

KG
11366
v. 462

Polar Catalogue
Observations & Reductions
B 7 1872-3
From 6^h 40^m to 10^h 15^m

Charles W. Sever, University Bookstore, Cambridge.

Polar Star

Observations - Reductions

Ay

1872-3

Red's

43 Camel. Tang $\sqrt{-26}$
 $\begin{matrix} 1 & 11.52 \\ 2 & 8.63 \\ 3 & 5.76 \\ 4 & 2.88 \\ 5 & 0.00 \end{matrix}$
 $\times = -200$

| Feb. | m | n |
|-------|----|-----|
| 9 | 40 | 186 |
| 14 | | 170 |
| 19 | | 153 |
| 24 | | 134 |
| Mar 1 | | 115 |
| 6 | | 93 |
| 11 | | 67 |
| 21 | | |

| | | | |
|-------|----------|---|------|
| Sin D | 9.97025 | 1 | 68.0 |
| cos D | 9.55367 | | 69.1 |
| | .11571n | | 70.1 |
| | 9.66938n | | 70.9 |
| | | | 71.7 |
| | | | 72.3 |
| | | | 72.9 |
| | | | 73.3 |
| | | | 73.7 |

$$\frac{d\alpha}{d\beta} = -3.48$$

$\text{Conc} = +.02 + .00 \pm$

$d\ 1872 = 53399 \quad 34.52$

$d\ 1873 = 52691 \quad 28.76$

$p\ 1873 = 1 \quad 53.59$

[illegible]

1982
 22.06
 22.062 38 36.10
 13.260 ✓ 27.40
 38 11.233
 38 17.90 6.033
 38 34.90
 39 22.02
 40 1.69
 -39.57
 -39.59
 39 13.22
 40 0.92
 -49.70
 -49.72
 39 11.19
 40 0.77
 -49.58
 -49.60
 39 5.99
 40 0.82
 +8.27
 +5.25
 Ref. Pers.

| | | | |
|------------------------|------------------------|------------------------|-----------------------|
| + 38.77 ⁺⁰¹ | + 46.53 ⁺⁰⁰ | + 48.82 ⁻⁰³ | - 3.70 ⁺⁰² |
| + 81 ⁺⁸⁰ | + 0.94 ⁺⁹³ | + .76 ⁺⁷⁸ | + 84 ⁺⁸⁴ |
| - 1.10 | - 1.03 | - 0.88 | - 0.83 |
| + 37.88 | 48.74 ³ | + 48.70 ⁶⁹ | - 2.69 |
| 22.02 | 13.22 | 11.19 | 40 6.99 |
| 39 59.90 | 59.96 | 59.84 | 30 |
| 39 59.90 | 59.95 | 59.88 | |

| +2.42 | | +2.40 | | +2.37 | | +2.37 | |
|-------|-------|-------|-------|-------|------|-------|------|
| 15 | | 15 | | 15 | | 15 | |
| 4 | 6.1 | 4 | 6.0 | 4 | 5.0 | 4 | 11.2 |
| | 55.1 | | 57.2 | | 1.1 | | 4.2 |
| | 121.2 | | 123.2 | | 6.1 | | 15.4 |
| ✓ | 0.60 | 19 | 1.60 | 19 | 3.05 | 19 | 7.70 |

| | | | |
|--------------|----------|----------|--------|
| + 45.96 | + 4586 | + 5323 | + 6.15 |
| 1.66238 | 1.66143 | 1.72697 | |
| 1.32176m | 1.33081m | 1.39623m | |
| -2147 | -2142 | -2491 | |
| 19 8.67 | 19 1.60 | 19 3.05 | |
| 18 39.13 | 18 40.18 | 18 38.14 | |
| 16° 4' 9.22" | 4 8.17 | 4 10.21 | |

| | | | |
|---|---|---|--|
| $\begin{array}{r} 26 \quad 38 \quad 58 = 1.46080_m \\ + 2068 \\ 1.48148_m \\ // \\ + \quad 3030 \\ - \quad .38 \\ \hline 20-82 \end{array}$ | $\begin{array}{r} + 3477 \\ 1.49557_m \\ // \\ + \quad 3130 \\ - \quad .38 \\ \hline 08-32 \end{array}$ | $\begin{array}{r} + 2149 \\ 1.48229_m \\ // \\ + \quad 3036 \\ - \quad .52 \\ \hline 08-32 \end{array}$ | $\begin{array}{r} + 2107^{20} \\ 1.48500_m \\ // \\ + \quad 30.55 \\ - \quad .81 \\ \hline 25-.33 \end{array}$ |
|---|---|---|--|

| | | | | | |
|----------------------|---------------------|------------------|--------------------|--------------------|----------------------|
| 3488 | 29.72 | 31.76 | +3084 | 3496 | +29.76 |
| 1693 | 38.34 | 3 | 3641 | 3 | 3925 |
| 169 | 4 38.94 | 38.62 | 4 39.01 | 38.69 | 3 39.97 |
| 100 | 2 9.7 | 2 | 12.3 | 2 | 12.7 |
| - 2 29.2 | 32 29.5 | - 2 | 26.7 | 32 27.0 | - 2 27.3 |
| - 16.10 | - | - | 18.70 | - | 19.10 |
| - 2 29.77 | 16.10 | - 2 | 27.99 | 18.70 | - 2 28.52 |
| - 2 45.87 | - 2 8023 | - 2 | 46.69 | 28.46 | - 2 47.62 |
| 69 1 5307 | + 108 | 1 | 52.32 | + 107 | 1 52.35 |
| - 2 45.25 | - | - 2 | 44.09 | - 2 | 46.77 |
| 1 5307 | 1 | 1 | 52.60 | 1 | 52.88 |

176
51 *bebei*
 $\begin{array}{l} \text{red. } s \\ 1 \quad 85.61 \\ 2 \quad 64.21 \\ 3 \quad 42.80 \\ 4 \quad 21.40 \\ 5 \quad 0.00 \end{array}$

Sind 9.99949

 $\begin{array}{l} \cos \delta \quad 8.68367 \\ 11.571n \\ 8.79938n \end{array}$
 $\begin{array}{l} 6 \quad 40 \quad 13 \\ 6 \quad 40 \quad 13 \\ + 87^{\circ} 14' \\ + 87^{\circ} 14' \\ 2 = 44 \quad 51 \quad 23 \end{array}$
 $\begin{array}{l} \text{M. S. } \alpha = +1.43 \\ \text{N. A. } 1273.0 \quad \alpha = 13.916 \\ \text{O. } 1073 \quad = 15.058 = 14.907 \end{array}$
sin $z = -.70$
 $\begin{array}{l} 14 \quad 11.61 \quad \text{M. A. } +06 \\ 14 \quad 10.67 = 12.17P \\ +1.50 \end{array}$
 $\begin{array}{l} dd = +30.326 \\ d\delta = -3.54 \end{array}$
 $\delta 1873 = 14 \quad 10.67 \quad (20)$

| 1873 | Feb. 5 | Feb. 6 | Feb. 8 | Feb. 11 | Feb. 17 | Feb. 18 |
|---------|---------|---------|---------|---------|--------------|---------|
| hms | 36 48.0 | 38 | 36 58.3 | 38 | 40 8.1 | 38 26.0 |
| 038.2 | 49.1 | 26.7 | 58.0 | 31.1 | 9.6 | 27.7 |
| 27.3 | 49.4 | 48.1 | 37 3.6 | 42.3 | 59.0 | 40.8 |
| 48.1 | | | | 38 0.8 | — | 44.3 |
| 39 9.8 | | 39 9.6 | | 39 3.4 | — | 39 1.5 |
| 31.3 | | 34.9 | | 20.7 | — | 22.9 |
| 52.7 | | 51.8 | | 47.6 | — | 44.6 |
| 40 14.5 | | 40 13.1 | | 40 7.5 | 6.1 44.7 | 41 4.1 |
| 36.2 | | 36.0 | | 31.1 | 26.9 44.1 | 27.3 |
| 55.5 | | 56.2 | | 49.6 | 49.3 43.1 | 48.7 |
| 41 18.9 | | 41 17.4 | | 41 13.7 | 41 10.6 43.0 | 41 10.8 |

| 10143 | 10101 |
|----------|----------|
| 52.90 | 52.26 |
| 52.700 | 52.233 |
| 39 52.38 | 39 57.81 |
| 40 32.14 | 40 31.96 |
| -39.76 | -40.05 |
| -40.79 | -41.08 |

| 1633 | 44.725 | 40 9.63 | 44.762 | 38 26.85 |
|----------|-----------|---------|----------|----------|
| 11.02 | | | | |
| 47.033 | 37 59.03 | 44.41 | 30 44.44 | |
| 39 46.72 | 37 57.039 | 29.05 | 40 28.45 | |
| 40 30.97 | 40 | -44.64 | -44.01 | |
| -41.26 | | -45.67 | -45.64 | |
| -45.28 | | | | |

 $\begin{array}{l} +32.38-.01 \\ +7.05 \\ -18.23 \\ +22.019 \\ 52.38 \\ 40 \quad 18.57 \end{array}$
 $\begin{array}{l} +34.07+.00 \\ +7.05 \\ -18.05 \\ +23.07 \\ 51.91 \\ 14.98 \end{array}$
 $\begin{array}{l} +35.62+.01 \\ +7.77 \\ -17.06 \\ +28.82 \\ 46.72 \\ 15.084 \end{array}$
 $\begin{array}{l} +36.77+.01 \\ +6.63 \\ -15.74 \\ +30.067 \\ 46.72 \\ 14.478 \end{array}$
 $\begin{array}{l} +39.87+.01 \\ +5.87 \\ -18.54 \\ +30.723 \\ 46.72 \\ 15.167 \end{array}$

| 5 | 2 | 7 | 15 |
|--------------|----------|----------|-------|
| 8.1 | 4.9 | 0.95 | 58.42 |
| 58.7 | 57.0 | 121.9 | |
| 126.8 | 121.9 | 0.95 | |
| 34.0 | 0.95 | 176.83 | |
| +158.77 | +176.83 | +144.93 | |
| +123.77 | +144.93 | 2.24236 | |
| 2.26427 | 2.24236 | 1.04224m | |
| 1.05365m | 1.04224m | -11.02 | |
| -11.38 | -11.02 | 7 0.95 | |
| 7 3.40 | 7 0.95 | 6 149.73 | |
| 6 57.82 | 6 149.73 | | |
| +87 15 56.53 | 15 58.42 | | |

| 5 | 2 | 6 | 15 |
|----------|----------|----------|-------|
| 5.1 | 5.1 | 57.20 | 57.95 |
| 47.3 | 47.3 | 114.4 | |
| 114.4 | 114.4 | 57.20 | |
| 57.20 | 57.20 | 6 57.20 | |
| +107.76 | +107.76 | 6 50.40 | |
| 2.03326 | 2.03326 | 15 57.95 | |
| 0.83264m | 0.83264m | | |
| -6.80 | -6.80 | | |
| 6 57.20 | 6 57.20 | | |
| 6 50.40 | 6 50.40 | | |
| 15 57.95 | 15 57.95 | | |

| | | |
|----------------------|-------------------|----------|
| -44 50 45 = 1.75740m | +1866 | 1.77606m |
| +2906 | | |
| 1.78646m | | |
| +1 116 | +0 59.71 | |
| -89 | -80 | |
| -10 | -10 | |
| -1 215 + 1 0.17 | -1 0.41 + 0 58.81 | |
| +87 14 54.38 | 14 57.81 | |
| +87 16 56.70 | 16 57.23 | 57.07 |
| 14 27.7 | 28.0 | |
| -2 25.0 | -2 25.2 | |
| -2 28.4 -16 | -2 28.6 -16 | 28.8 |

| | | |
|-----------------|-------------------|------------------|
| +25.05 | +20.68 | +1340 |
| 1.78254m | 1.77808m | 1.77080m |
| +1 0.61 | +0 59.99 | +0 59.00 |
| -31 | -02 | -16 |
| -0.09 | -0.09 | -0.09 |
| -1 101 + 1 0.21 | -1 0.10 + 0 59.88 | -59.25 + 0 58.70 |
| 14 51.94 | 14 59.83 | 15 7.31 |
| 16 58.16 | 16 59.81 | 16 59.31 |
| 29.4 | 30.8 | 31.2 |
| -2 28.8 | -2 29.0 | -2 28.1 |
| -2 28.2 -16 | -2 28.4 -14 | -2 28.5 -15 |

| | | | |
|----------|----------|----------|----------|
| -2 16.0 | -2 16.0 | -2 16.40 | -2 16.40 |
| -2 36.22 | -2 30.35 | -2 30.54 | -2 30.86 |
| -2 46.32 | -2 16.5 | -2 46.94 | -2 16.5 |
| 14 10.38 | 14 45.38 | 14 10.29 | 14 45.61 |
| 14 -1.54 | 14 10.74 | 14 -1.54 | 14 11.46 |

| | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|
| -2 17.00 | -2 17.80 | -2 19.20 | -2 19.20 | -2 19.60 | -2 19.60 |
| -2 28.71 | -2 29.77 | -2 30.23 | -2 30.33 | -2 30.67 | -2 30.67 |
| -2 46.51 | -2 48.97 | -2 48.97 | -2 48.97 | -2 48.97 | -2 48.97 |
| 14 11.65 | 14 45.29 | 14 10.84 | 14 45.29 | 14 7.38 | 14 2.48 |
| -1.54 14 12.71 | -1.54 14 11.93 | -1.54 14 11.93 | -1.54 14 11.93 | -1.54 14 11.93 | -1.54 14 11.93 |

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

1873.0

| α | δ |
|----------|-------------|
| 14.57 | 8.81 |
| 14.98 | 8.75 |
| 15.04 | 10.11 |
| 14.48 | 9.30 |
| 15.17 | 7.84 |
| 14.84 | 9.37 |
| 14.99 | 7.83 |
| 14.84 | 8.38 |
| 15.22 | 8.54 |
| 15.77 | 10.76 |
| 15.65 | 9 |
| 15.99 | |
| 15.84 | |
| 15.183 | 8.97 + 3.08 |
| 0.58 | 10.67 |
| + .125 | - 1.80 |

11.95
10.67
+ 1.28

| Mar. 9 | Mar. 10 | Mar. 13 |
|--------------------------------|-------------------------|-----------------|
| +380 +29 | +321 +32 | 2074.277 +27 |
| 39 41.244 38 39 18.0 40 41.438 | 39 18.0 40 12.0 41 43.9 | |
| 8.4 29.8 | 58.2 19.6 | |
| 31.5 31.5 | 31.6 21.6 | |
| 48.7 27.3 | 11.9 22.5 | |
| 12.4 29.9 | 7.8 22.0 | |
| 32.3 28.1 | 26.4 22.5 | 25.3 21.1 |
| 40.55.8 31.2 | 40.40.5 21.9 | 43.7 11.1 |

29.467 41 24.10 21.682 39 11.00 19.600 41 43.35

| | | |
|----------|----------|----------|
| 39 28.15 | 40 21.36 | 40 19.28 |
| 40 22.28 | 40 21.85 | 40 20.85 |
| -53.08 | -0.49 | -1.30 |
| -54.11 | -1.52 | -2.33 |

| | | |
|--------------|-----------|------------|
| +48.82-.03 | -3.70+.02 | -2.36-.01 |
| +4.02 | +6.24 | +5.60 |
| -47.831 | -6.79.53 | -5.02.66 |
| +47.83 46.50 | -4.55.537 | -2.28.3.44 |
| 29.15 | 21.36 | 19.28 |
| 16.82 | 17.11 | 17.00 |
| 15.685 | 15.989 | 15.884 |

| 5 | 5 | 5 |
|----------|----------|-------------|
| +2.37 | +2.37 | +2.36 |
| 1 41.0 | 1 50.2 | 1 39.0 |
| 38.1 | 43.2 | 15.0 |
| 7.41 | 9.34 | 7.40 |
| 6 39.85 | 6 46.70 | 6 37.00 |
| - 114.63 | + 10.68 | (+ 143.75)✓ |
| 2.05930m | 1.02857 | |
| 0.88888 | 9.82795m | |
| +7.32 | -0.69 | |
| 6 39.85 | 6 46.70 | |
| 6 47.11 | 6 46.03 | |
| 40.77 | 16 2.32 | |
| 16 1.58 | | |

| | | |
|----------|----------|----------|
| +2149 | +2420 | +2185 |
| 1.77889m | 1.78160m | 1.77925m |
| +1 0.10 | +1 0.18 | +1 0.15 |
| - .35 | - .00 | - .10 |
| - .03 | - .11 | |

| | | |
|-------------------|------------------|-------|
| -1 0.48 +0.59.72 | -1 0.39 +1.0.37 | |
| 15 1.10 | 15 1.73 | |
| 17 1.30 | 11.6 17 2.69 | 2.55 |
| 14 26.3 | 14 34.5 | |
| -2 27.0 | -2 28.2 | |
| -2 26.4 -14 26.5 | -2 27.6 -14 27.7 | |
| 2270 - 2270 | 2250 - 2290 | |
| -2 28.52 -2 28.73 | -2 28.49 | 28.90 |
| -2 57.22 + 16.5 | -2 57.39 + 16.5 | |
| 14 1008 -2 47.98 | 14 1130 -2 50.15 | |
| -1.54 14 11.38 | -1.54 14 12.40 | |
| 14 8.54 | 14 9.70.76 | |

1173

Sin S 9.74887

Cos S 9.91798

Geminorum tang δ = +6.8
 $\alpha = -0.19$
 Cox =
 $\Delta 1872 = 21.004$
 $\Delta 1873 = 24.964$
 $\delta 1873 = 6 \quad 42.42$

Feb. 9 44 25.64
 14 57
 19 53
 24 46
 Mar. 1 25.39
 6 130
 11 20.21
 21

$\Delta \alpha = +3.960$
 $\Delta \delta = +3.89$

49.2
 49.7 +5
 50.1 1
 50.5 4
 50.8 3
 51.1 3
 51.4 3
 51.6 2
 51.8 2

1873 Feb. 8 +2.47
 +.25

Feb. 11 +4.76
 +.47

Feb. 17 +3.07
 +.31

Feb. 20 +3.01
 +.31

Feb. 22 +4.61
 +.47

Feb. 26 +3.49
 +.34

| | | | | | | | | | | |
|-----------------|----------|---------------|----------|----------|----------|---------|----------------|---------|-----------------|---------|
| 6.13 35.7 | 45 28.9 | 43 34.1 | 43 24.6 | 43 30.0 | 43 34.4 | 43 35.0 | 43 29.8 | 43 24.0 | 43 28.9 | 43 21.7 |
| 38.1 | 30.2 | 37.3 | 28.9 | 30.0 | 38.2 | 32.8 | 32.3 | 25.3 | 31.4 | 23.0 |
| 40.4 | 31.5 | 39.9 | 30.1 | 36.8 | 39.4 | 35.0 | 24.6 | 26.4 | 34.0 | 24.3 |
| 48.2 | | 44.7 | | 41.6 | | 40.0 | 39.6 | | 39.0 | |
| 50.4 | | 47.2 | | 44.2 | | 42.5 | 41.4 | | 41.3 | |
| 52.1 | | 49.7 | | 46.6 | | 45.0 | 44.0 | | 44.0 | |
| 53.6 | | 52.1 | | 49.1 | | 47.6 | 46.2 | | 46.5 | |
| 44 8.6 | | 54.7 | | 51.6 | | 50.1 | 49.6 | | 48.9 | |
| 3.1 | | 56.8 | | 56.6 | | 55.0 | 54.5 | | 53.9 | |
| 5.5 | | 44 5.2 | | 50.0 | | 57.5 | 57.0 | | 56.3 | |
| | | 4.7 | | 44 1.0 | | 44 0.1 | 57.5 | | 58.8 | |
| 55.9 | | 57.0 | | 51.2 | | 49.5 | 49.0 | | 48.30 | |
| 50.62 | | 49.3 | | 46.00 | | 45.15 | 44.86 | | 43.91 | |
| 50.627 43 30.20 | | 47.27 43 28.7 | | 46.00 | 43 38.33 | 45.055 | 45.64 43 25.23 | | 43.909 43 23.00 | |
| 43 50.61 | 43 49.71 | 43 46.58 | 43 45.04 | 43 44.55 | 43 43.89 | | | | | |
| 44 28.64 | 44 28.62 | 44 28.55 | 44 28.52 | 44 28.49 | 44 28.43 | | | | | |
| -35.04 | -35.71 | -38.97 | -40.48 | -40.94 | -41.54 | | | | | |

| | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|
| +34.91 +.03 | +35.62 +.01 | +38.77 +.01 | +40.30 +.00 | +40.63 +.00 | +41.35 +.00 |
| + .17 | + .32 | + .21 | + .21 | + .32 | + .23 |
| -0.64 | -0.66 | -0.569 | -0.56 | -0.53 | -0.47 |
| +34.39 | +35.289 | +38.8940 | +39.95 | +40.421 | +41.142 |
| 43 50.61 | 47.71 | 46.58 | 45.04 | 44.55 | 43.89 |
| 44 28.64 | 24.99 | 24.97 | 24.99 | 24.97 | 25.00 |
| 44 25.00 | 25.00 | 24.98 | 24.99 | 24.96 | 25.01 |

| | | | | |
|---------------------|-------------------|------------------|------------------|------------------|
| +237 | +240 | +242 | +243 | +242 |
| 10 45.8 | 10 53.0 | 10 35.6 | 10 50.3 | 10 49.5 |
| 3 38.8 | 3 36.9 | 3 23.1 | 3 35.1 | 3 36.1 |
| 8 84.6 | 8 89.9 | 8 58.7 | 8 55.4 | 8 56.6 |
| 13 42.30 | 13 44.95 | 13 29.35 | 13 42.70 | 13 42.80 |
| +20.43 | +20.86 | +8.27 | +14.33 | +20.91 |
| 1.31027 | 1.31931 | 0.91751 | 1.28623 | 1.32035 |
| 1.34346m | 1.35300m | 0.95120m | 1.31992m | 1.35404m |
| -22.08 | -22.54 | -8.94 | -20.89 | -22.60 |
| 13 12.30 | 13 44.95 | 13 29.35 | 13 42.70 | 13 42.80 |
| 13 20.22 | 13 22.41 | 13 20.41 | 13 21.81 | 13 20.20 |
| 0.18 | | | | |
| 13.49 28.13 | 9 25.94 | 9 27.94 | 9 26.54 | 9 28.14 |
| +8 15 43 = 0.92230 | +25.14 | +20.68 | +29.92 | +25.39 |
| +12.67 | 0.94744 | 0.94298 | 0.95122 | 0.94769 |
| 0.93497 | | | | |
| +8.61 | +8.86 | +8.77 | +8.74 | +8.86 |
| -1.10 | -1.11 | -1.02 | -1.09 | -1.11 |
| -1.18 | -1.18 | -1.17 | -1.18 | -1.18 |
| +8.33 -8.89 | +8.57 -9.15 | +8.58 -8.96 | +8.67 -9.21 | +8.57 -9.15 |
| +34.7 36.16 | 9 34.54 | 9 36.52 | 9 35.21 | 9 36.72 |
| +34.9 19.24 9 18.94 | 9 16.79 | 9 18.98 | 9 17.33 | 9 19.00 |
| 49.1 | 6 44.9 | 6 50.0 | 6 50.4 | 6 50.6 |
| -2 30.1 -30 30.1 | -2 27.4 -30 27.7 | -2 29.0 -28 29.3 | -2 26.9 -30 27.2 | -2 28.4 -30 28.7 |
| -6.70 | -7.00 | -7.60 | -8.00 | -8.20 |
| -2 36.38 -6.70 | -2 28.71 -7.00 | -2 29.77 -7.60 | -2 28.67 -8.00 | -2 29.84 -8.20 |
| -2 37.08 -2 30.66 | -2 35.71 -2 36.57 | -2 36.57 -30.23 | -2 36.67 -28.76 | -2 38.04 -30.43 |
| 34.6 72.6 -30 | 6 41.08 | 6 42.61 | 6 40.66 | 6 40.96 |
| -2 34.66 | -2 34.48 | -2 38.14 | -2 37.07 | -2 38.94 |
| 6 41.28 | 6 40.01 | 6 40.56 | 6 37.96 | 6 37.76 |

| | | | |
|---|-------------|---|---------|
| Nov. 9 ⁺³⁰⁰ ₊₁₂₉ | | Dec. 10 ⁺³²¹ ₊₃₂ | |
| 43 214 | 43 145 | 43 140 | 43 62 |
| 23.9 | 158 | 16.4 | 7.3 |
| 26.2 | 159 | 18.8 | 8.3 |
| 31.3 | | 23.7 | |
| 33.7 | | 26.4 | |
| 36.3 | | 28.4 | |
| 38.9 | | 31.4 | |
| 41.3 | | 33.8 | |
| 46.2 | | 38.6 | |
| 48.4 | | 41.0 | |
| 51.2 | | 43.8 | |
| 39.91 | | 31.66 | |
| 36.28 | | 28.98 | |
| 36.28 2 | 43 16.07 | 28.782 | 43 7.27 |
| 43 36.26 | 44 28.76 | | |
| 44 28.24 | 44 28.22 | | |
| -48.98 | +3.54 | | |
| +48.82 ⁻⁰³ | 0 | -3.70 ⁺⁰² | |
| + .20 | +2.1 | + .22 | +2.2 |
| -0.28 | | -0.26 | |
| +48.741 | | -3.742 | |
| 43 36.26 | | 28.76 | |
| 28.00 | | 28.00 | |
| 24.97 | | 28.04 | |
| +2.37 | +2.37 | | |
| 10 | 10 | | |
| 3 45.1 | 3 48.3 | | |
| 39.9 | 40.0 | | |
| 85.0 | 88.3 | | |
| 13 42.50 | 13 44.5 | | |
| + 20.21 | + 21.51 | | |
| 1.30557 | 1.33264 | | |
| 1.33926m | 1.36633m | | |
| -21.84 | -23.24 | | |
| 13 42.50 | 13 44.5 | | |
| 13 20.66 | 13 20.91 | | |
| 9 27.69 | 9 27.94 | | |
| +2149 | +2420 | | |
| 0.94379 | 0.94650 | | |
| 4- 8.79 | 4- 8.84 | | |
| - .10 | - .11 | | |
| - .07 | - .22 | | |
| + 8.62-8.96 | + 8.51-9.17 | | |
| 9 36.37 | 9 35.95 | | |
| 9 18.73 | 9 18.27 | 18.43 | 17.97 |
| 6 51.3 | 6 51.4 | | |
| -2 27.4-30 | -2 26.9-30 | 27.7 | 27.2 |
| -8.90 | -9.00 | | |
| -2 28.52 | -2 28.49 | 8.90 | 9.07 |
| -2 37.42 | -2 37.49 | 28.73 | 28.90 |
| 6 41.31 | 6 40.78 | 30 | 30 |
| -2 37.13 | -2 38.20 | | |
| 6 40.50 | 3 38.77 | | |

| Mar. 10 ⁺³²¹ ₊₃₂ | | Mar. 13 ⁺²⁷⁷ ₊₂₇ | |
|---|--------|---|--------|
| 4.4 56.4 | 44 430 | 44 553 | 44 576 |
| 45 65 | 45.1 | 45 593 | |
| 4.2 | 47.2 | 45 31 | |
| 12.3 | | 110 | |
| 16.2 | | 147 | |
| 21.2 | | 198 | |
| 24.3 | | 268 | |
| 28.2 | | 268 | |
| 35.9 | | 347 | |
| 39.9 | | 384 | |
| 43.9 | | 425 | |

| | | | |
|-----------|---------|-----------|---------|
| 8.20 | | 8.52 | |
| 20.18 | | 12.93 | |
| 20.182 | 44 4510 | 18.927 | 44 5760 |
| 4.6 20.15 | | 4.6 18.90 | |
| 4.6 16.96 | | 4.6 16.87 | |
| +3.19 | | +2.03 | |
| +3.24 | | +2.08 | |

| | | | |
|------------|-----|------------|-----|
| -3.69 +0.2 | | -2.35 -0.1 | |
| + .52 | +53 | + .44 | +45 |
| -0.56 | | -0.47 | |
| -3.730 | | -2.35 | |
| 20.15 | | 18.90 | |
| 18.42 | | 16.52 | |
| 16.45 | | 16.52 | |

| +237 | +236 |
|-----------|-----------|
| 4.5 | 4.5 |
| 0 40.1 | 0 29.2 |
| 33.2 | 25.1 |
| 73.3 | 54.3 |
| 4.5 86.5 | 4.5 27.15 |
| + 35.08 | + 21.33 |
| 1.54506 | 1.32899 |
| 1.37782m | 1.16175m |
| -23.87 | -14.51 |
| 4.5 36.5 | 4.5 27.15 |
| 4.5 12.78 | 4.5 12.64 |
| 37 35.7 | 37 35.71 |

| | |
|----------|----------|
| +2433 | +2195 |
| 1.24793m | 1.24555m |

| | |
|---------|---------|
| + 17.70 | + 17.60 |
| - 30 | - 10 |
| - .04 | - .02 |

| | |
|----------------|----------------|
| - 18.04 +17.36 | - 17.20 +17.48 |
| 37 17.53 | 37 17.49 |
| 37 52.93 | 37 53.19 |
| 35 24.2 | 35 24.5 |
| -2 28.7 | -2 28.7 |
| -2 28.4 -0.05 | -2 28.4 -0.04 |
| -1630 - | -1660 - |
| -2 28.49 -2 | -2 28.20 -2 |
| -2 44.79 + | -2 44.80 + |
| 35 8.14 -2 | 35 8.39 -2 |
| 35 8.34 | 35 8.83 |

50 Draco. -64
 6 50 31
 18 50 24
 +75 16 38
 104 43 02
 -62 20 14
 -0.89

Sin S 7.78551
 cos S 9.40490m
 1187m
 9.52061

21873 = 15 50 27.419
 51873 = 15 16 57.62 43 288

| Feb. 11 | Feb. 17 | Feb. 19 | Feb. 20 | Feb. 22 | Feb. 24 |
|------------|-----------|-------------|-------------|-------------|-------------|
| 48.214 49 | 48.23 49 | 49.12 49 | 49.12 49 | 49 49 | 49 49 |
| 33.7 25.0 | 30.3 6.4 | 29.1 13.0 | 29.1 13.0 | 29.3 35.0 | 30.0 35.0 |
| 34.3 28.7 | 32.9 11.3 | 32.3 16.9 | 32.3 16.9 | 32.9 41.1 | 34.1 41.1 |
| 47.4 32.9 | 38.4 42.4 | 36.9 41.9 | 36.7 41.1 | 37.0 41.1 | 37.8 41.6 |
| 45.8 10.80 | 42.4 37.0 | 41.9 15.275 | 41.1 15.275 | 41.1 15.275 | 41.6 15.275 |
| 49.7 37.0 | 46.4 50.4 | 45.2 49.2 | 44.5 49.1 | 45.3 49.6 | 45.9 49.5 |
| 53.4 50.4 | 50.4 50.4 | 50.4 50.4 | 50.4 50.4 | 50.4 50.4 | 50.4 50.4 |
| 54.6 50.4 | 54.6 50.4 | 54.6 50.4 | 54.6 50.4 | 54.6 50.4 | 54.6 50.4 |
| 50 1.4 | 50 2.4 | 50 7.3 | 50 7.3 | 50 7.3 | 50 7.3 |
| 6.0 | | | | | |

| 44.73 | 48 27.00 | 41.52 | 48 6.67 | 40.63 | 49 15.28 | 40.42 | 44.01 | 40.19 | 47 36.17 | 41.24 | 49 36.0 |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 49.76 | 49 46.42 | 49 46.42 | 49 46.42 | 49 45.20 | 49 45.20 | 49 44.97 | 49 44.97 | 49 45.38 | 49 45.38 | 49 45.88 | 49 45.88 |
| +35.63 | +38.99 | +38.99 | +38.99 | +39.89 | +39.89 | +40.30 | +40.30 | +40.63 | +40.63 | +40.42 | +40.42 |
| -1.81 | -1.17 | -1.17 | -1.17 | -1.98 | -1.98 | -1.14 | -1.14 | -1.76 | -1.76 | -1.74 | -1.74 |
| +3.78 | +3.62 | +3.62 | +3.62 | +3.49 | +3.49 | +3.42 | +3.42 | +3.29 | +3.29 | +3.10 | +3.10 |
| 49 27.56 | 49 27.66 | 49 27.66 | 49 27.66 | 49 27.60 | 49 27.60 | 49 27.50 | 49 27.50 | 49 27.54 | 49 27.54 | 49 27.71 | 49 27.71 |

| 35 | 35 | 35 | 35 | 35 | 35 |
|--------------|-----------|-----------|-----------|-----------|-----------|
| 3 35.3 | 3 28.1 | 3 42.8 | 3 42.8 | 3 21.1 | 3 26.5 |
| 22.7 16.0 | 16.0 16.0 | 35.8 35.8 | 35.8 35.8 | 9.1 9.1 | 55.4 55.4 |
| 58.0 39.1 | 39.1 39.1 | 78.6 78.6 | 78.6 78.6 | 30.2 30.2 | 61.9 61.9 |
| 38 27.00 | 38 19.55 | 38 37.30 | 38 37.30 | 38 15.10 | 38 40.75 |
| +82.70 | +90.19 | +29.86 | +29.86 | +129.15 | +42.22 |
| 1.71751 | 1.71751 | 1.47509 | 1.47509 | 2.11109 | 1.62552 |
| 1.43812 | 1.51926 | 0.99570 | 0.99570 | 1.63170 | 1.14613 |
| +27.42 | +33.06 | +9.90 | +9.90 | +42.82 | +14.10 |
| 38 29.02 | 38 19.55 | 38 37.30 | 38 37.30 | 38 15.10 | 38 40.75 |
| 38 58.42 | 38 52.61 | 38 49.20 | 38 49.20 | 38 57.92 | 38 54.75 |
| 104 43 57.93 | 43 55.74 | 43 59.15 | 43 59.15 | 43 50.93 | 43 53.90 |

| 2523 | 2081 | 1342 | 3005 | 3454 |
|-------------------|-------------------|-------------------|-------------------|-------------------|
| 2.06376 | 2.05934 | 2.05195 | 2.06558 | 2.07307 |
| +1.558 | +1.558 | +1.558 | +1.558 | +1.558 |
| +1.558 | +1.558 | +1.558 | +1.558 | +1.558 |
| -1.17-28 | -1.16-26 | -1.15-30 | -1.16-26 | -1.17-28 |
| -1 55.10 +1 56.60 | -1 55.16 +1 58.50 | -1 55.78 +1 52.66 | -1 55.06 +1 59.22 | -1 58.30 +1 58.44 |
| 104 44 58.83 | 44 58.58 | 42 6.37 | 41 55.37 | 42 5.10 |
| 104 45 48.53 | 45 57.55 | 45 57.29 | 45 49.65 | 46 1.84 |
| 48 21.1 | 48 22.8 | 48 22.3 | 48 24.0 | 48 24.4 |
| 14.70 | 20.40 | 20.90 | 21.60 | 22.00 |
| -2 28.71 | -2 28.77 | -2 30.33 | -2 28.67 | -2 28.50 |
| -2 47.41 | -2 50.17 | -2 57.23 | -2 50.27 | -2 57.50 |
| 43 1.12 18.70 | 43 4.07 13.80 | 43 9.58 13.80 | 42 59.35 21.60 | 43 12.34 22.00 |
| 21.7 | 21.7 | 21.7 | 21.7 | 21.7 |
| 21.3 | 21.5 | 21.6 | 21.6 | 21.5 |
| -2 45.74 | -2 48.48 | -2 49.91 | -2 48.20 | -2 49.72 |
| 43 2.51 | 43 2.81 | 43 2.10 | 43 1.19 | 43 2.81 |

$$\times 1873 = \begin{matrix} m \\ 49 \\ 50 \end{matrix} 27.572$$

$$p \quad = \quad \begin{matrix} 1.32 \\ 38 \end{matrix} \quad \begin{matrix} 58.68 \\ 62 \end{matrix}$$

Feb 26 +349

Mar 9 +300

Mar 10 +321

Mar 13 +277

49 286
323
36.0
404
443
483
524
565
57 04

48 319
359
399
446
1523
38075

49 217
253
295
334
379
421
457
498
537

48 304
344
394

49 146
187
223
254
301
345
383
425
468

48 45
88
139
182
224
266

49 124
165
204
244
283
322
361
404
446

48 338
362
384

3995
4439

48 38.08

3991
4468

48 54.93

2935
3039

48 10.60

2607
2817

48 36.23

49 4445
+ 4135
- 133
+ 3.02

49 37.74
+ 48.80
- 114
+ 2.15

49 3045
- 367
- 122
+ 2.07

49 2903
- 237
- 106
+ 1.83

49 27.97

49 27.55

49 27.63

49 27.42

+2.42

+2.37

+2.37

+2.36

35 35.9
3 26.9
1 6.28
38 31.40

35 39.1
3 38.1
1 77.2
38 38.60

35 28.0
3 23.2
1 51.2
38 25.60

35 34.1
3 32.1
1 66.2
38 33.10

+ 6631
1.82158
1.34219
+ 2199
38 31.40
38 53.39

+ 4275
1.63094
1.15155
+ 1418
38 38.60
38 52.78

+ 7949
1.96195
1.42256
+ 2646
38 25.60
38 52.06

+ 5274
1.42214
1.24275
+ 1949
38 33.10
38 50.59

43 54.96

43 53.57

43 56.29

43 57.76

+ 2553
2.06406
+ .03
+ 1 5390
+ .59
- .17 -28

+ 2159
2.06012
+ .03
+ 1 5482
+ .25
- .07 -31

+ 2433
2.06286
+ .03
+ 1 5357
+ .35
- .20 -27

+ 2195
2.06048
+ .02
+ 1 5494
+ .37
- .22 -28

- 1 56.31 + 1 56.35

- 1 54.65 + 1 55.03

- 1 54.95 + 1 56.25

- 1 54.81 + 1 55.11

41 59.45

42 6.92

42 1.34

42 2.95

41 51.31 1/5 5703

46 50.60

45 52.54

41 52.87

24.9

26.8

26.9

27.3

- 2 22.50

- 2 24.40

- 2 24.50

- 2 24.90

- 2 29.84

- 2 28.52

- 2 28.19

- 2 28.20

- 2 52.34

- 2 52.92

- 2 52.97

- 2 53.10

42 58.97

42 57.68

42 57.55

42 57.77

- 2 30.43

- 2 28.73

- 2 28.90

- 2 28.38

+ 2.15

+ 2.10

+ 2.10

+ 2.10

- 2 52.78

- 2 57.03

- 2 53.30

- 2 57.18

43 6.25

42 59.26

43 0.97

43 1.41

Mar. 9 $+3.00$
 $+7.29$

54 54 12.4
54.4 15.0
54.6 10.0
55 6.4
3.8
7.0
9.8
10.3
16.4
19.5

6022
691
6.911 54 15.47

55 6.96
58- 64.85
- 48.89
- 48.95

+48.83 -p3 8
- .85 -8X
+1.85

+49.877
55 6.96
56.79
56.73

+2.87
25
4 34.9
32.1
1 67.0
29 33.50

+ 51.44
1.71 13.0
1.33 6.71
+ 21.71
29 33.50
29 55.21
52 53.14

+2169
2.14025m
+ 18.121
+ .44
- .09

- 2 17.82 + 2 18.52
- 50 3.532
55 11.66 11.29
52 47.2
- 2 24.5
- 2 24.6
- 2 24.4 -37 24.9
- 24.40 -2 24.8
- 2 28.52 + 2.18
- 2 52.92 -2 50.95
52 12.14 52 20.34

