2.66

^{15.7}
-164.3 2.89

-19.1 $\frac{2.47}{291}$
2.73

304
30
—
74

Groups 53 and 55 Contd

α	-1.48	-3.31	f_2	1.08	-1.19
55	1.76	-0.07	f_1	2.05	- .22
ω_3	2.39	+0.56	60	2.29	+ .02
ω_2	1.82	-0.01	anon	2.57	+ .30
236 B	2.62	+0.79	315 B	2.73	+ .46
51	2.36	+0.53	335 B	2.92	+ .65
ω_1	2.55	+0.72		1.64	
247 B	2.65	+0.82		2.27	
	<u>14.67</u>				
	1.83				

$$L_M - L_V = 0.44$$

Saturday October 11th 1873

Note fourth round Pinhole 6 was used

T423 Cygni				PX1X 240				Groombridge*			
Capo		Pinhole 5		Capo		Pinhole 5		Capo		Pinhole 5	
1	1	+18.9	2.49	2.78		+21.7	2.20		+12.4	3.41	
2	2	^{24.7} +155.3	1.93	2.15		^{24.9} +155.1	1.91		^{16.6} +163.4	2.77	
3	3	^{21.8} -158.2	2.19	2.44 0.72		^{21.3} -158.7	2.24		^{16.7} -163.3	2.76	
4	4	-48.3	0.65	1.41		-47.3	0.68	1.44	-29.6	1.56	2.32
		<u>8.02</u>					<u>7.79</u>		<u>11.26</u>		
		2.00					1.95		2.81		
		19					1.77		62		
		2.19					2.0		63		
		8.1					2.0		63		

116B Cygni				120B Cygni				Bet e and 120B			
Capo		Pinhole 5		Capo		Pinhole 5		Capo		Pinhole 5	
1		+10.7	3.73		+15.8	2.88	3.21		+15.8	2.88	
2		^{14.2} +165.8	3.11		^{16.9} +163.1	2.73	3.05		^{15.5} +164.5	2.92	
3		^{12.5} -167.5	3.39		^{16.0} -164.0	2.85	3.18 1.43		^{13.9} -166.1	3.16	
4		-24.1	1.98	2.74		-34.1	1.28	2.04	-27.1	1.74	2.50
		<u>9.7</u>					<u>2.50</u>		<u>3.46</u>		
		3.24					2.62		2.86		
		3.05					2.43		2.87		

* Bet is the 1st one of a triangle

The 4th round Pinhole 6 for all stars.

Groups 48 and 49.

for all the stars

Bet P x 1 x 240 and gr. but f.

91B Cygni

113B Cygni

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

+18.0 2.60

+17.8 2.62 2.92

+21.3 2.24

+^{20.3}159.7 2.34+^{22.0}158.0 2.17 2.42+^{22.0}158.0 2.17-^{21.1}158.9 2.26-^{18.0}162.0 2.60 2.90
11.51-^{22.6}157.4 2.12-33.5 1.32 2.08
1.28-32.9 1.35 2.11
1.56-41.4 0.91 1.67
2.20

2.32

2.47

2.05

2.13

2.28

1.86

237
24
13244
24
20175
44207
21
86

e Cygni

99B s.f. Cygni

99B n.p. Cygni

Capo Pinhole 5

Capo Pinhole 5

Capo Pinhole 5

+24.1 1.98

+14.5 3.07

+18.8 2.51

+^{30.0}150.0 1.53+^{14.2}165.8 3.11+^{18.7}161.3 2.52-^{29.2}150.8 1.59-^{13.4}166.6 3.23-^{15.6}164.4 2.91-62.5 0.27 1.03
2.13-28.4 1.64 2.40
3.81-34.1 1.28 2.04
1.98

