1861phae.proj..2925

KG
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K. 22

22

ZONES

No. 9

April 8 1861

June 25 "

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1861 Mar 16

1861 Apr 8

continuation from prec Book.

11	36	27.5	27.5	No 200	11	38	23.4	27.3
	38	28.8	32.8			38	28.7	32.6
	38	55.2	59.2			38	55.2	59.1
	39	58.7	62.6			39	58.5	62.6
	40	39.3	43.2			40	39.2	43.1
	41	8.3	12.3			41		
	41	50.7	54.8			41	50.6	54.8
	42	13.3	17.5			42	13.0	17.0
	43	59.3	63.1			43	59.2	63.3
	44	58.3	62.2			44	57.9	62.0
X	46	46.5	50.4			46	46.3	50.3
	47	42.9	46.8			47	42.7	46.8
	48	24.3	28.3			48	24.3	28.1
	48	58.3	62.3			48	58.2	62.1
	49	3.9	7.9			49	4.0	7.8
	49	14.1	18.3			49	14.3	18.3
	50	10.9	14.8	ex sheet		50	10.8	14.8
	50	49.8	53.8			50	49.6	53.6
11	51	59.7	63.8	No 218		51	59.8	63.6

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11	5	11			11,12	5	12	
10	1	8			10.11	1	10	
10.11?	9	59	Star about 4' Arg. m.		10.11	10	2	
	13.							
11 13.	5	4			11.12 7	5	6	
107	8	48			10.11	8	50	
11	8	8						
11 B	7	37			11.12	7	37	
10.11	8	55			11 B	8	58	
11	5	11			11.12	5	11	
	D							
107	2	44			10.11	2	45	
107	8	53			11 B	8	54	
7	9	13	Catalogue	6.8	7	9	14	
10	8	57			10	8	59	10.11 may
107	3	41			11 B	3	42	
10.11	9	1			11	9	3	
10.11	8	36			11	8	39	
10	1	1			11	0	59	
	B. B. B							
107	7	35			117	7	34	
10.11	4	37			11.12	4	39	
7	7	54	Catalogue	6.8	7.8	7	55	

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	52	49.6	53.6	№ 219	52	49.3	53.4
	53	24.0	28.0		53	23.7	27.7
	53	38.0	42.0		53	37.9	42.0
	53	58.4	62.4		53	58.4	62.2
	54	5.3	9.1		54		9.3
	54	42.4	46.3		54	42.4	46.3
	55	17.3	21.3	№ 225	55	17.2	21.2

Difference of two wires from 4.5 of interval

	Cases			By Theory
0.0	58		3058	56.6
0.1	92	.92	7519	82.5
0.2	26	1.04	9511	36.9
0.3	6	0.54	9942	8.0
0.4	3	0.48		1.1
	185	2.98		
log.	2.2672	0.4742		
		8.2070		
		9.1035 log. m. error		
		7.8290		
		8.9325		

Prob diff. of 2 wires 0.5 0856

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107	8	31			11	8	38	
10.11	5	41			11.12	5	42	
10.11	8	3			11.12	8	3	
	B		Begin here			B		
B10.11	9	32				9	36	
11B	4	40				4	41	fiere wire lost
97	8	3	Catalogue	8.9	9.10B	8	5	
8.9	9	57	Catalogue	8.3	9B	10	0	

By 46 comps

$S-A = 0^m.265 \pm 0^m.031$

Pr. error of 1 comp $\pm 0'.214$

Distributed as follows

-1.0	1
-0.5	1
-0.3	1
-0.2	1
0.0	5
0.2	10
0.3	7
0.4	3
0.5	15
0.7	2

By 43 comps.

$S-A = 0''.344 \pm 0''.029$

Pr. error of 1 comp. $\pm .190$

Dist. as follows

-0.5	1
-0.3	1
0.0	4
0.1	1
0.2	9
0.3	7
0.4	2
0.5	10
0.6	1
0.7	5
0.8	1
0.9	1
14.8	43

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	1862.00					
9	6 41 22.02	+1	5 52.2			
7.8	6 41 55.95	+1	9 12.7	Str 0.67		
8.9	52 24.48	1	6 8.8			Examine for Proper Motion
8.9	7 26 4.25	1	4 57.0			
9	27 0.93	1	9 11.7			
9	40 26.43	1	9 5.8			
8	41 51.74	1	0 13.4	S. 0.6		
8.9	41 52.07	1	1 9.3			
9	43 43.19	1	10 17.0			
8	7 58 27.67	1	4 57.6			
8.9	8 1 39.10	1	9 19.3			
G.	6 45 14.43	+1	11 26.2	Baily	8.4	
G.	45 27.05		15 16.1	Baily.	8.7	
9	52 27.96		15 18.4		8.7	
9	7 31 53.18		16 21.9		8.0	
8.9	40 2.64		15 19.8		7.8	
G	45 43.19		10 17.0		8.3	
9	47 45.42		10 47.9	Baily	9.0	
8	58 38.90		14 48.3	Baily	8.5	
9	8 7 18.02		11 8.5		9.1	
G	11 76.31		16 22.2		8.8	
8	20 23.37		16 41.5		8.0	
9	20 53.55	+1	14 20.4		9.0	

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$10^h\ 49^m$ — $12^h\ 53^m$

Apr. 9. 1861.

Arg of Per 83° 32′

At 21. 11 16 Ext. Tm. 32.3

13 30 30.6

May 2. 1861.

Arg of Per. 83° 26′

30.5

33.

Mean 29.8

At Ec 13 21 Ext Tm. 32°6

10	49	5.0	9.0	10 49	5.0 8.9
	49	55.0	59.0	49	54.9 59.0
	50	13.3	17.1	50	13.1 17.3
	50	20.2	24.2	50	20.3 24.0
	50	36.9	43.0	50	39.0 43.0
	50	40.8	44.8	50	40.6 44.6
	51	30.4		51	
	52	7.0	10.9	52	7.2 11.1
	52	27.0	31.0	52	27.1 31.1

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$1^{0}\ 0'$ + 1^{0} − $10'$

7.	10 49 5.71	+ 1 10 5.2	8.0	Wg. Arg.	=57 Lewis	5.46	5.9	Newton.	
	11 5 41.08	1 6 1.0 Bailey	8.4						
8.	11 13 11.03	+ 1° 1' 44.1	8.1	8.1	(7) 11 59 39.09	1 2 37.1	8.5		
9.	12 ~~12 12 13~~ 2.03	0 29.5		8.7					
8	9 54.68	7 11.2		7.8					
8	24 11.63	5 24.3		9.1					
9	51 44.62	7 9.6		8.2					
9	52 39.28	3 8.9		9.2					
8	53 0.98	+ 1 3 12.0		7.8	end here,				
8	54 59.69	9 1.0 Baily		8.5					
7	12 57 41.98	2 27.9		7.7					
9.10	13 13 56.82	1 4 57.3		9.3					

7,8	10	5		8.6	8	10	5	
10B	2	39		9.4	10	2	39	
11	4	25			11			Dec lost
11B	6	2			11	6	1	
9,10	1	38		9.1	9.10	1	35	
11	6	11	n s		11.12	6	10	
	B							
11.12	7	51	Sec wire lost					
11.12	7	49			11.12	7	50	
11	8	24			11.12	8	21	Dec doubtful

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0	53	31.5	35.3	N° 10.	10	53	31.4	35.5
	53	54.9	62.6			53	58.5	62.5
	54	17.4	47			54	17.1	21.5
	54	20.6	24.7			54	20.5	24.5
	54	45.8	49.7			54	45.5	49.7
	55	22.2	26.0			55	21.8	26.0
	56	0.0	4.2			56	0.1	4.0
	56	48.8	52.8			56	48.5	52.4
	57	5.1	9.2			57		9.2
	57	12.9	17.0			57	12.9	16.8
	57	23.3	27.3			57	23.4	27.2
	58	9.2	13.2			58	9.2	13.1
	58	25.5	29.6			58	25.5	29.4
	59	21.0	25.1			59		
10	59	39.7	43.6		10	59		43.4
11	0	10.3	14.2		11	0	10.0	13.9
	0	15.8	19.6			0		19.6
	0	42.2	46.2			0	42.0	45.8
	1	26.6	30.6			1	26.7	30.6
	2	23.0				2		
	2	33.8	37.8			2	33.6	39.5
	3	8.3	12.4			3	8.1	12.3
	3	10.6	13.8			3		
	3	45.0	—			3	45.1	49.1
	3	—	49.1					
	4	1.9	5.9			4	1.9	5.8
	4		12.8			4	8.7	

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-04 -0.5

10	7	8		8.9	9	7	7	
11.12	1	45			11.12			Dec lost
11B3	3	31	Dec wire lost-		11	3	30	
117	6	46			11	6	43	
11	3	26			10.11	3	25	
		Dots						
117	8	11			11.12	8	12	dec. doubtful
11B3	4	4			10.11	4	3	
11.12	3	44			11	3	Dots 39	
11.12	5	19			11.12	5	—	n.s. no sig
11	8	14	Dec a little doubtful		11	8	—	
10.11	1	25			11	1	23	
9.10	5	35			10	5	5	sure
9.10	8	38		9.5	9.10	8	40	
		B.D.						
			Few Stars here					
10.11	0	10				0	—	not obs
11.12	3	52			11.12	3	52	first wire lost
9.10	0	59		9.5	9.10	0	58	
10	2	52			10	2	50	
9.10	2	34	Dec wire lost		10B	2	35	
11.12	3	27	rej NRG					
		D.B3						
10B3	9	59			10	10	0	
11.12	0	33	Dec wire lost					
10.11	2	14			11	3	12	
10.11	2	31			10	2	32	
11.12	2	54	n s		not obs			
10.11	2	18	Dec wire lost		11	2	19	
11	1	5	first " "					
10	4	36		9.2	9.10	4	25	sure
11	6	19	first wire lost		10.11	6	18	
		B						

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	4	54.3	58.4	№ 37	11	4	54.2	58.1
	5	40.7	44.6			5	40.6	44.6
	6	24.2	28.1			6	24.0	28.0
	7	1.8	5.9			7	1.8	5.9
	8	42.4	46.4			8	42.2	46.3
	9	7.0	11.1			9	6.9	10.8
	9	46.4	50.3			9		
	10	54						
	10	54.8	58.8					
	11	23.6	27.6	45 прямое обр. № 45 зеркал.		11	23.4	27.5
	12	13.3	17.1			12	13.3	17.3
1	13	10.4	14.4			13	10.5	14.4
	13	25.7	29.7			13	25.5	29.9
	14	5.8	10.0					
	14	29.0	29.0			14		
	14	50.1	54.3			14	50.3	54.0
	15	26.2	30.1					
	16	3.8	7.7					
	16	38.9	42.9			16	39.1	43.0
	17	2.9	6.9					
	17	15.3	19.2			17	15.4	19.4
	17	43.7	47.6			17	43.7	
	17	52.3	56.4			17	52.2	56.2
	18	10.7	14.8			14	11.0	14.7
	18	30.5	34.4			18	30.6	34.4
	18	56.4	60.4			18	56.4	60.3
	19	17.3	21.3					
	19		29.1					

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117	3	22			11.12	3	28
9.10	5	55		8.4	8	5	55
11.12	3	40			11.12	3	40
10B	4	4		9.1	9	4	5
10	4	19			9.10	4 D.B.	20
9.10	6	12		9.5	9	6	11
11.12	7	38				lost, bad seeing	
	D D						
11	0	16					
11.12	9	2	} double middle obs. in AR.	9.4		10 1	} centre obs in AR
	9	8				10 7	
10	8	21			9.10	8 24	
8.9	1	43		8.1	8.9	1 44	
10.11	5	24				5 24	
11.12	0	30	AR doubtful				
11.12	0	34					
10	2	49		9.2	10	2 52	
11.12	4	6	B for Dj			D.D	
	Dolb						
11.127	2	16					
11.12	1	29			11.12	1 29	
11.12	3	28					
10.11	4	56		9.3	10	4 56	
9.10	8	14		9.0	9	8 15	Du wire lost
11	9	47			117	Du lost	
11	9	30			11	9 30	
11B	3	46			117	3 43	
	B						
11	5	22			11	5 22	
11	0	21				lost	
11.12	7	20	fine wire lost				
						B.D.D	

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1	20	27.5	31.6		11 20	27.6	31.7
	21	12.6	16.5		21	12.6	16.7
	21	26.6	50.4 examine sheet		21	46.7	50.6
	22	20.5	24.4		22	20.6	24.7
	23	14.8	18.9		23	16.1	18.9
	23	33.9	38.0		23	34.0	38.0
	23	35.7	39.7		23	35.8	39.7
	24	16.3	20.4		24		
	24	59.9	63.9		24	59.9	64.0
	25	35.0	39.0		25	35.1	38.7
	26	25.8	29.7		26	25.8	30.0
	26	45.8	49.7		26	45.8	49.7
	28	37.1					
	29	4.7	8.6		29	4.7	8.6
	30	2.0	6.0		30	2.1	6.1
	30	41.3	45.1		30	41.3	45.2
	31	17.3	21.2		31	17.4	21.3
	31	41.5	45.5				
	32	30.7	34.7		32	30.8	34.7
	32	54.6	58.6		32	54.5	58.6
	33	51.0	55.0		33	51.3	55.2
	34	26.0	29.8		34	26.1	29.9
	35	2.9	7.0		35	3.1	7.2
	35	32.9	36.8		35	32.9	36.9
	36	19.3	19.4		36		
	36	35.7	39.8		36	36.0	39.9
	36	55.9	59.7		3-		
	37	22.0	26.0		37	22.1	26.0

Provisional Reduction
1862.0
{ 11 32 31.32
+1° 9' 55".2 }

{ 11 35 3.65
+1° 8' 32.0 }

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11	5	7		10.11	5	7	
11	2	0		11	2	2	
10.11	2	53		11	2	52	
11.B	2	27		11	2	28	
10.11	9	0		10	9	0	
10.11	9	40		11	9	39	
10.11	8	19	n.s.	11	8	19	
11.12	3	34					
	D,D,D						
11.12	3	26	n.s.	11.12	3	29	due doubtful
10	10	34		10.11	10	34	n.s. accidental
11.12	9	57		11.12	9	58	
11.12	8	58		11.12	8	59	
	B for one Minute				Dots. long		
11	6	24	Li wire lost				
10 B	6	15	n.s. 9.3	9.107	6	14	
11.12	1	27		11.12	1	30	
11.12	9	4		11.12	9	4	
11 B	1	6		11	1	7	
11.12	8	38	n.s.				
9.10	9	55	9.3	10	9	55	
10.11	6	21	Stars scattered		6	21	
11.7	2	49		11.12	2	51	
11.12	2	58		11.12	3	0	
	B						
11	8	33		10.11	8	30	
11	1	4		11	1	6	
11.12	8	29	AR & Dec both Doubtful				
11.12	4	33		11.12	4	33	
11.12	1	44			B		
10.11	4	30	9.57		4	31	

