

KG
11365
51

A. 51

Meridian Circle

1864, May 22 - June 6th

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

KG 11365.51

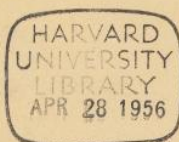
✓

A51

Handwritten mark, possibly a signature or initials.

Handwritten text, possibly a list or notes.

KG11365.51



6000 B 3rd ex. minute May 29
 1st or. of γ Virgin May 29
 323 Aplan B no results from May 29
 Polaris above May 29 ex
 & Prodi

		n	c	+50°	40°	30°	20°	+10°	0	-10°	20°	30°	40°
253	May 22/23	-1.02	+355	430	378	351	341	342	355	378	415	469	550
	27	-0.39	+355	506	431	388	364	353	355	367	392	432	497
203	28	-1.52	+355	371	336	322	323	330	355	387	433	466	592
271	29	-0.84	+355	452	394	362	347	345	355	375	409	458	554
	31-2nd	-1.07	+355	424	374	348	339	341	355	379	417	477	554
	June 3-6	+0.46	+355	607	503	437	395	368	355	352	361	383	425

δ	end' ntyd						
+50°	552	-122	-046	-181	-100	-128	+055
+40	408	-086	-033	-128	-070	-090	+039
+30	610	-059	-022	-088	-048	-062	+027
+20	378	037	-014	-055	-031	-039	+017
+10	260	-018	-007	-027	-015	-019	+008
0	355						
-10							
-20							
-30							
-40							

1864 May 22 ME
WAR

See next page

309 Cephei B. sp	ϵ leonini	γ leonini	α Virginus	6 Urs Minor 13
11. 53 4.0	12 ³ 33.6	9 44.4	13 22.6	
41.5	36.9	17.8	26.0	
54 35.2	40.9	21.6	29.6	12 14 56.0
55 19.4	43.8	24.4	32.2	16 35.0
	47.9	28.7	36.2	18 59.9
	203.1	106.9	146.6	
11. 53 45.93	12 4 40.62	12 9 21.38	12 13 29.32	12 14 46.59
23 53 12.48	3 10.86		59.51	14 27.75

855° 1.15078
1086

86° 27' 22 1.56934

A 44.76 - 34.24
B 45.15 - 47.35
C 46.87 + 3.37
D 45.55 41.55

C 47.17 - 8.63
D 46.08 - 148.92
E 46.52 - 413.08

53 14.7
2.5
4.0
5.2
7.0

53 40.7
42.2

54 34.9
35.4

55 18.8
20.0

14 50.9
14. 55.3
14 56.4
15 1.2
18 52.7
53.5
59.2
0.3
1.8
4.0
8.5
16 30.7
33.6
34.6
41.0

1864 May 22 *ME*
WAR

<i>Comae</i>		<i>δ Leonis</i>		<i>γ Leonis</i>		<i>β Leonis</i>		<i>Ar 48. sp</i>
		23	15.5	25	29.7	27	48.4	26.0
20	37.7		19.2		33.0		44.0	50.8
	41.7		22.7		36.9		48.0	9.9
	44.9		25.7		39.7		50.8	34.7
	49.1		29.8		43.6		55.2	57.5
			112.9		180.9		238.4	176.9
								56.9
		12 23	22.58	12 25	36.18	12 27	47.68	12 30 11.38
							17.85	

0.0583

3.84	41.54
-0.28	41.42
-3.30	41.54
-3.82	41.24
	41.44

(1) 29 240

(2) 29 50.8
57.0(3) 30 9.8
10.0

30 34.7

30 57.5

<i>a</i> Cassio. sp	γ Virgines <i>A</i>	1732 74	12 Caninus	12 Caninus <i>follo</i>
33 8.4	35 120	35 120	50 2.3	3.5
15.1	15.2	15.2	6.5	7.5
20.1	18.9	42 52.7	50 11.2	12.3
26.5	21.6	23.0	14.6	15.7
32.3	26.8	50.4	19.5	20.8
102.3			54.1	59.8
12 33 20.46	12 35 18.65		12 50 10.82	12 50 11.96
			219	42.21

18.66 18.55
 .66 18.66
 .77

1864 May 22 ^{W. A. R.} East
W.A.R.

43 Leph H	2	Virgin	44 Leph H	3	Virgin	Polaris
	55	50.0	35.6	3	20.7	
		53.6	56.0		24.2	
14.0		57.2	1	10.0	27.8	
0.8		0.0		28.9	30.3	13 12 7.0
42.7		4.0		46.6	34.2	1 14 48.8
		164.8		137.2		
		284.8		57.1		
12 51 17.44	12	53 56.96	13 1 11.42	13 3 27.46	13 9 50.57	
0 51 43.58		1		2 57.54	1 9 10.72	

55°31'46 9.10771
 A 17.35 - 1 25.35
 B 17.92 - 42.68
 C 17.05 + 3.05

51 10.65
 14.0 } 3
 17.5

51 57.2
 0.2 } 4
 4.9

52 40.3 } 5
 42.2
 42.7
 45.5

55°26'59" 160682
 A 17.45 h 29.35
 B 51.69 2 15.31

11 57.0
 54.5 }
 12 1.3 } 4
 4.4
 7.3
 11.0
 14.3

14 13.1 }
 16.8 } 5
 18.0
 19.6
 23.0
 29.5
 21.3

Second wrongnext page

a Draconis			a Bootis			2 Virginis			1 Cassiopeia ^{4h}			4 Bootis		
14	0	27.3	9	5.4	3.3	12	1.8		17	58.7		20	45.6	
		33.6		5	46.7		5.4			8.8			57.1	
		40.3			50.6		9.0			15.4			56.8	
		47.5			53.4		11.7			24.5			55.5	
		54.8			57.5		15.5			33.2			54.4	
		203.5			251.5		43.14			140.6			162.5	
										80.6			282.5	
14	0	40.70	14	9	50.30	14	12	8.64	14	17	16.12	14	20	56.50
					30.37									

May 22nd 1864 Went
W.A.R.

36 bars H		a' Libral		a" Libral		B hrs Min		y Scorpi	
25	10.3	43	36.8	43	{ 48.3 }	57	19.6	56	33.9
	(22.5)		40.1		51.5		27.5		37.3
	32.0		44.1		55.2		41.6		41.3
	43.4		46.8		58.2		51.5		44.0
	54.6		50.9	44	2.1	52	6.2		48.3
	16 2.8	~~14~~ 43	218.7				161.4		20 4.3
14	25 3 2.56								
		14 43	113.74	14 43	55.02	14 50	40.28	14 56	40.86
			13.59		25.03	51	11.60		

41.1
41.5
42.3

51 51.2
51.6
51.8

55.21
54.97

54.95

55.15

55.01

52 6.0
6.3
6.4

next page

μ Bootis	β Librae	μ Bootis	γ Draconis
59 2.4	15 10 8.2	19 45.7	19 46.8
(6.2)	11.7	49.7	51.2
12.0	15.2	54.3	55.7
13.3	18.0	57.8	59.1
17.6	22.0	2.7	4.0
	75.1	210.2	216.8
		270.2	276.8
14 59 9.88	15 10 15.02	15 19 54.04	15 19 55.36
58 40.06	9 44.90		15 21 30.42

A 9.91 7.51
 B [9.92] 2.77
 C 9.73 0.27
 D 9.99 2.31
 E 9.90 7.70

1864 May 22 Mt. Ant.

MAR

323 Ceph. Rep		57 Wrs Min B a coronae		6 Camel		Serpente	
22	45.1		29	20.9	30	48.6	35-55.2
23	40.4			24.9		54.5	58.8
22	45.7			29.2		2.3	2.7
23	40.4			32.0		9.5	6.4
24	29.7	25	(34.4)	36.4			9.6
				143.4			131.7
							11.7
15	22	49.15	15	29	28.68	15	36
3	22	12.90		28	58.80		2.34

8 56° 12' 56" 117972

15 { 50.6
 51.7
 53.4
 54.6
 57.0
 58.6 } 5

1 68.76 - 1 40.74
 03 49.79 - 50.61
 6 48.70 + 3.60

α Serpentes		λ Serpentes		μ Serpentes		ϵ Serpentes		γ Serpentes	
38	0.8	40	17.1	42	58.3	44	32.6	50	36.6
	4.2		20.5		1.7		36.0		40.3
	7.8		24.3		5.2		38.7		44.1
	10.5		26.9		7.8		42.5		46.8
	14.4		30.9		11.8				50.8
	37.7		119.7		84.8				218.6
					24.8				
15 38	7.54	15 40	23.94	15 42	4.96			15 50	43.72
37	37.43								

1864 May 22 - 10^h 10^m 10^s ant.

12 AIR

Gr 750 4	B. Scorp pr	B Scorp folu	Gr 771 46	5 Alphachin
45 5h 47.9	57 59.0	57 59.3	16 3 228	7 40.2
55 21.4	2.5	2.9		43.5
56 2.4	6.4	6.6	4 1.7	47.3
56 43.0	9.1	9.4		50.0
	13.3	13.7		53.8
	90.3	91.9		234.8
		31.9		18.0
15 55 23.33	15 58 6.06	15 58 6.38	16 4 3.60	16 7 46.96
3 54 57.22	57 35.70			