1.53

2.95

2.50

1.34

2.76

2.01

100
1030A
81207
26
231

Saturday October 11th Contd

SofqqBs.f. Cygni			SofqqBnp. Cygni			p. qqBCygni		
Capo	Pinhole 5		Capo	Pinhole 5		Capo	Pinhole 5	
1	+17.7	2.64		+13.1	3.29		+16.3	2.81
2	^{22.0} +158.0	2.17		^{14.2} +165.8	3.11		^{15.7} +164.3	2.89
3	^{16.8} -163.2	2.75		^{13.8} -166.2	3.17		^{14.8} -165.2	3.02
4	-34.6	1.25 2.01		-24.5	1.95 2.71		-30.1	1.53 2.29
		<u>1.87</u>			<u>2.8</u>			<u>3.01</u>
		2.39			3.07			2.75
	245	2.20		321	2.88		285	2.56
	<u>25</u>			<u>32</u>			<u>29</u>	
				89			56	

Fourth round of obsns with Pinhole 6

Groups 48 and 49 Contd

F423	2.00	-0.42	e	1.53	-1.05
Px 240	1.95	-0.47	Lals.sf	2.39	-0.19
113 B	2.05	-0.37	120 B	2.62	+0.04
91 B	2.47	+0.05	99 Bnp	2.50	-0.08
116 B	3.24	+0.82	Lalp	~~3.75~~	+0.17
Gm-	2.81	+0.39	99 Bsf	2.95	+0.37
	<u>1.4352</u>				
	2.42		Retre x 208	2.86	+0.28
Retr	2.82	-0.10	Lals sf 120 B	<u>3.07</u>	+0.49
				8) 4.67	
				2.58	

$$XLVIII - XLIX = -0.16$$

Saturday October 11th Cont'd

60 Cygni	Cap 1 Pinhole 6	Anonymous.	Cap 1 Pinhole 6	F, Cygni	Cap 1 Pinhole 6
~~+35.3~~ 1.21		~~+34.3~~ 1.27		~~+39.6~~ 0.99	
21 +28.5 1.64		+22.6 2.12		+28.0 1.67	
32 + ^{31.3} 148.7 1.45		^{26.9} +153.1 1.76		^{28.9} +151.1 1.61	
43 - ^{25.0} 155.0 1.91		* - ^{21.4} 158.6 2.23		- ^{29.6} 150.4 1.56	
	200		11		4
4	1.67	227	2.04	179	1.61
185	36	23		18	
19	4.81	09			
66					

315B Cygni	Cap 1 Pinhole 6	Lalande †	Cap 1 Pinhole 6	Pxx1 140	Cap 1 Pinhole 6
1 +23.8 2.01		+28.5 1.64		+22.2 2.15	
2 + ^{25.1} 154.9 1.90		^{31.0} +149.0 1.47		+ ^{25.2} 154.8 1.89	
3 - ^{25.8} 154.2 1.84		- ^{26.4} 153.6 1.80		- ^{25.1} 154.9 1.90	
	275		191		294
4	1.92	182	1.64	221	1.98
214		18		21	
26		64			
93					

Pxx1 140 is in a line between G & another nearly but a little N
 * Lamp somewhat blown by wind. † Lalande follows a cluster.

