

KG
11365
129

KG 11365.129 $\frac{UL}{2/3}$

[Faint, illegible handwriting, possibly bleed-through from the reverse side]

1851

Transit Circle
Cambridge Observatory
From August 7 to Dec.
4, 1851



KG 11365.129

All Transits in this book ~~are~~
must be corrected for 4 beats which
are counted from the moment the
star is on the wire to the time
of reading the Chron.

Hence the recorded time of the
star's passage over each wire is to great-
ly 4 beats = 2^s which must be subtracted.



1851

August 7/8 Sun

chrom No. 2964

	34.4	<i>Argus</i>	37.2		00.5
<i>Janus</i>	48.6-		57.0	<i>Janus</i>	16.1
<i>a Janus</i>	03.0	<i>a</i>	16.6	<i>B Janus</i>	31.8
	17.2		36.4		47.5-
	31.7		55.8		09.0
	46.0		15.5-		18.5-
			35.3		
4" 28 00.2		5" 06"		5" 17"	34.0
	37.2		32.7		06.8
<i>Orionis</i>	50.8		06.5-	<i>H. Sagitt</i>	21.5-
	04.5-	<i>Orionis</i>	20.3		36.2
	18.4		34.0		51.0
	32.1		47.7		05.6
	46.0		01.3		20.5-
5" 24 59.6		5" 29"	15.1	18" 05"	05.1
	00.8				
<i>Sagittarii</i>	16.0		59.5-		45.0
	31.2	<i>Pyrae</i>	17.4		01.3
	46.4	<i>a Pyrae</i>	55.3-		17.8
	01.5		53.2	<i>B Pyrae</i>	34.8
	16.8		16.6		37.0
18" 19" 32.0			28.0		07.5
			43.5-	18" 45"	24.0

Aug 8 Pm

05	10	11.5
19.3	24.5	26.2
33.5	39.4	41.5
47.4	54.0	57.0
012		12.1
		27.4
		19 02.42.8
59.15.8		

Aug. 9 Pm

18.4	Spica	—	13..17.. 22.0
32.9		09.5	21.96
47.5	13.. 17..	24.0	.64
01.8		—	
16.2		—	
30.5		—	
19.. 15.. 45.0			
			312.23
			21.15
			π 333-38
			ρ' 330-30
			16.1
			30.8
			45.5
			00.0
			15.1
			24.8
			19.. 01.. 44.5

312.23
15-15
β 327-38
ρ 330-41

57.4
11.5
25.4
39.5
53.8
08.0
18.55 22.2

Aug
16.1
30.8
45.5
00.0
15.1
24.8
19.. 01.. 44.5

Aug 9 Pm.

9' Gayath
24.7
39.2
33.5
68.0
22.4
36.9
19, 13, 51.3

8 April
24.0
37.6
51.5
05.0
18.9
32.6
19, 18, 42.5

2 April
35.0
48.9
02.8
16.5
30.8
44.8
19, 39, 58.9

a April
33.3
09.0
23.1
37.0
50.9
05.0
19, 44, 19.0

B April
24.9
38.2
52
06.5
20.0
33.6
19, 48, 47.5

Morrisland
52.9
08.2
23.6
38.5
58.5
08.9
19, 57, 24.0

a² Capri
11.5
25.5
39.5
53.5
02.4
21.5
20, 10, 35.8

B Capricorn
02.0
10.0
30.3
44.7
59.8
13.1
27.4
20, 13, 27.4

P Capricorn
43.2
54.4
13.5
28.
42.4
57.0
20, 21, 11.4

Aug. 10/11 Am.

	54.2		57.0		20.3
<i>ce Luni</i>	08.3		16.3	9.5	33.9
	22.5		35.9	9.4	57.5
	36.9		53.5	9.6	07.0
	51.3	<i>ce Luni</i>	15.4	9.9	22.5
	05.5	<i>misleading</i>	34.9	9.5	38.4
H... 28	19.8	5, 06	54.8	9.9	54.0

	12.3		39.0		12, 39.40.8-2
<i>ce Orionis</i>	26.0		52.9		
<i>pariet-</i>	39.7		06.8		
	33.5		20.6		
	07.2	<i>ce Orionis</i>	34.5		
	20.8		48.3		
5 29	34.7	5, 48	022.		

32.3

	38.0
<i>ce Ophiuchi</i>	52.0
	06.0
	19.8
	34.0
	48.3

17, 29, 02.5

Aug. 11/12 Am

	~~20.5~~		02.8	
B. J. L.	42.0	Orion's	16.6	32.0
	57.5		30.3	46.0
	13.1		44.0	
	28.8		57.8	
	44.3		11.5	19.5
5, 18,	00.0	5, 25,	25.3	

45.3	25.8
59.0	43.5
12.8	01.0
26.6	18.8
40.4	35.5
54.5	54.
5, 48,	08.4
	89, 11.5

B. J. L.	10.8
	27.0
	43.5
	00.0
	16.4
	33.0
	45, 49.2

August-12/13

51.8

64.4

August 13 Pm

cc Ophiuchus
and illuini

49.5

63.5

17.5

31.9

46.0

60.0

Draconis

33.9

55.5

117.5

89.4

61.8

23.9

cc Lynx

32.0

49.3

66.6

24.5

42.3

59.8

17.29.14.3 17.54.46.

1893 17.4

August 14 Pm

cc Lynx

16.8

33.0

39.5

65.9

22.5

38.6

45 55.0

cc Draco

43.3

57.7

12.3

26.9

41.5

56.2

14 10 10.8

4.4

4.6

4.6

4.4

4.4

4.4

4.4

4.4

4.4

4.4

cc Bootes

17.5

33.6

48.5

63.9

19.4

35.0

14 39 50.5

August 14 Bm.

14 49.08.5 * B Wane Min lost by clouds
B Wane Min on horizontal wire

Circle A reads $237.35 + 2 = 37.03$

Mic. H reads 2.03

β Gemin	39.7	β Draconis	84.4	γ Draconis	40.0
	54.2		56.0		62.0
	08.7		18.8		24.0
	23.4		41.5		45.9
	38.0		04.0		08.0
	52.4		26.5		30.0

15 54.07.00

17 28.49.0

β Draconis N.P.D. $= 37.36 \times 2 = 75.12 - 259.59 = 184.47$

γ Draconis N.P.D. $= 38.30 \times 2 = 77.00 - 259.53 = 183.53$

Inquest 14/15 Am. Ill East D

a Janni	19.4	20.7	45.4
	33.5-	34.4	61.0
	47.9	48.0	16.5
	62.1	62.0	32
	16.0	16.0	47.6
	80.8	90.0	63.5
4, 28, 45.0	5, 08 44.0		

a Orinis	64.5	5, 18, 19.0
	18.4	Lat Polaris
	92.0	12 45, 07.0 - 4.16-
	45.8	57, 58.5
	59.8	13, 06, 46.5
	19.4	15, 35.0
15, 48, 27.5		13, 24, 21.5

a Libra	38.8
	53.0
	07.0
	21.0
	35.5-
	45.8
14, 44, 04.0	

3 Wiser Min

Aug 15 Pm

14, 49, 16.0

50, 67.5

51, 60.0

14, 51, 52.0

52, 44.5

53, 36.5

14, 54, 29.0

a Corona Bore

19.5

33.0

50.4

65.8

21.3

36.5

15, 29, 52.0

Aug 15/16 Am

28.5

48.0

67.7

27.5

47.2

67.4

5, 07, 27.0

a Antigen

44.3

57.8

11.5

25.2

89.0

52.8

a Orionis

5, 30, 06.5

11.0

24.6

08.5

52.3

06.3

20.0

5, 48, 33.5

a Orionis

Aug 17/18 Am

~~Orionis~~ β Jami	05.6	Orionis	42.3	Orionis	57.8
	21.4		56.0		11.5
	37.0		69.8		25.3
	52.5		clouds		39.0
	08.0		87.5		52.8
	23.7		51.0		clouds
5, 18, 45.4		5, 26, 64.6		5, 30, 20.3	

Orionis	38.5	17.5	18/19 Am	46.5
	52.5	81.5	Orionis	61.0
	66.4	45.3		15.2
	290	589		clouds
	340	13.		—
5, 48, 48		26.8		—
15, 38, 40.8				

Aug. 18/19 Am.

