1855phae.proj....193

KG
11365
19

A.19

Transit Circle

Jan. 25, 1855 — May 6 1855

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January 27th 1855 Moon culminat. Ill. East.
P. S. C. obser.

Polaris	β Arietis	δ Tauri	ε Tauri	ζ Tauri
0h 15m 3ˢ.4	1h 46m 4ˢ.3	4h 14m 2ˢ.3	lost	4h 27m 4ˢ.3
	" 19.0	" 16.7	lost	" 18.4
	" 33.4	" 30.9	lost	" 32.8
W.C.B.	" 48.1	" 45.2	lost	" 47.2
	47 2.9	" 59.9		28. 1.5
	" 17.25	15 14.1		" 16.0
	" 32.1	" 28.8		" 30.2
		187.9		

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January 27. 1856

Moon culminat. Ill. East
P.S.C obs.

Moon			ι Aurigæ			ι Tauri			ε Leporis			α Aurigæ		
		5.3			55.3			52.8			46.4			11.1
		20.3			11.4			7.4			1.2			30.7
		35.9			28.0			22.2			16.0			50.4
		51.2			44.4			37.0			30.8			10.0
		.6.9			0.8			51.8			45.9			30.9
		22.2			17.1			6.3			0.8			49.5
4	39	37.7	4	48	33.7	4	55	21.4	5	0	15.8	5	7	9.3
		179.5			190.7			198.9			156.9			191.0
		180			120.			60.			60.			120.
	7	359.5		7	310.7		7	258.9		7	216.9		7	71.0
4	38	57.36	4	47	44.39	4	54	36.99	4	59	30.99	5	6	10.14

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January 27 1855 Moon culmination Jl. Last

P.S.C obs. W. C B obs.

β Tauri	δ Orionis	α Leporis last	α Columbæ	κ Orionis
32.0	6.1	~~[illegible]~~	45.9	49.1
47.5	19.9	33.0	2.5	2.9
3.1	33.5	17.4	18.8	16.7
18.8	47.1	31.6	30.7	30.41
34.5	0.9	46.2	52.5	44.5
50.1	14.8	0.5	8.8	58.2
5 18 5.8	5 25 ~~[illegible]~~	5 ~~26~~ 27 15.3	5 35 25.6	5 48 12.1
191.8			189.8	213.9
60.			60	~~30.56~~
131.8			249.8	213.9
5 17 18.83			5 34 35.69	5 47 30.56

κ Orionis — perhaps!

~~0 58~~	46.6
	0.7
	14.5
	28.8
	43.3
	57.3
6 0	12.0
	201.2
	0
	201.2
5 59	18.74

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January 29th 1865 Clock Stars. Ill. East

Thorp W.C. 13 obs. P.S.C. obs.

Polaris				α Arietis		κ Aurigæ		p Geminorum		Moon	
0h	39m	8.7		1h 5m	8m 41.1	6m	5m 34.0	6h	13m 40.2	6h	28m 1.2
	48m	03	0	"	56.0	"	49.9	"	54.7	"	17.0
	57	0.8	0	65.0	59. 11.0	6	5.7	14	9.5	"	32.7
1h	6	02	5	54.5	" 25.9	"	21.4	"	24.2	"	48.6
	15	05	9		" 40.8	"	37.3	"	39.2	29	4.4
	24	2.4		56.5	" 55.6	"	52.9	"	54.0	"	20.0
	33	12.2		1st wire lost		"	8.9	15	9.2		35.9

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January 29th Moon Culmination ☽ W. Last

Centre of Spot	Gassendi	Sirius as seen through window		ζ Geminorum	ι Geminorum	α Geminorum
				32		
29m	53.8	38m	23.6	6. 54m 59.0	7 10m 55.4	7 24m 44.4
30m	9.8	"	37.8	55 13.2	" 10.3	25 0.7
"	25.2	"	52.1	" 28.1	" 25.2	" 16.8
"	41.1	39	6.5	" 43.7	" 40.0	" 33.1
"	57.0	"	20.9	" 57.5	" 55.0	" 49.3
31	12.7	"	35.1	56 12.1	11 9.7	26 3.5
"	28.7	39	49.7	" 27.0	" 24.5	" 22.0
	228.3		225.7	256.6	220.1	169.8
	288.3		45.7	306.6	280.1	229.8
6. 30m	41.19	6h. 39m	6.53	49	7. 10m 40.01	7h 25m 32.83
		6 38	48 41		7 11m 28 47	7 25 21 53
			20.12		11.14	11.30

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1855 Jan. 30

E C	E.C.	E.C.	E.C.	
ε Gem.	ζ Gem.	Moon I limb	α² Gem.	β Gem.
6.. 34.. 27.8	59.0	7.. 23.. 4.0	——	7.. 35.. 52.3
34.. 42.9	13.7	19.3	——	8.0
58.1	28.5	35.5	25.. 17.3	23.6
13.2	43.0	51.0	33.5	39.0
27.8	57.9	6.8	49.8	54.8
43.8	12.5	22.4	5.9	10.3
6.. 35.. 59.0	6.. 56.. 27.2	7.. 24.. 38.3	7.. 26.. 22.2	7.. 37.. 26.0

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1855. Jan. 31. M. East.

Mean Sid. Time

Capella.	Rijel.	β Tauri	σ Orionis	α Leporis
5 5 12.3		33.5	~~47.5~~ 7.8	~~4.3~~
31.2		48.8	~~+ 21.3~~	4.3 ~~18.6~~
51.7		4.7	34.9	18.6 ~~32.9~~
11.6		20.3	48.7	32.9 ~~47.4~~
31.4	5 8 1.0 ~~47.13~~ 47.13	36.0	2.5	47.4 ~~7.9~~
51.0	14.7 46.98	51.5	16.2	1.9 ~~16.2~~
5 7 11.0	5 8 28.8 47.02	5 18 7.3	5 ~~35~~ 29.9	5 27 16.2
	3 | 4.13	202.1		
	.04	60.		
		7 | 142.1		
	5 7 47.04	5 17 20.30		

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1855

Jan. 3. M. E.

E. L. - T. Hd.

ε Orionis		α Columbae,	δ Orionis	γ Draconis S.P.	
		47.5	50.6		
		3.9	4.5	40.8	24.86
	50.5 ~~4.71~~	20.5	18.3	2.5	24.56
	4.1 4.13	37.2	32.0	24.5	24.45
	18.0 4.28	53.8	46.0	46.7	24.67
	31.6 4.17	10.3	59.8	8.8	24.55
5 29	45.5 4.16	5 ~~35~~ 27.1	5 48 13.9	5 ~~54~~ 30.7	24.58
	5)95	20.3	)249		6)367
	19	60	0		24.61
		7)260.3	7)224.9		
5 29 4.19		5 34 37.19	5 47 32.13	5 53 24.6	

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1855phae.proj...199

1855 Jan 31 M. E.

Thd.

δ Ursae Minoris S. P. Sirius

15.7
29.8
44.3
6 19 3.6 3.09 58.3
13.0
27.2
6 39 41.8
230.1
180
7)410.1
6 19 3.09 6 38 58.73

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1855 Mt. East.

Aug 1/2 W.C.B.

γ Draconis. α Lyrae

Dec + 51° 30′ + 38° 39′ For telegraph operations with Fordenston.

	3.5	25.53	37.9 −	13.16
	25.3	25.35	55.5 −	13.06
	47.7	25.65	13.0	13.04
	9.7	25.64	30.7	13.13
17 54	31.9	25.49	18 33 5.5	12.88
		5) 2.66		6) 46
		.53		13.08

	17	53	25.53	18 32	13.08
R	17	53	12 65	31	59.98
			12.88		13.10

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Comps. of chronometers (236 & 312) for telegraph operations with Prediction

February 2d 1855

Before going to Boston

236	1h.26m.23v.6	—	1.30.23.6	W.C.B
~~312~~ EC	1h.26m.0v.	—	1h.30m.0.	

EC	1h.27m.0	—	1h.29m.0	—	1h.33m.0
312	1h.27m.53v.8	—	1h.29m.53v.6	—	1h.33.53.7

W.C.B

(236)

EC	1h.26m.0v		
fast	13.14		
	1,26,46.86		
236	1 26 33.60		
236 fast of Camb.	86v.74	Feb 2 PM	
" " " "	32.1	Jan 30 PM	
	4.64:3		
rate	+ 1.55		

(312)

EC.	1h.33m.0		
fast by	13.14		
	1h.32m.46v86		
312	1.33.53.70		
" fast	1. 6.84	Feb 2	
"	1 08.00	Jan 23	
	1.16		
rate	— 0.11		

See end of observations

7h PM) EC = 3.45		EC 3.46		W.C.B
236. 3 45. 23.7		312 3. 46. 53.6		
EC 3h.50m.0		EC 3.51.0		F.S.C.
236 3.50.23.6		312 3, 51, 53.6		
236 — 4.12.0		312 — 4.14.0		W.C.B
312 — 4.12.29.8		236 — 4.13.30.1		

236
312

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February 2d

On arrival in Boston before
begin. telegraph operations

236	5h 44m 0	5h 45m 0	} P. S. C.
312	5. 44 29.5	5. 45 29.5	
312	5h 47m 0	5h 48m 0	
236	5. 46. 30.6	5. 47. 30. 5	

After concluds. telegraph operations
before leaving Boston

236 —	8h 5m	312 — 8h 6m 0s	} P. S. C.
312 —	8 5 29.4	236 — 8 5 30.5	

On arrival in Cambridge

EC —	9h 1m 0	EC — 9. 2. 0
236 —	9. 1 24. 0	312 — 9. 2. 53. 5
	236 —	9. 3 0
	312 —	9. 3 29. 5

Chronometer used in giving
signals was N. 236.

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Correspondence & observations
between Fredricton N B and
Harvard. C. Observatory.
February 2d 1855

On arrival at telegraph office sent to Fredricton following

C/ Are you ready

F/ Yes all ready. Which way would you ~~have~~ wish us to start to work to night

C/ Send us the time you intend to begin observations and then beginning at each even minute give 5-0 second signals for 10 minutes

F/ Is it 50 second signals you want

C/ Second signals for 50 consecutive seconds beginning at each even minute.

F/ All right prepare to receive signals in 3 minutes

C/ Give a series of dots 20 seconds before you begin

F/ Yes will do so & will break circuit each consecutive second for each clock beat for ~~one~~ 50 seconds

C/ ready

F all right

A way station broke in upon us after the during the first minute observations.

F/ Shall we ~~beg~~ commence signals again

C Yes

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F Well begin dots look out for dots directly.

Obtained following observations (time by h. 2 36)

1	2	3	4	5
6h 18m. 13s. 4	19 " 13. 4	20 " 15. 3	21 " 13. 2	22 " 13. 2
25. 4	20. 2	20. 25	25. 3	20. 2
30. 3	25. 2	35. 3	30. 25	25. 25
35. 3	30. 3	45. 3	35. 3	30. 2
40. 4	35. 25	50. 2	45. 25	35. 2
45. 3	40. 25	55. 25?	50. 25	~~40. 25~~
55. 3	44. 2	60. 25	55. 2	50. 2
60. 2	50. 2		60. 2	
	55. 1			
	60. 3			

A way station broke in again

F/ Shall we commence signals again

C/ yes

F/ Will begin dots look out for dots directly

C/ Give 5 minutes more of signals

F/ Will begin on even minutes when stop dots look out.

Here a way station broke in again

F/ Shall we take fresh start for 5 minutes

C/ Yes

F/ all right look out for dots

Then followed the following observations

Cambridge closed circuit always at 37s by Chro No 236 equal to the even minute of Cambridge sidereal time ± .3 three tenths of a second

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1 No 236	2 No 236	3	4	5
$6^h.\ 29^m.\ 13.3$	$30^m.\ 13^v.4$	$31^m.\ 13^v.3$	$32^m.\ 13^v.4$	$33^m.\ 20^v.3$
25.25	25.2	20.2	20.25	25.2
30.2	30.2	25.3	25.2	30.2
40.2	35.4	30.2	30.15	40.2
45.2	40.3	35.25	35.35	45.4
50.1	45.35	40.2	40.15	50.15
55.15	50.15	45.2?	50.2	55.1
60.2	55.1	50.15	55.2	60.2
	60.15	55.15	60.15	63.4
			63.3	

F/ Have you got the last 5 right.

C/ All right please send your clock time of first signal

F/ Clock time of the first signal of the last five $6^h.\ 36^m.\ 35^v$ approxm. will send more correctly tomorrow Will you give us your approx. time for first signal of the last 5

C/ It is $6^h.\ 29^m.\ 30^v.3$ sidereal time cambridge app.

F/ Mistake in my last for 36 minutes read 46

C/ Look out for signals from this station

F/ All right - ready

C/ Lookout for dots

F/ A series of observations were now transmitted ~~to Preston~~ to Preston (Numb 236 was used the first signal was given at $6^h.\ 44^m.\ 37^v$)

C/ Did you get them

F/ Yes got 10. please give time of first as near as convenient.

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C/ Instead of $6^h\ 29^m.30^s.3$ read $6.28.36.3$
We began our signals at $6^h.44^m$ 0 second
what is your corresponding time by 236 time
$6^h\ 44^m.37.0$

F/ $7^h.\ 2^m.49^s.5$

C/ Will you have a new series of five minute

F/ Will Mr Bond give corrected clock time of first signal of last signals.

C/ It is $6^h.44^m.$ approx. – send corrected time tomorrow

F/ all right.
F/ To Mr Bond – is your time taken at the end of the 50 seconds

C/ no

Here then was a series of interruptions – The Portland battery gave out – signals were not transmitted or did not reach After waiting upwards of ½ hour sent following
C/ Portland battery gave out – did not get your signal We will try again another evening Good night.

