KG
11366
v.685

# Instrumental Constants
depending on
New Pulkowa Coördinates

1872 - 1873

# Reduction of the positions of Polar Stars from the Nautical Almanac to the new Pulkowa System.

| | | | P | | | P′−P | P′ | N.A. | P′−N.A. |
|---|---|---|---|---|---|---|---|---|---|
| α Ursae Minoris | | 1870 | h | m | s | | s | | |
| | α | 1871 | 1 | 11 | 37.294 | +486 | 37.780 | 37.880 | −.100 s |
| | | 1872 | | 11 | 57.610 | +516 | 58.126 | 58.231 | −105 |
| | | 1873 | | 12 | 18.071 | +547 | 18.618 | 18.728 | −.110 |
| | | 1870 | ° | ′ | ″ | | ″ | | |
| | δ | 1871 | 88 | 37 | 17.83 | −.24 | 17.59 | 17.55 | +.04″ |
| | | 1872 | | | 36.93 | −26 | 36.67 | 36.63 | +.04 |
| | | 1873 | | | 56.02 | −27 | 55.75 | 55.70 | +.05 |
| 51 Hv Cephei | | 1870 | ,,6 | 39 | 14.406 | −270 | 14.136 s | 13.322 | +.814 s |
| | α | 71 | ,, | | 44.742 | −270 | 44.472 | 43.629 | +.843 |
| | | 72 | ,, | | 15.058 | −270 | 14.788 | 13.916 | +.872 |
| | | 73 | | | | | | | |
| | | 1870 | | | | | | | |
| | δ | 71 | 87 | 14 | 17.75 | +110 | 18.85 | 18.61 | +24″ |
| | | 72 | | | 14.24 | +113 | 15.37 | 15.13 | +.24 |
| | | 73 | | | 10.67 | +115 | 11.82 | 11.61 | +.21 |
| ε Ursae Minoris | | 1870 | | | | | | | |
| | α | 71 | 16 | 59 | 16.314 | +048 | 16.362 | 16.436 | −.074 s |
| | | 72 | | | 9.925 | +.044 | 9.969 | 10.049 | −.080 |
| | | 73 | | | 3.539 | +041 | 3.580 | 3.665 | −.085 |
| | | 1870 | | | | | | | |
| | δ | 71 | 82 | 14 | 43.40 | +.40 | 43.80 | 43.84 | −.04″ |
| | | 72 | | | 38.13 | +.41 | 38.54 | 38.58 | −.04 |
| | | 73 | | | 32.84 | +43 | 33.27 | 33.32 | −.05 |
| δ Ursae Minoris | | 1870 | | | | | | | |
| | α | 71 | 18 | 13 | 56.939 | −.029 | 56.910 | 56.963 | −.053 s |
| | | 72 | | | 37.537 | −032 | 37.505 | 37.558 | −.053 |
| | | 73 | | | 18.130 | −036 | 18.094 | 18.149 | −.055 |
| | | 1870 | | | | | | | |
| | δ | 71 | 86 | 36 | 22.19 | +.72 | 22.91 | 22.58 | +.33″ |
| | | 72 | | | 23.42 | +.74 | 24.16 | 23.83 | +.33 |
| | | 73 | | | 24.61 | +76 | 25.37 | 25.05 | +.32 |
| λ Ursae Minoris | | 1870 | | | | | | | |
| | α | 71 | 19 | 53 | 18.576 | −1.550 | 16.966 | 17.971 | −1.005 s |
| | | 72 | | 52 | 18.960 | −1.585 | 17.375 | 18.360 | −.985 |
| | | 73 | | 51 | 19.107 | −1.621 | 17.486 | 18.451 | −.965 |
| | | 1870 | | | | | | | |
| | δ | 71 | 88 | 55 | 14.43 | −.36 | 14.07 | 13.47 | +.60″ |
| | | 72 | | | 23.93 | −.39 | 23.54 | 22.94 | +60 |
| | | 73 | | | 32.85 | −.42 | 32.93 | 32.34 | +.59 |

1872 Nov 25 Wark h = +.050 +.075   n = 20 +.20 e = .00 h' = +.023

| Star | R | a | No. | tang. δ | πRa | P'-P | πRa (P'-P) |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| h | h | m |  |  | s |  |  |  |  |  | 28330 |
| 0.5 | +1 | 0 | 31 | +8 | + .55 | 0 = −28.48 | +.01 | −28.49 + | .11 − | +00 | −28.38 − 28.38 |
| 0.5 | +1 | 0 | 33 | 10 | + 1.47 | −28.57. | +.00 | −28.57 + | .29 | + 00 | 28 .28 |
| 0.50 0.8 | −2 | 0 | 49 | 13 | + 1.72 | −28.60 | +.02 | −28.62 + | 34 | + 00 | .28 .28 |
| 0.0 | +6 | 0 | 56 | 15 | + .13 | −28.25. | +.02 | −28.27 + | 03 | −01 | .24 .25 |
| ~~1.3~~ 1.4 | −8 | 1 | 24 | +22 | + .26 | −28.35. | +.06 | −2841 + | 05 | + 02 | 36 .34 |
| 0.73 0.64 |  |  |  |  |  |  |  |  |  |  | 28.273<br>28.308 28.306 |

1872 Nov. 25 Wark

| Star | Ra | sin δ |  | tang. δ | πRa | P'-P | πRa (P'-P) |
|---|---|---|---|---|---|---|---|
|  | h m |  |  |  |  |  |  |
|  | 0 25 | −.34 | 5 | + 1.90 | −28.78. | +.05 | −28.83 |
|  | 0 37 | −.53 | 340 | + 3.56 | −28.94. | +.18 | −29.12 |
|  | 0 49 | −.30 | 13 | + 1.73 | −28.60. | +.02 | −28.62 |
|  | 1 12 | −.72 | 19 | + 41.92 | −36.10. | +.51 | −35.99 + ~~36.61~~ |
|  | 1 16 | −.42 | 346 | + 2.41 | −28.73. | +.13 | −28.86 |
|  | 1 28 | −.50 | 347 | + 3.15 | −28.71. | +.05 | −28.76 |

| RA | tang δ | πRA |
|---|---|---|
| 0.9 | +1.3 | −28.27 |
| 1.4 | +.26 | −28.41 |
| 1.2 | +.20 | −28.34<br>−2 |
| 0.5 | +1.47 | −28.57 |
| 0.8 | +1.72 | −28.62 |
| 0.7 | +1.60 | −28.60 |

| RA. | tang δ | πRA | 1 corr. rate | I | 2 corr. rate | II |
|---|---|---|---|---|---|---|
| 0.4 | +1.90 | −2883 | +.04 | −28.79 | +02 | −2881 |
| 0.6 | +3.56 | −29.12 | +.03 | −29.09 | +01 | −29.11 |
| 0.8 | +1.73 | −28.62 | +02 | −28.60 | −01 | −2863 |
| 1.2 | +41.92 | −35.99 ~~36.61~~ | 00 | −36.64 | −03 | −36.70 .64 |
| 1.3 | +2.41 | −28.86 | −01 | −2887 | −03 | −28.89 |
| 1.5 | +3.15 | −28.76 | −02 | −28.78 | −.04 | −2880 |

n = +.19 −.02

0 = +1.70 −.45 n = +.26
+3.36 −.75 +.22
+1.53 −.26 +.17
+41.72 −8.32 +.68 +~~19.20~~ 18
+2.24 −.53 +.24
+2.95 −.44 +.15
+~~205~~ 7
+.203

0 = +30 −.21
+1.96 −.51 +.26
+.13 −.03
+40.32 −8.04 +.68 +.18 ~~+.20~~ 18
+0.81 −.29 +.36
+1.55 −.20 +.13
~~1.238~~ +.167
+.190

1872 Nov 27 Wark h = +.051 +.061   n = +.24 +.24 e = .00

| | | | | | | s | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23.3 | +.1 | 23 | 19 | −532 | + .42 | 0 = −26.08. | +.00 | −26.08 + | .10 | +01 | −25.98 | 25.97 |
| 23.5 | −.1 | 23 | 31 | −331 | + 1.03 | −26.36. | −.01 | −26.35 + | .25 | −.01 | −26.10 +.08 | 26.03 |
| 23.40 |  |  |  |  |  |  |  |  |  |  | 26.040<br>26.000 | 26.000 |

| Ra | sin δ | | tang. δ | πRa | P'-P | πRa (P'-P) |
|---|---|---|---|---|---|---|
| 23 23 | −.9 | 2162 − | 2.75 | −25.36. | +.12 | −25.48 |
| 23 34 | −.58 | 334 + | 4.31 | −27.07. | +.13 | −27.20 |

23.3 +.42 −26.08 −1

23.6 +4.31 −27.20 −01 I −27.21 +01 II −27.19

23.42 −2.75 −25.48 −01 I −25.49 +01 II −25.47

23.5 +1.03 −26.35

n = +.44 −.01

0 = +3.89 −1.13 n = +.29

0 = −3.17 +0.59 n = +.18 9

0 = +3.28 −0.84 n = +.26

0 = −3.78 +0.88 n = +.25 3

1872 Dec 3 Wark h = −.026 +.009 .000   n = +.27 e = .00 ~~h = .025~~

| | | | | | | s | | | | | 18.550<br>~~18.520~~ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.7 | +1.3 | 0 | 41 | −12 | + 1.55 | 0 = −18.76. | +.10 | −18.86 + | .42 | +.01 | −18.44 | −.09 .52 |
| 1.9 | +.1 | 1 | 56 | +32 | + .89 | −18.69. | +.11 | −18.80 + | .24 | .00 | .56 | .56 |
| 1.53 2.0 | +.0 | 1 | 59 | +33 | + .42 | −18.65. | +.02 | −18.67 + | .11 | .00 | .56 | .56 |
| 2.0 | +.0 | 2 | 1 | +34 | + .68 | −18.66. | +.07 | −18.73 + | .18 | .00 | .55 | .55 |
| 2.5 | −5 | 2 | 31 | −355 | + .39 | −18.66. | −.01 | −18.65 + | .11 | .00 | .54 | .54 |
| 2.6 | −6 | 2 | 35 | −40 | + 1.14 | −18.83. | +.08 | −18.91 + | .31 | −01 | .60 | .61 |
| 2.42 2.6 | −6 | 2 | 36 | +41 | + .05 | −18.48. | +.01 | −18.49 + | .01 | −01 | −18.48 | .49 |
| 2.04 |  |  |  |  |  |  |  |  |  |  | 18.542<br>18.546 | 18.547 |

| Ra | sin δ | | tang. δ | πRa | P'-P | πRa (P'-P) |
|---|---|---|---|---|---|---|
|  |  |  |  | s |  |  |
| 0 37 | −.53 | 340 + | 3.56 | 0 = −19.40. | +.18 | −19.58 |
| 2 14 9 | −.86 | 459 − | 4.76 | −17.47. | −.21 | −17.26 |
| 2 18 | −.41 | 36 + | 2.34 | −18.83. | +.23 | −19.06 |
| 2 25 | −.50 | 38 + | 3.12 | −19.29. | +.22 | −19.51 |

2.0 +.42 −18.67
2.5 +.39 −18.66
2.6 +.05 −18.49
2.4 +.29 −18.60
+.02

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 0.6 | +3.56 | −19.58 | −.05 | −19.63 | −.03 | −19.61 |
| 2.3 | +2.34 | −19.06 | −00 | −19.06 | +.02 | −19.04 |
| 2.4 | +3.12 | −19.51 | −00 | −19.51 | +.02 | −19.49 |

2.2 −4.76 −17.26 −01 I −17.27 +01 II −17.25

7
3

0 = +3.27 −1.03 n = +.31
+2.05 −.46 +.23
+2.83 −.91 +.32
+.287

0 = −5.05 +1.33 n = +.26

1.7 +1.55 −1886
1.9 +.69 −1880
2.6 +1.19 −18.91
~~1.7~~ ~~+1.19~~ ~~−18.86~~
2.2 +1.02 18.86

0 = +2.37 −.75 n = +.31 2
+1.145 −.18 +.16
+1.93 −.63 +.33
+~~.287~~
.325

0 = −5.95 +1.61 n = +.27

n = +.29 +.02

|  | Sin z | Sin z. | z e |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| z= | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

| Ra<br>h m | sin z cos z | tang δ | Rq−Rfl | P′−P | Rq+Rfl+(P′−P) | fl. | Req. |
|---|---|---|---|---|---|---|---|
| 0 31 | +.24 .97 + | 0.55 | +4′ 49.1″ | −0.2 | +48.9 | +0.6 | +49.5 |
| 0 33 | −.23 .97 + | 1.47 | 49.5 | +0.6 | 50.1 | −0.6 | 49.5 |
| 0 49 | −.30 .95 + | 1.72 | 50.4 | +0.7 | 51.1 | −0.7 | 50.4 |
| 0 56 | +.58 .81 + | .13 | 48.8 | +0.3 | 49.1 | +1.3 | 50.4 |
| 1 24 | +.46 .88 + | .26 | 50.2 | −0.3 | 49.9 | +1.0 | 50.9 |
|  |  |  |  |  |  |  | 50.14 |

| Ra<br>h m | sin z cos z | tang δ | Rq−Rfl | P′−P | Rq−Rfl+(P′−P) | fl. | Req. |
|---|---|---|---|---|---|---|---|
| 0 25 | −.34 .94 + | 1.90 | — — — | −0.3 |  |  |  |
| 0 37 | −.53 .84 + | 3.56 | 49.8 | +1.1 | +50.8 | −1.2 | +49.6 |
| ~~0 49~~ | ~~−.30 .95 +~~ | ~~1.73~~ | ~~50.4~~ | ~~+0.7~~ +1 | ~~51.1~~ 4 | ~~−0.7~~ | ~~50.4~~ |
| 1 12 | −.72 .69 + | 41.92 | 51.3 | −0.3 | 51.0 | −1.7 | 49.7 |
| 1 16 | −.42 .90 + | 2.41 | ~~50.4~~ | +0.5 | 50.4 | −0.9 | 49.5 |
| 1 28 | −.50 .86 + | 3.15 | 51.1 49.9 50.4 | +0.7 | 51.1 | −1.2 | 49.9 |
|  |  |  |  |  |  |  | 49.82<br>49.82 |

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  | 50.14 | 50.14 |  |  |
|  |  | +.58 +49.1″ | +.24 +48.9″ |  |  | −.23 +50.1″ | −.53 +50.8″ | −.72 +51.0″ |
|  |  | +.46 +49.9 |  |  |  | −.30 +51.1 | −.42 +50.4 |  |
|  |  |  |  |  |  | −.30 +51.1 | −.50 +51.1 |  |
|  |  | 4<br>+.52 +49.5 | +.24 +48.9 |  |  | −.28 +50.8 | −.46 +50.8 | −.72 +51.0 |
|  |  | +1.1 | +.5 |  |  | −.6 | −1.0 | −1.6 |
| +4′ 50.00″ |  | +50.6 | +49.4 |  |  | +50.2 | +49.8 | +49.4 |
| 49.98 |  | (10) 101.2 | 49.4 |  |  | 150.6 | 149.4 | 49.4 |
|  |  | − .6 | + .6 |  |  | − .2 | + .2 | + .6 |

| Ra<br>h m | sin z cos z | tang δ | Rq−Rfl | P′−P | Rq+Rfl+(P′−P) | fl. | Req. |
|---|---|---|---|---|---|---|---|
| 23 19 | +.34 .94 + | .12 | +4′ 48.6″ | +0.2 | +48.6 8 | +0.8 | +49.6 |
| 23 31 | −.06 1.00 + | 1.03 | 50.5 | +0.7 | 51.2 | −0.1 | 51.1 |
|  |  |  |  |  |  |  | 50.35 |

| Ra<br>h m | sin z cos z | tang δ | Rq−Rfl | P′−P | Rq−Rfl+(P′−P) | fl. | Req. |
|---|---|---|---|---|---|---|---|
| 23 23 | −.92 .35 − | 2.75 | 54.2 | +0.8 | ~~+55.0~~ 53.4 | −1.9 | 51.9 ✓ |
| 23 34 | −.58 .81 + | 4.31 | 49.5 | +0.3 | 49.8 | −1.3 | +48.5 ] |
|  |  |  |  |  |  |  | 48.50<br>48.50 |

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  | 50.35 | 50.35 |  |  |  |
|  |  |  | +.34 +48.6 |  | −.06 +51.2 |  | −.58 +49.8 |  | −.92 +55.0″ |
| 2 100.70 |  |  | + .7 |  | −.1 |  | −1.3 |  |  |
| 1 48.50 |  |  | +49.3 |  | +51.1 |  | +48.5 |  |  |
| 149.20<br>49.40 |  |  | (3) 49.3 |  | 51.1 |  | 48.5 |  |  |
| +4′ 49.63″ |  |  | + .3 |  | − 1.5 |  | + 1.1 |  |  |
| ~~49.70~~<br>50.35 |  |  |  |  |  |  |  |  |  |

| Ra<br>h m | sin z cos z | tang δ | Rq−Rfl | P′−P | Rq+Rfl+(P′−P) | fl. | Req. |
|---|---|---|---|---|---|---|---|
| 0 41 | −.26 .96 + | 1.55 | +4′ 49.2″ | +0.8 | +50.0 | −0.6 | +49.4 |
| 1 56 | +.01 1.00 + | .89 | 50.5 | +0.1 | 50.6 | +0.0 | 50.6 |
| 1 59 | +.33 .94 + | .42 | 49.8 | −0.1 | 49.7 | +0.7 | 50.4 |
| 2 1 | +.11 .99 + | .68 | 50.6 5 | +0.1 | 50.6 | +0.3 | 50.9 |
| 2 31 | +.36 .93 + | .39 | 48.5 9 | +0.4 | 48.9 | +0.8 | 49.7 |
| 2 35 | −.11 .99 + | 1.14 | 49.3 | +0.4 | 49.7 | −0.3 | 49.4 |
| 2 36 | +.64 .76 + | .05 | 46.7 | +0.3 | 47.0 | +1.5 | 48.5 |
|  |  |  |  |  |  |  | 49.84 |

| Ra<br>h m | sin z cos z | tang δ | Rq−Rfl | P′−P | Rq−Rfl+(P′−P) | fl. | Req. |
|---|---|---|---|---|---|---|---|
| 0 37 | −.53 .84 + | 3.56 | +4′ 50.0″ | +1.1 | +51.1 | −1.2 | +49.9 |
| 2 9 | −.86 .50 − | 4.76 | 49.5 | +0.7 | 49.2 ~~50.6~~ | −2.0 | 47.2 |
| 2 18 | −.41 .91 + | 2.34 | 50.7 | +0.7 | 51.4 | −0.9 | 50.5 |
| 2 25 | −.50 .86 + | 3.12 | 51.4 | +0.3 | 51.7 | −1.2 | 50.5 |
|  |  |  |  |  |  |  | 50.30<br>50.30 |

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  | 49.84 | 49.84 |  |  |  |
| 7<br>3 348.88 |  |  |  |  |  |  |  |  |  |
| 150.90 | +.64 +47.0 |  | +.33 +49.7 | +.04 +50.6 | −.11 +49.7 | −.26 +50.0 | −.53 +51.1 |  | −.86 +50.6 |
| 49.978 |  |  | +.36 +48.9 | +.14 +50.6 |  |  | −.41 +51.4 |  |  |
|  |  |  |  |  |  |  | −.50 +51.7 |  |  |
|  | +.64 +47.0 |  | +.34 +49.3 | +.07 +50.6 | −.11 +49.7 | −.26 +50.0 | −.48 +51.4 |  | −.86 +50.6 |
|  |  | +1.4 | +.7 | +.2 | −3 | −.6 | −1.0 |  |  |
|  |  | +48.4 | +50.0 | +50.8 | +49.4 | +49.4 | +50.4 |  |  |
| +4′ 50.00″ |  | (10) 48.4 | 100.0 | 101.6 | 49.4 | 49.4 | 151.2 |  |  |
| 49.98 |  | + 1.6 | 0 | − .8 | + .6 | + .6 | − .4 |  |  |

1872 Dec. 4 Warte h = ~~−.015~~ −.006 n = ~~+.22~~ +.23

| Star | | Ra h | m | Decl δ | | tang. δ | | π Ra | P′P | π Ra (P′P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23.9 | +.1 | 23 | 52 | 336 | + | .11 | 0 = | −19.01 | . +.05 | −19.06 | +.03 +.03 | | 00 − | 19.03 |
| 0.0 | .0 | 0 | 1 | 1 | + | .54 | | −19.17 | . +.03 | −19.20 | +.15 +.12 | | | 19.08 |
| 0.0 | .0 | 0 | 3 | 337 | + | 1.01 | | −19.51 | . −.03 | −19.48 | +.28 +.23 | | 00. | 19.25 |
| 23.97 | | | | | | | | | | | | | | 19.120 |
| | | | | | | | | | | | | | | 19.120 |

1872 Dec 4 Warte

| Star | Ra h | m | δ | tang. δ | | π Ra | P′P | π Ra (P′P) |
|---|---|---|---|---|---|---|---|---|
| α¹² | 6 | 168 = | ~~+~~ − 4.84 | | 0 = | −17.34 | . −.07 | −17.27 |
| 0 | 9 | 338 | + 4.08 | | | −19.64 | . +.30 | 19.94 |

0

23.9 +.11 −19.06

I + II

0.2 +4.08 −19.94 .00 −19.94

0.1 −4.84 −17.27 00 −17.27

01 +1.01 −19.48

n = +47

0 = +3.97 −.88 n = +.22

0 = −4.95 +1.79 n = +.36

0 = +3.07 −.46 n = +.15

0 = −5.85 +2.21 n = +.38

1872 Dec 7 h = +.000 h = +.014 n = .56 n = +.28 e = .00 ~~h = +.014~~

| Star | | | Ra | | | | tang. δ | | π Ra | P′P | π Ra (P′P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| π₂ | 21.9 | +.7 | 21 | 54 | 519 | + | .22 | 0 = | −19.53 | . +.07 | −19.60 + | .06 | +.01 | −19.54 | 19.53 |
| | 22.0 | .6 | 21 | 59 | 311 | + | −.02 | | −19.52 | . +.02 | −19.54 − | .01 | .01 | .55 | .54 |
| π₁ | 22.1 | .5 | 22 | 4 | 313 | + | .64 | | −19.61 | . +.04 | −19.65 + | .18 | .01 | .47 | .46 |
| | 22.2 | .4 | 22 | 10 | 522 | − | .15 | | −19.53 | . −.03 | −19.50 − | .04 | +.01 | .54 | .53 |
| 22.10 | 22.3 | .3 | 22 | 18 | 524 | + | 1.26 | | −19.89 | . +.04 | −19.93 + | .35 | .00 | .58 | .58 |
| | 22.6 | .0 | 22 | 37 | 322 | + | .57 | | −19.67 | . +.01 | −19.68 + | .16 | .00 | .52 | .52 |
| | 22.6 | +0 | 22 | 38 | 528 | + | .87 | | −19.78 | . +.03 | −19.81 + | .24 | .00 | .57 | .57 |
| | 22.7 | −.1 | 22 | 40 | 323 | + | .42 | | −19.60 | . +.05 | −19.65 + | .12 | .00 | .53 | .53 |
| | 23.0 | .4 | 22 | 58 | 329 | + | .26 | | −19.57 | . +.00 | −19.57 + | .07 | −.01 | .50 | .51 |
| | 23.1 | .5 | 23 | 7 | 530 | + | 1.51 | | −19.86 | . +.07 | −19.93 + | .42 | .01 | .51 | .52 |
| | 23.2 | .6 | 23 | 10 | 330 | + | .05 | | −19.48 | . +.03 | −19.51 + | .01 | .01 | .50 | .51 |
| | | | 0 | 1 | 1 | + | .54 | | −19.49 | . +.03 | −19.52 + | .15 | | [.37] | [.38] |
| ~~23.03~~ | 0.0 | −1.4 | 0 | 3 | 337 | + | 1.01 | | −19.84 | . −.03 | −19.81 + | .28 | −.02 | −19.53 | .55 |
| | ~~22.06~~ .64 | | | | | | | | | | | | | 19.523 | |
| | | | | | | | | | | | | | | 19.526 | 19.529 |

1954 36

| Ra h | m | δ | tang. δ | | π Ra | P′P | π Ra (P′P) |
|---|---|---|---|---|---|---|---|
| ~~22~~ 22 | ~~01~~ 01 | 520 | + ~~1.89~~ | 0 = | − ~~21.39~~ 19.61 | +.16 | |
| 22 | 07 | 521 | + 3.02 | | −20.38 | . +.00 | −20.38 |
| 22 | 32 | 525 | + 3.27 | | −20.51 | . +.15 | −20.66 |
| 22 | 45 | 325 | + 2.20 | | −20.08 | . +.08 | −20.16 |
| 22 | 49 | 433 | − 4.89 | | −18.51 | . −.21 | −18.30 |
| 23 | 03 | 529 | + 3.66 | | −20.54 | . +.01 | −20.55 |
| 0 | 6 | 168 | − 4.84 | | −18.52 | . −.07 | −18.45 |
| 22 | 01 | 520 | + 1.89 | | − ~~19.61~~ | +.16 | |

I + II

21.9 +.22 −19.60
22.0 −.02 −19.54
22.2 −.15 −19.50
22.9 +.26 −19.57
23.2 +.05 −19.51
22.4 +.07 −19.54

22.3 +1.26 −19.93
23.1 +1.51 −19.93
0.1 +1.01 −19.81
23.2 +1.26 −19.89

n = +.21

22.1 +3.02 −20.38
22.5 +3.27 −20.66
22.8 +2.20 −20.16
23.0 +3.66 −20.55

I + II

22.8 −4.89 −18.30
0.1 −4.84 −18.45

0 = +2.95 −.84 n = +.28
+3.20 −1.12 +.35
+2.13 −.62 +.29
+3.39 −1.01 +.31 .28

+.308

0 = −4.96 +1.24 n = +.25
−4.91 +1.09 +.22
+.235

0 = +1.76 −.49 n = +.28
+2.01 −.77 +.38
+.94 −.27 +.29
+2.40 −.66 +.27

0 = −6.15 +1.59 n = +.26
−6.10 +1.44 +.24
+.250

1872 Dec 10 h = −.005 +.006 +.35 +.305

| | | Ra h | m | | | tang. δ | | π Ra | P′P | π Ra (P′P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.5 | +.3 | 0 | 31 | 8 | + | .55 | 0 = | −19.29 | . +.01 | −19.30 + | .19 | | 00 − | 19.11 |
| 0.6 | +.2 | 0 | 33 | 10 | + | 1.47 | | −19.58 | . +.00 | −19.68 + | .51 | | | 19.07 |
| 0.9 | −.1 | 0 | 56 | 15 | + | .13 | | −19.17 | . +.02 | −19.19 + | .05 | | | 19.14 |
| 1.1 | −.3 | 1 | 4 | 17 | + | .56 | | −19.35 | . −.05 | −19.30 + | .20 | | 00 | 19.10 |
| 0.78 | | | | | | | | | | | | | | 19.105 |
| | | | | | | | | | | | | | | 19.105 |

| Ra h | m | | tang. δ | | π Ra | P′P | π Ra (P′P) |
|---|---|---|---|---|---|---|---|
| 0 | 25 | 5 | + 1.90 | 0 = | −19.79 | . +.05 | −19.84 |
| α¹² | 28 | 171 | − 2.82 | | −18.16 | . +.04 | −18.20 |
| 0 | 37 | 340 | + 3.56 | | −20.11 | . +.18 | −20.29 |
| 1 | 1 | 345 | + 5.14 | | −21.00 | . +.00 | −21.00 |
| 1 | 12 | 19 | + 41.92 | | −34.61 | . ~~+.51~~ −.11 | ~~−35.12~~ −34.50 |

I + II

0.5 +.55 −19.30
0.9 +.13 −19.19
1.1 +.56 −19.30
0.8 +.41 −19.26

0.4 +1.90 −19.84 −00
0.6 +3.56 −20.29 −00
1.0 +5.14 −21.00 +00
1.2 +41.92 ~~−35.12~~ −34.50 +00

I + II

0.5 −2.82 −18.20

0.5 +1.47 −19.58

n = +.30 .3

0 = +1.49 −.58 n = +.39
+3.15 −1.03 +.33
+4.73 −1.74 +.37
+41.51 −15.86 +.62 +.37
+ ~~.368~~ +.365

0 = −3.23 +1.06 n = +.33

0 = +.43 −.26 +
+2.09 −.71 +.34
+3.67 −1.42 +.39
+40.45 −15.54 +.62 +.37 ~~.370~~ +.367
+.367

0 = −4.29 +1.38 +.32

z = +.60+.80 | +.40+60 | +.20+.40 | +.0+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100

| RA h | m | sin z | cos z | tang. δ | $R_{eq}-R_{fl}$ | $\rho'-\rho$ | $R_{eq}-R_{fl}+(\rho'-\rho)$ | $R_{fl}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 23 | 52 | +.59 | .80 + | .11 | + 4′ 48″.3 . | + 0.2 | + 48″.5 | + 1.3 | +49.8 |
| 0 | 1 | +.24 | .97 + | .54 | 48.1 . | − 0.2 | 47.9 | + 0.6 | 48.5 |
| 0 | 3 | −.05 | 1.00 + | 1.01 | 51.~~5~~4 . | − 0.1 . | 51.3 | − 0.1 | 51.2 |
| | | | | | | | | | 49.83 49.83 |

| RA h | m | sin z | cos z | tang. δ | $R_{eq}-R_{fl}$ | $\rho'-\rho$ | $R_{eq}-R_{fl}+(\rho'-\rho)$ | $R_{fl}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 6 | −.59 | .80 + | 4.04 | − − − . | + 0.3 | ″ | −1.4 | |
| 0 | 9 | −.56 | .82 + | 4.08 | 25.0 − | + 0.5 | + 25.5 | −1.3 | |
| | | | | | | 00 | | | |

3 49.83
9

+.59 +48″.5 +.24 +47″.9 −.05 +51″.3 −.59 −.56

+.59 +48.5 +.24 +47.9 −.05 +51.3 −.57
+1.3 + .5 − .1
+49.8₁ +48.4₁ +51.2₁
+4′ 49″80 (3) 0 + 1.4 − 1.4
49.83

| RA h | m | sin z | cos z | tang. δ | $R_{eq}-R_{fl}$ | $\rho'-\rho$ | $R_{eq}-R_{fl}+(\rho'-\rho)$ | $R_{fl}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 21 | 54 | +.50 | .86 + | .22 | + ~~4′ 49″.4~~ . | − 0.4 | | | |
| 21 | 59 | +.69 | .72 − | .02 | − − − . | − 0.1 | | | |
| 22 | 4 | +.17 | .98 + | .64 | 50.7 . | + 0.1 | * +50.8 | + 0.4 | +51.2 |
| 22 | 10 | +.77 | .63 − | .15 | 49.4 . | + 0.5 | 49.9 | + 1.8 | 51.7 |
| 22 | 18 | −.16 | .99 + | 1.26 | 50.0 . | + 0.2 | 50.2 | − 0.4 | 49.8 |
| 22 | 37 | +.22 | .97 + | .57 | 48.8 . | − 0.2 | 48.6 | + 0.5 | 49.1 |
| 22 | 38 | +.02 | 1.00 + | .87 | ~~47.8~~ 49.3 . | − 0.8 | 48.5 | + 0.1 | 48.6 |
| 22 | 40 | +.33 | .94 + | .42 | 49.0 . | + 0.0 | 49.0 | + 0.8 | 49.8 |
| 22 | 58 | +.47 | .88 + | .26 | 49.6 . | − 0.6 | 49.0 | + 1.0 | 50.0 |
| 23 | 7 | −.24 | .97 + | 1.51 | − − − − . | + 0.9 | | | |
| 23 | 10 | +.64 | .76 + | .05 | 46.8 . | − 0.2 | 46.6 | + 1.5 | 48.1 |
| 0 | 1 | +.24 | .97 + | .54 | 48.0 . | − 0.2 | 47.8 | + 0.6 | 48.4 |
| 0 | 3 | −.05 | 1.00 + | 1.01 | 50.8 . | − 0.1 | 50.6 | − 0.2 | 50.4 |
| | | | | | | | | | 49.71 49.71 |

| RA h | m | sin z | cos z | tang. δ | $R_{eq}-R_{fl}$ | $\rho'-\rho$ | $R_{eq}-R_{fl}+(\rho'-\rho)$ | $R_{fl}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 22 | 01 | −.34 | .94 + | 1.89 | + 4′ 50″.7 | + 1.5 | +52.2 | −0.8 | +51.4 |
| 22 | 7 | −.49 | .87 + | 3.02 | + 4 49.4 . | + 0.9 | 50.3 | −1.2 | 49.1 |
| 22 | 32 | −.51 | .86 + | 3.27 | ~~49.3~~ 48.4 . | + 0.8 | 49.2 | −1.2 | 48.0 |
| 22 | 45 | −.39 | .92 + | 2.20 | 51.7 4 . | + 1.0 | 52.4 | −0.9 | 51.5 |
| 22 | 49 | −.86 | .50 − | 4.89 | − − − − | +0.7 | | | |
| 23 | 3 | −.53 | .84 + | 3.66 | − − − − | + 0.6 | 5 | | |
| 0 | 6 | −.86 | .50 − | 4.84 | − 51.8 . | + 0.3 | 51.5 ~~52.1~~ | −2.0 | 49.5 ✓ |
| ~~22~~ | ~~1~~ | | | ~~+ 1.89~~ | ~~+ 50.8~~ | ~~+1.5~~ | ~~52.3~~ | | |
| | | | | | | | | | 50.00 |

10 49.710
4 ~~.40~~ .00
.750
49.~~54~~

~~+.69~~ ~~+.50~~ +.22 +48.6 +.17 +50.8 −.16 +50.2 −.~~24~~ −.49 +50.3 −~~.86~~
+.77 +49.9 +.47 +49.0 +.33 +49.0 +.02 +48.5 −.05 +50.6 −.34 +52.2 −.51 +49.2 −.86 +52.1
+.64 +46.6 +.24 +47.8 −.39 +52.4 −~~.53~~

~~49.00~~
56

+.70 +48.2 +.47 +49.0 +.26 +48.5 +.09 +49.6 −.10 +50.4 −.36 +52.3 −.50 +49.7 −.86 +52.1
+1.6 +1.1 + .6 + .2 − .2 − .8 −1.1
+49.8₂ +50.1₁ +49.1₃ +49.8₂ +50.2₂ +51.5₂ +48.6₂
+4′ 49″.80 (14) 99.6 50.1 147.3 99.6 100.4 103.0 97.2
0 − .3 + .7 0 − .4 − 1.7 + 1.2
~~49.54~~
~~65~~
71

| RA h | m | sin z | cos z | tang. δ | $R_{eq}-R_{fl}$ | $\rho'-\rho$ | $R_{eq}-R_{fl}+(\rho'-\rho)$ | $R_{fl}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 31 | +.24 | .97 + | .55 | + 4′ 50″.8 . | − 0.2 | +50.6 | + 0.6 | +51.2 |
| 0 | 33 | −.23 | .97 + | 1.47 | 52.6 . | + 0.6 | 53.2 | − 0.6 | 52.6 |
| 0 | 56 | +.58 | .81 + | .13 | 49.5 . | + 0.3 | 49.8 | + 1.3 | 51.1 |
| 1 | 4 | +.22 | .97 + | .56 | 50.6 . | + 0.2 | 50.8 | + 0.5 | 51.3 |
| | | | | | | | | | 51.55 51.55 |

| RA h | m | sin z | cos z | tang. δ | $R_{eq}-R_{fl}$ | $\rho'-\rho$ | $R_{eq}-R_{fl}+(\rho'-\rho)$ | $R_{fl}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 25 | −.34 | .94 + | 1.90 | + 4′ 52″.1 . | − 0.3 | + 51.8 | − 0.8 | +51.0 |
| 0 | 28 | −.92 | .38 − | 2.82 | 53.7 4 . | + 0.8 | 52.9 ~~54.5~~ | − 2.2 | 50.7 ✓ |
| 0 | 37 | −.53 | .84 + | 3.56 | 52.~~5~~ . | + 1.1 | 53.5 | − 1.2 | 52.3 |
| 1 | 1 | −.60 | .80 + | 5.14 . | 51.8 0 . | + 0.6 | 51.6 | − 1.4 | 50.2 |
| 1 | 12 | −.72 | .69 + | 41.92 | 53.5 . | ~~− 0.3~~ + 1 | 53.~~2~~ 6 | − 1.7 | 51.9 |
| | | | | | | | | | 51.35<br>51.35 |

+.58 +49.8 +.24 +50.6 −.23 +53.2 −.53 +53.5 −.72 +53.2 −.92 +54.5
4 .90 +.22 +50.8 −.34 +51.8 −.60 +51.6
4

+58 +49.8 +.23 +50.7 −28 +52.~~8~~5 −56 +52.5 −.72 +53.2 −92 +54.5
+1.3 + .5 − .6 −1.2 −1.6
+51.1₁ +51.2₂ +51.9₂ +51.3₂ +51.6₁
+4′ 51″.44 (8) .1 .4 1.8 .6 .6
51.45 + .3 + .2 − .5 + .1 − .2

1872 Dec 17 WAR h = ~~.013~~ +005 n = +22 +.30 c = ,00

| Star | | Ra h | m | δ | tang δ | | π Ra s | P'−P | π Ra −(P'−P) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.1 | +.1 | 1 | 4 | 17 − | +0.56 | 0= | −21.78. | −.05 | −21.73 | +.17 | oo | −21.56 |
| 1.4 | −.2 | 1 | 24 | 22 | + .26 | | −21.62. | +.06 | −21.68 | +08 | oo | .60 |
| 1.25 | | | | | | | | | | | | 21.580<br>21.580 |

1872 Dec. 17 WAR

| Star | Ra h | m | δ | tang δ | | π Ra s | P'−P | π Ra −(P'−P) |
|---|---|---|---|---|---|---|---|---|
| | 1 | 1 | 345 | +5.14 | 0= | −22.90. | +.00 | −22.90 |
| | 1 | 12 | 19 | +41.92 | | −~~22.90~~<br>36.42. | ~~+.51~~<br>−.11 | −~~35.91~~<br>~~36.93~~<br>−36.31 |

1872 Dec 21 WAR h = ~~−.009~~ −.061 −.043 ~~n~~ = +.23 c = .00 ~~h = .046~~

| | | | | | tang δ | | s | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23.0 | +.9 | 22 | 58 | 329 | +0.26 | 0= | −22.56 | .+.00 | −22.56 | + .06 | −.05 | −22.50 | 22.55 |
| 23.2 | .7 | 23 | 10 | 330 | +0.05 | | −22.50 | .+.03 | −22.53 | + .01 | −.04 | 52 | .56 |
| 23.3 | .6 | 23 | 19 | 532 | +0.42. | | −22.67 | .+.00 | −22.67 | + .10 | −.04 | 57 | .61 |
| 2325 23.5 | .4 | 23 | 31 | 331 | +1.03. | | −22.92. | −.01 | −22.91 | + .24 | −.02 | 67 +08 | 61 |
| 23.7 | 2 | 23 | 45 | 538 | +0.33 | | −22.68. | +.02 | −22.70 | + .08 | −.01 | 62 | .64 |
| 23.9 | +0 | 23 | 52 | 336 | +0.11 | | −22.53. | +.05 | −22.58 | + .03 | −.00 | 55 | .55 |
| 1.4 | −1.5 | 1 | 24 | 22 | +0.26 | | −22.63, | +.06 | −22.69 | + .06 | +.09 | 63 | .54 |
| 0.65 1.6<br>23.95 | −1.7 | 1 | 38 | 25 | + .15 | | −22.87. | −.12 | −22.75 | + .03 | +.10 | −22.72<br>22.630 | .62 |

22.565

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 3 | 529 | +3.66 | 0= | −23.47. | +.01 | −23.48 |
| ~~23~~" | 23 | 162 | −2.75 | | −21.78. | +.12 | −21.90 |
| 23 | 34 | 334 | +4.31 | | −23.42. | +.13 | −23.55 |
| 23 | 41 | .537 | +2.37 | | −23.04. | +.11 | −23.15 |
| 1 | 28 | .347 | +3.15 | | −23.28. | +.05 | −23.33 |
| +13 | 34 | .455 | −3.06 | | −21.81. | +.12 | −21.93 |

22.9 +.26 −22.56
23.2 +.05 −22.53
23.9 +.11 −22.70
1.4 +.26 −22.69
1.6 +.15 −22.75
0.2 +.17 −22.65
+1

[23.5 +.03 −22.91]

n = +.30 +.01

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 23.1 | +3.66 | −23.48 | −01 | −23.49 | −00 | −23.48 |
| 23.6 | +4.31 | −23.55 | −00 | −23.55 | +00 | −23.55 |
| 23.7 | +2.37 | −23.15 | −00 | −23.15 | +00 | −23.15 |
| 1.5 | +3.15 | −23.33 | +.01 | −23.32 | +02 | −23.31 |

0 = +3.49 −.84 n = +.24
+4.14 −.90 +.22
+2.20 −.50 +.23
+2.98 −.67 +.22
+.228

0 = +2.63 −.57 +.22
+3.28 −.64 +.19
+1.34 −.24 +.18
+2.12 −.40 +.19
+.195

22.~~550~~ .587

22.585

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 23.4 | −2.75 | −21.90 | −.01 | −21.91 | −00 | −21.90 |
| 1.6 | −3.06 | −21.93 | +.01 | −21.92 | +.02 | −21.91 |

0 = −2.92 +.7~~2~~4 n = +.25
−3.23 +.75 +.23
+.240

0 = −3.78 +1.01 n = +.27
−4.09 +1.00 +.24
+.255

z = +.60+.80 | +.40+.60 | +.20+.40 | +0+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00

| RA h m | sin z | cos z | tang δ | Req − Rfl ′ ″ | P′−P | Req−Rfl + (P′−P) ″ | Rfl | Req |
|---|---|---|---|---|---|---|---|---|
| 1 4 | +.22 | .97+ | 0.56 | −2 32.5 | +0.2 | −32.3 | +0.5 | −31.8 |
| 1 24 | +.46 | .88+ | .26 | — —. | −0.3 | | | |
| | | | | | | | | 31.80 31.80 |

| RA h m | sin z | cos z | tang δ | Req − Rfl | P′−P | Req−Rfl + (P′−P) | Rfl | Req |
|---|---|---|---|---|---|---|---|---|
| 1 1 | −.60 | .80+ | 5.14 | ~~+4.6~~. | +0.6 ″ | | | |
| 1 12 | −.72 | .69+ | 41.92. | −2 29.4. | ~~−0.3~~ +.1 | −29.7 3 | −1.7 | −31.0 |
| | | | | | | | | 31.00 31.00 |

32.80 +.46 +.22 −32.3″ +.5 −31.8 (2) .8 + .32

+2′ 31.55″ 31.40

−.60 −.72 −29.7″ −1.6 −31.3 − 2.3

| RA h m | sin z | cos z | tang δ | Req − Rfl ′ ″ | P′−P | Req−Rfl + (P′−P) | Rfl | Req |
|---|---|---|---|---|---|---|---|---|
| 22 58 | +.47 | .88+ | 0.26 | −2 27.6 | −0.6 | −28.2 | +1.0 | −27.2] wt |
| 23 10 | +.64 | .76+ | .05 | 32.2 | −0.2 | 32.4 | +1.4 | 31.0 |
| 23 19 | +.34 | .94+ | .12 | ~~30.5~~ 31.0 | +0.2 | 30.8 | +0.7 | 30.1 |
| 23 31 | −.06 | 1.00+ | 1.03 | −31.8 | +0.7 | 31.1 | −0.2 | 31.3 |
| 23 45 | +.41 | .91+ | .33 | −31.9 8 | −0.2 | ~~31.6~~ 2.0 | +0.9 | 31.1 |
| 23 52 | +.59 | .80+ | .11 | −33.1 | +0.2 | 32.9 | +1.3 | 31.6 |
| 1 24 | +.46 | .88+ | .26 | −30.5 | −0.3 | 30.8 | +1.0 | 29.8 |
| 1 38 | | | | — — — | +0.4 | | | |
| | | | | | | | | 30.82 30.82 |

| RA h m | sin z | cos z | tang δ | Req − Rfl ′ ″ | P′−P | Req−Rfl + (P′−P) | Rfl | Req |
|---|---|---|---|---|---|---|---|---|
| 23 3 | −.53 | .84+ | 3.66 | — — | +0.6 | | | |
| 23 23 | −.92 | .38− | 2.75 | −2 26.7 | +0.8 | ~~25.9~~ 27.5 | −2.0 | 29.5 ✓ |
| 23 34 | −.57 | .82+ | 4.31 | 30.3 | +0.3 | 30.0 | −1.3 | 31.3 |
| 23 41 | −.42 | .90+ | 2.37 | ~~30.5~~ 31.0 | +0.4 | 30.6 | −0.9 | 31.5 |
| 1 28 | −.50 | .86+ | 3.15 | 28.0 ~~27.8~~ | +0.7 | 27.3 | −1.1 | 28.4 |
| 1 34 | −.91 | .40− | 3.06 | 26.4 | −0.1 | 26.3 ~~26.5~~ | −2.0 | 28.3 ✓ |
| | | | | | | | | 30.40 30.40 |

6 492
3 120
~~30~~ 612
30.68

+.64 −32.4 | +.47 −28.2 | +.34 −30.8 | −.06 −31.1
+.41 −31.6
+.59 −32.9
+.46 −30.8

−.53
−.57 −30.0
−.42 −30.6
−.50 −27.3

−.92 −25.9
−.91 −26.5

+64 −32.4 +1.4 −31.0 31.0 +.7
+48 −30.9 +1.0 −29.9 119.6 −.4
+34 −30.8 +7 −30.1 30.1 ± .2
−.06 −31.1 −.1 −31.2 31.2 +.9
−.50 −29.3 −1.1 −30.4 91.2 +.1
−.91 −26.2

−2′ 30.31″
30.68 (10)

1872 Dec 23 Ware h = ~~−.00~~ +.056 −.011 n = +.42 e = .00 ~~h = +.055~~

| Star | | Ra | δ | tang. δ | T−Ra | P′−P | T−Ra −(P′−P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h m | | | s | | | | | 22.970 | |
| 2.6 | +5 | 2 35 | 40 | + 1.14 | 0 = −23.37. | +.08 | −23.45 | + .48 | +.03 | −22.97 | 22.94 |
| 2.6 | 5 | 2 36 | 41 | + .05 | −22.99. | +.01 | −23.00 | + .02 | .03 | .98 | .95 |
| 2.7 | 4 | 2 41 | 43 | + 1.45 | −23.55. | +.02 3 | −23.57 8 | + .61 | .02 | .97 | .95 |
| 2.7 | 4 | 2 45 | 45 | + 1.29 | −23.41. | +.11 | −23.52 | + .54 | 02 | .98 | .96 |
| 2.9 | 2 | 2 56 | 49 | + .79 | −23.26. | +.01 | −23.27 | + .33 | 01 | .94 | .93 |
| 2.9 | 2 | 2 56 | 47 | + .06 | −23.06. | +.02 | −23.08 | + .03 | 01 | 23.05 | 23.04 |
| 2.77 3.0 | +1 | 2 59 | 50 | + .85 | −23.21. | +.05 | −23.26 | + .36 | +.01 | 22.90 | 22.91 |
| 3.6 | −5 | 3 33 | 57 | + 1.08 | −23.31. | +.08 | −23.39 | + .45 | −03 | .94 | .97 |
| 3.6 | 5 | 3 39 | 60 | + .44 | −23.04. | +.04 | −23.08 | + .18 | −03 | .90 | .93 |
| 3.7 | 6 | 3 41 | 61 | + .44 | −23.05. | +.04 5 | −23.09 | + .18 | −.03 | .91 | .94 |
| 3.67 3.8 | −7 | 3 50 | 65 | + .41 71 | −23.18. | +.05 | −23.23 | + .30 | −04 | −22.93 | .97 |
| 3.10 | | | | | | | | | | 22.920 | |

22.9~~29~~
.952

26 +.00 −23.00
2.9 +.08 −23.08
3.6 +.44 −23.08
3.7 +.44 −23.09
3.2 +.25 −23.06

I + II
2.8 +5.10 −25.07
3.1 +4.42 −24.81
3.6 +2.89 −24.16
3.8 +1.78 −23.69

0 = +4.85 −2.01 n = +.41
+4.17 −1.75 +.42
+2.64 −1.10 +.41 2
+1.53 −.63 +.41
+.41~~2~~ 5

2.6 +1.19 −23.45
2.7 +1.45 −23.57 8
2.7 +1.29 −23.52
3.5 +1.08 −23.39
2.9 +1.24 −23.48

0 = +3.86 −1.59 +.41
+3.18 −1.33 +.42
+1.65 −.68 +.41
+.64 −.21 6 +.39
+.408

n = +.42

1872 Dec. 23 Ware

| Star | Ra | δ | tang. δ | T−Ra | P′−P | T−Ra −(P′−P) |
|---|---|---|---|---|---|---|
| | h m | | | s | | |
| | 2 49 | 358 | + 5.10 | 0 = −24.85. | +.22 | −25.07 |
| | 2 51 | 198 | − 3.65 | −21.42 | +.10 | −21.52 |
| | 3 4 | 360 | + 4.42 | −24.76. | +.05 | −24.81 |
| | 3 36 | 364 | + 2.89 | −23.99. | +.17 | −24.16 |
| | 3 46 | 365 | + 1.78 | −23.68. | +.01 | −23.69 |
| | 3 48 15 | 217 | − 4.78 | −20.52. | +.26 | −20.78 |

22954 I + II
2.9 −3.65 −21.52
3.8 −4.78 −20.78

0 = −3.90 +1.54 n = +.39
−5.03 +2.28 +.45
+.420

0 = −4.89 +1.96 n = +.40
−6.02 +2.70 +.45
+.425

1872 Dec 24 Ware h = ~~−.00~~ −.006 n = ~~+.44~~ +.45 +.408

| Star | | Ra | δ | tang. δ | T−Ra | P′−P | T−Ra −(P′−P) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | s | | | | | |
| 23.3 | +3 | 23 19 | 532 | + .42 | 0 = −23.15 | .+.00 | −23.15 | +.18 19 | 00 | −22.96 |
| 23.5 | +1 | 23 31 | 331 | + 1.03 | −23.46 | .−.01 | −23.45 | +.45 46 | | 22.99 |
| 23.7 | −1 | 23 45 | 538 | + .33 | −23.12 | .+.02 | −23.14 | +.14 15 | | 22.99 |
| 23.9 | −3 | 23 52 | 336 | + .11 | −23.02 | .+.05 | −23.07 | +.05 05 | 00 | 23.02 |
| 23.60 | | | | | | | | | | −22.990 |
| | | | | | | | | | | 22.990 |

23.3 +.42 −23.15
23.7 +.33 −23.14
23.9 +.11 −23.07
23.6 +.29 −23.12

[23.5 +1.03 −23.45]

n = +.44

I + II
23.6 +4.31 −25.10
23.7 +2.37 −23.98

0 = +4.02 −1.98 n = +.49
+2.08 −.86 +.41
+.450

0 = +3.28 −1.65 +.50
+1.34 −.53 +.40
+.450

| Ra | δ | tang. δ | T−Ra | P′−P | T−Ra −(P′−P) |
|---|---|---|---|---|---|
| | | | s | | |
| 23 23 | 162 | − 2.75 | 0 = −21.74. | +.12 | −21.86 |
| 23 34 | 334 | + 4.31 | −24.97. | +.13 | −25.10 |
| 23 41 | 537 | + 2.37 | −23.87. | +.11 | −23.98 |

I + II
23.4 −2.75 −21.86

0 = −3.04 +1.26 n = +.414

0 = −3.78 +1.59 +.420

1872 Dec 25 h = −.00 5 .003 n = +.52 e = .00 ~~h = −.105~~

| Star | | Ra | δ | tang. δ | T−Ra | P′−P | T−Ra −(P′−P) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | s | | | | | 23.180 |
| 23.1 | +4 | 23 7 | 530 | + 1.51 | 0 = −23.90 | .+.07 | −23.97 | + .79 | 00 | −23.18 |
| 23.2 | +3 | 23 10 | 330 | + .05 | −23.18 | .+.03 | −23.21 | + .03 | | .18 |
| 23.20 23.3 | +2 | 23 19 | 532 | + .42 | −23.40 | .+.00 | −23.40 | + .22 | | .18 |
| 23.5 | +0 | 23 31 | 331 | + 1.03 | −23.78 | .−.01 | −23.77 | + .54 | | .23 +.08 |
| 23.7 | −2 | 23 45 | 538 | + .33 | −23.38 | .+.02 | −23.40 | + .17 | | .23 |
| [0.1] | | 0 3 | [337 | + 1.01 | −24.00 | .−.03 | −23.97 | + .53 | | [.44] |
| 23.80 0.2 | −7 | 0 12 | 4 | − .17 | −23.17 | +.01 | −23.18 | − .09 | 00 | −23.27 −.05 |
| 23.510 | | | | | | | | | | ~~23.243~~ |

23 ~~380~~
243
23.20

232 +.05 −23.21
23.3 +.42 −23.40
23.8 +.33 −23.40
[0.2 −.17 −23.18]
23.~~8~~ 4 ~~+.16~~ +.27 −~~23.30~~ −23.34
23.1 +1.57 −23.97
[23.5 +1.03 −23.77]
[0.1 +1.01 −23.97]
~~23.6 +1.16 −23.90~~
~~3 27 23.67~~

n = +.59

I + II
23.6 +4.31 −25.39
23.7 +2.37 −24.44

0 = +4.15 −2.09 n = +.50
+2.21 −1.14 +.57 2
+.~~505~~ 510

0 = +3.04 −1.52 n = +.50
1.10 −.57 +.52
+.510

| Ra | δ | tang. δ | T−Ra | P′−P | T−Ra −(P′−P) |
|---|---|---|---|---|---|
| | | | s | | |
| 23 23 | 162 | − 2.75 | 0 = −21.70. | +.12 | −21.82 |
| 23 34 | 334 | + 4.31 | −25.26. | +.13 | −25.39 |
| 23 41 | 537 | + 2.37 | −24.33. | +.11 | −24.44 |
| 0 6 12 | 168 | − 4.84 | −20.65. | −.07 | −20.58 |

I + II
23.4 −2.75 −21.82
0.1 −4.84 −20.58

0 = −2.91 +1.48 n = +.51
−5.00 +2.72 +.54
+.525

0 = −4.02 +2.05 +.51
~~−2.57~~ 6.11 +3.29 54
+.525

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin z | cos z | tang. δ | Rq − Rfc ′ ″ | P′ − P | Rq − Rfl + (P′ − P) ″ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| 2 35 | −.11 | .99 + | 1.14 | −2 — — . | +0.4 | | | |
| 2 36 | +.64 | .76 + | .05 | 30.7. | +0.3 | −30.4 | +1.4 | −29.0 |
| 2 41 | −.22 | .97 + | 1.45 | 31.3. | −0.5 | 31.8 | −0.5 | 32.3 |
| 2 45 | −.17 | .98 + | 1.29 | 32.5. | +0.7 | 31.8 | −0.4 | 32.2 |
| 2 56 | +.07 | 1.00 + | .79 | 28.0. | −0.3 | 28.3 | +0.2 | 28.1 |
| 2 56 | +.63 | .77 + | .06 | 30.6. | +0.7 | 29.9 | +1.4 | 28.5 |
| 2 59 | +.03 | 1.00 + | .85 | 32.2. | −0.1 | 32.3 | +0.1 | 32.2 |
| 3 33 | −.09 | 1.00 + | 1.08 | 29.5. | +0.5 | 29.0 | −0.2 | 29.2 |
| 3 39 | +.32 | .94 + | .44 | 29.8. | +0.2 | 29.6 | +0.7 | 28.9 |
| 3 41 | +.32 | .94 + | .44 | 30.9. | +0.~~1~~ 2 + | 30.7 | +0.7 | 30.0 |
| 3 50 | +.12 | .99 + | .41 | 28.9. | +0.3 | 28.6 | +0.3 | 28.3 |
| | | | | | | | | 29.87 |

29.87 &

| RA h m | sin z | cos z | tang. δ | Rq − Rfc | P′ − P | Rq − Rfl + (P′ − P) ″ | Rfl. | Req. | |
|---|---|---|---|---|---|---|---|---|---|
| 2 49 | −.59 | .80 + | 5.10 | 31.7. | +1.1 + 2 | −30.1 | −1.3 | −31.4 | |
| 2 51 | −.89 | .45 − | 3.65 | 29.7 | +0.~~8~~ 9 | ~~28.8~~ 30.6 | −2.0 | 32.6 | ✓ |
| 3 4 | −.67 | .74 + | 4.42 | 31.0. | +0.7 | 30.3 | −1.6 | 31.9 | |
| 3 36 | −.48 | .87 + | 2.89 | 28.~~2~~ 7. | +0.2 | 28.5 | −1.0 | 29.5 | |
| 3 46 | −.32 | .94 + | 1.78 | 27.9 ~~28.6~~. | −0.1 | 28.0 | −0.7 | 28.7 | |
| 3 48 | −.86 | .50 − | 4.78 | 27.2. | +0.2 | 27.4 27.0 | −2.0 | 29.4 | ✓ |

30.38
30.38

| | | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|---|
| ,10 | 9.87 | +.64 −30.4″ | | +.32 −29.6″ | +.07 −28.3″ | −.11 ″ | −.22 −31.8″ | −.59 −30.1″ | −.67 −30.3″ | −.89 −28.8″ |
| | | +.63 −29.9 | | +.32 −30.7 | +.63 −32.3 | −.17 −31.8 | −.32 −28.0 | −.48 −28.5 | | −.86 −27.0 |
| | | | | | +.12 −28.6 | −.09 −29.0 | | | | |
| | | +.63 −30.1 | | +.32 −30.1 | +.07 −29.7 | −.13 −30.4 | −.27 −29.9 | −.53 −29.3 | −.67 −30.3 | −.87 −27.9 |
| | | +1.3 | | +.7 | +.2 | −.3 | −.6 | −1.1 | −1.5 | |
| | | −28.8$_2$ | | −29.4$_2$ | −29.5$_3$ | −30.7$_2$ | −30.5$_2$ | −30.4$_2$ | −31.8$_1$ | |
| | −2′ 29.99″ | (14) 57.6 | | 58.8 | 88.5 | 61.4 | 61.0 | 60.8 | 31.8 | |
| | 30.02 | ✱ −1.2 | | ✱ −.6 | ✱ −.5 | ✱ +.7 | ✱ +.5 | ✱ +.4 | ✱ +1.8 | |

| RA h m | sin z | cos z | tang. δ | Rq − Rfc | P′ − P | Rq − Rfl + (P′ − P) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| 23 19 | +.34 | .94 + | .42 | −2′ 31.8″ 3 | +0.2 | −31.1 | +0.7 | −30.4 |
| 23 31 | −.06 | 1.00 + | 1.03 | 31.2 | +0.7 | 30.5 | −0.2 | 30.7 |
| 23 45 | +.41 | .91 + | .33 | 32.2 | −0.2 | 32.4 | +0.9 | 31.5 |
| 23 52 | +.59 | .80 + | .11 | 32.3 | +0.2 | 32.1 | +1.3 | 30.8 |

| RA h m | sin z | cos z | tang. δ | Rq − Rfc | P′ − P | Rq − Rfl + (P′ − P) | Rfl. | Req. | |
|---|---|---|---|---|---|---|---|---|---|
| 23 23 | −.92 | .38 − | 2.75 | −2′ 27.4″ | +0.8 | ~~26.6~~ 28.2 | −2.0 | 30.2 | ✓ |
| 23 34 | −.57 | .82 + | 4.31 | 29.1 | +0.3 | 28.8 | −1.3 | −30.1 | |
| 23 41 | −.42 | .90 + | 2.37 | 29.6 | +0.4 | 29.2 | −0.9 | 30.1 | |

4 340
2 20
380
30.60

30.85 30.85 —

30.10
30.10

| | | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | +.41 −32.4 | +.34 −31.1 | | −.06 −30.5 | | −.57 −28.8 | | −.92 −26.6 |
| | | | +.59 −32.1 | | | | | −.42 −29.2 | | |
| | | | +.50 −32.2 | +.34 −31.1 | | −.06 −30.5 | | −.49 −29.0 | | −.92 −26.6 |
| | | | +1.1 | +.7 | | −.1 | | −1.0 | | |
| | | | −31.1$_2$ | −30.4$_1$ | | −30.6$_1$ | | −30.0$_2$ | | |
| | −2′ 30.53″ | | (6) 2.2 | .4 | | .6 | | .0 | | |
| | 30.60 | | ✱ +.6 | ✱ −.1 | | ✱ +.1 | | ✱ −.5 | | |

| RA h m | sin z | cos z | tang. δ | Rq − Rfc | P′ − P | Rq − Rfl + (P′ − P) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| 23 7 | −.24 | .97 + | 1.51 | −2′ 20.5″ 7 | +0.9 | −19.8 | −0.5 | −20.3] |
| ~~23 10~~ | ~~+.64~~ | ~~.76 +~~ | ~~0.05~~ | ~~9.4]~~ | ~~−0.2~~ | ~~9.6]~~ | | |
| 23 19 | +.34 | .94 + | .42 | — — | +0.2 | | | |
| 23 31 | −.06 | 1.00 + | 1.03 | 28.7 | +0.7 | 28.0 | −0.2 | 28.2 |
| 23 45 | +.41 | .91 + | .33 | 28.2 | −0.2 | 28.4 | +0.9 | 27.5 |
| 0 3 | −.05 | 1.00 + | 1.01 | 23.1 5 | −0.1 | 23.6 | −0.2 | 23.8 |
| a 12 | | − | .17 | — — | +0.1 | | | |

R.Y
26.5

| RA h m | sin z | cos z | tang. δ | Rq − Rfc | P′ − P | Rq − Rfl + (P′ − P) | Rfl. | Req. | |
|---|---|---|---|---|---|---|---|---|---|
| 23 23 | −.92 | .38 − | 2.75 | −2′ 27.5″ | +0.8 | ~~26.7~~ 28.3 | −2.1 | 30.4 | ✓ |
| 23 34 | −.57 | .82 + | 4.31 | 25.2 | +0.3 | 24.9 | −1.3 | 26.2 | |
| 23 41 | −.42 | .90 + | 2.37 | ~~24.7~~ [illegible] | +0.4 | 24.7 | −0.9 | 25.6 | |
| 0 6 | −.86 | .50 − | 4.84 | 23.4 | +0.3 | ~~23.1~~ 23.7 | −2.0 | 25.7 | ✓ |

25.90

| | | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|---|
| ~~+~~ | | ~~+.64~~ 9.6] | +.41 −28.4 | ~~+.34~~ | | −.06 −28.0 | −.24 −19.8 | −.57 −24.9 | | −.92 −26.7 |
| | | | | | | −.05 −23.6 | | −.42 −24.7 | | −.86 −23.1 |
| | | | +.41 −28.4 | | | −.05 −25.8 | −.24 −19.8 | −.49 −24.8 | | −.89 −24.9 |
| | | | +.9 | | | −.1 | −.5 | −1.1 | | |
| | | | −27.5$_1$ | | | −25.9$_2$ | −20.3$_1$ | −25.9$_2$ | | |
| | −2′ ~~26.28~~ 26.22 | | (6) 7.5 | | | 11.8 | 0.3 | 11.8 | | |
| | | | − ~~2.5~~ | | | − .7 | + 4.9] | − .7 | | |
| | | | + 1.3 | | | − .3 | | − .3 | | |

1872 Dec 30 Ware h = ~~-.002~~ -.045 ~~0=~~ +.52 @=.00 ~~h=-.045~~
-.020

Star | Ra | δ | tang. δ | T-R.A. | P'-P | T-Ra -(P'-P)

h m | | | | s

1.4 +1.3 1 24 22 + .26 0= - 24.07. +.06 -24.13 + 14 -.06 -23.99 24.05
1.50 1.6 +1.1 1 38 25 + .15 - 24.13. -.12 -24.01 + 08 -.05 23.93 23.98
3.4 -.7 3 26 56 - .17 - 23.97. +.03 -24.00 - 09 +.03 24.09 24.06
3.6 -.9 3 33 57 + 1.08 - 24.56 +.08 -24.64 + 56 +.04 24.08 24.04
3.53 3.6 -.9 3 39 61 + 44 - 24.18. +.04 -24.22 + 23 +.04 -23.99 23.95
2.72
23.960
24.053
24.016 24.016

1872 Dec 30 Ware

Star | Ra | δ | tang. δ | T-Ra | P'-P | T-Ra -(P'-P)

h m | | | | s | -11 | +18.95

1 12 19 +41.92 0= + 18.84. ~~+.51~~ +18.33
1 28 347 + 3.15 2 25.65. +.05 -25.70
1 52 31 + 3.04 -25.33. +.15 -25.48
3 31 363 + 1.95 -24.97. +.11 -25.08
3 36 364 + 2.89 -25.41. +.17 -25.58

I+II

1895
1.2 +41.92 +~~18.33~~ -0
1.5 +3.15 -25.70 -0
1.9 +3.04 -25.48 -0
3.5 +1.95 -25.08 +0
3.6 +289 -25.58 +0

1.4 +.26 -24.13
1.6 +.15 -24.01
3.4 -.17 -24.00
3.6 +.44 -24.22
2.5 +.17 -24.09

3.5 +1.08 -24.64

n = +.60

-17.58 +62 +.42 1
0= +41.75 ~~+42.47~~ n = [~~+1.02~~]
+2.98 -1.61 +.54
+2.87 -1.39 +.48
+1.78 -.99 +.56
+2.72 -1.49 +.55
+ ~~.510~~
.508

-17.03 +62 +.42 1
0= +40.84 +42.97 n = [~~+1.08~~ 5]
+2.07 -1.06 +.51
+1.96 -.84 +.43
+0.87 -.44 +.51
+1.81 -.94 +.52
+ ~~.478~~
.476

1873 Jan 1 Ware h = ~~-.016~~ -.017 n = ~~.90~~ +.51 @=.00 ~~h=-.020~~
-.022

s

23.5 ~~+2.6~~ 23 31 331 + 1.03 - 6.54 -.01 -6.53 + 53 -6.00 +.98
24.98 97
23.7 +2.4 23 45 538 + .33 0= - 25.10 . +.02 -25.12 + 17 -.04 24.95 -24.99
23.9 2.2 23 52 336 + .11 - 25.02 . +.05 -25.07 + 06 .04 25.01 5.05
23.93 0.2 1.9 0 12 4 - .17 - 24.93 . +.01 -24.94 - 09 .03 .13 .06
1.4 +.7 1 24 22 + .26 - 25.10 . +.06 -25.16 + 13 -.01 .03 .04
3.2 -1.1 3 15 52 + 1.17 - 25.70 . -.01 -25.69 + 60 +.02 .09 .07
3.4 1.3 3 26 56 - .17 - 24.97 . +.03 -25.00 - 09 .02 .09 .07
3.5 1.4 3 33 57 + 1.08 - 25.52 . +.08 -25.60 + 55 .02 25.05 .03
3.7 1.6 3 39 61 + .44 - 25.27 . +.04 -25.31 + 22 .03 .09 .06
3.15 3.7 -1.6 3 41 62 + .44 - 25.17 . +.08 -25.25 + 22 +.03 -25.08 .00
2.08
25.063
~~25.629~~ 25.039
.041

s

23 3 529 + 3.66 0= - 26.86 . +.01 -26.90
23 34 334 + 4.31 - 27.16 . +.13 -27.29
23 41 537 + 2.37 - 26.06 . +.11 -26.17
1 28 347 + 3.15 - 26.48 . +.06 5 + -26.53
3 4 360 + 4.42 - 27.39 . +.05 + -27.44
2 15 21 203 - 3.13 - 23.66 . -.15 -23.57
3 31 363 + 1.95 25.94 ~~31.43~~ . +.11 -26.05
3 36 364 + 2.89 - 26.30 . +.17 -26.47

I II

23.7 +.33 -25.12
23.9 +.11 -25.07
[0.2 -.17 -24.94]
1.4 +.26 -25.16
3.4 -.17 -25.00
~~0.9~~ ~~+.07~~ -25.06 9
+.13 -4
[0.35 +1.03 -6.53]
3.3 +1.17 -25.69
3.5 +1.08 -25.60
~~2.1 +1.06 -19.27~~
3.4 +1.12 -25.64
n = +.55 -.04

23.1 +3.66 -26.90 -.03 -26.93 -.05 7 -26.98 7
23.6 +4.31 -27.29 -.02 -27.31 -.04 6 -27.33 5
23.7 +2.37 -26.17 -.02 -26.19 -.04 6 -26.21 3
1.5 +3.15 -26.53 +.01 -26.52 -.03 3 -26.54 6
3.1 +4.42 -27.44 +.03 -27.41 +.02 0 -27.42 4
3.5 +1.95 -26.05 +.04 -26.01 +.02 0 -26.03 5
3.6 +2.89 -26.47 +.04 -26.43 +.02 0 -26.45 7

