1855phae.proj....228

KG
11365
22

A.22

Transit Circle
From Sept. 25, 1855 to
March 27, 1856

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

1855phae.proj...22B

KG-11365.22

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

1855phae.proj...22

Nov 20th

Copy from Oct 25th inclusive

Notice the red ink directions also the 'Bs and Fs & Ll. which are to be copied on the sheets. Copy the Means when made out & the reductions in pencil

Observations copied to Nov 20th = (inclusive?)

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

1855phae.proj...22B

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

1855phae.proj...22D

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

1855phae.proj...22R

KG-11365.22

HARVARD
UNIVERSITY
LIBRARY
APR 28 1956

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

1855phae..proj...22B

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

1855phae.proj...22B

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

1855phnae.proj...22h

Sept 25 1855

	S.C. −1	S.C. −2.7	S.C. +10	S.C. −30	S.C. +14
	a Aquarii	γ Aquarii	ε Pegasi	α Psc. Austrin.	α Pegasi
a	21.. 59.. 16.0	15.. 6.2	22 35.. 9.2	22.. 50.. 28.3	22.. 58. 27.2
	29.4	19.3	22.6	43.8 15.5	40.9
	43.0	33.0	36.5	59.3 15.5 15.9	54.9
	56.7	46.8	50.5	51.. 15.2 15.6	59.. 8.9
	00 10.0	16.. 0.0	36.. 4.0	30.8	22.8
	24.2	14.3	18.6	47.0 16.2 16.1	37.6
	22 00.. 38.0	22.. 16.. 27.8	22.. 36.. 32.4	22.. 52.. 3.1	22.. 59.. 51.7
	213.3	147.4	173.8	229.5	244.0
	397.3	327.4	353.8	107.5	64.0
	21.. 59.. 56.76	22.. 15.. 46.74	22.. 36.. 50.54	~~22.. 51.. 13.9~~ 22.. 51.. 15.36	22.. 59.. 9.14

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

1855phae.proj...229

Sept. 25	+5	−6.49	−6.31	+28
P.S. 6. +2.29	P.S.C.	S.C.	S.C.	S.C.
γ Piscium	ι Piscium	30 Piscium	33 Piscium	α Androm.
23. 10.. 35.1	23.. 33.. 23.6	23.. 55.. 27.5	23.. 58.. 51.0	00.. 01.. 44.5
48.4	38.9	40.7 13.2	59.. 4.2	59.4
11.. 2.0	52.7	54.6 13.9	18.0	2.. 15.0
15.8	34.. 6.3	56.. 8.5	31.8	30.8
28.9	19.8	21.8	45.2	45.7
43.5	34.3	36.3	59.5	3.. 1.9
23.. 11.. 57.0	23.. 34.. 47.8	23.. 56.. 50.0	24.. 00.. 13.3	00.. 03.. 17.3
230.7	223.4	239.4	223.0	214.6
110.7	43.4	59.4	~~277.~~	,
23.. 11.. 15.81	23.. 34.. 6.20	23.. 56.. 8.49	23.. 59.. 31.86	0.. 2.. 30.66

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

1855phae.proj...22

+14

Sept. 25

S.C.	S.C.	S.C.	S.C.	S.C.
r Peggi first	a Phoenicis!	Moon's I limb	Messier	Spot A
00.. 06.. 54.8	00.. 19.. 48.9	28. 51.2	00.. 29.. 17.2	29.. 17.8
7.. 9.0	20.. 6.9	29.. 4.9	30.6	31.3
23.2	25.9	9 18.9	44.7	45.3
36.8	44.7	9 33.0	58.7	29.. 59.4
51.6	21.. 2.4	9 46.8	0.. 30.. 12.3	0.. 30 13.0
8.. 5.6	22.1	30.. 1.3		
	00.. 21.. 41.0	00.. 30.. 15.2		
	191.9	17.3		
	311.9	60		
	0.. 20.. 44.56	0.. 29.. 33.04		

* The glory of England is eclipsed — No Britisher ever saw that star from his native isle —

Ku-tidge

Arc de Triomphe

† "Set it down with gold
On lasting pillars"

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

1855phae.proj...228

Sept. 25

Ill. East

P.S. pb. Spot	P.S. C. Moon's II limb
00.. 31.. 05.6	31.. 9.0
19.0	1 22.6
32.9	1 36.7
47.0	1 50.6
0.8	2 4.3
15.3	2 18.9
00.. 32.. 29.3	00.. 32.. 32.8

13549
180
7)3549
50.70

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

1855phae.proj...22

Sept. 26 −26 +14 +13

−8

These stars are read off a few pages following this

W.6.B. δ Ophiuchi	W.6.B. Antares	W.6.B. α Herculis	W.6.B. α Ophiuchi
16h 07m 39.9	16h 21m 21.9	17h 08m 56.0	17h 29m 06.5
53.2	36.6	9m 9.6	29m 20.0
8m 6.8	52.0	23.8	30.0
20.6	22m 7.2	37.8	48.8
33.8	22.0	51.5	30m 06.8
48.2	37.9	10m 6.2	06.4
16h 9m 1.9	16h 22m 53.3	17h 10m 20.5	17h 30m 30.3
204.4	230.9	205.4	157.1
144.4	50.9	265.4	337.1
16h 8m 20.63	16h 22m 7.27	17h 9m 37.94	17h 29m 48.16

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

1855phae.proj...228

Sept. 27/28

Ill. East

W. C. B +22	W. C. B +32	W. C. B + 6	W. C. B +26
δ Geminorum	α² Geminorum	α Canis Minoris	β Gem
7h 12m 21.8	7h 26m 10.5	7h 32m 39.6	7h 37m 18.0
35.9	26.1	52.8	33.0
50.8	42.2	33m 6.7	48.5
13m 5.7	58.3	20.4	38m 4.0
19.9	27m 14.2	33.7	19.2
35.5	31.0	48.0	35.5
7h 13m 49.9	7h 27m 47.1	7h 34m 1.9	7h 38m 50.9
219.5	229.4	203.1	209.1
39.5	409.4	143.1	29.1
7h 13m 5.64	7h 26m 58.49	7h 33m 20.44	7h 38m 4.16

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

1855phae.proj...228

Sept. 28/29 Ill. East

+22 W. C. B. δ Geminorum	+32 W. C. B. a^2 Gem	W. C. B	+6 W. C. B a Canis Min	+28 W. C. B β Geminorum
7h 12m 22.9	7h 26m 11.7	[illegible]	7h 32m 40.5	7h 37m 18.9
37.0	27.2		54.0	34.0
51.9	43.2		33m 7.8	49.6
13m 6.8	59.4		21.4	38m 5.0
21.1	27m 14.9		34.9	20.2
36.7	32.0		49.1	36.5
7h 13m 51.3	7h 27m 48.2		7h 34m 2.8	7h 38m 52.0
227.7	236.6		210.5	214.1
47.7	416.6		150.5	36.1
7h 13m 6.81	7h 26.59.51		7h 33m 21.50	7h 38m 5.16

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

1855phae.proj...22B

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

1855phae.proj...228

C.W.B. first solar

1855 Sept. 26th P.M. Ill. East

W.6.B. δ Ophiuch −3°	W.6.B. Antares −26°	W.6.B. α Herculis +15°	W.6.B. α Ophiuch +13°
16.. 07.. 39.9	16.. 21.. 21.9	17.. 08.. 56.0	17.. 29.. 6.5
53.2	36.7	9.6	20.0
W.6.B. 6.8	52.0	23.8	34.0
20.6	7.2	37.8	48.1
33.8	22.0	51.5	1.8
48.2	37.9	6.2	16.4
16.. 09.. 1.9	16.. 22.. 53.2	17.. 10.. 20.5	17.. 30.. 30.3
204.4	230.9	205.4	157.1
60	180	60	180.
144.4	60.9	265.4	337.1
16.. 08.. 20.63	16.. 22.. 07.27	17.. 09.. 37.91	17.. 29.. 48.15
coll. 0.00	coll 0.00	coll. 0.00	coll. 0.00
az. − 0.10	az − 0.14	az. − 0.07	az. − 0.07
lev. + 0.31	lev. + 0.18	lev. + 0.39	lev. + 0.38
16.. 08.. 20.84	16.. 22.. 07.31	17.. 09.. 38.23	17.. 29.. 48.46
16.. 6.. 45.97	16.. 20.. 32.57	17.. 8.. 3.30	17.. 28.. 13.50
1.. 34.87	1.. 34.74	1.. 34.93	1.. 34.96

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

1855phae.proj...228

Oct. 4/5 A.M.