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38	7.1	11.0	38	7.1	11.3
38	45.9	50.0	38	28.3	32.1
39	11.0	15.2	39	11.2	15.3
39	27.3	31.2	39	27.4	31.4
39	55.8	59.7			
41	21.4	25.4	41	21.8	25.8
42	45.0	49.0	42	45.2	49.2
42	58.2	62.0	42	58.2	62.1
43	49.0	52.9	43	49.2	52.9
43	57.2	61.3	43	57.5	61.6
44	20.3	24.3	44	20.8	24.7
44	37.8	41.7	44	38.0	42.1
44	55.7	59.7	45		
45	10.0	13.9	45	10.3	14.7
45	10.7	14.6	45	1	14.7
47	0.1	4.1	47	0.2	4.3
48	7.3	11.1	48		
48	23.6	27.7			
48	49.7	53.5	48	50.0	53.8
48	52.3	56.3			
49	58.0	62.0	49	58.2	62.3
50	50.9	54.9	50	50.8	54.8
51	25.2	29.2	51	25.4	29.5
51	55.7	62.5	51	58.9	62.7
52	49.0	53.0	52	49.3	53.2
53	1.1	5.0	53	1.3	5.1
53	37.4	41.4	53	37.7	41.7

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11.7	6	2			11	6	2	
11.12	10	13			9.10	11	8	
11	3	31			11	3	30	
9.10	7	16		9.2	9.10	7	17	
11.12	9	28						
	B.D							
10	3	6		9.5	10	3	7.19	No AR Ls & Lm ~~N.S. first~~
11	5	30				9		
10.11	0	36			10.11	5	31	
						0	36	
11.12	9	18				~~9~~	~~19~~	dec lost
11.7	4	51			11	4	53	
11	5	50			10.11	5	51	
11	5	39			10	5	39	
11.12	2	43				2		
9.10.7	2	29		9.3	10	2	29#	Lm wire lost
9.10B	0	51	nS	9.0	9.10	0	51	first wire lost?
9.10	6	20		9.3	9.10B	6	20	
	D							
12.12	0	51			11.12	not obs		
11	0	43	Lm wire doubtful		11	not obs		
10.11	3	7			11	3	8	
11	9	6	nS					
11.12	4	56	AR?		11.12	4	54	
11.12	8	59			11	9	0	
11.7	5	14			11.12	5	14	
11.12	6	51			11.12	6	50	
	B.B							
11.12	5	18						AR obs perhaps
10.11	7	2			11	7	2	
10	8	54			10	8	53	nS

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11	53	49.6	53.5		11	53		53.7
	55	12.6	16.3			55	12.6	16.7
	55	46.6						
	55	52.6	56.5			55	52.7	56.9
	56	39.1	43.1			56	39.4	43.2
	56	41.5	45.5			56	41.6	45.8
	57	6.7	10.7			57	7.1	11.1
	57	29.0				57	28.9	33.2
	57	35.2	39.1					
	58	53.3	57.2			58	53.6	57.4
	59	2.5	6.4			59	2.7	6.7
11	59	38.5	42.4	Catalogue	11	59	38.6	42.9
12	0	38.5	42.5		12	0	38.8	42.7
	0	54.7	58.6			0	54.9	58.9
	2	14.4	18.2			2	14.4	18.5
	3	15.9	19.9			3	16.3	
	3	25.3	29.4			3	25.9	30.0
	3	43.5	47.4			3	43.8	47.9
	4	18.2	22.2			4	18.3	22.4
	4	58.8	62.9			4	59.2	63.2
	5	26.3	29.9					
	6	1.0	5.1	Catalogue		6	1.4	5.5
	6	46.8	50.9			6	47.0	51.1
	7	33.6	37.6			7	34.0	38.0
						8	6.7	10.8
	9	5.2	9.3			9	5.8	9.6
	9	54.2	58.1	Catalogue		9	54.5	58.4
	13	29.3	33.2			10	17.3	21.3
12	13	46.1	50.1		12	13	46.5	50.4

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11B	9	16	+0.9		10.11	9	10	-0.6
11.12	4	39				4	41	Sec doubtful and AR also
11	0	38	NS, Sec wire lost					
11	6	6			10.11	6	8	
9.10	8	41			10	8	43	
9.10	6	57		9.3	9.10	6	58	
10.11	7	19				7	20	
	B							
11	1	38	Sec wire lost					
9.10	9	17		9.2	9.10	9	18	AR lost
10.11	5	12	10.11 may		10	5	11	
10	7	43			9.10	7	44	
9	2	37		8.5	8.9	2	37	
11.12	4	5			11	4	6	
11.12	3	19			11	3	24	
	D							
10B	9	15		9.5	9.10	9	15	
11.12	4	11			11.12	4	11	Sec wire lost
11	0	31			10.11	—		Sec lost
11	6	59			11	6	59	
10	2	22		9.5	9.10	3	30 24	
10.11	6	22			10.11.7	6	25	
11.12	4	7						
9.8	0	29		8.7	8.9	0	25	
10.11	4	40			11B	4	38	
				9.5				
10	2	43	one or two ARs lost while filling		10.11	2	44	
11.7	6	10	Pen		11	6	12	
10.11D	2	15		9.5	11B	2	15	
	DD							
8.9	7	8	a field with many brighter than 13m NS	7.6	9 11	7 1	9 7	
11.7	5	37						
10B	2	38		9.3	10	2	40	

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14	12.6	16.6			
15	13.1	17.0	12 15	13.6	17.3
15	29.9	33.9			
16	17.0	20.9	16	17.2	
16		25.1	16	21.6	25.5
16	59.2	63.3	16	55.8	63.7
17	13.0	17.0			
17	32.5	36.4	17	32.9	36.8
18	0.8	4.7	18	1.1	5.2
19	28.2	32.0			
19	31.1		19	31.3	
19	34.7	38.6	19	34.9	39.1
20	47.7	(57.6)	20	48.1	52.2
22		49.5	22 22.2		26.1
23	10.8	14.8			
23	12.2	16.1	23	12.5	16.4
23	54.4	58.4	23	55.1	
24	2.5	6.7	24	3.1	
(24	8.8	12.8)	24	9.2	13.1
25	5.6	9.5	25	6.0	9.9
25	11.2	15.2	25	11.6	15.6
26	16.9	20.7	26	17.1	21.2
26	31.9	35.9	26	32.4	36.1
26	53.7	57.6	26		58.0
27	35.5	39.5	27	35.9	39.8
27	54.6	58.8	27	55.2	59.1
28	9.9	13.8	28	10.3	14.2
28	46.1	50.0	28	46.7	50.6
			30	57.8	61.9

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10.11	8	3					
9.10	9	42			9.10	9	42
11	3	48					
11	2	24			11	2	27
11	5	43	examine wire		11	5	45
10	1	23	first wire bad		10	1	27
11	7	38					
11	8	21			11	8	20
9	9	53		9.0	9.10	9	55
	D.B						
11	5	19					
10	1	15	See wire lost, NS				
10.11	4	41	NS		11	4	41
11.12	1	39	See wire doubtful		11	1	39
11.12	11	26	first wire lost		11.12	4	16
11	4	11					
9.10	6	2		9.5	9.10	6	2
11B	3	38				3	38
11	0	51			11	0	57
9.10	6	4	examine for a star +2.	(9.1) 5 -10. 11	9.10	6	4
	B						
10	9	58			lost	9	56
10.11	5	8			11	5	9
11.12	4	31			11.12	4	32
10B	4	55		9.5	10.11	4	45
10.11	4	23			11	4	19
	B.D.D						
11.12	1	29			11.12	1	30
11.12B	1	32			11.12	1	31
11	0	56			11	0	56
10.11	1	31			10.11	1	21
	Dots		No bright Stars		11	2	38

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12	33	3.3	7.3	12	33	3.6	7.6
	33	29.4	33.3		33	29.7	33.7
	33	36.1	40.1		33	36.5	40.6
	35	28.9	32.7		35		
	35	33.0	37.7		35	34.1	38.2
	36	4.0	8.0		36	4.4	8.3
	36		17.6		3		
	37	41	41.7				
	37	50.5	54.5		37	50.8	54.8
	38	20.3	24.3		38	21.0	24.7
	38	57.3	61.2		38	57.6	61.6
	39	55.6	59.4		39	55.9	5
	40	3.9	7.8		40	4.2	8.3
	40	18.3	22.3		40	18.8	22.9
	41	18.0	21.9		41	18.2	22.2
	41	27.3	31.1		41	27.7	31.6
	41	32.7	36.5		41	3	37.1
	42		56.4		42		
	43	7.6	11.5				
	43	55.3	59.3		43	55.8	59.8
	44	35.6	39.5		44	36.0	40.0
	44	50.2			44		
	45	46.6	50.3		45	(46.6)	50.9
	46	2.1	6.2		46	2.4	6.5
	46	42.3	46.1		46	42.7	46.7
	47	57.1	61.1		47	57.5	61.6
	49	23.6	27.5		49	23.9	28.0
	49	48.5	52.2		49	48.7	52.6
12	50	44.9	48.9	12	50	45.2	49.2

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10	5	58		G.5	10	5	09	
9.10	2	39		G.3	9.107	2	41	
9.10B	1	15		G.2	9.10	1	15	
10.11	8	22			11	8	21	There are many bright stars in this region and comparatively few small ones. The AR of 8,21 lost
10	10	9	NS		10.11	10	7	
10B	1	4		G.3	9.10	1	6	
10.11	10	7	examine wire Nj			lost?		
	B							
11.12	5	52	first wire lost, acc. B before Sij			lost		
10B	5	12		G.5	10	5	14	
10.11	3	40			10.11	3	40	
10.11	1	20			11	1	21	
11.12	7	38			11	7	39	Sec wire lost
11.12	2	5			10.11	2	6	
107	4	33		G.5	9.10	4	32	
11B	4	38			11B	4	39	
10	10	14			10	10	14	
11	3	35			11	3	37	
11.12	0	6	first wire lost. Dec?			lost		
11	2	36				lost		
10B	1	27		G.5	97	1	27	
11	9	29			11.12	9	31	
11.12	0	38	Sec wire lost			lost		
11	4	1			11.12	4	2	N.S. first wire doubtful
9.10	5	9		G.5	9.10	5	9	
9.107	6	24		G.5	10B	6	26	
11	6	19			10.11	6	20	
	03.03							
10	6	16			10	6	16	first wire a double break take the first.
10.11	6	8			107	6	6	
11	6	39			11.12	6	38	

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	50	57.0	61.1	1/2	50	57.5	61.4
	51	16.5	20.3		51	16.7	
	51	44.1	48.2		51		
	52	2.2	25.2				
	52	38.8	42.9				
1/2	53	0.6	4.6				

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10B	8	10			10B	8	13
10.7	4	15			10.11	4	14
9	7	10		8.2	9B	7	9
11	1	50			11	1	49
9.10	3	9		9.2	9.10	7	9
8	3	11		7.8	8.9	3	11

S - A

0.0	6	0.0	0.96
0.1	1	0.1	0.09
0.2	6	1.2	0.24
0.3	9	2.7	0.09
0.4	6	2.4	
0.5	9	4.5	0.09
0.6	1	0.6	0.04
0.7	2	1.4	0.14
0.8	3	2.4	0.48
1.1	2	2.2	0.98
1.2	1	1.2	0.64
	46	18.7	3.79

S - A $0.^{m}407 \pm 0.^{m}029$

Pr. error 1 comp $\pm 0.^{m}195$

S - A

-0.5	1	0.68
-0.4	1	0.53
-0.3	1	0.39
-0.2	1	0.28
-0.1	1	0.18
0.0	11	1.17
0.2	2	0.16
0.3	5	0.00
0.4	5	0.03
0.5	7	0.21
0.6	2	1.51
0.7	4	0.56
0.8	1	0.23
1.0	3	1.36
1.3	1	0.95
	46	8.18 (.1616

S - A $+0.^{m}326 \pm 0.^{m}040$

Prob. Error 1 comp: $\pm 0.^{m}271$

The atmosphere was quite hazy so that many 11/12 were unavoidably lost

The zone will need a careful revision.

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$11^h\ 52'$ — $13^h\ 45'$

1861. May 7.

Ang of Position 83 35½ } 83 35½ }

At beg. Et. 13 21 0 Est Mn. 55.5

end " 15 27 0 53.0

11	51	59.2	63.2
	52	49.2	52.9
	54	41.9	45.9
	55	16.9	20.8
	56	51.6	55.5
	57	26.0	29.8
	58	12.1	16.1
4	58	44.5	48.4
12	0	11.8	15.6

1861. May 29

Ang of Position 353° 42'

Et. 14 18 0 48.0

16 28 0 47.0

11	51	59.6	63.6
	52	49.6	53.4
	53	38.3	42.4
	54	27.5	46.4
	55	17.2	21.2
	56		35.1
	57	26.4	30.1
	58	12.5	16.4
11	58	44.7	48.7
12	0	12.1	16.1

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$1^{0}10' - 1^{0}20'$.

