1860phae.proj.2315

KG
11365
231

K.21

Zones

No. 8.

Feb. 26 – April 8 1860-1.

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1861 Jun 30 $8^h 45^m - 9^h 45^m$ 1861 Feb 24

9	29	0.7	4.7	9	29	1.1	4.9
	30	12.9	16.8		30	12.9	17.1
	31	19.5	23.3		31	19.9	23.5
	31	33.7	37.7		31	34.0	38.2
	31	58.8	62.8		31	58.9	63.0
	32	12.8	16.9		32	13.0	17.0
		B.D.					
	32	33.6	37.5		32	33.7	37.7
	33	36.6	40.5		33	36.5	40.7
	33	42.2	46.1		33	42.4	46.3
	35	16.9	20.6		35	16.8	20.6
	37	31.9	35.7		35	34.8	38.6
	37	37.3	41.3		37	32.0	36.1
					37	37.6	41.5
	38	26.2	30.1		38	26.5	30.4
	38	28.4	32.3		38	28.5	32.6
	38	49.4	53.4		38	49.6	53.8
	39	10.3	14.3		39	10.5	14.5
	40	37.2	41.2		40	37.4	41.5
	40	56.6	60.7		40	56.8	61.0
	42	3.0	7.0		42	3.1	7.1
	42	9.3	13.2		42	9.6	13.7
	43	2.7	6.7		43	3.0	7.1
	43	41.6	45.6		43	41.7	45.6
	44	1.3	5.2		44	1.5	5.5
	44	14.0	18.1		44	14.4	18.2
	44	30.5	34.5		44		34.5
	44	45.5	49.3		44	45.6	49.2
	44	48.2			44	58.4	
	45	1.5	5.4		45	1.6	5.3
9	45	23.8	27.8	9	45	24.0	27.9

137

Prob. diff. of two wires $\pm 0^s.104$

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1960phae.proj..2315

0°10'–0°50'

9.10	6	3	The Moon is up	10	6	0	
~~10~~	8	56		10	8	54	
10.11	6	35		11.~~12~~	6	31	
11	5	9		11.12	5	8	
10	7	58		10	7	55	
10.11	2	26		11	2	26	
	B.D				B		
11	8	21	n.s	11.12	8	18	
10	6	34		11	6	32	
10.11	4	39		11.12	3	39	n.s(sure)
10.11	7	16		11	7	12	(doubtful if same S tail)
10.11	5	37		11.12	5	32	
10	9	46		10.11	5	36	
	D.D			10	9	40	n.s
10	4	38		10.11	4	36	
9.10	0	14		10	0	10	AR doubtful
10	1	16	doubtful		1	—	~~AR doubtful~~
10	3	45		11	2	46	(sure)
10.11	1	40		11	1	40	
9.10	10	6		10	10	6	
10.11	5	39		11	5	41	
10	9	54		10	9	52	
7.8	5	23		8	5	21	
9.10	0	52		11	0	49	first-wire a little too soon
9.10	4	41		10.11	4	38	
10	0	57		11	0	57	
11	6	38			6	37	first-wire lost
10.11	8	28	Dec?		8	—	
9.10	7	44	See wire lost		7	46	See wire lost
8	3	59		8	4	0	See wire 0.1 too soon
10	6	18		10	6	14	

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Zone $8^h 35^m - 9^h 45^m$ $+0°30' - 0°50'$

Comparison of Magnitudes

1855.0

Mg.									
9.0	8	45	4.0	+0° 44.1	1.5	9.0	9.0	+0.00	0.00	0.00
~~8.4~~		46	31.7	42.2	0.9	9.0	9.0	0.00	0.00	0.00
9.1		46	36.5	47.7		9.5	9.5	0.40	0.40	0.40
9.5		47	25.2	51.4		9.5	9.5	+0.00	0.00	0.00
9.1		47	36.2	41.3		9.0	9.0	−0.10	−0.10	−0.10
9.2		47	36.4	42.4		9.5	9.5	+0.30	+0.30	+0.30
9.4		48	49.5	42.8		10.0			0.60	
8.8		50	23.7	48.2		9.0	9.5	0.70	0.20	0.70
8.2		53	3.1	43.2		9.0	9.0	0.00	0.00	0.00
9.3		54	9.0	51.0		9.5	9.0	−0.05	0.20	−0.30
9.5	8	59	20.0	44.5		9.5	9.5	0.00	0.00	0.00
9.1	9	2	12.7	46.5		~~9.0~~	9.0	~~0.00~~ −0.10	−0.10	−0.10
8.9		2	15.5	47.3		8.5	9.0	~~0.50~~ −0.15	−0.40	+0.10
7.5		13	10.5	46.9		7.5	8.0	~~0.25~~	0.00	0.50
9.3		13	32.6	50.4		9.0	10.0	0.20	−0.30	0.70
8.8		17	0.2	48.2		9.5	9.5	0.70	+0.70	0.70
9.3		22	11.2	46.4		9.5	9.5	0.20	0.20	0.20
9.5		24	30.5	45.0			10.0			0.50
8.0		28	27.3	51.1		8.5	8.0	0.25	0.50	0.00
7.5		42	47.3	46.8		7.5	8.0	0.25	0.00	0.50
7.0		44	46.0	45.2		8.0	8.0	0.00	1.00	1.00
9.3		45	29.0	43.1						

0.23 ± 0.054 | 0.36 ± 0.054

18) 5.25

0.292 ± 0.057

Pr. error of 1 comp. ± 0.24

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1860phae..proj..231S

64 | 41
54
44 | 19
34 ||| 35
24 | 6
14 ||| 6
4 |
6 |
16 | 3
26 | 7
36 |||| 52
46 || 42
56
66 | 44

20) 255
1275

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1860phae.proj..231S

This is a repetition
of Mr Coolidge's 3d Zone.

Angle of Position read off Feb. 13, the Telescope
at nearly the same hour angle. = 83° 33'

This is not an observation of the angle of Position

9 44	9.6	13.4	✓
44	31.2	35.1	✓
45	4.4	8.2	✓
45	44.3	48.3	✓
45	55.7	59.6	
46	25.1	29.0	✓
46	~~31.7~~	32.3	
48	22.8	26.7	
49	23.8	27.8	
50	32.4	36.4	
51	10.6	14.4	

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~~June 9-3 11~~

9		43	3.37	0 45	15.6
		45	1.60	43	56.0
	10	26	54.64	42	16.5
		42	5.92	41	54.9
7		53	53.97	47	49.5
7		56	26.80	45	6.7
8		56	54.04	43	21.8
7	11	3	14.00	41	29.0
5		6	36.05	41	29.5

Feb 12. 1861

	Dots		
9	8	14	
11	6	23	
11	7	36	
11	0	44	
11	9	38	
10	10	8	
10.11	3	36	first wire lost
	B		
10	8	29	a faint 10 mag
	False		break
10	1	28	
10.11	10	27	
10.11	3	46	

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9	54	47	8.7
	54	52.2	58.3
	55	42.2	46.3
	56	2.8	6.7
	56	26.1	30.0
	56	39.9	43.6
9	56	54.2	57.9
	57	43.8	47.8
	58	20.7	24.8
9	58	22.5	26.3
10	0	3.4	7.4
		5.4	9.2
		12.1	15.9
	1	16.5	20.2
	~~1~~	~~56.4~~	~~59~~
	1	55.4	59.0
	2	54.5	58.4
	3	5.3	9.2
	4	1.5	5.3
	4	51.5	55.4
	5	28.6	32.5
	6	2.8	(6.9)
	9	39.2	43.2
	9	49.8	54.0
	11	2,2	
	11	5.0	9.1
10	12	16.1	20.0.

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1860phae.proj..231S

	D	B	
10	7	27	
11	8	36	
11	6	8	
10	9	32	
11	8	9	
11	0	48	
10	1	2	Sec wire doubtful.
	D	D D	
12.12	3	43	AR & Dec both doubtful
11	2	48	on Sec scale
9.10	5	31	n S
9	6	57	
9.10	9	48	on Li
10	4	2	
11.12	3	21	
	B.	D.	
10	5	33	
9.10	4	58	
11.12	4	48	n.s. Dec doubtful
10	6	56	
9	7	46	
10	2	16	
11.12	7	33	Sec wire doubtful
11	2	48	
11	10	4	
10	1	2	Sec wire lost
10	8	48	
	B		
9.10	8	15	on.

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1860phae.proj..231S

10 12	41.9	45.9
13	41.4	45.6
14	26.9	30.8
14	37.5	41.7
15	35.6	39.3
16	43.1	47.1
16	45.3	49.1
17	1.4	5.3
17	54.0	57.7
19	2.2	6.2
19	19.0	23.0
19	(50.2)	53.9
20	17.7	
20	42.2	
20	43.7	47.6
22	19.4	23.2
22	48.2	52.3
23	26.4	30.4
24	14.6	18.5
25	56.3	60.3
26	50.1	54.1
27	18.5	22.4
28	24.5	28.4
30	18.6	22.4
30	50.3	54.3
10 31	26.3	32.2

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1860phae.proj..231S

10	4	45	· cr.
10	7	1	
	4	28	NS
9.10	8	—	
9.10	10	28	
	D		
11.12	7	12	
11	9	42	cr.
9.10	5	29	
10.11	6	27	
11.12	Double		
11	6	23	
11.12	6	4	first wire doubtful.
11.12	6	44	Lee wire lost
10.11	5	42	Lee " "
10.11	7	5	
	B.D		
10	0	16	
	~~6~~	~~5~~	not obs.
10.11	6	12	
9.10	7	3	
11.12	4	10	
10	6	59	
9	3	58	NS
10.11	6	14	
	D	B.D	
11	4	30	NS
11.12	6	10	
9.10	5	27	
10	4	19	

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1860phae.proj..231S

33	3.9	7.8
34	35.5	39.0
35	3.9	7.7
36	52.7	56.8
38	10.5	
38	56.4	60.3
39	21.1	24.9
41	32.1	35.9
41	52.9	57.0
42	14.8	18.7
43	25.3	(29.3)
44		10.1
44	45.0	49.0
45	42.6	46.5
46	56.5	60.6
47	32.9	36.7
48	21.7	25.5
48	28.0	31.9
50	21.5	25.9
51	7.6	11.4
54	12.6	16.4
54	26.3	30.5
55	43.6	47.4
56	27.4	31.3

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9	2	1	
10.11	5	33	
10	8	6	
10.11	9	37	
11.12	7	27	see wire lost
9	0	21	
11	2	12	
11.12	4	52	
11	2	59	ex.
11	3	55	
11	3	38	see wire too late
	1	–	first wire lost
9.10	9	18	
9.[illegible]	4	9	
11.12	1	58	HS
11	7	22	
9	0	43	ex
8.9	2	26	
	B.B.B		
10	0	13	
11.12	0	43	
11.12	8	48	
11.	1	37	
9.10	1	47	
9.10.	9	57	
			Eye-piece taken off

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11	0	11.5	15.5
	1	5.6	9.7
	1	39.6	43.6
	3	32.6	36.8
	3	43.5	47.6
	4	46.8	50.4
	4	55.1	59.1
	5	32.6	36.6
	5	41.2	45.3
	6	7.6	11.5
	6	22.9	26.8
	6	31.0	34.8
8	7	20.3	
8	7	51.3	55.4
	11	54.7	58.8
	12	4.1	7.9
	12	27.8	31.7
	14	3.5	7.3
	14	27.0	30.8
	14	59.0	63.0
	15	29.1	33.0
	15	53.7	57.4
11	16	8.0	12.1

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10.	3	24	
11	8	59	
11	2	9	
Pp.10	18	10	
10.11	0	38	n.s
11.12	10	0	n.s See wire lost
	D		
11.12	7	1	first wire lost
11	2	52	
11.12	4	41	
11.12	5	45	ns
9	9	18	
11	5	55	
11.12	6	8	
12	9	—	See wire bad
11.12	4	46	
11.12	4	23	
10.11	3	13	
8	8	4	
11	3	24	
10	3	9	
11.12	9	2—	first wire lost ns
	7	48	AR?

accidental Break

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11	47	16.6	20.6
	47	55.0	59.0
	48	5.7	9.6
	48	26.1	30.4
	48	42.2	46.3
	49	39.3	43.3
	50	13.9	17.8
	50	59.0	63.0
	51	40.9	44.6
	52	11.0	14.8
	52	22.9	26.9
	54	47.1	~~51.2~~
	54	~~17~~	57.2
11	55	17.2	21.2

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1860phae.proj..231S

10.11	3	39	
10.11	4	48	
11	9	37	
11	8	6	
10.11	8	17	
	B.D.B		
11	1	52	
9.10	4	6	
11	7	44	
11	0	38	
10	2	18	
9	7	1	
9	2	0	See wire-lost
8	3	16	first " " ns
9.10	7	32	

At the end of the Zone, the object-glass was found covered with moisture.

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Feb. 13. 1861.

Angle of Pos. 83° 26' } Mean
83 30 }
3d determn 83 26 } 83° 27'.3

The stars marked B.C. are already observed with the Bonn Meridian Circle but their accurate places not yet published.