285° 11' 20" 2 107654

A 23.56 - 1 19.44

M 22.49 - 39.91

C 24.29 + 2.84

D 22.92 35.02

54 47.8 / 2
48.021.1 / 8
21.6

56 2.4 / 4

43.0 / 5

ε Ophi		γ Herc		α Scorp		ζ Ophi		ζ Herculis	
11	34.6	16	21.5	21	31.1	30	24		
	38.0		25.0		34.9		10.7		
	41.6		28.9		38.8		14.6		
	44.2		31.7		41.9		17.2	36	46.2
	48.1		35.9		46.1		21.2		50.8
	206.5		143.0		192.8		71.1		
16	11	41.30	16	16	28.60	16	21	38.56	44.22
								8.29	12.57

42.74 3.46
42.76 5.04

1864 May 22 Mont.

HAR

1864 May 23d

THS

η Herculis	ϵ Scorpion	ζ Scorpion	Polaris	α Leonis
38 38.9	41 48.1	45 27.2	2 17.7	10 1 34.0
43.1	52.0	31.8	1 17.7	37.5
47.6	54.5	36.3	9 46.1	41.2
51.3	59.7	40.2	11 30.9	43.9
56.1	45	45.3	14 10.4	47.9
237.0	220.8	180.8		206.5
	280.8			
16 38 117.40	16 41 56.16	16 45 36.16	1 9 33.46	10 1 40.90
			11.09	9.43

Cook - Group

ϵ Corvi	12 3 0.42	30.18	-30.22	-0.4	
γ Virgin	12 13 0.35	30.16	-30.23	-0.7	
β Corvi	12 27 0.42	30.25	-30.25	.00	
δ Launum	12 50 0.38	30.13	-30.27	-1.4	
α Virgin	13 3 0.36	30.26	-30.29	-0.3	
α Bootis	14 10 0.74	30.27	-30.36	-0.9	✓
α Librae	14 43 0.60	30.55	-30.39	+1.6	✓
γ —	14 43 0.60	30.39	-30.39	.00	✓
β Bootis	14 58 0.35	30.17	-30.41	-2.4	
β Librae	15 10 0.38	30.50	-30.52	+0.8	✓
γ —	15 10 0.38	30.50	-30.52	-2.1	✓
γ Scorpion	15 58 0.47	30.77	-30.45	+3.0	✓
δ Ophiuchi	16 7 0.36	30.67	-30.48	-0.1	
α Scorpion	16 21 0.44	30.71	-30.70	+2.1	✓
ζ Serpentis	16 36 0.35	30.59	-30.72	+0.7	
γ —	17 22 0.35	30.77	-30.77	.00	
	14 32	+30.380			
Rate		+0.060 per			
		0.069 per			
		0.064			
			8 88.34 59.1	160682	
			33.01	2 15.31	
			34.48	9.62	
			32.16	1 58.74	
			34.17	4 36.23	

next page

x Inoue Maj		B Leonis		B Virginis		H Virginis		z Leonis	
39	15.0	42	34.2	44	40	11	54	3	35.2
	20.0		37.6		7.3		28.5		38.8
	23.5		41.3		10.9		31.1		42.6
	27.5		44.2		13.6		35.1		45.6
	35.4		48.2		17.5				49.8
	125.4		205.5		53.3		141.0		212.0
10 39	25.08	11 42	41.10	11 44	10.66	11 54	28.20	12 3	43.40
			9.58		43 39.08				10.85

1864 May 23

J.H.S

γ Leonis	ϵ Virginis	δ Leonis	η Leonis	β Leonis
9 16.3	13 24.5	23 17.3	25 31.6	27 42.2
19.7	27.8	20.7	34.9	45.8
23.5	31.3	24.4	38.8	49.7
26.3	34.0	27.3	41.5	52.6
30.4	37.9	31.2	45.4	56.8
116.2	155.5	120.9	192.2	247.1
12 9 23.24	12 13 31.10	12 23 24.18	12 25 38.44	12 27 49.52
	12 59.50			17.86

Br 48 Sp	y Virgines	Br 74 Sp	82 Camel H	32 Camel H fall
29 25.9	35-13.9	42 1.5	47 29.8	47 37.5
53.0	17.1	34.0	48 2.3	48 10.4
30 12.0	20.9	55.8		
36.7	23.5	43 24.6		
31 0.0	27.4	52.0		
127.6		167.9		
17.6		287.9		
12 30 13.52	12 35 20.53	12 42 57.58		
	34 48.94			

20.56	20.45
20.55	20.58
<u>20.57</u>	
20.56	20.50

May 23 1864

JHS

2 Virgins			12 Canum Jan		12 Canum Feb		43 Cephe H		2 Virgins		
12	48	12.8	50	4.2	50	5.1			55	54.8	
		16.1		8.1						55.2	
		19.9		12.7		14.0	51	16.4		59.0	
		22.4		16.3		17.5	52	2.8	56	1.7	
		26.3		21.0		22.5		44.9		5.6	
		97.5		62.3						172.13	
										292.3	
12	48	19.50	12	50	12.46	12	50	13.70	12	51	19.64
							49	42.20		50	43.54

A

19.55

B

19.92

C

19.45

13.68 + 8.58

— + 4.31

69 + 0.31

72 - 3.78

71 → 8.79

1864 May 27 M.E.

DHS

3 Virgins		γ Vir Maj		π Virgins		500 - Major		10 Virgins	
44	10.3	47	8.0	54	27.7	.1	36.6	3	16.9
	13.5		13.8		31.1		39.8		20.3
	17.2		20.0		34.7		43.6		25.8
	19.9		24.6		37.5		46.1		26.5
	23.8		31.2		41.4		50.1		30.4
	34.7		47.6		172.4		216.2		119.9
11	44 16.94	11	47 19.52	11	54 34.48	11	1 43.24	11	3 23.94
	43 39.04		46 42.02						

	5 hrs Min	γ Leman	δ Corvi	α Corvi	β Corvi
11	10.0	20 42.0		25 37.7	27 48.5
12	17.1	45.7		41.1	52.0
13	31.0	50.0		44.9	56.0
14	28.6	53.0	23 33.6	47.7	59.0
15	45.6	57.5	37.6	57.7	3.2
	129.7	248.2		223.1	219.7
12 13	25.86	12 20 49.64		12 25 44.62	12 27 53.74
12	54.53				17.81

14 25.2
26.1/4

1864 May 27 M E
JHJ *See next*

Br 48	2 Ins Maj	219 Canal B	2 Bortis	50 Camp Sp
30	42 40.8	46 3.8	48 46.3	52 120
10.0	45.9	33.1	49.7	24.5
18.4	51.5	47 5.0	53.6	32.6
14.8	55.7	28.6	56.5	44.9
31 6.9	1.8	2.2	0.5	55.0
	198.7	72.7	206.6	169.0
		12.7		
	13 42 57.14	13 47 2.54	13 48 53.32	13 52 33.80
	13.34		15.38	

20.44
20.09
20.65
20.57
20.44

1864phae. p

Sp	7	Virgins	Arg 24	2769	4	Centauri	a	Dracoms	20	Urs Min	13		
	55	18.0		58	40.8		14	1	7.1				
		21.3			44.0			14.9	14	3	40.0		
		25.0			47.8			23.3		4	38.8		
		27.6			50.4	13	59	26.8		5	22.4		
		31.4			54.2			31.8		6	23.0		
		123.3			237.2			114.1					
	13	55	24.66	13	58	47.44		14	1	22.82	14	41	34.47
		54	46.61										1.83

36°24'61 1.20334

B 33.46 + 53.44
 C 35.01 - 3.79
 D 36.51 46.89
 E 33.92 1 49.08

1864 May 27 MS cont.

JAS

a Bootes		R Virgins		659 Virgins B		671 Virgins B		1 Cassio	
10	1.2	12	19.9	13	19.1	16	52.6	18	17.5
	4.8		23.2		22.4		56.0		27.2
	8.6		26.9		26.1		59.6		33.6
	11.4		29.7		28.8		2.2		43.4
	15.5		33.7		32.7		6.0		57.7
	41.5		133.4		129.1		176.4		173.4
14	10 8.30	14	12 26.68	14	13 25.82	14	16 35.28	14	18 34.68
	9 30.35								

36 Caps # Sp	gr 527 Sp	Arg +0° 3216	Arg +10° 2984	n Virginia
14 25 28.7	28 23.1	33 6.0	35 23.5 26.9	36 28.4
41.2	47.0	9.2	30.5	31.7
50.0	4.4	12.8	33.2	36.3
1.9	27.2	15.5	37.0	38.0
12.7	48.4	19.6		42.0
134.5	150.1	63.1	151.1	175.4
254.5				
14 25 50.90	14 29 6.02	14 29 12.62	14 35 30.22	14 36 35.08
	28 25.83			

1864 May 27 *M. Cent.*
J.H.P.

108 Virgins	ϵ Bootis	α Librae	α^2 Librae	π XIV 205	π
39 9.2		43 44.9		47 23.0	
12.6	39 40.0	48.2	43 59.7	26.4	
16.2	44.0	52.0	44 3.4	30.0	
18.9	47.1	54.8	16.0		
22.7	51.5		10.1		
79.6					
14 39 15.92	14 39 43.77	14 43 51.74	14 44 3.07	14 47 29.84	
	5.73	13.60	43 25.04		

	4.52	51.81		29.91
48.78	3.78	51.67	3.17	87
73	0.27	51.75	3.15	75
78	3.32	51.75	2.95	
78	4.72		3.01	

next page.

