

KG
11365
73

B.2

No. 2.

Reduction of Transits

Aug. 16. 1849 to Dec. 7. 1849

Sold by T. Groom & Co., Stationers, India Building, 82 State St., Boston.

KG 11365.73



KG 11365.73



1849. Aug 16

$a = +0.37$

$b = +0.11$

$c = +0.14$

M.C.B

M. East

Polaris S.P.			α Virginis		η Bootis		ϵ Bootis		δ Urs Min	
12	40	13.2	7	25.8	7	39.0			49	26.2
	49	3.0		40.0		53.8	817.2	46.2	50	18.2
83° 30' 7.8	57	48.0	-10° 22'	54.0	+19° 10'	8.4	+27° 43'	17.1 1.6	+74° 47'	51 9.3
	6	31.0		8.0		23.0	17.1	17.0	52	2.0
	15	20.0		22.0		37.5	17.2	32.7	52	54.8
	24	0.3		36.0		52.0	17.2	48.2	53	47.0
13	32	48.7	13 18	50.0	13 49	6.5	14 40	17.0 3.6	14 54	39.8
	45	44.2		235.8		220.2				197.3
13	6	32.03	13 18	7.97		22.89	14 39	17.13		2.47
	-2			-2		-2		-2		-2
13	6	30.03	13 18	5.97	13 48	20.89	14 39	15.13	14 52	0.47

Prob. Error on $w \pm 0.111$

X
See two pages on for α Bootis

1849phae.proj...

1849. Aug 16

M.C.B.

α Cor. Bor.		β Librae		α Ophiuchi		μ Sagittarii		α Lyrae	
8	25.4	9	5.2	8	8.5	4	53.2	1	52.3
	40.7		19.2		22.3		10.0		10.0
+27° 14'	56.0	-8° 49'	33.3	+12° 41'	36.5	-21° 5'	24.7	+38° 39'	27.7
	11.4		47.4		50.5		39.4		45.3
	27.0		1.3		5.0		54.4		2.5
	42.3		14.8		18.8		9.0		20.0
15 29	58.0	15 10	29	17 29	33.0	18 6	23.8	18 33	38.0
	260.8		150.2		174.6		216.5		195.8
	11.54		47.17		50.64		39.50		45.11
	-2		-2		-2		-2		-2
15 29	9.54	15 9	45.17	17 29	48.64	18 5	37.50	18 33	43.11

1849. Aug 16

$a = +0.37$

$b = +0.11$

$c = +0.14$

W.G.B

 β Lyrae α Aquilae β Aquilae α Bootis

2.3	4	37.0	3	39.2	8	8.3		55.8
0.0		53.0		53.0		22.0		10.2
7.7	+33° 12	9.4	+8° 29	6.7	+6° 12	36.0	+19° 58	25.0
5.3		26.0		21.0		49.8		40.0
2.5		42.7		34.5		3.5		54.4
0.0		59.0		48.5		17.2		8.3
8.0	18 46	15.6	19 45	2.3	19 49	31.0	14 10	23.2
5.8		242.7		205.2		167.8		216.9
7.11		26.10		20.74		49.69		39.56
		-2		-2		-2		-2
8.11	18 45	24.10	19 44	18.74	19 48	47.69	14 9	37.56

1849phae.proj...

1849. Aug. 17.

$a = +0.37$
 $b = +0.11$
 $c = +0.15$

W. C. B.

Ill. East.

Polaris S.P.			α Virginis			γ Bootis			γ Uli Maj			ε Bootis		
12	40	35.6/13.3	7		28.8			26.4	42.8	1		26.3	8	33.4
	49	37.0 3.5			43.0			25.6	56.5			47.5		49.0
88° 30'	8.0	57 37.3 32.0	-10° 22'		57.0	+19° 10'		26.1	11.5	+50° 4'		9.0	+27° 43'	4.4
					10.9			25.9	25.8			30.5		20.0
	15	35.5 22.0			24.8							52.0		35.3
	24	38.0 10.0			38.7							13.2		51.0
	32	32.7 50.0	13	18	52.5	13	49	25.3	9.0	13	43	34.5	14	40 6.4
					255.7							213.0		199.5
														19.93
13	6	36.02			10.81	13	48	25.86				30.43		
		-2			-2			-2				-2		-2
13	6	34.02	13	18	8.81	13	48	23.86	13	43	28.43	14	40	17.93

Prob. Error on W = ± 0.114

1859. Aug 17

W.C. B.
 α Bootis

8	59.0
	13.4
+19 58	28.0
	42.5
	57.3
	12.0
14 10	26.4
	238.6
	42.66
	-2
14 9	40.66

1849. Aug. 20

$a = +0.37$

$b = +0.11$

$c = +0.15$

$a = +0.37$

$b = +0.11$

$c = -0.17$

M.C.B.

