

KG
11365
37

A.37

Transit Circle

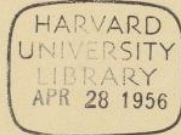
1861. Oct. 1. - Mar. 28. 1862

of the ...
by the ...
Groom & Co., Stationers, India Building, 82 State St., Boston.

KG-11365.37

		n	c	
1862	Mich 11	+0.341	+0.050	
	" 24	0.274	0.088	reduced
	" 26	0.304	0.088	"
	" 27	<u>0.301</u>	<u>0.081</u>	
	Use for 24-27	0.293	+0.086	

KG 11365.37



1861. Oct. 9.

M. East

A.H.

16 Pezari

2 Aquarii

39.9 35.5

43.4 38.8

47.3 42.0

50.8 45.3

21 46 54.5 21 58 48.6

2359 210.2

21 46 47.18 21 58 42.04

Oct 12. 1861.

H

M Ear

ϵ^2 Capricorn		Moon TD		δ Aquarii		γ Capricorn		δ Capricorn						
	28.6		34.4		20.2		22.1		21.0					
	32.0		38.0		23.5		25.6		24.6					
	35.7		41.6		26.9		29.1		28.1					
	38.9		45.0		30.1		32.5		31.3					
20	31	42.6	21	4	48.6	21	30	33.7	21	32	36.1	21	39	33.0
	177.8		207.6		134.4		145.4		140.0					

20	31	35.56	21	4	41.52	21	30	26.88	21	32	29.08	21	39	28.00
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Oct. 14. 1861.

A. H. obs.

Ill. East.

1861phae.F

Moon TO			" β Piscium			" η Aquarii			" γ Piscium		
		44.1			49.1			8.4			58.6
		47.5			52.3			11.7			1.9
		51.0			55.9			15.3			5.4
		54.2			59.1			18.4			8.5
22	40	57.8	22	57	2.5	23	7	21.9	23	9	12.0
		254.6			218.9			75.7			86.4
22	40	50.92	22	56	55.78	23	7	15.14	23	9	5.28

1861 Oct. 24

J.H.S.

Polaris S.P.

13 5 37.8

7 37.5

10 6.5

12 25.2

14 33.1

162.1

13 10 8.42

B. Polaris 9 20.38

40.04

+ 39.91

1861 Oct. 24

J.H.S.

Polaris S.P.

13 5 40.3

8 0.2

10 7.3

12 25.4

14 39.9

113.1

13 10 10.62

9 27.75

+ 42.87

1861 Oct. 28

J.H.S.

B. Ursa minoris

14 49 52.7

50 4.9

13.0

29.4

43.4

168.4

14 50 17.69

51 4.07

- 46.39

γ Ursa minoris

46.6

58.5

9.6

49.1

38.8

146.6

15 23 8.72

✗ ✗ ✗

✗ ✗ ✗

1861. Nov 5

AK

Leonis

Nov. 11

A.H.

E Pegasi

M Ear

"

16 Pegasi

Nov. 22

A.H.

2 Pegasi

24.8

58.4

20.4

38.7

28.2

1.7

24.0

38.9

31.7

5.2

27.8

42.6

35.0

8.4

31.3

45.9

38.5

21

38

12.0

21

47

35.1

22

58

49.3

158.2

85.7

138.6

212.4

31.64

21

38

5.14

21

47

27.72

22

58

42.48

1861. Nov 26

AU

Ill Eau

α Androm.		γ Pegasi	
	58.3		51.3
	1.9		54.7
	6.0		58.2
	9.5		1.7
0	2	7	51.2
	89.1		171.1
0	2	6	58.22

1861

Dec. 20.

1861phaeop

1861phaeop

Lyrae	♂ Pyrae	H Pyrae	♀ Pyrae	a Ptilis aethiops
46.7	9.1	5.3	22.4	35.1
50.6	12.3	9.2	25.6	36.6
55.3	16.0	13.2	29.3	42.5
59.4	19.1	16.6	32.3	46.1
3.7	22.7	20.7	35.9	50.5
215.7	79.2	65.0	145.5	212.8
18 32 55.14	22 34 15.84	22 36 13.00	22 39 29.10	22 49 42.56

14.90

1.68

See after A.W.

1861 *
Dec 20.

All

Ill Eau

Vrs Min 5 B		α Phenecis		α Canispor		β Ceti		δ Piscum	
—	—	0	20	0.5	11.6		14.6		6.7
—	—				17.1		18.0		10.0
13	34.1	Pen failed			23.2		25.1		13.5
14	46.8				29.2		21.7		16.6
15	52.6			0	33	0	37	0	43
					115.9		108.0		66.9
				0	33	0	37	0	43
					23.18		21.60		13.38

43.16

*

1861 Du 20.

AZ

43 Cephei		ε Piscium		Polaris		θ Ceti		ν Piscium	
49	45.7		22.2	4	56.7		42.9		50.6
50	26.3		25.4	7	9.6		46.0		53.8
51	13.6		29.1	9	30.2		49.8		57.6
51	52.9		32.2	11	34.0		53.0		0.5
0 52	36.2	0 58	35.6	1 13	53.1	17	56.6	1 35	4.0
	174.7		144.5		183.6		248.3		166.5
0 57	10.940	58	28.90	1 9	24.72	17	49.66	1 34	57.30

2.06

1861. Dec 20

A21		2 Arctis		7 H.S. (out of plane)			2 Sulphors		y Main major S.P.		
β Arctis				γ Cephei							
	36.6		59.2	23	33	46.6		13.0	23	46	59.1
	39.9		2.5		34	1.6		16.8		47	5.0
	43.4		6.4	40 55		17.2	40 55	20.8	40 55		10.4
	46.8		9.7			30.5		24.3			16.4
1	47	50.4	13.5			45.3		28.3			22.0
	217.1		91.3			141.2		103.2			112.9
1	47	43.42	2	0	6.26	23	34	24.24	23	42	25.64
									23	47	15.58

25.84

36.59

561 Jan 20th M. E.

7115

0 Primaries	2 Cetioidae	2 Andromedae	6 Arctique	Elliptic min SP
43.4	14.8	49.3	35.7	4 59 57.4
46.7	18.1	52.9	39.8	5 0 23.1
50.2	21.9	57.1	43.9	46.8
53.3	25.1	0.7	47.7	1 12.3
57.7	28.8	4.6	51.8	36.7
250.3	108.7	164.6	218.9	116.3
23 52 55.06	23 57 21.74	0 0 56.92	4 48 40.78	5 0 47.26

16.58

x

	α Aurigae	β Aurigae	γ Aurigae	δ Aurigae	ϵ Aurigae
0	3.9	30.7	30.7	9.6	55.8
4	8.4	33.9	36.0	13.7	59.4
1	13.3	37.5	37.5	17.4	3.3
3	17.9	40.6	40.6	21.0	6.5
7	22.8	44.1	44.2	24.9	10.2
3	66.3	166.8	167.0	86.6	135.2
6	5 7 13.26	5 8 37.36	5 11 37.40	5 18 17.32	5 22 3.04

33.29

56.71

36.96

δ Min	C ^{III} Great Nebula	δ Min	S ^{III} Gr. Neb.	V ^{III} Gr. Neb.
33.4	48.4	5.9		5.4
36.9	48.7	9.3		8.9
40.6	52.0	13.0	57.8	12.4
43.5	59.7	15.9	54.3	15.4
47.1	59.3	19.3	57.8	19.1
201.8	261.1	63.4		61.2
5 25 40.30	5 27 52.22	5 29 12.68	5 29 51.24	5 30 12.24

Hard to see

Dec. 20.

2 Columbus	K Orion	2 Orion	2 Orion	7 Geminorum
14.3	49.0	18.1	17.6	8.7
18.1	52.1	21.8	21.0	12.1
22.5	55.6	28.4	24.8	16.2
26.2	58.9	28.4	28.0	19.5
30.5	2.4	32.1	31.5	23.2
111.6	218.0	128.8	122.9	79.7

5 35 22.32 5 40 55.60 5 48 28.16 6 0 24.58 6 6 18.94

44.53

Dec 21.

Ill Eare

All

Polaris

δ Ceti

γ Piscum

to
61 Dec 20
Upar minoris SP

15	14.9
16	14.0
17	10.2
18	9.2
19	5.8
	60.1

4	51.2	33.6	31.9
7	1.5	36.8	35.1
9	25.9	40.3	38.7
11	31.7	43.3	42.0
13	51.4	46.8	45.6
	161.7	200.8	193.3

18 17 12.02

1	9	20.34	1	17	40.16	1	24	38.66
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16 22.40

9 1.69

One Rev. of Micr.

0 ^m	47.0	1	31.0
2	18.0	1	31.0
3	49.0	1	27.2
5	16.2	1	32.2
13	13.8		
14	36.0		

0.557

Dec 21. 1861

Ill East

AU

α Persei			β Andris			α Riscum			α Andris			β Ceti		
		54.9			36.8			30.4			59.5			42.3
		59.8			40.2			33.8			3.0			45.5
		5.0			44.0			37.3			6.8			49.1
		10.0			47.1			40.3			10.0			52.2
1	30	14.6	1	47	51.3	1	55	43.9	2	0	14.0	2	10	55.7
		144.3			219.4			185.7			93.3			244.8
1	30	48.6	1	47	43.88	1	55	37.14	2	0	6.66	2	10	48.96

5
59 25.83

Dec 21, 1861

Ill Ear

AZ
5th Ceti

Gr* 527

v Piscium

25.7

13.4

51.0

28.9

33.1

out of Place

54.0

32.3

53.7

57.8

35.5

14.2

0.7

2

21

38.9

2

29

37.4

1

35

4.4

161.3

153.8

167.9

2

21

32.26

2

28

54.76

1

34

57.58

* This star is just the
right magnitude to
observe well with
full illumination

Dec 21. 1864
 4 PM. Star in nebula of Min.