N. End
E. 10. 15.

Syr. at 9. 31.0
" e. 31.7

Feb. 21. 1861

Angle of P. 263 26

Ent. Syr. 25.0 E. 8 24
" 24.0 10 18

Mer. Arg. −1h 0m

Arranged for Reduction to 1862.0

9	33	37.1	41.1		9	33	40.0	43.9
	34	11.1	15.2	Catalogue		34	14.1	18.2
	34	18.1	22.0			34	21.0	25.0
	34	58.0	61.7			35	1.0	4.8
	35	17.8	21.9			35	20.8	24.8
	35	44.4	48.4			35	47.6	51.5
	36	3.0	7.1			36	6.0	10.2
	36	30.0	34.0	Catalogue		36	33.0	36.9
	36	37.3	41.1			36	40.2	44.3
	37	21.0	24.9			37	24.0	28.0
9	37	56.8	61.0		9	38	0.0	3.8

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$1^\circ 0' - 1^\circ 10'$

S.C. Sund. $+1''.1 = \alpha$
$+1.1$ " δ for $\delta = 1^\circ.5$

Mag. Resol.	1861.0	Red. to 1862.0			Mag. Reg.	
	h m s					
9	9 34 10.90	1°	1 44.4		8.7	
8.9	36 ~~23.82~~		~~7 20.4~~ 17.2		8.3	Set in this Star Group.
9	~~47 17.77~~		6 59.0		9.1	
9	51 44.77		1 15.3		8.8	
9	51 50.73		8 34.1		8.8	
9	10 1 21.78		7 28.2		8.2	
57 Leonis 7	49 2.64		10 26.3	Ex. Piazzi.	8.0	
8	11 5 38.01		6 29.4	Lalande alone	8.4	
~~9~~	~~5 44.47~~					
8	11 13 7.96	1	2 3.8		7.8	

There seems to be no 9m star between the limits $1^\circ 0' - 1^\circ 10'$ until we come to $1^h 5^m$

Go on about 2m after the last cat. star.

			D		
9.10	7	50	9	7	40
9	1	46	9	1	35
9.10	9	48	9.10	9	39
11.12	1	32	11.12	1	21 AR not very good
10.11	5	56	11	5	45
	B				
11	5	58	11.12	6	49 sure
9.10	8	37	9.10	8	28
8.9	7	20	8.9	7	10
10	7	41	10	7	31
11	8	54	11	8	42
10.11	8	21	11	8	11

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9h 33m – 11h 14m.

38	14.6	18.6	9 38	17.6	21.7
38	33.4	37.5	38	36.4	40.3
39	54.6	58.4	39	57.6	(61.3)
40	46.1	50.0	40	49.1	53.1
41	23.7	27.3	41	26.3	
41	40.2	44.3	41	43.2	47.2
42	40.1	44.0	42	43.0	47.0
42	52.0	55.9	43		
43	6.2	10.3	43	9.4	13.3
43	47.2	51.3	43	50.4	54.3
44	4.7	8.8	44	7.6	11.8
44	12.3	16.2	44	15.2	19.2
45	~~10.3~~	13.3	45	12.4	16.4
45	22.8	26.9	45	26.0	30.0
45	45.7	49.7	45	48.8	52.7
46	47.1	—	~~46~~		
47	6.8	10.7	47	9.8	13.8
47	8.6	12.6	47	11.7	15.8
47	17.9	21.8	47	21.0	25.0
47	56.3	60.4	47	59.2	63.3
48	33.1	37.1	48	36.1	40.1
49	7.8		49	10.7	(14.4)
49	48.8	52.7	49	51.6	55.6
49	59.2	63.3	50	2.1	6.0
50	53.7		50	56.7	60.8
51	2.8		51	5.8	
51	12.6	16.5	9 51	15.8	19.7

Catalogue

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1860phae.proj...231S

1° 0′ – 1° 10′

11	4	32		10	4	20	
10.11	3	26		10.11	3	14	
	D				B		
11.12	8	55		11.12	8	44	Sec wire bad
10	2	28		10B	2	17	
11.12	1	49		11.12	1	40	Sec wire lost
9.10	8	19		10	8	9	
10	1	45		10B	1	36	
11	6	52			F		
10	1	6		10	0	58	
	B.D						
10.11	6	17		11B	6	8	
11	1	28		10.11	1	14	
10	1	24		10	1	15	
11	1	56	first wire lost	11	1	44	
10.11	1	38		11	1	30	
11	4	25		11.12	4	13	
11.12	0	41	Sec wire lost		D		
9.10	7	45		10	7	36	
10.11	8	50	NS	11	8	39	
8	7	3		9	6	50	
	DD						
9.10	3	31		9.107	3	20	
11	5	19		11	5	17	
11	4	21	Sec wire lost	11.12	4	10	Sec wire doubtful
9.10	10	53		9	10	40	
9.10	7	4		9.10	7	55	sure
	B B						
11	3	19		11	3	6	
11.12	0	46	Sec wire lost	11.12	0	29	
11	3	49		11	3	37	

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9	51	45.3	49.3	Catalogue	9	51	48.3	52.1
	51	50.8	54.8	Catalogue		51	53.7	57.8
	52	36.0	40.1			52	39.2	43.0
	52	56.0	60.0			52	59.0	62.9
	53	23.3	(27.3)			53	26.2	30.3
	53	46.3	—	Examine obs		53	49.5	
	53	55.9	60.0			53	59.0	62.8
	54		3.9					
	54	42.1	46.0			54	45.2	
	55	2.0	6.0			55	5.0	9.0
	55	22.0	25.9			55	25.0	29.2
	56		10.6			56	9.7	13.5
	56	16.7	20.7			56	19.9	23.9
	56	26.0	30.1			56		33.0
	56	47.1	51.2					
	57	24.1	28.2			57	27.1	30.9
	57	47.3	51.2			57	50.4	54.4
	58	21.2	25.2			58	4.0	8.2
9	58	52.4	56.1			58	55.2	59.3
9	59	49.9	53.9		9	59	53.0	57.0
10	0	22.2	26.2		10	0	25.4	(29.5)
	1	3.8	7.8			1	6.8	10.7
						1	17.8	21.7
	1	46.9						
	1	56.8	60.8			1	59.8	63.8
	1	57.9	61.8			2	1.0	4.9
	2	—	16.4	Examine obs		2	15.5	19.4
	3	16.8	—			3	20.0	23.6
10	3	22.7	26.5		10	3	25.7	29.7

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9	1	16		8.9	1	5	
9	8	37	NS Dec doubtful, Up to	9	8	26	
10	1	6	this point the may have been too bright.	9.10	7	0	53
10.11	5	11		10.11	4	0	sure
10.11	6	34	See wire doubtful	10.11	6	23	.
11	4	18	Wire ?	11	4	6	see wire lost
	B		for Sij to next Star				
11	4	34		10.11	4	23	
11	9	8	a little doubtful in Dec, fine wire lost	10	9	0	AR lost
11	8	52		11	8	—	see wire lost
11.12	7	19		11	7	8	
10.11	9	8		10	8	57	
	D.				B. B		
10.11	5	5	fine wire lost	10	4	53	
10.11	6	31		10	6	18	
11	7	10		10.11	7	0	fine wire lost
11.12	3	48					
10.11	6	5		10	5	53	
11	6	57	long Sij	10	6	45	
11	4	41	No groups of Stars in	11	4	30	
9.10	7	18	this region.	9.10	7	8	
11	2	1		11.12	1	49	
10	0	36		11	0	45	NS See wire doubtful
	B. D. B						
10	2	16		10	2	4	
				11	1	36	
11	0	21	See wire lost				
10.11	3	27	a coarse double Star	10.11	3	15	
10	3	46	NS	10	3	35	
							The Stars
10.11	8	57	Wire ?	10	8	45	
11	5	20	See wire lost	11	5	10	Sij to both wires
11	2	31		11	2	18	

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10	4	53.7	57.7	10	4	56.9	60.7
	5	5.1	8.8		5	7.9	11.8
	6	9.6	13.6		6	12.9	16.7
	6	22.2	26.1	Catalogue	6	25.3	29.3
	6	52.8	56.9		6	56.0	60.0
	7	18.4	22.1		7	21.6	25.4
	7	49.8	53.7		7	53.0	56.9
	8	31.7	35.7		7	5	
	9	10.3	14.4				
	9	22.9	26.9				
	10	23.0	27.5	Examine	10	26.1	30.6
	10	30.0	34.0	(Argelander) rejected			
	11	29.9	33.8		10	26.6	30.6
	12	12.7	16.7		10	33.0	37.2
					11	32.9	37.0
	12	23.3	27.4		12	15.7	19.6
	14	23.8	27.7	Pen taken up. to be filled	12	26.5	30.6
					12	44.8	48.9
				Examine wire	13	1.9	5.7
					13	11.9	(reject)
	14	23.8	27.7		14	27.0	30.9
	15	45.3	49.4		15	48.5	52.4
	16	15.8	19.7		16	18.8	22.8
	16	32.1	36.1		16	35.0	39.0
	16	52.2	56.4		16	55.4	59.6
	18	24.6	28.5		18	27.7	31.7
	19	42.7	46.6	N° 91.	19	45.6	49.8
	19	55.8	60.0		19	59.2	63.0
	20	11.5	15.5		20	14.7	16.6
	21	8.3			21	11.2	15.3
10	21	15.2	19.3	10	21	18.3	22.2

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10.11	1	59		10.11	1	47	
10	9	8	first wire 0.1 too late	10	8	52	sure
	D				D.B		
10.11	1	4		10	0	50	
9	7	23	~~red~~	9	7	24	sure prob. an error of 10" in 1st Zone
10	9	27	redbish	9	9	16	
10	1	20		10	1	30	sure
10	2	32		11	2	21	
10	9	26					
11	2	7					
11	5	0					
	B						
10	7	7		10	6	56	n.s
10.11	2	20		10	2	7	
11	4	44		10.11	4	32	
	4	31		10	4	18	
	4	28		10	4	15	
	2	0	not obs	10.11	5	32	
				10	2	6	(reject)
				10.11	0	6	
10	8	6		10.11	7	54	
10.11	6	37		11B	6	25	
	D				~~0~~	~~15~~	
10	0	28		10.11	0	15	
9.10	2	48		9	2	35	
10.11	9	17	doubtful both in AR 8 Dec	10 7	9	10	
							A group of Stars just passed.
10.11	5	39		11	5	30	
11	4	31		11	4	21	n.s perhaps a false break focus
10	5	0		11	4	49	
11	2	37		11.12	2	26	
9.10	2	44	Sec wire lost	10	2	31	
10	10	—		10.11	9	57	

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10	22	25.7	29.6	10	22	28.8	32.7
	22	52.6	56.7		22	55.7	59.6
	23	0.1	4.0		23	3.0	7.1
	23	19.9	23.8		23	22.9	26.9
	23	45.3	49.2		23	48.4	52.2
	23	52.7	56.8		23	56.0	59.9
	24	23.9	27.8				
	25	10.1	14.1		25	13.2	17.2
	25	59.6	63.5		26	2.8	6.8
	26	25.9	29.8		26	28.9	33.0
	26	49.5	53.5		26	52.7	56.7
	27	7.8	12.0		27	11.0	15.1
	27	43.0	47.1		27	46.3	50.2
	28	1.4			28	4.5	8.4
	28	44.1	48.0		28	47.1	51.1
	31	46.1	50.0		31	49.2	53.2
	31	48.1	52.2		31	51.3	55.3
	32	25.7	29.8		32	28.9	32.8
	33	8.3	12.3		33	11.5	15.4
	33	59.2	63.2		34	2.4	6.2
	34	20.0	23.9		34	23.1	27.1
	35	6.2	10.2		35	9.3	13.3
	35	27.3	31.5		35	30.5	34.5
					35	31.3	
10	36	44.8	48.7		36	47.9	51.9
					37	42.9	46.8
					38	3.1	7.2
					38	35.0	39.0
					40	36.7	40.6
					41	20.5	24.5
				10	41	58.3	62.1

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10	6	36		10.11	6	26	
11	7	2		11.12	6	51	
10	3	21		10	3	10	
	B.B						
10.11	2	26		11	2	14	
10	10	9		10.11	9	58	
10.11	2	10		10	3	0	sure
10.11	0	28	Mags. a little uncertain				
10	6	8	of 60.(10.11) and (11)	10.11	5	59	
11	3	33		11.12	3	20	
11	0	47	AR?	11	0	33	
11	7	39		10.11	7	27	
11	8	52	lost star brighter than this one	11	8	12	sure
	D.D.						
10.11	5	37		10.11	5	26	
9.10	5	19	See wire lost	9.10	5	8	
11	2	38		11	2	25	
10	1	—		10.11	1	20	
11	2	—	n Sij	11	2	4	nS
10	5	48		10.11	5	37	
10	4	8		10	3	55	
10.11	3	9		11.12	2	57	
10.11	6	28		11	6	18	
10.11	4	36		11	4	23	n Sij
10	2	8		10.11	1	56	
	0	—	not obs.	10.11	0	5	See wire lost
9.10	1	0		10	0	49	
	9	—	} omitted	11	9	25	
	7	—	}	11.12	9	3	nS
				10	7	15	
				11.12	9	53	
			Took out the Lamp	11	4	36	
					B		
				10.11	1	16	

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10	41	55.0	58.9	This R.A. seems to belong to prec. star.	10	42	10.6	14.6
	42	29.3	33.2	B. C.		42	30.7	34.6
	43	6.3	10.3	B. C.		43	9.4	13.4
	43		14.8			43		18.2
	45	2.0	5.8			45	4.9	8.9
	45	57.1	61.2			46	0.2	4.2
	46	11.4	15.2			46	14.6	18.8
	46	33.5	37.4			46	36.7	40.5
	47	15.1	19.0			47	18.1	22.2
	49	3.0	7.1	Catalogue		49	5.9	10.1
	49	53.0	56.9					
	50	11.2	15.1					
	50	37.1	41.2					
	52	5.1	9.9					
	52	25.0	29.0					
	53	29.6	33.4		10	53	32.5	36.6
	54	15.3						
	54	18.8	22.6					
	54	43.6	47.7					
	55	20.1	24.2					
	55	58.5	62.1					
	57	11.1	15.0					
	57	21.5	25.5					
10	58	7.3	11.2					

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10.11	0	28		11	0	17	Der a little doubtful
11	4	15	Ex. Maj.	10	4	0	
10	5	25		9.10	5	16	
11	1	6	first wire lost	10.11	0	57	first wire lost.
	B. D. B						
11	5	22	comp. 30" n.f.	10.11	6	10	sure
11.	3	35		11	3	25	
11.12	6	38		11.12	6	16	
11	3	18		10	3	6	
10.	2	2		10	1	50	
8	10	25	rather red		10	16	first wire doubtful
10	3	5					
11	4	49					
10	2	1					
11.12	8	12					
11.12	8	46					
	D. D. D						
9	7	31		9.10	7	21	Maj's bad on account of Clouds and Lamps
10	3	55	Lee wire lost				
10	7	9					
10.11	3	50					
11.	8	36					
10	4	27			4	16	AR lost
11	8	37					
10	1	48					Clouded up.
	B. D						
10	5	28					

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1860phae.proj..231S

10	58	23.7	27.7
	59	19.2	23.0
11	0	8.4	12.3
	0	~~17~~	17.9
	1	~~24~~	~~6.5~~
	1	2.4	6.5
	3	31.8	35.9
	3	6.5	10.4
	4	0.1	4.1
	4	52.5	56.3
	5	38.7	42.7
	6	59.9	64.0
	8	40.3	44.4
	9	5.3	9.0
	10	52.8	56.8
	11	21.7	25.4
	12	4.1	(Begin here)
	12	11.3	15.4
	13	8.5	12.4
	14	(4.1)	7.9
11	14	48.2	52.1

B.C.