2.4 -3.13 -23.51 +.04 -23.47 +~~.02~~ 00 -23.49 51

0= -3.20 +1.59 n = +.50

0= +3.59 -1.87 n = +.52
+4.24 -2.25 +.53
+2.30 -1.13 +.49
+3.08 -1.46 +.47
+4.3 5 -2.35 +.54
+1.8 98 -.95 +.50
+2.82 -1.37 +.48 9 6
+.504

0= +2.54 -1.33 n = +.52
+3.19 -1.71 +.54
+1.25 -.59 +.47
+2.03 -.92 +.45
+3.30 -1.80 +.55
+.83 -.41 +.49
+1.77 -.83 +.47
+.499

0= -4.25 +2.13 n = +.50

1873 Jan 4 h = -.012
~~-.009~~ -.014
n = +.38 @ = ~~.00~~ 00 ~~h=-.014~~

s

1.9 +1.7 1 56 32 + .89 0= - 26.44 . +.11 -26.55 + 34 -.02 -26.21 26.23
2.0 1.6 1 59 33 + .42 - 26.29 . +.02 -26.31 + 16 .02 .15 .17
2.0 1.6 2 1 34 + .68 - 26.42 . +.07 -26.49 + 26 .02 .23 .25
2.5 1.1 2 31 355 + .39 - 26.35 . -.01 -26.34 + 15 .02 19 .21
2.32 3.2 +.4 3 15 52 + 1.17 - 26.67 . -.01 -26.66 + 44 -.01 .22 .23
4.0 -.4 3 59 69 + 1.09 - 26.56 . +.07 -26.63 + 41 +.01 .22 .21
4.2 .6 4 15 71 + .31 - 26.37 . +.03 -26.40 + 12 .01 .28 .27
4.4 .8 4 21 368 + 1.36 - 27.79 . -.09 -27.70 + 52 .01 .18 .17
4.5 .9 4 28 73 + .29 - 26.36 . +.00 -26.36 + 11 .01 .25 .24
4.6 1.0 4 34 370 + .42 - 26.34 . +.03 -26.37 + 16 .01 21 .20
4.6 1.0 4 37 371 + 1.51 - 26.83 . -.01 -26.82 + 57 .01 25 .24
4.43 4.7 -1.1 4 39 75 - .06 - 26.27 . -.07 -26.20 - 02 +.02 -26.22 .20
3.55
26.230
26.218 26.218

s

2 14 9 459 - 4.76 0= - 22.46 . -.21 -22.25
2 18 36 + 2.34 - 26.85 . +.23 -27.08
2 25 38 + 3.12 - 27.26 . +.22 -27.48
4 16 14 472 - 4.07 - 24.95 . -.04 -24.91
4 31 369 + 3.93 - 27.64 . +.17 -27.81
4 41 76 + 2.28 - 27.14 . +.22 -27.36

I II

2.0 +.42 -26.31 3.3 +1.17 -26.66
2.5 +.39 -26.34 4.0 +1.09 -26.63
4.3 +.31 -26.40 4.3 +1.36 -27.88
4.5 +.29 -26.36 4.6 +1.51 -26.82
4.6 -.06 -26.20 4.1 +1.28 ~~-26.95~~
3.6 +.27 -26.32 -26.75
-1
n = +.62
.42

2.3 +2.84 -27.08 -.02 -27.10 -.02 -27.10
2.4 +3.12 -27.48 -.01 -27.49 -.02 -27.50
4.5 +3.93 -27.81 +.01 -27.80 +.00 -27.81
4.7 +2.23 -27.34 +.01 -27.33 +.01 -27.33

2.2 -4.76 -22.25 -.02 -22.27 -.02 -22.27
4.2 -4.07 -24.91 +.01 -24.90 +.00 -24.90

0= -5.03 +4.05 n = +.80
-4.34 +1.42 +.83

0= +2.07 -.78 n = +.38
+2.85 -1.17 +.41
+3.66 -1.48 +.40
+1.96 -1.01 +.51
+.425

0= +1.06 .35 .15 n = +.14 .33
+1.84 .75 .55 +.30 .410
+2.65 1.06 .86 +.32 .40
+.95 .58 .38 +.40 .61
+.434

+.565

0= -6.04 448 74
-5.35 7.85 35

z = +.60+.80  +.40+.60  +.20+.40  +.0+.20  +.0−.20  −.20−.40  −.40−.60  −.60−.80  −.80−.100

| Ra | sin z | cos z | tang. δ | R_eq − R_fl | P′−P | R_eq−R_fl+(P′−P) | R_fl | R_eq | Ra | sin z | cos z | tang. δ | R_eq − R_fl | P′−P | R_eq−R_fl+(P′−P) | R_fl | R_eq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h m | | | | ′ ″ | | ″ | | | h m | | | | ′ ″ | | ″ | | |
| 1 24 | +.46 | .88+ | .26 | −2 32.0 | −0.3 | −32.3 | +0.9 | −31.4 | 1 12 | −.72 | .69+ | 4.92 | −2 31.6 | −0.3 | −31.8 | −1.4 | −32.9 |
| 1 38 | +.56 | .82+ | .15 | 34.0 | +0.4 | 33.6 | +1.1 | 32.5 | 1 28 | −.50 | .86+ | 3.15 | 29.0 ~~28.8~~ | +0.7 | 28.3 | −0.9 | 29.2 |
| 3 26 | +.79 | .61− | .17 | ––– | −0.1 | | | | 1 52 | −.49 | .87+ | 3.04 | 28.6 | −0.2 | 28.8 | −0.9 | 29.7 |
| 3 33 | −.09 | 1.00+ | 1.08 | ––– | +0.5 | | | | 3 31 | −.35 | .93+ | 1.95 | ––– | +0.4 | | | |
| 3 39 | +.32 | .94+ | .44 | ––– | +0.2 | | | | 3 36 | −.48 | .87+ | 2.89 | ––– | +0.2 | | | |

31.95 31.95

30.60
30.60

+.79  +.46 −32.″3  +.32  −.09  −.35  −.50 −28.″3  −.72 −31.″9
+.56 −33.6  −.49 −28.8
−.48

2  3.90
3  1.80
5.70

+.51 −32.9
+1.1
−31.8
(5) 63.6
+.5

−.50 −28.5  −.72 −31.9
−1.1  −1.6
−29.6  −33.5
59.2  33.5
−1.7  +2.2

−2′ 31.″26
30.14

√

| Ra | sin z | cos z | tang. δ | R_eq − R_fl | P′−P | R_eq−R_fl+(P′−P) | R_fl | R_eq | Ra | sin z | cos z | tang. δ | R_eq − R_fl | P′−P | R_eq−R_fl+(P′−P) | R_fl | R_eq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 31 | | | +1.03 | | +0.6 | | | | | | | | ′ ″ | | | | |
| 23 45 | +.41 | .91+ | .33 | −2 31.3 | −0.2 | −31.5 | +0.8 | −30.7 | 23 3 | −.53 | .84+ | 3.66 | −2 – | +0.6 | | | |
| 23 52 | +.59 | .80+ | .11 | 31.2 | +0.2 | 31.0 | +1.1 | 29.9 | 23 34 | −.57 | .82+ | 4.31 | 30.7 | +0.3 | −30.4 | −1.1 | −31.5 |
| 0 12 | +.79 | .61− | .17 | 32.7 | +0.2 | 32.6 | +1.5 | 31.1 | 23 41 | −.42 | .90+ | 2.37 | 30.3 | +0.4 | 29.9 | −0.8 | 30.7 |
| 1 24 | +.46 | .88+ | .26 | 31.9 | −0.3 | 32.2 | +0.9 | 31.3 | 1 28 | −.50 | .86+ | 3.15 | 29.9 | +0.7 | 29.2 | −0.9 | 30.1 |
| 3 15 | −.12 | .99+ | 1.17 | 31.8 | +0.7 | 31.1 | −0.3 | 31.4 | 3 4 | −.57 | .82+ | 4.42 | 30.8 ~~29.7~~ | +0.7 | 30.1 | −1.1 | 31.2 |
| 3 26 | +.79 | .61− | .17 | 33.0 | −0.1 | 33.1 | +1.5 | 31.6 | 3 21 | −.91 | .40− | 3.13 | 27.0 | +0.1 | 27.1 ~~26.9~~ | −2.0 | 29.1 ✓ |
| 3 33 | −.09 | 1.00+ | 1.08 | 29.8 | +0.5 | 29.3 | −0.2 | 29.5 | 3 31 | −.35 | .93+ | 1.95 | 31.2 | +0.4 | 30.8 | −0.7 | 31.5 |
| 3 39 | +.32 | .94+ | .44 | 33.5 | +0.2 | 33.3 | +0.6 | 32.7 ] ω+ | 3 36 | −.48 | .87+ | 2.89 | 28.3 | +0.2 | 28.1 | −0.9 | 29.0 |
| 3 41 | +.32 | .94+ | .44 | 31.5 | +0.1 | 31.4 | +0.6 | 30.8 | | | | | | | | | |

30.79 31.00

30.67
30.67

8  632
6  402
1034
30.74

+.79 −32.6  +.41 −31.5  +.32 −33.3  −.12 −31.1  −.35 −30.8  −.53  −.91 −26.9
+.79 −33.1  +.59 −31.0  +.32 −31.4  −.09 −29.3  −.48 −28.1  −.57 −30.4
+.46 −32.2  −.42 −29.9
−.50 −29.2
−.57 −30.1

+79 −32.8  +49 −31.6  +32 −32.3  −10 −30.2  −41 −29.4  −51 −29.9  −91 −26.9
+1.4  +0.9  +0.6  −.2  −.8  −.9
−31.4  −30.7  −31.7  −30.4  −30.2  −30.8
2.8  2.1  3.4  .8  .4  3.2
+.5  −.2  +.8  −.5  −.7  −.1

−2′ 30.″85 (15)
30.74

| Ra | sin z | cos z | tang. δ | R_eq − R_fl | P′−P | R_eq−R_fl+(P′−P) | R_fl | R_eq | Ra | sin z | cos z | tang. δ | R_eq − R_fl | P′−P | R_eq−R_fl+(P′−P) | R_fl | R_eq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ′ ″ | | | | | | | | | ′ ″ | | | | |
| 1 56 | +.01 | 1.00+ | .89 | −2 33.9 | +0.1 | −33.8 | +0.0 | −33.8 | 2 9 | −.86 | .50− | 4.76 | −2 26.3 | +0.7 | 27.0 ~~25.6~~ | −1.6 | −28.6 ✓ |
| 1 59 | +.33 | .94+ | .42 | 31.9 | −0.1 | 32.0 | +0.7 | 31.3 | 2 18 | −.41 | .91+ | 2.54 | 31.5 | +0.7 | 30.8 | −0.8 | −31.6 |
| 2 1 | +.14 | .99+ | .68 | 31.4 | +0.1 | 31.3 | +0.3 | 31.0 | 2 25 | −.50 | .86+ | 3.12 | 29.05 | +0.3 | 28.7 | −1.0 | 29.7 |
| 2 31 | +.36 | .93+ | .39 | 30.7 | +0.7 | 30.0 | +0.7 | 29.3 | 4 14 | −.88 | .46− | 4.07 | 26.8 | +0.6 | 27.1 ~~25.9~~ | −1.7 | −28.8 ✓ |
| 3 15 | −.12 | .99+ | 1.17 | 32.5 | +0.6 | 31.9 | −0.3 | 32.2 | 4 31 | −.55 | .83+ | 3.93 | 29.8 | +0.1 | 29.7 | −1.1 | 30.8 |
| 3 59 | −.09 | 1.00+ | 1.09 | 31.8 | +0.5 | 31.3 | −0.2 | 31.5 | 4 41 | −.40 | .91+ | 2.26 | 32.5 | −0.2 | 32.7 | −0.8 | 33.5 ] ω+ |
| 4 15 | +.42 | .90+ | .31 | 33.2 | +0.0 | 33.2 | +0.8 | 32.4 | | | | | | | | | |
| 4 21 | −.19 | .98+ | 1.36 | –– | +0.9 | | | | | | | | | | | | |
| 4 28 | +.44 | .90+ | .29 | 31.5 | −0.3 | 31.8 | +0.8 | 31.0 | | | | | | | | | |
| 4 34 | +.34 | .94+ | .42 | 33.1 ~~32.6~~ | +0.5 | 32.6 | +0.7 | 31.9 | | | | | | | | | |
| 4 37 | −.24 | .97+ | 1.51 | 32.0 ~~31.9~~ | +0.5 | 31.5 | −0.5 | 32.0 | | | | | | | | | |
| 4 39 | +.72 | .69− | .06 | 34.0 | +0.3 | 33.7 | +1.4 | 32.3 | | | | | | | | | |

31.70 31.70

31.40
30.70

11  1870
3  210
2080

+.72 −33.7  +.42 −33.2  +.33 −32.0  +.01 −33.8  −.12 −31.9  −.24 −31.5  −.41 −30.8  −.86 −25.6
+.44 −31.8  +.36 −30.0  +.14 −31.3  −.09 −31.3  −.40 −32.7  −.50 −28.7  −.88 −25.9
+.34 −32.6  −.55 −29.7

+72 −33.7  +43 −32.5  +34 −31.5  +07 −32.5  −10 −31.6  −32 −32.1  −49 −29.7  −87 −25.7
+1.3  +.8  +.6  +.1  −.2  −.6  −.9
−32.4  −31.7  −30.9  −32.4  −31.8  −32.7  −30.6
2.4  3.4  2.7  4.8  3.6  5.4  1.8
+.8  +1.0  −.7  +.8  +.2  −1.0  −1.0

−2′ 31.″61
31.40 (10)
70

1873 | Jan 6 WAR | h = −.01^s 7 +.007 −.014 | n = +.39 c = .00 | 1873 | Jan 6 WAR

|  | Star | RA |  | δ | tang. δ | T–RA | P'–P | T–RA (P'–P) |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | h m |  |  | s |  |  |  |  |  | ~~26635~~ |  |
|  | 2.5 | +1.3 | 2 31 | 355 | + .39 | 0 = −26.79 | −.01 | −26.78 | + | 15 | +.01 | −26.63 | 2662 |
| 2.85 | 3.2 | +.6 | 3 15 | 52 | + 1.17 | 27.11 − ~~26.97~~ | −.01 | −27.10 | + | 46 | 00 | .64 | .64 |
|  | 3.9 | −.1 | 3 53 | 66 | + .22 | −26.76 | +.00 | −26.76 | + | 09 |  | .67 | .67 |
|  | 4.2 | −.4 | 4 15 | 71 | + .31 | −26.73 | +.03 | −26.76 | + | 12 |  | .64 | .64 |
|  | 4.4 | −.6 | 4 21 | 368 | + 1.36 | −28.17 | −.09 | −28.08 | + | 53 |  | 55 | .55 |
| 4.25 | 4.5 | −.7 | 4 28 | 73 | + .29 | −26.75 | +.00 | −26.75 | + | 11 | +.00 | −26.64 | .64 |
|  | 3.78 |  |  |  |  |  |  |  |  |  |  | 26.625 |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 26.628 |  |

| RA |  | δ | tang. δ | T–RA | P'–P | T–RA (P'–P) |
|---|---|---|---|---|---|---|
| h m |  |  |  | s |  |  |
| 2 18 |  | 36 | + 2.34 | 0 = −27.34 | +.24 | −27.58 |
| 2 25 |  | 38 | + 3.12 | −27.60 | +.23 | −27.83 |
| 3 21 |  | 203 | − 3.13 | −25.75 | −.15 | −25.60 |
| 16★ 14 |  | 472 | − 4.07 | −24.92 | −.04 | −24.88 |

− 26.627 I & II

2.85 +.39 −26.78

2.3 +2.34 −27.58 −.02 −27.60 I & II

2.4 +3.12 −27.83 −.02 −27.85

3.4 −3.13 −25.60

16.2 −4.07 −24.88

3.9 +.22 −26.76
4.3 +.31 −26.76
4.5 +.29 −26.75
3.8 +.30 −26.76

0 = +2.04 −.84 n = +.41
+2.82 −1.09 +.39

+.400

0 = −3.43 +1.16 n = +.34
−4.37 +1.88 +.43

+.385

3.3 +1.17 −27.10
4.3 +1.36 −~~28.08~~ 27.23
3.8 +1.26 −~~27.59~~
27.16

n = +.42

0 = +1.08 −.01 .44 +.01 .41
+1.86 −.16 .69 +.14 .37
+.390

0 = −4.39 +1.99 1.56 n = +.45 .35
−5.33 +2.71 2.28 +.51 .43
~~+.480~~
.390

1873 | Jan 7 | h = −.01^s 4 +.017 +.013 | n = +.39 c = .00 ~~h = +.017~~

|  | Star |  |  |  | tang. δ | T–RA | P'–P | T–RA (P'–P) |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  | s |  |  |  |  |  | 26.954 |  |
|  | 2.5 | +.8 | 2 31 | 355 | + .39 | −27.12 | −.01 | −27.11 | + | 15 | +.01 | −26.96 | 26.95 |
|  | 2.6 | .7 | 2 36 | 41 | + .05 | −26.91 | +.01 | −26.92 | + | 02 | .01 | 26.90 | 6.89 |
|  | 2.7 | .6 | 2 41 | 43 | + 1.45 | −27.51 | +.02 3 | −27.53 4 | + | 57 | .01 | 26.97 | 6.96 |
|  | 2.7 | .6 | 2 45 | 45 | + 1.29 | −27.40 | +.11 | −27.51 | + | 50 | .01 | 27.01 | 7.00 |
| 2.70 | 3.0 | +.3 | 2 59 | 50 | + .85 | −27.21 | +.05 | −27.26 | + | 33 | +.01 | 26.93 | 6.92 |
|  | 4.2 | −.9 | 4 12 | 70 | + .27 | −27.02 | +.02 | −27.04 | + | 10 | −.02 | 26.94 | 6.96 |
|  | 4.2 | .9 | 4 15 | 71 | + .31 | −26.91 | +.03 | −26.94 | + | 12 | .02 | 26.82 | 6.84 |
| 4.27 | 4.4 | −1.1 | 4 21 | 368 | + 1.36 | −28.64 | −.09 | −28.55 | + | 53 | −.02 | 28.02 | 7.04 |
|  | 3.29 |  |  |  |  |  |  | 7 |  |  | 6 | 26.93 |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 26.944 | 26.945 |

| RA |  | δ | tang. δ | T–RA | P'–P | T–RA (P'–P) |
|---|---|---|---|---|---|---|
|  |  |  |  | s |  |  |
| 2 51 |  | 198 | − 3.65 | 0 = −25.71 | +.10 | −25.81 |
| 16★ 14 |  | 472 | − 4.07 | −25.08 | −.04 | −25.04 |

2.6 +.05 −26.92
4.2 +.27 −27.04
4.3 +.31 −26.94
3.7 +.21 −26.97
+1

2.7 +1.45 −27.58 4
2.8 +1.29 −27.51
4.5 +1.36 −27.55
3.3 +1.37 −~~27.57~~
27.58

n = +~~.7~~.49

I | II

2.8 −3.65 −25.81 −.01 −25.82 | −.01 −25.82
16.2 −4.07 −25.04 +~~.17~~ −~~24.87~~ | +.78 −~~24.69~~
3.5 +.01 25.03 | +.01 25.03

0 = −3.86 +1.18 5 n = +.29 30
−4.28 +1.94 +.45
+.372 5

0 = −5.02 +2.04 +.41
−5.44 +2.83 +.52
+.465

Z =

−2 3
3

z = +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100

| R a | | sin z | cos z | tang. δ | Req − Rfe | | P′P | + (Req−Rfe)(P′P) Rfe | | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| h | m | | | | ′ | ″ | | ″ | | |
| 2 | 31 | +.36 | .93 + | .39 | −2 32.1 | ~~31.7~~ | +0.7 | −31.4 | +0.7 | −30.7 |
| 3 | 16 | −.12 | .99 + | 1.17 | 31.2 | ~~32.4~~ | +0.7 | 30.5 | −0.2 | 30.7 |
| 3 | 53 | +.50 | .86 + | .22 | | 33.0 | +0.3 | 32.7 | +1.0 | 31.7 |
| 4 | 15 | +.42 | .90 + | .31 | | 32.2 | +0.0 | 32.2 | +0.8 | 31.4 |
| 4 | 21 | −.19 | .98 + | 1.36 | | 32.~~1~~5 | +0.9 | 31.6 | −0.5 | 32.1 |
| 4 | 28 | +.44 | .89 + | .29 | | 30.5 | −0.3 | 30.8 | +0.9 | 29.9 |
| | | | | | | | | | | 31.08 |

31.08

| R a | | sin z | cos z | tang. δ | Req − Rfe | | P′P | + (Req−Rfe)(P′P) Rfe | | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| h | m | | | | ′ | ″ | | | | |
| 2 | 18 | −.41 | .91 + | 2.34 | −2 | 31.3 | +0.7 | −30.6 | −0.8 | −31.4 |
| 2 | 25 | −.50 | .86 + | 3.12 | | 32.9 | +0.3 | 32.6 | −1.0 | 33.6 |
| 3 | 21 | −.91 | .40 − | 3.13 | | 30.2 7 | +0.1 | ~~30.1~~ 303 | −17 | 32.0 ✓ |
| 16 ~~4~~ | 14 | −.88 | .46 − | 4.07 | | 29.2 | +0.6 | ~~29.1~~ 303 | −17 | 32.0 |

32.50
32.50

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | +.50 −32″.7 | +.36 −31″.4 | | −.12 −30″.5 | | −.41 −30″.6 | | −.91 −30″.1 |
| 6 648 | +.42 −32.2 | | | −.19 −31.6 | | −.50 −32.6 | | −.88 −29.1 |
| 2 500 | +.44 −30.8 | | | | | | | |
| 1148 | | | | | | | | |
| | +.45 −31.9 | +.36 −31.4 | | −.15 −31.0 | | −.45 −31.6 | | −.89 −29.6 |
| | + .8 | + .7 | | − .3 | | − .8 | | |
| | −31.1$_3$ | −30.7$_1$ | | −31.3$_2$ | | −32.4$_2$ | | |
| −2′ 31″.42 | (8) 3.3 | .7 | | 2.6 | | 4.8 | | |
| 31.44 | *− .3 | *− .7 | | *− .1 | | *+1.0 | | |

| R a | | sin z | cos z | tang. δ | Req − Rfe | | P′P | Rfe | | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 31 | +.36 | .93 + | .39 | −2′ | 32.~~0~~4″ | +0.7 | −31.7 | +0.7 | −31.0 |
| 2 | 36 | +.64 | .76 + | .05 | | 32.7 | +0.3 | 32.4 | +1.2 | 31.2 |
| 2 | 41 | −.22 | .97 + | 1.45 | | 29.9 | −0.6 | 30.5 | −0.5 | 31.0 |
| 2 | 45 | −.17 | .98 + | 1.29 | | 32.5 | +0.7 | 31.8 | −0.4 | 32.2 |
| 2 | 59 | +.03 | 1.00 + | .85 | | 31.6 | −0.1 | 31.7 | +0.1 | 31.6 |
| 4 | 12 | +.46 | .88 + | .27 | | 31.3 | −0.5 | 31.8 | +0.9 | 30.9 |
| 4 | 15 | +.46 | .88 + | .31 | | 31.0 | +0.0 | 31.0 | +0.9 | 30.1 |
| 4 | 21 | −.20 | .98 + | 1.36 | | 32.~~7~~! | +0.9 | 31.2 | −0.5 | 31.7 |
| | | | | | | | | | | 31.21 |

31.21

| R a | | sin z | cos z | tang. δ | Req − Rfe | | P′P | Rfe | | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 51 | −.89 | .15 − | 3.65 | −2′ | 27.3″ | +1.0 | ~~26.3~~ | −17 | 30.0 ✓ |
| 16 ~~4~~ | 14 | −.88 | .46 − | 4.07 | | 27.~~4~~9 | +0.6 | ~~27.3~~ 283 285 | −17 | 30.0 ✓ |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | +.64 −32.4 | +.46 −31.8 | +.36 −31.7 | +.03 −31.7 | −.17 −31.8 | −.22 −30.5 | | | −.89 −26.3 |
| | | +.46 −31.0 | | | −.20 −31.2 | | | | −.88 −27.3 |
| | +.64 −32.4 | +.46 −31.4 | +.36 −31.7 | +.03 −31.7 | −.18 −31.5 | −.22 −30.5 | | | −.89 −26.8 |
| | + 1.1 | + .9 | + .7 | + .0 | − .3 | − .4 | | | |
| −2′ 31″.19 | −31.3$_1$ | −30.5$_2$ | −31.0$_1$ | −31.7$_1$ | −31.8$_2$ | −30.9$_1$ | | | |
| 31.21 (8) | 1.3 | 1.0 | 1.0 | 1.7 | 3.6 | 0.9 | | | |
| | *+ .1 | *− .7 | *− .2 | *+ .5 | *+ .6 | *− .3 | | | |

1873 Jan 9 Ware h = −.011 ~~−.017~~ h′ −.014

n = ~~.35~~ +.35 e = .00 ~~h = −.013~~

| | Star | Ra | | | δ | tang. δ | | | τ+Ra | P′−P | τ+Ra+(P′−P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | h | m | | | | | s | | s | | | 27.416 | |
| | 0.9 | +2.4 | 0 | 56 | 15 | + | .13 | 0 = | −27.46 | +.01 | −27.47 | + | .05 | −.03 | −27.42 | 27.45 |
| | 1.1 | 2.2 | 1 | 4 | 17 | + | .56 | | −27.65 | −.05 | −27.60 | + | .20 | .03 | .40 | .43 |
| | 2.5 | .8 | 2 | 31 | 355 | + | .39 | | −27.57 | −.01 | −27.56 | + | .14 | .01 | .42 | .43 |
| | 2.6 | .7 | 2 | 35 | 40 | + | 1.14 | | −27.68 | +.08 | −27.76 | + | .40 | .01 | .36 | .37 |
| | 2.7 | .6 | 2 | 41 | 43 | + | 1.45 | | −27.94 | +.02³ | −27.96⁷ | + | .52 | .01 | .45 | .46 |
| | 2.7 | .6 | 2 | 45 | 45 | + | 1.29 | | −27.76 | +.11 | −27.87 | + | .45 | .01 | .42 | .43 |
| 2,21 | 3.0 | +.3 | 2 | 59 | 50 | + | .85 | | −27.67 | +.05 | −27.72 | + | .30 | −.00 | ~~.42~~ | .43 |
| | 4.4 | −1.1 | 4 | 22 | 368 | + | 1.36 | | −28.02 | −.09 | −27.93 | + | .48 | +.02 | .45 | .43 |
| | 4.5 | 1.2 | 4 | 28 | 73 | + | .29 | | −27.54 | −.00 | −27.54 | + | .10 | .02 | .44 | .42 |
| | 4.6 | 1.3 | 4 | 34 | 370 | + | .42 | | −27.57 | +.03 | −27.60 | + | .15 | .02 | .45 | .43 |
| | 4.6 | 1.3 | 4 | 39 | 75 | − | .06 | | −27.54 | −.07 | −27.47 | − | .02 | .02 | .49 | .47 |
| | 4.7 | 1.4 | 4 | 44 | 77 | + | .09 | | −27.48 | −.01 | −27.47 | + | .03 | .02 | .44 | .42 |
| 4.60 | 4.8 | −1.5 | 4 | 48 | 79 | + | .65 | | −27.62 | +.03 | −27.65 | + | .23 | +.02 | −27.42 | .40 |
| | 3.32 | | 3 | 59 | 69 | + | 1.09 | | | +.06 | | | | | 27.45⁴⁸ | |

27.429 27.428

1873 Jan 9 Ware

| Ra | | | δ | tang. δ | | | | |
|---|---|---|---|---|---|---|---|---|
| h | m | | | | | s | | |
| 0 | 26 | 5 | + | 1.90 | 0 = | −27.68 | +.05 | −27.73 |
| 1 | 1 | 345 | + | 5.14 | | −29.03 | +.00 | −29.03 |
| 1 | 11 | 19 | + | 41.92 | | +18.89 | +.55 | +18.34 1900 |
| 1 | 16 | 346 | + | 2.41 | | −28.13 | +.13 | −28.26 |
| 2 | 25 | 38 | + | 3.12 | | −28.34 | +.23 | −28.57 |
| 2 | 51 | 198 | − | 3.65 | | −25.94 | +.10 | −26.04 |
| 4 | 14 | 472 | − | 4.07 | | −26.17 | −.04 | −26.13 |
| 4 | 31 | 369 | + | 3.93 | | −28.75 | +.17 | −28.92 |
| 4 | 41 | 76 | + | 2.26 | | −28.04 | +.21 | −28.25⁶ |

I II

09 +.13 −27.47
45 +.29 −27.54
46 +.42 −27.60
4.6 −.06 −27.47
4.7 +.09 −27.47
3.89 +.17 −27.51 +1

0.4 +1.90 −27.73 −.04 −27.77 −.03 −27.76
1.0 +5.14 −29.03 −.03 −29.06 −.03 −29.06
1.2 +41.92 ~~+18.34~~ +19.00 −.03 +18.37 −.02 +18.32
1.3 +2.41 −28.26 −.03 −28.29 −.02 −28.28
2.4 +3.12 −28.57 −.02 −28.59 −.01 −28.58
4.5 +3.93 −28.92 +.01 −28.91 +.01 −28.91
4.7 +2.26 −28.25⁶ +.01 −28.24 +.02 −28.23

2.8 −3.65 −26.04 −.01 −26.05 −.01 −26.05
4.2 −4.07 −26.13 +.00 −26.13 +.01 −26.12

0 = −3.82 +1.46 n = +.38
−4.24 +1.38 +.33
+.355

26 +1.14 −27.76
27 +1.45 −27.98⁷
28 +1.29 −27.87
45 +1.36 −27.93
~~40~~ ~~+1.02~~
3.8² +1.31 −27.88 n = +.32 +.01

0 = +1.73 −.26 n = +.15
+4.97 −1.55 +.31
+41.75 +45.82 −14.16 +66 +.34 2
+2.24 −.78 +.35
+2.95 −1.08 +.37
+3.76 −1.40 +.37
+2.09 −.73 +.35

0 = +.59 +.12 n = −.20
+3.83 −1.18 +.31
+40.61 +46.20 −13.80 +66 +.34 2
+1.10 −.40 +.36
+1.81 −.70 +.359
+2.62 −1.03 +.39
+.95 −.35 +.37

0 = −4.96 +1.83 +.37
−6.38 +1.76 +.33
+.350

1873 Jan 12 h = −.010 +.027 +.038

+.345 ~~+.348~~ +.345 n = +.38

+.360 +.357 e = .00 ~~h = +.038~~

| | | | | | | | | | | s | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2.6 | +.7 | 2 | 35 | 40 | + | 1.14 | 0 = | −28.27 | +.08 | −28.35 | + | .43 | +.03 | −27.92 | 27.882 27.89 |
| | 2.7 | .6 | 2 | 41 | 43 | + | 1.45 | | −28.37 | +.02³ | 28.39⁴⁰ | + | .55 | .02 | .85 | .83 |
| | 2.7 | .6 | 2 | 45 | 45 | + | 1.29 | | −28.16 | +.11 | 28.27 | + | .49 | .02 | .78 | .76 |
| | 2.9 | .4 | 2 | 55 | 47 | + | .06 | | −27.97 | +.02 | 27.99 | + | .02 | .02 | .97 | .96 |
| 2,78 | 3.0 | +.3 | 2 | 59 | 50 | + | .85 | | −28.16 | +.05 | 28.21 | + | .32 | +.01 | .89 | .88 |
| | 3.6 | −.3 | 3 | 39 | 361 | + | .44 | | −28.02 | +.04 | 28.06 | + | .17 | −.01 | .89 | .90 |
| | 3.7 | −.4 | 3 | 41 | 62 | + | .44 | | −27.85 | +.08 | 27.93 | + | .17 | .02 | .76 | .78 |
| | 3.8 | .5 | 3 | 50 | 65 | + | .71 | | −28.10 | +.05 | 28.15 | + | .27 | .02 | .88 | .90 |
| 82 | 3.9 | .6 | 3 | 53 | 66 | + | .22 | | −27.95 | +.00 | 27.95 | + | .08 | .02 | .87 | .89 |
| 3.80 | 4.0 | −.7 | 3 | 59 | 69 | + | 1.09 | | −28.15 | +.07 | 28.22 | + | .41 | −.03 | −27.81 | .84 |
| | 3.209 | | | | | | | | | | | | | | 27.842 | |
| | | | | | | | | | | | | | | | 27.862 | 27.863 |

| | | | | | | s | | |
|---|---|---|---|---|---|---|---|---|
| 2 | 49 | 358 | + | 5.10 | | −29.31 | +.23 | −29.54 |
| 2 | 51 | 198 | − | 3.65 | | −26.55 | +.10 | −26.65 |
| 3 | 48 | 217 | − | 4.78 | | −25.60 | +.27 | −25.87 |
| 3 | 46 | 365 | + | 1.78 | | −28.49 | +.01 | −28.50 |
| 3 | 4 | 360 | + | 4.42 | | −29.86 | +.03 | −29.89 |

I II

29 +.08 −27.99
36 +.44 −28.06
37 +.44 −27.93
39 +.22 −27.95
3.5 +.29 ~~−28.10~~ 27.98

2.8 +5.10 −29.54 −.01 −29.55 +.00 −29.55
3.8 +1.78 −28.50 +.00 −28.50 +.01 −28.49
3.1 +4.42 −29.89 −.00 −29.89 +.00 −29.89

2.8 −3.65 −26.65 −.01 −26.66 +.00 −26.65
3.8 −4.78 −25.87 +.00 −25.87 +.01 −25.86

0 = +4.81 −1.85 n = ~~+.37~~ .33
+1.49 −.825 .35
+4.13 −1.49 +.34 .46
+.380 3

0 = −3.94 +1.82 3 n = ~~+.46~~ .34
−5.07 +2.61 ~~+.51~~ .42
~~+.465~~ .380

26 +1.14 −28.35
27 +1.45 −28.39 40
28 +1.29 −28.27
40 +1.09 −28.22
3.0 +1.24 −28.31

0 = +3.86 −1.24 n = +.32
+.54 −.18 +.33
+3.18 −1.58 +.49 .50
+.388 3

0 = −4.89 +1.66 n = +.34
−6.02 +2.45 +.41
+.375

n = +.35

14
7

10
4

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h | m | sin z | cos z | tang δ | Rq − Rfc ′ | ″ | P′−P | Rq−Rfc+(P′−P) | R δ | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 56 | +.58 | .81 + | 0.13 | −2 | 33.6 . | +0.4 | −33.2 | +1.1 | −32.1 |
| 1 | 4 | +.22 | .97 + | .56 | | 32.5 . | +0.2 | 32.3 | +0.5 | 31.8 |
| 2 | 31 | +.36 | .93 + | .39 | 323 | ~~31.9~~ . | +0.7 | 31.6 | +0.7 | 30.9 |
| 2 | 35 | −.11 | .99 + | 1.14 | | 30.8 5 . | +0.4 | 30.1 | −0.2 | 30.3 |
| 2 | 41 | −.22 | .97 + | 1.45 | | 30.9 . | −0.6 | 31.5 | −0.5 | 32.0 |
| 2 | 45 | −.17 | 98 + | 1.29 | | 31.0 . | +0.7 | 30.3 | −0.4 | 30.7 |
| 2 | 59 | +.03 | 1.00 + | .85 | | 30.4 : | −0.1 | 30.5 | +0.1 | 30.4 |
| 4 | 22 | −.20 | .97 + | 1.36 | | 31.3 7 . | +.9 | 30.8 | −0.5 | 31.3 |
| 4 | 28 | +.44 | .89 + | .29 | | 32.3 . | −0.3 | 32.6 | +0.9 | 31.7 |
| 4 | 34 | +.34 | .94 + | .42 | | 32.0 5 | +0.5 | 32.0 | +0.7 | 31.3 |
| 4 | 39 | +.72 | .69 − | .06 | | 32.9 . | +0.3 | 32.6 | +1.4 | 31.2 |
| 4 | 44 | +.60 | 80 + | .09 | | 33.5 . | −0.6 | 34.1 | +1.2 | 32.9 |
| 4 | 48 | −.58 | .81 + | .65 | | 31.9 . | −0.1 | 32.0 | −1.1 | 33.1 |
| 3 | 59 | −09 | 100 + | 1.09 | | 31.3 . | +0.5 | 30.8 | −0.9 2 | 31.7 0 |
| | | | | | | | | | | 31.53 |
| | | | | | | | | | | 31.48 |

| RA h | m | sin z | cos z | tang δ | Rq ′ | Rfc ″ | P′−P | Rq−Rfc+(P′−P) | R δ | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 26 | −.34 | .94 + | 1.90 | −2 | 30.9 . | −0.4 | −31.3 | −0.7 | −32.0 |
| 1 | 1 | −.60 | .80 + | 5.14 | 313 | ~~30.5~~ . | +0.7 | 30.6 | −1.2 | 31.8 |
| 1 | 11 | −.72 | ~~.69~~ + | 41.92 | | 30.4 . | ~~+1.0~~ 3 | 30.7 3 | −1.4 | 31.7 |
| 1 | 16 | −.42 | .90 + | 2.41 | 324 | ~~31.9~~ | +0.5 | 31.9 | −0.8 | 32.7 |
| 2 | 25 | −.50 | .86 + | 3.12 | | 30.1 . | +0.3 | 29.8 | −1.0 | 30.8 |
| 2 | 51 | −.89 | .45 − | 3.65 | | 29.3 8 : | +1.0 | 303 ~~28.3~~ | −1.8 | 32.1 |
| 4 | 14 | −.88 | .46 − | 4.07 | | 27.3 . | +0.6 | 284 ~~27.2~~ | −1.8 | 30.2 |
| 4 | 31 | −.55 | .83 + | 3.93 | | 29.7 9 | +0.1 | 29.8 | −1.1 | 30.9 |
| 4 | 41 | −.40 | .91 + | 2.26 | | 29.9 . | −0.2 | 30.1 | −0.8 | 30.9 |
| | | | | | | | | | | 31.54 |
| | | | | | | | | | | 31.54 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 14′ 672<br>7 378<br>1050 | +.72 −32.6<br>+.60 −34.1 | +.58 −33.2<br>+.44 −32.6 | +.22 −32.3<br>+.36 −31.6<br>+.34 −32.0 | +.03 −30.5 | −.09 −30.8<br>−.11 −30.1<br>−.17 −30.3<br>−.20 −30.8 | −.22 −31.5<br>−.34 −31.3<br>−.40 −30.1 | −.58 ~~−30.8~~ 32.0<br>−.60 −30.6<br>−.42 −31.9<br>−.50 −29.8<br>−.55 −29.8 | −.72 −30.7 | −.89 −28.3<br>−.88 −27.2 |
| | +.66 −33.3<br>+1.2 | +.51 −32.9<br>+.9 | +.31 −32.0<br>+.6 | +.03 −30.5<br>+.0 | −.14 −30.5<br>−.3 | −.32 −31.0<br>−.6 | −.53 −30.8<br>−1.0 | −.72 −30.7<br>−1.3 | −.89 −27.7 |
| −2′ 31.52″ ~~31.40~~ (21)<br>31.50 | −32.1 2<br>4.2<br>+.6 | −32.0 2<br>4.0<br>+.5 | −31.4 3<br>4.2<br>−.1 | −30.5<br>0.5<br>−1.0 | −30.8 4<br>~~0.6~~ 3.2<br>−.7 | −31.6 3<br>4.8<br>+.1 | −31.8 5<br>9.0<br>+.3 | −32.0<br>2.0<br>+.5 | |

| RA h | m | sin z | cos z | tang δ | Rq ′ | Rfc ″ | P′−P | Rq−Rfc+(P′−P) | R δ | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 35 | −.11 | .99 + | 1.14 | −2 | 32.5 . | +0.4 | −32.1 | −0.2 | −32.3 |
| 2 | 41 | −.22 | .97 + | 1.45 | | 32.3 : | −0.6 | 32.9 | −0.5 | 33.4 |
| 2 | 45 | −.17 | .98 + | 1.29 | | 33.1 . | +0.7 | 32.4 | −0.4 | 32.8 |
| 2 | 55 | +.63 | .77 + | .06 | | 33.7 . | +0.7 | 33.0 | +1.2 | 31.8 |
| 2 | 59 | +.03 | 1.00 + | .85 | | 32.4 . | −0.1 | 32.5 | +0.1 | 32.4 |
| 3 | 39 | +.32 | .94 + | .44 | | 32.7 . | +0.2 | 32.5 | +0.7 | 31.8 |
| 3 | 41 | +.32 | .94 + | .44 | | 32.7 . | +0.1 | 32.6 | +0.7 | 31.9 |
| 3 | 50 | +.12 | .99 + | .71 | | 32.0 . | +0.3 | 31.7 | +0.3 | 31.4 |
| 3 | 53 | +.50 | .87 + | .22 | | 34.2 : | +0.3 | 33.9 | +1.0 | 32.9 |
| 3 | 59 | −.09 | 1.00 + | 1.09 | | 31.3 8 . | +0.5 | 31.3 | −0.2 | 31.5 |
| | | | | | | | | | | 32.22 32.22 |

| RA h | m | sin z | cos z | tang δ | Rq ′ | Rfc ″ | P′−P | Rq−Rfc+(P′−P) | R δ | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 49 | −.59 | .80 + | 5.10 | −2 | 323 ~~30.9~~ . | +1.1 | −31.2 | −1.2 | −32.4 |
| 2 | 51 | −.89 | .45 − | 3.05 | | 29.8 . | +1.0 | 308 ~~28.8~~ | −1.8 | 32.8 |
| 3 | 48 | −.58 | .81 − | 4.78 | | 29.0 . | +0.2 | 292 ~~28.8~~ | −1.2 | 30.0 |
| 3 | 46 | −.32 | .94 + | 1.78 | | 31.6 . | −0.1 | 31.7 | −0.7 | 32.4 |
| 3 | 4 | −57 | 82 + | 4.42 | | 30.8 . | +0.7 | 30.1 | −1.2 | 31.3 |
| | | | | | | | | | | 31.52 |
| | | | | | | | | | | 31.52 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 10 2220<br>4 608<br>2828 | +.63 −33.0 | +.50 −33.9 | +.32 −32.5<br>+.32 −32.6 | +.03 −32.5<br>+.12 −31.7 | −.11 −32.1<br>−.17 −32.4<br>−.09 −31.3 | −.22 −32.9<br>−.32 −31.7 | −.59 −31.2<br>−.58 −28.8 | | −.89 −28.8 |
| | +.63 −33.0<br>+1.1 | +.50 −33.9<br>+.9 | +.32 −32.5<br>+.6 | +.07 −32.1<br>+.1 | −.12 −31.9<br>+.2 | −.27 −32.3<br>−.5 | −.59 −30.0<br>−1.1 | | −.89 −28.8 |
| −2′ 31.97″ (13)<br>32.02 | −31.9<br>1.9<br>−.1 | −33.0<br>3.0<br>+1.0 | −31.9<br>3.8<br>−.1 | −32.0<br>4.0<br>0 | −31.7 3<br>5.1<br>−.3 | −32.8 2<br>5.6<br>+.8 | −31.1<br>2.2<br>−.9 | | |

1873 Jan 14 Wark h = −.01$^{s}$ −.010 ~~−.007~~ n = ~~n~~ = +.35 c = .00 ~~h = −.010~~

|  | Star |  | Ra h | m | δ |  | tang. δ |  | T–Ra | P'–P | T–Ra (P'–P) |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  | s |  | s |  |  |  | 28.5742 |
|  | 2.7 | +1.0 | 2 | 41 | 43 | + | 1.45 | O = | −29.06 | +.08 | −29.08 | + | .51 | −.01 | −28.58 28.59 |
|  | 2.7 | 1.0 | 2 | 45 | 45 | + | 1.29 |  | −28.91 | +.10 | 29.01 | + | .45 | .01 | .56 .57 |
|  | 2.9 | .8 | 2 | 53 | 47 | + | .06 |  | −28.55 | +.02 | 28.57 | + | .02 | .01 | .55 .56 |
|  | 3.0 | .7 | 2 | 59 | 50 | + | .85 |  | −28.72 | +.05 | 28.77 | + | .30 | −.01 | .47 .48 |
| 2.90 | 3.2 | .5 | 3 | 15 | 52 | + | 1.17 |  | −28.97 | −.01 | 28.96 | + | .41 | .00 | .55 .55 |
|  | 3.5 | +2 | 3 | 33 | 57 | + | 1.08 |  | −28.79 | +.08 | 28.87 | + | .38 | .00 | .49 .49 |
|  | 3.7 | +0 | 3 | 39 | 61 | + | .44 |  | −28.62 | +.04 | 28.66 | + | .15 | .00 | .51 .51 |
|  | 4.2 | −5 | 4 | 12 | 70 | + | .27 |  | −28.64 | +.02 | 28.66 | + | .09 | .00 | .57 .57 |
|  | 4.7 | 1.0 | 4 | 39 | 75 | − | .06 |  | −28.62 | −.07 | 28.55 | − | .02 | +.01 | .57 .56 |
|  | 4.7 | 1.0 | 4 | 44 | 77 | + | .09 |  | −28.58 | −.01 | 28.57 | + | .03 | .01 | .54 .53 |
| 4.36 | 4.8 | 1.1 | 4 | 48 | 79 | + | .65 |  | −28.81 | +.03 | 28.84 | + | .23 | .01 | .61 .60 |
|  | 4.9 | −1.2 | 4 | 53 | 82 | + | .87 |  | −28.86 | +.05 | 28.91 | + | .30 | +.01 | −28.61 .60 |
|  | 3.75 |  |  |  |  |  |  |  |  |  |  |  |  |  | 28.5457 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 28.551 |

1873 Jan. 14 Wark

| Star | Ra h | m | δ |  | tang. δ |  | T–Ra | P'–P | T–Ra –(P'–P) |
|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  | s |  | s |
|  | 2 | 49 | 358 | + | 5.10 | O = | −30.20 | +.23 | −30.43 |
|  | 2 | 51 | 198 | − | 3.65 |  | −27.05 | +.10 | 27.15 |
|  | 3 | 4 | 360 | + | 4.42 |  | −29.83 | +.03 | 29.86 |
|  | 3 | 36 | 364 | + | 2.89 |  | −29.34 | +.17 | 29.51 |
|  | 4 | 14 | 472 | − | 4.07 |  | −27.16 | −.04 | 27.12 |
|  | 4 | 41 | 76 | + | 2.26 |  | −29.14 | +.22 | −29.36 |
|  | 4 | 52 | 80 | + | 1.75 |  | −29.30 | −.02 | 29.28 |
| 28.551 |  |  |  |  |  |  |  |  |  |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 2.8 | +5.10 | −30.43 | −.01 | −30.44 | +.00 | −30.44 |
| 3.1 | +4.42 | −29.86 | −.01 | −29.87 | +.00 | −29.87 |
| 3.6 | +2.89 | −29.51 | −.00 | −29.51 | +.01 | −29.50 |
| 4.7 | +2.26 | −29.35 | +.01 | −29.34 | +.02 | −29.32 |
| 4.8 | +1.75 | −29.28 | +.01 | −29.27 | +.02 | −29.25 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 2.8 | −3.65 | −27.15 | −.01 | −27.16 | +.00 | −27.16 |
| 4.2 | −4.07 | −27.12 | +.00 | −27.12 | +.01 | −27.11 |

| | | |
|---|---|---|
| 2.9 | +.06 | −28.57 |
| 3.6 | +.44 | −28.66 |
| 4.2 | +.27 | −28.66 |
| 4.6 | −.06 | −28.55 |
| 4.7 | +.09 | −28.57 |
| 4.0 | +.16 | −28.60 |
|  |  | +1 |
| 2.7 | +1.45 | −29.08 9 |
| 2.7 | +1.29 | −29.01 |
| 3.3 | +1.17 | −28.96 |
| 3.5 | +1.08 | −28.87 |
| 3.0 | +1.25 | −28.98 |

n = +.35 +.01

O = +.494 −1.84 n = +.37 O = +.385 −1.46 n = +.38
+.426 −1.27 +.30 +.317 −.89 +.28
+.273 −.91 +.33 +.164 −.52 +.32
+.210 −.74 +.35 +.101 −.34 +.334
+.159 −.67] +.42] +.337 +.50 −.27] +.54] *
+.330

O = −.381 +1.44 n = +.38
−.423 +1.48 +.35
+.365

O = −.490 +1.82 n = +.37
−.532 +1.87 +.35
+.360

1873 Jan 16 Wark h = −.012$^{s}$ −.004 n = +.36 c = 0

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.0 | 2 | 59 | 50 | + | .85 | O = | −29.36 | +.05 | −29.41 | +.31 | −29.10 |

29.10
29.100

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3 | 4 | 360 | + | 4.42 | O = | −30.57 | +.03 | −30.60 |

1873 Jan 19 Wark h = −.010$^{s}$ −.029 n = +.36 c = +.05 h = −.029

|  | Star |  | Ra h | m | δ |  | tang. δ |  |  | T–Ra | P'–P | T–Ra (P'–P) |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  |  | s |  |  |  |  |  |  | 30.010 |  |
|  | 2.9 | +1.3 | 2 | 55 | 47 | + | .06 | 1.00 | O = | −30.11 | +.02 | −30.13 | + | .02 | −.04 | +.05 | −30.06 | 30.10 |
| 2.95 | 3.0 | +1.2 | 2 | 59 | 50 | + | .85 | +1.31 |  | −30.29 | +.05 | 30.34 | + | .31 | −.03 | +.07 | 29.96 | 29.99 |
|  | 4.6 | −.4 | 4 | 34 | 370 | + | .42 | +1.09 |  | −30.25 | +.03 | 30.28 | + | .15 | +.01 | +.05 | 30.08 | 30.07 |
|  | 4.6 | −.4 | 4 | 37 | 371 | + | 1.51 | +1.81 |  | −30.67 | −.01 | 30.66 | + | .54 | +.01 | +.09 | .03 | .02 |
|  | 4.7 | −5 | 4 | 39 | 75 | − | .06 | +1.00 |  | −30.15 | −.07 | 30.08 | − | .02 | +.01 | +.05 | .05 | .04 |
|  | 4.7 | −5 | 4 | 44 | 77 | + | .09 | +1.00 |  | −30.18 | −.01 | 30.17 | + | .03 | +.01 | +.05 | .09 | .08 |
| 4.68 | 4.8 | −6 | 4 | 48 | 79 | + | .65 | +1.19 |  | −30.31 | +.03 | 30.34 | + | .23 | +.02 | +.06 | −30.05 | .03 |
|  | 4.19 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 30.060 | 30.047 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 30.~~027~~ 046 |  |

| Ra h | m | δ |  | tang. δ | T–Ra | P'–P | T–Ra (P'–P) |
|---|---|---|---|---|---|---|---|
| 2 | 51 | 198 | − | 3.65 | −28.29 | +.10 | −28.39 |
| 3 | 4 | 360 | + | 4.42 | −31.78 | +.03 | 31.81 |
| 4 | 31 | 369 | + | 3.93 | −31.56 | +.17 | 31.73 |
| 4 | 41 | 76 | + | 2.26 | −30.76 | +.21 2 | 30.97 8 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 3.1 | +4.42 | −31.81 | −.01 | −31.82 | −.01 | −31.82 |
| 4.6 | +3.93 | −31.73 | +.00 | −31.73 | +.01 | −31.72 |
| 4.7 | +2.26 | −30.97 8 | +.01 | −30.96 | +.01 | −30.96 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 2.8 | −3.65 | −28.39 | −.01 | −28.40 | −.01 | −28.40 |

| | | |
|---|---|---|
| 2.9 | +.06 | −30.13 |
| 4.6 | −.06 | −30.08 |
| 4.7 | +.09 | −30.17 |
| 4.1 | +.03 | −30.13 |
| [3.0 | +.85 | −30.34] |
| 4.6 | +1.51 | −30.66 |
| ~~3.8~~ | ~~+1.18~~ | ~~−30.50~~ |
| 4.6 | 1.51 | 30.66 |

n = +.32

O = +4.39 −1.69 n = +.38
+3.90 −1.60 +.41
+2.23 −.83 +.37
4.387

O = +3.24 −1.32 +.41
+2.75 −1.22 +.44
+1.08 −.46 +.43
+.427

O = −3.68 +1.73 n = +.47

O = −4.83 +2.10 +.43

7
3

| z= | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-.100 |
|---|---|---|---|---|---|---|---|---|---|

| Ra | sin z | cos z | tang δ | $R_φ-R_{fl}$ | P′−P | $R_φ-R_{fl}+(P'-P)$ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| h m | | | | ′ ″ | | ″ | | |
| 2 41 | -.22 | .97 + | 1.45 | -2 31.1 | -0.6 | -31.7 | -0.5 | -32.2 |
| 2 45 | -.17 | .98 + | 1.29 | 31.8 | +0.7 | 31.1 | -0.4 | 31.5 |
| 2 55 | +.63 | .77 + | .06 | 34.4 | +0.7 | 33.7 | +1.3 | 32.4 |
| 2 59 | +.03 | 1.00 + | .85 | 31.3 | -0.1 | 31.4 | +0.1 | 31.3 |
| 3 15 | -.12 | .99 + | 1.17 | 32.4 | +0.7 | 31.7 | -0.3 | 32.0 |
| 3 33 | -.09 | 1.00 + | 1.08 | 30.9 | +0.5 | 30.4 | -0.2 | 30.6 |
| 3 39 | +.32 | .94 + | .44 | 29.8 | +0.2 | 29.6 | +0.7 | 28.9 |
| 4 12 | +.45 | .89 + | .27 | 32.0 | -0.5 | 32.5 | +0.9 | 31.6 |
| 4 39 | +.72 | .69 - | .06 | 32.4 | +0.3 | 32.1 | +1.4 | 30.7 |
| 4 44 | +.60 | .80 + | .09 | 33.4 | -0.6 | 34.0 | +1.2 | 32.8 |
| 4 48 | +.16 | .99 + | .65 | 32.5 | -0.1 | 32.6 | +0.4 | 32.2 |
| 4 53 | +.03 | 1.00 + | .87 | 30.3 | +0.1 | 30.2 | +0.1 | 30.1 |
| | | | | | | | | 31.23 31.36 |

| Ra | sin z | cos z | tang δ | $R_φ-R_{fl}$ | P′−P | $R_φ-R_{fl}+(P'-P)$ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| h m | | | | ′ ″ | | ″ | | |
| 2 49 | -.59 | .80 + | 5.10 | 31.7 -2 ~~30.3~~ | +1.1 | -30.6 | -1.2 | -31.8 |
| 2 51 | -.89 | .45 - | 3.65 | 31.0 | +1.0 | 32.0 ~~30.0~~ | -1.8 | 33.8 ✓ |
| 3 4 | -.57 | .82 + | 4.42 | 30.0 ~~28.9~~ | +0.7 | 29.3 | -1.2 | 30.5 |
| 3 36 | -.48 | .87 + | 2.89 | 31.6 | +0.2 | 31.4 | -1.0 | 32.4 |
| 4 14 | -.88 | .46 - | 4.07 | 29.9 | +0.6 | 30.5 ~~29.3~~ | -1.8 | 32.3 ✓ |
| 4 41 | -.40 | .91 + | 2.26 | 30.0 | -0.2 | 30.2 | -0.9 | 31.1 |
| 4 52 | -.31 | .95 + | 1.75 | 30.0 | +0.2 | 29.8 | -0.7 | 30.5 |
| | | | | | | | | 31.26<br>31.26 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-.100 |
|---|---|---|---|---|---|---|---|---|---|
| | +.63 -33.7<br>+.72 -32.1<br>+.60 -34.0 | +.45 -32.5 | +.32 -29.6 | +.03 -31.4<br>+.16 -32.6<br>+.03 -30.2 | -.17 -31.1<br>-.12 -31.7<br>-.09 -30.4 | -.22 -31.7<br>-.40 -30.2<br>-.31 -29.8 | -.59 -30.6<br>-.57 -29.3<br>-.48 -31.4 | | -.89 -30.0<br>-.88 -29.3 |
| | +.65 -33.3 | +.45 -32.5 | +.32 -29.6 | +.07 -31.4 | -.13 -31.1 | -.31 -30.6 | -.55 -30.4 | | -.89 -29.6 |
| 33<br>~~27~~<br>-2′ 31.~~33~~<br>31.24 | (17) +1.2<br>-32.1₃<br>96.3<br>+.8 | +.8<br>-31.7₁<br>31.7<br>+.4 | +.6<br>-29.0₁<br>29.0<br>2.3 | +.1<br>-31.3₃<br>93.9<br>0 | -.2<br>31.3₃<br>93.9<br>0 | -.6<br>-31.2₃<br>93.6<br>-.1 | -1.0<br>-31.4₃<br>94.2<br>+.1 | | |

| Ra | sin z | cos z | tang δ | $R_φ-R_{fl}$ | P′−P | $R_φ-R_{fl}+(P'-P)$ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| 2 59 | +.03 | 1.00 + | .85 | -2 31.5 | -0.1 | -31.6 | +0.0 | -31.6 |
| 3 4 | -.57 | .82 + | 4.42 | 31.7 -2 ~~30.6~~ | +0.7 | -31.0 | -1.2 | -32.2 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-.100 |
|---|---|---|---|---|---|---|---|---|---|
| ″80<br>-2′ 31.~~80~~<br>31.90 | | | | +.03 -31.6<br>+.0<br>-31.6₁<br>(2) 1.6<br>-.2 | 31.60 | | -.57 -31.0<br>-1.0<br>-32.0₁<br>2.0<br>+.2 | | 32.20 |

| Ra | sin z | cos z | tang δ | $R_φ-R_{fl}$ | P′−P | $R_φ-R_{fl}+(P'-P)$ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| | | | | ′ ″ | | | | |
| 2 55 | +.63 | .77 + | .06 | -2 33.5 | +0.7 | -32.8 | +1.3 | -31.5 |
| 2 59 | +.03 | 1.00 + | .85 | 30.9 | -0.1 | 31.0 | +0.1 | 30.9 |
| 4 34 | +.34 | .94 + | .42 | 30.4 ~~29.9~~ | +0.5 | 29.9 | +0.7 | 29.2 |
| 4 37 | -.25 | .97 + | 1.51 | 30.7 | +0.5 | 30.2 | -0.5 | 30.7 |
| 4 39 | +.72 | .69 - | .06 | 32.1 | +0.3 | 31.8 | +1.5 | 30.3 |
| 4 44 | +.60 | .80 + | .09 | 32.8 | -0.6 | 33.4 | +1.2 | 32.2 |
| 4 48 | +.16 | .99 + | .65 | 32.2 | -0.1 | 32.3 | +0.4 | -31.9 |
| | | | | | | | | 30.96 30.96 |

| Ra | sin z | cos z | tang δ | $R_φ-R_{fl}$ | P′−P | $R_φ-R_{fl}+(P'-P)$ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| | | | | ′ ″ | | | | |
| 2 51 | -.89 | .45 - | 3.65 | -2 26.9 | +1.0 | 27.9 ~~25.9~~ | -1.8 | 29.7 ✓ |
| 3 4 | -.57 | .82 + | 4.42 | 29.1 ~~26.0~~ | +0.7 | 28.4 | -1.2 | -29.6 |
| 4 31 | -.55 | .83 + | 3.93 | 29.0 ~~28.8~~ | +0.1 | 28.9 | -1.1 | 30.0 |
| 4 41 | -.40 | .91 + | 2.26 | 29.4 | -0.2 | 29.6 | -0.9 | -30.5 |
| | | | | | | | | 30.03<br>30.03 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-.100 |
|---|---|---|---|---|---|---|---|---|---|
| 7 672<br>3 09<br>681 | +.63 -32.8<br>+.72 -31.8<br>+.60 -33.4 | | +.34 -29.9 | +.03 -31.0<br>+.16 -32.3 | | -.25 -30.2<br>-.40 -29.6 | -.57 -28.4<br>-.55 -28.9 | | -.89 -25.9 |
| -2′ 30″67<br>30.68 | (10) +.65 -32.7<br>+1.2<br>-31.5₃<br>94.3<br>+.8 | | +.34 -29.9<br>+.7<br>29.2<br>29.2<br>-1.5 | +.09 -31.6<br>+.2<br>-31.4₂<br>62.8<br>+.7 | | -.32 -29.9<br>-.6<br>-30.5₂<br>61.0<br>-.2 | -.56 -28.6<br>-1.0<br>-29.6₂<br>59.2<br>-1.1 | | -.89 -25.9 |

1873 Jan. 22 wave h = ~~−.003~~ −.004 n = ~~+.29~~ +.28 c = .00 k = ~~+.076~~

| | Star | Ra h | m | | δ | tang. δ | sec δ | T−Ra | P'−P | T−Ra −(P'−P) | | | | 30.480 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | s | | s | | | | |
| | 4.2 | +5 4 | 15 | 71 | + | .31 | +1.04 | −30.56 | +.03 | −30.59 | + | .09 | oo | −30.50 |
| | 4.4 | 3 4 | 21 | 368 | + | 1.36 | +1.69 | −30.99 | −.09 | 30.90 | + | .38 | | .52 |
| | 4.5 | 2 4 | 28 | 73 | + | .29 | +1.04 | −30.54 | +.00 | 30.54 | + | .08 | | .46 |
| | 4.6 | 1 4 | 34 | 370 | + | .42 | +1.09 | −30.56 | +.03 | 30.59 | + | .12 | | .47 |
| | 4.6 | 1 4 | 37 | 371 | + | 1.51 | +1.81 | −30.91 | −.01 | 30.90 | + | .42 | | .48 |
| 4.48 | 4.6 | 1 4 | 39 | 75 | − | .06 | +1.00 | −30.50 | −.07 | 30.43 | − | .02 | | .45 |
| | 4.7 | +0 4 | 44 | 77 | + | .09 | +1.00 | −30.47 | −.01 | 30.46 | + | .03 | | .43 |
| | 4.8 | −1 4 | 48 | 79 | + | .65 | +1.19 | −30.64 | +.03 | 30.67 | + | .18 | | .49 |
| | 4.9 | 2 4 | 53 | 82 | + | .87 | +1.33 | −30.61 | +.05 | 30.66 | + | .24 | | .42 |
| | 4.9 | 2 4 | 55 | 372 | + | .39 | +1.08 | −30.56 | −.01 | 30.55 | + | .11 | | .44 |
| | 5.0 | 3 4 | 57 | 83 | + | .87 | +1.33 | −30.65 | +.04 | 30.69 | + | .24 | | .45 |
| | 5.1 | 4 5 | 4 | 374 | + | .79 | +1.27 | −30.69 | +.01 | 30.70 | + | .22 | | .48 |
| | 5.1 | 4 5 | 7 | 86 | + | 1.03 | +1.43 | −30.78 | −.02 | 30.76 | + | .29 | | .47 |
| 4.95 | 5.1 | −4 5 | 18 | 87 | − | .15 | +1.01 | −30.35 | −.02 | 30.33 | − | .04 | oo | −30.37 |
| | 4.75 | | | | | | | | | | | | | 30.444 |
| | | | | | | | | | | | | | | 30.459 |

1873 Jan 22 wave

| Star | Ra h | m | δ | tang. δ | T−Ra | P'−P | T−Ra −(P'−P) |
|---|---|---|---|---|---|---|---|
| | | | | | s | | s |
| | 4 | 31 | 369 | +3.93 | o = −31.44 | +.17 | −31.61 |
| | 4 | 41 | 76 | +2.26 | −30.90 | +.2× | 31.1× |
| | 4 | 52 | 80 | +1.75 | −30.98 | −.02 | 30.96 38 |
| | 4 | 59 | 235 | −7.33 ? | −28.47 | ~~+.04~~ −.09 | 28.51 |
| | 5 | 1 | 373 | +5.18 | −31.56 | +.22 | 31.78 |

4.3 +.31 −30.59
4.5 +.29 −30.54
4.6 −.06 −30.43
4.7 +.09 −30.46
5.1 −.15 −30.33
4.6 +.10 −30.47

4.5 +1.36 −30.90
4.6 +1.51 −30.90
4.9 +.87 −30.66
5.1 +1.03 −30.76
4.8 +1.19 −30.80
n = +.30

| | | | I | | | II |
|---|---|---|---|---|---|---|
| | | s | | s | | s |
| 4.5 | +3.93 | −31.61 | +.00 | −31.61 | +.00 | −31.61 |
| 4.7 | +2.26 | 31.1× | +.00 | −31.11 | +.00 | −31.11 |
| 4.9 | +1.75 | 30.96 | +.00 | −30.96 | +.00 | −30.96 |
| 5.0 | +5.18 | 31.78 | +.00 | −31.78 | +.00 | −31.78 |

0 = +3.83 −1.14 n = +.30
+2.16 −.64 +.30
+1.65 −.49 +.30
+5.08 −1.31 +.26
+.290

0 = +2.74 −.81 n = +.30
+1.07 −.31 +.29
+.56 −.16 +.29
+3.99 −.98 +.25
+.282

| | | | I | | II |
|---|---|---|---|---|---|
| | | s | | | s |
| 5.0 | −7.33 | ~~−28.51~~ −28.38 | +.00 | ~~−28.51~~ −28.38 | +.00 −28.51 |

0 = −7.43 +1.96 n = +.26 8
+.13

0 = −8.52 +2.29 n = +.27 9
+.13

1873 Jan 28 wave h = ~~−.004~~ −.004 n = ~~n=~~ +.32 c = .00 k =

| Star | Ra h | m | | δ | tang. δ | T−Ra | P'−P | T−Ra −(P'−P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | | | | | |
| 3.5 | +2 3 | 33 | 57 | + | 1.08 | o = −31.04 | +.08 | −31.12 | + | .35 | oo | −30.77 |
| 3.7 | +0 3 | 39 | 61 | + | .44 | −30.86 | +.04 | 30.90 | + | .14 | | .76 |
| 3.7 | +.0 3 | 41 | 62 | + | .44 | −30.79 | +.08 | 30.87 | + | .14 | | .73 |
| 3.8 | −1 3 | 50 | 65 | + | .71 | −30.89 | +.05 | 30.94 | + | .23 | oo | −30.71 |
| 3.68 | | | | | | | | | | | | 30.742 |
| | | | | | | | | | | | | 30.742 |

1873 Jan. 28

| Ra h | m | δ | tang. δ | T−Ra | P'−P | T−Ra −(P'−P) |
|---|---|---|---|---|---|---|
| | | | | s | | |
| 3 | 31 | 363 | +1.95 89 | o = −31.43 | +.11 | −31.54 |
| 3 | 36 | 364 | +2.89 ② | −31.50 | +.17 | 31.67 |
| 3 | 46 | 365 | +1.78 | −31.33 | +.01 | 31.34 |

3.6 +.44 −30.90
3.7 +.44 −30.87
3.6 +.44 −30.88

3.5 +1.08 −31.12

n = +.37

| | | | I | | | II |
|---|---|---|---|---|---|---|
| 3.5 | +1.95 | −31.54 | +.00 | −31.54 | +.00 | −31.54 |
| 3.6 | +2.89 | 31.67 | +.00 | −31.67 | +.00 | −31.67 |
| 3.8 | +1.78 | 31.34 | +.00 | −31.34 | +.00 | −31.34 |