Ill. East

Ill. West

Polaris S.P.

 α Virginis α Cor. Bor. ϵ Urs. Min. α Herculis

12	40	26.0	7	38.8	8	38.0	16	57	39.0	—					
	49	18.0		52.7		53.5		59	21.3	—					
38° 30' 38"	58	1.0	-10° 22'	6.7	+27° 14'	9.0	+82° 17'	1	3.5	+14° 34'	+38				
	6	49.0		20.7		24.6		2	46.3	—					
	15	32.0		34.6		39.8		4	28.0	53.6 7.8					
	24	20.0		48.5		55.2		6	10.0	53.1 21.5					
	33	6.0	13	2.4	15	10.7	17	7	52.0	17 9 54.0 36.5	18				
	47	32.0		204.4		230.8			200.1						
13	6	47.43	13	18	20.63	24.40	17	2	45.73	53.58					
		-2			-2	-2			-2	-2					
13	6	45.47	13	18	18.63	15	29	22.40	17	2	43.73	17	8	51.57	18

Prob. Error on $w \pm 0.062$

1849. Aug. 20

$a + 0.37$

$b + 0.11$

$c - 0.17$

W.C.B.

Ill. Westi

 α Lyrae β Lyrae δ Aquilae ϵ Aquilae ζ Aquilae

2 5.4

4 49.6

8 54.6

8 20.7

9 32.

23.0

6.2

9.0

34.5

46.0

+38° 39' 40.6

+33° 12' 22.0

+13° 39' 23.0

+2° 49' 49.0

+10° 15' 0.1

58.0

38.8

37.1

2.3

14.0

16.0

56.0

51.5

16.0

28.0

33.7

12.0

5.5

29.7

42.0

18 33 51.0

18 46 28.3

19 0 19.5

19 19 43.0

19 40 55.9

227.7

212.9

200.2

195.2

218.0

58.24

38.99

37.17

2.17

14.00

-2

-2

-2

-2

2

18 32 56.24

18 45 36.99

18 59 35.17

19 19 0.17

19 40 12.00

1849phae.proj...

1849 Aug. 20

$a = +0.37$
 $b = +0.11$
 $c = -0.17$

Ill. West

W. C. B.

α Aquilae

3	52.4
	6.2
+8° 29'	10.2
	34.0
	48.0
	2.0
19 45	15.7
	178.5
	34.07
	-2
19 45	32.07

1849. Aug. 21

$a = +0.39$

$b = +0.12$

$c = -0.17$

M.C.B.

Ill. West

 α Tauri α Andromedae α Orionis

7	48.0	5	45.8	7	30.6
	59.5		5.7		44.0
+16° 12'	14.0	+45° 50'	25.7	+7° 22'	57.8
	28.0				
	42.4		45.3		11.7
	56.5		5.0		25.3
4 29	10.8		24.8		39.4
		5	7	5	48
			44.3		53.2
			1966		2614
	256.2				
	28.03		45.23		11.63
	-2		-2		-2
4 28	26.035	6	43.235	48	9.63

1849. Aug. 22

$a = +0.31$

$b = +0.12$

$c = -0.02$

M.C.B.

H. West

Polaris S.P.

 α Virginis ϵ Bootis ϵ Bootis α^2 Librae

				7	45.0		9	15.		8	49.4		3	2.0	
12	49	43.412.8			59.0			29.3			4.7			16.3	
88° 36' 9.357		44.659.2	-10° 22'		13.0	+19° 58'		44.0	+27° 43'		20.3	-15° 25'		30.5	+74
6		43.345.0			26.9			58.8			36.0			45.0	
15		44.431			41.0			13.2			51.4			59.4	
24		45.017			54.9			28.0			7.0			13.5	
			13	19	8.6	14	10	42.4	14	40	22.3	14	44	27.5	
					248.4			230.7			191.1			194.2	
13	6	44.14			26.91			58.67			35.88	14	43	44.90	14
		-2			-2			-2			-2			-2	
13	6	42.14	13	18	29.91	14	10	56.67	14	39	33.88	14	43	42.90	14