B.C.

B.C. Catalogue

By 33 comps. of Mag.

S − A +0ᵐ.303 ± 0ᵐ.038

Pr. error of 1 comps. ± 0ᵐ.216

Wind still to-right. Hazy at times.

By 22 comps. ~~of~~ of the mean

between Jones Feb. 13 / Feb 21 and Argelander

S − A = 0ᵐ309 ± 0.043

Pr. error of 1 comps. ± 0ᵐ.203

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10	9	4	
10.11	0	33	
10	1	31	
11	3	14	Examine wire
10	2	59	AR lost reject
11.12	9	57	
11	3	36	
10.11	2	55	coarse double, comp. n.f.
9.10	4	49	
	B		
11	3	45	
9	6	16	a faint 8.9 may
9.10	4	26	
AR 10	4	44	
9.10	6	36	
10.11	0	39	
	B.D		
10	10	26	NS
11	2	39	See wire lost
9.10	8	46	
8.9	2	6	
10.11	0	50	first wire doubtful
9.10	3	13	

Comparing these times inter se we find

Mag. Feb 21 – Mag Feb. 13

−1.0	in 6 cases		−6.0
−0.5	" 18 "	−0.3 in 2 −0.2 in 2	−9.0
0.0	" 19 "		−1.0
+0.5	" 30 "	+0.2 in 1 +0.3 in 2	+15.0
+1.0	" 5 "		+0.8
			+5.0
+4.8	108		+4.8

(2−1) = + 0.m046

Considering them as casual we have

Prv. Error of One estimate

± 0.m222

Pr. Error of mean of 2.

± 0.m155

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The star 6 seems to be very erroneously given; its true position
1825.00 is about
9h 16m 2s +1° 22' 25"

while B.Z. 153 (to be reduced by notes to the Berlin star maps, Hora VIII) Cata
log
9 17 2.22 +2° 27' 32".1 40/1406

and Weisse 9 16 4.46 +1 20 50.5

Argelander 1855.0 9 17 37.5 +1 15.0

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1860phae.proj..231S

1° 10' - 1° 20'

1862.00

8.9	10	⁴ 18.96	+1° 16' 59."5		
9.		21 26.39	13 50.4		
9		33 42.56	13 41.9		
7		49 5.72	10 5.2		
7	11	20 35.54	16 7.2	not in Argelander.	
7		46 46.75	19 11.2		
7		51 59.72	17 52.7		
9		54 42.39	17 59.7		
9	11	55 17.26	+1 19 56.6		

1862.00

6	8	20 23.37	+1° 16' 41."5		
9		20 53.55	14 20.4		
a. 7	9	4 23.99	15 14.9	a. This star is not to be found; it is not in Argelander. The probability is that it	
7.6		9 34.64	18 13.6	= Baily $181\frac{34}{35}$ 24' South. An error of 8	
8		11 10.19	17 18.6	divisions of the ~~microscope~~ circle would account	
b. 9		17 58.77	11 28.3	for it and is probable. See B.Z. 153.	
9		18 52.79	11 46.1		
9		19 14.78	12 29.3		
8.9		27 45.43	16 09.5	~~Examine for alias~~	~~Ar. AD. 11 ✓ D. + 38.~~
8.9	10	1 18.96	16 59.5		

Arg. Go on between 5' and 6' of time

10+ 2 53 +0.4
6 36 11.9
6 54 12.

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1960phae.proj..231S

$1^{0}\,0' - 1^{0}\,10'$

				Mag. Argl.	
9.	$7^{h}\,40^{m}\,26\overset{s}{.}43$	$+1^{0}\,9'\,5\overset{''}{.}8$		8.5	
8.	41 51.73	1 0 13.4		7.6	
8.9	41 52.07	1 1 9.3		9.2	
9	45 43.19	1 10 17.0		8.3	
8	58 27.62	1 4 57.6		8.7	
8.9	8 1 39.10	1 9 19.3		6.0	
8	6 46.52	1 2 19.7		8.5	
9	8 6.12	1 7 40.9		9.0	
9	8 36.10	1 7 38.6		9.0	
9	11 23.06	1 8 26.4		9.0	
9	31 9.49	1 3 52.1		9.0	
9	32 12.85	1 7 12.9		8.8	
8	39 14.02	1 8 52.6		7.3	
9	39 31.24	1 4 46.6		8.8	
8	41 6.97+	1 3 44.1	L. only.	8.0	
7.8	9 0 16.49	1 9 9.9	S.B.	7.7	
7.8	10 26.92	1 7 53.9	major S. Str. B.	7.3	
9.10	28 10.36	+ 8 6.6		9.0	
9	34 13.99	1 1 28.2		8.7	
~~8.9~~					

+ Doubtful about this star
Get two stars about +14.5s 0.7'

The last star is the 2d star of

The preceding, - get following stars

9.2	7 32	
9.	1 28	Cal.
9.5	9 30	
11.12	1 14	
10.8	5 38	

+ This star is in Lalande only (1794) and is there given erroneously, in AR

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Feb. 26. 1861

Angle of Pos 83° 33′

Began at El. 8ʰ 45ᵐ

Est. Tr. at beg. 37″

end 33

Feb. 27

Angle of Pos. 83° 32′

Hor. Angle — 0ʰ 57ᵐ (East)

Est Tr. 37″.5 at beg.

39.6 " end.

7 40	9.4	13.4	1	7 40	9.2	13.1	
40	26.0	29.9 Catalogue	2	40	25.5	29.5	
41	9.7	13.7	3	41	9.4	13.2	
41	14.5	18.3	4	41	14.1	18.1	
41	57.5	— Catalogue	5	41	50.8	—	
41	—	55.7 Catalogue	6	41	—	55.1	
42	32.7	36.8	7	42	32.1	36.0	
42	45.1	49.1	8	42	44.5	48.3	
42	55.6	59.6	9	42	55.0	58.9	
43	24.8	28.7	10	43	24.1	28.3	
43	45.2	49.1	11	43	44.7	48.5	
43	56.2	60.3	12	43	55.8	59.8	
44	22.1	26.1	13	44	21.6	25.6	
			14	45	9.4	13.3	
45	42.7	46.7 Catalogue	15	45	42.2	46.3	
46	11.4	15.3	16	46	10.9	14.9	
46	51.2	55.2	17	46	50.6	54.5	
7 47	4.2	8.2	18	47	3.7	7.7	

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1860phae.proj..231S

Subtr. 0.2 D to reduce to ordinary scale

10	2	31			10	2	26	
8.9	9	6		8.5	9	9	3	
11 7	4	11			11	4	7	
10	6	50	NS		10 D	6	44	
8	0	16	See wire lost	7.6		4 0	11 11	not obs from Col: 8 See wire lost
9.10	1	15	first " "	9.2		1	8	first " "
10 B	5	50		9.2	9	5	46	
10	7	52		9.4	9.10	7	46	
10	8	45		9.4	9	8	41	
10,11	1	55			10	1	48	
9.10 B	8	56		9.2	9.10	8	49	
9 B	1	22		8.2	8.9	1 B	16	
10	4	18			10 B	4	13	
	B				11.12	3	51	
8.9	10	16		8.3	7.8	10	13	may doubtful
11	6	2			11 B	5	57	
10	0	40			10	0	36	
10.11	4	15			10,11	4	9	

B. B 2

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7	47	38.9	43.0	No. 19	7 47	38.3	42.4
	47	52.6	56.4		47	52.0	57.9
	48	22.9	26.9		48	22.2	26.1
	49	6.0	10.0		49	5.5	9.4
	49	16.7	20.7		49	16.2	20.2
	49	29.7	33.7		49	29.2	33.2
	50	25.3	29.4		49	38.1	42.0
					(49		46.1)
					50	24.7	28.8
	51	36.2	—		51	35.7	—
	51	—	40.0		51	—	39.5
	52	38.4	~~42.1~~		52	25.4	29.4
					52	37.9	(42.0)
	52	42.1	46.0		52	41.4	45.4
	53	16.1	20.1		53	15.4	19.4
	53	35.9	39.8		53	34.9	39.0
	54	6.9	10.7		54	6.3	10.1
	54	23.3	27.3		54	22.6	26.8
	54	50.2	54.1		54	49.6	53.4
	55	16.5	20.4		55	15.9	19.9
	56	1.2	5.1		56	0.5	4.6
	57	13.2	17.2		56	40.3	44.3
					57	12.5	16.5
	57	31.7	36.0		57	31.2	35.2
	58	14.6	18.5		58	14.1	18.0
	58	27.3	31.2	Catalogue No 45	58	26.6	—
	58	34.8	38.7	No 46	58	31.5	—
					58	34.3	38.3
7	59	0.3	4.3		7 58	59.7	63.8
8	0	11.9	15.8		8 0	11.2	15.2
	0	19.3	23.0		0	18.4	22.5
	0	21.7	25.5	No 50	0	21.3	25.2

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10.11	3	38			10	3	32	
9.10	10	37		9.3	9.10	10	21	sure
	D							
10	2	32		9.5	10B	2	25	
10.7	2	29			10	2	23	
10.11	1	21	Dec doubtful		10.11	1	17	
10	7	21			10B	7	18	
10	0	30		9.5	10	0	57	
	B.D				11	0	30	— declination wrong reject
					9.10	0	23	
10	2	6	See wire lost ζ to be interchanged		10B	2	3	See wire lost
10.11	8	37	first " " ζ in AR		10	8	36	first " "
9.10	10	21	See wire lost		10.11	1	54	
					9	10	15	See wire doubtful
10	9	8			10.11	9	1	n.s
11B	5	44			10.7	5	39	
11	5	38	first wire doubtful		10	5	32	
11.12	6	33			11B	6	27	
9.107	1	25			10	1	19	
107	3	3			10.11	2	58	
10	3	34	Stars appear in loose	9.5	10	3	26	
11.12	10	7	clusters with interruptions		10.11	10	1	a double star free 1 reads 2'
11B	3	20			11.12	4	39	
					10.11	3	16	~~a double star free~~
10	5	42	D for Sij (Ea for stars following		10	5	38	long Sij
	B.B		57 61 7' about)					
10	5	56			107	5	52	
9	5	3		8.7	9	4	56	See wire lost
10B	7	26			10	7	29	Ea wire lost
10	1	25			10	7	21	
	D.D				10	1	22	
10	9	8			9.10	9	3	
10.11	6	7			10	6	2	
11	8	43	Dec doubtful			8	38	Dec doubtful

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No 57.