C ^{III}	S ^{III} ?	Height H ^{III}	I ^{III}	Y. probably
46.2	45.0	24.2	25.6	? — { 31.7
49.4	48.2	26.0	29.5	? 34.7 { 34.7
52.9	51.4	31.1	32.5	34.7 { 37.0
55.8	54.7	34.6	35.6	37.4 { 41.3
59.6	58.4	38.2	39.1	41.3
263.9	257.7	156.1	162.3	
5 27 52.78	5 29 51.54	5 28 31.22	5 28 32.66	5 30 34.69

1861 Dec 21
5173.

Mars in Nebula.

BB

M. 797².M. 845².

29.0

15.9

57.5

32.3

19.1

54.7

36.0

22.7

56.4

36.9

26.0

1.7

43.2

29.4

5.2

179.4

113.1

171.5

5 31

35.88

5 32

22.62

5 32

58.30

1861 Dec 24th

M.H.

BH 1125 (Sunx)

2 Eridani

 η Tauri ζ Rami2³ Eridani

43.3

24.4

52.9

3.1

58.7

47.6

24.5

56.5

7.1

2.7

51.5

21.4

0.2

11.1

7.0

55.5

24.5

2.8

14.7

10.7

0.0

28.0

7.4

18.8

14.0

197.9

120.8

54.8

92.1

3 32 51.58

3 37

3 40 0.16

3 46 19.96

3 49 8.62

Not very good.

1861 Dec 26

1861

γ Eridani	Ork 1235 (Polar)	δ Horologii	α Tauri	δ Eridani
10.9?	53 55.2	0.0	36.5	28.0
15.0	54 33.0	4.6	39.9	31.4
18.6	55 65.4	9.3	43.8	35.2
	55 57.8	14.0	46.8	38.4
25.4	56 33.7	18.0	50.4	41.8
	189.1	45.9		174.8
	3 55 63.82	4 10 9.18	4 28 47.68	4 32 34.96

Arant Vast.

<i>A. Eridani</i>	<i>A. Arigum</i>	<i>A. Tauri</i>	<i>A. Orionis</i>	<i>A. Orionis</i>
12.7	36.1	26.8	30.8	30.8
16.0	42.0	30.4	34.2	34.0
19.5	44.1	34.2	37.7	37.6
22.7	47.9	37.7	40.8	40.5
26.2	51.9	41.3	44.5	44.2
97.1	220.0	170.4	188.0	187.1
4 39.1942	4.48 64.00	4 55 34.08	4 8 37.60	5 11 37.42

11/6/84 Dec 21th

Stars in great nebula

C^m	E^m	Q (probably)	L^m probable	B/B Last Star in Line 2.
46.0		29.8	37.5	28.2
49.2	8.2	26.5	40.9	31.9
52.6		30.2	—	36.0
55.7		33.6		38.8
59.2	18.5	36.8	(57.0)	42.5
262.7		150.9		177.4
5 27 52.54	5 28 ⁶¹ 11.7 _{11.69 11.64 .63}	5 29 90.18	5 28 (44.33)	5 31 35.48
217.59.2			¹⁴ 22 <u>63</u> 24	

1861 Dec 27th

Orion

C ^{III}	W	Last Star in Zone I = BB.
45.2	58.5	27.6
48.4	2.5	31.4
51.8	5.9	35.1
54.7	8.9	37.9
59.2	12.2	41.4
259.3	88.0	173.4
5 27 57.86	5 30	
	5 30 5.60	5 31 3.18

Decl. on next page. Decl. on next page.

0.17.55.

C ^{III}	H	52.8	236 = 5	28	06	turn for Dec	note " "	then reading
	4	47.2					+ 3 to 4	.61
	7	20.4						- 1.3
	F	49.0						+ 1.3

Brighter

5 29. 25

2 33 + 2.67

Microscopic Zero about 30 fractions are negative in E.

Mag. 9.

9.10

pr.

Set at $317^{\circ} 22'$

Time for Dec

5 30 21

2nd wire in R last to be taken

+ 3" to 1" .54

5 31 28

+ 1" .06

Microscope readings

H. On one that reads left 46.05
 " " more 44.06

G. reads left 44.00
 " more 41.08

F. On one that reads left 17.00
 " more 15.06

E. One where it stands is a little left the 2' from
 the one that reads left hand apparently
 reads left 41.00 .00
 one that reads more 43.05 .

Considering the micrometer reading as positive when it coincides with the positive direction of Circle Readings, the fractions will be positive. East: and the preceding observations will be as follows.

α^{III}	Circle Reading 317 54 52.8 47.2 55 20.4 54 49.0	Star - 3.39	^{1861 Dec.} W-L ^m	33 7.0 4.0 3.9 7.0
----------------	---	----------------	--	-----------------------------

Unknown Star	Same	+ 2.33	?
--------------	------	--------	---

W.	317 21 45.8 21 43.2 21 16.5 21 41.7	- 3.46	3.9 1.3 2.2 9.2	33 46.5
----	--	--------	--	---------

Last star in Zone I. ^{1861.}	Same	- 0.94
---------------------------------------	------	--------

The sign + given to the micrometer readings last night denotes North, which with regard to the Circle Readings is negative.

1961 Dec 27.

945.

<i>Deconu</i> <i>11.0</i>	<i>L Tawii</i>	<i>53 Eridani</i>	<i>μ Eridani</i>	<i>ϵ Aurigae</i>
31.8	35.5	26.9		34.9
39.7	38.8	30.3		38.8
45.1	42.5	34.1	18.2	43.1
<i>Circul</i> <i>bad.</i> 57.3?	45.8	37.4	21.5	46.9
57.6?	49.3	40.9	24.8	51.0
	211.9	169.6		214.7
<i>L</i> <i>22</i>	<i>L</i> <i>28</i> 42.38	<i>L</i> <i>32</i> 33.92	<i>L</i> <i>39</i>	<i>L</i> <i>48</i> 42.94

α Tauri	α Aurigan	β Orion
26.3	2.9	29.8
29.7	7.6	39.0
33.3	12.6	36.5
36.5	17.1	<hr/>
40.3	22.2	43.4
166.1	62.4	

4 55 33.22 5 7 12.48 5 8

Clouds.

After these ^{should} follow observations on nebula, given previously.

1861 Dec 28th

MS.

L Tauri	53 Eridani	54 Eridani	60 Eridani	53 Eridani 53 Eridani
34.9	26.2	58.6	33.0	41.5
37.8	29.6	2.0	36.4	44.7
41.8	33.4	5.9	40.0	58.3
45.1	36.4	9.2	43.2	54.5
48.3	40.0	12.8	46.7	54.8
207.9	168.6	88.5	199.3	240.9
L 28 41.58	L 32 33.12	L 35 5.70	L 44 39.86	L 46 48.16

1 Arcturus
34.2
37.9
Junk failed

5 Arcturus min SP
59 ~~44.5~~
50 30.6
43.9
1 10.4
33.6
103.6

2 Arcturus

20
70
11.7
16.6
21.4
58.7

3 Arcturus

29.1
32.3
35.7
38.9
42.4
178.4

4 Arcturus

70
10.3
14.0
17.0
20.4
68.7

4 48

5 0 44.72

5 7 11.74 5 6 35.68 5 18 13.74

320 30' 4.60

314 45' 13.55

320 30' 4.60 + 2 27.74 + 4.32 - 2 44.98 - 4.84

CR 0.7 320 32 32.14 + 4.32 314 42 28.57 - 4.80

2. R. - 11. 4. R. + 1 10.45 + 57.48

20 50 43.5 44 53.5 + 5.33 + 4.14

320 32 47.92 + 4.32 314 43 20.19 - 4.80

Alpha + 0.07

Corr. for wavy degree = 4

-0.07 1. + 4.33

-5. + 1.96

+ 4.234

-5. + 1.34

320° 30'

314 45'

H 2.8

5.9

G 52.6

4.4

F 20.0

41.4

E 54.8

2.5

5 0 20

5 17 58

9 26

19 1

-0.001 (t-1860)

η - β Arcturus 5° 50' 13.01 -0.838 (t-1860)

C-0

Diff. (η - β)

5° 50' 13.16 Compd

5 50 17.73 + 9.12 + 5.84

α = 4.57 + 9.12 + 5.84

γ = -0.29 + 1.57

Ar. (1) -0.19 -0.5 4 α' 8.974

Ar. (1) +0.30 +0.8 β' 8.396

Ar. 1 -0.17 +0.2 α' 9.915

Ar. 2 +0.12 +0.5 β' 7.943

Ar. 1/2 (100) -1.4 α' 8.1300

1861 Dec 28

Orion Star

C^m

Y (probably)

B B

M M

~~5 27~~ 43.7
 47.1
 51.1
 53.9
 57.3
 253.1

26.4
 29.4
 33.1
 36.1
 39.5
 164.5

5 27 50.62 5 30 32.90

Reading Microscope for C^m

H 12.5
 G 5.5
 F 43.1
 E 6.5

lower

C^m Zero for Dec on micrometer $-5 + .97$ 2nd star no sig Set at $317^{\circ} 22' \frac{1}{2}$

+2 .78

3rd Dec at 5 32.37 had passed micrometer 25°

-2 + .02

C^{III}

317	55	12.5
		5.5
		43.1
		6.5
<hr/>		
317	55	16.9
	-2	18.0
<hr/>		
317	52	58.9

y

317	22	16.6
		14.4
		51.0
		13.1
<hr/>		
317	22	23.8
	+1	35.2
<hr/>		
317	23	59.0

1313

317	22	23.8
	-1	22.8
<hr/>		
317	21	16.0

H Reading Microscopes for 2nd & 3rd stars

G near 2'

y

F

One that reads - below	17.2
" above	16.0
One that reads left?	14.0
" more	14.8
One that reads left	50.5
" more	51.5
" left	13.6
" more	12.6

Jolani H. by

Jolani H. ha 9

1st Star C^{III}

317 55 12.5
 5.5
 55 43.1
 55 6.5

Min
 - 4° 03

2nd Star

317 22 16.6
 14.4
 22 51.0
 13.1

+ 2° 78

3rd Star = B13

Same

- 1° 98

1861 Dec 30.

AU

 β Arietis α Arietis

32.9	55.2
36.4	59.0
40.2	2.9
43.4	6.2

1	47	47.1	2	0	10.0
		200.0			183.7

1	47	40.00	2	0	2.74
---	----	-------	---	---	------

Dec 30.