Pia XIV 207		Pia XIV 217		1 Serpente		Argto° 32 86		Arg + 1° 30 13						
		48	26.7	57	9.5	52	32.8	54	11.1					
			33.2		12.9		36.0		14.4					
47	33.0		40.4		16.5		39.8		18.0					
	35.7		45.9		19.2		42.5		20.5					
	39.7		53.6		23.1		46.3		24.4					
			199.8		81.2		197.4		88.4					
14	47	32.66	14	48	39.96	14	57	16.24	14	52	39.68	14	54	17.68

32.75
 45
 61

1869 May 27

543

2 Serpentes	γ Scorpi.	β Librae	6 Serpentes	α Bootes	
35 25.8	56 41.5	10 16.0	14 41.5		15
29.2	44.9	19.7	44.7		
32.8	49.1	23.2	48.4		
35.5	52.0	26.0	51.1	26 5.8	
39.4	56.4	29.9	58.0	10.6	
162.7	243.9	114.8	240.7		
14 55 32.54	14 56 48.78	15 10 22.96	15 14 48.14		15
		9 44.93			9

323 Cephe B	37 Libra	a Leonina	6 Camel H	Arg 10	3120
15 21 13.2	27 19.7	29 29.3	30 48.2	34 2.9	
22 11.5	23.1	33.1	56.6	6.2	
52.4	26.7	37.1	2.5	9.9	
23 48.3	29.5	40.2	10.4	12.6	
24 38.0	33.5	44.5	18.0	16.4	
163.4	13 2.5	184.2	13 5.7	58.2	
			15.7		
15 22 56.68	15 27 26.50	15 29 36.84	15 31 3.24	15 34 9.60	
3 22 43.69		28 58.81			

21 12.9 |
13.6 |

1864 May 27

JH.S.

Arg + 20 29 67
Flu XV 159

a Serpentes

Arg + 10 13 26 -

λ Serpentes

36	3.3	37	30.0	38	8.9	39	19.1	40	25.3
	6.8		33.5		12.2		22.4		28.6
	10.7		37.0		15.9		26.0		22.3
	13.6		39.8		18.5		28.7		38.0
	17.7		43.5		22.5		32.8		38.8
	52.1		183.8		78.0		128.8		150.0

15	36	10.42	15	37	36.76	15	38	15.60	15	39	25.86	15	40	30.0	15
							37	37.47							

next page

Star	w Serpens		ε Serpens		3 hrs 2 min		J Serpens	
41	37.2	44	0.0	44.4	49	7.1	52	52.4
	40.5		3.8	44		23.3		56.1
	44.0		7.4	44.0		41.2		0.0
	46.9		10.0	46.7		54.4		3.0
	50.8		14.0	50.5		13.3		7.1
	279.14		35.2			139.3		118.6
						199.3		
15 41	43.88	15 44	7.04		15 49	39.86	15 53	0.28

1864 May 27

745

Gr 750 sp	B Scorpi m	62 Urs Min	Gr 779 sp	ϵ Alpha
54 13.2	58 6.9		3 31.6	11 42.4
59.4	10.4		53.0	48.8
55- 30.3	14.1		11.3	42.6
56 14.1	17.0	58 54.3	32.9	52.3
53.3	21.1	28.0	53.1	56.1
170.3	69.5		183.9	246.2
			63.9	
15 55 34.06	15 58 13.90	3 58 28.96	4 3 12.78	4 11 49.24
3 54 51.63	57 35.75	15 57 52.00		

802121 0.93651

α 26.93 25.37
 ϵ 28.99 59.01

		Admitted		Admitted		Admitted			
y Hercules		Polaris		Polaris 9P		♂ Cassiopeia		α Virginis	
16	29.5	5	16.2			16	45.0	18	36.1
	32.9	7	24.5	13	8 5.0		55.2		39.4
	36.9	9	49.7		9 53.9		2.0		43.1
	39.6	11	40.3		12 21.0		11.4		46.0
	43.7	14	17.7		14 37.8		20.3		50.0
	182.6		148.4				13 3.9		214.6
							13.9		
h 16	36.52	1	9 41.68	13	10 5.86	13	16 2.78	13	18 42.92
			14.35	1	9 14.02				4.92

$86^{\circ}34'56''N$
 43.51 A 10.49 160676
 39.79 B 8.71 1 22.31
 40.08 C 3.52 2 15.29
 41.58 D 3.72 9.62
41.51 E 4 58.72
 4 36.19

13 8 343
 56 2
 6.8
 125

mitted

1.	5	16.2	1	9	48.4 53.3 58.9	3
7		22.7 23.6 25.2 26.4	2	12	16.2 20.2 21.1 22.0 23.3	4
9		45.8 46.7 47.7 50.6 52.5 53.7	3	14	34.0 35.8 37.1 39.1 42.6	5
11		38.5 39.7 40.7 42.3	4	14	15.7 16.2 17.2 18.6 21.1	5

1864 May 27
 214 Camel B

20 56.4
 21 31.0
 22 18.0

13 20 53.27
 19.17

Clock Errors

		λ	μ	δ	Δ	
β Virginis	+0.35	13 45	38.25	38.24	+01	✓
β Corvi	+0.40	12 27	38.33	38.28	+05	
α Bootis	+0.37	13 18	38.37	38.33	+04	✓
γ Bootis	+0.36	13 48	38.30	38.36	-06	
ϵ Virginis	+0.35	13 55	38.40	38.37	+03	
δ Bootis	+0.36	14 10	38.31	38.39	-08	✓
ϵ Bootis	+0.38	14 39	38.42	38.42	.00	
α Librae	+0.38	14 43	38.52	38.42	+10	✓
δ Librae	+0.38	14 43	38.41	38.42	-01	✓
ρ Librae	+0.37	15 10	38.40	38.45	-05	
α Coronae	+0.38	15 29	38.41	38.47	-06	✓
α Lupuli	+0.35	15 38	38.48	38.48	.00	✓
β Scorpis	+0.39	15 58	38.54	38.50	+04	

55° 23' 01 8.89782

Rate pro
 for

Adopter

14 17 38.395

+0.066

0.058

0.062

0.063

allowing for P.E.
 May 31

C 53.27 -301
 D 53.55 37.65
 E 52.58 86.42

1864 May 28th

MAR

next page

a Cassiopeian		γ Virgins		Br 74 Sp		γ Cassiopeian		12 Camm	
33	17.9	35	215	12	42	48	59.4		
	24.7		35.249		40.7		7.0		
	29.4	28.3		43	2.9		12.5	37	21.4
	36.1		31.2		33.2		19.6		25.1
	42.0	34.9			59.6		26.4		30.1
	150.1				146.3		124.9		
							64.9		
12 33	30.02	12 35	28.18	12 43	5.26	12 48	12.98	12 50	21.24
32	50.15	34	48.89					49	42.01

$$\begin{array}{r} 9.0 \\ 9.9 \\ 10.8 \end{array} \Bigg| 1$$

$$\begin{array}{r} 2816 \\ 06 \\ 07 \end{array} \quad \begin{array}{r} 28.28 \\ 28.26 \end{array}$$

$$\begin{array}{r} 39.7 \\ 40.5 \\ 40.9 \\ 41.7 \end{array} \Bigg| 2$$

$$\begin{array}{r} 2.0 \\ 2.5 \\ 3.2 \\ 3.8 \end{array} \Bigg| 3$$

$$\begin{array}{r} 31.4 \\ 32.0 \\ 32.3 \\ 33.1 \\ 33.8 \end{array} \Bigg| 4$$

$$\begin{array}{r} 588 \\ 573 \\ 57.9 \\ 605 \end{array} \Bigg| 5$$

$$\begin{array}{ll} A & +8.52 \\ B & +4.31 \\ C & 21.09 \pm 0.31 \\ D & 32 - 3.78 \\ E & 31 - 8.79 \end{array}$$