0		44.8	Examine wire (2)	8	9	40.1	44.2
1	6.2	10.4				2.8	6.8
1	39.5	43.4	Catalogue		1	38.9	42.8
2	27.2	31.1			2	27.2	31.1
2	32.0	35.9			2	32.1	36.0
3	18.6	22.5			3	18.8	22.6
3	53.1	57.2			3	53.5	57.4
4	2.1	5.9			4	2.2	6.2
4	41.9	45.9			4	41.9	46.1
5	15.5	19.5			5	15.6	19.8
6	11.8	15.8			6	5.5	19.3
6	45.5	49.3	Catalogue		6	11.9	15.8
						45.5	49.5
7	25.6	29.6			7	25.8	29.8
7	49.6	53.6			7	49.8	53.7
8	5.2	9.2	Catalogue		8	5.3	9.2
8	11.4	15.2			8	11.5	15.5
8	28.1	32.1	B.C.		8	28.1	32.2
8	34.2	38.1	Catalogue		8	34.4	38.2
8		44.7			8	40.9	44.7
10	30.8	34.8			9	47.4	51.4
11	22.0	26.0	Catalogue		10	31.0	34.9
					11	22.0	26.0
11		44.6			11	40.8	44.9
12	1.4	5.4			12	1.4	5.5
13	0.1	4.0			13	0.2	4.0
13	13.5	17.6			13	13.6	17.6
13	17.6	21.6			13	—	21.9
13	59.4	(63.4)	Examine		13	59.3	62.6
14	7.4	7.4			14	3.6	7.4
8 15	10.1	14.1	No 84.	8	14	10.5	14.5
					15	10.2	14.3

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						10.7	8	21	dec doubtful
	8	20	+ doubtful dec	9.5		9.10	8	28	
10	2	29							
8	9	18		8.0		8	9	13	
	B.								
10	2	43				10	2	38	
9.10	1	5	N.S			9.10	1	0	
11	4	59	double, comp 12; S. p, Dist 6" Have just pond many			10 7	4	53	doubt
10.11	6	11	clusters of stars			10	6	6	
10	4	56				10B	4	52	red, break for Sq
9	1	5		8.7		9	1	1	
10.11	2	50	Few stars here			10 7	2	45	
11B	3	46	See wire doubtful			11.12	1	21	
9.10	2	B 26	N.S	8.5		10.11	3	44	
						9.	2	21	
B 10.11	8	37				10	8	34	
7 10.11	5	58				11B	5	53	
9.10	7	41		9.0		9 7	7	36	
9.10	0	53		9.2		9.10	0	51	
9.10	9	47	doubtful Dec	9.4		9.10	9	47	
9	7	42		9.0		9	7	37	
						10	10	1	first wire lost
10	6	24	first wire lost, Dec very doubtful	9.5		9.10	8	22	
11.12	5	51	Many stars of 12 mag			11	1	31	
9 7	8	29	a star 9' 8" prec 8.5	9.0		11 7	5	46	
						9	8	24	
10	4	38	first wire lost	9.3		10	4	33	
10	7	4				10	6	59	
	D. B						D long		
10	5	56		9.5		10.11	5	53	
10.11	7	58	See wire lost			10.11	7	52	
10	0	59	See wire doubtful			10 7	0	56	first wire lost
10	4	15				10	4	9	See wire lost
9.10	3	31	accidentic break after	9.3		10	3	25	
10	7	28				10.11	0	54	
						10	7	22	

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15	27.5	31.4	No 85	8 15	27.6	31.6	10
15	41.9	45.8		15	41.9	46.0	10
16	27.6	31.6		16	27.6	31.6	9
17	9.5	13.3		17	9.4	13.4	1
17	21.3	25.4		17	21.4	25.4	10
18	14.8	18.7	No 90	18	14.7	18.7	1
18	16.5	20.5	No 91	18		20.9	1
18	46.5	50.4		18	46.6	50.5	1
19	13.8	17.8		19	13.5	17.5	10
19	36.2	40.1		19	36.4	40.2	1
20	17.2	21.2		20	17.4	21.3	1
21	0.3	4.4		21	0.3	4.4	1
21	18.1	22.1		21	18.3	22.3	9
22	28.8	32.7		22	29.1	33.1	10
23	21.9	26		22	40.0	43.9	
				23	22.0	25.9	11
23	26.0	30.0		23		30.1	1
24	11.8	15.3		24	11.6	15.8	10
24	14.0	17.9		24	14.2	16.1	9
25	39.4	43.3		25	39.4	43.4	1
26	11.8	15.5		26	11.6	15.5	10
26	12.9	16.8		26		16.8	10
26	41.2	45.1		26	41.2	45.1	1
27	4.9	9.2		27	4.9	9.0	1
27	39.3	43.3		27	39.3	43.3	9
28	6.7	10.5		28	6.6	10.5	10
28	48.4	52.3		28	48.3	52.3	10
29	34.9	38.9		29	35.1	38.9	1
29	47.4	51.5		29	47.4	51.4	8
8 30	40.8	44.5	No 114	8 30	40.6	44.9	11

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10.11B	9	16			10.7	9	11	
10.11	8	3			10.7	7	58	
9.10	0	45		9.0	9.10	0	41	
11	5	40			10.11	5	37	
10	2	38			10	2	35	
10	5	52		9.5	9.10	5	46	
11	7	39	N.S		11	7	35	
11	5	10			10.11	5	8	
10.11	6	8			10	6	3	
	⊕							
11	0	58	N.S		10.11	0	54	
11.7	4	27			11	4	22	
11	7	30			10.7	7	24	
9.10.7	7	35		9.0	9.10B	7	30	
10.11	5	47			10	5	45	
11.12B	6	31	Six wire lost		10.11	8	26	
					10.11	6	26	
11.12B	5	4			10.11	5	1	first wire lost
10.11	5	9			10	5	6	
9.10B	3	8		8.0	8.9	3	5	
11B	6	45			10	6	41	
10.11	3	23			10	3	18	
10.11	6	21			10	6	17	fine
					10B	8	35	AR lost
10.7	1	26		9.5	10	1	25	
	B							
11	5	48			10.11	5	46	double class preceded 8, faint
9.10.7	9	29		8.8	9.10	9	23	
10	2	38			10	2	34	
10.11B	3	39			10.B	3	34	
10	7	29			11B	7	22	
8.1	8	9			11	8	4	
11.12	9	19			11	9	12	

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30	54.2)						
30	58.2	62.2	Gamma N°15	8	30	56.4	62.4
31	8.5	12.4			31	8.6	12.6
31	13.5	17.4			31	13.8	17.6
32	11.1	15.1			32	11.3	15.3
32	12.3	16.2	Catalogue		32	12.5	16.5
33	25.8	29.9			33	25.9	29.9
33	48.9	52.9			33	48.9	52.9
					31		
34	31.9	35.9			34	32.0	
34	34.7	38.8			34	34.8	38.8
34	44.7				34	44.8	
36	11.8	15.9			36	12.0	16.0
36	23.8	27.7			36	23.9	27.9
37	7.9	11.8			37	7.9	11.9
37		50.2			37	46.6	50.7
38	26.0	32.0			38	26.1	32.0
39	13.0	26.9	Catalogue		39	13.1	17.1
39	30.9	34.8	Catalogue		39	30.8	34.8
40	44.1	48.0			40		47.9
40	57.3	61.4			40		51.9
40	57.3	61.4	B.6.		40	57.4	61.5
41	11.5	15.5	Catalogue Lalande		41	11.5	15.6
42	5.3	9.3	N° 136		42	6.5	9.4
42	54.4	58.4			42	54.6	58.6
43	41.8	45.8			43	42.0	45.9
43	48.6				43	48.5	
43	54.6	58.7			43	54.7	58.8
44	52.2	56.3	N° 141	8	44	52.4	56.4

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11	4	48	Catalogue		10.11	4	42	
97	4	3	~~How is max diff in mag. then~~	9.0	9.10	3	55	
8	10	23	~~give by dy. 8.8 is too faint~~	7.3	8	10	16	
			Catalogue (Lalande only)			1	40	omit
10.11	1	7		9.3	10	1	3	
9.10	7	21	Catalogue	8.8	8.9	7	14	
11	8	50			10.11	8	44	
107	3	48			10	3	46	
	D							
10	9	55		9.5	9.10	9	50	see wire lost
11	5	51			10	5	47	NS
10.11	2	38	first wire lost, Dec doubtful		10.11 D	2	35	(accidentally broken)
11	8	18			11	8	12	
10.11	2	12	Comp. n.f. 20" dist, of 12 mag	9.5	9.10	2	6	
9.10	5	19		8.8	9	5 B	13	
	2	17	first wire lost, Dec doubtful		10.11	2	12	
10	1	7		9.0	9.10 B	1	15	
8	9	3	Catalogue	7.3	7.8	8	56	
	B							
9.10 B	4	56	Catalogue	8.6	9	4 D	50	
11	6	41		9.5	9.10	6 D	37	first wire lost
10	1	—	not obs	9.5	9.10	1	19	" " "
10 B	3 2	1	(Catalogue)	9.4	9.10	2	55	
7.8	3	48	red, double n.f. 12"	(Catalogue) 9.0	8	3	41	red, and double
10	0	15		9.3	9.10	0	9	
11.12	5	56			11 7	5	49	
11.12	7	42			10	7	36	
11	5	30	see wire lost		10	5	25	see wire lost
10	0	—		9.4	9.10	0	16	
	D. B					B		
10.11	3	5			10 B	3	1	

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45	40.3	44.2		8 45	40.3	44.4
	48.6	52.5		45	46.8	52.7
46	9.7	13.7		46	9.9	13.8
47	7.41	11.2		47	7.3	11.2
47		14.6	Examine	47		14.7
47	35.3	39.6		47	35.6	39.7
47	50.0	54.1		47	50.2	54.0
48	15.2	19.1		48	25.1	29.1
49	24.2	28.2		49	15.3	19.4
				49	24.3	28.1
49	35.7	39.7		49	35.9	39.9
49	43.8	47.7		49	43.7	47.9
50	7.3	11.2		50	7.2	11.3
				50		36.2
51	18.4	22.4		51	18.3	22.4
51	48.7	52.7				
52	51.4	55.4		52	51.4	55.4
53	8.2	12.1		53	8.1	12.1
53	48.1	52.2		53	33.9	37.9
				53	48.2	52.2
54	4.5	8.5		54	4.7	8.8
54	27.1	30.9		54	27.1	31.1
54	45.9	50.1		54	46.1	50.1
56	2.4	6.3		56	2.5	6.5
57	26.1	30.0		57	47.7	51.6
58	8.7	12.6		58	26.3	30.2
				58	8.8	12.8
58	30.8	34.8		58	14.7	18.7
59	13.6	17.5		58	30.8	34.9
8 59	42.8	46.8		59	13.8	17.6
				8 59	42.9	47.0
				9 0	3.2	7.1
9 0	15.5	19.5	Catalogue	9 0	15.6	19.6
1	15.1	19.1		1	15.4	19.4
1	17.9	22.0	No 176	1	18.0	22.0

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10	8	44			9.107	8	37	
9.10	2	00		9.0	9.10B	1	55	
107	3	55		9.5	9.107	3	51	
10.11	5	56			10	5	52	
11.12	7	10			11	7	35	fine wire lost
10	7	31		9.4	9.10	7	35	
11	3	53			11	3	48	
11.12	6	48			10.11	5	36	
10	4	22		9.3	107	6	43	
					10B	4	16	
10	8	2		9.3	9.10	7	56	
10	0	27			10B	0	20	
9	3	53		7.5	8.9	3	48	
					10	2	19	fine wire lost
107	2	54				2	46	
	B.B							
11.12	6	55						
9.10	7	18	n.s.	8.5	8.9	7	14	
11.12	2	7	AR doubtful a little		10	2	3	
11	5	25			11	7	8	
					10	5	31	sure
10.11	8	8			90	8	3	
10	7	21		9.3	9.10B	7	15	
10	8	11			10	8	6	
	D							
11B	5	37			10	5	32	
11.127	6	28			11B	8	9	
11	3	48				6	21	
					107	3	45	
					10.11	5	33	
11.12	3	17			11	3	12	
10.11	5	49			9.10	5	42	
10.117	1	14		9.5	9.10	1	8	
					10.11	9	52	
7.8	9	17	Catalogue	7.7	8	9	11	
9.107	10	9		9.3	9.107	10	4	
10B	10	10			9.10B	10	5	

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9	1	50.2	54.2	№ 177	9	1	50.2	54.2
	2	14.4	18.3			2	14.3	18.5
		40.3	44.3			2	40.3	44.3
	3	41.5	45.6	№ 180		3	41.7	45.8
	4	15.8	19.7	" 181		4	15.8	19.8
	4	21.2	25.2			4	21.4	26.3
	4	43.9	47.9			4		48.0
	4		53.1			4	49.4	53.3
	5	8.2	12.1			5	8.3	12.3
	5	36.3	40.3			5	36.4	40.2
	5	52.0	56.0			5	52.0	56.0
	6	26.8	30.7			6	26.9	30.8
	7	50.6	54.4			7	50.7	54.6
	8	10.0	14.0			8	10.2	14.2
	8	17.9	21.9			8		
	9	28.6	32.8			9	28.7	32.6
						10	1.5	5.4
	10	26.1	30.1			10	26.2	30.0
	10	40.0	44.0			10	40.0	44.0
	11	0.0	3.8					AR lui
	11	48.9	52.9			11	48.8	52.8
	12	57.6	61.7			12	57.6	61.6
	13	4.1	8.1			13	4.1	8.1
	13	27.5	31.5			13	27.6	31.7
	14	37.8	41.8			14	19.1	23.1
						14	37.8	41.8
	15	46.1	50.2			15	46.1	50.1
	16	39.6	43.5			16	39.6	43.6
	16		48.0	№ 225		16		47.9

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10	0	42				10	0	39	
11	9	3				10.11	8	59	
10.11	1	44				10	1	41	
11B	9	37				10.B	9	32	
10	1	44			9.4	9.107	1	39	
10.11	7	9	n.s		9.5-	9.107	7	3	
11	9	9				10.11	9	3	first wire lost
11	8	55	first wire lost			10.11	8	49	
10	4	58			9.0	97	4	54	
10.11	3	46				9.107	3	38	
11	5-	1				107	4	56	
	B.B								
9.10	0	19			9.3	9.10B	0	15	
10.117	9	8				10.11	9	4	double comp. s.p. dist 15"
11.12	8	29	n.s			117	8	24	
11.7	5	7				11B	5	3	
9.10	9	51				9.10B	9	45	
	D.B.B					11B	6	21	
7.8	8	0	may. doubtful		7.3	8	7	54	
10	7	20	AR lost				7		
	8	—				10	8	16	
11	3	31					3	28	AR lost
9.107	0	26				9.10	0	23	
9.107	10	3			9.3	9.10B	9	56	
9107	3	33			9.3	9.10	3	27	
10	5	36			9.5	10.B	5-	32	
10.11	2	54				10	10	48	
	B lost					11	2	49	
11	0	54				10.11B	0	42	
11	4	8				10.11	4	3	
11	8	16	first wire lost			10.11	8	11	