F/ To Mr Bond – We have had so many interruptions on the line that we ~~would~~ beg you would let us give you 5 more signals 3 minutes afterwards they sent for it.
F/ It is so late we will try another evening – all right much obliged – good night

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Febrieny 2d

Before leaving for Boston comps. were made between 236 and M C.

M C	5.4.35.0	5.0 35
236	1.55 35.0	1h 35.35.5

Comparison by coincidence with mean time Clock were used on account of the long interval of star observation, namely from Feb. ½ to ⅔ A.M. clouds preventing transit observations during the interval

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Feb 2/3 1855

γ Draconis

Last +57.1

Last

Last

17h 53m 4.1

" 26.1

" 48.2

54 10.2

" 32.5

17 " 53 " 26.16

W. C. B. Obs.

α Lyrae

18h. Last +39°

Last

Last

Last

18h 32m 48.7

33. 6.8

α Cygni +44° 45'

20h 35m 42.8

36 1.0

4 20.9

4 40.3

4 59.8

37 19.0

" 38.8

2226

2826

20, 36 40.37

20. 36 26 9

13.40

6/9

120

Ill. East

Antares −26.20

16h 19m 58s.2

20 13.3

" 28.9

" 44.0

" 59.3

21 14.7

30. 30.3

248.7

308.7

16h 20m 44s.10

30 21

13.89

13.60

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Febr. 3d. 1855 — Clock Stars P. S. C. obs. — Ill. last

6 hours

α Canis maj.	ε Canis maj.	δ Geminorum.	α Geminorum	α Canis minor
lost	6h 52m 23s.8	7h. 10m. 58s. 0	7h 24m 46s.9	31m 16s.0
lost	" 39.4	11 12. 9	25 2.9	" 30.0
6h 38m.458	" 55.0	" 27 5	" 19.0	" 43.4
39 0s.0	53 10.5	" 42.3	" 35.2	" 57.4
" 14.8	" 26.6	" 57.2	" 51.9	32 11.3
" 29.1	" 42.1	12 12.1	25 7.9	" 25.0
" 42.0	" 57.9	" 27.1	" 24.3	" 38.9
13 1	255.3	237 1	188 1	222.0
	75.3	297.1	248	402.0
	6h,53m,10s.76	9h 11m 42s.44	7h,25m,35s.44	7h 31m 57s.43
	6 53 56.67	7 11m 28 51	7h.25m 21 53	7 31 43 29
	14.09	13.93	13.91	14.14

14.09
13 93
13 91
14 14
13.89
14 14
84.10
14.02

β Geminorum
15 Argus

7h 35 54.5
36 9.9
" 25.2
" 41.0
" 56.9
37 12.4
" 28.0
227.9
28
7h 36m 41.13
7h 36 27s.24
+ 13.89

15 Argus
28
0 52.7.0
" 57.7
" 22.1
" 37.2
" 52.3
2 7.3
" 22.5
201 1
261.1
28h 1m 37s.30
8h 1m 23.16
14 14

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February 5th

Ill. East.

W. C. Bobs

Polaris			α Arietis	
0h.	39m	42s.5	1h. 58m.	29s. 8
"	48	" 5. 2	"	44. 8
"	57	" 1. 8	"	59. 5
1	6	" 3. 0	59.	14. 2
"	14	" 59. 7	"	29. 5
"	24	00. 0	"	44. 1
"	33	3. 8	"	59. 3
				2 8 1 2
				1 0 1. 2
1.. 06.. 02. 39			1h	59m 14s. 46
			1	59 59 57
			+	14. 89

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February 6th Clock Stars. Ill. East

α Arietis

	1h	58m	30.9
		"	45.8
		59	0.7
W.C.B		"	15.3
		"	30.1
		"	44.9
	2	0	0.2

167 9
107.9
1h " 59m " 15.41
1h " 58m " 59s 56
15.85

γ Ceti

	2h	35m	22.0
		"	35.9
		"	49.3
P.S.C		36	3.4
		"	17.0
		"	30.5
		"	44.8

2029
22.9
2. 36. 3.41
2 35. 46.94
16 47

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February 10th 1855

Ill. East.

	α Lyræ.	α Aquilæ		α Cygni		α Persei	
				+ 44° 46′		+ 49.21	
	18h 31m 25s 6	lost		20h 35m 47s 4		3h 13m 14s 2	
	" 43.2	19h 43m 31s 3		36 6. 8		" 34. 8	
W.C.B	32 0. 6	" 45. 2		" 26. 0		" 55. 8	
	lost	P.S.C. " 59. 2		P.S.C " 45. 2		W.C.B. 14. 16. 8	
	lost	44 12. 9		37 4. 5		" 38. 5	
	lost	" 26. 8		" 23. 8		" 58. 9	
	lost.	" 40 8		" 43. 2		15 20. 4	
		216. 2		196. 9		239. 4	
				316. 9		19. 4	
				20h 36 45. 27		3h 14m 17s 06	
				20h 36 27 05		3h 13 55 77	
				+ 18. 22		18. 29	
				EC + 0 17. 69			

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February 10th 1855

T.H. East.

Observations for determining difference of longitude between H. College observatory Cambridge. Mass. and Kingston's College N.B.

W.C.B obs.

	$+16^\circ 13'$	$+45^\circ 51'$	$-8^\circ 22'$	$+25^\circ 29'$	$-0^\circ 25'$
	α Tauri	α Aurigæ	β Orionis	β Tauri	δ Orionis
			last		
	$4^h\ 2^m\ 11^s.5$	$5^h\ 5^m\ 18^s.0$	$5^h\ 7^m\ 38^s.0$	$5^h\ 16^m\ 39^s.2$	$5^h\ 24^m\ 13^s.3$
	" 25.8	" 37.7	" 52.8	" 54.8	" 27.0
	" 40.0	" 57.5	8 6.8	17 10.4	" 40.8
	" 54.3	6 17.1	" 20.7	" 26.2	" 54.4
	28 8.7	" 37.2	" 34.6	" 41.9	25 8.1
	" 22.8	" 56.6		" 57.4	" 21.9
	" 37.2	7. 16.7		18 13.2	" 35.9
	2003	2 40.8		2430	2014
	380.3	120.8		183.0	381.4
	$4^h\ 27^m\ 54^s.33$	$5^h\ 6^m\ 17^s.26$		$5^h\ 17\ 26\ 14$	$5^h\ 24^m\ 54^s.49$
		.55		.60	−.67
		.31		5 17 25.54	5 24 53.82
				5 17 07.98	5 24 36.36
				+ 17.56	+ 16.46

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1855.
Feb. 10th
at Cambridge

EC – 3 " 5 .. 00
236 3 " 5 .. 30.1

EC fast of Camb. 18.0

236 fast – 48.2.

Comparisons at Office in Boston. Before signals

Comparisons at Office in Boston After signals.

EC – 3 .. 7 " 00
312 – 3 " 7 " 39.5

236 – 5 .. 33 .. 00
312 – 5 .. 33 .. 09.4

286 – 8 .. 11 .. 0
312 – 8 .. 11 .. 9.1

236 – 3 .. 9 " 00
312 – 3 " 9 .. 9.4
PJC

236 – 5 .. 33 .. 50.6
312 – 5 .. 34 .. 00.0

236 – 8 .. 11 .. 50.8
312 – 8 .. 12 .. 00.0

EC – 3 .. 52 " 00
236 – 3 " 52 " 30.1

236 – 5 .. 36 .. 15
G.6 – 13 " 58 .. 00

EC – 3 " 53 " 00
312 – 3 " 53 " 39.5

Observations with chronometer 236 were given at 48s.0 for the even minute

236 – 3 .. 55 .. 00
312 – 3 " 55 " 9.5
W. C. B.

Comparisons on return from Boston

EC – 8 " 54 " 00
236 8 " 54 " 30,45

EC – 8 .. 55 " 00
312 – 8 " 55 " 39.6

236 – 8 " 57 .. 00
312 – 8 .. 57 " 9.4

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February 10th — Fredericton N.B. — Ill. Sat

Observations for determining the difference of Longitude between Harvard College Observatory and Thurston's College New Brunswick

	Before signals	W.C.B. 56. after signals
−17°.56′		+24°.26′
α Leporis	Σ Brown	Σ Leonis
5h 25m 55s.6	1st	9h 37m 11s.0
26 9s.9	last	25.9
" 24.5	last	" 40.9
" 38.7	5m 29s.9	" 55.9
" 53.2	23 7	38 11.4
27 7.6	37.3	" 25.9
" 22.1	51.2	41.4
211.6	122.0	212.4
271.6		392.3
5h 26m 38s.80		9h 37m 56s.06
−.77		sum corr .59
5 " 26 " 38.03		9 " 37 " 55.47
5 " 26 " 20.62		9 " 37 " 37.97
17.41		Eq. +17.50

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February 11/12 Moon culminat. 7h 11m East

Observations for determining the difference of longitude between Harvard College Observatory and Kingston college New Br.
7h. C. B dbs.

α Ophiuchi	Moon II L.	γ Draconis
17h 27m 48s.0	17h 33m 42s.9	17h 52m 25s.7
28 " 2.0	" 58.7	" 47.5
1 16.1	34 14.9	53 10.0
" 30.2	" 30.6	" 31.7
" 44.1	" 46.5	53 54.2
" 58.0	35 2.3	54 15.6
29 12.5	" 18.5	" 38.1
240.9	214.4	222.8
17h "28m "30.13	17h "34m "30.63	7h 53m 31.83

Telegraphic

Correspondance between Harvard College observatory and Kingston college Fredericton N.B. 10 February 1855

Went to Boston with chronometer 236 and 312 at 7 1/4 P.M. At 8 1/2 at telegraphic office ~~received dispatch from Fredericton~~ gave notice to Fredericton that the station was ready & some minutes later received following:

FJ Prof. Bond

To prevent mistake as to time of first signal we suggest that in sending to you we first telegraph to you to make ready and in a minute or so we call attention by five taps which will be followed in a few seconds by one tap. which is to indicate the

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absolute time of first signal - Each successive signal will be given in the same manner - In sending to us will you do the same.

C/ Yes. ~~Ready to begin exchange greetings~~. When will you be ready to begin

F/ In a minute or so ——— ready now prepare to receive first signal and listen for the 5 raps
Here as I could not distinguish which were the 5 raps ~~now~~ when the signal was given ~~telegraphed~~.

C/ Make a series of raps instead of 5 and begin again

F/ How long before the one.

C/ Stop 5 seconds before the signal.

F/ Will stop 5 seconds before signal - Look out.
This time as I did not perceive that the dots where interrupted at all for upwards of a minute sent full.

C/ Stop 5 seconds before giving the one signal

F/ Will commence a series of dots again and break off at 55 seconds and close on the sixty second - Will that do.

C/ Yes. very well.

F/ Will give dots now until 55 seconds. Look out.
Then follows ~~I~~ obtained following observations

$6^h.$	$40^m.$	$27^s.05$	
	$41^m.$	$27^s.0$	
	$42^m.$	$27^s.1$	
	$43^m.$	$27^s.0$	
	$44^m.$	$27^s.1$ or 2	

Mean for 1st signal $6^h.\ 40^m.\ 27^s.06$. by mean. 236

6 40m 27s
— 48
39m 39 app Camb.

F/ We sent 5 are they all right

C/ Yes all right cambridge time of first signal was $6^h\ 39^m.39^s$ approx
Send me yours

F/ 6 hours $57^m.37^s.$ approx.

6.57.37
6.39.39
17.58

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C/ Look out for dots from this Station _____ Look out
Here I [illegible] key. This Fredricton took
for dots one, when I had just began making dots
then sent

F/ what do you mean - why not keep dotting all the time the
way we did

C/ Because I had just began when you interrupted — Look
out I begin again

Sent them observations for 6 minutes
viz: $6^h.56^m.0^s$ $6^h.57^m.0^s$ $6^h.58^m.0^s$ $6^h.59^m.0^s$
$9^h.0^m.0^s$ $7^h.1^m.0^s$. Then sent (by 236
corresponding time of 1st obs. 6..56..48.0)

C/ Did you get them.

F/ Yes got 6. Time of first of last 6 is $7^h.13^m.58^s$ 7.13.58
56.0
17.

Here Bath broke in

C/ I propose now to work in the following way. Begin by sending me second signals for 50 consecutive seconds beginning at the even minute of for 3 minutes and then let us exchange time of first signal. I then will make signals for 3 minutes in the same way and afterward we can compare time again

F/ All right and we too at the end of the first minute to be — all right. mistake.

meaning that the lines underscored were to be considered as not having been received

F/ cont. prepare to receive signals from us we begin at the even minute and continue for 50 consecutive seconds

I obtained follows.

see note next page	$7^h.22^m.27^s.0$
	34 95
	50.0
	55.0
	60.0
	65.0
	70.0
	74.9 —

Read $7^h.23^m.27^s.0$

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$7^h.\ 23^m.\ 26.9$
35.0
40.0
45.0
50.0
55.0
60.0
65.0
70.0
75.0

$7^h.\ 24^m.\ 26^v.9$
35.0
40.0
45.0
50.0
60.0
65.0
69.9
75.0

C/ Very well — first signal $7^h.\ 22^m.\ 39^v$ approx.

F/ All right — our time $7^h\ 40^m\ 37^v.0$

31 (Note) I ~~this~~ probably ~~was~~ made a mistake of 1^m in noting the time a minute I did not perceive ~~at that time~~ ~~just~~ in checking my work with Professor ~~Bache~~, I made one, also of 1 minute, in the other way, as shown by note taken at the time. ~~I hope all together~~

C/ Look out I begin —

F/ ~~Did you get~~

Here follows signals for 3 minutes by 23b. $7^h.\ 30^m.$ / $7^h\ 31^m$ / $7^h\ 32^m$ | given at $+48^v$ for each minute

C/ Did you get them? What is your time of first signal.