1864 May 28

MAR

E Virginis	44 depth	H	O Virginis	Polaris 4	β Cassiopeiae
55- 596	0	45.6	3 30.2	13 5 25.5	16.45.9
3.0			(33.6)	8 1.7	55.8
6.7			37.0	9 52.5	3.0
9.3	1	38.5	39.8	12 18.3	12.6
13.4		55.8	43.7	14 32.7	20.9
92.10				130.7	138.2
32.0					18.2
12 55 6.40			13 3 34.84	13 10 2.14	13 17 3.64
			2 57.50	1 9 14.69	

$$1 \quad \begin{array}{r} 5.1 \\ 5.6 \end{array} / 2$$

$$\begin{array}{r} 19.1 \\ 19.4 \end{array} / 3$$

$$\begin{array}{r} 1.69 \\ 0.62 \\ 2.12 \\ 3.61 \\ 5.39 \end{array}$$

$$5 \quad \begin{array}{r} 17.0 \\ 24.5 \\ 25.1 \\ 25.8 \\ 27.3 \\ 33.3 \end{array} / 1$$

$$12 \quad \begin{array}{r} 10.2 \\ 17.4 \\ 18.9 \\ 20.2 \\ 25.2 \end{array} / 4$$

$$\begin{array}{r} 36.88 \\ (.97) \\ .76 \\ .85 \\ .85 \end{array} \quad \begin{array}{r} 6.68 \\ 3.97 \\ 0.24 \\ 2.95 \\ 6.85 \end{array}$$

$$7 \quad \begin{array}{r} 55.1 \\ 57.0 \\ 0.2 \\ 1.3 \\ 4.8 \\ 8.9 \end{array} / 2$$

$$14 \quad \begin{array}{r} 27.0 \\ 31.0 \\ 32.0 \\ 39.8 \end{array}$$

$$9 \quad \begin{array}{r} 96.4 \\ 50.4 \\ 51.3 \\ 59.0 \\ 60.5 \end{array} / 3$$

a Vignus			3 Vignus			2 Vignus Maj			50 Cassepea			a Draconis		
18	37.5		28	21.4		42	42.2		52	13.0		1	8.6	
	40.9			24.9			47.1			25.1			16.3	
	44.5			28.6			52.9			33.4			24.9	
	47.4			31.2			57.2						31.3	
	57.3			35.0			3.0			56.3			40.4	
	221.6			141.1			202.4						121.5	
13	18	44.32	13	28	28.22	13	42	52.48				14	1	24.30
		4.92		27	48.84			14.33						

1864 May 28

WAR

2 Mrs Min B Sp a Bootes			2 Virgo		2 Cassiopeia		2 Bootes	
		10	21.6	12	21.1	18	18.5	21 5.0
14	3	43.8	6.0		24.8		28.0	10.6
	4	42.2	10.1		28.3		35.1	16.4
	5	24.9	12.8		31.3		44.4	20.8
	6	26.6	17.0		35.1		52.8	27.2
			48.5		140.6		178.8	80.0
14	4	37.80	14 10 9.70	14 12 28.12	14 18 35.76	14 21 16.00		
	4	1.60	9 20.35					

4 $\left. \begin{array}{l} 41.6 \\ 42.0 \\ 42.9 \end{array} \right\} 3$

$\left. \begin{array}{l} 24.4 \\ 25.4 \end{array} \right\} 4$

37.24

38.41

38.01

37.52

next page

36 Cassiopeia	α Bootis	γ 527	μ Virginis	ϵ Bootis
25 29.7		28 48.0	36 29.9	39 37.5
41.6		29 05.3	33.1	41.4
51.2		28.2	36.4	45.6
3.1	26 43.7	49.2	39.3	48.5
13.9	48.2	3 00.0	43.3	53.0
139.5			182.4	276.0
259.5				
14 25 57.90	14 26 40.26	14 29 6.92	14 36 36.48	14 39 48.20
	0.94	28 25.92		5.73

60° 51' 44" 0.79928

A	7.25	-41.95
B	7.12	-21.06
C	6.80	+1.50
40.28	5.42	+18.49
40.22	7.97	+13.02

1864 May 28

WAP

 α^1 Libran α^2 Libran β Bootes γ Bootes δ LibranPen failed. Pen failed

14 59 12.2

15 1 54.6

10 17.7

15.7

58.4

26.0

20.0

2 2.4

24.7

22.7

5.4

27.5

27.2

9.6

31.4

97.8

13 0.4

122.3

10.4

14 59 19.56

15 2 2.08

15 10 26.46

58 40.06

9 44.93

y hrs min 323 leap $\frac{4}{13}$
 21 185
 28.8
 44.2 22 52.0
 50.0 23 48.2
 22 2.8 24 38.7
 144.3
 201.3
 15 21 40.26 15 22 57.05
 20 22 13.70

Clock Errors May 28th

y Virgin	1235	+0.26	+39.65	-39.65	+0.7	
12 Canin	1250	0.33	39.56	39.66	-10	Allowing
A Virginis	133	0.37	39.71	39.68	+0.3	
Δ ———	1318	0.39	39.79	39.70	+0.9	✓
ξ ———	1328	0.35	39.73	39.71	+0.2	
L Bootis	149	0.32	39.67	39.75	-0.8	✓
p ———	1426	0.32	39.64	39.77	-13	
z Bootis	1439	0.32	39.79	39.79	.00	
ψ ———	1459	0.32	39.82	39.81	+0.1	
B Libra	1510	+0.38	+39.91	-39.82	+0.9	

	1352	+39.734	
Per Rate		0.058	Allowing for p.e.
Tot		0.076	
		+0.068	

57.96

57.99

55.60

1864 May 29

M. A. R.

Ins Maj		π Virgines		ϵ Leonis		γ Leonis		α Virgines	
47	11.4	53	31.0	3	44.7	9	25.6	13	34.0
	16.9		34.0		48.3		29.1		37.1
	23.2		37.9		52.1		32.8		40.8
	27.8		40.4		55.1		35.8		43.4
	34.4		44.5		59.2		39.9		47.4
	113.7		187.8		259.4		163.2		202.7
11 47	22.74	11 53	37.56	12 3	51.88	12 9	32.64	12 13	40.54
					10.73			12	59.45

Next Page
 44.6.

6 Mar Min B Y Leonian J Leonian 2 Leonian Br 48

20	44.5	23	26.8	25	40.8	29	36.2
	(49.0)		30.3		44.2	30	2.8
12	14	3.0	53.0		48.0	30	46.7
	16	44.6	56.2		50.9	31	9.6
	19	4.6	60.5		54.8		
			168.7		238.7		

12 14 56.99 52. 12 23 33.74 12 25 47.74
 14 23.15

23.80
 23.24
 23.35
 23.27
 23.42

888.27 20.6
 1.56945

C 56.17 8.83
 S 55.66 148.94
 E 15.14 13.46

29 35.4
 36.2
 36.7

30 1.8
 2.9
 3.7

30 46.0
 46.7
 47.5

31 8.5
 9.6
 10.3

13 58.3
 62.3
 63.3
 68.0

16 39.4
 44.1
 45.0
 52.0

19 4.0
 7.3
 8.2
 14.7

1864 May 29 M.E.
MAR

Baromet	γ Virginis	Br 74	ε Urs Maj	δ Virginis
33 20.0	35 25.2	42 12.2	48 33.3	49 22.4
26.7	35 26.6	43 5.5	39.2	25.7
31.5	30.1	35.2	46.0	29.3
37.9	32.9	44 1.9	50.9	32.0
43.5	36.7	28.0	58.0	36.0
159.6			22 7.4	145.4
12 33 31.92	12 35 29.91	43 7.00	12 48 45.48	12 49 29.08
	30.1 48.89			

31.56 29.95
29.86 29.96
29.87

42 11.4
12.1
13.1

42 42.3
43.1
44.2

43 4.4
5.5
6.6

34.2
35.0
36.3

44 08
1.8
3.1

Next page.

12 Canumpr	43 Cephe H	44 Cephe H	2 ^d Phoebe	1 st Phoebe	4 Virgini	3 Leonae
50 13.4		0 47.0			3 31.9	6 7.5
17.6		1 6.9			35.3	11.3
22.3 12 51 26.2		21.5			39.0	15.4
25.7 52 12.5		40.1			41.6	18.3
30.8 55.8		58.0			45.5	22.9
109.8		173.5			143.3	13 6 75.4
		113.5				
21.96 12 51 29.78	18 1 22.70	13 3 38.66			13 6 15.08	
0 50 55.29		2 57.50				

Full Canum

50 14.7
18.8
23.5
27.0
32.0
116.0

12 50 23.20

110767
8 55° 31' 26" 31.07
A 3046 - 25.54
B 21.63 - 52.87
C 1925 + 3.05

51 23.7
25.3
26.4
27.3
28.4

52 10.5
12.5
14.6

53.0
55.5
58.9

1864 May 29

WAR

Floris	Centauri	ε Cassiopeiae	α Virginis	214 Camelopardalis
13 8 6.4	13 34.4	16 48.0	18 39.2	
9 56.2	38.4	58.2	42.7	
12 23.6	43.1	5.1	46.3	13 20 59.5
14 40.2	46.1	14.7	49.1	21 33.6
	57.1	22.9	52.9	22 22.4
	21 3.1	148.4	230.2	
13 10 7.54	13 13 42.62	13 16 29.74	13 18 66.04	13 20 56.31
9 15.39			4.92	20 18.77

α 88° 36' 58"

1.60673

A 1091 - 6 29.29
 B 8.31 - 2 15.29
 C 582 + 9.62
 D 581 + 1 58.71

8 0.1
 4.7
 5.9
 7.9
 13.5

9 48.7
 53.1
 56.3
 64.9

14 32.8
 38.5
 40.3
 48.8

12 16.6
 23.0
 24.6
 30.8

α 85° 28' 0"

1.10218

C 5649 3.01
 D 45 37.15
 E 11.98 26.42

21 32.8
 34.3

22 21.2
 22.6
 23.3

next page

2 Mrs May	219 Canal B	2 Booth	50 Cassiope	7 Vergina
42 440	45 5.6	48 49.4	52 15.0	55 21.0
49.2		52.9	27.2	24.5
54.8		56.8	36.0	28.0
59.0		59.6	46.9	30.7
5.0		83.7	57.9	34.6
212.0		222.4	183.0	138.8
272.0				
13 42 54.40		13 48 58.48	13 52 36.60	13 55 27.76
		15.36		54 56.60