N73

63. Aurigae.

Tangl = +82 Feb. 7

X = -0.29

Conv = -02-06 Mar. 1

21872 = 50.891

21873 = 55.030

21873 = 31 30.45

2^m 55.88

31 37.9

Sin P 9.80066

Cos P 9.88730

38.5 +.6

39.0 +.5

39.5 +.5

40.0 +.5

40.4 +.4

40.8 +.4

41.2 +.4

41.5 +.3

1.11571m

1.00801m

dx = +4.138

dy = -5.41

1873 Feb. 11

Feb. 17 +387
+31Feb. 20 +301
+31Feb. 22 +468
+47Feb. 24 +456
+45Feb. 26 +349
+34

2 0.4
3.6
6.1
11.3
14.0
16.4
19.4
22.0
24.3
30.0
32.8

1548
554
565
2 2.9
23.1
57.525

159.1
1.9
4.4
9.8
12.5
15.1
17.8
20.4
25.9
38.6
31.3

2 9.6
10.7
12.0
13.4
14.8
16.0
17.4
18.6
20.0

1516
52.8
53.9
1.6
4.3
9.6
13.1
14.9
17.6
20.3
25.6
28.2
30.9

158.2
0.4
3.4
8.8
11.5
14.2
16.9
19.4
24.6
27.3
29.9

1498
56.9
52.4
14.06
14.06
14.04
14.04
14.04
14.04
14.04
14.04
14.04
14.04

1836
1660
1669.1
2 16.67
55.80
-38.13
-38.11

8268
1516
1516.4
2 15.14
55.76
-40.62
-40.60

14.722
14.70
55.73
-41.03
-41.01

14.722
14.70
55.73
-41.03
-41.01

8260
1491
14.07
2 14.89
55.71
-40.82
-40.80

158.2
0.4
3.4
8.8
11.5
14.2
16.9
19.4
24.6
27.3
29.9

1498
56.9
52.4
14.06
14.06
14.04
14.04
14.04
14.04
14.04
14.04
14.04

+38.78 +.01
+ .25
-0.77
+38.287
2 16.67
2 54.93
2 54.94

+40.30 +.00
+ .25
-0.73
+39.82
15.14
34.96
54.96

+40.63 +.00
+ .39
-0.70
+40.381
14.70
55.02
55.01

+40.63 +.00
+ .39
-0.70
+40.381
14.70
55.02
55.01

+40.45 -.03
+ .37
-0.68
+40.141
14.89
55.03
55.00

+40.45 -.03
+ .37
-0.68
+40.141
14.89
55.03
55.00

+41.36 +.00
+ .28
-0.65
+40.77 +.00
14.04
55.03
55.04

+2.42
45 6.8
4 51.5
1 118.3
48 59.15

45 3.9
4 52.0
1 115.9
48 57.95

45 8.1
4 52.5
1 120.6
49 0.30

45 8.1
4 52.5
1 120.6
49 0.30

45 6.8
4 49.8
1 116.6
48 58.30

45 4.2
4 51.6
1 115.8
48 57.90

45 4.2
4 51.6
1 115.8
48 57.90

+ 19.16
1.28240
1.28541m
-19.29
48 57.15
48 38.66

+ 21.95
1.34143
1.34444m
-22.10
49 0.30
48 38.20

+ 20.94
1.32098
1.32399m
-21.09
48 58.30
48 37.21

+ 22.93
1.36040
1.36341m
-23.09
48 57.90
48 34.81

+ 22.93
1.36040
1.36341m
-23.09
48 57.90
48 34.81

+ 22.93
1.36040
1.36341m
-23.09
48 57.90
48 34.81

+ 22.93
1.36040
1.36341m
-23.09
48 57.90
48 34.81

+39 34 9.64
+2 51 2 = 0.45740
+2109
0.47849
+ 3.01
- .10
- .19

+30.31
0.48771
+ 3.07
- .13
- .20

+34.59
0.49199
+ 3.10
- .12
- .19

+34.59
0.49199
+ 3.10
- .12
- .19

+25.81
0.48321m
+ 3.04
- .14
- .19

+25.81
0.48321m
+ 3.04
- .14
- .19

+25.81
0.48321m
+ 3.04
- .14
- .19

+ 2.72 -3.30
+39 34 12.91
+39 34 6.39 34 6.08
31 39.8
-2 27.6 27.9
-2 28.2 -31 28.5

+ 2.74 -3.40
34 12.87
34 6.75 6.93
31 39.8
-2 27.9 27.7
-2 28.0 -32 28.3

+ 2.74 -3.41
34 13.93
34 7.73 7.91
31 39.5
-2 28.2 28.5
-2 28.8 -32 29.1

+ 2.74 -3.41
34 13.93
34 7.73 7.91
31 39.5
-2 28.2 28.5
-2 28.8 -32 29.1

+ 2.74 -3.37
34 14.75
34 10.17 10.35
31 39.9
-2 30.5 30.8
-2 31.1 -31 31.4

+ 2.74 -3.37
34 14.75
34 10.17 10.35
31 39.9
-2 30.5 30.8
-2 31.1 -31 31.4

+ 2.74 -3.37
34 14.75
34 10.17 10.35
31 39.9
-2 30.5 30.8
-2 31.1 -31 31.4

-8.40 -18.40
-2 29.19 -2 30.23
-2 38.17 -12
+39 31 28.22 -2 38.75
31 27.33

-8.90 -18.90
-2 28.64 -2 29.50
-2 37.54 -12
31 27.18 -2 37.78
31 28.65

-9.10 -19.10
-2 29.50 -2 30.60
-2 38.60 -12
31 27.13 -2 37.78
31 28.32

-9.10 -19.10
-2 29.50 -2 30.60
-2 38.60 -12
31 27.13 -2 37.78
31 28.32

-9.30 -19.30
-2 29.84 -2 30.94
-2 37.14 -12
31 31.03 -2 37.85
31 30.01

-9.30 -19.30
-2 29.84 -2 30.94
-2 37.14 -12
31 31.03 -2 37.85
31 30.01

-9.30 -19.30
-2 29.84 -2 30.94
-2 37.14 -12
31 31.03 -2 37.85
31 30.01

Mar 9 ⁺³⁰⁰
⁺²⁹

| | | | |
|---|-----|---|-----|
| 1 | 544 | 1 | 265 |
| | 529 | | 378 |
| | 558 | | 394 |
| 2 | 10 | | |
| | 38 | | |
| | 64 | | |
| | 93 | | |
| | 119 | | |
| | 180 | | |
| | 198 | | |
| | 226 | | |

| | | | |
|---|-------|---|------|
| | 7809 | | |
| | 645 | | |
| | 6445 | 1 | 3790 |
| 2 | 642 | | |
| 2 | 5549 | | |
| | -4907 | | |
| | -4905 | | |

| | | | |
|---|-------|-----|-----|
| | +4883 | -03 | |
| | +24 | | +25 |
| | -046 | | |
| | +4861 | 09 | |
| 2 | 642 | | |
| | 5503 | | |
| | 5501 | | |

| | | | |
|----|------|--|--|
| | +237 | | |
| 45 | | | |
| 4 | 79 | | |
| | 23 | | |
| | 102 | | |
| 19 | 510 | | |

| | | | |
|----|---------|--|--|
| | +2855 | | |
| | 145561 | | |
| | 145882n | | |
| | -2875 | | |
| 49 | 510 | | |
| 48 | 3635 | | |
| 34 | 1200 | | |

| | | | |
|--|---------|--|--|
| | +2178 | | |
| | 047918n | | |

| | | | |
|---|-----|--|--|
| * | 301 | | |
| - | 23 | | |
| - | 08 | | |

| | | | |
|---|-----|------|--|
| + | 270 | -332 | |
|---|-----|------|--|

| | | | |
|----|------|-----|------|
| 34 | 1470 | | |
| 34 | 868 | | 835 |
| 31 | 406 | | |
| -2 | 281 | | 284 |
| -2 | 287 | -33 | 290 |
| - | 1020 | - | 1020 |
| -2 | 2852 | 2 | 2873 |
| -2 | 3872 | | 12 |
| 31 | 2996 | -2 | 3905 |
| | | 31 | 2930 |

$$21872 = 3 \cdot 15.712$$

$$\sigma = 54.32 \quad 568$$

Mar 17 +327

3

24.9 15
29.6 16.0
33.8 16.7

3 15.83
3 15.90
- 0.88
- 1.40
+ 2.02

3 15.64

1873

Sin δ 9.81781

64 Aurigae tang δ = +87

286.9

9 13.10

6 30.2

$x = -0.20$

19

05

30.8 +.6

CONX = +40

19

10

31.4 +.6

$\alpha 1872 = 8.011$

24

94

32.0 +.6

$\alpha 1873 = 12.195$

6

12.5

32.5 +.5

$\delta 1873 = 6.2273$

11

69

33.0 +.5

$\gamma = +1.02$

16

59

33.4 +.4

$\gamma = +.02$

25

12.49

34.2 +.4

1873 Feb. 17 +307
+31

Feb. 19 +256
+26

Feb. 20 +301
+31

Feb. 22 +461
+47

Feb. 24 +456
+45

Feb. 26 +349
+34

8 285
298
311
32.6
34.0
35.2
36.6
38.0
39.3

8 468
483
495
164
193
220
274
312
329
365
383
434
464
493

8 90
102
114
161
186
214
269
294
324
352
379
434
461
488

8 155
183
210
264
292
318
346
374
429
455
483

8 154
183
212
265
294
320
348
375
430
458
487

8 148
176
204
256
284
313
340
367
422
449
476

3051
3298
33.900 8 4820

3014
3285
32.855 8 1020

3055
3241
32.409

3009
3190
31.900 8 4638

3026
3205
32.055 8 1273

3045
3123
31.227 8 250

8 3388
9 1302
-3914
-39.06
+38.78 +.01
+ .27
-0.83
+38.283
8 3388
9 1210
9 1211

8 3284
9 1300
-4016
-46.08
+39.88 +.01
+ .23
-0.81
+39.30
8 3284
9 1214
1214

8 3237
9 1299
-4060
-46.82
+40.30 +.00
+ .27
-0.80
+39.786
8 3239
9 1216
1215

8 3188
9 1297
-4099
-46.01
+40.63 +.00
+ .41
-0.78
+40.265
8 3188
9 1214
1213

8 3204
9 1294
-4090
-40.82
+40.45 +.03
+ .39
-0.75
+40.097
8 3204
9 1213
1211

8 3121
9 1291
-4190
-41.62
+41.36 +.00
+ .30
-0.72
+40.94
8 3121
9 1215
1215

+242
10 37.8
3 27.7
65.5
13 32.75
8 1430
1.15534m
1.14817
+14.07
13 32.75
13 46.82
+41 9 1.53

+243
10 13.2
4 3.8
170
14 8.50
+ .2266
1.35526
1.34809m
-22.29
14 8.50
13 46.21
9 2.14

+243
10 19.0
4 4.2
23.2
14 11.60
+ 2457
1.39841
1.38324m
-24.17
14 11.60
19 46.43
9 1.92

+242
10 13.9
4 56.9
129.8
14 4.90
+ 19.33
1.28623
1.27906m
-19.02
14 4.90
13 45.88
9 2.47

+242
10 19.9
4 9.0
289
14 14.45
+ 28.73
1.45834
1.45117m
-28.26
14 14.45
13 46.19
9 2.16

+1 16 10 = 0.10600
+2135
0.12735
+ 1.34
- .05
- .17
- 1.56

+1353
0.11953
+ 1.32
- .14
- .20
- 1.66

+3057
0.13657
+ 1.37
- .17
- .21
- 1.75

+3464
4.14064
+ 1.38
- .10
- .20
- 1.68

+2609
0.13209
+ 1.35
- .23
- .21
- 1.79

441 8 5997 8 5969 9 0.98 9 0.15
6 312
13 -2 288 291 -2 29.5 298
-2 30.1 -28 30.4 -2 30.8 -33 31.1
-8.50 -8.50 -8.70 -8.70
-2 29.77 -2 30.23 -2 30.33 -2 30.67
-2 38.27 -2 38.78 6 21.95 -2 39.42
41 6 21.70 -2 38.78 6 21.95 -2 39.42
6 20.91 6 20.73

9 0.17 8 5983 9 0.99 9 0.46 9 0.37 0.71
6 318
-2 28.4 28.7 -2 28.8 29.1 -2 28.2 28.6
-2 29.7 -34 30.0 -2 30.1 -33 30.4 -2 29.5 -36 29.9
-9.10 -9.10 -9.30 -9.30 -9.50 -9.50
-2 28.67 28.76 -2 29.50 29.87 -2 29.84 29.43
-2 39.77 -2 39.80 -2 39.80 -2 39.80 -2 39.80
6 2240 -2 39.91 6 2199 -2 39.22 6 2103 -2 39.98
6 2192 6 2129 6 2103

Mar. 9 $+300$
 $+129$ Mar. 16 $+254$
 $+26$ Mar. 17 $+327$
 $+33$ 8 7.3
10.9
13.6
18.2
21.9
23.6
26.4
29.2
34.6
37.2
40.02599
2362

23627 7 59.43

8 23.61
9 12.73
-48.12
-48.01
+48.83 -03
+ .25
-0.54
+48.542
8 23.61
12.15
12.13 $+237$ 10 12.0
4 7.0
1 1.90
14 9.50+ 2420
1.38582
1.37665
-23.80
14 9.50
13 4.70

9 2.65

+ 2197
0.12797+ 1.34
- .15
- .08- 1.54
9 1.08
6 33.2
-2 29.9
-2 29.2 -34-1050
-2 28.52
-2 34.02
6 22.067 58.1
89.4
10.88 57.2
9 2.7
8.4
10.4
13.6
16.3
19.0
24.5
27.3
35.2
20.44

13.582

9 13.56
9 12.58
+0.98
+1.06
-1.19 -01
+ .23
-0.39
-1.357
9 13.56
12.21
12.19 $+230$ 10 9.1
4 6.7
15.8
14 1.90+ 21.91
1.34064
1.33347
-21.55
14 7.90
13 06.35

9 2.00

+ 1452
0.12052+ 1.32
- .13
- .24- 1.69
9 0.31
6 33.8
-2 26.5
-2 24.8 -33-11.10
-2 28.23
-2 34.33
6 20.988 57.3
51.6
53.1

8 51.67

9 13.14
9 12.56
+0.58
+0.66
-0.87 -01
+ .29
-0.37
-0.957
9 13.14
12.19
12.17 $+227$ 10 9.1
4 6.7
15.8
14 1.90+ 21.91
1.34064
1.33347
-21.55
14 7.90
13 06.35

9 2.00

+ 1452
0.12052+ 1.32
- .13
- .24- 1.69
9 0.31
6 33.8
-2 26.5
-2 24.8 -33-11.10
-2 28.23
-2 34.33
6 20.989 7.6
8.0
10.4
11.7
13.2
14.6
15.9
17.3
18.71184
1316

13.156

9 13.14
9 12.56
+0.58
+0.66
-0.87 -01
+ .29
-0.37
-0.957
9 13.14
12.19
12.17 $+227$ 10 9.1
4 6.7
15.8
14 1.90+ 21.91
1.34064
1.33347
-21.55
14 7.90
13 06.35

9 2.00

+ 1452
0.12052+ 1.32
- .13
- .24- 1.69
9 0.31
6 33.8
-2 26.5
-2 24.8 -33-11.10
-2 28.23
-2 34.33
6 20.98

| | | |
|----|----------|------|
| 1 | 1334 | |
| 2 | 1111 | |
| 3 | 8888 | |
| 4 | 4444 | |
| 5 | 2222 | |
| 6 | 0.00 | |
| 21 | | |
| 12 | $P = 12$ | 5002 |

| | | | |
|--------------------|---------|----|---------|
| Sin δ | 9.57762 | | |
| cos δ | 9.96650 | 12 | 53.6 |
| | 1.1872 | | 53.7 +1 |
| | 1.8226 | | 53.9 .2 |
| | | | 54.1 .2 |
| | | | 54.2 .1 |
| $d\alpha = +3.591$ | | | 54.4 .2 |
| $d\delta = -6.24$ | | | 54.6 .2 |
| | | | 54.8 .2 |
| | | | 55.0 .2 |

$$\sin. z = +.34$$

| 1873 | Feb. 17 | Feb. 19 | Feb. 20 | Feb. 22 | Feb. 24 | Feb. 26 |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | +307 +31 | +256 +26 | +301 +31 | +461 +47 | +456 +45 | +349 +34 |
| hms | | | | | | |
| 0 11 406 | 11 300 | 11 395 | 11 325 | 11 384 | 11 389 | 11 301 |
| 42.4 | 310 | 418 | 413 | 418 | 416 | 415 |
| 40.0 | 32.3 | 43.9 | 435 | 430 | 431 | 425 |
| 49.5 | | 44.4 | 440 | 436 | 437 | 46.4 |
| 51.4 | | 48.8 | 491 | 499 | 499 | 490 |
| 53.8 | | 52.9 | 524 | 520 | 522 | 512 |
| 56.0 | | 55.1 | 546 | 541 | 545 | 534 |
| 58.3 | | 57.4 | 56.9 | 565 | 566 | 558 |
| 12 5.0 | 12 1.4 | | 12 1.4 | 12 0.9 | 12 0.9 | 12 0.8 |
| 7.3 | | 4.0 | 3.5 | 3.0 | 3.3 | 2.3 |
| | | 6.2 | 5.7 | 5.4 | 5.5 | 4.4 |
| 59.26 | | 58.17 | 57.66 | 57.15 | 57.36 | 56.38 |
| 53.87 | | 52.88 | 52.42 | 51.95 | 52.15 | 51.25 |
| 53.873 | 11 31.10 | 52.882 | 52.418 | 51.955 | 52.145 | 51.255 |
| 11 53.86 | 11 52.87 | 11 52.40 | 11 51.94 | 11 52.13 | 11 51.24 | |
| 12 32.84 | 12 32.83 | 12 32.82 | 12 32.80 | 12 32.78 | 12 32.76 | |
| -38.88 | -39.6 | -40.42 | -40.86 | -40.65 | -41.52 | |
| -39.00 | -39.98 | -40.44 | -40.48 | -40.67 | -41.54 | |
| +38.78 +.01 | +39.88 +.01 | +40.30 +.00 | +40.63 +.00 | +40.45 -.03 | +41.36 +.00 | |
| + .13 | + .11 | + .13 | + .19 | + .18 | + .14 | |
| -0.63 | -0.62 | -0.61 | -0.59 | -0.57 | -0.55 | |
| +38.289 | +39.37 | +39.921 | +40.23 | +40.64 | +40.95 | |
| 11 53.86 | 52.87 | 52.40 | 51.94 | 52.13 | 51.24 | |
| 12 32.14 | 32.24 | 32.22 | 32.17 | 32.19 | 32.19 | |
| 12 32.15 | 32.24 | 32.21 | 32.17 | 32.17 | 32.19 | |
| +2.42 | +2.43 | | +2.43 | +2.42 | +2.42 | |
| 5 34.1 | 5 28.2 | | 5 38.1 | 5 42.0 | 5 30.3 | |
| 2 22.8 | 18.6 | | 20.8 | 25.1 | 18.0 | |
| 56.9 | 46.8 | | 58.9 | 67.1 | 48.3 | |
| 7 28.45 | 23.40 | | 29.45 | 33.55 | 24.15 | |
| + 22.77 | + 18.28 | | + 23.06 | + 27.07 | + 19.76 | |
| 1.35736 | 1.26198 | | 1.36286 | 1.43249 | 1.29579 | |
| 1.43957m | 1.34419m | | 1.44507m | 1.51477m | 1.37800m | |
| -27.51 | -22.09 | | -27.51 | -32.71 | -23.88 | |
| 7 28.45 | 7 23.40 | | 7 29.45 | 7 33.55 | 7 24.15 | |
| 7 29.44 | 7 1.31 | | 7 1.58 | 7 0.84 | 7 0.27 | |
| +22 15 47.1 | 15 47.04 | | 15 46.77 | 15 47.51 | 15 48.08 | |
| +20 9 24 = 1.32500 | +1353 | | +3057 | +3464 | +2609 | |
| +2135 | 1.33853 | | 1.35557 | 1.35964 | 1.35109 | |
| 1.34635 | | | | | | |
| *- 22.20 | *- 21.80 | | *- 22.68 | *- 22.89 | *- 22.44 | |
| - .10 | - .06 | | - .10 | - .14 | - .07 | |
| - .12 | - .12 | | - .12 | - .13 | - .12 | |
| - 22.42 | - 21.98 | | - 22.80 | - 23.16 | - 22.63 | |
| +22 15 24.99 | 15 25.06 | | 15 23.77 | 15 24.35 | 15 25.45 | |
| 12 53.8 | 12 53.9 | | 12 54.0 | 12 54.1 | 12 54.1 | |
| - 2 31.2 | - 2 31.2 | | - 2 30.0 | - 2 30.2 | - 2 31.3 | |
| - 38.0 | - 39.0 | | - 40.0 | - 41.0 | - 41.0 | |
| - 2 29.77 | - 2 30.33 | | - 2 28.61 | - 2 29.50 | - 2 29.84 | |
| - 2 30.23 | - 2 30.23 | | - 2 32.67 | - 2 33.60 | - 2 33.94 | |
| +22 12 51.42 | 12 50.83 | | 12 51.20 | 12 50.55 | 12 51.51 | |
| +7.5 | +7.5 | | +7.5 | +7.5 | +7.5 | |
| +22 12 52.17 | 12 51.58 | | 12 51.95 | 12 51.50 | 12 52.26 | |

| Mar. 4 +361 +33 | | Mar. 9 +300 +29 | | Mar. 16 +254 +26 | | Mar. 17 +327 +32 | |
|----------------------|-----------|--------------------|----------|---------------------|----------|---------------------|-----|
| 11 - | 11 449 | 11 302 | 11 240 | 12 - | 12 138 | 12 200 | - |
| - | 12 255 | 326 | 253 | - | 148 | 221 | - |
| - | 335 | 348 | 266 | - | 163 | 244 | - |
| - | 649 | 390 | | - | 292 | 288 | - |
| - | 23 88 | 415 | | - | 314 | 310 | - |
| 442 4720 | | 434 | | - | 336 | 332 | - |
| 445 4728 | | 459 | | - | 358 | 354 | - |
| 515 4726 | | 480 | | - | 380 | 384 | - |
| 558 4692 | | 525 | | - | 425 | 421 | - |
| 582 4709 | | 548 | | - | 446 | 443 | - |
| 12 0.3 4696 | | 571 | | - | 467 | 466 | - |
| 44.118 | | 4801 | | 33.600 | | 36.96 | |
| 11 5970 | | 43.65 | | 12 1497 | | 33.24 | |
| | | 43.645 | 11 2530 | | | 33.236 | |
| 11 47.10 | | 11 43.63 | | 12 33.58 | | 12 33.92 | |
| 12 32.68 | | 12 32.61 | | 12 32.51 | | 12 32.99 | |
| - 45.58 | | - 48.98 | | +1.07 | | +0.73 | |
| - 45.60 | | - 47.00 | | +1.05 | | +0.71 | |
| +45.58-.02 | | +45.83-.03 | | - 1.19-.01 | | - 0.87-.01 | |
| + .14 | +15 | + .12 | +12 | + .11 | +10 | + .14 | +13 |
| - 0.47 | | - 0.40 | | - 0.30 | | - 0.28 | |
| +45.20.19 | | +45.58.20 | | - 1.38.40 | | - 1.08.3 | |
| 11 47.10 | | 12 43.63 | | 12 33.58 | | 12 33.22 | |
| 32.30 | | 32.18 | | 32.20 | | 32.21 | |
| 32.29 | | 32.15 | | 32.18 | | 32.19 | |
| +241 | | +237 | | +230 | | +227 | |
| 5 47.1 | | 5 28.1 | | 5 28.0 | | | |
| 34.4 | | 26.3 | | 34.9 | | | |
| 81.5 | | 49.4 | | 52.9 | | | |
| 6 40.75 | | 7 24.70 | | 7 26.45 | | | |
| - 12.58 -16.57 | | + 18.34 | | + 18.63 | | | |
| 1.09 968m. 21775 | | 1.26 340 | | 1.21 021 | | | |
| 1.18 789 | | 1.34 561m | | 1.35 242m | | | |
| + 15.20 + 19.95 | | - 22.16 | | - 22.51 | | | |
| 40.70 | | 7 24.70 | | 7 26.45 | | | |
| 6 53.45 | | 7 25.4 | | 7 39.4 | | | |
| 15 52.40 | | 15 45.81 | | 15 44.41 | | | |
| + 37.18 | | + 21.97 | | + 14.52 | | | |
| 1.36 218 | | 1.34 697 | | 1.33 952 | | | |
| * - 23.02 | | * - 22.23 | | * - 21.85 | | | |
| - .03 | | - .06 | | - .07 | | | |
| - .03 | | - .05 | | - .14 | | | |
| - 23.08 | | - 22.34 | | - 22.06 | | | |
| 15 29.32 24.57 24.43 | | 15 23.47 | 23.28 | 15 22.35 | 22.16 | | |
| 12 54.3 | | 12 54.5 | | 12 54.8 | | | |
| - 2 30.3 -14 30.4 | | - 2 29.0 -19 29.2 | | - 2 27.5 -19 27.7 | | | |
| - 4.30 | | - 4.50 | | - 4.80 | | | |
| - 2 28.39 | - 4.30 | - 2 28.52 | - 4.50 | - 2 28.53 | - 4.80 | | |
| - 2 32.69 | - 2 28.16 | - 2 33.02 | - 28.73 | - 2 33.03 | - 28.05 | | |
| 12 57.88 | 81 | 12 56.15 | 80 | 12 49.32 | 78 | | |
| + 7.5 - 2 33.27 | | + 7.5 - 2 34.03 | | + 7.5 - 2 33.63 | | | |
| 12 52.63 | 12 51.16 | 12 51.20 | 12 49.25 | 12 50.07 | 12 48.53 | | |

| 1873.0 | |
|----------|-----------------|
| α | δ |
| 32.15 | 52.17 |
| .24 | 51.58 |
| .21 | 51.95 |
| .17 | 51.50 |
| .17 | 52.26 |
| .29 | 52.63 |
| .29 | 51.20 |
| .15 | 50.07 |
| .18 | |
| .19 | |
| 32.194 | 51.67 -150 50.7 |
| .212 | 50.02 |
| -.018 | +1.65 |
| | +1.15 |

Gr. 1308 $\tau_{\text{mag}} = +2.57$
 $K = -.0012$
 $\sin. z = -44$
 $\delta 1873 = 43' 15.73''$

Sin δ 9.96982
 Cos δ 9.88988
 11.5712
 9.67559m

1873

Feb. 9

14
 19
 24
 Mar 1
 6
 11
 16
 21

7^h 17^m 41.05^s +68° 43' 27.9"
 4095.10
 4082.13
 4067.15
 4050.17
 4032.18
 4011.21
 3988.23
 3963.25
 390.11
 302.12
 312.14
 322.16
 338.18
 354.16
 370.16

$d\alpha = +6.309$
 $d\delta = -6.731$

1873 Feb. 26 +349^h March +361^h Mar. 9 +300^h Mar. 17 +327^h

h m s
 4/6 16 35.3 16 38.9 16 32.0 15 57.5 17 28.5
 49.0 39.9 42.1 39.3 31.5
 49.4 46.0 45.4 42.1 31.5
 52.4 48.5 44.9 49.8 34.3
 55.4 57.1 49.8 51.6 36.9
 58.4 54.2 51.6 51.6 36.9
 17 1.2 56.9 42.7
 4.1 59.8 45.8
 6.9 56 48.4
 10.0 55 57.3
 51.6 51.6 51.6

1873.0

2
 38.69 14.17
 .33 12.66
 .59 14.32
 .71
 38.580 13.72 +1.14 14.86
 63.1 15.73 15.73
 -.051 -2.01 -1.87

52.4 16 37.73 53.66 16 32.37 50.6 16 10.7 35.96
 58.41 53.69 50.58 37.64
 16 38.39 17 40.39 40.20 17 37.82
 17 40.60 -46.75 -49.62 +0.12
 -42.21 16 53.64 16 50.58 17 39.94
 16 58.37 +45.52 +48.81 -0.88
 +41.37 +9.3 +7.7 +8.4
 +90 -1.97 -1.57 -1.19
 17 38.69 38.33 38.57 38.71

+2412 35 2 32.9 2 36.0 2 42.3
 26.8 24.7 37.1
 37 27.35 37 30.35 37 39.70
 + 20.68 + 21.29 + 49.53
 1.31338 1.32818 1.692187
 0.99114m 1.00379m 1.54046m
 -9.80 -10.09 -23.47
 37 27.35 37 30.35 37 39.70
 37 17.53 37 20.26 37 16.23
 18 45 30.80 45 28.09 45 32.12
 -26 20 19 = 1.45490m +3734 +2207
 +26.23 1.49224m 1.47697m
 1.48113m
 + 30.28 + 31.06 + 29.99
 .08 .08 .08
 .12 .05 .05
 + 30.08 + 30.93 + 29.49
 43 46 0.88 46 0.68 45 59.02 45 58.82 46 1.61 46 1.39
 43 31.6 43 32.7 43 33.5
 -2 29.3 -20 29.5 -2 26.3 -20 26.5 -2 28.1 -22 28.3
 -13.90 -17.00 -17.80
 -2 29.84 -2 28.39 -2 28.52
 -2 45.74 -2 15.90 -2 9.33 -2 17.00 -2 46.32 -2 17.80
 68 43 15.14 -2 30.43 43 13.63 28.16 43 15.29 28.73
 7 47.4 + 1.06 -9.7 + 1.06 -9.7 + 1.04
 68 43 14.17 -2 45.21 43 12.66 -2 44.10 14.32 -2 45.99
 12 43 15.71 43 14.72 43 15.90

Red.
 1 14.19^s
 2 10.64
 3 4.70
 4 3.55
 5 0.00
 T Draco
 14 17 06
 + 73 07 59
 + 73 07 08
 106 52 52
 2 - 64 30 09
 - 90
 21873-58.868
 1872-58.868
 14.18
 7.09
 0.00
 1873-58.868
 14.18
 7.09
 0.00

473
 Feb. 19 17^m 55.26
 24 55.83
 Mar 1 55.83
 6 56.15
 11 56.49
 16 56.84
 21 57.21
 1873 = 4 8.50 = 52 51.50

Sin S 7.98087
 Sec S 7.46300
 11.571m
 907874
 48.9
 47.6 -1.3
 46.5 1.1
 45.5 1.0
 44.6 .9
 43.7 .7
 43.4 .5
 d₂ = -1.113
 d₀ = +6.80

1873 Feb. 20 +301
 +31

2m
 17 21
 56
 88
 134
 158
 175
 228
 265
 304

Feb. 26 +349
 +34

17 39.4
 41.0
 43.5 13.1
 53.7 15.2
 58.1 15.5

Mar. 4 +361
 +33

17 35.5
 36.4
 25.9 11.8
 35.5 11.4
 40.0 11.5
 53.9 11.3
 11.50

Mar. 9 +300
 +29

17 35.5
 36.4
 36.7 11.8
 44.3 11.8
 57.1 11.5

Mar. 16 +254
 +2.6

17 35.5
 36.4
 36.7 11.8
 44.3 11.8
 57.1 11.5

Mar. 17 +322
 +3.3

17 35.5
 36.4
 36.7 11.8
 44.3 11.8
 57.1 11.5

1439
 1599
 15989

17 16.04
 58.30
 -39.26

+40.30 +0.00

-1.02
 +3.57
 +43.88

17 16.04
 58.89
 17 58.82

15.267
 17 40.20

17 15.32
 58.63
 -40.31

+41.37 +0.00

-1.12
 +3.24
 +43.46

17 15.32
 58.81
 17 58.78

11.55 17 35.95

17 56.00
 -44.45

+45.57 +0.00

-1.09
 +2.87
 +47.32

17 56.00
 58.81
 17 58.78

8.533

17 56.59
 56.23
 -47.44

+48.84 +0.00

-1.95
 +2.54
 +50.43

17 56.59
 58.81
 17 58.78

5296
 5884
 58.844

17 58.90
 56.42
 +2.08

-1.19 +0.00

-1.86
 +2.05
 +0.21

17 58.90
 58.81
 17 58.78

370
 3994
 39944

17 40.00
 56.89
 -16.89

-0.87 +0.00

-1.09
 +1.98
 +0.02

17 40.00
 58.81
 17 58.78

+242

25 29.0
 20.2
 49.2
 29 24.60
 8

-24.73
 1.39672m
 0.97546m

-9.45
 29 24.60
 29 15.15

106 53 33.20

-64 28 22 = 2.079 10m
 +2.623
 2.10533m

+2 0.04
 +2 7.44
 +2 0.09

-2 2.2

+2 7.35
 106 55 40.55 55 40.20 55 38.70 55 38.34
 53 12.8 53 14.2 53 14.2 53 14.2

-2 21.7 -35 28.0 -2 24.5 -36 24.9

-2 21.30
 -2 28.84
 -2 57.14 -2 24.30 2 57.09 -2 22.70

106 52 49.41 -2 38.43 52 49.61 28.16
 +2 21.8
 -2 49.55
 52 50.65

+241

25 29.0
 25.1
 59.4
 29 29.70
 29 20.45

-24.73
 1.38739m
 0.96613m

-9.25
 29 29.70
 29 20.45

53 27.90

+3734
 2.11644m

+2 0.06
 +2 10.74
 +2 0.09

-2 0.09

+2 10.80
 55 38.70 55 38.34
 53 14.2 53 14.2 53 14.2 53 14.2

-2 24.5 -36 24.9

-2 22.70
 -2 28.39
 -2 57.09 -2 22.70

52 49.61 28.16
 +2 21.7
 -2 49.69
 52 49.65

+230

25 29.0
 23.8
 52.0
 29 26.00
 29 22.45

-27.83
 1.44451m
 1.02325m

-10.55
 29 22.45
 29 11.90

53 36.45

+1453
 2.09363m

+2 0.03
 +2 4.05
 +2 0.12

-2 0.26

+2 3.94
 55 40.39 55 40.04
 53 16.1 53 16.1 53 16.1 53 16.1

-2 24.3 -35 24.7

-2 24.60
 -2 28.23
 -2 52.83 -2 24.60

52 49.66 28.16
 +2 20.7
 -2 50.58
 52 49.66

473

Sind 9.72461

Lead 9.92826 2 93

11.57m

.0459m

dx = +3.868

dδ = -6.74

9.72461

9.92826 2 93

11.57m

.0459m

9.72461

9.92826 2 93

11.57m

.0459m

9.72461

9.92826 2 93

11.57m

.0459m

9.72461

9.92826 2 93

11.57m

.0459m

9.72461

9.92826 2 93

11.57m

.0459m

9.72461

9.92826 2 93

11.57m

.0459m

9.72461

9.92826 2 93

11.57m

.0459m

9.72461

9.92826 2 93

11.57m

.0459m

9.72461

9.92826 2 93

11.57m

.0459m

9.72461

9.92826 2 93

11.57m

.0459m

9.72461

9.92826 2 93

11.57m

.0459m

| 1873 | Feb 20 | Feb 24 | Feb 26 | Mar 4 | Mar 6 | Mar 9 |
|---------------------|----------|----------|----------|----------|----------|----------|
| 16.640 | 16.44 | 15.555 | 16.315 | 16.66 | 16.66 | 16.66 |
| 20 16.62 | 20 16.44 | 20 15.54 | 20 16.30 | 20 16.66 | 20 16.66 | 20 16.66 |
| 20 57.12 | 20 57.08 | 20 57.06 | 20 56.98 | 20 56.96 | 20 56.96 | 20 56.96 |
| -40.50 | -40.64 | -41.52 | -46.68 | -46.30 | -46.30 | -46.30 |
| -40.51 | -40.65 | -41.53 | -46.69 | -46.31 | -46.31 | -46.31 |
| +40.24 | +40.45 | +41.37 | +45.54 | +46.10 | +46.10 | +46.10 |
| +1.20 | +1.28 | +1.21 | +1.21 | +1.25 | +1.25 | +1.25 |
| -0.74 | -0.70 | -0.68 | -0.60 | -0.58 | -0.58 | -0.58 |
| +39.78 | +40.03 | +40.98 | +45.15 | +45.77 | +45.77 | +45.77 |
| 20 16.62 | 20 16.44 | 20 15.54 | 20 16.30 | 20 16.66 | 20 16.66 | 20 16.66 |
| 20 56.38 | 20 56.47 | 20 56.44 | 20 56.45 | 20 56.43 | 20 56.43 | 20 56.43 |
| 20 56.37 | 20 56.45 | 20 56.45 | 20 56.45 | 20 56.43 | 20 56.43 | 20 56.43 |
| +2.42 | +2.42 | +2.42 | +2.41 | +2.40 | +2.37 | +2.37 |
| 15 28.0 | 15 17.0 | 15 17.0 | 15 20.1 | 15 16.2 | 15 19.8 | 15 19.8 |
| 3 12.1 | 3 4.3 | 3 4.3 | 3 10.2 | 3 3.5 | 3 13.9 | 3 13.9 |
| 4 1.1 | 4 2.1 | 4 2.1 | 4 3.0 | 4 1.9 | 4 2.2 | 4 2.2 |
| 18 20.05 | 18 10.65 | 18 10.65 | 18 15.15 | 18 9.85 | 18 15.85 | 18 15.85 |
| 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| +21.95 | +13.76 | +13.76 | +17.07 | +12.88 | +18.91 | +18.91 |
| 1.34143 | 1.13862 | 1.13862 | 1.23274 | 1.10992 | 1.27669 | 1.27669 |
| 1.38540m | 1.18259m | 1.18259m | 1.24671m | 1.15389m | 1.32066m | 1.32066m |
| 24.29 | 15.23 | 15.23 | 18.91 | 14.25 | 20.92 | 20.92 |
| 18 20.05 | 18 10.65 | 18 10.65 | 18 15.15 | 18 9.85 | 18 15.85 | 18 15.85 |
| 17 56.76 | 17 56.42 | 17 56.42 | 17 56.24 | 17 56.60 | 17 56.93 | 17 56.93 |
| 4 52.59 | 4 52.93 | 4 52.93 | 4 52.11 | 4 52.75 | 4 52.42 | 4 52.42 |
| +10 20 19 = 1.02140 | +26.23 | +26.23 | +37.34 | +38.98 | +2.207 | +2.207 |
| +34.67 | 1.04763 | 1.04763 | 1.05874 | 1.06038 | 1.04347 | 1.04347 |
| 1.05607 | | | | | | |
| * 11.38 | * 11.16 | * 11.16 | * 11.15 | * 11.49 | * 11.05 | * 11.05 |
| -1.11 | -0.08 | -0.08 | -0.07 | -0.04 | -0.08 | -0.08 |
| -1.16 | -1.16 | -1.16 | -1.07 | -1.06 | -1.06 | -1.06 |
| 11.65 | 11.37 | 11.37 | 11.59 | 11.59 | 11.19 | 11.19 |
| +32 4 40.94 | 4 40.68 | 4 40.68 | 41.30 | 40.26 | 40.91 | 40.94 |
| 2 10.6 | 2 10.8 | 2 10.8 | 2 11.3 | 2 11.6 | 2 11.6 | 2 11.6 |
| -2 30.3 | -2 30.8 | -2 30.8 | -2 29.2 | -2 29.9 | -2 29.6 | -2 29.9 |
| -2 30.5 | -2 30.8 | -2 30.8 | -2 29.4 | -2 29.7 | -2 29.8 | -2 29.8 |
| -6.50 | -6.70 | -6.70 | -7.20 | -7.20 | -7.50 | -7.50 |
| -2 29.0 | -2 29.84 | -2 29.84 | -2 29.39 | -2 29.45 | -2 29.52 | -2 29.52 |
| -2 36.00 | -2 36.54 | -2 36.54 | -2 36.59 | -2 36.65 | -2 36.65 | -2 36.65 |
| +32 2 49.74 | 2 5.02 | 2 5.02 | 2 4.92 | 2 5.51 | 2 5.21 | 2 5.21 |
| -2 36.80 | -2 37.56 | -2 37.56 | -2 37.79 | -2 36.31 | -2 36.65 | -2 36.65 |
| 2 3.88 | 2 3.74 | 2 3.74 | 2 4.47 | 2 4.60 | 2 4.32 | 2 4.32 |

Mar. 16 $+2.54$
 $+2.26$

20 43.4 20 33.2 (20) 43.0
 48.9 54.6 48.3
 48.1 55.9 47.7
 53.0 52.9
 55.5 53.8
 58.0 57.5
 (21) 1.4 (21) 5.0
 2.8 2.4
 7.6 7.1
 12.1 12.4
 12.4 12.0
 63.2 63.24
 54.83 54.49
 57.927 20 34.57 57.451

20 57.91 20 57.47
 20 56.79 20 56.77
 +1.12 +0.50
 +1.11 +0.69

-1.79 -01
 +.16 +16
 -1.41
 -1.445
 20 57.91
 56.47
 56.46
 +2.30
 15
 3 22.7
 20.9
 43.6
 18 21.80
 + 23.56
 1.36847
 1.41241m
 -25.85
 18 21.80
 17 55.95
 4 52.90
 +45.3
 1.03593
 * 10.86
 - .13
 - .20
 - 11.19
 4 41.21 40.94
 2 12.0
 -2 29.2 29.5
 -2 29.9 27 29.7
 -7.90
 -2 28.23 -7.90
 -2 36.13 -28.05
 2 5.08 41
 -2 36.36
 2 4.58