Prob. Error ± 0.053

1849. Aug. 22

W.C. O

Ill. Nat

 β Urs. Min β Librae

14	49	44.8		6.1	24.5
	50	37.5		6.6	38.8
+74°	47	51	29.4 - 8°	49	6.3 52.4
	52	21.5		6.5	6.5
	53	13.8		6.2	—
	54	6.2			34.5
	54	58.3	15	10	—
		211.5			

14	52	21.64	15	10	6.34
		-2			-2

14	52	19.64	15	10	4.34
----	----	-------	----	----	------

1849. Aug 24

$a = +0.32$

$b = +0.12$

$c = -0.01$

W.C.B.

W.C.B.

~~W.C.B.~~

Ill. West.

L.P.B.

Polaris S.P.

γ Uis Maj

ϵ Bootis

β Uis. M in

β Orionis

		51	24.0	8	31.1	14	59	25.4	7	31.6	
			45.8		47.0		0	18.7		45.4	
88° 30' 10.0	+50° 4'	6.7	+27° 43'	2.5	+74° 47'	1	10.9	-8° 23'	59.3		
		28.3		17.7		2	3.3		13.0		
		49.8		33.5		2	56.0		27.0		
13 33 59.0		11.3		49.0		3	48.2		41.0		
- 4 feet of 255)	13 53	23.4	14 50	4.4		4	40.2	5 18	54.7		4
		198.3		185.2			202.7		272.0		
13 7 41.10		28.33	14 49	17.89			3.78		13.14		
- 2,		-2		-2			-2		-2		
13 7 39.10	13 53	26.33	14 49	15.89	15	2	1.78	5 18	11.14		4

1849 Aug. 26

$a = +0.33$

$b = +0.12$

$c = 0.00$

"

"

w.c.B.		w.c.B.		Jell. Mt. S. O. B.		M Gemini		Cass. May	
α Tauri		α Aurigae		α Orionis					
6	34.3	4	35.1		19.5	3	5.7	7	47.3
	48.5		55.0		33.7		20.9		1.8
	3.6		15.0		47.1		36.0		16.0
	17.2		34.7		1.2		50.9		30.5
	32.0		54.2		15.0		5.3		44.5
	46.		13.7		28.7		20.5		59.0
4	28	5	6	33.3	5	47	6	14	35.4
	181.0		241.0		187.7		174.7		212.1
4			34.43		1.10		50.67		30.30
	17.29		-2		2		-2		-2
4	4	27	15.29	5	6	32.43	5	46	59.10
								6	14
									48.67
								6	38
									28.30

1849phae.proj...

1849. Aug. 26

a = +0.33
b = +0.12
c = 0.00

Ill. West.

E. P. B.

i Canis Maj		2 ² Geminor		α Canis Min		β Geminor		α Urs. Maj	
2	54.8		10.5		43.0		18.5		50.5
	10.5		26.0		57.0		33.9		21.5
	26.		41.8		10.6		49.4	+62° 34'	51.0
	42.3		58.4		24.5		4.9		21.0
	57.5		14.5		38.5		20.5		51.0
	13.2		30.8		52.0		35.8		26.3
6	53	28.9	7 25 47.0	7	32 5.8	7	36 51.6		—
		233.2	229.0		172.6		214.6		
		41.89	58.43		24.52		4.94		
		-2	-2		-2		-2		
6	52	39.89	7 25 56.43	7	32 22.52	7	36 2.94		

1849. Aug 26

Ill. West

S.P. B.

Polaris S.P.

α Virginis

Red. Polaris

			6	34.0	+26	22.9	
12	48	7.5		47.8	+17	30.9	38.4
88° 30' 10"	56	53.0	-10° 22'	1.9	+8	45.5	40.5
	5	39.8		16.0	-0	1.7	38.1
	14	25.0		30.0	-8	46.7	38.3
	23	8.5		44.0	-17	32.5	36.0
	32	0.5	13 17	57.7	-26	18.1	39.6
				231.4			

13	5	38.50		15.91			
		-2		-2			
13	5	36.50	13 17	13.91			

Prob. Error new ± 0.081

1849phae.proj...

1849. Aug. 27.

$a = +0.34$

$b = +0.13$

$c = 0.00$

Alt. West.