	+6	+ 28	+13
	W. C. B.	W. C. B.	W. C. B.
	α Canis Min.	β Geminorum	α Leonis
	7.. 32.. 48.0	7.. 37.. 26.6	10.. 01.. 43.0
	33. 1.3	41.5	56.4
	15.2	57.1	2.. 10.4
	28.8	38.. 12.7	24.5
	42.2	27.8	38.0
	56.7	44.0	52.8
	7.. 34.. 10.3	7.. 38.. 59.5	10.. 03.. 6.8
	204.5	269.2	231.9
		89.2	171.9
	7.. 33.. 28.93	7.. 38.. 12.74	10.. 2.. 24.56

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

1855phae.proj...228

Oct. 7/8

W. 6. B.	W. 6. B.	Ill. East	W. 6. B.
	+6	+24	+13
+32			
α^2 Geminorum	α^2 Canis Min.	β Gem.	α Leonis
7h 26m 22.5	7h 32m 51.9	7h 37m 30.0	10h 01m 47.3
38.4	33m 4.9	45.2	2m 1.0
54.4	18.7	38m 0.8	14.9
27m 10.7	32.5	16.2	29.0
26.3	45.8	31.5	42.7
43.2	34m 0.3	47.8	57.3
7h 27m 59.3	7h 34m 13.8	7h 39m 3.1	10h 03m 11.6
254.8	167.9	174.6	203.8
74.8	227.9	114.6	
7h 27m 10.69	7h 33m 32.56	7h 38m 16.37	10m 2m 29.11

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

1855phae.proj...22B

Oct. 8/9

+13

W. C. B

d Leonid

10..01..47.3

2.. 1.0

15.1

29.2

42.5

57.2

10..03..11.2

203.5

10..2..29.07

Ill. East

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

1855phae.proj...22

Oct. 9/10

W. 6. B.		W. 6. B.		W. 6. B.
	+6		+25	+13
α Canis Min.		β Gem.		α Leonis
7.. 32.. 53.8		7.. 37.. 32.4		10.. 01.. 48.4
	7.2		47.1	2.1
0		0		
+5	20.9	+28	2.8	+18 16.0
	34.5		18.5	30.1
	48.0		33.5	43.8
	2.4		49.9	58.4
7.. 34.. 16.0		7.. 39.. 5.3		10.. 03.. 12.3
	182.8		189.5	173.1
	60		60	
	242.8		129.5	30.16
7.. 33.. 34.69		7.. 38.. 18.50		10.. 02.. 30.16
coll. +	0.15	coll. +	.17	coll. + .15
az. −	0.03	az. −	.01	az. − .02
lev. +	.35	lev. +	.46	lev. + .43
7.. 33.. 35.16		7.. 38.. 19.12		10.. 02.. 30.72
7.. 31.. 44.19		7.. 36.. 28.26		10.. 00.. 39.77
1.. 50.97		1.. 50.86		1.. 50.95

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

1855phae.proj...228

Oct 17th 10m

+15

WCB

α Herculis

17h 09m 19.6
33.0
47.3
01.6
15.3
30.2
44.1

191.1
180
11.1

17h 10m 01.59
−.05
+.38
+.16

17h 10m 02.08
17h 08m 02.97
+1m 59.11

+13

WCB

α Ophiuchi

17h 29m 30.3
43.7
57.7
11.8
25.4
40.0
54.1

263.0
180
83.0

17h 30m 11.86
−.05
+.38
+.16

17h 30m 12.35
17h 28m 13.15
+1m 59.20

+52

WCB

γ Draconis

17h 54m 07.1
28.2
50.3
12.6
33.7
56.8
18.7

207.4
120
87.4

17h 55m 12.49
−.07
+.82
+.32

17h 55m 13.56
17h 53m 14.30
+1m 59.26

−21

WCB

μ' Sagittarii

18h 06m 22.3
36.6
51.2
5.9
20.0
35.5
50.0

221.5
180
41.5

18h 07m 05.93
−.10
+.21
+.16

18h 07m 06.20
18h 05m 07.01
+1m 59.19

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

1855phae.proj....22

Oct 17th M.

		− 24.47	
− 29.53			
WCB	WCB	WCB	WCB
δ Sagittarii	C's 1st Limb	τ' Sagittarii	Unknown
18 12 56.2	19 05 48.1	19 17 42.0	19 28 28.4
13 11.5	6 3.6	56.7	43.2
27.4	19.5	18 11.7	58.0
43.2	35.4	26.8	29 13.3
58.5	57.1	41.3	27.8
14 15.0	7 7.9	57.2	43.7
30.8	24.0	19 12.1	58.7
242.6	189.6	247.8	273.1
60	60	60	180
302.6	249.6	187.8	93.1
18 13 43.23	19.06 35.66	19 18 26.83	19 29 13.30
18.			

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

1855phae.proj...22

October 10/11 A. M. Ill. East

	+32 W. C. B. α^2 Gem.	+6 W. C. B. Procyon
	7 .. 26 .. 25.8	7 .. 32 .. 54.9
	41.3	33 .. 8.3
	57.7	21.8
	27 .. 13.8	35.8
	29.3	49.0
	46.4	34 .. 3.2
	7 .. 28 .. 2.7	7 .. 34 .. 17.1
	217.0	190.1
	97.0	250.1
	7 .. 27 .. 13.86	7 .. 33 .. 35.73

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

1855phae.proj...224

Oct. 14/15 — Ill. East

W. C. B. ε Leonis	W. C. B. α Leonis	W. C. B. α Ursae Maj.	W. C. B. Polaris S. P.	W. C. B. η Ursae Maj.
+24	+13	+63		+50.2
9.. 38.. 49.6	10.. 01.. 54.5	10.. 55.. 12.8	12.. 42.. 21.3	13.. 42.. 42.8
39. 4.2	2.. 8.0	41.4	27.2	43.. 3.2
19.3	22.0	56. 11.2	33.1 41.6	24.6
34.2	36.3	41.2	51.. 19.7	46.0
49.0	49.9	57.. 9.8	24.0	44.. 6.4
40.. 4.6	3.. 4.5	40.9	30.3 74.0	28.8
9.. 40.. 19.7	10.. 3.. 18.4	10.. 58.. 10.2	13.. 00.. 41.5	13.. 44.. 49.8
180.6	193.6	167.5	48.6	201.6
240.6	253.6	287.5	56.1 146.2	321.6
9.. 39.. 34.37	10.. 2.. 36.23	10.. 56.. 41.07	9.. 19.3	13.. 44.. 45.94
9.. 37.. 38 24	10.. 00 39.90		26.2	
+1.56 13	+1.56.33		35.5 81.0	
			18.. 19.9	
			24.5	
			31.5 75.9	
			27.. 18.7	
			25.0 ~~43~~ 7	
			32.6 76.3	
			35.. 58.9	
			5.4	
			13.. 36.. 11.8 161	

10 days Oct 4 & 24/25

a	−.16
b	+.35
c	+.10

12.. 42.. 27.20	13.. 09.. 26.24
12.. 51.. 24.61	a −4.74
13.. 00.. 48.73	b −9.00
9.. 27.00	c −3.90
18.. 25.30	−17.64
27.. 25.~~77~~ 43	13 09 08.60
36.. 5.37	1.. 07.. 09.76
183.70	+1.58.84
	1 56.50
13.. 9.. ~~26.26~~	−2.34
26.24	

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

1855phae.proj...22B

Oct. 15 — Ill. East — Oct 15/16

+4m 37	+5 2	+13
W. C. B.	W. C. B.	W. C. B
β Ophiuchi	γ Draconis	α Leonis
17h 37m 35.7	17h 54m 5.3	10h 01m 55.8
48.9	26.6	2m 9.1
38m 2.8	48.7	23.3
16.3	55m 10.5	37.2
29.7	31.8	50.8
43.9	54.9	3m 8.7
17h 38m 57.8	17h 56m 16.8	10h 03m 19.6
23 5:1	19 4.6	19 4.5
115.1	74.6	259.5
17h 38m 16.44s	17h 55m 10.66	10h 2m 37.07

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

1855phae.proj...226

Oct. 18 P.M.

−22..47	−25.12	−25.12		−25..47
W. C. B.	W. C. B	W. C. B	W. C. B.	
χ' Sagittarii	h' Sagittarii	h² Sagittarii	Moon's I limb	χ Capricornii
19..17..43.8	19..30..30.0	19..31..09.8	20 last	20..38..47.3
58.3	44.8	24.3	9..52.0	39.. 2.0
18..13.7	31.. 0.0	39.5	10.. 7.6	17.3
last	14.9	54.7	23.4	32.4
43.2	29.9	32 9.2	38.4	47.2
59.0	45.5	25.2	56.0	40.. 3.0
19..19..13.9	19.. 32.. 0.6	19.. 31..40.2	20..11..10.9	20..40..18.3
	165.7	202.9		163.5
	105.7	382.9		227.5
	19..31..15.10	19..31..54.70		20..39..32.50

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

1855phae.proj...228

Oct. 18 −27.27
W.C.B
ω ♑ Capricorni
20.. 44.. 26.4
41.0
56.4
45.. 12.0
26.9
43.1
20.. 45.. 58.4
264.2
84.2
20.. 45.. 12.03

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

1855phae.proj...228

Oct 25 1855 9h East

B	+33	+14	E
	β Lyrae	ζ Aquilæ	
	16h 46m 2.1	19h 00m 10.2	
	17.6	24.2	
	34.0	37.9	
	50.8	52.2	
	47m 6.5	1m 05.8	
	23.3	20.5	
	48m 39.9	34.6	
	174.2	185.4	
	354.2	365.4	
	16h 46m 50.60	19h 00m 52.20	

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

1855phae.proj...228

Oct. 25/26

+6.56

Q. S. C.

ε Hydrae

8 40 33.6
0 46.8
41 0.7
1 14.3
1 27.8
1 42.2
1 55.9

221.3
120
101.3
8 41 14.47
− .17
+ .21
+ .04
8 41 14.55
8 39 07.53
+ 2 7.02

+48.3'

R. S. C.

i Urs maj.