9.	11h 54m 42.39	+1° 17' 59.7		8.9	
8.	55 17.26	19 56.6		8.3	
9.	12 0 12.13	11 30.7		8.3	
9	19 13.59	16 45.1		8.3	
8.9	20 42.78	12 10.5			NN in Argelander.
8	35 a.9	15 16.	Baily alone	8.0	
8	37 22.04	17 33.2		8.2	
9	44 30.79	14 54.6	Baily alone	9.0	
8.9	46 3.36	11 45.0		9.9	
8.9	55 14.34	16 0.7	Baily alone	8.5	
8	13 0 17.57	19 44.7	major australis	[7.2]	
8	11 52.11	14 6.1		8.1	
9	16 34.50	14 34.5		9.0	
8.9	27 4.57	12 32.9		8.5	
8.9	44 7.65 +1	14 40.4		8.6	

9	7	34		0.4	8.8	7 7.45	
11.12	8	12	∠ 5 10	0.7		11B 8.24	
9.10	7	41	∠ 9 42 ∠ 9 12 ∠ 4 20	0.6	8.9	10.11 9.27 9.10B 7 54	
9	9	36		0.4	8.3	9 9.50	
11.12	10	14		~~0.7~~		11 5 1	first wire lost
11.12	7	~~55~~		0.9		11 B 11 B	
11.12	7	13		1.1		11.12 7 28	first wire lost?
11	7	5				11 7 22	
9.~~10~~	1	6	Reject magnitudes to here		8.3	8.9 1 23	

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1	1	27.6	31.6	12	1	28.0	32.1
	1	38.3	42.3		1	38.6	42.9
	2	5.5	9.5		2	5.9	9.8
	2	30.7	34.7		2	31.0	34.9
	2	59.6	63.6		3	0.1	4.0
3		25.7	29.8		3	26.1	30.2
	3	47.4	51.3		3	47.8	51.8
	3		56.4		3		56.3
5		7.0	11.0		5	7.3	11.3
	5	44.7	48.7		5		49.0
	5	53.0	56.8		5	53.3	57.2
7		7.5	11.3		7	7.6	11.6
8		14.3	18.1		8	14.5	18.3
9		54.4	58.4		9	54.6	58.4
10		15.0	18.9		10	15.3	19.1
11		2.7	6.6		11	2.9	6.7
11		53.1	57.1		11	53.5	57.5
11		55.6	59.7		11	56.1	60.0
12		10.3	14.0		12	10.3	14.5
12		25.3	29.2		12	25.4	29.5
13		30.0	33.9		13	30.2	34.2
14		39.3	43.2		14	39.7	43.6
14		52.8	56.8		14	53.1	57.0
15		9.7	13.6		15	10.0	14.1
15		47.0	51.0		15	47.2	51.1
					16	0.5	4.5
16		27.3	31.3		16	27.6	31.4
17		31.6	35.7		17	31.9	35.9
17	18	39.0	42.9	12	18	39.2	43.2
				12	14	42.0	46.0

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0.29

10.11	3	15		
9.10	10	24	9.3	
9.10B	8	23	9.4	
10	6	26		
10	9	9		
	B			
9.10?	6	33		
9.10	7	39	9.3	
9.10	0	—	first wire lost; sec doubtful	
11.12	6	53		
10	8	44		
11	1	50		
	D			
10B	4	3		
11	7	21		
11	4	39		
9.10	9	25	9.5	
11	5	23		
	B B			
9	8	26	8.8	
10.11	4	55		
11	1	19		
10	6	17	telescope shaken by wind	
10B	2	54	9.3	
10	5	0		
9.10	9	12		
10.11	6	16		
10	8	15		
	D. B			
11	3	19		
10.11	1	50	double, comp S.f.	(9.3)
9	6	35		8.8

0.43

11	3	30	
9	10	44	
10	8	36	
10?	6	42	
10.11	9	22	
	D.		
11B	6	49.	
10	7	55	
10.11	0	52	first wire lost
11.12	7	8	nS
11	8	59	first wire lost
11B	2	7	
	B		Lone wire to be rejected
10	4	17	
11.12	7	39	
11	4	56	
9?	9	40	
11	5	39	
9	8	51	
11	5	11	
11B	1	34	
11B	6	30	
9.10	3	9	
10B	5	17	
10B	9	29	
10.11	6	33	
10.11	8	32	
11	4	8	
10B	3	37	
10	2	9	nS. comp 11 my i 48, fol. 0.4
9.10	6	48	
11	4	12	

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19	13.4	17.4		12 19	13.6	17.8	
19	45.1	49.0		19	45.3	49.3	
22	1.1	5.2		22	1.3	5.5	
22				22	52.2	56.2	
23	24.9	28.8		23	25.1	29.1	
24	19.9	24.0		24	20.0	23.8	
25	17.1	20.9	Mak	25	17.1	21.1	
25	58.3	62.2		25	58.5	62.5	
26				26	45.7	49.6	
27	16.1	20.1		27	16.2	20.3	
28	18.7	22.6		28	18.8	22.9	
28	43.5	47.5		28	43.8	47.7	
29	9.3	13.2		29	9.3	13.4	
30	1.3	5.1		30	1.3	5.3	
30	12.7	16.7		30	12.7	16.8	
30	55.3	59.3		30	55.4	59.4	
				30	56.7	60.7	
32	52.9	56.9		32	53.0	57.2	
33	40.6	44.5		33	41.0	44.9	
35	0.5	4.5		35	0.7	4.8	
35	34.6	38.6		35	35.0	39.0	
36	44.4	48.5		36	44.7	48.7	
12 37	22.0	26.0		37	22.4	26.4	
				39	3.8	7.8	
40	27.8	31.7		40	28.0	32.1	
41	17.2	21.3		41	17.4	21.6	
				41	34.8		
41	40.2	44.3		41	40.2	44.2	
43	23.3			43	23.6	27.5	
43	28.3	32.3		43		32.5	
12 43	38.5	42.4		12 43	38.7	42.9	

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8.9	6	25	Catalogue	8.3	9.10B	6	39	
11	4	46			11B	5	3	
10.11	8	59			10.11	9	14	sotto occidentale
						B. D.		
9.10B	9	54		9.0	11 7	4	43	
11	10	0	No 45		9 7	10	8	
9.10	1	40	No 46			10	15	doubtful Occ.
				9.5	10B	2	2	
10	8	4		9.5	9,10	8	19	
	B				11	8	58	
10	9	44			10	9	59	
10.11	3	6			10	3	24	
11.12	8	13			11	8	29	
11.12	3	51	AR not good		11	4	11	
11	7	0			11	7	17	
10.11	4	14.			10,11	4	31	
10.11	3	9			10, 11	3	27	
	D D				10, 117	2	42	
11	3	8			11B	3	28	
11.12	6	41			117	6	38	
9.10 B	4	50		8.0	9	5	6	
10	4	16			10, 11	4	30	
11	4	47			11	5	1	
8	7	13	red	8.2	9	7	28	reddish
					117	8	52	
10	1	17		9.[illegible]7	97	1	34	B for Sig
11	5	2	AR lost sight.					
11	5	10				5	27	
					11.12	6	0	Sun wire lost
10, 11	3	41			11B	3	59	
	B							
10, 11	5	57	Sun wire lost		11B	6	13	
10B	3	44			11	4	3	
—	4	18		9.3	10	4	34	

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12	43	53.7	57.7	12	43	55.9	59.9
	44	35.8	39.8		44	36.2	40.1
	44		44.0		44		44.2
12	46	3.5	7.5		46	3.7	7.7
	46	5.2	9.1		46	5.3	9.3
	46	31.3	35.4		46	31.6	35.5
					46	33.0	37.0
	47	2.9	6.7		47	2.9	6.9
	48	12.4	16.4		48	12.4	16.5
	49	5.9	9.8		49	6.2	10.2
	49		15.2		49	11.5	15.4
	49	28.3	32.3		49	28.4	32.6
	50	33.9	37.9		50	33.9	38.0
	51	9.9	13.9		51	10.2	
	51	11.6			51		15.8
	52	22.7	26.8		52	22.9	26.9
	54	7.4	11.2		54	7.8	11.7
	54	14.5	18.5		54	14.8	18.7
	54	41.2	45.2		54		45.5
	55	14.2	18.0		55	14.4	18.5
	56	21.3	25.1		56	21.1	25.2
	57	43.2	47.1		57	43.4	47.4
	57	47.6	51.9		57		52.2
	58	1.7	5.6		58	1.8	5.9
	58	25.1	29.1		58	25.4	29.3
				12	59	44.4	48.4
13	0	17.8	21.5	13	0	17.7	21.7
					1	58.1	62.0
					3	13.7	17.7
	3	59.2	63.0				
13	4	52.5	56.5		4	52.5	56.5

No. 91.

No. 95

No. 96 1.

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11	4	58				11	5	9	
9.10	4	29		9.0		9.10 7	4	47	
10.11	5	37	first wire lost			10.11	5	54	
9.10	1	23	Catalogue	9.0		9	1	28	
11	4	19				11	4	38	
10.11	7	17	comp ☆			11	7	34	double
						11 7	7	39	n.s.
10 7	7	18				10.11	7	35	
11	4	2				10 7	4	16	
10	5	49		9.5		10	6	5	
10	5	35	first wire lost			10	5	53	
10	6	57				10.11	7	11	
10	6	26				10.11	6	43	
	D.B								
11	2	2					2	17	See wire low
11	6	9	See wire low				6	27	first " "
11	9	6				11B	9	22	
9.10	10	7				10	10	22	
9.10B	4	15		9.2		10B	4	33	n.s
10	9	8				10.11	See low		
8.9	7	33		8.5		9 7	7	48	
10	4	9	No 90.			10 7	4	27	
9.10	1 D	40		9.5		10	1	56	
9.10	9	51				10	10	4	first wire lost
10.11	1	38				11B	1	55	
10B	5	20				10 7	5	36	
			Streak telescope wire head			11	5	43	
9.10	8	58	double (Divides)			~~10.11~~	~~5~~	~~22~~	Prof obs in AR
10	9	7	(R not Got)			9.10	9	33	
						10 7	9	41	
			(about 2' Sec)			9.10	1	46	
						11	4	3	
11.12	9	49							
11.12	4	41				11	5	20	

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13	5	5.1	9.0	13	5	5.1	9.2	11.
	5	52.8	56.9		5	53.0	57.0	1
	6	7.7	11.8		6	7.9	11.8	1
	6	14.0	17.9		6	14.0	18.0	10
	6	57.0	62.7		6	56.8	62.9	10
	7	30.0	34.2		7	30.1	34.1	10.
	8	25.9	29.7		8	25.9	29.8	1
	8	47.8	51.8		8	47.9	51.9	1
	11	1.5	5.5		11	1.5	5.5	
	11	27.0	30.9		11	26.9	30.9	9.
	11	52.3	56.3		11	52.3	56.3	8
	14	23.2	27.1		14	23.3	27.1	1
	15	0.8	4.4		15	0.8	4.9	1
	16	35.0	38.9		16	34.9	39.1	8
	17	24.1	28.0		17	24.1	28.0	1
	19	14.2	18.2		19	14.3	18.2	1
	20	21.1	25.0		20	21.2	25.1	
	20	53.0	56.9		20	53.1	57.1	1
	21	14.6	18.6		21	14.7	18.8	1
	21	47.1	50.9		21	47.0	51.0	1
	22	7.9	11.6		22	7.8	11.6	1
	22	20.8	24.5		22	20.6	24.8	1
	23	48.1	52.2		23	48.1	52.2	1
	24	5.2	9.1		24	5.1	9.1	9.
	24	58.3	62.2		24	58.3	62.3	1
	25	17.0	20.9		25	17.0	21.0	10.
13	25	31.4	35.2	13	25	31.2	35.2	1

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1861phae.proj..2329

11.12	7	14			11	7	51	B for Sj
11	3	2			11	3	38	
11	1	30			11 B	2	9	
10.11	1	8			10	1	47	
10.11	8	52			11 7	9	29	
10.11	9	26			11	10	2	
11	1	42			11	2	18	
11.12	2	20			11	2	57	
	D. B, B							
11	7	40	AR lost vj.			8	—	not obs
9.10	3	9			10 B	3	46	L a Star obs here
11	3	37			11	4	16	
8.19	3	22		8.1	9	4	0	
11.12	6	21			11.12	7	1	
11	9	2			11.12	9	38	
8.9	3	49	Catalogue	9.0	9,10 B	4	26	
11	2	53			10.	3	28	
11.12	6	18			11 B	1	59	
	D					6	52	B for Sj
						~~2~~	~~47~~	~~B for Sj~~
11	2	9				3 B	2	
11	2	24						
10 B	7	58			10	8	35	
10.11	5	42			10.11	6	20	
10.11	2	18			10.11	2	57	
11	3	22			10.11	4	3	
						D long		
10.7	2	54			10.7	3	31	
9.10 B	4	36		9.5	9.10	5	14	
10	6	10			10.7	6	46	
10.11	9	19			10.11	9	56	
10.11	8	16			10.11	8	55	
	B							

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13	26	4.9	8.6	13	26	4.8	8.7
	27	4.5	8.7		27	4.9	8.9
	27	34.6	38.4		27	34.8	38.6
	28	26.1	29.9		28	26.0	30.0
	29	44.8	48.8		29	44.9	48.8
	30	6.8	10.7		30	6.9	10.8
	31	3.6	7.6		31	3.7	7.7
	31	19.3	23.3		31	19.5	23.4
	35	57.9	61.8		33	5.9	9.9
					34	44.8	48.7
					35	57.9	61.9
	36	18.1	22.1		36	18.3	22.3
	37	13.0	16.9		37	13.0	17.1
	38	24.3	28.2		38	24.5	28.5
	39	3.7	7.5		39	3.8	7.7
	39	57.0	61.1		39	4.7	8.6
	40	25.0	29.1		39	57.3	61.2
					40	25.2	29.3
	43	17.1	20.9		43	17.1	21.1
	44	6.9	10.9		44	7.3	11.2
	44	7.8	11.7		44	8.0	12.0
	44	36.1	42.2		44	38.2	42.2
	45	17.3	21.4		45	17.4	21.3
13	45	22.4	26.4	13	45	—	26.4

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1861phae.proj...2325

10	4	45				5	24
8.9	1	63		8.5	9	2	31
1—	5	5			11	5	40
9	9	22		9.5	9.10?	5	57
10.11	8	56			11D	9	31
10	4	58			10.11D	5	35
9.10	8	19			10.11	8	56
9.10	0	3		8.9	9.10	0	38
11.12	9	28	Dec doubtful		11.12	10	17
					10.11D	1	2
					11	10	12
11	6	8			11D	6	41
11	6	0			11B	6	36
10.11	2	46	identical?	9.2	10.11	3	22
10.11	4	55	double comp S.f.		10.11	5	30
11.11	2	39			11?	5	23
10	6	1			11	3	14
	B				10.11D	6	35
10B	8	26			10	9	3
10	8	27			10?	9	4
9	3	54		8.6	9	4	32
10.11	8	26			11B	9	3
11D	5	7			11?	5	44
11	6	16			11?	6	54

A forty

Comp S 23

Magnitudes

S-A $0^m.286 \pm 0^m.055$
29 comps. Pr. Error of 1 comp $\pm 0^m.298$

S-A $0^m.425 \pm 0^m.041$
3 comps.
Pr. error of 1 comp. $\pm 0^m.228$

−0.5	2	0.3	1
−0.2	2	0.4	2
−0.1	1	0.5	5
0.0	5	0.7	1
0.1	1	0.8	1
0.2	5	1.0	1
		1.3	2

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1861phae.proj..232S

May 17. 1861.

Angle of Pos. 263°29'.5

(See next page)

At Sr.	13	57	0	27.49.5
	15	57	0	46.2

May 27. 1861.

Angle of Pos. 263° 32',5 } 43.