M. C. B.		"		"		"	
α Tauri		α Aurigae		β Tauri		α Orionis	
	—	—	—	—	—	6	21.0
+16° 12'	—	+45° 50'	—	+28° 28'	—		35.4
—	—	—	—	4.7 49.1	—		49.3
—	—	35.5 35.6	—	4.1 4.2	—		2.8
190 33.3	—	36.8 56.5 5	—	17 4.4 20.0	—		16.7
19.448.0	—	—	—	—	—		30.6
64 25 19.9 2.7 5	—	636.1 35.5	—	—	5 47		44.5
							200.3
4 27 19.43 5	5 36.13 5	17 4.40					2.90
-2	-2	-2					-2
4 27 17.43 5	5 34.13 5	17 2.40 5	47				0.90

1849. Aug. 28

$a = +0.34$

$b = +0.13$

$c = 0.00$

Hl. West.

m. c. d.

 α Canis Mij

32.049.0

-16° 31'

—

—

—

32.3 1.0

6 39 32.115.0

6 38 32.13

-2

6 38 30.13

1849. Aug. 30

$a = +0.35$

$b = +0.13$

$c = 0.00$

All. West.

W. C. B.

Polaris S.P.

 α Virginis η Urs. Maj η Bootis α Bootis

12	39	32.0	—	—	—	—	—	—	8	11.0	
	48	15.5	-10° 22'	—	+50° 4'	—	+19° 10'	—		26.0	
	57	1.7		7 23.6 9.6		42.5 59.8		—		40.4	
	5	47.0		23.3 23.3		42.7 21.3		38.7 38.7		55.1	
	14	35.0		23.4 37.3		42.9 43.0		38.4 53.0		10.0	
	23	20.0		23.4 51.3		42.1 4.5		38.2 7.3		24.5	
13	32	10.3	13	18 23.4 5.2		42.7 25.6	13	48 38.4 22.0	14	9	39.0
	40	41.5			13	42 42.3 46.4				206.0	
	5	48.8	13	17 23.42	13	41 42.53	13	47 38.42		55.14	
		-2		-2		-2		-2		-2	
13	5	46.80	13	17 21.42	13	41 40.53	13	47 36.42	14	8	53.14

1849. Aug. 30 *

$a = +0.40$

$b = +0.13$

$c = -0.02$

* Ill. East.

m.c.B.

2 Bootis

 α Serpini ϵ Vir. Min α Herculis α Lyrae

7

45.3

1.4

 $-26^{\circ} 5'$

—

82° 17'

58'

46.8

22.2

7

13.5

1

7.8

27.3

24.8

16.8

0 18.5

3.2

0

47.2

4.7

41.6

43.1

32.5

19.1

19.0

1

46.6

46.3

53.4

59.8

48.0

18.9

34.2

3

47.1

29.3

9.8

17.4

3.7

19.3

49.8

5

46.9

11.2

24.2

35.4

14 39

19.0

16

21

19.4

5.3

17 8

38.5

18

32

53.2

166.7

210.3

241.5

32.39 16

20

19.44

17

1

46.92

55.75

0.21

-2

-2

-2

-2

-2

14 38

30.39 16

20

17.44

17

1

44.92

17 8

53.75

18

31

58.21

* Instrument reversed between 2 Bootis and α Serpini

1849phae.proj...

1849. Aug. 30

$$a = +0.40$$

$$b = +0.13$$

$$c = -0.02$$

Ill. Cart

w. c. B.

β Lyrae

δ Aquilae

3	52.5	7	22.5
	8.0		36.5
	24.5		50.0
	40.8		4.0
	57.4		17.5
	14.0		31.6
18 45	30.2	19 18	45.0
	227.4		207.1
	41.05		3.86
	-2		-2
18 45	39.05	19 18	1.86

1849. Sept. 1

$a = +0.45$

$b = +0.14$

$c = -0.03$

W.C.B.

Ill. East

β Draconis		γ Draconis		μ Sagittarii		β Lyrae		5 " Argulus	
26	9.3	—	—	4	16.0	3	57.0	8	1.7
	31.4	+51° 31'	—		30.3		13.0		15.8
	54.0	—	—		45.3		30.0		30.3
	16.4	3 21.1	21.0		0.3		46.5		44.3
	38.8	22.1	44.2		15.0		3.0		58.1
	1.2	21.7	5.8		29.6		19.0		12.3
17 28	24.	21.9	28.2	18 5-	44.2	18 45-	35.5	18 59	26.5
	175.1				180.7		204.0		189.0
	16.44		21.70		0.10		46.29		44.14
	-2		-2		-2		-2		-2
17 27	14.44	17 3	19.70	18 4	58.10	18 44	44.29	18 58	42.14

1849phae.proj...