Glucose min SP + Arizone

4	57	53.8	0.1
5	0	19.0	4.7
		42.0	9.9
1		8.0	14.5
		32.5	19.5
		153.3	48.7

B. Brown

27.0
30.3
33.7
37.0
40.5
168.5

Q^{III}

42.1
44.4
48.6
57.8
55.4
243.3

8

Real Page

5	0	43.06	5	7	9.74	5	8	33.70	5	27	48.66
0	2.46	BJ.	6	33.34	7	56.74					

distant

A. E. (K) 2000

317° 55'

A
B
C
D

A	38.5
B	30.9
C	33.0
D	48.0

North
314.57

42	5	38.5	+	3.43
		30.9		34.5
		33.0		
		48.0		

42	5	37.6
	+	1 57.5

- 1 3.72

42 6 31.38

W.

Y.

56.2
57.4
2.9
6.0
9.5
176.0

27.7
31.0
36.0
37.4

5 30 2.80

5 30 ± 30.84

317 20

N 0 21 .45

Time for dec + 0.55

- 6 27 .51

1.57

A

20.9

B

11.9

C

14.7

D

29.6

42 40 19.24

+ 18.72

42 40 38.0

- 1 2.5

hr 39 35.5

42 40 19.0

- 3 43.0

42 36 36.8

- 1 2.0

42 ~~42~~ 59.2
35 33.7

Ref.

Dec 30, 1861

AZ
x Cor. Par

19.4

23.0

27.0

30.5

15 29 34.4

134.3

15 29 26.87

-.14

+.26

+.10

15 29 27.09

15 28 50.53

+ 27.56

* Jan 7. 1862 E.C. is slipping even seconds today
Jan 9. " Mr. R. Bowd adjusts E.C.

Apr 13
44.

α Aurigae	β Orionis	γ Orionis	β Tauri	α Orionis
34.0	0.7	0.6	10.2	3.9
36.8	4.0	4.0	43.9	6.9
43.9 Two breaks	(7.5)	7.7	47.7	10.8
48.2	10.5	10.6	51.4	13.8
53.4	14.3	14.2	55.3	17.4
218.3	37.6	37.1	236.5	52.8
5-6 43.66	5-8 7.40	5-12 7.42	5-17 47.70	5-25 10.56
N.A. 33.29	7 56.63		36.98	24 59.83
37 33.34	56.72		37.04	

ϵ Orion	δ Orion	θ Auriga	β Geminorum	γ Orion
18.9	48.7	21.1	50.2	48.2
22.7	51.9	28.0	53.5	51.4
26.0	55.6	32.6	58.0	55.0
29.2	58.7	36.5	0.8	58.3
32.5	2.0	40.7	14.4	1.8
129.3	216.9	161.9	166.9	214.7
5 30 25.86	5 47 55.38	5 50 32.38	5 50 57.38	5 59 52.94
15.06	44.57			
	44.66			

Probably too faint

to be well observed

The whole evening
was quite cloudy.

The wires illuminated
by moonlight only,

862 Jan 13^u

14.5

γ Geminorum	Murtac min SP			γ Geminorum	ϵ Geminorum	α Geminorum
39.0	18	14	49.6	51.1	32.8	10.7
42.7		15	48.2	54.6	36.3	14.0
46.4		16	38.2	58.0	40.3	17.5
49.9				1.5	42.8	20.7
53.5				4.9	47.6	24.5
231.5				170.1	200.8	87.4
6 6 46.30				6 29 58.02	6 35 40.16	6 39 17.48
	14	16	22.12			6.55
						6.41

Clock correction by B. Jährle.

$$5^h 7^m = -10.32 - 1.03n - 1.44c$$

$$5^h 8^m = -10.68 + 0.15n - 1.01c$$

$$5^h 18^m = -10.66 - 0.54n - 1.14c$$

$$5^h 48^m = -10.72 - 0.13n - 1.01c$$

$$6^h 39^m = -11.07 + 0.30n - 1.04c$$

Clock correction for

$$5^h 36^m = -10.690 - 0.250n - 1.128c$$

$$u + v = \text{step} - 0.20$$

1862, Jan. 27

N

J West

E Tawri

" Tawri

11.6

34.9

15.1

38.6

18.8

41.8

22.3

45.3

21

8.1

4

28

48.7

75.9

209.3

21

15.18

4

28

41.86

561 Jan 31st.

A.H.

J.H. West

J.H.S.

Polaris

+ Beti

51 Capri Herolii

+ Pra. & Cassiopeia

4	34.0			53.2
6	55.0			56.6
8	58.0			59.8
11	24.0			3.3
13	36.0	1	18	6.7
	207.0			179.6

6	33	41.1		9.4
	34	54.9		13.5
	35	57.7		17.2
	37	11.6		21.6
	38	19.2		25.3
		184.5		87.0
		180		

1	9	5.40	1	17	59.92
---	---	------	---	----	-------

6	36	0.90	6	45	17.40
	35	18.91			
		+44.00			

1	9	5.3
	9	6.9
	9	5.3
	9	6.1
	9	3.4
		5.40

+ 0.00 + 0.00

 ± 0.922

From nacliv next day

 $c = + 0.04$ circa

From H. (H. Kipler) and Prouy

 $\mu + 0.956c = 0.381$ $\mu = 0.343$ 9.537 $c = 0.040$

Rev. of Micrometer

0	28.2	}	1 ^m	33.1
2	1.3			
6	8.4	}	1	34.3
7	42.7			
8	31.2	}	1	35.1
10	6.3			

κ Cassio majoris	θ Cassio majoris	ε Cassio majoris	\times foll. ε Cassio majoris	\times n. p. ζ Geminorum
28.0	34.4	59.3	26.5	42.9
32.0	37.9	3.2	30.6	46.6
35.7	41.1	6.7	34.0	49.9
39.8	44.4	10.6	38.1	52.9
43.7	48.1	14.6	41.8	56.2
179.2	206.3	94.4	171.0	
6 45 35.84	6 48 41.26	6 54 6.88	6 54 34.20	6 58
- 5.17	- 0.03	- 0.15		

<i>Spermium</i>	<i>Lania maj</i>	<i>25 Canulophtes</i>	<i>Lania minoris</i>	<i>B Spermium</i>
42.9	18.6	15	52.7	39.3
46.6	22.1		56.2	43.3
49.9	25.3		59.3	46.9
53.7	29.1		2.8	50.9
57.1	32.3		5.9	54.5
250.2	17.4		176.9	234.9
	25.46			
6.56 50.04	6 58 26.48	7 2	7 32 59.38	7 32 46.98
	Mon. 57 33.44		7 37	36 55.20
			+0.07	
by hand +0.67	-0.05			+0.23

See M⁵ Hall.

Some confusion

1861 Jan 31

9. Navin

x.

y

Lat. 16590

z

10.7

14.4

17.6

21.2

24.5

✓

20.3

✓

23.3

16.9

(20.4)

23.5

27.2

30.2

48.4

49.0

52.2

55.7

59.0

261.3

31.6

34.8

38.2

41.2

7 46 17.64

8

9

8 10 (23.64)

Clock corr. dr. (- 52.29)

8 20 52.26

8 26 (34.38)

-0.04

x

8 9 31.35

Corr. Clock. - 52.18

8 9 31.46

+0.11

+0.04

- 52.22

7 46 9 2
47 6 }

8

8 10 55

8 27 4.

3/4 8

325° 40'

+ 3° 1'

34.7
36.2

Lunar Dr. is 10.12

318° 40'

+ 0° 6'

92.6

300 24.

No Dec

307 25

- 3° 7'

40.6

Circle - A = 8

A 2.8

B 37.5

C 4.6

D 37.3

37.9

34.4

H

57.9

34.4

59.6

33.3

Estimated mag.

9.2

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

x w,

 ϵ Hydrae

18	16.2
5.4	19.5
8.5	22.8
12.1	26.3
15.5	29.5
43.3	114.3

8 37	8.66	8 40	22.86
		M.A. corr. 39	30.83

- 5.20

8 36 (16.36)

+ 0.11

+ a.a.b.

- 92.24

8 36 16.53

Provisional for Comet - Hart Clark note - 3.

γ Canis	+ 52.04	# 658
α Canis min	52.04	732
ϵ Hydrae	52.03	840

8 39	30
40	49

 $\alpha = 0.500$ approximately

Reduced to year. Oct. 1950

by distance from Oct. 1954.

302 16.5

305 10

- 17.8

42.6

42.3

A	30.8
B	6.9
C	21.3
D	4.1

653	- 52.12
658	52.02
732	52.09
737	52.04
840	52.22
732	- 52.106

1862 Jan 31

Star = places for Comet 1861 II.

Scorliation

9 Davis

C. Hyman

Mer assumed 34.75

In. fact. 1.066

Obs. $\frac{1.026}{1.093}$

-13° 30' 13.72
 - 4.06
 - 1 46.28
 - 0.26

6.57 56.89

= 0.28

- 2 33.76

- 0.26

1862 4.72
 - 13 32 10.32
 R.R. + 0.92
 P.M. - 0.03

+ 6 55 22.59

+ 0.09

R.R. + 0.75

- 13 32 3.50

- 9.96

- 13 32 13.46

+ 6° 55' 11.7

So App.

- 29208

- 4 54.5

- 13 38 + 6.58

Star

41 28 16.30

+ 31.70

M.R. - 1 6.1

Corr. - 6.2

41 19 35.7

47 52 56.0

- 8 33 20.3

8° 9' 3.35

54 49 46.28

- 54.06

- 41.1

54 48 11.12

47 52 59.42

- 3.85

47 52 55.6

Collimation + 6.40

9.004 - 7.94

9.0164 + 1.57

0.9494 - 4.04

9.9526 + 0.38

Collim
App. Berlin.

App. R.R.

52 34 51.35

- 2 3.27

- 44.6

- 4.1

52 31 59.4

47 52 55.6

+ 4 39 3.8

48° 36' 42.52

48° 36' 16.35

The Bara Thermo. for
 9° M.T. were
 used.