α Aurigae	49.0	β Tauri	12.6	γ Orionis	49.2
	09.0		28.5		03.0
	287		44.0		17.0
	485		49.6		30.6
	084		15.4		44.4
	28.0		90.9		58.1
5, 07	47.6	18, 46.5		5, 26	11.9

γ Orionis	04.8	α Orionis	91.9
	18.7		45.4
	32.9		59.9
	46.0		13.9
	59.9		27.0
	13.6		41.0
5, 30, 22.2		5, 48, 54.7	

312-20	312-23
9 10	10 41
303-10	301-42

Aug. ~~17/10~~ 19/20 Am.

very blurry
or Persen
53.9
15.0
36.0
57.10
18.0
59.5

9. 16. 00.5

very instantly
38.0
52.0
66.0
19.9
39.8
47.7

21-01.5

07.0
22.5
37.8
52.4
67.1
22.0
37.5

40. 37.5

Mars II. Lend
13.0
28.0
42.8
57.4
11.9
26.5

4. 04. 41.0

53.4
08.0
22.0
56.9
50.8
05.0
4. 29 19.2

19.6
33.4
51.0
66.5
21.9
37.8

5. 18. 53.3

Orionis
56.4
10.0
23.9
57.3
clouds
05.0

5. 26. 18.8

11.8
23.5
39.4
53.2
06.9
20.6

30. 34.1

38.5
52.5
06.4
20.9
34.0
47.8

5. 42. 01.5

Aug. 26/21 Am

the companion
of Castor is very
conspicuous

Castor 87.8

54.0

10.0

26.0

42.3

58.8

7. 27- 15.0

Procyon 09.9

29.9

37.4

51.4

65.0

18.8

7. 33. 32.6

45.9

61.5

17.0

clouds

a Ophiuchus

9. 13.0

9. 27.0

9. 41.0

9. 55.0

17. 30. 09.0

3. 81

27.0

-2

17. 29. 25.0

17. 28. 62.60

1. 22.40

Pm. 21st

Aug. 28/23 Am

B Orionis

16.0

30.0

43.9

57.8

11.9

25.6

5. 09. 39.5

~~2964 B, Perm~~ Aug 24/25 - Am

~~10~~

41

584

15.8

33.5

51.0

08.5

26.0 5.08 28.9

Aug 24/25 - Am

50.5

10.0

29.8

49.5

09.2

34.0

09.5

24.9

40.8

56.5

12.0

5.19. 27.5

18 3 4

30.4

44.3

58.0

11.8

23.5

39.1

5.21 52.9

46.0

39.8

13.3

27.0

41.0

54.6

31.08.3

12.8

26.5

40.5

54.3

68.1

22.0

5.49 96.0

Aug 26 Pm.

60.0	24.0
17.8	43.3
35.4	02.5
53.0	22
16.7	41.2
28.5	61.0
18. 34.4 6.0	20 39. 20.0

26/27 Am

a Orion	26.9
	40.7
	54.5
	68.4
	22.2
	96.0
5. 49	49.9

26./27 Am

52.8	10.4	46.5
08.5-57	25.8	60.4
24.0 5.5	41.2	14.6
39.5 5.5	56.6	28.5
55.4 5.6	12.4	42.3
11.0 5.5	28.0	56.0
7. 36. 26.5	14 38. 49.4	15 09. 10.0

Aug 27. Prii.

27/28 Am } 28 Pm

04.3
20.0
35.5
51.0
66.5
22.0

15" 28" 37.3

16.5
30.5
44.4
58.3
12.0
25.6

2" 54" 39.5

58.9
12.9
26.7
41.5
54.5

15" 09" 08.4

Corona Borealis

18.5
34.0
49.5
65.0
20.4

10.3
24.5
38.4
52.2
66.0

15" 28" 35.7 19" 39" 20.0

17.0
30.8
44.6
58.5
12.4
26.3

28/29 Am

41.5
58.0
14.0
30.8
46.5
62.5

7" 25" 19.0

13.5
27.4
41.3
55.1
69.0
82.6

7" 31" 36.5

19/20 Am

45.0
63.5
21.0
36.7
52.3
67.9

7" 36" 23.5

Aug. 29 Pm.

25.6	54.8	15.0
44.0	08.3	28.9
01.2	22.4	42.6
19.0	36.1	56.3
56.5-	50.2	10.4
54.0	04.2	24.5-
10, 3 2 11.7	19 3 9, 18.1	1943, 38.3

29/30 Am	unsteady	11.8	47.4
44.5-	Brooklyn	25.5-	03.3
02.8		39.4	18.4
16.0		53.1	34.3-
89.8		06.8	50.0
48.8		20.5-	05.8
57.6	7 31, 34.4		
5, 47, 11.5	7, 3 6, 21.4		

a Cygni 30 Pm.

20 35 45.1 mid. Mv
 20 " 36 " 23.6
 40 56

Aug 31/82 M 1

	17.1		43.2
	31.0	38.0	58.9
Drum	44.7	11.7	14.5
Drum	58.5	25.5	30.0
w	12.1	49.4	45.8
	26.0	55.2	61.4
5, 28,	39.7	47, 06.9	56, 17.1

Sept 1st P.m.

09.9	37.5	
23.4	57.9	51
37.5	06	64.8
51.1	20.1	18.5
67.5	34.2	32.3
18.5	48.1	40.0
16, 06,	32.3	17, 28
	02.2	19, 17,
		59.8

September 1st Pm.

48.5	08.5	37.6
—	22.4	51.5
16.0	36.5	65.4
39.0	50.4	19.0
44.0	04.0	33.2
58.0	1.8	46.8
19.39.4	19.43.31.7	48.00.5

September 3rd Pm

just visible	08.9	35.4	46.4
2 Aquila	23.0	49.5	00.3
	37.1	03.2	14.2
	51.2	16.7	28.0
	05.1	30.5	41.9
clouds	24.4	56.0	
18.58.33.9	19.17.58.1	19.39.10.0	

September 3 Pm.

a *Apulac* 06.9
20.9
34.6
48.5
02.4
16.3

B *Apulac* 36.0
49.9
03.8
17.5
31.4
45.3

19.43 30.1

19.47. 59.0

3/4 Am.

a *Quinn* 56.5
11.0
25.2
39.5
53.8
08.0

B *Quinn* 57.4
11.5
25.2
39.2
5.3
06.9

B *Quinn* 09.5
25.0
40.5
5.16 56.0

4. 27. 21.3

5.07. 20.7

<i>Orionis</i>	12.8	<i>Orionis</i>	14.3	41.0
	26.5		28.0	55.0
	40.4		41.8	08.7
	53.8		55.7	22.7
	07.6		09.5	36.5
5, 24, 21.2			29.0	50.5
		5, 28, 36.8		5, 47, 04.2

<i>Orionis</i>	32.1	<i>Orionis</i>	04.4	40.8
	48.5		18.3	56.2
	04.8		32.1	11.8
	21.2		46.0	27.5
	37.4		59.7	42.9
	53.6		19.5	58.5
7, 25, 09.5		7, 31, 27.1		7, 36, 14.0

September 8/4 Am

4 Pm

c Wras. Mag.	12.0	c Lewis	58.5	7 Wras. Mag.	50.0
	33.0		12.7		10.4
	53.5		26.8		32.5
	14.0		41.0		54.0
	34.5		55.0		15.5
	55.5		09.0		36.7
8, 49, 16.4	10.00	29.2	13, 41, 58.0		

4th Pm,

β Draconis	10.5		02.5
	34.5		25.0
	57.0		46.5
	14.5		08.5
	42.0	17.53	31.0
	04.5		
17.27.27.3			

14.