8 50 23.2
43.2
51 3.9
24.6
44.7
52 6.6
27.0

17 3.2

8 51 24.74

−8.01

D. S. C.

α Hydrae

9 21 35.1
22 8.4
2 22.2
2 36.1
2 49.7
23 4.0
3 17.8

193.3
60
253.3
9 22 36.19
− .22
+ .17
+ .04
9 22 36.18
9 20 29.04
+ 2 7.14

+52.20

D. S. C.

ψ Urs. maj

9 24 10.2
31.8
54.3
25 16.7
38.6
26 1.7
24.3

177.6
177.6
9 25 16.80
+.04
+.39
+.06
9 25 17.33
9 23 10.37
+ 2 6.96

Ill East

copy as below

W. C. B.

Mid-wire
Polaris S.P.

13 9 29.4
36.3
43.2

Polaris S.P.

mid. t 29.4
mid. 13 09 36.3
mid t 43.4

13 0

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

1855phae.proj...228

B

Oct. ~~X~~ 26

	copy		
+13.39	+2.49	+10.15	+8.29 uncertain
3 Aquilæ	δ Aquilæ	γ Aquilæ	α Aquilæ
19h 00m 11.3		19h 40m 49.2	19h 45m 9.8
25.0	19h 19 52.5	41 2.8	23.5
39.0	20m 6.0	16.)	37.2
53.0	20.0	30.6	51.1
1m 6.)	~~33.3~~	44.1	46m 4.8
21.4	47.)	58.)	19.0
35.)	21m 1.1	42m 12.5	32.9
192.1		214.6	174.3
~~X~~ 392.1			358.3
19h 00m 58.16		19h 41m 30.66	19h 45m 51.19
−.14		−15	−16
+22		+21	+21
+05		+05	+05
19h 00m 53.29		19h 41m 30.77	19h 45m 51.29
18h 58m 45.82		19h 39m 23.38	19h 43m 43.99
+2m 7.47		+2m 7.39	+2m 7.30

E

Ill East

copy	
+6.2	
β Aquilæ	
19h 49m 39.2	
52.6	
50m 6.4	
20.2	
48.0	
51m 1.8	

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

1855phae.proj...228

Oct 26/27 E W.C.B. Ill East

α Leonis	δ Leonis	
+82.40	+21.20	
10 h 2 m 6.4	11 h 7 m 48.8	~~10 h 2 m 8~~
19.9	8 m 3.0	
34.0	17.8	
48.0	32.4	
3 m 1.7	46.6	
16.4	9 m 2.0	
~~30.3~~	16.7	
156.7	167.3	
336.7	227.3	
10 h 2 m 48.10	11 h 8 m 32.47	
− 14	− 11	
+ 22	+ 25	
+ 05	+ 05	
10 h 2 m 48.23	11 h 8 m 32.66	
10 h 0 m 40.23	11 h 6 m 24.72	
+ 2 m 8.00	+ 2 m 7.94	
+ 2 7.90		
+ 2 m 7.95		

diff. Eqn. at 10 h

a = −0.28
b = +0.25
c = +0.05

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

1855phae.proj...228

Oct. 28/29

Ill. East

+12°20′	+62°32′	+21°20′
20-C.B.	J.F.F.	J.F.F.
α Leonis	α Urs. Maj.	β Leonis
10h 2m 8.5	10h 55m 26.8	11h 7m 50.8
21.8	55.3	8h 3.0
36.1	56m 25.0	19.7
50.1	54.8	34.4
3m 3.8	57m 23.8	48.5
18.6	54.7	9h 4.2
32.5	58m 24.3	18.7
171.4	264.7	181.3
351.4	384.7	241.3
10h 2m 50.20	10h 56m 54.96	11h 8m 34.48
− .15	+ .21	− .11
+ .22	+ .50	+ .25
+ .06	+ .13	+ .06
10h 02m 50.33	10h 56m 55.80	11h 8m 34.66
10h 00m 40.38	10h 54m 46.24	11h 6m 24.77
2m 9.95	2m 09.56	2m 9.89

a = −0.25
b = +0.25
c_1 = +0.06

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

1855phae.proj...228

6 c 5. 31 . . 20.6.B . . Ill East

	+10 γ Aquilæ	+8 α Aquilæ	+6 β Aquilæ	
	19.40.32.80	19.45.13.70	19.49.42.90	
	41.6.40	26.90	56.1	32
	20.1	40.70	50.9.9	13.8
	34.0	54.60	23.4	13.5
	47.6	46.8.10	36.9	13.5
	42.8.2	22.40	51.4	14.5
	16.0	36.30	4.9	13.5
	179.1	202.7	225.5	
	239.1	382.7	165.5	
	19.41.3 4.16	19.45.54.67	19.50.23.64	

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

1855phae.proj...228

B

1855 Oct 30/31 N.W.S.B. Mill. East.

	−8.1			+12.40	
ν	Hydrae	ε	Leonis	α	Leonis
4	21.59.}			10.2.9.8	
	22.12.}				23.4
	26.}				37.5
	40.}				51.}
	54.1			3.	5.0
23.	8.3				19.9
	22.2				33.}
	224.4				141.0
	284.4				361.0
9. 22.	40.63			10. 2.	51.57
	− 22				−14
	+ 17				+22
	+ 8				+ 8
9. 22.	40.66			10. 2.	51.73
9. 20.	29.19			10. 0.	40.34
+ 2.	11.47			+ 2.	11.39

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

1855phae.proj...228

Nov. 2/3 N.E.B. S.W. East.

omit omit

Keplers (4)
Moons Spot.

	Moons 2d limb
11.17.39.6	11.18.0.4
53.5	~~46.~~ 14.3
18. 8.2	18 28.)
22.4	18 43.1
36.)	18 57.3
	19 12.6
19. 6.0	19 26.9
	183.3
	120
	7)303.3
	43.33

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

1855phae.proj...225

Nov. 8 . P.S.C. . Ill. East

B E

Omit

3° W. obs. too soon

very faint

α Pegasi	α Androm.	γ Pegasi	α Gastropus
22h 59m 10s	0h 00m 40.0	0h 7m 25.2	0h 33m 26s
24.3	55.0	38.8	30.0
	1m 10s	53.0	34m 14.4
	26.0	8m 7.1	89.0
	41.2	20.9	33m 2.5
	57.6	35.7	28.0
	13.0	49.7	52.2
	243.5	230.4	212.8
	183.5	50.4	272.8
	0h 1m 26.21	0h 8m 7.20	0h 34m 38.99
		− 15	+13
		+22	+42
		+10	+17
		0h 8m 7s 37	0h 34m 39.69
		0h 5m 49m 14	0h 32m 21.52
		+2m 18.23	+2m 18.17

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

1855phae.proj...228

B

Nov. 8/9

Ill. East

E

	omit		+15,22 unsteady	
+12,40		+62,31		+54,29
W.C.B.	W.C.B.	J.F.F.	J.F.F.	J.F.F.
α Leonis	γ Leonis	α Urs. Maj.	3 Leonis	γ Urs. Maj.
10 h 2 m 17.2	———	10 h 55 m 35.8	11 h 43 m 17.0	11 h 47 m 20.0
30.7	———	56 m 4.3	30.6	42.2
42.8	———	34.2	45.0	48 m 6.1
58.7	10 h 14 m 18.4	57 m 3.9	59.2	30.00
3 m 12.4	82.7	32.8	44 m 12.8	52.85
27.1	47.9	58 m 3.9	27.8	49 m 17.80
41.0	15 m 2.5	33.4	42.0	41.00
231.4		148.3	234.4	210.45
411.9		26.3	414.4	30.06
10 h 2 m 58.84		10 h 57 m 4.04	11 h 43 m 59.20	11 h 48 m 30.06
−14		+21	−13	+09
+22		+49	+23	+40
+12		+25	+12	+21
10 h 2 m 59.04		10 h 57 m 4.99	11 h 43 m 59.42	11 h 48 m 30.36
10 h 0 m 40.62		10 h 54 m 46.78	11 h 41 m 40.90	11 h 46 m 12.44
+2 m 18.42		+2 m 18.21	+2 m 18.52	+2 m 18.32

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

1855phae.proj....225

Nov 7 W. C. B. Mt Zion

α Lyræ	β Lyræ	β Lyræ
	18 46 13.80	
18 m 33.450	" 29.30	
34.2.5	" 45.90	
20.0	47. 2.20	
37.0	" 18.00	
55.5	" 35.20	
12.8	" 51.50	
	195.90	
	15.90	
	18 47 2.27	
	a − .06	
	b + .29	
	c + 11	
	18 47 2.61	
	18 44 43.95	
	+ 2.18.66	

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

1855phae.proj...228

B

Nov 9/10 W. b. N Ill. East

+12° 40′
α Leonis
10ʰ 2ᵐ 17.80
31.20
45.30
59.60
3ᵐ 12.9
27.7
41.7
236.2
216.2
10ʰ 2ᵐ 59.46
a — 16
b + 22
c + .09
10ʰ 2ᵐ 59.61
10ʰ 0ᵐ 40.65
2ᵐ 18.96
mt + 0ˢ.58