F/ Yes all right — our time $7^h\ 47^m.\ 58^v.0$

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C/ Cambridge time $7^h.\ 30^m$ approx.

F/ Do you consider the signal given to commence with the beginning of beating seconds or at the end of the 50 beat.

C/ At Beginning of Rating. the 50 beat being given only to get the true [illegible]ction of second. do you not?

F/ We have done so now. but on the first All right will not mind that. Meaning that the ~~time~~ word underscored when to be considered as not having been reckoned

F cont/ as a favour will you Compare clocks – try a single tap give 20 dots first - please

C/ look out

Here gave signal at $7^h\ 45^m\ 0^s$ and $7^h.\ 46^m.\ 0^s$.

Taps made by chronometer 236 at $7^h\ 45^m.\ 48^s.0$ & $7^h\ 46^m.\ 48^s.$

F/ was that you? - please give us the time of that last dot after the 20 second.

C/ $7^h.\ 46^m.\ 0^s$

$$\begin{array}{r} 3\ 5\ 8 \\ 7.\ 46.\ 0 \\ \hline 17.\ 5\ 8 \end{array}$$

F/ Good - all quite right our time $8^h.\ 3^m.\ 58^s$.

C/ Are you satisfied with the night's work do you wish to continue. I am at your service

F/ Much obliged quite satisfied with what we have done and think we now have data to give our correct longitude good night

C/ good night

F/ please send us particulars by letter and let us know all the expenses you may have incurred Sg. T. B Coldrey

C/ send you telegraph to morrow and particulars by mail.

F/ good night - much obliged - ~~do~~ drink your health in something hot immediately

C/ Thanks you good night

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1855.

Feb. 12th Ir. C. Lamp East.

	δ Orionis. W.C.B.	ε Orionis W.C.B	α Orionis W.C.B	12/13 α Herculis. W.C.B.
EC	5h..24m..14s.2	5h..28m..29s.7	5..46..57.2	17..07..37.9
	27.8	43.3	10.9	57.8
	41.7	57.0	24.8	6.5
	55.3	10.7	38.7	20.3
	9.0	24.4	52.6	34.7
	22.7	38.2	6.2	48.9
	5..25..36.6	5..29..52.0	5..48..20.3	17..09..03.0
	207.3	2553	210.7	203.1
	+180	−180	+60	−60
	7/387.3	7/753	7/270.7	7/1431
	5..24..55.33	5..29..10.76	47..38.67	8..20.44
	hour. corr. −17	−		
	5..24..36.33	5..28..51.73	5..47..14.76	17..08..01.28
EC fast	18.85	18.88	18.74	18.99

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1855. Feb. 18th

Ill East.

R.F.B. Capella.	R.F.B. ε Orionis	R.F.B. α Orionis	R.F.B. α Orionis
5 .. 05 .. 20.2	5 .. 28 .. 30.6	5 .. 05 .. 20.2	
5 .. 39.8	44.3	39.8	
5 .. 59.4	58.0	59.4	
6 .. 19.2	12.0	19.2	
6 .. 39.0	25.7	39.0	
6 .. 58.7	39.4	58.7	
last	5 .. 29 .. 53.2	5 .. 7 .. 18.4	
5 .. 06 .. 19.20	5 .. 29 .. 11.85		
− .55	− .67		
5 .. 06 .. 18.65	5 .. 29 .. 11.18		
5 .. 05 .. 59.10	5 .. 28 .. 57.66		
+ 19.55	+ 19.42		

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1855

Feb. 20^{d} Ill East

	☉'s 1st Limb		a Lyrae +38°..36'		ζ Aquilae		δ Aquilae +2°..4'		a Aquilae +8°..29'	
E6	1.. 41.. 15.6		EC	18.. 31.. 28.7	E6	18.. 58.. 22.0	E.6.	19.. 17.. 49.8	E.C.	19.. 43.. 20.3
	29.7			46.0		36.2		3.4		34.1
	43.9			3.8		50.3		17.0		48.0
N.C.B	58.0			32.. 21.4		59.. 4.4		30.9		1.9
	12.2			39.1		18.7		44.8		15.9
	26.3			56.7		32.7		58.2		29.8
	1 .. 42 .. 10.8			18.. 33.. 14.2		18.. 59.. 47.0		19.. 19.. 12.3		19.. 44.. 43.9
	226.5			209.9		211.3		216.4		193.9
	406.5			60		180		60		180
1 .. 41 ..	58.07			149.9		31.3	1	18.. 30.91		13.9
				18.. 32.. 21.41		18.. 59.. 4.47		18.. 18.. 30.91	*	19.. 44.. ~~2.30~~ 1.79
				Level −.24		−.17		−.15		−.16
				Col −.28		−.22		−.22		−.22
				Azz −.03		−.22		−.30		−.26
				18.. 32.. 20.88		18.. 59.. 03.86		19.. 18.. 30.24		19.. 44.. 01.66
				18.. 32.. 00.51		58.. 43.. 48		19.. 18.. 09.95		19.. 43.. 41.10
				E.C part +20.37		+20.38		+20.29		20.56

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1855 Feb. 21st Ft. Mt. East.
observer J.H.S.

Moons 1st limb	γ Ceti	α Ceti.	α Persei	Feb. 22d J.H.S. α Arietis
? 33.. 02.5	35.. 26.6	2.. 54.. 21.2	3.. 13.. 16.0	1.. 58.. 35.7
17.0	40.0	34.9	37.0	50.3
31.6	53.8	48.8	58.1	5.2
46.1	7.7	2.5	19.0	20.3
00.5	21.5	16.3	40.2	36.1
15.0	35.0	29.9	1.2	50.0
2.. 34.. 29.6	2.. 36.. 49.1	2.. 55.. 45.4	3.. 15.. 22.3	2.. 00.. 6.0
142.3	233.7	199.0	193.8	
~~322.3~~	53.7	19.0	133.8	
2.. 33 .. ~~37.07~~ 26.04	2.. 36 .. 7.67	2.. 55 .. 2.71	3.. 14 .. 19.11	

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Feb. 23

Ill. East

Observer W. C. B.,

	− 13.55			+ 16.13
+ 23.34				
η Tauri	γ' Eridani	A' Tauri + 21° .41	Moons I limb	α Tauri
3..38..27.9	54.7	55..44.1	4..19..12.0	4..27..14.8
42.9	8.7	58.8	27.2	28.4
58.0	22.9	13.6	43.0	42.8
13.0	36.8	28.2	58.0	57.4
28.0	51.1	43.2	13.5	11.6
42.9	5.2	58.0	28.8	25.8
3..39..58.0	3..52..19.8	3..57..13.0	4..20..44.2	4..28..40.4
270.7	199.2	258.9	226.7	221.2
180.0	60	−60		180
90.7	7)259.2	7)198.9	406.7	401.2
3.39..12.96	3..51..37.03	3..56..28.41	4..19..58.10	4..27..57.31
−.20	−.11	−.14		−.18
−.23	−.22	−.23		−.22
−.16	−.34	−.17		−.21
3..39..12.37	3..51..36.31	3..56..27.82		4..27..56.70
3..38..57.70	51..15.61	3..56..07.23		4..27..36.04
E.C. + 20.67	+20.70	+20.59		+20.66

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Feb. 23 — Ill. East

Observer W. C. B.

Saturn's I limb.	Saturn's II limb
4h 30m 18.1	19.3
32.7	34.0
47.2	48.5
1.8	3.1
16.6	17.8
31.1.	32.4
4h 31m 45.9	4h 31m 47.0
193.4	202.1
180	180
13.4	22.1
4h 31m 01.91	4h 31m 03.16

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Feb. 7. 1926 Ann.
W. C. B.
α Ophiuchi +12°

57.7
5.7
19.7
33.8
47.9
1.9
17h 29m 16.1
176.8
60
236.8
17h 28m 33.83
28m 11.67
22.16
Sum cor. − .61
R.A. + 21.55

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1855. Feb. 24d Ill. East.

	ε Tauri +18.51	α Tauri +16.13	1st Limb Saturn.	2d Limb Saturn	D's 1st Limb +26°
Chr.	4 .. 19 .. 47.0	4 .. 27 .. 14.6	4 .. 30 .. 25.5	4 .. 30 .. 26.8	5 .. 14 .. 05.8
	1.3	28.8	39.9	41.1	21.1
	15.5	41.1	54.4	55.9	37.0
	30.2	57.3	9.0	10.2	52.3
	44.8	11.8	23.9	25.0	8.2
	59.4	26.0	38.2	39.8	23.8
	4 .. 21 .. 14.1	4 .. 28 .. 40.6	4 .. 31 .. 53.3	4 .. 31 .. 54.7	5 .. 15 .. 39.5
	212.3	220.2	244.2	253.5	187.7
		180	180	180.0	180
	4 .. 20 .. 30.33	2400.2	64.2	73.5	367.7
	−.18	4 .. 27 .. 57.17	4 .. 31 .. 09.17	4 .. 31 .. 10.50	5 .. 14 .. 52.53
	−.23	−.18			
	−.19	−.22			
	4 .. 20 .. 29.73	−.21			
	4 .. 20 .. 8.96	4 .. 27 .. 56.56			
	+20.77	4 .. 27 .. 36.03			
		+20.53			

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Feb. 24 – Ill. East.

β Tauri +28°.29		γ Tauri +21°.03	
5 h 16 m 42 s.5		5 h 28 m 36 s.5	
	58.0		57.0
	13.5		5.8
	29.2		20.2
	45.0		35.2
	00.3		49.8
5 h 18 m 16 s.2		5 h 30 m 04 s.6	
	204.7		203.1
5 h 17 m 29 s.24			143.1
	–.21	5 h 29 m 20 s.44	
	–.26		–.14
	–.13		–.23
5 h 17 m 28 s.64			–.18
5 h 17 m 07 s.76		5 h 29 m 19 s.84	
	+20.88	5 h 28 m 59 s.02	
			+20.82

Rate = +0.58

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Feb 27th 1855 — Ill. East. — −14 P.S. Cobs +16 — Moon

	α Ceti +3.31	α Persei	γ Tauri +23.39	γ' Eridani	α Tauri	D 1st Limb
2h	54m 36.5		3. 38. 44. 2	3. 50. 58. 9	4. 27. 15. 7	7. 59. 14. 9
	" 50.3	3h 13m 59.8	" 59. 1	51 9. 9	" 29. 9	" 30. 2
	55 4. 1	14 20. 5	39. 14. 3	" 24. 2	" 44. 1	" 46. 9
	. 17. 8	" 41. 5	" 29. 3	" 38. 3	" 58. 2	8. 0. 1. 5
	. 31. 5	15 2. 8	" 44. 1	" 52. 4	28. 12. 9	" 17. 0
	. 45. 6	24. 1	" 59. 5	52 6. 6	27. 1	" 32. 5
				" 20. 8	41. 7	48. 5
			250. 5	206. 1	229. 6	190. 5
	185.8		44.92	266. 1	409. 6	10. 5
	41.23		205.58	3.51.38.01	4.27.58.51	8.00.1.5
	144.57		6) 85.58	−.36	−.19	
	24.57		3.39.14.26	−.06	−.10	
	2.35.4.09			−.20	−.20	
				3.51.37.39	4.27.58.02	
				3.51.16.54	4.27.35.58	
				+ 21.85	+ 22.04	
					+21.95	

a = −43
b = −11
c = −20

Δ 41.15 — 1.61437
9.31 10.00082
1.61519
41.23

log. 41.15 — 1.61437
Sec. 23.39 — 10.03810
1.65247
44.92

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Feb. 27 Culmination Ill. East R.S.C. 061.

β of Spot Gassendi	γ Cancri	ε Urs. maj.
8. 1. 1 6		8. 48. 37. 8
" 16. 8		" 58. 2
" 32. 4		49 19. 0
" 47. 9		" 39. 9
2 3. 4		50 0. 9
" 19. 8		" 22. 0
" 34. 8		" 43 0
		220. 8
		280. 8
		8. 49. 40. 1

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1855phae.proj...198

Feb. 28th 1855 Moon Culmination Ill East PS Obs.