Feb. 5, 1862.

A.U.

All West

o' Eridani		ε Tauri		α Tauri		53 Eridani		μ Eridani	
	10.1		33.9		2.6		54.0		38.7
-7° 12'	13.7	+18° 52'	39.6	+16° 14'	6.3	-14° 35'	57.6	-3° 31'	42.2
	16.8		42.9		9.4		0.8		45.4
	20.4		46.6		13.0		4.5		49.0
4 6	23.7	4 21	50.1	4 29	16.5	4 33	7.9	4 39	52.2
	84.7		215.1		47.8		124.8		227.5
4 6	16.94	4 21	43.02	4 29	9.56	4 33	0.96	4 39	45.50
4 6	16.84	4 21	42.94	4 29	9.56	4 33	0.96	4 39	45.40
	16.97		43.02		9.67		0.94		45.44
pr. Gr. om. wire	16.99		43.10		9.59		0.99		45.59
± 0.041	16.94	± 0.048	42.97	± 0.062	9.42	± 0.028	0.95	± 0.054	45.58
	16.98		43.05		9.55		1.01		45.50
	16.94		43.02		9.58		0.96		45.50

Feb. 5-

A.H.

α Aurigae			ε Tauri			ε Uls Min. sp			α Aurigae			β Orionis		
	2.2			53.3			26.3			30.2			57.1	
+32° 57'	6.3		+21° 23'	57.1		+82° 15' 20"	50.7		+45° 51'	35.1		-8° 22'	0.6	
	10.0			0.4			17.0			39.7			3.8	
	14.2			4.1		1	39.6			44.8			7.4	
h 49	18.1	h 56		7.7	5	2	4.7	5	7	49.4	5	9	10.7	
	50.8			122.6			138.3			199.2			79.6	
h 49	10.16	h 56		0.52	5	1	15.66	5	7	39.84	5	9	3.92	
h 49	10.17	h 56		0.48	5	1	15.79	5	7	39.80	5	9	3.86	
	10.16			0.58			16.19			39.75			3.87	
	10.22			0.60			15.62			39.97			3.99	
± 0.027	10.11	± 0.058		0.41	± 0.260		15.59	± 0.057		39.87	± 0.038		3.93	
	10.15			0.54			15.12			39.82			3.96	
	10.16			0.52			15.66			39.84			3.92	

Feb. 5. 1862

Ill. Weil

AU			B. H. C. 1662			β Leporis			δ Orionis			α Leporis		
τ Orionis														
57.1			10.1			22.4			0.3			41.2		
- 7° 0'			+ 85° 7'			- 20° 52'			- 0° 24'			- 17° 53'		
0.6			52.2			26.0			3.8			44.8		
3.8			19			29.4			6.9			48.2		
7.3			20			33.3			10.4			51.8		
5- 12			5- 20			5- 23			5- 26			5- 27		
10.6			48.2			36.7			13.6			53.2		
79.4			146.1			147.8			35.0			241.2		
5- 12			5- 19			5- 23			5- 26			5- 27		
3.88			29.22			29.58			7.00			48.24		
5- 12			5- 19			5- 23			5- 26			5- 27		
3.83			28.60			29.58			6.98			48.22		
3.86			30.21			29.46			7.04			48.20		
pr. Er. one wire			28.68			29.60			7.09			48.40		
± 0.044			± 0.510			± 0.042			± 0.043			± 0.061		
3.84			28.75			29.62			6.96			48.19		
3.88			29.86			29.58			6.93			48.19		
3.88			29.22			29.56			7.00			48.24		

Feb. 5

AU

1861phae.p

	ϵ Orionis	*	α Columbae ^(translucent)	α Orionis		α Orionis		θ Aurigae	
	15.7		40.7	15.5		45.1		20.4	
-1° 18'	19.2	-34° 9'	44.8	-9° 43'	19.1 +14° 47'	48.6	+37° 12'	24.6	
	22.2		48.4	22.2		51.7		28.7	
	25.7		52.8	25.8		55.3		33.1	
5 30	28.9	5 35	56.7	5 42	29.3	5 48	58.6	5 51	37.2
	111.7		243.4	111.9		259.3		144.0	
5 30	22.34	5 35	48.68	5 42	22.38	5 48	57.86	5 51	28.80
5 30	22.38	5 35	48.78	5 42	22.28	5 48	52.01	5 51	28.79
	22.44		48.71	22.38		51.95		28.66	
	22.39		48.62	22.39		51.89		28.93	
± 0.061	22.26	± 0.044	48.65	± 0.065	22.31	± 0.089	51.75	± 0.065	28.79
	22.23		48.64	22.53		51.70		28.82	
	22.34		48.68	22.38		51.86		28.80	

Feb. 5. 1862

NH

Ill West

Geminorum		Geminorum		Columbae		Min. s.p.		Geminorum	
	46.8		35.5		40.2	15	45.0		49.1
+23° 16'	50.5	+22° 33'	39.2	-35° 6'	44.5	+86° 35' 9"	39.0	+20° 18'	52.8
	53.8		42.7		48.3	17	40.2		56.0
	57.6		46.5		52.7	18	31.7		59.8
5- 57	1.3	6	50.0	12	56.8	6	29.1	6	22
	210.0		213.9		242.5		185.0		221.2
5- 57	54.00	6	42.78	5	48.50	6	37.00	6	21
5- 57	54.07	6	42.74	6	48.37	6	37.46	6	21
	54.02		42.72		48.45		36.92		56.25
pr. En. on wire	54.00		42.90		48.53		37.06		57.20
±0.055	53.86 ± 0.047		42.78 ± 0.070		48.50 ± 0.254		37.15 ± 0.063		56.14 ± 0
	54.04		42.78		48.65		36.43		56.39
	54.00		42.78		48.50		37.00		56.24

Feb. 5-

AU

γ Geminae	ϵ Geminae	α Can. Maj.	β Can. Maj.	θ Can. Maj.
47.4	29.1	6.7	43.3	49.9
+16° 31' - 51.0	+25° 16' 33.1	-16° 32' 10.2	-32° 21' 47.4	-11° 52' 53.4
54.1	36.5	13.6	circled taken by	56.5
58.0	40.4	17.1	Mr. Safford	0.2
6 31 1.26	36 44.1	6 40 20.6	6 45 59.0?	6 48 3.5
211.7	183.2	68.2		163.5
6 30 54.34	6 36 36.64	6 40 13.64		6 47 56.70
6 30 54.37	6 36 36.49	6 40 13.67	6 45 51.21	6 47 56.73
54.38	36.69	13.58	51.23	56.71
54.29	36.71	13.79		56.69
± 0.049 54.42	± 0.066 36.60	± 0.069 13.52		± 0.013 56.69
54.24	36.72	13.64		56.69
54.34	36.64	13.64	51.22	56.70

Feb. 5. 1862

A.H.

Ill Wier

Geminorum		25 Camel. H		λ Geminorum		δ Geminorum		γ Can. Maj.	
	58.3	2	17.3		12.8		55.8	only find the 19	40.8
+16° 31'	2.0	2	43.7	+16° 47'	16.5	+22° 14'	59.5	Chase	29° 2'
	5.4	3	8.0		19.7		3.0		
	9.3	3	35.0		23.5		6.6		
6 57	12.8	4	0.8	7 11	26.8	7 13	10.2		
	87.8		104.8		99.3		135.1		
6 57	5.56	3	8.96	7 11	19.86	7 13	3.02		
6 57	5.27	3	9.66	7 11	19.78	7 13	3.02	7 19	48.44
	5.38		9.05		19.88		3.00		
pr. Eranis wile	5.59		9.46		19.89		3.20		
± 0.162	5.72 ± 0.439		8.08 ± 0.037		19.91 ± 0.076		2.89		
	5.84		8.54		19.82		2.99		
	5.56		8.96		19.86		3.02		48.44

Feb. 5

Ill. West

AK		" "		" "		" "		" "		" "	
α Semiorum		α Can Min		β Semiorum		ϵ Maj. Can.		γ Can Maj			
	49.8		8.1		54.7		14.5		—		
+32° 11	53.9	+5° 34	11.6	+28° 21	58.7	-28° 47	18.6	-15° 26	37.4		
	57.4		14.7		2.2		21.9		40.7		
	1.7		18.3		6.2		26.1		44.4		
7 27	5.5	7 33	21.5	7 38	10.0	6 54	29.8	6 58	48.0		
	168.3		74.2		131.8		110.9				
7 26	57.66	7 33	14.84	7 38	2.36	6 54	22.18				
7 26	57.70	7 33	14.82	7 38	2.29	6 54	22.13	6 58	—		
	57.72		14.85		2.38		22.29		40.76		
	57.62		14.89		2.41		22.11		40.89		
± 0.047	57.64	± 0.023	14.85	± 0.041	2.30	± 0.047	22.18	± 0.078	40.84		
	57.62		14.80		2.42		22.19		41.08		
	57.66		14.84		2.36		22.18		40.89		

The mean pr. Er. of all the stars whose declinations do not exceed $\pm 50^\circ$ for one wire is ± 0.055

1862. Feb. 7.

M.