Sc at 263 38

15	16	51.5
16	46	50.0

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1861phae.proj...2325

1.°0′ — 1.°10′

Mag		1862.0		
10.0	Begin at	12ʰ 49ᵐ 24ˢ.0	+1° 6′ 16″.7	from prec. zone
10.2		49 48.7	6 7	

Catalogue Stars. 1862.0

Mag					
~~9.8~~ 9	12ʰ	51ᵐ 44ˢ.62	+1°	7′ 9″.6	8.2
8		52 39.28		3 8.9	9.2
8		53 0.98		3 12.0	7.8
8		54 59.69		9 1.	Bally alone 8.5
7		57 41.98		2 27.9	P. M.? 7.7
9.10	13	13 56.82		4 57.3	9.3
8.9		39 4.77		2 26.8	8.6
8.9		39 24.82		8 15.6	8.6
.		54 49.86		5 29.7	Rümker. 8.1
9	14	1 13.46		1 49.1	8.8
6.7		12 38.50		1 16.2	Not in B.Ac. 6.3
9		18 6.29		0 42.1	P.M.? 8.8
.		19 52.21		7 29.6	R. 9.3
9		30 30.67	+1	2 47.5	8.6

Go on 9 minutes.

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12h 46m – 14h 31m.

12 46	44.5	48.5	estimate short.	12 46	47.9	46.0	Windy.
47	24.0	27.9		47	56.7	6a.6	
49	48.5	52.4		49	23.3	27.2	
				49	47.9	51.9	(Wind shakes the
50	45.2	49.2		50	44.7	48.3	telescope occasionally
50	57.2	61.2		50	56.6	60.6	
51	16.9	20.6		51	16.2	20.0	
51	44.4	48.5	Catalogue	51	44.0	47.9	
52	21.6	25.6		52	20.7	24.5	
52	39.3	43.3	Catalogue	52	38.4	42.4	
53	1.0	4.9	Catalogue	53	0.0	4.1	
53	53.9	58.0		53	53.2	57.2	
54	8.4	12.4		54	7.9	11.8	
54	26.4	30.3		54	25.8	30.0	
54	59.6	63.5		54	58.9	62.9	
55	19.2	23.1		55	18.5	22.	
55	39.0			55	38.1		
55	42.7	46.6		55	42.0	45.9	
56	2.0	6.0		56	1.2	5.4	
57	41.7	45.7					
58	19.2						
		24.1		57	41.0	45.0	
				58	18.6		
				58		23.5	
59	16.4	20.3		59	15.8	19.7	
12 59	24.8	28.6					
13 0	55.7	59.7		13 0	55.0	59.1	
1	49.5	53.5		1	48.8	52.6	
13 2		1.0	No. 27	1	56.3	60.2	

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1861phae..proj..232S

1° 0′ – 1° 10′

~~9.10~~	~~6~~	~~11~~	~~18~~	stet.	9.5	9.10B	6	18	
10	6	9				11	6	10	
10.11	6	0				10	6	10	
						10.11	6	1	
11	6	31				11	6	30	
9.10	8	5				9,10	8	4	
107	4	9				10B	4	8	
9B	7	4			8.2	7.8	7	4	
10.11	1	43				11	1	40	
97	3	1			9.2	9	3	2	
	B								
8	3	4			7.8	7	3	5	double Sij
11B	5	50				117	5	50	
11	2	22				11	2	22	
117	6	25	Ser wire doubtful			11	6	24	
8.9	8	47			8.5	8	8	48	
10	8	27			9.5	9,10	8B	25	
10.11	1	42	Ser wire lost			10	1	40	Ser wire lost
9.10	1	38	N.S		6.8	8.9	1	36	
10	3	56				9.10	3	55	
	D								
			a sudden vacancy (hazy)						
	7	—	not obs			11.127	Seen. very faint		Sij.
8	2	17			7.7	7.8	2	16	
11	7	39	Ser wire lost			11.12	7	39	Ser wire lost
11	2	48	first wire lost			11.12	2	48	first wire lost
							D.D		
9.10	8	18				10.11B	8	15	
11	8	59	AR doubtful						
	B.D								
11.12	9	40				11.12	9	37	two Breaks in Ser wire (one D)
10	9	22				10.11	9	17	
11.12	1	18	first wire lost, Dec?			11.127	1	18	

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13	2	54.1	58.0	№ 28.	13	2	53.4	57.4
	3	38.6				3	37.9	41.9
	3	44.6	48.7			3	44.0	48.0
	3	51.3	5			3	50.5	54.7
	4	11.5	15.4			4	10.6	14.8
	4	39.5	43.6			4	38.8	42.8
	6	3.4	7.3			6	2.7	6.8
	6	28.6	32.7			6		
	7	27.6	31.6			7	26.8	
	7	11.8	35.1	Examine wire		7	30.2	34.2
	9	11.8	15.8			9	11.2	15.2
	9	27.4	31.2			9	26.9	30.7
	10	9.5	13.3			10	8.9	12.8
	10	34.4	38.4			10	33.8	37.8
x	10	37.1	41.0			10	36.4	40.5
	11	12.0	15.9			11	11.4	15.2
	11	13.2	17.1			11	12.7	16.6
	13	9.1	13.1	ex. magnitudes № 45.		13	8.5	12.5
	13	56.9	60.9	№ 46.		13	56.1	60.1
	14	5.9	9.8			14	5.2	9.1
	14	12.7	16.8			14	12.3	16.0
	14		27.1			14		26.2
	16	27.9	31.8			16	27.0	30.9
	17	26.3				17	(25.7)	
	17	37.8	41.6			17	37.1	41.1
	19	10.6	14.5			19	9.9	13.8
	19	46.4	50.5			19	45.8	49.8
	20	9.2	13.1			20	8.4	12.5
13	20	22.2	26.2		13	20	21.5	25.6

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1861phae..proj..2325

11.12	9	43				11.12	9	40	
11	5	30	Sec wire lost			11.12	5	25	
10	1	40		G.3		9.10	1	27	
10.11	9	21	Sec wire lost			11	9	18	
11	2	22				11	2	21	
10.11	6	29				11	6	26	
	B.B						D,B		
10	8	55		G.5		9.10	8	52	
11.12	7	22	n S				7	18	AR lost
10.7	10	34				10.11	10	24	Sec wire lost
10.11	3	34				10.11	3	33	both wires obs
10	4	14		G.5		9.10	4	11	
11	3	37				11	3	36	
11.12	2	3				11.12	2	1	
10.11	2	37				11.7	2	33	
10	3	52				11B	3	49	
	Dots								
10.11	1	32	} double	(G.5)			1	31	
11.12	1	29					1	28	
9.7	1	54	No 45	G.5		10B	1	49	
9.10	4	49		G.3		10B	4	48	
10	1	31				10	1	40	
	2	5				11.12	2	2	
11	6	50	first wire lost			10.7	6	47	first wire lost
	B						B		
11	1	30				11	1	29	
11.12	2	56	Sec wire lost			11.12	7	2	54 Sec wire lost, first wire dou
9.10	3	1				10B	2	58	
10	10	19				10.11	10	15	
10	3	19		G.5		10.11	3	18	
11	7	8				11	7	6	
10.11	2	9				10.11	2	8	

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13	21	36.2	40.0	13	21	35.6	39.5
	21	59.1	62.9		21	58.1	62.1
	22	20.8	24.8		22	20.2	24.2
	22	23.3	27.2		22	22.5	26.5
	23	4.6	8.6		23	4.0	8.0
	23	7.0	10.9		23	6.2	10.3
	24	15.7	19.7		24	15.3	
	24	20.3	24.1		24	19.3	23.3
	25	12.9	16.7		25	12.0	16.0
	25	33.4	37.2		25	32.5	36.5
	25	51.0	55.0		25	50.4	54.1
	26	30.5	34.5		26	29.8	33.9
	26	53.0	56.9		26	52.1	56.2
	27	26.1	30.0		27	25.6	29.4
	27	44.4	48.6		27	43.9	47.8
	28	18.0	21.8		28	17.1	21.3
	28		20.3		28		
	28	26.2	30.2		28	25.6	29.7
	30	31.6	35.5		30		
	31	1.4	5.4		31	0.8	4.6
	31	18.8	22.8		31	18.2	22.3
					32		0.6
	33	7.	7.1		33	2.8	
	34	3.2	7.1		34	2.6	6.5
	34	26.6	30.7		34	26.2	30.1
	35	26.2	30.0		35	25.5	29.5
	35	27.0	30.7		35	26.2	30.1
13	35	33.4	37.2	13	35	32.9	36.9

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1861phae.proj..2329

	D.D.					D				
11.12	9	2	+7.8		12	9	1		+9.1	9.8 10.1
11.12	4	00	8.2		11,12	3	59		9.2	8.2 8.2
	7	7	8.0		11	7	3	} Dec not very fod.	9.0	15.8 12.0
	4	24	8.2		11B3	4	21		9.2	32.2 30.2
9	3	23	8.8	8.7	9B	3B	21		9.3	31.3 30.3
11	1	6	8.5		11	1	4	n.s	9.4	14.5 13.4
11	5	14	8.1		11,12	5	11	Le win bon	9.2	22.1 20.2
9.10	0	25	8.6	9.2	9.10	0	21		9.5	24.6 24.5
	B.									
11	2	19	8.4		12	2	18		9.4	37.4 37.4
10	9	3	7.8		11	9	0		9.0	10.8 9.0
10	5	58	8.1		11	5	54		9.2	6.1 3.2
10.7	~~4~~	4	8.2		10,11	4	2		9.3	12.2 11.3
10.11	5	40	8.1		11	5	38		9.2	46.1 47.2
	B.D									
10B	10	22	7.7		11B	10	28	probably right	8.9	(7.9) 26.9
9.10	7	19	7.9	9.5	9	7	17	✓	9.1	26.9 26.6
10	9	20	7.8		10.11	9	18		9.0	47.0 47.0
11B	7	27	Examine wire (rej)			6	—	not obs		
9.10	8	20	Ex. minute of Dec	9.5	11	8	18			
11.12	3	39								
10.11	7	56			10	7	54			
	10	37		8.9	8.9	10	35			
	B				12	7	49			
11.12	9	0	first will lost		12	8	56			
11	7	49			~~12~~	~~7~~	~~49~~	first will lost.		
11	7	10			~~12~~	~~8~~	~~56~~	first win lost, Le doubtful		
						D.B.				
					11.12	7	43			
11	1	31			11.12	7	6			
11	1	12			11	1	28			
10	9	51	n.s		10,11	1	21			
					10B	9	50			

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1861phae.proj..232S

13	36	49.8	53.7	13	36	49.3	
	36	56.7	60.7		36	56.1	60.1
					37	34.1	38.0
	38	32.2	36.2		38	31.7	35.7
	39	5.0	8.8		39	4.1	8.1
	39	24.8	28.8		39	24.1	28.1
	40	12.7	16.6		40	12.1	16.1
	40	50.2	No. 91.		40	49.7	
	40	53.1	57.0		40	52.3	56.4
	41	8.1	12.1		41	7.6	11.7
	41	9.0	12.7		41	24.1	28.2
	43	7.8	11.9		43	7.3	
	43	17.8	21.5		43	17.0	20.9
	45	32.4	36.4		45		
	46	30.5	34.5		46	29.9	33.9
	47	10.1	14.0		47	38.9	42.9
	47	39.6	43.7				
	48	25.4	29.5	Two supernova stars in N.	48	24.8	28.7
	48	56.6	60.4		48	55.8	59.8
	49	29.7	33.5		49	29.0	33.0
	49	34.2	38.2		49	37.5	37.5
	50	21.0	24.8		50	19.9	23.9
	50	42.3	46.1		50	41.6	45.7
	52	53.9	58.0				
	53	57.2	61.2	54 50.5 54.3			
	54	3.5	7.3	54 57.3 61.3			
	54	(32.3)	36.1				
13	54	48.4					
13	55	57.1	61.3				

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1861phae_proj_2329

11	8	43			11.12	8	39	Su wire lost
10	0	20			10	0	18	
	D				117	1	58	
						D	D	
10	9	34			10,11	9	29	
9	2	18		E.6	9	2	17	
9B	8	12		E.6	9B	8	8	
11	10	31	No 90.		11	10	28	
	B							
10.11	4	57	Su wire lost		11	4	55	
9.10	6	33		8.6	9	8	30	
10.11	6	27			10.11	6	24	
H	8	47	Obs. doubtful					
					11B	0	47	
11	4	40			11	4	39	Su wire lost
11	2	52			11	3	50	
	B.D					B		
	10	5	Examine		107	5	3	
					10,11	8	37	
10,11	8	37			10,11	0	20	
	D					6	29	
						~~0~~	~~20~~	
11B	0	23	There are some broken strings			6		
10	9	10	lost here.		10	9	16	Sweep
10.11	10	18	First wire lost soon	9.5	10.11	—		Du lost
11.11	1	30			10.11	1	—	Su wire lost
11	9	3				9	—	
10,11	2	32						
					Clouded up: Lamp went out.			
10	1	32						
8.9	5	23	n s	E.1				
9	7	40		E.8				
11.12	4	1	first wire doubt-					
11.12	6	43	Su wire lost					
11	3	32						

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1861phae.proj..232S

57	16.1	20.1
58	11.8	15.8
59	2.7	
59	22.4	26.4
13 59	53.1	57.0
14 0	16.4	22.3
0	58.6	Ea. Wire
1	0.8	12.7
1	14.1	18.0
2	50.6	54.5
3	57.4	61.3
3	18.2	
3	19.5	23.3
3	21.6	25.5
3	47.0	51.1
4	33.0	37.0
4	52.7	56.6
5	30.5	34.4
6	23.3	27.3
7	39.3	43.2
9	0.1	4.0
9	59.8	63.6
10	22.0	25.8
12	39.0	42.8
13	1.5	5.5
14	3.6	7.5
15	20.3	24.3
15	53.2	57.0
14 55	55.9	60.0

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1861phae.proj..2329

10.7	0	20	
10.11	2	10	
11.12	2	36	Su wie lore, fine wie doubt.
9.10B	7	42	9.1
10B	6	29	9.5
10.11	1	22	
	B.D.D		
	5	29	
10	1	38	
9.10B	1	42	8.8
9.10	6	46	9.0
11	4	12	ns
11	7	8	Su wie lore
11	4	45	
11	2	54	
11	1	16	
	B.D		
10B	5	0	9.5
11	4	22	
10	0	39	
11	9	0	
11.12	5	42	
10.7	10	7	
11	9	50	
11	6	0	
	B long		
7	1	8	6.3
9.7	9	38	
10.11	9	2	
10B	10	39	
10.7	10	39	
10.11	4	36	

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1861phae.proj..232S

16	23.1	27.2
17	48.7	52.7
18	6.9	10.7
18	30.5	34.4
18	44.8	48.7
19	15.6	19.6
19	52.9	56.7
20	9.2	13.1
20	29.7	33.8
21	1.6	5.5
21	7.9	11.8
22	6.4	10.6
22	19.9	23.9
22	37.7	41.6
23	14.8	18.8
23	25.6	29.4
24	47.1	50.9
24	54.8	55.6
25	26.2	30.4
25	50.6	54.4
26	19.2	23.2
26	38.7	42.5
26	50.7	54.6
27	39.9	43.8
28	33.9	37.9
29	43.2	46.9
30	30.7	34.7
30	46.7	52.6
31	2.3	6.2

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1861phae.proj..2325

11	0	50	
11	4	11	
9.X9	0	32	8.8
9.10	1	53	
10	1	38	
10.11	4	40	
9.7	7	19	9.3
10	10	51	
11	8	41	
	B.D.		
11	3	0	
11	2	49	< Several false breaks
11.12	7	58	
11	2	23	
11	8	40	
11	1	30	
10.11	8	9	
11	3	0	
10.11	4	59	
11.12	9	42	
	D.D.		
10 7	9	42	
10.11	4	8	
11	5	48	
11	8	19	
10.11	4	59	
10	0	17	9.5
10.11	9	14	
9.10	B2	39	8.6
11	7	41	
9.10	0	39	9.5

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1861phae.proj..232S

A 31 29.1 32.9

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1961phae.proj..2225

10 9 40

The moonlight was rather bright.
Probably the atmosphere was some-
what hazy.