3320 Hrs. Min. 66 Sec.
 γ 25 21
 δ 26 42
 ϵ 27 00
 ζ 28 39
 η 29 58
 θ 30 07
 ι 31 07
 κ 32 07
 λ 33 07
 μ 34 07
 ν 35 07
 ξ 36 07
 \omicron 37 07
 π 38 07
 ρ 39 07
 σ 40 07
 τ 41 07
 υ 42 07
 ϕ 43 07
 χ 44 07
 ψ 45 07
 ω 46 07
 δ 47 07
 ϵ 48 07
 ζ 49 07
 η 50 07
 θ 51 07
 ι 52 07
 κ 53 07
 λ 54 07
 μ 55 07
 ν 56 07
 ξ 57 07
 \omicron 58 07
 π 59 07
 ρ 60 07
 σ 61 07
 τ 62 07
 υ 63 07
 ϕ 64 07
 χ 65 07
 ψ 66 07
 ω 67 07
 δ 68 07
 ϵ 69 07
 ζ 70 07
 η 71 07
 θ 72 07
 ι 73 07
 κ 74 07
 λ 75 07
 μ 76 07
 ν 77 07
 ξ 78 07
 \omicron 79 07
 π 80 07
 ρ 81 07
 σ 82 07
 τ 83 07
 υ 84 07
 ϕ 85 07
 χ 86 07
 ψ 87 07
 ω 88 07
 δ 89 07
 ϵ 90 07
 ζ 91 07
 η 92 07
 θ 93 07
 ι 94 07
 κ 95 07
 λ 96 07
 μ 97 07
 ν 98 07
 ξ 99 07
 \omicron 100 07
 π 101 07
 ρ 102 07
 σ 103 07
 τ 104 07
 υ 105 07
 ϕ 106 07
 χ 107 07
 ψ 108 07
 ω 109 07
 δ 110 07
 ϵ 111 07
 ζ 112 07
 η 113 07
 θ 114 07
 ι 115 07
 κ 116 07
 λ 117 07
 μ 118 07
 ν 119 07
 ξ 120 07
 \omicron 121 07
 π 122 07
 ρ 123 07
 σ 124 07
 τ 125 07
 υ 126 07
 ϕ 127 07
 χ 128 07
 ψ 129 07
 ω 130 07
 δ 131 07
 ϵ 132 07
 ζ 133 07
 η 134 07
 θ 135 07
 ι 136 07
 κ 137 07
 λ 138 07
 μ 139 07
 ν 140 07
 ξ 141 07
 \omicron 142 07
 π 143 07
 ρ 144 07
 σ 145 07
 τ 146 07
 υ 147 07
 ϕ 148 07
 χ 149 07
 ψ 150 07
 ω 151 07
 δ 152 07
 ϵ 153 07
 ζ 154 07
 η 155 07
 θ 156 07
 ι 157 07
 κ 158 07
 λ 159 07
 μ 160 07
 ν 161 07
 ξ 162 07
 \omicron 163 07
 π 164 07
 ρ 165 07
 σ 166 07
 τ 167 07
 υ 168 07
 ϕ 169 07
 χ 170 07
 ψ 171 07
 ω 172 07
 δ 173 07
 ϵ 174 07
 ζ 175 07
 η 176 07
 θ 177 07
 ι 178 07
 κ 179 07
 λ 180 07
 μ 181 07
 ν 182 07
 ξ 183 07
 \omicron 184 07
 π 185 07
 ρ 186 07
 σ 187 07
 τ 188 07
 υ 189 07
 ϕ 190 07
 χ 191 07
 ψ 192 07
 ω 193 07
 δ 194 07
 ϵ 195 07
 ζ 196 07
 η 197 07
 θ 198 07
 ι 199 07
 κ 200 07
 λ 201 07
 μ 202 07
 ν 203 07
 ξ 204 07
 \omicron 205 07
 π 206 07
 ρ 207 07
 σ 208 07
 τ 209 07
 υ 210 07
 ϕ 211 07
 χ 212 07
 ψ 213 07
 ω 214 07
 δ 215 07
 ϵ 216 07
 ζ 217 07
 η 218 07
 θ 219 07
 ι 220 07
 κ 221 07
 λ 222 07
 μ 223 07
 ν 224 07
 ξ 225 07
 \omicron 226 07
 π 227 07
 ρ 228 07
 σ 229 07
 τ 230 07
 υ 231 07
 ϕ 232 07
 χ 233 07
 ψ 234 07
 ω 235 07
 δ 236 07
 ϵ 237 07
 ζ 238 07
 η 239 07
 θ 240 07
 ι 241 07
 κ 242 07
 λ 243 07
 μ 244 07
 ν 245 07
 ξ 246 07
 \omicron 247 07
 π 248 07
 ρ 249 07
 σ 250 07
 τ 251 07
 υ 252 07
 ϕ 253 07
 χ 254 07
 ψ 255 07
 ω 256 07
 δ 257 07
 ϵ 258 07
 ζ 259 07
 η 260 07
 θ 261 07
 ι 262 07
 κ 263 07
 λ 264 07
 μ 265 07
 ν 266 07
 ξ 267 07
 \omicron 268 07
 π 269 07
 ρ 270 07
 σ 271 07
 τ 272 07
 υ 273 07
 ϕ 274 07
 χ 275 07
 ψ 276 07
 ω 277 07
 δ 278 07
 ϵ 279 07
 ζ 280 07
 η 281 07
 θ 282 07
 ι 283 07
 κ 284 07
 λ 285 07
 μ 286 07
 ν 287 07
 ξ 288 07
 \omicron 289 07
 π 290 07
 ρ 291 07
 σ 292 07
 τ 293 07
 υ 294 07
 ϕ 295 07
 χ 296 07
 ψ 297 07
 ω 298 07
 δ 299 07
 ϵ 300 07
 ζ 301 07
 η 302 07
 θ 303 07
 ι 304 07
 κ 305 07
 λ 306 07
 μ 307 07
 ν 308 07
 ξ 309 07
 \omicron 310 07
 π 311 07
 ρ 312 07
 σ 313 07
 τ 314 07
 υ 315 07
 ϕ 316 07
 χ 317 07
 ψ 318 07
 ω 319 07
 δ 320 07
 ϵ 321 07
 ζ 322 07
 η 323 07
 θ 324 07
 ι 325 07
 κ 326 07
 λ 327 07
 μ 328 07
 ν 329 07
 ξ 330 07
 \omicron 331 07
 π 332 07
 ρ 333 07
 σ 334 07
 τ 335 07
 υ 336 07
 ϕ 337 07
 χ 338 07
 ψ 339 07
 ω 340 07
 δ 341 07
 ϵ 342 07
 ζ 343 07
 η 344 07
 θ 345 07
 ι 346 07
 κ 347 07
 λ 348 07
 μ 349 07
 ν 350 07
 ξ 351 07
 \omicron 352 07
 π 353 07
 ρ 354 07
 σ 355 07
 τ 356 07
 υ 357 07
 ϕ 358 07
 χ 359 07
 ψ 360 07
 ω 361 07
 δ 362 07
 ϵ 363 07
 ζ 364 07
 η 365 07
 θ 366 07
 ι 367 07
 κ 368 07
 λ 369 07
 μ 370 07
 ν 371 07
 ξ 372 07
 \omicron 373 07
 π 374 07
 ρ 375 07
 σ 376 07
 τ 377 07
 υ 378 07
 ϕ 379 07
 χ 380 07
 ψ 381 07
 ω 382 07
 δ 383 07
 ϵ 384 07
 ζ 385 07
 η 386 07
 θ 387 07
 ι 388 07
 κ 389 07
 λ 390 07
 μ 391 07
 ν 392 07
 ξ 393 07
 \omicron 394 07
 π 395 07
 ρ 396 07
 σ 397 07
 τ 398 07
 υ 399 07
 ϕ 400 07
 χ 401 07
 ψ 402 07
 ω 403 07
 δ 404 07
 ϵ 405 07
 ζ 406 07
 η 407 07
 θ 408 07
 ι 409 07
 κ 410 07
 λ 411 07
 μ 412 07
 ν 413 07
 ξ 414 07
 \omicron 415 07
 π 416 07
 ρ 417 07
 σ 418 07
 τ 419 07
 υ 420 07
 ϕ 421 07
 χ 422 07
 ψ 423 07
 ω 424 07
 δ 425 07
 ϵ 426 07
 ζ 427 07
 η 428 07
 θ 429 07
 ι 430 07
 κ 431 07
 λ 432 07
 μ 433 07
 ν 434 07
 ξ 435 07
 \omicron 436 07
 π 437 07
 ρ 438 07
 σ 439 07
 τ 440 07
 υ 441 07
 ϕ 442 07
 χ 443 07
 ψ 444 07
 ω 445 07
 δ 446 07
 ϵ 447 07
 ζ 448 07
 η 449 07
 θ 450 07
 ι 451 07
 κ 452 07
 λ 453 07
 μ 454 07
 ν 455 07
 ξ 456 07
 \omicron 457 07
 π 458 07
 ρ 459 07
 σ 460 07
 τ 461 07
 υ 462 07
 ϕ 463 07
 χ 464 07
 ψ 465 07
 ω 466 07
 δ 467 07
 ϵ 468 07
 ζ 469 07
 η 470 07
 θ 471 07
 ι 472 07
 κ 473 07
 λ 474 07
 μ 475 07
 ν 476 07
 ξ 477 07
 \omicron 478 07
 π 479 07
 ρ 480 07
 σ 481 07
 τ 482 07
 υ 483 07
 ϕ 484 07
 χ 485 07
 ψ 486 07
 ω 487 07
 δ 488 07
 ϵ 489 07
 ζ 490 07
 η 491 07
 θ 492 07
 ι 493 07
 κ 494 07
 λ 495 07
 μ 496 07
 ν 497 07
 ξ 498 07
 \omicron 499 07
 π 500 07
 ρ 501 07
 σ 502 07
 τ 503 07
 υ 504 07
 ϕ 505 07
 χ 506 07
 ψ 507 07
 ω 508 07
 δ 509 07
 ϵ 510 07
 ζ 511 07
 η 512 07
 θ 513 07
 ι 514 07
 κ 515 07
 λ 516 07
 μ 517 07
 ν 518 07
 ξ 519 07
 \omicron 520 07
 π 521 07
 ρ 522 07
 σ 523 07
 τ 524 07
 υ 525 07
 ϕ 526 07
 χ 527 07
 ψ 528 07
 ω 529 07
 δ 530 07
 ϵ 531 07
 ζ 532 07
 η 533 07
 θ 534 07
 ι 535 07
 κ 536 07
 λ 537 07
 μ 538 07
 ν 539 07
 ξ 540 07
 \omicron 541 07
 π 542 07
 ρ 543 07
 σ 544 07
 τ 545 07
 υ 546 07
 ϕ 547 07
 χ 548 07
 ψ 549 07
 ω 550 07
 δ 551 07
 ϵ 552 07
 ζ 553 07
 η 554 07
 θ 555 07
 ι 556 07
 κ 557 07
 λ 558 07
 μ 559 07
 ν 560 07
 ξ 561 07
 \omicron 562 07
 π 563 07
 ρ 564 07
 σ 565 07
 τ 566 07
 υ 567 07
 ϕ 568 07
 χ 569 07
 ψ 570 07
 ω 571 07
 δ 572 07
 ϵ 573 07
 ζ 574 07
 η 575 07
 θ 576 07
 ι 577 07
 κ 578 07
 λ 579 07
 μ 580 07
 ν 581 07
 ξ 582 07
 \omicron 583 07
 π 584 07
 ρ 585 07
 σ 586 07
 τ 587 07
 υ 588 07
 ϕ 589 07
 χ 590 07
 ψ 591 07
 ω 592 07
 δ 593 07
 ϵ 594 07
 ζ 595 07
 η 596 07
 θ 597 07
 ι 598 07
 κ 599 07
 λ 600 07
 μ 601 07
 ν 602 07
 ξ 603 07
 \omicron 604 07
 π 605 07
 ρ 606 07
 σ 607 07
 τ 608 07
 υ 609 07
 ϕ 610 07
 χ 611 07
 ψ 612 07
 ω 613 07
 δ 614 07
 ϵ 615 07
 ζ 616 07
 η 617 07
 θ 618 07
 ι 619 07
 κ 620 07
 λ 621 07
 μ 622 07
 ν 623 07
 ξ 624 07
 \omicron 625 07
 π 626 07
 ρ 627 07
 σ 628 07
 τ 629 07
 υ 630 07
 ϕ 631 07
 χ 632 07
 ψ 633 07
 ω 634 07
 δ 635 07
 ϵ 636 07
 ζ 637 07
 η 638 07
 θ 639 07
 ι 640 07
 κ 641 07
 λ 642 07
 μ 643 07
 ν 644 07
 ξ 645 07
 \omicron 646 07
 π 647 07
 ρ 648 07
 σ 649 07
 τ 650 07
 υ 651 07
 ϕ 652 07
 χ 653 07
 ψ 654 07
 ω 655 07
 δ 656 07
 ϵ 657 07
 ζ 658 07
 η 659 07
 θ 660 07
 ι 661 07
 κ 662 07
 λ 663 07
 μ 664 07
 ν 665 07
 ξ 666 07
 \omicron 667 07
 π 668 07
 ρ 669 07
 σ 670 07
 τ 671 07
 υ 672 07
 ϕ 673 07
 χ 674 07
 ψ 675 07
 ω 676 07
 δ 677 07
 ϵ 678 07
 ζ 679 07
 η 680 07
 θ 681 07
 ι 682 07
 κ 683 07
 λ 684 07
 μ 685 07
 ν 686 07
 ξ 687 07
 \omicron 688 07
 π 689 07
 ρ 690 07
 σ 691 07
 τ 692 07
 υ 693 07
 ϕ 694 07
 χ 695 07
 ψ 696 07
 ω 697 07
 δ 698 07
 ϵ 699 07
 ζ 700 07
 η 701 07
 θ 702 07
 ι 703 07
 κ 704 07
 λ 705 07
 μ 706 07
 ν 707 07
 ξ 708 07
 \omicron 709 07
 π 710 07
 ρ 711 07
 σ 712 07
 τ 713 07
 υ 714 07
 ϕ 715 07
 χ 716 07
 ψ 717 07
 ω 718 07
 δ 719 07
 ϵ 720 07
 ζ 721 07
 η 722 07
 θ 723 07
 ι 724 07
 κ 725 07
 λ 726 07
 μ 727 07
 ν 728 07
 ξ 729 07
 \omicron 730 07
 π 731 07
 ρ 732 07
 σ 733 07
 τ 734 07
 υ 735 07
 ϕ 736 07
 χ 737 07
 ψ 738 07
 ω 739 07
 δ 740 07
 ϵ 741 07
 ζ 742 07
 η 743 07
 θ 744 07

$$\angle 1873 = 26^m 37^s.491$$

Mar. 7 ⁺³²⁷

25. —
 — —
 — —
 59.5
 26 56.2
 27 53.6
 —
 —
 —

26 56.43

26 55.55
 — 0.88
 + 18.82
 — 32.16
 26 41.33

+22.7

Mar 17 +327
+33

28 —
565 —
29 2.1 —
8.0 —
130
19.2
24.9
30.4
36.3
44.5

122
1913
19133

29 19.22
29 16.46
+2.76
+2.66

-0.87 -0.1
-1.76 -174
+3.38
+0.756
29 19.22
19.97
19.98

1173

i Can. Min. Tangent = +10
 $x = -0.16$
 $\text{corr} = +.01$
 $\Delta 1872 = 35.972$
 $\Delta 1873 = 39.111$
 $\Delta 1873 = 32.5432$
 $\sin z = +6.0$

286.9
 19
 19
 29
 Mar. 1
 4
 11
 16
 21
 26
 31

Sin δ 8.98549
 Sec δ 9.99746
 $\Delta 1872 = +3.139$
 $\Delta 1873 = -8.78$

32 54.4
 54.1
 53.9
 53.7
 53.5
 53.4
 53.3
 53.3

| 1873 | Feb. 25 | Feb. 26 | Mar. 4 | Mar. 5 | Mar. 9 | Mar. 16 |
|----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------|
| km s | +401 | +349 | +361 | +362 | +300 | +254 |
| 31 46.6 | 31 46.8 | 31 41.6 | 31 41.5 | 31 38.1 | 31 38.3 | 32 28.3 |
| 486 | 486 | 480 | 489 | 481 | 483 | 30.2 |
| 52.7 | 48.8 | 44.6 | 45.7 | 46.3 | 42.5 | 32.3 |
| 54.8 | 54.1 | 49.9 | 49.9 | 49.2 | 46.5 | 36.5 |
| 56.8 | 56.3 | 52.0 | 52.0 | 51.5 | 48.6 | 38.6 |
| 59.0 | 58.4 | 54.2 | 54.2 | 53.6 | 50.6 | 40.6 |
| 32 1.0 | 32 0.3 | 32 5.2 | 32 5.2 | 32 5.6 | 32 5.8 | 42.8 |
| 3.0 | 2.4 | 32 5.4 | 32 5.4 | 32 5.6 | 32 5.8 | 44.8 |
| 7.2 | 6.6 | 32 2.4 | 32 2.4 | 32 2.6 | 32 2.9 | 48.9 |
| 10.3 | 8.7 | 32 4.3 | 32 4.3 | 32 4.6 | 32 4.9 | 52.9 |
| 11.3 | 10.7 | 32 6.4 | 32 6.4 | 32 6.8 | 32 7.0 | 54.9 |
| 448.2 | 641.0 | 594.4 | 580.0 | 558.3 | 446.8 | |
| 31 58.936 | 31 42.1031 | 31 58.273 | 31 42.0731 | 31 54.064 | 31 45.664 | 31 29.1332 |
| 31 58.92 | 31 58.26 | 31 54.05 | 31 53.44 | 31 50.65 | 32 40.60 | |
| 32 39.70 | 32 39.69 | 32 39.62 | 32 39.61 | 32 39.55 | 32 39.46 | |
| -40.88 | -41.43 | -45.57 | -46.17 | -48.90 | -11.14 | |
| -40.79 | -41.44 | -45.58 | -46.18 | -48.91 | -11.15 | |
| +40.74 +.00 | +41.37 +.00 | +45.55 -.02 | +46.10 +.02 | +48.84 -.03 | -1.18 -.01 | |
| + .04 | + .03 | + .03 | + .04 | + .03 | + .03 | + .02 |
| -0.59 | -0.58 | -0.51 | -0.50 | -0.44 | -0.35 | |
| +40.19 | +40.82 | +45.086 | +45.68 46 | +48.480 | -1.582 | |
| 31 58.92 | 58.26 | 54.05 | 53.44 | 50.65 | 32 40.60 | |
| 32 39.70 | 39.68 | 39.12 | 39.08 | 39.08 | 39.10 | |
| 32 39.71 | 39.08 | 39.11 | 39.10 | 39.05 | 39.08 | |
| +2.42 | +2.42 | +2.41 | +2.40 | +2.37 | +2.30 | |
| 45 8.9 | 45 3.1 | 45 4.0 | 45 10.1 | 45 9.9 | 45 11.9 | |
| 52.9 | 50.0 | 48.0 | 56.5 | 3.1 | 9.7 | |
| 12.18 | 11.31 | 11.20 | 126.6 | 13.0 | 216 | |
| 47 8.90 | 46 36.55 | 46 56.00 | 47 3.30 | 47 6.50 | 47 10.50 | |
| +16.84 | +15.20 | +8.38 19.89 | +21.06 | +21.53 | +23.92 | |
| 1.22634 | 1.18184 | D.92324 1.17289 | 1.32346 | 1.33304 | 1.37876 | |
| 1.34001m | 1.29551m | 1.02871m 1.28656 | 1.43713m | 1.40671m | 1.49242m | |
| -21.88 | -19.75 | -18.94 | -21.36 | -27.97 | -31.08 | |
| 49 0.90 | 46 36.55 | 46 56.00 | 47 3.30 | 47 6.50 | 47 10.50 | |
| 46 39.02 | 46 36.80 | 46 45.11 | 46 35.94 | 46 38.53 | 46 39.72 | |
| +5.36 9.33 | 36 11.55 | 36 32.4 | 11.59 36 12.41 | 36 9.82 | 36 8.63 | |
| +36 49.2 = 1.63420 | +2.651 | +37.64 | +39.26 | +2.227 | +14.55 | |
| 1.65646 | 1.66071 | 1.67184 | 1.67346 | 1.65647 | 1.64875 | |
| + 45.34 | + 45.78 | + 46.97 | + 47.15 | + 45.34 | + 44.54 | |
| - .01 | - .01 | - .01 | - .02 | - .02 | - .03 | |
| - .10 | - .09 | - .04 | - .04 | - .04 | - .13 | |
| - 45.15 | - 45.88 | - 47.02 | - 47.21 | - 45.10 | - 44.70 | |
| +5 35 23.88 35 23.72 | 35 25.67 | 35 25.52 | 35 24.67 24.52 | 35 24.42 | 35 23.93 | 23.75 |
| 32 53.7 | 32 53.6 | 32 53.4 | 32 53.4 | 32 53.4 | 32 53.3 | |
| -2 34.2 -16 30.4 | -2 32.1 -15 32.3 | -2 31.3 -15 31.4 | -2 31.8 -17 32.0 | -2 31.1 -17 31.3 | -2 30.6 -18 30.8 | |
| +0.60 | +0.70 | +0.90 | +0.90 | +1.00 | +1.00 | |
| -2 29.41 | -2 28.54 | -2 28.39 | -2 28.15 | -2 28.52 | -2 28.23 | |
| -2 28.81 + .060 | -2 29.14 + .070 | -2 29.49 + .090 | -2 29.55 + .090 | -2 29.52 + .100 | -2 29.23 + .100 | |
| 45 32 55.02 29.81 | 32 56.53 30.43 | 32 57.18 31.18 | 32 57.65 32.15 | 32 58.00 32.15 | 32 58.10 32.15 | 18.05 |
| +1.32 -1.45 | +1.32 -1.45 | +1.32 -1.45 | +1.32 -1.45 | +1.32 -1.45 | +1.32 -1.45 | |
| +5 32 56.39 2 30.66 | 32 57.85 -2 31.18 | 32 58.50 -2 31.18 | 32 58.97 -2 31.18 | 32 58.22 -2 31.15 | 32 58.02 -2 31.12 | 1.37 |
| 32 53.06 | 32 54.34 | 32 55.81 | 32 55.81 | 32 55.10 | 32 55.33 | |

Nov 17 $+327$
 $+33$

Mar 17 $+255$
 $+24$

32 249
29.9
32.0
36.0
38.1
40.3
42.4
44.5
46.5
48.7
50.8

32 258 32 249
27.8
29.8
34.0
36.0
38.2
41.0
42.1
46.3
48.3
50.4

4431
40.28
40.282

4188
38.04
38.073 32 24.90

32 40.27
32 39.45
 $+0.82$
 $+0.81$

32 38.06
32 39.30
 -1.24
 -1.245

$-0.86-01$
 $+0.03$
 -0.34
 -1.188

$+1.12+00$
 $+0.02$
 -0.21
 $+0.93$
 $+0.02$

32 40.27
39.10
39.09

38.06
38.99
38.99

$+2.07$

45 59.8
49.8
109.6
46 54.80

$+13.17$
1.11959
1.23326
 -17.11
46 34.80
46 37.69
36 10.66

$+2440$
1.65860

$+15.56$
 $+0.01$
 $+0.04$

45.53
35 25.13 249.8
32 52.3
2 31.8 -15 32.0

$+1.00$
2 28.93
2 27.93 $+1.00$
32 57.20 -2 29.08
 $+1.32$ 124
32 58.52 -2 29.32
32 55.66

1873.0
8
39.11 56.39
08 57.85
11 58.50
10 58.97
05 58.22
08 58.02
39.09 58.52
38.99
39.076
1.11
-0.035
58.07 -2.64
54.32 55.43
 $+3.75$ 54.32
 -2.64 +1.11
 $+1.11$

$$\begin{aligned} & 2917 = 67 \\ & 7 \quad 35 \quad 40 \\ & 19 \quad 35 \quad 53 \\ & 71 \quad 19 \quad 59 \\ & 108 \quad 40 \quad 01 \\ & 3 = 66 \quad 17 \quad 13 \\ & -092 \end{aligned}$$

$$\begin{aligned} \sin \delta & 9.97653 & \tan \delta & 2.957 \\ \cos \delta & 9.68523 & K & +.046 \\ & 1157m & & \\ & 962897 & & \end{aligned}$$

$$\begin{aligned} 21873 & = 35 \quad 40.925 \\ & = 36.99 \quad 23.01 \end{aligned}$$

| 1873 Feb. 35 | Mar. 4 | Mar. 5 | Mar. 9 | Mar. 16 | Mar. 17 |
|--------------|---------|---------|---------|---------|---------|
| 34 34 | 34 | 34 | 34 | 35 | 35 |
| 45.5 | 40.8 | 40.2 | 39.3 | 29.5 | 29.1 |
| 48.2 | 43.8 | 43.1 | 40.4 | 30.6 | 31.8 |
| 51.4 | 47.2 | 46.3 | 44.0 | 33.9 | 34.1 |
| 54.7 | 50.4 | 49.9 | 47.0 | 37.2 | 37.5 |
| 58.1 | 53.7 | 53.3 | 50.3 | 40.2 | 40.4 |
| 35 1.1 | 35 54.4 | 35 55.9 | 35 53.4 | 35 43.9 | 35 43.4 |
| 4.4 | 35 6.3 | 35 59.4 | 35 56.8 | 35 47.0 | 35 47.0 |
| 4.6 | 34 | 35 2.5 | 35 59.6 | 35 50.0 | 35 50.1 |
| 11.0 | 6.8 | 5.4 | 35 34 | 53.5 | 53.4 |

| | | | | | |
|----------|----------|----------|----------|----------|----------|
| 52.0 | 48.5 | 47.62 | 45.5 | 36.9 | 36.1 |
| 58.00 | 53.2 | 52.91 | 50.28 | 40.40 | 40.52 |
| 34 58.05 | 34 53.77 | 34 52.96 | 34 50.33 | 35 40.48 | 35 40.57 |
| + 40.74 | + 45.53 | + 46.13 | + 48.81 | - 1.19 | - 0.88 |
| - 1.19 | - 1.07 | - 1.07 | - .89 | - .75 | - .97 |
| + 3.31 | + 2.95 | + 2.89 | + 2.66 | + 2.22 | + 2.16 |
| 35 40.91 | 35 41.18 | 35 40.91 | 35 40.91 | 35 40.76 | 35 40.88 |

| +242 | +241 | +240 | +237 | +230 |
|-----------------------|-------------------|-------------------|-------------------|-------------------|
| 40 | 40 | 40 | 40 | 40 |
| 1 19.1 | 1 28.8 | 1 29.0 | 1 12.8 | 1 23.4 |
| 8.3 | 21.0 | 20.0 | 16.1 | 23.9 |
| 27.4 | 49.8 | 49.0 | 33.9 | 37.3 |
| 41 13.0 | 41 24.90 | 41 24.50 | 41 17.95 | 41 23.65 |
| + 58.40 | + 51.32 | + 50.98 | + 50.05 | + 55.06 |
| 1.76641 | 1.71029 | 1.70740 | 1.69940 | 1.74084 |
| 1.38735 | 1.33123 | 1.32834 | 1.32034 | 1.36178 |
| + 24.40 | + 21.44 | + 21.30 | + 20.91 | + 23.00 |
| 41 13.70 | 41 24.90 | 41 24.50 | 41 17.95 | 41 23.65 |
| 41 38.10 | 41 46.34 | 41 45.80 | 41 38.86 | 41 36.65 |
| 108 41 10.25 | 41 2.01 | 41 2.55 | 41 9.49 | 41 11.70 |
| 66 15 59 = 2.11462 | + 37.80 | + 39.39 | + 22.37 | + 14.55 |
| 1.2239 | 2.15242 | 2.15401 | 2.13699 | 2.12917 |
| 2.13701 | 2.07 | 2.06 | 2.05 | 2.04 |
| + 2 17.08 | + 2 22.04 | + 2 22.56 | + 2 17.08 | + 2 14.63 |
| + 5.6 | + 4.4 | + 4.3 | + 4.1 | + 5.0 |
| - .06 -10 | - .03 -11 | - .03 -11 | - .03 -10 | - .08 -12 |
| + 2 17.63 | + 2 22.52 | + 2 23.02 | + 2 17.51 | + 2 15.09 |
| 108 43 27.88 43 27.78 | 43 24.53 | 43 25.57 | 43 20.00 | 43 26.79 |
| - 2 20.13 | - 2 21.50 | - 2 22.01 | - 2 22.80 | - 2 23.99 |
| - 2 29.41 | - 2 28.39 | - 2 28.45 | - 2 28.52 | - 2 28.23 |
| - 2 4.28 -2 49.59 | - 2 6.59 -2 50.19 | - 2 6.44 -2 50.46 | - 2 6.72 -2 51.32 | - 2 4.24 -2 52.21 |
| 108 41 18.50 40 35.24 | 41 17.94 40 34.34 | 41 17.13 40 35.11 | 41 21.28 40 35.65 | 41 17.56 40 34.58 |
| 20.13 | 21.80 | 22.01 | 22.80 | 23.99 |
| 19 35 + 22.2 | 22.1 | 22.0 | 21.8 | 21.1 |
| - 2 47.72 | - 2 47.75 | - 2 48.47 | - 2 47.35 | - 2 47.93 |
| + 71 18 (40 40.06) | 40 36.67 | 40 36.97 | 40 37.55 | 40 36.74 |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|--|--|--|--|--|--|--|--|--|-------------------|--|--|--|--|--|--|--|--|--|-------------------|--|--|--|--|--|--|--|--|--|
| 1873. 9 | | | | | | | | | | 19 | | | | | | | | | | 19 | | | | | | | | | |
| B. Geminorum. Tang. $\delta = +5.21$ | | | | | | | | | | Feb. 19 | | | | | | | | | | Feb. 19 | | | | | | | | | |
| $x = -0.18$ | | | | | | | | | | Mar. 6 | | | | | | | | | | Mar. 6 | | | | | | | | | |
| $\cos \delta = +0.1$ | | | | | | | | | | Mar. 11 | | | | | | | | | | Mar. 11 | | | | | | | | | |
| $\alpha 1872 = 28.836$ | | | | | | | | | | Mar. 16 | | | | | | | | | | Mar. 16 | | | | | | | | | |
| $\alpha 1873 = 32.518$ | | | | | | | | | | Mar. 21 | | | | | | | | | | Mar. 21 | | | | | | | | | |
| $\delta 1873 = 19.5049$ | | | | | | | | | | Mar. 26 | | | | | | | | | | Mar. 26 | | | | | | | | | |
| Apr. 10 | | | | | | | | | | Apr. 10 | | | | | | | | | | Apr. 10 | | | | | | | | | |
| $dx = +3.681$ | | | | | | | | | | $dx = +3.681$ | | | | | | | | | | $dx = +3.681$ | | | | | | | | | |
| $d\delta = -8.33$ | | | | | | | | | | $d\delta = -8.33$ | | | | | | | | | | $d\delta = -8.33$ | | | | | | | | | |
| 1873. Feb. 20 | | | | | | | | | | Mar. 4 | | | | | | | | | | Mar. 5 | | | | | | | | | |
| +401 | | | | | | | | | | +361 | | | | | | | | | | +362 | | | | | | | | | |
| +29 | | | | | | | | | | +33 | | | | | | | | | | +39 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | | 36 34.5 | | | | | | | | | |
| 36 34.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|-------------------|--|--|--|--|--|--|--|--|--|------------------------|--|--|--|--|--|--|--|--|--|------------------------|--|--|--|--|--|--|--|--|--|--------------------------------|--|--|--|--|--|--|--|--|--|---------|--|--|--|--|--|--|--|--|--|---------|--|--|--|--|--|--|--|--|--|---------|--|--|--|--|--|--|--|--|--|---------|--|--|--|--|--|--|--|--|--|---------|--|--|--|--|--|--|--|--|--|---------|--|--|--|--|--|--|--|--|--|-------------------------|--|--|--|--|--|--|--|--|--|-------------------------|--|--|--|--|--|--|--|--|--|------------|--|--|--|--|--|--|--|--|--|---------------------|--|--|--|--|--|--|--|--|--|-------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| TT <i>Geminorum</i> - <i>Tanyd</i> - +67 | | | | | | | | | | Feb. 9 | | | | | | | | | | Feb. 19 | | | | | | | | | | Mar. 1 | | | | | | | | | | Mar. 6 | | | | | | | | | | Mar. 11 | | | | | | | | | | Mar. 16 | | | | | | | | | | Mar. 21 | | | | | | | | | | Mar. 26 | | | | | | | | | | Mar. 31 | | | | | | | | | | Apr. 10 | | | | | | | | | | Sin δ 9.74455 43 | | | | | | | | | | Dec δ 9.91993 43 | | | | | | | | | | 111541m 43 | | | | | | | | | | $\Delta z = +3.883$ | | | | | | | | | | $\Delta \delta = -8.43$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $\alpha = -0.19$ | | | | | | | | | | Corr = +0.0 - 2.0 | | | | | | | | | | $\Delta 1872 = 15.011$ | | | | | | | | | | $\Delta 1873 = 18.893$ | | | | | | | | | | $\Delta 1873 = 43 \quad 30.86$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

~~37~~ $+161$
 $+17$

27 (1.5) 31 52.4
3.9 2.6
63 1.7
11.3 19 54
13.9 6.53
18.5
18.7
21.0
26.0
31.2
1992
16.291

39 5.3
1.02

39 16.27
39 19.15
-2.88

+2.75 $+01$
+ .11 $+11$
-0.26
+2.621

39 16.27
18.84
18.88

$+2.02$

35
0 55.1
44.9
100.0
35 50.00

+ 11.16 15.27
1.04 1.66 1.18 3.84
1.08 330.2 1.21 948
-12.11 -16.58
365 50.00 50.00
38 37.84 33.12
46 18.40 14.93

+13.88
0.95628

\times 9.04
- .03
+ .09

- 8.98
46 5.95 581
113 40.5
-2 25.4 25.5
-2 33.4 -14 24.5
-9.60 -760
-2 29.54 29.48
-2 39.14 30
43 26.85 39.38
43 26.93

2/16 ⁺¹⁶¹
1717

41 44 42.0

39.8
43.4
46.8
51.0
54.9
58.7
2.6
6.2
10.5

44.89
54.88
54.878 44 42.00

44 54.82
44 54.86
-304
-3.44

+2.75 ^{+4.01}
+ .60 ^{+5.7}
-1.34
+201.99
54.52
56.83
56.81

+2.02

5
0 49.2
49.9
99.1
5 49.55

+ 12.88 72.88
1.10992 1.86261
0.657302 1.41188
-4.56 20.82
5 49.55 49.55
5 44.9 5 23.73

17 ~~23.6~~ 24.62

+13.88
1.567582

+ 36.95
+ .82
+ .02

+ 36.95
18 40.24 1.57
15 30.8

- 0
- 20.80
- 2 20.54
- 2 20.54
14 49.89

29.48

Draco. = γ
 γ 48 39
 δ 48 36
 ϵ 69 56
 ζ 69 56 39
 η 110 03 21
 θ -67 40 33
 ι -93

Red. s
 1 12.05
 2 9.01
 3 6.02
 4 3.01
 5 0.00

Tangv = 2.74
 $x = +.41$

Corr =

$\alpha 1872$

$\alpha 1873 = 35.580$ $\rho = 56.39.16 = 3' 20.84''$ $d\alpha = 0.171$
 $d\rho = +9.15$

Sin δ 9.97280

cos δ 9.53509

1154.1m

965080

Mar. 4 +361

447 563
 392
 419
 452
 479
 510
 544
 578
 48 582

Mar. 5 +362

447 563
 392
 419
 452
 479
 510
 544
 578
 48 582

Mar. 6 +358

447 563
 392
 419
 452
 479
 510
 544
 578
 48 582

Mar. 8 +270

447 563
 392
 419
 452
 479
 510
 544
 578
 48 582

Mar. 9 +310

447 563
 392
 419
 452
 479
 510
 544
 578
 48 582

Mar. 10 +321

447 563
 392
 419
 452
 479
 510
 544
 578
 48 582

47 48.14
 +45.53
 -99
 +2.98
 48 35.66

47 47.71
 +46.13
 -99
 +2.93
 48 35.78

47 46.56
 +46.86
 -99
 +2.88
 48 35.32

47 46.96
 +48.30
 -74
 +2.77
 48 35.29

47 44.68
 +48.82
 -82
 +2.72
 48 35.40

48 37.32
 -365
 -88
 +2.67
 48 35.46

15 +2.41
 3 58.6
 49.9
 108.5
 18 54.25
 +43.20
 1.63548
 1.28628
 +19.33
 18 54.25
 19 13.58
 110 3 34.97

15 +2.40
 4 2.9
 53.9
 116.8
 18 58.40
 +35.82
 1.55413
 1.20493
 +16.03
 18 58.40
 19 14.43
 3 33.92

15 +2.40
 3 2.0
 55.3
 117.3
 18 58.65
 +26.19
 1.41814
 1.06894
 +11.72
 18 58.65
 19 10.37
 3 37.98

15 +2.39
 3 47.2
 45.5
 9.27
 18 46.35
 +33.59
 1.53621
 1.17701
 +15.05
 18 46.35
 19 11.33
 3 38.97

15 +2.37
 3 47.1
 45.0
 9.21
 18 46.05
 +41.54
 1.67786
 1.32786
 +21.27
 18 46.05
 19 7.52
 3 41.03

15 +2.37
 3 44.9
 40.9
 8.58
 18 42.90
 +11.61
 2.05922
 1.71002
 +51.29
 18 42.90
 19 34.19
 3 41.01

-67 38 23 = 2.14316m

+38.11
 2.18127m
 +2 31.80
 +33
 -0.08-31

+39.66
 2.18282m
 +2 32.34
 +23
 -0.08-32

+35.84
 2.17900m
 +2 31.01
 +12
 -0.08-32

+9.36
 2.15252m
 +2 22.07
 +20
 -0.08-30

+2.256
 2.16572m
 +2 26.96
 +40
 -0.08-30

+2.560
 2.16876m
 +2 27.49
 +23.1
 -22-30

+2 32.13
 110 6 6.90 6 6.59 6 6.48
 -2 28.39
 -2 28.45
 110 3 59.67 3 59.41 3 16.65

+2 32.56
 6 6.48
 -2 21.38
 -2 28.45
 3 59.41 3 16.65

+2 31.15
 6 6.48
 -2 21.38
 -2 28.45
 3 16.65

+2 22.22
 5 59.19 5 58.89
 -2 22.03
 -2 28.18
 3 18.98

+2 26.84
 6 7.87 6 7.57 6 7.27
 -2 22.23
 -2 28.52
 4 1.58 3 1.712

+2 29.64
 5 43.80 6 10.65
 -2 22.43
 -2 28.47
 3 27.44 3 27.44

48 33.2 28.16
 69 56 18-2 47.08
 3 14.57

28.68
 +223
 -2 48.83
 3 18.33

21.60
 28.46
 +223
 -2 47.83
 3 20.98

22.03
 28.47
 +222
 -2 48.28
 (3 10.61)

22.23
 28.73
 +220
 -2 48.76
 3 18.81

22.43
 28.70
 +220
 -2 47.13
 3 21.22

P=

1946 1954

| Mar 13 | +277 | Mar 16 | +254 | Mar 27 | +255 | Apr 1 | +161 |
|--------|----------|--------|-------|--------|-------|-------|-------|
| 478 | 416 38.5 | 418 | 47392 | 418 | 47331 | 418 | 47331 |
| 21.0 | 41.8 | 33.2 | 42.6 | 21.8 | 34.0 | — | 35.2 |
| 33.7 | 45.7 | 26.3 | 47.3 | 24.8 | 35.7 | — | 39.0 |
| 26.9 | | 29.0 | | 25.8 | | 39.0 | 31.0 |
| 30.1 | | 32.1 | | 30.9 | | 32.2 | .2 |
| 33.1 | | 35.0 | | 33.6 | | 35.4 | .4 |
| 36.0 | | 38.0 | | 36.6 | | — | |
| 39.1 | | 40.8 | | 39.9 | | — | |
| 42.0 | | 44.0 | | 42.6 | | — | |
| 44.8 | | 47.1 | | 45.7 | | 44.2 | .2 |

| | | | | | | | | | | | | | | |
|----------|-------|----------|-------|----------|-------|----------|-------|-------|-------|----|-------|-------|----|-------|
| 29.64 | 32.97 | 46 | 41.77 | 31.55 | 35.06 | 47 | 43.03 | 30.40 | 33.78 | 47 | 34.07 | 32.00 | 47 | 35.63 |
| 48 33.01 | | 48 35.10 | | 48 33.82 | | 48 32.24 | | | | | | | | |
| -235 | | -1.19 | | +1.12 | | +276 | | | | | | | | |
| -76 | | -70 | | -70 | | -44 | | | | | | | | |
| +2.50 | | +2.33 | | +1.65 | | +1.34 | | | | | | | | |
| [3240] | | 48 35.54 | | 48 35.89 | | 48 35.90 | | | | | | | | |

| Jan | +230 | +207 | +202 |
|-----------|-----------|----------------|-----------|
| 15 | 15 | 15 | 15 |
| 3 42.3 | 3 40.9 | 3 39.1 | 3 33.2 |
| 40.9 | 42.5 | 35.9 | 40.1 |
| 83.2 | 83.4 | 75.0 | 73.3 |
| 18 41.60 | 18 41.70 | 18 37.50 | 18 36.65 |
| + 11.20 | + 52.03 | + 59.11 | 56.57 |
| 2.04610 | 1.71625 | 1.71605 | 1.55259 |
| 1.69690 | 1.36705 | 1.42685 | 1.40334 |
| + 4.277 | + 23.88 | + 26.72 | + 25.32 |
| 18 41.60 | 18 41.70 | 18 37.50 | 18 36.65 |
| 19 37.37 | 19 4.98 | 19 4.22 | 19 1.97 |
| 3 76.98 | 3 43.37 | 3 41.13 | 3 46.38 |
| + 22.93 | + 14.57 | + 24.70 | + 13.97 |
| 2.16609 | 2.15773 | 2.16786 | 2.15713 |
| + 2 26.58 | + 2 23.79 | + 2 23.83 | + 2 23.59 |
| + 2 26.58 | + 2 23.79 | + 2 23.83 | + 2 23.59 |
| - 22 | - 22.30 | + 0.07-29 | + 0.07-29 |
| + 2 28.59 | + 2 24.10 | + 2 27.92 | + 2 24.25 |
| 5 45.57 | 6 74.7 | 11.77 6 120.56 | 6 106.3 |
| - 2 22.99 | + 2 23.51 | + 2 24.90 | + 2 25.25 |
| - 2 28.20 | - 2 28.23 | - 2 28.73 | - 2 29.34 |
| - 2 28.20 | - 2 28.23 | - 2 28.73 | - 2 29.34 |
| 3 44.26 | 4 2.75 | 3 1.573 | 4 6.34 |
| 2 64.38 | 2 64.38 | 2 51.74 | 2 54.99 |
| 28.38 | 28.38 | 28.05 | 28.25 |
| + 26.38 | + 22.13 | + 28.5 | + 28.0 |
| | - 2 49.43 | - 2 51.13 | - 2 51.93 |
| | 3 14.79 | 3 20.64 | 3 18.41 |

1873.0

8

| | |
|-------|-------|
| 20.57 | 21.97 |
| 16.48 | 21.98 |
| 14.76 | 21.88 |
| 16.86 | 24.08 |
| 13.49 | 22.97 |
| 14.31 | 23.92 |
| 16.83 | 23.11 |

17.17
16.58
19.98
16.35
16.701

19.107
-2.406
-2.406
+16.1
-3.81
22.84
26.65
+3.20
26.14
165
-51

Mar 18 +277

Mar 16 +254

Mar 17 +327

Mar 27 +255

Mar 1 +11

49 58
49 58
49 58
50 49.2
51 46.5
52 40.9

49 58
49 58
49 58
50 49.2
51 46.5
52 40.9

49 58
49 58
49 58
50 49.2
51 46.5
52 40.9

49 58
49 58
49 58
50 49.2
51 46.5
52 40.9

49 51.23
50 38.83
-44.60
-43.38

49 51.23
50 38.83
-44.60
-43.38

49 51.23
50 38.83
-44.60
-43.38

49 51.23
50 38.83
-44.60
-43.38

49 51.23
50 38.83
-44.60
-43.38

49 51.23
50 38.83
-44.60
-43.38

-233.01
-14.81
+42.62
+25.60
51.23
17.21
16.83

-115.01
-13.78
+39.53
+24.8788
52.29
16.86
17.17

-016.01
-17.50
+35.49
+20.329
56.29
16.42
16.58

+113.00
-12.82
+24.86
+16.57
3.41
20.38
19.98

+27.01
-0.90
+23.30
+25.4620
58.77
23.64
16.385

15 44.2
1 39.9
841
16 4205

15 39.8
1 38.6
784
16 39.20

15 47.0
1 42.1
891
16 44.55

15 32.0
1 35.1
671
16 33.55

+4543
1.65734
0.04283
+110
16 431.5
6 5.20

+2302
183862

+1458
183018

80
+247

+1407

+1.896
+1.02
+1.10

-10

-10

+03

+1.888
7 1408
4 4.9

1394

2 2.52
-2 26.3

253

26.3

-2 21.12

-2 2820

-2 473.2

4 2476.2

4 23.11

21.12

2838

1.77

4 26.21

#73

Lin 8 9.67074

60089.74538 8

.11571m

.06104m

6 lancie.