0 = +1.51 −.66 n = +.43 4
+2.45 −.79 +.32
+1.34 −.46 +.34
+.367

0 = +.87 −.42 n = +.48
+1.81 −.55 +.30
+.70 −.22 +.31
+.363

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +0+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin z cos z | tang. δ | Rq−Rfc ′ ″ | P′−P | +(P′−P) Rq−Rfc ″ | Rfl | Req. |
|---|---|---|---|---|---|---|---|
| 4 15 | +.42 .90 + | .31 | — —— | +0.0 | | | |
| 4 21 | −.20 .98 + | 1.36 | 35.2 ~~34.8~~ | +0.9 | −34.3 | −0.5 | −34.8 ct |
| 4 28 | +.44 .89 + | .29 | 30.4 | −0.3 | 30.7 | +0.9 | 29.8 |
| 4 34 | +.34 .94 + | .42 | 31.9 | +0.5 | 31.4 | +0.7 | 30.7 |
| 4 37 | −.25 .97 + | 1.51 | 31.7 | +0.5 | 31.2 | −0.6 | 31.8 |
| 4 39 | +.72 .69 − | .06 | 33.2 | +0.3 | 32.9 | +1.5 | 31.4 |
| 4 44 | +.60 .80 + | .09 | 34.2 | −0.6 | 34.8 | +1.3 | 33.5 |
| 4 48 | +.16 .99 + | .65 | 31.8 | −0.1 | 31.9 | +0.4 | 31.5 |
| 4 53 | +.03 1.00 + | .87 | 31.8 | +0.1 | 31.7 | +0.1 | 31.6 |
| 4 55 | +.36 .93 + | .39 | 32.5 | +0.0 | 32.5 | +0.8 | 31.7 |
| 4 57 | +.02 1.00 + | .87 | 30.8 | −0.5 | 31.3 | +0.0 | 31.3 |
| 5 4 | +.07 1.00 + | .79 | 32.4 | +0.1 | 32.3 | +0.2 | 32.1 |
| 5 7 | −.06 1.00 + | 1.03 | 31.2 | −0.1 | 31.3 | −0.1 | 31.4 |
| 5 8 | +.77 .63 − | .15 | — — — | +0.5 | | | |
| | | | | | | | 31.53 31.53 |

| RA h m | sin z cos z | tang. δ | Rq−Rfc ′ ″ | P′−P | +(P′−P) Rq−Rfc ″ | Rfl | Req. |
|---|---|---|---|---|---|---|---|
| 4 31 | −.55 .83 + | 3.93 | −2 30.1 ~~29.9~~ | +0.1 | −30.0 | −1.2 | −31.2 |
| 4 41 | −.40 .91 + | 2.26 | 30.2 | −0.2 | 30.4 | −0.9 | 31.3 |
| 4 52 | −.31 .95 + | 1.75 | 31.4 | +0.2 | 31.2 | −0.7 | 31.9 |
| 4 59 | −.82 .56 − | 7.35 | 30.5 | +0.4 | 30.6 | −1.7 | 32.1 δ |
| 5 1 | −.60 .80 + | 5.18 | 31.1 ~~30.7~~ | +0.6 | 30.4 30.5 | −1.3 | 31.8 |
| | | | | | | | 31.73<br>31.55 |

11 583
4 220
8,03

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| +.72 −32.9 | +.42 | +.34 −31.4 | +.16 −31.9 | −.20 −34.3 | −.25 −31.2 | −.55 −30.0 | | −.82 −30.1 |
| +.60 −34.8 | +.44 −30.7 | +.36 −32.5 | +.03 −31.7 | −.06 −31.3 | −.40 −30.4 | −.60 −30.5 | | |
| | | | +.02 −31.3 | | −.31 −31.2 | | | |
| | | | +.07 −32.3 | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | +.66 −33.8 | +.44 −30.7 | +.36 −31.9 | +.07 −31.8 | −.13 −32.8 | −.32 −30.9 | −.57 −30.2 | | −.82 −30.1 |
| | +1.2 | +.8 | +.7 | +.1 | −.2 | −.6 | −1.1 | | |
| ′ ″ | −32.6 2 | −29.9 1 | −31.2 2 | −31.7 4 | −33.0 2 | −31.5 3 | −31.3 2 | | |
| −2 31.71 (16) | 65.2 | 29.9 | 62.4 | 126.8 | 66.0 | 94.5 | 62.6 | | |
| 31.54 | * +.9 | * −1.8 | * −.5 | 0 | * +1.3 | * −.2 | * −.4 | | |

| RA h m | sin z cos z | tang. δ | Rq−Rfc ′ ″ | P′−P | +(P′−P) Rq−Rfc | Rfl | Req. |
|---|---|---|---|---|---|---|---|
| 3 33 | −.09 1.00 + | 1.08 | −2 32.5 | +0.5 | −32.0 | −0.2 | −32.2 |
| 3 39 | +.32 .94 + | .44 | 31.7 | +0.2 | 31.5 | +0.7 | 30.8 |
| 3 41 | +.32 .94 + | .44 | 32.1 | +0.1 | 32.0 | +0.7 | 31.3 |
| 3 50 | +.12 .99 + | .71 | 31.4 | +0.3 | 31.1 | +0.3 | 30.8 |
| | | | | | | | 31.28 31.28 |

| RA h m | sin z cos z | tang. δ | Rq−Rfc ′ ″ | P′−P | +(P′−P) Rq−Rfc | Rfl | Req. |
|---|---|---|---|---|---|---|---|
| 3 31 | −.35 .93 + | 1.95 | −2 31.9 | +0.4 | −31.5 | −0.8 | −32.3 |
| 3 36 | −.48 .87 + | 2.89 | 30.7 | +0.2 | 30.5 | −1.0 | 31.5 |
| 3 46 | −.32 .94 + | 1.78 | 31.7 ~~32.4~~ | −0.1 | 31.8 | −0.7 | 32.5 |
| | | | | | | | 32.10<br>32.10 |

4 512
3 630
1142

| | | | | |
|---|---|---|---|---|
| +.32 −31.5 | +.12 −31.1 | −.09 −32.0 | −.35 −31.5 | −.48 −30.5 |
| +.32 −32.0 | | | −.32 −31.8 | |

| | | | | | |
|---|---|---|---|---|---|
| | +.32 −31.7 | +.12 −31.1 | −.09 −32.0 | −.33 −31.6 | −.48 −30.5 |
| | +.6 | +.2 | −.2 | −.6 | −.9 |
| ′ ″ | −31.1 2 | −30.9 1 | −32.2 1 | −32.2 2 | −31.4 1 |
| −2 31.59 (7) | 2.2 | 0.9 | 2.2 | 4.4 | 1.4 |
| 31.63 | * −.5 | * −.7 | * +.6 | * +.6 | * −.2 |

1873 Jan 29 war  h = −.010 ÷.027  n = +.42 e = .00 h = −.033

| | Star | | Ra h | Ra m | δ | tang. δ | acc δ T-Ra | P'-P | T-Ra-(P'-P) | | | 30.83 28 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | h | m | | | s | | s | | | | |
| | 1.9 | +2.2 | 1 | 56 | 32 | + .89 | 0= −31.09 | +11 | −31.20 + | .37 | −.07 | −30.83 | 30.90 |
| | 2.0 | 2.1 | 1 | 59 | 33 | + .42 | −30.95 | +.02 | 30.97 + | .18 | .07 | .79 | .86 |
| | 2.0 | 2.1 | 2 | 1 | 34 | + .68 | −31.10 | +.07 | 31.17 + | .29 | .07 | .88 | .96 |
| | 2.5 | 1.6 | 2 | 31 | 355 | + .39 | −31.00 | −.01 | 30.99 + | .16 | .05 | .83 | .88 |
| | 2.6 | 1.5 | 2 | 35 | 40 | + 1.14 | −31.22 | +.08 | 31.30 + | .48 | .05 | .82 | .87 |
| | 2.7 | 1.4 | 2 | 45 | 45 | + 1.29 | −31.23 | +.11 | 31.34 + | .54 | .05 | .80 | .85 |
| | 2.9 | 1.2 | 2 | 56 | 49 | + .79 | −31.17 | +.01 | 31.18 + | .33 | .04 | .85 | .89 |
| 2,45 | 3.0 | +1.1 | 2 | 59 | 50 | + .85 | −31.13 | +.05 | 31.18 + | .36 | −.04 | .82 | .86 |
| | 4.2 | −1 | 4 | 12 | 70 | + .27 | −30.98 | +.02 | 31.00 + | .11 | +.00 | .89 | .89 |
| | 4.2 | .1 | 4 | 15 | 71 | + .31 | −31.01 | +.03 | 31.04 + | .13 | .00 | .91 | .91 |
| | 4.4 | .3 | 4 | 21 | 368 | + 1.36 | −31.51 | −.09 | 31.42 + | .57 | .01 | .85 | .84 |
| | 4.6 | .5 | 4 | 34 | 370 | + .42 | −31.11 | +.03 | 31.14 + | .18 | .02 | .96 | .94 |
| | 5.0 | .9 | 5 | 2 | 85 | − .16 | −30.90 | −.04 | 30.86 − | .07 | .03 | .93 | .90 |
| | 5.1 | 1.0 | 5 | 4 | 374 | + .79 | −31.21 | +.01 | 31.22 + | .33 | .03 | .89 | .86 |
| | 5.1 | 1.0 | 5 | 7 | 86 | + 1.03 | −31.47 | −.02 | 31.45 + | .43 | .03 | 31.02 | .99 |
| | 5.1 | 1.0 | 5 | 8 | 87 | − .15 | −30.96 | −.02 | 30.94 − | .06 | .03 | 31.00 | .97 |
| | 5.2 | 1.1 | 5 | 11 | 88 | − .12 | −30.90 | −.06 | 30.84 − | .05 | .04 | 30.89 | .85 |
| | 5.4 | 1.3 | 5 | 25 | 93 | − .01 | −30.92 | −.07 | 30.85 − | .00 | .04 | .85 | .81 |
| | 5.5 | 1.4 | 5 | 27 | 376 | + .17 | −31.00 | +.03 | 31.03 + | .07 | .05 | .96 | .91 |
| | 5.6 | 1.5 | 5 | 36 | 377 | + 1.18 | −31.25 | +.07 | 31.32 + | .50 | .05 | .82 | .77 |
| | 5.6 | 1.5 | 5 | 39 | 378 | + .32 | −31.03 | +.04 | 31.07 + | .13 | .05 | .94 | .89 |
| 5.05 | 5.7 | −1.6 | 5 | 42 | 101 | + .81 | −31.17 | +.07 | 31.24 + | .345 | +.05 | −30.90 | .85 |
| | 4.10 | | | | | | | | | | | 30.915<br>30.883 | 30.884 |

1873 Jan 29 war

| Star | Ra h | Ra m | δ | tang. δ | T-Ra | P'-P | T-Ra-(P'-P) |
|---|---|---|---|---|---|---|---|
| | h | m | | | s | | s |
| | 1 | 45 | 26 | + 1.97 | 0= −31.64 | −.01 | −31.63 |
| | 1 | 52 | 31 | + 3.04 | −32.07 | +.15 | 32.22 |
| | 2 | 9 | 459 | −4.76 | −29.70 | −22 | 29.48 |
| | 2 | 18 | 36 | + 2.34 | −31.68 | +.24 | 31.92 |
| | 2 | 25 | 38 | + 3.12 | −31.83 | +.23 | 32.06 |
| | 2 | 49 | 358 | + 5.10 | −32.77 | +.23 | 33.00 |
| | 2 | 51 | 198 | −3.65 | −29.29 | +.10 | 29.39 |
| | 4 | 14 | 472 | −4.07 | −29.09 | −.04 | 29.05 |
| | 4 | 31 | 369 | + 3.93 | −32.46 | +.17 | 32.63 |
| | 4 | 59 | 235 | −7.33? | −27.88 | ~~+.04~~ −09 | ~~27.92~~ 79 |
| | 5 | 1 | 373 | + 5.18 | −33.17 | +.22 | 33.39 |

s
2.0 +42 −30.97  26 +1.14 −31.30
2.5 +.39 −30.99  27 +1.29 −31.34
4.2 +.27 −31.00  43 +1.36 −31.42
4.3 +.31 −31.04  5.1 +1.03 −31.45
4.5 +.42 −31.14  56 +1.18 −31.32
5.0 −.16 −30.86  4.1 +1.20 −31.37
5.1 −15 −30.94
5.2 −12 −30.84
5.5 −07 −30.85
5.5 +.17 −31.03
4.4 +.15 −~~31.00~~ 30.97

n = +.38

| | | I | | II |
|---|---|---|---|---|
| 1.8+1.97 | −31.63 −.03 | −31.66 | | −.02 −31.65 |
| 1.8+3.04 | 32.22 −.03 | −32.25 | | −.02 −32.24 |
| 2.3+2.34 | 31.92 −.02 | −31.94 | | −.02 −31.94 |
| 2.4+3.12 | 32.06 −.02 | −32.08 | | −.02 −32.08 |
| 2.8+5.10 | 33.00 −.02 | −33.02 | | −.01 −33.03 |
| 4.5+3.93 | 32.63 +.00 | −32.63 | | +.00 −32.63 |
| 5.0+5.18 | 33.39 +.01 | −33.38 | | +.01 −33.38 |

0= +1.82 −.69 n = +.38
+2.89 −1.28 +.44
+2.19 −.97 +.44
+2.97 −1.11 +.37
+4.95 −2.05 +.42
+3.78 −1.66 +.44
+5.03 −2.41 +.48
+.424

0= +.77 −.28 n = +.36
+1.84 −.87 +.48 7
+1.14 −.57 +.50
+1.92 −.71 +.37
+3.90 −1.66 +.43
+2.73 −1.26 +.46
+3.98 −2.01 +.51
+.443

| | | I | | II |
|---|---|---|---|---|
| 2.2 −4.76 | −29.48 −.02 | −29.50 | | −.02 −29.50 |
| 2.8 −3.65 | 29.39 −.02 | −29.41 | | −.01 −29.40 |
| 4.3 −4.07 | 29.05 +.00 | −29.05 | | +.00 −29.05 |
| 5.0 −7.33 | ~~27.92~~ −27.79 +.01 | −27.93 | | +.01 −27.91 |

0= −4.91 +1.47 n = +.30
−3.80 +1.56 +.41
−4.22 +1.92 +.45
−7.48 +3.04 +.13 +.4~~8~~ ×3
+.~~392~~ .398

0= −5.96 +1.87 +.31
−4.85 +1.97 +.41
−6.27 +2.32 +.44
−8.53 +3.46 +.13 +.4~~0~~ 2
+.39~~8~~ 5 6

1873 Feb 2  h = −.072  c =  n = +43 e = +.05 h' = −.030

| | Star | | Ra h | Ra m | δ | tang. δ | T-Ra | P'-P | T-Ra-(P'-P) | | | | 32.02.5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.9 | +2.2 | 1 | 56 | 32 | + .89 +1.33 | −32.37 | +.11 | −32.48 + | .38 | −.07 | +.07 | −32.03 | 32.10 |
| | 2.0 | 2.1 | 1 | 59 | 33 | + .42 +1.09 | −32.29 | +.02 | 32.31 + | .18 | .06 | +.05 | .08 | .14 |
| | 2.0 | 2.1 | 2 | 1 | 34 | + .68 +1.21 | −32.34 | +.07 | 32.41 + | .29 | .06 | +.06 | .06 | .12 |
| | 2.6 | 1.5 | 2 | 35 | 40 | + 1.14 +1.52 | −32.51 | +.08 | 32.59 + | .49 | .04 | +.08 | .02 | .06 |
| | 2.7 | 1.4 | 2 | 41 | 43 | + 1.45 +1.76 | −32.70 | +.02 3 | 32.72 3 + | .62 | .04 | +.09 | .02 | 2.06 |
| 2,32 | 2.7 | +1.4 | 2 | 45 | 45 | + 1.29 +1.63 | −32.46 | +.11 | 32.57 + | .55 | −.04 | +.08 | 31.94 | 1.98 |
| | 5.4 | −1.3 | 5 | 25 | 93 | − .01 +1.00 | −32.24 | −.07 | 32.17 − | .00 | +.04 | +.05 | 32.12 | 2.08 |
| | 5.5 | 1.4 | 5 | 27 | 376 | + .17 +1.01 | −32.17 | +.03 | 32.20 + | .07 | .04 | +.05 | .08 | .04 |
| | 5.6 | 1.5 | 5 | 36 | 377 | + 1.18 +1.55 | −32.67 | +.07 | 32.74 + | .51 | .04 | +.08 | .15 | .11 |
| | 5.7 | 1.6 | 5 | 40 | 378 | + .32 +1.05 | −32.35 | +.04 | 32.39 + | .14 | .05 | +.05 | .20 | .15 |
| | 5.7 | 1.6 | 5 | 42 | 101 | + .81 +1.29 | −32.46 | +.07 | 32.53 + | .35 | .05 | +.06 | .12 | .07 |
| | 5.8 | 1.7 | 5 | 48 | 102 | + .13 +1.01 | −32.25 | −.01 | 32.24 + | .06 | .05 | +.05 | .13 | .08 |
| 5.64 | 5.8 | −1.7 | 5 | 50 | 103 | + 1.00 +1.44 | −32.61 | −.04 | 32.57 + | .43 | +.05 | +.07 | −32.07 | 2.02 |
| | 4.18 | | | | | | | | | | | | 32.124<br>32.078 | 32.078 |

| Ra h | Ra m | δ | tang. δ | T-Ra | P'-P | T-Ra-(P'-P) |
|---|---|---|---|---|---|---|
| 2 | 49 | 358 | + 5.10 | 0= −34.22 | +.23 | −34.45 |
| 2 | 51 | 198 | −3.65 | −29.99 | +.10 | 30.09 |
| 5 | 44 | 484 | −3.12 | −30.65 | +.09 | 30.74 |

5.5 −.07 −32.17
5.5 +17 −32.20
5.7 +.32 −32.39
5.8 +.13 −32.24
5.6 +.15 −32.25
+2

I: 2.8 +5.10 −34.45 −.03 −34.48  II: +.01 −34.46

0 = +4.95 −2.23 n = +.45

0 = +3.89 −1.82 n = +.47

2.6 +1.14 −32.59
2.7 +1.45 −32.72 3
2.8 +1.29 −32.57
5.6 +1.18 −32.74
5.8 +1.00 −32.57
3.9 +1.21 −32.64

n = +.37 +.02

| | | I | II |
|---|---|---|---|
| 2.8 | −3.65 −30.09 −.03 | −30.12 | −.01 −30.10 |
| 5.7 | −3.12 −30.74 +.00 | −30.74 | +.02 −30.72 |

0 = −3.80 +2.13 n = +.56
−3.27 +1.51 +.46
+.510

0 = −4.86 +2.54 n = +.52
−4.33 +1.92 +.44
+.480

z = +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | +.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00

| RA h | m | sin z | cos z | tang. δ | Req−Rfl ′ ″ | P′−P | Req−Rfl+(P′−P) ″ | Rfl | Req |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 56 | +.01 | 1.00+ | .89 | −2 32.3 | +0.1 | −32.8 2 | +0.0 | −32.2 |
| 1 | 59 | +.33 | .94+ | .42 | 34.0 | −0.1 | 34.1 | +0.8 | 33.3 |
| 2 | 1 | +.14 | .99+ | .68 | 30.5 4 | +0.1 | 30.4 | +0.3 | 30.1 |
| 2 | 31 | +.36 | .93+ | .39 | 32.0 | +0.7 | 31.7 | +0.8 | 30.9 |
| 2 | 35 | −.11 | .99+ | 1.14 | 32.5 | +0.4 | 32.1 | −0.3 | 32.4 |
| 2 | 45 | −.17 | .98+ | 1.29 | 31.2 | +0.7 | 30.5 | −0.4 | 30.9 |
| 2 | 56 | +.07 | 1.00+ | .79 | 30.4 | −0.3 | 30.7 | +0.2 | 30.5 |
| 2 | 59 | +.02 | 1.00+ | .85 | 31.5 | −0.1 | 31.6 | +0.0 | 31.6 |
| 4 | 12 | +.45 | .89+ | .27 | 28.3 | −0.5 | 28.8 | +1.0 | 27.8 |
| 4 | 15 | +.42 | .90+ | .31 | 31.4 | +0.0 | 31.4 | +0.9 | 30.5 |
| 4 | 21 | −.20 | .98+ | 1.36 | 30.0 ~~29.6~~ | +0.9 | 29.1 | −0.5 | 29.6 |
| 4 | 34 | +.34 | .94+ | .42 | 31.0 5 | +0.5 | 31.0 | +0.8 | 30.2 |
| 5 | 2 | +.78 | .62− | .16 | 33.2 | +1.1 | 32.1 | +1.6 | 30.5 |
| 5 | 4 | +.07 | 1.00+ | .79 | 30.9 | −0.1 | 31.0 | +0.2 | 30.8 |
| 5 | 7 | −.06 | 1.00+ | 1.03 | 31.5 | +0.1 | 31.4 | −0.1 | 31.5 |
| 5 | 8 | +.77 | .63− | .15 | 32.9 | +0.5 | 32.4 | +1.6 | 30.8 |
| 5 | 11 | +.76 | .64− | .12 | 36.2 | −0.1 | 36.3 | +1.6 | 34.7 |
| 5 | 25 | +.68 | .73− | .01 | − | +0.6 | | | |
| 5 | 27 | +.54 | .84+ | .17 | 3.1 ~~32.8~~ | +0.4 | 32.7 | +1.1 | 31.6 |
| 5 | 36 | −.13 | .99+ | 1.18 | 32.0 6 | +0.9 | 31.7 | −0.3 | 32.0 |
| 5 | 39 | +.42 | .90+ | .32 | 31.7 | +0.3 | 31.4 | +0.9 | 30.5 |
| 5 | 42 | +.06 | 1.00+ | .81 | 30.2 ~~32.7~~ | −1.8 | 32.0 | +0.1 | 31.9 |
| | | | | | | | | | 31.15 31.15 |

| RA h | m | sin z | cos z | tang. δ | Req−Rfl ′ ″ | P′−P | Req−Rfl+(P′−P) ″ | Rfl | Req |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 45 | −.35 | .93+ | 1.97 | −2 30.2 | +0.3 | −29.9 | −0.8 | −30.7 |
| 1 | 52 | −.49 | .87+ | 3.04 | 30.2 | −0.2 | 30.4 | −1.1 | 31.5 |
| 2 | 9 | −.86 | .50− | 4.76 | 25.4 | +0.7 | 26.1 ~~24.7~~ | −1.8 | 27.9 ✓ |
| 2 | 18 | −.41 | .91+ | 2.34 | 30.2 | +0.7 | 29.5 | −0.9 | 30.4 |
| 2 | 25 | −.50 | .86+ | 3.12 | 29.4 | +0.3 | 29.1 | −1.1 | 30.2 |
| 2 | 49 | −.59 | .80+ | 5.10 | 31.5 ~~30.1~~ | +1.1 | 30.4 | −1.3 | 31.7 |
| 2 | 51 | −.89 | .45− | 3.65 | 25.9 | +1.0 | 26.9 ~~24.9~~ | −1.8 | 28.7 ✓ |
| 4 | 14 | −.88 | .46− | 4.07 | 27.9 | +0.6 | 28.5 ~~27.3~~ | −1.8 | 30.3 ✓ |
| 4 | 31 | −.55 | .83+ | 3.93 | 28.2 | +0.1 | 28.1 | −1.2 | 29.3 |
| 4 | 59 | −.82 | .56− | 7.35 | − 9 | ~~+0.4~~ −.1 | | | |
| 5 | 1 | −.50 6 | .80+ | 5.18 | 28.7 | +0.6 | 29.1 | −1.3 | 30.4 |
| | | | | | | | | | 30.60<br>30.60 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | +.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|
| 19 2185 | +.78 −32.1 | +.45 −28.8 | +.33 −34.1 | +.01 −32.3 | −.11 −32.1 | −.35 −29.9 | −.49 −30.4 | | −.86 −24.7 |
| 7 420 | +.77 −32.4 | +.42 −31.4 | +.36 −31.7 | +.14 −30.4 | −.17 −30.5 | | −.41 −29.5 | | −.89 −24.9 |
| 2605 | +.76 −36.3 | +.54 −32.7 | +.34 −31.0 | +.07 −30.7 | −.20 −29.1 | | −.50 −29.1 | | −.88 −27.3 |
| | +.68 | +.42 −31.4 | | +.02 −31.6 | −.06 −31.4 | | −.59 −30.4 | | −.82 |
| | | | | +.07 −31.0 | −.13 −31.7 | | −.55 −28.1 | | |
| | | | | +.06 −32.0 | | | −.60 −29.1 | | |
| | +.77 −33.6 | +.46 −31.1 | +.34 −32.3 | +.06 −31.3 | −.13 −31.0 | −.35 −29.9 | −.52 −29.4 | | −.88 −25.6 |
| | +1.4 | +.9 | +.6 | +.1 | −.2 | −.7 | −1.0 | | |
| ′ ″ | −32.2 | −30.2 | −31.7 | −31.2 | −31.2 | −30.6 | −30.4 | | |
| −2 31.02<br>31.00 | (28) 6.6<br>∗+1.2 | 0.8<br>∗−.8 | 5.1<br>∗+.7 | 7.2<br>∗+.2 | 6.0<br>∗+.2 | 0.6<br>∗−.4 | 2.4<br>∗−.6 | | |

| RA h | m | sin z | cos z | tang. δ | Req−Rfl ′ ″ | P′−P | Req−Rfl+(P′−P) | Rfl | Req |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 56 | +.01 | 1.00+ | .89 | −2 31.1 | +0.1 | −31.0 | +0.0 | −31.0 |
| 1 | 59 | +.33 | .94+ | .42 | 31.9 | −0.1 | 32.0 | +0.8 | 31.2 |
| 2 | 1 | +.14 | .99+ | .68 | 29.0 | +0.1 | 28.9 | +0.4 | 28.5 |
| 2 | 35 | −.11 | .99+ | 1.14 | 31.5 | +0.4 | 31.1 | −0.3 | 31.4 |
| 2 | 41 | −.22 | .97+ | 1.45 | 29.7 | −0.6 | 30.3 | −0.5 | 30.8 |
| 2 | 45 | −.17 | .98+ | 1.29 | 31.0 | +0.7 | 30.3 | −0.4 | 30.7 |
| 5 | 25 | +.68 | .73− | .01 | 33.1 | +0.6 | 32.5 | +1.5 | 31.0 |
| 5 | 27 | +.54 | .84+ | .17 | 31.8 | +0.4 | 31.4 | +1.2 | 30.2 |
| 5 | 36 | −.13 | .99+ | 1.18 | 32.0 ~~31.4~~ | +0.9 | 31.1 | −0.4 | 31.5 |
| 5 | 40 | +.42 | .90+ | .32 | 29.9 | +0.3 | 29.6 | +0.9 | 28.7 |
| 5 | 42 | +.06 | 1.00+ | .81 | 29.4 ~~31.9~~ | −1.8 | ~~27.6~~ 31.2 | +0.2 | 31.0 |
| 5 | 48 | +.57 | .82+ | .13 | 32.7 | +0.8 | 31.9 | +1.2 | 30.7 |
| 5 | 50 | −.05 | 1.00+ | 1.00 | 29.8 | +0.5 | 29.3 | −0.2 | 29.5 |
| | | | | | | | | | 30.48 30.48 |

| RA h | m | sin z | cos z | tang. δ | Req−Rfl ′ ″ | P′−P | Req−Rfl+(P′−P) | Rfl | Req |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 49 | −.59 | .80+ | 5.10 | −2 30.7 ~~29.3~~ | +1.1 | −29.6 | −1.3 | −30.9 |
| 2 | 51 | −.89 | .45− | 3.65 | 28.6 | +1.0 | 29.9 ~~27.9~~ | −1.9 | 31.8 ✓ |
| 5 | 44 | −.91 | .40− | 3.12 | 28.8 | +0.4 | 29.0 ~~28.4~~ | −1.9 | 30.9 ✓ |
| | | | | | | | | | 30.90<br>30.90 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | +.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|
| 13 624 | | | | | | | | | |
| 1 90 | | | | +.01 −31.0 | | | | | |
| 714 | +.68 −32.5 | +.54 −31.4 | +.33 −32.0 | +.14 −28.9 | −.11 −31.1 | −.22 −30.3 | −.59 −29.6 | | −.89 −27.9 |
| | | +.42 −29.6 | | +.06 −~~27.6~~ 31.2 | −.17 −30.3 | | | | −.91 −28.4 |
| | | +.57 −31.9 | | | −.13 −31.1 | | | | |
| | | | | | −.05 −29.3 | | | | |
| | +.68 −32.5 | +.51 −31.0 | +.33 −32.0 | +.07 −30.4 | −.11 −30.5 | −.22 −30.3 | −.59 −29.6 | | −.90 −28.0 |
| | +1.3 | +1.0 | +.6 | +.1 | −.2 | −.4 | −1.1 | | |
| ′ ″ | −31.2 | 30.0 | 31.4 | 30.3 | 30.7 | 30.7 | 30.7 | | |
| −2 30.55<br>30.51 | (14) 1.2<br>∗+.6 | 0.8<br>∗−.6 | 1.4<br>∗+.8 | 0.9<br>∗−.3 | 2.8<br>∗+.1 | .7<br>∗+.1 | .7<br>∗+.1 | | |

1873 Feb. 4 war h = ~~-.040~~ -.038 -.044 n = ~~n~~ = +.37 e = -.04 h' = -.032

| Star | | Ra h | m | | δ | tang. δ | sec δ | π Ra | P'-P | π Ra-(P'-P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.4 | +7 | 3 | 26 | 56 | – | .17 | +1.01 | – 32.50 | +.03 | – 32.53 – | .06 | –.02 | ∓.04 | – 32.62 | 32.65 |
| 3.6 | +.5 | 3 | 33 | 57 | + | 1.08 | +1.47 | – 32.92 | +.08 | 33.00 + | .40 | –.02 | ±.06 | .66 | .68 |
| | | 3 | 41 | 62 | + | .44 | +1.10 | – 32.52 | +.04 | 32.56 + | .16 | .04 | ∓.04 | .44 | |
| 3.60 3.8 | +3 | 3 | 50 | 65 | + | .71 | +1.23 | – 32.80 | +.05 | 32.85 + | .26 | –.01 | ∓.05 | .64 | .65 |
| 4.7 | –6 | 4 | 44 | 77 | + | .09 | +1.00 | – 32.66 | –.01 | 32.65 + | .03 | +.02 | ∓.04 | .66 | .64 |
| 4.75 4.8 | –7 | 4 | 48 | 79 | + | .65 | +1.19 | – 32.86 | +.03 | 32.89 + | .24 | +.02 | ∓.05 | – 32.70 | .68 |

4.86
32.643
32.680
32.658

C = –.05

| | | | Is | | | IIs |
|---|---|---|---|---|---|---|
| 3.5 | +1.95 | – 33.36 | –.01 | – 33.37 | +.00 | – 33.36 |
| 3.8 | +1.78 | 33.19 | +.00 | – 33.19 | +.01 | – 33.18 |
| 4.7 | +2.26 | ~~33.39~~ 33.41 | +.02 | – 33.37 | +.02 | – 33.37 |

3.4 –17 – 32.53
3.7 +.44 – 32.56
4.7 +.09 – 32.65
~~3.9 +.12 – 32.58~~
4.0 –.04 32.59
3.5 +1.08 – 33.00

n = +.44 +.01

0 = +1.83 –.79 n = +.43
+1.66 –.61 +.37
+2.14 –.79 +.37
+.390

0 = +.87 –.36 n = +.41
+.70 –.18 +.28 5
+1.18 –.37 +.31
+.360

1873 Feb 4 war

| Star | Ra h | m | δ | tang. δ | | π Ra | P'-P | π Ra-(P'-P) |
|---|---|---|---|---|---|---|---|---|
| | 3 | 31 | 363 | + 1.95 | 0 = | – 33.25 | +.11 | – 33.36 |
| | 3 | 46 | 365 | + 1.78 | | – 33.18 | +.01 | 33.19 |
| | 3 | 48 | 217 | – 4.78 | | – 30.84 | +.27 | 31.11 |
| | 4 | 41 | 76 | + 2.26 | | – 33.19 | +.22 | ~~33.39~~ 33.41 |

32660 Is s IIs
3.8 – 4.78 – 31.11 +.00 – 31.11 +.01 – 31.10

0 = –4.90 +1.47 n = +.30

0 = –5.86 +1.90 n = +.32

1873 Feb. 5 h = –.029 –.031 @ = n = +.32 e = .00 h = –.029

| | | | | | | | | s | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2.0 | +2.1 | 1 | 59 | 33 | + | .42 | 0 = – 33.35 | +.02 | – 33.37 + | .13 | –.06 | – 33.24 | 33.30 |
| | 2.0 | 2.1 | 2 | 1 | 34 | + | .68 | – 33.46 | +.07 | 33.53 + | .22 | .06 | .31 | .37 |
| | 2.5 | 1.6 | 2 | 31 | 355 | + | .39 | – 33.42 | –.01 | 33.41 + | .12 | .05 | .29 | .34 |
| | 2.6 | 1.5 | 2 | 35 | 40 | + | 1.14 | – 33.59 | +.08 | 33.67 + | .36 | .04 | .31 | .35 |
| 2.34 | 2.6 | +1.5 | 2 | 36 | 41 | + | .05 | – 33.24 | +.01 | 33.25 + | .02 | –.04 | .23 | .27 |
| | 4.2 | –.1 | 4 | 12 | 70 | + | .27 | – 34.39 | +.02 | 34.41 + | .08 | +.00 | .33 | .33 |
| | 4.2 | 1 | 4 | 15 | 71 | + | .31 | – 33.34 | +.03 | 33.37 + | .10 | .00 | .27 | .27 |
| | 4.4 | 3 | 4 | 21 | 368 | + | 1.36 | – 33.88 | –.09 | 33.79 + | .44 | .01 | .35 | .34 |
| | 4.6 | 5 | 4 | 34 | 370 | + | .42 | – 33.44 | +.02 | 33.46 + | .13 | .01 | .33 | .32 |
| | 6.5 | 2.4 | 6 | 29 | 389 | + | .82 | – 33.59 | +.09 | 33.68 + | .26 | .07 | .42 | .35 |
| | 6.5 | 2.4 | 6 | 33 | 108 | + | .18 | – 33.50 | –.03 | 33.47 + | .06 | .07 | .41 | .34 |
| 5.29 | 6.6 | –2.5 | 6 | 36 | 109 | + | .47 | – 33.57 | +.01 | 33.58 + | .15 | +.07 | – 33.43 | .36 |

4.026
33.2876
33.363
33.327

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 2.3 | +2.34 | – 34.10 | –.04 | – 34.14 | –.03 | – 34.13 |
| 2.4 | +3.12 | 34.30 | –.04 | – 34.34 | –.03 | – 34.33 |
| 4.5 | +3.93 | 34.78 | +.02 | – 34.76 | +.03 | – 34.75 |
| 6.4 | +5.50 | 35.25 | +.08 | – 35.17 | +.09 | – 35.16 |
| 6.7 | +20.73 | ~~39.49~~ 40.65 | +.08 | – 39.41 | +.10 | – 39.39 |

2.0 +.42 – 33.37
2.5 +.39 – 33.41
2.6 +.05 – 33.25
4.2 +.27 – 34.41
4.3 +.31 – 33.37
4.6 +.42 – 33.46
6.5 +.18 – 33.47
3.8 +.29 – 33.53
+1
2.6 +1.14 – 33.67
4.3 +1.36 – 33.79
3.4 +1.25 – 33.73

n = +.21 +.01

0 = +2.05 –.61 n = +.30
+2.83 –.81 +.29
+3.64 –1.23 +.34
+5.21 –1.64 +.31
+20.44 –5.88 –1.14 +.~~28~~ 34
+.~~306~~ +.316

0 = +1.09 –.40 +.36 7
+1.87 –.60 +.32
+2.68 –1.02 +.38
+4.26 –1.43 +.34
+19.48 –5.66 –1.14 +.~~29~~ 34
+.~~340~~ +.350

1873 Feb 4 war

| Star | Ra h | m | δ | tang. δ | | π Ra | P'-P | π Ra-(P'-P) |
|---|---|---|---|---|---|---|---|---|
| | 2 | 18 | 36 | + 2.34 | 0 = | – 33.86 | +.24 | – 34.10 |
| | 2 | 25 | 38 | + 3.12 | | – 34.07 | +.23 | 34.30 |
| | 4 | 14 | 472 | – 4.07 | | – 32.14 | –.04 | 32.10 |
| | 4 | 31 | 369 | + 3.93 | | – 34.61 | +.17 | 34.78 |
| | 6 | 24 | 387 | + 5.50 | | – 35.18 | +.07 | 35.25 |
| | 6 | 40 | 111 | + 20.73 | | – 39.76 | ~~–.27~~ +.89 | ~~39.49~~ – 40.65 |

33.328 I II
4.2 – 4.07 – 32.10 +.01 – 32.09 +.02 – 32.07

0 = –4.36 +1.44 n = +.33

0 = –5.32 +1.66 n = +.31

1873 Feb 1

3.0 2 59
3.2 3 15

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin z | cos z | tang. δ | Rq−Rpc ′ ″ | P′−P | Rq−Rpc+(P′−P) ″ | Bfl | Req. |
|---|---|---|---|---|---|---|---|---|
| 3 26 | +.79 | .61 − | .17 | −2 32.6 | −0.1 5 | −32.7 | +1.7 | −31.0 |
| 3 33 | −.09 | 1.00 + | 1.08 | — — | +0.8 2 | | | |
| 3 41 | +.32 | .94 + | .44 | 33.5 | +0.2 | 33.3 | +0.7 | 32.6 |
| 3 50 | +.12 | .99 + | .71 | 31.4 | +0.3 | 31.1 | +0.3 | 30.8 |
| 4 44 | +.60 | .80 + | .09 | 32.8 | −0.5 | 33.3 | +1.3 | 32.0 |
| 4 48 | +.16 | .99 + | .65 | 30.4 | −0.0 | 30.4 | +0.4 | 30.0 |
| | | | | | | | | 31.28 31.28 |

| RA h m | sin z | cos z | tang. δ | Rq−Rpc ′ ″ | P′−P | Rq−Rpc+(P′−P) ″ | Bfl | Req. |
|---|---|---|---|---|---|---|---|---|
| 3 31 | −.35 | .93 + | 1.95 | −2 31.1 30.8 | +0.4 | −30.7 | −0.8 | −31.5 |
| 3 46 | −.32 | .94 + | 1.78 | 30.8 ~~31.5~~ | −0.1 | 30.9 | −0.7 | 31.6 |
| 3 48 | −.86 | .50 − | 4.78 | 29.1 | +0.2 | 29.3 ~~28.9~~ | −1.8 | 31.1 ✓ |
| 4 41 | −.40 | .91 + | 2.26 | 30.8 | −0.2 | 31.0 | −0.9 | 31.9 |
| | | | | | | | | 31.70<br>31.67 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| | +.79 −32.″7 | | +.32 −33.″3 | +.12 −31.″1 | −.09 | −.35 −30.″7 | | | −.86 −28.″9 |
| | +.60 −33.3 | | | +.16 −30.4 | | −.32 −30.9 | | | |
| 5 1.40 | | | | | | −.40 −31.0 | | | |
| 3 2.01 | | | | | | | | | |
| 3.41 | +.70 −33.0 | | +.32 −33.3 | +.14 −30.7 | | −.36 −30.9 | | | −.86 −28.9 |
| | +1.3 | | +.6 | −.3 | | −.7 | | | |
| | −31.7₂ | | 32.7₁ | 31.0₂ | | 31.6₃ | | | |
| −2′ 31.″61 | (8) 3.4 | | 2.7 | 2.0 | | 4.8 | | | |
| 31.43 | ++.1 | | +1.1 | −.6 | | 0 | | | |

| RA h m | sin z | cos z | tang. δ | Rq−Rpc ′ ″ | P′−P | Rq−Rpc+(P′−P) | Bfl | Req. |
|---|---|---|---|---|---|---|---|---|
| 1 59 | +.33 | .94 + | .42 | −2 30.7 | −.01 | −30.8 | +0.8 | −30.0 |
| 2 1 | +.14 | .99 + | .68 | 30.8 0 | +0.1 7 | 29.9 | +0.4 | 29.5 |
| 2 31 | +.36 | .93 + | .39 | 32.1 ~~31.7~~ | +0.8 | 31.4 | +0.8 | 30.6 |
| 2 35 | −.11 | .99 + | 1.14 | — — | +0.4 | | | |
| 2 36 | +.64 | .76 + | .05 | — — | +0.2 3 | | | |
| 4 12 | +.45 | .89 + | .27 | 32.6 | −0.5 | 33.1 | +1.0 | 32.1 |
| 4 15 | +.42 | .90 + | .31 | 30.4 | +0.0 | 30.4 | +0.9 | 29.5 |
| 4 21 | −.20 | .98 + | 1.36 | 31.2 6 | +0.9 | 30.7 | −0.5 | 31.2 |
| 4 34 | +.34 | .94 + | .42 | 32.3 8 | +0.5 | 32.3 | +0.8 | 31.5 |
| 6 29 | +.05 | 1.00 + | .82 | 29.9 ~~32.0~~ | −1.2 | 31.1 | +0.2 | 30.9 |
| 6 33 | +.54 | .84 + | .18 | 30.7 | +0.2 | 30.5 | +1.2 | 29.3 |
| 6 36 | +.29 | .95 + | .47 | 29.7 | +0.1 | 29.6 | +0.7 | 28.9 |
| | | | | | | | | 30.35 30.35 |

| RA h m | sin z | cos z | tang. δ | Rq−Rpc ′ ″ | P′−P | Rq−Rpc+(P′−P) | Bfl | Req. |
|---|---|---|---|---|---|---|---|---|
| 2 18 | −.41 | .91 + | 2.34 | −2 27.6 | +0.7 | −26.9 | −0.9 | −27.8 |
| 2 25 | −.50 | .86 + | 3.12 | — — | +0.4 3 | | ~~−1.6~~ | |
| 4 14 | −.88 | .46 − | 4.07 | 26.6 | +0.6 | ~~26.0~~ | −1.8 | 29.0 ✓ |
| 4 31 | −.55 | .83 + | 3.93 | 30.0 ~~29.8~~ | +0.1 | 27.2 29.9 | −1.2 | 31.1 |
| 6 24 | −.61 | .79 + | 5.50 | 31.4 ~~30.0~~ | +0.9 | 30.5 | −1.4 | 31.9 |
| 6 40 | −.71 | ~~.70 +~~ | 20.73 | 29.2 | ~~+1.1~~ +.2 | 28.1 29.0 | −1.6 | 30.6 |
| | | | | | | | | 30.35<br>30.35 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 10 350 | +.64 | +.45 −33.1 | +.33 −30.8 | +.14 −29.9 | −.11 | | −.41 −26.9 | −.61 −30.5 | −.88 −26.0 |
| 4 140 | | +.42 −30.4 | +.36 −31.4 | +.05 −31.1 | −.20 −30.7 | | −.56 | −.71 −28.1 | |
| 490 | | +.54 −30.5 | +.34 −32.3 | | | | −.55 −29.9 | | |
| | | | +.29 −29.6 | | | | −. | | |
| | | +.47 −31.3 | +.33 −31.0 | +.09 −30.5 | −.20 −30.7 | | −.48 −28.4 | −.66 −29.3 | −.88 −26.0 |
| | | +.9 | +.7 | +.2 | −.4 | | −.9 | −1.2 | |
| | | 30.4₃ | 30.3₄ | 30.3₂ | 31.1₁ | | 29.3₂ | 30.5₂ | |
| −2′ 30.″26 | | (14) 91.2 | 121.2 | 60.6 | 31.1 | | 58.6 | 61.0 | |
| 30.35 | | ++.1 | 0 | 0 | ++.8 | | +−1.0 | ++.2 | |

z = +.60+.80 +.40+.60 +.20+.40 +.0+.20 +.0-.20 -.20-.40 -.40-.60 -.60-.80 -.80-1.00

$0 = -.126 + .66a + c$
$+.625 - .86 - c$
$+.287 - .79 - c$
$-.149 + .65 + c$
$-.129 + .69 + c$
$+.636 - .84 - c$
$-.166 + .68 + c$

.83 | 121 | 20
B
170
96.

$0 = -\cancel{.111} -$
$-.119 + .62a + c$
$+.424 - .95 - c$
$+.273 - .83 - c$
$-.030 + .59 + c$
$-.124 + .65 + c$
$+.414 - .91 - c$
$-.164 + .64 + c$

z = +.60+.80 +.40+.60 +.20+.40 +.0+.20 +.0-.20 -.20-.40 -.40-.60 -.60-.80 -.80-.100

1657
00829

13468

202
101

10

+000167

0.0005

35

1648

14.516
15.087
597
14.79

c +20.7
+38
+18

+217
+355

14.57
+54
15.024
.516

14.57
4
1453

14.570
37
684
533

38
41
335

20

14.570
454
15.016

20
256

+27

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−100 |
|---|---|---|---|---|---|---|---|---|---|

| RA | | sin δ | cos z | tang δ | $R_{eq}-R_{fl}$ | (P'−P) | $R_{eq}-R_{fl}$ + (P'−P) | $R_{fl}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| h | m | | | | | | ″ | | |
| 4 | 12 | +.46 | .88 | + .27 | −2 31.6 | −0.5 | −32.1 | +1.0 | −31.1 |
| 4 | 21 | −.20 | .98 | + 1.36 | 31.1 5 | +0.9 | 30.6 | −0.5 | 31.1 |
| 4 | 34 | +.34 | .94 | + .42 | 32.0 5 | +0.6 | 31.9 | +0.8 | 31.1 |
| 4 | 37 | −.25 | .97 | + 1.51 | 30.6 7 | +0.5 | 30.2 | −0.6 | 30.8 |
| 4 | 39 | +.72 | .69 | − .06 | 32.3 | +0.3 | 32.0 | +1.6 | 30.4 |
| 4 | 44 | +.60 | .80 | + .09 | 32.6 | −0.6 | 33.2 | +1.3 | 31.9 |
| 4 | 53 | +.03 | 1.00 | + .87 | 30.9 | +0.1 | 30.8 | +0.1 | 30.7 |
| 4 | 55 | +.36 | .93 | + .39 | 30.4 2 | +0.0 | 30.2 | +0.8 | 29.4 |
| 4 | 57 | +.02 | 1.00 | + .87 | 29.6 | −0.5 | 30.1 | +0.0 | 30.1 |
| 5 | 4 | +.07 | 1.00 | + .79 | 30.6 | −0.1 | 30.7 | +0.2 | 30.5 |
| 6 | 15 | +.34 | .94 | + .42 | 31.8 | +0.3 | 31.5 | +0.8 | 30.7 |
| 6 | 29 | +.05 | 1.00 | + .82 | 29.9 ~~32.0~~ | −1.2 | 31.1 | +0.2 | 30.9 |
| 6 | 33 | +.54 | .84 | + 1.18 | 31.6 | +0.2 | 31.4 | +1.2 | 30.2 |
| 6 | 36 | +.29 | .95 | + .47 | 31.4 | +0.1 | 31.3 | +0.7 | 30.6 |
| | | | | | | | | | 30.68 30.68 |

| RA | | sin δ | cos z | tang δ | $R_{eq}-R_{fl}$ | (P'−P) | $R_{eq}-R_{fl}$ + (P'−P) | $R_{fl}$ | $R_{eq}$ | |
|---|---|---|---|---|---|---|---|---|---|---|
| h | m | | | | | | ″ | | | |
| 4 | 14 | −.56 | .82 | − 4.07 | −2 27.8 6 | +0.6 | ~~27.2~~ 28.4 | −1.2 | ~~28.4~~ 29.6 | ✓ |
| 4 | 31 | −.55 | .83 | + 3.93 | 29.4 | +0.1 | 29.5 | −1.2 | 30.7 | |
| 4 | 41 | −.40 | .91 | + 2.26 | 29.7 | −0.3 | 30.0 | −0.9 | 30.9 | |
| 4 | 52 | −.31 | .95 | + 1.75 | 30.2 | +0.2 | 30.0 | −0.7 | 30.7 | |
| 4 | 59 | −.82 | .57 | − 1.34 | 29.0 ~~28.5~~ | ~~+0.4~~ 1 | 28.9 ~~28.6~~ 29.1 | −1.8 | 30.9 | ✓ |
| 5 | 1 | −.60 | .80 | + 5.18 | 30.9 29.9 | +0.6 | 30.3 | −1.3 | 31.6 | |
| 6 | 13 | −.78 | .62 | − 16.92 | 28.7 ~~29.0~~ | +0.8 3 | 29.0 ~~29.5~~ 28.4 | −1.7 | ~~30.1~~ 30.7 | |
| 6 | 22 | −.92 | .38 | − 2.95 | 30.3 0 | +0.4 | 30.4 ~~29.6~~ | −1.9 | 32.3 | ✓ |
| 6 | 23 | −.91 | .40 | − 3.20 | 29.8 | −0.1 | 29.7 ~~29.9~~ | −1.9 | 31.6 | ✓ |
| 6 | 24 | −.61 | .79 | + 5.50 | 31.6 30.2 | +0.9 | 30.7 | −1.3 | 32.0 | |
| 6 | 40 | −.71 | .70 | + 20.73 | 29.4 | ~~+1.1~~ +2 | ~~28.3~~ 29.2 | −1.6 | 30.8 | |
| | | | | | | | | | 30.65<br>31.06 | |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−100 |
|---|---|---|---|---|---|---|---|---|---|
| | +.72 −32.0 | +.46 −32.1 | +.34 −31.9 | +.03 −30.8 | −.20 −30.6 | −.25 −30.2 | −.56 −27.2 | −.78 −27.9 | −.82 −28.6 |
| 14 952 | +.60 −33.2 | +.54 −31.4 | +.36 −30.2 | +.02 −30.1 | −." | −.40 −30.0 | −.55 −29.5 | −.61 −30.7 | −.92 −29.6 |
| 7 742 | | | +.34 −31.5 | +.07 −30.7 | | −.31 −30.0 | −.60 −30.3 | −.71 −28.3 | −.91 −29.9 |
| 21 1694 | | | +.29 −31.3 | +.05 −31.1 | | | 67<br>558 | 750 | |
| | +.66 −32.6 | +.50 −31.7 | +.33 −31.2 | +.04 −30.7 | −.20 −30.6 | −.32 −30.1 | −.57 −29.0 9 | −.70 −29.0 | −.88 −29.4 |
| | +1.2 | +.9 | +.6 | +.1 | −.4 | −.6 | −1.1 | −1.3 | |
| ′ ″ | 31.4 | 30.8 | 30.6 | 30.6 | 31.0 | 30.7 | 30.1 3 | 30.3 | |
| −2 30.61 | (22) 2.8 | 1.6 | 2.4 | 2.4 | 1.0 | 2.1 | 0.3 | 0.9 | |
| 30.81 | +.8 | +.2 | 0 | 0 | +.4 | +.1 | −.5 | −.3 | |

| RA | | sin δ | cos z | tang δ | $R_{eq}-R_{fl}$ | (P'−P) | $R_{eq}-R_{fl}$ + (P'−P) | $R_{fl}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 44 | +.60 | .80 | + .09 | −2 31.5 | −0.6 | −32.1 | +1.3 | 30.8 |
| 4 | 48 | +.16 | .99 | + .65 | 30.8 | −0.1 | 30.9 | +0.4 | 30.5 |
| 4 | 53 | +.03 | 1.00 | + .87 | 30.7 | +0.1 | 30.6 | +0.1 | 30.5 |
| 5 | 25 | +.68 | .73 | − .01 | 31.9 | +0.6 | 31.3 | +1.5 | 29.8 |
| 5 | 27 | +.54 | .84 | + .17 | 32.0 ~~31.7~~ | +0.4 | 31.6 | +1.2 | 30.4 |
| 5 | 36 | −.13 | .99 | + 1.18 | 32.4 ~~31.8~~ | +0.9 | 31.5 | −0.4 | 31.9 |
| 5 | 39 | +.42 | .90 | + .32 | 30.0 ~~29.9~~ | +0.3 | 29.7 | +0.9 | 28.8 |
| 5 | 42 | +.06 | 1.00 | + .81 | 28.0 30.5 | −1.8 | 29.8 | +0.2 | 29.6 |
| 5 | 48 | +.57 | .82 | + .13 | 33.0 4 | +0.8 | 32.6 | +1.3 | 31.3 |
| 5 | 50 | −.05 | 1.00 | + 1.00 | 30.7 5 | +0.5 | 30.2 | −0.2 | 30.4 |
| 6 | 0 | +.46 | .88 | + .26 | 30.6 8 | +0.3 | 30.5 | +1.0 | 29.5 |
| 6 | 7 | +.34 | .94 | + .41 | 29.6 | +0.2 | 29.4 | +0.8 | 28.6 |
| 6 | 8 | −.29 | .95 | + 1.67 | 31.2 0 | +0.4 | 30.6 | −0.7 | 31.3 |
| 6 | 15 | +.34 | .94 | + .42 | 29.2 | +0.3 | 28.9 | +0.8 | 28.1 |
| 6 | 16 | +.61 | .80 | + .08 | 31.8 ~~32.7~~ | −0.2 | 32.0 | +1.4 | 30.6 |
| 6 | 29 | +.05 | 1.00 | + .82 | 28.9 ~~34.0~~ | −1.2 | 30.1 | +0.2 | 29.9 |
| 6 | 33 | +.54 | .84 | + .18 | 33.1 | +0.2 | 32.9 | +1.2 | 31.7 |
| 6 | 36 | +.29 | .95 | + .47 | 30.7 | +0.1 | 30.6 | +0.7 | 29.9 |
| 6 | 37 | −.02 | 1.00 | + .96 | 30.3 2 | +0.4 | 29.8 | +0.0 | 29.8 |
| 6 | 44 | +.14 | .99 | + .68 | 30.4 | +0.2 | 30.2 | +0.4 | 29.8 |
| | | | | | | | | | 30.16 30.15 |

| RA | | sin δ | cos z | tang δ | $R_{eq}-R_{fl}$ | (P'−P) | $R_{eq}-R_{fl}$ + (P'−P) | $R_{fl}$ | $R_{eq}$ | |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 41 | −.40 | .91 | + 2.26 | −2 29.9 | −0.3 | −30.2 | −0.9 | −31.1 | |
| 4 | 52 | −.31 | .95 | + 1.75 | 29.6 | +0.2 | 29.4 | −0.8 | 30.2 | |
| 5 | 44 | −.91 | .40 | − 3.12 | 29.9 ~~30.1~~ | +0.4 | 30.3 ~~29.5~~ | −1.8 | 32.1 | ✓ |
| 5 | 55 | −.87 | .48 | − 4.32 | — — | +0.2 | | −1.8 | | |
| 6 | 4 | −.45 | | + 2.65 | 29.1 | +0.3 | 28.8 | −1.0 | 29.8 | |
| 6 | 13 | −.78 | .62 | − 2.45 | 27.9 ~~30.2~~ | +0.3 | 28.2 | −1.7 | 29.8 9 | |
| 6 | 22 | −.92 | .38 | − 2.95 | 29.8 | +0.4 | 29.7 ~~28.9~~ | −1.8 | 31.5 | ✓ |
| 6 | 23 | −.91 | .40 | − 3.20 | 29.8 | −0.1 | 29.7 ~~29.9~~ | −1.8 | 31.5 | ✓ |
| | | | | | | | | | 30.20<br>30.37 | |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−100 |
|---|---|---|---|---|---|---|---|---|---|
| 20 320 | +.60 −32.1 | +.54 −31.6 | +.34 −29.4 | +.16 −30.9 | −.13 −31.5 | −.29 −30.6 | | −.78 −27.1 | −.91 −29.5 |
| 3 111 | +.68 −31.3 | +.42 −29.7 | +.34 −28.9 | +.03 −30.6 | −.05 −30.2 | −.40 −30.2 | | | |
| 431 | +.61 −32.0 | +.57 −32.6 | +.29 −30.6 | +.06 −29.8 | −.02 −29.8 | −.31 −29.4 | | | −.92 −28.9 |
| | | +.46 −30.5 | | +.05 −30.1 | | | | | −.91 −29.9 |
| | | +.54 −32.9 | | +.14 −30.2 | | | | | |
| | +.63 −31.5 8 | +.51 −31.5 | +.32 −29.6 | +.09 −30.3 | −.07 −30.5 | −.33 −30.1 | | −.78 −27.1 | −.91 −29.4 |
| | +1.2 | +1.0 | +.6 | +.2 | −.2 | −.7 | | −1.5 | |
| ′ ″ | 30.6 | 30.5 | 29.0 | 30.1 | 30.7 | 30.8 | | 28.6 | |
| −2 ~~30.31~~ | (23) 91.8 | 152.5 | 87.0 | 150.5 | 92.1 | 92.4 | | 28.6 | |
| 0.21 | +.4 | +.3 | −1.2 | −.1 | +.5 | +.6 | | −1.6 | |
| 30.19 | | | | | | | | | |

1873 Feb. 9 var h = -.01 ~~2~~ -.015 n = + .30

| Star | Ra | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) | | |
|---|---|---|---|---|---|---|---|---|
| | h m | | | s | | s | | |
| 4.5 | 4 28 | 73 | +2.9 | 0 = -35.22 | +.00 | -35.22 | + .09 | -35.13 |

4.5 +.29 -35.22

4.5 + 3.93 -36.30 -.00 -36.30

0 = +3.64 -1.08 n = +.297

1873 Feb 9 war

| Star | Ra | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) |
|---|---|---|---|---|---|---|
| | | | | s | | s |
| | 4 31 | 369 | +3.93 | 0 = -36.30 | +.~~19~~ 17 | -36.47 |

1873 Feb 10 h = -.02 -.013 n = +.42 e = .00 h = -.016

| | | | Ra | δ | tang. δ | π-Ra | P'-P | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | | | | 35.390 | |
| | 4.7 | +1.1 | 4 44 | 77 | + .09 | 0 = -35.45 | -.01 | -35.44 | + .04 | -.02 | 35.40 | 35.42 |
| 4.75 | 4.8 | +1.0 | 4 48 | 79 | + .65 | -35.62 | +.03 | 35.65 | + .27 | -.02 | .38 | .40 |
| | 6.1 | -.3 | 6 7 | 105 | + .41 | -35.55 | +.01 | 35.56 | + .17 | +.00 | .39 | .39 |
| | 6.2 | -.4 | 6 15 | 106 | + .42 | -35.61 | -.01 | 35.60 | + .18 | +.01 | .42 | .41 |
| | 6.3 | -.5 | 6 16 | 386 | + .08 | -35.49 | -.05 | 35.44 | + .03 | +.01 | .41 | .40 |
| | | | 6 29 | 389 | + .82 | -35.92 | +.09 | 36.01 | + .34 | | [.67] | |
| 6.27 | 6.5 | -.7 | 6 33 | 108 | + .18 | -35.55 | -.03 | 35.52 | + .08 | +.01 | .44 | .43 |
| | 5.77 | | | | | | | | | | 35.415 | |
| | | | | | | | | | | | 35407 | 35.408 |

| Ra | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) |
|---|---|---|---|---|---|
| | | | s | | s |
| 4 41 | 76 | +2.26 | 0 = -35.96 | +.2~~8~~ 2 | -36.1~~6~~ 8 |
| 4 52 | 80 | +1.75 | -36.18 | -.02 | 36.16 |
| 4 59 | 235 | -7.34 | -33.59 | ~~+.04~~ -.09 | 33.~~63~~ 50 |
| 5 1 | 373 | +5.18 | -37.33 | +.22 | 37.55 |
| 6 13 | | -16.92 | -27.80 | -.0~~4~~ 5 | 27.7~~8~~ 5 |
| 6 22 | 489 | -2.95 | -34.39 | -.20 | 34.19 |
| 6 23 | 259 | -3.20 | -33.49 | +.18 | 33.67 |
| 6 24 | 387 | +5.50 | -38.06 | +.07 | 38.13 |

4.7 +.09 -35.44
61 +.41 -35.56
63 +.42 -35.60
6.3 +.08 -35.44
6.5 +.18 -35.52
6.0 +.24 -35.51

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 4.7 | +2.26 | -36.1~~6~~ 8 | -.02 | -36.18 | -.01 | -36.17 |
| 4.9 | +1.75 | -36.16 | -.01 | -36.17 | -.01 | -36.17 |
| 5.0 | +5.18 | -37.55 | -.01 | -37.56 | -.01 | -37.56 |
| 6.4 | +5.50 | -38.13 | +.00 | -38.13 | +.01 | -38.12 |

| | | | I | | II |
|---|---|---|---|---|---|
| 5.0 | -7.34 | ~~-33.63~~ -33.50 | -.01 | -33.64 | -.01 | -33.64 |
| 6.2 | -16.92 | 27.7~~6~~ 5 | +.00 | -27.76 | +.01 | -27.75 |
| 6.4 | -2.95 | 34.19 | +.00 | -34.19 | +.01 | -34.18 |
| 6.4 | -3.20 | 33.67 | +.00 | -33.67 | +.01 | -33.66 |

0 = +2.02 -.67 n = +.33
+1.51 -.66 +.4~~3~~ 4
+4.94 -2.05 +.41
+5.26 -2.62 +.50
+.420

0 = -7.58 +1.87 +13 n = +.2~~5~~ 7
-17.16 +7.75 +.45
-3.19 +1.32 +.41
-3.44 +1.84 +.53
+.41~~0~~ 5

n = +.34

0 = +1.61 -.52 n = +.32
1.10 -.52 +.46
4.53 -1.91 +.42
4.85 -2.47 +.51
+.428

0 = -7.99 +2.01 n = +.25
17.57 +7.90 +.45
3.60 +1.47 +.41
3.85 +1.99 +.52
+.408

1873 Feb. 11 h = -.015 -.023 n = +.46 e = .00

| | | Ra | δ | tang. δ | π-Ra | P'-P | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.5 | +.1 | 6 33 | 108 | + .18 | -35.80 | -.03 | -35.77 | + .08 | 00 | -35.69 | |
| 6.6 | .0 | 6 36 | 109 | + .47 | -35.85 | +.01 | 35.86 | + .22 | | .64 | |
| 6.6 | .0 | 6 37 | 390 | + .96 | -36.03 | -.01 | 36.02 | + .44 | | .58 | |
| 6.7 | -.1 | 6 44 | 112 | + .68 | -35.91 | +.08 | 35.99 | + .31 | | .68 | |
| 6.8 | -.2 | 6 46 | 394 | + 1.64 | -36.43 | +.02 | 36.45 | + .75 | 00 | .70 | |
| 6.64 | | | | | | | | | | 35.658 | |
| | | | | | | | | | | 35658 | |

| Ra | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) |
|---|---|---|---|---|---|
| 6 40 | 111 | +20.73 | -44.25 | -.27 +87 | ~~-43.98~~ -45.12 |
| 6 55 | 493 | -2.92 | 0 = -34.19 | +.10 | -34.29 |

6.5 +.18 -35.77
6.6 +.47 -35.86
6.5 +.32 -35.81

6.6 +.96 -36.02
6.8 +1.64 -36.45
6.7 +1.30 -36.23

n = +.43

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 6.7 | +20.73 | -43.98 | +.00 | -43.98 | +.00 | -43.98 |

0 = +20.41 -8.17 -1.14 n = +.4~~8~~ 6

0 = +19.43 -7.75 -1.14 n = +.4~~8~~ 6

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 6.9 | -2.92 | -34.29 | +.01 | -34.30 | +.00 | -34.29 |

0 = -3.24 +1.51 n = +.4~~6~~ .47

0 = -4.22 +1.94 n = +.46~~0~~ 1

z = +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00

| Ra h m | sin δ cos z | | tang. δ | $R_{eq}-R_{ff}$ ′ ″ | p′−p | $R_{eq}-R_{ff}+(p'-p)$ ″ | $R_{ff}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|
| 4 28 | +.44 | .89 + | .29 | ~~0~~ 2 29.7 | −0.3 | −30.0 | + 1.0 | −29.0 |

29.00

| Ra h m | sin δ cos z | | tang. δ | $R_{eq}-R_{ff}$ ′ ″ | p′−p | $R_{eq}-R_{ff}+(p'-p)$ ″ | $R_{ff}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|
| 4 31 | −.55 | .83 + | 3.93 | −2 27.8 7 | +0.1 | −27.6 | −1.2 | −28.8 |

28.80

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | +.44 −30.0″ | | | | | −.55 −27.6″ | | |
| | | + .9 | | | | | −1.1 | | |
| | | $29.1_1$ | | | | | $28.7_1$ | | |
| −2′ 28.90″ | | (2) 9.1 | | | | | 8.7 | | |
| 28.90 | | + .2 | | | | | − .2 | | |

| Ra h m | sin δ | cos z | tang. δ | $R_{eq}-R_{ff}$ ′ ″ | p′−p | $R_{eq}-R_{ff}+(p'-p)$ | $R_{ff}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|
| 4 44 | +.60 | .80 + | .09 | −2 31.1 | −0.6 | −31.7 | + 1.3 | −30.4 |
| 4 48 | +.16 | .99 + | .65 | 28.0 | −0.0 | 28.0 | + 0.4 | 27.6 |
| 6 7 | +.34 | .94 + | .41 | 29.3 | +0.2 | 29.1 | + 0.8 | 28.3 |
| 6 15 | +.34 | .94 + | .42 | 29.0 | +0.3 | 28.7 | + 0.8 | 27.9 |
| 6 16 | +.61 | .79 + | .08 | 27.9 ~~28.2~~ | −0.2 | 28.1 | + 1.4 | 26.7 |
| 6 29 | +.05 | 1.00 + | .82 | 27.1 ~~29.2~~ | −1.2 | 28.3 | + 0.2 | 28.1 |
| 6 33 | +.54 | .84 + | .18 | 28.4 | +0.2 | 28.2 | + 1.2 | 27.0 |

28.00 28.00

| Ra h m | sin δ | cos z | tang. δ | $R_{eq}-R_{ff}$ ′ ″ | p′−p | $R_{eq}-R_{ff}+(p'-p)$ | $R_{ff}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|
| 4 41 | −.40 | .91 + | 2.26 | −2 26.6 | −0.2 | −26.8 | −0.9 | −27.7 |
| 4 52 | −.31 | .95 + | 1.75 | 26.3 | +0.2 | 26.1 | −0.8 | 26.9 |
| 4 59 | −.82 | .567 − | 9.34 | ~~7~~ | ~~+0.4~~ | | | |
| 5 1 | −.60 | .80 + | 5.18 | 26.3 | +0.6 | −26.7 | −1.3 | 28.0 |
| 6 13 | −.78 | .62 − | 16.92 | 24.7 ~~25.0~~ | +0.3 | 25.0 ~~23.9~~ | ~~24.4~~ −1.8 | 26.8 |
| 6 22 | −.92 | .38 − | 2.95 | 25.9 ~~26.2~~ | +0.4 | 26.3 ~~25.5~~ | −2.0 | 28.3 ✓ |
| 6 23 | −.91 | .40 − | 3.20 | 26.2 | −0.1 | 26.1 ~~26.3~~ | −2.0 | 28.1 ✓ |
| 6 24 | −.61 | .79 + | 5.50 | 28.1 ~~26.7~~ | +0.9 | 27.2 | −1.4 | 28.6 |

27.46
27.80

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 7 5600 — | | | | | | | | | |
| 4 3120 | +.60 −31.7 | +.54 −28.2 | +.34 −29.1 | +.16 −28.0 | | −.40 −26.8 | −.60 −26.7 | | ~~−.82~~ |
| 8720 | +.61 −28.1 | | +.34 −28.7 | +.05 −28.3 | | −.31 −26.1 | −.78 −23.9 | | −.92 −25.9 |
| | | | | | | | −.61 −27.2 | | −.91 −26.3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | +.60 −29.9 | +.54 −28.2 | +.34 −28.9 | +.10 −28.1 | | −.35 −26.4 | −.60 −26.9 | | −.91 −25.9 |
| | +1.2 | +1.0 | + .7 | + .2 | | − .7 | −1.2 | | |
| | $28.7_2$ | $27.2_1$ | $28.2_2$ | $27.9_2$ | | $27.1_2$ | $28.1_2$ | | |
| −2′ 27.9″ | (11) 17.4 | 7.2 | 16.4 | 15.8 | | 14.2 | 16.2 | | |
| 27.83 27.6 | + .8 | − .7 | + .3 | 0 | | − .8 | + .2 | | |

| Ra h m | sin δ | cos z | tang. δ | $R_{eq}-R_{ff}$ ′ ″ | p′−p | $R_{eq}-R_{ff}+(p'-p)$ | $R_{ff}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|
| 6 33 | +.54 | .84 + | .18 | −2 30.1 | +0.2 | −29.9 | + 1.2 | −28.7 |
| 6 36 | +.29 | .95 + | .47 | 29.4 | +0.1 | 29.3 | + 0.7 | 28.6 |
| 6 37 | −.02 | 1.00 + | .96 | 29.5 ~~29.6~~ | +0.4 | 29.1 | + 0.0 | 29.1 |
| 6 44 | +.14 | .99 + | .68 | 27.7 | +0.2 | 27.5 | + 0.4 | [27.1] |
| 6 46 | −.28 | .96 + | 1.64 | 28.9 | +1.1 | 27.8 | − 0.7 | 28.5 |

28.40 28.40
72

| Ra h m | sin δ | cos z | tang. δ | $R_{eq}-R_{ff}$ ′ ″ | p′−p | $R_{eq}-R_{ff}+(p'-p)$ | $R_{ff}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|
| 6 40 | −.70 | .72 + | 20.73 | − 29.0 | ~~+1.1~~ +1.2 | ~~−27.9~~ 28.8 | −1.6 | −30.4 |
| 6 55 | −.92 | .38 − | 2.92 | −2 28.2 | −0.0 | 28.2 | −2.0 | 30.2 ✓ |

30.40

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5 14200 | | | | | | | | | |
| 1 3040 | | +.54 −29.9 | +.29 −29.3 | +.14 −27.5 | −.02 −29.1 | −.28 −27.8 | | −.70 −27.9 | −.92 −28.2 |
| 17240 | | +1.0 | + .6 | + .3 | − .0 | − .6 | | −1.3 | |
| | | $-28.9_1$ | $28.7_1$ | $27.2_1$ | $29.1_1$ | $28.4_1$ | | $29.2_1$ | |
| −2′ 28.58″ | | (6) 8.9 | 8.7 | 7.2 | 9.1 | 8.4 | | 9.2 | |
| ~~28.73~~ | | + .3 | + .1 | −1.4 | + .5 | − .2 | | + .6 | |
| 29.16 | | | | | | | | | |