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

1855phae.proj...228

1855 Nov. 13 O. C. 38. 9 ft. East

13 E

+3	+40	+8	+6
δ Aquilae	γ Aquilae	α Aquilae	β Aquilae
19h 19m 52.2	19h 41m 2.3	19h 45m 22.9	19h 49m 52.3
20m 5.4	15.7	36.5	50m 5.6
19.1	29.7	50.8	19.3
32.9	43.5	46h 4.1	33.2
46.3	57.0	17.6	46.6
21m 0.6	42m 11.6	32.1	51m 1.0
14.2	25.6	45.9	14.7
172.7	185.4	209.4	172.7
230.7	305.4	29.4	232.7
19h 20m 32.96	19h 41m 43.63	19h 46m 4.20	19h 50m 33.24
−19	−16	−17	−18
+13	+15	+14	+14
+8	+8	+8	+8
19h 20m 32.98	19h 41m 43.70	19h 46m 4.25	19h 50m 33.28
19h 18m 12.43	19h 39m 23.13	19h 43m 43.74	19h 48m 12.73
+2m 20.55	+2m 20.57	+2m 20.511	+2m 20.55
		+2m 20.55	

Instrument reversed

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

1855phae.proj...22

Notice Ill West

1855 Aug 18 U.C.B. Ill. West

+45	+38	+38	+29.38
α Cygni	61' Cygni	61² Cygni	ζ Cygni
20 37 52.1	21 1 53.6	21 1 55.0	21 8 20.8
38 11.8	2 11.0	2 12.3	36.2
32.3	29.2	30.6	52.7
50.6	46.0	47.5	9 7.9
39 9.5	3 3.4	3 4.9	23.8
29.2	20.8	22.1	39.5
47.8	37.6	39.0	54.7
233.3	201.6	211.4	235.1
353.3	321.6	331.4	551.1
20 38 50.47	21 2 45.94	21 2 47.34	21 9 7.87

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

1855phae.proj...228

B

1855 Nov 13/14

E

The West

Copy as below

D. S. b

Polaris

Mid wire

13 9 26.9
29.5
33.9
0.3
13 9 30.1

+63	+21
20.6.33	20.6.33
α Urs. Maj.	~~α Urs. Maj.~~ δ Leonis
10 55 38.2	11 8 1.9
56 9.5	16.8
38.9	32.0
57 ~~7~~.9	26.3
37.4	9 1.0
58 7.2	15.8
35.9	29.9
173.0	143.7
53.0	323.7
10 57 7.57	11 8 46.24
+23	−13
+30	+15
−28	−14
10 57 7.82	11 8 46.12
10 54 47.05	11 6 25.24
+2 20.77	+2 20.88

+ 2 20.85

Polaris S.P.

mid − t 26.9
mid 13 09 29.5
mid + t 33.9

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

1855phae.proj...228

Nov. 14 R. S. C. Ill West

γ Aquilæ (+10)		α Aquilæ (+6)		Moon	
19h 41m 2.9	13.8	19h 45m 23.7	13.7	19h 51m 1.4	15.8
16.7		37.4		17.2	
31.0	14.3	52.0	14.6	33.7	16.5
44.6	13.6	46m 8.0	13.0	49.1	15.4
58.7	14.1	19.2	14.2	4.9	15.8
42m 12.5	13.4	33.0	13.8	20.9	16.0
26.0	13.5	46.4	13.4		
192.4		216.7			
312.4		36.7			
19h 41m 44.63					

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

1855phae.proj:...22

Nov. 14/15 J. F. T. Ill West

+ 20

α Bootis
14h 10m 41.8
56.4
11m 11.8
25.75
40.3
54.9
12m 9.0

239.95
179.95
14h 11m 25.71
−12
+.14
−12

14h 11m 25.61
14h 9m 3.57
+2m 22.04

α Bootis
14h 10m 41.8
56.4
11m 25.7
40.3

a −.30
b +.14
c −.12

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

1855phae.proj...228

omit 13

Nov. 18/19

W.C.B. & Hrs. Obj	W.C.B. S Leonis	E.F.F. S Leonis	E.F.F. Y Hrs. Obj.
	+21	+15	+55
	11h 8m 4.6	11h 43m 21.9	11h 47m 24.75
18h 56m 10.0	19.1	36.1	48.55
41.2	34.3	51.0	48h 13.00
57m 10.2	48.7	44m 4.65	35.7
40.0	9m 3.6	18.9	59.4
56 9.5	18.2	33.0	49m 23.0
88.2	32.3	46.85	45.9
	16 0.8	212.40	250.3
	340.8	32.40	
	11h 8m 48.69	11h 44m 4.63	11h 48m 35.76
	−14	−17	
	+13	+12	
	−12	−12	
	11h 8m 48.56	11h 44m 4.46	
	11h 6m 25.39	11h 41m 41.18	
	+2m 23.17	+2m 23.28	

33.80
24.45
22.7
23.7
23.6
22.9

+2m 23.23

a −35
b +13
c −12

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

1855phae.proj:...228

K

Nov. 18/19

copy as below

Polaris

3d 4th & 5th wires

13 - 00 .. 24.8
33.5
41.0
99.3

13 .. 00 .. 33.1

9 .. 25.1
33.2
40.0
98.3

13 .. 9 .. 32.77

18 .. 8.9
15.2
20.3
44.4

13 .. 18 .. 14.80

E

S. F. H. Ill. West

copy

α Virginis

13 .. 19 .. 58.1
20 .. 12.0
26.0
39.7

Polaris SP

1st wire	- - - - -
2nd "	- - - - -
3 "	13 .. 00 .. 33.10
4	" 9 " 32.77
5	" 18 " 14.80
6	- - - -
7	- - - -

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

1855phae.proj...228

13

Nov. 19th P.S.C. & O.H.S.

P.S.C. −6m49		P.S.C. −6m31		O.H.S. +26
30 Piscium		33 Piscium		a Andromeda
23h 56m 16.1		23h 59m 39.9		0h 02m 33.1
30.2		53.7		48.7
44.6		0h 00m 08.0		3h 04.9
58.0		21.2		20.0
57m 11.8		35.1		35.7
25.4		49.1		51.2
38.8		1h 02.2		4h 06.2
224.9		209.2		199.8
404.9		149.2		139.8
23h 56m 57.84		0h 00m 21.31		0h 3m 19.99

Ill. West.

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

1855phae.proj...228

E

+14

M. H. S.
γ Pegasi

0 " 67 " 30.1
44.3
59.2
8 " 12.9
27.0
41.1
54.7

269.3
89.3
0 " 4 " 12.76

P. S. C.
Moon's 1st Limb

0 " 33 " 43.5
57.6
34 " 12.3

39.8
53.8

+7".6

P. S. C.
ε Piscium

0 " 57 " 10.4
24.1
38.5
51.9
05.7
19.6
32.8

163.0
363.0
0 " 57 " 51.8.6"

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

1855phae.proj...228

Nov. 19th

Ill. West.

P. S. C.
ε Piscium

———
———
———
———
———

1.. 00.. 16. 4
29. 6

R. S. C.
Moon's Spots.

34.. 58. 3
35.. 07. 3
11. 7
25. 2
25. 8

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

1855phae.proj...228

B

Novr. 19/20th.

+21

W. C. B.
S Leonis
11h 08m 05.0
19.5
31.7
49.2
9h 03.8
18.8
32.7
163.7
343.7
11h 9m 49.10
−25
+13
−12
11h 8m 46.96
11h 6m 25'.43
+2m 23.53

E

Ill. West.

+20

W. C. B.
Arcturus
14h 10m 43.5
58.1
11m 13.7
27.3
42.0
56.7
12m 10.7
252.0
192.0
14h 11m 27.43
−15
+13
−12
14h 11m 27.29
14h 9m 3.65
2 23.64

+ 2m 23.56

a −37
b +13
c −12

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

1855phae.proj...228

Nov.r 20th

Unknown	W. C. B, +7m6 ε Piscium	Ill. West. +4m53 e & Piscium
0 56 20.1	0 57 10.7	1 02 39.8
33.6	24.5	53.5
48.2	38.7	03 07.9
57 01.6	52.1	21.0
15.3	58 06.2	34.7
29.2	19.8	48.7
42.2	33.0	4 02.0
190.2	185.0	207.6
10.2	365.0	147.6
0 57 1.46	0 57 52.14	1 4 3 21.09

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

1855phae.proj...228

20th "

	−9	
θ Ceti	Moon's 1st. Limb	Spot Messier
1 " 18 " 32.3	1 " 26 " 14.1	1 " 26 " 37.9
45.9	6 28.1	6 51.8
19 " 0.4	6 42.9	7 06.8
13.9	6 56.4	7 20.3
27.7	7 10.8	7 34.8
41.5	7 25.0	7 48.8
55.0	7 38.5	8 02.2
216.7	275 8	202.6
96.7	180	60
1 " 19 " 13.81	395.8	142.6
	26 " 56.54	1 " 27 " 20.37

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

1855phae.proj...218

Copied Mrs Jar.