42 440
49.2
54.8
59.0
5.0

46 5.6
6.2
6.8
7.5

46 348
35.9
37.0

47 7.3
8.0
8.6

47 366
31.4
32.3

48 3.9
4.9
6.4

1864 May 29

MAR

θ Centauri	(α Draconis!)	20 Nov Min B	α Bootis	λ Virginis
59 180	14 2	51.7	10 4.3	12 22.4
22.3	3	43.8	8.0	26.5
26.7	4	41.0	11.7	30.3
30.0	5	25.6	14.6	33.9
34.7	6	26.7	18.7	36.9
131.7		188.4	57.3	150.5
13 59 26.34	14 4 37.76	14 10 11.46	14 12 30.10	
	1.39	9 30.34		

$$\begin{array}{r} 3 \quad 41.1 \\ 44.4 \\ 46.5 \end{array} \bigg| 2$$

$$\begin{array}{r} 4 \quad 39.2 \\ 41.3 \\ 42.6 \end{array} \bigg| 3$$

$$\begin{array}{r} 5 \quad 23.9 \\ 25.6 \\ 27.2 \end{array} \bigg| 4$$

$$\begin{array}{r} 6 \quad 25.0 \\ 26.7 \\ 28.5 \end{array} \bigg| 5$$

Next page

Cassiope	α Bootis	36 Cassiope H	ρ Bootis	n Virgins
18 21.6	21 6.7			36 31.7
30.3	12.4			350
37.2	18.2			384
46.5	22.6			41.2
55.2 ^{Andate}	28.8		26 50.0	45.2
189.8	88.7			191.5
14 18 37.96	14 21 17.74			14 36 38.30

$$\begin{array}{r} 25- \\ 43.9 \\ \hline 44.3 \end{array} \bigg| 2$$

$$\begin{array}{r} 53.3 \\ 53.7 \\ \hline \end{array} \bigg| 3$$

$$\begin{array}{r} 4.5 \\ 4.8 \\ 5.2 \\ 5.7 \\ \hline \end{array} \bigg| 4$$

$$\begin{array}{r} 16.0 \\ 16.4 \\ \hline \end{array} \bigg| 5$$

1864 May 29 WE
WAR

ϵ Bootis	α^1 Librae	α^2 Librae	P. ~~214~~ 217	β Urs Min
39 31.2	43 48.0			51 26.9
43.1	51.4			38.7
47.2	55.0	44 6.5		53.2
50.4	[58.1]	9.4		3.0
54.7	44 2.0	13.3	48 56.8	
236.6	214.5			
14 39 46.92	14 43 54.86	14 44 6.27		
	13.60	43 25.04		

56.91
87
75
[55.05]
54.91

6.25
6.35
6.21

52 17.0/5
17.8

next page

γ Scorpii?	δ Bootis	ϵ Bootis	β Librae	μ Bootis
56 44.7	59 13.7	1 56.6	10 19.5	
48.4	17.5	2 0.0	22.8	
52.4	21.5	4.4	26.7	
55.4	24.6	7.0	29.2	
59.7	29.0	11.5	33.2	20 15.2
260.6	106.3	79.4	131.4	
		19.4		
14 5-6 52.12	14 59 21.26	3.88	15 10 26.28	
	58 40.06		9 44.94	

1864 May 29

W A R

y *Pro Min* 323 *Ceph B sp* 37 *Librae*21 19.5
31.0*Wrt by*
*pen**Wrt by* *pen*a *Coronae* a *Serpentis*

29	32.7	38	12.0
	36.4		15.6
	40.5		19.5
	43.5		21.9
	47.8		25.8
	200.9		94.8

15	29	40.18	15	38	18.96
	28	58.82		37	27.48

~~86° 12' 21" + 1.17967~~

~~A~~	~~+ 40.73~~
~~B~~	~~- 50.60~~
~~C~~	~~+ 3.60~~

end

9/11

Polaris

54.4

23.69
15.76

Clock Errors

				Clock Error	
ϵ Corvi	+ 42	41.57	12 3	41.46	+0.13
γ Virginis	35	41.44	12 13	41.45	-0.01
χ Virginis	36	41.38	12 35	41.47	-0.09
δ Virginis	36	41.52	13 3	41.50	+0.02
α Virginis	38	41.50	13 18	41.52	-0.02
η Bootis	35	41.47	13 49	41.55	-0.08
ζ Virginis	35	41.51	13 55	41.56	-0.05
α Bootis	35	41.47	14 10	41.58	-0.11
α Librae	39	41.65	14 43	41.61	+0.04
α Librae	39	41.62	14 43	41.61	+0.01
ψ Bootis	36	41.58	14 59	41.63	-0.07
ρ Librae	37	41.71	15 10	41.64	+0.07
ϵ Corvini	36	41.72	15 29	41.66	+0.06
α Serpentis	+ 35	41.83	15 38	41.67	+0.16

+ 41.58 14 3

Per Rate
Jell

0.076

0.056

0.066

50.2
52.3
54.3
56.6
58.8

1864 May 31 W.E.
H.S.

32 Camel H	2 Virginis	12 Canum	12 Canum	43 Cyph H. Sp
12 48 25.1	50 16.2	50 17.5		
41.5 } 48 14.3	20.3	21.8		
49.1 } 21.3	25.0	26.4	12 37 30.0	
	28.5	29.8	52 16.3	
	32.0	34.9	52 59.1	
	34.7	33.6		
	38.6	123.6	12 50 26.08	12 51 33.41
	158.9		49 42.88	0 50 65.71
12 49 31.78	12 50 26.72			

Lee Jan 20

33.75

33.43

33.05

+ Virgins			Polaris			1. Centauri			φ Cassiope 3p			α Virgins		
	3	34.6	13	5	34.5				16	50.6		18	42.1	
		38.0				13	40.9			0.8			45.8	
		41.8					45.5			8.0			49.1	
		44.4		12	27.2		48.7			17.5			51.9	
		48.3					53.5			26.2			55.9	
		207.0								103.1			244.5	
										43.1				
41	13	3	41.40	13	10	11.28			13	16	8.62	13	18	18.90
71		2	57.48	4	9	10.94								4.90

S 88°34'57" 1.60670

B 10.65 - 2 15.28

E 11.92 + 4 36.15

5

31.2	
34.0	
34.5	1
36.0	
36.7	

12

26.3	
26.6	
27.6	
28.7	4
31.7	

The other stars are
illuminated owing to
of battery

1864 May 31 Wrent
J.H.S

14 Canis B	3 Virgins	Centauria	Argo	Argo
19 34.2	28 26.0		0 38.8	~~57 25.0~~
20 16.8	29.4	59 23.0	42.0	57 25.0
21 3.1	32.9	24.5	45.9	29.5
35.7	35.7	32.8	48.5	32.8
22 25.3	39.6	37.6	52.4	37.7
115.1	163.6		227.6	

13 20 59.02 13 28 32.72
18.32 27 48.82

151 0 45.62

20 Urs. Min. B	2 Virgins	671 Virgins B	Arg + 20	5619	# Boots
	12 25.8	16 58.6	18 14.2		21 9.8
	29.1	17 2.0	17.3		15.0
14 4 45.3	32.7	5.8	21.0		21.0
5 28.0	35.6	8.3	23.7		23.4
6 30.3	39.6	12.2	27.4		31.8
	162.8	86.9	103.6		103.0
14 4 41.27	14 12 32.56	14 12 5.38	14 18 20.72		14 21 20.60
14 4 0.90					

86° 24' 63"
1.20338

C - 3.81 41.49
D - 46.89 .11
E - 1 49.09 .21

4 45.3/3

5 28.0

5 280/4

6 30.0/3
30.6/3

1864 May 31 *Int. cont.*
T.H.S

P XIV 96		36 Canal H Sp		Pr 529 52		P XIV 132		u Virginis	
23	35.1	25	34.3	28	285	31.	165	36	34.3
	38.4		47.3		53.7		19.9		37.7
	42.0		56.3		10.0		23.4		41.6
	44.6	26	7.8		38.2		26.3		44.0
	48.6		18.8		54.5		30.2		47.9
	208.7		164.5		179.9		116.3		205.5
			284.5						
14	23	14	25	14	28	14	31	14	36
	41.74		56.90		11.98		23.26		41.10
				2	28				
					26.41				

56.70
56.80
57.37
56.7~
56.96

ϵ Bootis	a' Librae	a'' Librae	Pi XIV 205	Pi XIV 217
39 9.1	43 50.7		47 29.1	
12.9	54.2	44 5.5	32.5	
16.8	57.9	9.5	36.1	48 46.6
21.5	0.7	12.0	38.6	57.8
26.0		16.1	42.6	59.7
86.3			178.9	
14 39 17.26	14 43 57.64	14 44 9.00	14 47 35.78	
5.72	13.60	43 25.04		

17.61
 67
 65
 65

8.77
 9.05
 8.95
9.01

May 31 - 1864

THS

see end

c. Serpentes		110 Virgins		c. Bootes		B Librae		m. Bootes	
55	31.9	58	42.4	0	57.3	10	22.0	19	54.6
33.1			45.9	1	2.9		25.5	20	03.9
38.8			49.3		70		29.2		8.4
41.5			52.0		10.0		31.9		11.7
45.3			53.9		14.2		35.8		16.7
192.6			245.0		93.4		144.4		100.3
					33.4				40.3
14 55	38.52	14 58	49.00	15 1	6.68	15	28.88	15 20	8.06
						10	44.94		

323 Leph Bp	Wiese 15.4 44	37 Libra	a Corona	6 Band H Sp
15 21 19.9	25 37.1	27 25.8	29 35.3	30 54.3
22 18.9	40.5	29.1	39.0	2.8
58.2	44.0	32.8	43.1	8.6
23 52.7	46.8	35.4	46.1	16.5
	50.7	39.5	50.5	23.7
	21 9.2	16 2.6	214.0	105.9
				45.9
15 23 2.60	15 25 43.84	15 27 32.52	15 29 42.80	15 30 9.18
3 22 14.12			28 58.82	

86° 12' 52" 40" 117965

A - 140.72
 B 210 - 50.60
 C 180 + 3.60
 D 330 + 44.40
 E 3.19 + 43.29

1864 May 31

J.H.S.