1849. ~~May~~ Sept. 1

$a = +0.45$
 $b = +0.13$
 $c = -0.03$

Ill. East

W.C.B.

"

"

α Aquilae

β Aquilae

γ Aquilae

2 59.3

7 29.0

8 39.5

13.8

42.5

53.2

27.3

56.3

6.7

41.1

10.2

21.0

55.2

24.2

35.0

9.0

38.1

49.0

19 44 23.0

19 48 51.5

19 40 3.0

228.7

281.8

207.4

41.24

10.26

21.06

-2

-2

-2

19 43 39.24

19 48 8.26

19 39 19.06

1849: Sept. 3

$$\begin{aligned} a &= -0.06 \\ b &= +0.14 \\ c &= -0.04 \end{aligned}$$

Ill. East-

M. C. B.		" "		" "		" "		" "	
α Aurigae		δ Orionis		α Orionis		β Tauri		α Canis Major	
4	54.0	3	56.0	6	37.	6	17.8	8	5.3
	13.3	4	9.8		51.0		34.0		19.6
	32.2		23.2		5.2		49.3		33.8
	53.0		37.2		19.2		5.0		48.1
	12.5		50.9		33.1		20.3		2.3
	32.0		4.4		47.0		36.0		16.7
5	6	5	25	48	1.05	17	51.8	6	39
	249.0		199.7		193.5		213.9		157.2
	52.71		37.10		19.07		4.84		48.17
	-2		-2		-2		-2		-2
5	5	5	24	47	17.07	17	2.84	6	39
	50.71		35.10		17.07		2.84		46.17

1849. Sept. 3.

$a = -0.06$

$b = +0.14$

$c = -0.04$

W.C.B.

Alt. East.

α^2 Geminor	α Canis Min	β Geminor	Polaris S.P.	α Virginis	α
4 28.1	1 1.0	5 36.3	12 39 57.5	6 53.0	
44.2	15.0	52.0	48 50.0	6.8	
0.4	28.7	7.5	57 33.6	20.3	
16.7	42.5	23.2	6 21.0	34.5	
32.7	56.4	39.0	15 6.3	48.7	
49.	9.8	54.5	23 52.5	2.3	
7 26 5.47	32 24.3	7 37 10.	13 32 39.0	13 18 16.3	15
176.5	177.7	222.5	44 19.9	181.9	
16.64	42.53	23.21	6 19.99	34.56	
-2	-2	-2	-2	-2	
7 26 14.647	31 40.53	7 36 21.21	13 6 17.99	13 17 32.56	15

Prob. Error are ± 0.138

1849. Sept. 3

$a = -0.06$

$b = +0.14$

$c = -0.04$

Ill. East

W.C.B.

α Cor. Bor.		α Serpenti		β Scorpii		δ Ophiuchi		ϵ Urs. Min		
7	51.2	6	28.5	—	—	6	5.4	16	56	48.6
	6.5		42.5	-19° 23'	—		18.8		58	30.0
	22.0		56.5	6	0.6 46.0		33.0		0	12.0
	37.3		10.3		0.4 0.4		46.6		1	55.2
	53.0		24.0		0.7 15.3		0.5		3	37.0
	8.4		38.0		0.4 29.5		14.0		5	19.0
15 29	23.7	15 37	51.7	15 57	0.5 44.2	16 7	28.0		7	1.3
	202.1		251.5				146.3			23.1
	37.44		10.21		0.52		46.61		1	54.73
	-2		-2		-2		-2			-2
15 28	35.44	15 37	8.21	15 56	58.52	16 6	44.61	17 1		52.73

1849phae.proj...

1849. Sept. 3

$a = -0.06$
 $b = +0.14$
 $c = -0.04$

Ill. East

W. C. B.

β Draconis

6 14.5

36.3

59.0

21.5

44.0

6.4

17 28 29.0

210.7

21.53

-2

17 27 19.53

1849. Sept. 3/4

$a = -0.10$

$b = +0.14$

$c = -0.04$

Ill. East

M.C.B.