Groups 55 and 57

I_2 Cygni
Cap 1 Pinhole 6

$$+46.1 \quad 0.73$$

$$+48.7 \\ +131.3 \quad 0.63$$

$$-45.0 \\ -135.0 \quad 0.77 \\ \hline 3$$

49
8

$$0.71$$

Pxx 429
Cap 1 Pinhole 6

$$+26.8 \quad 1.76$$

$$+22.9 \\ +157.1 \quad 2.09$$

$$-25.4 \\ -154.6 \quad 1.87 \\ \hline 272$$

$$1.91$$

$$213 \\ 21 \\ \hline 92$$

335B Cygni
Cap 1 Pinhole 6

$$+24.0 \quad 1.99$$

$$+22.5 \\ +157.5 \quad 2.12$$

$$-22.7 \\ -157.3 \quad 2.11 \\ \hline 22$$

$$2.07$$

$$231 \\ 23 \\ \hline 254$$

g Cygni
Cap 1 Pinhole 6

$$+29.8 \quad 1.55$$

$$+27.1 \\ +152.9 \quad 1.74$$

$$-33.9 \\ -146.1 \quad 1.29 \\ \hline 158$$

$$170 \\ 17$$

$$1.53$$

p Cygni
Cap 1 Pinhole 6

$$+58.9 \quad 0.34$$

$$+71.1 \\ +108.9 \quad 0.12$$

$$-80.7 \\ -99.3 \quad 0.03 \\ \hline 49$$

$$0.16 \\ 0.16$$

$$1.91 \\ 16 \\ \hline 1.75$$

p Cygni
Cap 2 Pinhole 6

$$+26.2 \quad 1.81$$

$$+23.7 \\ +156.3 \quad 2.02$$

$$-24.9 \\ -145.1 \quad 1.91 \\ \hline 274$$

$$1.52 \\ 36 \\ \hline 1.16$$

$$4.94 \\ 16 \\ \hline 1.75$$

$$1.91 \\ 1.91$$

$$1.16 \\ 0.75$$

$$213 \\ 23 \\ \hline 236$$

$$16 \\ 75 \\ \hline 91 \quad 0.45$$

Pxx 149 is at the S.p. angle of an obtuse angled triangle

Saturday October 11th Contd

π_2 Cygni		π_2 Cygni	
Cap 1	Pinhole 6	Cap 2	Pinhole 6
1	+55.1 0.44	+22.0 2.17	
	59.0	23.5	
2	+121.0 0.34	+156.5 2.04	
	61.4	23.6	
3	-118.6 0.29	-156.4 2.03	
	107	24	
4	0.36	2.08	
		1.16	
		0.92	
		1.28	
		0.64	
		2.32	
		2.2	
		0.9	

$$\begin{array}{r} 2.08 \\ 0.36 \\ \hline 1.72 \end{array}$$

$$\begin{array}{r} 1.28 \\ 0.64 \\ \hline 0.64 \end{array}$$

$$\begin{array}{r} 2.32 \\ 2.2 \\ \hline 0.9 \end{array}$$

Groups 55 and 57 Cont'd

F_2	0.71	-0.96	g	0.45	-0.80
F_1	1.61	-0.06	u_2	0.64	-0.61
G_0	1.67	0.00	L_{el}	1.64	+0.39
cl_{non}	2.04	+0.37	g	1.53	+0.28
315B	1.92	+0.25	prg	1.98	+0.73
335B	2.07	+0.40		1.24	
	<u>4.02</u>			1.25	
	1.67				
P_{x429}	1.91	+0.24			

$$LV - LVII = +0.42$$

Monday October 13th 1873

This must be μ Cassiopeae		ξ Cassiopeae		θ Cassiopeae	
Cap 1	Pinhole 6	Cap 1	Pinhole 6	Cap 1	Pinhole 6
1	+37.6 1.09	55° +37.2 1.11		+34.4 1.26	
2	+31.8 1.42	+35.4 1.21		+35.7 1.19	
3	^{34.0} +146.0 1.29	^{33.8} +146.2 1.30		^{38.2} +141.8 1.06	
4	1.35	^{1.40} 1.25		^{1.26} 1.12	
100		ϕ And $0.47 -0.80 -1.93$ θ Cas $1.12 -0.15 -1.1$ Σ " $1.25 -0.02 +0.2$ π " $1.36 +0.09 +1.3$ ρ And $2.13 +0.86 +9.0$ $116 \quad 1.33$ $1.23 \quad 1.27$ μ Cas $1.35 +0.08$		ν Pers $-0.21 -1.03$ ϕ " $0.50 -0.32$ Σ And $1.03 +1.21$ ω " $1.39 +0.57$ A " $1.41 +0.59$ 4.12 0.82	
		$LXV-LXVI = +0.45$			

ϕ Andromedae		$\# \xi$ Androm.		ω Androm.	
Cap 2	Pinhole 6	Cap 1	Pinhole 6	Cap 1	Pinhole 6
2	+30.0 1.53	+41.2 0.92		+34.3 1.27	
3	^{28.3} +151.7 1.65	^{36.6} +143.4 1.14		^{30.2} +149.8 1.52	
4	1.59	1.03		1.39	
5	1.16				
	0.43				

1.59
1.16
0.08
0.57
0.59
0.30

Groups 65 and 67.