Ill. West.

Nov.r 20th

Spot. A.

1 26 38.4
6 52.4
7 07.4
7 21.1
7 35.3
7 49.4
8 3.0

207.0
60

147.0

1 27 21.00

π Piscium

1 31 38.7
51.9
6.1
20.2
23.8 33.8?

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

1855phae.proj...228

B

1855 Nov 24 W. C. 13 Ill. Test

α Aquilae +6	α² Capricorni −13	α Cygni +45
19 h 45 m 27.4	1st lost	20 h 37 m 56.8
41.2	20 h 11 m 59.4	38 m 16.1
55.8	14.1	36.3
46 9.0	27.8	54.9
23.0	41.8	39 m 14.5
36.9	55.8	33.4
50.2	9.4	20 39 m 51.9
243.5		263.9
63.5		383.9
19 h 46 m 9.07		20 h 38 m 54.64

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

1855phae.proj...208

B

1855 Nov 21/22 W.C.B. Ill Clear

E

Copy as below

Polaris S.P.

	+63 α Ursæ Maj.	+21 δ Leonis
	10 h 55 m 41.8	11 h 8 m 9.6
	56 m 11.1	20.0
	42.2	35.6
	57 m 11.1	49.6
	41.0	9 m 4.6
	58 m 10.5	19.1
	39.3	33.4
	197.0	168.1
	77.0	348.1
	10 h 57 m 11.00	11 h 8 m 49.73
	+30	−16
	+27	+13
	−25	−12
	10 h 57 m 11.32	11 h 8 m 29.58
	10 h 54 m 47.51	11 h 6 m 25.43
	+2 m 23.81	+2 m 24.15

+2 m 24.05

a −40
b +13
c −17

3rd wire
13 h 00 m 33.00
38.00
43.30
114.30

13 h 00 m 38.10

4th wire
13 h 9 m 29.80
34.90
42.80
107.50

13 h 9 m 35.83

5th wire
13 h 15 m 10.20
16.00
22.70
49.90

13 h 15 m 16.30

Polaris S.P.

1st wire	———
2	———
3	13.00 38.1
4	9 m 35.8
5	15 m 16.3
6	———
7	———

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

1855phae.proj...228

1855 Nov. 25/26 B

Obs. G. B. Hill. West

omit				omit
+63	+21	−14	+15	+55
α UMa. Maj	δ Leonis	∑ Hyd. et Crat.	β Leonis	γ UMa. Maj.
10 55 49.2	11 8 7.5	11 13 51.1	11 43 24.8	11 47 27.9
56 13.4	22.1	14 5.2	39.0	51.4
44.9	37.3	20.0	53.9	48 16.1
57 12.7	51.7	33.7	44 7.6	36.8
	9 6.4	47.8	21.9	49 2.4
58 12.9	21.1	15 1.8	36.1	
41.6	35.2	15.5	49.7	
	181.3	175.1	233.0	
	361.3	235.1	53.0	
	11 8 57.61	11 14 33.59	11 44 7.58	

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

1855phae.proj...228

E

1855

Ill. West

Nov. 25/26

−10.24

W. G. D.		α Virginis		α Bootis.
13	19.1	14	10	26.1
	33.0	11	0.5	
	47.7		16.0	
20	1.0		30.0	
	15.0		44.6	
	28.9		59.2	
	42.6	12	13.3	
	187.3		209.7	
	7.3			
13	20. 1.04	14	11. 29.96	
	−36		−.18	
	+5		+.11	
	−13		−.13	
13	20. 0.62	14	11. 29.76	
13	17. 34.68	14	9. 3.76	
	+2. 25.94		+2. 26.00	

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

1855phae.proj...228

13

1855 ~~Oct~~ Nov 26/7 W.C.B. Dll. West

α Virginis

13h 19m 19.8
33.7
48.0
20h 1.7
19.7
29.7
42.9
191.5
11.5
13h 20m 1.64

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

1855phae.proj...228

1855's Nov 29/80 J.F.F. J.M. West

Spica	Arcturus	
13.. 19.. 21.9	14.. 10.. 48.95	14.2
35.8	11.. 3.1	15.7
50.5	18.8	14.2
20.. 3.8	33.0	14.8
17.9	47.35	14.6
31.8	12.. 1.95	14.0
45.3	16.0	
207.0	169.15	
27.0	329.15	
13.. 20.. 3.86	14.. 11.. 32.74	
-42	-20	
13.. 20.. 3.44	14.. 11.. 32.54	
13.. 17.. 34.79	14.. 9 3.63	
+ 2.. 28.85	+ 2.. 28.71	
	+ 2.. 28.68	
	+ 2.. 28.70	

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

1855phae.proj...228

1855 Nov 30 W. C. B. Ill. West.

α Cephei	β Aquarii	β Cephei	δ Companion	Anon.
21h 16m 6.8	21h 25m 44.9			
36.0	58.7			
17m 6.7	26h 13.0			
34.6	26.4	21h 29m 10.0	29m 12.7	
18h 3.8	40.2	50.4	52.9	
32.9	53.9	30m 30.5	30m 32.5	
19h 1.2	27m 9.2	31m 8.8	31m 11.3	

omit.

Anony.

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

1855phae.proj...22B

E Copy the 2nd column E

Nov. 30 1855 Ill. West

P. S. C.

see below 20. C. B. α Androm.	20. C. B. γ Pegasi	P. S. C. α Cassiopeae	Polaris	
0 .. 00 .. 50.3	0 .. 7 .. 35.6	33 .. 36.4	0 .. 42 .. 1.9	
1 .. 5.9	49.7	34 .. 0.6	7.6	
22.0	8 .. 4.3	26.2	14.6	
37.0	18.0	49.7	24.1	= 0 .. 42 .. 8.03
52.8	32.3	35 .. 14.3		
2 .. 8.7	46.2	38.4	0 .. 51 .. 4.0	
23.4	59.9	36 .. 2.0	8.0	
α Andromeda	246.0	167.6	16.2	
0 .. 2 .. 38.4	126.0	347.6	28.2	2nd = 0 .. 51 .. 9.40
54.2	0 .. 8 .. 18.0	0 .. 34 .. 49.66		
3 .. 10.4			1 .. 00 .. 29.60	
25.3			35.40	
41.1			42.20	3
56.8			107.2	1 .. 00 .. 35.73
11.6				
237.8			1 .. 9 .. 9.40	
177.8			18.90	
0 .. 3 .. 25.40			27.00	4
			55.30	1 .. 9 .. 17.77
			1 .. 18 .. 14.9	
			19.2	
			24.1	5
			58.2	1 .. 18 .. 19.40
			1 .. 27 .. 15.4	
			19.3	
			25.3	6
			60.0	1 .. 27 .. 20.00
			1 .. 36 .. 1.3	
			4.4	
			11.1	7
			16.8	1 .. 36 .. 5.60
				115.93
			Mean of sines	1 .. 9 .. 16.56

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

1855phae.proj....22

B copy 2nd column. 1855

E

Nov. 30/81

δ Polaris S.P.		δ Spica	α Arcturus
12h 43m 42.8		13h 19m 22.2	14h 10m 29.1
50.3		36.1	11m 3.7
56.3		50.8	14.9
151.4	12h 43m 50.47	20m 4.1	33.0
		18.0	47.6
12h 5/m 28.6		32.1	12m 2.2
34.1		45.5	16.2
40.0		204.8	10
102.7	12h 5/m 34.23	28.8	230.8
		13h 20m 4.11	14h 11m 32.97
13h 00m 31.6			
35.9			
40.6			
104.1	13h 00m 36.03		
13h 9m 30.9			
36.9			
42.9			
110.7	13h 9m 36.90		
13h 14m 13.0			
18.2			
21.3			
52.5	13h 14m 17.50		
13h 27m 40.2			
49.4			
51.4			
137.0	13h 2}m 45.67		
13h 36m 38.30			
43.70			
46.80			
130.8	13h 36m 43.60		
	264.40		
	13h 9m 37.77		

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

1855phae.proj.:.228

1855 B E

Dec. 2/3

Ill West

W.C.B.	I.F.F.	I.F.F.
Moons 2 limb	12 Can. Venat	α Virginis
	12.. 50.. 52.1	13.. 19.. 22.6
	51.. 9.)	36.5
	28.4	51.1
	45.1	20.. 4.)
	52.. 2.9	18.)
	20.)	32.6
12.. 17.. 21.2	37.)	45.9
	196.6	212.1
	316.6	32.1
	12.. 51.. 45.23	13.. 20.. 4.59
	− .20	− .42
	12 .. 51 . 45.03	13 . 20 . 04 . 17
	12 .. 49 .. 15.79	13 .. 17 . 34 . 88
	− 2 . 29 . 24	2 . 29 . 29

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

1855phae.proj....228

B

1855 Dec 3/4

E

Ill. West

Northernst star slightly preceding.