Moon's 1st Limb	Spot Reiner	ξ Cancri	λ Leonis	μ Leonis	α Leonis
8 5 51. 29.1	8. 53. 30.8	9. 0. 40.4	9. 23. 5.5	9. 37. 15.5	9. 44. 8.6
" 59.4	" 45.8	" 55.0	20.3	" 30.4	" 23.7
5 2 14.5	54 1.0	1 9.8	35.2	" 45.5	" 39.1
" 29.9	" 16.1	" 24.6	50.2	38 0.5	" 54.5
" 45.0	31.5	39.6	5.2	" 15.9	45 9.9
" 0.3	46.5	54.4	20.2	" 30.9	" 25.2
	2.0	9.4	35.5	" 46.1	" 40.6
222.1	173.7	233.2	172.1	184.8	201.6
102.1	113.7	173.2	352.1	4.8	381.6
8 52 14.59	8 54 16.24	9 1 24.74	9 23 50.30	9 38 0.69	9 44 ~~25.94~~ 54.51

1855 March 1st 20. C.V. Cat. Stars Ill. East

237	~~244~~	+22.34 μ Gemmar.	250	~~260~~ 259	~~263~~ 262
5 57 21.70	6 06 33.25	6 14 36.90	6 18 02.60	6 22 35.40	6 27 12.35
35.40	46.95	50.90	18.40	49.10	26.20
48.95	~~52.70~~ 0.65	15 05.00	32.00	23 2.75	39.95
58 2.80	09 14.40 .03457	18.95	45.90	16.50	53.70
16.70	28.20	33.30	59.70	30.30	26 7.80
30.40	42.10		19 13.30	44.00	21.25
5 58 44.55	55.90		26.95	58.00	35.10
200.50	~~227.65~~ 101.65	146.05	200.85	236.05	196.35
20.50	~~73.90~~		320.85	116.05	376.35
5 56 2.93	6 09 14.52		6 18 45.84	6 23 16.58	6 27 53.76
a -.27	not a Cat. Star				
b -.06	obsd. Ill. West				
c -.20					
δt -21.98					
sum -22.51	-22.51		-22.54	-22.54	-22.51
rate .00	.00		00	00	00
5 57 40.42	6 06 52.01		6 18 23.33	6 22 54.07	6 27 31.25
Op. M. Sc. -0.23	-0.29		-0.33	-0.35	-0.38
-6.14	-6.15	Car. for chr. Var.	-6.14	-6.15	-6.17
5 57 34.01	6 06 45.57	M 1853.0	6 18 16.82	6 22 47.57	6 27 24.70

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1855phae.proj...193

Ill. Cont

March 1st Continued (WOB)

Sirius	ε Can. Majoris	δ Geminor.	Castor	Procyon.	Pollux
6h 38m 25.20	6h 52m 31.80	7h 12m 20.90	7h 25m 11.20	7h 32m	7h 37m 02.80
39.50	47.50	35.90	27.60		18.35
53.95	3.30	50.55	43.90		33.95
40.00	18.75	5.80	0.20		49.65
	34.50	20.25	16.30		5.05
	50.10	35.00	32.90		20.90
	6.00				36.00
28.65	191.95	168.40	187.30		186.70
118.65	131.95	44.46	307.30		346.70
85.95	6h 59m 18.85	123.94	7h 25m 43.90		7h 36m 49.53
204.60	.43	6)303.94	.04		.11
3)24.60	.03	7h 11m 50.66	.11		.11
6h 39m 08.20	.23	.15	.23		.23
.32	6h 53m 18.16	.09	7h 26m 43.48		7h 36m 49.08
.04		.21	7h 25m 21.36		7h 36m 27.09
.20	6h 52m 58.26	7h 11m 50.21	+ 22.12		+ 21.99
6h 39m 07.62	6h 52m 56.26	7h 11m 28.28			
6h 38m 46.08	+ 21.90	+ 21.93			
+ 21.54	- 21.98	- 21.98	- 21.98		- 21.98
	6h 52m 56.18	7h 11m 28.23	7h 25m 21.50		7h 36m 27.10

Final Corr. by Cat. Stars 0.0

10.01630
1.91593
1.93423
85.95

10.03355
1.61437
1.64792
44.46

used in red. of Cat. Stars { a = -.39, b = -.04, c = -.20 }
rate = 0.0

21.90
21.93
22.12
21.99
7.94
+ 21.98

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1855phae.proj...193

After alterations of one of wires

March 2nd

Dec East Mid wire – Mean		Polaris March 30		Dec E	Apr 7	Mch 30 E
+0.06	March 5		A to B			39.3
+0.06			B " C	42.0		56.8
+0.03			C " D	56.5		4.5
−.18	" 12		E "	57.5		33.5
−.06			F	39.4		25.7
−.04			G	21.9		55.5
−.19						
−.10	" 16					
+.13						
−.05						
−.17						
+.03						
−.03	" 16					
−.09	" 19					
−.06						
−.11						
+.04	" 27					
+.14						
−.17						
+.03						
+.01	Apr 7					
−.03						
−.01	Apr 7					
+.13						

Sum + 60

" − 136

24) 76 (0.032

72

40

Dec East Mid wire – Mean

= −0^s.032 by 24 Transits

−0.045 Previous value

From this it would seem that

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1855phae.proj...193

1855. March. 1st Illumination East.

Cancri	χ Leonis.	Ds 1st limb	γ Leonis
9.. 00.. 40.20	9.. 23.. 5.40	9.. 41.. 26.10	Lost
55.00	20.65	41.00	Lost
9.90	35.20	55.70	Lost
24.80	50.10	10.65	Lost
39.60	5.10	25.25	10.. 12.. 37.00
54.70	20.10	40.10	52.30?
02.. 9.70	24.. 35.50	42.. 55.00	13.. 6.30

Collimation altered

March 2nd 1855

Diaphragm taken out.

After March 2nd in consequence of the derangement of the wires we must use for the

New value of (Mid wire − Mean) Dec = −0.s018 ± 0.s006

Old value " = −0.045

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1855phae.proj...193

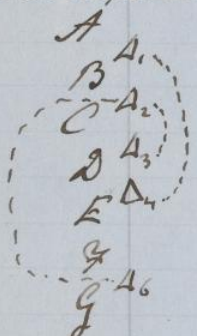
March 6th 1855. J.H. East. P.S. Cobb.

	+22.35	−28.47	+22.15
	ρ Geminorum	ε Canis Maj.	δ Geminorum.
6h	13m 51s.0	6. 52. 33. 4	11. 7. 8
	14. 5. 3	" 48. 6	" 22. 1
	" 20. 0	53 4. 1	" 36. 7
	" 35. 1	" 19. 8	" 51. 8
	" 49. 4	" 34. 9	12 6. 1
	15 4. 8	" 51. 4	" 21. 6
	" 19. 7	54 6. 8	" 36. 3
	185.3	199.0	182.4
	245.3	139	362.4
	6h 14m 35s.04	6h 53m 19s.86	7h 11m 51s.77
	6 14 11.61	6h 52 56 27	7h 11m 28 29
	23.43	23.59	23.48
	48	−76	50
	59		
	23.150	ΣC +22.83	ΣC +22.98
	23.50		
	−48		
	ΣC 22.95		

B 6h 14m 35s.04 6h 53m 19s.86 7h 11m 51s.77 E

N B
The Means in red ink have been revised by Mr Flagg.

N.B. In consequence of a derangement of the wires of the Transit. the accidental errors of whole seconds committed in reading from the sheets will be best detected in the following manner. The differences are to be taken between the wires A + B, B + C, C + D, D + E, F + G. The new intervals of the wires give very nearly A to B = D to E. B to C = C to D. F to G = B to C. These correspond to the new intervals after March 2nd. 1855.



The liability to errors of a whole second in reading off makes it necessary that all the Transits should be thus differenced.

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1855phae.proj...1

March 12th 1855 Ill. East P.S.C obs.

α Aurigæ +15.41	β Tauri +28.29	δ Orionis −0.25	ε Orionis −1.17
5h 5m 25v.1 19.0	5 16 46.2 14.9	5h 24m 20.1 13.2	5h 28m 35s.8 13.5
" 44.1 19.8	17 1.1 15.7	" 33.3 13.8	" 49.0 13.4
6 3.9 19.4	" 16.8 15.7	" 47.1 13.7	29 2.4 13.8
" 23.3 19.2	" 32.5 14.9	25 0.8 13.3	" 16.2 13.0
" 42.5 20.7	" 47.4 16.5	" 14.1 14.4	" 29.2 14.8
7 3.2 19.5	18 3.9 15.2	" 28.5 13.6	" 44.0 13.4
" 22.7	" 19.1	" 42.1	" 57.4
1648	167.0	186.0	233.7
2354	227.0	6.0	213.7
	32.43	5h 25m 0.86	5h 29m 16.24
5h 5m 58v.65	5.17. 7.54	5h 24 36.01	28 51.38
24.89	24.89	24.85	24.40

B

5h 6m 23.54 5h 14m 32.43 5h 25m 0.86 5h 29m 16.24

E

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1855phae.proj...193

March 12th 1855 Ill. East. P.S.C. Obs.

The pendulum was touched in the interval between ε Leonis & Procyon

Procyon +5.36		β Geminiorum +28.22	
7. 34. 27. 5	13.4	7h 36m 6s. 0	14.9
" 40. 9	13.9	" 20. 9	15.6
" 54. 8	13.5	" 36. 5	15.5
32 8. 3	13.4	" 52. 0	15.2
" 21. 7	14.5	37 7. 2	16.3
" 36. 2		23. 5	
" 50 0	13.8	~~Lost 4~~	

2394

59.4

7h 32m 8.49

7 31. 43.00 7 36 27. 07

25.43

B. E

4h 32m 8.49

Pendulum touched see above

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1855phae.proj...1133

March 16th 1855 Ill. East P.S.C obs.

	+16.13 α Tauri		+45.41 α Aurigæ		+28.29 β Tauri		−0.25 δ Orionis		−1.17 ε Orionis	
4h	27m 18.8	13.6	5h 5m 25.4	19.2	5. 17. 46.7	15.1	5h 24m 20.6	13.4	28 36.2	13.2
	32.4	14.5	44.6	19.7	18 1.8	15.4	34.0	13.6	49.4	14.6
	46.9	14.2	6 4.3	19.9	17.2	15.7	47.6	13.6	29 3.0	13.9
28	1.1	13.8	24.2	18.8	32.9	15.0	25 1.2	13.4	16.9	13.1
	14.9	15.0	43.0	20.5	47.9	16.4	14.6	14.4	30.0	14.5
	29.9	14.5	7 3.5	19.5	19 4.3	15.6	29.0	13.6	44.5	13.6
	44.4		23.0		19.9		42.6		58.1	
	1884		1680		1707		1896		2381	
	8.4		5h 6m 24.00		230.7		9.6		168.1	
4h	28m 1.20		5h 5 58.55		5h 18m 32.96		5h 25m 1.33		4h 29m 16.87	
4h	27 35.74		25.45		5h 18 7.47		5h 24m 35.83		28 51.31	
	+25.76		−.41		25.49		25.54		25.56	
Col	−.30		−.03		−.34		−.29		−.29	
αz	−.13				.04		−.20		−.20	
Anal. ±	.00		25.01		+25.06		+25.05		25.07	
	25.33									

αz = 0 αz = 0 αz = 0

B

4h 28m 1.20 5h 6m 24.0 5h 18m 32.96 5h 25m 1.37

6m 28.54

−1.64

−1.55

5h 29m 16.87

α Orionis 1/23

5. 47m 4.0

" 17.0

" 31.0

" 44.8

" 58.0

48 12.6

αδ 26.4

1938

313.8

5h 47m 44.83

1935

2548

−30

−23

αz = 0 24.95

5h 47m 44.83

E

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1855phae.proj...193

March 19th 1855 Clock Stars Ill. East T.S.6 00

δ Orionis Dec +7.22	ε Canis maj δ = −28.46 −16.30	δ Geminorum δ +22.144
5h 47m 4s.4 13.1	6h 52m 35s.8 15.1	7h 11m 10s.2 14.2
" 17. 5 13.8	" 50. 9 15.9	" 24. 3 14.9
" 31. 3 13.9	52 6. 8 15.4	" 39. 3 14.7
" 45. 2 13.5	" 22. 2 14.9	" 54. 0 14.3
" 58. 7 14.3	" 37. 1 16.7	12 8. 3 15.5
48 " 13. 0 13.9	" 53. 8 15.4	" 23. 8 15.0
" 26. 9	54 9. 2	" 38. 8
197.0	215 8	198 8
317.0	155.8	378.8
5h 47m 45s.29	6h 53m 22s.26	7h 11m 54s.11
5h Cabl m — .25	— 29	— 26
az. — 18	— 08	— 11
lev. 00	00	00
5 47 44.86	6h 53m 21s.89	7h 11m 53s.74
5 47 19 28	6 52 56 00	7h 11m 28s.09
25.58	25.89	25.65
89		
65		
212		
ΣC = +25.71		

cu 0.25−
az = 0.30−

B 5h 47m 45s.29 6h 53m 22s.26 7h 11m 54s.11 E

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1855phae.proj...193

March 27th 1855 Clock Stars Ill Limb P. S. E. Obs. a = -38 b = -06 c = -24

ρ Leonis δ = 10°.3′ ν Hydrae -15.25 α Ursæ Maj. +62°.91 δ Leonis +21°.18

10h 24m. 58v.6	10h. 42m. 15v.7	10h. 53. 49. 0	11h. 6m. 9v.8
25 11. 9	" 29.3	54 16. 5	" 23v. 9
" 26. 0	" 43.5	" 46. 0	" 38. 9
" 40.0	" 58.0	55 15. 5	" 53. 3
" 53.2	43, 11. 8	" 44. 5	7. 7.7
26 8. 0	" 26.2	56 16. 1	" 23.0
" 21. 8	" 40.5	45 45.4	" 37.7
219.5	2250	238.9	1943
279.5	405.0	192.9	394.3
10h 25m 29.93	10h 42m 57.86	1	11h 6m 53.47
call — 32	— 32		— 29
az = 20	= 29		— 15
level 10h 25m 39.40	10h 42m 57.24		11h 6m 53v.04
R 10 25 39v.49	29.90		24 96
+.27v.61	27.94		28.08

call = − 0.308
azm = — .369
Lens = — .040

B 10h 25m 39s.93 10 42 57.86 11 6 53.47 E

March 27/28 . +8°.29

19 43 29 5

19h 43m. 42v.8
56.7
44 10.19 4th wire bad Observation 0"8 too late
" 23.9
" 38.4
" 62.2

253.8 6
73.1 6
19h. 44m 10.51
— 32
— 21
— 04
44m.9v 88
R 19h 43m 41v 97
H = 19h 43m 41.97
+ 27.91 E
B 19h 44m 10s.57

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1855phae.proj...193

March 28th 1855 T.H.S. obs. Ill. East

Moon culmin.

γ Cancri	ε Hydræ +6.57	Moon	ε Leonis +24.26	α Leonis +12.40
8h ———	38m 53s.7 13.4	9h 23. 40.8 14.2	———	10h 0m 26s.2 13.8
———	3.9 7.1 13.8	" 55.0	9h 37m 36s 0 15.1	" 40.0 14.1
8h 34m 7s.7	" 20.9 13.8	24. 10.2 14.7	" 51 1 15.1	" 54.1
" 22.3 14.5	" 34.7 13.3	" 24.9 14.4	38 6.2 14.5	1m ———
" 36.8 15.4	" 48.0 14.4	" 39.3 15.9	" 20.7 15.8	" 21.9 14.6
" 52.2 14.7	40 2.4 13.9	" 55.2	" 36 5 15.0	" 36.5
35 6.9	" 16.3	25. 9.8 14.6	" 51.5	———
	183.1	235.2		
	243.1	175.2		
	8h " 39m 34s.73	9h " 24m 29s.03		

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March 29 1855 W. C. to ♂. Ill. East.