4th Pom.

07.0	23.3	4.4	57.5	3.3
21.4	37.7	4.8	12.8	5.5
36.0	52.5	4.5	28.3	5.7
30.2	07.0	4.5	44.0	5.2
03.0	21.5	5.0	59.2	5.7
19.5	36.4	4.5	14.5	5.6
19.47, 34.0	14.08, 51.0		14.38, 30.5	

10.4	47.0	30.0	24.9
25.7	39.0	43.8	39.0
40.0	31.0	57.5	53.0
54.1	23.1	10.4	07.1
08.4	15.3	25.3	21.5
22.6	07.5	39.0	35.5
14.42, 37.0	14.53, 06.3	15.36, 53.0	17.07, 49.8

4th Pm. Ill East

3 Nympha

08.0
22.0
36.5
50.2
04.5
18.5
18.58 33.0

8 Nympha

34.5-
48.4
02.0
16.0
29.5
43.0
19.17 57.0

2 Nympha

45.4
59.4
13.4
27.3
41.2
55.0
19.39.09.0

2 Nympha

06.0
19.7
09.5-
47.5-
01.4
15.4
19.43.29.3

3 Nympha

54.9
48.6
02.8
16.5-
30.4
44.2
19.47.58.0

22.0
322.23 36.0
30 1 30.0
274 22 03.9
18.0
32.0
2009 46.0

30 West
20 Legym

40.5-
00.0
19.0
58.0
17.3-

20.56 36.5

4/5 Am, Ill West

Sivins

06.9

21.0

33.4

49.8

64.0

18.3

6, 30, 32.4

31.2

47.5

63.6

20.0

32.0

52.5

7, 25, 08.4

a Canis Min

03.4

17.2

30.9

44.8

58.5

12.3

7, 31, 26.1

39.2

53.0

10.5

26.1

41.7

59.3

7, 9 6, 13.0

11.0

31.5

52.1

13.0

34.0

54.5

45, 15.5

a Leonis

57.3

12.0

26.0

40.0

54.0

68.3

10, 00 22.1

Sept.
5th Pm.

S

η Wrasse May	49.0	η Boottis	06.0	β Libras	32.5
	10.5		20.4		46.5
	32.0		35.0		60.4
	58.1		49.5		14.5
	14.4		04.0		28.2
	36.0		19.5		42.0
13.41	57.4	13.47	33.1	15.08	56.0
α Serpenti	28.9	β Draconis	11.0	γ Draconis	07.0
	43.0		33.5		39.4
	58.9		56.0		01.5
	10.5		18.4		23.4
	24.3		41.6		45.5
	38.1		03.5		07.4
15.36	52.0	17.27	26.0	17.53	29.5

Septembes 5th Pm.

15.8

93.5

51.2

08.14

26.0

43.5

18.8 2 01.3

01.0

17.3

93.8

50.2

06.5

28.0

44 39.3

012-23

21-57

290-26

334-20

300 38

15

Sagitt

16.0

31.0

46.0

00.3

15.5

30.9

18.55 45.0

Sagittari

25.4

40.5

55.0

09.5

24.5

39.0

19.00 34.0

33.5

47.2

01.0

14.5

28.5

42.1

19.17 56.0

Noon
 06.5
 28.0
 38.8
 —
 —
 19 89 38.5
 5/6 Am.

April
 04.5
 19.0
 32.5
 48.8
 00.3
 14.0
 28.0
 19 49

April
 —
 —
 19 47 15
 19 47 56.5

a. August
 57.0
 17.0
 36.3
 56.0
 15.9
 35.5-
 5- 05- 55.0

June
 20.0
 36.0
 51.5-
 07.1
 22.6-
 38.2
 5- 16 59.8

Orion
 312-23
 15
 15-38
 27
 10.5-
 24.2
 38.0
 51.7
 05.3
 5- 24 19.0

Orion
 12.0
 25.9
 39.5
 53.5-
 07.2
 21
 5- 28 34.5

312-23
 18 46
 331-03 v

312-23
 25-48
 338-17
 274.22

6th Can Ill West

B. Pyra	32.0	18.5	
	46.0	32.9	
	59.6	47.0	
	73.5	01.0	3.2.0
	27.4	15.0	06.4
	41.0	29.0	20.5
19 47,,	55.0	43.2	12 35.0

u Capri	04.0	18.0	44.6
	19.0	33.	59.6
	33.4	48.1	13.5
	48.0	03.0	30.5
31,,	02.5	18.0	46.5
			01.0
		20 32,, 33.0	97,, 16.0
		48.0	

61 Cygni	85.5	02.5	16.0
	53.0	18.4	29.5
	101.5	34.2	43.8
	28.0	50.0	57.0
	45.4	06.0	10.5
	02.5	21.5	
21,, 00	20.0	21,, 06,, 37.0	21,, 23,, 37.5

September 6th Pm.

2964

e Regent

24.4

38.5

22.5

06.0

20.0

34.0

Σ 1, 36, 47.8

1126-10, 37, 25.0

2964-Σ 1, 38, 50.0

Avg 10 40, 30

2964 Σ 1, 41, 55.5

Sept. 7/8 Am.

50.4

04.5

14.0

33.4

47.6

02.0

4, 27 16.0

e Langer

53.0

12.9

32.3

52.1

12.0

31.3

5, 06, 51, 3

B Langer

16.1

32.0

47.5

03.4

19.0

34.5

5, 16 50.0

e Orion

52.9

06.5

20.2

34.0

47.7

01.5

5, 24, 15.1

e Orion

08.4

22.0

35.7

49.5

02.0

16.8

5, 28, 30.5

Sept. 8th Pm.

a Herenlis

18.2

32.4

46.5-

60.8

15.0

29.2

17. 07. 43.9

Ophirich

28.5-

42.8

56.6

10.8

24.9

39.0

17 27. 53.0

8/9 Am;

51.4

10.3

31.0

50.7

10.4

50.1

5, 05, 49.7

Orionis

—

—

18.9

32.5-

46.2

00.0

5, 24, 13.5

Orionis

20.4

34.2

48.0

01.8

15.5-

5, 28, 29.0

Sept 8/9 Am

Orinus

09.5

47.5

01.4

15.0

29.0

42.7

5, 46, 56.5

10 Pm

Ophirich

26.8

40.4

54.5

08.7

22.7

36.8

50.6

17, 27, 50.6

9 Pm,

aphinich

27.5

41.5

55.4

69.8

24.0

37.9

17, 27, 52.0

9/10 Am

Orinus

38.9

13.6

27.9

42.0

56.4

10.8

6, 38, 25.2

54.8

08.5

22.4

36.3

50.0

08.9

7, 81, 17.6

—

46.4

02.1

17.3

33.3

48.6

04.5

7, 36,

11^N Cam

B Lyrae	51.4		57.5		34.9
	07.8		11.8		48.9
	24.4		25.3		02.8
	410.7	α Lyrae	40.0		16.7
	57.5	α	54.0		30.8
	13.8		08.2		44.8
18 44	36.0	18.11	58.11	22.4	19 38.11 58.6

α Lyrae	55.4		24.4
	09.4		38.3
	29.3		52.3
	37.0		06.0
	51.0		19.8
	04.9		33.6
19 43	18.9		19.47.11 47.5

12th Dec.