5.5 36

+280 09

+28 08 53

2=+14 13 56

+1.25

Tony S = +53

x = -0.18

corr = +.03 + 0.2

21872 = 39.221

21873 = 42.918

21873 = 8' 53.11

Mar. 1

6

11

16

21

26

31

55 43.70

43.64

43.58

43.51

43.44

43.36

43.27

m

s

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

1073

27 *Lepus* *tang* $\delta = +1.28$ Mar. 1
 $x = -0.40$
 $\text{corr} = +0.09 - 0.2$
 $\delta = -9$ 29 24 $\delta 1872 = 49.033$
 $\delta 1873 = 53.575$ Apr. 10
 $\delta 1873 = 52.1242$

58 δ 54.59
 54.50 9
 54.70 10
 54.60 10
 54.49 11
 $\delta 1872 = +45.42$
 $\delta 1873 = -9.93$

Sin δ 9.89574
 Sec δ 9.79063 52 22.9
 1157m 23.8 +.9
 9.90684m 246 .8
 253 .4
 259 .1
 264 .5
 269 .5
 273 .4
 276 .3

1873 Mar. 6 $+3.58$
 $+3.6$ Mar. 8 $+2.70$
 $+2.27$ Mar. 17 $+3.327$
 $+3.3$
 58 49.4 54 46.3 54 46.2 54 35.7 58 35.3 58 —
 54 54.9 46.4 49.5 37.0 38.5 —
 54 54.3 18.4 52.9 39.0 41.4 —
 58 1.0 58 59.6 48.6
 4.4 58 26.9 52.0
 7.5 6.2 55.1
 11.0 9.5 55.6
 143 12.8 59 1.9
 208 19.6 8.5
 243 22.9 77.8
 278 26.1 15.2
 440 72.2 60.72
 58 5.636 57 46.9058 6.20 57 37.0358 55.20
 58 7.60 58 6.16 58 55.16
 58 54.50 58 34.76 58 54.57
 -47.20 -48.60 +0.59
 -47.29 -48.69 +0.50
 +46.87 +.00 +46.30 +.01 -0.86 -0.1
 +46 +.46 +35 +.35 +46.42 +.42
 -1.23 -1.18 -1.00
 46.10 +47.4678 -1.445
 58 7.60 6.16 55.16
 58 53.70 33.62 53.702
 58 53.70 53.64 53.71
 +2.40 +2.39
 25 25 3 31.9
 3 26.8 3 27.1
 15.3 59.0
 45.1 28 29.50
 22.55 28 5.99
 +20.74 +29.17
 1.31681 1.46494
 1.22315m 1.37128m
 -16.72 -23.51
 28 22.55 28 29.50
 28 5.83 28 5.99
 +51 54 42.52 54 42.36
 -9 29.01 = 0.98350m +9.46
 +36.03 0.99296m
 1.01953m
 +10.96 +9.84
 -12 -23
 -0.07 -0.07
 +10.27 +9.54
 54 52.79 54 52.68 54 51.90 51.78
 52 23.8 52 24.2
 -2 29.0 29.1 -2 27.7 27.8
 -2 27.2 -11 27.3 -2 27.9 -12 28.0
 -11.40 -11.80
 -2 27.99 -11.40 -2 28.18 -11.80
 -2 39.39 -2 28.46 -2 38.98 28.47
 +51 52 13.40 + 38 52 11.92 + 38
 -2 39.48 -2 37.89
 52 13.20 11.89

3 Ure Min. $\kappa = 68$ N.A.
 $\begin{matrix} 8^{\circ} 00' 03'' \\ 8^{\circ} 00' 03'' \\ + 68^{\circ} 57' \\ + 68^{\circ} 57' \\ 2 = -26^{\circ} 28' \\ -044 \end{matrix}$

Sin δ 9.96971 Tang $\delta = +2.458$
 Cos δ 9.55728 $K = -0.39$
 $\begin{matrix} .115714 \\ 967299m \end{matrix}$

21873 = $\begin{matrix} m \\ 0 \end{matrix}$ $\begin{matrix} a \\ 8.583 \end{matrix}$
 $\delta = \begin{matrix} 17.29 \\ 40.58 \end{matrix}$

1873 Mar 6 $+358$ Mar 17 $+327$ Apr. 1 $+161$
 $\begin{matrix} 4ms \\ 59 118 \\ (247) \\ 19.3 \\ 20.2 \\ 23.3 \\ 26.2 \\ 29.1 \\ 32.0 \\ 34.6 \end{matrix}$ $\begin{matrix} 59 89 \\ 9.6 \\ 0 59.1 \\ 2.0 \\ 4.9 \\ 2.8 \\ 10.4 \\ 13.3 \\ 16.2 \\ 19.2 \\ 22.3 \end{matrix}$ $\begin{matrix} 59 55.1 \\ 58.1 \\ 0 0.9 \\ 3.8 \\ 6.7 \\ 9.5 \\ 12.5 \\ 15.1 \\ 18.3 \end{matrix}$ $\begin{matrix} 59 38.5 \\ 40.1 \\ 42.7 \end{matrix}$

$\begin{matrix} 23.244 59 925 \\ 59 23.20 \\ + 46.87 \\ + .88 \\ - 2.34 \\ 0 8.61 \end{matrix}$ $\begin{matrix} 68.52 \\ 10.59 \\ 0 10.55 \\ - 0.87 \\ + .80 \\ - 1.93 \\ 0 8.55 \end{matrix}$ $\begin{matrix} 1003 \\ 40.30 59 40.27 \\ 0 6.66 \\ + 2.77 \\ + .40 \\ - 1.24 \\ 0 8.59 \end{matrix}$

$\begin{matrix} +2410 \\ 30 \\ 0 7.2 \\ 4 58.0 \\ 10.2 \\ 29 57.60 \\ 20 03.50 \\ + 13.99 \\ 1.14582 \\ 0.81881m \\ - 6.59 \\ 29 56.01 \\ + 68.52 58.34 \\ - 26 27 46 = 1.45720n \\ + 36.03 \\ 1.49323n \end{matrix}$ $\begin{matrix} +202 \\ 30 \\ 0 0.9 \\ 4 3.0 \\ 30 3.9 \\ 1.95 \\ + 26.43 \\ 1.42210 \\ 1.09509n \\ - 12.45 \\ 1.25 \\ 29 49.50 \\ 52 58.85 \\ + 14.16 \\ 1.47136n \end{matrix}$ $\begin{matrix} + 31.13 \\ - .03 \\ - .14 - .00 \\ + 31.80 \\ 48.33 28.34 .53 28.44 \\ - 15.36 \\ - 2 27.99 \\ - 2 13.35 \\ 68.50 44.99 45.69 \\ + 15.36 \\ - 2 28.46 \\ + 1.06 \\ - 2 42.76 12.44 42.76 \\ + 45.68 16.10 45.68 \end{matrix}$ $\begin{matrix} + 29.60 \\ - .12 \\ .00 - .00 \\ + 29.48 \\ 53 28.33 28.33 \\ - 19.25 \\ - 2 27.54 \\ - 2 48.79 \\ 50 39.59 \\ + 17.25 \\ 29.48 \\ + .88 \\ - 2 44.85 16.15 44.85 \\ 50 44.85 15.18 44.85 \end{matrix}$

1873

Apr. 1408
 $\begin{matrix} 8 & 03 & 16 \\ + & 76 & 08 \\ + & 76 & 08 \\ 3 = -33 & 45 & 36 \\ - & .56 \end{matrix}$

Tang $\delta = +405$ Mar. 1
 $x = -.064$
 $\cos x = -.11 + .15$
 $\alpha 1872 = 23.904$
 $\alpha 1873 = 31.642$ $\delta = 8' 24.05''$

Sin δ 9.98715

Sec δ 9.37960 8
 $\begin{matrix} 39.4 \\ 40.5 + 11 \\ 41.6 \\ 42.6 \\ 43.4 \\ 44.1 \\ 44.7 \end{matrix}$
 $\begin{matrix} 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \end{matrix}$
 $\begin{matrix} 25 \\ 28 \\ 31 \\ 33 \\ 35 \\ 36 \end{matrix}$
 $\begin{matrix} 35.68 \\ 35.93 \\ 35.15 \\ 39.84 \\ 34.51 \\ 34.16 \\ 33.80 \end{matrix}$
 $\begin{matrix} dx = +77.39 \\ dd = -10.29 \end{matrix}$

1873
 $\begin{matrix} \text{Mar. 6} & +.358 & +.36 \\ \text{Mar. 17} & +.327 & +.33 \\ \text{Apr. 1} & +.161 & +.17 \end{matrix}$
 $\begin{matrix} h & m & s \\ 8 & 2 & 295 \\ 34.2 & 2 & 592 \\ 38.1 & 2 & 50 \\ 48.0 & 2 & 50 \\ 46.9 & 2 & 50 \\ 57.3 & 2 & 50 \\ 55.4 & 2 & 50 \\ 59.5 & 2 & 50 \\ 44.5 & 2 & 50 \end{matrix}$
 $\begin{matrix} 3 & 1 & 110 \\ 21.3 & 1 & 110 \\ 25.8 & 1 & 110 \\ 35.0 & 1 & 110 \\ 34.0 & 1 & 110 \\ 38.5 & 1 & 110 \\ 42.4 & 1 & 110 \\ 47.0 & 1 & 110 \\ 84.3 & 1 & 110 \end{matrix}$
 $\begin{matrix} 3 & 1 & 13.0 \\ 17.4 & 1 & 13.0 \\ 21.7 & 1 & 13.0 \\ 23.8 & 1 & 13.0 \\ 30.1 & 1 & 13.0 \\ 34.3 & 1 & 13.0 \\ 38.4 & 1 & 13.0 \\ 43.0 & 1 & 13.0 \\ 47.3 & 1 & 13.0 \end{matrix}$

$\begin{matrix} 42.25 \\ 46.04 \\ 46.67 \end{matrix}$ 1 5760 $\begin{matrix} 30.46 \\ 34.18 \\ 34.178 \end{matrix}$ $\begin{matrix} 29.15 \\ 34.17 \\ 34.167 \end{matrix}$ 2 46.12
 $\begin{matrix} 2 & 46.90 \\ 3 & 35.42 \\ & -48.52 \\ & -48.41 \\ & +46.87 +.00 \\ & +1.46 \\ & -3.78 \\ & +44.084 \\ 2 & 46.90 \\ 3 & 31.48 \\ 3 & 31.44 \end{matrix}$ $\begin{matrix} 3 & 34.11 \\ 3 & 34.76 \\ & -0.65 \\ & -0.54 \\ & -0.86 - .01 \\ & +1.34 \\ & -2.12 \\ & -2.607 \\ 3 & 34.11 \\ 3 & 34.76 \\ 3 & 31.44 \end{matrix}$ $\begin{matrix} 3 & 30.10 \\ 3 & 33.71 \\ & -3.61 \\ & -3.50 \\ & +2.76 \\ & +1.73 +.01 \\ & +.69 \\ & -2.07 \\ & +1.385 \\ 3 & 30.10 \\ 3 & 31.48 \\ 3 & 31.45 \end{matrix}$
 $\begin{matrix} +2.40 \\ 10 & 42.1 \\ 2 & 30.1 \\ & 72.3 \\ 12 & 36.10 \end{matrix}$ $\begin{matrix} +2.02 \\ 10 & 26.9 \\ 2 & 26.4 \\ & 53.3 \\ 12 & 26.65 \end{matrix}$
 $\begin{matrix} + & 47.37 \\ 1.67550 \\ 1.17088m \\ 12 & -1482 \\ 12 & 36.10 \\ 12 & 21.28 \\ +76 & 10 & 27.07 \end{matrix}$ $\begin{matrix} + & 44.05 \\ 1.64395 \\ 1.13926m \\ 12 & -13.78 \\ 12 & 26.65 \\ 12 & 12.87 \\ 10 & 35.78 \end{matrix}$

$-33 \ 45 \ 16 = 1.58810m$
 $+3712$
 $1.62222m$

$+1425$
 $1.59935m$

$\begin{matrix} + & 41.90 \\ - & .27 \\ - & .05 \\ + & 41.58 \\ +76 & 11 & 8.65 & 11 & 8.44 \\ & 8 & 40.6 \\ & -2 & 28.0 \\ & -2 & 26.5 - .21 & 26.7 \\ & -16.60 \\ & -2 & 27.99 - & 16.60 \\ & -2 & 44.59 - & 28.46 \\ +76 & 8 & 24.06 + & 1.38 \\ & -2 & 43.73 \\ & 8 & 24.71 \end{matrix}$ $\begin{matrix} + & 39.75 \\ - & .20 \\ + & .05 \\ + & 39.55 \\ 11 & 15.03 & 14.84 \\ 8 & 44.8 \\ -2 & 30.2 & 30.4 \\ -2 & 28.7 - .19 & 28.9 \\ & -20.70 \\ -2 & 27.54 - & 20.70 \\ -2 & 30.24 & 29.48 \\ 8 & 24.79 + & 1.13 \\ & -2 & 49.05 \\ & 8 & 25.79 \end{matrix}$

Apr. 1 $\pm .161$
 $\pm .17$

| | |
|--------|--------|
| 9 22.6 | 9 11.0 |
| 24.7 | 12.2 |
| 26.8 | 13.6 |
| 31.0 | 13.9 |
| 33.1 | 44.6 |
| 35.1 | 46.3 |
| 37.2 | |
| 39.4 | |
| 42.1 | |
| 45.5 | |
| 47.7 | |

38.66
35.15
38.145 9 12.27
9 35.13 9 44.60
9 37.91
-2.78
-2.79
27.6
+1.13 +.01
+ .03 +.03
-0.32
+2.988
9 35.13
37.460
13.661

+2.02
4.5
0 39.7
36.2
4.5 7.59
37.95

+ 22.87
1.35927
1.46890m
-2044
45 37.01
40 8.51
37 32.84

+1434
1.58344

* 38.32
+ .05
+ .01

- 38.36
37 1.48 37 1.13
34 30.6
-2 30.9 -.05 31.0

- 430
-2 27.54
-2 29.84 - 0.30
34 31.64 -2 29.48
+1.19 - 1.09
34 32.83 -2 30.84
34 30.56

1873.0

α
9
37.51
.46
.61
.49
.49
.59
.61
37.537
593
- .056

δ
" 32.96
32.43
32.97
32.11
34.14
32.83
32.91 -2.38 30.53
30.29
+2.62 +.24

Cephei
 $\alpha = -60^\circ 17' 32''$
 $\delta = 77^\circ 19' 40''$
 $\mu = 13.09$
 $\nu = 7.70$

Red. s
 1 1.79
 2 1.09
 3 1.40
 4 1.70
 5 0.00

Tang. $\delta = -44.8$
 $x = +0.70$
 $\text{conv} = +13 + 0.5$
 $\Delta 1872 = 9.228$
 $\Delta 1873 = 9.407$
 7.331

1873

Mar. 13^m 206
 6 2.39 .33
 11 2.75 .36
 16 3.14 .39
 21 3.56 .42
 26 4.01 .45
 31 4.47 .46

Sin. δ 9.98980

Cos. δ 9.34100
 11 571 m
 9.45671
 19 21.3
 20.0 -13
 18.9 13
 17.9 10
 17.0 9
 16.2 8
 15.6 6

$d\alpha = -1.897$
 $d\delta = -11.01$

1873 Mar. 8 +.270
 Mar. 10 +.321
 Mar. 13 +.277
 Mar. 16 +.254
 Mar. 17 +.327
 Mar. 31

| | | | | | | | | | |
|------------|------------|-------|----------------|---------|-----------|-----------|--------|------|---|
| ms 811 | 11 | 12 | (12) | 12 | 10391 | 12 | 13 158 | 12 | |
| 56.4 | 48.5 | — | 27.0 | 12 4.8 | 11 4.39 | 46.6 | 220 | 46.8 | — |
| 12 1.5 | 47.3 | — | 28.4 | 5.20 | 4.59 | 57.5 | 26.2 | 57.3 | — |
| 5.6 | 57.4 | — | 30.0 | 5.0 | | 53.9 | | 56.0 | |
| 11.3 | (13 2.9 76 | | 31.4 | 12 1.5 | 13 0.7 | 5.4 | 13 0.7 | 5.6 | |
| 15.4 | 4.6 76 | | 11.7 | 13 1.5 | | 10.3 | | 10.4 | |
| 20.4 | 12.3 76 | | 11.4 | | | 14.9 | | 15.0 | |
| 24.0 | 17.8 84 | | 16.1 | | | 19.4 | | 19.9 | |
| 28.5 | 22.3 82 | | 20.7 | | | 24.0 | | 24.4 | |
| 32.2 | 26.8 80 | | 25.5 | | | | | | |
| 6782 | 7.900 | | 5983 | | 5887 | 59.01 | | | |
| 15.36 | 11 47.73 | | 6.48 | 13 2930 | 5.411 | 5.54 | | | |
| 15.356 | | | 6.478 10 43.97 | | 5.411 | 5.567 | | | |
| 12 15.43 | 13 7.97 | | 12 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | 13 2.88 | | 13 3.12 | 13 3.20 | | | |
| -47.08 | +8.31 | | +3.67 | | +2.36 | +2.44 | | | |
| -47.21 | +8.18 | | +3.54 | | +2.33 | +2.31 | | | |
| +48.31+.01 | -3.64+.02 | | -2.38-.01 | | -1.77-.01 | -0.86-.01 | | | |
| -1.20 | -1.42 | -1.43 | -1.20 | +1.23 | -1.16 | -1.47 | -1.45 | | |
| +6.90 | +8.75 | | +6.53 | | +6.29 | +6.21 | | | |
| +54.02 | +1.62 87 | | +3.00 | | +3.57 57 | +3.88 9 | | | |
| 12 15.43 | 13 7.97 | | 13 6.55 | | 13 5.48 | 13 5.64 | | | |
| 13 2.51 | 13 2.66 | | | | | | | | |

the.1 $+1.161$
 $+1.17$

12 11 48.4
435 50.6
478 57.0
534
574
522
54
119
167
2.12

5615
239
2389 11 52.00

13 2.46
13 4.04
- 2.08
- 2.21
276
+ 1.13 +01
- .76 -72
+ 4.87
+ 6.84 92
13 2.46
833
1.1
13 7.38
+2.02

40
1 0.0
6.0
6.0
41 3.00

+ 7039
1,847.51
1,304.22
+ 20.15
41 3.00
41 23.15
41 2520

+ 1434
2,01642
+ 1 4385
+ .58
+ .02

+ 1 4446
43 4.66 9.57
40 46.5
- 2 252 25.3
- 2 257.09 25.8

2420 - 2420
- 2 29.59 - 29.48
- 2 53.74 + 1.75
40 13.92 - 2 51.93
40 17.64

Red, s

| | |
|---|-------|
| 1 | 853 |
| 2 | 6, 40 |
| 3 | 4, 21 |
| 4 | 2, 13 |
| 5 | 0, 00 |

1473

Line D 9.94288

| | | | |
|--------|---------|---|-----------|
| Good | 7.68374 | 8 | 34.3 |
| | 1154m | | 35.3 + 10 |
| | 979745m | | 36.3 10 |
| | | | 37.2 9 |
| | | | 38.0 8 |
| 5045 | | | 38.7 7 |
| -11.62 | | | 39.3 6 |
| | | | 39.8 5 |
| | | | 40.3 |

1872phae.proj.14

Urs. Maj

8 19 33

8 19 42

+ 61 09 42

+ 61 08 23

$\Sigma = -18 \ 45 \ 35$

sin. $\Sigma = -.32$

$T_{avg} = +1.81$ Mar 1
 $x = -0.31$ " 6
 $C_{avg} = +0.03 + 0.8$ " 14
 $\Delta 1872 = 36.634$ " 21
 $\Delta 1873 = 41.679$ Apr 5
 $S 1873 = 8' 22.96$ " 10

| 3 ^m | 5 | |
|----------------|---|----|
| 43.67 | | |
| 43.96 | | 71 |
| 43.95 | | 11 |
| 43.32 | | 13 |
| 43.18 | | 14 |
| 43.02 | | 14 |
| 42.85 | | 16 |
| 42.69 | | 17 |
| 42.52 | | 17 |

| 8 18 | 18 218 | 18 | 18 142 | 18 81 | 18 76 | 18 | 19 | 19 103 |
|--------|--------|----|--------|--------|--------|----|--------|--------|
| 18 382 | 18 241 | 18 | 18 190 | 18 355 | 18 192 | 18 | 19 214 | 19 117 |
| 403 | 263 | 18 | 18 214 | 18 376 | 18 114 | 18 | 19 324 | 19 125 |
| 424 | | 18 | 18 | 18 399 | | 18 | 19 335 | |
| 445 | | 18 | 18 | 18 419 | | 18 | 19 347 | |
| 466 | | 18 | 18 | 18 440 | | 18 | 19 358 | |
| 488 | | 18 | 18 | 18 462 | | 18 | 19 370 | |
| 509 | | 18 | 18 | 18 484 | | 18 | 19 382 | |
| 530 | | 18 | 18 | 18 506 | | 18 | 19 393 | |
| 552 | | 18 | 18 | 18 528 | | 18 | 19 405 | |

[illegible]

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| -3.66 ^{+0.2} | -2.32 ^{-.01} | -1.17 ^{-.01} | -0.86 ^{-.01} | +2.76 ^{+0.1} |
| +1.58 | +1.49 | +1.47 | +1.60 | +2.81 |
| +1.79 | -1.71 | -1.63 | -1.60 | -1.14 |
| -4.88 ⁵ | -3.54 | -2.38 ⁵ | -1.86 ⁸ | +1.93 ² |
| 19 4.68 | 4.51 ⁵ | 4.40 ⁶ | 4.36 ⁶ | 3.83 |
| 19 4.76 | 4.16 ¹ | 4.17 ³ | 4.18 ⁰ | 4.76 |
| 19 4.78 | 4.16 ¹ | 4.17 ¹ | 4.17 ⁸ | 4.75 |

| 10 | +237 | 10 | +236 | 10 | +230 | 10 | | 10 | +202 |
|----|------|----|------|----|------|----|------|----|------|
| 2 | 221 | 2 | 231 | 2 | 250 | 2 | 20.0 | 2 | 15.0 |
| | 13.9 | | 18.1 | | 23.0 | | 17.0 | | 16.4 |
| | 360 | | 412 | | 481 | | 370 | | 314 |
| 12 | 1800 | 12 | 2060 | 12 | 2400 | 12 | 1850 | 12 | 1570 |

| | | | |
|----------|----------|----------|----------|
| + 2258 | + 2718 | + 3469 | + 2836 |
| 1,35872 | 1,44685 | 1,54020 | 1,45271 |
| 1,18317 | 1,24630 | 1,33865 | 1,25216 |
| - 1423 | - 1763 | - 2186 | - 1787 |
| 12 378 | 12 2.97 | 12 2.14 | 12 18.70 |
| 468 | | | 11 57.83 |
| 10 44.58 | 10 45.38 | 10 46.21 | 10 50.52 |

| | | | |
|---|---|---|---|
| $\begin{array}{r} + 2624 \\ 1,31754m \\ \hline \end{array}$ | $\begin{array}{r} + 2346 \\ 1,31476m \\ \hline \end{array}$ | $\begin{array}{r} + 1459 \\ 1,30589m \\ \hline \end{array}$ | $\begin{array}{r} + 1444 \\ 1,30574m \\ \hline \end{array}$ |
| $\begin{array}{r} + 2077 \\ - 14 \\ \hline \end{array}$ | $\begin{array}{r} + 2064 \\ - 18 \\ \hline \end{array}$ | $\begin{array}{r} + 2023 \\ - 22 \\ \hline \end{array}$ | $\begin{array}{r} + 2022 \\ - 18 \\ \hline \end{array}$ |
| $\begin{array}{r} - 14 \\ \hline \end{array}$ | $\begin{array}{r} - 14 \\ \hline \end{array}$ | $\begin{array}{r} - 14 \\ \hline \end{array}$ | $\begin{array}{r} + 2022 \\ - 18 \\ \hline \end{array}$ |

[illegible]

1873.0

α
 41.78
 61
 .71
 .78
 .75
 63
 41.710
 679
 +.031

δ
 22.68
 23.20
 22.95
 23.96
 22.59

23.08 +1.40 24.48
 22.96 22.96
 +.12 +1.52

Apr. 10 +.104
 +.10

18 2.1
 3.4
 3.15
 3.35
 3.59
 3.80
 4.02
 4.23
 4.43
 4.63

3416
 3406
 34936 19 9.15

19 37.93
 42.51
 -4.58
 -4.61

+4.34 +.00
 +.18
 -0.83
 +3.69.70
 37.93
 41.62
 41.63

+188

10
 2 14.0
 18.2
 32.2
 12 16.70

+ 28.81
 1.45934
 1.25899m
 -18.15
 12 16.10
 11 57.95
 10 50.40

+ 847
 1.29977m

+ 19.94
 - .20
 + .11

+ 19.85
 11 1025 10.87
 8 403
 -2 300 302
 -2 29.2-18 29.4

- 1730 - 1730
 -2 29.66 29.69
 -2 46.96 + 60
 8 23.29 -2 46.39
 -70 8 23.68
 8 22.59

1473

$$\begin{array}{r}
 8 \text{ } 24 \text{ } 32 \\
 8 \text{ } 24 \text{ } 39 \\
 + 38 \text{ } 27 \\
 + 38 \text{ } 26 \\
 \hline
 3 = +3 \text{ } 55 \\
 + .07
 \end{array}$$

$\tan y = +.79$
 $x = -.020$
 $\cos x = +.99$
 $\Delta 1872 = 35.16$
 $\Delta 1873 = 39.076$
 $\rho 1873 = 26.5$

| Mon | m | s | |
|---------|----|-------|----|
| 6 | 24 | 40 | 1 |
| 11 | | 42 | 5 |
| 16 | | 46 | 6 |
| 21 | | 49 | 7 |
| 26 | | 39.92 | 7 |
| 31 | | 83 | 9 |
| 1/pt. 5 | | 74 | 9 |
| 10 | | 65 | 9 |
| | | 39.55 | 10 |

| | | | |
|----------|----------------------|----|----------|
| Sim D | 9.79367 | | |
| Cor D | 9.89385 | 26 | 637 |
| | 11.57 ^m | | 644 + .7 |
| | 10.1956 ^m | | 650 .6 |
| | | | 656 .6 |
| | | | 661 .5 |
| = +3.914 | | | 666 .5 |
| = -12.04 | | | 671 .5 |
| | | | 675 .4 |
| | | | 679 .4 |

| 1873 | Mar 10 | Mar 13 | Mar 16 | Mar 17 | Mar 31 | Apr 1 |
|--------------|-------------|--------------------|------------|------------|------------|------------|
| 8 23 20 | 28 15.1 | 23 (24.6) | 24 44.2 | 24 25.0 | 24 21.8 | 24 18.4 |
| 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 |
| 39.8 | 39.8 | 39.8 | 39.8 | 39.8 | 39.8 | 39.8 |
| 41.1 | 41.1 | 41.1 | 41.1 | 41.1 | 41.1 | 41.1 |
| 42.4 | 42.4 | 42.4 | 42.4 | 42.4 | 42.4 | 42.4 |
| 43.8 | 43.8 | 43.8 | 43.8 | 43.8 | 43.8 | 43.8 |
| 45.1 | 45.1 | 45.1 | 45.1 | 45.1 | 45.1 | 45.1 |
| 46.4 | 46.4 | 46.4 | 46.4 | 46.4 | 46.4 | 46.4 |
| 47.7 | 47.7 | 47.7 | 47.7 | 47.7 | 47.7 | 47.7 |
| 49.0 | 49.0 | 49.0 | 49.0 | 49.0 | 49.0 | 49.0 |
| 39.38 | 41.60 | 42.364 | 41.260 | 40.827 | 39.036 | 24 27.90 |
| 43.76 | 43.76 | 43.76 | 43.76 | 43.76 | 43.76 | 43.76 |
| 43.76 | 43.76 | 43.76 | 43.76 | 43.76 | 43.76 | 43.76 |
| 234 43.74 | 234 42.34 | 234 41.24 | 234 40.81 | 234 39.72 | 234 37.02 | 234 37.02 |
| 24 40.07 | 24 40.03 | 24 39.99 | 24 39.97 | 24 39.72 | 24 39.72 | 24 39.72 |
| +36.8 | +2.31 | +1.25 | +0.84 | +0.84 | +0.84 | +0.84 |
| +3.48 | +2.12 | +1.06 | +0.65 | +0.65 | +0.65 | +0.65 |
| -3.66 +0.2 | -2.32 -0.1 | -1.17 -0.1 | -0.86 -0.1 | -0.86 -0.1 | -0.86 -0.1 | -0.86 -0.1 |
| + .25 | + .21 | + .21 | + .26 | + .26 | + .26 | + .26 |
| -0.99 | -0.95 | -0.91 | -0.89 | -0.89 | -0.89 | -0.89 |
| -440.38 | -3.06 | -1.88.9 | -1.44.50 | -1.44.50 | -1.44.50 | -1.44.50 |
| 24 43.74 | 42.34 | 41.24 | 40.81 | 39.72 | 37.02 | 37.02 |
| 24 39.34 | 39.28 | 39.35 | 39.32 | 39.27 | 39.28 | 39.28 |
| 24 39.36 | 39.28 | 39.35 | 39.31 | 39.28 | 39.28 | 39.28 |
| +2.37 | +2.36 | +2.30 | | | +2.02 | |
| 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 3 41.7 | 3 6.0 | 3 32.0 | 3 29.0 | 3 24.3 | 3 24.3 | 3 24.3 |
| 32.0 | 5.0 | 28.0 | 24.6 | 25.1 | 25.1 | 25.1 |
| 7.37 | 12.50 | 6.00 | 5.36 | 4.94 | 4.94 | 4.94 |
| 33 36.85 | 53 2.50 | 53 30.00 | 53 26.80 | 53 24.70 | 53 24.70 | 53 24.70 |
| +27.31 | -3.34 | + 21.26 | | | + 9.14 | +18.64 |
| 1.43632 | 0.52427 | 1.32756 | | | 0.96095 | 1.27045 |
| 1.45088 | 1.54283 | 1.34712 | | | 0.98081 | 1.29001 |
| -2.85 | +3.50 +5.00 | -22.24 | | | -9.56 | -19.00 |
| 53 36.85 | 53 2.50 | 53 30.00 | | | 53 24.70 | 53 24.70 |
| 53 8.28 | 53 6.00 | 53 7.76 | | | 53 15.74 | 53 15.74 |
| 29 40.07 | 29 40.85 | 29 40.59 | | | 29 33.21 | 29 33.21 |
| +26.37 | +2.356 | +3 55 31 = 0.59610 | | | +14.53 | +14.53 |
| 0.62307 | 0.62026 | +14.60 | | | 0.61123 | 0.61123 |
| 4.20 | 4.17 | 4.09 | | | 4.09 | 4.09 |
| 15 | 15 | 12 | | | 12 | 12 |
| 22 | 18 | 21 | | | 21 | 21 |
| 4.57 | 4.36 | 4.42 | | | 4.05 | 4.05 |
| 29 35.50 | 29 35.21 | 29 36.17 | | | 29 29.16 | 29 29.16 |
| 27 49 | 27 5.3 | 27 5.6 | | | 27 7.2 | 27 7.2 |
| 40.7 -2 30.6 | 30.9 | 30.6 | | | -2 31.9 | -2 31.9 |
| -2 31.9 | -2 30.5 | -2 29.9 | | | -2 31.2 | -2 31.2 |
| -2 29.9 | -2 30.2 | -2 30.7 | | | -2 31.2 | -2 31.2 |
| -7.20 | -7.60 | -7.90 | | | -9.50 | -9.50 |
| -2 28.79 | -2 28.20 | -2 28.23 | | | -2 29.54 | |

Apr. 10 +.104
+10

24 195 24 119
22.0 13.1
24.8 14.3
30.0
32.5
35.2
37.9
40.6
43.8
46.6
51.1

3880
35.29
35.273 24 13.10
24 3
24 35.25
24 39.53
-4.30
-4.49

+4.34 +.00
+ .08 +.08
-0.47
+3.95
35.25
37.20
39.20

+1.88

50
3 26.9
28.6
55.5
53 27.75

+ 22.17
1.34574
1.36533m
-23.19
53 27.75
53 9.56
29 43.79

+875
0.60545

+ 403
- .13
+ .17

- 399
29 39.80 39.53
27 7.9
-2 31.9 32.2
-2 31.2 -27 31.5

-1020 - 1020
-2 29.66 -2 29.69
-2 39.86 13
26 59.94 -2 40.02
26 59.51

Apr. 10 $+1.04$
 $+1.10$

25 25 8.8
 13.7 9.5
 17.3 10.5
 21.2
 24.8
 28.9
 32.5
 36.3
 40.0
 43.4

35.6
 28.73
 28.733 25 9.60

25 28.68
 20 28.71
 -6.03
 -5.93

$+4.34 + .00$
 $+ .35$ $+ .36$
 -1.72

25 $+2988$
 28.68
 31.65
 31.66

15 $+188$

1 30.0
 31.4
 61.4
 16 30.70

$+ 14.13$
 1.28171
 0.83579m
 -6.85
 16 30.70
 16 23.85
 6 24.50

$+ 875$
 1.53935m

$+ 36.25$
 $- .05$
 $+ .07$

$+ 36.27$
 $7 077$ 0.65
 $4 32.9$
 $-2 28.4$ 28.5
 $-2 27.8 -12$ 27.9

$-2040 - 2040$
 $-2 29.66$ 29.69
 $-2 58.86 + 99$
 $4 10.71 -2 47.10$
 $4 11.55$

1473

March 1

$$\text{Tang} = +1.33$$

$$x = -0.25$$

$$\text{Corr} = +2.3 - 0.2$$

$$\alpha 1872 = 47.559$$

$$\alpha 1873 = 52.037 \quad \delta = 9' 15.06''$$

Sim 8 290320

Corr 8 297795

111671m

9.89366m

$$dx = +4.478$$

$$dy = -12.22$$

24.1
25.0 +9
25.9 .9
26.7 .8
27.5 .8
28.2 .7
28.8 .6
29.3 .5
29.8 .5

1873 Mar 10 +321 Mar 13 +277 Mar 17 +327 Mar 27 +255 Mar 30 +201 Apr 1 +161

| | | | | | | | | | | | |
|-------|--------|------|--------|------|--------|--------|--------|--------|--------|------|-----|
| 8 28 | 28 346 | 28 | 28 268 | 29 | 29 312 | 29 235 | 29 312 | 29 217 | 29 208 | 29 | 170 |
| 57.4 | 58.1 | (29) | 28.0 | 44.2 | 348 | 249 | 33.7 | 23.7 | 33.1 | 18.3 | |
| 57.4 | 58.1 | (29) | 24.4 | 48.8 | 382 | 26.9 | 34.2 | 25.2 | 36.5 | 20.1 | |
| 55.5 | | | | 50.6 | 45.0 | | 44.1 | | 43.4 | | |
| 55.3 | | | | 52.3 | 48.6 | | 44.3 | | 46.9 | | |
| 54.0 | | | | 54.0 | 53.0 | | 50.9 | | 50.2 | | |
| 54.8 | | | | 55.4 | 55.3 | | 54.3 | | 53.7 | | |
| 29 04 | 29 28 | | | 54.4 | 54.0 | | 54.9 | | 54.4 | | |
| 2.1 | (30) | | | 50.2 | 50.8 | 30 | 50.6 | | 4.0 | | |
| 3.9 | | | | 50.9 | 93 | | 8.2 | | 7.5 | | |
| | | | | 10.9 | 12.9 | | 11.4 | | 11.0 | | |

| | | | | | |
|-------------|------------------|----------------------|------------------|------------------|------------|
| 5128 | 55.700 | 4861 | 5419 | 55.48 | 55.5 |
| 56.98 | 55.700 | 5401 | 54.99 | 55.89 | 55.32 |
| 56.978 | 28 36.27 | 54011 | 51.991 | 50.891 | 50.318 |
| 29 56.95 | 29 55.68 | 29 53.99 | 29 51.97 | 29 50.87 | 29 50.29 |
| 29 53.49 | 29 53.49 | 29 53.37 | 29 53.14 | 29 53.06 | 29 52.01 |
| +3.46 | +2.24 | +0.62 | -1.17 | -2.19 | -2.72 |
| +3.23 | +2.01 | +0.39 | -1.40 | -2.42 | -2.95 |
| -3.66 +0.2 | -2.32 -0.1 | -0.86 | +5.13 +0.50 | +2.14 +0.1 | +2.76 +0.1 |
| + .43 | + .36 | + .44 | + .32 | + .29 | + .23 |
| -1.45 | -1.40 | -1.33 | -1.10 | -1.02 | -0.97 |
| -4.68.6 | -3.36 | -1.78.9 | +0.38.7 | +1.44.0 | +2.02.1 |
| 29 56.95 | 55.68 | 53.99 | 51.97 | 50.87 | 50.29 |
| 29 52.27 | 52.32 | 52.24 | 52.32 | 52.28 | 52.31 |
| 29 52.29 | 52.32 | 52.22 | 52.34 | 52.27 | 52.30 |
| +2.37 | +2.36 | +2.07 | +2.03 | +2.02 | |
| 10 | 10 | 10 | 10 | 10 | 10 |
| 1 25.8 | 1 30.5 | 1 28.1 | 1 22.3 | 1 25.1 | |
| 1 16.9 | 2.3.9 | 20.0 | 20.0 | 25.2 | |
| 1 4.27 | 54.4 | 48.1 | 42.3 | 50.3 | |
| 11 20.35 | 11 27.20 | 11 24.05 | 11 21.15 | 11 25.15 | |
| +20.70 | +27.53 | +26.89 | +27.36 | +31.88 | |
| 1. 315.97 | 1. 439.81 | 1.429.59 | 1.434.12 | 1.503.11 | |
| 1. 209.63 | 1. 303.47 | 1. 323.25m | 1. 330.78m | 1. 396.77m | |
| 1. 16.30 | 1. 3.55 | -21.05 | -21.42 | -24.93 | |
| 1. 31.35 | 1. 3.20 | 11 24.05 | 11 21.15 | 11 25.15 | |
| 1. 31.35 | 1. 5.65 | 11 3.00 | 10 59.73 | 11 0.22 | |
| -11 57.15 | | +53 11 45.35 | 11 48.62 | 11 48.33 | |
| 11 43.20 | 11 42.90 | -10 46.34 = 0.13980m | +9.67 | +14.62 | |
| +26.59 | +23.65 | +2.541 | 1.04947m | 1.05442m | |
| 1.06639m | 1.06345m | 1.06521m | | | |
| + 11.65 | + 11.57 | + 11.62 | + 11.21 | + 11.33 | |
| - .08 | - .08 | - .19 | - .19 | - .26 | |
| | | + .03 | + .03 | + .03 | |
| +11.45 | + 11.30 | + 11.46 | + 11.05 | + 11.10 | |
| 11 54.25 | 11 54.55 | 11 56.81 | 11 59.67 | 11 59.43 | 59.32 |
| 9 25.8 | 9 26.3 | 9 28.3 | 9 28.7 | 9 28.9 | |
| -0.22 28.8 | 28.9 | -2 28.5 | 28.6 | 31.1 | 30.6 |
| -2 29.4 -10 | 29.1 -2 27.9 -11 | -2 28.7 -11 | 28.8 -2 31.2 -10 | 31.3 -2 30.7 -11 | 30.8 |
| -10.70 | 10.70 | -13.20 | 13.20 | -13.60 | 13.60 |
| -2 28.49 | -2 28.90 | -2 28.93 | 29.08 | -2 29.59 | 30.06 |
| -2 31.19 | 45 | -2 42.13 | 39 | -2 43.19 | 38 |
| 53 9 15.46 | 39.15 | 9 14.98 | 41.89 | 9 16.48 | 16.09 |
| 9 15.40 | 9 14.60 | 9 14.75 | 14.81 | 9 16.29 | 16.42 |