M. West

Urs Min		γ Eridani		δ Eridani		γ Tauri		β Tauri	
4	52.4		42.9		15.4		4.2		16.1
7	13.4	-13° 54'	46.3	-7° 12'	18.9	+15° 17'	7.8	+17° 7'	19.8
9	20.3		49.6		22.1		10.9		23.0
11	42.8		53.2		25.6		14.7		26.7
13	54.0	3 52	56.6	4 6	28.9	4 13	18.0	4 17	30.2
	182.9		248.6		110.9		55.6		115.8
9	24.58	3 52	49.72	4 6	22.18	4 13	11.12	4 17	23.16
9	23.7	3 52	49.82	4 6	22.17	4 13	11.16	4 17	23.13
	25.3		49.66		22.19		11.18		23.22
for Er. one wire	27.6		49.79		22.28		11.09		23.19
± 1.327	24.9	± 0.051	49.68	± 0.044	22.16	± 0.047	11.16	± 0.027	23.13
	21.4		49.65		22.10		11.01		23.14
	24.58		49.72		22.18		11.12		23.16

Rev. Micro.		Rev.	
1	53.9	1	31.7
3	25.6		
6	22.3	1	31.3
7	53.6		
7	41.1	1	32.1
10	13.2		
11	4.5	1	33.2
12	37.7		

Feb. 7

AU		" Tauri		53 Eridani		" Anigae		" Tauri	
	41.3		7.9		59.3		7.7		58.7
+18° 52'	44.9	+16° 14'	11.5	-14° 35'	2.9	+32° 57'	11.7	+21° 23'	2.3
	48.1		14.6		6.0		15.4		5.7
	51.9		18.4		9.7		19.7		9.4
4 21	55.3	4 29	21.8	4 33	13.4	4 49	23.5	4 58	13.0
	241.5		74.2		91.0		78.0		89.1
4 21	48.30	4 29	14.84	4 33	6.20	4 49	15.60	4 58	5.82
4 21	48.40	4 29	14.90	4 33	6.24	4 49	15.70		
	48.35		14.90		6.27		15.60		
	48.29		14.79		6.19		15.61		
± 0.058	48.29 ± 0.041		14.84 ± 0.038		6.17 ± 0.059		15.63		
	48.17		14.77		6.13		15.46		
	48.30		14.84		6.20		15.60		

Feb. 7. 1862

All		Ill Wad											
E. W. Min sp		" Anisjeu		" β Orionis		" Orionis		" B. & C. 1662 (fair)					
0	32.0		35.7		2.4		2.4		18		15.1		
+82° 15' 2"	55.6	+45° 51'	40.5	-8° 22'	5.9	-7° 0'	5.9	+85° 7'	18		55.0		-2
1	22.1		44.9		9.0		9.1		19		31.7		
1	44.4		50.1		12.6		12.5		20		14.4		
5-	2	5	54.6	5-	9	15.9	5-	12	15.8	5-	20	32.9	5-
	165.1		225.8		45.8		45.7				169.1		
5	1	5	45.16	5	9	9.16	5	12	9.14	5	19	33.82	5

Feb. 7

AU

β Leporis		δ Orionis		α Leporis		ε Orionis		α Columbae	
	27.6		5.5		46.4		20.9		45.8
-20° 52'	31.4	-0° 24'	9.0	-17° 58'	50.1	-1° 18'	24.3	-34° 9'	50.1
	34.5		12.1		53.3		27.5		53.7
	38.4		15.7		57.0		31.1		58.1
5 23	41.9	5 26	18.9	4 28	0.4	5 30	34.2	5 36	2.0
	173.8		67.2		207.2		138.0		209.7
5 23	34.76	5 26	12.24	4 27	53.44	5 30	27.60	5 35	53.94

Feb. 7, 1862.

A.H.

M. West

α Orionis		α Orionis		β Aurigae		γ Gemmae		δ Orionis	
	20.8		50.3		26.7		51.8		49.8
-9° 43	24.3	+7° 23	53.8	+37° 12	30.0	+23° 16	55.7	+14° 47	53.4
	27.5		57.0		34.0		59.1		56.7
	31.1		0.6		38.4		2.8		0.2
5 42	34.3	5 49	3.8	5 57	42.5	5 57	6.3	6 1	3.6
	138.0		165.5		170.6		175.7		163.7
5 42	27.60	5 48	57.10	5 51	34.12	5 56	59.14	6 0	56.74

Feb. 7

AK

1861 phase. p.

α Columbae	δ Urs. Min. sp	γ Geminorum	ϵ Geminorum	α Can. Maj.	
45.4	15	51.2	52.7	34.4	12.1
-35° 6' 49.6	81° 35' 56" 16	45.4	+16° 31' 56.2	+25° 16' 38.2	-16° 32' 15.7
53.4	17	46.1	59.5	41.7	19.0
57.8	18	38.3	3.2	45.7	22.8
6 13 2.0	6 19 36.1	6 31 6.5	6 36 49.2	6 40 26.0	
208.2		217.1	178.1	209.2	95.6
6 12 53.64	6 17 43.42	6 30 59.62	6 36 41.84	6 40 19.12	

Feb. 7, 1862

A H

M W

132 Can Maj			4 Can Maj			2 Can Maj			5 Geminorum			25 Camel. H		
		48.6			55.0			19.8			3.7		2	22.2
-32°	21'	52.7	-11°	52'	58.6	-28°	47'	23.7	+20°	46'	7.4	+22°	40'	48.6
		56.4			1.9			27.3			10.7		3	13.8
		0.4			5.4			31.4			14.5		3	41.5
6	46	4.5	6	49	8.7	6	54	35.1	6	57	17.9	7	4	7.1
		162.6			129.6			137.3			54.2			133.2
6	47	56.52	6	49	1.92	6	54	27.46	6	57	10.84	7	3	14.64

Feb. 7

A.U.

	λ Geminaorum	γ Can "Maj.	α Can "Men	δ Geminaorum	α Geminaorum
2	18.0	45.9	13.4	1.0	55.1
6	+16° 47 21.7	-29° 2' 49.8	+5° 34 16.7	+22° 14 4.7	+32° 11 59.1
8	24.9	53.5	19.9	8.1	2.7
5	28.7	57.6	23.4	11.8	6.9
1	7 11. 32.0	7 20 1.2	7 33 26.7	7 13 15.4	7 27 10.7
2	125.3	208.0	100.1	41.0	134.5
64	7 11 25.06	7 19 53.60	7 33 20.02	7 13 8.20	7 27 2.96

Feb. 7. 1862

A₁₁M₁₁ Mar

1861phae.p

3 Gemmenorum		156 Camelo. Bode		μ Eridani				
	0.0	43	43.3		44.1			
+28° 21	4.0	+84° 27'	44	19.6	-3° 31	47.6		
	7.7		44	52.2		50.7		
	11.6		45	28.1		54.2		
7	38	15.2	7	46	8.3	4	39	57.5
		38.5			146.5			254.1
7	38	7.70	7	44	53.30	4	39	50.82

July 8. 1862

Continued on next page

MS.

Polari	α Tricis	ζ Persei	γ Eridani	1235 B.H.
1 4 58.3	32.7	36.7	48.3	3 54 22.5
7 12.5	36.4	40.8	48.8	55 16.6
9 19.4	39.8	44.4	52.0	55 41.0
11 48.6	43.6	48.5	55.8	58 23.0
Cloudy	47.2	52.4	59.1	57 1.7
	199.7	222.8	262.0	92.2
1 9	2 0 39.94	3 46 44.50	3 52 52.20	3 55 42.44

faint

Feb 8. 1862

205

h 2315.5 P

3

58 41.8

59 12.1

59 39.2

o'Fredani

17.8

21.4

24.3

28.1

31.3

122.9

 γ Tauri

6.6

10.2

13.3

16.9

20.4

67.4

 δ Tauri

8.6

12.3

15.4

19.3

22.6

78.2

 β Tauri

18.4

22.2

25.3

28.9

32.4

127.2

41 '6 24.58

4 13 13.48

4 16 15.64

4 17 25.44

Very faint

Continued on next page

α Tau	α Tau	δ Eridani	π Orion	δ Orion
43.6	10.4	1.6	23.3	52.7
47.4	13.9	5.4	26.8	56.2
50.5	17.2	8.6	29.9	59.2
54.2	20.8	12.2	33.5	2.9
57.7	24.2	15.4	36.8	6.2
253.4	86.5	42.2	150.3	177.2
4' 21 50.68	4' 29 17.30	4' 32 8.64	4' 42 30.06	5' 48 59.44

faint

1861phae.proj...37H

Feb. 8 1862

245

Q. Aurigae

v Orion

28.2	52.2
32.6	55.7
36.4	59.1
40.9	2.7
44.9	6.1
143.0	175.8

5	51	36.60	6	0	59.16
---	----	-------	---	---	-------

Feb. 21

All

✓ Orionis (cloudy)

μ Geminae

33.6

30.5

39.0

34.0

42.6

37.8

45.9

41.3

6 1

49.4

6

16

45.0

212.5

188.6

6 1

42.30

6

16

37.72

59

48.95

14

39.27

Feb. 25. 1862.

All.		Ill. East													
S. W. Min. S. P.		γ Luminos.		α Can. Maj.		θ Can. Maj.		ε Can. Maj.							
16	59.9		54.2		13.7		56.8		21.5						
17	56.9		57.6		17.2		0.1		25.0						
18	49.4		1.6		20.7		3.4		29.2						
19	51.3		4.7		24.1		7.0		32.6						
6 20	44.8	6 32	8.2	6 41	27.6	6 50	10.5	6 55	36.6						
	262.3		126.3		103.3		78.2		144.9						
6 18	52.46	6 32	1.26	6 41	20.66	6 50	3.64	6 55	28.98						

Feb. 25

Mt. East

All		"		"		"		"	
5 Gemini		γ Can. Maj.		α Gemini		α Can. Min.		β Gemini	
5	5.3		41.0		56.9		15.1		1.8
0	8.7		44.2		0.7		18.3		5.5
2	12.6		48.1		4.6		22.0		13.1
6	16.0		51.2		8.5		25.2		9.6
6	58 19.7	6	59 54.8	7	28 12.5	7	34 28.6	7	39 17.2
9	62.3		239.3		83.2		109.2		47.2
8	6 58 12.46	6	59 47.86	7	28 4.64	7	34 21.84	7	39 9.44

1862. Mar. 7

SH

Ill West

Mar. 19

AM

Ill East

6 Cancri

15 Argus

2 Ophiuchi

42.0

19.7

20.0

45.9

23.6

23.3

49.3

26.9

27.1

53.5

30.9

30.2

7	57	57.0	8	4	34.4	17	31	33.7
		247.7			135.7			134.3

7	57	49.54	8	4	27.14	17	31	26.86
---	----	-------	---	---	-------	----	----	-------

Mar. 11, 1862

Ill. East

A.H.		Polaris		Can Maj.		132 Can Maj		Can Maj.		Can Maj.	
	6	15.3		53.8		30.2		36.9		1.4	
	8	22.0		57.0		34.0		40.2		5.2	
	10	51.4		1.0		38.4		44.1		9.4	
	12	53.3		4.2		42.0		47.1		12.8	
1	15	13.9	6	42	7.9	6	47	46.1	6	50	50.6
		155.9			123.9			191.7			218.9
											45.5
1	10	43.1 ⁸	6	42	0.78	6	47	38.34	6	50	43.78
1	8	4.25		39	5.87					53	14.07

Rev. Mic.