1873 Star Ra δ tang δ T−Ra P′−P T−Ra −(P′−P) 1873 Ra δ tang δ T−Ra P′−P T−Ra−(P′−P) ~~T−Ra P′−P~~

1873 Feb. 17 h = −.023 −.063 ~~n =~~ n = +.31 c = .00 h = −.063 1873 Feb. 17

|  |  |  |  |  |  |  |  | s |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 4.6 | +1.7 | 4 | 34 | 370 | + .42 | 0 = | −38.81 | +.02 | −38.83 | + .13 | −.11 |
|  | 4.6 | 1.7 | 4 | 37 | 371 | + 1.51 |  | −39.20 | −.01 | 39.19 | + .47 | .11 |
|  | 6.1 | .2 | 6 | 7 | 105 | + .41 |  | −38.92 | +.01 | 38.93 | + .13 | .01 |
| 535 | 6.1 | +.2 | 6 | 8 | 384 | + 1.67 |  | −39.47 | −.21 | 39.26 | + .52 | −.01 |
|  | 6.5 | −.2 | 6 | 29 | 389 | + .82 |  | −38.94 | +.09 | 39.03 | + .25 | +.01 |
|  | 6.5 | .2 | 6 | 33 | 108 | + .18 |  | −38.90 | −.03 | 38.87 | + .06 | .01 |
|  | 6.6 | .3 | 6 | 36 | 109 | + .47 |  | −38.94 | +.01 | 38.95 | + .15 | .02 |
|  | 6.6 | .3 | 6 | 37 | 390 | + .96 |  | −39.08 | −.01 | 39.07 | + .30 | .02 |
|  | 6.7 | .4 | 6 | 44 | 112 | + .68 |  | −38.97 | +.08 | 39.05 | + .21 | .03 |
|  | 6.8 | .5 | 6 | 46 | 394 | + 1.64 |  | −39.37 | +.02 | 39.39 | + .51 | .03 |
|  | 7.0 | .7 | 7 | 2 | 395 | + .82 |  | −39.13 | +.01 | 39.14 | + .25 | .04 |
|  | 7.1 | .8 | 7 | 9 | 396 | + .87 |  | −39.14 | −.01 | 39.13 | + .27 | .05 |
| 6.78 | 7.2 | −.9 | 7 | 12 | 115 | + .41 |  | −38.98 | −.01 | 38.97 | + .13 | +.06 |
|  | 6.34 |  |  |  |  |  |  |  |  |  |  |  |

| 38.740 |  |  |  |  |  |  | s |  | s |
|---|---|---|---|---|---|---|---|---|---|
| − 38.70 | 4 | 41 | 38.81 | 76 | + 2.26 | 0 = | −39.25 | +.20 2 | −39.45 7 |
| .72 | 5 | 1 | .83 | 373 | + 5.18 |  | −40.04 | +.22 | 40.26 |
| .80 | 6 | 13 | .81 | 256 | − 16.92 |  | −33.55 | ~~+.04~~ 5 | 33.51 0 59 |
| .74 | 6 | 39 | .75 | 391 | + 2.61 |  | −39.57 | +.07 | ~~39.84~~ |
| .78 | 6 | ~~40~~ | .77 | 111 | + ~~20.73~~ |  | −44.64 | −.27 +.89 | ~~44.37~~ 45.53 |
| .81 | 6 | 55 | .80 | 493 | − 2.92 |  | −37.78 | +.10 | 37.88 |
| .80 |  |  | .78 |  |  |  |  |  |  |
| .77 |  |  | .75 |  |  |  |  |  |  |
| .84 |  |  | .81 |  |  |  |  |  |  |
| .88 |  |  | .85 |  |  |  |  |  |  |
| .89 |  |  | .85 |  |  |  |  |  |  |
| .86 |  |  | .81 |  |  |  |  |  |  |
| .84 |  |  | .78 |  |  |  |  |  |  |
| 38.830 |  |  |  |  |  |  |  |  |  |
| 38.802 |  |  | 38.800 |  |  |  |  |  |  |

|  |  |  |
|---|---|---|
| 4.6 | +.42 | −38.83 |
| 6.1 | +.41 | −38.93 |
| 6.5 | +.18 | −38.87 |
| 7.2 | +.41 | −38.97 |
| 6.1 | +.36 | −38.90 |
|  |  |  |
| 4.6 | +1.51 | −39.19 |
| 6.1 | +1.67 | −39.26 |
| 6.6 | +.96 | −39.07 |
| 6.8 | +1.64 | −39.39 |
| 6.0 | +1.69 45 | −39.23 |

n = +.30

|  |  |  |  | I |  | II |
|---|---|---|---|---|---|---|
| 4.7 | +2.26 | ~~−39.45~~ −39.47 | −.03 | −39.48 | −.03 | −39.48 |
| 5.0 | +5.18 | −40.26 | −.03 | −40.29 | −.02 | −40.28 |
| 6.6 | +2.61 | −39.84 59 | +.01 | −39.83 58 | +.01 | −39.83 58 |
| 6.7 | +20.73 | ~~−44.37~~ −45.53 | +.01 | −44.36 | +.02 | −44.35 |

0 = +1.90 −.58 n = +.30
+4.82 −1.39 +.29
+2.25 ~~−.93~~ 68 + ~~.41~~ .30
+20.37 −5.46 −.114 + ~~.28~~ .33
+ ~~.290~~ +.305

0 = +.81 −.25 n = +.31
+3.73 −1.05 +.28
+1.16 −.60 35 + ~~.54~~ .30
+19.28 −5.12 −1.14 + ~~.26~~ .32
+ ~~.288~~ +.302

|  |  |  |  | I |  | II |
|---|---|---|---|---|---|---|
| 6.2 | −16.92 | −33.54 0 | +.00 | −33.51 | +.00 | −33.51 |
| 6.9 | −2.92 | −37.88 | +.02 | −37.86 | +.02 | −37.86 |

0 = −17.28 +5.39 n = +.31
−3.28 +1.04 +.32
+.315

0 = −18.37 +5.72 n = +.31
−4.37 +1.37 +.31
+.310

12
4
−2

| z = | +.60+.80 | +.40+.60 | +20+.40 | +0.+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

1873

| Ra | | sin z | cos z | tang. δ | Req−Rfe | P′−P | Req−Rfe +(P′−P) | Rfe | Req |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 34 | +.34 | .94 | + .42 | −2′ −− ″ | +0.5 | ″ | | |
| 4 | 37 | −.24 | .97 | + 1.51 | 30.3$^4$ | +0.5 | −29.9 | −0.6 | −30.5 |
| 6 | 7 | +.34 | .94 | + .41 | 29.9 | +0.2 | 29.7 | +0.8 | 28.9 |
| 6 | 8 | −.29 | .95 | + 1.67 | 29.9 ~~30.1~~ | +0.4 | ~~29.5~~ | − 0.8 | 30.3 |
| 6 | 29 | +.05 | 1.00 | + .82 | 284 ~~30.5~~ | −1.2 | 29.6 | +0.2 | 29.4 |
| 6 | 33 | +.54 | .84 | + .18 | −31.2 | +0.2 | 31.0 | +1.2 | 29.8 |
| 6 | 36 | +.29 | .95 | + .47 | −30.0 | +0.1 | 29.9 | +0.7 | 29.2 |
| 6 | 37 | −.02 | 1.00 | + .96 | −30.~~3~~2 | +0.4 | 29.8 | +0.0 | 29.8 |
| 6 | 44 | +.14 | .99 | + .68 | −29.3 | +0.2 | 29.1 | +0.4 | 28.7 |
| 6 | 46 | −.28 | .96 | + 1.64 | −30.4 | +1.1 | 29.3 | −0.7 | 30.0 |
| 7 | 2 | +.05 | 1.00 | + .82 | −27.9 | −0.1 | 28.0 | +0.2 | 27.8 |
| 7 | 9 | +.02 | 1.00 | + .87 | −29.1 | −0.4 | 29.5 | +0.0 | 29.5 |
| 7 | 12 | +.35 | .93 | + .41 | −31.4 | +0.2 | 31.2 | +0.9 | 30.3 |
| | | | | | | | | | 29.52 2952 |

| Ra | | sin z | cos z | tang. δ | Req−Rfe | P′−P | Req−Rfe +(P′−P) | Rfe | Req |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 41 | −.40 | .91 | + 2.26 | −2′ 29.6″ | −.02 | −29.8 | −1.0 | −30.8 |
| 5 | 1 | −.60 | .80 | + 5.18 | −−− | −+0.6 | | | |
| 6 | 13 | −.78 | .62 | − 16.92 | 28.7 ~~29.0~~ | +0.3 | 29.0 ~~27.9~~ 28.4 | −1.8 | 30.8 |
| 6 | 39 | −.45 | .89 | + 2.67 | 29.5 | +0.8 | 28.7 | −1.1 | 29.8 |
| 6 | 40 | −.70 | .71 | + 20.73 | 29.1 | ~~+1.1~~ +.2 | 28.9 | −1.6 | 30.5 |
| 6 | 55 | −.92 | .38 | − 2.92 | 29.6 | +0.0 | 29.6 | −2.0 | 31.6 ✓ |

30.32
30.48

| | +.60+.80 | +.40+.60 | +20+.40 | +0.+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 12 ~~35424~~<br>4 12192 | | +.54 −31.0 | +.34 −29.7<br>+.29 −29.9<br>+.35 −31.2 | +.05 −29.6<br>+.14 −29.1<br>+.05 −28.0<br>+.02 −29.5 | −.02 −29.8 | −.24 −29.9<br>−.29 −29.5<br>−.28 −29.3<br>−.40 −29.8 | −.45 −28.7 | −.78 −27.9<br>−.70 −28.0 | −.92 −29.6 |
| −2′ 29.~~38~~57″<br>29.76 | | +.54 −31.0<br>+1.1<br>−29.9<br>(16) 29.9<br>*+.3 | +.33 −30.3<br>+ .7<br>$-29.6_3$<br>88.8<br>.0 | +.06 −29.0<br>+ .1<br>$-28.9_4$<br>115.6<br>*−.7 | −.02 −29.8<br>−.0<br>29.8<br>29.8<br>*+.2 | −.30 −29.6<br>−.6<br>$30.2_4$<br>120.8<br>*+.6 | −.45 −28.7<br>−.9<br>29.6<br>29.6<br>.0 | −.74 −27.9<br>−1.4<br>$29.3_2$<br>58.6<br>*−.3 | −.92 −29.6 |

1873 Feb. 18 ware h = -.023 -.030 n = +.36 e = .00 h =

| | Star | | Ra h | m | | | tang. δ | | T-Ra s | P'P | T-Ra-(P'P) s | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 4.5 | +4 | 4 | 28 | 73 | + | .29 | 0 = | -39.35 | +.00 | -39.35 | + | .10 | -.01 | -39.25 |
| | 4.6 | .3 | 4 | 37 | 371 | + | 1.56 | | -39.89 | -.01 | 39.88 | + | .54 | -.01 | 34 |
| 4.60 | 4.7 | .2 | 4 | 44 | 77 | + | .09 | | -39.39 | -.01 | 39.38 | + | .03 | -.01 | .35 |
| | 4.9 | +0 | 4 | 53 | 82 | + | .87 | | -39.51 | +.05 | 39.56 | + | .31 | +.00 | .25 |
| | 5.0 | -1 | 5 | 2 | 85 | - | .16 | | -39.29 | -.04 | 39.25 | - | .06 | +.00 | .31 |
| | 5.1 | 2 | 5 | 4 | 374 | + | .79 | | -39.53 | +.01 | 39.54 | + | .28 | +01 | 26 |
| | 5.1 | 2 | 5 | 8 | 87 | - | .15 | | -39.24 | -.02 | 39.22 | - | .05 | +01 | .27 |
| 5.06 | 5.2 | -3 | 5 | 11 | 88 | - | .12 | | -39.29 | -.06 | 39.23 | - | .04 | +01 | -39.27 |
| | 4.~~09~~ 89 | | | | | | | | | | | | | | 39.272 |
| | | | | | | | | | | | | | | | 39.288 |

1873 Feb. 18 ware

| 39.313 h | m | δ | | | tang. δ | | T-Ra s | P'P | T-Ra-(P'P) s |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 31 | 39.26 | 369 | + | 3.93 | 0 = | -40.57 | +.17 | -40.74 |
| 4 | 41 | .35 | 76 | + | 2.26 | | -40.00 | +.20 2 | 40.20 2 |
| 4 | 52 | .36 | 80 | + | 1.75 | | -40.01 | -.02 | 39.99 3691 |
| 4 | 59 | .25 | 235 | - | 7.34 | | -37.00 | ~~+.04~~ -.09 | ~~37.04~~ |
| 5 | 1 | .31 | 373 | + | 5.18 | | -40.73 | +.22 | 40.95 |
| | | .25 | | | | | | | |
| | | .26 | | | | | | | |
| | | .26 | | | | | | | |
| | | 39.288 | | | | | | | |

4.5 +.28 -39.35
4.7 +.09 -39.38
5.0 -.16 -39.25
5.1 -.15 -39.22
5.2 -.12 -39.23
4.9 -.01 -39.29

4.6 +.5 -39.88
5.1 +.79 -39.54
4.8 +.65 -39.71

n = +.37

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 4.5 | +3.93 | -40.74 | -.01 | -40.75 | -.01 | -40.75 |
| 4.7 | +2.26 | -40.20 2 | +.00 | -40.20 | +.00 | -40.20 |
| 4.9 | +1.75 | -39.99 | +.00 | -39.99 | +.00 | -39.99 |
| 5.0 | +5.18 | -40.95 | +.00 | -40.95 | +.00 | -40.95 |

5.0 -7.34 ~~-37.04~~ -36.91 +.00 -37.04 I +.00 -37.04 II

0 = +3.94 -1.46 n = +.37
+2.27 -.91 +.40
+1.76 -.70 +.40
+5.19 -1.66 +.32
+.372

0 = -7.33 +2.25 n = +.31 2
+.13

0 = +2.78 -1.04 n = +.37
+1.11 -.49 +.44
+.60 -.28 +.47
+4.03 -1.24 +.31
+.373

0 = -8.49 +.267 n = +.31 2

1873 Feb 19 ware h = -.020 +.010 n = +.36 e = .00 h = -.006

| | Star | | Ra h | m | | | tang. δ | | T-Ra s | P'P | T-Ra-(P'P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5.4 | +.7 | 5 | 25 | 93 | - | .01 | 0 = | -39.94 | -.07 | -39.87 | = | .00 | .00 | -39.87 |
| | 5.5 | .6 | 5 | 27 | 376 | + | .17 | | -39.85 | +.03 | 39.88 | + | .04 | | .84 |
| | 5.6 | 5 | 5 | 36 | 377 | + | 1.18 | | -40.13 | +.07 | 40.20 | + | .31 | | .89 |
| | 5.6 | 5 | 5 | 39 | 378 | + | .32 | | -39.94 | +.04 | 39.98 | + | .08 | | .90 |
| | 5.7 | 4 | 5 | 42 | 101 | + | .81 | | -39.99 | +.07 | 40.06 | + | .21 | | .85 |
| | 5.8 | 3 | 5 | 48 | 102 | + | .13 | | -39.87 | -.01 | 39.86 | + | .03 | | .83 |
| 5.63 | 5.8 | 3 | 5 | 50 | 103 | + | 1.00 | | -40.13 | -.04 | 40.09 | + | .26 | | .83 |
| | 6.0 | 1 | 6 | 00 | 382 | + | .26 | | -39.94 | -.02 | 39.92 | + | .07 | | .85 |
| | 6.1 | +0 | 6 | 7 | 105 | + | .41 | | -39.96 | +.01 | 39.97 | + | .11 | | .86 |
| | 6.6 | -5 | 6 | 36 | 109 | + | .47 | | -39.99 | +.01 | 40.00 | + | .12 | | .88 |
| | 6.6 | 5 | 6 | 37 | 390 | + | .96 | | -40.10 | -.01 | 40.09 | + | .25 | .00 | .84 |
| | 7.1 | 1.0 | 7 | 9 | 396 | + | .87 | | -40.16 | -.01 | 40.15 | + | .23 | +01 | .92 |
| 6.60 | 7.2 | -1.1 | 7 | 12 | 115 | + | .41 | | -39.96 | -.01 | 39.95 | + | .11 | +01 | -39.84 |
| | 6.08 | | | | | | | | | | | | | | 39.865 |
| | | | | | | | | | | | | | | | 39.862 |

| 39.8659 h | m | δ | | | tang. δ | | T-Ra s | P'P | T-Ra-(P'P) |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 44 | 39.87 | 484 | - | 3.12 | 0 = | -38.93 | +.09 | -39.02 |
| 6 | 4 | .84 | 383 | + | 2.65 | | -40.47 | ~~+.01~~ +.10 | 40.57 |
| 6 | 13 | .89 | 256 | - | 16.92 | | -35.59 | -.04 5 | 35.55 4 |
| 6 | 40 | .90 | 111 | + | 20.73 | | -44.01 | -.27 89 | ~~43.74~~ 44.90 |
| 6 | 55 | .85 | 493 | - | 2.92 | | -38.98 | +.10 | 39.08 |
| | | .83 | | | | | | | |
| | | .83 | | | | | | | |
| | | .85 | | | | | | | |
| | | .86 | | | | | | | |
| | | .88 | | | | | | | |
| | | 84 | | | | | | | |
| | | .91 | | | | | | | |
| | | .83 | | | | | | | |
| | | 39.860 | | | | | | | |

5.5 -.01 -39.87
5.5 +.17 -39.88
5.8 +.13 -39.86
6.0 +.26 -39.92
6.1 +.41 -39.97
7.2 +.41 -39.95
6.0 +.23 -39.91

5.6 +1.18 -40.20
5.8 +1.00 -40.09
6.6 +.96 -40.09
6.0 +1.04 5 -40.13

n = +.27

| | | | | I & II |
|---|---|---|---|---|
| 6.4 | +2.65 | -40.57 | +.01 | -40.56 |
| 6.7 | +20.73 | ~~-43.74~~ 44.90 | +.01 | -43.73 |

| | | | | I & II |
|---|---|---|---|---|
| 5.7 | -3.12 | -39.02 | -.01 | -39.03 |
| 6.2 | -16.92 | -35.55 4 | +.00 | -35.55 |
| 6.9 | -2.92 | -39.08 | +.02 | -39.06 |

0 = +2.42 -.65 n = +.27
+20.50 -3.82 ~~+.19~~ 24
-1.14
+.~~230~~ .255

0 = -3.35 +~~.62~~ 88 n = +.26
-17.15 +4.36 +.25
-3.15 +.85 +.27
+.260

0 = +1.60 -.43 n = +.27
+19.68 -3.60 ~~+.18~~ 24
-1.14
+.~~225~~ .255

0 = -4.17 +1.10 n = +.27 6
-17.97 +4.58 +.25
-3.97 +1.07 +.27
+.260

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|

=3

| RA | sin z | cos z | tang. δ | Req−Rfe |  Rfe | ρ′−ρ | H(ρ′−ρ) | Rfe | Req. |
|---|---|---|---|---|---|---|---|---|---|
| h m | | | | | ″ | | ″ | | |
| 4 28 | +.44 | .89+ | .29 | −2 | 29.6 | −0.3 | −29.9 | +1.0 | −28.9 |
| 4 37 | −.24 | .97+ | 1.51 | | 30.4⁵ | +0.5 | 30.0 | −0.6 | 30.6 |
| 4 44 | +.60 | .80+ | .09 | | 32.9 | −0.6 | 33.5 | +1.4 | 32.1 |
| 4 53 | +.03 | 1.00+ | .87 | | 31.5 | +0.1 | 31.4 | +0.1 | 31.3 |
| 5 2 | +.78 | .62− | .16 | | 32.0 | +1.1 | 30.9 | +1.8 | 29.1 |
| 5 4 | +.07 | 1.00+ | .79 | 29.2 | ~~30.2~~ | −0.1 | 29.3 | +0.2 | 29.1 |
| 5 8 | +.77 | .63− | .15 | | 31.6 | +0.5 | 31.1 | +1.8 | 29.3 |
| 5 11 | +.76 | .64− | .12 | | 30.9 | ~~+0.2~~ −0.1 | 31.0 | +1.7 | 29.3 |
| | | | | | | | | | 29.96 29.96 |

| RA | sin z | cos z | tang. δ | Req−Rfe | Rfe | ρ′−ρ | H(ρ′−ρ) | Rfe | Req. |
|---|---|---|---|---|---|---|---|---|---|
| h m | | | | | ″ | | ″ | | |
| 4 31 | −.55 | .83+ | 3.93 | −2 | 28.4⁶ | +0.1 | −28.5 | −1.3 | −29.8 |
| 4 41 | −.40 | .91+ | 2.26 | | 28.7 | −0.2 | 28.9 | −1.0 | 29.9 |
| 4 52 | −.31 | .95+ | 1.75 | | 29.7 | +0.2 | 29.5 | −0.8 | 30.3 |
| 4 59 | −.82 | .56− | 7.34 | | 28.2⁷ | ~~+0.4~~ −1 | 28.6 ~~28.8~~ 8 | −1.8 | 30.4 ✓ |
| 5 1 | −.60 | .80+ | 5.18 | | 28.4 9 | +0.6 | 28.8 | −1.4 | 30.2 |
| | | | | | | | | | 30.05 30.05 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|
| 8 768<br>4 420<br>1188 | +.60 −33.5″<br>+.78 −30.9<br>+.77 −31.1<br>+.76 −31.0 | +.44 −29.9″ | | +.03 −31.4″<br>+.07 −29.3 | | −.24 −30.0″<br>−.40 −28.9<br>−.31 −29.5 | −.55 −28.5″<br>−.60 −28.8 | | −.82 −28.3 |
| −2′ 30.02″<br>29.99 | (12) +.73 −31.6<br>+1.4<br>$30.2_4$<br>120.8<br>~+.2 | +.44 −29.9<br>+.9<br>$29.0_1$<br>29.0<br>*−1.0 | | +.05 −30.3<br>+.1<br>$30.2_2$<br>60.4<br>~+.2 | | −.32 −29.5<br>−.7<br>$30.2_3$<br>90.6<br>~+.2 | −.57 −28.6<br>−1.1<br>$29.7_2$<br>59.4<br>*−.3 | | −.82 −28.3 |

| RA | sin z | cos z | tang. δ | Req−Rfe | Rfe | ρ′−ρ | H(ρ′−ρ) | Rfe | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 5 25 | +.68 | .73− | .01 | −2 | ′ ″ 32.2 | +0.6 | −31.6 | +1.6 | −30.0 |
| 5 27 | +.52 | .84+ | .17 | | 31.2⁵ | +0.4 | 31.1 | +1.2 | 29.9 |
| 5 36 | −.13 | .99+ | 1.18 | 320 | ~~31.4~~ | +0.9 | 31.1 | −0.4 | 31.5 |
| 5 39 | +.42 | .90+ | .32 | | 30.7⁸ | +0.3 | 30.5 | +1.0 | 29.5 |
| 5 42 | +.06 | 1.00+ | .81 | 28.2 | ~~30.7~~ | −1.8 | 30.0 | +0.2 | 29.8 |
| 5 48 | +.57 | .82+ | .13 | 33.2 | ~~32.8~~ | +0.8 | 32.4 | +1.3 | 31.1 |
| 5 50 | −.05 | 1.00+ | 1.00 | | 30.1 | +0.5 | 29.6 | −0.2 | 29.8 |
| 6 0 | +.46 | .88+ | .26 | | 30.6⁸ | +0.3 | 30.5 | +1.1 | 29.4 |
| 6 7 | +.34 | .94+ | .41 | | 30.9 | +0.2 | 30.7 | +0.8 | 29.9 |
| 6 36 | +.29 | .95+ | .47 | | 30.4 | +0.1 | 30.3 | +0.7 | 29.6 |
| 6 37 | −.02 | 1.00+ | .96 | | 30.3² | +0.4 | 29.8 | +0.0 | 29.8 |
| 7 9 | +.02 | 1.00+ | .87 | | 29.8 | −0.4 | 30.2 | +0.0 | 30.2 |
| 7 12 | +.35 | .93+ | .41 | | 31.4 | +0.2 | 31.2 | +0.9 | 30.3 |
| | | | | | | | | | 30.06 30.06 |

| RA | sin z | cos z | tang. δ | Req−Rfe | Rfe | ρ′−ρ | H(ρ′−ρ) | Rfe | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 5 44 | −.91 | .40− | 3.12 | −2 | ′ ″ 28.6⁴ | +0.4 | 288 ~~28.4~~ 0 | −1.8 | 30.6 ✓ |
| 6 4 | −.45 | .89+ | 2.65 | | 30.9⁶ | +0.3 | 30.3 | −1.1 | 31.4 |
| 6 13 | −.78 | .62− | 16.92 | 29.9 | ~~30.2~~ | ~~+0.8~~ 3 | 30.5 ~~29.x~~ 6 | −1.8 | 32.0 |
| 6 ~~48~~ | −.70 | .71+ | 20.73 | | 28.8 | ~~+1.1~~ +2 | ~~27.2~~ 28.1 | 1.6 | 29.7 |
| 6 65 | −.92 | .38− | 2.92 | | 30.3 | −0.0 | 30.3 | −1.8 | 32.1 ✓ |
| | | | | | | | | | 30.83 31.03 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|
| 13 078<br>3 309<br>387 | +.68 −31.6 | +.54 −31.1<br>+.42 −30.5<br>+.57 −32.4<br>+.46 −30.5 | +.34 −30.7<br>+.29 −30.3<br>+.35 −31.2 | +.06 −30.0<br>+.02 −30.2 | −.13 −31.1<br>−.05 −29.6<br>−.02 −29.8 | | −.45 −30.3 | −.78 −29.1<br>−.70 −27.2 | −.91 −28.~~4~~8<br>−.92 −30.3 |
| ″13<br>−2 ~~30.79~~<br>30.24 | (16) +68 −31.6<br>+1.3<br>$30.3_1$<br>30.3<br>*+.2 | +.50 −31.1<br>+1.0<br>$30.1_4$<br>120.4<br>0 | +.33 −30.7<br>+.7<br>$30.0_3$<br>90.0<br>*−.1 | +.04 −30.1<br>+.1<br>$30.0_2$<br>60.0<br>*−.1 | −.07 −30.2<br>−.2<br>$30.4_3$<br>91.2<br>~+.3 | | −.45 −30.3<br>−.9<br>$31.2_1$<br>31.2<br>*+1.1 | −.74 −28.1<br>−1.4<br>$29.5_2$<br>59.0<br>*−.6 | −.91 −29.1 |

1873 Feb.20 wake h = −.013
−.057

n = +.30 c = −.00 l = −.055

| | Star | | Ra | δ | tang. δ | π-Ra | P'P | π-Ra-(P'P) | | | 40.270 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | h m | | | s | | s | | | | |
| | 5.5 | +.9 | 5 27 | 376 | + .17 | 0 = −40.25 | +.03 | −40.28 | + .05 | −.05 − | 40.23 | 40.28 |
| | 5.6 | 8 | 5 36 | 377 | + 1.18 | −40.54 | +.07 | 40.61 | + .35 | .04 | 26 | .30 |
| | 5.7 | 7 | 5 39 | 378 | + .32 | −40.39 | +.04 | 40.43 | + .10 | .04 | 33 | 37 |
| | 5.7 | 7 | 5 42 | 101 | + .81 | −40.39 | +.07 | 40.46 | + .24 | .04 | 22 | .26 |
| | 5.8 | 6 | 5 48 | 102 | + .13 | −40.29 | −.01 | 40.28 | + .04 | .03 | .24 | .27 |
| | 5.8 | 6 | 5 50 | 103 | + 1.00 | −40.60 | −.04 | 40.56 | + .30 | .03 | .26 | .29 |
| | 6.2 | .2 | 6 15 | 106 | + .42 | −40.44 | −.01 | 40.43 | + .13 | .01 | 30 | .31 |
| 5,82 | 6.3 | +1 | 6 16 | 386 | + .08 | −40.39 | −.05 | 40.34 | + .02 | −.01 | .32 | .33 |
| | 6.5 | −1 | 6 33 | 108 | + .18 | −40.33 | −.03 | 40.30 | + .05 | +.01 | 25 | .24 |
| | 6.6 | .2 | 6 36 | 109 | + .47 | −40.48 | +.01 | 40.47 | + .14 | .01 | 33 | .32 |
| | 6.6 | .2 | 6 37 | 390 | + .96 | 40 −39.62 | −.01 | 40 39.61 | + .29 | .01 | 32 | .31 |
| | 6.7 | .3 | 6 44 | 112 | + .68 | −40.48 | +.08 | 40.56 | + .20 | .02 | .36 | 34 |
| | 6.8 | .4 | 6 46 | 394 | + 1.64 | −40.82 | +.02 | 40.84 | + .49 | .02 | 35 | .33 |
| | 7.0 | .6 | 7 2 | 395 | + .82 | −40.62 | +.01 | 40.63 | + .25 | .03 | 38 | .35 |
| | 7.1 | .7 | 7 9 | 396 | + .87 | −40.60 | −.02 | 40.58 | + .26 | .04 | 32 | .28 |
| | 7.2 | .8 | 7 12 | 115 | + .41 | −40.42 | −.01 | 40.41 | + .12 | .04 | 29 | .25 |
| 6.87 | 7.3 | −.9 | 7 20 | 398 | + .63 | −40.50 | +.04 | 40.54 | + .19 | +.05 − | 40 35 | .30 |
| | 6.38 | | | | | | | | | | 40.33 28<br>40.301 | |

1873 Feb.20 wake

| Star | Ra | δ | tang. δ | π-Ra | P'P | π-Ra-(P'P) |
|---|---|---|---|---|---|---|
| | h m | | | s | | s |
| | 5 44 | 484 | − 3.12 | 0 = −39.30 | +.09 | −39.39 |
| | 5 55 | 485 | − 4.32 | −38.66 | +.23 | 38.89 |
| | 6 4 | 383 | + 2.65 | −41.14 | +.10 | 41.24 |
| | 6 13 | 256 | − 16.92 | −36.24 | −.02 5 | 36.~~20~~ 19 |
| | 6 22 | 489 | − 2.95 | −39.76 | −.20 | 39.56 |
| | 6 24 | 387 | + 5.50 | −42.02 | +.07 | 42.09 |
| | 6 ~~40~~ | 111 | + ~~20.73~~ | −45 81 | −.27 +.89 | ~~45.54~~ 46.70 |
| | 7 18 | 273 | − 3.29 | −39.26 | +.09 | 39.35 |

40.302

5.5 +.17 −40.28
5.8 +.13 −40.28
6.3 +.08 −40.34
6.5 +.18 −40.30
6.0 +.14 −40.30

I

6.1 +2.65 −41.24 +.00 −41.24 2
6.4 +5.50 42.09 +.01 −42.08
6.7 +20.73 ~~45.54~~ 46.70 +.01 −45.53
−1.14

II 2 44

+.00 −41.24
+.00 −42.09
+.01 −45.53
−1.14

I

5.7 −3.12 −39.39 −.00 −39.39
5.9 −4.32 −38.89 −.00 −38.89
6.2 −16.92 −~~36.20~~ 36.19 +.00 −36.20
6.4 −2.95 −39.56 +.01 −39.55
7.3 −3.29 −39.35 +.02 −39.33

II

−.01 −39.40
+.00 −38.89
+.00 −36.20
+.00 −39.56
+.01 −39.34

5.6 +1.18 −40.61
5.8 +1.00 −40.56
6.6 +.96 −~~39.61~~ 40.61 46
6.8 +1.64 −40.84
6.2 +1.19 −40.~~40~~ 65

n = ~~+.09~~ .33

0 = +2.51 −1.14 n = +.45
+5.36 −1.78 +.33
+20.59 −5.23 + ~~.25~~ 31
−1.14
+.~~343~~ 363

0 = +1.46 −.59 n = +.40
+4.31 −1.44 +.33
+19.54 −6.02 +.38
+.370

0 = −3.26 +.91 n = +.28
−4.46 +1.41 +.31 2
−17.06 +4.10 +.24
−3.09 +.~~86~~ 75 +.2~~3~~ 4
−3.43 +.97 +.28
+.272

0 = −4.31 +1.25 n = +.29
−5.51 +1.76 +.32
−18.11 +4.45 +.25
−4.14 1.09 +.26
−4.48 1.31 +.29
+.2~~8~~ 2

1873 Feb. 22 wake h = +.000

n = +.42 c = .00 l = +.046

| | Star | | Ra | δ | tang. δ | π-Ra | P'P | π-Ra-(P'P) | | | 40.730 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | | | | | |
| | 5.4 | +1.3 | 5 25 | 93 | − .01 | 0 = −40.85 | −.07 | −40.78 | + .00 | +.06 − | 40.78 | 40.72 |
| 630 | 6.7 | .0 | 6 44 | 112 | + .68 | −40.94 | +.08 | 41.02 | + .29 | .00 | 73 | .73 |
| | 6.8 | −.1 | 6 46 | 394 | + 1.64 | −41.35 | +.02 | 41.37 | + .69 | .00 | 68 | .68 |
| | 7.0 | −.3 | 7 2 | 395 | + .82 | −41.03 | +.01 | 41.04 | + .34 | −.01 | .70 | .71 |
| | 7.1 | −.4 | 7 9 | 396 | + .87 | −41.09 | −.02 | 41.07 | + .37 | −.02 | .70 | .72 |
| 7.10 | 7.2 | −.5 | 7 12 | 115 | + .41 | −40.86 | −.01 | 40.85 | + .17 | −.02 − | 40.68 | .70 |
| | 6.70 | | | | | | | | | | 40.693<br>40.712 | |

| Ra | δ | tang. δ | π-Ra | P'P | π-Ra-(P'P) |
|---|---|---|---|---|---|
| | | | s | | |
| 6 4 | 383 | + 2.65 | n = −41.52 | +.10 | −41.62 |
| 6 13 | 256 | − 16.92 | −33.58 | −.04 5 | 33.5~~4~~ 3 |
| 6 ~~40~~ | 111 | + ~~20.73~~ | −49.31 | +.89 ~~.27~~ | ~~49.04~~ 50.20 |
| 6 55 | 493 | − 2.92 | −39.18 | +.10 | 39.28 |

40.710

5.4 −.01 −40.78
7.2 +.41 −40.85
6.3 +~~.17~~ .20 −40.81

I & II

6.1 +2.65 −41.62 +.00 −41.62
6.7 +20.73 −~~49.04~~ −50.20 +.00 −49.04

I & II

6.2 −16.92 −33.5~~4~~ 3 +.00 −33.54
6.9 −2.92 −39.28 +.00 −39.28

0 = +2.45 −.81 n = +.33
+20.53 −8.23 +.4~~0~~ 6
−1.14
+.~~365~~ .395

0 = −17.12 +7.27 n = +.42
−3.12 +1.53 +.49
+.455

6.8 +1.64 −41.37
7.1 + .87 −41.07
6.9 +1.25 −41.22

n = +.39

0 = +1~~8~~.40 −.40 n = +.~~17~~ .29
+19.48 −7.82 +.4~~0~~ 6
−1.14
* +.4~~0~~ 60

0 = −18.17 +7.68 n = +.42
−4.17 +1.94 +.46
+.440

z = +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00

| RA h m | sin q | cos q | tang. δ | Req−Rpe ′ ″ | P′−P | Req−Rpe+(P′−P) | Rpe | Req |
|---|---|---|---|---|---|---|---|---|
| 5 27 | +.54 | .84+ | .17 | −2 – – | +0.4 | | | |
| 5 36 | −.13 | .99+ | 1.18 | – – – | +0.9 | | | |
| 5 39 | +.42 | .90+ | .32 | – – – | +0.3 | | | |
| 5 42 | +.06 | 1.00+ | .81 | – – – | −1.8 | | | |
| 5 48 | +.57 | .82+ | .13 | – – – | +0.8 | | | |
| 5 50 | −.05 | 1.00+ | 1.00 | – – – | +0.5 | | | |
| 6 15 | +.34 | .94+ | .42 | – – – | +0.3 | | | |
| 6 16 | +.60 | .80+ | .08 | – – – | −0.2 | | | |
| 6 33 | +.54 | .84+ | .18 | – – – | +0.2 | | | |
| 6 36 | +.29 | .95+ | .47 | – – – | +0.1 | | | |
| 6 37 | −.62 | 1.00+ | .96 | – – – | +0.4 | | | |
| 6 44 | +.14 | .99+ | .68 | – – – | +0.2 | | | |
| 6 46 | −.28 | .96+ | 1.64 | – – – | +1.1 | | | |
| 7 2 | +.05 | 1.00+ | .82 | – – – | −0.1 | | | |
| 7 9 | +.02 | 1.00+ | .87 | – – – | −0.4 | | | |
| 7 12 | +.35 | .93+ | .41 | – – – | +0.2 | | | |
| 7 20 | +.18 | .98+ | .63 | – – – | +0.7 | | | |

| RA h m | sin q | cos q | tang. δ | Req−Rpe ′ ″ | P′−P | Req−Rpe+(P′−P) | Rpe | Req |
|---|---|---|---|---|---|---|---|---|
| 5 44 | −.91 | .40− | 3.12 | 2 – – | +0.4 | | | |
| 5 55 | −.87 | .48− | 4.32 | – – – | +0.2 | | | |
| 6 4 | −.45 | .89+ | 2.65 | – – – | +0.3 | | | |
| 6 13 | −.78 | .62− | 16.42 | – – – | +0.~~8~~3 | | | |
| 6 22 | −.92 | .38− | 2.95 | – – – | +0.4 | | | |
| 6 24 | −.61 | .79+ | 5.50 | – – – | +0.9 | | | |
| 6 ~~40~~ | −.70 | .71+ | ~~20.72~~ | – – – | ~~+1.1~~ +2 | | | |
| 7 18 | −.90 | .42− | 3.29 | – – – | +0.1 | | | |

| +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 |
|---|---|---|---|
| +.60 −0.2 | +.54 +0.4 | +.34 +0.3 | +.06 −1.8 |
| | +.42 +0.3 | +.29 +0.1 | |
| | +.57 +0.8 | +.35 +0.2 | |
| | +.54 +0.2 | | |

| RA h m | sin q | cos q | tang. δ | Req−Rpe ′ ″ | P′−P | | | |
|---|---|---|---|---|---|---|---|---|
| 5 25 | +.68 | .73− | 0.01 | −2 31.6 | +0.6 | −31.0 | +1.6 | −29.4 |
| 6 44 | +.14 | .99+ | .68 | 2 27.2 | +0.2 | 27.0 | +0.4 | 26.6 |
| 6 46 | −.28 | .96+ | 1.64 | 28.5 | +1.1 | 27.4 | −0.7 | 28.1 |
| 7 2 | +.05 | 1.00+ | .82 | 27.7 ~~28.3~~ | −0.1 | 27.8 | +0.2 | 27.6 |
| 7 9 | +.02 | 1.00+ | .87 | 28.7 | −0.4 | 29.1 | +0.1 | 29.0 |
| 7 12 | +.35 | .93+ | .41 | 30.1 | +0.2 | 29.9 | +0.9 | 29.0 |
| | | | | | | | | 28.28 |

28.28

| RA h m | sin q | cos q | tang. δ | Req−Rpe ′ ″ | P′−P | | | |
|---|---|---|---|---|---|---|---|---|
| 6 4 | −.45 | .89+ | 2.65 | −2 27.9 6 | +0.3 | −27.3 | −1.1 | −28.4 |
| 6 13 | −.78 | .62− | 16.92 | 26.8 ~~27.1~~ | +0.~~8~~3 | 27.5 ~~26.05~~ | −1.8 | 28.9 |
| 6 40 | −.70 | .71+ | 20.73 | 28.1 ~~26.8~~ | ~~+1.1~~ +2 | 27.9 | −1.7 | 29.6 |
| 6 55 | −.92 | .38− | 2.92 | 24.9 | +0.0 | 24.9 | −2.0 | 26.9 √ |

28.77
28.97

6 168
3 291
459

+.68 −31.0 | +.35 −29.9 | +.14 −27.0 | −.28 −27.4 | −.45 −27.3 | −.78 −26.0 | −.92 −24.9
+.05 −27.8
+.02 −29.1
−.70 −27.0

+.68 −31.0 | +.35 −29.9 | +.07 −28.0 | −.28 −27.4 | −.45 −27.3 | −.74 −26.5 | −.92 −24.9
+1.4 | +.7 | +.2 | −.6 | −.9 | −1.5
−2 ′ ″ 28.27 (9) 29.6, | 29.2, | 27.8 3 | 28.0, | 28.2, | 28.0 2
28.51 | +1.3 | +.9 | −.5 | −.3 | −.1 | −.3

1873 Feb. 23 Ware  h = ~~+.004~~ −.004  n = +.42  c = +.06  l = −.~~089~~

| Star | c = | Ra h | m |  |  | tang. δ | sec δ |  | π Ra | P'−P | π Ra −(P'−P) |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  | s |  | s |  |  | 4r |  | 40.396 |
| [4.9 |  | 4 | 53] | 82 | + | .87 | +1.31 | = − | 40.61 | .+.05 | −40.66 | + | .37 | 00 | +08 | 40.21] |
| 4.9 | +5 | 4 | 55 | 372 | + | .39 | +1.08 | − | 40.62 | .−.01 | 40.61 | + | .16 |  | +.06 | .39 |
| 5.0 | 4 | 4 | 57 | 83 | + | .87 | +1.32 | − | 40.79 | .+.04 | 40.83 | + | .37 |  | +.08 | .38 |
| 5.1 | 3 | 5 | 4 | 374 | + | .79 | +1.28 | − | 40.78 | .+.01 | 40.79 | + | .33 |  | +.08 | .38 |
| 5.1 | 3 | 5 | 7 | 86 | + | 1.03 | +1.43 | − | 40.89 | .−.02 | 40.87 | + | .43 |  | +.09 | .3~~7~~5 |
| 5.04 5.1 | 3 | 5 | 8 | 87 | − | .15 | +1.01 | − | 40.50 | .−.02 | 40.48 | − | .06 |  | +.06 | .48 |
| 5.2 | +2 | 5 | 11 | 88 | − | .12 | +1.00 | − | 40.47 | .−.06 | 40.41 | − | .05 |  | +.06 | .40 |
| 5.5 | −1 | 5 | 28 | 97 | − | .02 | +1.00 | − | 40.68 | .−.07 | 40.61 | − | .01 |  | +.06 | .5~~5~~6 |
| 5.6 | 2 | 5 | 34 | 377 | + | 1.18 | +1.55 | − | 40.96 | .+.07 | 41.03 | + | .50 |  | +.09 | .44 |
| 5.7 | 3 | 5 | 39 | 378 | + | .32 | +1.05 | − | 40.57 | .+.04 | 40.61 | + | .13 |  | +.06 | .42 |
| 5.7 | 3 | 5 | 42 | 401 | + | .81 | +1.29 | − | 40.77 | .+.07 | 40.84 | + | .34 |  | +.08 | .42 |
| 5.8 | 4 | 5 | 50 | 103 | + | 1.00 | +1.41 | − | 40.95 | .−.04 | 40.91 | + | .42 |  | +.08 | .41 |
| 5.69 6.3 | −9 | 6 | 16 | 386 | + | .08 | +1.00 | − | 40.67 | .−.05 | 40.62 | + | .03 | 00 | +.06 | .53 |
| 5.42 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 40.454 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4047 |  | 40.430 |

1873 Feb. 23 Ware

| Star | Ra h | m | sin δ |  | tang δ |  | π Ra | P'−P | π Ra −(P'−P) |
|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  | s |  | s |
|  | 4 | 52 | −.80 | + | 1.75 | 0 = | −41.14 | .−.02 | −41.12 |
|  | 4 | 59 | 235 | − | 7.34 |  | −37.30 | .~~+.04~~ 09 | 37.~~34~~ 21 |
|  | 5 | 1 | 373 | + | 5.18 |  | −42.35 | .+.22 | 42.57 |
|  | 5 | 44 | 484 | − | 3.12 |  | −38.86 | .+.09 | 38.95 |
|  | 6 | 22 | 489 | − | 2.95 |  | −39.06 | :−.20 | 38.86 |
|  | 6 | 23 | 259 | − | 3.20 |  | −38.34 | .+.18 | 38.52 |
|  | 6 | 24 | 387 | + | 5.50 |  | −43.03 | .+.07 | 43.10 |

5.1 −.15 −40.48
5.2 −.12 −40.41
[5.5 −.02 −40.61]
5.6 +.32 −40.61
6.3 +.08 −40.62
5.5 ~~+.02~~ ~~−40.55~~
5.6 +.03 −40.53

5.1 +1.03 −40.87
5.6 +1.18 −41.03
5.8 +1.00 −40.91
6.5 +1.07 −40.94

n = +.37

I & II
4.9 +1.75 −41.12 +.00 −41.12
5.0 +5.18 −42.57 +.00 −42.57
6.4 +5.50 −43.10 +.00 −43.10

0 = +1.73 −.57 n = +.33
+5.16 −2.02 +.39
+5.48 −2.55 +.46
+.393

0 = +.68 −.18 +.26]
+4.11 −1.63 +.~~39~~ 40
+4.43 −2.16 +.4~~8~~9
+.445

I & II
5.0 −7.34 ~~−37.34~~ −37.21 +.00 −37.34
5.7 −3.12 −38.95 +.00 −38.95
6.4 −2.95 −38.86 +.00 −38.86
6.4 −3.20 −38.52 +.00 −38.52

0 = −7.36 +3.21 (+.13) n = +.4~~8~~ ~~4~~6
−3.14 +1.60 +.51
−2.97 +1.69 +.57
−3.52 +2.03 +.63
+.5~~38~~
.542

0 = −8.41 +3.60 (+.13) n = +.4~~3~~5
−4.19 +1.99 +.47
−4.02 +2.08 +.52
−4.27 +2.42 +.57
+.~~498~~
.502

1873 Feb. 24 Ware  h = −.006 −.016  n = +.46  c = .00

| Star |  | Ra h | m |  |  | tang δ |  | π Ra | P'−P | π Ra −(P'−P) |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  | s |  |  |  |  |  |  |
| 7.0 | +2 | 7 | 2 | 395 | + | .82 | 0 = − | 40.82 | .+.01 | −40.83 | + | .38 | 00 | −40.45 |
| 7.2 | 0 | 7 | 9 | 396 | + | .87 | − | 40.90 | .−.02 | 40.88 | + | .40 |  | .48 |
| 7.2 | 0 | 7 | 12 | 115 | + | .41 | − | 40.65 | .−.01 | 40.64 | + | .19 |  | .45 |
| 7.3 | −1 | 7 | 20 | 398 | + | .63 | − | 40.64 | .+.04 | 40.68 | + | .29 | 00 | .39 |
| 7.18 |  |  |  |  |  |  |  |  |  |  |  |  |  | 40.442 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | 40.442 |

1873 Feb. 24 Ware

| Ra h | m |  |  | tang δ |  | π Ra | P'−P | π Ra −(P'−P) |
|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  | s |  |  |
| 6 | 4 | 383 | + | 2.65 | 0 = | −41.45 | .+.10 | −41.55 |
| 6 | 13 | 256 | − | 16.92 |  | −32.73 | .−.0~~4~~5 | 32.6~~9~~8 |
| 6 | ~~40~~ | 111 | + | ~~20.73~~ |  | ~~−48.83~~ | ~~+.27~~ +.89 | ~~48.56~~ 49.72 |
| 6 | 55 | 493 | − | 2.92 |  | −38.77 | .+.10 | 38.87 |

7.2 +.41 −40.64

7.2 +.82 −40.83
7.2 +.87 −40.88
7.2 +.84 −40.85

n = +.49

I & II
6.1 +2.65 −41.55 −.01 −41.56
6.7 +20.73 −~~48.56~~ 49.72 −.00 −48.56

0 = +2.24 −.92 n = +.41
+20.32 −7.92 (−1.14) +.~~39~~ 35
+.~~400~~
.380

0 = +1.81 −.71 n = +.39
+19.89 −7.71 (−1.14) +.~~39~~ 35
+.~~390~~
.~~370~~

I & II
6.2 −16.92 −32.6~~9~~8 −.01 −32.70
6.9 −2.92 −38.87 +.00 −38.87

0 = −17.33 +7.94 n = +.46
−3.33 +1.77 +.53
+.495

0 = −17.76 +8.15 n = +.46
−3.76 +1.98 +.53
+.495

η = +.60+.80 +.40+.60 +.20+.40 +.0+.20 +.0−.20 −.20−.40 −.40−.60 −.60−.80 −.80−.100

| RA h | m | sin η | cos η | tang. δ | Req | Rfc | (P'−P)+(P''−P') | Req−Rfc | Rfc | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 53 | +.03 | 1.00+ | .87 | −2 | 30.9 | +0.1 | −30.8 | +0.1 | −30.7 |
| 4 | 55 | +.36 | .93+ | .39 | | ~~31.8~~ 31.6 | +0.0 | 31.6 | +0.9 | 30.7 |
| 4 | 57 | +.02 | 1.00+ | .87 | | 27.8 | −0.5 | 28.3 | +0.~~8~~1 | 28.~~1~~2 |
| 5 | 4 | +.07 | 1.00+ | .79 | | 30.5 | −0.1 | 30.6 | +0.2 | 30.4 |
| 5 | 7 | −.06 | 1.00+ | 1.03 | | — — — | +0.1 | | | |
| 5 | 8 | +.77 | .63− | .15 | | 34.0 | +0.5 | 33.5 | +1.8 | 31.7 |
| 5 | 11 | +.76 | .64− | .12 | | 33.6 | −0.1 | 33.7 | +1.8 | 31.~~7~~9 |
| 5 | 28 | +.69 | .72− | .02 | | — — — | +0.~~5~~6 | | | |
| 5 | 36 | −.13 | .99+ | 1.18 | | 29.~~3~~9 | +0.9 | 29.0 | −0.4 | 29.4 |
| 5 | 39 | +.42 | .90+ | .32 | | 29.~~8~~9 | +0.3 | 29.6 | +1.0 | 28.6 |
| 5 | 42 | +.06 | 1.00+ | .81 | 27.6 | ~~30.1~~ | −1.8 | 29.4 | +0.2 | 29.2 |
| 5 | 50 | −.05 | 1.00+ | 1.00 | | 28.6 | +0.5 | 28.1 | −0.2 | 28.3 |
| 6 | 16 | +.60 | .80+ | .08 | 30.8 | ~~31.1~~ | −0.2 | 31.0 | +1.4 | 29.6 |

29.88 29.86

| RA h | m | sin η | cos η | tang. δ | Req | Rfc | P'−P+(P''−P') | Req−Rfc | Rfc | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 52 | −.31 | .95+ | 1.75 | −2 | 29.2 | +0.2 | −29.0 | −0.8 | −29.8 |
| 4 | 59 | −.82 | .56− | 7.34 | | 25.~~2~~7 | ~~+0.4~~ −1 | ~~25.3~~ 25.6 8 | −2.0 | 27.6 ✓ |
| 5 | 1 | −.60 | .80+ | 5.18 | 7 | 2~~6~~.3 | +0.6 | 26.7 | −1.4 | 28.1 |
| 5 | 44 | −.91 | .40− | 3.12 | | [22.8] | +0.4 | 23.2 ~~22.4~~] | −2.0 | 25.2] ✓ |
| 6 | 22 | −.92 | .38− | 2.95 | | 25.7 4 | +0.4 | 25.8 ~~25.0~~ | −2.0 | 27.8 ✓ |
| 6 | 23 | −.91 | .40− | 3.20 | | 26.0 | −0.1 | 25.9 ~~26.1~~ | −2.0 | 27.9 ✓ |
| 6 | 24 | −.61 | .79+ | 5.50 | 31.8 | ~~30.4~~ | +0.9 | ~~30.9~~ 30.9 | −1.5 | 32.4 |

30.10
30.10

11 968
3 330
1298

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| +.77 | −33.5" | +.42 | −29.6" | +.36 | −31.6" | +.03 | −30.8" | ~~−.06~~ | " | −.31 | −29.0" | −.60 | −26.7" | −.82 | −25.3" |
| +.76 | −33.7 | | | | | +.02 | −28.3 | −.13 | ~~+~~29.0 | | | −.61 | −30.9 | ~~−.91~~ | |
| ~~+.69~~ | | | | | | +.07 | −30.6 | −.05 | −28.1 | | | | | −.92 | −25.0 |
| +.60 | −31.0 | | | | | +.06 | −29.4 | | | | | | | −.91 | −26.1 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| +.71 | −32.7 | +.42 | −29.6 | +.36 | −31.6 | +.05 | −29.8 | −.09 | −28.5 | −.31 | −29.0 | −.60 | −28.8 | −.88 | −25.5 |
| | +1.4 | | +.9 | | +.7 | | +.1 | | −.2 | | −.7 | | −1.2 | | |
| (14) | 31.3 3 | | 28.7 1 | | 30.9 1 | | 29.7 4 | | 28.7 2 | | 29.7 1 | | 30.0 2 | | |
| | * +1.3 | | * −1.3 | | * +.9 | | * −.3 | | * −1.5 | | * −.3 | | 0 | | |

−2' 29.96"
29.93

| RA h | m | sin η | cos η | tang. δ | Req | Rfc | (P'−P)+(P''−P') | Req−Rfc | Rfc | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | +.05 | 1.02+ | .82 | 28.5 −2' | ~~29.1~~" | −0.1 | −28.6 | +0.2 | −28.4 |
| 7 | 9 | +.02 | 1.00+ | .87 | | 29.1 | −0.4 | 29.5 | +0.1 | 29.4 |
| 7 | 12 | +.35 | .93+ | .41 | | 30.4 | +0.2 | 30.2 | +0.9 | 29.3 |
| 7 | 20 | +.18 | .98+ | .63 | | 30.6 | +0.7 | 29.9 | +0.5 | 29.4 |

29.12 29.12

| RA h | m | sin η | cos η | tang. δ | Req | Rfc | P'−P+(P''−P') | Req−Rfc | Rfc | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 4 | −.45 | .89+ | 2.65 | | − − | +0.3 | 3 28.3 | | |
| 6 | 13 | −.78 | .62− | 16.92 | | 28.8 | +0.8 | ~~27.2~~ | −1.8 | −30.1 |
| 6 | 40 | −.70 | .71+ | 20.73 | | — — | ~~+1.1~~ +2 | | | |
| 6 | 55 | −.92 | .38− | 2.92 | | 27.5 | −0.0 | 27.5 | −2.0 | 29.5 ✓ |

29.50
30.10

4 48
1 170
158

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| +.35 | −30.2 | +.05 | −28.6 | −.78 | −27.2 | −.92 | −27.5 |
| | | +.02 | −29.5 | | | | |
| | | +.18 | −29.9 | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| +.35 | −30.2 | +.08 | −29.3 | −.78 | −27.2 | −.92 | −27.5 |
| | +.7 | | +.2 | | −1.5 | | |
| (5) | 29.5 1 | | 29.1 3 | | 28.7 1 | | |
| | * +.4 | | .0 | | * −.4 | | |

−2' 29.10"
29.32

1873 Feb. 25 Wash. h = −.015 ~~.033~~   n = ~~n~~ = +.39 c = .00 k = −.028

| Star | | Ra h m | δ | tang. δ | π Ra | P'−P | π Ra −(P'−P) | | | 40.702 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5.7 | +.7 | 5 39 | 378 | + .32 | 0 = −40.82 | +.04 | −40.86 | + .12 | −.02 | −40.74 | 40.76 |
| 5.7 | +.7 | 5 42 | 101 | + .81 | −40.93 | +.07 | 41.00 | + .32 | −.02 | 68 | .70 |
| 5.8 | +.6 | 5 48 | 102 | + .13 | −40.72 | −.01 | 40.71 | + .05 | −.02 | 66 | .68 |
| 5.8 | +.6 | 5 50 | 103 | + 1.00 | −41.12 | −.04 | 41.08 | + .39 | −.02 | 69 | .71 |
| 5.80 6.0 | +.4 | 6 0 | 382 | + .26 | −40.86 | −.02 | 40.84 | + .10 | −.01 | .74 | .75 |
| 6.1 | +3 | 6 7 | 105 | + .41 | −40.82 | +.01 | 40.83 | + .16 | −.01 | .67 | .68 |
| 6.1 | +3 | 6 8 | 384 | + 1.67 | −41.56 | −.21 | 41.35 | + .65 | −.01 | .70 | .71 |
| 7.5 | −1.1 | 7 32 | 120 | + .10 | −40.78 | −.01 | 40.77 | + .04 | +.03 | .73 | .70 |
| 7.6 | −1.2 | 7 37 | 122 | + .54 | −40.98 | +.01 | 40.99 | + .21 | +.03 | .78 | .75 |
| 7.00 7.7 | −1.3 | 7 39 | 400 | + .67 | −41.04 | +.02 | 41.06 | + .26 | +.04 | −40.80 | .76 |
| 6.40 | | | | | | | | | | 40.7~~4~~36 | |
| | | | | | | | | | | 40.719 | 40.720 |

1873 Feb 25 Wash.

| Star | Ra h m | δ | tang. δ | π Ra | P'−P | π Ra −(P'−P) |
|---|---|---|---|---|---|---|
| | 5 44 | 484 | −3.12 | 0 = −39.42 | +.09 | −39.51 |
| | 5 55 | 485 | −4.32 | −38.59 | +.23 | 38.82 |
| | 6 4 | 383 | +2.65 | −41.60 | +.10 | 41.70 |
| | 6 13 | 256 | −16.92 | −34.04 | −.04 5 | ~~34.00~~ 33.99 |
| | 7 29 | 497 | −5.32 | −38.60 | +.09 | 38.69 |

5.8 +.3 −40.71
6.0 +.26 −40.84
6.1 +.41 −40.83
7.5 +.10 −40.77
6.3 +.22 −40.79 +1

6.1 +2.65 −41.70 +.00 −41.70 (I)   +.00 −41.70 (II)

0 = +2.43 −.91 n = +.37

0 = +1.32 −.49 n = +.37

5.8 +1.00 −41.08
6.1 +1.67 −41.35
5.9 +1.33 −41.21

| | | I | | | II | |
|---|---|---|---|---|---|---|
| 5.7 | −3.12 | −39.51 | −.01 | −39.52 | −.03 | −39.54 |
| 5.9 | −4.32 | −38.82 | −.01 | −38.83 | +.00 | −38.82 |
| 6.2 | −16.92 | ~~−34.00~~ 33.99 | +.00 | −34.00 | +.00 | −34.00 |
| 7.5 | −5.32 | −38.69 | +.02 | −38.67 | +.02 | −38.67 |

0 = −3.34 +1.27 n = +.38   0 = −4.45 +1.67 n = +.37
−4.54 +1.96 +.43   −5.65 +2.39 +.42
−17.14 +6.79 +~~.39~~ 40   −18.25 +7.21 +.39
−5.54 +2.12 +.38   −6.65 +2.54 +.38
+.398   +.390

n = +.38 +.01

1873 Feb 26 h = −.027 ~~.000~~   n = +.34 c = .00 k = +.001

| | Star | | Ra h m | δ | tang. δ | π Ra | P'−P | π Ra −(P'−P) | | | 41.372 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5.8 | +.9 | 5 48 | 102 | + .13 | 0 = −41.43 | +.01 | −41.42 | + .04 | 00 | −41.38 |
| | 5.8 | .9 | 5 50 | 103 | + 1.00 | −41.78 | −.04 | 41.74 | + .34 | | 40 |
| | 6.1 | .6 | 6 7 | 105 | + .41 | −41.49 | +.01 | 41.50 | + .14 | | 36 |
| 5.95 | 6.1 | .6 | 6 8 | 384 | + 1.67 | −42.13 | −.21 | 41.92 | + .57 | | 35 |
| | 6.7 | +.0 | 6 44 | 112 | + .68 | −41.54 | +.08 | 41.62 | + .23 | | 39 |
| | 6.8 | −.1 | 6 46 | 394 | + 1.64 | −41.89 | +.02 | 41.91 | + .56 | | 35 |
| | 7.0 | .3 | 7 2 | 395 | + .82 | −41.64 | +.01 | 41.65 | + .28 | | 37 |
| | 7.2 | .5 | 7 9 | 396 | + .87 | −41.70 | −.02 | 41.68 | + .30 | | 38 |
| | 7.2 | .5 | 7 12 | 115 | + .41 | −41.52 | −.01 | 41.51 | + .14 | | 37 |
| | 7.3 | .6 | 7 20 | 398 | + .63 | −41.52 | +.04 | 41.56 | + .21 | | 35 |
| 7.10 | 7.5 | −.8 | 7 32 | 120 | + .10 | −41.43 | −.01 | 41.4~~4~~2 | + .03 | 00 | 39 |
| | 6.58 | | | | | | | | | | 41.371 |
| | | | | | | | | | | | 41.372 |

| Ra h m | δ | tang. δ | π Ra | P'−P | π Ra −(P'−P) |
|---|---|---|---|---|---|
| 5 55 | 485 | −4.32 | 0 = −39.43 | +.23 | −39.66 |
| 6 4 | 383 | +2.65 | −42.13 | +.10 | 42.23 |
| 6 ~~20~~ | 111 | +~~20.73~~ | −47.10 | +.8~~9~~ ~~−.27~~ | ~~46.83~~ 47.99 |
| 6 55 | 493 | −2.92 | −40.23 | +.10 | 40.33 |
| 7 18 | 273 | −3.29 | −40.31 | +.09 | 40.40 |
| 7 29 | 497 | −5.32 | −39.35 | +.09 | 39.44 |

5.8 +.13 −41.42
7.2 +.41 −41.50
7.5 +.10 −41.44 2
6.8 +.21 −41.45 +2

| | | I | | | II | |
|---|---|---|---|---|---|---|
| 6.1 | +2.65 | −42.23 | −.02 | −42.25 | +.00 | −42.23 |
| 6.7 | +20.73 | ~~−46.83~~ 47.99 | +.00 | −46.83 | +.01 | −46.82 |

0 = +2.44 −.80 n = +.3~~2~~3
+20.52 −5.38 +.~~28~~32
−1.14
+.~~295~~ +.325

0 = +1.21 −.37 n = +.30 1
+19.29 −4.96 +.~~26~~32
−1.14
+.~~285~~ +.315

5.8 +1.00 −41.74
6.1 +1.67 −41.92
6.8 +1.64 −41.91
6.2 +1.44 −41.86

| | | I | | | II | |
|---|---|---|---|---|---|---|
| 5.9 | −4.32 | −39.66 | −.02 | −39.68 | −.01 | −39.67 |
| 6.9 | −2.92 | −40.33 | +.00 | −40.33 | +.02 | −40.31 |
| 7.3 | −3.29 | −40.40 | +.01 | −40.39 | +.03 | −40.37 |
| 7.5 | −5.32 | −39.44 | +.02 | −39.42 | +.04 | −39.40 |

0 = −4.53 +1.77 n = +.39
−3.13 +1.12 +.36
−3.50 +1.06 +.30
−5.53 +2.03 +.37
+.355

0 = −5.76 +2.19 +.38
−4.36 +1.55 +.35
−4.73 +1.49 +.31
−6.76 +2.46 +.36
+.350

n = +.33 +.02

1873 Mar. 4 h = −.026 ~~.033~~   ~~n~~ = +.36 c = .00 k = −~~.034~~ .077

| | Star | | Ra h m | δ | tang. δ | π Ra | P'−P | π Ra −(P'−P) | | | 45.410 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5.8 | +1.2 | 5 50 | 103 | + 1.00 | 0 = −45.85 | −.04 | −45.81 | + .36 | −.048 | 45.45 | 45.49 | 53 |
| 6.00 | 6.1 | +.9 | 6 7 | 105 | + .41 | −45.63 | +.01 | 45.64 | + .15 | −.036 | .49 | ~~.52~~ | 54 |
| ~~5.95~~ | 6.1 | .8 | 6 8 | 384 | + 1.67 | −46.10 | −.21 | 45.89 | + .60 | −6 | .29 | | 35 |
| | 7.2 | −.2 | 7 12 | 115 | + .43 | −45.58 | −.01 | 45.57 | + .15 | +.0x2 | .42 | ~~.47~~ | 40 |
| | 7.3 | .3 | 7 20 | 398 | + .63 | −45.68 | +.04 | 45.72 | + .23 | .0x3 | ~~.49~~ | .48 | 46 |
| | 7.5 | .5 | 7 32 | 120 | + .10 | −45.57 | −.01 | 45.56 | + .04 | .02+5 | .52 | .50 | 47 |
| 7.46 | 7.6 | .6 | 7 37 | 122 | + .54 | −45.78 | +.01 | 45.79 | + .19 | .02+6 | .60 | .58 | 52 |
| | 7.7 | −.7 | 7 39 | 400 | + .67 | −45.80 | +.02 | 45.82 | + .24 | +.02+6 | 58 | .56 | 52 |
| | ~~7.03~~ 6.91 | | | | | | | | | | 45.522 | | .463 |
| | | | | | | | | | | | 45.~~504~~ 463 | 45.~~506~~ | |

| Ra h m | δ | tang. δ | π Ra | P'−P | π Ra −(P'−P) |
|---|---|---|---|---|---|
| 5 55 | 485 | −4.32 | 0 = −43.84 | +.23 | −44.07 |
| 6 4 | 383 | +2.65 | −46.32 | +.10 | 46.42 |
| 6 13 | 256 | −16.92 | −39.77 | −.04 5 | 39.73 2 |
| 7 18 | 273 | −3.29 | −44.45 | +.09 | 44.54 |
| 7 45 | 401 | +3.55 | −46.58 | +.37 | 46.95 |
| 7 52 | 284 | −*53.01 ~~−24.04~~ | ~~−43.55~~ | ~~+.62~~ | ~~22.41~~ −23.08 |
| 7 29 | 497 | −5.32 | −43.55 | +.09 | 43.64 |

6.1 +.41 −45.64
7.2 +.41 −45.57
7.5 +.10 −45.56
6.9 +.31 −45.59 +.03

| | | I | | | II | |
|---|---|---|---|---|---|---|
| 6.1 | +2.65 | −46.42 | −.02 | −46.44 | +.01 | −46.41 |
| 7.8 | +3.55 | −46.95 | +.02 | −46.93 | +.05 | −46.90 |

5.8 +1.00 −45.81
6.1
5.9

n = +.32 +.06

0 = +2.34 −.85 n = +.36
+3.24 −1.34 +.41
+.385

0 = +1.65 −.60 n = +.36
+2.55 −1.09 +.43
+.395

0 = −4.63 +1.49 n = +.32
17.23 5.44 .34
3.60 1.06 .29
53.32 23.24 .43
5.63 1.97 .35
+.346

0 = 5.82 +1.74 n = +.33
17.52 6.09 .34
4.29 1.81 .38
54.01 23.45 .43
6.32 2.31 .35
.35

| | | I | | | II | |
|---|---|---|---|---|---|---|
| 5.9 | −4.32 | −44.07 | −.03 | −44.10 | +.00 | −44.07 |
| 6.2 | −16.92 | −39.73 | −.02 | −39.75 | +.01 | −39.72 |
| 7.3 | −3.29 | −44.52 | +.01 | −44.53 | +.04 | −44.50 |
| 7.9 | −53.01 | −22.41 | +.03 | −22.38 | +.05 | −22.36 |
| 7.5 | −5.32 | −43.64 | +.02 | −43.62 | +.04 | −43.60 |