Apr. 10 $+1.04$
 $+1.10$

29 27.8 29 23.5
 31.4 25.0
 34.8 26.9
 41.6
 49.9
 48.5
 51.1
 55.3
 2.3
 3.7
 9.1

53.8
 48.48
 48.482 29 25.13

29 48.46
 29 52.78
 -4.32
 -3.55

+4.34 +.00
 +.13 +14
 -0.74

29 48.46
 52.19
 52.20

+1.88

10
 1 16.9
 18.8
 35.7
 11 17.85

+ 23.35
 1.36829
 1.26195m

-18.28
 11 17.85
 10 59.57

11 48.78

+ 9.03
 1.04883m

+ 11.19
 + .14
 + .06

+ 11.11
 11 59.89 59.79
 9 29.8

-2 30.1 30.2
 -2 30.3 -10 30.4

-14.70 - 14.70
 -2 29.66 -2 29.69
 -2 44.36 + 3.5
 9 13.53 -2 44.04
 9 15.75

\checkmark
 $3241 = 69$
 $8 \cdot 30 \cdot 30$
 $20 \cdot 30 \cdot 32$
 $+ 73 \cdot 06$
 $+ 72 \cdot 06 \cdot 05$
 $107 \cdot 53 \cdot 55$
 $3 = -65 \cdot 31$
 -0.91

Rd.
 1 13.41
 2 14.05
 3 8.71
 4 3.36
 5 0.00

Lim 8 9.97845 Tang 8 = 30.96
 Cos 8 9.48764m
 115.71m
 9.60333

K = +.049

21873 =

$30 \cdot 32.340$
 $32.68 \cdot 27.32$

-0.1

1873 Mar. 10 +321

Mar. 13 +277

Mar. 17 +327

Apr. 1 +161

8 29.3
 198
 235
 28.7
 298
 382
 364
 390
 430
 464

80.226
 25.0
 28.3

30
 27.6 31.0
 31.0 31.0
 34.2 30.8
 37.5 30.6
 40.9 30.9
 44.5 31.1

29 29.8
 33.1
 31.6
 43.5
 47.0
 53.7
 57.4
 30 4.2
 11.0

29 17.0
 18.0
 18.6
 19.6
 20.4
 23.6
 16.72

2990
 33.222 29 46.75
 39 33.27
 -36.4
 -7.9
 +3.70
 39 32.34

30 25.30

30.923
 30 30.98
 -0.87
 -1.01
 +3.32
 30 32.42

53.41
 53.4
 50.73 29 18.72
 29 50.42
 -2.78
 -5.0
 +2.38
 [29 55.08]

-0.86

+237

25
 3 28.2
 21.1
 4.94
 28 24.70
 28 40.00

+ 4.171
 1.64807
 1.25142
 + 7.84
 28 24.70
 28 42.54

107 54 5.81

$-65 \cdot 28 \cdot 55 = 2.09885m$
 $+ 2.659$
 $2.12544m$
 $+ 1.05$
 $+ 2 \cdot 13.98$
 $+ 4.0$
 $- 20 = 27$

+2 13.73
 107 56 19.54 56 19.27
 + 19.84

-2 28.14
 -2 2.602 +23.3
 107 54 18.29 53 31.21 m

-2 28.90
 -2 2.15
 20 30 29.2 46.59
 0 53 32.68
 +72 63

+202

25
 3 29.8
 34.0
 6.38
 28 31.90

+ 3.165
 1.56039
 1.10372
 + 1.270
 28 31.90
 28 44.00
 54 37.5

+14.62
 2.11347m
 + 0.03
 +2 9.86
 + 1.16
 + 0.07

+2 10.12
 56 13.87
 + 23.71
 -2 29.54
 -2 2.53
 54 8.64

-2 53.25
 de
 + 29.48

+10
 11
 -209

1473

73 Draco
 $\begin{matrix} 8 & 33 & 10 \\ 20 & 33 & 09 \\ + & 740 & 31 \\ + & 74 & 31 \\ 105 & 28 & 52 \\ 2 = -63 & 6 & 4 \\ -89 \end{matrix}$

Tang $\delta = -36.1$ Mar. 11 $m.s.$
 $\chi = +0.57$ " 21
 $\text{Conv} = +0.2 + 0.9$ " 26
 $21872 = 10.124$ Apr. 5
 $21873 = 9.407$ $\delta = 31$ $\gamma = 28$ 52.39

Sin δ 9.98395
 Cos δ 9.4264430
 $\begin{matrix} 47.8 \\ 46.7 - 1.1 \\ 45.7 10 \\ 44.9 8 \\ 44.2 7 \\ 43.7 5 \\ 43.3 4 \end{matrix}$

1873
 Mar. 10 $+321$ $+322$ Mar. 13 $+277$ $+27$ Mar. 17 $+327$ $+33$ Apr. 1 $+161$ $+17$ Apr. 10 $+104$ $+10$

| | | | | | | | | |
|--------|--------|--------|--------|--------|--------|---------|--------|---------|
| 8 31 | 32 484 | 31 | 31 408 | 33 | 32 | 32 28.6 | 32 | 32 57.0 |
| 542 | 459 | 531 | 421 | 524 | 490 | 33.3 | 478 | 54.3 |
| 584 | 57.0 | 569 | 458 | 56.0 | 52.9 | 377 | 57.8 | 52.3 |
| 32 1.9 | | 32 0.5 | | 33 0.0 | 57.4 | | 53.3 | 22.5 |
| 6.6 | | 5.2 | | 4.0 | 33 0.8 | | 57.5 | 24.1 |
| 9.9 | | 8.3 | | 7.4 | 4.6 | | 33 3.4 | 35.22 |
| 12.6 | | 12.9 | | 11.2 | 8.3 | | 7.3 | 10.44 |
| 17.4 | | 15.9 | | 15.4 | 12.3 | | 11.0 | |
| 21.4 | | 19.1 | | 19.5 | 16.2 | | 15.0 | |
| 25.9 | | 24.2 | | 23.4 | 19.9 | | 15.7 | |

6289 9.86 9.856 32 46.77 6164 8.52 8.522 31 42.03 6046 7.73 7.733 5814 4.60 4.600 32 33.20 5700 3.33 3.333 32 22.30

33 9.91 33 8.58 33 7.79 33 4.66 33 3.39
 33 5.12 33 8.32 33 5.56 33 6.62 33 7.23
 4489 +3.26 +2.23 -196 -394
 4.77 +3.24 +2.21 -1.98 -396

-366+02 -116 -2.32+01 -100 -0.85-01 -118 +2.77+01 -58 +4.35+02 -37
 -1.16 -97 -1.19 -1.19 -2.61 -36
 +4.29 +409 +3.85 +2.77 +2.08
 +0.321 +0.8076 +1.81 +4.859 +6.086
 33 9.91 33 8.58 33 7.79 33 4.66 33 3.39
 33 9.38 33 9.38 33 9.60 33 9.61 33 9.65 33 9.65 33 9.65
 33 940 33 934 33 960 33 965 33 965 33 965

+2.37 +2.36 +2.02 +1.88
 50 26.9 50 2.8 50 50.2 50 3.2
 3 19.9 3 58.0 3 54.7 3 8.4
 46.8 1208 1049 116
 53 2340 53 0.40 52 5245 53 580

-36.91 +26.49 1.56714m 1.42308 1.10929m 0.96523 +9.23 50 23.40 53 5.40 53 9.63 29 38.72
 +105-29 37.81 29 38.72

-63 4 26 = 2.05257m +2672 +2375 2.07429m 2.07632m
 +.04 +.03 +2 0.23 +1 37.21 +.19 +.10 +.20 +.18
 +2 0.06 +1 59.16 +1 56.97 +1 55.48
 105 31 37.81 31 37.88 31 41.70 31 44.46 44.21
 29 11.9 29 12.6 29 15.9 29 16.7 29 16.7
 -2 26.0 -2 25.3 -2 26.0 -2 27.8 -2 27.8
 -2 26.9 -2 27.2 -2 26.9 -2 27.1 -2 27.1
 -17.50 -19.50 -20.20 -20.20 -23.50 -23.50 -24.30 -24.30
 -2 28.49 -2 28.90 -2 28.20 -2 28.38 -2 29.54 -2 29.48 -2 29.66 -2 29.69
 -2 47.99 +2.10 -2 48.40 +2.10 -2 53.04 +1.79 -2 53.96 +1.67
 105 28 49.88 -2 46.30 28 49.48 -2 46.48 28 48.89 -2 51.19 28 50.50 -2 52.32
 28 52.30 28 51.16 28 50.51 28 51.89

N/Jan 10 $+1.104$
 $+1.10$

| | | | |
|----|------|----|-------|
| 37 | 110 | 37 | 45 |
| | 13.0 | | 5.8 |
| | 15.2 | | 6.6 |
| | 19.5 | | 12.1 |
| | 21.8 | | 22.7 |
| | 23.8 | | 58.4 |
| | 26.0 | | 116.8 |
| | 28.2 | | |
| | 32.5 | | |
| | 34.8 | | |
| | 36.9 | | |

2627
 2388
 23882 37 \checkmark 1168
 8.63

37 23.87
 37 28.33
 -4.46
 $+4.357.00$
 $+ .03$ $+1.03$
 -0.40
 $+3.88$
 37 23.87
 27.85
 27.85

40 $+1.88$
 3 4.9
 3.6
 8.5
 43 4.25

$+ 12.25$ $+18.25$
 1.08636 1.26126
 1.17873 1.35363
 -15.09 -22.58
 43 4.25 4.05
 42 4.16 4.07
 39 5.19 6.68

$+ 9.31$
 1.41301

$+ 25.88$
 $- .03$
 $+ 15$
 $- 25.76$
 39 33.43 40.92 40.67
 37 12.6
 -2 28.3 25 28.6
 -3.20
 -2 29.66 32.0
 -2 32.86 29.69
 37 8.06 7.5
 -2 33.64
 37 7.03

1473

ϵ Hydraz
 $\lambda = 39.57$
 $\mu = 6.0$
 $\nu = 53.1$
 $\omega = 6.53$
 $\pi = 29.48$
 $\sin i = +58$
 $\tan i = +12$
 $x = -0.16$
 $\cos i = -11$
 $\Delta 1872 = 59.780$
 $\Delta 1873 = 0.448$
 $\Delta 1873 = 2.965$
 $\Delta 1873 = 52.5952$

$40 \sim 5$
 376
 372
 368
 363
 358
 352
 345
 338
 331

 $\sin i = 9.07863$

$\cos i = 9.99686$
 $52 \sim 58.4$
 58.3
 58.3
 58.3
 58.3
 58.3
 58.4
 58.5
 58.7
 58.9

$dx = +3184$
 $dy = -12.91$

| 1873 | Mar 8 | Mar 10 | Mar 13 | Mar 17 | Mar 21 | Apr 1 |
|-------|------------|----------|----------|----------|--------|----------|
| h m s | +270 | +321 | +277 | +327 | | +161 |
| 39 | 39.29 | 38.501 | 38.535 | 39.520 | | 39.48.1 |
| 40 | 49 | 51.3 | 55.5 | 54.0 | | 52.3 |
| 50 | 52.4 | 56.8 | 54.4 | 56.1 | | 52.3 |
| 60 | 58.8 | 58.8 | 54.4 | 56.1 | | (54.4) |
| 70 | 2.9 | 3.9 | 3.9 | 2.3 | | 58.6 |
| 80 | 5.3 | 7.3 | 5.8 | 4.4 | | 0.6 |
| 90 | 10.3 | 11.4 | 8.0 | 6.6 | | 2.8 |
| 100 | 15.3 | 15.5 | 9.9 | 8.6 | | 4.9 |
| 110 | 20.3 | 19.4 | 14.2 | 12.4 | | 8.0 |
| 120 | 25.3 | 19.4 | 16.3 | 14.4 | | 11.0 |
| 130 | 29.8 | 19.4 | 18.4 | 16.8 | | 13.1 |
| 140 | 16.80 | 19.91 | 72.48 | 70.83 | | |
| 150 | 15.273 | 41.91 | 58.91 | 43.91 | | 0.4164 |
| 160 | 38 51.30 | 38 55.40 | 38 52.10 | 38 49.03 | | 39 44.03 |
| 170 | 15.26 | 7.18 | 5.88 | 4.38 | | 40 0.45 |
| 180 | 3.70 | 3.69 | 3.66 | 3.62 | | 40 3.43 |
| 190 | -48.44 | +3.49 | +2.22 | +0.76 | | -2.98 |
| 200 | -48.53 | +3.60 | +2.33 | +0.87 | | -2.87 |
| 210 | +48.31 | -3.66 | -2.32 | -0.85 | | +2.77 |
| 220 | +0.03 | +0.04 | +0.03 | +0.04 | | +0.02 |
| 230 | -3.23 | -3.22 | -3.22 | -3.15 | | -2.96 |
| 240 | +4.51 | -6.84 | -5.48 | -3.76 | | -0.17 |
| 250 | 15.26 | 18.24 | 3.88 | 4.38 | | 0.45 |
| 260 | 0.37 | 0.34 | 0.40 | 0.42 | | 0.28 |
| 270 | 2.87 | 2.85 | 2.88 | 2.90 | | 2.98 |
| 280 | +2.39 | +2.37 | +2.36 | | | +2.02 |
| 290 | 2 14.1 | 1 56.0 | 2 2.1 | 25 9.9 | | 25 59.9 |
| 300 | 5.5 | 47.1 | 56.0 | 4.0 | | 57.8 |
| 310 | 19.6 | 103.1 | 118.1 | 13.9 | | 117.7 |
| 320 | 9.80 | 26 51.55 | 26 59.05 | 27 6.95 | | 26 58.85 |
| 330 | +23.77 | +11.79 | +13.44 | | | +16.43 |
| 340 | 1.37967 | 1.07151 | 1.23001 | | | 1.21564 |
| 350 | 1.49224 | 1.18408 | 1.24258 | | | 1.32821 |
| 360 | -31.06 | -15.28 | -17.48 | | | -21.29 |
| 370 | 12 9.80 | 26 51.55 | 26 39.05 | | | 26 58.85 |
| 380 | 11 38.74 | 26 36.27 | 26 44.57 | | | 26 37.86 |
| 390 | +6 10 9.81 | 56 12.08 | 56 6.58 | | | 56 10.79 |
| 400 | +9.78 | +26.84 | +23.85 | | | +14.81 |
| 410 | 1.62288 | 1.63994 | 1.63695 | | | 1.62791 |
| 420 | 41.96 | 43.64 | 43.34 | | | 42.45 |
| 430 | 0.4 | 0.1 | 0.1 | | | 0.1 |
| 440 | 0.4 | 0.11 | 0.06 | | | +0.04 |
| 450 | 42.04 | 43.76 | 43.41 | | | 42.42 |
| 460 | 27.57 | 27.39 | 27.09 | | | 27.37 |
| 470 | 52.58 | 52.58 | 52.58 | | | 52.58 |
| 480 | -2 25.3 | -2 29.5 | -2 28.8 | | | -2 30.0 |
| 490 | +1.20 | +0.90 | +0.90 | | | +0.40 |
| 500 | -2 28.18 | -2 28.49 | -2 28.20 | | | -2 29.54 |
| 510 | -2 26.98 | -2 27.29 | -2 27.00 | | | -2 28.44 |
| 520 | 6 53 45.9 | 28.47 | 28.40 | | | 52 59.93 |
| 530 | +1.28 | 1.38 | 1.37 | | | 52 59.93 |
| 540 | 46 53 1.87 | 28.65 | 29.07 | | | 53 1.21 |
| 550 | 52 58.44 | 52 59.10 | 52 58.39 | | | 52 58.66 |

1873.0

 α
 2.87
 .85
 .88
 .90
 .98
 .82
 .87
 2.881
 .965
 -.084

 δ
 1.87
 2.31
 1.37
 1.21
 0.63
 1.80

 -2.56 58.97
 59.52
 -.55

$\frac{1}{2}$ 10 $+104$
 $+10$
 39 46.5 39 41.8 39 45.7 39 33.5
 48.4 42.7 47.7 34.6
 50.4 43.6 48.8 35.8
 54.4 53.9
 56.9 56.0
 58.0 58.0
 1.0 0.1
 3.0 2.3
 7.0 6.5
 1.3 8.5
 11.4 10.7
 64.73 63.2
 58.85 58.11
 58.845 39 42.70 58.109 39 34.63

39 58.83 39 58.09
 40 3.31 40 3.24
 -4.48 -5.18
 -4.37 -5.04
 +4.35 +1.00 +5.03 +.01
 +.01 +.02
 -284.37 -277.28
 +1.52 39.8 2.28 47.8
 39 58.83 58.83 58.09 58.09
 0.38 2.82 0.37 2.86
 2.82 2.87

$+1.88$ $+1.80$
 25 59.5 25 9.7
 58.9 5.8
 118.4 15.5
 26 59.20 27 77.5
 + 16.14 + 23.48
 1.20770 1.37070
 1.32047m 1.48327m
 -20.92 -30.43
 26 59.20 27 77.5
 26 58.28 26 37.32
 56 10.07 56 11.03

+9.59 +9.67
 1.62269 1.62277
 * - 41.95 * - 41.95
 .01 .04
 + .10 + .10
 - 41.86 - 41.89
 55 28.21 28.05 55 29.14 28.97
 52 58.7 52 58.9
 -2 29.5 -16 29.7 -2 30.2 -17 30.4
 + 0.50 0.80 + 0.30 0.60
 -2 29.66 -2 29.22
 -2 28.86 + 0.50 -2 28.62 + 0.60
 52 59.35 -2 29.69 53 0.52 29.47
 +1.28 -109 +1.28 -104
 53 0.63 -2 29.98 53 1.80 -2 27.91
 52 58.07 52 59.06

$$\text{Tang } \rho = +1.916 \quad \text{Sin } \rho = 9.94786$$

$$K. = -.033 \quad \text{Cor } \rho = 9.66465$$

$$.115712$$

$$9.78036m$$

$$\times 1873 = 42 \quad 53.337$$

$$\rho = 4.40$$

$$+3.675$$

$$-13.74$$

$$\begin{array}{r} 5 \text{ Urs. Maj.} = \text{Gr. 1472} \rightarrow 70 \\ \begin{array}{r} 8 \text{ } 43 \text{ } 49 \\ 8 \text{ } 42 \text{ } 54 \\ + 62 \text{ } 29 \text{ } 08 \\ \hline 3 = 20 \text{ } 6 \text{ } 20 \\ - 034 \end{array} \end{array}$$

$$1873 \text{ Mar. 17 } +327$$

$$\begin{array}{r} h \text{ } m \text{ } s \\ 8 \text{ } 42 \text{ } 5 \\ 46.5 \\ 48.4 \\ 51.0 \\ 53.3 \\ 55.5 \\ 57.8 \\ 59.8 \\ 43 \text{ } 26.2 \\ 4.4 \end{array}$$

$$\text{Mar. 31}$$

$$\text{Apr. 10 } +104$$

$$\begin{array}{r} 42 \quad 42 \quad 9.2 \quad 42 \quad 42 \quad 17.6 \\ 41.1 \quad 11.6 \quad 40.2 \quad 19.7 \\ 43.3 \quad 13.5 \quad 42.6 \quad 21.8 \\ 45.5 \quad 44.8 \\ 47.8 \quad 47.0 \\ 50.0 \quad 49.2 \\ 52.3 \quad 51.3 \\ 54.5 \quad 53.9 \\ 56.8 \quad 55.8 \\ 59.0 \quad 58.3 \end{array}$$

$$\text{Apr. 15 } +137$$

$$49.02$$

$$55.47$$

$$\begin{array}{r} 42 \text{ } 55.44 \\ - 9.84 \\ + 63 \\ - 1.94 \end{array}$$

$$42 \text{ } 53.23$$

$$\begin{array}{r} 450.8 \quad 442.9 \\ 50.08 \quad 42 \quad 11.43 \quad 49.21 \quad 42 \quad 19.70 \end{array}$$

$$\begin{array}{r} 42 \text{ } 50.00 \\ + 1.34 \\ + .20 \\ - 1.21 \end{array}$$

$$\begin{array}{r} 42 \text{ } 49.18 \\ + 5.04 \\ + .26 \\ - 1.03 \end{array}$$

$$42 \text{ } 53.33$$

$$42 \text{ } 53.45$$

$$\begin{array}{r} 50 \\ 4 \text{ } 34.8 \\ 31.4 \\ 66.2 \\ 54 \text{ } 33.10 \end{array}$$

$$+1.88$$

$$\begin{array}{r} 50 \\ 4 \text{ } 41.0 \\ 43.9 \\ 84.9 \\ 54 \text{ } 42.45 \\ + 38.60 \\ + 38.70 \\ 1.58659 \\ 1.36695m \\ - 23.28 \\ 54 \text{ } 42.45 \\ 54 \text{ } 19.17 \end{array}$$

$$+ 62 \text{ } 28 \text{ } 29.18$$

$$- 20 \text{ } 3 \text{ } 18 = 1.32260m$$

$$+ 9.59$$

$$1.33219m$$

$$+ 21.19$$

$$+ 23.38$$

$$+ 21.38$$

$$+ 62 \text{ } 28 \text{ } 50.56 \text{ } 28 \text{ } 50.18$$

$$- 16.98$$

$$- 2 \text{ } 29.66$$

$$- 2 \text{ } 46.64$$

$$+ 62 \text{ } 26 \text{ } 3.92$$

$$+1.80$$

$$\begin{array}{r} 50 \\ 4 \text{ } 36.8 \\ 35.8 \\ 72.6 \\ 54 \text{ } 36.30 \end{array}$$

$$\begin{array}{r} + 29.51 \\ 1.46907 \\ 1.25033m \\ - 17.80 \end{array}$$

$$54 \text{ } 36.30$$

$$54 \text{ } 18.50$$

$$28 \text{ } 29.85$$

$$+ 9.67$$

$$1.33227m$$

$$+ 21.19$$

$$+ 23.37$$

$$+ 21.53$$

$$+ 51.38$$

$$- 17.18$$

$$- 2 \text{ } 29.22$$

$$- 2 \text{ } 46.70$$

$$26 \text{ } 4.68$$

$$- 16.98$$

$$- 2 \text{ } 29.69$$

$$+ 63$$

$$- 2 \text{ } 46.04$$

$$26 \text{ } 4.14$$

$$- 17.48$$

$$29.47$$

$$+ 60$$

$$- 2 \text{ } 46.35$$

$$26 \text{ } 4.66$$

$$\begin{array}{r} h \text{ } m \text{ } s \\ 8 \text{ } 42 \text{ } 55 \\ 0 \\ + 62 \text{ } 26 \text{ } 28 \end{array}$$

Man
 57 Canon. Tany S = +60
 8 46 23
 8 46 29
 + 51° 04' "
 + 31 03 31
 2 = +11 19 17
 +.20
 X = -0.18
 Coix = +.08
 +.05 = 0.86
 21872 = 25.740
 21873 = 29.416 $\delta = 3$ 30.79
 1173 March 1
 Mar. 11 46^m 30.39
 16 30.34
 21 28
 26 21
 31 13
 5 30.05
 10 29.9
 15 30.79
 Sin δ 9.71268 3 34.1
 Cos δ 9.93276 35.2
 11.571m 35.7
 04847m 36.2
 36.7
 37.1
 37.5
 38.0
 38.4
 8dx + 8675
 ddt - 1334
 34.1 +6
 35.2 .5
 35.7 .5
 36.2 .5
 36.7 .5
 37.1 .4
 37.5 .4
 38.0 .5
 38.4 4

1873 Mar. 17 +327
 46 164
 190
 21.5
 26.2
 28.4
 31.0
 33.6
 35.9
 40.4
 43.0
 45.5
 3418
 31.18
 31.073
 46 31.06
 46 31.23
 +0.73
 +1.68
 -0.85-01
 +.20
 -0.91
 -1.568
 46 31.06
 46 29.50
 46 29.48
 Mar. 31 +.207
 46 138
 15.4
 18.2
 22.9
 25.4
 27.8
 30.2
 32.4
 34.0
 36.4
 42.3
 3162
 27.84
 27.836 46 8.32
 6.70
 46 27.82
 46 30.13
 -2.31
 -2.34
 +2.27+01
 +.13
 -0.71
 +1.68
 27.82
 29.51
 29.51
 +2.02
 15 54.8
 1 57.0
 1 105.8
 16 3290
 + 19.52 +21.14
 1.29048 1.22510
 1.33893m 1.37357
 -2.82 -23.63
 16 3290 52.90 16 33.30
 16 31.08 27.27 16 28.81
 +31 6 17.27 19.08 6 19.54
 +11 18 54 = 1.06150
 +1242
 1.07392
 * 11.86
 - .08
 + .04
 - 11.90
 + 31 6 53.7 7.18 7.03 6 7.74 7.59
 3 37.1 3 38.4
 -2 28.3 30.1 30.2 -2 29.3 29.4
 -2 29.1 30.9 -15 30.0 -2 30.1 -15 30.2
 -6.30 -7.60
 -2 30.23 -2 31.06 -2 30.82 29.47
 -2 30.53 -2 31.40 3 30.92 -36
 +31 3 29.65 -2 30.76 -2 30.43
 3 29.24 3 30.16

-0.8

1473
March 1

March 11 m s
48 48.54 5
16 49 5
21 49 5
26 38 6
31 31 7
36 25 6
41 15 7
46 11 7
51 13 8

Sin δ 7.0494025 36.5
Cos δ 7.99726 36.3
1157m 36.3
11297m 36.3
36.4
36.5
36.7
36.9

dx = +3.178
dd = -13.47

Hydras
8 48 35
8 48 41
+ 6 26 38
+ 35 57 10
+ .59

Tang = +11

x = -0.16

conv = .04

 $\Delta 1872 = 37.608$ $\Delta 1873 = 40.786$ $\delta 1873 = 25.3786$ 1873
Mar 17 +327
+33Mar 31 +207
+21Apr 15 +137
+14

48 36.0
31.9
34.0
38.0
40.1
42.3
44.3
46.4
48.6
50.9
52.4
54.4

46.50
42.20
42.73

48 42.26
48 41.48
+0.78
+0.52

-0.85-0.1
+0.04
-0.69
-1.581
48 42.26
48 40.76
48 40.75

50
4 20.0
14.1
3.41
54 17.05
8
+ 15.04
1,177.25
1,290.22m
-19.51
54 17.05
53 57.54
+ 6 28 50.81

+35 56 21 = 1.62620
+12.42
1.63272

+ 42.93
- .01
+ .09

+6 28 7.96 28 7.62 28 9.27 8.92
25 36.4 25 36.9
- 2 31.6 -34 31.9 -2 32.9 -35 32.8

- 8.50 +1.50
- 2 30.23 + 1.50 - 2 29.22 + 1.00
- 2 29.73 - 2 31.06 - 2 28.22 29.47
+ 6 25 38.23 - 1.19 25 41.05 - 1.05
- 2 30.75
25 36.87

1273

i Urs. Map. Tangl = +1.13 Mon. 1 50^m 31.68^s
 $x = -0.23$ 6 31.62^s
 $\text{Corr} = +0.0$ 11 31.56^s
 $\Delta 1872 = 26.010$ 16 31.49^s
 $\Delta 1873 = 30.150$ 21 31.41^s
 $\Delta 1873 = 32.1776$ 26 31.32^s
 31 31.20^s
 5 31.09^s
 10 30.99^s
 15 30.88^s
 20 30.76^s

Sin δ 9.87468

Cos δ 9.82078 32 24.4
 11371^m 25.3 +.9
 9.93669^m 26.2 .9
 27.0 .8
 27.8 .8
 28.5 .7
 29.2 .7
 29.8 .6
 30.4 .6
 30.8 .4

 $d_{\text{ref}} = +4.140$ $d_{\text{ref}} = -13.85$ 1873 Mar 17 +.327
+33

850
 256
 243
 289
 304
 319
 335
 350
 366
 382

384
 393
 31733

50 31.91
 50 31.47
 +0.44

-0.85 .01
 +.37
 -1.32
 -1.801

50 31.91
 50 31.11
 50 30.10

+37

Mar 1 +.207
+21

50 102
 18.2
 16.2
 22.3
 25.5
 28.8
 31.9
 35.0
 41.3
 44.3
 47.4

31.61
 28.04
 28.736 50 6.00

50 28.71
 50 31.19
 -2.48

+2.27 +.01

+.24

-1.04

+1.97

28.71

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

Apr. 15 +.137
+14

50 102
 18.2
 16.2
 22.3
 25.5
 28.8
 31.9
 35.0
 41.3
 44.3
 47.4

31.61
 28.04
 28.736 50 6.00

50 28.71
 50 31.19
 -2.48

+5.03 +.01

+.16

-0.72

+1.97

28.71

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

30.18

+1202

415

3 17.2

13.3

30.5

48 15.25

+ 22.74

1.35679

1.29348_m

-19.66

118 15.25

47 55.59

+ 48 34 52.76

-6 9 41 = 0.79350_m

+12.42

0.80592_m

+ 6.40

- 1.14

+ 2.06

+ 6.32

+118 34 59.08

32 29.2

-2 29.9

-11.40

-2 30.23

-2 41.63

+48 32 17.95

+ 2.2

34 58.2

32 30.8

-2 26.1

-13.00

-2 29.22

-2 42.22

-2 42.22

-2 42.22

-2 42.22

-2 42.22

-2 42.22

+180

415

3 21.0

19.8

40.8

48 20.40

+ 26.11

1.41681

1.35350_m

-22.57

48 20.40

47 55.59

34 50.52

+9.83

0.80333_m

+ 6.36

- 1.18

+ 2.16

+ 6.34

34 58.2

32 30.8

-2 26.1

-13.00

-2 29.22

-2 42.22

-2 42.22

-2 42.22

-2 42.22

1873

 $\sin \delta = 9.99582$ $\tan \delta = -7.159$
 $\cos \delta = 9.12994$ $K = +.110$
 $.115712$
 9.25565
 $d = -3.938$
 $20 = +3.66$
 $\delta 1873 = 2699.3301$

76 Draco tangl- Red.
 $x = 5693.2982$
 $y = 4240.2287$
 $z = 1492.1473$
 $\Delta 1873 = 38.537$ $\rho = 3.3209$

1873 March +327 March +207 Apr. 15 +137

| h m s | h m s | h m s |
|------------|---------|-----------|
| 8 57 | 51 | 51 47 51 |
| 8 57 | 51 | 51 47 51 |
| 192 341 | 163 312 | 232 306 |
| 262 336 | 239 313 | 303 303 |
| 339 339 | 311 314 | 371 257 |
| 410 336 | 388 314 | 449 300 |
| 490 341 | 463 311 | 525 301 |
| 560 336 | 535 258 | 52 01 393 |
| 52 3.7 359 | 596 | |

| | | | | |
|-----------|-----------|----------|-----------|----------|
| 51 33.829 | 51 31.075 | 51 48.60 | 51 30.147 | 51 30.55 |
| 51 33.94 | 51 31.18 | | 51 30.28 | |
| -0.86 | +2.28 | | +5.04 | |
| -2.34 | -1.48 | | -98 | |
| +8.01 | +6.29 | | +4.14 | |
| 51 38.75 | 51 38.27 | | 51 38.48 | |

| +202 | | +180 | |
|----------|-----------------|----------|------------|
| 25 | 0 | 25 | 0 |
| 4 | 59.0 | 4 | 59.2 |
| | 1191 | | 1.1 |
| 24 | 58.55 | ✓ | 1203 |
| | 8 | | 0.15 |
| | 17.53 | | 20.38 |
| | 1.24378m | | 1.30920 |
| | 0.49943m | | 0.56485m |
| | -3.16 | | -367 |
| 24 | 58.55 | 25 | 0.15 |
| 24 | 58.39 | 24 | 58.48 |
| +97 | 57 51.96 | 57 | 51.87 |
| -55 | 32.41 = 192280m | | |
| +12.42 | | +10.80 | |
| 1.93522m | | 1.93280m | |
| +1 | 26.14 | +1 | 25.66 |
| +1 | 26.16 | +1 | 25.69 |
| +97 | 59 18.12 | 59 18.12 | 59 17.56 |
| -2 | 21.83 | -2 | 22.46 |
| -2 | 30.23 | -2 | 29.22 |
| -2 | 8.40 58.06 | -2 | 7.46 57.68 |
| +1 | 57 1.48 | 57 | 10.86 |
| +97 | 56 26.06 | 56 | 25.88 |
| | 21.83 | | 22.46 |
| -2 | 31.06 | -2 | 29.47 |
| +1 | 165 | +1 | 144 |
| -2 | 51.24 | -2 | 50.46 |
| 56 | 26.88 | 56 | 27.10 |

173

Simd 999344

Corr 928679m

11871m

935250

dx = -2.492

do +1372

Tang J = -5.72

x = +0.59

Corr = -0.2 + 0.8

21872 = 19.077

21873 = 16.583

21873 = 4 2867 = 55 3133

1873

Mars +.327

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.33

Mars +.207

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.21

Mars +.137

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.14

Mars +.083

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

Mars +.07

1873
March 1

1873
Nov. Maj.
8 54 49
+ 47 39 24
7 = -5 16 36
sin. g = -.09

Tau = +110
X = -022
Cru = +06
21872 = 52.472
21873 = 56.596
21873 = 39 23.65

March 11 54^m 58.01
16 57.34 7
21 57.47 7
26 57.78 9
31 57.68 10
5 57.58 10
10 57.97 11
15 57.35 12
20 57.29 11
25
30

Sin. 8 9.86867 39 29.9
Cos. 8 9.82844 31.7
9.82844 32.5
9.82844 33.3
9.82844 34.6
9.82844 34.7
9.82844 35.3
9.82844 35.9
9.82844 36.8
9.82844 36.7
9.82844 37.0
9.82844 37.3

dx = +4.125
dy = -13.96

1873
Nov. 11 +.327
+33Nov. 31 +.207
+21Nov. 15 +.137
+14

Nov. 16

Nov. 23 +.083
+07

1873.0

8 54 399
432
462
52.4
55.5
58.5
55 16
48
108
134
169
6435
58.50
58.50

54 58.48
54 57.92
40.56
+4.50
-0.85
+ .36
-1.32
-1.842
54 58.48
54 56.67
54 56.66

+2.27 +.01
+ .23
-1.08
+1.933
55.19
56.61
56.62
+2.02
40
1 9.5
5.6
15.1
41 7.55
8
+ 22.89
1.35965
1.30380m
20.13
41 7.55
40 6.42
+ 47 42 0.93
-5 16 50 = 0.72600m
+12.42
0.73842m
+ 5.47
+ .02
+ 5.35
+ 47 42 6.28
39 34.7
-2 31.6
-11.10
-2 30.23
-2 41.33
+47 39 24.95
-20 +
+47 39 24.75
39 24.21

+2.23
+ .23
+ .15
-0.74
+4.945
56.25
56.68
56.70
+1.80
40
1 6.9
5.1
12.0
41 6.00
+ 22.12
1.34479
1.28894m
-19.45
41 6.00
40 46.55
42 1.80

+10.00
0.73600m
+ 5.44
+ .13
+ .05
+ 5.36
+ 5.16
39 36.3
-2 30.9
-12.60
-2 29.22
-2 41.82
39 25.34
-20 +
39 25.14
39 25.16

+10.00
0.73600m
+ 5.44
+ .13
+ .05
+ 5.36
+ 5.16
39 36.3
-2 30.9
-12.60
-2 29.22
-2 41.82
39 25.34
-20 +
39 25.14
39 25.16

+10.00
0.73600m
+ 5.44
+ .13
+ .05
+ 5.36
+ 5.16
39 36.3
-2 30.9
-12.60
-2 29.22
-2 41.82
39 25.34
-20 +
39 25.14
39 25.16

+10.00
0.73600m
+ 5.44
+ .13
+ .05
+ 5.36
+ 5.16
39 36.3
-2 30.9
-12.60
-2 29.22
-2 41.82
39 25.34
-20 +
39 25.14
39 25.16

Lost

54 54 56.0
44.4
46.0
47.4
48.9
50.5
52.1
53.6
55.2
56.7
4848
50.53
50.53 54 56.93

54 50.51
54 57.17
-6.66
-6.72
+ 6.69
+ .08
-0.51
+6.2019
50.51
50.71
56.70
+1.81

+6.69
+ .08
-0.51
+6.2019
50.51
50.71
56.70
+1.81

+6.69
+ .08
-0.51
+6.2019
50.51
50.71
56.70
+1.81

+6.69
+ .08
-0.51
+6.2019
50.51
50.71
56.70
+1.81

+6.69
+ .08
-0.51
+6.2019
50.51
50.71
56.70
+1.81

+6.69
+ .08
-0.51
+6.2019
50.51
50.71
56.70
+1.81

56.66
62
70
70
56.670
59.6
+ .074
24.75
25.14
23.59
24.49
23.65
+ .84
24.89
23.65
+1.24

[illegible]

1873

36 days new Kings

Kings = +7.96

Mar. 21 5^m5^m5^m

Sind 9.88767

Sind 9.88888

44

29.6

30.4 +8

31.1

31.7

32.3

32.8

33.3

33.7

34.0

34.6

35.2

35.8

36.4

37.0

37.6

38.2

38.8

39.4

40.0

40.6

41.2

41.8

42.4

43.0

43.6

44.2

44.8

45.4

46.0

46.6

47.2

47.8

48.4

49.0

49.6

50.2

50.8

51.4

52.0

52.6

53.2

53.8

54.4

55.0

55.6

56.2

56.8

57.4

58.0

58.6

59.2

59.8

9 85 22

x = -021

Apr. 5

10

15

30.70

30.62

30.53

30.44

30.35

30.25

30.15

30.05

29.95

29.85

29.75

29.65

29.55

29.45

29.35

29.25

29.15

29.05

28.95

28.85

28.75

28.65

28.55

28.45

28.35

28.25

28.15

28.05

27.95

27.85

27.75

27.65

27.55

27.45

27.35

27.25

27.15

27.05

26.95

26.85

26.75

26.65

26.55

26.45

26.35

26.25

+43 45 1

corr = -11 + 0.2

Apr. 10

15

20

30.70

30.62

30.53

30.44

30.35

30.25

30.15

30.05

29.95

29.85

29.75

29.65

29.55

29.45

29.35

29.25

29.15

29.05

28.95

28.85

28.75

28.65

28.55

28.45

28.35

28.25

28.15

28.05

27.95

27.85

27.75

27.65

27.55

27.45

27.35

27.25

27.15

27.05

26.95

26.85

26.75

26.65

26.55

26.45

26.35

+43 44 22

21872 = 25.513

Apr. 15

20

25

30.70

30.62

30.53

30.44

30.35

30.25

30.15

30.05

29.95

29.85

29.75

29.65

29.55

29.45

29.35

29.25

29.15

29.05

28.95

28.85

28.75

28.65

28.55

28.45

28.35

28.25

28.15

28.05

27.95

27.85

27.75

27.65

27.55

27.45

27.35

27.25

27.15

27.05

26.95

26.85

26.75

26.65

26.55

26.45

-1 21 34

21873 = 29.467

Apr. 20

25

30

30.70

30.62

30.53

30.44

30.35

30.25

30.15

30.05

29.95

29.85

29.75

29.65

29.55

29.45

29.35

29.25

29.15

29.05

28.95

28.85

28.75

28.65

28.55

28.45

28.35

28.25

28.15

28.05

27.95

27.85

27.75

27.65

27.55

27.45

27.35

27.25

27.15

27.05

26.95

26.85

26.75

26.65

26.55

-02

21873 = 44 2161

Apr. 25

30

35

30.70

30.62

30.53

30.44

30.35

30.25

30.15

30.05

29.95

29.85

29.75

29.65

29.55

29.45

29.35

29.25

29.15

29.05

28.95

28.85

28.75

28.65

28.55

28.45

28.35

28.25

28.15

28.05

27.95

27.85

27.75

27.65

27.55

27.45

27.35

27.25

27.15

27.05

26.95

26.85

26.75

26.65

1873

Mar. 27

Mar. 30

Apr. 1

Apr. 15

Apr. 16

Apr. 23

4 5 11.9

4 5 11.0

4 5 10.4

4 5 7.8

4 5 0.4

4 5 1.5

4 5 1.1

4 5 2.3

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.1

4 5 1.