1	3	35.1	$r = 1^{\circ}$	32.2	Hor. + 42°
	5	7.3			
	7	29.9		1	29.3
	8	39.2		1	33.3
	10	14.1		1	30.3
	11	47.4			
	12	23.0			
	13	53.3			

1862 Mar. 11

All

All East

1861phae.p

♂ Geminor				25 Canu H.		♂ Geminor		γ Can Maj.		♂ Geminor				
	45.6			4	0.8		43.0		27.8		37.0			
	49.0			4	25.9		46.3		31.5		40.8			
	53.0			4	55.2		50.4		35.7		45.0			
	56.2			5	18.0		53.8		39.1		48.7			
6	58	59.9	7	5	45.7	7	14	57.5	7	21	43.0	7	28	52.7
	263.7				145.6			251.0			177.1			224.2
6	58	52.74	7	4	53.12	7	14	50.20	7	21	35.42	7	28	44.84
				2	1.34		11	55.32				found	25	50.02

Mar. 11.

AU

All East

~~X Gemini~~
~~Blanc~~

"

Can. Max

 β Gemini

156 Cam. B.

5th Vir Maj.

152.1

42.1

45- 21.3

52.5

31.4

155.7

45.7

45- 55.3

56.2

38.0

158.0

50.0

46- 33.4

0.3

45.7

152.4

53.4

47- 4.0

3.8

51.9

157.3

7 39 57.3

47- 40.4

7 58 7.6

7 21 59.1

159.5

248.5

154.4

120.4

226.1

154.70

7 39 49.70

46- 30.88

7 58 0.08

8 21 45.22

154.70

36 54.89

43- 40.32

55 5.21

n 0.341 c 0.050

slammy	6319	-05	254.86	-54.94	-08
E	653	-13	54.90	54.96	-06
β Gemini	712	+19	55.07	54.99	+08
[H]	726	.27	55.09	54.98	[+11]
β	737	.24	55.05	55.04	+01
X	755	.24	55.11	55.07	+14
	715		254.998		
Rate ad.			+ .105		

W₃

F

[H]

Mar. 24. 1862

A.U.

Jawi

21.9

25.4

29.2

32.4

4 27 36.1

145.0

4 27 29.00

4 28 1.65

Sawing

Mar. 16. 1862 E.C. run down.

March 24. 1862 M. 2.

Continued on next page.

JMS.

Polaris	β Orionis	β Tauri	δ Orionis	α Leporis
1 41 52.2	16.2	55.7	19.7	0.5
7 23.6	19.55	59.3	22.8	3.8
9 22.0	23.45	3.5	26.6	7.7
	26.45	7.0	29.5	10.8
	29.9	10.9	33.0	14.4
	115.55	136.4	131.7	37.2
7 13.43	5 7 23.11	5 17 3.28	5 24 26.34	5 26 7.44
6 0.89	15.72	36.04	24 58.94	39.93
insten. +14.59	+ .05	+ .25	+ .09	.00
Choker. [-32.87]	- 32.56	- 32.51	- 32.51	+ 32.49
Int 32.96	+ 32.53	+ 32.51	+ 32.49	+ 32.49
Dev. +0.09	- 0.03	0.00	- 0.02	0.00

This is not valuable
as an observation

X
T+d
put
Feyja
8' 56" 34.68105 8.3947
Lg 1.6051
10.0 + 11.04 1.0129
10.0 + 3.55 0.5498
13+22.07 7 12.9
C-10.3 13.32
B-210.8 14.17
13.43

1862 Nov 24 continued

5 Ori min	2 Columbae	2 Canis majoris	5 Spina	4 Canis
34.95	59.7	33.8	18.0	53.4
38.2	3.65	37.6	21.5	56.8
41.9	8.25	41.75	25.5	59.55
44.9	11.8	45.25	28.7	62.8
48.4	15.95	49.2	32.45	66.35
208.85	99.35	207.6	126.15	1.90
5 28 41.67	5 34 7.87	6 52 41.82	6 55 25.23	6 57 0.38
29 14.21	[40.26]	53 13.78		57 32.73
inst. cor + .08	-.08	-.05	+ .20	+ .02
Chor. Cor. obs - 32.46	[32.47]	- 32.31		- 32.33
C.L. 'mt + 32.49	32.48	+ 32.34	+ 32.33	32.33
Dev. + 0.03	(+ 0.01)	+ 0.03		0.00
App. RR obs.			6 55 57.76	

continued on next page.

25 Lame 1H	1 Geminorum	8 —	2 Geminorum	2 Cassiopeia
	32.9	15.6	14.6	9.65
	36.1		19.0	13.1
7 1 26.0	39.9	22.7		17.8
	42.9	26.2	20.9	
	46.55	29.8		25.45
	198.35	112.3		
		6		
1 23.84	7 9 39.67	7 11 22.46	7 25 17.35	7 31 34.48
7 1 59.53		55.12	[49.76]	32 [6.86]
+ 3.06	+ 17	+ .21	+ .28	+ .11
[32.59]		- 32.48	[-32.13]	[-32.27]
+ 32.32	+ 32.31	32.33	32.28	32.27
- 11.27		- 0.12	+ 0.15	0.00
	7 10 12.15		0.0725	
			17.22 +4.12	
			17.07 -3.83	
			17.145 preceding	
			A 17.56 +7.91	
			6 57 -0.29	
			2 54 -7.91	
			17.537 following	
			17.537 2 wires	
			319 3	

Cloudy; no
other wires used

^{105° 30'}
Re observed

Feb 26 30 9.7744
+ 31.9 1.5041

Temp 0

S' 83° 15.09 by a 9.0702

by 0.9269

at 2.31 0.3647

and 75 9.8743

C +2.12

2 Geminorum is ob-
served in Bessel's and
Struve's manner; the
each component is
got on a portion
of the wires.

It seems probable
that this method
with the chronograph is
liable to no personal
equation different
from other stars.
This is however to
be determined by
actual observation of
the differences between the

Feb 24

7

geminorum

5 49m

14.6	25.6
16.2	29.25
22.5	33.45
26.0	37.0
29.9	41.0
111.2	166.3

7 36	22.24	21	6	33.16
36	54.65		7	4.32
	+ 25			+ 26
	- 32.16			- 30.80
Chal	+ 32.26			+ 30.78
	+ 0.10			- 0.02

Chal Cor. observed

5 8	+ 32.56	5 18	+ 32.51
25	32.51	7 12	32.41
27	32.49	7 37	32.16
29	32.46		
6 53	32.31		
57	32.33		

5 53	+ 32.443	6 642	+ 32.360
6 42	32.360	3	

To be rejected.
too far from
clock story.

6 9	+ 32.415	9	
6 23	32.376	11	Final value
	Deviations		Rate + 109

Obs	C.E	C.C	
115	Blonin	-03	- 32.56 + 32.51 - .05 F
	Stunin	.00	32.51 32.50 - .01 F
	Blonin	-02	32.51 32.48 - .03
	Alipon	.00	32.49 32.48 + .01
	Blonin	+03	32.46 32.47 + .01
	Stunin	+03	32.31 32.32 + .01
	1	.00	32.33 32.31 - .02
	Spunin	-12	32.45 32.79 - .16
	2	+15	32.13 32.26 + .13 F
	Stunin	.00	32.27 32.25 - .02 F
	Blonin	+10	32.16 32.24 + .08 F

1961 March 26. M. 2.

continued on next page

M5

α M ₄₈ minoris	β Tauri	δ Orionis	α Leporis	ϵ Orionis
	0.8 26.8	24.8	5.6	40.1
4 53.0	4.5 28.5	28.0	8.9	43.3
7 26.0	8.6 32.6	31.7	12.8	47.9
9 24.1	12.1 36.1	34.7	16.0	50.0
11 44.7	16.0 40.0	38.2	19.7	53.5
	49.0 162.0	157.4	63.0	233.9
inst				
1 7 14.42	5 17 8.40	5 24 31.48	5 26 12.60	5 28 46.78
inst. 8 0.44	17 36.00	58.91	59.89	14.18
inst. cor. +15.89	+0.27	+0.09	+0.02	+0.09
clock error 10. -30.13	-27.33	-27.34	-27.30	-27.31
C. Cont. +27.41	+27.37	+27.35	+27.34	+27.33
Decorati -2.32	+0.04	+0.01	+0.04	+0.02

Reduced to mean

B	7 13.7
C	15.7
D	12.4
E	14.9

From all the polar stars
not single

δ 88° 36' 40.0" 1.6054
C. 1.6052

alt' +12.25 1.0680
lat' +3.56 0.529

62 Nov 26 continued

23" 6m

L Orionis	A Antigae	γ Geminorum	sp	Altair	γ Geminorum
9.5	46.7	0.1	6	14 27.2	13.7
12.8	46.9	3.5		15 25.8	17.0
16.6	53.5	7.6		16 18.9	20.9
19.6	57.3	10.9		17 18.1	24.2
23.1	1.7	14.6		18 12.5	27.9
51.6	206.1	36.7		99.5	103.7
5 47 16.32	5 49 53.22	6 1 7.34	6	16 19.90	6 20 20.74
43.79				16 41.09	
int. wr. + 0.13	+ 0.34	+ 0.22		+ 6.59	+ 0.21
clock error - 27.34				[-27.78]	
C. G. int + 27.31	+ 27.30	+ 27.27		+ 27.25	+ 27.25
Drift - 0.03				- 0.53	
App. RR dr.	5 50 20.86	6 1 34.83			6 20 48.20