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0,−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h | m | sin z | cos z | tang. δ | | $R_{eq}-R_{pe}$ | P'−P | $R_{eq}-R_{pe}$+(P'−P) | $\Delta_{pe}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 30 | +.42 | .90 + | .32 | −2 | 30.3 4 | +0.3 | −30.1 | +1.0 | −29.1 |
| 5 | 42 | +.06 | 1.00 + | .81 | 27.5 | ~~30.0~~ | −1.8 | 29.3 | +0.2 | 29.1 |
| 5 | 48 | +.57 | .82 + | .13 | | 31.0 4 | +0.8 | 30.6 | +1.4 | 29.2 |
| 5 | 50 | −.04 | 1.00 + | 1.00 | | 29.9 | +0.5 | 29.4 | −0.1 | 29.5 |
| 6 | 0 | +.46 | .88 + | .26 | | 29.5 7 | +0.3 | 29.4 | +1.1 | 28.3 |
| 6 | 7 | +.34 | .94 + | .41 | | 29.9 | +0.2 | 29.7 | +0.8 | 28.9 |
| 6 | 8 | −.29 | .95 + | 1.67 | | 28.4 2 | +0.4 | 27.8 | −0.8 | 28.6 |
| 7 | 32 | +.60 | .80 + | .10 | | 30.4 | +0.7 | 29.7 | +1.4 | 28.3 |
| 7 | 37 | +.24 | .97 + | .54 | | 30.6 | +0.4 | 30.2 | +0.6 | 29.6 |
| 7 | 39 | +.15 | .99 + | .67 | | 28.1 | −0.8 | 27.3 8.9 | +0.4 | 28.5 |
| | | | | | | | | | | 28.91 29.10 |

| RA h | m | sin z | cos z | tang. δ | | $R_{eq}-R_{pe}$ | P'−P | $R_{eq}-R_{pe}$+(P'−P) | $\Delta_{pe}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 44 | −.91 | .40 − | 3.12 | −2 | 29.4 2 | +0.4 | 29.6 ~~28.8~~ | −2.0 | −31.6 ✓ |
| 5 | 55 | −.87 | .48 − | 4.32 | | 28.3 0 | +0.2 | 28.2 ~~27.8~~ | −2.0 | −30.2 ✓ |
| 6 | 4 | −.45 | .89 + | 2.65 | 28.8 | ~~29.1~~ | +0.3 | 28.5 | −1.2 | −29.7 |
| 6 | 13 | −.78 | .86 − | 16.92 | | 29.8 0 | +0.8 3 | ~~28.8~~ 4 | −1.8 | 31.1 |
| 7 | 29 | −.85 | .52 − | 5.32 | | 28.0 | −0.5 | 27.3 27.5 ~~28.5~~ | −1.9 | 29.4 ✓ |
| | | | | | | | | | | 30.10<br>30.40 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 10<br>2 | [illegible]910<br>480<br>[illegible]390 | +.60 −29.7 | +.42 −30.1<br>+.57 −30.6<br>+.46 −29.4 | +.34 −29.7<br>+.24 −30.2<br>+.? | +.06 −29.3 8 7<br>+.15 −27.3 8 | −.04 −29.4 | −.29 −27.8 | −.45 −28.5 | −.78 −28.2 | −.91 −28.8<br>−.87 −27.8<br>−.85 −28.5 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | +60 −29.7 | +48 −30.0 | +29 −30.0 | +10 −29.1 | −04 −29.4 | −29 −27.8 | −45 −28.5 | −78 −28.2 | −88 −28.4 |
| | +1.2 | +1.0 | +.6 | +.2 | −.1 | −.6 | −.9 | −1.5 | |
| −2' 29.09 | (12) −28.5 | −29.0 | 29.4 | 28.9 2 | 29.5 | 28.4 | 29.4 | 29.7 | |
| 29.16 | −.6 | −.1 3 | +.3 2 | −.2 | +.4 | −.7 | +.3 | +.6 | |

| RA h | m | sin z | cos z | tang. δ | | $R_{eq}-R_{pe}$ | P'−P | $R_{eq}-R_{pe}$+(P'−P) | $\Delta_{pe}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 48 | +.57 | .82 + | .13 | −2 | 32.4 8 | +0.8 | −32.0 | +1.4 | −30.6 |
| 5 | 50 | −.04 | 1.00 + | 1.00 | | 29.9 | +0.5 | 29.4 | −0.1 | 29.5 |
| 6 | 7 | +.34 | .94 + | .41 | | 30.7 | +0.2 | 30.5 | +0.8 | 29.7 |
| 6 | 8 | −.29 | .95 + | 1.67 | 29.8 | ~~30.0~~ | +0.4 | 29.4 | −0.8 | 30.2 |
| 6 | 44 | +.14 | .99 + | .68 | | 28.7 | +0.2 | 28.5 | +0.4 | 28.1 |
| 6 | 46 | −.28 | .96 + | 1.64 | | — — | +1.1 | | | |
| 7 | 2 | +.05 | 1.00 + | .82 | 30.8 | ~~31.4~~ | −0.1 | 30.9 | +0.2 | 30.7 |
| 7 | 9 | +.02 | 1.00 + | .87 | | 28.6 | −0.4 | 29.0 | +0.1 | 28.9 |
| 7 | 12 | +.35 | .93 + | .41 | | 31.5 | +0.2 | 31.3 | +0.9 | 30.4 |
| 7 | 20 | +.18 | .98 + | .63 | | 31.1 | +0.7 | 30.4 | +0.5 | 29.9 |
| 7 | 32 | +.60 | .80 + | .10 | | 32.3 | +0.7 | 31.6 | +1.4 | 30.2 |
| | | | | | | | | | | 29.82 29.82 |

| RA h | m | sin z | cos z | tang. δ | | $R_{eq}-R_{pe}$ | P'−P | $R_{eq}-R_{pe}$+(P'−P) | $\Delta_{pe}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 55 | −.87 | .48 − | 4.32 | −2 | 29.8 ~~30.1~~ | +0.2 | 30.0 ~~29.6~~ | −1.9 | 31.9 ✓ |
| 6 | 4 | −.45 | .89 + | 2.65 | 28.9 | ~~29.0~~ | +0.3 | 28.6 | −1.2 | −29.8 |
| 6 | 40 | −.70 | .71 + | 20.73 | | 27.8 | +1.1 2 | ~~26.7~~ 27.6 | −1.7 | 29.3 |
| 6 | 55 | −.92 | .38 − | 2.92 | | 28.4 | +0.0 | 28.4 | −2.0 | 30.4 ✓ |
| 7 | 18 | −.90 | .42 − | 3.29 | − | 28.0 | +0.1 | 28.1 ~~27.9~~ | −2.0 | 30.1 ✓ |
| 7 | 29 | −.85 | .52 − | 5.32 | | 29.7 | −0.5 | 29.2 ~~30.2~~ | −1.9 | 31.1 ✓ |
| | | | | | | | | | | 29.55<br>29.55 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 10<br>2 | 820<br>110<br>930 | +.60 −31.6 | +.57 −32.0 | +.34 −30.5<br>+.35 −31.3 | +.14 −28.5<br>+.05 −30.9<br>+.02 −29.0<br>+.18 −30.4 | −.04 −29.4 | −.29 −29.4 | −.45 −28.6 | −.70 −26.7 | −.87 −29.6<br>−.92 −28.4<br>−.90 −27.9<br>−.85 −30.2 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | +60 −31.6 | +57 −32.0 | +34 −30.9 | +10 −29.7 | −04 −29.4 | −29 −29.4 | −45 −28.6 | −70 −26.7 | −88 −29.0 |
| | +1.2 | +1.1 | +.7 | +.2 | −.1 | −.6 | −.9 | −1.4 | |
| −2' 29.73 | (12) 30.4 | 30.9 | 30.2 2 | 29.5 4 | 29.5 | 30.0 | 29.5 | 28.1 | |
| 29.78 | +.7 | +1.2 | +.5 | −.2 | −.2 | +.3 | −.2 | −1.6 | |

| RA h | m | sin z | cos z | tang. δ | | $R_{eq}-R_{pe}$ | P'−P | $R_{eq}-R_{pe}$+(P'−P) | $\Delta_{pe}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 50 | −.04 | 1.00 + | 1.00 | −2 | 29.0 4 | +0.5 | −28.5 | −0.1 | −28.6 |
| 6 | 7 | +.34 | .94 + | .41 | | 28.2 | +0.2 | 28.0 | +0.9 | 27.1 |
| 6 | 8 | −.29 | .95 + | 1.67 | | 26.6 4 | +0.4 | 26.0 | −0.8 | 26.8 |
| 7 | 12 | +.35 | .93 + | .41 | | 30.4 | +0.2 | 30.2 | +0.9 | 29.3 |
| 7 | 20 | +.18 | .98 + | .63 | | 29.5 | +0.7 | 28.5 8 | +0.5 | 28.3 |
| 7 | 32 | +.60 | .80 + | .10 | | 31.4 | +0.7 | 30.7 | +1.5 | 29.2 |
| 7 | 37 | +.24 | .97 + | .54 | | 28.5 | +0.4 | 28.1 | +0.6 | 27.5 |
| 7 | 39 | +.15 | .99 + | .67 | | 26.9 | −0.8 | 27.7 | +0.4 | 27.3 |
| | | | | | | | | | | 28.01 28.01 |

| RA h | m | sin z | cos z | tang. δ | | $R_{eq}-R_{pe}$ | P'−P | $R_{eq}-R_{pe}$+(P'−P) | $\Delta_{pe}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 53 | −.87 | .48 − | 4.32 | − | — — 6 | +0.2 | | | |
| 6 | 4 | −.45 | .89 + | 2.65 | | 27.3 6 | +0.3 | −27.3 6 | 1.2 | −28.5 |
| 6 | 13 | −.78 | .62 − | 16.92 | 25.9 | ~~26.2~~ | +0.8 3 | 26.2 ~~25.4~~ | −1.8 | 28.0 |
| 7 | 18 | −.90 | .42 − | 3.29 | | 24.9 | +0.1 | 25.0 ~~24.8~~ | −2.1 | 27.1 ✓ |
| 7 | 45 | −.53 | .84 + | 3.55 | | 26.4 | +0.6 | 25.8 | −1.3 | 27.1 |
| 7 | 52 | −.75 | .66 + | 53.01 | | 24.4 | ~~−0.4~~ +6 | 25.0 ~~24.8~~ 25.8 | −1.8 | 26.8 |
| 7 | 29 | −.85 | .52 − | 5.32 | | 25.1 | −0.5 | 24.6 ~~25.6~~ | −2.0 | 26.6 ✓ |
| | | | | | | | | | | 27.15<br>27.60 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8<br>4 | 808<br>240<br>1048 | +.60 −30.7 | | +.34 −28.0<br>+.35 −30.2<br>+.24 −28.1 | +.18 −28.5 8<br>+.15 −27.7 | −.04 −28.5 | −.29 −26.0 | −.45 −27.3<br>−.53 −25.8 | −.78 −25.4 1<br>−.75 −24.8 | −.90 −24.8<br>−.85 −25.6 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | +60 −30.7 | | +31 −28.8 | +16 −28.2 | −04 −28.5 | −29 −26.0 | −49 −26.5 | −76 −24.9 | −87 −25.2 |
| | +1.2 | | +.7 | +.4 | −.1 | −.6 | −1.0 | −1.5 | |
| −2 27.70 | (12) 29.5 | | 28.1 | 27.8 | 28.6 | 26.6 | 27.5 | 26.4 | |
| 27.87 | +1.8 | | +.4 3 | +.1 2 | +.9 | −1.1 | −.2 2 | −1.3 2 | |

1873 Mar. 5 Ware h = −.027 / −.031 n = +.37 e = .00 h = −.030

| | Star | Ra | h | m | δ | tang. δ | π-Ra | P′-P | π-Ra-(P′-P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | s | | s | | | 46.063 | |
| | 5.7 | +8 | 5 | 39 | 378 | + .32 | 0 = −46.19 | +.04 | −46.23 | + .12 | −.02 | −46.11 | 46.13 |
| | 5.7 | .8 | 5 | 42 | 101 | + .81 | −46.19 | +.07 | 46.26 | + .30 | .02 | 45.96 | 45.98] |
| | 5.8 | .7 | 5 | 48 | 102 | + .13 | −46.20 | −.01 | 46.19 | + .05 | .02 | 46.14 | 46.16 |
| | 5.8 | 7 | 5 | 50 | 103 | + 1.00 | −46.44 | −.04 | 46.40 | + .37 | .02 | .03 | .05 |
| | 6.0 | 5 | 6 | 0 | 382 | + .26 | −46.22 | −.02 | 46.20 | + .10 | .01 | .10 | .11 |
| 5.89 | 6.1 | 4 | 6 | 7 | 105 | + .41 | −46.23 | +.01 | 46.24 | + .15 | .01 | .09 | .10 |
| | 6.1 | +4 | 6 | 8 | 384 | + 1.67 | −46.84 | −.21 | 46.63 | + ~~.52~~ | −.01 | .01 | .02 |
| | 7.3 | −8 | 7 | 20 | 398 | + .63 | −46.30 | +.04 | 46.34 | + .23 | +.02 | .11 | .09 |
| | 7.5 | 10 | 7 | 32 | 120 | + .10 | −46.17 | −.01 | 46.16 | + .04 | .03 | .12 | .09 |
| | 7.6 | 1.1 | 7 | 37 | 122 | + .54 | −46.26 | +.01 | 46.27 | + .20 | .03 | .07 | .04 |
| 7.52 | 7.7 | −1.2 | 7 | 39 | 400 | + .67 | −46.38 | +.02 | 46.40 | + .25 | +.04 | .15 | .11 |
| | 6.48 | | | | | | | | | 46.11 | | 46.112 | |
| | | | | | | | | | | | | 46.~~072~~081 | |

1873 Mar. 5 Ware

| Star | Ra h | m | δ | tang. δ | π-Ra | P′-P | π-Ra-(P′-P) |
|---|---|---|---|---|---|---|---|
| | 5 | 44 | 484 | −3.12 | 0 = −~~31.26~~ 44.573 | +.09 | −~~31.35~~ −44.82 |
| | 6 | 4 | 383 | +2.65 | −46.87 | +.10 | 46.97 |
| | 6 | 13 | 256 | −16.92 | −40.14 | −.04 5 | 40.~~18~~ 89 |
| | 7 | 29 | 497 | −5.32 | −43.86 | +.09 | 43.95 |
| | 7 | 44 | 401 | +3.55 | −47.16 | +.37 | 47.53 |
| | 7 | 52 | 284 | −53.01 | −28.91 | ~~−1.63~~ −.96 | ~~27.28~~ −27.95 |

| | | s |
|---|---|---|
| 5.6 | +.32 | −46.23 |
| 5.8 | +.13 | −46.19 |
| 6.0 | +.26 | −46.20 |
| 7.5 | +.10 | −46.16 |
| 6.2 | +.20 | −46.19 +1 |

| | | |
|---|---|---|
| 5.8 | +1.00 | −46.40 |
| 6.1 | +1.67 | −46.63 |
| 5.9 | +1.33 | −46.51 |

n = +.28 +.01

I

6.1 +2.65 −46.97 +.00 −46.97

7.7 +3.55 −47.53 +.04 −47.49

II

+.01 −46.96

+.05 −47.48

o = +2.45 −0.78 n = +.32
3.35 −1.30 +.39
+.355

o = +1.32 −0.45 n = +.34
+2.22 −0.97 +.44
+.390

o = −3.32 +1.36 n = +.41
−17.12 +6.09 n = .36
−5.52 +2.28 +.41
−53.21 +18.96 −.67 +.36~~6~~5
+.382

o = −4.45 +1.69 n = .38
−18.25 +6.42 .35
−6.65 +2.66 .39
−54.34 +19.28 .35
+.368

46.0~~80~~50

| | | | | I | II | |
|---|---|---|---|---|---|---|
| 5.7 | −3.12 | −~~31.35~~ 44.582 | −.01 | −~~31.36~~ 44.83 | +.00 | −~~31.36~~ 44.82 |
| 6.2 | −16.92 | −~~40.10~~ 40.09 | +.00 | −40.10 | +.01 | −40.09 91 |
| 7.5 | −5.32 | −43.95 | +.04 | −43.91 | +.04 | −43.87 23 |
| 7.9 | −53.01 | −~~27.28~~ −27.95 | +.05 | −27.23 | +.05 | −27.18 |

11
4

1873 Mar 6 h = −.030 / −.034 n = +.34 e = .00 h = −.044

| | Star | Ra | h | m | δ | tang. δ | π-Ra | P′-P | π-Ra-(P′-P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | s | | | | | 46.814 | |
| | 5.6 | +8 | 5 | 36 | 377 | + 1.18 | 0 = −47.11 | +.07 | −47.18 | + .40 | −.04 | −46.78 | 46.82 |
| | 5.7 | 7 | 5 | 39 | 378 | + .32 | −46.86 | +.04 | 46.90 | + .11 | .03 | .79 | 82 |
| | 5.7 | 7 | 5 | 42 | 101 | + .81 | −46.87 | +.07 | 46.94 | + .28 | .03 | .66 | .69 |
| | 5.8 | .6 | 5 | 48 | 102 | + .13 | −46.85 | −.01 | 46.84 | + .04 | .03 | 80 | .83 |
| | 5.8 | 6 | 5 | 50 | 103 | + 1.00 | −47.23 | −.04 | 47.19 | + .34 | .03 | 85 | .88 |
| | 6.0 | 4 | 6 | 00 | 382 | + .26 | −46.96 | −.02 | 46.94 | + .09 | .02 | 85 | .87 |
| | 6.1 | 3 | 6 | 7 | 105 | + .41 | −46.94 | +.01 | 46.95 | + .14 | .01 | 81 | .82 |
| 5.85 | 6.1 | 3 | 6 | 8 | 384 | + 1.67 | −47.75 | −.21 | 47.54 | + .57 | .01 | .97 | .98 |
| | 6.2 | .2 | 6 | 15 | 106 | + .42 | −46.98 | −.01 | 46.97 | + .14 | −.01 | .83 | .84 |
| | 6.3 | +1 | 6 | 16 | 386 | + .08 | −46.97 | −.05 | 46.92 | + .03 | .00 | 89 | .89 |
| | 6.5 | −1 | 6 | 29 | 389 | + .82 | −47.01 | +.09 | 47.10 | + .28 | +.00 | 82 | .82 |
| | 6.6 | 2 | 6 | 36 | 109 | + .47 | −46.98 | +.01 | 46.99 | + .16 | .01 | .83 | .82 |
| | 6.6] | | 6 | 37 | 390 | + .96 | −47.04 | −.01 | 47.03 | + .33 | | .70] | |
| | 7.9 | 1.5 | 7 | 55 | 404 | + .53 | −47.09 | +.00 | 47.09 | + .18 | .07 | .91 | .84 |
| 9 | 8.0 | 1.6 | 7 | 58 | 405 | + 1.28 | −47.20 | +.09 | 47.29 | + .44 | .07 | 85 | .78 |
| 7.03 | 8.1 | −1.7 | 8 | 9 | 123 | + .17 | −47.01 | +.00 | 47.01 | + .06 | +.07 | .95 | .88 |
| | 6.403 | | | | | | | | | | | 46.8769 | |
| | | | | | | | | | | | | 46.839 | |

| Ra h | m | δ | tang. δ | π-Ra | P′-P | π-Ra-(P′-P) |
|---|---|---|---|---|---|---|
| 5 | 44 | 484 | −3.12 | −~~28.91~~ 45.76 | +.09 | −~~29.00~~ 45.85 |
| 5 | 55 | 485 | −4.32 | 0 = −45.27 | +.23 | 45.50 |
| 6 | 4 | 383 | +2.65 | −47.63 | +.10 | 47.73 |
| 6 | 13 | 256 | −16.92 | −40.84 | −.04 5 | 40.80 79 |
| 6 | 22 | 489 | −2.95 | −45.87 | −.20 | 45.67 |
| 6 | 23 | 259 | −3.20 | −45.54 | +.18 | 45.72 |
| 6 | 24 | 387 | +5.50 | −48.79 | +.07 | 48.86 |
| 6 | 39 | 391 | +2.61 | −47.70 | +.02 | 47.72 |
| 6 | 40 | 111 | +20.73 | −52.45 | +.89 ~~7.27~~ | ~~52.18~~ 53.34 |
| 8 | 3 | 406 | +4.05 | −48.52 | −.16 | 48.36 |
| 7 | 52 | 284 | −53.01 | −31.58 | ~~−1.63~~ −.96 | ~~29.95~~ −30.62 |

| | | |
|---|---|---|
| 5.6 | +.32 | −46.90 |
| 5.8 | +.13 | −46.84 |
| 6.0 | +.26 | −46.94 |
| 6.3 | +.08 | −46.92 |
| 8.1 | +.17 | −47.01 |
| 6.4 | +.19 | −46.92 |

| | | |
|---|---|---|
| 5.6 | +1.18 | −47.18 |
| 5.8 | +1.00 | −47.19 |
| 6.1 | +1.67 | −47.54 |
| 8.0 | +1.28 | −47.29 |
| 6.4 | +1.28 | −47.30 |

n = +.36

I×II

| | | | | |
|---|---|---|---|---|
| 6.1 | +2.65 | −47.73 | −.01 | −47.74 |
| 6.4 | +5.50 | −48.86 | +.00 | −48.86 |
| 6.6 | +2.61 | −47.72 | +.01 | −47.71 |
| 6.7 | +20.73 | −~~52.18~~ 53.34 | +.01 | −52.17 |
| 8.1 | +4.05 | −48.36 | +.05 | −48.31 |

o = +2.46 −0.82 n = +.33
3.31 −1.94 .37
2.42 −0.79 .33
20.84 −5.25 −114 ~~.26~~ 32
3.86 −1.369 .386
+.330
.342

o = +1.37 −0.44 n = +.32
+4.22 −1.56 .37
+1.33 −0.41 .31
+19.45 −4.17 −114 ~~.20~~ .31
+2.77 −1.01 .36
+.~~322~~
.334

46.839 4585

I×II 4587

| | | | | |
|---|---|---|---|---|
| 5.7 | −3.12 | −~~29.00~~ | −.02 | −~~29.02~~ |
| 5.9 | −4.32 | −45.50 | −.02 | −45.52 |
| 6.2 | −16.92 | −40.80 79 | −.01 | −40.81 |
| 6.4 | −2.95 | −45.67 | +.00 | −45.67 |
| 6.4 | −3.20 | −45.72 | +.00 | −45.72 |
| 7.9 | −53.01 | −~~29.95~~ 30.62 | +.04 | −29.91 |

o = −3.31 +1.05 n = +.352
−4.51 +1.40 +.31
−17.11 +6.11 .36
−3.14 +1.25 .40
−3.39 +1.20 ~~.29~~ .35
−53.20 +17.01 .67 .321
+.348 7

o = −4.40 +1.43 n = +.33
−5.60 +1.78 .32
−18.20 +6.49 .36
−4.23 +1.63 .39
−4.48 +1.58 .35
−54.29 +17.39 .67 .381
+.~~348~~ +.343

16
7

| z= | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +0,−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA | sin z cos z | tang. δ | | Req−Rfe | P′−P | Req−Rfe +(P′−P) | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|
| h m | | | | | | | | |
| 5 39 | +.42 .90 + | .32 | −2 | 27.~~8~~9 | +0.3 | −27.6 + | 1.0 | −26.6 |
| 5 42 | +.06 1.00 + | .81 | 26.5 | ~~29.0~~ | −1.8 | 28.3 + | 0.2 | 28.1 |
| 5 48 | +.57 .82 + | .13 | 29.0 | ~~29.0~~ | +0.8 | 28.2 + | 1.4 | 26.8 |
| 5 50 | −.04 1.00 + | 1.00 | | 30.3 | +0.5 | 29.8 − | 0.1 | 29.9 |
| 6 0 | +.46 .82 + | .26 | | 28.~~5~~7 | +0.3 | 28.4 + | 1.1 | 27.3 |
| 6 7 | +.34 .94 + | .41 | | 29.2 | +0.2 | 29.0 + | 0.9 | 28.1 |
| 6 8 | −.29 .95 + | 1.67 | 27.9 | ~~28.1~~ | +0.4 | 27.5 − | 0.8 | 28.3 |
| 7 20 | +.18 .98 + | .63 | | 30.2 | +0.7 | 29.5 + | 0.5 | 29.0 |
| 7 32 | +.60 .80 + | .10 | | 32.0 | +0.7 | 31.3 + | 1.5 | 29.8 |
| 7 37 | +.24 .97 + | .54 | | 30.9 | +0.4 | 30.5 + | 0.6 | 29.9 |
| 7 39 | +.15 .99 + | .67 | | 28.5 | −0.8 | 27.3 + | 0.4 | −26.9 |
| | | | | | | | | 28.25 28.25 |

| RA | sin z cos z | tang. δ | | Req−Rfe | P′−P | Req−Rfe −(P′−P) | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|
| h m | | | | | | | | |
| 5 44 | −.50 .86 − | 3.12 | −2 | 15.5] | +0.4 | −~~15.1~~] − | 1.3 | −16.4] |
| 6 4 | −.45 .89 + | 2.65 | | 28.6 3 | +0.3 | 28.3 − | 1.2 | 29.5 |
| 6 13 | −.78 .62 − | 16.92 | | 27.6 3 | +0.~~8~~3 | 276 ~~26.5~~ 270 − | 1.8 | 29.4 |
| 7 29 | −.85 .52 − | 5.32 | | 26.4 | −0.5 | 259 ~~26.9~~ − | 1.9 | 27.9 ✓ |
| 7 44 | −.53 .84 + | 3.55 | | 26.7 | +0.6 | 26.1 − | 1.3 | 27.4 |
| 7 52 | −.75 .66 − | 53.01 | | 24.6 | ~~−0.4~~ +6 | 25.2 ~~25.0~~ ~~24.0~~ − | 1.8 | 27.0 |
| | | | | | | | | 27.87<br>28.32 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | +.60 −31.3 | +.42 −27.6 | +.34 −29.0 | +.06 −28.3 | −.04 −29.8 | −.29 −27.5 | ~~−.50~~ | −.78 −26.5 | ~~−.78 −26.5~~ |
| 11 275 | | +.57 −28.2 | +.24 −30.5 | +.18 −29.5 | | | −.45 −28.3 | −.75 −25.0 | −.85 −26.9 |
| 4 128 | | +.46 −28.4 | | +.15 −27.3 | | | −.53 −26.1 | | |
| 403 | | | | | | | | | |
| | +.60 −31.3 | +.48 −28.1 | +.29 −29.7 | +.13 −28.4 | −.04 −29.8 | −.29 −27.5 | −.49 −27.2 | −.76 −25.7 | −.85 −26.9 |
| ′ ″18 | +1.2 | +1.0 | +.6 | +.3 | −.1 | −.6 | −1.0 | −1.5 | |
| −2 ~~28.07~~ 28.27 ~~28.2~~ (15) | $30.1_1$ +1.9 | $27.1_3$ −1.1 | $29.1_2$ +.9 | $28.1_3$ −.1 | $29.9_1$ +1.7 | $28.1_1$ −.1 | $28.2_2$ 0 | $27.2_2$ +1.0 | |

| RA | sin z cos z | tang. δ | | Req−Rfe | P′−P | Req−Rfe +(P′−P) | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|
| 5 36 | −.13 .99 + | 1.18 | −2 | 30.~~00~~6 | +0.9 | −29.7 − | 0.4 | −30.1 |
| 5 39 | +.42 .90 + | .32 | | 29.~~8~~3 | +0.3 | 29.0 + | 1.0 | 28.0 |
| 5 42 | +.06 1.00 + | .81 | 26.5 | ~~29.0~~ | −1.8 | 28.3 + | 0.2 | 28.1 |
| 5 48 | +.57 .82 + | .13 | 29.2 | ~~28.8~~ | +0.8 | 28.4 + | 1.4 | 27.0 |
| 5 50 | −.84 1.00 + | 1.00 | | 28.9 | +0.5 | 28.4 − | 0.1 | 28.5 |
| 6 00 | +.46 .88 + | .26 | | 27.~~4~~6 | +0.3 | 27.3 + | 1.1 | 26.2 |
| 6 7 | +.34 .94 + | .41 | | 28.3 | +0.2 | 28.1 + | 0.9 | 27.2 |
| 6 8 | −.29 .95 + | 1.67 | 27.7 | ~~27.9~~ | +0.4 | 27.3 − | 0.8 | 28.1 |
| 6 15 | +.34 .94 + | .42 | | 28.9 | +0.3 | 28.6 + | 0.9 | 27.7 |
| 6 16 | +.61 .79 + | .08 | | 29.3 0 | −0.2 | 29.2 + | 1.5 | 27.7 |
| 6 29 | +.05 1.00 + | .82 | 27.0 | ~~29.1~~ | −1.2 | 28.2 + | 0.2 | 28.0 |
| 6 36 | +.21 .98 + | .47 | | 27.1 | +0.1 | 27.0 + | 0.6 | 26.4 |
| 6 37 | −.02 1.00 + | .96 | | 27.~~5~~4 | +0.4 | 27.0 − | 0.1 | 27.1 |
| 7 55 | +.25 .97 + | .53 | | 29.8 | +0.9 | 28.9 + | 0.7 | 28.2 |
| 7 58 | −.17 .98 + | 1.28 | | 29.1 | +0.4 | 28.7 − | 0.5 | 29.2 |
| 8 9 | +.54 .84 + | .17 | | 29.5 | +0.2 | 29.3 + | 1.3 | 28.0 |
| | | | | | | | | 27.84 27.84 |

| RA | sin z cos z | tang. δ | | Req−Rfe | P′−P | Req−Rfe −(P′−P) | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|
| 5 44 | −.50 .86 − | 3.12 | −2 | 17.6 | +0.4 | ~~17.2~~ 180 − | 1.3 | −~~18.~~ 18.3] |
| 5 55 | −.87 .48 − | 4.32 | −2 | — — | +0.2 | − | 2.0 | |
| 6 4 | −.45 .89 + | 2.65 | 27.9 | 28.2 | +0.3 | 27.6 − | 1.2 | 28.8 |
| 6 13 | −.78 .62 − | 16.92 | | 26.2 | +0.~~8~~3 | 265 ~~25.4~~ 9 − | 1.~~7~~8 | 28.3 |
| 6 22 | −.92 .38 − | 2.95 | | 27.8 5 | +0.4 | 279 ~~27.1~~ − | 2.1 | 30.0 ✓ |
| 6 23 | −.91 .40 − | 3.90 | | 27.5 | −0.1 | 27.4 ~~27.6~~ − | 2.1 | 29.5 ✓ |
| 6 24 | −.61 .79 + | 5.50 | 29.7 | ~~28.3~~ | +0.9 | 28.8 − | 1.5 | 30.3 |
| 6 39 | −.45 .89 + | 2.61 | | 27.0 | +0.8 | 26.2 − | 1.2 | 27.4 |
| 6 40 | −.71 .70 + | 20.78 | | 26.4 | ~~+1.1~~ +2 | ~~25.3~~ 26.2 − | 1.7 | 27.9 |
| 8 3 | −.56 .82 + | 4.05 | | 28.2 | +0.4 | 26.8 − | 1.4 | 28.2 |
| 7 52 | −.75 .66 − | 53.01 | | 25.9 | ~~−0.4~~ +6 | ~~26.3~~ ~~25.3~~ 26.5 − | 1.8 | 28.3 |
| | | | | | | | | 28.21<br>28.46 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | +.61 −29.2 | +.42 −29.0 | +.34 −28.1 | +.06 −28.3 | −.13 −29.7 | −.29 −27.3 | −.45 −27.6 | −.78 −25.4 | |
| 16 1344 | | +.57 −28.4 | +.34 −28.6 | +.05 −28.2 | −.04 −28.4 | | −.45 −26.2 | −.61 −28.8 | −.92 −27.1 |
| 7 1022 | | +.46 −27.3 | +.21 −27.0 | | −.02 −27.0 | | −.56 −26.8 | −.71 −25.3 | −.91 −27.6 |
| 2366 | | +.54 −29.3 | +.25 −28.9 | | −.17 −28.7 | | | −.75 −26.3 | |
| | +.61 −29.2 | +.50 −28.5 | +.28 −28.1 | +.05 −28.3 | −.09 −28.5 | −.29 −27.3 | −.49 −26.9 | −.71 −26.5 | −.92 −27.3 |
| | +1.3 | +1.0 | +.6 | +.1 | −.2 | −.6 | −1.0 | −1.4 | |
| −2′ 27.93″ 28.03 (23) | $27.9_1$ .0 | $27.5_4$ −.4 | $27.5_4$ −.4 | $28.2_2$ +.3 | $28.7_4$ +.8 | $27.9_1$ 0 | $27.9_3$ 0 | $27.9_4$ 0 | |

1873 Mar 8 Ware h = ~~−0.27~~ −.044 n = +.26 e = .00 h = −.043

| | Star | | h | m | δ | tang. δ | T−Ra | P′−P | T−Ra−(P′−P) | | | 18.#312 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6.5 | +9 | 6 | 29 | 389 | + .82 | 0 = −48.40 | +.09 | −48.49 | + .20 | −.04 | −48.29 | 48.33 |
| | 6.5 | .9 | 6 | 33 | 108 | + .18 | −48.43 | ~~+.04~~ −.03 | 48.40 | + .04 | .04 | .36 | .40 |
| | 6.6 | .8 | 6 | 36 | 109 | + .47 | −48.40 | +.01 | 48.41 | + .12 | .03 | .29 | .32 |
| 6.55 | 6.6 | +8 | 6 | 37 | 390 | + .96 | −48.56 | −.01 | 48.55 | + .24 | −.03 | .31 | .34 |
| | [7.9 | | 7 | 53 | 404 | + .53 | −48.34 | +.00 | 48.34 | + .13 | | .21] | |
| | 8.0 | −6 | 7 | 58 | 405 | + 1.28 | −48.60 | +.09 | 48.69 | + .32 | +.03 | .37 | .34 |
| | 8.1 | 7 | 8 | 9 | 123 | + .17 | −48.49 | +.00 | 48.49 | + .04 | .03 | .45 | .42 |
| | 8.6 | 1.2 | 8 | 37 | 126 | + .34 | −48.42 | +.00 | 48.42 | + .08 | .05 | .34 | .29 |
| 8.35 | 8.7 | −1.3 | 8 | 39 | 128 | + .12 | −48.44 | −.01 | 48.43 | + .03 | +.06 | .40 | .34 |
| | 7.45 | | | | | | | | | | | 48.~~354~~ .390 48.351 | 48.348 |

1873 Mar. 8 Ware

| Star | h | m | δ | tang. δ | T−Ra | P′−P | T−Ra−(P′−P) |
|---|---|---|---|---|---|---|---|
| | 6 | 23 | 259 | − 3.20 | 0 = −47.47 | +.18 | −47.65 |
| | 6 | 24 | 387 | + 5.50 | −49.72 | +.07 | 49.79 |
| | 8 | 13 | 502 | − 4.45 | −47.08 | +.15 | 47.23 |
| | 7 | 52 | 284 | − 53.01 | −35.59 | ~~+1.62~~ +1.64 −.96 | ~~33.95~~ −34.63 |

| | | s |
|---|---|---|
| 6.5 | +18 | −48.40 |
| 8.1 | +17 | −48.49 |
| 8.6 | +34 | −48.42 |
| 8.7 | +12 | −48.43 |
| 8.0 | +.20 | −48.43 |
| | | +2 |

| | | s | | I | | II |
|---|---|---|---|---|---|---|
| 6.4 | +5.50 | −49.79 | −.04 | −49.83 | −.02 | −49.81 |

| | | s | | I | | II |
|---|---|---|---|---|---|---|
| 6.4 | −3.20 | −47.65 | −.04 | −47.69 | −0.2 | −47.71 |
| 8.2 | −4.45 | −47.23 | +.00 | −47.23 | +.02 | −47.21 |
| 7.9 | −53.01 | ~~−33.95~~ −34.63 | +.00 | −33.95 | +.02 | −33.93 |

0 = +5.30 − 1.~~36~~40 n = +.26

0 = +4.38 − 1.19 n = +.27

0 = − 3.40 + 0.74 n = +.22
4.65 + 1.20 .26
53.21 + 14.48 .27 6
−.68 +.~~25~~0
+.247

| | | |
|---|---|---|
| 6.6 | +.96 | −48.55 |
| 8.0 | +1.28 | −48.69 |
| 7.3 | +1.12 | −48.62 |

n = +.21 +02

0 = − 4.32 + 0.91 n = +.21
− 5.57 + 1.41 +.25
− 54.13 + 14.69 +.27 6
48.82 18 −.68 +.248 0

1873 Mar. 9 Ware. h = −0.23 −.026 n = +.28 e = .00 h = −.032

| | Star | | h | m | δ | tang. δ | T−Ra | P′−P | T−Ra−(P′−P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6.3 | +7 | 6 | 16 | 386 | + .08 | 0 = −48.94 | −.05 | −48.89 | + .02 | −.02 | −48.87 | 48.89 |
| | 6.5 | 5 | 6 | 33 | 108 | + .18 | −48.92 | −.03 | 48.89 | + .05 | .02 | .84 | .86 |
| | 6.6 | .4 | 6 | 36 | 109 | + .47 | −48.91 | +.01 | 48.92 | + .13 | .01 | .79 | .80 |
| | 6.7 | .3 | 6 | 44 | 112 | + .68 | −48.98 | +.08 | 49.06 | + .19 | .01 | .87 | .88 |
| 6.58 | 6.8 | .2 | 6 | 46 | 394 | + 1.64 | −49.16 | +.02 | 49.18 | + .46 | .01 | .72 | .73 |
| | 7.0 | +0 | 7 | 2 | 395 | + .82 | −49.07 | +.01 | 49.08 | + .23 | −00 | .85 | .85 |
| | 7.2 | −2 | 7 | 9 | 396 | + .87 | −49.12 | −.01 | 49.11 | + .24 | +01 | .87 | .86 |
| | 7.2 | .2 | 7 | 12 | 115 | + .41 | −48.98 | −.01 | 48.97 | + .11 | .01 | .86 | .85 |
| | 7.3 | .3 | 7 | 20 | 398 | + .63 | −48.88 | +.04 | 48.92 | + .18 | .01 | .74 | .73 |
| | 7.5 | .5 | 7 | 32 | 120 | + .10 | −48.90 | −.01 | 48.89 | + .03 | .02 | .86 | .84 |
| | 7.6 | 6 | 7 | 37 | 122 | + .54 | −48.99 | +.01 | 49.00 | + .15 | .02 | .85 | .83 |
| 7.36 | 7.7 | −7 | 7 | 39 | 400 | + .67 | −49.04 | +.02 | 49.06 | + .19 | +02 | .87 | .85 |
| | 7.03 | | | | | | | | | | 48.84 | 48.843 48.832 | 48.831 |

| h | m | δ | tang. δ | T−Ra | P′−P | T−Ra−(P′−P) |
|---|---|---|---|---|---|---|
| 6 | 22 | 489 | − 2.95 | 0 = −48.22 | −.20 | −48.02 |
| 6 | 23 | 259 | − 3.20 | −47.75 | +.18 | 47.93 |
| 6 | 24 | 387 | + 5.50 | −50.21 | +.07 | 50.28 |
| 6 | 39 | 391 | + 2.61 | −49.58 | +.02 | 49.60 |
| 6 | ~~40~~ | 111 | + ~~20.73~~ | −53.08 | ~~+.27~~ +.89 | ~~52.81~~ 53.97 |
| 6 | 55 | 493 | − 2.92 | −47.89 | +.10 | 47.99 |
| 7 | 18 | 273 | − 3.29 | −47.74 | +.09 | 47.83 |
| 7 | 29 | 497 | − 5.32 | −47.17 | +.09 | 47.26 |
| 7 | 44 | 401 | + 3.55 | −49.49 | +.37 | 49.86 |
| 7 | 52 | 284 | − 53.01 | −37.88 | ~~+1.62~~ +1.64 −.96 | ~~36.24~~ −36.92 |

| | | | | I x II |
|---|---|---|---|---|
| 6.3 | +.08 | −48.89 | | |
| 6.5 | +.18 | −48.89 | | |
| 7.2 | +.41 | −48.97 | | |
| 7.5 | +.10 | −48.89 | | |
| 6.9 | +.19 | −48.91 | | |
| 6.7 | +.68 | 49.06 | | |
| 6.8 | +1.64 | −49.18 | | |
| 7.1 | +.87 | −49.11 | | |
| ~~6.9~~ | +1.25 | ~~−49.14~~ | | |
| 6.9 | ~~+1.63~~ | −49.12 | | |

n = +.22

| | | | | I x II |
|---|---|---|---|---|
| 6.4 | +5.50 | −50.28 | −.01 | −50.29 |
| 6.6 | +2.61 | −49.60 | −.01 | −49.61 |
| 6.7 | +20.73 | ~~−52.81~~ −53.97 | +.00 | −52.81 |
| 7.7 | +3.55 | −49.86 | +.02 | −49.84 |

| | | | | I x II |
|---|---|---|---|---|
| 6.4 | −2.95 | −48.02 | −.01 | −48.03 |
| 6.4 | −3.20 | −47.93 | −.01 | −47.94 |
| 6.9 | −2.92 | −47.99 | +.00 | −47.99 |
| 7.3 | −3.29 | −47.83 | +.01 | −47.82 |
| 7.5 | −5.32 | −47.26 | +.01 | −47.25 |
| 7.9 | −53.01 | ~~−36.24~~ −36.92 | +.02 | −36.22 |

0 = +5.31 ~~+~~ − 1.38 n = +.26
+2.42 ~~+~~ − 0.70 .29
+20.54 ~~+~~ − 3.90 −114 ~~.27~~ .25
+3.36 ~~+~~ − 0.93 .28
+.~~255~~
.270

0 = −3.14 + 0.88 n = +.28
−3.39 + .97 .29
−3.11 + .92 .30
−3.48 + 1.09 .31
−5.51 + 1.66 .30
−53.20 + 12.69 .2~~4~~3
−.68 +.28~~7~~5

0 = +4.25 ~~+~~ − 1.15 n = +.27
+1.36 ~~+~~ − .47 .28]
+19.48 ~~+~~ − 3.67 −114 ~~.27~~ .25
+2.30 ~~+~~ − .40 .30
+.~~253~~
.273

0 = −4.20 + 1.11 n = +.26
−4.45 + 1.20 .27
−4.17 + 1.15 .28
−4.54 + 1.32 .29
−6.57 + 1.89 .29
−54.26 + 12.92 .2~~4~~3
−68 +.27~~8~~0

8
3

12
5

| z= | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|

| RA | sin z cos z | tang. δ | $D_{eq}-D_{fe}$ | P'−P | $R_{eq}-R_{fe}+(P'-P)$ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|
| h m | | | ″ | | ″ | | |
| 6 29 | +.05 . 1.00 + | 0.82 | 27.4 −2 ~~29.5~~ | . −1.2 | −28.6 | + 0.2 | −28.4 |
| 6 33 | +.54 . .84 + | .18 | 29.0 | . +0.2 ~~+0.1~~ | 28.8 | + 1.3 | 27.5 |
| 6 36 | +.29 . .95 + | .47 | 27.5 | . +0.1 | 27.4 | + 0.8 | 26.6 |
| 6 37 | −.02 . 1.00 + | .96 | 27.8 | . +0.4 | 27.4 | − 0.1 | 27.5 |
| 7 55 | −.48 .87 + | .53 | 30.5 | . +0.9 | 29.6 | − 1.2 | 30.8 |
| 7 58 | −.17 .98 + | 1.28 | 27.8 | . +0.4 | 27.4 | − 0.5 | 27.9 |
| 8 9 | +.54 .84 + | .17 | 29.2 | . +0.2 | 29.0 | + 1.3 | 27.7 |
| 8 37 | +.40 .91 + | .34 | 29.0 | . +0.6 | 28.4 | + 1.0 | 27.4 |
| 8 39 | +.58 .81 + | .12 | 29.5 | . −0.2 | 29.7 | + 1.4 | 28.3 |

| RA | sin z cos z | tang. δ | $R_{eq}-R_{fe}$ | P'−P | $R_{eq}-R_{fe}+(P'-P)$ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|
| h m | | | ″ | | ″ | | |
| 6 23 | −.91 .40 − | 3.20 | −2 25.0 | . −0.1 | 24.9 ~~25.1~~ | −2.0 | 26.9 ✓ |
| 6 24 | −.61 .79 + | 5.50 | 29.8 ~~28.4~~ | . +0.9 | 28.9 | −1.5 | 30.4 |
| 8 13 | −.57 .82 − | 4.45 | 27.0 | . +0.5 | 27.5 ~~26.5~~ | −1.4 | 28.9 |
| 7 52 | −75 66 − | 53.01 | 26.8 | . ~~−0.1~~ +.6 | 26.9 ~~26.7~~ | −1.8 | 28.7 |

8 528

3 699

1227

27.66 28.01

28.93

29.33

+.54 −28.8″ +.29 −27.4″ +.05 −28.6″ −.02 −27.4″

+.54 −29.0 −.17 −27.4

+.40 −28.4

+.58 −29.7

−.48 −29.6″ −.61 −28.9″ −.91 −25.1″

−.57 −26.5 −.75 26.7

+.51 −29.0 +.29 −27.4 +.05 −28.6 −.09 −27.4

+1.1 + .6 +.1 −.2

(12) 27.9₄ 26.8₁ 28.5₁ 27.6₂

∗−.3 ∗−1.4 ∗+.3 ∗−.6

−.52 −28.0 −.68 −28.9 (7.8) −.91 −25.7

−1.1 −1.4

29.1₂ 29.2₂

∗+.9 ∗+1.0

−2 ′ ″ 28.~~2~~ 22

28.12

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 16 | +.61 .79 + | .08 | −2 31.8 ~~32.1~~ | . −0.2 | −32.0 | + 1.5 | 30.5 |
| 6 33 | +.54 .84 + | .18 | 30.5 | . +0.2 | 30.3 | + 1.3 | 29.0 |
| 6 36 | +.29 . .95 + | .47 | 29.1 | . +0.1 | 29.0 | + 0.8 | 28.2 |
| 6 44 | +.14 . .99 + | .68 | 27.7 | . +0.2 | 27.5 | + 0.4 | 27.1 |
| 6 46 | −.28 . .96 + | 1.64 | 28.3 | . +1.1 | 27.2 | − 0.7 | 27.9 |
| 7 2 | +.05 1.00 + | .82 | 28.4 ~~29.0~~ | . −0.1 | 28.5 | + 0.2 | 28.3 |
| 7 9 | +.02 . 1.00 + | .87 | 28.2 ~~29.5~~ | . −0.4 | 28.6 | + 0.1 | 28.5 |
| 7 12 | +.35 .93 + | .41 | 29.2 | . +0.2 | 29.0 | + 0.9 | 28.1 |
| 7 20 | +.18 . .98 + | .63 | 29.9 | . +0.7 | 29.2 | + 0.5 | 28.7 |
| 7 32 | +.60 . .80 + | .10 | 31.3 | . +0.7 | 30.6 | + 1.5 | 29.1 |
| 7 37 | +.24 .97 + | .54 | 29.5 | . +0.4 | 29.1 | + 0.6 | 28.5 |
| 7 39 | +.15 .98 + | .67 | 27.8 | . −0.8 | 28.6 | + 0.4 | 28.2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 22 | −.92 .38 − | 2.95 | −2 27.3 | . +0.4 | ~~26.6~~ 27.0 | −2.1 | 29.5 ✓ |
| 6 23 | −.91 .40 − | 3.20 | 27.6 | . −0.1 | 27.4 ~~27.7~~ | −2.1 | 29.6 ✓ |
| 6 24 | −.61 .79 + | 5.50 | 28.1 ~~26.7~~ | . +0.9 | 27.2 | −1.5 | 28.7 |
| 6 39 | −.45 .89 − | 2.61 | 27.6 | . +0.8 | 28.4 ~~26.8~~ | −1.2 | 29.6 |
| 6 ~~40~~ | −.71 .70 + | 20.73 | 27.1 | . ~~+1.1~~ +.2 | 26.9 | −1.7 | 28.6 |
| 6 55 | −.92 .38 − | 2.72 | 24.9 | +0.0 | 24.9 | −2.1 | 27.0 ✓ |
| 7 18 | −.90 .42 − | 3.29 | | +0.2 ~~−0.5~~ | | −2.1 | |
| 7 29 | −.85 .52 − | 5.32 | 26.2 | . −0.5 | 25.7 ~~26.7~~ | −2.0 | 27.7 ✓ |
| 7 44 | −.53 .84 + | 3.55 | 26.0 | . +0.6 | 25.4 | −1.3 | 26.7 |
| 7 52 | −75 .66 − | 53.01 | 25.6 | . ~~−0.4~~ +6 | 26.2 ~~26.0~~ ~~25.0~~ | −1.8 | 28.0 |

12 612

5 160

772

28.51 28.51

28.16

28.32

+.61 −32.0 +.54 −30.3 +.29 −29.0 +.14 −27.5

+.60 −30.6 +.35 −29.0 +.05 −28.5

+.24 −29.1 +.02 −28.6

+.18 −29.2

+.15 −28.6

−.28 −27.2 −.45 −26.8 −.61 −27.2 −.92 −26.6

−.53 −25.4 −.71 −26.0 −.91 −27.7

−.75 26.0 −.92 −24.9

~~−.90~~

−.85 −26.7

+.61 −31.3 +.54 −30.3 +.29 −29.0 +.11 −28.5

+1.3 +1.1 +.6 +.3

30.0₂ 29.2₁ 28.4₃ 28.2₅

∗+1.7 ∗+.9 ∗+.1 ∗−.1

−.28 −27.2 −.49 −26.1 −.66 (9) −26.6 (4) −.90 −26.5

−.6 −1.0 −1.4

27.8₁ 27.1₂ 27.8₃

∗−.5 ∗−1.2 ∗−.5

−2 ′ ″ 28.28 (17)

28.45

1873 Mar. 10 Ware h = −.024 −.018 n = +.30 c = .00 h = −.009

| | Star | | h | m | δ | tang δ | π Ra | P'–P | π Ra – (P'+P) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 66 | +1.0 | 6 | 33 | 108 | + .18 | 0 = + ~~56.54~~ 3.46 | −.03 | −~~56.51~~ 3.49 + | .05 | −01 + |
| | 66 | +1.0 | 6 | 36 | 109 | + .47 | + ~~56.53~~ 3.47 | +.01 | ~~56.51~~ 3.46 + | .14 | 01 |
| | 66 | +1.0 | 6 | 37 | 390 | + .96 | + ~~56.64~~ 3.56 | −.01 | ~~56.63~~ 3.37 + | 29 | 01 |
| | 6.7 | +9 | 6 | 44 | 142 | + .68 | + 3.54 | +.08 | 3.46 + | 20 | 01 |
| 6.66 | 6.8 | +.8 | 6 | 46 | 394 | + 1.64 | + 3.19 | +.02 | 3.17 + | 46 | −01 |
| | 7.9 | −3 | 7 | 55 | 404 | + .53 | + 3.45 | +.00 | 3.45 + | 16 | +00 |
| | 8.2 | 6 | 8 | 9 | 123 | + .17 | + 3.62 | +.00 | 3.62 + | 05 | 01 |
| | 8.4 | 8 | 8 | 24 | 408 | + .79 | + 3.67 | +.24 | 3.43 + | 24 | 01 |
| | 8.5 | 9 | 8 | 29 | 411 | + 1.33 | + 3.46 | +.27 | 3.19 + | 40 | 01 |
| | 8.6 | 1.0 | 8 | 37 | 126 | + .34 | + 3.47 | +.00 | 3.47 + | 10 | 01 |
| 8.37 | 8.6 | −1.0 | 8 | 39 | 128 | + .12 | + 3.49 | −.01 | 3.50 + | 04 | +01 + |
| | 7.59 | | | | | | | | | | |

1873 Mar. 10 Ware

| | h | m | | δ | tang δ | π Ra | P'–P | π Ra – (P'–P) |
|---|---|---|---|---|---|---|---|---|
| 3.624 +3.54 | 6 | 22 | +3.53 | 489 − | 2.95 | 0 = − 55.75 | −.20 | − 55.55 |
| 60 | 6 | 23 | 59 | 259 − | 3.20 | − 52.99 | +.18 | 53.17 |
| 66 | 6 | 24 | .65 | 387 + | 5.50 | − 57.98 | +.07 | 58.05 |
| 66 | 6 | ~~40~~ | .65 | 111 + | ~~20.73~~ | − 0.49 | +.89 ~~.27~~ | − ~~0.22~~ 1.38 |
| 66 | 8 | 13 | .65 | 502 − | 4.45 | + 5.31 | +.15 | + 5.16 |
| 61 | 8 | 19 | .61 | 125 + | 1.81 | + 3.16 | +.03 | 3.13 |
| 67 | 8 | 25 | .68 | 410 + | 3.50 | + 2.37 | −.09 | 2.46 |
| 67 | 8 | 33 | .68 | 504 − | 3.61 | + 4.79 | +.10 | 4.69 |
| 59 | 7 | 52 | .60 | 284 − | 53.01 | ~~43.44~~ +16.56 | ~~−1.62~~ −96 | + 17.52 |
| 57 | | | .58 | | | | | |
| +3.54 | | | .55 | | | | | |
| 3.608<br>3.615 | | | 3.615 | | | | | |

| | | | | I | | | II | |
|---|---|---|---|---|---|---|---|---|
| 6.4 | +6.50 | −58.05 | −.03 | −58.08 | +1.92 | −.02 | −58.07 | +1.93 |
| 6.7 | +20.73 | −~~0.22~~ −1.38 | −.02 | −0.24 | | −.01 | −0.23 | |
| 8.3 | +1.81 | +3.13 | +.01 | +3.14 | | +.02 | +3.15 | |
| 8.4 | +3.50 | +2.46 | +.01 | +2.47 | | +.02 | +2.48 | |

| | | | | I | | | II | |
|---|---|---|---|---|---|---|---|---|
| 6.4 | −2.95 | ~~−55.55~~ +4.45 | −.03 | ~~−55.58~~ | +4.42 | −.02 | −55.60 | +4.40 |
| 6.4 | −3.20 | ~~−55.17~~ +4.83 | .03 | −55.20 | +4.80 | −.02 | −55.22 | +4.78 |
| 8.2 | −4.45 | +5.16 | +.01 | +5.17 | | +.02 | +5.19 | |
| 8.6 | −3.61 | +4.69 | +.02 | +4.71 | | +.03 | +4.74 | |
| 7.9 | −53.01 | ~~+41.80~~ +17.52 | +.00 | +41.80 | +18.20 | +.01 | +41.81 | +18.19 |

| | | |
|---|---|---|
| 6.5 | +.18 | +~~56.51~~ 3.49 |
| 6.6 | +.47 | +~~56.54~~ 3.46 |
| 8.1 | +.17 | + 3.62 |
| 8.6 | +.34 | + 3.47 |
| 8.6 | +.12 | + 3.50 |
| 7.7 | +.26 | −~~24.73~~ +3.51 +1 |
| 6.6 | +.96 | +~~56.63~~ 3.37 |
| 6.8 | +1.64 | + 3.17 |
| 8.5 | +1.23 | + 3.19 |
| 7.3 | +1.31 | −~~21.00~~ +3.24 |

n = +.26 +.01

0 = +5.24 − 1.59 n = +.30
+20.47 − 3.75 −1.14 ~~.18~~ .24
+1.55 − 0.37 .24
+3.24 − 1.04 .32
+ ~~.285~~ +.300

0 = +4.19 − 1.31 n = +.31
+19.42 − 3.47 −1.14 ~~.18~~ .24
+0.50 − .09
+2.19 − .76
.35

0 = −3.21 + 0.91 n = +.28
−3.46 + 1.29 .37
−4.78 + 1.66 .35
−3.87 + 1.20 .31
−53.27 + ~~38.24~~ 14.69 −68 .287
+ ~~.318~~ +.316

0 = −4.26 + 1.16 n = +.27
−4.51 + 1.54 .34
−5.76 + 1.95 .34
−4.90 + 1.50 .30 ~~.308~~ +.304
−54.32 + ~~38.57~~ 14.95 −68 ~~2.8~~ .28 + .315

1873 Mar. 13 Ware h = −.018 −.029 n = +.250 ~~.280~~ +.300 c = .00 h = −.~~092~~

| | Star | | h | m | δ | tang δ | π Ra | P'–P | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.80 | 6.8 | | 6 | 46 | 394 | + 1.64 | 0 = + 2.03 | +.02 | +2.01 | +.41 | |
| | 7.9 | +5 | 7 | 55 | 404 | + .53 | + 2.15 | +.00 | 2.15 | .13 | −.01 |
| | 8.2 | +2 | 8 | 9 | 123 | + .17 | + 2.19 | +.00 | 2.19 | .05 | −.01 |
| | 8.4 | +0 | 8 | 24 | 408 | + .79 | + 2.31 | +.24 | 2.07 | .20 | .00 |
| | 8.5 | −1 | 8 | 29 | 411 | + 1.33 | + 2.24 | +.27 | 1.97 | .33 | .00 |
| | 8.6 | −2 | 8 | 34 | 126 | + .34 | + 2.22 | +.00 | 2.22 | .08 | +01 |
| 8.37 | 8.6 | −2 | 8 | 39 | 128 | + .12 | + 2.22 | −.01 | 2.23 | + .03 | +01 |
| | 8.44<br>.37 | | | | | | | | | | |

| | h | m | | δ | tang δ | π Ra | P'–P | |
|---|---|---|---|---|---|---|---|---|
| 2.420<br>+2.42 | 6 | 40 | 2.42 | 111 + | 20.73 | 0 = + .30 | −.27 +.89 | ~~−1.03~~ −2.19 |
| .28 | 8 | 13 | +2.27 | 502 − | 4.45 | + 3.67 | +.15 | + 3.52 |
| .24 | 8 | 19 | .23 | 125 + | 1.81 | + 1.76 | +.03 | + 1.73 |
| .27 | 8 | 25 | .27 | 410 + | 3.50 | + 1.35 | −.09 | + 1.44 |
| .30 | 8 | 33 | .30 | 504 − | 3.61 | + 3.26 | +.10 | + 3.16 |
| .30 | 7 | 52 | .31 | 284 − | 53.01 | ~~44.60~~ + 15.40 | ~~1.62~~ −.76 −.96 | ~~+12.96~~ ~~+17.04~~ +16.36 |
| .26 | | | .27 | | | | | |
| 2.275<br>2.275 | | | 2.275 | | | | | |

| | | | | I | | | II |
|---|---|---|---|---|---|---|---|
| 6.7 | +20.73 | ~~−1.03~~ −2.19 | −.03 | −1.06 | +.00 | +.00 | −1.03 |
| 8.3 | + 1.81 | +1.73 | +.00 | +1.73 | +.01 | +.01 | +1.74 |
| 8.4 | + 3.50 | +1.44 | +.00 | +1.44 | +.01 | +.01 | +1.45 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 8.2 | −4.45 | +3.52 | +.00 | +3.52 | +.01 | +3.51 |
| 8.5 | −3.61 | +3.16 | +.00 | +3.16 | +.01 | +3.15 |
| 7.9 | −53.01 | +16.36 | −.01 | ~~+42.97~~ 17.03 | +.00 | ~~+42.96~~ 17.04 |

| | | |
|---|---|---|
| 8.1 | +.17 | +2.19 |
| 8.6 | +.34 | +2.22 |
| 8.6 | +.12 | +2.23 |
| 8.4 | +.21 | +2.21 +1 |
| 6.8 | +1.64 | +2.01 |
| 8.5 | +1.33 | +1.97 |
| 7.7 | +1.48 | +1.99 |

n = +.18

0 = +20.52 − 3.24 −1.14 n = + ~~.19~~ .16 .22
+ 1.60 − 0.48 +.30
+ 3.29 − 0.77 +.23
+ ~~.230~~ .21
+.250

0 = −4.66 + 1.31 n = +.28
−3.82 + 0.95 +.25
−53.22 + 14.82 −.68 +.287
+ ~~.270~~
+.267

1873

0 = 19.25 − ~~3.52~~ .02 −1.14 n = + ~~.16~~ .22
08.33 − 2.76
2.02 − .54 +.27
~~.215~~
+.245

0 = −5.93 + 1.52 n = +.26
5.09 + 1.16 +.23
54.49 + 15.05 −.68 +.287
~~+.257~~
+.253

| z = | +.60+.80 | +.40+60 | +.20+40 | +.0+.20 | +0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-.110 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sinz | cosz | tang. δ | $R_{eq}-R_{pc}$ | P'-P | $R_{eq}-R_{pc}+(P'-P)$ | Aff. | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|
| 6 33 | +.54 | .84 + | .18 | -2 29.3 | +0.2 | -29.1 | +1.3 | -27.8 |
| 6 36 | +.29 | .95 + | .47 | 27.8 | +0.1 | 27.7 | +0.8 | 26.9 |
| 6 37 | -.02 | 1.00 + | .96 | 28.2! | +0.4 | 27.7 | -0.1 | 27.8 |
| 6 44 | +.14 | .99 + | .68 | 27.2 | +0.2 | 27.0 | +0.4 | 26.6 |
| 6 46 | -.28 | .96 + | 1.64 | 28.8 | +1.1 | 27.7 | -0.7 | 28.4 |
| 7 55 | +.25 | .97 + | .53 | 29.3 | +0.9 | 28.4 | +0.7 | 27.7 |
| 8 9 | +.54 | .84 + | .17 | 30.0 | +0.2 | 29.8 | +1.3 | 28.5 |
| 8 24 | +.07 | 1.00 + | .79 | 30.9 | +1.6 | 29.3 | +0.2 | 29.1 |
| 8 29 | -.19 | .98 + | 1.33 | 28.9 | +0.7 | 28.2 | -0.6 | 28.8 |
| 8 37 | +.40 | .91 + | .34 | 29.5 | +0.6 | 28.9 | +1.0 | 27.9 |
| 8 39 | +.58 | .81 + | .12 | 30.1 | -0.2 | 30.3 | +1.4 | 28.9 |
| | | | | | | | | 28.04 28.04 |

| RA h m | sinz | cosz | tang. δ | $R_{eq}-R_{pc}$ | P'-P | $R_{eq}-R_{pc}+(P'-P)$ | Aff. | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|
| 6 22 | -.92 | .38 - | 2.95 | -2 28.8<br>29.1 | +0.4 | ~~28.4~~ 29.2 | -2.1 | 31.3 ✓ |
| 6 23 | -.91 | .40 - | 3.20 | 29.0 | -0.1 | 28.9 ~~29.1~~ | -2.1 | 31.0 ✓ |
| 6 24 | -.61 | .79 + | 5.50 | 30.0 ~~28.6~~ | +0.9 | 29.1 | -1.5 | -30.6 |
| 6 ~~40~~ | -.71 | .70 + | ~~20.73~~ | 28.4 | +1.1 +2 | 27.3 28.2 | 1.7 | 29.9 |
| 8 13 | -.87 | .48 - | 4.45 | 24.7 | +0.5 | 25.2 ~~24.2~~ | -2.1 | 27.3 ✓ |
| 8 19 | -.32 | .94 + | 1.81 | 29.3! | +1.4 | 27.7 | -0.8 | 28.5 |
| 8 25 | -.53 | .84 + | 3.50 | 27.7 | +0.8 | 26.9 | -1.3 | 28.2 |
| 8 33 | -.89 | .45 - | 3.61 | 26.3 | +0.6 | 26.9 ~~25.7~~ | -2.1 | 29.0 ✓ |
| 7 52 | -.75 | .66 - | 53.01 | 20.5 | ~~-0.4~~<br>+.6 | ~~20.9~~<br>21.1 ~~19.9~~ | -1.8 | 22.9 |
| | | | | | | | | 29.30<br>29.30 |

| | +.40+60 | +.20+40 | +.0+.20 | +0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-.110 |
|---|---|---|---|---|---|---|---|---|
| | +.54 -29.1" | +.29 -27.7" | +.14 -27.0" | -.02 -27.7" | -.28 -27.7" | -.53 -26.9" | -.61 -29.1" | -.92 -28.4" |
| 11 8844 | +.54 -29.8 | +.25 -28.4 | +.07 -29.3 | -.19 -28.2 | -.32 -27.7 | | -.71 -27.3 | -.91 -29.1 |
| 4 3720 | +.40 -28.9 | | | | | | -.75 -20.9 | -.87 -24.2 |
| 12564 | +.58 -30.3 | | | | | | | -.89 -25.7 |
| | | | | | | | 9 5.8 | |
| | +.51 -29.5 | +.27 -28.0 | +.10 -28.1 | -.10 -27.9 | -.30 -27.7 | -.53 -26.9 | -.66 -28.4 | -.90 -26.8 |
| | +1.1 | +.6 | +.2 | -.2 | -.6 | -1.1 | -1.4 | |
| -2' 27.91" | (16) $28.4_4$ | $27.4_2$ | $27.9_2$ | $28.1_2$ | $28.3_2$ | $28.0_1$ | $27.2_3$ | |
| 28.37 | *+.5 | *-.5 | .0 | *+.2 | *+.4 | *+.1 | *-.7 | |

| RA h m | sinz | cosz | tang. δ | $R_{eq}-R_{pc}$ | P'-P | $R_{eq}-R_{pc}+(P'-P)$ | Aff. | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|
| 6 46 | -.28 | .96 + | 1.64 | -2 28.7 | +1.1 | -27.6 | -0.7 | -28.3 |
| 7 55 | +.25 | .97 + | .53 | 29.1 | +0.9 | 28.2 | +0.7 | 27.5 |
| 8 9 | +.54 | .84 + | .17 | 28.9 | +0.2 | 28.7 | +1.3 | 27.4 |
| 8 24 | +.07 | 1.00 + | .79 | 31.4 | +1.6 | 29.8 | +0.2 | 29.6 |
| 8 29 | -.19 | .98 + | 1.33 | 27.8 | +0.7 | 27.1 | -0.6 | 27.7 |
| 8 37 | +.40 | .77 + | .34 | 28.5 | +0.6 | 27.9 | +1.0 | 26.9 |
| 8 39 | +.58 | .81 + | .12 | 29.0 | -0.2 | 29.2 | +1.4 | 27.8 |
| | | | | | | | | 27.89 27.89 |

| RA h m | sinz | cosz | tang. δ | $R_{eq}-R_{pc}$ | P'-P | $R_{eq}-R_{pc}+(P'-P)$ | Aff. | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|
| 6 40 | -.71 | .70 + | 20.73 | - -- | ~~+1.1~~ +2 | | | |
| 8 13 | -.87 | .48 - | 4.45 | 24.8 | +0.5 | -25.3 | -2.1 | 27.4 ✓ |
| 8 19 | -.32 | .94 + | 1.81 | 29.3 | +1.4 | 27.9 | -0.8 | -28.7 |
| 8 25 | -.53 | .84 + | 3.50 | 27.5 | +0.8 | 26.7 | -1.3 | 28.0 |
| 8 33 | -.89 | .45 - | 3.61 | 25.5 | +0.6 | 26.1 ~~24.9~~ | -2.1 | 28.2 ✓ |
| 7 52 | -.75 | .66 - | 53.01 | 25.3 | ~~-0.4~~<br>+.6 | ~~25.7~~<br>25.9 ~~24.9~~ | -1.8 | 27.7 |
| | | | | | | | | 27.73<br>28.13 |

| | +.40+60 | +.20+40 | +.0+.20 | +0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-.110 |
|---|---|---|---|---|---|---|---|---|
| 7 15523 | +.54 -28.7 | +.25 -28.2 | +.07 -29.8 | -.19 -27.1 | -.28 -27.6 | -.53 -26.7 | -.75 -25.7 | -.87 -24.3" |
| 3 2439 | +.40 -27.9 | | | | -.32 -27.9 | | | -.89 -24.9 |
| 17962 | +.58 -29.2 | | | | | | | |
| | +.51 -28.6 | +.25 -28.2 | +.07 -29.8 | -.19 -27.1 | -.30 -27.7 | -.53 -26.7 | -.75 -25.7 | -.88 -24.6 |
| | +1.1 | +.5 | +.2 | -.4 | -.6 | -1.1 | -1.5 | |
| -2' 27.89" | (10) $27.5_3$ | $27.7_1$ | $29.6_1$ | $27.5_1$ | $28.3_2$ | $27.8_1$ | $27.2_1$ | |
| 27.96 | *-.4 | *-.2 | *+1.7 | *-.4 | *+.4 | *-.1 | *-.7 | |

1873 Mar 16 Wave h = −.015 n = +.25 h = −.062

| Star | | Ra | δ | tang. δ | π−Ra | ρ'−ρ | π−Ra−(ρ'−ρ) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h m | | | s | | s | | | | 1.210 |
| 7.2 | +4 | 7 9 | 396 | + .87 | 0 = +0.98 | .−.01 | +0.99 | ++.23 22 | −.02+ | 1.21 | 1.19 |
| 7.2 | .4 | 7 12 | 415 | + .41 | +1.07 | .−.01 | 1.08 | ++.11 .10 | −.02 | 1.18 | .16 |
| 7.23 7.3 | 3 | 7 20 | 398 | + .63 | +1.12 | .+.04 | 1.08 | ++.16 .16 | +.02 | 1.24 | .22 |
| 7.5 | +1 | 7 32 | 120 | + .10 | +1.14 | .−.01 | 1.15 | ++.03 .03 | −.01 | 1.18 | .17 |
| 8.2 | −6 | 8 9 | 123 | + .17 | +1.05 | +.00 | 1.05 | ++.04 .04 | +.04 | 1.09 | .13 |
| 8.03 8.4 | −8 | 8 24 | 408 | + .79 | +1.25 | +.24 | 1.01 | ++.20 .20 | +.05 | 1.21 | .26 |
| 7.63 | | | | | | | | | | 1.160 | |
| | | | | | | | | | | 1.185 | 1.188 |