Sirius −16.31	ε Canis Maj. −28.47	β Geminorum +28.22	α Leonis +12.40	Moon
$6^h\ 38^m\ 31^s.3$ 13.6	$6\ 52\ 37^s.8$ 15.0	$7\ 36\ 8^s.5$ 15.1	$10^h\ 0^m\ 26^s.3$ 13.7	$10^h\ 12^m\ 8^s.9$ 13.8
44.9 14.4	52.8 15.5	23.6 15.5	40.0 14.0	22.7 14.7
59.3 14.5	53 08.3 15.6	39.1 15.8	54.0 14.0	37.4 14.6
39 13.8 13.6	23.9 15.1	54.9 15.0 T.H.S.	1 8.0 13.5 T.H.S.	52.0 14.0
27.4 14.9	39.0 16.6	37 9.9 16.3	21.5 14.8	12 6.0 15.2
42.3 14.5	55.6 15.4	26.2 15.4	36.3 13.9	21.2 14.7
56.8	$6\ 54\ 11^s.0$	$7\ 37\ 41^s.6$	50.2	35.9
275.8	228.4	203.8	236.3	184.1
95.8	168.4	853.8	56.3	364.1
B. $6^h\ 39^m\ 13^s.69$	$6^h\ 53^m\ 24^s.06$	$7^h\ 36^m\ 54^s.38$ E	B $10^h\ 1^m\ 8^s.04$	$10^h\ 11^m\ 32^s.01$ E
−.34	−.43	−.11	−.20	
−.02	−.03	−.06	−.06	
−.22	−.26	−.26	−.22	
$6\ 39\ 13^s.09$	$6\ 53\ 23^s.34$	$7\ 36\ 54^s.38$	$10\ 01\ 07^s.56$	
$6\ 38\ 48^s.54$	$6\ 52\ 55^s.69$	$7\ 36\ 26^s.66$	$10\ 00\ 39^s.78$	
+27.50	+27.65	+27.72	+27.78	
−27.67	−27.67	−27.67	−27.67	
$6\ 38\ 45^s.42$	$+6\ 52\ 55^s.67$	$7\ 36\ 26^s.71$	$10\ 00\ 39^s.89$	

27.69
27.50
27.65
27.72
27.78
~~27.66~~
+27.67

used in red. of 6 Cat. Stars: a −.39, b −.07, c −.22

rate 0.0

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March 29th 1855 Ill. Last. W. S. B.

P Leonis To be read off again.

10	25	00	5	2.4
	26	12	9	12.9
	"	25.	8	13.8
T.H.S.	"	39.	6	13.5
	"	53.	1	14.8
	26	7.	9	13.1
	2	21.	6	
		210.	4	

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March 30th 1855 Ill East

Polaris

0h 39m	16.2	
47m	55.5	39.3
56	52.3	59.8
5h	56.8	04.5
4m	30.3	39.5
2.8m	56.0	25.7
2m	51.5	55.5
	318.6	

Copied from Merman

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1855phae.proj...198

1855

March 29

Catalogue Stars

Ill. East

Observer W.C.B.

March 29 used in red. of Cat. Stars { a = −.39, b = −.07, c = −.22

Ill East

	407	~~417~~ 416	~~420~~ 421	~~422~~ 423	432
	7.. 59.. 21.3 (13.1)	8.. 6.. 13.7 (13.1)	8.. 14.. 57.1 (13.6)	8.. 18.. 09.0 (13.5)	8.. 22.. 17.5 (13.1)
	34.4 (13.9)	26.8 (13.9)	15 10.7 (13.6)	22.5 (13.7)	30.6 (13.7)
	48.3 (13.7)	40.7 (13.6)	24.3	36.2 (13.7)	44.3 (13.7)
	8.. 00.. 2.0	54.3	38.1 (13.8)	49.9 (13.7)	58.0 (13.7)
	lost	7 7.6 (13.3)	51.2 (13.1)	19 2.8 (12.9)	23 11.2 (13.2)
		21.8 (14.2)	16 5.7 (14.5)	17.3 (14.5)	25.7 (14.5)
		8.. 7.. 35.5 (13.7)	8.. 16.. 19.5 (13.8)	8.. 19.. 31.0 (13.7)	8.. 23.. 39.2 (13.5)
	106.00	200.4	206.6	168.7	226.5
	81.90	360.4	266.6	348.7	406.5
	187.90	$8^h\ 6^m\ 54^s.34$	$8^h\ 15^m\ 38^s.09$	$8^h\ 18^m\ 47^s.81$	$8^h\ 22^m\ 56^s.07$
	4) 7.90	a −.27			
	8.. 00.. 1.98	b −.05			
		c −.22			
		dt −27.67			
	−28.21	sum −28.21	−28.21	−28.21	−28.21
	00	rate 00	00	00	00
	7.. 59.. 33.77	8.. 06.. 26.13	8.. 15.. 09.48	8.. 18.. 21.60	8.. 22.. 29.46
	Ω. Abbr. −0.12	−0.45	−0.49	−0.50	−0.52
	Corr. for dec. Var. −6.16	−6.14	−6.14	−6.14	−6.16
	7.. 59.. 27.19	8.. 06.. 19.54	8.. 15.. 03.25	8.. 18.. 14.96	8.. 22.. 23.18
	AR 1853.0				

Final Corr by Cat. Stars −0.00

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1855phae.proj....198

Catalogue Stars

March 29 — Ill. East — Observer W. C. B. — rate 0.0 s East

(435)	454	455	457	461
8.. 27.. 29.8	8.. 39.. 57.2	8.. 39.. 57.2	8.. 45.. 20.0	8.. 49.. 6.7
43.2	40 9.8	40 10.5	33.3	20.0
56.8	23.4	24.4	47.0	33.7
24 10.7	37.3	38.0	46 0.8	47.3
24.1	50.6	51.2	14.1	50 50.7
38.1	41 4.9	41 5.6	28.4	50 14.9
8.. 28.. 52.0	8.. 41.. 18.9	8.. 41.. 19.5	8.. 46.. 42.0	8.. 50.. 28.7
254.7	202.1	206.4	145.6	152.0
74.7	262.1	266.4	5.6	832.0
h m s 8.. 28.. 10.67	h m s 8.. 40.. 37.44	h m s 8.. 40.. 38.01	h m s 8.. 46.. 0.80	h m s 8.. 49.. 47.43
−28.21	−28.21	−28.21	−28.21	−28.21
00	00	00	00	00
8.. 27.. 42.46	8.. 40.. 09.23	8.. 40.. 09.80	8.. 45.. 32.59	8.. 49.. 19.22
−0.55	−0.61	−0.61	−0.63	−0.65
−6.17	−6.16	−6.16	−6.16	−6.17
8.. 27.. 35.74	8.. 40.. 02.46	8.. 40.. 03.08	8.. 45.. 25.80	8.. 49.. 12.40

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1855phae.proj...198

Catalogue Stars

March 29

Ill East

Observer W. C. B.

(468)	471	478	479	486
8.. 54.. 21.9 13.1	8.. 59.. 56.1 13.3	9.. 6.. 15.9 13.1	9.. 10.. 31.0 13.0	9.. 14.. 33.7 13.3
35.0 13.9	00 9.4 13.6	29.0	44.0 13.8	47.0 13.8
48.9 13.5	23.0 13.8	42.8 13.9	57.8	15 0.9
55 2.4 13.1	36.8 13.2	56.7 13.0	11 11.6 13.8	14.1 13.2
15.5	50.0 14.4	7 9.7	25.0 13.4	27.4 13.4
30.0 14.5	4.4 13.6	24.0 14.3	39.1 14.1	41.9 14.4
8.. 55.. 43.7 13.7	9.. 1.. 18.0	9.. 7.. 37.8 13.8	9.. 11.. 52.9 13.8	9.. 15.. 55.4 13.5
197.4	197.4	215.9	261.4	220.5
17.4	257.7	395.9	81.4	100.5
8h.. 55m.. 2.49	9.. 00.. 36.81	9h.. 6m.. 56.56	9.. 11.. 11.63	9.. 15.. 14.36
time −28.24	−28.21	−28.21	−28.21	−28.21
rate 00	00	00	00	00
8.. 54.. 34.28	9.. 00.. 06.60	9.. 06.. 28.35	9.. 10.. 43.42	9.. 14.. 46.15
Or. Abe. −0.67	−0.70	−0.73	−0.75	−0.77
Corr. for th. var. −6.15	−6.16	−6.15	−6.16	−6.15
8.. 54.. 27.46	9.. 00.. 01.74	9.. 06.. 21.47	9.. 10.. 36.51	9.. 14.. 39.23
Mn 1853.0				

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1855phae.proj....198

Catalogue Stars
Ill East
Observer W. C. B

March 29

488

9 21 15.1 13.3
28.4 13.7
42.1 13.8
55.9 13.1
22 9.0 14.6
23.6 13.4
9 22 37.0

211.1
391.1

9h 21m 55.87
sum rate −28.21 00
9 21 27.66
Pr. M. R. −0.80
−6.16
9 21 20.70

+23.36
λ Leonis

9 23 55.6 14.4
10.0 15.9
25.9 14.9
40.8
Three first wires lost

.03733
.91312
1.95105

132.3
89.34
) 42.96
4) 222.91
9 23 55.74
−.14
−.08
−.24
9 23 55.28
−27.67
9 23 27.61

(491)

9 30 17.8 13.2
31.0 13.8
44.8 13.6
58.4 13.3
31 11.7 14.3
26.0 13.8
9 31 39.8

229.5
409.5
9h 30m 58s.50
−28.21 00
9 30 30.29
−0.84
−6.15
9 30 23.30

(492)

9 34 46.3 13.2
59.5 13.6
35 13.1 13.9
27.0 13.2
40.2 14.6
54.8 13.4
8 36 8.2

249.1
169.1
9h 35m 27s.01
−28.21 00
9 34 58.80
−0.56
−6.15
9 34 51.79

+24
ε Leonis

9 37 21.2 14.7
35.9 15.0
50.9 15.2
38 6.1 14.8
20.9 15.4
36.3 14.8
9 38 51.1

222.4
42.4
9h 38m 8s.06
−.14
−.08
−.24
9 38 05.60
9 37 37.91
+27.69
−27.67
9 37 37.93

501

9 42 35.1
48.3
43 2.1
16.0
29.2
43.3
9 43 57.1

231.1
111.1
9h 43m 15s.57
sum rate −28.21 00
9 42 47.66
−0.89
−6.15
9 42 40.62

506

9 45 48.6
46 1.9
15.8
29.2
42.5
56.9
9 47 10.6

205.5
9h 46m 29s.36
−28.21 00
9 46 01.15
−0.90
−6.14
9 45 54.11

508

9 49 47.2
50 0.7
14.1
28.0
41.2
55.6
9 51 9.1

195.9
9h 50m 29s.99
−28.21 00
9 49 59.78
−0.91
−6.16
9 49 52.71

509

9 53 39.6
52.8
54 6.7
20.2
33.5
47.9
9 55 1.4

202.1
142.1
9h 54m 20s.30
−28.21 00
9 53 52.09
−0.93
−6.14
9 53 45.02

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1855phae.proj...193

Before Reversal?
What is the matter?

March 30th 1855 Mlast

Polaris

0h	39m	16.2
	47.	55.5
	56.	52.3
WC P.	1h 5.	56.8
	14.	30.3
	23	56.0
	32	51.5

318.6
60
7) 378.6
54.09

April 3 Ill. West.

ν Hydrae −15° 26′

10h	42m	14.8	14.2	a −.35
	"	29.0	14.9	b −.15
	"	43.9	13.6	c +.27
P.S.C.	"	57.5	14.4	
	43	11.9	14.1	
	"	26.0	13.9	
	"	39.9		
		223.0		
		40 3.0		
	10h 42m	57.53		
	sum of cor.	−.20		
	10h 42m	57.33		
		29.26		
		28.07		

3/4 Ap. ♀ C + 28.05

B 1h 5m 52.09 E B 10h 42m 57.57 E

April 3/4 Ill West.

α Cephei +61.58 lost.

21h	14m	33.2	30.6
	15	3.8	28.3
	"	32.1	
P.S.C.	16	1 2	
	"	30.7	28.0
	"	58.7	

101 " 0
161 " 0
24h 15m 32.20
sum of cor. +65
21h 15m 32.85
15 4 78
28.07

β Cephei +69.55 lost

21h	25m	5.3	41.4
	26	31.7	38.4
	27	10.1	39.7
P.S.C.	"	49.8	40.9
	28	30.7	

not observed

172.6
172.6
21h 27m 10.52
+67
27 11.19
26 4216
28.03

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1855phae.proj....198

April 4th 1855 Ill. West Clock slow

	+16.13 α Tauri		+45.51 α Aurigæ		+28.29 β Tauri		−0.25 δ Orionis		+7.20 ε Orionis	
	h m	s	h m	s	h m	s	h m	s	h m	s
	4 27	20.3	5 5	26.4	5 16	48.0	5 24	22.2	5 47	5.2
	"	34.4	"	46.1	17	3.5	"	35.9	"	19.0
	"	49.3	6	6.9	"	19.7	"	50.1	"	33.5
WCB 28		3.1	PSC	25.8	P.S.C	34.9	PSC	3.3		46.8
	"	17.1	"	45.3	"	50.4	"	17.1		48 0.2
	"	31.8	7	5.0	18	6.0	"	31.0	"	14.5
	"	45.6	"	24.3	"	21.0	"	44.1	"	27.9
		201.5		179.8		183.5		203.7		147.6
		21.5				243.5		23.7		327.6
B	4 28	3.07	5 6	25.69	5 17	34.79	5 25	3.39	5 47	46.80

E

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1855phae.prof...198

April 6th 1855 W.C. B obs Ill West

+16.13

Trans.