1873

77 Draco. Tang $\delta = -4.55$ Mar. 31
 $\alpha = +0.71$
 $\text{Conv} = -23 + 0.8$
 $\alpha 1872 = 1.015$
 $\alpha 1873 = 59.948$
 $\delta 1873 = 36.3792 = 23.22.08$

55.45
 55.89 .44
 56.35 .46
 56.83 .48
 57.32 .49
 57.82 .50
 58.33 .51

Sin δ 9.98978
 Cos δ 9.3313236
 $\log \sin \delta$ 15.8 - 8
 $\log \cos \delta$ 15.2 - 6
 $\log \tan \delta$ 14.8 - 4
 $\log \sec \delta$ 14.5 - 3
 $\log \csc \delta$ 14.4 - 1
 $\log \cot \delta$ 14.4 - 0

$d\alpha = -1.066$
 $d\delta = +14.68$

| 1873 | Mar. 30 | Apr. 1 | Apr. 10 | Apr. 15 | Apr. 16 | Apr. 23 |
|-------|---------|--------|---------|---------|---------|---------|
| 7 146 | 7 146 | 7 146 | 7 146 | 7 146 | 7 146 | 7 146 |
| 348 | 348 | 348 | 348 | 348 | 348 | 348 |
| 394 | 394 | 394 | 394 | 394 | 394 | 394 |
| 442 | 442 | 442 | 442 | 442 | 442 | 442 |
| 490 | 490 | 490 | 490 | 490 | 490 | 490 |
| 539 | 539 | 539 | 539 | 539 | 539 | 539 |
| 587 | 587 | 587 | 587 | 587 | 587 | 587 |
| 635 | 635 | 635 | 635 | 635 | 635 | 635 |
| 683 | 683 | 683 | 683 | 683 | 683 | 683 |
| 731 | 731 | 731 | 731 | 731 | 731 | 731 |
| 779 | 779 | 779 | 779 | 779 | 779 | 779 |
| 827 | 827 | 827 | 827 | 827 | 827 | 827 |
| 875 | 875 | 875 | 875 | 875 | 875 | 875 |
| 923 | 923 | 923 | 923 | 923 | 923 | 923 |
| 971 | 971 | 971 | 971 | 971 | 971 | 971 |
| 1019 | 1019 | 1019 | 1019 | 1019 | 1019 | 1019 |
| 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 |
| 1115 | 1115 | 1115 | 1115 | 1115 | 1115 | 1115 |
| 1163 | 1163 | 1163 | 1163 | 1163 | 1163 | 1163 |
| 1211 | 1211 | 1211 | 1211 | 1211 | 1211 | 1211 |
| 1259 | 1259 | 1259 | 1259 | 1259 | 1259 | 1259 |
| 1307 | 1307 | 1307 | 1307 | 1307 | 1307 | 1307 |
| 1355 | 1355 | 1355 | 1355 | 1355 | 1355 | 1355 |
| 1403 | 1403 | 1403 | 1403 | 1403 | 1403 | 1403 |
| 1451 | 1451 | 1451 | 1451 | 1451 | 1451 | 1451 |
| 1499 | 1499 | 1499 | 1499 | 1499 | 1499 | 1499 |
| 1547 | 1547 | 1547 | 1547 | 1547 | 1547 | 1547 |
| 1595 | 1595 | 1595 | 1595 | 1595 | 1595 | 1595 |
| 1643 | 1643 | 1643 | 1643 | 1643 | 1643 | 1643 |
| 1691 | 1691 | 1691 | 1691 | 1691 | 1691 | 1691 |
| 1739 | 1739 | 1739 | 1739 | 1739 | 1739 | 1739 |
| 1787 | 1787 | 1787 | 1787 | 1787 | 1787 | 1787 |
| 1835 | 1835 | 1835 | 1835 | 1835 | 1835 | 1835 |
| 1883 | 1883 | 1883 | 1883 | 1883 | 1883 | 1883 |
| 1931 | 1931 | 1931 | 1931 | 1931 | 1931 | 1931 |
| 1979 | 1979 | 1979 | 1979 | 1979 | 1979 | 1979 |
| 2027 | 2027 | 2027 | 2027 | 2027 | 2027 | 2027 |
| 2075 | 2075 | 2075 | 2075 | 2075 | 2075 | 2075 |
| 2123 | 2123 | 2123 | 2123 | 2123 | 2123 | 2123 |
| 2171 | 2171 | 2171 | 2171 | 2171 | 2171 | 2171 |
| 2219 | 2219 | 2219 | 2219 | 2219 | 2219 | 2219 |
| 2267 | 2267 | 2267 | 2267 | 2267 | 2267 | 2267 |
| 2315 | 2315 | 2315 | 2315 | 2315 | 2315 | 2315 |
| 2363 | 2363 | 2363 | 2363 | 2363 | 2363 | 2363 |
| 2411 | 2411 | 2411 | 2411 | 2411 | 2411 | 2411 |
| 2459 | 2459 | 2459 | 2459 | 2459 | 2459 | 2459 |
| 2507 | 2507 | 2507 | 2507 | 2507 | 2507 | 2507 |
| 2555 | 2555 | 2555 | 2555 | 2555 | 2555 | 2555 |
| 2603 | 2603 | 2603 | 2603 | 2603 | 2603 | 2603 |
| 2651 | 2651 | 2651 | 2651 | 2651 | 2651 | 2651 |
| 2699 | 2699 | 2699 | 2699 | 2699 | 2699 | 2699 |
| 2747 | 2747 | 2747 | 2747 | 2747 | 2747 | 2747 |
| 2795 | 2795 | 2795 | 2795 | 2795 | 2795 | 2795 |
| 2843 | 2843 | 2843 | 2843 | 2843 | 2843 | 2843 |
| 2891 | 2891 | 2891 | 2891 | 2891 | 2891 | 2891 |
| 2939 | 2939 | 2939 | 2939 | 2939 | 2939 | 2939 |
| 2987 | 2987 | 2987 | 2987 | 2987 | 2987 | 2987 |
| 3035 | 3035 | 3035 | 3035 | 3035 | 3035 | 3035 |
| 3083 | 3083 | 3083 | 3083 | 3083 | 3083 | 3083 |
| 3131 | 3131 | 3131 | 3131 | 3131 | 3131 | 3131 |
| 3179 | 3179 | 3179 | 3179 | 3179 | 3179 | 3179 |
| 3227 | 3227 | 3227 | 3227 | 3227 | 3227 | 3227 |
| 3275 | 3275 | 3275 | 3275 | 3275 | 3275 | 3275 |
| 3323 | 3323 | 3323 | 3323 | 3323 | 3323 | 3323 |
| 3371 | 3371 | 3371 | 3371 | 3371 | 3371 | 3371 |
| 3419 | 3419 | 3419 | 3419 | 3419 | 3419 | 3419 |
| 3467 | 3467 | 3467 | 3467 | 3467 | 3467 | 3467 |
| 3515 | 3515 | 3515 | 3515 | 3515 | 3515 | 3515 |
| 3563 | 3563 | 3563 | 3563 | 3563 | 3563 | 3563 |
| 3611 | 3611 | 3611 | 3611 | 3611 | 3611 | 3611 |
| 3659 | 3659 | 3659 | 3659 | 3659 | 3659 | 3659 |
| 3707 | 3707 | 3707 | 3707 | 3707 | 3707 | 3707 |
| 3755 | 3755 | 3755 | 3755 | 3755 | 3755 | 3755 |
| 3803 | 3803 | 3803 | 3803 | 3803 | 3803 | 3803 |
| 3851 | 3851 | 3851 | 3851 | 3851 | 3851 | 3851 |
| 3899 | 3899 | 3899 | 3899 | 3899 | 3899 | 3899 |
| 3947 | 3947 | 3947 | 3947 | 3947 | 3947 | 3947 |
| 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 |
| 4043 | 4043 | 4043 | 4043 | 4043 | 4043 | 4043 |
| 4091 | 4091 | 4091 | 4091 | 4091 | 4091 | 4091 |
| 4139 | 4139 | 4139 | 4139 | 4139 | 4139 | 4139 |
| 4187 | 4187 | 4187 | 4187 | 4187 | 4187 | 4187 |
| 4235 | 4235 | 4235 | 4235 | 4235 | 4235 | 4235 |
| 4283 | 4283 | 4283 | 4283 | 4283 | 4283 | 4283 |
| 4331 | 4331 | 4331 | 4331 | 4331 | 4331 | 4331 |
| 4379 | 4379 | 4379 | 4379 | 4379 | 4379 | 4379 |
| 4427 | 4427 | 4427 | 4427 | 4427 | 4427 | 4427 |
| 4475 | 4475 | 4475 | 4475 | 4475 | 4475 | 4475 |
| 4523 | 4523 | 4523 | 4523 | 4523 | 4523 | 4523 |
| 4571 | 4571 | 4571 | 4571 | 4571 | 4571 | 4571 |
| 4619 | 4619 | 4619 | 4619 | 4619 | 4619 | 4619 |
| 4667 | 4667 | 4667 | 4667 | 4667 | 4667 | 4667 |
| 4715 | 4715 | 4715 | 4715 | 4715 | 4715 | 4715 |
| 4763 | 4763 | 4763 | 4763 | 4763 | 4763 | 4763 |
| 4811 | 4811 | 4811 | 4811 | 4811 | 4811 | 4811 |
| 4859 | 4859 | 4859 | 4859 | 4859 | 4859 | 4859 |
| 4907 | 4907 | 4907 | 4907 | 4907 | 4907 | 4907 |
| 4955 | 4955 | 4955 | 4955 | 4955 | 4955 | 4955 |
| 5003 | 5003 | 5003 | 5003 | 5003 | 5003 | 5003 |
| 5051 | 5051 | 5051 | 5051 | 5051 | 5051 | 5051 |
| 5099 | 5099 | 5099 | 5099 | 5099 | 5099 | 5099 |
| 5147 | 5147 | 5147 | 5147 | 5147 | 5147 | 5147 |
| 5195 | 5195 | 5195 | 5195 | 5195 | 5195 | 5195 |
| 5243 | 5243 | 5243 | 5243 | 5243 | 5243 | 5243 |
| 5291 | 5291 | 5291 | 5291 | 5291 | 5291 | 5291 |
| 5339 | 5339 | 5339 | 5339 | 5339 | 5339 | 5339 |
| 5387 | 5387 | 5387 | 5387 | 5387 | 5387 | 5387 |
| 5435 | 5435 | 5435 | 5435 | 5435 | 5435 | 5435 |
| 5483 | 5483 | 5483 | 5483 | 5483 | 5483 | 5483 |
| 5531 | 5531 | 5531 | 5531 | 5531 | 5531 | 5531 |
| 5579 | 5579 | 5579 | 5579 | 5579 | 5579 | 5579 |
| 5627 | 5627 | 5627 | 5627 | 5627 | 5627 | 5627 |
| 5675 | 5675 | 5675 | 5675 | 5675 | 5675 | 5675 |
| 5723 | 5723 | 5723 | 5723 | 5723 | 5723 | 5723 |
| 5771 | 5771 | 5771 | 5771 | 5771 | 5771 | 5771 |
| 5819 | 5819 | 5819 | 5819 | 5819 | 5819 | 5819 |
| 5867 | 5867 | 5867 | 5867 | 5867 | 5867 | 5867 |
| 5915 | 5915 | 5915 | 5915 | 5915 | 5915 | 5915 |
| 5963 | 5963 | 5963 | 5963 | 5963 | 5963 | 5963 |
| 6011 | 6011 | 6011 | 6011 | 6011 | 6011 | 6011 |
| 6059 | 6059 | 6059 | 6059 | 6059 | 6059 | 6059 |
| 6107 | 6107 | 6107 | 6107 | 6107 | 6107 | 6107 |
| 6155 | 6155 | 6155 | 6155 | 6155 | 6155 | 6155 |
| 6203 | 6203 | 6203 | 6203 | 6203 | 6203 | 6203 |
| 6251 | 6251 | 6251 | 6251 | 6251 | 6251 | 6251 |
| 6299 | 6299 | 6299 | 6299 | 6299 | 6299 | 6299 |
| 6347 | 6347 | 6347 | 6347 | 6347 | 6347 | 6347 |
| 6395 | 6395 | 6395 | 6395 | 6395 | 6395 | 6395 |
| 6443 | 6443 | 6443 | 6443 | 6443 | 6443 | 6443 |
| 6491 | 6491 | 6491 | 6491 | 6491 | 6491 | 6491 |
| 6539 | 6539 | 6539 | 6539 | 6539 | 6539 | 6539 |
| 6587 | 6587 | 6587 | 6587 | 6587 | 6587 | 6587 |
| 6635 | 6635 | 6635 | 6635 | 6635 | 6635 | 6635 |
| 6683 | 6683 | 6683 | 6683 | 6683 | 6683 | 6683 |
| 6731 | 6731 | 6731 | 6731 | 6731 | 6731 | 6731 |
| 6779 | 6779 | 6779 | 6779 | 6779 | 6779 | 6779 |
| 6827 | 6827 | 6827 | 6827 | 6827 | 6827 | 6827 |
| 6875 | 6875 | 6875 | 6875 | 6875 | 6875 | 6875 |
| 6923 | 6923 | 6923 | 6923 | 6923 | 6923 | 6923 |
| 6971 | 6971 | 6971 | 6971 | 6971 | 6971 | 6971 |
| 7019 | 7019 | 7019 | 7019 | 7019 | 7019 | 7019 |
| 7067 | 7067 | 7067 | 7067 | 7067 | 7067 | 7067 |
| 7115 | 7115 | 7115 | 7115 | 7115 | 7115 | 7115 |
| 7163 | 7163 | 7163 | 7163 | 7163 | 7163 | 7163 |
| 7211 | 7211 | 7211 | 7211 | 7211 | 7211 | 7211 |
| 7259 | 7259 | 7259 | 7259 | 7259 | 7259 | 7259 |
| 7307 | 7307 | 7307 | 7307 | 7307 | 7307 | 7307 |
| 7355 | 7355 | 7355 | 7355 | 7355 | 7355 | 7355 |
| 7403 | 7403 | 7403 | 7403 | 7403 | 7403 | 7403 |
| 7451 | 7451 | 7451 | 7451 | 7451 | 7451 | 7451 |
| 7499 | 7499 | 7499 | 7499 | 7499 | 7499 | 7499 |
| 7547 | 7547 | 7547 | 7547 | 7547 | 7547 | 7547 |
| 7595 | 7595 | 7595 | 7595 | 7595 | 7595 | 7595 |
| 7643 | 7643 | 7643 | 7643 | 7643 | 7643 | 7643 |
| 7691 | 7691 | 7691 | 7691 | 7691 | 7691 | 7691 |
| 7739 | 7739 | 7739 | 7739 | 7739 | 7739 | 7739 |
| 7787 | 7787 | 7787 | 7787 | 7787 | 7787 | 7787 |
| 7835 | 7835 | 7835 | 7835 | 7835 | 7835 | 7835 |
| 7883 | 7883 | 7883 | 7883 | 7883 | 7883 | 7883 |
| 7931 | 7931 | 7931 | 7931 | 7931 | 7931 | 7931 |
| 7979 | 7979 | 7979 | 7979 | 7979 | 7979 | 7979 |
| 8027 | 8027 | 8027 | 8027 | 8027 | 8027 | 8027 |
| 8075 | 8075 | 8075 | 8075 | 8075 | 8075 | 8075 |
| 8123 | 8123 | 8123 | 8123 | 8123 | 8123 | 8123 |
| 8171 | 8171 | 8171 | 8171 | 8171 | 8171 | 8171 |
| 8219 | 8219 | 8219 | 8219 | 8219 | 8219 | 8219 |
| 8267 | 8267 | 8267 | 8267 | 8267 | 8267 | 8267 |
| 8315 | 8315 | 8315 | 8315 | 8315 | 8315 | 8315 |
| 8363 | 8363 | 8363 | 8363 | 8363 | 8363 | 8363 |
| 8411 | 8411 | 8411 | 8411 | 8411 | 8411 | 8411 |

1078

38 Lyrae Temp = +.76 Mar. 21

$x = -0.20$

$\text{Corr} = +0.07 - 12$

$\Delta 1872 = 52.268$

$\Delta 1873 = 56.023$

$\Delta 1873 = 20 \ 19.06$

| 10 ^m | 57.14 | 20 | 25.1 |
|-----------------|-------|----|-----------|
| 26 | 57.07 | 7 | 25.8 + .7 |
| 31 | 56.99 | 8 | 26.4 .6 |
| 36 | 56.91 | 8 | 27.0 .6 |
| 41 | 56.83 | 8 | 27.5 .5 |
| 46 | 56.74 | 9 | 28.0 .5 |
| 51 | 56.65 | 9 | 28.4 .4 |
| 56 | 56.56 | 9 | 28.8 .4 |
| 61 | 56.48 | 8 | 29.1 .3 |

$\sin \delta \ 9.78280$

$\cos \delta \ 9.90043$

115.71^m

$0.16 \ 14^m$

$d\alpha = +3.754$

$d\delta = -14.92$

| 1873 | Mar. 27 +.255 | Mar. 30 +.201 | Apr. 15 +.137 | Apr. 16 +.103 | Apr. 23 +.083 |
|-------------------|---------------|---------------|---------------|---------------|---------------|
| 10 402 | 10 324 | 10 392 | 10 306 | 10 261 | 10 29.2 |
| 9 10 402 | 34.1 | 41.9 | 31.9 | 28.6 | 31.1 |
| 42.9 | 34.1 | 41.9 | 31.9 | 28.6 | 31.1 |
| 44.5 | 35.7 | 40.3 | 33.0 | 41.3 | 31.7 |
| 53.5 | | 40.6 | 34.6 | 46.4 | |
| 53.3 | | 52.2 | 40.3 | 49.3 | |
| 55.9 | | 54.8 | 51.8 | 51.5 | |
| 58.3 | | 57.4 | 54.5 | 54.0 | |
| 10 1.0 | | 59.9 | 56.4 | 56.7 | |
| 6.2 | | 57.2 | 11 2.1 | 11 1.2 | |
| 8.9 | | 57.4 | 4.8 | 4.4 | |
| 11.4 | | 57.4 | 7.3 | 7.0 | |
| 61.41 | | 60.26 | 56.91 | 56.49 | |
| 55.827 | 10 340.7 | 54.782 | 51.736 | 51.355 | 10 32.60 |
| 10 55.81 | 10 54.76 | 10 51.72 | 10 51.34 | 10 49.97 | 10 29.48 |
| 10 57.05 | 10 57.00 | 10 54.72 | 10 53.72 | 10 56.59 | 29.97 |
| -1.24 | -2.24 | -5.02 | -5.38 | -6.62 | |
| -1.31 | -2.31 | -5.09 | -5.45 | -6.69 | |
| +1.14 +.00 | +2.15 +.01 | +5.03 +.01 | +5.36 +.02 | +6.69 +.02 | |
| +1.18 | +1.17 | +1.11 | +1.12 | +1.05 | |
| -1.03 | -0.98 | -0.72 | -0.70 | -0.57 | |
| -2.30 | +1.343 | +4.42 | +4.787 | +6.126 | |
| 10 55.81 | 54.76 | 51.72 | 51.34 | 49.97 | |
| 10 56.10 | 56.10 | 56.14 | 56.12 | 56.14 | |
| 10 56.11 | 56.09 | 56.14 | 56.11 | 56.13 | |
| +2.07 | +2.03 | +1.83 | +1.80 | +1.81 | |
| 0 15.9 | 0 16.1 | 0 9.1 | 0 6.1 | 0 9.9 | |
| 6.4 | 7.9 | 7.5 | 6.2 | 10.4 | |
| 2.23 | 19.0 | 16.6 | 12.3 | 30.3 | |
| 0 18.15 | 0 9.50 | 0 8.30 | 0 6.15 | 0 10.15 | |
| 8 | | | | | |
| +21.76 | +22.26 | +21.07 | +19.08 | +20.59 | +22.02 |
| 1.33766 | 1.34753 | 1.32366 | 1.28058 | 1.31366 | 1.34282 |
| 1.35380m | 1.36367m | 1.32980m | 1.29672m | 1.32980m | 1.35896 |
| -22.58 | -23.10 | -21.87 | -19.80 | -21.87 | -22.85 |
| 0 11.15 | 0 9.50 | 0 8.30 | 0 6.15 | 0 10.15 | 10.15 |
| 57 48.37 | 59 46.40 | 59 46.43 | 59 46.35 | 59 48.78 | 59 47.30 |
| +37 22 59.78 | 23 1.95 | 23 1.92 | 23 2.00 | 22 59.37 | 23 1.05 |
| +5 2 12 = 0.70550 | +9.83 | +10.49 | +14.92 | +4.57 | |
| +26.12 | 0.71533 | 0.71599 | 0.72042 | 0.71007 | |
| 0.73162 | | | | | |
| +5.39 | +5.19 | +5.20 | +5.25 | +5.13 | |
| -1.12 | -1.12 | -1.11 | -1.09 | -1.11 | |
| .08 | .00 | .00 | .00 | .01 | |
| -5.51 | -5.37 | -5.31 | -5.34 | -5.23 | |
| 37 22 54.27 | 22 54.25 | 56.63 | 56.60 | 56.65 | 55.80 |
| 20 26.0 | 20 26.3 | 20 28.0 | 20 28.1 | 20 28.7 | |
| -12-2 28.3 | 28.3 | 30.3 | 28.6 | 28.6 | 27.1 |
| -2 29.5-.02 | 29.5 | 31.5-.01 | 29.8 | 29.8 | 26.8-.02 |
| | | | | | 28.3 |
| -6.90 | -6.90 | -7.20 | -8.10 | -9.00 | -9.60 |
| -2 28.3 | -2 29.08 | -2 29.64 | -2 29.22 | -2 28.52 | -2 28.56 |
| -2 35.83 | .18 | -2 36.79 | .18 | -2 37.52 | -2 38.16 |
| 37 20 18.44 | -2 36.16 | 20 18.85 | -2 37.44 | 20 18.14 | -2 37.66 |
| 20 18.09 | 20 18.19 | 20 18.87 | 20 18.77 | 20 18.77 | 20 17.08 |

1878

| | | | | | | | |
|--------------|-------------------------------------|--------|----|------|----|----------|----------------------|
| 40 Lyricis | Tangl - +70 | Mar 21 | 13 | 1976 | 55 | 45.8 | sin δ 9.15787 |
| 9 13 13 | $x = -0.19$ | 24 | 13 | 1971 | 6 | 46.4 + 6 | |
| 9 13 19 | | 31 | 13 | 1964 | 7 | 47.0 | cos δ 9.91372 |
| +34 55 19 | corr = +0.3 | 4/11 | 5 | 1957 | 7 | 47.6 | 11571m |
| +34 55 40 | | 10 | 10 | 1949 | 8 | 48.1 | .02943m |
| 2 = + 7 27 8 | $\Delta 1872 = 15.034$ | 15 | 15 | 1941 | 8 | 48.6 | |
| + .13 | $\Delta 1873 = 18.706$ | 20 | 20 | 1932 | 9 | 49.0 | $d\alpha = +3.672$ |
| | | 25 | 25 | 1924 | 8 | 49.4 | $d\delta = -14.98$ |
| | | 30 | 30 | 1915 | 9 | 49.7 | |
| | $\delta 1873 = 55^{\circ} 40' 48''$ | | | | | | |

| | | | | | |
|--------------|---------------------|-------------|----------------|-------------|-------------|
| 673 | Mar 27 +255 | Mar 30 +201 | Apr 15 +137 | Apr 16 +113 | Apr 23 +083 |
| 9 13 35 | 12 571 | 13 24 | 12 58.1 (25.3) | 12 53.6 | 13 58.8 |
| 58 | 525 | 4.9 | 58.6 13 1.8 | 53.1 | 13 1.3 |
| 84 | 540 | 14 | 59.4 | 56.7 | 8.9 |
| 13.5 | | 12.3 | 9.4 | 9.0 | 9.0 |
| 15.9 | | 14.8 | 11.7 | 11.5 | 11.5 |
| 18.5 | | 17.3 | 14.4 | 14.0 | 14.0 |
| 21.0 | | 19.9 | 16.8 | 16.4 | 16.4 |
| 23.7 | | 22.4 | 19.4 | 18.9 | 18.9 |
| 26.6 | | 25.0 | 22.4 | 24.2 | 24.2 |
| 31.1 | | 30.0 | 26.4 | 26.6 | 26.6 |
| 33.6 | | 32.4 | 29.3 | 29.0 | 29.0 |
| 28.6 | | 19.13 | | 815.0 | 798.3 |
| 18.51 | | 17.30 | | 13.96 | 12.84 |
| 13 18.509 | 12 52.53 | 17.341 | 12 58.70 | 13.964 | 12 55.50 |
| 13 16.49 | 13 17.37 | 13 14.34 | 13 13.95 | 13 12.56 | 13 12.56 |
| 13 19.40 | 13 19.65 | 13 19.41 | 13 19.39 | 13 19.27 | 13 19.27 |
| -1.21 | -2.28 | -5.07 | -5.44 | -6.81 | -6.74 |
| -1.24 | -3.31 | -5.10 | -5.47 | -6.74 | -6.74 |
| +1.14 +.00 | +2.15 +.01 | +5.03 +.01 | +5.36 +.02 | +6.69 -.02 | +6.69 -.02 |
| +1.17 | +1.18 | +1.10 | +1.11 | +1.08 | +1.08 |
| -0.99 | -0.94 | -0.70 | -0.68 | -0.56 | -0.56 |
| +0.323 | +1.36 | +4.43 | +4.748 | +6.1887 | +6.1887 |
| 13 18.49 | 17.37 | 14.34 | 13.95 | 12.56 | 12.56 |
| 13 18.81 | 18.73 | 18.77 | 18.73 | 18.73 | 18.73 |
| 13 18.82 | 18.73 | 18.77 | 18.73 | 18.73 | 18.73 |
| +2.07 | +2.03 | +1.80 | +1.80 | +1.81 | +1.81 |
| 25 58.1 | 4 48.3 | 4 44.1 | 4 42.9 | 4 43.9 | 4 43.9 |
| 49.0 | 43.0 | 42.1 | 42.8 | 42.2 | 42.2 |
| 107.1 | 91.3 | 86.2 | 85.7 | 86.1 | 86.1 |
| 25 32.55 | 24 45.65 | 24 43.10 | 24 42.85 | 24 43.05 | 24 43.05 |
| 3 | | | | | |
| +25.78 | +18.89 | +19.22 | +18.46 | +18.77 | +18.77 |
| 1.41464 | 1.27161 | 1.28398 | 1.26623 | 1.27346 | 1.27346 |
| 1.44407m | 1.30104m | 1.31341m | 1.29566m | 1.30289m | 1.30289m |
| -25.80 | -20.00 | -20.58 | -19.75 | -20.09 | -20.09 |
| 25 53.55 | 24 45.65 | 24 43.10 | 24 42.85 | 24 43.05 | 24 43.05 |
| 25 25.78 | 24 25.65 | 24 22.52 | 24 23.10 | 24 22.96 | 24 22.96 |
| +34 57 22.60 | 58 22.70 | 58 25.83 | 58 25.25 | 58 25.37 | 58 25.37 |
| +26.12 | +17.26 49 = 0.87660 | +10.49 | +14.92 | +4.57 | +4.57 |
| 0.90272 | +9.83 | 1.88709 | 0.89152 | 0.88117 | 0.88117 |
| 4.88643 | | | | | |
| * - 7.99 | + - 7.70 | + - 7.71 | + - 7.79 | + - 7.61 | + - 7.61 |
| - 1.7 | - .09 | - .09 | - .08 | - .09 | - .09 |
| + .02 | + .10 | + .23 | + .23 | - .23 | - .23 |
| - 8.14 | - 7.69 | - 7.57 | - 7.64 | - 7.93 | - 7.93 |
| +34 58 14.46 | 58 14.39 | 58 15.01 | 58 15.26 | 58 15.46 | 58 15.46 |
| 55 46.5 | 55 46.9 | 55 48.6 | 55 48.7 | 55 49.3 | 55 49.3 |
| -2 28.0 | -0.7 28.1 | -2 28.1 | -2 29.4 | -2 28.9 | -2 28.2 |
| -6.00 | -6.40 | -8.10 | -8.20 | -8.80 | -8.80 |
| -2 28.3 | -2 29.59 | -2 29.22 | -2 28.52 | -2 28.56 | -2 28.56 |
| -2 34.73 | -2 35.99 | -2 36.32 | -2 36.72 | -2 37.06 | -2 37.06 |
| +34 55 39.53 | -2 37.02 | -2 37.99 | -2 38.89 | -2 39.10 | -2 39.10 |
| -2 35.34 | -2 36.72 | -2 37.80 | -2 37.13 | -2 37.99 | -2 37.99 |
| 55 39.05 | 55 38.23 | 55 40.40 | 55 40.42 | 55 39.41 | 55 39.41 |

$$\text{Yang } P_2 = -4.156$$
$$K = +.066$$
$$K = +.066$$

Sp 3452 = 71

$$\begin{array}{r} 9 \text{ } 16 \text{ } 55 \\ 21 \text{ } 17 \text{ } 92 \\ + 103 \text{ } 31 \text{ } " \\ \hline 76 \text{ } 28 \text{ } 11 \\ 103 \text{ } 31 \text{ } 49 \\ \hline n = -61 \text{ } 9 \text{ } 1 \\ -0.87 \end{array}$$

$\sin P$ 9.98777
 $\cos P$ 9.36924u
 11571u
 948495

$\alpha 1873 = 17^m 3.270^s$
 $\rho_{11} = 20^m 36.396^s$

| 1873 | Mar. 27 | Mar. 30 | Apr. 15 | Apr. 16 | Apr. 23 |
|----------|----------|----------|----------|----------|---------|
| hms | | | | | |
| 9.16 | 16.51 | 16 | 15.32.2 | 16 | 16 |
| 40.7 | 39.4 | 37.7 | 38.6 | 39.5 | 36.8 |
| 44.9 | 40.2 | 42.4 | 45.7 | 41.9 | 41.1 |
| 49.8 | 48.1 | 46.7 | 48.5 | 46.4 | 48.5 |
| 54.3 | 53.5 | 51.3 | | 50.7 | 49.9 |
| 58.8 | 57.4 | 55.4 | | 55.1 | 54.4 |
| 17 3.0 | 17 4.5 | 17 4.2 | 17 4.3 | 17 4.3 | 17 4.2 |
| 2.4 | 6.6 | 8.7 | 8.6 | 8.6 | 8.2 |
| 16.9 | 10.4 | 13.0 | 12.7 | 12.7 | 12.2 |
| 16.3 | 15.0 | | | | |
| 52.74 | 57.0 | 49.72 | 49.75 | 48.98 | |
| 58.60 | 57.44 | 55.47 | 55.28 | 54.42 | |
| 16 58.67 | 15 37.23 | 15 44.27 | 16 15.35 | 15 17.00 | |
| + 1.14 | 16 57.51 | 16 55.54 | 16 55.35 | 16 54.49 | |
| - 1.06 | + 2.16 | + 5.04 | + 5.38 | + 6.67 | |
| + 4.68 | - .84 | - .57 | - .47 | - .35 | |
| | + 4.46 | + 3.12 | + 3.04 | + 2.39 | |
| 7 3.25 | 7 3.29 | 7 3.13 | 7 3.30 | 7 3.20 | |

| +2.07 | | | +2.03 | | | +1.82 | | | +1.80 | | | +1.81 | | |
|-------|---|---------------------|-------|---|------------------|-------|---|------------------|-------|---|------------------|-------|----|------------------|
| 50 | 0 | 19.8 | 50 | 0 | 3.8 | 50 | 0 | 1.9 | 50 | 0 | 10.1 | 45 | 4 | 52.0 |
| | | 13.5 | | | 2.0 | | 4 | 3.9 | | | 14.0 | | | 55.0 |
| | | 3.3 | | | 5.8 | | | 5.8 | | | 24.1 | | | 107.0 |
| 50 | 1 | 106.5 | 50 | 1 | 2.90 | 50 | 1 | 2.90 | 50 | 1 | 12.05 | 49 | 49 | 53.50 |
| | | 8 | | | | | | | | | | | | |
| | | + 50.57 | | | + 80.21 | | | + 71.20 | | | + 39.93 | | | + 97.42 |
| | | 1,403.86 | | | 1,904.23 | | | 1,852.48 | | | 1,601.30 | | | 1,988.65 |
| | | 1,188.84 | | | 1,389.18 | | | 1,337.43 | | | 1,086.25 | | | 1,473.60 |
| | | + 13.45 | | | + 24.50 | | | + 21.75 | | | + 12.20 | | | + 29.76 |
| | | 50 16.65 | | | 50 2.90 | | | 50 2.90 | | | 50 12.05 | | | 49 53.50 |
| | | 50 32.10 | | | 50 2.90 | | | 50 24.65 | | | 50 24.25 | | | 50 23.26 |
| | | | | | | | | | | | | | | |
| | | 103 32 16.25 | | | 32 20.95 | | | 32 23.70 | | | 32 24.10 | | | 32 23.09 |
| | | - 61 7 5 = 2,017.04 | | | - 98.4 | | | - 106.6 | | | - 150.8 | | | - 47.0 |
| | | + 26.23 | | | + 98.4 | | | + 106.6 | | | + 150.8 | | | + 47.0 |
| | | 2,043.27 | | | 2,026.88 | | | 2,027.70 | | | 2,032.12 | | | 2,021.74 |
| | | + 1 10.2 | | | + 1 10.1 | | | + 1 10.1 | | | + 1 10.1 | | | + 1 10.1 |
| | | + 1 50.47 | | | + 1 46.38 | | | + 1 46.58 | | | + 1 47.67 | | | + 1 45.73 |
| | | + 3.3 | | | + 8.0 | | | + 6.3 | | | + 2.0 | | | + 1.18 |
| | | + .01 - .02 | | | + .00 - .00 | | | + .00 - .00 | | | + .01 - .00 | | | + .24 - .39 |
| | | + 1 50.82 | | | + 1 47.19 | | | + 1 47.22 | | | + 1 47.89 | | | + 1 48.55 |
| | | 103 34 7.07 | | | 34 8.14 | | | 34 10.92 | | | 34 11.99 | | | 34 13.64 |
| | | - 2 20.64 | | | - 2 20.64 | | | - 2 22.76 | | | - 2 22.84 | | | - 2 23.25 |
| | | - 2 28.93 | | | - 2 28.57 | | | - 2 29.22 | | | - 2 28.52 | | | - 2 28.86 |
| | | - 2 8.89 | | | - 2 8.75 | | | - 2 6.46 | | | - 2 5.68 | | | - 2 5.27 |
| | | 103 31 55.15 | | | 31 57.12 | | | 31 57.91 | | | 31 58.94 | | | 31 59.83 |
| | | - 2 26.04 | | | - 2 26.04 | | | - 2 22.76 | | | - 2 22.84 | | | - 2 23.25 |
| | | 2 16 + | | | 2 16 + | | | 2 16 + | | | 2 16 + | | | 2 16 + |
| | | + 76 28 31 19.73 | | | + 76 28 31 19.73 | | | + 76 28 31 19.73 | | | + 76 28 31 19.73 | | | + 76 28 31 19.73 |

Draco

$$\text{Long } \delta = +7.020$$

$$K = -1.08$$

$$\Delta x = +.62$$

$$\Delta \delta = -0.7$$

$$\alpha 1873 = 47.204 \delta = 53 \quad 4.63$$

$$\sin \delta = 9.99563$$

$$\cos \delta = 9.14980$$

$$115.71m$$

$$9.26551m$$

$$d\alpha = +9.120$$

$$d\delta = -15.29$$

$$1873.0$$

$$\alpha$$

$$47.660$$

$$+2.04$$

$$+4.56$$

$$\delta$$

$$2.47 + 2.82$$

$$4.63$$

$$-2.16$$

$$5.29$$

$$4.63$$

$$+1.66$$

$$z = -39 \quad 30 \quad 17$$

$$\sin z = -64$$

$$1873 \quad \text{Apr. } 27 \quad +0.48$$

$$18 \quad 17 \quad 289$$

$$146$$

$$219$$

$$295$$

$$364$$

$$442$$

$$514$$

$$590$$

$$60$$

$$13.3$$

$$50.66$$

$$44.04$$

$$43.86$$

$$+7.02$$

$$+3.4$$

$$-36.6$$

$$66$$

$$18 \quad 47.25$$

$$17 \quad 35.63$$

$$18 \quad 44.18$$

$$+7.02$$

$$+3.4$$

$$-36.6$$

$$66$$

$$18 \quad 47.25$$

$$+2.07$$

$$25 \quad 53.5$$

$$2 \quad 56.7$$

$$110.2$$

$$27 \quad 53.10$$

$$8$$

$$+58.94$$

$$1,835.31$$

$$1,100.82m$$

$$-12.61$$

$$27 \quad 53.10$$

$$27 \quad 42.49$$

$$+81 \quad 53 \quad 5.86$$

$$-39 \quad 29 \quad 55 = 1.67610m$$

$$+2.16$$

$$1.67826m$$

$$+4.67$$

$$+36$$

$$+0.3 -23$$

$$+47.34$$

$$+81 \quad 53 \quad 52.20 \quad 53 \quad 52.97$$

$$-21.21$$

$$-2 \quad 28.11$$

$$-2 \quad 19.32$$

$$+81 \quad 53 \quad 3.88$$

$$-1.41 -21.21$$

$$+81 \quad 53 \quad 2.47 -2 \quad 28.71$$

$$16.32$$

$$9 \quad 18 \quad 51 -2 \quad 18.60$$

$$0 \quad 1 \quad 11 \quad 53 \quad 9.37$$

$$+81 \quad 53 \quad 30$$

1873

α *Hydrae* $\tan \delta = -14$ *Mar.* 21 $21^m 21^s$
 $\delta = +50$ 29 22 $\alpha 1872 = 17.827$
 $\sin. \delta = +.77$ $\alpha 1873 = 20.777$ $\delta = 6$ 33.83

$\delta = 39.1$ $\sin \delta = 9.149802$ $\alpha 1873.0$
 $\delta = 39.3 + 2$ $\cos \delta = 9.99568$ δ
 $\delta = 39.5 - 2$ 11.5712 20.070
 $\delta = 39.7 - 2$ 11.1342 3383
 $\delta = 39.9 - 2$ $- .707$