α Orionis			α Canis Maj			α Canis Min			α^2 Geminor			β Geminor		
5		40.8	8		8.5	1		4.4	4		31.4	5		39.3
		54.5			22.9			18.2			46.5			54.7
		8.4			37.4			32.0			3.0			10.4
		22.3			51.5			45.5			19.5			26.0
		36.2			6.0			59.5			35.7			41.6
		50.0			20.2			13.2			52.0			57.0
5	47	4.0	6	39	34.5	7	32	27.	7	26	8.0	7	37	12.7
		216.2			181.0			199.8			196.1			241.7
		22.31			51.57			45.64			19.44			25.96
		-2			-2			-2			2			-2
5	46	20.316	6	38	49.57	7	31	43.64	7	25	17.44	7	36	23.96

1849. Sept. 5

a = -0.10
b = +0.14
c = -0.04

M.C.B.

Ill. East

β Draconis α Lyrae

	6	19.8	1	24.0
		42.2		41.0
		4.7		57.7
		27.0		16.0
		49.6		34.0
		12.0		51.2
17	28	34.8	18	33
		190.1		232.7
		27.16		16.10
		-2		-2
17	27	25.16	18	32
				14.10

1849. Sept. 6

$$a = -.10$$

$$b = +.14$$

$$c = -.04$$

All. East.

M. C. B.

Polaris S.P. 2 Virginis

			17	0.7
58° 30' 14.2"				15.0
12	57	23.5	37.5	29.0
	6	22.3	24.0	42.7
	15	23.8	11.0	56.8
				10.7
			13	18
				24.8
				179.7
		23.20		42.81
		-2		-2
13	6	21.20	13	17
				40.81

Prob. Error on W ± 0.102

1849. Sept. 7

$$a = -0.16$$

$$b = +0.14$$

$$c = -0.05$$

All East

W.C. B.

Polaris S.P.

 α Virginis

12	48	29.457.5		45.717.8
88° 36' 14.5"	57	28.742.7	-10° 22'	46.032.0
	6	27.128.8		45.747.7
	15	29.316.5		45.559.5
	24	28.52.0		45.613.5

13	6	28.60		45.70
		-2		-2
13	6	26.60		43.70

1849. Sept. 8

$a = -0.17$

$b = +0.15$

$c = -0.05$

L. O. B.

Polaris S.P.

 α Bootis

8 36.8

8 51.5

6.0

20.5

33.2

49.7

14 10 4.7

204.4

20.63

13 6 35.00

-2

13 6 33.00

14 9 18.63

Sept. 9.

Ill. East
M.C. B.

$a = -0.19$

$b = +0.15$

$c = -0.05$

 β Tauri

6 37.1

52.2

8.0

23.5

39.2

53.0

18 10.5

225.5

23.64

-2

17 21.64

 δ Orionis $-0^{\circ} 25' 55.928.4$

56.1 42.3

55.5 55.5

56.0 9.7

56.1 23.5

5 30

55.92

-2

53.92

 ϵ Tauri

8 32.

46.4

1.0

15.6

30.8

45.2

0.0

171.0

15.86

-2

29 13.86

1849phae.proj...

1849. Sept. 9

$a = -0.18$
 $b = +0.15$
 $c = -0.05$

ell. East

W.C.B.

Moon TT0 α Canis Maj γ Geminor

6	40.4		24.3		
	55.0		38.7	+16° 31'	—
+18° 36'	10.0		53.2		—
	25.0		7.4		—
	39.7		21.9		37.0 51.3
	54.2		36.0		37.4 6.0
5 48	9.26	39	50.36	30	37.520.5
	233.5		231.8		
	173.5		51.8		
	24.79		7.40		37.30
	-2		-2		-2
5 47	22.796	39	5.406	29	35.30

1849. Sept. 10

$a = -0.18$

$b = +0.15$

$c = -0.05$

All. East

W.C. B.				All. East					
α Herculis		α Orionis		μ Geminor		α Canis Maj		Moon TTV	
7	43.3	6	59.9	3	46.5	8	28.3	9	13.0
	57.1		13.4		1.3		42.0		27.7
	11.0		27.5		16.0		56.0		42.5
	25.3		41.7		31.0		10.5		57.5
	39.6		55.0		46.0		25.0		12.5
	53.4		9.0		0.7		39.2		27.4
17	9	5	48	6	15	6	39	6	50
	7.6		23.0		15.3		53.7		42.4
	237.3		229.5		156.8		254.7		223.0
	177.3		289.5		216.8		74.7		403.0
	25.33		41.36		30.97		10.67		57.57
	-2		-2		-2		-2		-2
17	8	4	39	14	28.97	6	39	8.67	6
	23.335		39.366					49	55.57

1849. Sept. 10

$$a = -0.18$$

$$b = +0.15$$

$$c = -0.05$$

W.C.B.