4	28	20	6 14.2
	"	34.	8 15.1
	"	49.	9 13.5
	29	3.	4 14.3
	"	17.	7 14.3
	"	32.	0 13.8
	"	45.	8

204.2

24.2

B 4h 28m 3.46 E

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1855phae.proj...198

April 17th 1855. P.S.C obs.

α Aurigæ +45.51

β Tauri +28.29

δ Orionis −0.25

P.S.

Polaris

last

last

last

0h 47m 25v.3		5h 5m 26v.9	5h 16m 48v.3
35 5 10.2	0h 47m 34v.73	46.1 19.2	17 3 5 15.2
43.4 07.9		6 6 9 20.8	20 0 16.5
104 2		25 8 18.9	35 0 15.0
		45 7 19.9	50 6 15.6
	21.94	7 5 2 19.5	18 6 3 15.7
		24.1 18.9	21 1 14.8
		180.7	184.8
0 56m 51v.0		5h 6m 25.84	244.8
55.9	0h 56m 56v.67	cal +.44	5h 17m 34v.97
57 3.1		+.01	+.31
110 0		−.05	+.11
	39.43		−.04
1h 5m 32v.8		5h 6m 26.21	5h 17m 35.39
35.7	1h 5m 36.10	5h 5 58.04	5h 17 7.42
39.8		28.17	28 36
108 3		57.55 5h 6m 25.81	5h 17m 34.99
		+.03	−.09
14.2 4.5		−.26	−.22
29.7 bad	1h 14m 33v.65	+.34	+.27
42.8		56.55	5h 17m 35.03
673			5h 17m 07.02
23m 22v.1			+28.01
30.2	1h 23m 30v.20		
46.8 bad			
		42.00 5h 06m 25.92	
		5h 05m 58.03	
		+27.89	
31m 59v.0			
32 8.3 bad	1h 32m 12v.2		
32 25.4			
64 24 4			

5h 24m 22.4	
36.1	
50.3	
25 3.6	
17.2	
31.1	
44.3	
285.1	
35.1	
5h 25m 3.59	
	−.21
	−.13
	+.24
5h 25m 03.62	
5h 24m 35.49	
+28.13	

Coll +.31

Az −.37

Lev −.04

not used

445

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1855phae.proj...193

April 7. 1855 P.S.C obs. Ist West

ε Orionis −1.17		α Orionis +7.23	
5h	28m 38s.0	5h	47m 5s.34
"	51. 5 13.5	"	19. 3 13.9
29	5. 8 14.3	"	33. 8 14.5
"	19. 2 13.4	"	46. 9 13.1
"	32. 9 13.7	48	0. 9. 14.0
"	46. 4 13.5	"	14.9 14.0
"	59. 8 13.4	"	28.0 13.1
	253.6		149.2
	133.6		329.2
5h	29m 19s.09	5h	47m 47s.03
	+ 31		+ 31
	− 25		+ 22
	− 03		− 09
5h	29m 19s.22	5h	47m 47s.53
5h	28m 50.90	6h	47m 18s.93
	28 + 32		28 + 40

5h 29m 19s.09 5h 47m 47s.03 E

−22	− 18
−13	− 15
+.24	+ 24
5h 29m 19.11	5h 47m 46.94
5h 28m 50.89	6h 47m 18.92
+28.22	+28.02

not used.

used in red. of Cat. Stars { a = −.32, b = −.18, c = +24

Rate −0.10s

Error of Z.C. at 8h.00 +27.83s

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1855phae.proj...193

1855
April 7

Catalogue Stars
Ill. West
Observer W. C. B.

432	435	454	455	457
8.. 22.. 16.3	8.. 27.. 29.2	8.. 39.. 55.5	8.. 39.. 56.5	8.. 45.. 19.1
30.0 13.7	42.8 13.6	40 9.1 13.6	40 9.9 13.4	32.9 13.8
44.2 14.2	57.0 14.2	24.0 14.9	24.8 14.9	46.8 13.9
57.7 13.5	28 10.2 13.2	36.9 12.9	37.5 12.7	46 00.5 13.7
23 11.2 13.5	24.1 13.9	50.7 13.8	51.4 13.9	14.0 13.5
24.9 13.7	37.7 13.6	41 4.2 13.5	41 4.9 13.5	28.0 14.0
8.. 23.. 38.2 13.3	8.. 28.. 50.8 13.1	8.. 41.. 17.7 13.5	8.. 41.. 18.2 13.3	8.. 46.. 41.1 13.1
222.5	251.6	196.1	203.2	182.4
402.5	71.8	256.1	263.2	2.4
8h.. 22m.. 57s.50	8h.. 28m.. 10s.26	8h.. 40m.. 36s.47	8h.. 40m.. 37s.60	8h.. 46m.. 0s.34
a −.22				
b −.13				
c +.24				
δt −27.83				
sum −27.94	−27.94	−27.94	−27.94	−27.94
sub 00	00	00	00	00
8.. 22.. 29.56	8.. 27.. 42.32	8.. 40.. 08.93	8.. 40.. 09.66	8.. 45.. 32.40
Diff. Abb. Sc. −0.40	−0.43	−0.49	−0.49	−0.52
Cor. for Ch. Var. −6.16	−6.17	−6.16	−6.16	−6.16
8.. 22.. ~~23~~ 00	8.. 27.. 35.72	8.. 40.. 02.28	8.. 40.. 03.01	8.. 45.. 25.72
AR 1853.0				

Final Corr. by Cat. Stars 0.0

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1855phae.proj...193

Catalogue Stars

Ill West

Observer W. C. B.

April 7

461	(468)	478	479	486
8.. 49.. 05.8	8.. 54.. 20.9 13.9	9.. 06.. 14.9 13.6	9.. 10.. 29.9 13.5	9.. 14.. 32.7 13.6
19.2 13.4	34.8 14.0	28.5 14.4	43.4 14.6	46.3 14.5
34.0 14.8	48.8 13.2	42.9 13.1	58.0 13.0	15 0.8 13.2
47.1 13.1	55 2.0 13.8	56.0 13.8	11 11.0 14.1	14.0 13.7
50 0.9 13.6	15.8 13.6	7 9.8 14.1	25.1 13.6	27.7 13.7
14.5 13.3	29.4 13.2	23.9 12.8	38.7 13.2	41.4 13.4
8.. 50.. 27.8	8.. 55.. 42.6	9.. 7.. 36.7	9.. 11.. 51.9	9.. 15.. 54.8
149.8	194.3	212.4	256.0	217.7
329.3	14.3	392.4	78.0	93.4
8h 49m 47.04	8h 55m 2.04	9h 6m 56.10	9h 11m 11.14	9h 15m 13.96

sum	−27.94	−27.94	−27.94	−27.94
rate	00	00	00	+.01
8.. 49.. 19.10	8.. 54.. 34.10	9.. 06.. 28.16	9.. 10.. 43.20	9.. 14.. 46.03
Dr-Mb.Rc.	−0.54	−0.56	−0.62	−0.64	−0.66
Corr for Obs Vert	−6.17	−6.15	−6.15	−6.16	−6.15
8.. 49.. 12.39	8.. 54.. 27.39	9.. 06.. 21.39	9.. 10.. 36.40	9.. 14.. 39.22
cR 1853.0				

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Catalogue Stars

April 7 — Ill. West — Observer W.C.B

488	(491)	(492)	E Lewis	507
			+24°26	
9.. 21.. 14.2	9.. 30.. 16.9	9.. 34.. 46.5	9.. 37.. 35.2	9.. 42.. 34.2
28.0	30.5	59.3	51.1	48.0
42.2	44.9	35 13.2	5.7	43 2.3
55.5	58.1	26.7	20.7	15.2
22 9.2	31 11.8	40.3	36.0	29.2
22.9	25.4	54.1	50.2	43.0
9.. 22.. 36.1	9.. 31.. 38.9	9.. 36.. 7.7		9.. 43.. 36.1
208.1	226.5	246.2	198.9	228.0
384.1	406.5	186.2	45.20	108.0
9h 21m 55s.44	9.. 30.. 58.07	9.. 35.. 26.60	153.70	9.. 43.. 15.43
			6) 33.70	
			9.. 38.. 05.62	
			-.11	
			-.19	
-27.94	-27.94	-27.94	+.26	-27.94
+.01	+.01	+.01	9.. 38.. 05.58	+.01
9.. 21.. 27.51	9.. 30.. 30.14	9.. 34.. 58.67	9.. 37.. 37.81	9.. 42.. 47.50
-0.69	-0.73	-0.75	+27.77	-0.79
-6.16	-6.15	-6.15	-27.83	-6.15
9.. 21.. 20.66	9.. 30.. 23.26	9.. 34.. 51.77	+.01	9.. 42.. 40.56
			9.. 37.. 37.76	

Last seen Feb.

10.04075
1.61437
1.65512
45.20

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Catalogue Stars

Ill. West

Observer W. C. B.

April 7

506	508	509	Star of 7 mag. prec. abv.	α Leonis
9.. 45.. 47.6	9.. 49.. 46.4	9.. 53.. 38.5	10.. 00.. 15.9	10.. 00.. 25.4
46 1.4	50 0.0	52.4	29.9	39.4
15.7	14.3	54 6.8	44.6	54.2
29.0	27.6	20.2	58.0	1 7.7
42.8	41.5	33.8	12.1	21.6
56.4	55.1	47.3	29.2	35.8
9.. 47.. 9.8	9.. 51.. 8.2	9.. 55.. 0.8	10.. 01.. 39.8	10.. 01.. 49.4
202.7	193.1	199.8		233.5
		139.8		53.5
9.. 46.. 28.96	9.. 50.. 27.59	9.. 54.. 19.97		10.. 1.. 7.64
				−16
				−16
				+25
				10.. 01.. 07.57
sum −27.94	−27.94	−27.94		10.. 00.. 35.70
rate +.01	+.01	+.01		+27.87
9.. 46.. 01.03	9.. 49.. 59.66	9.. 53.. 52.04		−27.83
Bz. M. Bc. −0.80	−0.82	−0.84		+.01
Corr. for Abr. −6.14	−6.16	−6.14		10.. 00.. 39.75
9.. 45.. 54.09	9.. 49.. 52.68	9.. 53.. 45.06		
1653.0				

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April 8/9

Ill. West
Obserν. W.C.B

+33°.11 β Lyræ lost	−30° 5′ γ Sagittarii	D 2d limb	+2°.49 δ Aquilæ	+27°.39 β Cygni ~~Aquilæ~~
	18„ 53„ 3„6	18 59. 24.4	19 17„ 57.9	24. 33.8
18. 44„ 38.5 [17.3]	19 19„2 [15.6]	40.5 [16.1]	18 11.6 [13.6]	49.0 [15.2]
55.8 [15.6]	36.0 [16.8]	57.3 [16.8]	26.0 [14.5]	25 5.2 [16.2]
11.4 [16.5]	51.2 [15.2]	0 12.8 [15.5]	39.1 [13.1]	20.1 [14.9]
27.9 [16.4]	54 7.1 [15.9]	29.0 [16.2]	52.9 [13.8]	35.8 [15.7]
44.3 [15.7]	23.0 [15.9]	44.7 [15.7]	19 6.8 [13.9]	51.0 [15.2]
18„ 45 0.0	38.3 [15.3]	1 0.4 [15.7]	19.8 [13.0]	26 6.0 [15.0]
	178.4	209.1	214.0	200.9
	358.4	89.1	274.0	140.9
	B 18„53„51.2	19„0„12.73	19„18„39.14	19„25„20.13

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April 8/9

Illum. West
W.C. Obs.

	+ 10°. 16′ γ Aquilae		+ 8°. 29′ β Aquilae		+ 6°. 3′ β Aquilae	
19h	39m	7.9	43m	28,4	19h	47. 57.8
		21.5 13.6		42.3 13.9		48 11.4 13.6
		36.3 14.8		56.9 14.6		25.9 14.5
		49.8 13.5	44m	10.2 13.3		39.2 13.3
	40	3.7 13.9		24.1 13.9		53.0 13.8
		17.8 14.1		38.0 13.9	49h	6.9 13.9
		31.0 13.2		51.2 13.2		20.0 13.1
		166.0		251.1		214.2
←		346.0		71.1		274.2
		19h 39m 49.71		19h 44m 10,16		19h 48m 39.17 E

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1855phae.proj...193

April 9/10

Illum. West
W. C. B Obs

	+ 27° 39		+ 10° 16		+ 8° 29			− 12° 59	
	β Cygni		γ Aquilæ		α Aquilæ		☽ 2d limb	α² Capricorni	
19h	24m 33.2	19	39 7.8	19	43m 28.2	20h	4m 31.2	20 9m 45.7	
	48.7		21.5		42.3		47.0	+9 59.7	
	25 5.1		36.2		56.9		5 3.5	10 14.6	
	19.7		49.4		44 10.0		18.8	27.9	
	35.4		40 3.5		23.9		34.5	42.0	
	50.8		17.3		37.8		50.5	56.0	
	26 5.9		30.8		51.1		6 5.6	11 9.8	
	196.6		166.5		250.2		191.1	255.4	
	136.6		346.5		70.2		131.1	195.4	

B 19 „ 25 „ 19.63 19 „ 39 „ 49.50 19 „ 44 „ 10.03 20 „ 5 „ 18.73 20 „ 10 „ 27.96

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1855phae.proj...193

April 9.10

Illum. West
P. S. C. obs.

a −0.32
b −0.20
c +0.28

		+ 39° 47′			+ 44° 45′		
		γ. Cygni			α Cygni.		
20	h	16	m	34.9	20 h 35 m	58″.0	
				52.6	17.7	36 17.0	19.0
				11.3	18.7	37.4	20.4
	17			28.5	17.2	56.0	18.6
				46.2	17.7	37 15.1	19.1
				4.4	18.2	34.8	19.7
	18			21.3	16.9	53.2	18.4
				199.2		271.5	
				3		391.5	

20 h 17 m 28.46 20 h 36 m 55.93 E

20..36..55.93
36 28.51
+27 42

D = +88° 32′ 05.83 1st May. Cos = 8.4076817

Eq. Int.