Bradley
Cap1 Pinhole 6~~+30.0~~ ~~1.53~~

+24.6 1.94

$$\begin{array}{r} 20.4 \\ +159.6 \\ \hline 27 \end{array}$$

2.13

$$\begin{array}{r} 238 \\ 24 \\ \hline \end{array}$$
π Cassiopeae
Cap1 Pinhole 6

+31.9 1.41

$$\begin{array}{r} 33.4 \\ +146.6 \\ \hline 1.32 \end{array}$$

1.36

$$\begin{array}{r} 152 \\ 101 \\ \hline 7 \end{array}$$
♄ Androm
Cap1 Pinhole 6

+50.8 0.59

$$\begin{array}{r} 55.1 \\ +124.9 \\ \hline 0.44 \end{array}$$

0.51

5

A Andromedae
Cap1 Pinhole 6

+33.1 1.34

$$\begin{array}{r} 30.6 \\ +1149.4 \\ \hline 1.49 \end{array}$$

1.41

$$\begin{array}{r} 158 \\ 16 \\ \hline 72 \end{array}$$
♁ Persei
Cap2 Pinhole 6

+41.7 0.90

$$\begin{array}{r} 39.3 \\ +140.7 \\ \hline 1.01 \end{array}$$

0.95

1.16

-0.21

$$\begin{array}{r} 106 \\ 11 \\ \hline 5 \end{array}$$
♁ Persei
Cap1 Pinhole 6

+48.5 0.64

$$\begin{array}{r} 57.8 \\ +122.2 \\ \hline 0.37 \end{array}$$

0.50

$$\begin{array}{r} 56 \\ 5 \\ \hline 50 \end{array}$$

Very hazy Seeing not very good.

Wednesday.
Tuesday October 15th 1873.

9 Andromedae SP		9 Androm NF		13 Andromedae	
Cap 0	Pinhole 6	Cap 0	Pinhole 6	Cap 0	Pinhole 6
1	+21.1 2.26	+21.7 2.20		+23.5 2.04	
2	$\begin{array}{r} 25.5 \\ +154.5 \\ \hline 1.87 \\ 2.06 \end{array}$	$\begin{array}{r} 27.0 \\ +153.0 \\ \hline 1.75 \\ 1.97 \end{array}$		$\begin{array}{r} 26.3 \\ +153.7 \\ \hline 1.80 \\ 1.92 \end{array}$	
3					
4	$\begin{array}{r} 230 \\ 23 \\ \hline 07 \end{array}$	$\begin{array}{r} 226 \\ 27 \\ \hline 98 \end{array}$		$\begin{array}{r} 214 \\ 21 \\ \hline 93 \end{array}$	

λ Androm.		γ Androm. S.P.		γ Androm. NF.	
Cap 1	Pinhole 6	Cap 1	Pinhole 6	Cap 1	Pinhole 6
1	+50.8 0.56	+30.1 1.53 1.70		+20.5 2.32 2.09	
2	$\begin{array}{r} 68.7 \\ +111.3 \\ \hline 0.17 \\ 0.36 \end{array}$	$\begin{array}{r} 31.9 \\ +148.1 \\ \hline 1.46 \\ 1.57 \\ 1.49 \\ 36 \\ \hline 1.13 \end{array}$		$\begin{array}{r} 14.2 \\ +165.8 \\ \hline 3.11 \\ 3.47 \\ 5.43 \\ 2.71 \\ 36 \\ \hline 2.35 \end{array}$	
3					
4	$\begin{array}{r} 40 \\ 40 \\ \hline 0.00 \end{array}$	$\begin{array}{r} 163 \\ 16 \\ \hline 147 \end{array}$		$\begin{array}{r} 303 \\ 30 \\ \hline 270 \end{array}$	

Groups 62 and 63.

2 Androm.

Cap 1 Pinhole 6

+25.5 1.20

$$\begin{array}{r} 42.1 \\ +117.9 \\ \hline \end{array}$$

0.88

1.04

36

0.68

$$\begin{array}{r} 116 \\ 12 \\ \hline \end{array}$$

K Androm.