30 Dec

02.0

24.5

46.0

08.5

31.0

53.5

17.27 160

30 Dec

07.0

29.0

51.2

13.4

35.5

57.5

17.53, 19.4

50.8

07.0

23.5

40

3 April

56.4

10.7

24.8

49.0

53.1

07.3

18.58, 21.5

3 April

54.5

08.6

22.5

36.2

50.1

04.0

19.43, 17.9

September 12/13 Am.

<i>ce Orinus</i>	49.0	<i>ce Germ</i>	20.8	<i>Brugem</i>	52.3
	57.0		36.5		06.2
	10.9		52.9		20.0
	24.7		09.0		33.9
	38.5		25.3		47.7
			41.4		01.4
5. 46. 52.3		7. 24. 57.6		7. 31. 15.3	

<i>B Germ</i>	29.4	<i>Lirino unsteady</i>	56.8	Sept 14/15 Am		
	44.0		11.2		53.4	29.4
	59.7		25.8		07.4	45.3
	15.3		40.0		21.3	01.0
	30.9		54.4		35.1	16.4
	46.5		08.8		49	32.0
7 36. 22.0		6. 38. 23.0			02.9	47.7
				7. 31. 16.6		7. 36. 03.4

September 14/13 - Am 15 Pm

<i>a Leonis</i>	02.4	14.8	01.5
<i>perseus</i>	16.4	28.7	24.4
	30.3	42.9	46.6
	44.4	57.2	69.4
	58.3	10.7	81.9
	10.00	25.5	54.4
	12.2	39.6	17.27 16.9

08.0	51.5
30.3	07.9
52.0	24.4
14.2	41.0
36.4	57.9
58.5	13.8
20.4	29.9
17.53	18 44.11

Sept-17 Am

2964 9.45.00

9.42.04

13.46.00

13.42.41.2

3.18.8

82.16

15.28

97.44

312.83

214.89

September 15/16 Am

	47.0	13.5	04.1
<i>ce Persei</i>	08.4	27.4	18.2
	29.2	41.1	32.3
	50.4	53.9	46.2
	11.5	69.0	00.2
	32.4	25.0	14.8
3,,	135.8.7	3, 16, 36.8	
		3,, 22,, 28.6	

	00.4	27.5	4.6	43.3
<i>7 Jumi</i>	15.4	42.1	4.7	57.7
	36.3	56.8	4.2	11.8
	45.0	11.0	4.3	26.0
	00.0	25.9	4.7	40.3
	15.2	40.0	4.7	54.5
3,, 38,, 30.1		3,, 43,, 54.7		4,, 11,, 08.8

	52.4	3,, 43,, 54.7
<i>52 Jumi</i>	09.0	
	23.2	
	37.5	
	52.0	
	06.3	
4,, 15,, 20.7		

1851

Sept. 15/16 Am.

α Linn	46.5	ϵ Wma Min	4, 55.20	α Aurigae	49.0
	00.8		, 57, 1.5		09.0
	15.2		, 58, 43.		28.6
	29.5		5, 00, 25.5		48.4
	43.8		5, 02, 08.		08.0
	58.2				27.5
4, 27, 12.3				5, 05, 47.4	

δ Orionis	48.9		11.4	α Leporis	47.
	02.8		27.5		01.4
	16.6	β Linn	43.		16.0
	30.0		58.4		30.4
	43.8	β	14.4		44.7
	57.6		30	5, 25, 59.1	
5, 24, 11.2		5, 16	45.4		

α Orion	58.8	ϵ Orion	3.3
	12.5		17.7
	26.5		31.5
	40.4		45.
	54.2		59.
5, 46, 54.2			12.9
		5, 28	26.5

Sept. 16/17 Am.

Ill East

Sivins

58.0

12.3

26.6

40.8

55.4

095

6, 38, 24.1

Sivins

58.4

6 13.3

8 28.5

6 43.5

6.58.5

9, 37 13.8

202.2

9, 142.2

28.42

-2

9, 36, 26.42

9, 37, 28.20

56.78

17 Pm

Polari

12, 38, 54.0 - 4 15

47 47.5

12, 56, 34.4

13, 05 29.5

13, 14 17.0

13, 23, 06.4

13, 31 58.2

17 Pm

2964-13, 02, 00

9-13, 02, 39.4

2964.16, 04, 00

9, 16, 04, 09

18 Am

2964-7, 28, 00

9, 7, 27, 09

18 Pm

2964 15, 46, 00

9, 15, 43, 51

2964 17, 32, 00

9, 17, 29, 40

18 Pm

2964 20, 39, 00

9, 20, 36, 16

19 Am

2964 7, 08, 00

9, 7, 05, 35

19 Pm

26 2964 5, 15, 00

410, 9, 5, 11, 34

54, 00 Set. poster

20

13, 17, 08.0

2964-20, 43, 00

20 39:49

Spica

Sept 17 Am.

Ill East

Ill East

14.9

25.0

37.3-

28.9

39.1

52.4

43.0

53.3

07.5

57.8

07.4

23.0

11.5-

21.5

38.3

25.6

35.6

53.5

39.9

49.6

08.9

17.07

17.27

16.20

17/18 Am

22.7

54.8

31.0

38.9

08.7

46.4

53.2

22.5

61.9

11.5

36.1

17.7

27.6

50.0

33.4

49.9

03.9

49.0

7.25.00.1

7.31.17.6

7.36.04.5

18 Bm

58.7

30.4

12.8

30.0

26.8

Long 09.4

40.8

28.9

54.9

48

09.0

07.4

18" 58" 23.1

20 36 26.7

18/19 Am.

22.9

53.0

31.2

39.3

09.0

46.8

55.4

22.8

02.4

11.8

36.5

18.0

28.0

50.9

33.3

44.1

04.0

49.1

7, 25 00.4

7, 31, 17.9

7, 32, 04.7

Sept. 22 Am.