1873 α *Hydrae* $+20.1$
 $+2.2$

9 21.49 20
 8.9 56.2
 14.9 56.9
 14.1 57.8
 16.3 58.9
 18.3 59.5
 20.8 57.7
 23.4
 24.3
 24.4
 24.9
 25.0

18.580 20 57.37

21 18.56
 21 21.40
 -2.84
 -2.86

$+2.15 + .01$
 $- .03$ $-.03$
 $- .062$
 $+1.501$

21 18.56
 20.61

21 20.07

$+2.03$
 25 18.2
 1 10.0
 28.2
 26 14.10

+1.69

+70
-02

Red. $\log P = -16.358$
 $K = +.250$

$$K = +.250$$

7504 Ure Min = 72 67.65

$\begin{array}{r} 9 \\ 21 \\ + \end{array} \begin{array}{r} 24 \\ 24 \\ 86 \end{array} \begin{array}{r} 45 \\ 34 \\ 30 \end{array} \begin{array}{r} 5 \\ - \\ 26 \end{array}$

$$3 = -51 \quad 29 \quad 34$$

$$6 \quad 46$$

Re. led. to app place for

Series P 9.99919

cos ϕ 8.78568m
11571m
8.90139

$$21873 = 24 \cdot 33716$$

$d'' = \frac{3134}{3211} = \frac{2866}{2788}$

1873 Mar 30 $+2.01$ Apr. 1 $+1.61$ Apr. 10 $+1.04$ Apr. 16 $+1.13$ Apr. 27 $+0.48$

| | | | | | | | | | |
|--------|---------------|------|------|------|-------|---------|--------|--------|--------|
| 23 = | 23 408 24 | 24 | 25 3 | 25 = | 24 43 | 23 4461 | 24 340 | 23 = | 25 107 |
| 40 | 40 | 27.4 | 57.0 | 138 | 6.9 | 27.5 | 35.7 | 42.4 | 45 |
| 24 10 | 11 | 23.2 | 13.7 | 15.7 | 9.0 | 48.2 | 38.1 | 24 1.5 | 13.9 |
| 18.5 | 34.4 | 17.5 | 32.0 | 15.1 | | 24 3.2 | | 18.1 | 10.8 |
| - 34.3 | 11 | 11 | 42.4 | 16.1 | | - 17.4 | | 3.46 | 17.7 |
| 52.4 | 48.2 | 15.5 | 5.7 | 15.0 | | 33.6 | | 51.5 | 17.7 |
| 11 | 11 | 11 | 23.7 | 16.1 | | 50.3 | | 25 8.5 | 17.8 |
| - | 7.0 | 16.3 | | | | 25 6.8 | | 25.8 | 18.2 |
| | 11 | 11 | | | | 25.6 | | 11 | |
| | 24.2 | 16.6 | | | | 11 | | 11 | |
| | | | | | | 15.5 | | | |

24 1124 23 40.80 24 16.48 24 27.30 24 18.32 24 6.73 24 17.50 24 35.93 24 18.06 25 12.90

34.87
 33.87
 32.60
 33.79
 33.45

 1858
 33716

| | | | | |
|----------|----------|----------|----------|----------|
| 24 18,49 | 24 16,73 | 24 15,57 | 24 17,75 | 24 18,31 |
| + 2,16 | + 2,79 | + 4,35 | + 5,38 | + 7,02 |
| - 3,29 | - 2,63 | - 1,70 | - 1,85 | - 6,79 |
| + 17,51 | + 16,98 | + 14,38 | + 12,52 | + 8,91 |
| 24 34,87 | 24 33,87 | 24 32,60 | 24 33,79 | 24 33,45 |

| +2.03 | | +2.02 | | +1.88 | | +1.80 | | +1.81 | |
|---------------------|-------|--------|-------|--------|-------|--------|-------|-------|-------|
| 50 | 44.0 | 50 | 42.8 | 50 | 37.9 | 50 | 40.9 | 50 | 39.9 |
| 1 | 40.6 | 1 | 44.9 | 1 | 41.1 | 1 | 43.9 | 1 | 43.2 |
| | 84.6 | | 88.7 | | 79.0 | | 84.8 | | 83.1 |
| 51 | 42.30 | 51 | 44.35 | 51 | 39.50 | 51 | 42.40 | 51 | 41.55 |
| | 37.84 | | 10.82 | | 8.59 | | 18.48 | | 54.84 |
| 1.57 | 33.4 | 1.03 | 42.3m | 0.93 | 33.49 | 1.26 | 55.3m | 1.73 | 91.0m |
| 0.47 | 47.3 | 9.93 | 56.2m | 9.83 | 53.8 | 0.16 | 69.2m | 0.64 | 04.9m |
| +2.98 | | -0.86 | | +0.68 | | -1.47 | | -4.37 | |
| 51 | 42.30 | 51 | 44.35 | 51 | 39.50 | 51 | 42.40 | 51 | 41.55 |
| 51 | 45.28 | 51 | 43.49 | 51 | 40.18 | 51 | 40.93 | 51 | 37.18 |
| 31 | 30.7 | 31 | 4.86 | 31 | 8.17 | 31 | 7.42 | 31 | 11.17 |
| -51 5 52 = 1.85270m | | +15.45 | | +11.55 | | +15.23 | | +2.35 | |
| 1.86 | 25.5m | 1.86 | 81.5m | 1.86 | 42.5m | 1.86 | 79.3m | 1.85 | 50.5m |
| +1 | 100 | +1 | 100 | +1 | 100 | +1 | 100 | +1 | 100 |
| +1 | 12.87 | +1 | 13.82 | +1 | 13.16 | +1 | 13.78 | +1 | 11.62 |
| +1 | 05 | +1 | 00 | +1 | 00 | +1 | 01 | +1 | 10 |
| +1 | 03-14 | +1 | 03-14 | +1 | 08-14 | +1 | 08-14 | +1 | 02-14 |
| +1 | 12.95 | +1 | 13.85 | +1 | 13.24 | +1 | 13.87 | +1 | 11.74 |
| 32 | 16.02 | 32 | 15.88 | 32 | 21.41 | 32 | 21.29 | 32 | 22.91 |
| 19.11 | | 19.49 | | 20.97 | | 21.68 | | 22.46 | |
| -2 | 29.59 | -2 | 29.54 | -2 | 27.62 | -2 | 28.52 | -2 | 28.11 |
| -2 | 14.48 | -2 | 14.65 | -2 | 8.64 | -2 | 6.84 | -2 | 5.65 |
| 29 | 27.32 | 29 | 29.68 | 29 | 30.78 | 29 | 31.09 | 29 | 32.34 |
| +1 | 19.11 | +1 | 19.49 | +1 | 20.97 | +1 | 21.68 | +1 | 22.46 |
| -2 | 30.06 | -2 | 29.48 | -2 | 29.48 | -2 | 28.70 | -2 | 28.71 |
| 3+ | 15.8 | 3+ | 15.7 | 3+ | 14.6 | 3+ | 14.0 | 3+ | 14.1 |
| 21 | 24.17 | 21 | 24.17 | 21 | 24.17 | 21 | 24.17 | 21 | 24.17 |
| 29 | 28.27 | 29 | 31.17 | 29 | 32.07 | 29 | 32.17 | 29 | 33.0 |

Red. 5

1473

B. Becker

| | | |
|----------------------|---|------|
| | 2 | 9.03 |
| $\text{Temp} = -275$ | 3 | 4.02 |
| | 4 | 3.01 |
| $x = +0.01$ | 5 | 0.00 |

Mar. 21
26
31
Apr. 5

| | | |
|----|-------|-----|
| 26 | 57.12 | |
| | 57.36 | .24 |
| | 57.62 | .26 |
| | 57.90 | .28 |
| | 58.19 | .29 |
| | 58.50 | .31 |
| | 58.81 | .31 |
| | 59.14 | .33 |
| | 59.47 | .33 |

| | | | | |
|------|------|----|-------|--------------------------|
| | ' | " | | |
| 36 | 16.5 | 89 | 527 | Sin ² 9.97299 |
| | | | 57.6 | -1.1 |
| H+L | | | 507 | Cos ² 9.53405 |
| | | | 49.9 | .8 |
| L52 | | | 49.3 | .6 |
| | | | 48.8 | .5 |
| H+L5 | | | 48.5 | .3 |
| | | | 48.3 | .2 |
| H+L4 | | | 48.2 | . |
| | | | d/d = | +0.799 |
| | | | | -15.40 |

18730

| | |
|------|-------|
| 2 | 8 |
| 0.94 | 42.54 |
| .77 | 44.54 |
| .63 | 43.86 |
| .80 | |

| | |
|--------|--------------------|
| 0.785 | 43.65 <i>check</i> |
| .774 | 48.65 |
| + .011 | - 5.00 |
| | + 4.04 |
| | - .96 |

$$\begin{array}{r} 21.0791 \\ + 756.00 \\ + 70.00 \\ \hline n = -67 \quad 59 \quad 37 \\ \rho = -0.92 \end{array}$$
$$\begin{aligned} 21872 &= 59.976 \\ 21873 &= 0.774 \\ \delta 1873 &= 0 \quad 11.35 = 59' 48.65'' \end{aligned}$$

1873 Mar 27 +255
+24

Mar 30 +201
+122

Apr. 16 $+113$
 $+16$

Apr. 27 +.048
+.04

| | | | |
|--------|------|-----|-----|
| Line 5 | 20 | 562 | 20 |
| 9 300 | | 588 | |
| | 45.3 | | |
| | 48.2 | 26 | 2.3 |
| | 51.1 | | |
| | 53.8 | | |
| | 56.1 | | |
| 27 | 60 | | |
| | 3.0 | | |
| | 6.2 | | |
| | 9.0 | | |

$26\overline{)46}$
 $\underline{7.0}$
 8.0

| | | |
|------|------|------|
| 26 | 26 | 17.9 |
| 41.0 | 53.3 | 21.1 |
| 44.4 | 5 | 24.0 |
| 47.7 | 8 | |
| 50.3 | 3 | |
| 53.3 | 3 | |
| 56.3 | 3 | |
| 59.4 | 4 | |
| 27 | — | 2 |
| — | — | |

$$\begin{array}{r} 9 \quad 36 \\ 1 \quad - \\ 0 \quad - \\ \hline 553 \quad 583 \\ 553 \quad 2 \\ 583 \quad 3 \\ 27 \quad 14 \quad 4 \\ \quad 48 \quad 5 \end{array}$$

57.34
 27408
 $57.078 \quad 2$
 $26 \quad 57.12$
 $26 \quad 57.39$
 $- 0.27$
 $- 0.04$
 $- 0.38$
 $+ 1.14 + 0$
 $- .66$
 $+ 3.38$
 $+ 3.86 \quad 2$
 $26 \quad 57.12$
 $27 \quad 0.88$
 $27 \quad 0.94$
 $+ 2.07$
 20
 $2 \quad 2.00$
 14.2
 34.2
 $22 \quad 17.10$
 s
 $+ 57.98$
 $1,763.28$
 $1,413.04$
 $+ 25.89$
 $22 \quad 17.10$
 $22 \quad 4.299$
 $0 \quad "$
 $10 \quad 0 \quad 5.36$

| | | |
|----|---------|----|
| | 5031 | |
| | 5590 | |
| 26 | 55900 | 2 |
| 26 | 5594 | |
| 26 | 5755 | |
| | -1.61 | |
| | -1.98 | |
| | -1.72 | |
| | +2.15 | +0 |
| | - .61 | |
| | +3.22 | |
| | +4.86 | 83 |
| | 55.94 | |
| | 0.70 | |
| | 0.77 | |
| | +2.03 | |
| 20 | | |
| 2 | 13.2 | |
| | 11.0 | |
| | 24.2 | |
| 22 | 12.10 | |
| | + 4937 | |
| | 1,69346 | |
| | 1,34322 | |
| | + 2254 | |
| 22 | 12.10 | |
| 22 | 3414 | |
| 0 | 1421 | |

53.300
 26
 26 53.34
 26 57.55
 - 521
 - 498
 - 5.32
 + 5.36 1.02
 - .44
 + 2.22
 + 7.14 .09
 53.34
 0.48
 0.63
 + 180
 30
 2 18.8
 23.0
 418
 22 2090
 + 32.30
 1.509.20
 1.158.96
 + 1442
 22 2090
 22 3532
 0 1303

$$\begin{array}{r}
 52.360 \\
 26 \quad 58.86 \\
 \hline
 26 \quad 52.40 \quad 49.39 \\
 56 \quad 59.26 \\
 - 64.86 \\
 - 46.9 \\
 - 4.99 \\
 + 7.03 - .01 \\
 - .11 \\
 + 1.51 \\
 + 8.43 \quad 40 \\
 52.40 \\
 0.83 \\
 1.80 \\
 + 1.81 \\
 \hline
 - 6.44 \\
 9.80889m \\
 9.45865m \\
 - 2.87
 \end{array}$$
$$\begin{array}{r} -67\ 34\ 54 = \\ +2643 \\ \hline 2,16834x \\ + \quad .05 \\ + 2\ 2734 \\ + \quad 59 \\ + \quad .05 \end{array}$$
$$\begin{array}{r} 2191m \\ + 986 \\ \hline 21517m \\ + 22183 \\ \hline 43800 \\ + 43 \\ \hline 43843 \end{array}$$
$$\begin{array}{r} + 1539 \\ 2,15730 \\ + .03 \\ + 2.2365 \\ + .18 \\ + .11 \end{array}$$
$$\begin{array}{r} + 254 \\ 214445 \\ \hline \end{array}$$
$$\begin{array}{r} +2 \quad 28.03 \\ 0 \quad 2 \quad 33.39 \\ \quad 0 \quad 8.5 \\ -2 \quad 24.9 \\ -2 \quad 25.9 \\ \hline -19.90 \\ -2 \quad 28.93 \\ -2 \quad 48.83 \\ 110 \quad 59 \quad 448.6 + \\ \hline -2.02 \\ 59 \quad 42.54 \end{array}$$
$$\begin{array}{r} + 2 \quad 22.34 \\ 21 \quad 2 \quad 36.55 \\ \quad \quad 0 \quad 9.1 \\ 51 \quad - 2 \quad 27.4 \\ 61 \quad - 2 \quad 28.4 - 18 \\ \\ \quad \quad - 20.40 \\ 90 \quad - 2 \quad 29.59 - \\ 08 \quad - 2 \quad 47.99 \\ 90 \quad 59 \quad 46.56 + \\ 08 \quad - 2.02 - \\ 13 \quad 44.54 \end{array}$$
$$\begin{array}{r} + 2 \quad 23.97 \\ 37 \quad 2 \quad 37.00 \\ \quad 0 \quad 11.2 \\ 6 \quad - 2 \quad 25.8 \\ 6 \quad - 2 \quad 26.8 - 18 \\ \quad - 2260 \\ 40 \quad 2 \quad 2852 - \\ 06 \quad 2 \quad 5112 \\ 86 \quad 59 \quad 4588 + \\ 60 \quad - 2.02 - 2 \\ 77 \quad 43.86 \quad 5 \end{array}$$
$$\begin{array}{r} 682 \\ 0 \\ 260 \\ 270 \\ \hline 2260 \\ 2870 \\ 165 \\ \hline 965 \\ 4917 \end{array}$$

1273

| | | | | | | | | |
|----------|---------------------------|---------|-----------------|-------|------|------|--------------|----------------------|
| 1564 | Tang α = +2.72 | Mar. 21 | 31 ^m | 33.35 | 48 | 60.5 | and | 9.97248 |
| h m s | X = -9.41 | 26 | 23.17 | 18 | 61.6 | +11 | | |
| 31 10 | | 31 | 22.99 | 18 | 62.7 | 11 | cos δ | 9.53785 |
| 31 20 | | Apr. 5 | 22.80 | 19 | 63.6 | 9 | | 11571 _m |
| 40 49 | Corr α = +2.4 +0.4 | 10 | 22.59 | 21 | 64.4 | 8 | | 9.55856 _m |
| 69 48 48 | | 15 | 22.86 | 23 | 65.1 | 7 | | |
| -27 26 0 | 21872 = 14.790 | 20 | 22.12 | 24 | 65.7 | 6 | dx = | +5.253 |
| -46 | 21873 = 20.041 | 25 | 21.87 | 25 | 66.2 | 5 | dy = | -16.05 |
| | | 30 | 21.63 | 24 | 66.6 | 4 | | |
| | 21873 = 48 47.99 | | | | | | | |

| | | | | | | | | | | | | |
|----------------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-------------|
| 1873 | Mar. 27 | +2.255 +2.24 | Mar. 30 | +2.201 +2.22 | Apr. 1 | +2.161 +2.17 | Apr. 10 | +2.104 +2.10 | Apr. 15 | +2.137 +2.14 | Apr. 16 | +2.113 |
| h m s | 30 35.4 | 31 | 31 12.9 | 31 | 30 57.0 | 31 | 30 56.6 | 31 | 30 36.5 | | | |
| 9.9 | 38.0 | 8.9 | 19.4 | 7.7 | 53.1 | 6.2 | 52.5 | 5.2 | 38.4 | | | |
| 15.8 | 42.0 | 11.6 | 25.4 | 11.0 | 56.6 | 9.4 | 2.5 | 8.4 | 38.4 | | | |
| 15.6 | | 19.5 | 28.3 | 14.1 | | 12.3 | | 11.2 | 41.2 | | | |
| 18.8 | | 19.6 | 6.64 | 16.9 | | 13.2 | | 14.2 | | | | |
| 21.9 | | 20.6 | | 19.7 | | 18.3 | | 17.1 | | | | |
| 24.6 | | 23.5 | | 22.9 | | 21.2 | | 20.0 | | | | |
| 27.5 | | 26.6 | | 26.0 | | 24.0 | | 23.2 | | | | |
| 30.8 | | 29.4 | | 28.4 | | 27.0 | | 26.2 | | | | |
| 33.9 | | 32.6 | | 32.0 | | 30.1 | | 29.2 | | | | |
| 19.58 | 18.57 | 17.92 | 16.37 | 15.44 | 14.89 | 13.89 | 12.89 | 11.89 | 10.89 | 9.89 | 8.89 | 7.89 |
| 21.756 | 20.567 | 19.911 | 18.189 | 16.489 | 14.789 | 13.089 | 11.389 | 9.689 | 7.989 | 6.289 | 4.589 | 2.889 |
| 31 21.71 | 31 20.53 | 31 19.87 | 31 18.15 | 31 17.15 | 31 16.15 | 31 15.15 | 31 14.15 | 31 13.15 | 31 12.15 | 31 11.15 | 31 10.15 | 31 9.15 |
| 31 23.13 | 31 23.02 | 31 22.45 | 31 21.88 | 31 21.31 | 31 20.74 | 31 20.17 | 31 19.60 | 31 19.03 | 31 18.46 | 31 17.89 | 31 17.32 | 31 16.75 |
| -1.42 | -2.49 | -3.08 | -4.43 | -5.20 | -6.07 | -6.94 | -7.81 | -8.68 | -9.55 | -10.42 | -11.29 | -12.16 |
| -1.66 | -2.73 | -3.32 | -4.67 | -5.44 | -6.21 | -6.98 | -7.75 | -8.52 | -9.29 | -10.06 | -10.83 | -11.60 |
| +1.15 +0.0 | +2.16 +0.1 | +2.78 +0.1 | +4.35 +0.0 | +5.01 +0.1 | +5.67 +0.1 | +6.33 +0.1 | +6.99 +0.1 | +7.65 +0.1 | +8.31 +0.1 | +8.97 +0.1 | +9.63 +0.1 | +10.29 +0.1 |
| +1.65 | +1.60 | +1.46 | +1.27 | +1.08 | +0.89 | +0.70 | +0.51 | +0.32 | +0.13 | +0.04 | +0.00 | +0.00 |
| -3.09 | -2.98 | -2.91 | -2.54 | -2.31 | -2.08 | -1.85 | -1.62 | -1.39 | -1.16 | -0.93 | -0.70 | -0.47 |
| -1.2425 | -0.226 | +0.382 | +2.089 | +3.11 | +4.14 | +5.17 | +6.20 | +7.23 | +8.26 | +9.29 | +10.32 | +11.35 |
| 31 21.71 | 20.53 | 19.87 | 18.15 | 17.15 | 16.15 | 15.15 | 14.15 | 13.15 | 12.15 | 11.15 | 10.15 | 9.15 |
| 31 20.42 | 20.31 | 20.20 | 20.23 | 20.26 | 20.29 | 20.32 | 20.35 | 20.38 | 20.41 | 20.44 | 20.47 | 20.50 |
| 31 20.46 | 20.27 | 20.19 | 20.24 | 20.26 | 20.28 | 20.30 | 20.32 | 20.34 | 20.36 | 20.38 | 20.40 | 20.42 |
| +2.07 | +2.03 | +2.02 | +1.88 | +1.80 | +1.72 | +1.64 | +1.56 | +1.48 | +1.40 | +1.32 | +1.24 | +1.16 |
| 31 13.6 | 2 11.0 | 2 0.1 | 1 54.0 | 2 3.1 | 2 1.1 | 2 0.1 | 2 0.1 | 2 0.1 | 2 0.1 | 2 0.1 | 2 0.1 | 2 0.1 |
| 4.9 | 6.0 | 59.0 | 54.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 18.5 | 17.0 | 11.91 | 10.82 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| 32 9.35 | 32 8.50 | 30 59.55 | 31 54.10 | 32 2.10 | 31 2.10 | 31 2.10 | 31 2.10 | 31 2.10 | 31 2.10 | 31 2.10 | 31 2.10 | 31 2.10 |
| 8 | -1.03 | +2.634 | +18.66 | +38.49 | +38.49 | +38.49 | +38.49 | +38.49 | +38.49 | +38.49 | +38.49 | +38.49 |
| +42.86 | -0.43 | 1.42062 | 1.27091 | 1.58535 | 1.58535 | 1.58535 | 1.58535 | 1.58535 | 1.58535 | 1.58535 | 1.58535 | 1.58535 |
| 1.63205 | 0.01284m | 1.07418m | 0.92447m | 1.23891m | 1.23891m | 1.23891m | 1.23891m | 1.23891m | 1.23891m | 1.23891m | 1.23891m | 1.23891m |
| 1.28561m | 9.66640 | -11.86 | -8.40 | -17.33 | -17.33 | -17.33 | -17.33 | -17.33 | -17.33 | -17.33 | -17.33 | -17.33 |
| -19.30 | +0.46 | 30 59.55 | 30 54.10 | 32 2.10 | 31 2.10 | 31 2.10 | 31 2.10 | 31 2.10 | 31 2.10 | 31 2.10 | 31 2.10 | 31 2.10 |
| 32 9.25 | 32 8.50 | 30 47.69 | 31 45.70 | 31 45.77 | 31 45.77 | 31 45.77 | 31 45.77 | 31 45.77 | 31 45.77 | 31 45.77 | 31 45.77 | 31 45.77 |
| 31 40.95 | 32 8.76 | 51 0.66 | 51 2.65 | 51 3.58 | 51 3.58 | 51 3.58 | 51 3.58 | 51 3.58 | 51 3.58 | 51 3.58 | 51 3.58 | 51 3.58 |
| 49.95 | 50 39.39 | | | | | | | | | | | |
| 19.50 58.40 | | | | | | | | | | | | |
| -27 25.47 = 1.47530m | +9.86 | +15.54 | +11.83 | +10.99 | +10.99 | +10.99 | +10.99 | +10.99 | +10.99 | +10.99 | +10.99 | +10.99 |
| +26.43 | 1.48516m | 1.49084m | 1.48713m | 1.48629m | 1.48629m | 1.48629m | 1.48629m | 1.48629m | 1.48629m | 1.48629m | 1.48629m | 1.48629m |
| 1.50173m | | | | | | | | | | | | |
| + 31.75 | + 30.56 | + 30.96 | + 30.70 | + 30.64 | + 30.64 | + 30.64 | + 30.64 | + 30.64 | + 30.64 | + 30.64 | + 30.64 | + 30.64 |
| + 32 | + 30.56 | + 30.96 | + 30.70 | + 30.64 | + 30.64 | + 30.64 | + 30.64 | + 30.64 | + 30.64 | + 30.64 | + 30.64 | + 30.64 |
| + .04 | + .04 | + .02 | + .09 | + .10 | + .10 | + .10 | + .10 | + .10 | + .10 | + .10 | + .10 | + .10 |
| + 31.47 | + 30.60 | + 30.86 | + 30.73 | + 30.48 | + 30.48 | + 30.48 | + 30.48 | + 30.48 | + 30.48 | + 30.48 | + 30.48 | + 30.48 |
| 69.51 29.87 | 51 29.69 | 51 31.36 | 51 33.38 | 33.23 | 33.23 | 33.23 | 33.23 | 33.23 | 33.23 | 33.23 | 33.23 | 33.23 |
| 149.19 | 49 2.5 | 49 2.9 | 49 4.4 | 49 5.1 | 49 5.1 | 49 5.1 | 49 5.1 | 49 5.1 | 49 5.1 | 49 5.1 | 49 5.1 | 49 5.1 |
| 16.4 -2.260 | 28.2 | 28.6 | 28.4 | 29.1 | 29.1 | 29.1 | 29.1 | 29.1 | 29.1 | 29.1 | 29.1 | 29.1 |
| -2 2.76 -18 | 27.8 | 28.2 -16 | 28.4 -2 | 28.6 -15 | 28.7 -2 | 28.7 -2 | 28.7 -2 | 28.7 -2 | 28.7 -2 | 28.7 -2 | 28.7 -2 | 28.7 -2 |
| -13.90 | -14.50 | -14.90 | -16.40 | -17.10 | -17.10 | -17.10 | -17.10 | -17.10 | -17.10 | -17.10 | -17.10 | -17.10 |
| -2 28.93 - | 13.90 -2 | 28.94 - | 29.48 -2 | 29.66 - | 29.66 - | 29.66 - | 29.66 - | 29.66 - | 29.66 - | 29.66 - | 29.66 - | 29.66 - |
| -2 42.83 -2 | 29.08 -2 | 29.44 - | 29.48 -2 | 29.66 - | 29.66 - | 29.66 - | 29.66 - | 29.66 - | 29.66 - | 29.66 - | 29.66 - | 29.66 - |
| 19.48 47.04 + | 45 | 47.08 | 47.32 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + |
| -2 42.03 | 48 | 47.08 | 47.32 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + |
| 48 47.66 | 48 | 47.08 | 47.32 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + | 47.44 + |

| Apr 23 +0.83 +0.07 | | | Apr 26 +1.00 +0.07 | | | Apr 27 +0.48 +0.04 | | |
|-----------------------|----------------|----------------|-----------------------|-------|----------|-----------------------|--|--|
| 31 | 30 443 | 31 | 31 | 333 | 31 | 30 483 | | |
| 34 | 1/25 | — | 361 | 36 | — | 52.0 | | |
| 6.11 | 50.0 | — | 38.0 | 59 | — | 54.5 | | |
| 9.5 | — | — | 174 | 9.0 | — | — | | |
| 12.8 | — | — | — | 12.0 | — | — | | |
| 15.8 | — | 146 | — | 14.8 | — | — | | |
| 18.8 | — | 179 | — | 17.8 | — | — | | |
| 21.8 | — | 208 | — | 20.8 | — | — | | |
| 24.8 | — | 238 | — | 23.8 | — | — | | |
| 27.2 | — | 268 | — | 26.8 | — | — | | |
| — | — | 298 | — | — | — | — | | |
| 1380 | — | — | 1334 | — | — | — | | |
| 15333 | 30 47.27 | 14.81 | 31 35.80 | 14.86 | 30 51.60 | — | | |
| 31 15.29 | 31 14.77 | — | 31 14.82 | — | — | | | |
| 31 21.96 | 31 21.81 | — | 31 21.76 | — | — | | | |
| -6.67 | -7.04 | — | -6.94 | — | — | | | |
| -6.91 | -7.28 | — | -7.18 | — | — | | | |
| +6.70-02 | +6.90-02 | +7.04-01 | +7.04-01 | +7.13 | — | | | |
| +1.19 | +1.19 | +1.11 | +1.11 | +1.13 | — | | | |
| -1.92 | -1.77 | -1.72 | -1.72 | — | — | | | |
| +4.788 | +8.328 | +5.434 | +5.434 | — | — | | | |
| 31 15.29 | 14.77 | 14.82 | 14.82 | — | — | | | |
| 31 20.26 | 20.09 | 20.25 | 20.25 | — | — | | | |
| 20.27 | 20.15 | 20.26 | 20.26 | — | — | | | |
| +1.81 | +1.81 | +1.81 | +1.81 | — | — | | | |
| 30 | 30 | 30 | 30 | — | — | | | |
| 1 56.9 | 1 34.1 | 1 52.9 | 1 52.9 | — | — | | | |
| 56.9 | 35.1 | 55.0 | 55.0 | — | — | | | |
| 113.8 | 69.2 | 107.9 | 107.9 | — | — | | | |
| 31 56.90 | 31 34.60 | 31 53.95 | 53.95 | — | — | | | |
| +28.06 | 20.49 | +23.26 | +23.26 | — | — | | | |
| 1,448.09 | 1,322.01m | 1,366.61 | 1,366.61 | — | — | | | |
| 1,101.65m | 6,975.57 | 1,020.17m | 1,020.17m | — | — | | | |
| -12.64 | +4.45 | -10.47 | -10.47 | — | — | | | |
| 31 56.90 | 31 34.60 | 31 53.95 | 53.95 | — | — | | | |
| 31 44.26 | 31 44.05 | 31 43.48 | 43.48 | — | — | | | |
| +69 51 4.89 | 51 4.30 | 51 4.87 | 4.87 | — | — | | | |
| +4.95 | +4.43 | +2.54 | +2.54 | — | — | | | |
| 1,480.25m | 1,479.73m | 1,477.84m | 1,477.84m | — | — | | | |
| +30.22 | +30.18 | +30.05 | +30.05 | — | — | | | |
| +1.14 | +1.08 | +1.09 | +1.09 | — | — | | | |
| +1.09 | +1.02 | +1.02 | +1.02 | — | — | | | |
| +30.17 | +30.12 | +29.98 | +29.98 | — | — | | | |
| +69 51 34.26 | 34.11 51 34.42 | 34.29 51 34.85 | 34.85 | 34.70 | — | | | |
| 49 6.0 | 49 6.3 | 49 6.4 | 6.4 | — | — | | | |
| -2 28.3 | -2 28.1 | -2 28.4 | 28.4 | 28.6 | — | | | |
| -2 27.9 | -2 27.7 | -2 28.0 | 28.0 | 28.2 | — | | | |
| -18.00 | -18.30 | -18.40 | -18.40 | — | — | | | |
| -2 28.56 | -2 28.48 | -2 28.11 | 28.11 | 15.20 | — | | | |
| -2 46.96 | -2 46.76 | -2 46.51 | 46.51 | 28.71 | — | | | |
| +69 48 47.70 | 48 47.66 | 48 48.34 | 48.34 | 83 | — | | | |
| -2 46.73 | -2 46.52 | -2 46.28 | 46.28 | — | — | | | |
| 48 47.98 | 48 47.77 | 48 48.42 | 48.42 | — | — | | | |

1873

1873 *Louis*. *lang* $\delta = +19$ *Mar. 21* $\delta = 23.09$ *27* $\delta = 66.0$ *Sund 9.25.927*
 $\delta = -0.16$ *Apr. 5* $\delta = 22.95$ $\delta = 66.3$ *2* *cool 9.99.271*
 $\delta = 22.89$ $\delta = 66.5$ *2* *11.57.1m*
 $\delta = 22.83$ $\delta = 66.7$ *2* *.1084.22*
 $\delta = 22.76$ $\delta = 67.2$ *3* *do = +3.208*
 $\delta = 22.70$ $\delta = 67.5$ *3* *do = -16.17*
 $\delta = 22.63$ $\delta = 67.7$ *2*
 $\delta = 28.764$

| 1873 | Mar. 27 | Apr. 15 | Apr. 16 | Apr. 21 | Apr. 23 | Apr. 26 |
|---------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| hms | $\delta = +255$ | $\delta = +137$ | $\delta = +113$ | $\delta = +124$ | $\delta = +083$ | $\delta = +100$ |
| 9 34.93 | 34 22.84 | 33 52.5 | 33 57.9 | 34 40 | 34 35 | 33 58.4 |
| 11.4 | 4.0 | 56.1 | 58.4 | 61 | 5.5 | 53 |
| 13.4 | 5.5 | 9.0 | 0.3 | 8.8 | 11.7 | 57.4 |
| 15.4 | 13.6 | 13.3 | 12.5 | 12.5 | 11.5 | 11.6 |
| 17.4 | 15.7 | 15.4 | 14.5 | 14.5 | 10.9 | 10.8 |
| 19.4 | 17.7 | 17.4 | 16.6 | 16.6 | 10.1 | 10.1 |
| 21.8 | 19.8 | 19.5 | 18.7 | 18.7 | 10.1 | 10.1 |
| 23.9 | 22.0 | 21.6 | 20.8 | 20.8 | 10.1 | 10.1 |
| 25.9 | 24.2 | 23.7 | 22.8 | 22.8 | 10.1 | 10.1 |
| 27.9 | 26.2 | 25.7 | 24.9 | 24.9 | 10.1 | 10.1 |
| 29.9 | 28.3 | 27.9 | 27.0 | 27.0 | 10.1 | 10.1 |
| 31.9 | 30.4 | 30.0 | 29.0 | 29.0 | 10.1 | 10.1 |
| 33.9 | | | | | | |
| 35.9 | | | | | | |
| 37.9 | | | | | | |
| 39.9 | | | | | | |
| 41.9 | | | | | | |
| 43.9 | | | | | | |
| 45.9 | | | | | | |
| 47.9 | | | | | | |
| 49.9 | | | | | | |
| 51.9 | | | | | | |
| 53.9 | | | | | | |
| 55.9 | | | | | | |
| 57.9 | | | | | | |
| 59.9 | | | | | | |
| 61.9 | | | | | | |
| 63.9 | | | | | | |
| 65.9 | | | | | | |
| 67.9 | | | | | | |
| 69.9 | | | | | | |
| 71.9 | | | | | | |
| 73.9 | | | | | | |
| 75.9 | | | | | | |
| 77.9 | | | | | | |
| 79.9 | | | | | | |
| 81.9 | | | | | | |
| 83.9 | | | | | | |
| 85.9 | | | | | | |
| 87.9 | | | | | | |
| 89.9 | | | | | | |
| 91.9 | | | | | | |
| 93.9 | | | | | | |
| 95.9 | | | | | | |
| 97.9 | | | | | | |
| 99.9 | | | | | | |
| 101.9 | | | | | | |
| 103.9 | | | | | | |
| 105.9 | | | | | | |
| 107.9 | | | | | | |
| 109.9 | | | | | | |
| 111.9 | | | | | | |
| 113.9 | | | | | | |
| 115.9 | | | | | | |
| 117.9 | | | | | | |
| 119.9 | | | | | | |
| 121.9 | | | | | | |
| 123.9 | | | | | | |
| 125.9 | | | | | | |
| 127.9 | | | | | | |
| 129.9 | | | | | | |
| 131.9 | | | | | | |
| 133.9 | | | | | | |
| 135.9 | | | | | | |
| 137.9 | | | | | | |
| 139.9 | | | | | | |
| 141.9 | | | | | | |
| 143.9 | | | | | | |
| 145.9 | | | | | | |
| 147.9 | | | | | | |
| 149.9 | | | | | | |
| 151.9 | | | | | | |
| 153.9 | | | | | | |
| 155.9 | | | | | | |
| 157.9 | | | | | | |
| 159.9 | | | | | | |
| 161.9 | | | | | | |
| 163.9 | | | | | | |
| 165.9 | | | | | | |
| 167.9 | | | | | | |
| 169.9 | | | | | | |
| 171.9 | | | | | | |
| 173.9 | | | | | | |
| 175.9 | | | | | | |
| 177.9 | | | | | | |
| 179.9 | | | | | | |
| 181.9 | | | | | | |
| 183.9 | | | | | | |
| 185.9 | | | | | | |
| 187.9 | | | | | | |
| 189.9 | | | | | | |
| 191.9 | | | | | | |
| 193.9 | | | | | | |
| 195.9 | | | | | | |
| 197.9 | | | | | | |
| 199.9 | | | | | | |
| 201.9 | | | | | | |
| 203.9 | | | | | | |
| 205.9 | | | | | | |
| 207.9 | | | | | | |
| 209.9 | | | | | | |
| 211.9 | | | | | | |
| 213.9 | | | | | | |
| 215.9 | | | | | | |
| 217.9 | | | | | | |
| 219.9 | | | | | | |
| 221.9 | | | | | | |
| 223.9 | | | | | | |
| 225.9 | | | | | | |
| 227.9 | | | | | | |
| 229.9 | | | | | | |
| 231.9 | | | | | | |
| 233.9 | | | | | | |
| 235.9 | | | | | | |
| 237.9 | | | | | | |
| 239.9 | | | | | | |
| 241.9 | | | | | | |
| 243.9 | | | | | | |
| 245.9 | | | | | | |
| 247.9 | | | | | | |
| 249.9 | | | | | | |
| 251.9 | | | | | | |
| 253.9 | | | | | | |
| 255.9 | | | | | | |
| 257.9 | | | | | | |
| 259.9 | | | | | | |
| 261.9 | | | | | | |
| 263.9 | | | | | | |
| 265.9 | | | | | | |
| 267.9 | | | | | | |
| 269.9 | | | | | | |
| 271.9 | | | | | | |
| 273.9 | | | | | | |
| 275.9 | | | | | | |
| 277.9 | | | | | | |
| 279.9 | | | | | | |
| 281.9 | | | | | | |
| 283.9 | | | | | | |
| 285.9 | | | | | | |
| 287.9 | | | | | | |
| 289.9 | | | | | | |
| 291.9 | | | | | | |
| 293.9 | | | | | | |
| 295.9 | | | | | | |
| 297.9 | | | | | | |
| 299.9 | | | | | | |
| 301.9 | | | | | | |
| 303.9 | | | | | | |
| 305.9 | | | | | | |
| 307.9 | | | | | | |
| 309.9 | | | | | | |
| 311.9 | | | | | | |
| 313.9 | | | | | | |
| 315.9 | | | | | | |
| 317.9 | | | | | | |
| 319.9 | | | | | | |
| 321.9 | | | | | | |
| 323.9 | | | | | | |
| 325.9 | | | | | | |
| 327.9 | | | | | | |
| 329.9 | | | | | | |
| 331.9 | | | | | | |
| 333.9 | | | | | | |
| 335.9 | | | | | | |
| 337.9 | | | | | | |
| 339.9 | | | | | | |
| 341.9 | | | | | | |
| 343.9 | | | | | | |
| 345.9 | | | | | | |
| 347.9 | | | | | | |
| 349.9 | | | | | | |
| 351.9 | | | | | | |
| 353.9 | | | | | | |
| 355.9 | | | | | | |
| 357.9 | | | | | | |
| 359.9 | | | | | | |
| 361.9 | | | | | | |
| 363.9 | | | | | | |
| 365.9 | | | | | | |
| 367.9 | | | | | | |
| 369.9 | | | | | | |
| 371.9 | | | | | | |
| 373.9 | | | | | | |
| 375.9 | | | | | | |
| 377.9 | | | | | | |
| 379.9 | | | | | | |
| 381.9 | | | | | | |
| 383.9 | | | | | | |
| 385.9 | | | | | | |
| 387.9 | | | | | | |
| 389.9 | | | | | | |
| 391.9 | | | | | | |
| 393.9 | | | | | | |
| 395.9 | | | | | | |
| 397.9 | | | | | | |
| 399.9 | | | | | | |
| 401.9 | | | | | | |
| 403.9 | | | | | | |
| 405.9 | | | | | | |
| 407.9 | | | | | | |
| 409.9 | | | | | | |
| 411.9 | | | | | | |
| 413.9 | | | | | | |
| 415.9 | | | | | | |
| 417.9 | | | | | | |
| 419.9 | | | | | | |
| 421.9 | | | | | | |
| 423.9 | | | | | | |
| 425.9 | | | | | | |
| 427.9 | | | | | | |
| 429.9 | | | | | | |
| 431.9 | | | | | | |
| 433.9 | | | | | | |
| 435.9 | | | | | | |
| 437.9 | | | | | | |
| 439.9 | | | | | | |
| 441.9 | | | | | | |
| 443.9 | | | | | | |
| 445.9 | | | | | | |
| 447.9 | | | | | | |
| 449.9 | | | | | | |
| 451.9 | | | | | | |
| 453.9 | | | | | | |
| 455.9 | | | | | | |
| 457.9 | | | | | | |
| 459.9 | | | | | | |
| 461.9 | | | | | | |
| 463.9 | | | | | | |
| 465.9 | | | | | | |
| 467.9 | | | | | | |
| 469.9 | | | | | | |
| 471.9 | | | | | | |
| 473.9 | | | | | | |
| 475.9 | | | | | | |
| 477.9 | | | | | | |
| 479.9 | | | | | | |
| 481.9 | | | | | | |
| 483.9 | | | | | | |
| 485.9 | | | | | | |
| 487.9 | | | | | | |
| 489.9 | | | | | | |
| 491.9 | | | | | | |
| 493.9 | | | | | | |
| 495.9 | | | | | | |
| 497.9 | | | | | | |
| 499.9 | | | | | | |
| 501.9 | | | | | | |
| 503.9 | | | | | | |
| 505.9 | | | | | | |
| 507.9 | | | | | | |
| 509.9 | | | | | | |
| 511.9 | | | | | | |
| 513.9 | | | | | | |
| 515.9 | | | | | | |
| 517.9 | | | | | | |
| 519.9 | | | | | | |
| 521.9 | | | | | | |
| 523.9 | | | | | | |
| 525.9 | | | | | | |
| 527.9 | | | | | | |
| 529.9 | | | | | | |
| 531.9 | | | | | | |
| 533.9 | | | | | | |
| 535.9 | | | | | | |
| 537.9 | | | | | | |
| 539.9 | | | | | | |
| 541.9 | | | | | | |
| 543.9 | | | | | | |
| 545.9 | | | | | | |
| 547.9 | | | | | | |
| 549.9 | | | | | | |
| 551.9 | | | | | | |
| 553.9 | | | | | | |
| 555.9 | | | | | | |
| 557.9 | | | | | | |
| 559.9 | | | | | | |
| 561.9 | | | | | | |
| 563.9 | | | | | | |
| 565.9 | | | | | | |
| 567.9 | | | | | | |
| 569.9 | | | | | | |
| 571.9 | | | | | | |
| 573.9 | | | | | | |