Cap 1 Pinhole 6

+41.6 0.91

$$\begin{array}{r} 45.5 \\ +134.5 \\ \hline \end{array}$$

0.75

0.83

36

0.47

92

P. K Androm.

Cap 1 Pinhole 6

+22.4 2.13

$$\begin{array}{r} 21.7 \\ +158.3 \\ \hline \end{array}$$

2.20

2.16

36

1.80

$$\begin{array}{r} 241 \\ 74 \\ \hline 17 \end{array}$$

2 Androm

Cap 2 Pinhole 6

+20.9 2.28

$$\begin{array}{r} 27.7 \\ +152.3 \\ \hline \end{array}$$

1.69

$$\begin{array}{r} 1.98 \\ 1.04 \\ \hline .94 \end{array}$$

1.98

1.52

0.46

With Cap 1 0.68

mean 0.57

$$\begin{array}{r} 221 \\ 22 \\ \hline \end{array}$$

K Andromedae

Cap 2 Pinhole 6

+23.7 2.02

$$\begin{array}{r} 21.9 \\ +158.1 \\ \hline \end{array}$$

2.18

$$\begin{array}{r} 2.10 \\ 83 \\ \hline 1.27 \end{array}$$

2.10

1.52

0.58

With Cap 1 0.47

mean 0.52

$$\begin{array}{r} 234 \\ 23 \\ \hline 11 \end{array}$$

λ Andromedae

Cap 2 Pinhole 6

+28.9 1.61

$$\begin{array}{r} 29.6 \\ +150.4 \\ \hline \end{array}$$

1.56

$$\begin{array}{r} 1.58 \\ 36 \\ \hline 1.22 \end{array}$$

1.58

1.52

0.06

With Cap 1 0.00

mean 0.03

$$\begin{array}{r} 176 \\ 18 \\ \hline 8 \end{array}$$

Wednesday October 15th 1873 Contd

18 Andromedae		Bet ⁿ 18 and K, near 18		32B Androm.	
Capo	Pinhole 6	Capo	Pinhole 6	Capo	Pinhole 6
1	+37.2 1.11	+20.8 2.29		+22.6 2.12	
2	^{36.6} +143.4 1.14	^{22.3} +157.7 2.14		^{21.1} +158.9 2.26	
3	<u>1.12</u>	<u>2.21</u>		<u>2.19</u>	
4	126 13	247 25 <u>2</u>		244 24 <u>220</u>	

22 Androm		Same Star	
Capo	Pinhole 6	Capo	Pinhole 6
1	+34.1 1.28 1.43	+28.5 1.64 1.82	
2	^{41.4} +138.6 0.91 1.02	^{28.2} +181.8 1.66 1.85	
3	<u>1.09</u>	<u>1.65</u> <u>1.09</u> 0.56	
4	122 12 <u>10</u> 2.45 0.67 <u>1.22</u> 61	<u>1.29</u> 1.09 1.19	
		Mean 1.19	

183

182
18
163

Look out for R Cass = $28^{\circ} 17'$ +50 34

41° 49' 20

This is really 40B
41° 49' 33

Groups 62 and 63 Cont'd

40B Androm.
Capo Pinhole 6

+23.0 2.08

+18.4
+161.6 2.55
2.31

258
26
232
K

0.52 -1.07

0.57 -1.02

1.97 +.38

1.92 +.33

2.19 +.60

1.69 +.00

40B 2.26 +.67

11.12

1.59

sp 9 2.06 +.47

pK 1.80 +.20

fol αΔ 2.34 +.72

Foll 9 one of a Triangle
Capo Pinhole 6

+23.2 2.06

+19.2
+160.8 2.46
2.26

252
20
7

λ 0.03 -0.84

ψ 1.13 +0.26

22 1.19 +0.32

18 1.12 +0.25

3.47

0.87

npψ 2.35 +1.48

Beta 18-K 2.21 +1.34

189
19

LXII - LXIII = +0.72

40B is at the Right Angle of a triangle

Wednesday October 15th Cont'd

θ Persei		τ Persei		F431 Persei	
Cap 1	Pin hole 6	Cap 1	Pin hole 6	Cap 1	Pin hole 6
1	+41.4 0.91 ~~+40.5 0.95~~	+49.6 0.60		+28.4 1.64	
2	^{38.6} +141.4 1.04	^{53.7} +126.3 0.48		^{26.3} +153.7 1.80	
3	^{51.1} -128.9 0.55	^{67.8} -112.2 0.17		^{30.2} -149.8 1.52	
4	-64.4 0.23	-77.3 0.05		-32.7 1.36	
	0.68	0.33		1.58	
26	<u>0.36</u>	<u>0.36</u>		<u>36</u>	
	0.32	-0.03		1.22	