2964-7.09.00

7-7.10.004

19" 23.00

19" 23.24.8

23 Am

2964 7.08.00

7 7.09.18

24

2964 7.12.00

7 7.13.28.3

as given

Brought

Sept. 19th Pm

19/20 Am,

H. Sagittaria	14.0	54.5	30.6
	28.8	68.4	15.4
	43.5	22.8	02.0
	58.3	56.4	17.6
	13.0	50	33.9
	27.5	69.7	48.9
18" 04" 42.1	7" 51" 17.5	7" 36" 04.6	

20 Pm,

21/22 Am,

24.5
38.4
52.1
65.8
19.5
33.2
7.17" 47.0

Sept: 22/23 Am.
very bad seeing

3 Orionis	47.5	49.0	64.5
	01.7	02.8	18.4
	15.0	16.5	32.1
	25.2	30.3	46.0
	43.1	44.0	55.7
	57.4	57.8	13.5
5, 07, 10 9	5, 22, 11.4	5, 28, 27.2	

bad seeing - no luck	22.5	16.7	34.5
	39.2	5.8	08.4
	55.0	5.4	22.9
	10.4	6.4	36.1
	27.3	6.6	50.0
	43.9	5.9	09.6
7, 24 55.8	31, 17.5	7, 36, 04.3	

Sept. 23/24 Am

$$\begin{array}{r} 35.7 \\ 30.68 \\ \hline 55.98 \end{array}$$
misty
a 25m.

28.7

56.0

32

40.2

09.8

47.5-

56.4

28.6

08.2

12.6

37.3

19.0

28.9

51.2

34.5-

45.0

05.0

50.0

7.25 01.2

7.31, 18.8

7.36, 05.4

Sept. 24 Pm

Oct. 1st Pm

B Dracms

03.0

57.4

27

26.0

13.5-

42.0

48.5-

28.9

56.4

10.9

45.0

11.0

33.5-

00.5-

25.5-

56.2

16.4

40.5-

18.00 55.0

157.27, 18.6

21.06, 32.1

Sept 24/25 hr
 33
 47.9
 01.1
 14.9
 28.8
 42.5-
 5, 46, 56.4
 25/26 hr
 58.9
 12.2
 26.0
 49.8
 53.5-
 67.8
 2, 54.21

Oct. 15th

26 Dm. 18.8-
 32.4
 46.4
 60.5-
 14.8
 89.0
 17, 07, 43.2
 24.4 4.6
 59.0 4.8
 53.8 3.4
 67.7 4.2
 21.5- 4.1
 55.6 4.2
 17, 07, 49.8

11.5
 34.4
 56.7
 19.5-
 41.8
 04.2
 17, 27, 26.5-
 18.0
 40.3
 02.1
 24.5
 46.4
 08.5-
 17, 53, 30.4
 312.23
 21 57
 0 = 334 2.0
 n = 338.38

Oct. 1st

Mars's limb

07.9

17.4

32.4

47.8

03.0

18.2

18.25.32

17.0

34.4

57.8

69.4

27.5

44.9 18.44 40.0

18 32.02.4

01.9

18.5

34.8

57.0

07.8

23.7

234.16

32.5

47.0

02.0

16.9

31.5

18.55.46.5

07.9

22.0

36.0

50.8

04.5

18.5

18.58.02.5

Oct. 11/2 Am.

06.0

14.0

28.0

42.3

56.9

10.5

10.00 24.5

312.29

25.12

hⁿ 337.35

16.28

e^r 328.51

Oct. 20

<i>Lyrae</i>	12.6		08.7		<i>Moon's limb</i>	2.8
	33.5		23.0			06.8
	52.8	<i>Argemone</i>	37.0			22.2
	10.4		34.3			37.4
	28.9		037.5			52.5
	45.8		19.5			08.0
18 3 2	03.4		18.58.33.8			22.8

	10.5		49.0		19.21.38.4
	25.9		09.5		
<i>42</i>	41.0		17.5		
	56.0	<i>2</i>	32.0		
	11.4	<i>2</i>	46.5		
	26.5		00.4		
19.27.41.8	19.34.00.4				

312-23 312-23

14-33- 16.51

326.58 329-19

312-23 10-25

8 31 4 8 22 48

0 32 054

October 6/6 Am Pom

<i>Regulus</i>	06.4		24.4
	20.5	<i>Syrax</i>	42.0
	34.6		59.8
	48.8		17.3
	03.0		35.0
	17.1		52.5
	10.00, 31.0		92, 10.0

Occlusion 2964 74 Aquarii
21.. 26.. 51.4 - 4 lbs good

<i>Regulus</i>	35.4	<i>Aquarii</i>	06.02	42.0
	49.5		20.4	56.0
	03.5		34.5	09.5
	17.4		48.8	29.5
	31.3		03.0	37.3
	45.0		17.1	57.5
	21, 36, 59.0		21, 38, 51.3	22, 09, 05.3

Oct.
6 Bar.

3 Pegasi

45.5-

59.4

18.5-

27.4

41.4

55.3-

Mars / Lank

14.5-

28.9

42.5-

57.0

14.9

25.2-

α Pegasi

03.5-

17.9

32.0

46.2

60.4

14.5-

22.34 09.3 22.45 39.9 22.57 28.6

3 Argemini

56.1

10.4

24.9

38.14

52.5-

66.3

23 "11" 20.0

α Hydra

58.6

12.5-

26.5-

40.4

54.4

68.3

6/7 Am

812-23

6-51

φ 319 14

10-25-

ψ 322 48

4-23

27 316 46

6-32

9 " 20 22.1 33 318 5-5-

October 7th

Formalions	03.5-		04.5-	44	219
	19.5-		18.9	4.9	359
	35.4		38.2	4.1	494
	51.4		47.8	4.0	631
	07.5-		01.3	4.2	170
	23.5-		15.5-	4.9	308
	22.49,, 39.3	22 57,, 29.8	23,, 06,, 44.5		

4 th Aynan	57.9		45.9	48.0
	11.4		00.0	02.0
	25.3		14.2	15.8
	39.5		28.4	29.5
	53.2		42.5	48.4
	07.0		56.5-	5.8
23,, 11,, 21.0	23 32,, 10.8	23,, 51,, 10.9		

7th

33 Pisium	27.9	2.2	18.4
	41.8	37.4	32.8
	55.5-	58.8	46.8
	08.4	083-	01.0
	28.0	243-	15.8
	368	40.0	29.5-
28.57.506	0.0.00554	00.05.43.5-	

7/8 Am	8 Pom	8/9 Am
u Leonis	54	
09.0	07.9	
28.2	21.3	
37.1	55.0	
51.8	48.9	
05.5-	02.8	
19.5-	16.7	
10.00 33.5-	21.58.11	

Oct. 9 Pm

9/10

12.4

61.9

10.8

28.9

15.8

25.3

45.1

29.5

39.5

01.4

43.5

53.5

18.0

57.4

07.4

84.3

11.3

21.4

18., 44 50 69, 20., 25.0

10., 00., 35.8

Oct 10 Pm

28.8

46.4

7.6

04.2

7.8

21.5

7.9

39.2

7.7

57.0

7.8

18 32, 14.3

e. Lyrae

October 13 Pm

 α 60m

88.4

52.8

67.0

21.0

35.0

48.9

20, 10, 03.6

 α 60m

56.5

16.3

35.0

55.0

14.0

33.4

20, 36 55.0

13/4 m

 α Hydra

07.9

22.0

35.8

49.5

03.5

17.3

9, 80, 31.2

17.3

31.5

45.5

59.4

13.5

27.7

10, 00, 41.8

14/15 m

19.8

34.0

48.0

62.0

13.7

30.0

10, 00, 44.3

15 Bm

α Pegasi	49.0		05.4	
	02.5		19.0	
	16.6	α Lyrae	32.8	α Pegasi 27
	30.5		46.6	41
	44.7		00.9	55.0
	58.9		14.0	09.0
37	12.5		27.6	22.9
"	21.5		34"	