35 comps. S-A = Mag 0.″326 ± 0.″032

Pr. error of 1 comp. ± 0.″188

S-A			
−0.7	I		64
−0.5	III		1.08
−0.3	I	−0.4 I	75
−0.2	III	−3.5	16
0.0	III		27
0.1	I		03
0.2	II		00
0.3	II		02
0.4	II		08
0.5	I		18
1.0	II		16
1.5	I		61
		+5.9	196
		+2.4	564
			245
			498

23 comps. S-A = 0.″091 ± 0.″071
Pr. err. 1 comp. ± 0.″34

+ 0.″104 ±
± 0.″33

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1861phae.proj..232S

$13^h\ 43^m - 15^h\ 20^m$

May 30. 1861.

Ang. of Position. 353° 28′

				Est Mn.
At	Gr.	13	32 0	57.5
		15	49 0	54.5

June 12. 1861.

Ang. of Position 83° 38′.5

At	Gr.	16	9 0	66.0
	(Est)			67.5

May.

B	43	15.4	19.5	10.0	B	43	15.9	19.8 40
	44	5.7	9.5	10.0		44	6.0	9.9 35
	44	6.3	10.4	6.5		44	6.8	10.7 40
	44	36.6	40.7	10.4		44	36.9	40.8 20
	45	16.1	19.9	10.6		45		20.2 20
	45	24.7		10.6		45		25.2 30
	46	10.7	14.6	11.0		46	11.0	15.0 35
	46	54.0	56.1	9.5		46	54.4	58.4 35

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1861phae.proj...2325

1° 10′ – 1 20′

Begin at	13 43 17.0 / 44 6.8	1 10 6.2 / 1 9 13		m 9.6 10.0	Avg. mag.		
9	13	44 7.65 +1	14 40.4		8.6		8
9		56 48.66	15 28.2		9.2		7
	14	15 19.65	11 46.5		9.5		7
		23 37.55	15 33.6		9.2		7
9		27 18.08	19 21.2		9.3		(10)
		27 19.29	17 9.7				
		38 28.48	18 8.3		6.5	108 Virginis	7
9		45 55.60	18 0.9		9.1		10
8.9		48 31.20	17 36.1		8.6		9
8		54 42.53	15 38.8	Bisby alone	9.4		9
8	15	6 55.63	18 54.8		7.5		11
8.9		11 4.62	18 58.6		8.9		11
6.		14 0.82	13 9.5		6.1	6 Serpentis	11
8.9		20 22.87	19 17.1		8.7		9
		38 38. +1	15.		6.7 mag.		

8.9?

Dots

10.11	9	0			10.11	9	8	
10.11	9	1			10.11	9	8	
9	4	28	nS	Catalogue 8.6	9	4	36	
11B	9	0			11	9	9	
	5	41		Examine mag.	11.7	5	50	first wire lost
	6	48		Second lost, n.S (one wire)	11.7	6	58	" " "
11.12	5	38			11.12	5	46	
9.10	9	8			10.11	9	16	

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1861phae.proj..232S

			May.				
	47	46.3	50.0	11.5	13 47	(46.4)	
	48	37.7	41.7	10.7	48	38.6	
	48	53.9	57.8	10.0	48	53.9	56.0
	49	6.3	10.2	10.7	49	°	
	49	33.6	37.4	9.6	49	33.6	37.4
	49	54.1	58.0	10.4	49	54.2	58.3
	51	16.1	20.1	9.7	51	16.5	20.7
	51	37.3	41.2	10.9			
	51	59.1	62.9	9.5	51	59.4	63.3
	52	(1.5)	5.3	9.9			
	53	15.3	19.2	10.7			
	53	56.4	60.3	10.7	53	56.7	60.7
	54	18.8	22.8	9.6	54	19.1	23.1
	54	54.6	58.7	9.1	54	55.0	59.0
	55	11.7	15.8	10.3	55	11.9	≠
	55	51.2	61.2	10.0	55	57.5	61.5
	56	23.1	27.0	10.7	56	23.3	27.2
	56	45.1		10.7			
	56	47.7	51.8	8.9	56	48.0	52.0
	57	23.4	27.3	10.0	57	23.5	27.4
	57	44.6	48.6	10.3	57	45.0	49.0
	58	40.1	44.0	10.7	58	44.5	44.4
	59	21.5		10.5	59	21.6	25.6
	59	24.0	27.8	9.5	59	24.2	28.0
13	59	26.8	30.8	9.8	13 59	?	31.1
14	0	43.3	49.2	10.5	14 0	45.5	49.4
	2	3.2	7.0	10.1	2	3.3	
	2	7.0	10.9	9.8	2	7.3	11.2
14	2	14.3	18.3	10.5	14 2	1	18.3

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1861phae.proj..2328

11.12	8	20		12	8	28	see wire lost, first doubtful
11	5	1		11.12	5	9	see wire lost
10	2	33		11	2	40	
11	2	35					
	D			107	0	21	
11B	1	44			1	52	
10	7	53		10.11	8	1	
117	10	18					
9.10	8	52		10.11	9	3	
107	7	14	NS examine wire				
	B.B						
11	9	57					
11	2	35			2	42	
10	9	12		107	9	21	∠ adjusted focus
9.10	10	42	9.2	10B	10	51	
10.11	0	22		11	0	30	
11.12	6	26		11	6	34	
11	6	59			7	8	
11	2	28	See wire lost				
97	5	19	Catalogue 9.2	9.10	5	26	
10.11	0	52	✓	10.11	1	0	
	B.						
10.117	6	23		11B	6	31	
11	3	40			3	49	
11	8	27	See wire lost	11	8	36	
10.11	6	41		10	6	51	
10	5	46	has a comp. 11 mag. reads 6 3″(9.5)	10.11	5	54	first wire lost
11	10	15		11	10	25	
	D. D					Accidental B	
11B	5	52	See wire lost Number of stars decidedly increased	10.11	6	1	See wire lost
10.11	7	51		10	7	57	
11	7	19		11	7	28	first wire lost

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11	3	8.7	12.7		10.3	14 3	9.2	13.0
	4	(31.0)	34.6		11.0	4	31.0	34.7
	4	59.8	63.7		10.6	5	0.1	4.2
	5	23.8	27.9		10.9	5	24.2	28.0
	5	52.3	56.2		9.4	5	52.8	56.8
	6	536	57.7		11.0	6	53.9	57.8
	7	10.8	14.7		9.8	7	11.3	15.2
	7	16.3	20.1		10.4	7		20.6
	7	27.9	31.8	No 46	10.7	7		
	8	33.4	37.3		9.9	8	33.5	37.5
	8	51.5	55.4		9.5	8	51.7	55.7
	8		63.2		10.3	8	59.3	60.4
	9	31.8	35.9		10.1	9	32.0	36.0
	9	37.8	36.6		10.3	9	33.0	36.9
	10	19.4	23.5		10.5	10	19.9	23.7
	11	37.6	41.5		10.5	11	37.6	42.2?
	11		45.9		10.5	11	42.2?	46.2
	11	53.1	57.0		9.3	11	53.3	57.2
	12	30.9	34.8		11.0	12	31.1	35.1
	12	38.8	42.8		10.5	12	39.1	43.0
						13	49.3	53.3
	13	35.7	39.7		11.2			
	13	49.0	52.9		10.0	13	49.3	53.3
	13	57.0	57.5		10.5	13	54.1	57.7
	14	53.5	57.4		10.1	14	53.7	57.7
	15	19.4	23.3		9.4	15	19.6	23.5
	15	41.9	45.9		9.3	15	42.2	46.1
	15	52.3	56.3		10.0	14 15	52.6	56.4

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1961phae.proj.-22325

10.11	9	18		11	9	29	
11.12	9	3	first wire doubtful	11.12	9	11	
117	2	6		11	2	13	
11.12	2	47		117	3	58	sure
10	10	14		10B	10	25	
	D.B.						
11.12	7	56		11.12	8	6	
10	9	14	No 45.	10,11	9	22	
11B	5	27			5	38	one wire lost
11	1	29			1	38	AR lost
10	1	0					
9.10	9	27					
10.11	0	4	first wire lost	11B	1	6	sure
	B			10.11	9	36	
10.11B	3	10		11	0	12	
				11	3	16	
10.11	5	8		11	5	24	
11	6	47		11	6	58	
11	5	14		11	5	23	
11B	1	58	first wire lost	117	2	4	first wire lost
9.10	5	46		10	5	54	
11.12	7	21		11.12	7	31	
10.11	5	10		11.12	5	18	
	D.D.D						
11.12	10	9					
10.11	5	4		10.11	5	14	
11	5	49	first wire lost.	11	6	59	
10.7	8	37		11	8	46	
9.10	0	38	Catalogue 9.5	10.7	0	45	
9.10	6	49	9.5	10	6	56	
10.11	0	38		10.11	0	44	

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14	16	9.0	13.0	9.6	14	16	9.3	13.1
	16	48.0	57.9	10.7		16		52.1
	16	59.3	63.2	10.4		16	59.5	63.3
	17	35.8	39.9	10.6		17		40.1
	17	37.9	41.8	10.3		17	38.1	42.1
	17	49.2	53.3	9.1		17	49.5	53.6
				10.1		18	16.8	20.7
	18	42.2	46.3	10.0		18	42.8	46.6
	19	27.0	31.9	10.4		19	7.3	11.2
	19	26.7	30.6	10.7				
	20	8.3	12.2	9.4		20	8.5	12.5
	21	10.2	14.3	10.8		21	10.7	14.6
				10.9		22	16.2	19.9
	22	47.6	51.5	10.6		22	47.7	51.7
	22	49.3	53.3	9.5		22	49.7	53.7
	23	37.1	41.0	9.3		23	37.4	41.2
	24	4.2	8.1	9.9		24	4.6	8.4
	25	46.8	50.8	10.5		25	47.1	51.1
	26	23.2	27.1	10.3		26	23.3	27.2
	26	47.3	51.1	10.5		26	47.5	51.4
	26	48.6	52.5	10.4		26	48.9	52.9
	27	17.8	21.7	9.2		27	18.1	22.1
				10.1		27	50.1	54.0
	27	49.7	53.6	8.9		28	7.0	11.0
	28	6.6	10.6	9.5		28	30.5	34.6
	28	30.2	34.2	10.4		29	3.5	7.5
	29	3.3						
	29	41.5	45.5	10.1		29	41.7	45.6
	29	44.0	48.0	9.8		29	44.4	48.4
	30	11.5	15.4	10.2		30	11.	
	30	33.8	37.9	10.0		30	34.1	38.1
14	31	8.2	12.2	10.3	14	31	8.7	12.5

No. 90

No. 91

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1961phae.proj..2225

10B	10	23	N.S		Q.5	10.11	10	33	
11	7	9					8	—	sure
10.11	4	29				11	4	39	
10D	5	17				11.11	5	24	
10.11	6	50				11	6	59	
9.10B	7	8			Q.5	10	7	15	
	D					11B	0	37	
10	7	50				11	7	59	
11D	4	59				11	5	7	
11	5	42							
10	0	48			Q.5	10B	0	57	
	long D.								
11	7	32				11.12	7	40	
						11.12	6	54	
11	3	46				11	3	53	
10	8	20				10	8	28	
9.10	5	24	Catalogue		Q.2	10	5	31	
10.11	4	45				10.11B	4	52	
11	2	26				11	2	33	dots
11B	3	4				11B	3	11	
11	1	8	dec doubtful			11	1	12	
11D	7	54				11	8	2	
9.10	9	14	Catalogue	7'3"	Q.3		9	32	
			Declination wanting			11D	1	23	
9	7	37			Q.0	10B	7	45	
10	9	20				10	9	29	
	2	22	double dif		No 90.	11	2	29	
11D	10	20				10.11	10	29	
10B	5	39			Q.1	10.11	5	48	
10.11	3	16							
11B	9	14				11D	9	22	
	D								
10.11	8	38				11	8	48	

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31	46.1	50.0	9.9	14 31	46.5	50.4	
31	58.8	62.8	9.4	31	59.1	63.2	
32	28.1	32.0	10.4	32	28.6	32.5	
33	6.4	10.4	11.3	33		11.0	
34	3.4	7.4	10.0	34	3.6	7.6	
34	50.2	54.2	9.9	34	50.7	54.8	
35	18.4	22.2	10.1	35	18.6	22.6	
35	23.9	27.8	10.4	35	2	28.1	
36	9.9		10.5	36	10.2	14.4	
36	13.4	17.4	10.5	36		17.6	
36	57.8	01.7	10.7	36	58.4	02.2	
37	0.4	4.5	10.5	37	0.3	9.1	
38	4.7	8.8	10.6	38	5.3	9.1	
38	27.2	31.2	9.9	38	27.5	31.5	
38	28.0	32.0	6.9	38	28.5	32.3	
39	5.5	9.5	9.6	39	5.9	10.0	
41	26.4	30.3	10.5	41	26.9	30.8	
41	39.7	43.6	10.5	41	39.9	43.9	
41	56.7	60.7	10.4	41			
43	17.7	21.6	10.5	43	18.0	22.1	
43	30.0	33.9	10.1	43	30.4	34.4	
43	32.9	36.8	10.2	43	33.1	37.1	
44	15.7	19.8	10.3	44	15.9	19.9	
44		50.6	10.7	44	47.0	51.1	
45	3.9		10.9	45	4.4	8.2	
45	5.9	9.7	9.8	45	6.2	10.0	
45		16.1	10.1	45	12.6	16.5	
14 45	55.0	59.2	9.0	45	55.7	59.6	