Missa 15.673		P. XIV. 159		4 Serpentes		Missa 15.724		Missa 15.812	
36	27.0	37	36.1	37	52.3	39	6.9	43	32.4
	30.1		39.5		55.6		10.1		39.6
	34.0		43.1		59.3		13.9		42.0
	36.9		45.7		2.0		16.7		45.8
	40.5		49.6		5.9		20.5		
	168.5		214.0		175.1		68.1		
15 36	33.70	15 37	42.80	15 37	59.02	15 39	13.62		
					~~37.58~~				

8 Serpens	3 Pers Min	8 Scorpio	Aug +103154	42 750 Sp
44 43.0	49 13.5	52 38.6	53 50.7	55 4.0
46.3	29.8	2.0	54.3	36.3
49.9	47.5	6.0	57.0	19.6
52.6	0.5	9.0	54 0.9	
56.6	19.5	13.1		
268.4	110.8	88.7		
	230.8	28.7		
15 44 49.68	15 49 46.16	15 52 5.74	15 53 54.06	15 55 39.25
				15 54 51.94

	850,139	1.07647
X		
B	54.05	10 39.60 -39.90
C	06	15 +2.84
D	06	15 .01 +35.01
E	07	6 +81.45

1864 May 31

5H S

Pro Min B		4779 sp		e Aphurcin		y Hercules		a Scorpi	
57	37.1	3	37.3	11	48.4	16	35.5	21	45.2
58	6.0	4	0.6		51.7		38.8		48.6
	37.5		16.9		54.4		42.8		52.7
59	0.5		39.0		58.0		46.6		55.6
	33.9		58.9		2.0		49.8	22	0.1
	115.0		152.7		21 4.5		21 2.5		202.2
			92.7		27 4.5				
15 58	35.00	15 4	18.52	15 11	54.90	15 16	42.50	16 21	52.44
57	51.83								8.39

α Draconis	β Herculis	γ Scorpis	δ Aphiaca	ρ XVI	182
22 42.3	25 2.5	28 5.9	30 21.4	33 34.0	
49.1	6.0	9.7	24.6	51.5	
56.7	9.9	13.7	28.2	11.3	
23 2.5	12.8	16.8	30.9	25.2	
10.8	17.0	21.2	34.9	46.8	
166.4	48.2	67.3	140.0	168.8	
241.4				44.8	
16 22 56.28	16 25 9.64	16 28 13.46	16 30 28.00	16 34 9.76	

1864 May 31

JHS

End

Ceph #	Sp	ϵ	Scorpio	Pupiter	Satel	Satel
		42	2.0	13 47.0	14 9.5-	14 27.4
35-	29.3		6.0	50.4	13.0	30.8
	46.0		10.4	54.3	16.8	34.7
36	9.2		13.7	14 0.0	19.6	37.5-
36	30.0		18.4	42	23.6	41.5-
			50.5		82.5-	171.9
		16	42 10.10		16 14 16.50	16 34.38

It is tolerably sure
that $\theta^{\circ} 2$ is a star
on the Prime Vertical

*
Sate. ... ✓

						C. Corr.	
12 Canum fol.	12 50	+37	+44.37	44.27	+10		
α Virginis	13 3	36	44.28	44.28	.00		
α Virginis	13 18	38	44.38	44.29	+09	✓	
ξ Virginis	13 28	35	44.25	44.30	-.05		
ϵ Bootis	14 39	34	[11.88]	L			
α Librae	14 43	40	44.44	44.39	-.05	✓	
α Librae	14 43	40	44.36	44.39	-.03	✓	
β Librae	15 10	38	44.32	44.41	-.09		
α Corvinae	15 29	34	44.32	44.43	-.11	✓	
α Scorpii	16 21	+45	44.50	44.48	+02	✓	
14 22			+44.358				
Rate pr			+0.050				
- folly			+0.064				
			+0.060				

1864 June 2d

J.H.S.

W.A.R. to 1 Virginii inclusive

4 Mrs Magi

3 Corni

Br 48

1/2 Virginis

12 Cornu

24

27

57.4

30

9.4

33

28.9

50

18.9

1.1

5.0

2

57.7

36.0

32.3

22.2

37.6

7.7

52.7

38.6

28.0

43.9

11.9

31

16.2

42.4

31.3

83.1

36.4

137.8

12 28 4.62

27 17.25

12 3 35.64

34 58.85

12 50 27.56

22.05

57.00

32.75

36.01

32.26

29.84

29.39

29.35

29.87

29.61

35.56

35.65

36

35.66

57

next page

12 Canum	43 Cephe	2 Virgins	44 Cephe	8 Virgins
50 20.2		~~58 14.4~~	13 0 53.5	3 37.7
24.4		~~14.7~~	1 13.2	41.0
29.1	12 51 33.4	214.1	1 27.7	44.7
32.7	52 20.1	16.8	1 46.4	47.5
37.7	58 2.6	20.8	2 3.9	51.2
144.1			144.7	222.1
			13 1 2 8.94	13 3 44.42
12 51 28.82	12 51 36.98		13 1 28.94	2 57.43
42.05	0 50 46.31			

285° 31' 43" 1.1077

A 47.5 - 1 25.35

M 33. - 42.87

G 26.45 + 3.05

$$\begin{array}{r} 52.8 \\ 53.6 \\ 53.7 \end{array}$$

$$\begin{array}{r} 51 \quad 30.5 \\ 33.5 \\ 36.2 \end{array} \Bigg| 3$$

$$\begin{array}{r} 12.5 \\ 12.7 \\ 13.4 \\ 13.8 \end{array} \Bigg| 2$$

$$\begin{array}{r} 52 \quad 17.8 \\ 20.2 \\ 22.3 \end{array} \Bigg| 4$$

$$\begin{array}{r} 270 \\ 276 \\ 279 \\ 283 \end{array} \Bigg| 3$$

$$\begin{array}{r} 53 \quad 0.5 \\ 2.5 \\ 4.8 \end{array} \Bigg| 5$$

$$\begin{array}{r} 283 \\ 46.0 \\ 46.4 \\ 46.9 \end{array} \Bigg| 4$$

$$\begin{array}{r} 3.4 \\ 3.9 \\ 4.3 \end{array} \Bigg| 5$$

1864 June 2d

NAR

~~WNR~~

Polaris	γ Cassiope	δ Virgo	ϵ Camel B	α Pro Maj
13 5 40.2	16 53.5	18 45.0		42 49.5
8 16.6	4.1	48.4		54.7
10 5.3	10.8	52.0		0.3
	20.3	54.8	21 38.9	4.4
14 48.8	29.2	58.9	22 27.3	10.6
	117.9	259.1		119.1
	57.9			
13 10 16.52	13 16 11.58	13 18 51.82	13 21 15.5	13 42 59.90
9 18.69		4.69	13 20 17.81	42 13.24

δ 58° 34' 59" 1.60667
 A 17.34 - 4 29.26
 C 14.92 + 9.62
 D 15.30 1 58.70
 E 16.34 4 36.14

 δ 55° 27' 02" 16 1.1006

1 37.00
 δ 1.9 86.10
 ϵ 1.2

5 33.6
 39.7
 41.0
 46.3

8 8.8
 10.1
 15.8
 16.5
 19.2
 22.0
 23.7

10 0.4
 4.4
 5.4
 10.9

14 38.4
 44.1
 46.5
 48.8
 50.8
 51.5
 54.4
 56.6

J.H.S

τ Virgins	α Bootes	λ Virgins	θ Bootes	ρ Bootes
55 26.8	10 10.0	12 28.7	21 12.6	26 40.0
30.2	13.5	32.2	18.0	43.9
33.9	17.6	36.0	24.0	48.2
36.6	20.4	38.7	28.5	51.4
40.5	24.6	42.6	34.6	55.9
168.0	86.1	178.2	117.7	239.4

B 55 33.60	14 10 17.22	14 12 35.64	14 21 23.54	14 26 47.88
54 46.57	9 30.32			0.91

1864 June 2nd

FAS

1864phae.