15/10 Am

α Hydrae	13.0		16.6		22.4
	26.9		31.5		36.3
	40.8	α Leonis	46.5		50.4
	54.7		01.9	α Leonis	04.5
	08.5		17.0		18.5
	22.4		32.0		32.5
9	20.36.4	9	37.47.0	10	00.46.7

October 15/16 Am

W. Mag	37.3	04.5	24.4
	07.4	19.4	48.3-
	36.3	34.9	12.0
	54 06.5	49.0	35.9
	48 6.4	63.8	59.4
	06.2	18.5	22.9
10,, 55,, 26.0	11,, 06 33.0	11,, 46,, 46.5-	

Poland's Ill. West

13,, 39,, 30-4 Mb

48.22

57,, 15.5-

Per Ill East-

13,, 14 58

23.58

13,, 32,, 42.5-

a Serpents

54.5-

07.5-

20.5-

34.5-

48.5-

02.5-

25.5-

40.5-

55.9

11.0

26.9

15,, 37,, 16 3. 16,, 20,, 42.0

October 16

Drains
41.3
63.0
251.0
47.0
09.1
30.9

17.5 3.5 3.7

Leons
24.8
41.0
57.5
141.0
30.3
46.5
55.5

18.45 03.0 20.10.099

=

12

41.4

11.0

40.5

09.3
16.11

41.9

55.8

09.7

23.5

37.5

51.2

21.24.05.0

51.2

04.9

18.9

52.8

46.8

006

37.14.5

=

44.0

24.0

03.5

44.0

24.0

21.28.11

October 16/17 Am

Polaris

25.0	20.4	12,, 39,, 26.5-5
38.9	50.0	48,, 24.0
53.3	13.9	,, 57,, 15.0
07.4	37.6	13,, 06,, 05.0
21.5~	01.0	13,, 14,, 56.0
05.7	24.7	13,, 23,, 47.5
17 41,, 50.4	11,, 46 48.3	13,, 32 41.5
		"

 55.0

14, 50,, 46

58.9

52,, 30.5

53,, 23.4

17. + 22.09

15 - 26.56

2) 4.47 (2.23

.09

2.21

18

.22

October 17 Poo

	49.4		59.5		42.3
	68.5		13.8		04.5
α Perseus	17.5	α Orion	27.9		26.5
	81.8		42.0		48.5
	46.0		56.0		10.4
	60.0		10.1		32.6
17, 08, 14.4		17, 28, 24.0		17, 53, 54.8	

	41.5		20.5		17/18 Am
	58.2		35.0		16.0
α Lyrae	17.0	α Cygnus	49.0		30.3
	34.0		63.3		44.0
	52.0		17.5	α Hydra	58.0
	09.5		31.5		11.7
18, 32, 26.9		22, 57, 45.8			23.5
				9, 29, 99.5	

October 17/19 Am

	19.5		25.4
ϵ Leonis	34.9	α Leonis	39.8
	50.0		54.0
	65.0		08.0
	20.1	α	22.1
	35.4		36.0
γ , 37,	50.2	δ , 00,	50.0

19/20 Am

2964	20.4	23.9	
α Mydra	34.3	39.0	
	48.0	54.0	
	02.0	09.1	
	16.0	24.2	
	29.9	39.4	
γ , 20,	43.6	γ , 37,	54.4

19/20 Am, Chron 2964

12

Polaris
h m s

27,

12, 39, 36.0 - 4 lb

41.5

48, 28.5

56.3

12, 57, 16.5

11.2

13, 06, 10.4

25.9

15, 01.2

11, 06, 40.6

13, 23, 53.4

13, 32, 52.3

20 Am.

28.5

40.8

55.0

09.3

23.5

37.6

51.8

22, 57,

20/21 Am.

2964

65.0

37.3

-

21.5

57.2

45.4

37.5

65.0

00.5

54.0

19.0

16

10.3

32.7

31.3

26.5

46.5

736.47.0

7, 25, 43.0

7, 31, 00.0

21 Pm.

24/25 Am

 α Ophiuchi

67.4

36.4

21.5

50.7

35.5

64.8

49.8

18.7

03.8

32.9

18.0

46.8

17, 28, 52.0

10, 01, 01.0

 α Wraschel Magari

57.4

21.0

51.0

20.8

50.5

20.4

10, 55, 50.4

October 22, 1921 Ill. West

37.0

Polars

51.0

12,, 39,, 44.5 - 4 1/2

65.4

12,, 48,, 37.7

29.9

12 57, 27.5

34.0

13,, 06,, 18.4

48.4

13,, 15,, 10.0

11,, 42,, 02.5

13,, 24,, 01.5

8.7

1.8

6.9

43.5

56.4

05.4

59.0

19.3

15.0

10.

33.0

30.5

24.0

47.3

46.4

38.0

01.3

62.3

51.5

15.0

05.5

15.0

21,, 07,, 17.5 21,, 24,, 19.3 21,, 37,, 29.0

1 or or made

65.0 01.00

a Merenlis

19.0

56.8

7.7

41.5

33.0

14.5

7.5

58.0

47.5

32.0

7.5

14.5

61.5

49.9

7.5

31.0

16.0

07.4

7.5

47.5

17, 08, 30.0

249

7.5

64.0

18, 3 E., 424

18, 45, 20.8

B. Aynan

59.0

08.0

13.0

22.0

27.0

35.9

40.7

50.0

54.5

63.8

08.0

17.7

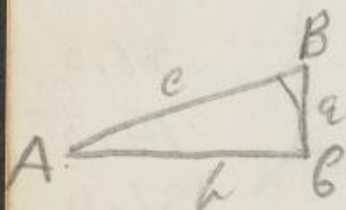
21, 24, 22.0

37, 37.5

24^h

$$\begin{array}{r}
 1.12.23.5 \\
 \hline
 1.13.39.9 \\
 \hline
 1.13.357 \\
 \hline
 4.9
 \end{array}$$

$$2 = \frac{8}{4}$$



$$\text{tang } A = \frac{a}{b}$$

$$\sin A = \frac{a}{c} \quad c = \frac{a}{\sin A}$$

$$\begin{array}{r}
 412.23 \\
 19 \\
 \hline
 5-5-23
 \end{array}$$

$$\sin A 87.59$$

$$9.99993$$

$$2.10003$$

$$2.10020$$

185-1, Oct 24 P.M.

0.19.24

. 11.5

. 26

. 47.5

. 1.8, mid.

57.5-

0, 10, 52,

Polaris 1.5, 56.5 mid min

Chw 3283 =

$$\begin{array}{r} 2 \overline{) 177.59} \\ \underline{15} \\ 27 \end{array}$$

.49.4

10.48.49.4
7.10.48.56.4

10.48.20.

7.56.4

1.5.54.5-

1.6.50.9

1.6.21.5

59)29.21/0.5

October 27 Pm, $2 = \frac{8}{4}$ $8 = 2.4$
 $4 \frac{8}{2}$

29.5-

37.4-

31.2

05.0

18.7

19 18 32.5-

34.5-

48.3-

02.4

16.4

30.5-

44.4

19, 39, 38.5-

B. Agnes
 08.0
 22.0
 33.5
 49.4

03.0

12.5

24, 31.0

Agnes
 17.0
 30.9
 45.6
 58.8

12.5

26.4

21, 37, 40.5-

Oct 28 Brn

	57.6	26.9
	11.5	44.6
	23.3	54.4
	39.5	08.8
<i>α</i> <i>Agulac</i>	59.4	22.1
	07.2	36.0

19, 44, 21.1 1948 496
11,

October 29/30 am

36.8
 101.4
 — clouds
 00, 42.5 - doubt
 clouds

10,00 38.16

10,00 26.92

11.24

30/31 am

59.3
 13.9
 28.0
 42.0
 56.3
 10.5

11,42, 24.8

31 am

37.7
 51.5
 05.5
 19.4
 33.5
 47.5

22 35, 01.3

54.4
 10.5
 26.5
 42.4
 58.3
 14

22 50, 36.5

31 Pm.

Nov. 1

e. *Pyra*

55.4

10.0

24.0

38.3

28.3

06.5

22.58 20.8

52.0

06.2

20.1

33.8

47.5

01.5

5.21 15.14

e. *Leorio*

01.4

15.5

29.5

43.8

57.7

12.