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9	16	59.5	63.2	No 226	9	16	59.0	63.0
	17	25.5	29.4			17	25.2	29.1
	17	59.4	63.1			17	59.3	63.3
						19	52.9	56.7
	20	14.2				20	14.0	18.1
	20	18.0	21.7			20		21.6
	21	9.3				21	9.2	13.0
2	22	53.4	57.3					
	23	8.9	13.1					
	23	17.0	21.0					
	23	52.0	56.1			23	52.0	56.1
	24	52.8	58.8					
	26	45.9	49.8					
	27	4.1	8.0					
	27	16.4	20.3					
	28	10.2	Abel Catalogue			28	10.2	14.0
	28	15.2	19.2					
	29	12.6	16.4			29	12.4	16.5
	29	59.9	63.9			29	59.8	63.7
	30		35.6	Examine title		30	3	35.7
						31	19.2	
	31	28.3	32.4			31	28.2	32.1
	31	43.8	47.8			31	43.7	(47.2)
	32	0.6	4.6	No 249	9	32	0.3	4.3

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9.10	7	10	.10		8.8	9 7	10 7	
10.11	B	~~54~~				11	3 ~~50~~	
10	4	8				10	4 3	
	D long						B.D	
11	6	54	See wire lost			10B	10 38	
10.11	5	23				10.11	6 48	
10.11	7	38	See wire lost			10 7	5 21	first wire lost
						11B	7 33	
								Clouds began to appear.
			Lamp failed.					Moon rose.
								The remaining magnitudes are to be re-examined.
10.11	1	2						
10.11	7	28						
10.11	8	25						
10.11B	5	58					5 53	n Lij
10	8	14						
	9	—	not obs					
10	3	18			9.5		3 12	AR lost
10	7	51						
10	0	21			9.0			
9.10	8	12			9.0		8 7	
10.11	4	33						
10.11	4	24					4 19	
9.10	7	45					7 38	
9.10	9	54					9 47	first wire lost
	3	—	not obs				3 9	n.S. See wire lost
10.11	5	27					5 19	
10	2	28					2 22	See wire wrong
9.10	7	25					7 17	

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9	32						
	33	39.0	43.2		9 33	39.2	43.2
	33	41.6	45.5		33		
	34	13.4	17.4	Catalogue	34	13.2	17.1
	34	20.3	24.3		34	20.2	24.1
	35	0.1	4.1				
9	35	20.0	24.0	N° 255	9 35	19.9	23.9

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	5	—	not obs				
9.7	7	36		G.0		7	28
9.10	9	55		9.3			
9	1	34		8.7		1	25
9.10	9	35				9	29
11.12	1	19	Der doublefue				
10.7	5	43		9.1		5	36.

Closed up very shortly.

The moonlight rendered the magnitudes uncertain.

From 80 comps.

S-A = +0.m56 ± 0.m026

Pr. Error of 1 comp ± 0.m21

From 66 comps.

S-A = +0.m28 ± 0.m021

Pr. Error of 1 comp: ± 0.m175

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$8^h 20^m - 10^h 8^m$

Mar. 11.

H.S. 1st.

Angle of Pos 83° 29′

Ext. Thr. at Ing. 22.5 El. 9 25

" " " end 21.3 " 11 27

West of meridian

Good night for magnitudes

Apr. 4

Angle Pos 83° 34.5′
83 38.0

Ext. Thr. at Ing 37.5 El. 10 22

" " end 36.0 12 37

8	10	23.2	27.2	Catalogue № 1	8 20	23.4	27.3
	20	40.7	44.7		20	40.8	44.7
	20	53.3	57.3	Catalogue	20	53.5	57.6
	21	23.2	27.2		21	23.4	27.4
	21	32.9	36.9		21	33.2	37.3
	22	3.0	6.8		22	3.1	7.3
	22	15.1	18.8				
	22	36.0			22	36.1	
	22	39.2	43.3		22	39.4	43.4
	22	53.6	57.5		22	53.8	57.9
	23	14.4	18.4		23	14.8	18.7
	23	38.4	42.6		23		
	23		53.3	ex. wire	23	49.6	53.7
	24	8.6	12.7		24		
	24	40.9	44.9				
	24	43.2	47.1				
	25		17	ex. wire	24	58.3	62.3
				№ 17 / № 18	25	16.7	20.7

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1°10′ – 1°20′

P.M. res.

8	6	9		8.0	~~6~~ 8	6	39	
9.10	3	5			10.11	3	34	
9	3	46	Is there a star + 10^s + 7′ ?	9.0	9 7	4	16	
9.10	5	32			10	6	3	
9.10	2	50		9.5	9.10	3	21	
10	9	53	ns.		11	10	21	
11	1	37	doubtful Dec					
10	6	4	Sec wire lost		10	6	31	
10	3	49	ns		11	4	20	
10	0	16			10B	0	46	
10	0	53			10B	1	22	
10	9	28				B.		
9.10	0	15	w. wire	9.0		0	46	
	B							
10	2	2	n.s					
10	10	18			~~10~~	10	48	dec?
10.11	6	56				7	28	
	10	15	dec doubtful ~~Dec~~ one wire only		10	10	48	dec?
						7	28	

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δ 29 – 10 8

1861 March 11.

25	32.6	36.7	N° 19				
26	2.1	6.0		8	26	2.3	6.1
26	29.3	33.0			26	29.4	33.6
26	32.1	36.1			26	32.4	36.4
26	59.0	62.9			26	59.2	63.1
27	11.8	15.9			27	1	16.1
27	16.9	20.8			27	17.3	21.1
27	45.1	49.0			27	45.1	49.3
28	11.0				28		
28		19.6.					
28	39.0	43.1			28	39.3	43.3
28	53.7	57.6	examine object		29	3.2	7.2
29	13.2	17.1			29		17.5
29	38.0	41.9			29	38.3	42.3
30	2.6	6.4			30	2.7	6.8
30	17.6	21.4			30	17.9	21.8
30	26.3	30.3			30	28.7	32.6
30	50.1	54.0			30	50.4	54.4
31	17.3	21.1			31	14.3	18.3
31	25.7	29.7					
31		40.6					
31	56.6	60.7			31	57.2	61.3
32	37.2				32	31.1	35.0
32		40.7					
33	31.9	35.6	B.C. N° 45		33	32.3	36.3
33	34.7	38.6	B.C. N° 46		33	35.0	39.0
33		40.6			33		41.0
8 34	26.4	30.4	N° 46	8	34	26.8	30.7

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1° 10' – 1° 20'

10.11	2	26						
9.10	0	48		9.0	9.10	1	17	
	D. B							
10.11	7	21			11	7	51	
9.10	6	39		9.4	10	7	8	
10 7	4	14			11	4	39	
8.9	8	4	a little 9 mag	9.0	9.10	8	29	
9.10	4	0		8.8	9.10	4	28	
10	1	4			10.11	1	33	
	B							
	5	51	see wire loc					
	6	31	first " "					
9.10 B	7	1		9.0	9.10 B	7	32	
	10	–	foll of a double Star		10, 11	1	37	
9.10	4	8			9.10	4	36	
9 B	10	17	doubtful Dec	9.0?	9	10	48	
9.10 B	3	11		9.0	9.10 7	3	42	ns
10 B	6	33				7	2	
	B							
10	6	31	ns					
10	7	34			10	8	4	
11	4	31				0	13	a bright star
						0	12	a bright star
					10	1	24	
10.11	2	45						
10	10	7	first wire loc and ns, Dec?					
11	0	55			10	1	24	
	D							
	7	8	See wire loc					
	9	–	first " "					
B 9.10	5	45		9.0	9.10	6	16	
9.10	5	34	ns	9.4	10	6	6	ns
10	6	1	first wire loc		11	6	28	first wire loc
10.11	8	58			11	9	26	

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35	0.2	4.1	Nebg	8	35	0.5	4.6
35	14.0	18.1			35	14.2	18.2
35	32.3	36.2			35	32.7	36.7
35	43.5	47.5			35		47.8
35	56.8	60.6			35	57.0	61.0
36	17.1	21.1			36	17.5	21.5
36	27.9	31.6			36	±	32.1
36	45.9	49.8			36	46.4	50.3
36	47.5	51.4			36		52.0
36	59.2	63.3			36		63.4
37		7.4			37	21.5	25.5
37	24.8	28.8			37		29.4
37	36.2	40.3			37	36.7	40.7
37	50.3	54.4			37	51.1	54.9
38	14.6	18.4			38	14.8	19.0
38	24.3	28.3			38	24.9	28.7
38	47.1	51.1			38	47.4	51.6
39	33.0	37.0			39	33.3	37.1
40	32.2	36.1			40	32.4	36.3
41	2.8	6.9			41	3.1	7.2
41	8.7	12.9			41	9.3	13.0
41	28.9	32.8			41		
41	47.3	51.3			41	47.7	51.7
41	55.8	59.9			41	56.1	
42	57.5	61.4			42	58.1	62.0
43	32.3	37.2			43	32.6	3
43	46.4	50.4			43	46.8	6
44	28.7	32.7			44	29.0	32.9
44		37.9	ex nebe. Neb 77		44	(34.1)	38.2

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1960phae.proj..231S

10.7	3	37			11.7	4	6	
10.11	5	36			11.12	6	8	
10.7	9	57				10	24	
9.107	6	29			10.11	7	1	
10	4	49			11	5	19	zwei
	B.13					B		
8.9	4	55		8.5	9	5	25	
11B	3	21				3	49	fünf wie.
9.10	6	56			10.11	8	22	
9.10	6	48			9.10	1	17	
10	5	2				5	32	fünf wie bei 2
	8	57	fünf wie bei			8	6	
						8	4	
10	7	3			10.11	7	31	fünf " "
9.10	3	24			10	4	5	
9.10	8	24			10B	8	54	
						D		
10.11	2	29			11.12	2	58	
10	7	45	nS		10.11	8	16	doubl-fünf
10B	5	38			10	6	7	
	D					B.D.B		
9.10	8	40			9.107	9	9	
10	5	5			10.11	5	34	
10	9	48			11	10	18	
9.10	9	11		9.5	10	9	43	
11B	7	34						
10B	8	17			10B	8	43	
9.10	5	42			10	6	14	2 wie bei
	B							
10.7	5	26			11B	5	56	
11	4	11			11.12	4	42	
10	2	26			11B	2	58	
9.10	5	15			10.7	5	45	Sij to bork wies
10.11	5	51	bx. wie		11.7	6	18	fünf wie?

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8 44		47.2	ex wire No 78	8		
44	50.1	54.2		44	50.6	54.6
45	18.9	23.1		45	19.4	23.4
45	43.4	47.5		45	43.9	47.8
45	50.3	54.3		45		
46	1.0	5.0		46	1.2	5.2
46	14.4	18.3		46	14.7	18.6
46	20.4	24.3		46	20.6	24.8
46	41.7	45.8		46	42.3	46.2
47	13.8	17.9		47	14.3	18.4
48	5.0	9.0		48	5.4	9.3
48	19.3	23.3		48	19.7	23.9
48	32.5	36.7	No 90	48	32.9	36.9
48	35.0	39.0	No 91	48	35.2	39.3
49	4.7	8.7		49		
49	10.8	14.7				
49	51.0	54.8		49	51.2	55.1
49	53.5	57.4	ex wire	49	53.7	57.8
50	0.5			50	0.8	4.8
50		31.3	ex. wire	50	50.0	54.1
51	6.4	10.4		51	6.8	10.9
51		47.6		51		
51	58.0	62.7		51	58.5	62.4
52	12.7	16.9		52	13.0	17.1
52	23.8	28.0		52	24.2	28.3
53	3.7		ex. wire			
53	7.0	11.0		53	7.3	11.4
54	9.1	13.0		54	9.4	13.3
54	19.4	23.5		54	19.7	23.7
8 54	29.3	33.3	No 107	8 54	29.7	33.7

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1960phae.proj..231S

	1	11	ex. wire and mag.				
10	6	6			11	6	35
10	4	19				4	57
9.10	2	8		9.3	10B	2	42
10	4	—					
9	7	2			10	7	31
10	2	14			10.11	2	42
9.10	3	33			9.10	4	4
9.107	1	31			10.11	2	2
	B					B.D	
97	8	9	N.S			8	38
9	4	56		9.5	9.10	5	26
10.11	2	25			11B	2	56
10	6	14			11	6	39 certain
10	6	56	N S		11	7	24
10	4	6					
10.11	1	10	fine wire lost? Dec 10"!				
107	1	45				2	16
107	1	22				0	50
9.10	6	56	ex wire lost	90			
	8	—	one wire only ex wire, mag.		9.10	8	25
9	7	10	Comp. N. p 10 dist		11.12	1	18
					10	7	41
10.11	0	12	fine wire lost				
10	0	8			10.11B	0	38
9.10	3	44			10	3	11
10	2	48			11	3	16
11	3	0	comp. S. f. ex. wire and mag.				
10	1	52			10	2	19
10	6	25			10.11	7	26
10.11	2	3			11	2	32
11	1	52			117	2	21
	D.B						

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54	54.8	58.8	N° 109	54	55.3	59.3	
55	26.5	30.5		55	26.9	30.9	
55	33.6	37.6		55	34.3	38.3	
55	41.3			55	41.9	45.8	
56	3.3	7.3		56	5	7.6	
56	16.9	20.9		56	17.3	21.1	
56	31.0			56	31.3		
56	34.4	38.3		56	3	38.8	
57	8.2	12.3		57	8.7	12.6	
57	18.7	22.8		57		23.3	
57	28.0	31.9		57	28.3	32.5	
57	45.0	49.1		57	45.5	49.5	
57	52.0	56.0		57		56.4	
58	30.8	34.9		58	31.2	35.4	
58	58.3	62.5		58		62.7	
59	42.4	46.0		59	42.9	46.7	
59	49.1	53.1		59	49.4	53.4	
59	54.9	58.9		59	55.4		
0	57.9	61.8		0		62.4	
0	54.3	63.2		1	[illegible]	[illegible]	
1	57.9	61.9		1	58.3	62.2	
2	8.9	13.0		2	9.4	13.3	
2	29.0	33.0		2	29.4	33.3	
2	42.3	46.3		2	52.0	55.9	
3	0.7			3	1.1	5.0	
3		4.6	N° 133.				