Ill. East

α^2 Seminov α Canis Min β Seminov

4	50.0	1	23.5	5	58.0	12			
	6.2		37.2		14.0				
	22.2		51.0		29.6	88			
	38.3		4.9		44.9				
	54.3		18.4		0.7				
	10.7		32.5		16.4				
7	26	27.0	7	32	46.4	7	37	32.0	13
		208.7			213.9			195.6	
		268.7			33.9			315.6	
		38.39			4.84			45.09	13
		-2			-2			-2	
7	25	36.39	7	32	2.84	7	36	43.09	13

1849. Sept. 11

$a = -0.17$

$b = +0.15$

$c = -0.05$

M. East

W.C.B.			" "		" "		" "	
Polaris S.P.			α Virginis		α Cor. Bor.		β Aquilae	
12	40	43.2 19.	7	14.2	8	13.1	7	56.3
		49 42.9 11.		28.3		28.5		10.
88° 30' 15".8				42.3		44.0		24.0
	6	40.8 42.5		56.2		59.5		38.2
	15	42.8 30.0		10.1		15.0		52.0
	24	41.7 15.2		24.1		30.2		5.7
13	33	42.5 2.0	13	38.2 15	29	45.4 19	49	20.
				213.4		235.7		206.2
13	6	42.32		56.20		59.39		38.03
		-2		-2		2		-2
13	6	40.32 13	17	54.20 15	28	57.39 19	48	36.03

Prob. Error ± 0.059

1849phae.proj.

1849. Sept. 12

$a = -0.17$
 $b = +0.16$
 $c = -0.06$

Ill. Part.

W. C. B.
 α Orionis

7 5.8
19.5
33.5
47.2
1.0

5 48 29.0
150.8

47.26
-2

5 47 45.26

18

12

88° 3

13

13

1849. Sept. 13

$a = -0.16$

$b = +0.16$

$c = -0.07$

Ill. Part

W.C.B.			"		"		"	
Polaris S.P.			α Virginis		ϵ Urs. Min		α Heculis	
12	40	23.	7	20.2	—		7	51.4
	49	13.3		34.0	82° 17'	—		5.8
88° 30' 16.558		0.5		48.0	17	0 18.5 36.0		20.0
	6	51.3		2.0		2 16.5 18.2		34.2
	15	36.0		16.0		3 17.6 59.8		48.2
	24	22.0		29.8		—		2.3
13	33	6.7	13	44.0	—		17	9
		32.8		194.0				178.4
	47.							
	47.54			2.00	17	2 18.20		34.06
	-2			-2		-2		-2
13	6	45.84	13	0.00	17	2 16.20	17	8
								32.06

Prob. Error on $w \pm 0.040$

1849phae.proj. 13

1849. Sept. 15.

W. C. D.

Ill. East

$$a = -0.15$$

$$b = +0.16$$

$$c = -0.08$$

δ Orionis

α Orionis

—	6	21.8				
—		36.0				
-0° 25'	—	49.9				
—		4.0				
21.5	35.2	17.5				
21.6	49.0	31.4				
5	25 21.7	3.05	47	45.3		7
				205.9		
	21.60	3.70				
	-2	-2				
5	24	19.605	47	1.70		7

1849. Sept. 16

$a = -0.14$

$b = +0.17$

$c = -0.09$

W.C.B.

Ill. East.

α^2 Geminor		α Canis Min		β Geminor	
4	12.0	0	45.2	8	20.4
	28.0		59.3		36.1
	44.2		12.9		51.5
	0.3		27.0		7.2
	16.7		41.0		22.7
	33.0		54.6		38.3
7	25	7	32	7	36
	49.5		8.3		54.0
	183.7		248.3		230.2
	0.53		26.90		7.17
	-2		-2		-2
7	24	7	31	7	36
	58.53		24.90		5.17

1849. Sept. 17

 $a = -0.11$
 $b = +0.17$
 $c = +0.04$

m. c. B

Ill. West

1849

α Canis Maj	δ "Geminor	α^2 "Geminor	α Canis Min	β "Geminor	
7	49.2	0 24.	4 11.	0 44.4	5 19.3
	3.6	39.0	27.5	58.5	35.0
	17.8	53.8	43.6	12.2	51.0
	32.4	8.8	0.0	26.2	6.5
	46.6	23.5	16.2	40.0	22.0
	0.9	38.4	32.4	53.7	37.8
6 39	15.27	11 53.2	7 25 48.5	7 32 7.27	86 53.2
	165.7	240.7	179.2	242.2	224.8
			59.89		
	22.24	8.67	-2	26.03	06.40
	-2	-2		-2	-2
6 38	30.247	11 6.677	24 57.897	7 31 24.037	36 44.0

1849phae.proj...