Sines

7.4708550	9.4631733	− 6° 38′ 29.55	6° 38′ 30″
7.2998984	8.8922167	− 4° 28 29.55	4° 28′ 30
6.9999957	8.5923136	− 2 14 29.55	2° 14′ 30
3.0933209	4.6860386	− 0′ 00″.45	0 00
6.9777697	8.5700880	+ 2° 19′ 48.45	2° 19′ 45″
7.3027408	8.8950591	+ 4 30 15.45	4° 30′ 15
7.4773318	9.0696501	+ 6 43 30.45	6° 43′ 30″

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99/110 (28
7/8
3/2
3/1 2

Collimation altered.

April 10.

Diaphragm taken out.

N.B. After the Alteration the relation of the Mid wire to the Mean of the Seven was not sensibly altered (by micrometer measurements) but as the intervals were as follows by 4 passages of Polaris

March 2nd

A to D	26m 34s	} 53.26	The wires A and F are not evenly situated with respect to the others
B "	17 " 54		
C "	8 " 58		
D "	0 " 00		Mean of wires W of Mid wire the E 0s.029 by Polaris
E "	8 " 39	} 53.34	" 0.032 by Equatl
F "	18 " 01		
G "	26 " 54		

The Eist Mean from Mid wire 0.027

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April 12/13 h & 13 d 1855 Ill. West.

Polaris

1st wire lost

0h	47m	29.9	14.6
		44.5	16.6
		48 1.0	
		143 7.5	4
		56 59.0	
		57 6.9	
		15.4	
		81 3	
		5m 42.0	
		47.0	
		52.1	
		141 1	
		14. 31.8	
		40.1	
		49.0	
		120 9	
~~23~~		~~8~~	
		23. 20 5	
		37.0	
		48.2	
		105 7	
		32. 12.0	
		16.8	
		bad	

0h 47m 45.13

P.S.C 5m 47.03

14m 40.30 C

23m 35.23 B

32m 16.80 A

+45.51

α Aurigae

0h	5m	25.8	
		48.0	19.2
	6	5 9	20.9
W C B		24 8	14.9
Z		44 7	17.9
	7	4 0	19.3
		23 0	19.0
		173 2	

Beg 5 6 24 74

β Orionis

		lost	
0h		lost	
0h	7m	47.1	13.8
B.S.C		0.9	13.8
		14.7	13.8
		28 7	14.0
		42.0	13.8

-8°.22

δ Orionis

-0.25

		lost	
24m	35	0	14.3
		49.3	
	25	2.7	13.4
P.S.C		16.5	13.8
		29.9	13.4
		43.0	13.1

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25

14.3

13.4

13.8

13.4

13.1

0

2 Orionis

5 28 „ 36„7 13.7

„ 50„4 14.4

29 4„8

P. S. C. „ 18.0 13.2

„ 816 13.6

„ 45.2 13.6

„ 58„8

245 5

125,5

5„29„17.93 End

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April 14 & 14/15 1855 Ill. West.

Aprd 14 0°.8 / η Virginis

11h	12m	16s.08
"		29.9
"		44.0
P.S.C "		57.2
13		11.0
"		24.8
"		37.9
		220.8
		400.8

11 " 12 " 57.26

April 14/15 +27.39 β Cygni

19h	24m	~~25s.9~~ ~~30.8~~ 32.8
"		47.8
25		4.0
W C B "		18.8
"		34.5
"		49.7
26		4.8
		192.4
		132.4

19 " 25 " 14.91

April 14/15 companion

19	24m	~~34.3~~ ~~32.3~~
21		49.8
25		6.3
W.C.B "		21.0
"		36.6
"		51.9
26		6.8
		206.7
		146.7

19 " 25 " 20.96

April 14/15 +10.16 γ Aquilae lost

19h	39m	34.8
W.C.B "		48.4
49		3.5
"		16.2
"		29.9

19.44 08.97
19.43 42.52
26 45

April 14/15 +8.29 α Aquilae

19 "	43m	27.4
"		41.1
"		55.7
W.C.B	44	9.0
"		22.9
44		36.7
		50.0
		242.8
		62.8

19 " 44 " 8.97

Ap. 14/15 +6°.03 β Aquilae

19.	47.	56.4
	48	10.0
		24.7
W C B	"	37.9
	"	51.8
	49.	5.3
		18.8
		204.9
		264.9

19 " 48 " 37.84

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1855phae.proj...193

April 15/16 1855 Ill. West
S. S. C obser.
Polaris

0. 38. 41.7		
46.4	0h 38m 47s.47	
54.3		
1424		
0 47m 39.0		
41.2	0h 47m 43s.13	
52.2		
1324		
0 56m 59.2		
57 7.8	0h 57m 7s.90	
" 16.7		
1237		
1 5 36.8		
40.3	1h 5m 42s.63	
50.8		
1279		
1 14 31.2		
39.4	1h 14m 40s.53	
50.0		
1216		
1 23. 31.2		
39.2	1h 23m 40.07	
49.8		
1202		
1 32 12.5		
16.5	1h 32m 16s.47	
20.4		
494		

April 17th
Polaris

0. 38. 43.4		
57.4	0h 38m 55s.13	
64.6		
1654		
0 47. 34.3		
not seen	0h 47m 41s.55	
" 48.8		
831		
0. 56. 51.1		
57 52.3	0h 57m 1s.90	
" 12.3		
557		
1h 5 31s.80		
1 5 41s.40	1h 5m 43s.73	
1. 5 58.00		
13120		
1. 14 33.0		
42.4	1h 14m 43s.13	
54.1		
1295		
1, 23 38.9		
1 35.60	1h 23m 37.17	
47.6		
1115		
1. 32. 11.1		
not seen	1h 32m 19.85	
286		
397		

8. 36. 40

8. 46 42

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1855phae.proj...193

April 16th W. C. B. obs. Ill. West

Temperat. trials of chronometers

β Canis Min +5°.36	α' Geminorum	α² Geminorum +32.12	α Canis minoris 5°.36	β Geminorum +28°.23
7h 19. 01. 40	24 57.80	24 57.95	31. 27. 45	" 36. 5. 4
" 15.30	25 13.80	25 14.05	" 41.10	" 21.0
" 29.80	" 30.85	" 31.10	" 55.60	" 37.3
" 43.30	" 46.30	" 46.80	32 8.60	" 52.3
" 57.05	26 2.30	26 2.70	" 22.60	37 8.0
20 10.80	18.60	19.00	" 36.70	" 23.8
24.20	33.90	34.30	49.60	" 38.6
181.85	209.55	205.90	241.65	166.4
301.85	323.55	325.90	61.65	366.4
7.19.43.12	7.25.46.22	7.25.46.56	7.32.8.81	7.36.52.34

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April 17/18th W. C. Bond obs. Ill. West

Temperature trials of chronometers

	α Aquilæ	+10°.16		α Aquilæ	+8°.29
19h	39m	05s.90	19h	43m	26.7
	"	19 80		"	40.4
	"	34.50		"	55.0
	"	47.70		44	8.4
	40	1.92		"	22.2
	"	15.78		"	36.1
	"	29.0		"	49.6
		154.5			236.4
		334.5			56.4

19h 39m 47s.79 19h 44m 8s.34 E

1855phae.proj...193

April 21st 1855 d

Ill. West

Polaris

April 20/21

April 20/21

α Capricorni

lost
lost
lost

20. 11. 52.6

lost
lost
lost

20. 11. 52.6

az —
lev. —
c —

α Cygni

20h 36m 56 00
" 37 15 blc
" 35 6
" 54 00
3-8 13 25
" 32 70
" 51 30

20h 37m 54.01

az —
lev. —
c —

B 20. 37. 54.01 E

April 20/21

0h 38 52.3
" 56.0
38 59.8
168 1

0h 47m 40.0
49.0
59.0
47. 148.0

0 57. 7.25

0h 38m 56.03
5 47 80
47.77

0h 47m 49.33

0 57. 7.25

+28.28

β Tauri

5h 16m 44.9
" 00.5
" 16.9
" 31.9
" 47.4
18 3.0
" 18.0

162.6
222.6
102.6

B 5. 17. 31.80 E

R 5. 17. 6.89

1 6. 41.9
48.0
53.5
143 4

1h 6. 47 80

April 23/23 Illum. West

W. C. B. Obs. +8°29

γ Aquilae +10°.16

19h 39m 4.9
18.7
33.4
46.7
40. 0.7
14.7
28.1

14 7.2
327.2

19. 39. 46.74

Et Aquilae

19h 43. 25.8
39.3
54.0
44. 7.3
21.1
35.0
48.4

230.9
50.9

19. 44. 7.27

1 lost
mr fades

23 41.85
45 20
48.70
135 7 5

32. 19.5
24.3
29 9
737

1. 23. 45 25

1. 32. 24 57

April 23/23 +6°.3

W. C. B. Obs.

β Aquilae

19. 47. 34.8
48. 8.5
23.0
36.2
50.0
49 3.8
17.0

193.3
253.3

19. 48. 36.17 E

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April 23d W.C.B Observer Ill. West.

Moon culminations.

Moon's I limb		β Cancri		ε Hydræ +6°.57	
				lost	
8h 11m	52.9	8 23	00.5		
12m	8.4 15.5	"	14.9 14.4	8 39m	2.5
"	24.5 16.1	"	30.0 15.1	"	17.0 14.5
"	39.6 15.1	"	43.9 13.9	"	30.3 13.3
"	55.0 15.4	"	58.4 14.5	"	44.1 13.8
13	10.5 15.5	24	12.8 14.4	"	57.8 13.7
"	25.4 14.9 ~~35.4~~	"	26.9 14.1	40	11.2 13.4
	216.3 ~~224.3~~		187.4		
	276.3		307.4		

δ 12m 39.47 δ 23m 43.91

April 23 P.S.C obs. Ill. West

Temperature trials of chronometers

	+45.51		+28.29		−0°.25″		2 1.18	
	α Aurigæ		β Tauri		δ Orionis		ε Orionis	
5h 5m	22 9.5	5	16 44.30	5m	24.18.6	5	28 ~~34.0~~ ~~31.0~~	~~13.5~~
"	42.4 19.5	"	59 9.0 15.60	"	32.2 13.6	"	47.5	
6	3.0 20.6	17	16.20 16.30	"	46.4 14.2	29	1.9 14.4	
"	22.0 19.0	"	31.00 14.80	"	59.5 13.1	"	15.1 13.2	
"	41.6 19.6	"	46.80 15.80	25	13.4 13.9	"	28.9 13.8	
7	1.5 19.9	18	2.30 15.50	"	27.1 13.7	"	42.5 13.6	
"	20.2 18.7	"	17.30 15.00	"	40.4 13.3	"	55.8 13.3	
	153.6		214.6		234.6		225.4	
					417.6		105.7	

δ 6m 21.94 δ 17m 31.11 δ 24m 59.66 δ 28m 15.10 E

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April 23/24th W. C. B Obs. Ill. West

[illegible] Capricorni -12°.59

	γ Cygni		α Cygni +44°.46	
20h 15m	19.6	20 16m 31.8	20. 35.	55.10
"	29.0 09.4	" 49.7 17.9	36	14.20 19.10
?		17 8.2 18.5	"	34.40 20.20
?		" 25.5 17.3	"	53.10 18.70
?		" 43.2 17.7	37	12.30 19.20
?		18 1.1 17.9	"	31.90 19.60
?		" 18.3 17.2	"	50.30 18.40
		176.8		251.3
20h 17m	25.40			37 1.3
Sum of cor.	−30		20h 36m	53.04
20 " 17 "	25.10		Sum of cor.	−30
Connaissance des Temps 20 " 17 "	01.32		20 " 36 "	52.74
EC fast	+23.78		20 " 36 "	29.03 N.A.
			EC	+23.71

M 20 " 17 " 25.40 20 " 36 " 53.04 E

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1855phae_proj...193

April 27 P. S. L. Obs. Illum. West.

β Tauri +28°.29	α Ursæ Maj.	δ Leonis +21°.19	Moon's limb	Sen. 2 not Gassendi
5 .. 17 .. 12.9 15.7	10 .. 54 .. 10.2 31.3	11 .. 6 .. 3.4 15.3	11 .. 25 .. 56.7 13.7	11 .. 27 .. 26.9
28.6 16.3	41.5 26.5	18.7 14.8	26 .. 10.4 15.0	40.5 13.6
44.9 14.9	55 .. 10.0 29.6	33.5 14.2	25.4 13.6	55.5 13.4
59.8 15.7	39.6 30.2	47.7 14.6	39.0 14.2	28 .. 8.9 14.2
18 .. 15.5 16.1	56 .. 9.8 24.3	7 2.3 14.8	53.2 14.0	23.1 14.1
31.6 14.5	38.1	17.1 14.1	27 .. 7.2 13.7	37.2 13.4
46.1	first were lost.	31.2	20.9	50.6
239.4		153.9	212.8	242.7
419.4		333.9	272.8	62.7
B 5 .. 17 .. 59.91 E		B 11 .. 6 .. 47.70	11 .. 26 .. 38.97	11 .. 28 .. 8.96

→

5 .. 17 .. 59.91
R 5 17 .. 06.72

11 .. 06 .. 24.69
23.01

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1855phae.proj...198

April 27 P. S. C. Obs. Ill. West.