April 27 $+0.48$
 $+0.04$

34 31 22 57.1
 52 58.2
 72 59.3
 114
 125
 157
 178
 198
 241
 261
 283

1702
 1565
 15655 33 58.20

34 15.64
 35 22.67
 -7.03

+7.04 -0.04
 + .01 $+0.01$
 - 0.14
 + 6.640

34 15.64
 22.25
 22.24

+1.81

50
 1 57.5
 58.1
 115.6
 51 57.80

+ 17.16
 1,242.04
 1,350.46m

-22.41
 51 57.80
 51 35.39

31 12.96

+27.3
 1,556.93

+ 36.05
 - .03
 + .02

- 36.06
 30 36.90 36.74
 38 36
 -2 29.8 -16 29.5

+5.00
 -2 28.11
 -2 28.11 + 0.00
 28 8.79 28.71
 -2 27.66
 28 7.08

1873

1972phae.proj.146

E. Lomin

| | | |
|--------------|---------------|---------------|
| 9 | 38 | 32 |
| 9 | 38 | 38 |
| 2 | 20 | 20 |
| 2 | 24 | 21 |

$\alpha = +18$ 1

$\sin. \gamma = +.31$

| | | in | S |
|------------------|--------|----|-------|
| Tang S = +45 | Mar 21 | 38 | 39.35 |
| | | 26 | 39.30 |
| X = -017 | 31 | | 39.25 |
| Cour = 1.02 | Apr. 5 | | 39.20 |
| | 10 | | 39.14 |
| 21872 = 34909 | 15 | | 39.07 |
| | 20 | | 39.00 |
| 21873 = 38.327 | 25 | | 38.93 |
| | 30 | | 38.86 |
| 21873 = 21 27.66 | | | |

| | | | | |
|---|----|------|------------|--------------------|
| 5 | 21 | 29.1 | sin ρ | 9.61522 |
| 5 | | 29.6 | + 5 | |
| 5 | | 30.1 | 5 | cos ρ 9.95954 |
| | | | | 115.41 m |
| 6 | | 30.6 | 5 | .07525 m |
| | | 31.0 | 4 | |
| 7 | | 31.4 | 4 | $d\alpha = +3.418$ |
| 7 | | 31.8 | 4 | $d\rho = -16.38$ |
| 7 | | 32.2 | 4 | |
| 7 | | 32.5 | 3 | |

| 1873 | 1874 | 1875 | 1876 | 1877 | 1878 | 1879 | 1880 | 1881 | 1882 | 1883 | 1884 | 1885 | 1886 | 1887 | 1888 | 1889 | 1890 | 1891 | 1892 | 1893 | 1894 | 1895 | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 22 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|

May 1. 07 ⁰⁶⁵

| | | | |
|----|------|----|-------|
| 38 | 17.5 | 38 | 9.5 |
| | 17.4 | | 10.1 |
| | 22.1 | | 11.6 |
| | 26.6 | | 16.7 |
| | 28.8 | | 8.2 |
| | 31.1 | | 12.05 |
| | 33.4 | | |
| | 35.6 | | |
| | 40.1 | | |
| | 42.4 | | |
| | 44.8 | | |

3421
 38 31.10 38 12.05
 38 31.08
 38 38.82
 - 7.76
 - 7.78

+ 7.79 + .00
 - .03 - .03
 - 0.51
 + 7.25
 38 31.08
 38.33
 38.33

+ 1.82
 55
 3 49.4
 57.7
 107.1
 58 53.55

+ 14.05 + 20.60
 1.27989 1.31387
 1.35514 1.38912
 - 22.65 - 24.50
 58 53.55 53.55
 58 30.90 29.05
 24 17.45 19.30

- * 593
 1.26657

* - 18.47
 - .08
 + .04

- 18.51
 23 58.94 24 07.9 0.48
 21 32.6
 - 2 26.8 31 28.5
 28.2
 - 4.80 4.90
 - 2 27.29
 - 2 32.19 - 4.90
 21 26.05 - 27.73
 28.68 - 56
 21 29.28 - 2 33.19
 21 27.29

1873.0
 α
 38.31 29.51
 38.28 27.91
 .26 29.51
 .25 28.06
 .24 29.43
 .31 28.68
 .33 28.28
 38.283 28.91 - 1.36
 .327 27.66
 -.044 - 1.25 27.55
 .66
 -.11

Apr. 26 $+1.00$
 $+0.07$
 29 42.4 39 19.9 39 41.9 39 39.4
 45.2 21.9 45.2 46.3
 48.3 24.4 48.3
 51.2 51.2
 54.5 54.4
 57.0 57.4
 58.8 6.5
 4.0 3.8
 7.3 6.8

May 1 -0.65
 -0.07
 Lost

4017 4896
 54.62 54.39
 54.633 39 22.07 54.389 39 40.00
 39 54.68 39 54.43
 39 61.37 39 61.44
 -6.69 -8.01
 -6.66 -6.88

+6.70 -0.02 9 +7.04 -0.01
 -2.20 -2.8 -1.11 -0.14
 +1.89 +1.82
 +8.59 48 +8.751
 39 54.68 54.43
 32.7 3.18
 3.16 3.14

+1.81 +1.81
 5 5 40.5
 0 35.3 0 47.9
 40.0 88.4
 75.3 44.20
 5 37.65 5 51.67
 5 51.67 16 57.95

+ 32.36 + 14.39
 1.51268 1.15806
 1.14686 0.79224
 + 14.02 + 6.20
 5 37.65 5 40.20
 5 51.67 5 50.40
 16 56.68 16 57.95

+ 466 + 292
 2.13146 2.12972
 + .01 + .00
 + 2 15.35 + 2 14.81
 + .18 + .03
 + .01 + .01

+2 15.55 +2 14.85
 19 1223 12.18 19 1280 12.74
 16 46.0 16 46.0
 -2 26.2 26.2 -2 26.8 26.9
 -2 27.2 -0.05 27.2 -2 27.8 -0.06 27.9
 -22.40 -22.50
 -2 28.48 -2 28.11 -2 28.50
 -2 30.88 29.05 -2 30.61 28.71
 16 23.5 + 16 22.19 + 16 23.19
 -2 45.99 -2 45.55
 16 22.37 16 23.19

Urs. Maj.
 $\alpha = 41^\circ 50'$
 $\delta = 38^\circ 03'$
 $\sin \delta = -0.30$

Red.
 1 8.15
 2 6.11
 3 4.08
 4 2.04
 5 0.00

1273

Tang $\alpha = +1.70$ Mar. 21
 $x = -0.29$
 $\text{Cur} = -0.2 + 0.6$
 $\Delta 1872 = 52.106$
 $\Delta 1873 = 56.435$
 $\delta 1873 = 38^\circ 3.09'$
 $d\alpha = +4.329$
 $d\delta = -16.72$

37 12.6
 73.7 +1.1
 74.7 100.0 9.70375
 75.6 .9 11.571m
 76.4 .8 98.1 946m
 77.1 .7
 77.8 .5
 78.3 .5
 78.8 .5

1873 Mar. 27 +2.55
 Apr. 16 +1.13
 May 1 -0.65

| | | | | | |
|-------|---------|------------|---------|-------|---------|
| h m s | 41 28.5 | 41 | 41 51.6 | 41 41 | 41 14.7 |
| 1 | 48.8 | 25.2 | 55.5 | 418 | 16.3 |
| | 51.8 | | 42 42 | 438 | 18.0 |
| | 52.9 | | 6.2 | 45.8 | |
| | 55.0 | 50.4 52.44 | 8.4 | 47.8 | |
| | 57.0 | 52.5 .50 | | 49.9 | |
| | 59.0 | 54.5 .46 | | 51.9 | |
| 42 | 1.0 | 56.6 .52 | | 53.9 | |
| | 3.1 | 58.5 .39 | | 56.0 | |
| | 5.3 | 42 0.5 .35 | | 58.1 | |

1873.0
 α
 56.40
 37
 37
 56.380
 4.35
 -0.55
 δ
 3.88
 3.09
 2.66
 3.21 +1.32 4.53
 3.09 3.09
 +1.12 +1.44

| | | | | | | | |
|----------|-------|--------|----------|--------|----------|--------|----------|
| 5129 | 56.00 | 56.989 | 41 22.85 | 52.443 | 41 53.55 | 49.889 | 41 16.33 |
| 41 56.96 | 41 | 52.41 | 41 | 49.86 | 41 | 57.60 | |
| 41 58.54 | 41 | 58.06 | 41 | 57.60 | 41 | 57.60 | |
| -161 | | -52.65 | | -7.74 | | -7.74 | |
| -1.59 | | -4.63 | | -4.72 | | -4.72 | |

| | | | | | |
|-------------|------|------------|------|-------------|------|
| +1.15 +0.00 | +4.3 | +5.37 +0.2 | +1.9 | +7.77 +0.00 | -1.1 |
| +41 | | +2.7 | | -1.12 | |
| -2.14 | | -1.62 | | -1.17 | |
| -0.586 | | +5.02 4.96 | | +6.501 | |
| 41 56.96 | | 52.41 | | 49.86 | |
| 41 58.54 | | 58.06 | | 57.60 | |
| 41 56.40 | | 56.37 | | 56.37 | |

| | | |
|----------|----------|----------|
| 40 | 40 | 40 |
| 2 429 | 2 10.9 | 2 36.7 |
| 40.9 | 11.9 | 46.3 |
| 9.88 | 2.28 | 83.0 |
| 42 45.40 | 42 11.40 | 42 41.50 |

| | | |
|-------------|------------------|----------------|
| +3414 | 1.11 -138.3 | +33.56 |
| 1.53326 | 0.04532m 1.74082 | 1.52582 |
| 1.35272m | 9.86478 0.76028 | 1.34528m |
| -22.53 | +0.73 +9.13 | -22.15 |
| 42 45.40 | 42 11.40 | 42 41.50 |
| 42 22.87 | 42 12.13 | 42 19.35 |
| 45.40 25.48 | 40 36.22 | 27.82 40 29.00 |

| | | |
|----------------------|----------|----------|
| -17 15 14 = 1.25240m | +15.70 | -56.8 |
| +26.64 | 1.26810m | 1.24672m |
| 1.27704m | | |
| +19.01 | +18.54 | +17.65 |
| +2.7 | .00 | .27 |
| + .05 | .11 | .03 |

| | | |
|-------------------------|----------------------|---------------|
| +18.79 | +18.65 | +17.41 |
| 59.40 44.27 40 44.05 40 | 54.87 46.47 46.29 10 | 46.41 46.19 |
| 128 13.9 | 38 17.3 | 38 18.4 |
| +0.6 -2.30.4 | 306 -2 37.6 29.2 | 27.5 27.7 |
| -2 27.8 -22 30.2 -2 | 370 28.6 -18.24 -2 | 26.9 -22 27.1 |
| -10.80 | -14.20 | -15.80 |
| -2 28.93 -10.80 -2 | 28.52 -14.20 -2 | 27.29 -15.80 |
| -2 59.73 -2 29.08 -2 | 42.72 28.70 -2 | 43.09 27.73 |
| 59.38 4.34 + | 62 38 3.75 + | 54 38 3.32 + |
| -66 -2 37.21 | -66 -2 42.36 | -66 -2 42.98 |
| 59.38 3.88 38 47.9 38 | 3.09 38 3.93 38 | 2.66 38 3.21 |

1873
Apr. 10

19 Leo Min. Tang S = +89
 $x = -.020$
 $\text{Corr} = -.05 - .08$
 $\alpha 1872 = 50.223$
 $\alpha 1873 = 53.922$

Apr. 20 49 m 54.92
 25 54.83
 30 52.74
 $\delta 1873 = 39$ 32.78

39' 40.8
 41.5 +5
 41.9 6 sin d 9.82269
 42.5 6 cos d 9.87334
 43.1 6
 $dx = +3.700$
 $dy = -16.93$

11 54.12
 9.98905m

1873 Apr 21 +12.41
 May 1 - .065

49 43.4 49 59.3 49 30.5 49 18.3
 44.5 50 8.4 33.2 17.3
 46.0 2.0 36.0 20.1
 47.3 41.4
 48.8 44.0
 50.0 44.6
 51.5 52.5
 52.8 53.8
 54.2 58
 3.5

43.85 51.67
 48.72 46.99
 48.722 50 0.57 46.773 49 19.43

49 48.70 49 46.95
 49 54.90 49 54.72
 -6.20 -7.97
 -6.15 -9.72

+6.20 .06 +7.79 +.00
 +.07 +.11 -.06
 -.098 -.080
 +5.287 +6.93

49 48.70 49 46.95
 49 53.99 53.88
 49 53.97 53.88

+1.80 +1.82
 40 25.0 40 59.4
 25.1 8.0
 50.1 127.4
 40 25.05 41 3.70

-118.5 +29.54
 1.07372m 1.43996
 1.06277 1.42401m
 +11.55 -26.86
 40 25.05 41 3.70
 40 36.60 40 36.84
 41 42 11.75 42 11.51

+0 43 00 = 9.85800
 +16.04 -45.44
 9.86804 9.85256

* -0.74 * -0.71
 +.04 +.21
 +.02 +.01

-0.76 -0.91
 +4142 10.99 42 10.96 42 10.60 10.52

39 42.1 39 43.2
 -2 28.9 28.9 -2 27.4 27.5
 -2 29.7 -0.3 29.7 -2 28.2 -0.8 28.3

-9.30 -10.40
 -2 29.80 -2 29.29 -10.40
 -2 30.10 -2 29.96 -2 30.69 27.73
 41 39 31.89 -0.2 39 32.91 -0.2
 -2 39.28 -2 38.15
 39 31.68 39 32.37

1873

54. 11 *Lionie* $\tan \delta = +1.5$ Apr. 30 53^m 30^s 55
 $\delta = -0.16$ May 5 45
 $\delta = -0.42$ 6
 $\delta = -0.02 - 0.4$ 20
 $\delta = +3.175$
 $\delta = -17.09$
 $\delta = 30.052$ $\delta = 39$ $\delta = 8.68$
 $\delta = 38$ $\delta = 677$ $\delta = 9.17724$
 $\delta = 680 + 3$
 $\delta = 683$ $\delta = 3 \cos \delta$ $\delta = 9.99503$
 $\delta = 686$ $\delta = 3$ $\delta = 11.571n$
 $\delta = 688$ $\delta = 2$ $\delta = 11.071n$

1873

Apr. 16

Lush.

May 1 - .065

53 10.3 52 598

12.3 5.7

10.4 1.8

18.5

20.8

22.8

24.8

26.8

28.8

30.8

32.8

34.8

36.8

38.8

40.8

42.8

44.8

46.8

48.8

50.8

52.8

54.8

56.8

58.8

60.8

62.8

64.8

66.8

68.8

70.8

72.8

74.8

76.8

78.8

80.8

82.8

84.8

86.8

88.8

90.8

92.8

94.8

96.8

98.8

100.8

102.8

104.8

106.8

108.8

110.8

112.8

114.8

116.8

118.8

120.8

122.8

124.8

126.8

128.8

130.8

132.8

134.8

136.8

138.8

140.8

142.8

144.8

146.8

148.8

150.8

152.8

154.8

156.8

158.8

160.8

162.8

164.8

166.8

168.8

170.8

172.8

174.8

176.8

178.8

180.8

182.8

184.8

186.8

188.8

190.8

192.8

194.8

196.8

198.8

200.8

202.8

204.8

206.8

208.8

210.8

212.8

214.8

216.8

218.8

220.8

222.8

224.8

226.8

228.8

230.8

232.8

234.8

236.8

238.8

240.8

242.8

244.8

246.8

248.8

250.8

252.8

254.8

256.8

258.8

260.8

262.8

264.8

266.8

268.8

270.8

272.8

274.8

276.8

278.8

280.8

282.8

284.8

286.8

288.8

290.8

292.8

294.8

296.8

298.8

300.8

302.8

304.8

306.8

308.8

310.8

312.8

314.8

316.8

318.8

320.8

322.8

324.8

326.8

328.8

330.8

332.8

334.8

336.8

338.8

340.8

342.8

344.8

346.8

348.8

350.8

352.8

354.8

356.8

358.8

360.8

362.8

364.8

366.8

368.8

370.8

372.8

374.8

376.8

378.8

380.8

382.8

384.8

386.8

388.8

390.8

392.8

394.8

396.8

398.8

400.8

402.8

404.8

406.8

408.8

410.8

412.8

414.8

416.8

418.8

420.8

422.8

424.8

426.8

428.8

430.8

432.8

434.8

436.8

438.8

440.8

442.8

444.8

446.8

448.8

450.8

452.8

454.8

456.8

458.8

460.8

462.8

464.8

466.8

468.8

470.8

472.8

474.8

476.8

478.8

480.8

482.8

484.8

486.8

488.8

490.8

492.8

494.8

496.8

498.8

500.8

502.8

504.8

506.8

508.8

510.8

512.8

514.8

516.8

518.8

520.8

522.8

524.8

526.8

528.8

530.8

532.8

534.8

536.8

538.8

540.8

542.8

544.8

546.8

548.8

550.8

552.8

554.8

556.8

558.8

560.8

562.8

564.8

566.8

568.8

570.8

572.8

574.8

576.8

578.8

580.8

582.8

584.8

586.8

588.8

590.8

592.8

594.8

596.8

598.8

600.8

602.8

604.8

606.8

608.8

610.8

612.8

614.8

616.8

618.8

620.8

622.8

624.8

626.8

628.8

630.8

632.8

634.8

636.8

638.8

640.8

642.8

644.8

646.8

648.8

650.8

652.8

1873

March 21

a Loris

lang $\delta = +22$ Apr. 10 μ 37.27

34 70.7

71.2

71.4

71.7

72.0

72.3

72.6

72.9

73.2

73.5

73.8

74.1

74.4

74.7

75.0

75.3

75.6

75.9

76.2

76.5

76.8

77.1

77.4

77.7

78.0

78.3

78.6

78.9

79.2

79.5

79.8

80.1

80.4

80.7

81.0

81.3

81.6

81.9

82.2

82.5

82.8

83.1

83.4

83.7

84.0

84.3

84.6

84.9

85.2

85.5

85.8

86.1

86.4

86.7

87.0

87.3

87.6

87.9

88.2

88.5

88.8

89.1

89.4

89.7

90.0

90.3

90.6

90.9

91.2

91.5

91.8

92.1

92.4

92.7

93.0

93.3

93.6

93.9

94.2

94.5

94.8

95.1

95.4

95.7

96.0

96.3

96.6

96.9

97.2

97.5

97.8

98.1

98.4

98.7

99.0

99.3

99.6

99.9

100.2

100.5

100.8

101.1

101.4

101.7

102.0

102.3

102.6

102.9

103.2

103.5

103.8

104.1

104.4

104.7

105.0

105.3

105.6

105.9

106.2

106.5

106.8

107.1

107.4

107.7

108.0

108.3

108.6

108.9

109.2

109.5

109.8

110.1

110.4

110.7

111.0

111.3

111.6

111.9

112.2

112.5

112.8

113.1

113.4

113.7

114.0

114.3

114.6

114.9

115.2

115.5

115.8

116.1

116.4

116.7

117.0

117.3

117.6

117.9

118.2

118.5

118.8

119.1

119.4

119.7

120.0

120.3

120.6

120.9

121.2

121.5

121.8

122.1

122.4

122.7

123.0

123.3

123.6

123.9

124.2

124.5

124.8

125.1

125.4

125.7

126.0

126.3

126.6

126.9

127.2

127.5

127.8

128.1

128.4

128.7

129.0

129.3

129.6

129.9

130.2

130.5

130.8

131.1

131.4

131.7

132.0

132.3

132.6

132.9

133.2

133.5

133.8

134.1

134.4

134.7

135.0

135.3

135.6

135.9

136.2

136.5

136.8

137.1

137.4

137.7

138.0

138.3

138.6

138.9

139.2

139.5

139.8

140.1

140.4

140.7

141.0

141.3

141.6

141.9

142.2

142.5

142.8

143.1

143.4

143.7

144.0

144.3

144.6

144.9

145.2

145.5

145.8

146.1

146.4

146.7

147.0

147.3

147.6

147.9

148.2

148.5

148.8

149.1

149.4

149.7

150.0

150.3

150.6

150.9

151.2

151.5

151.8

152.1

152.4

152.7

153.0

153.3

153.6

153.9

154.2

154.5

154.8

155.1

155.4

155.7

156.0

156.3

156.6

156.9

157.2

157.5

157.8

158.1

158.4

158.7

159.0

159.3

159.6

159.9

160.2

160.5

160.8

161.1

161.4

161.7

162.0

162.3

162.6

162.9

163.2

163.5

163.8

164.1

164.4

164.7

165.0

165.3

165.6

165.9

166.2

166.5

166.8

167.1

167.4

167.7

168.0

168.3

168.6

168.9

169.2

169.5

169.8

170.1

170.4

170.7

171.0

cyl. Prob. not 24. 2.

24 October

Tangl = -303

March 21

Apr. 23

May 5

May 10

May 15

May 20

May 25

May 30

May 31

June 1

June 2

June 3

10 07 20

x = +0.47

17.63

17.89

18.15

18.41

18.67

18.93

19.19

19.45

19.71

19.97

20.23

+71.0 43.57

conv = -10 +1.0

17.63

17.89

18.15

18.41

18.67

18.93

19.19

19.45

19.71

19.97

20.23

108 17 3

21872 = 20.532

May 5

May 10

May 15

May 20

May 25

May 30

May 31

June 1

June 2

June 3

June 4

3 = -6.5 54 1.5

21873 = 21.700

May 5

May 10

May 15

May 20

May 25

May 30

May 31

June 1

June 2

June 3

June 4

1873 Apr. 1 +16.1

Apr. 10 +10.4

Apr. 16 +11.3

May 1 -0.65

May 4 +0.08

May 7 +0.01

May 10 +0.01

May 13 +0.01

May 16 +0.01

May 19 +0.01

May 22 +0.01

May 25 +0.01

May 28 +0.01

21.3 22.2

19.6 20.8

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

21.8 22.8

23.0 24.0

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

22.8 23.8

26.0 27.0

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

30.8 31.8

29.7 30.4

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

34.6 35.5

33.0 33.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

38.0 38.7

36.3 36.8

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

41.1 42.0

39.1 39.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

44.4 45.2

42.6 43.4

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

47.2 48.5

45.8 46.7

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

31.0 31.84

29.7 30.31

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

34.44 35.38

32.7 33.68

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

38.0 38.7

36.3 36.8

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

41.1 42.0

39.1 39.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

44.4 45.2

42.6 43.4

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

47.2 48.5

45.8 46.7

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

31.0 31.84

29.7 30.31

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

34.44 35.38

32.7 33.68

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

38.0 38.7

36.3 36.8

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

41.1 42.0

39.1 39.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

44.4 45.2

42.6 43.4

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

47.2 48.5

45.8 46.7

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

17.9

3

$\rightarrow 3$ Red. s
 32 W. May Tangd = +223
 10 08 50
 10 08 47
 +65 45 11
 +65 44 25
 7 = 23 21 37
 -040
 10.02
 7.52
 5.01
 2.50
 0.00
 1873
 Yang $\rho = +2.220$
 $K = -.037$

$21873 = 8$ 47.097
 $\rho = 25.78$
 sin ρ 9.95982
 cos ρ 9.61382
 11.571m
 9.72953n

1873 May 1 -065 May 4 +.008 May 6 -074
 8 8 5.8 8 9.7 8 8 41.8
 31.4 8.3 31.3 11.4 50.4
 34.0 11.2 33.7 14.4 59.2
 36.4 36.2
 38.9 38.8
 41.3 41.2
 43.9 43.9
 46.1 46.3
 48.8 48.7
 51.8 51.4
 43.0 40.50
 45.4 39
 48.2 68
 50.8 78

31.24 31.15 40.5+8
 41.38 41.28 8 50.30
 41378 8 8.27 41278 8 11.83
 8 41.34 8 41.24 8 40.55
 8 41.304 8 41.204 8 40.5X5
 +7.79 +7.67 +8.21
 -1.14 +.02 -21
 -1.82 -1.72 -1.604
 8 47.11 8 47.17 8 46.87

+182 +183 +185
 35 1 16.6 35 1 17.1 35 0 59.9
 25.8 19.9 59.2
 4.24 37.0 109.1
 36 21.20 36 18.50 35 59.55
 8
 +33.11 +29.45 -9.71
 1.51946 1.46709 0.98722n
 1.24949n 1.19862n 0.71675
 -17.76 -15.80 +5.21
 36 21.20 36 18.50 35 59.55
 36 34.4 36 27.0 35 59.76
 +65 46 41.91 46 45.85 46 48.59
 -23 21 34 = 139560n +347 +476
 139092n 139907n 140036n
 +2460 +2507 +2514
 -22 -18 -0.2
 +.01-10 +.01-10 00-07
 +2439 +2490 +2512
 +65 47 930 47 1055 47 1371 8.64
 1633 1662 1678
 -2 27.73 +28.76 28.42
 10 8 49 +.73 +.73 74
 -2 43.33 -2 44.16 -2 44.16
 +65 44 46 44 25.87 44 25.80 44 25.18

16.33 16.62 16.78
 -2 27.73 +28.76 28.42
 10 8 49 +.73 +.73 74
 -2 43.33 -2 44.16 -2 44.16
 +65 44 46 44 25.87 44 25.80 44 25.18

1873
March 21
 λ Dra. Proj. 1466
 $x = -0.21$
 $y = -0.2$
 $z = -1.10$
 $2 \times 1872 = 22.069$
 $2 \times 1873 = 25.714$
 λ Dra. Proj. 1466
 $x = -0.21$
 $y = -0.2$
 $z = -1.10$
 λ Dra. Proj. 1466
 $x = -0.21$
 $y = -0.2$
 $z = -1.10$
 $d\lambda = +26.44$
 $d\delta = -17.85$
 $32 \ 54.1$
 $55.0 + .9$
 $55.9 .9$
 $56.7 .8$
 $57.5 .8$
 $58.2 .7$
 $58.9 .7$
 $59.6 .7$
 $60.2 .6$
 $\sin \delta \ 9.83821$
 $\cos \delta \ 9.86020$
 $11.571m$
 $9.97591m$
1873
Apr. 1 +.161
+.17Apr. 10 +.104
+.10Apr. 16 +.113
+.16Apr. 21 +.124
+.08May 1 -.065
-.07
 $9 \ 7.2$
 $9 \ 1.7$
 $9 \ 3.0$
 $9 \ 5.4$
 $9 \ 7.8$
 $9 \ 10.2$
 $9 \ 12.6$
 $9 \ 15.0$
 $9 \ 17.4$
 $9 \ 19.8$
 $9 \ 22.2$
 $9 \ 24.6$
 $9 \ 27.0$
 $9 \ 29.4$
 $9 \ 31.8$
 $9 \ 34.2$
 $9 \ 36.6$
 $9 \ 39.0$
 $9 \ 5.7$
 $9 \ 8.6$
 $9 \ 11.3$
 $9 \ 14.0$
 $9 \ 16.8$
 $9 \ 19.5$
 $9 \ 22.2$
 $9 \ 24.9$
 $9 \ 27.6$
 $9 \ 30.3$
 $9 \ 33.0$
 $9 \ 35.7$
 $9 \ 38.4$
 $9 \ 41.1$
 $9 \ 43.8$
 $9 \ 46.5$
 $9 \ 49.2$
 $8 \ 52.9$
 $8 \ 54.6$
 $8 \ 56.3$
 $8 \ 58.0$
 $8 \ 59.7$
 $8 \ 61.4$
 $8 \ 63.1$
 $8 \ 64.8$
 $8 \ 66.5$
 $8 \ 68.2$
 $8 \ 69.9$
 $8 \ 71.6$
 $8 \ 73.3$
 $8 \ 75.0$
 $8 \ 76.7$
 $8 \ 78.4$
 $8 \ 80.1$
 $9 \ 8.1$
 $9 \ 10.5$
 $9 \ 12.9$
 $9 \ 15.3$
 $9 \ 17.7$
 $9 \ 20.1$
 $9 \ 22.5$
 $9 \ 24.9$
 $9 \ 27.3$
 $9 \ 29.7$
 $9 \ 32.1$
 $9 \ 34.5$
 $9 \ 36.9$
 $9 \ 39.3$
 $9 \ 41.7$
 $9 \ 44.1$
 $9 \ 46.5$
 $8 \ 56.9$
 $8 \ 58.9$
 $8 \ 60.9$
 $8 \ 62.9$
 $8 \ 64.9$
 $8 \ 66.9$
 $8 \ 68.9$
 $8 \ 70.9$
 $8 \ 72.9$
 $8 \ 74.9$
 $8 \ 76.9$
 $8 \ 78.9$
 $8 \ 80.9$
 $8 \ 82.9$
 $8 \ 84.9$
 $8 \ 86.9$
 $8 \ 88.9$
 26.70
 24.27
 24.273
 $9 \ 33.0$
 24.98
 22.71
 22.709
 $8 \ 54.70$
 21.560
 $8 \ 59.95$
 20.78
 20.782
 $8 \ 57.87$
 25.81
 25.809
 $9 \ 33.0$
 $9 \ 24.25$
 $9 \ 27.19$
 $9 \ 30.13$
 $9 \ 33.07$
 $9 \ 36.01$
 $9 \ 38.95$
 $9 \ 41.89$
 $9 \ 44.83$
 $9 \ 47.77$
 $9 \ 50.71$
 $9 \ 53.65$
 $9 \ 56.59$
 $9 \ 59.53$
 $9 \ 62.47$
 $9 \ 65.41$
 $9 \ 68.35$
 $9 \ 71.29$
 $9 \ 22.69$
 $9 \ 25.63$
 $9 \ 28.57$
 $9 \ 31.51$
 $9 \ 34.45$
 $9 \ 37.39$
 $9 \ 40.33$
 $9 \ 43.27$
 $9 \ 46.21$
 $9 \ 49.15$
 $9 \ 52.09$
 $9 \ 55.03$
 $9 \ 57.97$
 $9 \ 60.91$
 $9 \ 63.85$
 $9 \ 66.79$
 $9 \ 69.73$
 $9 \ 21.54$
 $9 \ 24.48$
 $9 \ 27.42$
 $9 \ 30.36$
 $9 \ 33.30$
 $9 \ 36.24$
 $9 \ 39.18$
 $9 \ 42.12$
 $9 \ 45.06$
 $9 \ 48.00$
 $9 \ 50.94$
 $9 \ 53.88$
 $9 \ 56.82$
 $9 \ 59.76$
 $9 \ 62.70$
 $9 \ 65.64$
 $9 \ 68.58$
 $9 \ 20.76$
 $9 \ 23.70$
 $9 \ 26.64$
 $9 \ 29.58$
 $9 \ 32.52$
 $9 \ 35.46$
 $9 \ 38.40$
 $9 \ 41.34$
 $9 \ 44.28$
 $9 \ 47.22$
 $9 \ 50.16$
 $9 \ 53.10$
 $9 \ 56.04$
 $9 \ 58.98$
 $9 \ 61.92$
 $9 \ 64.86$
 $9 \ 67.80$
 $9 \ 25.89$
 $9 \ 28.83$
 $9 \ 31.77$
 $9 \ 34.71$
 $9 \ 37.65$
 $9 \ 40.59$
 $9 \ 43.53$
 $9 \ 46.47$
 $9 \ 49.41$
 $9 \ 52.35$
 $9 \ 55.29$
 $9 \ 58.23$
 $9 \ 61.17$
 $9 \ 64.11$
 $9 \ 67.05$
 $9 \ 70.00$
 4.5
 $2 \ 44.1$
 42.3
 86.4
 $47 \ 43.20$
 4.5
 $2 \ 48.2$
 48.0
 96.2
 $47 \ 48.10$
 4.5
 $2 \ 43.9$
 42.5
 86.4
 $47 \ 43.20$
 4.5
 $2 \ 42.5$
 41.0
 83.5
 $47 \ 41.75$
 4.5
 $2 \ 9.0$
 17.9
 26.9
 $47 \ 13.45$
 $+20.70$
 1.32015
 1.29606
 -19.77
 $47 \ 43.20$
 $47 \ 23.43$
 $35 \ 24.92$
 $+28.01$
 1.44731
 $1.42322m$
 -26.50
 $47 \ 48.10$
 $47 \ 21.60$
 $+43 \ 35 \ 26.75$
 $+21.61$
 1.33465
 $1.31056m$
 -20.44
 $47 \ 43.20$
 $47 \ 22.70$
 $35 \ 25.59$
 $+22.91$
 1.36003
 $1.33594m$
 -21.67
 $47 \ 41.75$
 $47 \ 20.08$
 $35 \ 28.27$
 $+16.20$
 $0.08660m$
 $+1.22$
 $+1.13$
 $+1.05$
 $+1.14$
 $35 \ 26.36$
 $32 \ 36.1$
 $-2 \ 36.0$
 $+13.79$
 $0.08419m$
 $+1.21$
 $+1.21$
 $+1.14$
 $+1.14$
 $35 \ 27.89$
 $32 \ 37.85$
 $-2 \ 30.24$
 $+16.49$
 $0.08689m$
 $+1.22$
 $+1.22$
 $+1.13$
 $+1.13$
 $35 \ 26.81$
 $32 \ 38.4$
 $-2 \ 28.9$
 $+10.41$
 $0.08081m$
 $+1.20$
 $+1.20$
 $+1.14$
 $+1.14$
 $35 \ 29.46$
 $32 \ 39.1$
 $-2 \ 30.4$
 -6.00
 $-2 \ 29.54$
 $-2 \ 35.54$
 $+13 \ 32 \ 50.52$
 $-2 \ 35.44$
 $32 \ 50.40$
 -7.40
 $-2 \ 29.66$
 $-2 \ 35.66$
 $32 \ 50.83$
 $-2 \ 37.05$
 $32 \ 50.62$
 -8.30
 $-2 \ 28.52$
 $-2 \ 36.82$
 $32 \ 49.99$
 $-2 \ 36.96$
 $32 \ 49.63$
 -9.00
 $-2 \ 29.80$
 $-2 \ 38.80$
 $32 \ 50.66$
 $-2 \ 38.92$
 $32 \ 50.32$

$$21873 = 10^{\circ} 49.412''$$

$$p'' = 41.20$$

$$\sin p = 9.99828$$

$$\cos p = 8.94887$$

$$11.571''$$

$$9064.58''$$

$$Or 1620(61) = 74 \quad \text{Angle} = +11.297$$

$$K = -1.72$$

$$10 \quad 11 \quad 40$$

$$10 \quad 11 \quad 31$$

$$+ 8.40 \quad 55 \quad "$$

$$+ 8.41 \quad 53 \quad 59$$

$$2 = -42 \quad 31 \quad 11$$

$$-0.68$$

| | | | | | |
|----------|----------------|------------------|-----------------|---------------|---------------|
| 1873 | Apr. 1 $+1.61$ | Apr. 10 -1.104 | Apr. 16 $+1.13$ | May 1 -0.65 | May 4 $+0.08$ |
| 10 | 10 10.5 | 10 10.5 | 10 8.7 | 10 9.562 | 10 10.210 |
| 12.3 | 13.3 | 7.0 | 10.4 | 5.74 | 3.8 |
| 24.6 | 15.2 | 20.0 | 12.5 | 58.8 | 15.2 |
| 36.0 | | 31.5 | | | 2.1 |
| 47.0 | | 42.2 | | | 38.5 |
| 58.1 | | 55.3 | | | 49.5 |
| 11 10.8 | | 11 6.6 | | 11 3.3 | 11.9 |
| 21.5 | | 16.9 | | 14.6 | 13.5 |
| 33.9 | | 28.7 | | 26.2 | 24.7 |
| 44.9 | | 40.9 | | 37.8 | 34.4 |
| 53.01 | | 24.91 | | 46.14 | 45.06 |
| 10 58.90 | 10 13.00 | 48.91 | 10 10.53 | 51.27 | 9 57.47 |
| | | 54.34 | | | 50.67 |
| | | | | | 10 22.57 |

| | | | |
|----------|----------|----------|----------|
| 10 58.73 | 10 54.17 | 10 51.10 | 10 49.90 |
| + 2.80 | + 5.39 | + 7.79 | + 7.67 |
| + 1.80 | + 1.27 | - 0.73 | + 5.09 |
| - 14.09 | - 11.61 | - 8.63 | - 8.00 |
| 10 49.24 | 10 49.22 | 10 49.53 | 10 49.66 |

| | | | | |
|-----------------------|----------|------------|----------------|----------------|
| 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| 2 24.0 | 2 6.9 | 2 21.0 | 2 13.0 | 2 13.0 |
| 24.7 | 9.1 | 22.0 | 25.3 | 18.1 |
| 4.87 | 14.0 | 4.30 | 38.3 | 3.11 |
| 27 24.35 | 27 8.00 | 27 21.50 | 27 19.15 | 27 15.55 |
| + 4.91 | | + 4.81 | + 5.380 | + 27.50 |
| 1.66181 | | 1.64157 | 1.73078 | 1.43933 |
| 0.726392 | | 0.706152 | 0.775362 | 0.503912 |
| - 5.33 | | - 5.08 | - 6.24 | - 3.19 |
| 27 24.35 | | 27 21.50 | 27 19.15 | 27 15.55 |
| 27 19.02 | | 27 16.92 | 27 12.91 | 27 12.30 |
| + 54 55 28.33 | | 55 31.93 | 55 35.94 | 55 35.99 |
| - 42 30.18 = 1.722002 | | + 16.49 | - 44.3 | + 36.7 |
| + 16.20 | | 1.738492 | 1.717572 | 1.72567 |
| 1.738202 | | | | |
| + 54.73 | | + 54.76 | + 52.19 | + 53.17 |
| - .10 | | - .09 | - .75 | - .04 |
| + .05 - 19 | | + .12 - 18 | + .02 - 18 | + .02 - 18 |
| + 54.68 | | + 54.79 | + 52.06 | + 53.15 |
| + 84 56 24.01 | 56 23.82 | 56 26.72 | 26.54 56 27.50 | 27.32 56 29.14 |
| - 14.70 | | - 12.78 | - 19.73 | - 19.97 |
| - 2 24.54 | | - 2 28.52 | - 2 27.27 | - 2 28.40 |
| - 2 44.29 | | - 2 46.30 | - 2 47.02 | - 2 48.91 |
| + 84 53 39.72 | | 53 40.42 | 53 40.48 | 53 40.53 |
| - 14.75 | | - 12.78 | - 19.73 | - 19.97 |
| - 2 29.48 | | 28.70 | 27.13 | 28.76 |
| + 1.37 | | + 1.22 | + 1.23 | + 1.24 |
| 10 58.2 | 58.2 | - 2 45.26 | - 2 46.23 | - 2 47.49 |
| 10 54.1 | 54.1 | 53 41.28 | 53 41.09 | 53 41.04 |

1873
March 21

w. Dr. Maj. King S = +.90

April 10

14^m

46.50

5^s7^m

77.0

+9

77.9

+9

78.8

+9

79.6

+9

80.4

Sind 9.82663

cos d 9.87016

115.71m

9985.87m

K m 5

10 14 38

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

+42.0 5.9

5
9
2
9
2
3
4
1

386 obs.

62 palas

386 obs.

Wolbach, p. 1566