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107	7	22			7	30	
9,107	4	18		10	4	25	
11B	8	18		11	8	26	
12	2	19		11,12	2	29	first wire lost
10,11	10	34		10,11	10	43	
107	4	46	double?	10,11	4	54	Comp not seen
11B	9	41		10,11	9	51	
11B	4	4		11	4	11	
	D.B.D				B.D.D		
11	4	52	See wire lost	11	5	1	
11	8	48		11	8	59	
11	10	22			10	31	
11	3	53		11	4	1	AR lost
11,12	3	16		11	3	26	
10	9	15		11B	9	24	
	7	57	Catalogue 65	7,8	8	4	
10B	10	26		10,11	10	36	
	B				BD		
11	6	39		11	6	49	
11	8	57		11	9	4	
11B	3	48					
11	0	52		11	1	1	
10,11	4	30		10,11	7	4	39
11B	6	28	NS	10,11	7	6	38
11B	1	18		11B	2	28	Zero
11	1	29	first wire lost	11,12	1	38	
	6	8	See wire low	11,12	6	16	
10	7	32	P.S	10,11	7	42	
11	0	56	Examine wire	B10,11	1	5	
9,10	7	49	Catalogue 9.1	9,10	7	59	

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				Mag.				
14	46	19.3	23.4	11.0	14	46	19.9	23.7
	46	32.5	36.5	10.1		46	32.9	36.9
	46	57.1	61.2	10.5		46	57.4	61.5
	47	23.0	26.9	10.4		47	23.1	27.1
	47	30.1	34.0	10.4		47	30.6	34.4
	48	0.9	4.8	9.6		48	1.3	5.2
	48	11.4	15.3	9.8		48	11.4	15.7
	48	30.5	34.5	8.5		48	31.0	35.0
	49	20.6	24.6	9.6		49	21.1	25.0
	49	40.8	44.6	10.4		49	41.1	45.0
	49	43.9	47.8	9.6		49	44.1	48.0
	50	42.7	46.5	10.7		50		
	50	56.9	60.9	10.6		50	57.2	61.0
	51	36.4	40.5	9.4		51	36.8	40.8
	53	2.2	6.3	10.4		53	2.9	6.7
	53	33.8	37.8	10.2		53	34.3	38.4
	54	8.1	12.1	8.4		54	42.2	46.1
	55	8.1	12.0	10.2		55	8.4	12.5
				11.0		55	57.0	58.0
	55	58.8	62.7	10.0		55	59.0	63.1
	56	44.3	48.2	10.3		56	44.8	48.7
14	57	33.6	37.6	8.1		57	33.8	37.8
				10.9		58	25.5	29.4
				10.7	14	59	3.6	7.6
15	0	17.7	21.7	10.9	15	0	17.9	22.1
	1	5.6	9.6	10.0		1	6.0	10.0
	1	35.7	39.7	10.5	15	1	36.1	40.0

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11.12	3	31			11.12	3	39
10.17	1	48			11	1	58
11	1	13			11	1	21
11B	5	18			11	5	26
11	2	39			11B	2	48
		⊗					
10	9	56			107	10	6
10	1	11		9.3	10.11	1	21
9	7	28	Catalogue	8.6	9	7	37
10B	7	22			10.11	7	31
10.17	5	6			11	5	12
10	2	45	NS		107	2	54
						B	
11	2	29	No 135				
11B	1	57			11.12	2	5
10B	3	20		9.5		3	34
10.11	7	36			117	7	45
	BB						
107	9	9			11	9	19
9B	5	30	Catalogue	9.4	9	5	39
10.11	2	18			11	2	29
11.12	2	20			11.12	2	29
10-11	8	47	} it is doubtful which of these		10.11	9	55	AR doubtful
11B	5	45	} two precedes. Copy.		11B	5	56
9B	0	44		8.7	8.9	0	52
					11.12	3	14
					11.12	4	29	comp. dis tant
						⊗	
117	4	39			11.12	4	48
10.11	7	23			10.11	7	33
11	8	24			11	8	25

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15	1	36.8	40.8		10.5	15 1	37.2	41.0
	2	4.8	8.8		10.6	2		9.1
	2	19.5	23.6		10.9			
	2	39.6	43.6		8.0	2	39.8	44.0
	2		44.8		10.7	2	41.1	45.4
	3	28.7	32.7		10.6	3	18.3	21.9
					9.9	3	29.2	33.1
	4	45.8	49.8		10.4	4	46.0	50.1
	4	51.7	55.9		10.5	4	52.4	56.2
	4	57.1	61.1		10.0	4		61.3
	5	39.7	43.7		9.9	5	40.0	44.0
	6	54.2			10.1	6	54.5	58.3
	6	59.8			10.3	6	59.8	
	6		63.8		9.7	6		64.1
	7	34.1	38.1		10.7	7		
	8	38.7	42.5		10.4	8	38.8	42.9
	8	40.1	44.0		10.9	8	40.4	44.3
	8	55.7	59.7		7.5	8	55.9	59.9
	9	34.5	38.5		10.4	9	35.1	39.0
	10	31.2			10.3	10	31.5	
	10		34.7		10.5	10		35.1
	10	46.4	50.5		9.8	10	46.8	50.8
	11	4.0	8.0		8.8	11	4.4	8.4
	11	52.2	56.2	examine sheet	11.0	11	52.7	56.5
	12	36.3	40.1		10.5	12	36.6	40.7
	12	50.3	54.3		10.4	12	50.6	54.6
	13	17.7	21.8		10.8	13	18.0	21.8
	13	56.3	60.2		10.7	13	56.7	
15	14	0.3	4.4		6.8	14	0.8	4.5

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11	7	47			11	7	58	
11.7	3	45			11	3	56	
11.7	5	6						
9	4	51		8.3	8	5	3	
11	1	20	Examine wire			1	28	
10.7	8	10			11.12D	9	9	
	D long					8	20	Dec doubtful
10.11.7	6	52	a singular group of stars		11	7	1	
11	5	27			11	5	36	
10.11	6	48	false B		10.11	6	57	
10	3	45			11B	3	53	
10.11	2	30	see wire lost		11B	2	42	
10.11	1	2	" " "		11	1	10	See wire lost
10	8	5	first wire lost	9.5		7	17	first lost, Dec
11	5	50						
	B							
11B	6	30			11	6	39	
11.7	6	30			11.12	6	40	
7.8	8	40	Catalogue	7.5	8.9	8	57	
10.11.7	5	13			11	5	23	
10.11	1	6	See wire lost		11	1	13	See wire lost
11	7	58	first " "		11	8	8	first " "
10.7	0	57			10.7	1	6	
9.10	8	47	Catalogue	8.9	9	8	58	
	D							
11.12	6	6			11.12	6	15	
11	1	57			11	2	5	
11B	1	43			11	1	48	
11	2	54			11.12	3	3	
11	8	10	See wire lost			8	20	See wire lost
7	2	56	Catalogue	6.1	7.8	3	7	

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15 14	23.2	27.2	No	10.7	15 14			
14	45.5	49.4	No. 061	10.3	15 14	45.9	49.7	
15	51.5?	47.4	or Heel	10.4	15	43.5		
15		54.2		10.5	15	47.4	51.4	
16	56.0	59.9		10.2	16	56.4	60.4	
17		4.8		10.6	17	1.1	5.1	
17	45.6	49.9		10.1	17	46.1	50.0	
18	28.0	31.9		10.9	18	28.4	32.3	
18	30.0	34.0		10.1	18	30.5	34.4	
19	1.4	5.5		10.1	19	1.9	5.9	
20	20	6.1		9.8	20	2.4	6.5	
15 20	22.3	26.3	No 191,	2.9	15 20	22.6	26.6	
21	19.8	23.7						

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1861phae.proj.,.2329

11	1	8	№ 180				
	B						
10.11	1	38			11	1	47
11B	3	33			11	3	44	See wire lost
11	5	1	first wire lost		11	5	9
10.11	10	4				10	13
11B	8	11	fine wire lost		11.12	8	20
10.7	6	42			11	6	53
117	8	0			11.12	8	9
107	7	26			11	7	46	sure
	B						
10.11	1	7		9.5	11B	1	15
10	6	30			10.11	6	40
9.10B	9	7	Catalogue	8.7	9.10	9	16

Magnitudes:

26 comps. give S–A

+0.″331 ± 0.″046

P. Error of 1 comp ± 0.″234

From a comp. between Zone (b) and (a) Zone (a) 7 fine

(b) – (a) · (diag) = 0.″218 = 0.″030

$y = n - n_x \}$ = 0.″216 ± 0.″028

$= n_x - n \}$ M. 76.94

Prob. error of 1 diff. mag ± 0.″247 = 0.675 $\sqrt{\frac{193}{143}}$

24 comp. S–A +0.″642 ± 0.″070

P. Error of 1 comp. -

± 0.″338

Somewhat hazy. Det. of faint stars not very secure.

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at Rogue Start

Begin at 15 16 56 +1° 20' 15". (see prec. page)

8.9	15	20	22.87	+1° 19'	17."1	6.7
9		53	38.94	14	14.3	9.2
9	16	2	12.74	14	30.3	9.3
7		2	40.24	11	11.7	7.0
9		11	27.83	12	33.2	9.2 ?
9		11	33.94	19	58.2	9.2
9		19	50.98	19	37.1	9.0
7		38	29.10	16	36.1	7.0
4.9		38	54.03	14	39.9	~~9.3~~ 8.4
9		39	59.69	12	57.9	9.3
8		41	13.46	20	21.1	8.0
9		49	10.50	20	0.9	8.4
9	17	2	48.81	16	38.9	9.0
95	17	4	44	1	10.30	9.5

16 Ophinrhi

Aug.

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Catalogue Stars.

Begin at 14 29 43 1° 9' 22"

9	14	14	6.29	+1	0	42.1	P.M.?	8.8	
.		19	52.21		7	29.6	R.	9.3	
9.	14	30	30.17	+1°	2'	47.'5		8.6	(The AR. of this needs a slight correct? B.Z. 74)
9.10		49	56.92		1	24.1		9.5	
8.9		53	13.69		5	19.8	Baily alone.	8.3	
9	15	12	11.47		3	25.3		9.4	
9		12	43.53		3	47.8		9.4	
9		17	41.77		8	39.6		8.9	
8		21	31.53		5	13.6		7.9	
Rümker 6			28	6.37		7	57.8		not in Argelander.
9			37	13.65		3	2.4		9.2
9			52	22.39		4	17.6		9.1
9			53	0.25		1	4.2		7.4
7	15	57	27.84		3	25.5		7.2	End of Zone
9	16	4	59.90		1	16.8		9.1	
9			5	59.75		0	15.6		9.0
9			6	36.04		0	25.2		9.1
9			18	45.48		1	54.7		9.2
9			19	32.93		5	11.5		5.8
9.2			22	16.		10.		Argelander	9.2
9.5	16		22	22.	1°	10'			9.5

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1861phae.proj..232S

15h 16m — 17h 7m

June 24. 1861

Ang. of Pos. 83° 31′

June 25. 1861

Ang. of Pos. 83° 37′

Magnitude

15	16	55.9	59.9		10.1	15	16	56.0	59.9
	17		4.9		10.5		17	0.8	4.8
	17	49.6	49.5		10.5		17	45.5	49.6
	18	27.9			11.1		18	27.8	31.8
	18	30.1	34.1		10.0		18	30.0	33.9
	19	1.6	5.5		9.9		19	1.5	5.5
	20	2.1	6.1		9.6		20	2.0	6.0
	20	22.3	26.3	Catalogue	8.5		20	22.2	26.2
					10.7		21	8.6	12.7
	21	19.5	23.5		10.7		21	19.5	23.4
	21	33.5	37.5		10.4		22	33.5	37.5
	22	42.3	46.4		10.6		22	42.3	46.2
	23	23.1	27.0		10.7		23	23.1	26.7
	24	14.6	18.5		9.0		24	14.4	18.5
	24	39.3	43.1		10.0		24	39.1	43.1
	25	11.1	15.0		10.0		25	11.0	14.9
	25	37.5	41.4		10.4		25	37.4	41.3
	26	1.4	5.3		9.5		26	1.3	5.4
	26	22.7	26.7		9.2		26	22.5	26.6
	26	51.3	55.2		11.1		26	51.3	55.2
	27	24.4	28.4		10.9		27	24.3	28.3
	28	6.5	10.4		8.7		28	6.4	10.4
	28	13.9	18.0		9.4		28	13.9	17.8
	28		36.5	No 24.	10.4	15	28	32.3	36.4

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1° 10′ — 1°20′

10.11	9	54			10.11	10	10	
11	8	1	first wire lost		11B	Dec lost		
11	~~6~~ B	33			10.117	6	50	
11.12	7	51	Dec wire lost		11.12	8	8	
10.11	7	26			10.11B	7	44	
107	0	56		9.5	10.7	1	14	B
10	6	21			10	6	40	
9	8	59	Catalogue	8.7	9B	9	17	
	B				11	2	0	
11.12	4	2			11B	4	20	
11	8	23	doubtful Dec.		10.11	8	42	
11	5	12			11	5	31	
117	9	59			11	10	16	
97	9	~~24~~		9.1	9.10	9	41	
11B	9	17			10	9	34	
	D							
10.11	9	32			107	9	50	
11	9	7			10.11	9	~~24~~	
10 ~~B~~	7	45		9.5	10B	8	4	
10B	1	8		9.5	9.10	1	27	
11.12	10	10	ns		11.12	10	29	
117	3	1			117	3	19	
	BD							
9.10B	2	13		9.5	9	2	32	
10	1	26		9.5	970	1	56	
11	6	1	first wire lost		10.11	6	21	