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9.10	9	—			10	10	14
10B	6	28			10	6	58
10B	3	26			10.11	3	56
10	2	19	Sec wire lost		10.11	2	50
10.11	4	29			11	5-	1
9,10	3	38		G.S-	10	4	8
107	0	41	Sec wire lost			1	14
107	2	17				3	50
	B					B,D,D	
10	~~4~~	16	may doubtful		10.11	4	— not obs
10.11	4	31			~~10~~.11	5-	2
9,107	1	46			10	2	13
107	3	5-1			10.11	4	23
107	5-	56			10.11	6	27 first wire lost
	D	D					
10	5-	55	ns		10	6	21
10.11	7	1			11,12	7	29
	B	D	D				
10	3	3			10,11	3	33
10	4	57			10,B	5-	27
9,10	1	56			10B	2	28
10	7	53				8	19 first wire lost
	9	—				10	18 AR " "
10.11	1	33			10	- 0	1
					10	+ 0	4
					10,11	2	4
10	5-	11			11	5-	41
10.B	2	9			10.11	2	38
11	3	43			11.12	4 B	18
10.7	7	13	Sec wire lost		10.11	7	44
10	8	59	first " "		10.11	9	28 AR lost
	B						

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9	3	32.1	36.0	No 134			
	5	4.5	8.3	135	9	5	4.8	8.9
	5	20.8	24.7	136				
	6	13.5	17.5			6	14.0	17.8
	6	29.8	33.5			6	30.0	34.0
	6	58.6	62.8			7		3.0
	7	38.4	42.5			7	21.9	26.0
	7	44.6	48.4			7	45.0	48.7
	8	15.0	18.9			8	15.0	19.2
	9	13.3	17.5			9	13.8	17.8
	9	34.2	38.1	Catalogue		9	34.7	38.7
	10	14.0	18.1			10	14.8	18.6
	10	36.9	41.0			10	37.5	41.4
	10	51.5	55.6			10	42.1	46.4
	11	10.2	14.2	Catalogue			52.1	56.1
	11	24.5	—	Examine &c.		11	10.6	14.6
	11	—	27.5			11	24.9	29.0
	12	17.6	21.5			12	14.1	18.1
						12		22.2
	13	8.9	13.0			13	9.5	13.3
	13		16.7			13	16.9	
	13	37.8	41.9			13	—	17.5
							38.4	
	14	13.7	17.7			14	14.2	18.2
	14	30.5	34.2	Examine &c.		14	20.0	24.1
	14		37.6			14	30.9	34.8
	15	25.1	29.0	Bonn		15	25.5	29.4
	15	38.7	—	Catalogue		15	39.2	—
	15	—	42.8			15	—	43.1
	16	16.7	20.8			16	28.8	32.2
	16	37.6	41.7			16	36.5	42.6
9	16	56.1	60.2	No 165		16	59.9	03.8

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1960phae.proj..231S

10.11	4	58	Several fields with no stars					
9.107	9	48	above 11.12		10	10	19	
11.12	4	5–						
11.12	8	34			11.12	9	6	
10.11	8	35–			11B	9	6	
11	6	46				7	–	Su wire only
						0	–	
11	5	28						
9.10	9	10			10.117	9	38	
10.B	8	6		9.5	10.7	8	36	
11	2	32			11.12	2	5-9	
7.8	7	40		6.8	7	8	8	
107	2	51			11	3	18	
10.11	1	0			11	1	26	
11B	3	20			11.12	1	42	
8.9	6	46		8.0	8.19	3	51	
						7	15–	
10B	8	3	Su wire lost			4	25–	
10	5	–	fin " "		11.12	2	8	
10.11	7	22			11.	7	48	
9B	0	14		8.8	9	0	44	
9	7	24	first wire lost	8.8	9	8	15–	fin wire only
10B	1	45–			11	2	10	Su wire
							16	
107	6	42			11	7	12	
9.10	6	51		9.3	10.11	0	32	
	2	59	fine wire lost		10.11	9	32	
	B							
10.11	7	13			11.12	7	42	
107	4	12	Su wire lost 9.5	9.5	11.12	4	41	Su wire lost
10	3	18	fin " "	9.5	11B	3	50	
11	3	35–				4	19	Su wire
9.107	4	25–			10.11	4	52	
11	2	25–	nS		10	0	2	

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17	40.3	44.2	No 166	17	——	44.8	
17	43.3	47.3					
17	59.0	——	Catalogue	17	59.5	63.6	
17	——	62.0		17	58.6	62.5	
18	52.5	56.5	Catalogue	18	52.9	——	
19	14.1	18.1	Catalogue	19	14.7	18.6	
19	44.6	48.6		19	45.2	49.9	
20	1.5	5.6		19	53.8	57.8	
20	6.5	10.7		20	7.1	11.1	
20	46.8	50.8		20	47.5	51.5	
21	3.5	7.5		21		9.1	
21	48.8	52.8		21	49.4	53.1	
22	8.6	12.6		22	9.2	13.2	
22	15.1	19.2		22	15.8	19.7	
22	49.9	52.0	No 180	22	50.7		
24	1.3	5.4	No 181	24	——	——	
24	57.5	61.5		24	58.1	——	
25	13.4	17.4		25	13.8	17.9	
25	33.1	37.1		25	33.8	37.7	
25	44.6	48.5		25			
25	45.8	49.7					
25		58.7					
26	3.0	7.0					
26	33.3	37.2					
26	53.6	57.6					
27	3.6	7.6		27	4.2	8.4	
27	33.8	37.7					
27	44.9	48.9	Catalogue	27	45.5	49.6	
28	6.0	10.0					
28	11.0	15.1	No 195	28	11.5	15.4	

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10.11	1	17					1	46
11	2	4	nS					
10	2	34	zu wire bot		9.3		3	1
9.10	9	7	first " "		9.5		9	36
9B	1	17			8.3	9.X	1	43
9	1	59			8.8	9.10	2	25
10	7	34				11	8	1
10.11	4	42				10	0	34
107	3	39	nS			10.11	4	8
	B							
107	3	9			9.3	10.11	3	38
9.10	8	45			9.5	10	9	14
10.11	9	4				11.12	9	32
~~10B~~	4	14				11.	4	43
10.B	0	53			9.5	10	1	21
10	7	34				10.11	8	4
	D							
107	6	25				11.12	6	55
11	5	10				11	5	38
11B	2	16				11.12	2	46
10B	6	4			9.3	9.10	6	32
10	8	6					~~9~~	~~57~~
10	9	1	nS				~~9~~	~~49~~
							~~9~~	~~48~~
10.11	8	—	first wire bot			10	~~8~~	~~28~~
9.10	7	54			9.5	10.11	~~2~~	~~54~~
107	3	10				10.11	~~4~~	~~36~~
10	10	46						
9.10	9	21			9.3		9	57
11B	9	2						
9B	5	38			8.3		~~5~~	~~49~~
107	9	54						
	5	22					5	49

recorder absent to Baker look after S.G.

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9 28	21.1	25.2	N 96	9 28	21.7	25.8	9
29	10.2	14.3		29	11.0	14.9	
29	26.2	29.3					10
29	—	31.5	ex. wire	29	28.2	32.2	1
29	57.2	61.3		29	58.0	62.0	1
				30	59.1	63.1	
30	40.3	44.1		30			10
32	11.6	—	ex. wire				10
32	16.1	20.0		32	16.9	20.9	10
32	51.7	55.8		32	52.5	56.5	10
32	—	59.3		32		60.1	
33	14.5	18.2		33			10
33	34.9	38.8	D. C.	33	35.5	39.3	1
33	41.8	45.7		33	42.5	46.3	9
34	25.6	29.6		34	26.3	30.3	1
34	26.5	30.3		34	27.0	—	1
34	44.2	48.2		34	45.0	49.2	1
35	—	11.1		35	—	12.1	10
				36	4.8	8.6	
36	23.6	27.6		36	24.4	28.2	10
36	45.4	49.4		36	45.9	50.0	9
37	0.2	4.3		37	1.0	4.8	1
37	22.0	25.9		37	22.5	26.3	9
38	34.4	38.3		38	35.2	39.1	1
39	16.1	20.3		39	16.8	21.0	1
39	19.5	23.5		39	20.3	24.2	10
40	7.6	11.7		40	8.5	12.4	10
40	9.5	13.5		40	10.2	14.1	1
40	25.6	29.7		40	26.4	30.2	10
40	32.9	33.9		40	3-		9
940		35.4	N 225	40	32.0	36.0	

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1860phae.proj..231S

9,10	9	19	Dec?			9 48	
	DB						
10	7	39				8 8	
10.11	4	48					
10	2	25	ex. wire			2 54	
10B	4	8				4 36	
			Ex. for a star 8.9 mag Dec. 10' +		11.12	1 25	by D after
10.11	0	40					
10,11	0	19	ex. wire.				
10B	5	36				6 5	
10	4	25				4 56	double
	8	37	first wire lost			9 6	
107	9	11	n s				
10	3	21		9.4	10.11	3 50	
9,10	0	15		9.3	10	0 42	
10	9	14			11	9 43	
10	9	56	n s. Dec?		11	10 26	5n wire lost
10B	7	56			107	8 26	
107	7	45	n s first wire lost			8 15	first wire lost
					11,12	1 11	
10.11	5	53			11.12	6 21	
9,10	1	26	Stars coming without any		10	1 55	
10	6	25	particular order		11B	6 56	
						B	
9,10	1	33		9.4	10	2 1	
10	2	24			10.11	2 52	
	BB						
107	2	35				3 3	
10	3	13	n s			3 42	
107	8	19				8 46	
10	10	28				11 0	
10B	8	21			10.11	8 47	
9.10	9	8	first wire lost				
	2	46	" " "			3 18	

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1860phae.proj..231S

9	40	55.8	59.8	B. C. No 226	9	40	56.4	60.4	
	41	45.7	49.6			41	46.4	50.4	
	41	56.5	60.5			41	57.3	61.3	
	42	13.6	17.4			42	14.3	18.4	
	42	33.3	37.2			42	34.1	36.2	
	43	16.4	22.3	est. dist.		43	19.0	23.0	
	43	49.9	53.8			43	50.6	54.5	
	43	56.9	60.8			43	57.6	61.4	44 6.2 ?
	44	25.5	29.5			44	26.2	30.0	44 19.7 23.7
					L				
	44	58.8	62.7			45	53		
	45	6.9	10.9			45	7.7	11.7	
	45	33.6	37.8			45			
	45	48.1	52.0			45	49.0	53.0	
	47	3.8	7.7			47	4.6	0.6	
	48	30.0	34.2			48	30.8	34.6	
						49	57.9	55.9	
	50	0.9	4.9			50	1.5	5.6	
	50	6.8	10.8			50	—	11.5	
	51	32.3	36.2			51	32.8	36.9	
	51	42.5	46.5			51	43.1	47.1	
	52	4.6	8.7			52	5.2	9.3	
	53	30.7	34.8			53	31.4	35.3	
	53	44.3	48.2			53	45.0	49.0	
	54		7.6			54			
	54	28.5	32.6			54	29.5	33.4	
	54		37.7			54		38.7	
9	55	49.7	53.6	No 253	9	55	50.3	54.3	

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1860phae.proj..231S

10	1	45		9.5	10.11	2	14	
	B	D						
9.10	8	26		9.1	10	8	56	
9,107	1	28		9.3	107	1	58	
9.10	4	26		9.3	10B	4	56	
9	6	4	compar bad few small stars	9.1	9.10	6	30	
10B	7	10			10	7	28	
	B							
10.11	2	14				2	46	
107	3	52				4	17	⟨ o — two stars obs here
10	1	16				1	41	⟨ o —
	D				10.11	~~0~~	~~48~~	
						~~3~~	~~18~~	
10	9	10	} may doublefish		10.11	C	48,	
10	3	50	}			3	18	
107	8	58	ns					
107	8	47			10,11	9	16	
10.11	0	35			11	1	3	
9	7	56		9.0	9.10	8	25	
					10.11B	0	22	
10	2	4			10.11	2	33	
10,11	7	58				8	—	first wire lost
	D	B	D					
10	3	11			10	3	39	
11	1	10			11	1	38	
10.11	4	58			10.11	5	28	
11B	3	36			11.12	4	3	
9.107	7	26			10.11	7	53	
11	6	48	ns first wire lost		11.127	—		see wire lost
						~~5~~	~~2~~	
						~~B~~	~~28~~	see wire only. B faint
10.11	5	32				5	2	
11B	6	1	first wire lost			5	28	
107	4	44			11B	5	10	

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6	56	59.0	63.0	No 254	9	56	59.8	63.8
	57	54.9	59.0					
	58	23.3	27.3			58	24.2	28.3
	58	40.1	44.1			58	40.8	44.9
	59	0.4	4.5		9	59	1.1	5.0
	59	26.2	30.3			59		
10	0	3.0	6.9		10	0	3.7	7.7
	0	59.0	63.1			0	59.9	63.8
10	1	18.7	22.6	Catalogue	10	1	19.4	23.3
	2	52.8	56.8			2	53.6	57.6
	3	11.0	15.2			3	11.8	15.8
	3	51.6	55.8			3	52.4	56.3
	4	—	49.5			4	46.6	
	4	47.1	51.1			4	48.2	52.1
	5	30.9	35.0			5	31.6	35.9
	6	37.4	(41.2)	ex wires		6	38.3	(42.1)
	6	—	45.1	" No 270				46.1
	7	7.4	11.3	" 271				
	8	11.7	15.7			8	12.6	16.5
10	8	17.0	21.0			8	17.2	21.7

Prob. diff. of 2 wires $4.^{s}5 \pm 0.^{s}0784$ (275 comps)

With this pr. error there ought to (There are

be differences between two wires.