W. C. R. β Leonis	W. C. R. η Virginis	W. C. R. γ Virginis	J. F. F. α Virginis
11.. 43.. 28.90	12.. 14.. 20.00	12.. 36.. 9.5	13.. 19.. 23.3
43.10	33.80	23.0	37.1
57.90	47.90	37.3	51.8
44.. 11.95	15.. 1.15	50.7	20.. 5.2
25.90	14.90	37.. 4.3	19.1
40.15	28.80	18.0	33.0
53.80	41.90	31.3	46.4
261.50	188.45	174.1	215.9
81.50	8.45	354.1	35.9
11.. 44.. 11.64	12.. 15.. 1.21	12.. 36.. 50.59	13.. 20.. 5.13

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

1855phae.proj...229

B

1855 Dec. 5/6

E

I Ch. West

W. C. B.

omit

~~12 Can. Vent~~

Companion of 12 Can. Vent

12 " 50 " 52.50	12 " 50 " 53.80	13 " 19 " 24.30
	51 " 11.25	38.20
51 " 28.50	29.60	52.40
45.30	46.80	5.80
52 " 3.30	52 " 4.40	19.85
20.65	21.90	33.90
37.90	39.20	47.30
	206.95	224.75
	120	180
	326.95	44.75
12 " 51 " 46.71		20 " 05.96
	20	45
12 " 51 " 46.71		13 " 20 " 05.51
49 " 15.90		13 " 17 " 35.80
+ 2 " 30.81		+ 2 " 30.57
		81
		131
		+ 2 " 30.65

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

1855phae.proj....228

1855 Dec 4/5 W. C B Ill. Mist

γ Virginis 12 Can. Ven α ℓℓ

12 .. 34 .. 9.7	12 .. 50 .. 53.1	13 .. 42 .. 11.7
4 23.3	1 10.7	2 25.6
4 37.7	1 29.3	2 40.7
4 51.1	1 46.2	2 54.5
5 4.8	2 3.9	3 8.6
5 18.5	2 21.6	3 22.9
5 31.7	2 38.6	3 36.3
1768	203.4	2003
180	120	180
7)3568	7)3234	7)3803
12 . 34 . 51.11	12 . 51 . 46.20	13 . 42 . 54.33

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

1855phae.proj...228

1855 Dec 6.ᵉ Ill Wet

P.S.C α Andromedæ	W.C.B γ Pegasi
0.. 02.. 40.6	— — — —
56.1	— — — —
12.2	— — — —
27.2	— — — —
43.0	— — — —
58.6	0.. 08.. 48.5
13.6	2.0

Dec 6/7

P.S.C α Cassiopeiæ	W.C.B γ Ursæ Min.ⁱ
0.. 33.. 38.6	11.. 47.. 33.5
2.6	7 56.9
28.1	8 21.8
51.8	8 44.3
16.0	9 8.2
40.5	9 31.7
4.0	9 54.5
	250.9
	60
	310.9
	11 .48 .44.90

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

1855phae.proj....228

1855 Dec 6/7 Mt Hunt

7 C B
12 Can. Ven
12.. 50.. 53.9
1 11.5
1 30.0
1 47.2
2 4.8
2 22.5
2 39.8
2097
126
7)3297
12. 51 .. 47.10

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

1855phae.proj...229

1855 Dec 7/8

1

Tr C B	Tr C B	J. Z. Z.
Between ♍	12 Can. Ven	a Virginis
12.. 50.. 53.5	12.. 50.. 54.6	13.. 19.. 25.1
10.9	51.. 12.0	39.0
	30.7	53.6
46.1	47.7	20.. 7.0
4.2	52.. 5.5	~~44.3~~ 21.0
21.5	23.1	~~21.0~~ 34.9
38.9	40.1	~~34.9~~ 48.4
	213.7	229.0
	~~223.7~~	49.0
	12.. 51.. ~~39.~~ 46.24	13.. 20.. 7.0

17.4 17.7 17.0 17.8 17.6 17.0

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

1855phae.proj....228

1855 Dec. 11 W. C. B. Lt. West

ε Aquarii	α Aquarii
21ʰ 38ᵐ 58.1	22ʰ 00ᵐ 15.30
39ᵐ 11.8	28.85
26.6	43.30
40.0	56.40
53.9	1ʰ 10.40
40ᵐ 7.8	24.00
21.0	37.40
219.2	215.65
279.2	355.65
21ʰ 39ᵐ 39.89	22ʰ 00ᵐ 56.52

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

1855phae.proj...228

1855 Dec 11/12 Ill West

W. C. D.	W. C. B.	I. F. F.	I. F. F.
η Ursæ Maj.	η Bootis	α Bootis	ε Bootis
13ʰ 43ᵐ 20.70	13ʰ 49ᵐ 39.25	14ʰ 10ᵐ 54.60 3 Lösen	14ʰ 40ᵐ 24.50
41.85	53.75	11ᵐ 9.60	43.80
44ᵐ 4.10	50ᵐ 8.85	24.60	59.90
24.65	22.90	38.75	41ᵐ 14.85
46.00	37.50	53.60	30.40
45ᵐ 7.50	51.90	12 8.10	46.00
28.10	51ᵐ 6.00	22.10	42ᵐ 0.80
17 2.90	220.15	211.35	224.25
	160.15	271.35	104.25
13ʰ 44ᵐ 24.70	13ʰ 50ᵐ ~~31.4~~	14ʰ 11ᵐ 38.76	14ʰ 41ᵐ 14.89
	22.88	−19	−14
	−21	−4	−4
	−14	−14	−15
	13ʰ 50ᵐ 22ˢ.49	14ʰ 11ᵐ 38ˢ.39	14ʰ 41ᵐ 14ˢ.56
	13ʰ 47ᵐ 48ˢ.31	~~14ʰ 9ᵐ 41ˢ.19~~	14ʰ 38ᵐ 40ˢ.28
	+ 2ᵐ 34ˢ.18	+ 2ᵐ 34ˢ.20	+ 2ᵐ 34ˢ.28
	20	21	

+ 2ᵐ 34ˢ.23

−24
− 4
−13

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

1855phae.proj...228

1855 Dec. 13/14 ~~W.C.V~~ Ill. West

J. F. Fr. η Urs. Maj. ~~W. C. B.~~ ~~ε Virginis~~	W. C. B. α Virginis	W. C. B α Bootis	J. Fr. Fr, ε Bootis
13 h 13 m 21.15	13 h 19 m 26.40	12 h 10 m 55.20	14 h 40 m 28.60
42.30	42.30	11 m 9.80	41 m 10
44 m 4.30	56.70	25.10	41 m 0.35
25.00	20 m 10.40	39.25	15.25
46.40	21.40	53.80	30.50
45 m 8.00	38.20	12 m 8.30	46.20
24.50	51.75	22 m 40	42 m 1.30
175.65	252.15	213.85	166.30
	72.15	273.85	106.30
13 h 44 m 25.09	13 h 20 m 10.31	12 h 11 m 39.12	12 h 41 m 15.19

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

1855phae.proj...228

1855 Dec. 14 40-6.75 Ill. West

α' 1° limb	Messier	A.
22h 31m 33.85	22h 31m 57.85	22h 31m 58.45
1 48.25	32 12.05	+2m 12.85
32m 3.30	27.30	32m 28.00
2 17.40	41.80	42.00
2 31.90	55.50	56.20
2 46.30	33m 10.50	33h 11.15
33m 0.45	24.40	25.15
181 45		
60		
3 | 121		
32m 17.35		

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

1855phae.proj...228

1855 Dec. 12. 20-6.D. 2 h. Ost

τ² Aquarii	δ Aquarii	α Pegasi
22 43 49.60	22 48 51.50	22 59 26.85
44 3.50	49 5.65	40.90
4 18.30	20.90	55.75
4 32.00	34.35	23 00 9.40
4 46.10	48.85	23.45
45 0.30	50 3.00	37.90
5 13.95	16.80	51.30
163 75	180.85	245.55
60	240.85	65.55
7)223	22 49 34.41	23 00 9.96
22 44 31.96		-23
		-5
		-10
		23 00 8.98
		22 57 34.34
		+2 34.60

-,29
-6
-,12

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

1855phae.proj...220

1855 Dec 17 Ill West

W. C. B.

12 Ceti'	13 Ceti	Moons Point	Messier
0 24 35.80	0 29 42.60	1 8 30.40	1 8 54.80
49.50	58.35	42.70	9 8.90
25 4.00	30 12.60	59.65	23.65
16.95	25.95	9 12.90	39.15
30.80	39.50	26.90	51.35
44.60	53.40	41.00	10 5.45
58.00	31 6.75	54.55	18.85
239.65	241.15	270.30	199.95
120	60	180	60
119	181.15	90.30	259.95
0 25 17.09	0 30 25.88	1 9 12.90	1 9 37.14

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

1855phae.proj...228

1855 Dec 17 Ll West

W. C. B.

A	μ Piscium	π Piscium
1h 8m 55.40	1h 24m 33.00	1h 31m 22.00
9m 9.60	46.50	35.80
24.40	25m 1.10	50.50
37.90	14.35	32m 4.00
52.00	28.30	17.90
6.15	41.90	32.00
19.55	55.10	45.40
205.00	220.25	207.60
60	120	180
265.00	100.25	27.60
1m 9s 37.86	1 25 14.32	1 32 3.94