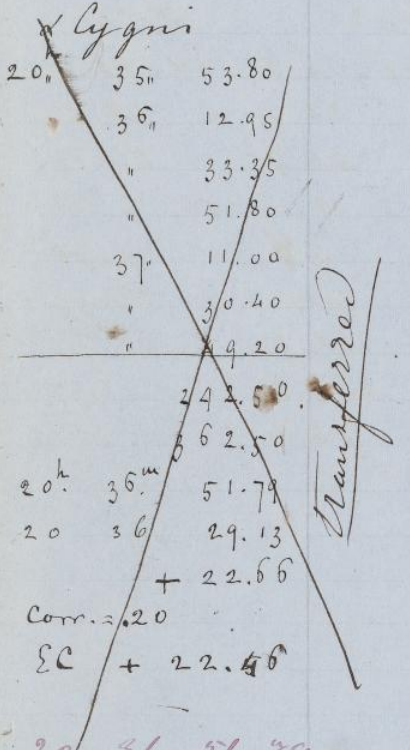
γ Virginis	β Virginis	η Virginis	β Corvi	Polaris
				Sub Pr. S.P.
$11^h\,38^m\,7.0$	$11^h\,42^m\,51.3$	$12^h\,12^m\,12.4$	$12^h\,26^m\,26.3$	12..39..16.6
20.7	43..6.1	26.0	41.0	47..58.7
35.2	19.5	40.5	56.7	56..57.6
48.5	32.6	53.7	27..11.0	13..5..52.6
39..2.3	46.4	13 7.3	25.6	14..28.0
16.1	44..0.2	21.0	40.7	28..54.4
29.6	13.4	34.3	52.9	32..49.5
159.4	168.5	195.2	256.4	317.4
339 4	227.5	375.2	76.4	377.4
11..38..48.49	11..43..32.5	12..12..53.6	12..27..10.91	13..5..53.91

2 in next page

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April 28/29 1855



April 27th good seeing Ill. West.

Polaris S. P.

12h 39m 11s.0
16s.6
21s.3
48.9

12h 39m 16s.30

8. 41. 35

47m 47s.75
58.80
48 6.40
172 95

8. 59. 85

12h 56m 53.3
57.6
61.6
1725

8 55 10

13 5 45.3
53.8
58.7
78

+8. 35 07

13 14 22.3
26.7
34.0
830

9. 26 63

48.2

13 23 54.5

60.2
1629

8. 55 17

43.0

13 32 48.5
56.9
1484

Polaris' Companion

A 12h 38m 50s.6
B 12 47m 45s.5 36s.1
C 12 56 34.1
D 13 5 27.9
E 13 13 59.6
F 13 23 25.1
G 13 32 15.9

5 27 9
26 45 0

23. 54. 30
52 45
17 01 45

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1855phae.proj...198

April 27. 1855 P. S. L. Obs. Illum. West.

α Virginis		η Urs. Maj.		η Bootis	
		lost			
13h	17m 16.0			13	47 27.9
	29.9	13	41 32.6		42.1
	44.6		54.0		57.4
	57.9	42	14.4	48	11.5
18	11.9		36.4		25.9
	25.9		57.3		40.5
	39.3	43	18.1		54.6
	225.5				259.9
	40 5.5				79.9
13	17 57.93			13	48 11.41

1855phae.proj....193

April 27/28 1855

+ 44.46

-25. 8. B. Obs.

α Cygni

20.. 35.. 53.7

36.. 12.9

33.4

47.7

37.. 11.0

30.4

49.2

242.3

362.3

B 20.. 36.. 51.76 E

Illum. West.

P. S. B. Obs.

Polaris

0 .. 38.. 50.5

47.. 48.6

57.. 14.4

1 5.. 51.4

14.. 44.6

22.. 42.6

32.. 24.4

276.4

336.4

B 1 .. 5 .. 48.06 E

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1855phae.proj...198

April 28/29

+44.46

P. S. C.

a Cygni

Ill. West

20 " 35" 53.80 19.15

36 " 12.95 20.40

33.35 14.45

51.80 19.20

37 " 11.00 19.40

30.40 14.60

49.20

2 42.50

3 62.50

B 20 " 36 " 51.79 E

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1855phae.proj....1013

1855 May 2nd Ill. West G. H. S.

+32.12 +5° 36

α² Geminorum α Canis Minoris

24.. 53.0, 16.4 31, 23.0 13.3
25.. 9.4 16.4 36.3 14.5
THS 26.2 15.8 THS 50.8 13.4
42.0 15.9 32.. 4.2 13.9
57.9 16.3 17.5 14.1
26.. 14.2 15.6 31.6 13.4

7.. 26.. 29.8 7.. 32.. 45.0

2325 2084
2925 284

7.. 25.. 41.79 7.. 32.. 4.06
AR 7.. 25.. 20.32 7 31 42.29
+21.47 +21.77
7.. 25.. 41.79 7.. 32.. 4.06

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1855phae.proj...198

1855 May 3 W.C.B. obs. & P.S.C after wards

W.C.B. P.S.C P.S.C

α Leonis +12.40 ν Hydrae −15 β ☆ Ursae Majoris +57

10.. 00.. 18.4	14.0	42.. 7.8	14.1	10.. 52.. 10.8	25.2
" 32.4	14.7	" 21.9	14.9	53.. 36.0	26.7
" 47.1	13.5	" 36.8	13.6	53.. 2.7	24.3
1 0.6	12.2	" 50.4	14.3	" 27.0	25.2
" 14.8	12.0	43 4.7	14.3	" 52.2	25.5
" 28.8	13.5	" 19.0	13.5	54 17.7	24.3
10.. 01.. 42.3		10.. 43.. 32.5		" 42.0	
184.4		173.1		10.. 53.. 26.91	
4.4		353.1			
10.. 1m " 0.63		10.. 42m 50.44		10.. 53 26.91	
−.35		−.33		+.15	
−.15		10.42 50.11		10.53 26.41	
10 1 −0.13		10 42 28.99		−1.05	
10.. 0.. 39.48		8.8 + 21.1 2		20.36	
EC +20.67					

10.. 1 " 0.63	10 " 42 " 50.44	10.. 53 " 26.91	rate = −0.1
.17	−.16	+.15	
−.10	−.29	+.24	
−.07	−.06	−.19	
39.41	−.07	−.13	
10 " 00 " 59.29	10 " 42 " 50.02	10.. 53.. 26.74	+21.00 = error of 8.t.
10.. 00.. 39.41	10.. 42.. 28.99	10.. 53.. 05.80	
19.88	+ 21.03	+ 20.94	
	w = 0.8	0.4	
	−21.00	−21.00	
	10.. 42 " 29.02	10.. 53.. 05.74	

α −.33
β −.11
c −.07

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1855phae.proj....1393

May 3/4 1855 — obs. C. H. West.

α Pegasi

22h 54m 10.6	
24.8	14.2
39.6	14.8
53.2	13.6
58m 7.1	13.9
21.7	14.6
35.2	13.5
192.2	
2	
2 72.2	
22m 57m 53.17	
−16	
−9	
−7	
22m 57m 52.85	
22m 57 31.91	
R.A. + 20.94	

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1855mae.proj...198

1855

May 3

Catalogue Stars - Ill. Vert

Ill Vr

P.S.C.

used in red. of Cat. 8 Lars (5552)

a = -.33
b = -.11
c = -.07

5541	(5545)	(5551)	5554
11..00..50.80	11..06..01.15	11..15..33.65	11..20..19.50
0..53.30	14.95	47.15	33.05
1 7.85	29.20	1.60	47.40
1..21.00	42.60	14.75	00.65
1..34.85	56.20	28.55	14.25
1..48.50	9.90	42.10	28.00
2..1.80	23.00	55.40	41.35
167.30	177.00	223.20	184.20
41.15	297.00	103.20	4.20
6) 126.15	11..06..42.43	11..16..14.74	11..21..00.60
11..01..21.02			
a -.22			
b -.08			
c -.07			
Δt -21.00			
sum -21.37	-21.37	-21.37	-21.37
rate 00	00	00	00
11..00..59.65	11..06..21.06	11..15..53.37	11..20..39.23
Dr. Ath. Bc. -0.89	-0.92	-0.96	-0.99
8 or for Ath. Dr. -6.14	-6.18	-6.15	-6.15
11..00..52.62	11..06..13.96	11..15..46.26	11..20..32.09
M 1853.0			

5557	5558
11..29..12.70	11..33..11.55
26.15	25.15
48.75	39.55
54.00	52.65
7.60	6.25
21.20	20.10
34.45	33.20
196.85	184.45
376.85	368.45
11..29..53.84	11..33..52.64
-21.37	-21.37
00	00
11..29..32.47	11..33..31.27
-1.08	-1.05
-6.15	-6.14
11..29..25.24	11..33..24.08

Final Corr. for Cat. 8 Lars +0.10

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1855phae.proj....193

For Clock stars all on a preceding page

Error of E. C. at 11h 0m 00s +21.s07

Rate −0.s1

(561)
~~563~~

11h 41m 18.95
32.60
47.10
00.10
13.90
27.70
40.80

181.15
1.15
11h 42m 00.16

37
−21.~~46~~
00
.79
11h 41m 38.~~72~~
− 1.08
−6.14
11h 41m 31.~~50~~ 57

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May 5/6 1855 W.S.B. Obs Ill. West

α Cygni

20.. 35. 52.2 19.2
36.. 11. 4 24.2
31. 6 16.4
30. 0 19.6
37.. 9. 6 19.2
28. 8 18.6
27. 4
231. 0
7) 35.1. 0
20.. 36.. 30.14

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To leave spaces for Polaris NB to copy results at the bottom of page

Dif. sheet for each date

~~Always Astr. account~~ Both civil & Astr. account

Name of observer & Ill E or W

Copy only those stars which have names

Copy in order of R

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1855phae.proj...1

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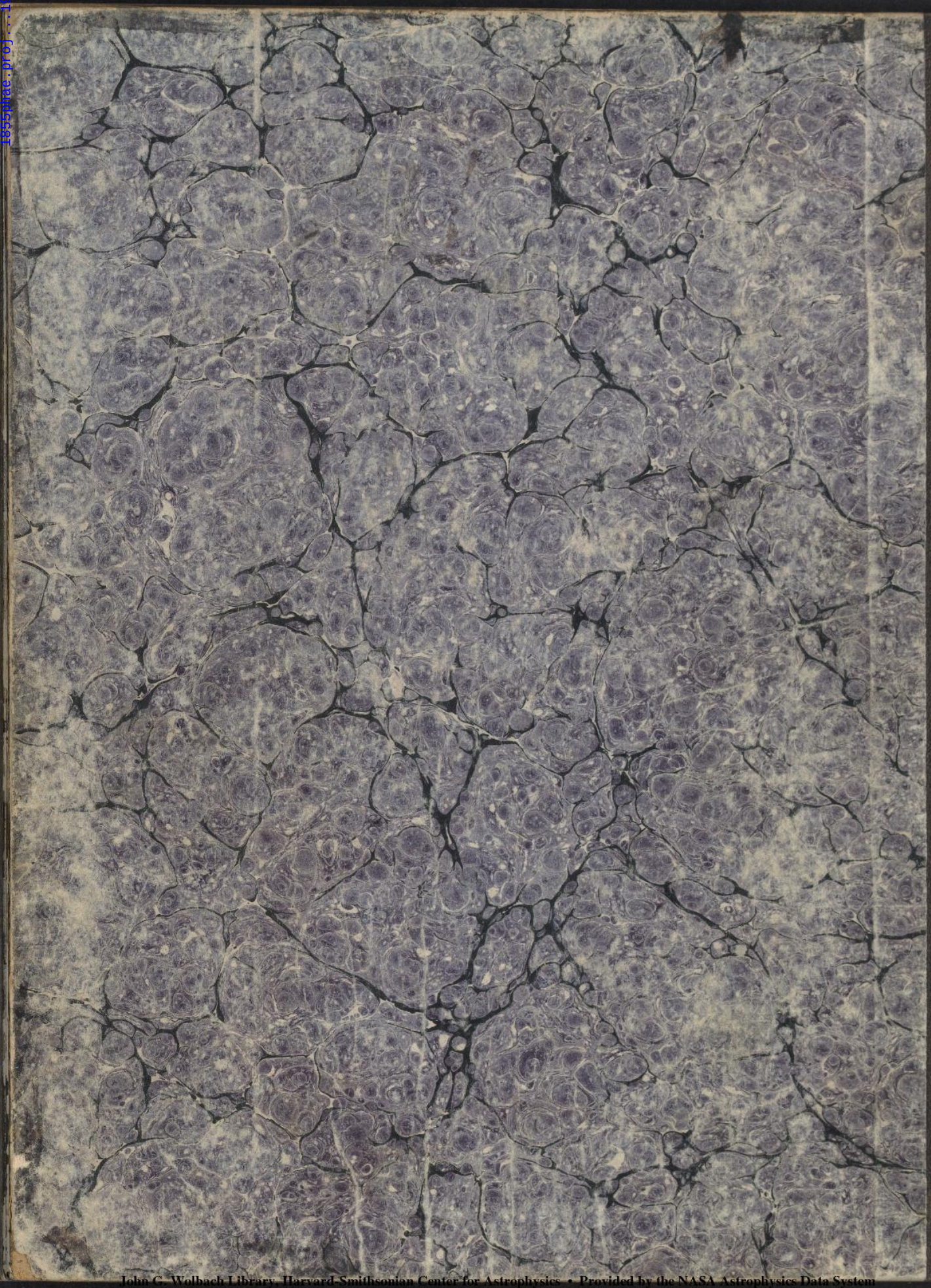
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