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29	13.7	17.4	N.25	10.2	15	29	13.4	17.4
29	21.5	25.8		10.6		29	21.6	25.5
30	2.9	6.8		9.7		30	2.6	6.7
30	26.4	30.3		10.4		30	26.1	30.3
31	51.5	55.3		10.9		31	51.4	55.3
31	[illegible]			10.5		31	53.0	56.0
32	0.8	5.0		10.1		32	0.7	4.6
32	32.1	36.1		10.5				
32	40.7	44.7		10.1		32	40.6	44.7
33	26.4	30.3		10.6		33	26.3	30.3
34	20.6	24.4		11.0		34		
34	32.4	36.2		9.6		34	32.2	36.1
34	34.6	38.5		9.6		34	34.7	38.6
	B.							
35	24.0	27.8		10.6		35	23.7	27.7
35	33.6	37.5		9.2		35	33.4	37.6
35	59.0	63.0		9.4		35	59.0	62.5
36	13.4	17.6		10.0		36	13.7	17.6
36	56.0	60.1		9.9		36	56.1	59.8
38	37.9	41.9		7.6		38	37.9	41.9
38	50.4	54.4		9.2		38	50.4	54.5
39	37.2	41.1	N.45	10.7		39	37.2	41.2
39	42.6	46.5		9.5		39	42.4	46.3
40	20.5	24.5		10.2		40	20.5	24.5
41	15.7	19.8		10.6		41	15.8	19.9
41	42.0	46.9		11.0		41	42.7	46.8
42	30.8	34.8		10.7		42	30.5	34.5
43	8.6	12.5		10.6		43	8.3	12.5
43	26.8	30.8		9.9		43	26.8	30.6
44	9.0		N.52	10.4	15	44	9.0	12.9

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11	7	10	8		10	10	26
11.12	7	39	n s		10.11	7	56
10.11	7	8	24		9.10	8	42
					11	Sky with no Stars	
11	7	42			10.11	8	1
	D.B.D					D	
11.12B	5	52	double Stars, Comp. South. pre		10.11	Decker Dist 9". Pos 40°	
					11B	7	29
11	1	0			10	1	20
11	10	52					
11B	6	7			10 7	5	25
11.12	10	9			10.11	10	27
11.12	9	39				Not obs.	
10.11B	2	58			10B	3	17
10.11B	9	7	n s		10D	9	26
	B						
11	3	9			11	3	28
10B	8	16	Very few Stars in this	9.2	9.10	8	37
10B	5	3	Rejon	9.5	9.10	8	19
10 7	5	26			10.11	9	46 Da doubtful
10.11	1	56			10	2	15
						B.D	
8.9	9	11		6.7	7.8	9	31
10B	9	10	No ns	9.3	9.10	9	30
117	1	20			11	1	40 Sec wire doubtful
10	D	54	n s	9.5	10B	1	14
	D.						
11B	9	8				9	27
11	9	27			11	9	45
11.12	2	33				2	52
11	1	38			117	1	48
117	2	12			10.117	2	32
11B	10	7			9.107	10	28
11	8	32	See work book		10.11	8	50

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44	12.7	16.6	N. 54	10.4	15 44		16.3
45	0.5	4.4		10.1	45	0.3	4.3
46	12.1	16.2		9.6	45	12.1	16.0
	D. B. B.						
46	7.2	11.2		9.1	46	7.1	11.1
46	18.9	23.0		10.0	46	18.7	22.7
47	24.6	28.6		10.1	47	24.6	28.7
48	0.7	4.7		10.4	48	0.6	4.5
49	9.5	13.6		10.0	49	9.4	13.6
49	53.3	57.1		10.9	49	53.1	57.1
50	25.2	29.2		10.7	50	25.0	29.1
51	1.2	5.1		9.6	51	1.2	5.1
				~~10.9~~	51	4.1	7.9
5				11.2			
51	42.8	47.0		9.9	51	42.8	46.7
52	23.9	28.0		10.5	52	23.8	27.9
52	55.7	59.5		11.0	52	55.5	59.5
53	11.6			10.8	53		
53	15.4	19.4		9.2	53	15.4	19.5
53	36.5	42.4		8.9	53	36.2	42.2
				10.0	54	23.7	27.6
54	46.3	51.3		10.5	54	46.0	50.0
54	47.0	51.0		10.0	54	47.0	50.7
56	5.0	8.8		10.6	56	4.7	8.4
56	15.0	19.0		10.9	56	15.4	19.3
	B.						
56	48.9	52.9		9.7	56	48.7	52.8
57	51.0	55.0		11.1	57	50.8	54.8
58	59.6	63.6		9.9	58	59.5	63.6
59	26.1	30.1		9.4	59	26.1	30.1
59	32.1	35.9		10.5			
5 59	38.0	42.0		9.6	59	37.8	41.8
6 00	33.1			10.2	59		42.5
				10.2	15 59		62.6
				9.6	16 0	33.0	36.9

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11	2	23		10.11	2	44	first wire lost
11	10	41		10	10	58	
10.11B	8	7		10B	8	26	
	D.B.B						
10B	4	54		9.10B	5	15	
11P	5	42		10	6	3	
10.117	9	00		107	9	17	
					D		
11	9	37		10.11	9	57	
10.11	10	49			11	5	
117	3	21					(examine)
				117	2	44	
117	5	26			5	45	NS
10	1	52	9.5	10	2	13	
	D			11.12	1	26	NS
10.11	2	20		10B	2	40	
11	7	7			7	26	
11.12	9	40		117	10	0	
117	9	15	see wire lost		Not obs		
10B	7	1	9.3	9.10	7	21	} more than ½'s
9.10	3	48	{ Catalogue } 9.2	9	4	9	sure } diff in mag.
			{ examine Dec }	107	0	27	
11	4	1			B	19	sure
10.11	5	28	NS		4	48	sure a cirty wire to be replaced
11	5	20		11	5	40	
117	3	23		117	3	41	
	B						
10	2	23		107	2	44	
11.12	6	31		11.12	6	50	
10.11B	1	43		10	2	3	
10B	6	42		10B	7	0	
11	8	45			No obs		
10.11	8	26		9.10	8	45	
10	8	27	See wire lost	10.11	7	49	} see wire of circle slow
				10.11	9	44	

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16	0	36.6	40.6	No 56	10.5				
	1	2.3	6.3		9.2	16	1	2.2	6.1
	1	14.0	18.0		9.9		1	14.0	17.9
	1	26.7	30.7	~~No 90~~	10.4		1	26.4	30.5
		B 13		No 90	10.2		1	29.8	33.7
	2	3.4	7.2		10.2		2	3.0	7.0
	2	12.1	15.9		9.1		2	12.0	16.0
	2	27.0	30.9		9.9		2	26.7	31.1
	2	40.1	44.0		7.6		2	40.0	44.0
	3	14.1	16.2		10.4		3	14.1	17.9
	3	39.5	43.3		10.5		3	39.3	43.3
	4	14.2	18.1		11.0				
							B		
	4	37.7	41.5		10.4		4	37.5	41.6
	5	1.3	5.3		10.5		5	1.3	5.3
	5	41.4	45.5		11.0		5	41.4	45.2
	6	1.0	4.9		10.7		6	0.6	4.6
	6	29.0	32.8		10.0		6	28.6	32.6
							D		
	7	28.8	32.7		9.9		7	28.7	32.6
	7	41.9	45.7		10.6		7	41.7	45.6
	7	54.9	58.8		8.9		7	54.9	58.8
	9	2.7	6.7		9.5		9	2.4	6.4
		B							
	9	45.6	49.7		9.2		9	45.6	49.5
	10	6.9	10.7		10.4		10	6.5	10.4
	10	24.2	28.0		10.1		10	24.0	28.0
	10	48.1	52.3		11.1		10	48.2	52.0
	11	8.9	13.0		10.9		11	8.9	12.9
	11	24.4	28.3		9.2		11	24.2	28.3
	11	25.3	29.2	No 113	8.7		11	25.2	29.1

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11	10	17	{double B at first wire take first one			Not obs		
9.10	2	1			9.4	10 B	2	19
10.11	4	42				10	5	1
11	1	58				10.11	2	18
	B.B					10.11	9	4
11B	10	18					10	39
9.10	4	11	Catalogue		9.3	9.10	4	25
10	6	53				10.11	7	13
8.9	0	47	Catalogue		9.0	7.8	1	8
11	9	18				10.11	9	38
11	5	7				11B	5	26
11.12	8	15						
11B	3	19				11B	3	39
	D							
11B	6	6	Li wire doubtful, too soon?			11	6	25
11.12	4	7				11.7	4	25
11.7	9	21				11	9	39
10.11	3	42				10.7	4	4
							D	
10.7	5	33				10.7	5	52
11	3	26				11	3	45
9.10	10	4			9.1	9	10	22
10	1	32			9.5	10B	1	53
	B							
9.10	2	3			9.2	10B	2	21
10.11	4	11				11	4	30
10.11	6	27				10.11	6	48
11.12	4	38	n s			11.12	4	57
11.12	5	57				11	6	16
10	3	16			9.3	9.10	3	36
9.7	2	9	Catalogue		9.2	9	2	28
						9	9	55

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			No. 114	8.9	16 11	31.7	35.7	
16	12	7.5	11.5	10.1	12	7.3	11.2	
		D.						
	12	55.0	59.0	10.7	12	54.9	58.6	
	13	22.0	26.1	8.9	13	22.0	26.1	
	14	18.8	22.8	10.9	14			(12.5)
	14	42.1	46.1	11.0	14	41.8	45.8	
	15	50	8.9	6.5				
	15	54.3	55.9 This star rej. no dur.	11.2	15	51.8	55.9	
	16	50.0	54.0	10.0	16	50.0	54.0	
	17	17.0	21.1	10.2	17	16.9	21.0	
	17	35.7	39.6	9.7	17	35.7	39.7	
	18	18.9	22.8	9.5	18	18.9	22.8	
	19	1.9	5.9	10.2	19	1.8		
	19	4.1	8.0	9.5	19	3.8	7.8	
	19	25.2	29.2		19		29.2	
	19	26.6	30.7	9.7	19	26.5	30.5	
	19	D. 13.						
	19	50.9	54.7	9.1	19	50.6	54.8	
	19	56.4	60.3	10.1	19	56.2	60.2	20 10.3 ?
	20	19.7	23.6	9.6	20	19.6	23.5	
						D.		
	20	26.3	30.2	10.2				
	21	56.3	60.3	10.7	21	56.3	60.3	
	22	10.6	14.7	10.9	22	10.5	14.6	
	22	12.9	16.8 ?	9.4	22	12.7	16.7	
	22	37.0	41.1 ?	9.7	22	37.1	41.2	
	22	46.5	50.4 ?	10.9	22	46.2	50.2	
	23	25.1	29.2	10.1	2			
	24	7.6	11.5	10.2	24	7.4	11.4	
	24		40.5	10.9	24	36.2	40.2	
	24	12.6	16.5	No. 142. 10.3	16 25	12.6	16.3	

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1861phae.proj..2325

	1	25	AR lost ~~vis~~	~~G.~~				
9.10	9	–	lost AR and dec.	G.3	9	9	55	
10.11	2	44			10.11	3	4	
	D							
11B	2	3			11.12	2	23	
97	4	43		G.7	9.10B	5	1	
11	8	13			11.12	D. B Dec lost		first wire lost
11.12	2	59			117	3	18	
7	11	1	Pr. Cat Star = 6 Serpentis					
	Dec without cloth				11.12	8	29	
10.11	7	58				8	16	
	7	21			10.11	7 B	39	
107	7	53			10	8	9	
10B	6	51		G.2	9.10	7	10	
11	8	13			107	8	32	Dec wire lost
10	2	31		G.5	9.107	2	50	
5						5	34	Dec wire only
			} Decs lost	(9.3)	10	5	14	
	D.							
9.10	9	13	Catalogue	G.8	9.10	9	33	
11B	9	25			107	9	45	
10	3	47		G.4	10	4	10	
						D		
10.117	5	48						
11.12B	7	20			11	7	39	
11.12	6	39			11	6	58	
10B	0	34		?G.2	10B	0	57	
	8	3	There is a declination lost		10	~~8~~	~~49~~	Dec lost
11.12	8	55	here.	10.7	11	5	15	
11.0		↓				8	49	AR lost
10.11	5	4			11B	5	23	comp south pr 8"
11.12	5	3	first wire lost		11	4	22	sure
11B	8	43				9	3	

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			No. 114	8.9	16	11	31.7	35.7
16	12	7.5	11.5	10.1		12	7.3	11.2
		D.						
	12	55.0	59.0	10.7		12	54.9	58.6
	13	22.0	26.1	8.9		13	22.0	26.1
	14	18.8	22.8	10.9		14	22.0	(12.5)
	14	42.1	46.1	11.0		14	41.8	45.8
	15	50	8.9	6.5				
	15	51.9	55.9 This star has no dec.	11.2		15	51.8	55.9
	16	50.0	54.0	10.0		16	50.0	54.0
	17	17.0	21.1	10.2		17	16.9	21.0
	17	35.7	39.6	9.7		17	35.7	39.7
	18	18.9	22.8	9.5		18	18.9	22.8
	19	1.9	5.9	10.2		19	1.8	
	19	4.1	8.0	9.5		19	3.6	7.8
	19	25.2	29.2			19		29.2
	19	26.6	30.7	9.7		19	26.5	30.5
	19	D. 13.						
	19	50.9	54.7	9.1		19	50.6	54.8
	19	56.4	60.3	10.1		19	56.2	60.2 20 10.3
	20	19.7	23.6	9.6		20	15.6	23.5
							D.	
	20	26.3	30.2	10.2				
	21	56.3	60.3 ~~No. 135.~~	10.7		21	56.3	60.3
	22	10.6	14.7 No. 135	10.9		22	10.5	14.6
	22	12.9	16.8 ?	9.4		22	12.7	16.7
	22	37.0	41.1 ?	9.7		22	37.1	41.2
	22	46.5	50.4 ?	10.9		22	46.2	50.2
	23	25.1	29.2	10.1		2		
	24	7.6	11.5 24 7.4 11.4 ?	10.2		24	7.4	11.4
	24	[illegible]	40.5	10.9		24	36.2	40.2
	25	12.6	16.5 No. 142.	10.3	16	25	12.6	16.3

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1861phae.proj..2325

	1	25	AR lost ~~9.0~~						
9.10	9	–	lost AR and dec.	9.3		9	9	55	
10.11	2	44				10.11	3	4	
	D								
11B	2	3				11.12	2	23	
97	4	43		8.7		9.10B	5	1	
11	8	13				11.12	D.B	lost	first wire lost
11.12	2	59				117	3	18	
7	11	1	Pr. Col Star = 6 Serpentis						
	Sig	without	Obenth			11,12	8	29	
10.11	7	58					8	16	
	7	21				10.11	7B	39	
107	7	53				10	8	9	
10B	6	51		9.2		9,10	7	10	
11	8	13				107	8	32	Dec wire lost
10	2	31		9.5		9.107	2	50	
5							5	34	Dec wire only
			} Decs lost		(9.3)	10	5	14	
	D.								
9,10	9	13	Catalogue	9.0		9.10	9	33	
11B	9	25				107	9	45	
10	3	47		9.4		10	4	10	
							D		
10.117	5	48							
11.12B	7	20				11	7	39	
11.12	6	39				11	6	58	
10B	0	34		?9.2		10B	0	57	
	8	3	There is a declination lost			10	~~8~~	~~49~~	Dec lost
11.12	8	55	here.		10.7	11	5	15	
11.0		↓					8	19	AR lost
10.11	5	4				11B	5	23	comp south pre 8"
11.12	5	3	first wire lost			11	4	22	sure
11B	8	43					9	3	