1849. Sept. 17

Ill. West

W.C.D.

Polaris S.P. & Virginis

3					
0	12	49 17.8 44.		16.4 48.5	
0	88° 30' 18.0		-10° 22' 6.3	2.4	
5		6 17.4 15.7		16.3 16.3	
0				16.2 30.2	
8		23 14.7 47.		16.2 44.2	
2					
8					
40	00	16.63		16.28	
		-2		-2	
40	13 6	14.63		14.28	

1849. Sept. 18

$a = -0.09$

$b = +0.17$

$c = +0.03$

W.C.B.

Ill. West

δ Gemino	α^2 Gemino	α Canis	Min	β Gemino	* α Vir. Maj
—	4	9.9	0	43.0	—
—	—	26.2	57.0	5.2 34.	51.3 9.8
+22° 15'	—	42.4	11.0	+28° 23' 4.9 49.3	51.1 30.3
7.4 7.4	—	58.6	24.8	5.0 5.1	50.9 51.0
7.1 22.0	—	14.8	38.7	5.2 20.8	50.8 11.6
7.3 37.0	—	30.9	52.4	7 36 5.1 36.3	50.7 32.3
7 11 7.5 52.0	7 25 47.	7 32 6.2	—	—	—
	229.8	233.1			
				5.08	
7.32	58.54	24.73		-2	50.96
-2	-2	2			-2
7 11 5.32	7 24 56.54	7 31 22.73	7 36 3.08		48.96

* First & last minus last

1849 Sept. 18

m.c. 3

2 Mr. Maj

Ill. East

+62° 34'

20.450.2

20.2 19.7

8-5-20.0 49.5

20.20

-2

10 54 18.20

1849. Sept. 19

$a = -0.04$

$b = +0.17$

$c = -0.06$

Ill. East.

1849phi

W.C. B.			"		"		"			"		
Polaris S.P.			α Virginis		α Bootis		β Vir. Min			α Cor. Bor.		
12	39	31.2			8	2.4	14	48	30.0	7	31.1	
	48	20.0		14.9 47.0		17.0		49	22.2		46.7	
	57	8.0	-10° 22	14.8 0.8		31.5		50	14.0		2.3	
	6	2.0		14.8 14.8		46.0		51	6.3		17.5	
	14	42.5		15.2 29.2		1.0		51	39.0		33.0	
	23	36.0	13	17 14.8 42.7		15.5		52	51.0		48.5	
13	32	15.8			14	9	30.0	53	43.5	15	4.0	
		35.5					143.4		226.0		163.1	
		56.50		14.90		46.20		6.57			17.58	
	-2			-2		-2		-2			-2	
13	5	54.50	13	17 12.90	14	9	44.20	14	51	4.57	15	28 15.59

1849. Sept. 19

M. East

M.C.B.

 α Serpentis α Herculis

1.1	6	9.0	1	7	3.8
1.7		22.7			18.0
2.3		36.5			32.3
2.8		50.1			46.5
3.0		4.0			0.5
8.5		18.0			14.7
1.0	15	37	32.0	17	8
7.1		172.3			144.8
58		50.33			46.40
		-2			-2
59	15	36	48.33	17	7
					44.40

1849. Sept. 20

$a = -0.02$
 $b = +0.17$
 $c = -0.06$

Ill. East

W.C.B.
 α Serpenti

6 7.2
21.0
34.8
48.7
2.4
16.4
15 37 30.3
160.8

48.69
-2

15 36 46.69

1849phae.proj...

1849. Sept. 23.

$a = +0.04$
 $b = +0.17$
 $c = -0.09$

Ill. East

W.C.B.

α Canis Maj	α^2 Geminor	α Canis Min	β Geminor	Polaris I.P.
8 51.0	5 13.0	1 46.4	6 21.5	—
5.5	29.4	0.0	37.0	12 49 59.126.2
19.7	45.7	14.0	52.5	88° 30' 20.2
34.0	2.0	27.9	8.4	—