1873 Mar 16 Wave

| Ra | δ | tang. δ | π−Ra | ρ'−ρ | π−Ra−(ρ'−ρ) |
|---|---|---|---|---|---|
| h m | | | s | | s |
| 7 18 | 273 | −3.29 | 0 = +2.08 | .+.09 | +1.99 |
| 7 29 | 497 | −5.32 | +2.93 | .+.09 | 2.84 |
| 7 44 | 401 | +3.55 | +1.81 | .+.37 | 0.44 |
| 8 13 | 502 | −4.45 | +2.36 | .+.15 | 2.21 |
| 8 19 | 125 | +1.81 | +0.75 | .+.03 | 0.72 |
| 8 25 | 410 | +3.50 | +.11 | .−.09 | .20 |

| | s |
|---|---|
| 7.2 +.41 | +1.08 |
| 7.5 +10 | +1.15 |
| 8.1 +17 | +1.05 |
| 7.6 +.23 | +1.09 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 7.7 | +3.55 | +0.44 | +.00 | +0.44 | +.00 | +0.44 |
| 8.3 | +1.81 | 0.72 | +.01 | +0.72 | +.01 | +0.73 |
| 8.4 | +3.50 | 0.20 | +.01 | +0.21 | +.01 | +0.21 |

| | | | | I | | II | |
|---|---|---|---|---|---|---|---|
| 7.3 | −3.29 | +1.99 | +.00 | +1.99 | −.01 | +1.98 | +1.98 |
| 7.5 | −5.32 | +2.84 | +.00 | +2.84 | +.00 | +2.84 | +2.84 |
| 8.2 | −4.45 | +2.21 | +.01 | +2.22 | +.01 | +2.22 | +2.22 |

0 = +3.32 − 0.65 n = +.20
+1.58 − 0.37 +.23
(b) +3.27 − 0.88 +.27
+.233

0 = +2.72 − .56 n = +.21
+.98 − .27 +.28
(a) +2.67 − .79 +.30
+.295
.263

7.2 +.87 +0.99
8.4 +.79 +1.01
7.8 +.83 +1.00

−.60 +.09

n = +.15

0 = +3.52 +0.90 n = +.26
+5.55 +1.71 +.32
(d) +4.68 +1.13 +.24
+.273

0 = −4.12 +.98 +.24
−6.15 +1.84 +.30
(c) −5.28 +1.22 +.23
+.257

1873 Mar. 17 h = −.007 −.037 n = +.33 a = .00 h = −.048

| | | | | | s | | | | | 0.865 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.2 | +.9 | 7 9 | 396 | + .87 | 0 = +0.58 | .−.01 | +0.59 | + .29 | −.04+ | 0.88 | 0.84 |
| 7.2 | .9 | 7 12 | 115 | + .41 | + .73 | .−.01 | 0.74 | + .44 | .04 | .88 | .84 |
| 7.3 | .8 | 7 20 | 398 | + .63 | + .70 | .+.04 | 0.66 | + .21 | .04 | .87 | .83 |
| 7.5 | .6 | 7 32 | 120 | + .10 | + .82 | .−.01 | 0.83 | + .03 | .03 | .86 | .83 |
| 7.6 | 5 | 7 37 | 122 | + .54 | + .68 | .+.01 | 0.67 | + .18 | .02 | .85 | .83 |
| 7.7 | 4 | 7 39 | 400 | + .67 | + .64 | .+.02 | 0.62 | + .22 | .02 | .84 | .82 |
| 7.9 | 2 | 7 55 | 404 | + .53 | + .65 | .+.00 | 0.65 | + .17 | .01 | .82 | .81 |
| 7.55 8.0 | +1 | 7 58 | 405 | +1.28 | + .59 | .+.09 | 0.50 | + .40 | −.00 | .92 | .92 |
| 8.2 | −1 | 8 9 | 123 | + .17 | + .81 | .+.00 | 0.81 | + .06 | +.00 | .87 | .87 |
| 8.4 | 3 | 8 24 | 408 | + .79 | + .84 | .+.24 | 0.60 | + .26 | .01 | .86 | .87 |
| 8.5 | 4 | 8 29 | 411 | +1.33 | + .62 | .+.27 | 0.35 | + .44 | .02 | .79 | .81 |
| 8.6 | 5 | 8 37 | 126 | + .34 | + .68 | .+.00 | 0.68 | + .11 | .02 | .79 | .81 |
| 8.6 | 5 | 8 39 | 128 | + .12 | + .76 | .−.01 | 0.77 | + .04 | .02 | .81 | .83 |
| 8.8 | 7 | 8 46 | 412 | + .60 | + .73 | .+.10 | 0.63 | + .20 | .03 | .83 | .86 |
| 8.8 | 7 | 8 48 | 129 | + .11 | + .78 | .−.03 | 0.81 | + .04 | .03 | .85 | .88 |
| 8.8 | 7 | 8 50 | 130 | +1.13 | + .44 | .+.04 | 0.40 | + .37 | .03 | .77 | .80 |
| 8.62 8.9 | −8 | 8 54 | 133 | +1.10 | + .56 | .+.16 | 0.40 | + .36 | +.04 | .76 | .80 |
| 8.12 | | | | | | | | | | 0.814 | |
| | | | | | | | | | | 0.838 | 0.838 |

| | | | | | |
|---|---|---|---|---|---|
| 7 29 | 497 | −5.32 | 0 = +2.76 | .+.09 | +2.67 |
| 7 44 | 401 | +3.55 | +0.06 | .+.37 | +~~59.69~~ −0.34 |
| 8 3 | 406 | +4.05 | −0.65 | .−.16 | −0.49 |
| 8 13 | 502 | −4.45 | +2.44 | .+.15 | +2.29 |
| 8 19 | 125 | +1.81 | +0.38 | .+.03 | +0.35 |
| 8 25 | 410 | +3.50 | −0.42 | .−.09 | −0.33 |
| 8 33 | 504 | −3.61 | +2.23 | .+.10 | +2.13 |
| 8 53 | 509 | −5.72 | +2.96 | .+.06 | +2.90 |
| 8 59 | 415 | +2.43 | +0.01 | .+.13 | +~~59.88~~ −.12 |
| 7 52 | 284 | −53.01 | ~~−4.67~~ +12.33 | ~~+.05~~ ~~−.64~~ .96 | +8.29 |

| | s |
|---|---|
| 7.2 +.41 | +0.74 |
| 7.5 +.10 | +0.83 |
| 8.2 +.17 | +0.81 |
| 8.6 +.34 | +0.68 |
| 8.6 +.12 | +0.77 |
| 8.8 +.11 | +0.81 |
| 8.1 +.21 | +0.77 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 7.7 | +3.55 | ~~+59.69~~ −0.34 | +.00 | ~~+59.69~~ −.31 | −.01 | ~~+59.68~~ −.32 |
| 8.0 | +4.05 | −0.49 | +.00 | −0.49 | +.00 | −0.49 |
| 8.3 | +1.81 | +0.35 | +.00 | +0.35 | +.00 | +0.35 |
| 8.4 | +3.50 | −0.33 | +.00 | −0.33 | +.00 | −0.33 |
| 9.0 | +2.43 | ~~+59.88~~ −0.12 | +.01 | ~~+59.89~~ −.11 | +.00 | ~~+59.88~~ −.12 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 7.5 | −5.32 | +2.67 | +.00 | +2.67 | −.01 | +2.66 |
| 8.2 | −4.45 | +2.29 | +.00 | +2.29 | +.00 | +2.29 |
| 8.5 | −3.61 | +2.13 | +.00 | +2.13 | +.00 | +2.18 |
| 8.9 | −5.72 | +2.90 | +.01 | +2.91 | +.00 | +2.90 |
| 7.9 | −53.01 | ~~+46.03~~ +13.29 | +.00 | ~~−46.03~~ +13.97 | +.00 | ~~−46.03~~ +13.97 |

0 = +3.34 − 1.08 n = +.32
+3.84 − 1.26 +.33
+1.60 − 0.42 +.26
+3.29 − 1.10 +.34
+2.22 − 0.88 +.40
+.330

0 = −5.53 +1.90 n = +.34
−4.66 +1.52 +.33
−3.82 +1.36 +.36
−5.93 +2.14 +.36
−53.22 +13.20 −.68 +.25 4
+.328 6

7.9 +1.28 +0.50
8.5 +1.33 +0.35
8.8 +1.13 +0.40
8.9 +1.10 +0.40
8.5 +1.21 +0.41

1.00 36

n = +.36

0 = +2.34 − 0.73 n = +.31
+2.84 − .90 +.32
[+0.60 − .06 ~~.0674~~]
+2.29 − .74 +.32
+1.22 − .53 +.43
+.345

0 = −6.53 +2.25 n = +.34
−5.66 +1.88 +.33
−4.82 +1.72 +.36
−6.93 +2.49 +.36
−54.22 +13.56 −.68 +.25 4
+.328 6

| z = | +.60 +.80 | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.60 −.80 | −.80 −100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h | m | sin z | cos z | tang. δ | $R_q - R_{fe}$ | P′−P | $R_q - R_{fe} + H(P'-P)$ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 9 | +.02 | 1.00+ | .87 | −2 26.8″ | −0.4 | −27.2″ | +0.0 | −27.2 |
| 7 | 12 | +.35 | .93+ | .41 | 27.7 | +0.2 | 27.5 | +0.9 | 26.6 |
| 7 | 20 | +.18 | .98+ | .63 | 29.5 | +0.7 | 28.8 | +0.5 | 28.3 |
| 7 | 32 | +.60 | .80+ | .10 | 30.8 | +0.7 | 30.1 | +1.4 | 28.7 |
| 8 | 9 | +.54 | .84+ | .17 | 30.9 | +0.2 | 30.7 | +1.3 | 29.4 |
| 8 | 24 | +.07 | 1.00+ | .79 | 30.9 | +1.6 | 29.3 | +0.2 | 29.1 |
| | | | | | | | | | 28.22 |

28.22

| RA h | m | sin z | cos z | tang. δ | $R_q - R_{fe}$ | P′−P | $R_q - R_{fe} + H(P'-P)$ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 18 | −.90 | .42− | 3.29 | −2 24.7″ | +0.1 ~~−0.5~~ | 248 ~~−24.6″~~ | −2.0 | 26.8 ✓ |
| 7 | 29 | −.85 | .52− | 5.32 | 25.0 | −0.5 | 245 ~~25.5~~ | −2.0 | 26.5 ✓ |
| 7 | 44 | −.53 | .84+ | 3.55 | 26.2 | +0.6 | 25.6 | −1.3 | 26.9 |
| 8 | 13 | −.87 | .48− | 4.45 | 24.4 | +0.5 | 24.9 ~~23.9~~ | −2.0 | 26.9 ✓ |
| 8 | 19 | −.32 | .94+ | 1.81 | 29.1 | +1.4 | 27.7 | −0.8 | 28.5 |
| 8 | 25 | −.53 | .84+ | 3.50 | 26.5 | +0.8 | 25.7 | −1.3 | 27.0 |
| | | | | | | | | | 27.47 |
| | | | | | | | | | 27.47 |

+.02 −27.2″
+.60 −30.″1 | +.54 −30.″7 | +.35 −27.″5 | +.18 −28.″8 | −.32 −27.″7 | −.53 −25.″6 | −.90 −24.″6
+.07 −29.3 | −.53 −25.7 | −.85 −25.6
−.87 −23.9
−.87 −24.7

6 4932
3 2241
7173

+.60 −30.1 | +.54 −30.7 | +.35 −27.5 | +.09 −28.4 | −.32 −27.7 | −.53 −25.6
+1.3 | +1.1 | +.7 | +.2 | −.7 | −1.1
−2′ 27.″96 (9) 28.8 | 29.6 | 26.8 | 28.2 | 28.4 | 26.7
27.97 | +.8 | +1.6 | −1.2 | +.2 | +.4 | −1.3

| h | m | sin z | cos z | tang. δ | | |
|---|---|---|---|---|---|---|
| 7 | 9 | +.02 | 1.00+ | .87 | — — — . | −0.4 |
| 7 | 12 | +.35 | .93+ | .41 | — — — . | +0.2 |
| 7 | 20 | +.18 | .98+ | .63 | — — — . | +0.7 |
| 7 | 32 | +.60 | .80+ | .10 | — — — . | +0.7 |
| 7 | 37 | +.24 | .97+ | .54 | — — — . | +0.4 |
| 7 | 39 | +.15 | .99+ | .67 | — — — . | −0.8 |
| 7 | 53 | +.25 | .97+ | .53 | — — — . | +0.9 |
| 7 | 58 | −.16 | .99+ | 1.28 | — — — . | +0.4 |
| 8 | 9 | +.54 | .84+ | .17 | — — — . | +0.2 |
| 8 | 24 | +.07 | 1.00+ | .79 | — — — . | +1.6 |
| 8 | 29 | −.19 | .98+ | 1.33 | — — — . | +0.4 |
| 8 | 37 | +.40 | .91+ | .34 | — — — . | +0.6 |
| 8 | 39 | +.58 | .81+ | .12 | — — — . | −0.2 |
| 8 | 46 | +.20 | .98+ | .60 | — — — . | +0.2 |
| 8 | 48 | +.59 | .80+ | .11 | — — — . | +0.7 |
| 8 | 50 | −.11 | .99+ | 1.13 | — — . | +0.8 |
| 8 | 54 | −.09 | 1.00+ | 1.10 | — — . | +1.2 |

| h | m | sin z | cos z | tang. δ | | |
|---|---|---|---|---|---|---|
| 7 | 29 | −.85 | .52− | 5.32 | — — — . | −0.5 |
| 7 | 44 | −.53 | .84+ | 3.55 | — — — . | +0.6 |
| 8 | 3 | −.56 | .82+ | 4.05 | — — — . | +1.4 |
| 8 | 13 | −.87 | .48− | 4.45 | − ~~25.3~~ . | +0.5 |
| 8 | 19 | −.32 | .94+ | 1.81 | — — — . | +1.4 |
| 8 | 25 | −.53 | .84+ | 3.50 | — — — . | +0.8 |
| 8 | 33 | −.89 | .45− | 3.61 | — — — . | +0.6 |
| 8 | 53 | −.84 | .53− | 5.72 | — — — . | +0.4 |
| 8 | 59 | −.43 | .90+ | 2.43 | — — — . | +0.8 |
| 7 | 52 | −75 | 66− | 53.01 | — — — . | ~~+1.4~~ +.6 |

1873 Mar. 27 W.A.R. h = -.014 -.018 n = +.24 c = .00 h = -.018 1873 Mar. 27 W.A.R.

| Star | Ra | | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) | | | | Star | Ra | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h m | | | s | | s | | | 1.160 | | h m | | | s | | s |
| 7.5 | +1.2 | 7 32 | 120 | + .10 | 0= -1.24 | -.01 | -1.23 | + .02 | -.02 | -1.21] | 1.23 | 7 44 | 401. | +3.55 | 0= -1.57 | +.37 | -1.94 |
| 7.6 | 1.1 | 7 37 | 122 | + .54 | -1.29 | +.01 | 1.30 | + .13 | .02 | .17 | .19 | 8 59 | 415. | +2.43 | -1.66 | +.13 | 1.79 |
| 7.7 | 1.0 | 7 39 | 400 | + .67 | -1.28 | +.02 | 1.30 | + .16 | .02 | .14 | .16 | 9 23 | 418 | +2.81 | -1.97 | -.01 | 1.96 |
| 7.82 8.5 | +2 | 8 29 | 411 | +1.33 | -1.17 | +.27 | 1.44 | + .32 | -.00 | .12 | .12 | 9 27 | 308 | -2.75 | -0.27 | +.08 | 0.35 |
| [9.1 | -.4 | 9 5 | 416 | + .96 | -1.46 | +.03 | 1.49 | + .23 | +.01 | .26] +16 | .09 | 9 31 | 420 | +2.72 | -1.42 | +.29 | 1.71 |
| 9.2 | .5 | 9 10 | 135 | + .76 | -1.24 | +.10 | 1.34 | + .18 | .01 | .16 | .15 | 9 40 | 516 | -2.86 | -0.50 | -.03 | 0.47 |
| 9.2 | .5 | 9 13 | 136 | + .70 | -1.21 | +.07 | 1.28 | + .17 | .01 | .11 | .10 | 9 46 | 421 | +3.37 | -1.96 | +.17 | 2.13 |
| 9.6 | .9 | 9 34 | 141 | + .19 | -1.26 | +.03 | 1.29 | + .05 | .02 | .24 | .22 | 7 52 | 284 | -53.01 | -53.20 | ~~+1.62~~ +164<br>-96 | ~~-54.84~~<br>-52.24 |
| 9.6 | .9 | 9 38 | 142 | + .45 | -1.28 | +.03 | 1.31 | + .11 | .02 | .20 | .18 | | | | | | |
| 9.46 9.7 | -1.0 | 9 41 | 143 | +1.70 | -1.61 | +.04 | 1.65 | + .41 | +.02 | -1.24 +04 | .18 | | | | | | |
| ~~8.82~~<br>73 | | | | | | | | | | 1.190<br>1.165 | 1.162 | | | | | | |

| | | | | | I | | II | | | | | I | | II | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.5 | +.10 | -1.23 | 7.7 | +3.55 -1.94 | -.01 | -1.95 | -.02 | -1.96 | 9.4 | -2.75 -0.35 | +.01 | -0.34 - | +.00 | -0.35 | |
| 7.6 | +.54 | -1.30 | 9.0 | +2.43 -1.79 | +.01 | -1.78 | +.00 | -1.79 | 9.7 | -2.86 -0.47 | +.02 | -0.45 | +.01 | -0.46 | |
| 9.6 | +.19 | -1.29 | 9.4 | +2.81 -1.96 | +.01 | -1.95 | +.00 | -1.96 | 7.9 | -53.01 ~~-54.84~~ -52.24 | -.01 | ~~-54.85~~ 52.25 | ~~+5.15~~ +7.15 | -.02 ~~-54.86~~ +7.76 | ~~+5.14~~ |
| 9.6 | +.45 | -1.31 | 9.5 | +2.72 -1.71 | +.01 | -1.70 | +.01 | -1.70 | | | | | | | |
| 8.6 | +.32 | -1.28<br>-1 | 9.8 | +3.37 -2.13 | +.02 | -2.11 | +.01 | -2.12 | | | | | | | |

8.5 +1.33 -1.44
[9.1] +.96 -1.49]
9.7 +1.70 -1.65
9.1 ~~+1.33~~ ~~-1.53~~
+1.52 -154

0 = +3.23 - 0.67 n = +.21
+2.11 - .50 +.24
+2.49 - .67 +.27
+2.40 - .42 +.18
+3.05 - .83 +.27
+.234

0 = +2.22 - 0.43 n = +.19
+1.10 - .26 +.24
+1.48 - .43 +.29
+1.39 - .17 +.13 [2]
+2.04 - .59 +.29
+.252

0 = -3.07 +0.94 n = +.31
-3.18 +.84 +.27
+9.03 +.17 ~~+.240~~
+.250

0 = -4.08 +1.18 n = +.29
-4.19 +1.07 +.26
+9.29 +.17 ~~+.245~~
+.240

n = +.25 -.01

1873 Mar. 30 W.A.R. h = -.070 -.013 n = +.21 c = .00

| Star | Ra | | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) | | | | | Ra | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | s | | |
| 8.5 | +.5 | 8 29 | 411 | +1.33 | 0= -2.19 | +.27 | -2.46 | + .28 | -.01 | -2.18 | 2.19 | 8 59 | 415 | +2.43 | 0= -2.54 | +.13 | -2.67 |
| 9.1 | -1 | 9 5 | 416 | + .96 | -2.49 | +.03 | 2.52 | + .20 [ | ] 00 | .32 +16 | .16 | 9 8 | 510 | -4.55 | -1.30 | -.14 | 1.16 |
| 9.2 | -.2 | 9 10 | 135 | + .76 | -2.24 | +.10 | 2.34 | + .16 | | .18 | .18 | 9 23 | 418 | +2.81 | -2.80 | ~~-.01~~ ~~-.02~~ | 2.79 |
| 9.2 | -.2 | 9 13 | 136 | + .70 | -2.28 | +.07 | 2.35 | + .15 | 00 | .20 | .20 | 9 27 | 308 | -2.75 | -1.61 | +.08 | 1.69 |
| ~~9.00~~<br>8.98 | | | | | | | | | | ~~2.187~~<br>-2.180<br>2.180 | 2182 | 9 31 | 420 | +2.72 | -2.49 | +.29 | 2.78 |

| | | | | | I | | II | | | | | I | | II |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9.2 | +.76 | -2.34 | 9.0 | +2.43 -2.67 | +.00 | -2.67 | +.00 | -2.67 | 9.1 | -4.55 -1.16 | -.01 | -1.17 | +.00 | -1.16 |
| 9.2 | +.70 | -2.35 | 9.4 | +2.81 -2.79 | +.00 | -2.79 | +.01 | -2.78 | 9.4 | -2.75 -1.69 | -.02 | -1.71 | +.01 | -1.68 |
| 9.2 | +.73 | -2.34 | 9.5 | +2.72 -2.78 | +.00 | -2.78 | +.01 | -2.77 | | | | | | |

8.5 +1.33 -2.46
[9.1 +.96 -2.52]
8.5 +1.33 -2.46
n = .20

0 = +1.70 - 0.33 n = +.19
+2.08 0.45 +.22
+1.99 0.44 +.22
+.210

0 = -5.28 +1.17 n = +.22
3.48 +.63 +.18
+.200

0 = +1.10 - .21 n = +.19
+1.48 - .32 +.22
+1.39 - .31 +.22
+.210

0 = -5.88 +1.30 n = +.22
-4.08 +.78 +.19
+.205

1873 Mar. 31 W.A.R. h = -.013 -.016 n = +.21 c = .00

| Star | Ra | | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) | | | | Ra | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | s | | | | | | | | | s | | |
| 8.8 | +0 | 8 46 | 412 | + .60 | 0= -2.31 | +.10 | -2.41 | + .13 | 00 - | 2.28 | 8 53 | 509 | -5.72 | 0= -1.09 | +.06 | -1.15 |
| 8.8 | +0 | 8 48 | 129 | + .11 | -2.39 | -.03 | 2.36 | + .02 | | .34 | | | | | | |
| 8.8 | +0 | 8 50 | 130 | +1.13 | -2.48 | +.04 | 2.52 | + .24 | | .28 | | | | | | |
| 8.9 | -1 | 8 54 | 133 | +1.10 | -2.49 | +.16 | 2.65 | + .23 | 00 | .42 | | | | | | |
| 8.83 | | | | | | | | | | 2.330<br>2.330 | | | | | | |

8.6 +.11 -2.36 8.8 +.60 -2.41

8.9 -5.72 -1.15 +.00 ~~-5.72~~ 1.15 +.00 ~~-5.72~~ 1.15

8.8 +1.13 -2.52
8.9 +1.10 -2.65
8.8 +1.11 -2.58

0 = -5.83 +1.21 n = +.21

0 = -6.83 +1.43 n = +.21

n = +.20

| z= | +.60+.80 | +.40+.60 | +.20+.40 | +0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| R A h m | sin z cos z | tang. δ | Req−Rfc | | P′−P | Req−Rfc+(P′−P) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| 7 32 | +.60 .80 + | .10 | −2′ | 32.0″ | +0.7 | −31.3″ | +1.4 | −29.9 |
| 7 37 | +.24 .97 + | .54 | | 29.7 | +0.4 | 29.3 | +0.6 | 28.7 |
| 7 39 | +.15 .99 + | .67 | | 29.6 | ~~−0.7~~ −.08 | 28.4 | +0.4 | 280 |
| 8 29 | −.19 .98 + | 1.33 | | 28.6 | +0.7 | 27.9 | −0.5 | 28.4 |
| 9 5 | −.02 1.00 + | .96 | | 29.2 | +1.0 | 28.2 | +0.0 | 28.2 |
| 9 10 | +.09 1.00 + | .76 | | 28.3 | −0.9 | 29.2 | +0.3 | 28.9 |
| 9 13 | +.13 .99 + | .70 | | 28.1 | +0.3 | 27.8 | +0.4 | 27.4 |
| 9 34 | +.53 .84 + | .19 | | 31.0 | +0.2 | 30.8 | +1.3 | 29.5 |
| 9 38 | +.31 .95 + | .45 | | 30.4 | +0.5 | 29.9 | +0.8 | 29.1 |
| 9 41 | −.30 .95 + | 1.70 | | 30.6 | +1.9 | 28.7 | −0.7 | 29.4 |
| | | | | | | | | 28.75 28.75 |

| R A h m | sin z cos z | tang. δ | | Req−Rfc | | P′−P | Req−Rfc+(P′−P) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 7 44 | −.53 .84 + | 3.55 | −2 28.0 | −2′ | 28.0″ | +0.6 | −27.4″ | −1.3 | −28.7 |
| 8 59 | −.43 .90 + | 2.43 | | | 28.7 | +0.8 | 27.9 | −1.0 | 28.9 |
| 9 23 | −.47 .88 + | 2.81 | | | 27.6 | +0.2 | 27.4 | −1.1 | 28.5 |
| 9 27 | −.92 .38 − | 2.75 | | | 25.1 | +1.2 | ~~23.9~~ 27.1 | −2.0 | 29.1 ✓ |
| 9 31 | −.46 .88 + | 2.72 | | | 28.2 | ~~+0.1~~ +1.0 | 27.2 | −1.1 | 28.3 |
| 9 40 | −.92 .38 − | 2.86 | | | 25.6 | +0.8 | ~~24.8~~ 26.4 | −2.0 | 28.4 ✓ |
| 9 46 | −.52 .85 + | 3.37 | | | 26.9 | +0.6 | 26.3 | −1.2 | 27.5 |
| ~~7 52~~ | ~~−.75 .66 −~~ | ~~53.01~~ | | | ——— | ~~−0.4~~ +.6 | | | |
| | | | | | | | | | 28.38<br>28.38 |

+.60 −31.″3 | +.53 −30.″8 | +.24 −29.″3 | +.15 −28.″4 | −.19 −27.″9 | −.30 −28.″7 | −.53 −27.″4 | −.92 −23.″9
+.31 −29.9 | +.09 −29.2 | −.02 −28.2 | −.43 −27.9 | −.92 −24.8
+.13 −27.8 | −.47 −27.4
−.46 −27.2
−.52 −26.3

10 8750
5 190
9 40

+.60 −31.3 | +.53 −30.8 | +.27 −29.6 | +.12 −28.5 | −.10 −28.0 | −.30 −28.7 | −.48 −27.2 | −.92 −24.3
+1.3 | +1.1 | +.6 | +.3 | −.2 | −.7 | −1.0
30.0₁ | 29.7₁ | 29.0₂ | 28.2₃ | 28.2₂ | 29.4₁ | 28.2₅
−2′ 28.″61 (15) | +1.4 | +1.1 | +.4 | −.4 | −.4 | +.8 | −.4
28.63

| R A h m | sin z cos z | tang. δ | Req−Rfc | | P′−P | Req−Rfc+(P′−P) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| 8 29 | −.19 .98 + | 1.33 | −2′ | 31.3″ | +0.7 | −30.4 | −0.5 | −30.9 |
| 9 5 | −.02 1.00 + | .96 | | 30.3 | +1.0 | 29.3 | +0.0 | 29.3 |
| 9 10 | +.09 1.00 + | .76 | | 30.3 | −0.9 | 31.2 | +0.2 | 31.0 |
| 9 13 | +.13 .99 + | .70 | | 28.2 | +0.3 | 27.9 | +0.4 | 27.5 |
| | | | | | | | | 29.68 29.68 |

| R A h m | sin z cos z | tang. δ | Req−Rfc | | P′−P | Req−Rfc+(P′−P) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| 8 59 | −.43 .90 + | 2.43 | −2′ | 29.3″ | +0.8 | −28.5 | −1.0 | −29.5 |
| 9 8 | −.87 .48 − | 4.55 | | 27.3 | +0.9 | ~~26.4~~ 28.2 | −2.0 | 30.2 ✓ |
| 9 23 | −.47 .88 + | 2.81 | | 28.0 | +0.2 | 27.8 | −1.1 | 28.9 |
| 9 27 | −.92 .38 − | 2.75 | | 27.6 | ~~+1.2~~ +1.1 | ~~26.5~~ 28.7 | −2.0 | 30.7 ✓ |
| 9 31 | −.46 .88 + | 2.72 | | —— | ~~+0.1~~ +1.0 | | | |
| | | | | | | | | 29.20 |

4 38 7 2
2 18 4 0
6 57 1 2

+.09 −31.2 | −.19 −30.4 | −.43 −28.5 | −.87 −26.4
+.13 −27.9 | −.02 −29.3 | −.47 −27.8 | −.92 −26.5

+.11 −29.5 | −.10 −29.8 | −.45 −28.1 | −.89 −26.4
+.3 | −.2 | −.9
29.2₂ | 30.0₂ | 29.0₂
−2′ 29.″40 | (6) −.2 | +.6 | −.4
29.52

| R A h m | sin z cos z | tang. δ | Req−Rfc | | P′−P | Req−Rfc+(P′−P) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| 8 46 | +.20 .98 + | .60 | −2′ | 30.2″ | +0.2 | −30.0 | +0.5 | −29.5 |
| 8 48 | +.59 .80 + | .11 | | 31.9 | +0.7 | 31.2 | +1.4 | 29.8 |
| 8 50 | −.11 .99 + | 1.13 | | 30.2 | +0.8 | 29.4 | −0.2 | 29.6 |
| 8 54 | −.09 1.00 + | 1.10 | | 31.7 | +1.2 | 30.5 | −0.2 | 30.7 |
| | | | | | | | | 29.90 29.90 |

| R A h m | sin z cos z | tang. δ | Req−Rfc | | P′−P | Req−Rfc+(P′−P) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|
| 8 53 | −.84 .53 − | 5.72 | −2′ | 29.2″ | +0.4 | −28.8 | −2.0 | 30.80 |
| | | | | | | | ~~29.80~~ | 30.80 |

4 360
1 180
540

+.59 −31.2 | +.20 −30.0 | −.11 −29.4 | −.84 −28.8
−.09 −30.5

+.59 −31.2 | +.20 −30.0 | −.10 −29.9 | −.84 −28.8
+1.3 | +.5 | −.2
29.9₁ | 29.5₁ | 30.1₂
−2′ 29.″90 (4) | .0 | −.4 | +.2
30.08

1873 Apr. 1 Ware h = −.074 / −.016 n = +.16 e = .00 h = −.016 (1)

| Star | | Ra h | m | | δ | tang. δ | | T−Ra s | ρ'−ρ | T−Ra−(ρ'−ρ) s | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.7 | +1.1 | 7 | 39 | 400 | + | .67 | 0 = − | 2.88 | .+.02 | −2.90 | + | .11 | −.02 | − 2.79 | 2.81 |
| 7.9 | +.9 | 7 | 55 | 404 | + | .53 | − | 2.92 | .+.00 | 2.92 | + | .08 | .01 | .84 | .85 |
| 8.1 | +.7 | 8 | 9 | 123 | + | .17 | − | 2.78 | .+.00 | 2.78 | + | .03 | .01 | .75 | .76 |
| 8.4 | +.4 | 8 | 24 | 408 | + | .79 | − | 2.70 | .+.24 | 2.94 | + | .13 | .01 | .81 | .82 |
| 8.5 | +.3 | 8 | 29 | 411 | + | 1.33 | − | 2.72 | .+.27 | 2.99 | + | .21 | .00 | .78 | .78 |
| 8.6 | +.2 | 8 | 37 | 126 | + | .34 | − | 2.83 | .−.00 | 2.83 | + | .05 | .00 | .78 | .78 |
| 8.26 8.6 | +.2 | 8 | 39 | 128 | + | .12 | − | 2.98 | −.01 | 2.97 | + | .02 | −.00 | .95 | .95 |
| 10.0 | −1.2 | 10 | 1 | 146 | + | .22 | − | 2.85 | .+.02 | 2.87 | + | .04 | +.02 | .83 | .81 |
| 10.2 | −1.4 | 10 | 9 | 147 | + | .95 | − | 2.94 | .+.08 | 3.02 | + | .15 | .02 | .87 | .85 |
| 10.13 10.2 | −1.4 | 10 | 14 | 149 | + | .90 | − | 2.93 | .+.04 | 2.97 | + | .14 | .02 | 2.83 | 2.81 |
| [9.1 | −.3 | 9 | 5] | 416 | + | .96 | − | 3.29 | .+.03 | 3.32 | + | .15 | +.00 | − 3.17] | +163.01 |
| 8.82 | | | | | | | | | | | | | | 2.843<br>2.840 | 2839 |

1873 Apr. 1 WAR (2)

| Star | Ra h | m | | δ | tang. δ | | T−Ra s | ρ'−ρ | T−Ra−(ρ'−ρ) s |
|---|---|---|---|---|---|---|---|---|---|
| 2814 | | | | | | | | | |
| | 7 | 44 | 401 | + | 3.55 | 0 = − | 3.04 | .+.37 | −3.41 |
| | 8 | 3 | 406 | + | 4.05 | − | 3.61 | .−.16 | 3.45 |
| | 8 | 13 | 502 | − | 4.45 | − | 2.08 | .+.15 | 2.23 |
| | 8 | 19 | 125 | + | 1.81 | − | 2.99 | .+.03 | 3.02 |
| | 8 | 25 | 410 | + | 3.50 | − | 3.04 | −.09 | 2.95 |
| | 8 | 33 | 504 | − | 3.61 | − | 1.96 | .+.10 | 2.06 |
| | 9 | 8 | 510 | − | 4.55 | − | 2.41 | −.14 | 2.27 |
| | 9 | 23 | 418 | + | 2.81 | − | 3.36 | .−.01 | 3.35 |
| | 9 | ~~27~~ 31 | ~~308~~ | + | 2.72× | − | 3.08 | +.29 | 3.37 |
| | 9 | 40 | 516 | − | 2.86 | − | 2.55 | .−.03 | 2.52 |

5 I II

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7.7 | +3.55 | −3.41 | −.02 | −3.43 | | −.02 | −3.43 |
| 8.1 | +4.05 | −3.45 | −.01 | −3.46 | | −.02 | −3.47 |
| 8.3 | +1.81 | −3.02 | −.01 | −3.03 | | −.02 | −3.04 |
| 8.4 | +3.50 | −2.95 | −.01 | −2.96 | | −.02 | −2.97 |
| 9.4 | +2.81 | −3.35 | +.01 | −3.34 | | +.00 | −3.35 |
| 9.4 | +2.72 | −3.37 | +.01 | −3.36 | | +.00 | −3.37 |

6 I II

| | | | | | | |
|---|---|---|---|---|---|---|
| 8.2 | −4.45 | −2.23 | −.01 | −2.24 | −.01 | −2.24 |
| 8.5 | −3.61 | −2.06 | +.00 | −2.06 | +.00 | −2.06 |
| 9.1 | −4.55 | −2.27 | +.00 | −2.27 | +.00 | −2.27 |
| 9.7 | −2.86 | −2.52 | +.01 | −2.51 | +.00 | −2.52 |

(3)

| | | |
|---|---|---|
| 8.1 | +17 | −2.78 |
| 8.6 | +34 | −2.83 |
| 8.6 | +12 | −2.97 |
| 10.0 | +.22 | −2.87 |
| 8.8 | +.21 | −2.86 |

(4)

| | | |
|---|---|---|
| 8.5 | +1.33 | −2.99 |
| 10.1 | +.95 | −3.02 |
| 10.2 | +.90 | −2.97 |
| [9.1 | +.96 | 3.32] |
| 9.5 | +1.03 | −3.07 |
| 9.6 | 1.06 | 2.99 |

n = ~~+.20~~ +16 −.02

0 = +3.34 − .57 n = +.17
+3.84 − .60 +.16
+1.60 − .17 +.11
+3.29 − .10 +.03
+2.60 − .48 +.18
+2.51 − .50 +.20
+.142
1'

0 = +2.52 − .36 n = +.17
+3.02 − .40 +.16
+ .78 + .03
+2.47 + .10 +.01
+1.78 − .28 +.20
+1.69 − .30 +.22
+.152
2'

8

0 = −4.66 + .62 n = +.13
−3.82 + .80 +.21
−4.76 + .59 +.12
−3.07 + .35 +.14
+.142
3'

0 = −3.26 + .83 n = +.14
−3.09 + 1.01 −8 +.20
−2.58 + .80 −8 +.13
−3.55 + .55 −8 +.12
+.148 + .162
4'

10
4

−2

1873 Apr. 10 h = −.007 / +.036 n = +.10 e = .00 h = +.038

| Star | | Ra h | m | | | δ | tang. δ | T−Ra s | ρ'−ρ | T−Ra−(ρ'−ρ) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8.4 | +1.5 | 8 | 24 | 408 | + | .79 | 0 = − | 4.30 | .+.24 | −4.54 | + | .08 | +.06 | − 4.46 | 4.40 |
| 8.5 | 1.4 | 8 | 29 | 411 | + | 1.33 | − | 4.32 | ~~+.27~~ | 4.59 | + | .13 | .05 | .46 | .41 |
| 8.6 | 1.3 | 8 | 37 | 126 | + | .34 | − | 4.46 | +.00 ~~+.27~~ | 4.46 | + | .03 | .05 | .43 | .38 |
| 8.55 8.7 | +1.2 | 8 | 39 | 128 | + | .12 | − | 4.48 | .−.01 | 4.47 | + | .01 | +.05 | .46 | .41 |
| 10.0 | −.1 | 10 | 1 | 146 | + | .22 | − | 4.38 | .+.02 | 4.40 | + | .02 | −.00 | .38 | .38 |
| 10.2 | .3 | 10 | 9 | 147 | + | .95 | − | 4.38 | .+.08 | 4.46 | + | .09 | .01 | .37 | .38 |
| 10.2 | .3 | 10 | 14 | 149 | + | .90 | − | 4.41 | .+.04 | 4.45 | + | .09 | .01 | .36 | .37 |
| 10.3 | .4 | 10 | 20 | 426 | + | .76 | − | 4.47 | .+.02 | 4.49 | + | .08 | .02 | .41 | .43 |
| 10.4 | .5 | 10 | 26 | 151 | + | .17 | − | 4.30 | .+.08 | 4.38 | + | .02 | .02 | .36 | .38 |
| 10.6 | .7 | 10 | 36 | 430 | + | .44 | − | 4.51 | .−.00 | 4.51 | + | .04 | .03 | .47 | .50 |
| 10.6 | .7 | 10 | 38 | 431 | + | .61 | − | 4.43 | .−.02 | 4.41 | + | .06 | .03 | .35 | .38 |
| 10.7 | .8 | 10 | 42 | 432 | + | .20 | − | 4.31 | .+.02 | 4.33 | + | .02 | .03 | .31 | .34 |
| 10.8 | .9 | 10 | 46 | 152 | + | .70 | − | 4.38 | .+.07 | 4.45 | + | .07 | .03 | .38 | .41 |
| 10.47 10.9 | −1.0 | 10 | 54 | 153 | + | 1.54 | − | 4.51 | .+.03 | 4.54 | + | .15 | −.04 | .39 | .43 |
| 9.92 | | | | | | | | | | | | | 4.38 | 4.3878<br>4.399 | 4.400 |

4.452

| Ra h | m | | | δ | tang. δ | | T−Ra s | ρ'−ρ | T−Ra−(ρ'−ρ) |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 19 | 125 | + | 1.81 | 0 = − | 4.58 | .+.03 | −4.61 |
| 8 | 25 | 410 | + | 3.50 | − | 6.03 | .−.09 | 5.94 ε4 |
| 8 | 33 | 504 | − | 3.61 | − | 3.94 | .+.10 | 4.04 |
| 9 | 8 | 510 | − | 4.55 | − | 4.21 | −.14 | 4.07 |
| 9 | 23 | 418 | + | 2.81 | − | 4.59 | −.01 | 4.58 |
| 9 | 31 | 420 | + | 2.72 | − | 4.43 | .+.29 | 4.72 |
| 10 | 24 | 150 | + | 4.12 | − | 4.85 | .−.15 | 4.70 |
| 10 | 32 | 525 | − | 3.27 | − | 4.12 | .+.15 | 4.27 |
| 10 | 49 | 433 | + | 4.89 | − | 5.26 | .−.22 | 5.04 |
| 10 | 55 | 154 | + | 1.92 | − | 4.51 | .+.04 | 4.55 |

I II

| | | | | | | |
|---|---|---|---|---|---|---|
| 8.3 | +1.81 | −4.61 | −.01 | −4.62 | −.01 | −4.62 |
| 8.4 | +3.50 | −5.94 | −.01 | −5.95 | −.01 | −5.95 ε4 |
| 9.4 | +2.81 | −4.58 | +.00 | −4.58 | +.00 | −4.58 |
| 9.5 | +2.72 | −4.72 | +.00 | −4.72 | +.00 | −4.72 |
| 10.4 | +4.12 | −4.70 | +.04 | −4.66 | +.00 | −4.70 |
| 10.8 | +4.89 | −5.04 | +.01 | −5.03 | +.01 | −5.03 |
| 10.9 | +1.92 | −4.55 | +.01 | −4.54 | +.01 | −4.54 |

I II

| | | | | | | |
|---|---|---|---|---|---|---|
| 8.5 | −3.61 | −4.04 | −.01 | −4.05 | −.01 | −4.05 |
| 9.2 | −4.55 | −4.07 | +.00 | −4.07 | +.00 | −4.07 |
| 10.5 | −3.27 | −4.27 | +.01 | −4.26 | +.00 | −4.27 |

ε4

13
6

| | | |
|---|---|---|
| 8.6 | +34 | −4.46 |
| 8.6 | +12 | −4.47 |
| 10.0 | +22 | −4.40 |
| 10.4 | +.17 | −4.38 |
| 10.7 | +.20 | −4.33 |
| 9.7 | +.21 | −4.41 |

| | | |
|---|---|---|
| 8.5 | +1.33 | −4.59 |
| 10.1 | +.95 | −4.46 |
| 10.2 | +.90 | −4.45 |
| 10.9 | +1.54 | −4.54 |
| 9.9 | +1.18 | −4.51 |

n = +10

0 = +1.60 − 0.21 n = +.13
+3.29 − 0.54 .17
+2.60 − .17 .07
+2.51 − .31 .12
+3.91 − .25 .06
+4.68 − .62 .13
+1.71 − .13 .08
+.109

0 = +.63 − .11 n +.18
+2.32 − .44 .19
+1.63 − .07 .04
+1.54 − .21 .14
+2.94 − .19 .06
+3.71 − .53 .14
+ .44 − .03 .04
.113

0 = −3.82 + .36 n = +.09
4.76 + .34 .07
3.48 + .15 .04
+.067

0 = −4.79 + .46 +.10
5.73 + .44 +.08
4.47 + .24 + ~~.10~~ .05
+.077

| z = | +.60 +.80 | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.60 −.80 | −.80 −.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h | m | sin z | cos z | tang. δ | Req − Rfl | ρ′ − ρ | Req − Rfl + (ρ′ − ρ) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 39 | +.15 | .99 + | .67 | −2′ 25″.5 | −0.7 | 8″<br>−28.2 | + 0.4 | 7<br>−28.8 |
| 7 | 55 | +.25 | .97 + | .53 | − — | +0.9 | | | |
| 8 | 9 | +.54 | .84 + | .17 | 31.0 | +0.2 | 30.8 | + 1.2 | 29.6 |
| 8 | 24 | +.07 | 1.00 + | .79 | 32.2 | 7 + 1.6 | 30.6 | + 0.2 | 30.4 |
| 8 | 29 | −.19 | .99 + | 1.33 | 30.8 6 | +0.7 | 29.9 | − 0.5 | 30.4 |
| 8 | 37 | +.40 | .91 + | .34 | 29.3 | +06 ~~+1.6~~ | 28.7 | + 0.9 | 27.8 |
| 8 | 39 | +.58 | .81 + | .12 | 30.2 | −02 ~~+0.6~~ | 30.4 | + 1.4 | 29.0 |
| 10 | 1 | +.50 | .86 + | .22 | 30.4 | + +0.2 | 30.2 | + 1.2 | 29.0 |
| 10 | 9 | −.02 | 1.00 + | .95 | 30.2 | +14 ~~+0.2~~ | 29.2 | + 0.0 | 29.2 |
| 10 | 14 | +.01 | 1.00 + | .90 | 28.6 | +04 ~~+0.5~~ | 28.2 | + 0.0 | 28.2 |
| 9 | 5 | −02 | 1.00 + | .96 | 28.5 | +1.0 | 27.5 | + 0.0 | 27.5 |
| | | | | | | | | | 28.79 29.01 |

| RA h | m | sin z | cos z | tang. δ | Req − Rfl | ρ′ − ρ | Req − Rfl + (ρ′ − ρ) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 44 | −.53 | .84 + | 3.55 | −2′ — — | +0.6 | | | |
| 8 | 3 | −.56 | .82 + | 4.05 | 30.4 | +1.4 | −29.0 | − 1.3 | −30.3 |
| 8 | 13 | −.87 | .48 − | 4.45 | 25.3 | +0.5 | 25.8 3.0 ~~24.8~~ | − 1.9 | 27.7 ✓ |
| 8 | 19 | −.32 | .94 + | 1.81 | 30.4 | +1.4 | 29.0 | − 0.8 | 30.8 |
| 8 | 25 | −.53 | .84 + | 3.50 | 30.4 | +0.8 | 29.6 | − 1.2 | 30.8 |
| 8 | 33 | −.89 | .45 − | 3.61 | 26.2 | +0.6 | 26.8 ~~25.6~~ | − 2.0 | 28.8 ✓ |
| 9 | 8 | −.87 | .48 − | 4.55 | 25.9 | +0.9 | 26.8 ~~25.0~~ | − 2.0 | 28.8 ✓ |
| 9 | 23 | −.47 | .88 + | 2.81 | 28.5 | +0.2 | 28.3 | − 1.0 | 29.3 |
| 9 | ~~27~~ 31 | −.92 | .38 + | 2.72 | 28.8 | +1.0 | 27.8 | − 2.0 | 29.8 ✓ |
| 9 | 40 | −.92 | .38 − | 2.86 | 26.3 | +0.8 | 27.1 ~~25.5~~ | − 2.0 | 29.1 ✓ |
| | | | | | | | | | 30.30<br>30.30 |

| | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.80 −.100 |
|---|---|---|---|---|---|---|---|
| 10 28790 | +.54 −30″.8 | ~~+.25~~ | +.15 −26″.2 | −.19 −29″.9 | −.32 −~~29~~.0 30″ | ~~−.53~~ | −.87 −24″.8 |
| 4 12120 | +.58 −30.4 | +.40 −28.7 | +.07 −30.6 | −.02 −29.2 | | −.56 −29.0 | −.89 −25.6 |
| 40910 | +.50 −30.2 | | +.01 −28.2 | −.02 −27.5 | | −.53 −29.6 | −.87 −25.0 |
| | | | | | | −.47 −28.3 | −.92 −27.8 |
| 16 | | | | .08 −8.9 | E+ | | −.92 −25.5 |
| −2′ 29″.~~06~~ | +.54 −30.5 | +40 −28.7 | +08 −28.3 | ~~−10 −29.5~~ | −.32 −30.0 | −.52 −29.0 | −.89 −25.7 |
| 29.22 | +1.2 | +.9 | +.2 | −.2 | −.7 | −1.1 | |
| (14) | 29.3₃ | 27.8₁ | 28.1₃ | 29.1 ~~29.7~~₃ | 30.7₁ | 30.1₃ | |
| | +.1 | −1.4 | −1.1 | −.1 | +1.5 | +.9 | |

82

| RA h | m | sin z | cos z | tang. δ | Req − Rfl | ρ′ − ρ | Req − Rfl + (ρ′ − ρ) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 24 | +.07 | 1.00 + | .79 | 0 = −2′ 32″.2 | +1.6 | 306<br>−~~33.8~~ | + 0.2 | 304<br>−~~33.6~~ |
| 8 | 29 | −.19 | .98 + | 1.33 | 30.4 2 | +0.7 | 29.5 | − 0.5 | 30.0 |
| 8 | 37 | +.40 | .91 + | .34 | 28.6 | +06 ~~+1.6~~ | 28.0 | + 0.9 | 27.1 |
| 8 | 39 | +.58 | .81 + | .12 | 29.7 | −02 ~~+0.6~~ | 29.9 | + 1.2 | 28.7 |
| 10 | 1 | +.50 | .86 + | .22 | 30.0 | + ~~−0.2~~ | 29.8 | + 1.1 | 28.7 |
| 10 | 9 | −.02 | 1.00 + | .95 | 30.6 | +14 ~~+0.2~~ | 29.6 | + 0.0 | 29.6 |
| 10 | 14 | +.01 | 1.00 + | .90 | 29.3 | +04 ~~+0.5~~ | 28.9 | + 0.0 | 28.9 |
| 10 | 20 | +.09 | 1.00 + | .76 | 31.7 ✓ | +0.4 | 31.3 | + 0.2 | 31.1 |
| 10 | 26 | +.54 | .84 + | .17 | 30.7 | +0.5 | 30.2 | + 1.2 | 29.0 |
| 10 | 36 | +.32 | .94 + | .44 | 27.6 | +0.7 | 26.9 | + 0.7 | 26.2] E+ |
| 10 | 38 | +.19 | .98 + | .61 | 30.3 | +1.0 | 29.3 | + 0.5 | 28.8 |
| 10 | 42 | +.52 | .85 + | .20 | 31.2 | +0.4 | 30.8 | + 1.1 | 29.7 |
| 10 | 44 | +.13 | .99 + | .70 | 27.1 | −0.7 | 27.8 | + 0.3 | 27.5 |
| 10 | 52 | −.25 | .97 + | 1.54 | 29.9 | +1.1 | 28.8 | − 0.6 | 29.4 |
| | | | | | | | | | 29.15 29.47 |

| RA h | m | sin z | cos z | tang. δ | Req − Rfl | ρ′ − ρ | Req − Rfl + (ρ′ − ρ) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 19 | −.32 | .94 + | 1.81 | −2′ 30″.2 | +1.4 | −28.8 | − 0.7 | −29.5 |
| 8 | 25 | −.53 | .84 + | 3.50 | 28.5 | +0.8 | 27.7 | − 1.1 | 28.8 |
| 8 | 33 | −.89 | .45 − | 3.61 | 28.1 | +0.6 | 28.7 ~~27.5~~ | − 1.9 | 30.6 ✓ |
| 9 | 8 | −.87 | .48 − | 4.55 | 26.2 | +0.9 | 27.1 ~~25.3~~ | − 1.9 | 29.0 ✓ |
| 9 | 23 | −.47 | .88 + | 2.81 | 30.2 | +0.2 | 30.0 | − 1.0 | 31.0 |
| 9 | 31 | −.46 | .88 + | 2.72 | 29.1 | +1.0 | 28.1 | − 1.0 | 29.1 |
| 10 | 24 | −.56 | .82 + | 4.12 | 29.0 | +0.7 | 28.3 | − 1.2 | 29.5 |
| 10 | 32 | −.90 | .43 − | 3.27 | 25.9 | +0.8 | 26.7 ~~25.1~~ | − 1.9 | 28.6 ✓ |
| 10 | 49 | −.59 | .80 + | 4.89 | 29.0 | +07 ~~+1.7~~ | 28.3 | − 1.3 | 29.6 |
| 10 | 55 | −.34 | .94 + | 1.92 | — — | +1.0 | | | |
| | | | | | | | | | 30.58<br>29.58 |

| | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.80 −.100 |
|---|---|---|---|---|---|---|---|
| | +.40 −28.0 | +.32 −26.9 | +.07 −33.8 | −.19 −29.5 | −.25 −28.8 | −.53 −27.7 | −.89 −27.5 |
| | +.58 −29.9 | | +.01 −28.9 | −.02 −29.6 | −.32 −28.8 | −.47 −30.0 | −.87 −25.3 |
| 13 795 | +.50 −29.8 | | +.09 −31.3 | | 34 | −.46 −28.1 | −.90 −25.1 |
| 6 348 | +.54 −30.2 | | +.19 −29.3 | | | −.56 −28.3 | |
| 543 | +.52 −30.8 | | +.13 −27.8 | | | −.59 −28.3 | |
| | +51 −29.7 | +32 −26.9 | +10 −30.2 | −10 −29.5 | −28 −28.8 | −52 −28.5 | −89 −26.0 |
| −2′ 29″.27 | +1.1 | +.7 | +.2 | −.2 | −.6 | −1.1 | |
| 29.29 | (20) 28.6₅ | 26.2 | 30.0₅ | 29.7₂ | 29.4₂ | 29.6₅ | |
| | −.7 | −3.1] | +.7 | +.4 | +.1 | +.3 | |

1873 Apr. 15 War h = –.010 +.018 n = +.14 c = .00 h = +.025 ~~+.105~~

1873 Apr. 15 War

| | Star | | Ra h | m | δ | | tang. δ | sec δ | τ Ra | P'–P | τ Ra –(P'–P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | s | | s | | | | 5.~~55~~ | 080 |
| | 8.6 | +5 | 8 | 39 | 128. | + | .12 | 0= – | 5.15 | .–.01 | – 5.14 | + | .02 | +01 | – 5.12 | 5.11 |
| | 8.8 | +3 | 8 | 46 | 412 | + | .60 | – | 5.03 | .+.10 | 5.13 | + | .07 | .01 | .06 | .05 |
| | 8.8 | +3 | 8 | 48 | 129 | + | .11 | – | 5.15 | .–.03 | 5.12 | + | .02 | .01 | .10 | .09 |
| 8.75 | 8.8 | +3 | 8 | 50 | 130 | + | 1.13 | – | 5.16 | .+.04 | 5.20 | + | .16 | .01 | .04 | .03 |
| | [9.1 | +0 | 9 | 5] | 416 | + | .96 | – | 5.32 | .+.03 | 5.35 | + | .13 | +00 | .22] +16 | .06 |
| | 9.2 | –1 | 9 | 10 | 135 | + | .76 | – | 5.02 | .+.10 | 5.12 | + | .11 | – 00 | .01 | .01 |
| | 9.2 | –1 | 9 | 13 | 136 | + | .70 | – | 5.07 | .+.07 | 5.14 | + | .10 | .00 | .04 | .04 |
| | 9.6 | –5 | 9 | 34 | 141 | + | .19 | – | 5.05 | .+.03 | 5.08 | + | .03 | 01 | .05 | .06 |
| | 9.6 | –5 | 9 | 38 | 142 | + | .45 | – | 5.16 | .+.03 | 5.19 | + | .06 | –.01 | .13 | .14 |
| 9.30 | 8.9 | +2 | 8 | 54 | 133 | + | 1.10 | – | 8.09 | .+.16 | 8.25 | + | .15 | +00 | .10 | .10 |
| | 9.06 | | | | | | | | | | | | | | 5.~~660~~ | |
| | | | | | | | | | | | | | | | 5.066 | |
| | | | | | | | | | | | | | | | 5.~~065~~ .071 | 5.069 |

| Star | Ra h | m | δ | tang. δ | | τ Ra | P'–P | τ Ra –(P'–Ra) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | s |
| | 8 | 53 | 509 | – 5.72 | 0= – | 4.05 | .+.06 | –4.11 |
| | 8 | 59 | 415 | + 2.43 | – | 5.30 | .+.13 | 5.43 |
| | 9 | 8 | 510 | – 4.55 | – | 4.74 | .–.14 | 4.60 |
| | 9 | 31 | 420 | + 2.72 | – | 5.20 | .+.29 | 5.49 |
| | 9 | 40 | 516 | – 2.86 | – | 4.70 | .–.03 | 4.67 |

86 +12 –5.14
88 +.11 –5.12
96 +19 –5.08
96 +10 –5.19
9.1 +.22 –5.13

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 9.0 | +2.43 | –5.43 | +.00 | –5.43 | +.00 | –5.43 |
| 9.5 | +2.72 | 5.49 | +.00 | –5.49 | +.01 | –5.48 |

0 = +2.71 – 30 n = +.14
+2.50 – 36 .14
+.140

88 +1.13 –5.20
91 +.96 –5.35]
89 +1.10 –8.25
8.9 +~~1.06~~ 1.12 –~~5.27~~ 5.22

0 = +1.37 – 16 n = +.12
+1.66 – 21 .13
+.125

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 8.9 | –5.72 | –4.11 | +.00 | –4.11 | +.00 | –4.11 |
| 9.2 | –4.55 | –4.60 | +.00 | –4.60 | +.00 | –4.00 |
| 9.7 | –2.86 | –4.67 | +.01 | –4.66 | +.01 | –4.66 |

10
3

0 = –5.94 + 102 n = +.17
–4.77 + ~~1.13~~ .53 ~~.24~~ .11
–3.08 + .47 .18
+.143

0 = –6.78 +116 n = +.17
–5.61 + ~~.77~~ .6 ~~.23~~ .12
–3.92 + .61 .16
+ .150

n = +.17

1873 Apr. 16 War h = –.010 +.033 n = +.14 c = –.05 h = ~~+.236~~ +.014

| | Star | | Ra h | m | δ | | tang. δ sec δ | | τ Ra | P'–P | τ Ra –(P'–P) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | s | | | | | | | 5484<br>~~5.492~~ | |
| | [9.1 | +9 | 9 | 5] | 416 | + | .96 +1.35 | – | 5.68 | .+.03 | –5.71 | + | .13 | +.01 | –.07 | –5.65] +16 | .48 |
| | 9.2 | .8 | 9 | 10 | 135 | + | .76 +1.26 | – | 5.38 | .+.10 | 5.48 | + | .11 | .01 | –.06 | .43 | .42 |
| | 9.2 | .8 | 9 | 13 | 136 | + | .70 +1.22 | – | 5.44 | .+.07 | 5.51 | + | .10 | .01 | –.06 | .47 | .46 |
| | 9.6 | .4 | 9 | 34 | 141 | + | .19 +1.02 | – | 5.42 | .+.03 | 5.45 | + | .03 | 01 | –.05 | .47 | .46 |
| | 9.6 | .4 | 9 | 38 | 142 | + | .45 +1.10 | – | 5.51 | .+.03 | 5.54 | + | .06 | 01 | –.06 | .54 | .53 |
| 9.46 | 9.7 | .3 | 9 | 41 | 143. | + | 1.70 +1.98 | – | 5.65 | .+.04 | 5.69 | + | .24 | 00 | –.10 | .55 +04 | .51 |
| | 10.0 | .0 | 10 | 0 | 745 | + | .31 +1.04 | – | 5.40 | .+.08 | 5.48 | + | .04 | 00 | –.05 | .49 | .49 |
| | 10.0 | +.0 | 10 | 1 | 146 | + | .22 +1.02 | – | 5.36 | .+.02 | 5.38 | + | .03 | +.00 | –.05 | .40 | .40 |
| | 10.2 | –2 | 10 | 9 | 147 | + | .95 +1.37 | – | 5.43 | .+.08 | 5.51 | + | .13 | –.00 | –.07 | .45 | .45 |
| | 10.3 | .3 | 10 | 20 | 426 | + | .76 +1.26 | – | 5.52 | .+.02 | 5.54 | + | .11 | .00 | –.06 | .49 | .49 |
| | 10.4 | .4 | 10 | 26 | 151 | + | .17 +1.01 | – | 5.38 | .+.08 | 5.46 | + | .02 | .01 | –.05 | .49 | .50 |
| | 10.6 | .6 | 10 | 36 | 430 | + | .44 +1.10 | – | 5.46 | +.00 ~~.+.05~~ | 5.46 | + | .06 | 01 | –.06 | .46 | .47 |
| 10.38 5 | 10.6 | .6 | 10 | 38 | 431 | + | .61 +1.17 | – | 5.50 | .–.02 | 5.48 | + | .09 | .01 | –.06 | .45 | .46 |
| 10.38 | 10.7 | –.7 | 10 | 42 | 432 | + | .20 +1.02 | – | 5.50 | .+.02 | 5.52 | + | .03 | –.01 | –.05 | .544 | .55 |
| | 10.01 | | | | | | | | | | | | 5.44 | | | 5.471<br>5.477 | 5.476 |

| Ra h | m | δ | tang. δ | | τ Ra | P'–P | τ Ra –(P'–P) |
|---|---|---|---|---|---|---|---|
| | | | | | s | | |
| 8 | 59 | 415 | + 2.43 | 0= – | 5.57 | .+.13 | –5.70 |
| 9 | 8 | 510 | – 4.55 | – | ~~4~~5.64 | .–.14 | –~~4~~5.50 |
| 9 | 27 | 3.08 | – 2.75 | – | 5.21 | .+.09 | 5.30 |
| 9 | 40 | 516 | – 2.86 | – | 5.38 | .–.03 | 5.35 |
| 9 | 46 | 421 | + 3.37 | – | 5.84 | .+.17 | 6.01 |
| 10 | 24 | 150 | + 4.12 | – | 6.16 | .–.15 | 6.01 |
| 10 | 32 | 525 | – 3.27 | – | 5.02 | .+.15 | 5.17 |

96 +.19 –5.45
96 +.45 –5.54
10.0 +.31 –5.48
10.0 +.22 –5.38
10.4 +.17 –5.46
10.7 +.20 –5.52
10.0 +.26 –5.47
+1

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 9.0 | +2.43 | –5.70 | –.01 | –5.71 | +.00 | –5.70 |
| 9.8 | +3.37 | –6.01 | +.00 | –6.01 | +.00 | –6.01 |
| 10.4 | +4.12 | –6.01 | +.00 | –6.01 | +.01 | –6.00 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 9.2 | –4.55 | –~~4~~5.50 | –.01 | –~~4~~5.51 | +.00 | –~~4~~5.50 |
| 9.4 | –2.75 | –5.30 | –.01 | –5.31 | +.00 | –5.30 |
| 9.7 | –2.86 | –5.35 | +.00 | –5.35 | +.00 | –5.35 |
| 10.5 | –3.27 | –5.17 | +.01 | –5.16 | +.01 | –5.16 |

13
3

0 = +2.17 – 23 n = +.11
+3.11 – .54 .17
+3.86 – .54 .14
+.140

0 = –4.81 +.04 n = –.01
–3.01 +.16 +.05
–3.12 +.12 +.04
–3.53 +.31 +.09
+.042

91 +.96 –5.71]
97 +1.70 –5.69
~~9.4~~ ~~+1.33~~ ~~–5.70~~

n = +.21 +.01

0 = +1.10 .00 n = .00
+2.04 – .31 +.18
+2.79 – .30 +.11
+.130

0 = –5.88 +.20 n = +.03
–4.08 +.40 +.10
–4.19 +.35 +.0~~9~~8
–4.60 +.54 +.12
+.082

–2

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h | RA m | sin z | cos z | tang. δ | Req − Rfe | Rfe | ρ'−ρ | Req−Rfe+(ρ'−ρ) | | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 39 | +.58 | .81 + | .12 | −2 | 30.4 | − 0.2 | −30.6 | +1.1 | −29.5 |
| 8 | 46 | +.20 | .98 + | .60 | | 29.4 | + 0.2 | 29.2 | +0.4 | 28.8 |
| 8 | 48 | +.59 | .80 + | .11 | | 32.8 | + 0.7 | 32.1 | +1.2 | 30.9 |
| 8 | 50 | −.11 | .99 + | 1.13 | | 29.1 | +0.8 ~~+0.7~~ | 28.3 | −0.2 | 28.5 |
| 9 | 5 | −.02 | 1.00 + | .96 | | 29.8 | + 1.0 | 28.8 | +0.0 | 28.8 |
| 9 | 10 | +.09 | 1.00 + | .76 | | 28.6 | − 0.9 | 29.5 | +0.2 | 29.3 |
| 9 | 13 | +.13 | .99 + | .70 | | 29.8 | + 0.3 | 29.5 | +0.3 | 29.2 |
| 9 | 34 | +.53 | .84 + | .19 | | 30.9 | + 0.2 | 30.7 | +1.1 | 29.6 |
| 9 | 38 | +.31 | .95 + | .45 | | 29.0 | + 0.5 | 28.5 | +0.6 | 27.9 |
| 8 | 54 | −.09 | 100 + | 1.10 | | 31.0 | + 1.2 | 29.8 | −0.2 | 30.0 |
| | | | | | | | | | | 29.25 29.25 |

| RA h | RA m | sin z | cos z | tang. δ | Req − Rfe | Rfe | ρ'−ρ | Req−Rfe+(ρ'−ρ) | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 53 | −.61 | .79 − | 5.72 | −2 | 27.0 | + 0.4 | 27.4 ~~26.6~~ | −1.1 | 28.5 ~~27.7~~ |
| 8 | 59 | −.43 | .90 + | 2.43 | | 28.6 | + 0.8 | 27.8 | −0.9 | 28.7 |
| 9 | 8 | −.87 | .48 − | 4.55 | | 25.8 | + 0.9 | 26.7 ~~24.9~~ | −1.9 | 28.6 |
| 9 | 31 | −.46 | .88 + | 2.72 | | 29.2 | + 1.0 | 28.2 | −0.9 | 29.1 |
| 9 | 40 | −.92 | .38 − | 2.86 | | 26.6 | + 0.8 | 27.4 ~~25.8~~ | ~~−1.7~~ 2.0 | 29.8 .4 |
| | | | | | | | | | | 28.50<br>28.77 |

| | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|
| | +.58 −30.6 | +.20 −29.2 | +.09 −29.5 | −.11 −28.3 | | −.43 −27.8 | −.61 −26.6 | −.87 −24.9 |
| 10 9250 | +.59 −32.1 | +.31 −28.5 | +.13 −29.5 | −.02 −28.6 | | −.46 −28.2 | | −.92 −25.8 |
| 3 2631 | +.53 −30.7 | | | −.09 29.8 | | | | |
| 11881 | | | | 7 − 9.0 E+ | | | | |
| | +.57 −31.1 | +25 −28.8 | +11 −29.5 | −.16 −28.5 | | −.44 −28.0 | .61 −26.6 | .89 −25.3 |
| 9.04 | +1.2 | +.6 | +.3 | −.1 | | −.9 | −1.3 | |
| −2 ~~28.99~~ | (13) 29.9 3 | 28.2 2 | 29.2 2 | 9. ~~28.9~~ 3 | | 28.9 | 27.9 | |
| 29.14 | * +.9 | * −.8 | * +.2 | * +.1 | | * −.1 2 | * −1.1 | |

| RA h | RA m | sin z | cos z | tang. δ | Req − Rfe | Rfe | ρ'−ρ | Req−Rfe+(ρ'−ρ) | | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 5 | −.02 | 1.00 + | .96 | −2 | 27.6 | + 1.0 | −26.6 | +0.0 | −26.6 |
| 9 | 10 | +.09 | 1.00 + | .76 | | 28.6 | − 0.9 | 29.5 | +0.2 | 29.3 |
| 9 | 13 | +.13 | .99 + | .70 | | 29.0 | + 0.3 | 28.7 | +0.3 | 28.4 |
| 9 | 34 | +.53 | .84 + | .19 | | 30.0 | + 0.2 | 29.8 | +1.1 | 28.8 |
| 9 | 38 | +.31 | .95 + | .45 | | 29.9 | + 0.5 | 29.4 | +0.6 | 28.8 |
| 9 | 41 | −.30 | .95 + | 1.70 | | 29.4 | + 1.9 | 27.5 | −0.6 | 28.1 |
| 10 | 0 | +.42 | .90 + | .31 | | 27.7 | + 0.1 | 27.6 | +0.8 | 26.8 |
| 10 | 1 | +.50 | .86 + | .22 | | 30.7 | + 0.2 | 30.5 | +1.0 | 29.5 |
| 10 | 9 | −.02 | 1.00 + | .95 | | 28.6 | + 1.0 | 27.6 | +0.0 | 27.6 |
| 10 | 20 | +.09 | 1.00 + | .76 | | 29.3 | + 0.4 | 28.9 | +0.2 | 28.7 |
| 10 | 26 | +.54 | .84 + | .17 | | 30.2 | + 0.5 | 29.7 | +1.1 | 28.6 |
| 10 | 36 | +.32 | .94 + | .44 | | 27.2 | + 0.7 | 26.5 | +0.6 | 25.9 |
| 10 | 38 | +.19 | .98 + | .61 | | 29.9 | + 1.0 | 28.9 | +0.4 | 28.5 |
| 10 | 42 | +.52 | .85 + | .20 | | 30.2 | + 0.4 | 29.8 | +1.0 | 28.8 |
| | | | | | | | | | | 28.35 28.16 |

| RA h | RA m | sin z | cos z | tang. δ | Req − Rfe | Rfe | ρ'−ρ | Req−Rfe+(ρ'−ρ) | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 59 | −.43 | .90 + | 2.43 | −2 | 27.5 | + 0.8 | −26.7 | −0.9 | −27.6 |
| 9 | 8 | −.87 | .48 − | 4.55 | | 25.7 | + 0.9 | 26.6 ~~24.8~~ | −1.9 | 28.5 |
| 9 | 27 | −.92 | .38 − | 2.75 | | 26.0 | + 1.2 | 27.2 ~~24.8~~ | −1.9 | 29.2 |
| 9 | 40 | −.92 | .38 − | 2.86 | | 27.1 | + 0.8 | 27.9 ~~26.3~~ | −1.9 | 29.8 |
| 9 | 46 | −.52 | .85 + | 3.37 | | 27.4 | + 0.6 | 26.8 | −0.9 | 27.7 |
| 10 | 24 | −.56 | .82 + | 4.12 | | 28.5 | + 0.7 | 27.8 | −1.0 | 28.8 |
| 10 | 32 | −.90 | .42 − | 3.27 | | 25.0 | + 0.8 | 25.8 ~~24.2~~ | −1.9 | 27.7 |
| | | | | | | | | | | 28.03<br>28.03 |

| | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|
| 13 455 | +.53 −29.8 | +.31 −29.4 | +.09 −29.5 | −.02 −26.6 | −.30 −27.5 | −.43 −26.7 | | −.87 −24.8 |
| 3 09 | +.42 −27.6 | +.32 −26.5 | +.13 −28.7 | −.02 −27.6 | | −.52 −26.8 | | −.92 −24.8 |
| 464 | +.50 −30.5 | | +.09 −28.9 | | | −.56 −27.8 | | −.92 −26.3 |
| | +.54 −29.7 | | +.19 −28.9 | | | | | −.90 −24.2 |
| | +.52 −29.8 | | | | | | | |
| | +.50 −29.5 | +.31 −27.9 | +.12 −29.0 | −.02 −27.1 | −.30 −27.5 | −.50 −27.1 | | −.90 −25.0 |
| | +1.1 | +.7 | +.3 | −.1 | −.7 | −1.1 | | |
| −2 28.14 | (17) 28.4 5 | 27.2 2 | 28.7 4 | 27.2 2 | 28.2 1 | 28.2 3 | | |
| 28.29 | * +.3 | * −.9 | * +.6 | * −.9 | * +.1 | * +.1 | | |