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16	25	18.6	22.5	No 1163	10.6	16	25	16.3	22.3
	25	46.6	50.6		9.7		25	46.4	50.4
	25	49.5	53.6		10.9		25	49.5	53.5
	27	44.7	48.6		9.1		27	44.6	48.6
	27	56.0	60.0		9.4		27	56.0	59.9
	29	36.8			10.6		29 B	36.7	40.9
	29	40.1	44.1		10.4		29	40.1	44.0
	30	19.1	23.1		10.7		30	19.0	23.1
	30	47.0	51.0		10.9		30	46.8	51.0
	31	1.0	5.0		11.1		31	0.5	4.9
	31 B.								
	31	45.6	49.4		10.9		31	45.4	49.4
	32	0.9	4.8		9.5		32	0.4	4.8
	33	29.4	33.4		10.6		33	29.3	33.5
	33	45.7	49.7		9.5		33	45.7	49.7
	34	17.4	21.2		11.1		34	17.4	21.4
	34	—	27.5		10.7		04	23.6	27.7
					10.7		34	52.1	56.1
	34	57.6	61.6		9.2		34	57.7	61.7
							B		
	35	49.4	53.3		10.0		35	49.4	53.3
	36	1.7	5.6		10.2		36	1.4	5.6
	36	33.3	37.3		10.2		36	33.3	37.3
				36 42.4 46.3	10.2		36	38.8	
				36 48.6 52.6	10.2		36		46.2
					9.8		36	46.5	52.5
	37	57.4	61.4	37 [illegible] 61.4	9.4		37	57.4	61.5
	38	29.1	33.0		7.4		38	29.0	33.0
	38	41.3	45.3		9.7		38	41.3	45.3
	38	[illegible]	49.8		9.7		38		49.7
	39	53.7	57.6		9.1		38	53.5	57.7
	39	51.6	55.5		9.9		39	51.6	55.6
	39	59.5	63.5	No 1173	9.0	16	39	59.6	63.5
		38 D.							

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1861phae.proj.2226

11	1	17			11	1	39	
31	4	52			10	5	11	
11.12	6	39			11	6	58	
10 B	6	27		9.2	9.7	6	48	
10	5	34		9.4	9,10	5	53	
11	7	41	See wire lost		11	7 B	58	
11.	1	42	NS		10.11	2	2	
11	5	12			11.7	5	31	Laccidentaire break
11.7	5	21			11.7	5	41	
11.12	3	29			11.12	3	48	
	B							
11	3	37	Few Stars		11,12	3	58	
10	10	26			10 B	10	46	
11	6	54			11	7	14	
10	0	54		9.4	9,10.7	1	13	
					11,12	3	24	
			Dec doubtful. first wire lost		11	10	32	
10 B	5	47		9.3	9.10	7 6	8 8	
	B.D					B		
	0	32			10.7	0	44	sure
11	1	15			10.7	1	34	
	5	59	Examine these stars: Dec. lost.		10.11	6	17	
					10.11	6	23	first wire only
					10.11	7	13	2nd wire only
					10	5	34	
10	4	50		9.5	9.10	5	6	
8	6	14	Catalogue	7.0	7.8	6	32	
10	1	59			10.7	2	18	long sig, sig to both wires
10	7	25	first wire lost		10.7	7	43	N.S.
9.10	4	16	Catalogue	8.8	9.10	4	35	
10.11	4	4			10	4	23	
9.10	2	37	Catalogue.	9.3	9.7	2	55	red
	B.D							

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1861phae.proj..232S

16	40	~~35~~	36.5	No 174	10.9	16	40	32.4	36.4
	40	53.3	57.3		10.2		40	53.3	57.4
	41	13.3	17.2		7.9		41	13.3	17.2
	41	26.2	30.3		10.6		41	26.2	30.1
	41	51.2	54.2		10.5		41	50.0	54.1
	42	11.2	15.2	~~No 160.~~	11.0		42	11.1	15.0
	42	12.9	17.0	No 160.	11.0		42	12.4	16.5
	43	0.2	4.0 &		10.5		42	54.9	58
	43	4.0	8.0		9.2		43	3.9	7.8
					10.2		43		10.9
	44	25.0	29.0		10.6		44	25.1	29.1
	45	2.4	6.3		9.6		45	2.4	6.3
	45	16.9	20.8		10.4		45	16.8	20.7
	46	23.9	27.6		11.1		46	23.8	27.6
	46	38.4	42.3		9.9		46	38.1	42.2
	46	50.2	54.1		10.6		46	50.3	54.1
	47	11.8	15.6		10.5		47	11.6	15.7
					10.2		47	41.9	45.9
	48	1.5	5.4		9.8		48	1.5	5.3
	48	8.8	12.7		10.7		48	8.7	12.6
	48	40.1	44.2		9.9		48	40.0	44.1
	49	10.1	14.2						
					8.7		49	10.1	14.0
	49	~~31.3~~	~~35.2~~ 3 rej:		10.1		49	38.6	42.6
	49	38.6	42.6		11.0		50	30.3	34.3 50 0.3 10.2
	50	21.7	25.8		11.1		50	21.8	25.7
	50	54.3	58.2		9.7		50	54.2	58.1
	51	2.5	8.2		9.8		51	4.1	8.1
	51	18.9	22.9		9.9		51	18.9	22.7
					10.7			31.7	35.7
	52	13.0	17.0		9.4		52	12.9	16.9
	52	54.1	58.0		11.1		52	51.0	54.9
	53	17.4	21.3		9.2		53	17.4	21.4
16	53	56.0	54.9	No 206	10.9	16	53	55.9	59.9

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1861phae.proj..2325

				-0.57				-0.26	
11.12	3	40	NS examine wire		11	4	2		
11.25	1	57			10.11	0	56		
8.9	9	58		8.0	8	10	17		
11	6	39			11	7	1		
11 7	10	23			10.11	10	44		
11.12	0	21				0	34		
								Sure	
11.12	0	22	NS			0	36		
11	0	39	examine wire			1	2	See wire lost	
10	2	46		9.1	9,10 B	3	6		
					10.11	3	15	first wire lost	
11	3	47			11	4	5		
10	8	37		9.5	10	8	56		
10.11	0	32			10.11	0	52		
11.12	7	2			11.12	7	12		
10	0	37			10.11	0	57		
11	8	59			11	9 B3	18		
11	6	16			11B	6	36		
	B.D				10.11	0	46		
10.11	10	44			10B	11	4		
117	5	50			11	6	13		
10.11	6	21			10	6	39		
~~10.11~~	~~1~~	~~35~~	(omit Cataloguen Star 9364.						
			Examine this place		9	9	57		
10.11	1	35			10.11	1	54		
11.12	2	43			117 11.12	1	39 3		
107	3	16			10	3 B3	36		
10	1	59			107	2	18		
10	7	53			10,11	8	13		
9,10	0	24		9.3	11	0	49	NS	
					10	0	44		
11.12	2	54			11.12	3	13		
9.10	8	10		9.0	10B	8	27		
11.12	5	9			11	5	29		

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16	54	27.3	31.3		10.9	16	54	27.2	31.2
	54	44.1	48.3		10.6		54	44.1	48.0
					10.7		55	19	5.4
	55	19.8	23.7		10.5			B. B.	
	55	31.9	35.9		10.4		55	32.0	36.0
	56	13.3	17.5		11.1		56	13.6	17.5
	56	48.5	52.5		10.4		56	48.4	52.4
	57	27.9	31.9		10.6		57	26.1	32.0
	57	36.9	40.8		9.2		57	36.8	40.8
	58	33.4	37.2		9.4		58	33.4	37.3
	58	51.0	55.0		9.4		58	50.9	55.0
	59	10.1	14.1		9.6		59	10.0	14.0
	59	12.2	16.1		9.4		59	12.1	16.2
	59	42.4	46.2		11.2		59	33.6	37.7
					11.2		59	33.6	37.7
					8.8	16	59	42.4	46.2
17	0	29.7	33.6		10.2	17	0	29.6	33.4
7	1	5.2	9.3	~~No 225~~	10.2		1	5.3	9.1
	1	16.5	20.4	No 225	9.2		1	16.4	20.4
					11.2		1		35.7
	2	49.0	53.0		9.0		2	49.0	53.0
	3	54.0			10.4		3	58.8	62.8
	4	2.5	6.6		11.1		4	2.1	6.3
	4	44.3	48.2		9.9		4	44.1	48.1
	4	57.8	61.9		10.4		4	58.0	61.9
	6	49.9	53.8		10.6		6	49.9	53.8
	7	2.8	6.9		9.6	17	7	2.8	6.7
	7	13.6	17.5	No 234	9.7				

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		B						
11.12	7	48			11	8	7	
11	3	17			11	3	37	
					11	0	59	
11	7	26				B.B		
10.11	6	55			11	7	16	
11.12	9	39			11.12	9	58	nS
10.117	10	41			11B	11	2	
	D							
11	9	3			11	9	20	
9.10	7	41		9.3	10B	8	2	
10	5-	18		9.5—	9.10	5	36	
10B	4	26		9.5	9.107	4	B 45	
107	5-	15-		9.5	9.107	5	33	
10B	8	14		9.5	9.10	8	23	nS sw wie vor
9	2	25	→ *	8.5	11.12	3	0	
					11.12	2	56	
					9.10B	2	44	
11	9	29			11.125	9	49	
11B	7	45-			10.11	7	54	sww
9.10	6	56		9.1	9.10B	7	16	
					11.12	1	29	fein wie vor
9.10B	6	14	Katalogue.	9.0	9.10	6	32	
10.11	3	59	sw wie vor		11	4	17	
11.12	7	30			11.12	7	49	
10.11	1	9		9.5	10	1	29	
10.11	6	53			11	7	13	
11	4	19			11	4	40	
10	5-	3			10	5	22	
107	8	—						

For magnitudes see next page.

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1861phae.proj..232S

Lyr 1861 June 24.

Magnitudes.

S − A = 0.m300 ± 0.m030 (52 comp.)

Pr. Error of 1 comp ± 0.m219

June 25

S − A = 0.m262 ± 0.m029 (57)

± 0.m211

Let x denote magnitude in zone June 24th,
less magnitude June 25th.
Let y denote the numerical difference between
a magnitude and the same mag. bright (B) or
faint (F) − y a positive quantity.

x = 0.m223 ± 0.m017

y = 0.m295 ± 0.m026

Pr Err. 1 Diffr. 0.6745 $\sqrt{0.1206}$ = 0.6745 $\sqrt{\frac{21.1}{175.}}$

= ± 0.m234

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June 29. 1861

Ang. of Pos. 83° 35′

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1861phae.proj..232S

11B	9	19	
11	5	14	
9B	2	41	8.6
10.11	7	44	
9	0	44	9.5
10.11	1	18	doubtful
9.10	9	43	
	DB		
11.12	3	40	
9,10	9	0	
11	4	41	
10	8	8	
10	4	39	A good many stars here
10.11	3	6	of nearly 10th mag.
10	3	47	
107	6	19	see wire low
10	1	25	first " "
10.11	1	35	
107	5	7	
10	0	29	

D.D

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1861phae.proj..2325

9,10	9	8	
10,11	0	15	
10	2	6	NS
10	10	3	NS
10B	6	36	
10,11	8	29	Dn doubtful
11B	8	13	
10,11	11	2	
11	7	24	
11	6	44	
9B	7	38	
	B		
11B	9	55	
11	7	50	Sec wire lost
9	4	25	
9,10	7	32	
11	0	49	
11B	9	43	
10	4	28	
11	5	52	
10	3	12	
10,11	7	41	
	D		
10,11	3	16	
10,11	3	45	
10B	1	17	
10	10	2	
10,11	0	47	
11	1	35	NS doubtful in both AR & Dn
	B.B		

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1961phae.proj..2225

10.7	8	14	
9B	5	10	
10.11	5	51	
10B	4	10	
11	0	59	first wire lost
11B	2	36	Sec wire "
10.7	9	16	
11B	1	34	
8	10	47	
10.11	3	19	
9B	1	57	
9	7	45	
9.7	6	14	
	D. B.		
11	5	46	
			Comparatively a good many
11B	3	39	bright stars
10	7	51	
9.10	3	55	first wire lost
9.10	1	18	
9.10	7	33	
10	3	47	
11.12	1	50	
	B.		
10	3	26	
11	2	44	
10	8	6	
	Sec lost		
11	0	34	Sec wire lost
10.11	8	2.	
	Broke wire of telescope		

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1861phac.proj...2328

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Zero of Position

Date.	Hor. Ang. W.	Angle	
1861 Apr. 9	+0h 30m	83° 32′	Three comps. not very accordant.
" May 2	2 40	83 30	Three comps.
" May 7	1 35	83. 35.5	Two trials.
" May 17	0 17	83 29.5	Two trials.
" May 27		83 38.	Two trials
" May 29	2 36	83 42.	Three trials.
" May 30	0.	83 28	Two trials
" June 12	2 30	83 38.5	
" June 24	1 40	83 31	One trial.
25		83 37	

163 34

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1861phae.proj..232S

Series 1° 0′ – 1° 20′ (in this book)

Dates.	No. (Provisional)	Right Asc.	Decl.	Obs.		Remarks.
1861 Mch. 16	130	10 1 – 11 55	1° 10′ – 1° 20′	L.		Continued from
Apl. 26	132	idem	idem	S.		No. 8.
1861 Apl. 9	183	10 49 – 12 53	1 0 – 1 10	S.		
May 2.	184	10 49 – 12 50	idem.	S.		Hazy.
1861 May 7.	185	11 51 – 13 45	1 10 – 1 20	S.	185. 186	Divide at 12h 58m
29	188	idem	idem	S.	189	
1861 May 17	186	12 46 – 14 31	1 0 – 1 10	S.	187.	Moon past first quarter.
27	187	12 46 – 13 48	idem	S.	188.	Clouded.
1861 May 30	189	13 43 – 15 20	1 10 – 1 20	S.	190.	Very bright starlight.
June 12.	190	idem.	idem	S.	191.	
1861 June 24	191	15 16 – 17 7	1 10 – 1 20	S.	192.	Moonlight rather bright.
" 25	192	idem	idem	S.	193	Moon rose in mist.

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