Gr 527 sp	n Virginis	e Boötis	Polaris 217	B Boötis
28 32.4	36 37.5	39 45.2		57 30.6
56.6	40.8	49.0	14 48° 42.5	34.9
29 13.3	44.4	53.0	49.7	39.6
36.4	47.1	56.0	54.9	43.1
57.6	51.0	40 0.4	49 2.4	48.2
196.3	220.8	203.6		196.4
14 29 15.26	14 36 44.16	14 39 52.72		14 57 39.28
2 28 26.41		5.70		

B Librae		u Bootis		323 Cephei		13.444		37 Librae	
10	25.4	20	2.6	21	22.0	25	40.3	27	28.8
	28.8		6.7	22	21.0		42.5		32.2
	32.5		11.4	23	0.6		47.2		35.8
	35.2		14.8	2	55.9		50.6		38.4
	39.2		19.7		46.8		54.0		42.6
	101.1		55.2		146.3		235.0		177.8
15	10 32.22	15	20 11.04	15	13 5.26	15	25 47.00	15	27 35.56
9	44.95			3	22 14.52				

$$\begin{array}{r} 24 \quad 55.4 \\ 56.4 \end{array}$$

$$\begin{array}{r} 25 \quad 46.5 \\ 47.0 \end{array}$$

1864phae.p

a levonae		a Serpentes		λ Serpentes		ε Serpentes		3 hrs Min		
29	38.5	38	17.9	40	34.3	15	44	46.1	49	16.5
	42.1		21.2		37.6			49.4		32.3
	46.3		25.0		41.4			53.0		50.6
	49.3		27.7		44.1			55.7	50	3.8
	53.6		31.6		48.0			59.6		23.4
	229.8		120.4		205.4			263.8		126.1
										246.1
15	29	15	38	15	40	15	44	52.76	15	49
	15.96		24.68		41.08					49.20
	28		37							
	58.82		37.99							

End

Gr 750 Sp		62 hrs Min 18		Gr 779 Sp	
54	21.5			3	40.4
55	8.3	58	8.6		
	39.6		39.4	4	20.4
56	23.1	59	2.4		41.7
57	02.1	59	37.0	5	(~~41.7~~) 36
	94.6				

15	55	42.92	15	58	37.47
3	54	52.16	15	57	51.69

Rock Errors June 2

JWS		W.A.R.	
g Bootis	14 26 +35	+47.32	-47.43 - .11
E Bootis	14 39 34	47.36	47.44 - .08
B Abiae	15 10 38	47.65	47.47 + .18
x Coronae	15 29 34	47.48	47.49 -.01
x Serpenti	15 38 34	47.53	47.50 + .03
	15 4	+47.68	
Pro Rate		+0.064	
Joh.		0.052	
		0.058	

83° 21' 24" 0.93654

B	37.51	+ 28.91
C	37.34	- 2.06
D	37.03	25.37
E	37.99	59.01

B Groci	+ 4.3	17.27	+47.50	47.23	+0.27
x Virginii	36	12 35	47.15	47.24	-0.09
12 launum	37	12 50	47.14	47.25	-0.11
B Virginii	36	13 3	47.31	47.26	+0.05
x Virginii	38	13 18	47.31	47.28	+0.03
x Virginii	35	13 55	47.44	47.31	+0.13
x Bootis	34	14 10	47.24	47.33	-0.09
		13 11	+47.27		
Rate		0.058			

1864 June 3^d a.e

AM

End

749

 δ Corvi γ Virginis pr

Polaris

 α Anitis

23 33.9

35 30.3

1 5 21.0

2 0 14.0

37.3

33.6

7 35.8

17.4

41.0

37.1

10 0.8

21.3

43.9

39.8

11 49.9

24.3

48.0

45.6

14 27.2

28.5

204.1

184.4

134.7

105.7

23 40.82

35 36.88

1 9 50.94
20.062 0 21.14
1 59 32.175 17.9
20.0
21.3
24.77 32.7
34.7
36.4
39.29 58.0
59.2
60.3
61.8
64.711 44.7
48.7
51.4
52.714 25.2
26.1
27.4
30.2

1864 June 4th

JH8

next page

γ Virginis	B ₂ 74 Sp	δ Virginis	12 Canum pr	12 Canum Tell
35 31.6	42 22.3	49 30.5	50 21.6	23.0
38.5	43 16.4	34.0	26.0	27.2
41.3	44 12.9	37.6	30.5	31.7
45.1	152.1	40.3	34.0	35.2
	92.1	44.2	39.0	40.3
		186.6	151.1	157.4
12 35 38.31	12 43 18.62	12 49 37.32	12 50 30.22	12 50 31.48
36 48.83				49 42.02

38.26 38.35

26 38.36

27

June 4 1864

JAS

43 Cephe H 9/2	+ Virginis	Polaris Sp	e Bootes foll	a' Libra	a
	3 40.4	13 5 50.4	39 47.7	43 56.3	
	43.7	not separated from	51.5	59.8	
51 38.4	47.3	10 14.8	53.6	3.5	
52 23.2	50.0		58.5	6.4	
53 7.2	54.0	14 55.4	2.9		
	235.4		216.2		
12 51 41.88	13 3 42.08	13 10 25.84	14 39 55.24	14 44 3.27	
0 50.46.89	2 57.45	1 9 20.51	5.70	43 13.60	

$88^{\circ}34'52''28''$ 1.60666
 $4 26.15 - 4 29.25$
 $c 26.42 + 9.62$
 $e 26.53 + 4 36.13$

5 46.0
 49.5 121
 50.8
 53.4

10 95
 15.0
 17.5 32
 20.0

14 49.6
 54.2
 58.1 5
 56.5
 61.5

A 51 41.85
 B 52.33
 C 41.45

524
 527
 528
 535

<u>a² Libral</u>	<u>P XIV 217</u>	<u>B/Bootes</u>	<u>ψ Bootes</u>	<u>B Libral</u>
	48 38.0	57 33.1	59 22.1	10 28.0
11.7	44.7	37.3	25.7	31.2
14.9	51.9	42.0	29.7	34.9
17.7	57.2	45.4	32.8	37.6
21.7	50	50.6	37.4	41.6
	196.8	208.4	147.7	173.3
	256.8			
14 44 14.62	14 48 51.36	14 57 41.68	14 59 29.54	15 10 34.66
43 25.04			58 40.04	9 44.95

14.57

65

65

61

1864 June 4th

743

μ Bootes	57 Jovs Min B	a Leonis	L Serpentes	a Serpentes
20 5.1			36 14.9	38 20.4
9.3	15 21 49.5		18.4	23.8
13.8	23 22.6		22.3	27.3
17.2	24 28.2	29 51.6	25.1	30.2
22.3	26 11.1	56.0	29.4	34.1
67.7			110.1	135.8
15 20 13.54	15 23 15.46	15 29 48.31	15 36 22.02	15 38 27.16
	15 22 37.07	28 58.82		37 37.50

$37^{\circ}45'05''$ 1.410621
 A + 2 49.71
 B 14.76 + 1 25.26
 C 16.64 - 6.07
 D 13.39 - 1 14.81
 E 17.06 - 2 54.04

21 46.7
 49.1
 52.4 | 2

23 20.6
 22.9
 24.2 | 3

24 26.9
 28.0
 29.6 | 4

26 9.4
 10.6
 11.7
 12.8 | 5

0.0508

48.30 3.30

48.92 7.64

next page

λ Serpentis	μ Serpentis	ϵ Serpentis	γ Serpentis	ζ 750 Sp
40 36.8	43 17.9	44 48.5	57 56.2	54 26.0
40.2	21.2	52.0	57.9	55 13.2
44.0	24.9	55.6	3.5	55 44.4
46.6	27.5	58.2	6.3	56 27.5
50.5	31.5	2.0	10.4	
218.1	123.0	216.3	136.3	
		276.3	16.3	
15-40 43.62	15-43 24.60	15-44 55.26	15-50 3.26	15 55 47.62
				54 52.56

55 44.1
44.8 } 3

See Aug 31

47.45
48.21
47.24
47.60

1864 June 4th

548

62 Mrs Min B

57 42.0

58 10.5

39.7

59 05.4

37.7

105.3

15 58 39.06

57 51.52

Check Errors

γ Virgin	12 35	0.35	49.83	49.82	-0.01	
12 Canum	12 50	0.49	49.95	49.88	+0.07	
α Virgin	13 30	0.35	49.98	49.89	+0.09	
ε Bootis	14 39	0.62	49.96	49.97	-0.01	
α' Librae	14 43	0.36	50.03	49.98	+0.05	✓
α' Librae	14 43	0.36	49.94	49.98	-0.04	✓
γ Bootis	14 59	0.62	49.92	49.99	-0.07	
β Librae	15 10	0.35	50.06	50.00	+0.06	
ι Coronae	15 29	0.42	49.91	50.02	-0.11	✓
α' Serpente	15 38	0.36	50.02	50.02	.00	✓

14 23 49.960
 Pro R +0.053
 Zolly 0.051
 0.052

1864 Page 6 W2.

J.H.S.