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

1855phae.proj...22B

1855 Dec. 17/18 J. W. West

W. C. B.	J. G. F.	J. G. F.	W. C. B.
α Virginis	η Urs. Maj.	η Bootis	α Bootis
13.. 19.. 29.70	13.. 43.. 22.25	13.. 49.. 40.90	14.. 10.. 56.40
43.40	43.50	55.25	11.. 11.00
58.10	44.. 5.60	50.. 10.55	26.25
20.. 11.50	26.45	24.60	40.30
25.75	48.20	38.95	54.95
39.50	45 9.15 ?	53.85	12.. 9.40
52.90	29.75	51.. 9.40	23.75
260.90	182.90	231.80	222.05
80.90		171.80	282.05
13.. 20.. 11.56	13.. 44.. 26.41	13.. 50.. 24.54	14.. 11.. 40.29

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

1855phae.proj...228

1855 Dec. 19 45. C.B. Ill. West

π Piscium

1.. 31.. 22.20
36.30
50.75
32.. 4.25
14.25
32.25
45.70

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

1855phae.proj...22B

1855 Dec. 19/20

J. M. West

J. F. T.

ε Bootis	α² Libra
14ᵐ 40ˢ 30.30	14ᵐ 44ˢ 47.20
25.80	45ˢ 1.30
41ˢ 1.80	16.30
16.95	30.10
32.45	44.30
47.95	58.30
42ˢ 3.00	46ˢ 12.25
178 25	209.80
115.25	
14ᵐ 41ˢ 16.89	14ᵐ 45ˢ 29.97
−16	−46
−10	−5
−11	−10
14ᵐ 41ˢ 16.52	14ᵐ 45ˢ 29.36
14ᵐ 38ˢ 40.47	14ᵐ 42ˢ 53.37
+2ˢ 36.05	+2ˢ 35.99

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

1855phae.proj....228

1855 Dec 30/31 Ill. 20 cl

J. F. F.
α Lyrd
18.. 33.. 48.8
34.. 5.8
23.9
40.9
58.7
35.. 16.2
32.9

226.7
286.7
18.. 34.. 40.96

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

1855phae.proj...22B

1856

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

1855phate.proj....228

1856 Jan 3/4 15 Ill West

very faint
& uncertain
I. F. F.
β' Scorpii

15h 59m 13.0
27.9
42.2
57.0
16h 00m 11.1
25.2
176.6
-43.66
132.94
6) 252.94
15h 59m 42.16
-50
-9
-11
15h 59m 41.46
15h 57m 2.48
+2m 38.98

W. C. B.
α Scorpii
16h 22m 26.6
42.0
57.9
23m 12.7
27.8
43.2
57.9
268.1
88.1
16h 23m 12.59
-54
-7
-11
16h 23m 11.87
16h 20m 33.14
+2m 38.69

9.61473 Log 41.184
10.02539 Dec. -19.24
9.64012 43.66

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

1855phae.proj...22B

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

1855phae.proj...22B

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

1855phae.proj...22R

1855 Jan 7/8 Ill West

W. C. W
J. F. F.
Ge & our method E.C.
α Scorpii
16h 22m 28.2
43.3
59.5
23h 14.2
29.5
44.7
59.3
278.7
94.7
16h 23m 12.10
−54
−7
−11
16h 23m 13.38
16h 20m 33.31
+2m 40.07

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

1855phae.proj....22B

Jan 17/18 1856 J. F. F. Ill. Wash

α Scorpii

16ᵘ 22ᵐ 33.75
48.95
23 4.90
19.70
34.95
50.35
24ᵘ 4ᵐ 85

197.80
137.50
16ᵘ 23ᵐ 19.64
-.72

16ᵘ 23ᵐ 18.92
16ᵘ 20ᵐ 33.63

+2ᵐ 45.29

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

1855phae.proj...228

Dome covered with Ice and
frozen fast.— Transit roof in the same
condition, this state of things continued
about two months, without a single day when
we could clear the shutters.

A winter of relentless constancy
The snow covered the ground like the 2nd
week in April.

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

1855phot:proj...228

March 10th 1856 Ill. West.

W.C.B.

α Tauri

4h 30m 11.75
25.80
40.40
54.50
31m 8.60
22.90
36.60

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

1855phae.proj...228

1856 March 11 Ill. West

w.c.W. Capella	w.c.W. β. Tauri	w.c.W. δ orionis	ε orionis
~~5.. 7..19.75~~			
5.. 6.. 18.90	5.. 19.. 40.0	5.. 27.. 13.4	5.. 31.. 28.8
8 39.00	9 55.5	) 27.0	42.5
8 59.70	20.. 11.9	) 41.4	56.8
9.. 18.70	0 26.9	) 54.6	32.. 10.0
9 ~~38.30~~	0 42.5	28.. 8.4	———
9 58.00	0 58.1	8 22.1	———
10.. ~~29.00~~	21.. 13.2	8 35.2	———
2490	2481	2021	
124	60	180	
129	7)1881	7)3921	
5 .09 .. 18.52	5.20 .. 26.87	5 .27 .. 54.60	

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

1855phae.proj...228

1856 March 12 T. H. S. Ill. West

Moon I.		α Aurigae		β Tauri		γ Tauri	
4	49 50.7			5	18 40.4	5	30 34.1
	50 6.3				55.9		49.0
	22.6	8	0.1	19	12.3	31	4.3
	38.0		18.9		27.4		Something the matter with the paper —
	53.7		38.7		43.1		33.1
	51 9.2	8	58.5		58.6		48.2
4	24.5	9	17.3	20	13.8	32	24
	1 − 1.0						

4 50 37.86 5 19 27.36

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

1855phae.proj...22

1856 March 14 Ill West

+26.5	−0.5	−1.3	+22°.5
W.C.B.	W.C.B.	W.C.B.	T.H.S.
β Tauri	δ Orionis	ε Orionis	η Geminor.
5ʰ 19ᵐ 40.90	5ʰ 27ᵐ 14.4	5ʰ 31ᵐ 29.80	6ʰ 08ᵐ 43.30
56.35	27.9	43.40	57.90
20ᵐ 12.75	42.3	57.70	09ᵐ 13.75
27.75	55.5	32ᵐ 10.90	27.90
43.35	28ᵐ 9.3	24.70	42.75
58.85	22.8	38.35	57.65
21ᵐ 12.10	36.1	51.65	10ᵐ 11.85
2540 5	2083	2665	2551
−60	180	180	60
7)19405	7)3883	7)4865	7)1951
5ʰ 20ᵐ 27.72	5ʰ 27ᵐ 55.47	5ʰ 32ᵐ 10.93	6ʰ 09ᵐ 27.87
ar − .15	− 13	− 13	− 13
as − .14	− 33	− 33	− 14
− .17	− 10	− 10	.14
5ʰ 20ᵐ 27.26	5ʰ 27ᵐ 54.91	5ʰ 32ᵐ 10.47	6ʰ 09ᵐ 27.41
17ᵐ 11.55	4ʰ 39.21	28.54.59	6 11.49
EC + 3 15.71	3 15.70	3 15.88	3 15.92

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

1855plate:proj...228

1856 March 14 G. M. T. Hp. 20ᵐ

+22°.5

μ Geminor.

6ᵈ 16ʰ 47ᵐ.00
17ᵐ 1ˢ.90
17ˢ.50
31ˢ.60
46ˢ.65
18ᵐ 1ˢ.40
15ˢ.80
16 8 5
2 28 60
6ʰ 17ᵐ 31ˢ.69
−13
−19
−14
6ʰ 17ᵐ 31ˢ.23
14ʰ 15ᵐ 35ˢ
3ʰ 15ᵐ 68ˢ

Moon 1st limb

6ʰ 51ᵐ 13ˢ.95
1 29.80
1 46.40
52ᵐ 1ˢ.90
2 17ˢ.85
2 33.20
2 49.15
1922 5
180
1225
6ʰ 52ᵐ 1ˢ.75

+22°.2

δ Geminor.

7ʰ 14ᵐ 3ˢ.90
18ˢ.75
34ˢ.05
44ˢ.40
15ᵐ 3ˢ.15
18ˢ.10
32ˢ.25
158 6
180
7/338.6
7ʰ 14ᵐ 48ˢ.37
−13
−19
−14
7ʰ 14ᵐ 47ˢ.91
11 32.02
3ʰ 15ᵐ 89ˢ

+26°.

ε Geminor.