1873 Apr. 21 Ware h = −.008 n = +.11 c = .00 l = −.010

| | Star | Ra | | | δ | tang. δ | | T-Ra | ρ'-ρ | T-Ra -(ρ'-ρ) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | h | m | | | | s | | s | | | | 6.200 | |
| | 9.6 | +.8 | 9 | 34 | 141 | + .19 | 0 = | −6.23 | .+.03 | −6.26 | + | .02 | −.01 | −6.24 | 6.25 |
| | 9.8 | .6 | 9 | 50 | 422 | + .89 | | −6.20 | .+.02 | 6.22 | + | .04 | −.01 | .13 | .14 |
| | 10.0 | 4 | 10 | 0 | 145 | + .31 | | −6.32 | .+.08 | 6.40 | + | .03 | .00 | .37 | .37 |
| | 10.0 | 4 | 10 | 1 | 146 | + .22 | | −6.16 | +.02 | 6.18 | + | .02 | | .16 | .16 |
| 990 | 10.1 | 3 | 10 | 9 | 147 | + .92 5 | | −6.12 | +.08 | 6.20 | + | 10 | | .10 | .10 |
| | 10.2 | 2 | 10 | 14 | 149 | + .90 | | −6.18 | .+.04 | 6.22 | + | 10 | | .12 | .12 |
| | 10.3 | 1 | 10 | 20 | 426 | + .76 | | −6.26 | .+.02 | 6.28 | + | 08 | | .20 | .20 |
| | 10.4 | +0 | 10 | 26 | 151 | + .17 | | −6.15 | .+.08 | 6.23 | + | 02 | | 21 | .21 |
| | 10.6 | −2 | 10 | 36 | 430 | + .44 | | −6.24 | −.00 | 6.24 | + | 04 | | .20 | .20 |
| | 108 | 4 | 10 | 46 | 152 | + .70 | | −6.18 | +.07 | 6.25 | + | .08 | | .17 | .17 |
| | 10.9 | 5 | 10 | 54 | 153 | + 1.54 | | −6.35 | .+.03 | 6.38 | + | 17 | .00 | 21 | .21 |
| | 11.0 | 6 | 10 | 58 | 434 | + .14 | | −6.23 | .+.01 | 6.24 | + | 01 | +01 | .23 | .22 |
| | 11.1 | 7 | 11 | 7 | 156 | + .39 | | −6.23 | .+.04 | 6.27 | + | .04 | +01 | .23 | .22 |
| 10.71 | 11.1 | −7 | 11 | 9 | 435 | + 1.20 | | −6.41 | .+.02 | 6.43 | + | 13 | +01 | 30 | .29 |
| | 10.42 | | | | | | | | | | | 6.24 | | 6.208<br>6.205 | 6.204 |

1873 Apr. 21 Ware

| Star | Ra | | δ | tang. δ | | T-Ra | ρ'-ρ | T-Ra -(ρ'-ρ) |
|---|---|---|---|---|---|---|---|---|
| h | m | | | | | s | | s |
| 10 | 49 | 433 | | + 4.89 | 0 = | −6.93 | .−.22 | −6.71 |
| 10 | 55 | 154 | | + 1.92 | | −6.41 | +.04 | 6.45 |

14
2

| | | |
|---|---|---|
| 9.6 | +19 | −6.26 |
| 10.0 | +.31 | −6.40 |
| 10.0 | +22 | −6.18 |
| 10.4 | +.17 | −6.23 |
| 10.9 | +.14 | −6.24 |
| ~~10.2~~ | ~~+.21~~ | ~~−6.26~~ |
| 10.2 | +.18 | −6.23 |
| 9.8 | +89 | −6.22 |
| 10.1 | +95 | −6.20 |
| 10.2 | +90 | −6.22 |
| 10.9 | +1.54 | −6.38 |
| 11.1 | +1.20 | −6.43 |
| 10.4 | +1.09 | 6.29 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 10.8 | +4.89 | −6.71 | +.00 | −6.70 | +.00 | −6.71 |
| 10.9 | +1.92 | −6.45 | +.01 | −6.44 | +.00 | −6.45 |

0 = +4.68 − .44 n = +.09
+1.71 − .18 +.11
+.10

0 = +3.79 − .42 n = +.11
+.82 − .16 .20
+.11

1873 Apr. 23 Ware h = −.006 0.00 n = +.09 c = .00 l = +.002

n = +.03

| | Star | Ra | | | δ | tang. δ | | T-Ra | ρ'-ρ | T-Ra -(ρ'-ρ) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | s | | s | | | | 6.724 |
| | 8.9 | +1.4 | 8 | 54 | 133 | + 1.10 | 0 = | −6.66 | .+.16 | −6.82 | + | .10 | .00 | −6.72 |
| | 9.1 | 1.2 | 9 | 5 | 416 | + .96 | | −6.93 | .+.03 | 6.96 | + | .09 | | .87 |
| | 9.2 | 11 | 9 | 10 | 135 | + .76 | | −6.62 | .+.10 | 6.72 | + | .07 | | .65 |
| | 9.2 | 1.1 | 9 | 13 | 136 | + .70 | | −6.71 | .+.07 | 6.78 | + | .06 | | .72 |
| | 9.6 | 7 | 9 | 34 | 141 | + ~~.19~~ .19 | | −6.73 | .+.03 | 6.76 | + | 02 | | .74 |
| 9.30 | 9.6 | + 7 | 9 | 38 | 142 | + .45 | | −6.80 | .+.03 | 6.83 | + | 04 | | .79 |
| | 10.6 | −3 | 10 | 36 | 430 | + .44 | | −6.76 | .+.00 | 6.76 | + | 04 | | .72 |
| | 10.6 | .3 | 10 | 38 | 431 | + .61 | | −6.81 | .−.02 | 6.79 | + | .05 | | .74 |
| | 10.7 | .4 | 10 | 42 | 432 | + .20 | | −6.80 | .+.02 | 6.82 | + | .02 | | .80 |
| | 10.8 | 5 | 10 | 46 | 152 | + .70 | | −6.73 | .+.07 | 6.80 | + | .06 | | .74 |
| | 10.9 | 6 | 10 | 54 | 153 | + 1.54 | | −6.75 | .+.03 | 6.78 | + | .14 | | .64 |
| | 11.0 | .7 | 11 | 2 | 155 | + 1.01 | | −6.66 | .+.09 | 6.75 | + | .09 | | .66 |
| | 11.1 | .8 | 11 | 7 | 156 | + .39 | | −6.74 | .+.04 | 6.78 | + | .04 | | .74 |
| 10.86 | 11.2 | −.9 | 11 | 9 | 435 | + 1.20 | | −6.84 | +.00 | 6.84 | + | .11 | .00 | .73 |
| | 10.26 | | | | | | | | | | | 6.74 | | 6.721<br>6.721 |

1873 Apr. 23

| Ra | | δ | tang. δ | | T-Ra | ρ'-ρ | T-Ra -(ρ'-ρ) |
|---|---|---|---|---|---|---|---|
| | | | | | s | | s |
| 8 | 53 | 509 | − 5.72 | 0 = | −6.10 | .+.06 | −6.16 |
| +.16 | 59 | 415 | + 2.43 | | −6.84 | +.13 | 6.97 |
| 9 | 8 | 510 | − 4.55 | | −6.44 | .−.14 | 6.30 |
| 9 | 31 | 420 | + 2.72 | | −6.67 | +.29 ~~−.03~~ | 6.96 |
| 9 | 40 | 516 | − 2.86 | | −6.48 | .−.03 | 6.45 |
| 10 | 24 | 150 | + 4.12 | | −6.86 | .−.15 | 6.71 |
| 10 | 32 | 525 | − 3.27 | | −6.43 | .+.15 | 6.58 |
| 10 | 49 | 433 | + 4.89 | | −7.49 | .−.22 | 7.27 |
| 10 | 53 | 154 | + 1.92 | | −6.80 | .+.04 | 6.84 |
| 11 | 3 | 529 | − 3.66 | | −6.56 | .+.01 | 6.57 |

| | | |
|---|---|---|
| 9.6 | +19 | −6.76 |
| 9.8 | +45 | −6.83 |
| 10.6 | +44 | −6.76 |
| 10.7 | +20 | −6.82 |
| 11.1 | +.39 | −6.78 |
| 10.4 | +.33 | −6.79 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 9.0 | +2.43 | −6.97 | −.01 | −6.98 | −.01 | −6.98 |
| 9.5 | +2.72 | −6.96 | −.01 | −6.97 | +.00 | −6.96 |
| 10.4 | +4.12 | −6.71 | +.00 | −6.71 | +.00 | −6.71 |
| 10.8 | +4.89 | −7.27 | +.00 | −7.27 | +.00 | −7.27 |
| 10.9 | +1.92 | −6.84 | +.00 | −6.84 | +.00 | −6.84 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 8.9 | −5.72 | −6.16 | −.01 | −6.17 | −.01 | −6.17 |
| 9.1 | −4.55 | −6.30 | −.01 | −6.31 | −.01 | −6.31 |
| 9.7 | −2.86 | −6.45 | +.00 | −6.45 | +.00 | −6.45 |
| 10.5 | −3.27 | −6.58 | +.00 | −6.58 | +.00 | −6.58 |
| 11.1 | −3.66 | −6.57 | +.00 | −6.57 | +.00 | −6.57 |

14
5

| | | |
|---|---|---|
| 8.9 | +1.10 | −6.82 |
| 9.1 | +.96 | −6.96 |
| 10.9 | +1.54 | −6.78 |
| 11.0 | +1.01 | −6.75 |
| 11.2 | +1.20 | −6.84 |
| ~~10.2~~ | ~~+1.16~~ | ~~−6.83~~ |
| 10.5 | +1.21 | −6.80 |

n = +.05

0 = +2.10 − .19 n = +.09
+2.39 − .18 +.07
+3.79 + .08 −.02
+4.56 − .48 +.11
+1.59 ∓ .05 +.03
+.056

0 = −6.05 + .62 n = +.10
−4.88 + .48 +.10
−3.19 + .34 +.11
−3.60 + .21 +.06
−3.99 + .22 +.06
+.086

0 = +1.27 − .16 n = +.13
+1.56 − .13 +.08
+2.96 + .12 −.04
+3.73 − .44 +.12
+0.76 − .01 +.01
+.060

0 = −6.88 + .66 n = +.10
−5.71 + .52 +.09
−4.02 + .38 +.09
−4.43 + .25 +.06
−4.82 + .26 +.05
+.078

| z = | +.60 +.80 | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.60 −.80 | −.80 −.100 |
|---|---|---|---|---|---|---|---|---|---|

=K

| RA h | m | sin z | cos z | tang δ | | $R_{eq}-R_{pe}$ | $P'-P$ | $R_{eq}-R_{pe}+(P'-P)$ | $l_g$ | $R_{eq}$ | RA h | m | sin z | cos z | tang δ | | $R_{eq}-R_{pe}$ | $P'-P$ | $R_{eq}-R_{pe}+(P'-P)$ | $l_g$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 34 | +.53 | .84 + | .19 | −2 | 32.1 | ~~+0.3~~ +02 | −31.9 | +1.0 | −30.9 | 10 | 49 | −.59 | .80 + | 4.89 | −2 | 30.7 | +0.7 | −30.0 | −1.1 | −31.1 |
| 9 | 50 | +.01 | 1.00 + | .89 | | 28.9 | +0.1 | 28.8 | +0.0 | 28.8 | 10 | 55 | −.34 | .94 + | 1.92 | | 28.8 | +1.0 | 27.8 | −0.6 | 28.4 |
| 10 | 0 | +.42 | .90 + | .31 | | 29.6 | +0.1 | 29.5 | +0.8 | 28.7 | | | | | | | | | | | |
| 10 | 1 | +.50 | .86 + | .22 | | 30.7 | +0.2 | 30.5 | +0.9 | 29.6 | | | | | | | | | | | |
| 10 | 9 | −.02 | 1.00 + | .90 5 | | 30.6 | +1.0 | 29.6 | +0.0 | 29.6 | | | | | | | | | | | |
| 10 | 14 | +.01 | 1.00 + | .90 | | 29.3 | +0.4 | 28.9 | +0.0 | 28.9 | | | | | | | | | | | |
| 10 | 20 | +.09 | 1.00 + | .76 | 30.1 | ~~29.3~~ | +0.4 | 29.7 | +0.2 | 29.5 | | | | | | | | | | | |
| 10 | 26 | +.54 | .84 + | .17 | | 30.4 | +0.5 | 29.9 | +1.0 | 28.9 | | | | | | | | | | | |
| 10 | 36 | +.32 | .94 + | .44 | | 30.4 | +0.7 | 29.7 | +0.6 | 29.1 | | | | | | | | | | | |
| 10 | 46 | +.13 | .99 + | .70 | | 28.2 | −0.7 | 28.9 | +0.3 | 28.6 | | | | | | | | | | | |
| 10 | 54 | −.25 | .97 + | 1.54 | | 29.6 | +1.1 | 28.5 | −0.5 | 29.0 | | | | | | | | | | | |
| 10 | 58 | +.56 | .82 + | .14 | | 31.8 | +1.0 | 30.8 | +1.0 | 29.8 | | | | | | | | | | | |
| 11 | 7 | +.36 | .93 + | .39 | | 31.0 | +0.6 | 30.4 | +0.7 | 29.7 | | | | | | | | | | | |
| 11 | 9 | −.14 | .99 + | 1.20 | | 29.6 | +0.8 | 28.8 | −0.3 | 29.1 | | | | | | | | | | | |
| | | | | | | | | | | 29.36 29.30 | | | | | | | | | | | 29.75<br>29.75 |

| | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 |
|---|---|---|---|---|---|---|
| 14 420 | | | | | | |
| 2 150 | +.53 −31.9 | +.32 −29.7 | +.01 −28.8 | −.02 −29.6 | −.25 −28.5 | −.59 −30.0 |
| 570 | +.42 −29.5 | +.36 −30.4 | +.01 −28.9 | −.14 −28.8 | −.34 −27.8 | |
| | +.50 −30.5 | | +.09 −29.7 | | | |
| | +.54 −29.9 | | +.13 −28.9 | | | |
| | +.56 −30.8 | | | | | |
| .31 ~~29~~ | +.51 −30.5 | +.34 −30.0 | +.06 −29.1 | −.08 −29.2 | −.29 −28.1 | −.59 −30.0 |
| ″ | +1.1 | +.7 | +.1 | −.2 | −.6 | −1.2 |
| −2 29.~~31~~ | (16) $29.4_5$ | $29.3_2$ | $29.0_4$ | $29.4_2$ | $28.7_2$ | $31.2_6$ |
| 29.36 | * +.1 | 0 | * −.3 | * +.1 | * −.6 | + 1.9 |

| RA h | m | sin z | cos z | tang δ | | $R_{eq}-R_{pe}$ | $P'-P$ | $R_{eq}-R_{pe}+(P'-P)$ | $l_g$ | $R_{eq}$ | RA h | m | sin z | cos z | tang δ | | $R_{eq}-R_{pe}$ | $P'-P$ | $R_{eq}-R_{pe}+(P'-P)$ | $l_g$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 54 | −.09 | 1.00 + | 1.10 | −2 | ′ ″ 28.9 | +1.2 | −27.7 | −0.2 | −27.9 | 8 | 53 | −.84 | .53 − | 5.72 | −2 | ′ ″ 27.1 | +1.4 | ~~26.7~~ 27.5 | −1.8 | 29.3 ✓ |
| 9 | 5 | −.02 | 1.00 + | .96 | | 28.9 | +1.0 | 27.9 | +0.0 | 27.9 | 8 | 59 | −.43 | .90 + | 2.43 | | 28.1 | +0.8 | 27.3 | −0.8 | 28.1 |
| 9 | 10 | +.09 | 1.00 + | .76 | | 27.1 | −0.9 | 28.0 | +0.2 | 27.8 | 9 | 8 | −.87 | .48 − | 4.55 | | 26.4 | +0.9 | 27.3 ~~25.5~~ | −1.8 | 29.1 ✓ |
| 9 | 13 | +.13 | .99 + | .70 | | 28.3 | +0.3 | 28.0 | +0.3 | 27.7 | 9 | 31 | −.46 | .88 + | 2.72 | | 28.5 | +1.0 ~~+0.8~~ | 27.5 | −0.8 | 28.3 |
| 9 | 34 | +.53 | .84 + | ~~.79~~ .19 | | 30.2 | +0.2 | 30.0 | +1.0 | 29.0 | 9 | 40 | −.92 | .38 − | 2.86 | | 26.9 | +0.8 | 27.7 ~~26.1~~ | −2.0 | 29.6 ✓ |
| 9 | 38 | +.31 | .95 + | .45 | | 28.5 | +0.5 | 28.0 | +0.6 | 27.4 | 10 | 24 | −.56 | .82 + | 4.12 | | 28.5 | +0.7 | 27.8 | −1.0 | 28.8 |
| 10 | 36 | +.32 | .94 + | .44 | | 30.1 | +0.7 | 29.4 | +0.6 | 28.8 | 10 | 32 | −.90 | .43 − | 3.27 | | 26.3 | +0.8 | 27.1 ~~25.5~~ | −2.0 | 29.0 ✓ |
| 10 | 38 | +.19 | .98 + | .61 | | 30.1 | +1.0 | 29.1 | +0.4 | 28.7 | 10 | 49 | −.59 | .80 + | 4.89 | | 28.2 | +0.7 | 27.5 | −1.1 | 28.6 |
| 10 | 42 | +.52 | .85 + | .20 | | 30.0 | +0.4 | 29.6 | +1.0 | 28.6 | 10 | 55 | −.34 | .94 + | 1.92 | | 26.9 | +1.0 | 27.9 | −0.6 | 28.5 |
| 10 | 44 | +.13 | .99 + | .70 | | 27.5 | −0.7 | 28.2 | +0.3 | 27.9 | 11 | 3 | −.89 | .45 − | 3.66 | | 26.3 | +0.6 | 26.9 ~~25.7~~ | −2.0 | 28.8 ✓ |
| 10 | 54 | −.25 | .97 + | 1.54 | | 28.9 | +1.1 | 27.8 | −0.5 | 28.3 | | | | | | | | | | | |
| 11 | 2 | −.05 | 1.00 + | 1.01 | | 28.9 | +1.0 | 27.9 | −0.1 | 28.0 | | | | | | | | | | | |
| 11 | 7 | +.36 | .93 + | .39 | | 28.7 | +0.6 | 28.1 | +0.7 | 27.4 | | | | | | | | | | | |
| 11 | 9 | −.14 | .99 + | 1.20 | | 29.1 | +0.8 | 28.3 | −0.3 | 28.6 | | | | | | | | | | | |
| | | | | | | | | | | 28.14 28.14 | | | | | | | | | | | 28.46<br>28.46 |

| | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.60 −.80 | −.80 −.100 |
|---|---|---|---|---|---|---|---|---|
| | +.53 −30.0 | +.31 −28.0 | +.09 −28.0 | −.09 −27.7 | −.25 −27.8 | −.43 −27.3 | | −.84 −26.7 |
| | +.52 −29.6 | +.32 −29.4 | +.13 −28.0 | −.02 −27.9 | −.34 −27.9 | −.46 −27.5 | | −.87 −25.5 |
| 14 196 | | +.36 −28.1 | +.19 −29.1 | −.05 −27.9 | | −.56 −27.8 | | −.92 −26.1 |
| 5 230 | | | +.13 −28.2 | −.14 −28.3 | | −.59 −27.5 | | −.90 −25.5 |
| 426 | | | | | | | | −.89 −25.7 |
| | +.52 −29.8 | +.33 −28.5 | +.14 −28.3 | −.08 −27.9 | −.30 −27.8 | −.51 −27.5 | | −.88 −25.9 |
| ′ ″ | +1.1 | +.7 | +.3 | −.2 | −.6 | −1.1 | | −8 |
| −2 28.23 | (19) $28.7_2$ | $27.8_3$ | $28.0_4$ | $28.1_4$ | $28.4_2$ | $28.6_4$ | | |
| 28.28 | * +.5 | * −.4 | * −.2 | * −.1 | * +.2 | * +.4 | | |

1873 Apr. 26 wak h = −.005 n = +.11 e = .00 h = +.043

| | Star | | Ra h | m | | δ | tang. δ | | π-Ra s | P'-P | π-Ra-(P'-P) s | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | 6.9x37 | |
| | 9.6 | +1.1 | 9 | 34 | 141 | + | .19 | 0= − | 6.97 | +.03 | −7.00 | + | .02 | +.05 − | 6.98 | 6.93 |
| | 9.6 | +1.1 | 9 | 38 | 142 | + | .45 | − | 7.01 | +.03 | 7.04 | + | .05 | .05 | .99 | .94 |
| | 10.6 | +.1 | 10 | 36 | 430 | + | .44 | − | 6.95 | +.00 | 6.95 | + | .05 | .00 | .90 | .90 |
| 10.10 | 10.6 | +.1 | 10 | 38 | 431 | + | .61 | − | 6.97 | −.02 | 6.95 | + | .07 | .00 | .88 | .88 |
| | 10.7 | +.0 | 10 | 42 | 432 | + | .20 | − | 6.82 | +.02 | 6.84 | + | .02 | +.00 | .82 | .82 |
| | 10.8 | −.1 | 10 | 46 | 152 | + | .70 | − | 6.92 | +.07 | 6.99 | + | .08 | −.00 | .91 | .91 |
| | 10.9 | −.2 | 10 | 54 | 153 | + | 1.54 | − | 6.96 | +.03 | 6.99 | + | .17 | .01 | .82 | .83 |
| | 11.0 | −.3 | 10 | 58 | 434 | + | .14 | − | 6.97 | +.01 | 6.98 | + | .02 | .01 | .96 | .97 |
| | 11.0 | −.3 | 11 | 2 | 155 | + | 1.01 | − | 6.99 | +.08 | 7.07 | + | .11 | .01 | .96 | .97 |
| | 11.1 | −.4 | 11 | 7 | 156 | + | .39 | − | 6.78 | +.04 | 6.82 | + | .04 | .02 | .78 | .80 |
| | 11.1 | −.4 | 11 | 9 | 435 | + | 1.20 | − | 7.05 | +.02 | 7.07 | + | .13 | .02 | 6.94 | 6.96 |
| 10.97 | 11.2 | −.5 | 11 | 11 | 159 | + | .67 | − | 7.03 | +.05 | 7.08 | + | .07 | −.02 | 7.01 | 7.03 |
| | 10.68 | | | | | | | | | | | | | 6.9 | 6.900 | |
| | | | | | | | | | | | | | | | 6.~~901~~ .912 | 6.912 |

1873 Apr. 26 ware

| Star | Ra h | m | | δ | tang. δ | | π-Ra s | P'-P | π-Ra-(P'-P) s |
|---|---|---|---|---|---|---|---|---|---|
| | 9 | 31 | 420 | + | 2.72 | 0= − | 7.04 | +.29 | −7.33 |
| | 9 | 40 | 516 | − | 2.86 | − | 6.69 | −.03 | 6.66 |
| | 10 | 49 | 433 | + | 4.89 | − | 7.54 | −.21 | 7.33 |
| | 10 | 53 | 154 | + | 1.92 | − | 7.06 | +.04 | 7.10 |

| | | | | | I s | | II s |
|---|---|---|---|---|---|---|---|
| 9.5 | + 2.72 | −7.33 | +.00 | −7.33 | | −.01 | −7.34 |
| 10.8 | + 4.89 | 7.33 | +.00 | −7.33 | | +.00 | −7.33 |
| 10.9 | + 1.92 | 7.10 | +.00 | −7.10 | | +.00 | −7.10 |

9.7 −2.86 −6.66 s +.00 −6.66 I s ±.01 −6.67 II

9.6 +.19 −7.00
9.6 +.41 −7.04
10.6 +.44 −6.95
10.7 +.20 −6.84
10.9 +.14 −6.98
11.7 +.39 −6.82
10.5 +.30 −6.94

0 = +2.42 − 0.39 n = +.16
+4.59 − .39 +.09
+1.62 − .16 +.10
+.117

0 = ±3.16 + .28 n = +.09

10.9 +1.54 −6.99
11.0 +1.01 −7.07
11.2 +1.20 −7.07
11.0 +1.25 −7.04
n = ±.11

0 = +1.47 − .30 n = +.20
+3.64 − .29 +.08
+.67 − .06 +.09
+.123

0 = −4.11 + .37 n = +.09

1873 Apr. 27 h = −.007 +.022 n = +.06 e = .00 h = +.021

| | Star | | Ra h | m | | δ | tang. δ | | π-Ra s | P'-P | π-Ra-(P'-P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | 7.0x67 | |
| | 9.6 | +1.0 | 9 | 34 | 141. | + | .19 | 0= − | 7.03 | +.03 | −7.06 | + | .01 | +.02 − | 7.05 | 7.03 |
| | 9.6 | 1.0 | 9 | 38 | 142 | + | .45 | − | 7.07 | +.03 | 7.10 | + | .03 | +.02 | .07 | .05 |
| | 10.6 | +.0 | 10 | 36 | 430 | + | .44 | − | 7.12 | +.00 | 7.12 | + | .03 | +.00 | .09 | .09 |
| 10.12 | 10.7 | −.1 | 10 | 42 | 432 | + | .20 | − | 7.05 | +.02 | 7.07 | + | .01 | −.00 | .06 | .06 |
| | 10.8 | .2 | 10 | 46 | 152 | + | .70 | − | 7.03 | +.07 | 7.10 | + | .04 | −.00 | .06 | 7.06 |
| | 10.9 | .3 | 10 | 54 | 153 | + | 1.54 | − | 7.00 | +.03 | 7.03 | + | .09 | −.01 | 6.94 | 6.95 |
| | 11.0 | .4 | 10 | 58 | 434 | + | .14 | − | 7.10 | +.01 | 7.11 | + | .01 | −.01 | 7.10 | 7.11 |
| | 11.1 | .5 | 11 | 9 | 435. | + | 1.20 | − | 7.14 | +.02 | 7.16 | + | .07 | −.01 | .09 | .10 |
| 11.02 | 11.3 | −.7 | 11 | 17 | 161 | + | .20 | − | 7.08 | −.02 | 7.06 | + | .01 | −.01 | .05 | 06 |
| | 10.62 | | | | | | | | | | | | | | 7.05x48 | |
| | | | | | | | | | | | | | | | 7.057 | 7.057 |

| Ra h | m | | δ | tang. δ | | π-Ra s | P'-P | π-Ra-(P'-P) |
|---|---|---|---|---|---|---|---|---|
| 9 | 23 | 418 | + | 2.81 | 0= − | 7.29 | −.01 | −7.28 |
| 9 | 27 | 308 | − | 2.75 | − | 6.86 | +.08 ~~+.12~~ | 6.94 |
| 9 | 31 | 420 | + | 2.72 | − | 6.94 | +.29 | 7.23 |
| 9 | 40 | 516 | − | 2.86 | − | 7.01 | −.03 | 6.98 |
| 10 | 32 | 525 | − | 3.27 | − | 6.83 | +.15 | 6.98 |
| 10 | 49 | 433 | + | 4.89 | − | 7.63 | −.21 | 7.42 |
| 10 | 55 | 154 | + | 1.92 | − | 7.10 | +.04 | 7.14 |
| 11 | 15 | 436 | + | 2.15 | − | 6.81 | +.31 | 7.12 |

| | | | | | I | | II |
|---|---|---|---|---|---|---|---|
| 9.4 | +2.81 | −7.28 | −.01 | −7.29 | | −.01 | −7.29 |
| 9.5 | +2.72 | −7.23 | −.01 | −7.24 | | −.01 | −7.24 |
| 10.8 | +4.89 | −7.42 | +.00 | −7.42 | | +.00 | −7.42 |
| 10.9 | +1.92 | −7.14 | +.00 | −7.14 | | +.00 | −7.14 |
| 11.2 | +2.15 | −7.12 | +.01 | −7.11 | | +.00 | −7.12 |

| | | | | | 6 I | | 6 II |
|---|---|---|---|---|---|---|---|
| 9.4 | −2.75 | −6.94 | −.01 | −6.95 | | −.01 | −6.95 |
| 9.7 | −2.86 | −6.98 | −.00 | −6.98 | | −.01 | −6.98 |
| 10.5 | −3.27 | −6.98 | +.00 | −6.98 | | +.00 | −6.98 |

9.6 +.19 −7.06
9.6 +.45 −7.10
10.6 +.44 −7.12
10.7 +.20 −7.07
10.9 +.14 −7.11
11.3 +.20 −7.06
10.4 +.27 −7.09

0 = +2.54 − 0.20 n = +.08
+2.45 − .15 +.06
+4.62 − .33 +.07
+1.65 − .05 +.03
+1.88 − .02 +.01
+
+.050

0 = −3.02 +.14 n = +.05
−3.13 +.11 +.04
−3.54 +.11 +.03
+.040

10.9 +1.54 −7.03
11.1 +1.20 −7.16
11.0 +1.37 −7.09

n = .00

0 = +1.44 − .20 n = +.14
+1.35 − .15 +.11
+3.52 − .33 +.09
+ .55 − .05 +.09
+ .78 − .03 +.04
+.113

0 = −4.12 +.14 n = +.03
−4.23 +.11 n = +.03
−4.64 +.11 +.02
+.027

11
3

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h | m | sin z | cos z | tang δ | Req−Rfc ′ ″ | P′−P | Req−Rfc+(P′−P) ″ | | Rfc Req | RA h | m | sin z | cos z | tang δ | Req−Rfc ′ ″ | P′−P | Req−Rfc+(P′−P) ″ | | Rfc Req |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 34 | +.53 | .84+ | .19 | −2 29.4 | +0.2 | −29.2 | +1.0 | −28.2 | 9 | 31 | −.46 | .88+ | 2.72 | −2 28.2 | +1.0 | −27.2 | −0.8 | −28.0 |
| 9 | 38 | +.31 | .95+ | .45 | 29.8 | +0.5 | 29.3 | +0.6 | 28.7 | 9 | 40 | −.92 | .38− | 2.86 | 26.2 | +0.8 | 27.0 ~~25.4~~ | −1.9 | 28.9 ✓ |
| 10 | 36 | +.32 | .94+ | .44 | 29.9 | +0.7 | 29.2 | +0.6 | 28.6 | 10 | 49 | −.59 | .80+ | 4.89 | 28.4 | +0.7 | 27.7 | −1.1 | 28.8 |
| 10 | 38 | +.19 | .98+ | .61 | 29.3 | +1.0 | 28.3 | +0.4 | 27.9 | 10 | 55 | −.34 | .94+ | 1.92 | 29.0 | +1.0 | 28.0 | −0.6 | 28.6 |
| 10 | 42 | +.52 | .85+ | .20 | 29.5 | +0.4 | 29.1 | +1.0 | 28.1 | | | | | | | | | | |
| 10 | 46 | +.13 | .99+ | .70 | 26.5 | −0.7 | 27.2 | +0.2 | 27.0 | | | | | | | | | | |
| 10 | 54 | −.25 | .97+ | 1.54 | 29.6 | +1.1 | 28.5 | −0.5 | 29.0 | | | | | | | | | | |
| 10 | 58 | +.56 | .82+ | .14 | 30.5 | +1.0 | 29.5 | +1.0 | 28.5 | | | | | | | | | | |
| 11 | 2 | −.05 | 1.00+ | 1.01 | 29.5 | +1.0 | 28.5 | −0.1 | 28.6 | | | | | | | | | | |
| 11 | 7 | +.36 | .93+ | .39 | −− | +0.6 | | | | | | | | | | | | | |
| 11 | 9 | −.14 | .99+ | 1.20 | 29.3 | +0.8 | 28.5 | −0.2 | 28.7 | | | | | | | | | | |
| 11 | 11 | +.15 | .99+ | .67 | 28.7 | +0.0 | 28.7 | +0.3 | 28.4 | | | | | | | | | | |
| | | | | | | | | | 28.34 28.34 | | | | | | | | | | 28.47<br>28.47 |

| | | +.40+.60 | | +.20+.40 | | +.0+.20 | | +.0−.20 | | −.20−.40 | | −.40−.60 | | −.80−.100 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 374 | +.53 | −29.2″ | +.31 | −29.3″ | +.19 | −28.3″ | −.05 | −28.5″ | −.25 | −28.5″ | −.46 | −27.2″ | −.92 | −25.4″ |
| 3 | 141 | +.52 | −29.1 | +.32 | −29.2 | +.13 | −27.2 | −.14 | −28.5 | −.34 | −28.0 | −.59 | −27.7 | | |
| | 515 | +.56 | −29.5 | +.36 | | +.15 | −28.7 | | | | | | | | |
| | | +.54 | −29.3 | +.33 | −29.3 | +.16 | −28.1 | −.09 | −28.5 | −.29 | −28.2 | −.52 | −27.4 | −.92 | −25.4 |
| | | | +1.1 | | +.7 | | +.4 | | −.2 | | −.6 | | −1.1 | | |
| −2′ | 28.35″ | (14) | −28.2 3 | | 28.6 2 | | 27.7 3 | | 28.7 2 | | 28.8 2 | | 28.5 2 | | |
| | 28.37 | | * −.2 | | * +.2 | | * −.7 | | * +.3 | | * +.4 | | * +.1 | | |

| RA h | m | sin z | cos z | tang δ | Req−Rfc ′ ″ | P′−P | Req−Rfc+(P′−P) | | Rfc Req | RA h | m | sin z | cos z | tang δ | Req−Rfc ′ ″ | P′−P | Req−Rfc+(P′−P) | | Rfc Req |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 34 | +.53 | .84+ | .19 | −2 29.5 | +0.2 | −29.3 | +1.0 | −28.3 | 9 | 23 | −.47 | .88+ | 2.81 | −2 −− | +0.2 | | | |
| 9 | 38 | +.31 | .95+ | .45 | 28.7 | +0.5 | 28.2 | +0.6 | 27.6 | 9 | 27 | −.92 | .38− | 2.75 | −− | ~~+1.1~~ 0.1 | | | |
| 10 | 36 | +.32 | .94+ | .44 | 29.9 | +0.7 | 29.2 | +0.6 | 28.6 | 9 | 31 | −.46 | .88+ | 2.72 | 28.6 | +1.0 | −27.6 | −0.8 | −28.4 |
| 10 | 42 | +.52 | .85+ | .20 | 28.6 | +0.4 | 28.2 | +1.0 | 27.2 | 9 | 40 | −.92 | .38− | 2.86 | 26.9 | +0.8 | 27.7 ~~26.1~~ | −2.0 | 29.7 ✓ |
| 10 | 46 | +.13 | .99+ | .70 | 24.3 | −0.7 | 25.0 | +0.2 | [24.8] | 10 | 32 | −.90 | .42− | 3.27 | 25.9 | +0.8 | 26.7 ~~25.1~~ | −2.0 | 28.7 ✓ |
| 10 | 54 | −.25 | .97+ | 1.54 | 28.7 | +1.1 | 27.6 | −0.5 | 28.1 | 10 | 49 | −.59 | .80+ | 4.89 | 26.9 | +0.7 | 26.2 | −1.1 | 27.3 |
| 10 | 58 | +.56 | .82+ | .14 | 30.9 | +1.0 | 29.9 | +1.0 | 28.9 | 10 | 55 | −.34 | .94+ | 1.92 | 27.8 | +1.0 | 26.8 | −0.6 | 27.4 |
| 11 | 9 | −.14 | .99+ | 1.20 | 29.0 | +0.8 | 28.2 | −0.2 | 28.4 | 11 | 15 | −.38 | .92+ | 2.15 | 28.5 | +0.8 | 27.7 | −0.7 | 28.4 |
| 11 | 17 | +.52 | .85+ | .20 | 29.8 | +0.3 | 29.5 | +1.0 | 28.5 | | | | | | | | | | |
| | | | | | | | | | 28.20 28.20 | | | | | | | | | | 27.88<br>27.88 |

| | | +.40+.60 | | +.20+.40 | | +.0+.20 | | +.0−.20 | | −.20−.40 | | −.40−.60 | | −.80−.100 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | +.53 | −29.3 | +.31 | −28.2 | +.13 | −25.0 | −.14 | −28.2 | −.25 | −27.6 | −.47 | | −.92 | |
| | | +.52 | −28.2 | +.32 | −29.2 | | | | | −.34 | −26.8 | −.46 | −27.6 | −.92 | −26.1 |
| 8 | 6560 | +.56 | −29.9 | | | | | | | −.38 | −27.7 | −.59 | −26.2 | −.90 | −25.1 |
| 4 | 3152 | +.52 | −29.5 | | | | | | | | | | | | |
| | 9712 | | | | | | | | | | | | | | |
| | | +.53 | −29.2 | +.31 | −28.7 | +.13 | −25.0 | −.14 | −28.2 | −.32 | −27.4 | −.52 | −26.9 | −.91 | −25.6 |
| | | | +1.1 | | +.7 | | +.3 | | −.3 | | −.7 | | −1.1 | | |
| −2′ | 28.10″ | | 28.1 4 | | 28.0 2 | | [24.7] 1 84 | | 28.5 1 | | 28.1 3 | | 28.0 2 | | |
| | 28.14 | | .0 | | * −.1 | | | | * +.4 | | .0 | | −.1 | | |

1872phae.proj.1689.

1873 May 1 WARC h = ~~–.003~~ –.004 c=+.70 n=+.08 c=.00 h = ~~+.006~~ –.010

| Star | | Ra | h | m | ∝ δ | tang. δ | ecc. δ | T–Ra | P'–P | T–Ra–(P'–P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | + | .45 | | s | | s | | | 7.835 1 | | |
| | 9.6 | +1.1 | 9 | 38 | 1,10. 142+ | 1.45 | 0=– | 7.76 | +.03 | –7.79 | –+1 | .04 853 01 – | 7.83 | 7.84 | 853 |
| .1 | 9.7 | 1.0 | 9 | 41 | 1.58 143.+ | 1.70 | 97 ,40– | 7.74 | +.04 | 7.78 | – | .14 9.14 .01 | .92+04 | .89 | 9.15 |
| .2 | 9.8 | .9 | 9 | 49 | 1.3' 422+ | .89 | 94– | 7.77 | +.02 | 7.79 | – | .07 8.71 01 – | .86 | 87 | 8.73 |
| 3 | 9.9 | .8 | 9 | 53 | 1.01 423+ | .15 | 71– | 7.80 | +.01 | 7.81 | – | .01 8.51 01 | .82 | .83 | 8.54 |
| 4 | 10.0 | 7 | 10 | 0 | 1.05 145+ | .31 | 73– | 7.74 | +.08 | 7.82 | – | .02 8.97 01 | .84 | 85 | 8.51 |
| .6 | 10.2 | 5 | 10 | 14 | 1.3' 149+ | .90 | 94– | 7.71 | +.04 | 7.75 | – | .07 8.65 00 | 82 | 82 | 8.71 |
| 7 | 10.3 | 4 | 10 | 20 | 1.2' 426+ | .76 | 88– | 7.77 | +.02 | 7.79 | – | .06 9.65 | .85 | 85 | 8.72 |
| 8 | 10.4 | 3 | 10 | 26 | 1.0' 151+ | .17 | 71– | 7.68 | +.08 | 7.76 | – | .01 8.39 | .77 | .77 | 8.47 |
| 10 | 10.6 | 1 | 10 | 36 | 1.10 430+ | .44 | 77– | 7.81 | +.00 | 7.81 | – | .04 8.58 | .85 | .85 | 8.68 |
| 10 | 10.6 | 1 | 10 | 38 | 1.17 431+ | .61 | 82– | 7.79 | –.02 | 7.77 | – | .05 9.61 | .82 | .82 | 9.71 |
| 11 | 10.7 | +0 | 10 | 42 | 1.02 432+ | .20 | 71– | 7.77 | +.02 | 7.79 | – | .02 8.48 | .81 | .81 | 8.59 |
| 10.22 12 | 10.8 | –1 | 10 | 46 | 1.22 152+ | .70 | 85– | 7.70 | +.04 | 7.77 | – | .06 8.55 | .83 | .83 | 8.67 |
| 13 | 10.9 | 2 | 10 | 54 | 1.84 153+ | 1.54 | 1.29– | 7.71 | +.03 | 7.74 | – | .12 9.00 | .86 | 86 | 9.13 |
| 14 | 11.0 | 3 | 10 | 58 | 1.01 434+ | .14 | 71– | 7.79 | +.01 | 7.80 | – | .01 8.50 | .81 | .81 | 8.64 |
| 14 | 11.0 | 3 | 11 | 2 | 1.42 155+ | 1.01 | 95– | 7.72 | +.08 | 7.80 | – | .08 8.71 | .88 | .88 | 8.85 |
| 15 | 11.1 | 4 | 11 | 7 | 1.07 156+ | .39 | 75– | 7.76 | +.04 | 7.80 | – | .03 8.51 | .83 | .83 | 8.66 |
| 15 | 11.1 | 4 | 11 | 9 | 1.57 435+ | 1.20 | 1.10– | 7.73 | +.04 ~~+.12~~ | 7.77 | – | .10 8.87 | .87 | .87 | 9.02 |
| 16 | 11.2 | 5 | 11 | 11 | 1.21 159+ | .67 | 85– | 7.78 | +.05 | 7.83 | – | .05 8.63 00 | .88 | .88 | 8.79 |
| 19 | 11.5 | 8 | 11 | 30 | 1.00 438+ | .00 | 70– | 7.81 | +.03 | 7.84 | – | .00 8.54 01 | .84 | .83 | 8.70 |
| 20 | 11.6 | 9 | 11 | 39 | 1.51 163+ | 1.13 | 1.06– | 7.76 | +.02 | 7.78 | = | .09 8.82 01 | .87 | .86 | 9.02 |
| 21 | 11.7 | 10 | 11 | 42 | 1.04 164+ | 0.27 | 83– | 7.78 | +.02 | 7.80 | = | .02 8.51 01 | .82 | .81 | 8.72 |
| 21 | 11.7 | 10 | 11 | 44 | 1.09 165+ | .04 | 70– | 7.67 | +.04 | 7.71 | = | .00 8.37 01 | .71 | .70 | 8.58 |
| 11.33 22 | 11.8 | –11 | 11 | 47 | 1.72 166+ | 1.40 | 1.20– | 7.80 | –.02 | 7.78 | – | .11 9.04 01 | .89 | .88 | 9.22 |
| | 10.75 | | | | | | | | | | | | 7.842 | | |
| | | | | | | | | | | | | | 7.837 | 7.837 | |

1873 May 1 WARC

| Ra h | Ra m | δ | tang. δ | | T–Ra | P'–P | T–Ra (P'–P) |
|---|---|---|---|---|---|---|---|
| | | | | | s | | s |
| 9 | 46 | 421 | +3.37 | 0=– | 7.41 | +.17 | –7.58 |
| 10 | 24 | 150 | +41.2 | – | 7.52 | –.15 | 7.37 |
| 10 | 32 | 525 | –+3.27 | – | 7.88 | +.15 | 8.03 |
| 10 | 49 | 433 | +4.89 | – | 7.78 | –.22 | 7.56 |
| 10 | 55 | 154 | +1.92 | – | 7.69 | +.04 | 7.73 |
| 11 | 3 | 529 | –3.66 | – | 8.02 | +.01 | 8.03 |
| 11 | 15 | 436 | +2.15 | – | 7.48 | +.31 | 7.79 |
| 11 | 23 | 162 | +2.75 | – | 7.41 | +.13 | 7.54 |
| 11 | 34 | 334 | –4.31 | – | 7.96 | +.13 | 8.09 |

9.9 +.3 +15 –7.81 +.1 9.7 +170 –7.70 +.2 352
10.0 .4 +31 –7.82 .13 10.9 +154 –7.74 .8 425
10.4 +.8 +17 –7.76 11.0 +1.01 –7.80 12 459
10.7 11 +20 –7.79 .15 11.1 +1.20 –7.77 1.3 2.18
10.9 13 +14 –7.80 .20 11.6 +1.13 –7.78 17 2.35
11.5 19 +00 –7.84 .22 11.8 +1.40 –7.78 18 2.92
11.7 21 +27 –7.80
11.7 21 +04 –7.71
10.8 +.16 –7.79 11.0 +1.33 –7.76

n = +.03

| | I | | II | | | II |
|---|---|---|---|---|---|---|
| 9.8 +3.37 –7.58 | +.00 | –7.58 10.06 | .9 | +.00 | –7.58 | |
| 10.4 +41.2 –7.37 | +.00 | –7.37 10.42 | 1.4 | +.00 | –7.37 | |
| 10.8 +4.89 –7.56 | +.00 | –7.56 11.18 | 2.0 | +.00 | –7.56 | |
| 10.9 +1.92 –7.73 | +.00 | –7.73 9.39 | | +.00 | –7.73 | |
| 11.3 +2.15 –7.79 | +.00 | –7.79 9.63 | | +.00 | –7.79 | |
| 11.4 +2.75 –7.54 | +.00 | –7.54 9.76 | | +00 | –7.54 | |

| | I | | II | | II | |
|---|---|---|---|---|---|---|
| 342 10.5 –3.27 –8.03 | +.00 | –8.03 | +.00 | –8.03 | | –5.73 |
| 377 11.0 –3.66 –8.03 | +.00 | –8.03 | +.00 | –8.03 | | –5.53 |
| 441 11.6 –4.31 –8.09 | +.00 | –8.09 | +.01 | –8.08 | | –5.20 |

o = +321 +21 n = –07
+396 +42 –11
+473 +23 –05
+1.76 +06 –04
+1.99 +00 –00
+259 +28 –10
–.062

o = +204 +18 n = –.09
+279 +39 –.14
+356 +20 –.06
+.59 +43 –.08
+.82 –03 +.04
+1.42 +22 –.16
– ~~.062~~
.097

o = –343 – 24 n = –07
–3.82 – 24 –.07 6
–4.47 – 30 –.07
–.067

o = –460 – 27 n = –.06
–4.99 – 27 –.05
–5.64 – 32 –.06
–.057

1873 May 4 WARC h = –.005 +.030 n = +.06 c = –.06 h = +.024 –7.74 7.770

| Star | | | Ra h | Ra m | δ | | tang. δ | ecc. δ | T–Ra | P'–P | T–Ra–(P'–P) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | s | | | | | | | | | |
| | 10.2 | +1.4 | 10 | 14 | 149 | + | .90 | +0.34 | 7.72 | +.04 | –7.76 | + | .05 | +.03 | –.08 | –7.79 | 7.76 | |
| 10.25 | 10.3 | 1.3 | 10 | 20 | 426 | + | .76 | +1.25– | 7.71 | +.02 | 7.73 | + | .05 | +.03 | –.07 | .75 | .72 | |
| | 11.7 | –1 | 11 | 39 | 763. | + | 1.13 | +1.51– | 7.72 | +.02 | 7.74 | + | .07 | –.00 | –.09 | .76 | .76 | |
| | 11.7 | 1 | 11 | 42 | 164 | + | .27 | +1.03– | 7.64 | +.02 | 7.66 | + | .02 | –.00 | –.06 | .70 | .70 | |
| | 11.7 | 1 | 11 | 44 | 165 | + | .64 | +1.00– | 7.54 | +.04 | 7.58 | + | .00 | –.00 | –.06 | .64 | .64 | |
| | 11.8 | 2 | 11 | 47 | 166 | + | 1.40 | +1.72– | 7.70 | –.02 | 7.68 | + | .08 | –.00 | –.10 | .70 | .70 | |
| | 12.2 | 6 | 12 | 9 | 441 | + | .88 | +1.33– | 7.71 | –.01 | 7.70 | + | .05 | –.01 | –.08 | .73 | .74 | |
| | 12.2 | 6 | 12 | 13 | 170 | + | .00 | +1.00– | 7.64 | +.04 | 7.68 | + | .00 | –.01 | –.086 | .874 | .75 | |
| 11.94 | 12.3 | –7 | 12 | 19 | 442 | + | .83 | +1.30– | 7.76 | +.05 | 7.81 | + | .05 | –.02 | –.08 | .84 | .86 | |
| | 11.57 | | | | | | | | | | –7.69 | | | | | 7.730 | | |
| | | | | | | | | | | | | | | | | 7.739 | 7737 | |

| Ra h | Ra m | δ | tang. δ | | T–Ra | P'–P | |
|---|---|---|---|---|---|---|---|
| | | | | | s | | |
| 10 | 24 | 150 | +4.12 | 0=– | 7.88 | –.15 | –7.73 |
| 10 | 32 | 525 | –3.27 | – | 7.53 | +.15 | 7.68 |
| 10 | 49 | 433 | +4.89 | – | 7.89 | –.22 | 7.67 |
| 10 | 55 | 154 | +1.92 | – | 7.64 | +.04 | 7.68 |
| 11 | 3 | 529 | –3.66 | – | 7.66 | +.01 | 7.67 |
| 11 | 23 | 162 | +2.75 | – | 7.60 | +.13 | 7.73 |
| 11 | 34 | 334 | –4.31 | – | 7.83 | +.13 | 7.96 |
| 11 | 58 | 440 | +4.55 | – | 7.59 | +.08 | 7.67 |
| 12 | 6 | 168 | +4.84 | – | 7.88 | –.08 | 7.80 |

11.7 +27 –7.66
11.7 +04 –7.58
12.2 +00 –7.68
11.9 +.10 –7.64

| | I | | II |
|---|---|---|---|
| 10.4 +4.12 –7.73 | –.01 | –7.74 | –.01 –7.74 |
| 10.8 +4.89 –7.67 | –.01 | –7.68 | +.00 –7.67 |
| 10.9 +1.92 –7.68 | –.01 | –7.69 | +.00 –7.68 |
| 11.4 +2.75 –7.73 | –.00 | –7.73 | +.00 –7.73 |
| 12.0 +4.55 –7.67 | +.00 | –7.67 | +.00 –7.67 |
| 12.1 +4.84 –7.80 | +.00 | –7.80 | +.00 –7.80 |

| | I | | | II |
|---|---|---|---|---|
| 10.5 –3.27 –7.73 | –.01 | –7.74 | +.00 | +00 –7.73 |
| 11.1 –3.66 –7.67 | +.00 | –7.67 | +.00 | +.00 –7.67 |
| 11.6 –4.31 –7.96 | +.00 | –7.96 | +.00 | +.00 –7.96 |

10.2 +90 –7.76
11.6 +1.13 –7.74
11.8 +1.40 –7.68
12.2 +.88 –7.70
12.3 +.83 –7.81
11.6 +1.03 –7.74

n = +.11

o = +4.02 –.10 n = +.02
+4.79 –.04 +.01
+1.82 –.05 +.03
+2.65 –.09 +.03
+4.45 –.03 +.01
+4.74 –.16 +.03
+.025 2

o = +309 +0 n = +0
+3.86 +7 –.02
+.89 +6 –.06
+1.72 +4 –.01
+3.02 +7 –.02
+3.81 –.16 +.02
– ~~.060~~
.006

o = –337 –.10 +.01 n = –.03
–3.76 –.03 +.04 –.01
–4.41 –.32 –.22 –.07
–.037

o = –430 +.01 n = +.00
–469 +.07 +.02
–5.34 –.22 –.04
–.007

| z = | +.60+.80 | +.40+.60 | +20+.40 | +0.+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|

| RA h | m | sin z | cos z | tang δ | | Reg−Rfe ′ ″ | P′−P | Reg−Rfe+(P′−P) ″ | Rfe. | Reg. |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 38 | +.31 | .95 + | 0.45 | −2 | 28.5 | .+0.5 | −28.0 | +0.6 | −27.4 |
| 9 | 41 | −.30 | .95 + | 1.70 | | 27.7 | .+1.8 | 25.9 | −0.5 | 26.4 |
| 9 | 49 | +.01 | 1.00 + | .89 | | 27.5 | .+0.1 | 27.4 | +0.0 | 27.4 |
| 9 | 53 | +.55 | .83 + | .15 | | — — | .+0.2 | | | |
| 10 | 0 | +.42 | .90 + | .31 | | 27.4 | .+0.1 | 27.3 | +0.7 | 26.6 |
| 10 | 14 | +.01 | 1.00 + | .90 | | 27.4 | .+0.4 | 27.0 | +0.0 | 27.0 |
| 10 | 20 | +.09 | 1.00 + | .76 | 27.9 | ~~30.1~~ | .+0.4 | 27.5 | +0.2 | 27.3 |
| 10 | 26 | +.54 | .84 + | .17 | | —— | .+0.5 | | | |
| 10 | 36 | +.32 | .94 + | .44 | | 28.5 | .+0.7 | 27.8 | +0.6 | 27.2 |
| 10 | 38 | +.19 | .98 + | .61 | | 28.4 | .+1.0 | 27.4 | +0.3 | 27.1 |
| 10 | 42 | +.52 | .85 + | .20 | | 27.2 | .+0.4 | 26.8 | +0.9 | 25.9 |
| 10 | 46 | +.13 | .99 + | .70 | | 25.7 | .−0.7 | 26.4 | +0.2 | 26.2 |
| 10 | 54 | −.25 | .97 + | 1.54 | | 29.6 | .+1.1 | 28.5 | −0.4 | 28.9 |
| 10 | 58 | +.56 | .82 + | .14 | | 29.6 | .+1.0 | 28.6 | +1.0 | 27.6 |
| 11 | 2 | −.05 | 1.00 + | 1.01 | | 27.7 | .+1.0 | 26.7 | −0.1 | 26.8 |
| 11 | 7 | +.36 | .93 + | .39 | | 27.6 | .+0.6 | 27.0 | +0.6 | 26.4 |
| 11 | 9 | −.14 | .99 + | 1.20 | | 27.4 | .+0.8 | 26.6 | −0.2 | 26.8 |
| 11 | 11 | +.15 | .99 + | .67 | | 26.9 | .+0.0 | 26.9 | +0.3 | 26.6 |
| 11 | 30 | +.68 | .73 + | .00 | | 28.3 | .+0.5 | 27.8 | +1.3 | 26.5 |
| 11 | 39 | −.11 | .99 + | 1.13 | | 27.4 | .+0.8 | 26.6 | −0.2 | 26.8 |
| 11 | 42 | +.46 | .88 + | 0.27 | | 28.1 | .+0.0 | 28.1 | +0.8 | 27.3 |
| 11 | 44 | +.64 | .76 + | .04 | | 28.4 | .+0.4 | 28.~~4~~0 | +1.2 | 26.8 |
| 11 | 47 | −.21 | .98 + | 1.40 | | 27.6 | .+0.5 | 27.1 | −0.4 | 27.5 |
| | | | | | | | | | | 26.98 2698 |

| RA h | m | sin z | cos z | tang δ | | | Reg−Rfe ′ ″ | P′−P | Reg−Rfe+(P′−P) ″ | Rfe. | Reg. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 46 | −.52 | .85 + | 3.37 | 2 | −2 | 26.3 | .+0.6 | −27.7 | −0.9 | −28.6 |
| 10 | 24 | −.56 | .82 + | 4.12 | | | 27.3 | .+0.7 | 26.6 | −1.0 | 27.6 |
| 10 | 32 | −.90 | .42 + | 3.27 | | | 26.0 | .+0.8 | 26.8 ~~25.2~~ | −2.0 | 28.0 ✓ |
| 10 | 49 | −.59 | .80 + | 4.89 | | | 27.4 | .+0.7 | 26.7 | −1.1 | 27.8 |
| 10 | 53 | −.34 | .94 + | 1.92 | | | 27.4 | .+1.0 | 26.4 | −0.6 | 27.0 |
| 11 | 3 | −.89 | .45 − | 3.66 | | | 26.3 | .+0.6 | 26.9 ~~25.7~~ | −2.0 | 28.9 ✓ |
| 11 | 15 | −.38 | .92 + | 2.15 | | | 26.8 | .+0.8 | 26.0 | −0.7 | 26.7 |
| 11 | 23 | −.46 | .88 + | 2.75 | | | 27.1 | .+0.8 | 26.3 | −0.8 | 27.1 |
| 11 | 34 | −.87 | .48 − | 4.31 | | | 24.9 | .+0.3 | 25.2 ~~24.6~~ | −2.0 | 27.4 ✓ |

27.47
27.47

| | +.60+.80 | +.40+.60 | +20+.40 | +0.+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|
| | +.68 −27.8″ | ~~+.55~~ | +.31 −28.0″ | +.01 −27.4″ | −.05 −26.7″ | −.30 −25.9″ | −.52 −27.7″ | | −.90 −25.2 |
| | +.64 −28.~~4~~0 | +.42 −27.3 | +.32 −27.8 | +.01 −27.0 | −.14 −26.6 | −.25 −28.5 | −.56 −26.6 | | −.89 −25.7 |
| | | +.52 −26.8 | +.36 −27.0 | +.09 −27.5 | −.11 −26.6 | −.21 −27.1 | −.59 −26.7 | | −.87 −24.6 |
| | | +.50 −28.6 | | +.19 −27.4 | | −.34 −26.4 | −.46 −26.3 | | |
| 21 14658<br>6 4482<br>19140 | | +.46 −28.1 | | +.13 −26.4<br>+.15 −26.9 | | −.38 −26.0 | | | |
| | +.66 −27.9<br>+1.4 | +.49 −27.7<br>+1.0 | +.33 −27.6<br>+.7 | +.10 −27.1<br>+.2 | −.10 −26.6<br>−.2 | −.30 −26.8<br>−.6 | −.53 −26.8<br>−1.1 | | −.89 −25.2 |
| −2 ′ ″ 7.07<br>~~26.96~~<br>27.09 | (27) 26.5 2<br>* −.6 .5 | 26.7 4<br>* −.4 | 26.9 3<br>* −.2 | 26.96<br>* −.1 | 26.8 3<br>* −.3 .2 | 27.4 5<br>+.3 .4 | 27.9 4<br>++.9 8 | | |

| RA h | m | sin z | cos z | tang δ | | | Reg−Rfe ′ ″ | P′−P | Reg−Rfe+(P′−P) | Rfe. | Reg. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 14 | +.01 | 1.00 + | .90 | | −2 | 28.3 | .+0.4 | 27.9 | +0.0 | −27.9 |
| 10 | 20 | +.09 | 1.00 + | .76 | | 28.3 | ~~27.9~~ | .+0.4 | 27.9 | +0.2 | 27.7 |
| 11 | 39 | −.11 | .99 + | 1.13 | | 28.7 | ~~27.0~~ | .+0.8 | 27.9 | −0.2 | 28.1 |
| 11 | 42 | +.46 | .88 + | .27 | | | 28.5 | .+0.0 | 28.5 | +0.8 | 27.7 |
| 11 | 44 | +.64 | .76 + | .04 | | | 29.5 | .+0.4 | 29.1 | +1.2 | 27.9 |
| 11 | 47 | −.21 | .98 + | 1.40 | | | 28.7 | .+0.5 | 28.2 | −0.4 | 28.6 |
| 12 | 9 | +.02 | 1.00 + | .88 | | | 28.7 | .+0.7 | 28.0 | +0.0 | 28.0 |
| 12 | 13 | +.67 | .74 + | .00 | | | 28.5 | .−0.2 | 28.7 | +1.2 | 27.5 |
| 12 | 19 | +.05 | 1.00 + | .83 | | | 28.8 | .+0.5 | 28.3 | +0.1 | 28.2 |
| | | | | | | | | | | | 27.96 27.96 |

| RA h | m | sin z | cos z | tang δ | | Reg−Rfe ′ ″ | P′−P | Reg−Rfe+(P′−P) | Rfe. | Reg. |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 24 | −.56 | .82 + | 4.12 | −2 | 27.9 | .+0.7 | −27.2 | −1.0 | −28.2 |
| 10 | 32 | −.90 | .42 − | 3.27 | | 26.4 | .+0.8 | 27.2 ~~25.6~~ | −2.2 | 29.4 ✓ |
| 10 | 49 | −.59 | .80 + | 4.89 | | 28.4 | .+0.7 | 27.7 | −1.1 | 28.8 |
| 10 | 55 | −.34 | .94 + | 1.92 | | 27.5 | .+1.0 | 26.5 | −0.6 | 27.1 |
| 11 | 3 | −.89 | .45 − | 3.66 | | 27.3 | .+0.6 | 27.9 ~~26.7~~ | −2.2 | 30.1 ✓ |
| 11 | 23 | −.46 | .88 + | 2.75 | | 28.4 | .+0.8 | 27.6 | −0.8 | 28.4 |
| 11 | 34 | −.87 | .48 − | 4.31 | | 27.0 | .+0.3 | 27.3 ~~26.7~~ | −2.1 | 29.6 ✓ |
| 11 | 58 | −.58 | .81 + | 4.55 | | 29.4 | .+1.6 | 27.8 | −1.0 | 28.8 |
| 12 | 6 | −.59 | .80 + | 4.84 | | 28.8 | .+0.4 | 28.4 | −1.1 | 29.5 |

28.47
28.47

| | +.60+.80 | +.40+.60 | +20+.40 | +0.+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|
| | +.64 −29.1 | +.46 −28.5 | | +.01 −27.9 | −.11 −27.9 | −.21 −28.2 | −.56 −27.2 | | −.90 −25.6 |
| | +.67 −28.7 | | | +.09 −27.9 | | −.34 −26.5 | −.59 −27.7 | | −.89 −26.7 |
| 9 6864<br>6 5082<br>11946 | | | | +.02 −28.0<br>+.05 −28.3 | | | −.46 −27.6<br>−.58 −27.8<br>−.59 −28.4 | | −.87 −26.7 |
| | +.65 −28.9<br>+1.4 | +.46 −28.5<br>+1.0 | | +.04 −28.0<br>+.1 | −.11 −27.9<br>−.2 | −.27 −27.3<br>−.6 | −.56 −27.7<br>−1.2 | | −.89 −26.3 |
| −2 ′ ″ 28.17<br>28.16 | (10) 27.5 2<br>* −.7 | 27.5 1<br>* −.7 | | 27.9 4<br>* −.3 | 28.1 1<br>* −.1 | 27.9 2<br>* −.3 | 28.9 5<br>+.7 | | |

1873 May 5 WaRC h = −.012 +.030

n = −.06 e = .00 h = +.036

| | Star | | Ra h | m | δ | tang. δ | | τ Ra | ρ'−ρ | τ Ra −(ρ'−ρ) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | + .76 | | s | | s | | | 7.982 | |
| | 103 | +9 | 10 | 20 | 426 | + .76 | 0 = | −7.93 | +.02 | −7.95 | − .05 | +.03 | −8.00 | 7.97 |
| | 107 | 5 | 10 | 42 | 432 | + .20 | | −7.95 | +.02 | 7.97 | − .01 | .02 | 7.98 | .96 |
| | 10.9 | 3 | 10 | 54 | 153 | + 1.54 | | −7.88 | +.03 | 7.91 | − .09 | .01 | 8.00 | .99 |
| | 11.0 | 2 | 10 | 58 | 434 | + .14 | | −7.93 | +.01 | 7.94 | − .01 | .01 | 7.95 | .94 |
| | 11.1 | 1 | 11 | 7 | 156 | + .39 | | −7.94 | +.04 | 7.98 | − .02 | .00 | 8.00 | 8.00 |
| 10.87 | 11.2 | 0 | 11 | 9 | 435 | + 1.20 | | −7.89 | +.00 ~~+.02~~ | 7.89 | − .07 | .00 | 7.96 | 7.96 |
| | 11.2 | +0 | 11 | 11 | 759 | + .67 | | −7.97 | +.05 | 8.02 | − .04 | .00 | 8.06 | 8.06 |
| | 11.3 | −1 | 11 | 17 | 161 | + .20 | | −7.91 | −.02 | 7.89 | − .01 | +.00 | 7.90 | 7.90 |
| | 11.5 | 3 | 11 | 30 | 438 | − .00 | | −7.92 | +.03 | 7.95 | − .00 | −.01 | 7.95 | .96 |
| | 11.7 | 5 | 11 | 42 | 164 | + .27 | | −7.92 | +.02 | 7.94 | − .02 | .02 | 7.96 | .98 |
| | 11.7 | 5 | 11 | 44 | 165 | + .04 | | −7.89 | +.04 | 7.93 | − .00 | .02 | 7.93 | .95 |
| 11.53 | 11.8 | −6 | 11 | 47 | 166 | + 1.40 | | −7.89 | −.02 | 7.87 | − .08 | −.02 | 7.95 | .97 |
| ~~11.46~~ | 10.6] | | 10 | 36 | 430 | + .44 | | −8.23 | +.00 | 8.23 | − .03 | | −8.26] | |
| | 11.20 | | | | | | | | | | | | 7.9858 | |
| | | | | | | | | | | | | | 7.970 | 7.970 |

1873 May 5 WaRC

| Star | Ra h | m | δ | tang. δ | | τ Ra | ρ'−ρ | τ Ra −(ρ'−ρ) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | s |
| | 10 | 24 | 150 | + 4.12 | 0 = | −7.77 | −.15 | −7.62 |
| | 10 | 32 | 525 | −+ 3.27 | | −7.98× | ~~+~~.15 | 8.13 |
| | 10 | 49 | 433 | + 4.89 | | −7.99 | −.22 | 7.77 |
| | 11 | 15 | 436 | + 2.15 | | −7.48 | +.31 | 7.79 |
| | 11 | 23 | 162 | + 2.75 | | −7.84 | +.13 | 7.97 |
| | 11 | 34 | 334 | − 4.31 | | −8.20 | +.13 | 8.33 |
| | 10 | 55 | 154 | + 1.92 | | −7.79 | +.04 | 7.83 |

| | | s |
|---|---|---|
| 107 | +.20 | −7.97 |
| 109 | +.14 | −7.94 |
| 11.3 | +.20 | −7.89 |
| 11.5 | +.00 | −7.95 |
| 11.7 | +.27 | −7.94 |
| 11.7 | +.04 | −7.93 |
| 11.3 | +.14 | −7.94 |
| 10.9 | +1.54 | −7.91 |
| 11.9 | +1.20 | −7.89 |
| 11.8 | +1.40 | −7.87 |
| 11.5 | +1.38 | −7.89 |

n = −.04

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 10.4 | +4.12 | −7.62 | −.01 | −7.63 | −.01 | −7.63 |
| 10.8 | +4.89 | −7.77 | −.01 | −7.78 | −.01 | −7.78 |
| 11.2 | +2.15 | −7.79 | +.00 | −7.79 | +.00 | −7.79 |
| 11.4 | +2.75 | −7.97 | +.00 | −7.97 | +.00 | −7.97 |
| 10.9 | +1.92 | −7.83 | +.00 | −7.83 | −.01 | −7.82 |

| | | | I | | II |
|---|---|---|---|---|---|
| 10.5 | −3.27 | −8.13 | −.01 − 8.14 | −.01 | −8.14 |
| 11.6 | −4.31 | −8.33 | +.00 − 8.33 | +.00 | −8.33 |

0 = +3.98 +.31 n = −.08
+4.75 +.16 −.03
+2.01 +.15 −.07
+2.61 −.03 +.01
+1.78 +.11 −.06
−.046

0 = +2.74 +0.26 n = −.09
+3.51 +.11 −.03
+.77 +.10 −.13]
+1.37 −.08 +.06
+.54 +.07 −.13]
~~−.002~~
.020