10.01 23.8

November 1 Pm Chron 2864

4.15
01.0
20.0
39.4
59.0
18.5

20, 37, 38.0

05.5-
19.6
03.5-
47.8
01.9
16.0

21, 02, 30.0 21, 08, 32.0

—
20.5-
34.9
49.4
03.5-
17.9

312.23

11.58

v 324-21

296.4328.10

8329.11

c 826.58

20.9
34.5-
48.5-
02.5-
16.4
30.0

21, 24, 44.0

30
44

25.4
34.5-
38, 53.5

slap 40

54

98, 08.4
23.0

39, 37.5

Moon I
48.4

03.0

17.8

32.4

47.0

01.8

9, 41, 16.5

Ayanaris

00.3-

14.5-

28.6

43.0

57.0

11.3

21, 59, 25.5-

Andromeda

15.5-

31.2

47.0

02.2

18.3

34.0

00, 01, 44.5-

Nov. 1st

12.3
 26.5-
 40.9
 55.0
 69.0
 83.4

00, 06,, 87.4

α Andromedae
 22.2
 38.5-
 54.0
 69.5-
 85.8
 100.5-

Nov. 3 Pmo

22.2

38.5-

54.0

69.5-

85.8

100.5-

00,, 07,, 56.4

November 4/5 - m

$$a^2 + b^2 = 2ab$$

α Wrasse May	30.8	30.1	58.0	16.4
	4.00.9	30.0	12.8	30.5
	30.9	95	27.5	44.5
	5 00.4	6	42.4	58.8
	30.0		57.0	18.3
	89.9		12.9	27.5
10.56	29.8	11.07	26.5	11.42
				41.8

Polaris

12 40	22.1 - 4.15
12 49	15.0
12 58	08.5
13 06	58.0
13 15	52.0
13 24	42.8
13 33	45.0

α Virgo

7	11.0
7	25.0
7	39.1
7	52.9
8	07.0
8	21.0
13	18.34.6

Nov 4/5/

B. W. Minors

9, 53.4
 50, 44.8
 1 37.0
 2 29.0
 53, 20.9
 14, 54, 13.4

Nov 5 Pm

02.0 22.5
 16.0 36.4
 30.0 50.3
 43.9 64.3
 58.0 18.1
 11.9 31.9
 19, 40, 26.0 19, 44, 45.8

5/6 Am.

B. W. Minors

51.5
 03.4
 19.4
 33.2
 47.0
 00.5
 19, 45 14.2 11, 07, 30.1

B. W. Minors

01.5 19.8
 16.5 34.0
 31.0 48.4
 46.0 02.5
 00.8 17.0
 15.6 31.2
 30.1 11, 42 45.4

November 6/7 pm West Transit

6 - 12^{win} 53^h 10^m 5^s Ill East-

7 - 12 54 48.0 - 4th

8 - 12 56 26.6

9 - 12 58 05.0

10 - 12 59 36.5

11 - 13 02 55.0

12 - 13 04 27.8

13 - 13 06 06.4

14 - 13 07 44.5

15 - 13 09 25.4

16 - 13 12 33.5

17 - 13 14 12.3

18 - 13 15 56.4

19 - 13 17 29.0

20 - 13 19 09.5

21 - 13 22 22.0

22 - 13 24 00.0

23 - 13 25 41.5

24 - 13 27 17.5

25 - 13 29 02.0

Nov. 7

Pm

r Drums

24.5

47.0

09.0

34 31.0

34 " 38.0

a Segneri

19.5

34.0

48.4

02.4

16.5

31.0

22 " 58 " 45.1

Nov. 7/8 Am

68.5

23.0

37.9

52.5

07.0

22.0

11 " 07 " 36.5

b Drums

26.5

41.0

55.0

09.0

23.4

37.5

11 " 42 " 51.5

November 10 Pm.

46.4
 02.3-
 17.9
 33.6
 49.0
 04.5-

00 02,, 20.0

43.1
 58.9
 26.0
 40.0
 54.0

00,, 07,, 08.3

312-2.3
5.27

B16205-317.30

206.314-20

HPis 307-05

00.303-59

Nov. 10/11 Am

20.8
 54,, 50.5
 20.4
 50.3
 20.0

18.0
 32.8
 47.5
 02.4
 17.0
 32.0

11,, 07,,

36.0
 50.4
 04.5
 18.9
 33.0
 47.4
 46.5- 11,, 43,, 01.5-

10 56,, 49.5

November 10/11 Am

2964

Polaris S.P. Ill West

12, 40, 41.4

Nov. 11/12 Am.

Polaris S.P. Ill West

~~194~~ @ Chiron 194

56.4

12, 43, 06.5

10.5

12, 51, 59.8

24.4

13, 00, 50.0

38.5

13, 09, 42.5

52.5

13 17, 32.5

06.2

27, 28.4

13, 21, 20.3

13, 36 27.4

Spica

Nov. 11/17

Lhr 2964

Asclurus	03.0	ε Boötis	37.2	15.9
	18.0		52.8	15.4
	32.5		68.9	5.7
	47.0		24.20	5.9
	62.0		39.3	5.2
	16.4		54.5	5.5
	14, 10, 31.0		14, 40, 10.0	

B.W. Min

==	31.5
==	47.0
00.4	62.5
14, 52, 52.5	18.0
53, 44.4	33.4
14, 54, 37.0	48.5

15, 30, 64.5

Nov. 12 Pm

a. Capricorn

02.0

16.0

30.4

0 44.5-

0 58.5-

1 12.8

20, 11, 27.0

20 10 42

20, 09, 48

54

Nov. 13 Pm.

a. Lyrae

59.0

17.0

84.5

52.0

09.8

27.4

18, 9 3 45.0

a. Aquila

48.9

03.0

16.5-

30.5-

44.4

58.3

12.4

19, 45, 12.4

April
 18.0
 32.0
 45.6
 59.5
 13.4
 27.4

194 941.3

89
 5-3.4
 07.3
 21.9
 36.0
 60.4

22 59 04 2

Nov 15

09.0
 19.0
 34.3
 60
 05.5
 21.3

59.9
 14.0
 24.6
 42.4
 56.8
 10.5
 24.9

00,02,37.2

57/17
 3.4
 17
 5.1

Nov 17/18 Am.

Polaris

2964

12,, 41,, 03.0 - 466

49,, 57.0

12,, 58,, 48.5-

13,, 07 40.0

13 16,, 34.0

13,, 25,, 26.5-

13 34,, 22.4-

Nov 17 Jan

52.9

07.0

21.5-

35.3-

49.5-

04.0

22 59,, 18.0

Nov 17/18 Am.