5^h 41^m Clock error - 27.305 N. star 6

86 35 50.4²⁴ 1.2258.
1.2266.
+ 5.18 0.7087
+ 1.48 0.171

continued on next page

	57 Cephei Novellii	2 Camis majoris	X Leonis	ψ Ursae majoris	δ Leonis
1	32 5.7	31.2	23.1	20.4	14.8
33	13.4	34.7	26.4	25.1	18.3
34	31.0	38.5	30.2	30.2	22.4
35	34.0	41.7	33.2	34.7	25.6
36	44.8	45.4	36.7	39.6	29.3
	128.9	191.5	149.6	150.0	110.4
6	34 25.78	38 38.30	10 57 29.92	11 1 30.00	11 6 22.08
1. [Nov.] 34	57.44	39 5.58	56.78		49.06
	+ 8.16	+ 0.00	+ 0.13	+ 0.42	+ 0.27
	[-25.32]	-27.28	-26.73		-26.79
	+27.22	+27.21	+26.74	+26.74	+26.73
	+1.90	-0.07	+0.01		-0.06
				11 1 57.16	

98 6.5
 29 31 9.6925
 + 26.2 1.4269
 + 0.1
 67 15 6. 1.3188
 1.3193
 + 6.33 0.8017
 + 1.83 0.260

9.996
 0.149
 9.679
 9.093
 0.301
 0.124

4.62 Mch 16 continued

W5

J Crateris		y Crateris		Saturn		202 Camelopard B		39 Cephei New St.	
55.9		28.7		12 57.6	22 58.8	20 52.0		25 18.8	
54.3		32.1		0.7	2.0	21 14.9		26 15.0	
3.1		36.0		4.5	5.8	41.6		27 4.8	
6.3		39.1		7.7	8.9	22 2.5		28 8.0	
9.7		42.7		11.0	12.1	27.2		29 0.6	
134.3		178.6				138.4		47.2	
Contre.									
11 12 286	11 17 35.72	11 19 4.91	11 21 39.64	11 27 9.44					
29.54				29 27 29.10					
+0.02	1.00	+0.13	+2.77	-6.50					
-26.70		-	[27.36]	[-26.16]					
+26.72	+26.71	+26.71	+26.70	+26.69					
+0.02			-0.66	+0.53					
11 18 2.43	11 19 31.75								

See from Cat
Mch.

171 32	0.6647	357 52	
101 16	9.9918 6639.	282 36	9.9696.
+53.3	1.7264 6683.	-53.9	1.7262.
81 53	5.05 8.8920	81 32 52.34	1.2195 "
	0.8573		1.2203 "
12.02	11.14	+5.04	0.7024 "
0.27	0.17	-1.46	0.1643 "
8.69			
0.14			
21.12	11.35		

Continued on next page

ST.	α Ursa major	β Leonis	β Virginis	γ Ursa major	309 Alpha B. sp. Gr 4193 sp		
1	11.5	30.4	0.0	58.6			
2	16.5	33.8	3.3	4.2	11	57	45.1
3	21.8	37.4	6.9	10.5		52	26.4
4	26.5	40.7	9.9	15.7		53	19.8
5	31.8	44.3	13.4	21.6			
6	108.1	186.6	33.5	110.6			(91.3)
7							
8							
9							
10							
11	38 21.62	41 37.32	43 6.70	46 10.12	52 30.43		
12		42 4.19	44 33.41	47 37.47	53 58.83		
13	+0.48	+0.19	+0.10	+0.58	-5.53		
14		-26.69	-26.69	[-26.77]	[-25.93]		
15	+26.67	+26.66	+26.66	+26.66	+26.64		
16		-0.03	+0.05	-0.11	+0.71		
17							
18							
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97							
98							
99							
100							

Reduced to mean

α	11 42 30.9
β	29.9
γ	30.5

358 13							
288 57	9.9756						
-57.3	1.7106						
0.146	85 56 24.7	4.1489					
0.236		1.1504					
+0.627	9.629	+4.29	0.6318				
+0.152	9.180	+1.24	0.0946				
0.054							
0.179							
+0.344	9.537						
+0.123	9.123						

562 Nov 26 continued

745

ϵ Corvi

BK 4150

BK 4165

δ Corvi

η Corvi

31.2
34.7
38.6
42.0
45.8
192.3

12 17 27.8
12 44.1
13 45.9
~~18~~

12 10 17.9
12 17.8
14 35.4
16 29.0
18 37.2
136.5

13.1
16.6
20.3
23.6
27.2
100.8

27.2
30.7
34.5
37.6
41.3
171.3

12 2 38.46
3 5.04
- 0.03
not used] - 26.61?
+ 26.63
Dev. [+ 0.02]
Ap. Mass.

12 12 39.27
13 14.63
+ 8.02
[- 27.34]
+ 26.61
- 0.73

12 14 27.30
15 7.92
+ 14.59
[- 25.93]
26.60
+ 11.67

12 22 20.16
~~11~~
0.00
+ 26.59
12 22 46.75
C.H.J. + 0.10

12 24 34.26
0.00
+ 26.59
12 25 0.85

Red. to mean

The window
cut off a portion
of the object glass.
The star appeared
no

12 12 39.3
C 39.0
D 39.5

183 19
114 2 9.9606
+ 49.6 1.6954
87 12 0.4 1.3106
or 1.3111
+ 6.22 0.7925
+ 1.60 0.2557

183 17
114 31 9.9589
+ 49.4 1.6937
88 27 43.4 1.5711
or 1.5712
11.32
+ 3.27
+ 2.27
0.552

β Corvi	α Capriopisae S.P	γ Virginis	ϵ Capri maj.	ϵ Virginis
37.8	3.6	9.9	21.5	47.9
41.6	9.5	—	27.3	51.3
45.6	15.2	16.8	34.2	55.0
48.9	21.8	—	—	58.0
51.6	27.3	23.2	—	1.6
225.5	77.4	—	—	253.8

12 26 45.10	12 32 15.48	12 34 16.59	12 47 33.70	12 54 54.76
[27 11.59]	41.43	43.18		
-0.03	1.1 1-0.60	+0.09	+0.62	+0.16
-26.52?	[-26.55]	-26.50		
+26.58	+26.57	+26.57	+26.55	+26.54
+0.06	+0.02	+0.07		
			12 48 0.87	12 55 21.45
			C.d.J +0.07	C.d.J -0.02

See previous
remark to ϵ
Corvi. There is
some trouble with
the window

See note to
Castor, Mrh. 24. ink

0.166
0.250
9.151
9.196

0.162
1.2605
+0.66
+0.16
9.165
9.204
A +12.20 33.70
B +6.36 18.66
C -0.45 9.75

1861 March 16 M-S

finis

445

13 Cephei New sp	5b L Myae maj sp	d Virginis	BH 4498	L Myae maj sp
13 3 18.2	13 3 18.2	15.3	18 36.8	54 36.4
5 36.4	5 36.4	28.5	19 16.8	44.2
10 0	10 0	32.4	20 5.4	50.4
10 9.5	10 9.5	35.4	43.5	58.9
12 15.5	12 15.5	38.8	21 27.1	55 5.5
		160.4	131.6	195.8
12 49 57.1				
12 49 57.29	13 7 47.50	13 17 32.08	13 20 2.32	22 54 57.16
50 18.29	8 0.34	58.66	20 34.78	55 15.56
+5.82	-15.69	+0.03	+4.95	-0.77
[-26.02]	[-28.53]	-26.55	[-27.51]	[-25.17]
+26.54	+26.57	+26.49	+26.48	[+26.65]
Leitch +0.52	-2.02	-0.06	-1.03	[+0.28]

An error in the working catalogue was corrected.

Rev to mean

E	13	7	48.5
D			47.1
B			48.8
A			45.6

12 35	0.3029		
303 19	9.977		
	9.9220 n		
	1.2205		
	1.6568 n		
	0.350		
85 32 27.3	1.1083 n	86 32 42.5	1.6051 n
	2.77		
	1.1096 n		1.605 n
+3.69	0.5912 n	-12.25	1.0880 n
+1.13	0.0536 n	-3.44	0.5292 n

200 9	0.4060 n		
+6.61			
300 53	9.9996 n		
+0.47	9.8786		
	9.9996 n		
+14.89+41.0	1.6134		
88 28 17.4	1.1013		
+0.06	1.1029		
13 20 12.08			
0.66 n	+6.61 0.5842		
0.66 n	+0.06 0.0619	+0.58	
+3.84			
+1.11			
0.66 n	+0.66		
0.66 n	+0.06		
	-0.04		
		+0.19	
			0.283
			0.336
			9.766
			9.280

Corrections
Clock ~~From~~
North South

517	+27.33	525	+27.34
548	27.34	527	27.30
1058	26.73	529	27.31
116	26.79	639	27.28
1142	26.69	1112	26.70
1144	26.61	1234	26.50
		1318	26.55

54

155

56

254

N.	926	+26.915	6
S.	836	26.997	7
	859	+26.769	13
	925	26.920	15

26.910

Preceding rate
Following "
Adopted

+2.576
-2.632
-2.604
-0.1085

Corrected l. Cor

54 +27.387
6 27.278
7 27.180
11 26.736
12 26.628
13 +26.549

Deviation
Sec 26

Corrected
"

β Tauri	+04	+04
δ Orion	+01	+00
ϵ Leporis	+04	+04
ζ Orion	+02	+03
δ —	-03	-04
ϵ Lami	-07	-07
χ Lami	+01	+01
δ —	-06	-06
δ Crateri	+02	+02
β Leonis	-03	-03
β Virgin	+05	+05
ζ Corvi	+02	+01
β —	+06	+06
γ Virgin	+07	+07
χ —	-06	-06

116

1862. Mar. 27

All

Ill. East

At U.S. Maj.			γ Cancii			δ Cancii			Anargma			Anargma		
		35.8			14.4			21.2			3.1			6.5
		43.2			17.7			24.5	+27° 20'		6.6	+27° 26'		10.1
		52.4			21.7			28.6			10.7			14.5
		59.6			25.0			31.8			14.2			17.8
8	22	7.8	8	24.	28.5	8	36	35.5	8	42	18.0	8	45	21.7
		198.8			107.3			141.6			52.6			70.6
8	21	51.76	8	24	21.46	8	36	28.32	8	42	10.52	8	45	14.12
					46.10									