0, Cygni N		0, Cygni S		178B Cygni	
Cap 1	Pinhole 6	Cap 1	Pinhole 6	Cap 0	Pinhole 6
1	+30.4 1.51	+56.2 0.41		+21.3 2.24	
2	^{34.6} +145.4 1.25	^{49.7} +130.3 0.60		^{24.1} +155.9 1.98	
3	^{28.8} -151.2 1.62	^{72.8} -107.2 0.10		^{19.1} -160.9 2.47	
4	^{43.2} -39.3 1.01	-75.4 0.07		-25.4 1.87	
	1.35	0.29		2.14	
	<u>36</u>	<u>36</u>			
	0.99	-0.07			

This is too faint
Ought to have been obs.
with cap 2. reject

Groups 51 and 1

γ Persei
Cap 2 Pinhole 6

$$+39.9 \quad 0.98$$

$$+144.3 \quad 1.19$$

$$-135.3 \quad 0.78$$

$$-55.5 \quad 0.43$$

$$\begin{array}{r} 93 \\ 0.84 \\ 1.52 \\ -0.68 \end{array}$$

ϵ Persei
Cap 1 Pinhole 6

$$+49.4 \quad 0.61$$

$$+127.7 \quad 0.52$$

$$-124.0 \quad 0.41$$

$$-71.3 \quad 0.12$$

$$\begin{array}{r} 46 \\ 0.42 \\ 0.36 \\ +0.06 \end{array}$$

θ_2 Cygni
Cap 1 Pinhole 6

$$51^\circ +55.5 \quad 0.43$$

$$+119.5 \quad 0.31$$

$$-108.8 \quad 0.12$$

$$44^\circ -69.5 \quad 0.15$$

$$\begin{array}{r} 0.25 \\ 0.36 \\ -0.11 \end{array}$$

182B Cygni
Cap 0 Pinhole 6

$$+35.8 \quad 1.19$$

$$+147.7 \quad 1.39$$

$$-150.2 \quad 1.55$$

$$\begin{array}{r} 44^\circ \\ -38.7 \quad 1.04 \\ 1.19 \\ 1.29 \end{array}$$

$$\begin{array}{r} 124 \\ 14 \end{array}$$

165B Cygni
Cap 0 Pinhole 6

$$+23.6 \quad 2.03$$

$$+155.0 \quad 1.91$$

$$452^\circ -154.1 \quad 1.83$$

$$-27.6 \quad 1.70$$

$$\begin{array}{r} 208 \\ 21 \\ 187 \end{array}$$

$$1.87$$

Bet 178 and 165B
Cap 0 Pinhole 6

$$+21.1 \quad 2.26$$

$$+163.7 \quad 2.81$$

$$-163.9 \quad 2.84$$

$$-22.4 \quad 2.13$$

$$2.51$$

$$\begin{array}{r} 280 \\ 28 \\ 52 \end{array}$$

Friday October 17th 1873.

Groups 63 and 64

$$O_1 f \quad -0.07 \quad -1.30$$

$$O_2 \quad -0.11 \quad -1.34$$

$$O_{1pr} \quad +0.99 \quad -0.24$$

$$182B \quad 1.29 \quad +0.06$$

$$165B \quad 1.87 \quad +0.64$$

$$DM 45^{\circ} 313j \quad 2.51 \quad +1.28$$

$$178B \quad 2.14 \quad +.91$$

$$\hline 8.62$$

$$1.23$$

$$L1-1 = +1.05$$

$$\gamma \quad -0.68 \quad -0.86$$

$$\bar{c} \quad -0.03 \quad -0.21$$

$$g \quad +0.06 \quad -0.12$$

$$v \quad +0.32 \quad +0.14$$

$$F431 \quad 1.22 \quad +1.04$$

$$\hline \begin{array}{r} 1.60 \\ 71 \\ \hline .89 \end{array}$$

$$0.18$$