			Diff
> 0.05	74.9	81	0.0
< 0.05 > 0.15	105.8	108	0.1
< 0.15 > 0.25	37.2	27	0.2
< 0.25 > 0.35	6.5	8	0.3
< 0.35 > 0.45	0.7	1	0.4
< 0.45			

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9.10	4	18		9.2	9	5	15
11.12	6	4					
11 7	1	53			11.12	2	22
11	8	2			11	8	28
10 7	5	28			11 B	5	54
11.12	6	46	Dec?				
9.10	9	3			9.10	9	30
10 7	5	4			10.11	5	30
8.9	6	27		8.2	9	6	55
9.10	6	17		9.0	10	0	47
10	5	56			10.11	6	21
10	8	3			10.11	8	29
10.11	7	38	fine wire lost		11.12	8	6
11 B	3	16			11.12	3	42
10 7	0	36			11	1	2
10	1	45	ex. wire	9.5	10 11	2	11
10	1	29			10	4	38
10.11	3	3					
9.10	8	50			10.11	9	17
9.10	10	4			10	10	31

By 46 comps.

$S - A = 0^{m}.233 \pm 0^{m}.029$ $\quad 0.529 \pm 0.035$ (12 comps)

Pr. error of 1 comp $\pm 0^{m}.198$ $\quad \pm 0^{m}.226$

1st Zone

There are more stars than usual estimated 9.10 not found in Argelander. On the other hand there are not so many stars in Argelander as there should be on the average by Zones $0^{\circ}-1^{\circ}$ and $1^{\circ}-2^{\circ}$

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1960phae.proj..291S

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1860phae.proj..231S

10h 1m – 11h 55m

March 16. 1861

Ang of Pos 83° 34'
35.2
Mean 34.6

Rather Hazy.

Catalogue No 191

10	1	18.7	22.6	
	2	3.6	7.5	
	2	52.8	56.8	
	3	11.3	15.2	
	3	51.7	55.7	
	4	45.6	49.7	
	4	47.1	51.2	
	5	31.0	34.9	
	6	37.7		
	6	41.2	45.2	
	7	7.4	11.5	
	8	11.8	15.6	
	8	17.2	21.1	
	8	59.9	63.9	
	10	20.3	24.4	
	10	44.4	46.5	

191

Apr. 8. 1861

Ang. of Pos 83 38

10	1	18.2	22.0
	2	3.1	7.1
	2	52.3	56.4
	3	10.7	14.8
	3	51.2	55.1
	4	45.1	49.1
	4	46.8	50.7
	5	30.5	34.5
	6	37.0	
	6	40.6	44.7
	7	7.0	11.0
	8	11.3	15.3
	8	16.7	20.5
	8	59.3	63.3
	9	6.4	10.5
	10	19.7	23.7
	10	44.0	46.0

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1860phae.proj..231S

Long D

8	6	57	a faint 8 mag	8.2	8.9	6	59	
11 7	1	1			11.12 7	1	3	
9.10	0	46		9.0	10 B	0 B	50	
10	6	23			11 B	6	27	
10 B	8	34			10.~~11~~	8	34	
11 B	8	8			11.~~12~~	8	11	
11 B	3	47			11 7	3	50	
	B							
10	1	5			11 B	1	5	
9.10 7	2	11	Lec wire lost	{9.5	10 7	2	16	Lec wire lost
9.10 7	1	58	n s	{~~9.5~~	10	2	1	
10, 11	3	37			11	3	38	
					Dots			
9 7	9	19			10 B	9	23	
9	10	33			9.10	10	34	n s
11	5	59			11	6	0	
	D				11 7	8	21	doubtful Dec ± 3"
10 7	7	23	was AR obs?		11	7	26	
11	8	18			11 7	8	18	
	B							

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1860phae.proj..231S

9	11	41.5	45.5	No 18	10	11	40.9	45.0
	11	56.7	60.8			11	56.3	60.4
	12	6.7	10.7			12	6.2	10.3
	13	32.0	36.1			13	31.6	35.6
	14	5.1	9.0			14	4.6	8.5
	15	23.0	27.0			15	22.6	26.4
	15	33.6	37.9			15	33.3	
	15	36.1	39.9			15	35.4	39.3
	15	52.6	56.5			15		56.2
	16	12.7	16.6			16	12.1	16.0
	16	27.1	31.1			16	26.6	30.5
	16	58.1	62.0			16	57.5	61.4
	17	54.2	58.2			17	45.2 53.8	57.8
	18	30.1	34.1			18	29.6	33.7
	19	3.2	7.1			19	2.6	6.7
						19	45.9	49.7
	20	15.3	19.2			20	14.9	18.9
	20	36.1	40.2			20	35.7	39.7
10	21	26.1	30.3	Catalogue		21	25.7	29.8
	21		38.6			21	34.4	38.2
	22	23.3	27.4			22	22.9	26.9
	22	54.2	58.3			22	53.7	57.7
						22	55.1	59.0
	24	18.9	22.9			24	18.4	22.5
	24	21.8	25.7	~~No 44~~		24	21.3	25.3
	24	50.9	54.7	No 45		24	50.5	54.5
	25	21.4	25.4	No 46		25	21.1	25.0
10	26	51.6		47	10	26	51.0	

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1860phae.proj..231S

10.11	4	22			10,11	4	25		
107	4	31			10.11	4	34		
9.10	9	44	Dec doubtful		10B	9	45		
10	6	23		9.5	9.107	6	23		
97	6	16		9.11	9.10	6	18		
9	5	16		8.7	9.10	5	16		
10.11	5	0			11	5	1	Sw wire lost	
10	6	2		9.5	10B	6	5		
11	2	4			11	2	7	first wire lost	
10	4	39			10	4	43		
	B								
10.11	2	1	nS		11	2	1		
107	2	36			10	2	37		
	9	—	not obs		11.12	D.B		reads 9' 45" Sw wire lost	
11	7	36			11.107	5	18	Sw wire lost	
					11.12	7	38		
11.12	9	21			11.12	9	23		
10B	1	57	The stars have less tendency	2.5	10	1	58		
	D B		than usual to regulox order		10B	10	59		
					~~107~~	2	3		
10B	3	3			107	3	4		
10	2	15		9.5	10	2	16		
9	3	49	Catalogue	8.8	9	3	50		
10.11	1	8	- Ex. wire		11.12	1	11		
10B	5	37		9.3	9.10	5	38		
10.11	0	53			117	0	56		
	B.B				11.12	3	18	n.s.	
10	4	28			10B	4	31		
10	10	24			107	10	32		
9.10	1	57		9.5	9.10	1	4		
11	9	40	Scram double, Dist 20",		117	9	42		
			Obs preceding one			B			
10.11	2	40	Sw wire lost		11.	2	40	Sw wire lost	

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10	26	55.1	59.2		10	26	54.8	58.7
	27	23.1						
	27	28.0	31.9			27	27.4	31.5
	28	46.4	50.4			28	46.1	50.1
	28	←	55.4					
	29	24.4	28.3			29	27.9	28.1
	30	13.4	17.5			30	13.0	17.3
	30	33.7	37.8			30	33.4	37.2
	30	46.5	50.6			30	46.1	49.9
	31	6.6	10.7			31	6.3	10.1
	31	33.8	37.7			31	33.2	37.1
	31	43.5	47.4			31	42.9	46.9
						32	12.2	16.0
	32	34.7	38.7			32	34.2	38.3
	33	22.1	25.9			33	21.5	25.4
10	33	42.3	46.4	Catalogue		33	42.1	46.0
	33	50.9	55.2			33	50.5	54.4
	34	14.3	18.0			34	13.7	17.6
	34	46.2	52.3			34	46.0	51.8
	35	59.7	63.8			35	59.2	63.1
	36	17.6	21.9			36	17.0	20.9
	36	21.8	25.8			36	21.6	25.4
						3		
	36	30.5	34.4			36	30.2	34.2
	36	51.2	55.3			37	1.5	5.6
	38	11.4	15.2			38	11.0	15.0
	38	52.2	56.2			38	52.0	55.9
	39	25.3	29.3			39	25.0	28.8
	39	35.2	39.3			39	35.0	39.0
	39	44.8	48.9			39	44.4	48.6
						39		62.1
10	40	25.0	29.1		10	40	24.8	28.7
						40	26.4	30.2 (extra star?)

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10 7	1	7			10 7	1	10		
10,11	6	50	Sec wire lost		11.12	6	50	AR lost	} maybe doubtful
10.11	6	52			11.12	6	53		
	B								
10 7	6	53			10	6	56	short sig	
11	1	48	first wire lost			1	51	AR lost	
10B	10	53			10.	10	53	n s	
			Pairs of Stars rather numerous about 30" distant.						
9,10	8	17		9.5	9,10	8	17		
107	3	48			107	3	53		
10	8	40			10	8	41		
10B	7	7		9.3	9,10	7	8		
107	2	57			10.11	2	52		
107	9	16			10	9	17		
	D.D				11	8	52		
10	2	5		9.5	10B	2	7	B for sig	
11	4	43			11.12	4	45		
9	3	46	Catalogue	8.7	9	3	46		
9.107	3	50			9.107	3	51		
10B	2	51			10	2	53		
9,10B	6	39		9.1	9,10	6	39		
	D.B					Dito			
10	4	59			10	5	3		
9.10	6	35	Sec wire lost		90	6	35		
9	8	52		8.6	97	8	53	first wire doubtful	
					10.11	2	25		
	3	20	ex. may.		11	1	31		
						2	25		
11B	0	38							
9.10	5	5		8.8	9.10	5	6		
10	7	59			10	8	1		
	B								
10.11	6	48	ns		10,11	6	48		
11	5	16			11	5	18		
107	9	18	Dec to be rejected		10.11	9	20	doubtful dec	
10	7	44		9.5	11 10.	9 7	48 46	sure wire lost, n s	

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10	41	24.0	27.8		10	41	23.6	27.6
	41	50.2	54.2			41	49.8	53.9
	43	2.6	6.7			43	2.3	
	43		10.7			43	6.2	10.2
	43	46.1	50.0			43	45.7	49.6
	44	26.2	30.1			44	25.9	30.0
	44	49.6	53.4			44	49.2	53.2
	45	2.9	6.8			45	2.7	6.6
	45	28.8	32.6			45	28.4	32.2
	45	35.4	39.3			45	35.0	39.0
	45	42.9	47.0			45	42.8	46.7
	45		51.3			45		
	46	47.2	51.1			46	46.6	50.8
	47	37.6	41.4			47	37.3	41.4
	47	40.0	43.9			47	39.8	43.7
	47		46.4			47		45.9
	48	0.2	4.3			47	59.9	64.0
11	49	5.6	9.4			49	5.3	9.2
	49	35.4	39.4			49	35.1	39.2
	51	14.0	18.0			51	13.4	17.6
	51	34.0	37.9			51	33.6	37.5
	51	58.7	62.4			51	58.2	62.2
	52	45.0	49.1			52		
	53	42.0	46.1			53	41.6	45.5
	54	37.7	41.7			54	37.3	41.3
	54	40.0	43.9			54	39.7	43.6
10	54	56.8	60.7		10	54	56.7	60.7

No 80

Catalogue

No 90

No 91

No 106

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10.11	0	40			11B	0	41	
107	6	48			11	6	51	
11	4	33			117	4	38	Ex wire lost
11	5	48	first wire lost		11.12	5	49	
10	5	35		9.3	10	5	37	
	D.							
11B	6	2			117	6	3	
107	0	45			9.107	0	50	
10	3	37		9.5	9.10	3	38	
10B	5	18			9.10B	5	22	
10	3	2			9.107	3	4	
	9	21	Dec doubtful		9.10	9	25	
11B	4	47	ex wire					
10.117	8	21				8	28	doubtful Dec
	B.D.D							
9.10	1	20		9.3	9.10B	1	19	
10	5	8	n s	9.5	10	5	8	
10	7	23	Ex wire		10B	7	24	
9.10	3	4	n.s	9.5	10B	3	6	
	D							
7	0	9	Catalogue	8.0	7.8	0	9	
10	2	47	Stars small in this region		10.11	2	48	D
11.12	6	29			11.127	6	30	
10.11	1	57			11	1	59	
11	4	44			11.12	4	46	
11.12	3	35						
10	7	17			107	7	19	
	B							
9.10	10	16		9.5	10B	10	17	
10.11	2	45			11	2	46	
10	5	18			10	5	21	