00.0

14.4

28.5

43.0

57.1

11.5-

11,, 43, 25.7

54.8

09.0

22.5

36.5

50.5

04.4

13,, 19,, 18.3-

After observing Polaris and Spica 2964
was set aside, where it ought to have
been long ago. Witness its operations

New Federal Chronometers

No. 202

to Astoria

11.5 5.0
26.5 4.3
40.8 4.7
55.5 4.5
100.0 4.8
24.8 4.2

14.08.39.0

202
18 P.m.

3 April 53.4
59.4
23.8
37.7
51.9
06.0

16.55.20.0

Stymilas
22.0
36.0
49.8
63.5
17.0
30.9

19.18.44.5

Stymilas
47.0
01.0
19.9
29.0
42.8

19.40.57.0

Stymilas
53.5
07.4
21.4
35.2
49.0
03.0

19.44.16.8

Nov. 18 Pm.

22.5-

36.5-

50.4

18.0

32.0

19 48" 45.8

19 Pm

21.8

36.0

50.0

64.0

18.1

20 10" 31.9

3
Lagym

5.1

07.0

22.5-

36.4

54.5-

10.0.

21.07" 25.4

Nov. 21/22 hr

12 Cor. Ven.

10.8

24.5

47.0

04

21.3

39.4

12,, 49,, 57.0

4	6	5
00	4	
14	5	
28	4	
42	0	
55	5	

1,, 22 55.5

Spicer

54.5

08.5

22.4

36.5

50.5

13,, 18,, 64.5

Nov. 24 Sun.

	37.4		21.0
ce <i>Aymila</i>	05.5	<i>Aymila</i>	34.9
	19.4		48.6
	33.5		02.4
	47.8		16.8
	01.2		30.1
19, 44, 15.1		19, 48, 44.0	

Nov 25/26

<i>B W. Min</i>	22.5	
	14.7	52.2
		52.6
	14 57, 07.3	52.4
	59.7	
14, 52, 52.0		
53, 44.2		

Dec. 3^d Am Chron 202

Species	Sex	Age	Weight (g)	Wing (mm)	Tarsus (mm)	Middle toe (mm)	Bill (mm)	Culmen (mm)	Beak (mm)	Bill (mm)	Culmen (mm)	Beak (mm)
<i>Anthus triviridis</i>	♂	Ad.	46.0	101.4	17.5	32.8	48.0	103.9	19.8	42.3	56.7	10.6
	♂	Ad.	42.3	98.9	16.9	31.9	47.9	102.9	19.7	41.9	56.7	10.6
	♂	Ad.	41.9	98.9	16.9	31.9	47.9	102.9	19.7	41.9	56.7	10.6
	♂	Ad.	41.9	98.9	16.9	31.9	47.9	102.9	19.7	41.9	56.7	10.6
	♂	Ad.	41.9	98.9	16.9	31.9	47.9	102.9	19.7	41.9	56.7	10.6
<i>Regulus</i>	♂	Ad.	42.3	98.9	16.9	31.9	47.9	102.9	19.7	41.9	56.7	10.6
	♂	Ad.	41.9	98.9	16.9	31.9	47.9	102.9	19.7	41.9	56.7	10.6
	♂	Ad.	41.9	98.9	16.9	31.9	47.9	102.9	19.7	41.9	56.7	10.6
	♂	Ad.	41.9	98.9	16.9	31.9	47.9	102.9	19.7	41.9	56.7	10.6
	♂	Ad.	41.9	98.9	16.9	31.9	47.9	102.9	19.7	41.9	56.7	10.6

B.A.C. 205-		20.66 quite a red star		Moon's I very unsteady
	58.9		33.8	
7	13.0		47.5-	08.0
7	26.5		01.0	21.7
7	40.5		14.9	36.0
7	54.5		28.5-	49.8
8	08.0		42.8	03.9
00" 38"	21.5-		56.0	1" 15" 17.4
00" 45"				

Dec. 3^d Pm

Pisium

46.5-

00.4

14.5-

28.4

42.0

1" 22" 55.5-

Pisium

41.5-

53.4

09.4

23.4

37.2

51.0

1" 38" 03.0

312-23
5 22

H 307-01

O 303-59

*S*² 304-36

r 307-27

a. frietis

53.5-

09.0

23.8

39.0

53.6

08.5-

1" 59" 23.4

Dec 4 Pm

O'ben	42.9	Piscium	31.3	O'Ben	40.3
	56.8		45.5-		34.4
	10.5-		59.0		68.2
	24.5-		13.0		21.8
	38.4		27.0		86.0
	52.5-		40.8		49.6
1, 17, 06, 8		1, 22, 54, 3		1, 38, 03, 5	

Saturn's 1 st limb	05.0	a. bricty	52.5-	Moon's 1 st limb	13.0
	19.0		07.4		27.0
	32.8		22.4		41.0
	46.5-		37.3		54.9
	00.4		52.1		69.2
	14.5-		07.0		29.2
7, 48, 28, 4		1, 59, 21, 7		2, 01, 37, 5	

202
 Nov 21/22 42
 00.
 14
 28.7
 42.0
 56
 10 01,, 69.3

Dec 4 Pan

23.0
 37.1
 51.0
 05.0
 18.9
 22.5
 46.3
 2,, 20,,

26.0
 40.0
 53.9
 08.0
 21.7
 2,, 28 35.3

38.9
 52.5
 06.0
 20.0
 33.9
 47.6
 2,, 55,, 0/10

Dec 5 Pan

α Arietis
 48.9
 03.8 4.9
 19.0 5.2
 33.7 4.7
 48.5 4.8
 03.4 4.8

1. 5.5 18.2

19.3
 33.4
 47.4
 61.3
 13.0
 28.7
 42.5
 2. 20. 2. 28. 31.3

2. 20. 2. 28. 31.3

α Beti
 40.4
 54.5 4.1
 68.0 3.8
 21.8 3.7
 35.5
 49.5

2. 36. 03.2

α Beti
 34.9
 48.6
 02.4
 18.0
 30.0
 43.6
 2. 54. 57.5

18.7 4.0
 32.7 4.0
 47.3
 01.3 4.0
 15.4 4.0
 29.7

2. 49. 44.0

Dec 5 Pm.

312-23

312-23

8-30

303-53 0

299-58 f

27-42

284-41

Jan	53.0	Jan	43.8
	66.8		57.5
	21.0		11.8
	34.6		26.0
	48.5		39.8
	02.3		54.0
3, 17, 16.0		3, 23, 08.0	

Dec 5/6 Am.

Achrom	48.3	E Boats	22.0	3.4
	03.0		4.7	5.6
	17.5		4.5	5.4
	32.6		4.5	5.6
	46.9		4.9	5.4
	61.5		4.6	5.4
14, 09, 16.0		14, 38, 34.8		

22.0	3.4
27.4	5.6
33.0	5.4
08.4	5.6
24.0	5.4
39.4	5.4
14, 38, 34.8	

B₂ m s

T 11..44..28.5~

T 10..03..27.94

1..41..00.56

a h m s

10..03..27.94

T' 11..41..27.90

T 10 00..27.09

1..41..00.81

1..41..00.56

,25-

$$nt = u - e \sin u$$

Sept 25

2964-9..47..00

7-9..48..47.5

Gosperis new planet

Hamburg Aug. 14-9^{h m s}..30..48.0 R 272..02..57.4

" 28-8^{h m s}..23..49.9 R 272..02..57

h m 4.16
R 4.20
+ 1° - 2° 4.24
- 5



195-7
4222

22-26

E.8