7ʰ 19ᵐ 17ˢ.20
32ˢ.70
48ˢ.95
20ᵐ 3ˢ.95
19ˢ.65
35 35.00
50.15
20 6
180
276
7ʰ 20ᵐ 03ˢ.94
−15
−14
−17
7ʰ 20ᵐ 03ˢ.48
6ᵐ 47ˢ.64
+3ʰ 15ᵐ 84ˢ

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

1855phae.proj...228

1856 March 15 W.C.B. All West

β Tauri

5h 19m 40.70
19 56.50 −15.80
20h 12.80 −16.30
20 27.70 −14.90
20 43.40
20 58.90
21h 14.00

254.0
−60
7)1940
5.20 h 27.79

240.00
060
7)180
2
260.0
060
7)200 / 28
257
60
7)191 / 27.3
14
57
49
2

δ Orionis

5h 27m 14.30
27.90
42.40
55.50
26h 9.30
22.85
36.20

208.45
1K0
7)388.45
55.49

ε Orionis

5h 31m 29.70
1 43.30
1 57.80
32h 10.90
2 24.80
2 38.40
2 51.60

256 50
180
7)0765 0
5.32 h 20.93

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

1855phae.proj...228

1856 March 16/17 W.C.B. Jll. West

α Lyræ	β Lyræ
	18h 47m 13.00
	29.70
	46.65
	48m 2.25
	18.90
	34.95
	18.48.50.90
	196.35
	180
	2)16.35
	18.48 m 2.34
	− 46
	18.48 m 01.88
	45.45.44
	+ 3.16.44
16h 34m 45.0	
35m 3.3	
20.6	
37.7	
55.5	
36m 12.3	

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

1855phae.proj...228

1856 March 25. Transit Circle, Lamp West

II Catalogue of fundamental stars

Observer. J. F. Flagg.

bad focus	bad focus					
h						
8 .. 12 .. 47.9	8 .. 15 .. 59.7	8 .. 20 .. 57.9	8 .. 23 .. 48.8	8 .. 26 .. 50.0	8 .. 29 .. 57.2	
1.6	13.2	13.4	2.3	3.9	10.9	
15.9	27.6	27.9	16.7	18.1	25.2	
28.8	41.0	41.2	30.0	31.3	38.4	
42.6	54.7	54.9	43.5	44.9	52.3	
56.6	8.2	8.5	57.4	58.8	5.9	
8 .. 14 .. 10.0	17 .. 21 .. 7	22 .. 21 .. 8	25 .. 10 .. 6	28 .. 12 .. 3	31 .. 14 .. 1	
203.4	226.1	227.6	209.3	219.3	209.0	
	286.1	287.6			269.0	
8 .. 13 .. 29.96	8 .. 16 .. 40.87	8 .. 21 .. 41.09	8 .. 24 .. 29.90	8 .. 26 .. 31.33	8 .. 30 .. 38.43	

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

1855phae..proj...228

	ε Hydra				
8 .. 36 .. 29.7	8 .. 41 .. 47.4	8 .. 44 .. 49.0	8 .. 57 .. 10.4	8 .. 54 .. 47.7	8 .. 54 .. 56.2
43.6	1.2	2.7	24.0	1.6	9.8
57.7	15.7	17.2	38.5	15.9	24.1
11.0	28.9	30.2	57.8	29.9	37.5
24.7	42.7	44.0	5.2	42.9	57.1
38.4	56.6	57.8	19.0	56.6	4.9
8 .. 27 .. 57.8	43 .. 9.8	46 .. 11.0	52 .. 32.3	56 .. 9.9	56 .. 16.2
256.9	202.3				
76.9					
6 .. 37 .. 10.99	8 .. 42 .. 28.90				

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

1855phae.proj...22

1856 March 25th

Lamp west Observer J. F. J.

				α Hydrae	
8 .. 59 .. 53.5	9 .. 11 .. 55.2	lost	9 .. 19 .. 7.5	9 .. 23 .. 9.2	lost
7.1	8.8	9 .. 14 .. 57.2	9 .. 19 .. 27.6	22.8	9 .. 26 .. 2.2
21.4	23.2	11.4	35.3	37.5	16.8
34.8	36.3	24.8	48.7	50.8	29.9
48.5	50.1	38.7	2.4	4.8	43.6
lost	3.9	52.2	16.2	18.7	57.3
lost	13 .. 17.0	16 .. 5.6	20 .. 29.3	24 .. 32.0	27 .. 10.7

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

1855phae.proj...228

1856 March 25

Lamp West.

				α Leonis
9 30 5.9	9 48 18.6	9 52 32.9	9 58 54.7	10 3 20.1
19.5	32.5	46.5	8.4	34.1
33.9	46.7	00.9	22.9	48.8
47.0	00.0	14.1	36.0	2.5
0.8	13.7	27.9	49.9	16.4
14.6	27.4	41.7	3.4	30.4
31. 27.9	49 40.7	53 54.7	10 00 16.7	4 44.0

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

1855phae.proj...22

1856
March 25/26 –

Lamp West.

β Lyrae	γ Aquilae	α Aquilae	β Aquilae		
lost	19.. 42.. 01.9	19.. 46.. 22.9	19.. 50.. 52.0		
lost.	15.9	36.7	5.7		
18.. 47.. 49.0	30.5	57.1	20.1		
5.0	44.0	4.6	33.5		
21.5	57.0	18.3	47.2		
37.8	11.8	32.2	1.0		
48.53.7	43.25.2	47.45.7	52.14.4		

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

1855phae.proj...228

1856 March 27th W.C.B. Ill. West

α Tauri lost	α Aurigæ	β Tauri ~~Lorioni's~~	ξ Orionis	ε Orionis lost
4h 30m 30.6	5h 08m 22.1	5h 19m 44.4	5h 27m 17.8	5h 31m 46.8
45.4	43.2	59.9	31.6	32m 1.3
59.3	9m 3.7	20m 16.3	45.8	14.5
31m 13.6	23.0	31.2	59.2	28.1
27.9	42.7	46.9	28m 12.9	42.0
41.4	10m 2.2	21m 2.5	26.7	55.2
	21.7	17.6	39.8	

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

1855phae.proj...22B

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

1855phae.proj...22

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

1855phae.proj...22B

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

1855phae.proj...22B

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

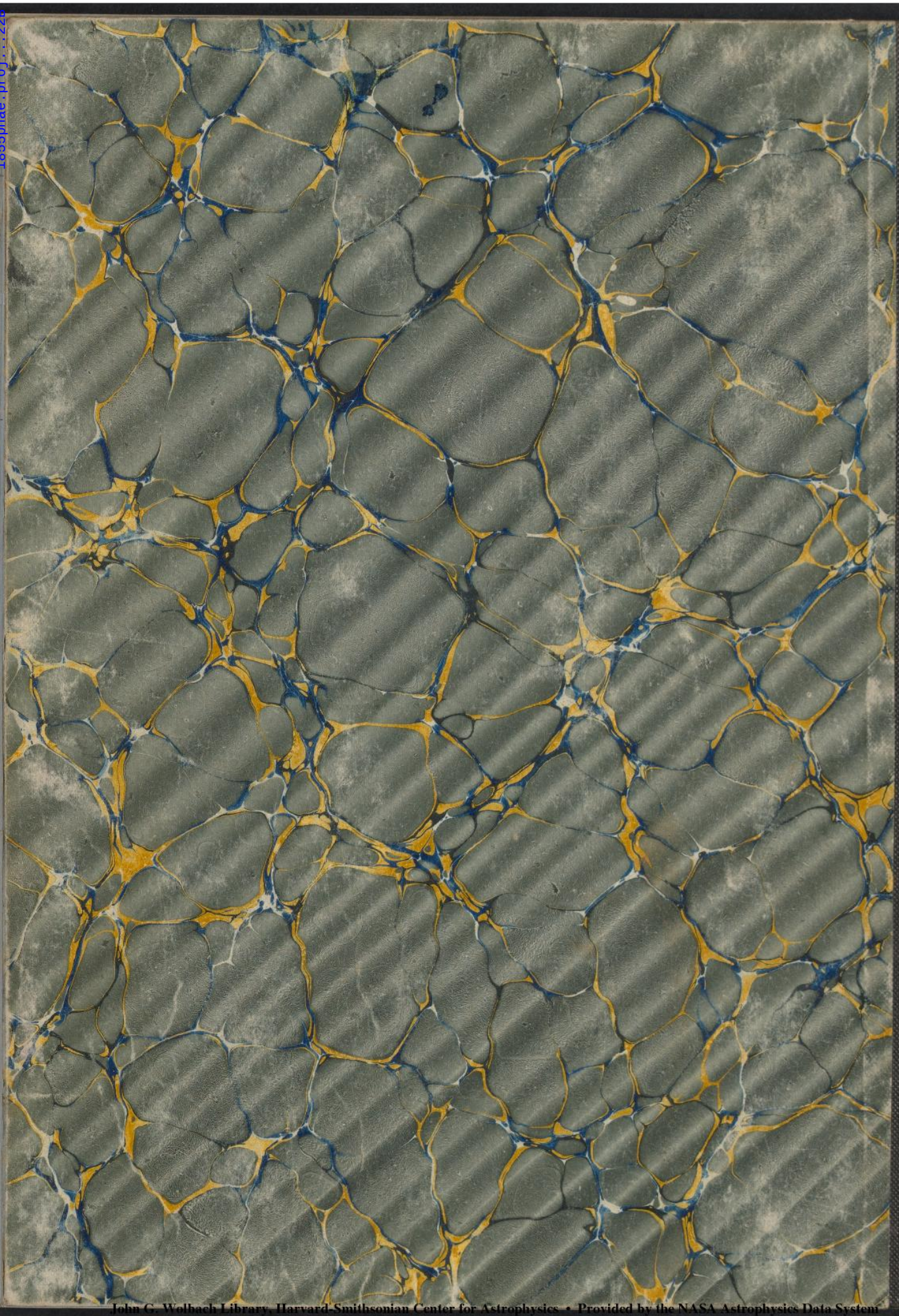
1855phae.proj...220

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

1855phae..proj...22B

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

1855phae.proj...228



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