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10	55	9.5	13.7	No 107	10	55	9.2	13.3
	55		17.4					17.1
	56	25.6	29.4			56	25.3	29.0
	56	49.6	53.0			56	49.3	(53.1)
	56	53.5	57.4			56	(53.1?)	57.4
	57	40.1	44.0			57	39.7	43.7
	58	27.2	31.0			58	27.2	30.9
	58	39.9				58	39.8	43.6
	58	43.3	47.3			58	—	47.1
	58	—	51.5			58	—	51.3
						58	—	53.0
	59	16.0	20.0			59	16.9	20.0
	59	18.1	22.1					
10	59	44.7	48.7					
						0		62.2
11	1	32.8	37.1			0	59.6	63.6
	1	50.2	54.1			1	32.7	36.6
	2	15.8	19.8			1	50.1	54.0
						2	15.6	
	2	24.1	27.9			2	23.6	28.0
	2	54.5				2		
	3		2.3			2	58.1	62.1
	(4		29.9)	examine sheet		(4	24.6	28.5)
	5	0.8	4.8			5	0.8	4.7
	5	13.1	(17.0)			5	12.7	
	5	—	21.0			5	16.8	20.6
	5	29.6	33.4			5	29.4	33.4
						6	9.5	13.7
	6	15.2	19.2	No 135		6		18.9
	6	29.7	33.6			6	29.4	33.3
11	6	50.7	54.9	~~No 137~~	11	6	50.7	54.6
					11	7		7.2 (wire)

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10.7	2	32			10 7	2	35	
10.11	4	4	first wire lost		11	4	7	first wire lost
	B.D					B		
10.11	7	46			11.12	7	47	Sec wire lost
11.12	6	53	Sec wire lost		11.12	6	53	
11B	4	40			11	4	42	
11.B	0	50			117	0	52	
	D							
10	4	50	ex mags	9.5	11B	4	52	
9.10	8	18	Sec wire lost	9.5		8	18	
10	3	49		9.5	10	3	49	
10	1	54	ex wire	9.5	9.107	1	52	
					11.12	2	11	Sec wire only
10.7	3	46			11	3	48	
10.11	4	39						
11	3	8						
	D long					4	11	first wire lost
10	10	30	nS			1	22	
	6	39	ex mag.		9.10 11	10 6	32 39	
10.11	7	32				7	36	first only
10.11	7	23				7	35	sure
11	4	2	Sec wire lost					
11B	0	30	first wire also? ex		11	0	32	
11.12	8	50	nS, first wire lost, AR & D?		12	8	53	AR?
9.10	1	48			10B	1	49	
10.11	6	28	ex wire		10	6	31	Sec wire lost
10	4	0	ex wire		11	4	2	
11B	2	37			11	2	38	
	B				11.12	1	11	
11B	3	29	nS		11	3	31	first wire lost
11	2	16			11.12	2	18	
10	10	2			10.11	10	4	
					10	11	1	

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11	7	24.5	28.4				
	8	21.5	25.5		11	8	21.6	25.5
	8	31.7	35.6			8	31.4	35.5
	9	6.0				9	5.7	4.6
	9	10.1	14.1			9	9.8	13.8
	9	24.0	28.2			9	24.1	28.0
	10	17.6	24.8			10	17.7	21.5
	11	16.0	19.8			11	15.7	19.5
	11	23.9	27.9			11		27.6
	11	25.5	29.4			11	25.1	29.3
	11	—	51.4			11	47.3	51.4
	12	2.5	6.5			12	2.3	6.2
						12	36.3	38.1
	13	21.0	25.0			13	21.0	25.0
	14	46.1	50.1			14	46.2	50.1
	15	1.6	5.7			15	1.5	5.3
	16	25.8	29.9			16	25.7	29.6
	16	48.7	52.5			16	48.4	52.3
	18	7.9	30.9					
						18	4.5	8.3
	18	26.8	30.4			18	26.5	30.4
	18	32.5	36.4			18		36.2
	18	53.9	57.7			18	53.3	57.6
	20	9.3	—			20	9.0	
	20	—	13.3			20		13.1
	20	55.0	59.0			20	24.3	
	21	27.2	31.1			21	27.0	30.9
	21	36.2	40.1			21	36.0	40.1
	22	51.6	55.7			22	29.4 51.4	33.4 55.4
	23	52.7	29.1			23	52.4	
	23	56.6	60.7			23		60.5
11	24	25.2	29.1		11	24	25.1	28.9

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1860phae_proj_231S

11 7	5	38	NS. AR?					very few groups of stars
10 B	6	36			10.11	6	39	
8	9	34	may a little doubtful / 8.3 (obliter		8.9	9	34	
10.11	6	42	Su wire lost		11.12	6	47	
10	6	37			10.11	6	38	NS
10 7	3	36			10,11	3	37	
	D		Many is solid groups					
10	8	28	of bright Stars for		10.11	8	28	
10 B	10	7	20 minutes past		9.10	10 D.D	9	
	0	3		9.4	9.10	0	5	first wire lost
9.10	8	45		9.2	9.10	8	43	
	8	—	ex wire		11.	8	18	Su doubtful
10.7	6	33				6	36	
	B. B				9.107	1	10	
10 B	9	17			10	9	18	
10.11	2	26			11 7	2	27	
10 B	8	18	dec. doubtful		10	8	19	
			Atmosphere is getting					
9.10 B	3	4	rather thick	9.1	9 B	3	7	
9.10 B	1	5	9.107		10	1	5	
10	6	57	AR lost		11	7	0	AR lost
9,10	10	49	NS		11	10	48	
10.11	1	22	NS		10	10	54	
10	6	6			11	1	24	
					11 B	6	8	
10	6	44	Su wire lost		10,11	6	46	Su wire lost
107	9	38	first wire lost, dec. doubtf		10.11	9	42	first " "
11.12	7	8	short sig		11.12	3	44	
10.	7	14		9.5	107	7	16	
10.11	8	37			11.12	8	38	
107	5	40			11.12	0	48	Break
					11	5	42	NS
11 B	6	47	Su wire lost early			6	47	Su wire lost
10.11	3	31				3	33	first " "
9.107	4	33		9.3	10 B	4	34	

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1860phae.proj..231S

24	33.5	37.7	№170	11 24	33.6	37.5	
25	35.4	39.3		25	35.2	39.1	
26	9.0	12.8		26	8.8	12.9	
26	45.9	49.8		26	45.7	49.6	
26	46.2	52.1		26	48.0	51.9	
27	29.8	33.9		27	29.6	33.6	
27	57.3	61.2		27	57.3	61.0	
27	58.9	62.9		27	58.8	62.8	
28	47.3	51.3		28	47.3	51.3	
28	54.0	(58.2)	№140	28	54.1	58.0	
29	49.3	53.2	№141	29	49.2	53.2	
30	17.6	21.2		30	17.3	21.3	
30	31.4	35.5		30	31.1	35.2	
31	3.1	6.8		31	2.9	6.7	
31	21.6	25.6		31	21.7	25.5	
31	24.3	28.3		31	24.0	28.1	
31	35.7	39.6		31	35.4	39.5	
32	23.3	27.3		32	23.0	26.9	
32	26.4	30.3		32	26.3	30.3	
33	~~78~~	28.6		33	24.5	28.6	
33	53.2	57.3		33	53.1	57.0	
34	27.9	31.9		34	27.9	31.7	
35	23.3	27.3		35	23.2	27.1	
36	15.7	—		36	15.6		
36	19.1	23.0		36	18.8	22.9	
36	52.1	57.2		36	52.2	56.0	
37	2.5	6.5		37	2.4	6.3	
37	29.3	29.2		37	25.0	29.0	
11 37	33.8	37.9	№199	11 37	33.7	37.7	

ex wire

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10	2	38				10.11	2	39	
10.11	0	36				11	0	39	
11	4	27				11.12	4	29	
	B.D.B								
10	9	4				11	9	6	
9.107	7	57	n.s		9.3	9.10	8	1	n s
10B	4	57			9.5	10.11	8	0	
						10	4	59	
11B	1	21				11	1	23	double
11.12	0	19	n s			11.127	1	23	
9.10	5	20				10	5	22	
9.10	1	8	Su wire doubtful		9.0	9.10	1	8	
10.11	7	52				11.12	7	54	
9.107	7	51			9.3	107	7	51	
10	2	36				11	2	39	
10.11	9	37				11.12	9	39	
10.11	8	0				11.12	8	3	
9.10	6	52			9.2	9	6	54	
10	7	30				117	7	31	
	D								
10B	6	36			9.5	10.11	6	38	n s
10.11	6	28				117	6	28	
11	3	54	first wire lost ?			11.127	3	57	
10	10	52				10B	10	56	
10	5	4				11B	5	5	
11	6	41				11.127	6	42	
107	3	24	Su wire lost			11	3	26	Su wire lost
10	10	18	n s			107	10	21	
10B	2	36				10B	2	38	
9.10	3	8	(examine magnitudes)		9.3	9.10	3	14	
9	6	16			9.5	9.107	6	20	
10.11	2	3				11.127	2	4	

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1800pnae.proj.: 2515

Zero of Position for Scale.

			Mer. Ref. W. +	Zero
1861	Feb. 13	–	+1.2	83° 27'.3
"	" 21	–	+1	26.
"	" 26		+1	33.
"	" 27		−1	32.
"	Mch. 11		+1	29
"	" 16		−0.5	34.6
"	Apr. 4		+2.5	36.2
	8		+1.0	38.0

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List of Zones 0°.40'–1°.0'

Dates.	Prov. No.	R.A.	Dec.	Observ.	Offic. No.	Remarks.
1859 March 31	(1)	9 43–12 1	40'–50'	C.	117	R.A. of books wrong by read off.
Apr. 1	(2)			C.	118	
1859 Apr. 29	(4)	12 0–14 4	40–50	C.	120	
" Apr. 30	(5)			C.	121	
1859 May 3	(6)	11 54–14 13	50–60	C.	122	X 270
" May 4	(7)			C.	123	
1859 May 23	8 117	13 55–16 8	40–50	C.	124	X 278
" May 24	118			C.	125	
1859 June 7	119	13 54–16 3	50–60	C.	126	X 262
" June 9	120			C.	127	
1859 June 18	121	15 57–17 27	40–50	C.	128	X 206
" July 20	122			B.	130	
1859 June 18	123	17 24–18 12	40–50	C.	129	X 110
" July 28	122			B.	131	
1859 Aug. 25	123	16 0–18 20	50–60	B.	132	~~330~~
" Aug. 26	124			B.	133	
1859 Aug. 29	125	18 10–20 27	40–50	B.	134	334
" Sept. 1	126			B	135	
1859 Sept. 2	127	18 15–20 32	50–60	B.	136	This Zone was divided 13a & 13b
" Oct 4	128			C.	137	
1859 Oct. 12	129	20 26–21 18	40–50	C.	138	
" Oct. 24	130			C.	139	
1859 Nov. 14	131	21 18–22 26	40–50	C.	140	
" Nov. 15	132			C.	141	
1859 Nov. 15	133	22 26–23 57.	40–50.	C.	142	
1860 Nov. 6	(136')			S.	158	
1859 Nov. 17	134	20 27–22 31	50–60	C.	143	
" Nov 26	135			C.	144	(May Angle up to this)
1859 Nov. 28	137	22 20–0 14	50–60	C.	145	
" Nov. 29	138			C.	146	
1859 Nov. 30	139	0 10–2 13	50–60	C.	147	
" Dec. 1	140			C.	148	
1859 Dec. 13	141	23 44–1 44	40–50	C.	149	
" Dec. 15	142			C.	150	
1859 Dec. 16	143	1 40–3 50	40–50	C.	151	
1860 Jan 23	144			C.	152	

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Date	Provisional Number.	Right Ascension	Declination	Observer.	Definitive Number	
1860 Jan 25	145.	2ʰ 9ᵐ – 3ʰ 47ᵐ	50′ – 60′	L	153	
" Oct 24	1861			J	155	
1860 (?)	146	3 46 – 5 19	50 – 60	L.	154	
" Dec. 2	148′			S.	163	
1860 Nov. 8		3 29 – 5 32	40 – 50	S.	157	Sett 1
" Nov. 14				J.	158	
1860 Nov. 16		5 28 – 7 25	40 – 50	S.	159	
" Nov. 22				J.	161	
1860 Nov. 20		5 15 – 7 10	50 – 60	S.	160	
" Nov. 24				J.	162	
1860 Dec. 11		7 24 – 8 50	40 – 50	S.	164	
" Dec. 12				J.	165	
1860 Dec 13		7 8 – 8 20	50 – 60.	S.	166	
1861 Jan 12				S.	169	
1860 Dec 13				S.	167	
1861 Feb. 6				J.	172	
1860 Dec. 13				S.	168	
1861 Feb. 14				J.	174	
1861 Jan 30		8 45 – 9 45	40 – 50	S.	170	
" Feb. 4				J.	171	
1860 Apr. 18		~~9ʰ 6ᵐ~~ – 11ʰ 55ᵐ	50 – 60	C.	119	
1861 Feb. 12				J.	173	

Series 1° 0′ – 1° 20′ (in this book)

1861 Feb. 26	177	7 40 – 9 35	1° 0′ – 1° 10′	S.		
Feb. 27	178			S.		
Feb. 13	175	9 33 – 11 14	1° 0′ – 1° 10′	S.		
Feb. 21	176			S.		lost a part by clouds.
Mch. 11	179	8 20 – 10 8	1° 10′ – 1° 20′	S.		~~dont~~
Apr. 4	181			S.		
Mch. 16	180	10 1 – 11 55	1° 10′ – 1° 20′	S.		continued into next book.
Apr. 8	182			S.		

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C30
519 1868. 19.9 32.7 38/57

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