next page

# Boots	36 Casimp # Sp	yr 527	SP	E Boots Fall	Te	XIV	217
14 19 17.4	23 43.2	26	38.2	37	50.1	46	40.5
22.7	56.3		2.9		53.9		47.1
28.8	4.9		14.6		58.0		54.2
33.1	16.9		42.7		01.0		59.6
39.6	27.7	28	3.3		5.4		7.4
141.6	149.0		106.7		168.3		208.8
	29.0						268.8
14 19 28.32	14 24 5.80	14 27 21.34	14	37 57.66	14	46 53.76	
		2 28 26.91		39 5.69			

1864 June 6

WHL

B Vir Min		110 Virginis		4 Bootis		c Bootis		3 Librae	
49	37.1	54	50.4	57	24.5	15	0 7.2	8	30.4
49.4			53.8		28.2		10.8		33.6
3.4			57.8		32.3		14.9		37.3
13.2			0.0		35.3		17.8		39.4
28.4			3.9		39.6		22.2		44.0
131.5			165.4		159.9		72.9		185.2
			285.4						
14	50 2.30	14.54	57.08	14	57 31.98	15	0 14.58	15	8 37.04
	51 11.03				58 40.03				9 44.95

next page

	5-Serpentis	μ Bootis	323 Cepheus B4	* pre 37 Librae	37 Librae
0.4	11 11.0	18 7.5	15 19 29.6	22.34 35.0	26- 33.7
3.6	14.4	11.7	20 28.9	38.2	37.1
7.3	18.0	16.3	21 9.6	41.9	40.7
9.4	20.6	19.8	22 4.0	44.7	43.5
40	24.5	24.7	22 53.6	48.6	47.4
5.2	88.5	79.9	125.7	208.4	202.4
04	15 11 17.70	15 18 15.96	15 21 13.14	15 24 4 1.68	15 25 40.48
95			3 22 15.44		

19 $\begin{array}{r} 27.1 \\ 29.3 \\ 32.2 \end{array} \Bigg| 1$

20 28.9

21 9.6

22 4.0

53.6

1864 June 6th
5 H.S.

6 Camel H Sp	1 Serp	Pc XV 13-9	4 Serpentina	a Serpentina	15
	34	17.4	35 44.0	0.4	
		20.9	47.5	3.7	
29	16.9	24.7	57.3	7.3	36 29.9
	25.2	27.6	54.0	9.9	32.5
	32.3	31.8	57.8	13.8	36.5
	12 21.4	254.6	35.1		

15 34 24.48 15 35 50.92 15 36 70.2 15 36 29.61
37 37.51

0.0031

29.66 0.24
54 2.96
62 6.88

	15-38 170 + 1	λ Serpentes	μ Serpentes	ϵ Serpentes	θ Draconis
	37 33.2	38 39.3	40 20.4	42 57.8	58 2.5-
	36.5-	42.5-	41 23.6	54.4	9.0
29.9	40.0	46.2	27.3	58.0	16.0
2.5-	42.7	48.9	29.9	0.7	21.1
16.5-	46.5-	52.8	33.9	4.6	28.7
	198.9	22 9.7	13 5.1	16 8.6	17.3
				288 6	
0.61	15 37 39.78	15 38 45.94	15 41 27.02	15 42 57.72	15 58 15.46
2.57					

0.24
2.96
6.88

1864 June 6th

JH3

MAR

J Aphelion		62nd percent		1/2 Sagittarii		y Aphelion		15-6 Comet B1	
6	2.1	21	50.8	27	14.2			19	41 38.5
	5.6		54.3		18.0			42	18.6 19
	9.3		58.4		22.0				45.5 19
	12.0		1.1		24.9	38	46.0	43	24.4 20
	15.8		5.3		29.2		50.0		57.9
	44.8		179.9		108.3				184.9
16	6	19	289.9	19	27 21.66	19	38 43.04	19	42 48.99
	7	21	57.98		28 29.37		39 50.73	7	43 52.63

41 37.1
37.8
39.1
40.0

42 16.4
18.7
20.7

44.0
45.0
46.0
47.0

43.02 2.98
06 6.94

43 22.3
24.1
24.9
26.4

43 56.2
57.2
58.2
60.0

81	X Min	P Aquila	1a Capricorn	1418	o Mr Maj SP
5		6 47.5	58 55.2	12 43.1	17 (36.5)
6	19 56 8.8	50.8	58.5	13 32.6	44.7
5	59 15.0	54.7	2.3	14 7.7	50.1
4	20 1 38.9	57.3	(4.9)	14 54.0	57.8
7.9	A 1.0	1.3	8.8	15 37.4	4.4
4.9		211.6		174.8	
		271.6			
7.9	19 59 1.66	209 6 54.32	20 9 1.95	20 14 30.96	
2.63	20 0 ~~32.12~~ 31.72		10 9.68		

38 54.4% 1.71736
 A 75 5.15738
 B 53.50 2 54.50
 C 2.79 12.41
 D 5.78 2 33.12
 E 6.77 5 56.23
 56 1.0
 8.0
 9.3
 17.0

59 6.5
 13.7
 15.0
 25.7

1 31.3
 36.6
 38.2
 40.0
 48.5

4 37.2
 59.8
 1.6
 11.4

(End-1) 0.026

A 2.03 +4.83
 B 1.93 +3.43
 C 2.06 -0.24
 D [1.89] -3.01
 E 1.79 -7.01

01	0	Legni	2	Cuph	6	Urs Maj	32	Thelpuental	76	Draconis
	39	29.7	41	12.2	43	34.0	47	33.5	50	20.5
		33.5		19.2		42.8		37.3		44.6
		38.0		26.4		49.8		41.3		
		41.2		32.2		58.2		44.4		
		45.8		40.5		6.1		48.7		
		188.2		130.5		190.8		205.2		
						250.8				
63	20	39	37.64	20	41	26.10	20	43	50.16	20
74								47	41.04	
								48	46.67	

June 6 1864

W.A.R.

End

s Ins Mag Sp.		a Luphin		1 Dracenis		y Leap.		Polaris	
58.	59.3	14	0.6	15	31.0	31	21.3	1	5 43.0
	9.6		7.5-		59.7		24.7		8 10.0
			15.4	16	17.9		28.6		9 57.4
			21.0		42.8		31.3		12 29.2
			29.3	17	7.7		35.5-		
			43.8.		159.1		141.4		
21	14	14.76		21	16	19.82	21 31 28.28	1	7 57.61
	15	22.90		9	17	24.70			9 22.61

16
 $\begin{array}{r} 42.4 \\ 42.8 \\ 43.3 \end{array} \bigg| 4$

17
 $\begin{array}{r} 6.7 \\ 7.7 \\ 8.5 \end{array} \bigg| 5-$

80° 31' 57" 1.60665

B + 2 15.26

C - 9.62

D 1 58.89

Σ 4 36.12

58.26

0.38

58.71

53.08

Clock Errors
JMS

				Clock Error
ϵ Bootes	+43	-67.60	14.39	+67.58 -02
ψ —	+43	67.62	14.59	67.56 -06
ρ Libiae	+35	67.56	15.10	67.55 -01
δ Serpenti	+36	67.52	15.38	67.53 -01
σ Opusculi	+35	67.40	16.8	67.50 -10
		-67.54	15.19	

Pro Rate

0.051

WARR

N				
κ Sagittarii	277	1928	-67.34	+67.33 -01
γ Aquilae	37	1940	67.32	67.32 .00
κ Capricorni	35	2010	67.38	67.29 -09
δ Lygni	54	2037	67.23	67.27 +04
β Vulpeculae	63	2049	67.20	67.26 +06
	209		67.294	

		Dr	A-C	B-C	D-C	E-C	H-C
5 Mo mm	May 27		2 21.0	1 13.9	0 54.6	2 14.6	5.26
gr 527	May 27		44.0	22.8	17.4	41.3	1.62
	31		44.5	23.2	16.3	41.5	1.98
	June 6		43.7	23.1	16.7	41.4	1.74
523 Aph B	May 27		1 45.6	55.9	40.9	139.2	4.28
	June 2		1 46.2	55.3	39.6	138.6	4.66
	— 6		1 44.0	54.4	40.7	140.0	3.54
gr 750	May 27		1 23.0	43.8	30.9	117.1	3.76
	June 2						
Polaris	May 27		4 33.5	2 25.2	1 50.6	4 28.0	8.02
	28		40.2	25.8	50.8	27.0	7.64
	June 3		39.8	25.0	49.1	26.4	7.86
20 kmw B	May 29		1 49.3	57.2	44.6	145.7	3.24
219 Comet B	May 31		1 28.9	46.3	32.6	122.2	4.08
62 km B	May 31		60.4	31.5	23.0	56.4	2.50
	June 4		57.7	29.2	25.7	58.8	0.13

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

	β Boot	β Her	Loran	α Ugr	β Sup	δ Ori	α Sup	γ Her
July 12	-02	+02	-03	-08		-02	+04	
13			-09	-10	+02		+06	
14		-10	-02	-05	-04	.00	+01	.00
15		.00	-09	-06			+05	
16					+02	+03		
18								
19							+06	-09
20			~~03~~	-				-03
22			-03	-05	+05	+13		
23								+02
26			-03	00		-08	-02	-03
30								00
Aug 1				-04			+07	
5				-04	+07	-08	+06	
8							.00	.00
Sept 6							+06	-03
7							-03	-13
10							+01	

4
3
1
12