(Hourly Rate of EC. + 5.110)

Mar. 27

Ill. East														
M.		Hydras		+ Vir Maj		o Leonis		E Leonis						
Anonyma														
		38.4		19.7		4.6		18.4		31.7				
+27° 27'		41.9		22.9		9.7		21.7		35.3				
		46.2		26.7		15.7		25.6		39.5				
		49.6		29.7		20.7		28.6		42.8				
48	45	53.5	9	20	33.3	9	23	26.5	9	33	32.1	9	37	46.3
		229.6			132.3			77.2			126.4			195.6
46	45	45.92	9	20	26.46	9	23	15.44	9	33	25.28	9	37	39.12
					50.92			[40.25]					38	3.75

1862. Mar. 27

Ill. East

All				30 Cam. H.				μ Hydrae				p. Leonis			
μ Leonis															
		25.7			12	44.3			56.6				4.3		
		29.1			13	11.3			59.9				7.6		
		33.4			13	44.0			3.7				11.3		
		36.7			14	9.5			7.0				14.5		
9	44	40.6	40		14	38.1	10	19	10.5	10	25		18.0		
		165.5				147.2			137.7				55.7		
9	44	33.10	10		13	41.44	10	19	3.54	10	25		11.14		
					14	8.97							35.50		

21
7
24
10
25.23
7.12

η Leonis .21	24.43	8.25	24.50	+01
μ Hydrae .05	24.44	9.21	24.40	-09
Edmonia .23	24.40	9.38	24.37	-03
9 — .14	24.22	10.26	24.28	+06
	24.385	9.28		

Pro late 0.1062 motion for R +
0.117
0.112

11, 5

$\delta\theta_{\text{monis}}$ $\beta\theta_{\text{anti}}$ $\delta\theta_{\text{monis}}$ $\times\theta_{\text{spin}}$ $\delta\theta_{\text{monis}}$ $\times\theta_{\text{monis}}$ $\times\theta_{\text{monis}}$ $\mu\theta_{\text{spin}}$ $\gamma\theta_{\text{anti}}$ $\delta\theta_{\text{anti}}$

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$$l = \frac{1}{\lg \alpha - \lg \alpha'}$$

$$K = \frac{\sec \delta - \sec \delta'}{\lg \alpha - \lg \alpha'}$$

$$= \frac{\sec \delta' \cos \alpha'}{\sin(\alpha - \alpha')}$$

$$K = \frac{\cos \alpha' - \cos \alpha}{\sin(\alpha - \alpha')} = \frac{2 \sin(\alpha - \alpha') \sin(\alpha + \alpha')}{2 \sin(\alpha - \alpha') \cos(\alpha - \alpha')}$$

$$= \frac{\sec \alpha'}{\cos(\alpha - \alpha')}$$

$$K = \frac{\sec \alpha' \cos(\alpha + \alpha')}{\cos(\alpha - \alpha')}$$

1851

To observe following Reference - Stars for
Orion - Zones.

	<u>1857.0</u>
Wise 597	5 24 33 - 5 49 !
787	5 31 25 - 5 8
824	5 32 41 - 5 9 !
863	5 33 52 - 5 38

6

Pulsara East of Cambridge 6^h 46^m

1861phae.proj.:...37H

Log A. German notation								
Camb. S.D. T.	Log A + n	Log B	Log C	Log D.	$\tau + n$		Log γ	I
	9.9990					1.5862 _n		
Jan 13 5 14	0.4154 _n	9.212 _n	0.9780 _n	1.2722	-2.963	1.9973	1.5929	281 22
	9.662					1.5536 _n		
31 7 38	0.4049 _n	9.669 _n	1.0994 _n	1.1010	-2.914	1.1152	1.5806	290 1
	9.6676					1.5663 _n		
Feb. 5 5 14	0.4039 _n	9.696 _n	1.1376	1.1440	-2.900	1.1530	1.5965	291 7
	9.6716					1.5721 _n		
7 5 14	0.4030 _n	9.645 _n	1.1573	1.1269	-2.895	1.1646	1.6030	291 22
	9.6760					1.5744 _n		
8 5 14	0.4024 _n	9.629 _n	1.1578	1.1180	-2.892	1.1704	1.6058	291 32
	9.7177					1.6211 _n		
15 7 38	0.3941 _n	9.745 _n	1.2381 _n	0.8978	-2.845	1.2531	1.6577	293 12
	9.7368					1.6633 _n		
Mar. 11 7 38	0.3895 _n	9.810 _n	1.2680 _n	0.4933	-2.807	1.2629	1.6981	292 37
	9.7591					1.6999 _n		
24 7 38	0.3848 _n	9.726 _n	1.2720	0.1664 _n	-2.772	1.2862	1.7297	292 00
	9.7677					1.7092 _n		
26 7 38	0.3840 _n	9.768 _n	1.2706	0.3361 _n	-2.766	1.2840	1.7344	290 56
	9.7630					1.7057 _n		
26 12 26	0.3839 _n	9.772 _n	1.2705 _n	0.3499 _n	-2.766	1.2840	1.7348	290 54
	9.7636					1.7087 _n		
27 10 2	0.3838 _n	9.786 _n	1.2697 _n	0.4071 _n	-2.763	1.2837	1.7370	290 37

$$L' = \alpha 1465 + [A+n]a + B\beta + C\gamma + D\delta + (\tau+n)\epsilon + (\tau+n)^2 \nu$$

$$\delta' = \delta 1865 + \gamma \sin [T' + \alpha] \quad [\text{sufficiently accurate for all purposes of reduction}]$$

where $n = -3$ for 1862; -2 for 1863; -1 for 1864.

In the English notation

C D A B
A B C D

correspond to

and

a d a d
a d c d

in the German.

1 Ceni major

$$\begin{array}{r}
 104 \quad 14 \quad 36.14 \\
 \hline
 5 \quad 9.19 \\
 \hline
 104 \quad 22 \quad 45.34 = 6.57 \quad 31.016 \\
 \hline
 \quad \quad \quad -0.014
 \end{array}$$

$$\begin{array}{r}
 1836. \text{ Pb.} \quad 6 \quad 56 \quad 20.33 \\
 \quad \quad \quad + 0.05 \\
 \hline
 6 \quad 56 \quad 20.38 \\
 \quad \quad \quad 52 \quad 40.38 \\
 \hline
 \quad \quad \quad 3 \quad 40.00 \quad \text{vs} + 0.0007 \\
 \quad \quad \quad 1 \quad 13.333 \\
 \quad \quad \quad - 2.816
 \end{array}$$

E Hydron

$$\begin{array}{r}
 129 \quad 42 \quad 28.25 \quad \text{vs} + 0.0067 \\
 \hline
 47.782 \quad + 9 \quad 33.38 \\
 \hline
 129 \quad 52 \quad 1.63 \quad 8 \quad 39 \quad 28.109 \\
 \quad \quad \quad \quad \quad \quad + 0.002 \\
 \hline
 \quad \quad \quad 8 \quad 39 \quad 28.111
 \end{array}$$

$$\begin{array}{r}
 \text{Rob. 1830.0} \quad 8 \quad 37 \quad 45.94 \\
 1755.0 \quad \quad \quad 33 \quad 46.847 \\
 \hline
 \quad \quad \quad 3 \quad 59.093 \\
 \quad \quad \quad 1 \quad 35.637 \\
 \quad \quad \quad \quad \quad 6.376 \\
 \hline
 \quad \quad \quad 1 \quad 42.013 \\
 \quad \quad \quad - 0.115 \\
 \hline
 \quad \quad \quad 27.838 \quad 106
 \end{array}$$

$$\begin{array}{r}
 \text{Gr. 1856} \quad 8 \quad 39 \quad 8.86 \quad 8. \quad 3.185 \\
 \quad \quad \quad \quad \quad \quad 12.06 \quad 2 \\
 \quad \quad \quad \quad \quad \quad 15.24 \quad 6 \quad 3.185
 \end{array}$$

$$\begin{array}{r}
 1457.0 \quad 8 \quad 39 \quad 12.057 \quad + 15.943 \\
 \text{Corr.} \quad \quad \quad (+0.031) \quad \quad - 0.017 \\
 \hline
 \quad \quad \quad 8 \quad 39 \quad 12.08 \quad 28.006 \\
 \quad \quad \quad 33 \quad 46.847 \\
 \hline
 \quad \quad \quad 5 \quad 25.233
 \end{array}$$

$$\begin{array}{r}
 \text{Airy} \quad 1856 \quad 14.58 \quad 2 \\
 \quad \quad \quad 57 \quad 17.74 \quad 3 \quad 17.316 \\
 \quad \quad \quad 58 \quad 20.06 \quad 3 \quad \underline{346} \\
 \hline
 \quad \quad \quad 21 \quad 36.966 \quad 276.966 \\
 \quad \quad \quad \quad \quad \quad 13.577 \quad 271.539 \\
 \quad \quad \quad \quad \quad \quad + 0.002 \\
 \hline
 \quad \quad \quad \quad \quad \quad 30.925
 \end{array}$$

Mol. Robinson Airy

$$\begin{array}{r}
 \text{Rob} \quad \quad \quad 26.107 \quad 1.1 \\
 \quad \quad \quad 20.11 \\
 \hline
 6 \quad 56 \quad 20.38 \\
 \quad \quad \quad + 1 \quad 10.62 \\
 \quad \quad \quad + \quad 0.01
 \end{array}$$

$$\begin{array}{r}
 31.107 \quad 17.12 \\
 \hline
 20.11
 \end{array}$$

$$\begin{array}{r}
 328.233 \\
 6.377 \\
 \hline
 318.856 \quad 2.62
 \end{array}$$

$$\begin{array}{r}
 \text{Airy + Mol} \\
 \hline
 2 \quad 28.058
 \end{array}$$

966
42
535

1861phae.proj. 37H

librarian, prof. ...