0 = −3.41 −.20 n = −.06
−4.45 −.39 −.09
−.075

0 = −4.65 −.25 n = −.065
−5.69 −.44 −.08
−.065

1873 May 6 WaRC h = −.012 −.023

~~n~~ = −.09 e = .00 h = −.034

| | Star | | Ra h | m | δ | tang. δ | | τ Ra | ρ'−ρ | τ Ra −(ρ'−ρ) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | s | | | | | 8.2657 | |
| | 10.6 | +4 | 10 | 36 | 430 | + .44 | 0 = | −8.23 | +.00 | −8.23 | − .04 | −.01 | −8.27 | 8.28 |
| | 10.6 | 4 | 10 | 38 | 431 | + .61 | | −8.17 | −.02 | 8.15 | − .05 | −.01 | .20 | .21 |
| | 10.8 | 2 | 10 | 46 | 152 | + .70 | | −8.17 | +.07 | 8.24 | − .06 | −.01 | .30 | .31 |
| 10.72 | 10.9 | 1 | 10 | 54 | 153 | + 1.54 | | −8.09 | +.03 | 8.12 | − .14 | 00 | .26 | .26 |
| | 11.0 | 0 | 10 | 58 | 434 | + .14 | | −8.19 | +.01 | 8.20 | − .01 | 00 | .21 | .21 |
| | 11.0 | +0 | 11 | 2 | 155 | + 1.01 | | −8.15 | +.09 | 8.24 | − .09 | 00 | .33 | .33 |
| | 11.1 | −1 | 11 | 9 | 435 | + 1.20 | | −8.14 | +.00 ~~+.02~~ | 8.14 | − .11 | 00 | .25 | .25 |
| | 11.2 | 2 | 11 | 11 | 159 | + .67 | | −8.10 | +.05 | 8.24 | − .06 | +.01 | .30 | .29 |
| 11.16 | 11.5 | −5 | 11 | 30 | 438 | − .00 | | −8.24 | +.03 | 8.27 | .00 | +.02 | 27 | .25 |
| | 10.~~52~~ 97 | | | | | | | | | | | | 8.272 | |
| | | | | | | | | | | | | | 8.266 | 8.266 |

| Ra h | m | δ | tang. δ | | τ Ra | ρ'−ρ | τ Ra −(ρ'−ρ) |
|---|---|---|---|---|---|---|---|
| | | | | | s | | |
| 10 | 49 | 433 | + 4.89 | 0 = | −8.15 | −.22 | −7.93 |
| 10 | 55 | 154 | + 1.92 | | −8.07 | +.04 ~~+.03~~ | 8.11 |
| 11 | 23 | 162 | + 2.75 | | −7.87 | +.13 | 8.00 |
| 11 | 34 | 334 | − 4.31 | | −8.69 | +.13 | 8.82 |

| | | |
|---|---|---|
| 10.6 | +.44 | −8.23 |
| 10.9 | +.14 | −8.20 |
| 11.5 | +.00 | −8.27 |
| ~~10.0~~ 11.0 | +.19 | −8.23 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 10.8 | +4.89 | −7.93 | +.01 | −7.92 | +.00 | −7.93 |
| 10.9 | +1.92 | −8.11 | +.01 | −8.10 | +.00 | −8.11 |
| 11.4 | +2.75 | −8.00 | +.02 | −7.98 | +.00 | −8.00 |

| | | | I | | II |
|---|---|---|---|---|---|
| 11.6 | −4.31 | −8.82 | +.02 − 8.80 | +.01 | −8.79 |

| | | |
|---|---|---|
| 10.9 | +1.54 | −8.12 |
| 11.0 | +1.01 | −8.24 |
| 11.5 | +~~120~~ | −8.~~27~~ 14 |
| 11.1 | +~~.085~~ 1.25 | −8.~~21~~ 17 |

n = −.07 6

0 = +4.70 +.31 n = −.07
+1.73 +.13 −.08
+2.56 +.25 −.10
−.083

0 = +4.04 +.28 n = −.07
+1.07 +.10 −.09
+1.90 +.21 −.11
−.090

0 = −4.50 −.57 n = −.13

0 = −5.16 −.58 n = −.10

z= +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00

gr+

| RA h | m | sin z | cos z | tang. δ | Req−Rfe ′ ″ | ρ'−ρ | ρ+(ρ'−ρ) ″ | Req−Rfe | Rfe Req |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 20 | +.09 | 1.00+ | .76 | −2 28.8 | +0.4 | −28.4 | +0.2 | −28.2 |
| 10 | 42 | +.52 | .85+ | .20 | 32.5 | +0.4 | 32.1 | +0.9 | 31.2 ] |
| 10 | 54 | −.25 | .97+ | 1.54 | 28.6 | +1.1 | 27.5 | −0.4 | 27.9 |
| 10 | 58 | +.56 | .82+ | .14 | 29.2 | +1.0 | 28.2 | +1.0 | 27.2 |
| 11 | 7 | +.36 | .93+ | .39 | 28.2 | +0.6 | 27.6 | +0.6 | 27.0 |
| 11 | 9 | −.14 | .99+ | 1.20 | 27.4 | +0.8 | 26.6 | −0.2 | 26.8 |
| 11 | 11 | +.15 | .99+ | .67 | 27.3 | +0.0 | 27.3 | +0.3 | 27.0 |
| 11 | 17 | +.52 | .85+ | .20 | 28.9 | +0.3 | 28.6 | +0.9 | 27.7 |
| 11 | 30 | +.68 | .73− | .00 | 30.1 | +0.5 | 29.6 | +1.2 | 28.4 |
| 11 | 42 | +.46 | .88+ | .27 | 29.8 | +0.0 | 29.8 | +0.8 | 29.0 |
| 11 | 44 | +.64 | .76+ | .04 | 28.6 | +0.4 | 28.2 | +1.2 | 27.0 |
| 11 | 47 | −.21 | .98+ | 1.40 | 29.0 | +0.5 | 28.5 | −0.4 | 28.9 |
| 10 | 36 | +.32 | .92+ | .44 | 31.5 | +0.7 | 30.8 | +0.6 | 30.2 |
| | | | | | | | | | 27.94 28.12 |

| RA h | m | sin z | cos z | tang. δ | Req−Rfe ′ ″ | ρ'−ρ | ρ+(ρ'−ρ) ″ | Req−Rfe | Rfe. Req. |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 24 | −.56 | .82+ | 4.12 | −2 27.6 | +0.7 | −26.9 | −1.0 | −27.9 |
| 10 | 32 | −.90 | .42+ | 3.27 | 22.6 | +0.8 | 23.4 ~~21.8~~ | −2.2 | 25.6 |
| 10 | 49 | −.59 | .80+ | 4.89 | 26.0 | +0.7 | 25.3 | −1.1 | 26.4 |
| 11 | 15 | −.38 | .92+ | 2.15 | 27.1 | +0.8 | 26.3 | −0.7 | 27.0 |
| 11 | 23 | −.46 | .88+ | 2.75 | 27.6 | +0.8 | 26.8 | −0.8 | 27.6 |
| 11 | 34 | −.87 | .48− | 4.31 | 24.0 | +0.3 | 24.3 ~~23.7~~ | −2.1 | 26.4 |
| 10 | 55 | −.34 | .94+ | 1.92 | 27.3 | +1.0 | 26.3 | −0.6 | 26.9 |
| | | | | | | | | | 27.16<br>27.16 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|
| 12 1128 | | | | | | | | | |
| 5 80 | +.68 −29.6″ | +.52 −32.1″ | +.36 −27.6″ | +.09 −28.4″ | | −.25 −27.5″ | −.56 −26.9″ | | −.90 −21.8″ |
| 1208 | +.64 −28.2 | +.56 −28.2 | +32 −30.8 | +.15 −27.3 | | −.14 −26.6 | −.59 −25.3 | | −.87 −23.7 |
| | | +.52 −28.6 | | | | −.21 −28.5 | −.46 −26.8 | | |
| | | +.46 −29.8 | | | | −.38 −26.3 | | | |
| | | | | | | −.34 −26.3 | | | |
| | +.66 −28.9 | +.57 −29.7 | 4 9.2<br>+.36 −27.6 | +12 −27.8 | | −.26 −27.0 | −.54 −26.3 | | −88 −22.7 |
| | +1.4 | +1.1 | +.8 | +.3 | | −.6 | −1.1 | | |
| | 27.5 2 | 28.6 4 | 28.4 2 | 27.5 4 | | 27.6 5 | 27.4 3 | | |
| −2′ 27.86″<br>27.71 | (18) *−.4 | *+.7 | *+.5 | *−.4 | | *−.3 | *−.5 | | |

| RA h | m | sin z | cos z | tang. δ | Req−Rfe ′ ″ | ρ'−ρ | ρ+(ρ'−ρ) | Req−Rfe | Rfe Req |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 36 | +.32 | .94+ | .44 | −2 31.5 | +0.7 | −30.8 | +0.6 | −30.2 |
| 10 | 38 | +.19 | .98+ | .61 | 28.8 | +1.0 | 27.8 | +0.3 | 27.5 |
| 10 | 46 | +.13 | .99+ | .70 | 25.7 | −0.7 | 26.4 | +0.2 | 26.2 |
| 10 | 54 | −.25 | .97+ | 1.54 | 29.0 | +1.1 | 27.9 | −0.4 | 28.3 |
| 10 | 58 | +.56 | .82+ | .14 | 30.0 | +1.0 | 29.0 | +1.0 | 28.0 |
| 11 | 2 | −.05 | 1.00+ | 1.01 | 28.6 | +1.0 | 27.6 | −0.1 | 27.7 |
| 11 | 9 | −.14 | .99+ | 1.20 | 27.5 | +0.8 | 26.7 | −0.2 | 26.9 |
| 11 | 11 | +.15 | .99+ | .67 | 26.7 | +0.0 | 26.7 | +0.2 | 26.5 |
| 11 | 30 | +.68 | .73− | .00 | 29.9 | +0.5 | 29.4 | +1.2 | 28.2 |
| | | | | | | | | | 27.72 27.75 |

| RA h | m | sin z | cos z | tang. δ | Req−Rfe ′ ″ | ρ'−ρ | ρ+(ρ'−ρ) | Req−Rfe | Rfe. Req. |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 49 | −.59 | .80+ | 4.89 | −2 27.9 | +0.7 | −27.2 | −1.1 | −28.3 |
| 10 | 55 | −.34 | .94+ | 1.92 | 28.3 | +1.0 ~~+1.1~~ | 27.3 | −0.6 | 27.9 |
| 11 | 23 | −.46 | .88+ | 2.75 | 26.7 | +0.8 | 25.9 | −0.8 | 26.7 |
| 11 | 34 | −.87 | .48− | 4.31 | — — | +0.3 | | | |
| | | | | | | | | | 27.63<br>27.63 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|
| | +.68 −29.4 | +.56 −29.0 | +.32 −30.8 | +.19 −27.8 | −.05 −27.6 | −.25 −27.9 | −.59 −27.2 | | −.87 |
| | | | | +.13 −26.4 | −.14 −26.7 | −.34 −27.3 | −.46 −25.9 | | |
| 9 648 | | | | +.15 −26.7 | | | | | |
| 3 189 | | | | | | | | | |
| 837 | +.68 −29.4 | +.56 −29.0 | +.32 −30.8 | +.16 −27.0 | −.09 −27.1 | −.29 −27.6 | −.52 −26.5 | | |
| | +1.4 | +1.2 | +.7 | +.3 | −.2 | −.6 | −1.1 | | |
| ′ ″ | 28.0 1 | 27.8 1 | 30.1 1 | 26.7 3 | 27.3 2 | 28.2 2 | 27.6 2 | | |
| −2 27.68<br>27.70 | (12) *+.3 | *+.1 | *+2.4 | *−1.0 | *−.4 | *+.5 | *−.1 | | |

1873 May 7 wave  h = −.006 +.012  n = −.06 e = .00 h = −.~~[illegible]~~

| Star | | Ra | | | δ | tang. δ | | T=Ra | P'−P | T=Ra −(P'−P) | | | 8.510 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h | m | | | | | s | | s | | | | |
| | 10.4 | +6 | 10 | 26 | 151 | + .17 | 0= | −8.44 | +.08 | −8.52 | − .01 | +01 − | 8.53 | 8.52 |
| 10.70 | 10.7 | .3 | 10 | 42 | 432 | + .20 | | −8.45 | +.02 | 8.47 | − .01 | 00 | .48 | .48 |
| 10.70 | 11.0 | +0 | 11 | 2 | 155 | +1.01 | | −8.37 | +.09 | 8.46 | − .06 | | 52 | .52 |
| | 11.1 | −1 | 11 | 7 | 156 | + .39 | | −8.56 | +.04 | 8.60 | − .02 | | .62 | .62 |
| | 11.2 | 2 | 11 | 9 | 435 | +1.20 | | −8.43 | +.00 | 8.43 | − .07 | | 50 | .50 |
| | 11.2 | 2 | 11 | 11 | 159 | + .67 | | −8.49 | +.05 | 8.54 | − .04 | | .58 | .58 |
| | 11.3 | 3 | 11 | 17 | 161 | + .20 | | −8.47 | −.02 | 8.45 | − .01 | 00 | .46 | .46 |
| 11.26 | 11.5 | −.5 | 11 | 30 | 438 | − 00 | | −8.54 | +.03 | 8.57 | − 00 | −01 | .57 | .58 |
| | 11.30 | | | | | | | | | | | | 8.5346 | |
| | 05 | | | | | | | | | | | | 8.532 | |

| | | s |
|---|---|---|
| 10.6 | +17 | −8.52 |
| 10.7 | +20 | −8.47 |
| 11.3 | +20 | −8.45 |
| 11.5 | +00 | −8.57 |
| 11.0 | +14 | −8.50 |

| | | s | | I s | | II s |
|---|---|---|---|---|---|---|
| 10.4 | +4.12 | −8.31 | +.00 | −8.31 | +.00 | −8.31 |
| 11.3 | +2.15 | −8.50 | +.00 | −8.50 | +.00 | −8.50 |
| 11.4 | +2.75 | −8.35 | +.00 | −8.35 | +.00 | −8.35 |

o = +3.98 + 0.19 n = −.05
+2.01 +0.00 −.00
+2.61 +0.15 −.06
−.037

| | | |
|---|---|---|
| 11.0 | +1.01 | −8.46 |
| 11.2 | +1.20 | −8.43 |
| 11.1 | +1.10 | −8.44 |

o = +3.02 + 0.13 n = −.04
+1.05 −0.06 +.06]
+1.61 +0.09 −.06
−.050

n = −.06

1873 May 7 wave

| Star | | Ra | | δ | tang. δ | | T=Ra | P'−P | T=Ra −(P'−P) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | s | | s |
| 8.53 | 8.52 | 10 | 24 | 150 | +4.12 | 0= | −8.46 | −.15 | −8.31 |
| .48 | .48 | 11 | 3 | 529 | −3.66 | | −8.84 | +.01 | 8.85 |
| 52 | .52 | 11 | 15 | 436 | +2.15 | | −8.19 | +.31 | 8.50 |
| .62 | .62 | 11 | 23 | 162 | +2.75 | | −8.22 | +.13 | 8.35 |

8.532

| | | s | | I | | II |
|---|---|---|---|---|---|---|
| 11.1 | −3.66 | −8.85 | +.00 | −8.85 | +.00 | −8.85 |

o = −3.80 − .35 n = −.09

o = −4.76 − .41 n = −.08 9

7
3

1873 May 12 wave  h = −.002 −.042  n = −.05 e = .00 h = −.010 ~~−.003~~

| | | | | | | | | s | | | | | 9.0826 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10.6 | +5 | 10 | 36 | 430 | + .44 | 0= | −9.03 | +.00 | −9.03 | − .02 | −01 − | 9.05 | 9.06 |
| | 10.6 | 5 | 10 | 38 | 431 | + .61 | | −9.02 | −.02 | 9.00 | − .03 | −01 | .03 | .04 |
| | 10.7 | 4 | 10 | 42 | 432 | + .20 | | −9.00 | +.02 | 9.02 | − .01 | .00 | .03 | .03 |
| | 10.8 | 3 | 10 | 46 | 152 | + .70 | | −8.93 | +.07 | 9.00 | − .03 | | .03 | .03 |
| | 10.9 | 2 | 10 | 54 | 153 | +1.54 | | −8.89 | +.03 | 8.92 | − .08 | | .00 | 00 |
| | 11.0 | 1 | 10 | 58 | 434 | + .14 | | −9.02 | +.01 | 9.03 | − .01 | | .04 | 04 |
| 10.80 | 11.0 | +1 | 11 | 2 | 155 | +1.01 | | −8.86 | +.09 | 8.95 | − .05 | | .00 | 00 |
| | | | 12 | 23 | 443 | + .40 | | | −.08 | | − .02 | | | |
| | 12.2 | −11 | 12 | 09 | 441 | + .88 | | −9.01 | −.01 | 9.00 | − .04 | +01 | .04 | 03 |
| 12.23 | 12.3] | | 12 | 19 | 442 | + 83 | | −9.13 | +.05 | 9.18 | − .04 | | .22] | |
| 12.20 | 12.2 | −11 | 12 | 13 | 170 | + .00 | | −8.98 | +.04 | 9.02 | − 00 | +.01 | .02 | .01 |
| 12.23 | 11.23 | | | | | | | | | | 9.01 | | 9.030 | |
| | 11 | | | | | | | | | | | | 9.027 | |

| | | |
|---|---|---|
| 10.6 | +44 | −9.03 |
| 10.7 | +20 | −9.02 |
| 10.9 | +.14 | −9.03 |
| 12.54 | +.44 | |
| 12.2 | +.00 | −9.02 84 |
| 11.4 | +.24 .19 | −9.02 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 10.8 | +4.89 | −8.81 | +.00 | −8.81 | +.00 | −8.81 |
| 10.9 | +1.92 | −8.88 | +.00 | −8.88 | +.00 | −8.88 |
| 11.4 | +2.75 | −8.91 | +.00 | −8.91 | +.00 | −8.91 |
| 12.1 | +4.84 | −8.82 | +.00 | −8.82 | +.00 | −8.82 |

o = +4.70 + 0.21 n = −.04
+1.73 + .14 −.08
+2.56 + .11 −.04
+4.65 + .20 −.04
−.050

o = +3.83 + 0.20 n = −.05
+ .86 + .13] −
+1.69 + .10 −.06
+3.78 + .19 −.05
−.053

| | | |
|---|---|---|
| 10.9 | +1.54 | −8.92 |
| 11.9 | +1.01 | −8.95 |
| 12.1 | +.88 | −9.00 |
| 12.3 | +.83 | −9.18 or −.11 |
| 11.6 | +1.06 | −9.01 |

| | | s | | |
|---|---|---|---|---|
| 10 | 32 | 525 | −3.27 | 0= −9.09 | +.15 | −9.24 |
| 10 | 49 | 433 | +4.89 | −9.03 | −.22 | 8.81 |
| 10 | 55 | 154 | +1.92 | −8.84 | +.04 | 8.88 |
| 11 | 23 | 162 | +2.75 | −8.78 | +.13 | 8.91 |
| 12 | 6 | 168 | +4.84 | −8.90 | −.08 | 8.82 |
| 12 | 37 | 340 | −3.56 | −9.01 | +.18 | 9.19 |

9.027

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 10.5 | −3.27 | −9.24 | +.00 | −9.24 | +.00 | −9.24 |
| 12.6 | −3.56 | −9.19 | +.00 | −9.19 | +.00 | −9.19 |

o = −3.46 − .22 n = −.06
−3.75 .17 −.05
−.055

o = −4.33 − .23 n = −.05
−4.62 − .18 −.04
−.045

9
4

−2

1873 May 13  h = +.001  n = −.14 e = .00 h = +.006

| | | | | | | | | | | | | | 9.070 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 11.2 | +.9 | 11 | 11 | 159 | + .67 | 0= | −8.94 | +.05 | −8.99 | − .09 | +01 − | 9.08 | 9.07 |
| 11.35 | 11.5 | +.6 | 11 | 30 | 438 | − .00 | | −9.03 | +.03 | 9.06 | − 00 | 00 | .06 | .06 |
| | 12.9 | −8 | 12 | 53 | 176 | + .21 | | −8.96 | +.04 | 9.00 | − .03 | 00 | .03 | .03 |
| 12.95 | 13.0 | −9 | 13 | 3 | 449 | − .08 | | −9.11 | −.01 | 9.10 | + .01 | −.01 | .11 .09 | .10 |
| | 12.15 | | | | | | | | | | | | 9.060 | |
| | | | | | | | | | | | | | 9.065 | |

| | | |
|---|---|---|
| 11.5 | +.00 | −9.06 |
| 12.9 | +21 | −9.00 |
| 13.0 | +08 | −9.10 |
| 12.5 | +.04 | −9.05 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 11.2 | +2.15 | −6.67 | +.00 | −8.67 | +.00 | −8.67 |
| 11.4 | +2.75 | −8.58 | +.00 | −8.58 | +.00 | −8.58 |

o = +2.11 + .38 n = −.18
+2.71 + .49 −.07
−.125

o = +1.48 + .32] n = −.22
+2.08 + .41 −.20

| | | | s | | |
|---|---|---|---|---|---|
| 11 | 15 | 436 | +2.15 | 0= −8.36 | +.31 | −8.67 |
| 11 | 23 | 162 | +2.75 | −8.45 | +.13 | 8.58 |
| 13 | 01 | 345 | −5.14 | −9.58 | +.00 | 9.58 |
| 13 | 12 | 19 | −41.79 | −13.89 | ~~+54.33~~ −.11 | ~~14.46~~ −13.78 |

9.065

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 13.0 | −5.14 | −9.58 | +.00 | −9.58 | +.00 | −9.58 |
| 13.2 | −41.79 | ~~−14.46~~ −13.78 | +.00 | −14.46 | +.00 | −14.46 |

o = −5.18 − .53 n = −.10
−41.83 −5.41 −.132
+.68
−.115

o = −5.81 − .59 n = −.10
−42.46 −5.47 −.132 0
.115

4
2

−2

z = +.60+.80 +.40+.60 +.20+.40 +.0+.20 +.0-.20 -.20-.40 -.40-.60 -.60-.80 -.80-.100

| RA h m | sin z | cos z | tang. δ |
|---|---|---|---|
| 10 26 | +.54 | .84 + | .17 |
| 10 42 | +.52 | .85 + | .20 |
| 11 2 | -.05 | 1.00 + | 1.01 |
| 11 7 | +.36 | .93 + | .39 |
| 11 9 | -.14 | .99 + | 1.20 |
| 11 11 | +.15 | .99 + | .67 |
| 11 17 | +.52 | .85 + | .20 |
| 11 30 | +.68 | .73 - | .00 |

| R-Req | Rge | ρ'-ρ | R+(ρ'-ρ) | Req-Rge | Req. |
|---|---|---|---|---|---|
| -2 | 30.6 | +0.5 | -30.1 | +0.9 | -29.2 |
|  | 29.7 | +0.4 | 29.3 | +0.9 | 28.4 |
|  | 28.5 | +1.0 | 27.5 | -0.1 | 27.6 |
|  | 28.9 | +0.6 | 28.3 | +0.6 | 27.7 |
|  | 27.4 | +0.8 | 26.6 | -0.2 | 26.8 |
|  | 28.0 | +0.0 | 28.0 | +0.2 | 27.8 |
|  | 29.6 | +0.3 | 29.3 | +0.9 | 28.4 |
|  | — — | +0.5 |  |  |  |
|  |  |  |  |  | 27.99 27.99 |

| RA h m | sin z | cos z | tang. δ |
|---|---|---|---|
| 10 24 | -.56 | .82 + | 4.12 |
| 11 3 | -.89 | .45 - | 3.66 |
| 11 15 | -.38 | .92 + | 2.15 |
| 11 23 | -.46 | .88 + | 2.75 |

| R-Req | Rge | ρ'-ρ | R+(ρ'-ρ) | Req-Rge |
|---|---|---|---|---|
| -2 | 26.6 | +0.7 | -25.9 | -1.0 |
|  | 23.2 | +0.6 | 238 ~~22.6~~ | -2.2 |
|  | 28.0 | +0.8 | 27.2 | -0.7 |
|  | 27.3 | +0.8 | 26.5 | -0.8 |

Req
-26.9
26.0 √
-27.9
-27.3
27.37
27.37

7 693
3 111
804
+.68

+.54 -30.″1 | +.36 -28.″3 | +.15 -28.″0 | -.05 -27.″5 | -.38 -27.″2 | -.56 -25.″9 | -.89 -22.″6
+.52 -29.3 | -.14 -26.6 | -.46 -26.5
+.52 -29.3

+.53 -29.6 | +.36 -28.3 | +.15 -28.0 | -.09 -27.0 | -.38 -27.2 | -.51 -26.2 | -.89 -22.6
+1.1 | +.8 | +.3 | -.2 | -.8 | -1.0
28.5 3 | 27.5 1 | 27.7 1 | 27.2 | 28.0 1 | 27.2 2
(10) ++.7 | +-.3 | +-.1 | +-.6 2 | +-.2 | +-.6 2

-2′ 27.″75
27.80

10 ~~36~~ ~~+.32~~ .94 + ~~.44~~ +0.
-2 ~~24.″8~~ ~~+0.7~~ ~~-24.1~~ ~~+1.0~~ ~~24.5~~ 27

| RA h m | sin z | cos z | tang. δ |
|---|---|---|---|
| 10 38 | +.19 | .99 + | .61 |
| 10 42 | +.52 | .85 + | .20 |
| 10 46 | +.13 | .99 + | .70 |
| 10 54 | -.25 | .97 + | 1.54 |
| 10 58 | +.56 | .82 + | .14 |
| 11 2 | -.05 | 1.00 + | 1.01 |
| 12 23 | +.36 | .93 + | .44 |
| 12 09 | +.02 | 1.00 + | .88 |
| 12 19 | +.05 | 1.00 + | .83 |
| 12 13 | +.67 | .74 + | .00 |

| Rge | ρ'-ρ | R+(ρ'-ρ) | Req-Rge | Req. |
|---|---|---|---|---|
| 29.3 | +1.0 | 28.3 | +0.3 | -28.0 |
| 28.2 | +0.4 | 27.8 | +0.9 | 26.9 |
| 25.8 | -0.7 | 26.5 | +0.2 | 26.3 |
| 29.5 | +1.1 | 28.4 | -0.4 | 28.8 |
| 30.7 | +1.0 | 29.7 | +1.0 | 28.7 |
| 28.7 | +1.0 | 27.7 | -0.1 | 27.8 |
|  | +0.0 |  |  |  |
| 27.8 | +0.7 | 27.1 | +0.0 | 27.1 |
| 29.2 | +0.5 | 28.7 | +0.1 | 28.6 |
| 29.0 | -0.2 | 29.2 | +1.2 | 28.0 |
|  |  |  |  | 27.80 27.71 |

| RA h m | sin z | cos z | tang. δ |
|---|---|---|---|
| 10 32 | -.90 | .42 - | 3.27 |
| 10 49 | -.59 | .80 + | 4.89 |
| 10 55 | -.34 | .94 + | 1.92 |
| 11 23 | -.47 | .88 + | 2.75 |
| 12 6 | -.59 | .80 + | 4.84 |
| 12 37 | -.89 | .45 - | 3.56 |

| R-Req | Rge | ρ'-ρ | R+(ρ'-ρ) | Req-Rge |
|---|---|---|---|---|
| -2 | 25.″8 | +0.8 | ~~-25.0~~ | -2.2 |
|  | 27.6 | +0.7 | 26.9 26.9 | -1.0 |
|  | 27.9 | +1.0 | 26.9 | -0.6 |
|  | 27.9 | +0.8 | 27.1 | -0.8 |
|  | 27.7 | +0.4 | 27.3 | -1.0 |
|  | 26.4 | +1.2 | ~~25.2~~ 27.6 | -2.2 |

Req.
28.8 √
-27.9
27.5
27.9
-28.3 27.90
29.8 √ 27.90

9 720
4 360
1080

+.67 -29.2 | +.52 -27.8 | +.32 | +.19 -28.3 | -.05 -27.7 | -.25 -28.4 | -.59 -26.9 | -.90 -25.″0
+.56 -29.7 | +.36 | +.13 -26.5 | -.34 -26.9 | -.47 -27.1 | -.89 -25.2
+.02 -27.1 | -.59 -27.3
+.05 -28.7

+.67 -29.2 | +.54 -28.7 | +.34 | +.10 -27.8 | -.05 -27.7 | -.29 -27.6 | -.55 -27.1 | -.89 -25.1
+1.4 | +1.1 | +.2 | -.1 | -.6 | -1.1
27.8 1 | 27.6 2 | 27.5 4 | 27.8 1 | 28.2 | 28.2 3
(13) 0 | +-.2 | +-.3 | .0 | ++.4 | ++.9

-2′ 27.″83
27.83

4 40
2 40
80

| RA h m | sin z | cos z | tang. δ |
|---|---|---|---|
| 11 11 | +.15 | .99 + | .67 |
| 11 30 | +.68 | .73 - | .00 |
| 12 55 | +.51 | .86 + | .21 |
| 13 3 | +.73 | .68 - | .08 |

| R-Req | Rge | ρ'-ρ | R+(ρ'-ρ) | Req-Rge | Req. |
|---|---|---|---|---|---|
| -2′ | 29.″0 | +0.0 | -29.″0 | +0.2 | -28.8 |
|  | 28.6 | +0.5 | 28.1 | +1.2 | 26.9 |
|  | 29.0 | -0.1 | 29.1 | +0.9 | 28.2 |
|  | 30.7 | +0.9 | 29.8 | +1.3 | 28.5 |
|  |  |  |  |  | 28.10 28.10 |

| RA h m | sin z | cos z | tang. δ |
|---|---|---|---|
| 11 15 | -.38 | .92 + | 2.15 |
| 11 23 | -.46 | .88 + | 2.75 |
| 13 1 | -.85 | .52 - | 5.04 |
| 13 12 |  | - | 41.79 |

| R-Req | Rge | ρ'-ρ | R+(ρ'-ρ) | Req-Rge |
|---|---|---|---|---|
| -2 | 28.6 | +0.8 | -27.8 | -0.7 |
|  | 27.9 | +0.8 | 27.1 | -0.8 |
|  | 27.5 | +0.6 | ~~26.9~~ | -2.1 |
|  | — | ~~-0.3~~ +.1 | 28.1 |  |

Reg.
-28.5
27.9 28.20
30.2 √ 28.20

+.68 -28.1 | +.51 -29.1 | +.15 -29.0 | -.38 -27.8 | -.46 -27.1 | -.85 -26.9
+.73 -29.8

+.70 -28.9 | +.51 -29.1 | +.15 -29.0 | -.38 -27.8 | -.46 -27.1 | -.85 -26.9
+1.4 | +1.0 | +.3 | -.8 | -.9
27.5 2 | 28.1 1 | 28.7 | 28.6 1 | 28.0 1
(6) +-.6 | .0 | ++.6 | ++.5 | +-.1

-2′ 28.″07
28.13

1873 May 14 W a R h = +.004 -.004 n = -.09 h = + ~~.0~~

| | Star | | h | m | δ | tang. δ | | T-Ra | P'-P | T-Ra-(P'-P) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | s | | s | | | -9.024 |
| | 10.8 | +.5 | 10 | 46 | 152 | + .70 | 0 = | -8.85 | +.07 | -8.92 - | .06 | 00 | -8.98 |
| | 10.9 | .4 | 10 | 54 | 153 | +1.54 | | -8.86 | +.03 | 8.89 - | 14 | | 9.03 |
| | 11.0 | 3 | 10 | 58 | 434 | + .14 | | -8.98 | +.01 | 8.99 - | .01 | | 900 |
| | 11.0 | 3 | 11 | 2 | 155 | +1.01 | | -8.87 | +.08 | 8.95 - | 09 | | 904 |
| | 11.1 | 2 | 11 | 7 | 156 | + .39 | | -8.97 | +.04 | 9.01 - | 03 | | 904 |
| | 11.2 | 1 | 11 | 9 | 435 | +1.20 | | -8.96 +10 | +.02 | 8.96 - | .11 | | 907 |
| | 11.2 | 1 | 11 | 11 | 159 | + .67 | | -8.98 | +.05 | 9.03 - | 06 | | 909 |
| 11.06 | 11.3 | +0 | 11 | 17 | 161 | + .20 | | -8.94 | -.02 | 8.92 - | 02 | | 894 |
| | 11.5 | -2 | 11 | 30 | 438 | - .00 | | -8.97 | +.03 | 9.00 + | 00 | | 900 |
| | 11.6 | 3 | 11 | 39 | 163 | +1.13 | | -8.91 | +.02 | 8.89 93 - | .10 | | 9.03 |
| | 11.7 | 4 | 11 | 42 | 164 | + .27 | | -8.97 | +.02 | 8.99 - | .02 | | 901 |
| | 11.7 | 4 | 11 | 44 | 165 | + .04 | | -8.91 | +.04 | 8.95 - | 00 | | 895 |
| 11.66 | 11.8 | -.5 | 11 | 47 | 166 | +1.40 | | -8.89 | -.02 | 8.87 - | 13 | 00 | 900 |
| | 11.~~30~~ 29 | | | | | | | | | 8.9 | | | 8.998 |
| | | | | | | | | | | | | | 9.015 |

1873 May 14 W a R

| Star | h | m | δ | tang. δ | | T-Ra | P'-P | T-Ra-(P'-P) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | s | |
| | 10 | 49 | 433 | +4.89 | 0 = | -8.96 | -.22 | -8.74 | |
| | 10 | 55 | 154 | +1.92 | | -8.85 | +.03 | 8.88 | |
| | 11 | 3 | 529 | -3.66 | | -9.23 | +.01 | 9.24 | |
| | 11 | 15 | 436 | +2.15 | | -6.53 | +.31 | 6.84 | E4 |
| | 11 | 23 | 162 | +2.75 | | -8.58 | +.13 | 8.71 | |
| | 11 | 34 | 334 | -4.31 | | -9.31 | +13 ~~+.07~~ | 9.44 | |
| | 11 | 58 | 440 | +4.55 | | -8 ~~12~~.41 | +.08 | 8.49 | |
| | 12 | 6 | 168 | +4.84 | | -12.59 | -.08 | 12.51 | |
| | 12 | 9 | 338 | -4.07 | | -8.95 | +.30 | 9.25 | |

10.9 +14 -8.99
11.1 +39 -9.01
11.3 +20 -8.92
11.5 +00 -9.00
11.7 +27 -8.99
11.7 +04 -8.95
11.4 +.17 -8.98

| | | | I | | | II |
|---|---|---|---|---|---|---|
| 10.8 | +4.89 | -8.74 | +.00 | -8.74 | +.00 | -8.74 |
| 10.9 | +1.92 | -8.88 | +.00 | -8.88 | +.00 | -8.88 |
| 11.2 | +2.15 | -6.84 | +.00 | -6.84 | +.00 | -6.84 |
| 11.4 | +2.75 | -8.71 | +.00 | -8.71 | +.00 | -8.71 |
| 12.0 | +4.55 | -8.49 | +.00 | -8.49 | +.00 | -8.49 |
| ~~12.1~~ | ~~+4.84~~ | ~~-12.51~~ | ~~+.00~~ | ~~-12.51~~ | +.00 | -12.51] |

| | | | I | | | II |
|---|---|---|---|---|---|---|
| 11.1 | -3.66 | -9.24 | +.00 | -9.24 | +.00 | -9.24 |
| 11.6 | -4.31 | -9.44 | +.00 | -9.44 | +.00 | -9.44 |
| 12.2 | -4.07 | -9.25 | +.00 | -9.25 | +.00 | -9.25 |

10.9 +1.54 -8.89
11.0 +1.01 -8.95
11.2 +1.20 -8.96
11.6 +1.13 -8.89
11.8 +1.40 -8.87
11.3 +1.26 -8.90
n = -.06

0 = +4.72 +0.24 n = -.05
+1.70 +.10 -.06
+1.98 +.14 -.07
+2.58 +.27 -.11
+4.38 +.49 -.11
-.080

0 = +3.63 +.017 n = -.05
+0.66 +.03 -.05
+0.89 +.07 -.08
+1.49 +.20 -.14
+3.29 +.42 -.13
-.090

0 = -3.83 -.26 n = -.07
-4.48 -.46 -.10
-4.24 -.27 -.06
-.077

0 = -4.92 -.23 n = -.07
-5.57 -.53 -.10
-5.33 -.34 -.06
-.077

1873 May 15 W a R h = -.020 -.011 + ~~3.03~~
-.820 + ~~4.48~~

n = -.09 c = .00 ₃h = -.~~56~~

| | Star | | h | m | δ | tang. δ | | T-Ra | P'-P | T-Ra-(P'-P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | s | | | | | 12.730 | |
| 10.75 | 10.6 | +5 | 10 | 38 | 431 | + .61 | 0 = | -12.71 | -.02 | -12.69 - | .05 | -.01 | -12.74 | 12.75 |
| | 10.9 | 2 | 10 | 54 | 153 | +1.54 | | -12.55 | +.03 | 12.58 - | .14 | .00 | .72 | .72 |
| | 11.0 | 1 | 10 | 58 | 434 | + .14 | | -12.69 | +.01 | 12.70 - | .01 | | .71 | .71 |
| | 11.0 | +1 | 11 | 2 | 155 | +1.01 | | -12.61 | +.08 | 12.69 - | .09 | | .78 | .78 |
| | 11.1 | 0 | 11 | 7 | 156 | + .39 | | -12.73 | +.04 | 12.77 - | .04 | | .81 | .81 |
| | 11.1 | 0 | 11 | 9 | 435 | +1.20 | | -12.74 +00 | ~~+.02~~ | 12.74 - | 11 | | .85 | .85 |
| | 11.2 | -1 | 11 | 11 | 159 | + .67 | | -12.75 | +.05 | 12.80 - | .06 | | .86 | .86 |
| | 11.3 | 2 | 11 | 17 | 161 | + .20 | | -12.73 | -.02 | 12.71 - | .02 | | .73 | .73 |
| 11.27 | 11.5 | -4 | 11 | 30 | 438 | - .00 | | -12.74 | +.03 | 12.77 - | 00 | 00 | .77 | .77 |
| | 11.08 | | | | | | | | | 12.80 | | | 12.~~80~~ 787 | |
| | | | | | | | | | | | | | 12.774 | 12.776 |

| Star | h | m | δ | tang. δ | | T-Ra | P'-P | T-Ra-(P'-P) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | | |
| | 10 | 49 | 433 | +4.89 | 0 = | -12.56 | -.22 | -12.34 | |
| | 10 | 55 | 154 | +1.92 | | -12.55 | +.03 | 12.58 | |
| | 11 | 3 | 529 | -3.66 | | -13.15 | +.01 | 13.16 | |
| | 11 | 15 | 436 | +2.15 | | -10.30 | +.31 | 10.61 | E4 |
| | 11 | 23 | 162 | +2.75 | | -12.40 | +.13 | 12.53 | |

10.9 +14 -12.70
11.1 +39 -12.77
11.3 +20 -12.71
11.5 +00 -12.77
11.2 +.18 -12.74

| | | | I | | | II |
|---|---|---|---|---|---|---|
| 10.8 | +4.89 | -12.34 | -.01 | -12.35 | +.00 | -12.34 |
| 10.9 | +1.92 | -12.58 | -.01 | -12.59 | +.00 | -12.58 |
| 11.2 | +2.15 | -10.61 | +.00 | -12.61 | +.00 | -10.61 |
| 11.4 | +2.75 | -12.53 | +.00 | -12.53 | +.01 | -12.52 |

| | | | I | | | II |
|---|---|---|---|---|---|---|
| 11.1 | -3.66 | -13.16 | +.00 | -13.16 | +.00 | -13.16 |

10.9 +1.54 -12.58
11.0 +1.01 -12.69
11.2 +1.20 -12.74
11.0 +1.25 -12.67

n = -.07

0 = +4.71 +0.39 n = -.08
+1.74 +.16 -.09
+1.97 +.13 -.07
+2.57 +.21 -.08
-.080

0 = -3.84 -.42 n = -.11

0 = +3.64 +0.33 n = -.09
+.67 +.09 -.14
+.90 +.06 -.07
+1.50 +.15 -.10
-.087

0 = -4.91 -.49 n = -.10

12
6

-2

9
4

-1

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

−.18

| Ra h | m | sin z | cos z | tang δ | | Req−Rfe ′ ″ | ρ′−ρ | Rfe+(ρ′−ρ) ″ | Req |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 46 | +.13 | .99 + | .70 | −2 | 25.3 | −0.7 | −26.0 +0.2 | −25.8 |
| 10 | 54 | +.25 | .97 + | 1.54 | | 30.3 | +1.1 | 29.2 +0.4 | 28.8 |
| 10 | 58 | +.56 | .82 + | .14 | | 30.0 | +1.0 | 29.0 +1.0 | 28.0 |
| 11 | 2 | +.05 | 1.00 + | 1.01 | | 29.0 | +1.0 | 28.0 +0.1 | 27.9 |
| 11 | 7 | +.36 | .93 + | .39 | | 28.2 | +0.6 | 27.6 +0.6 | 27.0 |
| 11 | 9 | +.14 | .99 + | 1.20 | | 27.5 | +0.8 | 26.7 +0.2 | 26.5 |
| 11 | 11 | +.15 | .99 + | .67 | | 27.3 | +0.0 | 27.3 +0.2 | 27.1 |
| 11 | 17 | +.52 | .85 + | .20 | | 29.4 | +0.3 | 29.1 +0.9 | 28.2 |
| 11 | 30 | +.68 | .73 − | .00 | | 28.9 | +0.5 | 28.4 +1.2 | 27.2 |
| 11 | 39 | −.11 | .99 + | 1.13 | | 27.4 | +0.8 | 26.6 −0.2 | 26.8 |
| 11 | 42 | +.46 | .88 + | .27 | | 28.9 | +0.0 | 28.9 +0.8 | 28.1 |
| 11 | 44 | +.64 | .76 + | .04 | | 29.5 | +0.4 | 29.1 +1.1 | 28.0 |
| 11 | 47 | +.21 | .98 + | 1.40 | | 28.7 | +0.5 | 28.2 +0.4 | 27.8 |
| | | | | | | | | | 27.62 27.48 |

| Ra h | m | sin z | cos z | tang δ | | Req−Rfe ′ ″ | ρ′−ρ | Rfe+(ρ′−ρ) ″ | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 49 | −.59 | .80 + | 4.89 | −2 | 27.1 | +0.7 | −26.4 | −1.0 | −27.4 |
| 10 | 55 | −.34 | .94 + | 1.92 | | 28.2 | +1.1 | 27.1 | −0.6 | 27.~~8~~7 |
| 11 | 3 | −.89 | .45 − | 3.66 | | 25.2 | +0.6 | 25.8 ~~24.6~~ | −2.2 | 28.0 ✓ |
| 11 | 15 | −.38 | .92 + | 2.15 | | 27.3 | +0.8 | 26.5 | −0.7 | 27.2 |
| 11 | 23 | −.46 | .88 + | 2.75 | | 28.1 | +0.8 | 27.3 | −0.8 | 28.1 |
| 11 | 34 | −.87 | .48 − | 4.31 | | 24.2 | +0.3 ~~+1.6~~ | 24.5 ~~23.9~~ | −2.1 | 26.5 ✓ |
| 11 | 58 | −.58 | .81 + | 4.55 | | 28.9 | +1.6 | 27.3 | −1.0 | 28.3 |
| 12 | 6 | −.59 | .80 + | 4.85 | | 26.6 | +0.4 | 26.2 | −1.0 | 27.2 |
| 12 | 9 | −.88 | .46 − | 4.07 | | 26.0 | +0.5 | 26.5 ~~25.5~~ | −2.1 | 28.6 ✓ |
| | | | | | | | | | | 27.63<br>27.65 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 12 744 | | | | | | | | | |
| 6 390 | +.68 −28.4″ | +.56 −29.0″ | +.25 −29.2″ | +.13 −26.0″ | −.11 −26.6″ | −.34 −27.1″ | −.59 −26.4″ | | −.89 −24.6″ |
| 1134 | +.64 −29.1 | +.52 −29.1 | +.36 −27.6 | +.05 −28.0 | | −.38 −26.5 | −.46 −27.3 | | −.87 −23.9 |
| | | +.46 −28.9 | +.21 −28.2 | +.14 −26.7 | | | −.58 −27.3 | | −.88 −25.5 |
| | | | | +.15 −27.3 | | | −.59 −26.2 | | |
| | +66 −28.7 | +51 −29.0 | +27 −28.3 | +12 −27.0 | −11 −26.6 | −36 −26.8 | −56 −26.8 | | −88 −24.7 |
| | +1.3 | +1.0 | +.5 | +.3 | −.2 | −.8 | −1.1 | | |
| | 27.4 | 28.0 | 27.8 | 26.7 | 26.8 | 27.6 | 27.9 | | |
| −2′ 27.50″ (19)<br>27.63 | ∗−.1 2 | ∗+.5 3 | ∗+.3 3 | ∗−.8 4 | ∗−.7 | ∗+.1 2 | ∗+.4 4 | | |

| Ra h | m | sin z | cos z | tang δ | | Req−Rfe ′ ″ | ρ′−ρ | Rfe+(ρ′−ρ) ″ | Req |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 38 | +.19 | .98 + | .61 | −1 | 9.9 | +1.0 | −8.9 +0.3 | −8.6 |
| 10 | 54 | −.25 | .97 + | 1.54 | − | 11.2 | +1.1 | 10.1 −0.4 | 10.5 |
| 10 | 58 | +.56 | .82 + | .14 | − | 11.6 | +1.0 | 10.6 +1.0 | 9.6 |
| 11 | 2 | −.05 | 1.00 + | 1.01 | | 9.9 | +1.0 | 8.9 −0.1 | 9.0 |
| 11 | 7 | +.36 | .93 + | .39 | | 10.0 | +0.6 | 9.4 +0.6 | 8.8 |
| 11 | 9 | −.14 | .99 + | 1.20 | | 8.8 | +0.8 | 8.0 −0.2 | 8.2 |
| 11 | 11 | +.15 | .99 + | .67 | | 9.4 | +0.0 | 9.4 +0.2 | 9.2 |
| 11 | 17 | +.51 | .86 + | .20 | | 9.6 | +0.3 | 9.3 +0.9 | 8.4 |
| 11 | 30 | +.68 | .73 − | .00 | | 10.2 | +0.5 | 9.7 +1.2 | 8.5 |
| | | | | | | | | | 8.98 8.98 |

| Ra h | m | sin z | cos z | tang δ | | Req−Rfe ′ ″ | ρ′−ρ | Rfe+(ρ′−ρ) | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 49 | −.59 | .80 + | 4.89 | −1 | 8.5 | +0.7 | −7.8 | −1.0 | −8.8 |
| 10 | 55 | −.34 | .94 + | 1.92 | | 10.2 | +1.1 | 9.1 | −0.6 | 9.~~6~~7 |
| 11 | 3 | −.89 | .45 − | 3.66 | | 6.0 | +0.6 | 6.6 ~~5.4~~ | −2.0 | 8.7 ✓ |
| 11 | 15 | −.38 | .92 + | 2.15 | | 8.8 | +0.8 | 8.0 | −0.7 | 8.7 |
| 11 | 23 | −.46 | .88 + | 2.75 | | 7.5 | +0.8 | 6.7 | −0.8 | 7.5 |
| | | | | | | | | | | 8.6$\overset{8}{5}$<br>8.68 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 9 882 | | | | | | | | | |
| 4 72 | +.68 −9.7 | +.56 −10.6 | +.36 −9.4 | +.19 −8.9 | −.05 −8.9 | −.25 −10.1 | −.59 −7.8 | | −.89 −5.4 |
| 954 | | +.51 −9.3 | | +.15 −9.4 | −.14 −8.0 | −.34 −9.1 | −.46 −6.7 | | |
| | | | | | | −.38 −8.0 | | | |
| | +68 −9.7 | +53 −9.9 | +36 −9.4 | +17 +9.1 | −09 −8.4 | −32 −9.8 | −.52 −7.2 | | −89 −5.4 |
| | +1.4 | +1.1 | +.8 | −.4 | −.2 | −.7 | −1.0 | | |
| −1 8.84″ (13)<br>8.73 | 8.3 1 | 8.8 2 | 8.6 1 | 8.7 2 | 8.6 2 | 9.8 3 | 8.2 2 | | |
| | ∗−.5 | .0 | ∗−.2 | ∗−.1 | ∗−.2 | ∗+1.0 | ∗−.6 | | |

1873 May 18 wave h = +.009 -.017 +.020 n = -.13 c = .00

| Star | | Ra | | δ | tang. δ | | τ Ra | P'-P | τ Ra (P'-P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h | m | | | | s | | s | | | | |
| 10.9 | +2 | 10 | 54 | 153 | +1.54 | 0 = | -14.08 | +.03 | -14.11 | - | .20 | oo | -14.31 |
| 11.0 | 1 | 10 | 58 | 434 | + .14 | | -14.16 | +.01 | 14.17 | - | .02 | | .19 |
| 11.0 | 1 | 11 | 2 | 155 | +1.01 | | -14.01 | +.09 | 14.10 | - | .13 | | .23 |
| 11.1 | +0 | 11 | 7 | 156 | + .39 | | -14.11 | +.04 | 14.15 | - | .05 | | .20 |
| 11.2 | -1 | 11 | 9 | 435 | +1.20 | | -14.09 | +.00 ~~+.02~~ | 14.09 | - | .15 | | .24 |
| 11.2 | 1 | 11 | 11 | 159 | + .67 | | -14.15 | +.05 | 14.20 | - | .09 | | .29 |
| 11.3 | -2 | 11 | 17 | 161 | + .20 | | -14.16 | -+.02 | 14.14 | - | .03 | oo | .17 |
| 11.10 | | | | | | | | | | | | | 14.233 |
| | | | | | | | | | | | | | 14.233 |

| | I | | | II | |
|---|---|---|---|---|---|
| 10.9 | +1.92 -13.99 | +.00 | -13.99 | +.00 | -13.99 |
| 11.2 | +2.15 -13.91 | +.00 | -13.91 | +.00 | -13.91 |
| 11.4 | +2.75 -13.82 | +.00 | -13.82 | +.00 | -13.82 |

10.9 +14 -14.17
11.1 +39 -14.15
11.3 +20 -14.14
11.1 +.24 -14.15

10.9 +1.54 -14.11
11.0 +1.01 -14.01
11.2 +1.20 -14.09
11.0 +1.25 -14.07

0 = +1.68 +.16 n = -.10
+1.91 +.24 -.13
+2.57 +.33 -.13
-.120

n = -.08

0 = +0.67 +.08 n = -.12
+0.90 +.16 -.18
+1.50 +.25 -.17
-.145

1873 May 18 wave

| Star | Ra | | δ | tang. δ | | τ Ra | P'-P | τ Ra (P'-P) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | s |
| | 10 | 55 | 154 | +1.92 | 0 = | -13.95 | +.04 | -13.99 |
| | 11 | 3 | 529 | -3.66 | | -14.67 | +.01 | 14.68 |
| | 11 | 15 | 436 | +2.15 | | -13.60 | +.31 | 13.91 |
| | 11 | 23 | 162 | +2.75 | | -13.69 | +.13 | 13.82 |

11.1 -3.66 -14.68 +.00 -14.68 + I; +.00 -14.68 II

0 = -3.90 -.53 n = -.14

0 = -4.91 -.61 n = -.12

1873 May 19 wave h = +.005 +.028 n = ~~m~~ -.13 c = .00 h = +.025

| | | | | | | | | s | | s | | | | | 14.0237 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 11.2 | +7 | 11 | 11 | 159 | +.67 | 0 = | -14.04 | +.05 | -14.09 | - | .09 | +.02 | - | 14.18 | 14.16 |
| | 11.3 | 6 | 11 | 17 | 161 | + .20 | | -13.97 | -+.02 | 13.95 | - | .03 | .01 | | 13.98 | 3.97 |
| | 11.5 | 4 | 11 | 30 | 438 | - .00 | | -14.05 | +.03 | 14.08 | - | .00 | .01 | | 14.08 | 4.07 |
| | 11.6 | 3 | 11 | 39 | 163 | +1.13 | | -13.88 | +.02 | 13.90 | - | .15 | .01 | | 14.05 | 4.04 |
| | 11.7 | 2 | 11 | 42 | 164 | + .27 | | -13.92 | +.02 | 13.94 | - | .04 | 00 | | 13.98 | 3.98 |
| 11.50 | 11.7 | 2 | 11 | 44 | 165 | + .04 | | -13.90 | +.04 | 13.94 | - | .01 | 00 | | 13.95 | 3.95 |
| | 11.8 | +1 | 11 | 47 | 166 | +1.40 | | -13.83 | -.02 | 13.81 | - | .18 | +.00 | | 13.99 | 3.99 |
| | 12.9 | -10 | 12 | 55 | 176 | + .21 | | -13.93 | +.04 | 13.97 | - | .03 | -.02 | | 14.00 | 4.02 |
| 12.57 | 13.0 | -11 | 13 | 3 | 449 | - .08 | | -14.06 | -+.01 | 14.05 | + | .01 | -.03 | - | 14.04 | 4.07 |
| 12.57 | 11.86 | | | | | | | | | | | 14.00 | | | 14.010 | |
| | | | | | | | | | | | | | | | 14.029 | 14028 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11 | 15 | 436 | +2.15 | 0 = -13.50 | +.31 | -13.81 |
| 11 | 23 | 162 | +2.75 | -13.50 | +.13 | 13.63 |
| 11 | 34 | 334 | -4.31 | -14.52 | +.13 | 13.65 |
| 12 | 6 | 768 | +4.84 | -13.38 | -.08 | 13.30 |
| 12 | 9 | 338 | -4.07 | -13.95 | +.30 | 14.25 |
| 13 | 12 | 19 | -41.76 | -21.26 | +.57 +.57 -.11 ~~+.55~~ | ~~21.83~~ -21.15 |

| | I | | | II | |
|---|---|---|---|---|---|
| 11.3 | +2.15 -13.81 | +.00 | -13.81 | +.00 | -13.81 |
| 11.4 | +2.75 -13.63 | +.00 | -13.63 | +.00 | -13.63 |
| 12.1 | +4.84 -13.30 | +.00 | -13.30 | +.00 | -13.30 |

| | I | | | II | |
|---|---|---|---|---|---|
| 11.6 | -4.31 -13.65 | +.00 | -13.65 | +.00 | -13.65 |
| 12.2 | -4.07 -14.25 | +.00 | -14.25 | +.00 | -14.25 |
| 13.2 | -41.76 ~~-21.83~~ -21.15 | +.01 | -21.82 | +.01 | -21.82 |

11.3 +20 -13.95
11.5 +00 -14.08
11.7 +27 -13.94
11.7 +04 -13.94
12.9 +21 -13.97
13.0 -.08 -14.05
12.8 +.11 -13.99

11.6 +1.13 -13.90
11.8 +1.40 -13.81
11.7 +1.27 -13.85

n = -.12

0 = +2.04 +.18 n = -.09
+2.64 +.36 -.14
+4.73 +.69 -.15
-.127

0 = +.88 +.04 n = -.08
+1.48 +.22 -.15
+3.57 +.55 -.13
-.117

0 = -4.42 -.066 n = -.15
-4.18 -.26 -.06
-41.47 -7.83 ~~-.09~~ .14 .17
+.68 -.133
.127

0 = -5.58 -.80 n = -.14
-5.34 -.40 -.07
-42.03 -7.97 ~~-.07~~ .14 .17
+.68 -.133
.127

z = +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.~~1~~0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-1.00

RA sin η cos η tang δ  Req-Rfe  ρ'-ρ  Req-Rfe + (ρ'-ρ)  Req.  RA sin η cos η tang δ  Req-Rfe  ρ'-ρ  Req-Rfe + (ρ'-ρ)  Req.

h m

10 54 -.25 .97 + 1.54  -1 9.8 +1.1 -8.7 -0.4 -9.1 | 10 53 -.34 .94 + 1.92  -1 8.8 +1.0 -7.8 -0.6 -8.4
10 58 +.56 .82 + .14  11.6 +1.0 10.6 +1.0 9.6 | 11 3 -.89 .45 - 3.66  7.6 +0.6 82 ~~7.0~~ -2.1 10.3 δ
11 2 -.05 1.00 + 1.01  9.5 +1.0 8.5 -0.1 8.6 | 11 15 -.38 .92 + 2.15  9.5 +0.8 8.7 -0.7 9.4
11 7 +.36 .93 + .39  10.2 +0.6 9.6 +0.6 9.0 | 11 23 -.46 .88 + 2.75  8.3 +0.8 7.5 -0.8 8.3
11 9 -.14 .99 + 1.20  9.8 +0.8 9.0 -0.2 9.2
11 11 +.15 .99 + .67  8.7 +0.0 8.7 +0.2 8.5
11 17 +.52 .85 + .20  11.1 +0.3 10.8 +0.9 9.9
9.13 9.13  9.10 ~~8.70~~ 9.03

7 91
3 09
100
+.56 -10.6  +.36 -9.6  +.15 -8.7  -.05 -8.5  -.25 -8.7  -.46 -7.5 -  -.89 -7.0
+.52 -10.8  -.14 -9.0  -.34 -7.8
-.38 -8.7

+.54 -10.7  +.36 -9.6  +.15 -8.7  -.09 -8.7  -.32 -8.4  -.46 -7.5  -.89 -7.0
+1.1  +.7  +.3  -.2  -.6  -.9
8.97  9.~~8~~6 2  8.9 1  8.4 1  8.9 2  9.0 3  8.4
-1 ~~9.01~~ 9.10  (10) +.6  -.1  -.6  -.1  0  -.6

h m
11 11 +.15 .99 + .67  -1 6.9 +0.0 -6.9 +0.2 -6.7 | 11 15 -.38 .92 + 2.15  -1 9.3 +0.8 -8.5 -0.7 -9.2
11 17 +.52 .85 + .20  9.8 +0.3 9.5 +0.9 8.6 | 11 23 -.46 .88 + 2.75  8.9 +0.8 8.1 -0.8 8.9
11 30 +.68 .73 - 0.0  11.2 +0.5 10.7 +1.2 9.5 | 11 34 -.87 .48 - 4.31  5.3 +0.3 5.6 ~~5.0~~ -2.0 7.6 δ
11 39 -.11 .99 + 1.13  8.9 +0.8 8.1 -0.2 8.3 | 12 6 -.59 .80 + 4.84  8.8 +0.4 8.4 -1.0 9.4
11 42 +.46 .88 + .27  9.5 +0.0 9.5 +0.8 8.7 | 12 9 -.56 .82 - 4.07  5.8 +0.5 6.3 ~~5.3~~ -1.0 ~~7.3~~
11 44 +.64 .76 + .04  11.4 +0.4 11.0 +1.1 9.9 | 12 12 -.72 .69 - 41.76  7.4 -0.3 7.1 ~~7.7~~ -1.4 9.1
11 47 -.21 .98 + 1.40  9.6 +0.5 9.1 -0.4 9.5
12 55 +.51 .86 + .21  9.8 -0.1 9.9 +0.9 9.0
13 3 +.73 .68 - .08  10.9 +0.9 10.0 +1.3 8.7
9.03 8.77  8.58 8.58

+.68 -10.7  +.52 -9.5  +.15 -6.9  -.11 -8.1  -.21 -9.1  -.46 -8.1  -.72 -7.7  -.87 -5.0
8 824 +.64 -11.0  +.46 -9.5  -.38 -8.5  -.59 -8.4
5 290 +.73 -10.0  +.51 -9.9  -.66 -5.3 E1
1114

+.68 -10.6  +.50 -9.6  +.15 -6.9  -.11 -8.1  -.29 -8.8  -.54 -7.3  -.72 -7.7  -.87 -5.0
117  +1.4  +1.0  +.3  -.2  -.6  +1.2x  -1.4
-1 ~~8.69~~ 8.86  (14)  9.2 3  8.6 3  6.6 1  8.3 1  9.4 2  8.4 3  9.1
+.5  -.1  -2.1  -.4  +.7  -.3  +.4

1873 May 20 ware  h = +.004 −.045  n = −.10  c = .00  h = −.092

| Star | | Ra h | m | δ | tang. δ | | τRa | P'−P | τRa (P'−P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h | m | | | | s | | s | | | | 14.113 | |
| 11,3 | +4 | 11 | 17 | 161 | +0.20 | 0 = | −14.10 | −.02 | −14.08 | − | .02 | −02 | −14.10 | 14.12 |
| 11.5 | +2 | 11 | 30 | 438 | − .00 | | −14.05 | +.03 | 14.08 | − | .00 | −.01 | .08 | .09 |
| 11.47 — 11.6 | +1 | 11 | 39 | 163 | +1.13 | | −14.03 | +.02 | 14.05 | − | .11 | 00 | .16 | .16 |
| 11.7 | +0 | 11 | 42 | 164 | + .27 | | −14.08 | +.02 | 14.10 | − | .03 | | .13 | .13 |
| 11.7 | +0 | 11 | 44 | 165 | + .04 | | −14.09 | +.04 | 14.13 | − | .04 | | .17 | .17 |
| 11.8 | −1 | 11 | 47 | 166 | +1.40 | | −14.04 | −.02 | 14.02 | − | .14 | 00 | .16 | .16 |
| 11.94 12.2 | −5 | 12 | 13 | 170 | + .00 | | −14.09 | +.04 | 14.13 | − | .00 | +02 | .13 | .11 |
| 11.85 12.3 | | 12 | 19 | 442 | + 83 | | −14.12 | +.05 | 14.17 | − | .08 | | .25 | 23 |
| 11.69 | | | | | | | | | | | | | 14.128 | |
| | | | | | | | | | | | | | 14.133 | 14.134 |

1873 May 20 ware.

| Star | Ra h | m | δ | tang. δ | | τRa | (P'−P) | τRa (P'−P) |
|---|---|---|---|---|---|---|---|---|
| | h | m | | | | s | | s |
| | 11 | 15 | 436 | +2.15 | 0 = | −13.75 | +.31 | −14.06 |
| | 11 | 23 | 162 | +2.75 | | −13.72 | +13 | 13.85 |
| | 11 | 34 | 334 | −4.31 | | −14.37 | ~~+.04~~ +13 | 14.50 |
| | 11 | 58 | 440 | +4.55 | | −13.43 | +.08 | 13.51 |
| | 12 | 6 | 168 | +4.84 | | −13.57 | −.08 | 13.49 |

| | | |
|---|---|---|
| 11.3 | +.20 | −14.08 |
| 11.5 | +00 | −14.08 |
| 11.7 | +27 | −14.10 |
| 11.7 | +04 | −14.13 |
| 12.2 | +00 | −14.13 |
| 11.7 | +.10 | −14.10 |

I×II

11.3 +2.15 −14.06 +.00 −14.06
11.4 +2.75 13.85 +.00 −13.85
12.0 +4.55 13.51 +.00 −13.51
12.1 +4.84 13.49 +.00 −13.49

I×II

11.6 −4.31 −14.50 +.00 −14.50

0 = +2.05 +.04 n = −.02
+2.65 +.25  −.09
+4.45 +.59  −.13
+4.74 +.61  −.13
−.092

0 = +89 −02 n = +02
+49 +.19  −.13
+3.29 +.53  −.16
+3.58 +.55  −.15
−.105

0 = −4.41 −.40 n = −.09  0 = −5.57 −.46 n = −.08

| | | |
|---|---|---|
| 11.6 | +1.13 | −14.05 |
| 11.8 | +1.40 | −14.02 |
| 11.7 | +1.26 | −14.04 |

n = −.05 √

1873 May 25 ware  h = +.008 −.052  n = −.31  c = .00

| Star | | Ra h | m | δ | tang. δ | | τRa | P'−P | τRa (P'−P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | s | | | | | | | |
| 11.5 | +2 | 11 | 30 | 438 | − .00 | 0 = | −23.26 | +.03 | −23.29 | − | .00 | −.01 | −23.29 | 23.30 |
| 11.7 | 0 | 11 | 42 | 164 | + .27 | | −23.21 | +.02 | 23.23 | − | .08 | 00 | .31 | .31 |
| 11.7 | 0 | 11 | 44 | 165 | + .04 | | −23.24 | +.04 | 23.28 | − | .01 | 00 | .29 | .29 |
| 11.8 | −1 | 11 | 47 | 166 | +1.40 | | −22.95 | −.02 | 22.93 | − | .43 | +.01 | 36 | .35 |
| 11.68 | | | | | | | | | | | | | 23312 | |
| | | | | | | | | | | | | | 23.312 | 23.312 |

| Ra h | m | δ | tang. δ | | τRa | P'−P | τRa (P'−P) |
|---|---|---|---|---|---|---|---|
| | | | | | s | +13 | |
| 11 | 34 | 334 | −4.31 | 0 = | −24.40 | +.04 | −24.53 |
| 11 | 58 | 440 | +4.55 | | −21.83 | +.08 | 21.91 |
| 12 | 6 | 168 | +4.84 | | −21.85 | −.08 | 21.77 |

| | | |
|---|---|---|
| 11.5 | +.00 | −23.29 |
| 11.7 | +27 | −23.23 |
| 11.7 | +.04 | −23.28 |
| 11.6 | +.10 | −23.27 |
| 11.8 | +1.40 | −22.93 |

n = −.26

12.0 +4.55 −21.91 +.00 −21.91  +.00 −21.91
12.1 +4.84 −21.77 +.00 −21.77  +.00 −21.77

I  II

11.6 −4.31 −24.53 +.00 −24.53  +.00 −24.53

0 = +4.45 +1.36 n = −.31
+4.74 +1.50  −.32
−.315

0 = −4.41 −1.26 n = −.29

0 = +3.15 +1.02 n = −.32
+3.44 +1.16  −.34
−.330

0 = −5.71 −1.60 n = −.28

√

1873 May 27 ware  h = +.009 −.002  n = −.35  c = .00

| Star | | Ra h | m | δ | tang. δ | | τRa | P'−P | τRa (P'−P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | s | | | | | | |
| 11.8 | +5 | 11 | 47 | 166 | +1.40 | 0 = | −22.57 | −.02 | −22.55 | − | .49 | 00 | −23.04 |
| 12.2 | +1 | 12 | 9 | 441 | + .88 | | −22.57 | −.01 | 22.56 | − | 31 | | 22.87 |
| 12.2 | +1 | 12 | 13 | 170 | + .00 | | −22.73 | +.04 | 22.77 | − | 00 | | .77 |
| 13.0 | −7 | 13 | 3 | 449 | − .08 | | −22.~~77~~ .80 | −.01 | 22.79 | + | .03 | 00 | .76 |
| 12.30 | | | | | | | | | | | | | 22.~~35~~ 860 |
| | | | | | | | | | | | | | 22.860 |

1873 May 27 ware

| Ra h | m | δ | tang. δ | | τRa | P'−P | τRa (P'−P) |
|---|---|---|---|---|---|---|---|
| | | | | | s | | |
| 12 | 6 | 168 | +4.84 | 0 = | −21.32 | −.08 | −21.24 |
| 13 | 12 | 19 | −41.76 | | −37.95 | ~~+.57~~ ~~+.55~~ −.11 | ~~38.52~~ 37.84 |

| | | |
|---|---|---|
| 12.2 | +00 | −22.77 |
| 13.0 | +.08 | −22.79 |
| 12.6 | −.04 | −22.78 |

I  II

12.1 +4.84 −21.24 +.00 −21.24  +.01 −21.23

I  II

13.2 −41.76 ~~−38.52~~ −37.84 +.00 −38.52  −.01 −38.53

0 = +4.88 +1.54 n = −.32

0 = −41.80 .72 −15.74 +68 n = −.386

| | | |
|---|---|---|
| 11.8 | +1.40 | −22.55 |
| 12.1 | +.88 | −22.56 |
| 11.9 | +1.14 | −22.55 |

0 = 3.70 +1.32 n = −.36

0 = −42.90 −15.98 +68 n = −.375

n = −.20

z = +.60+.80 +.40+.60 +.20+.40 +.0+.20 +.0−.20 −.20−.40 −.40−.60 −.60−.80 −.80−1.00

RA sin z cos z tang. δ D_eq−R_ec ρ'−ρ Req Rec Rec +½(ρ'−ρ) Req. RA sin z cos z tang. δ R_eq−R_ec ρ'−ρ Req Rec Rec +½(ρ'−ρ) Req.

h m ′ ″ ″ h m ′ ″ ″

11 17 +.52 .85 + 0.20 −1 9.6 . +0.3 − 9.3 +0.9 −8.4 11 15 −.38 .92 + 2.15 −1 8.3 . +0.8 −7.5 −0.7 −8.2
11 30 +.68 .73 − .00 9.8 . +0.5 9.3 +1.2 8.1 11 23 −.46 .88 + 2.75 7.1 . +0.8 6.3 −0.8 7.1
11 39 −.11 .99 + 1.13 9.6 . +0.8 8.8 −0.2 9.0 11 34 −.87 .48 − 4.31 7.6 +0.3 ~~+0.7~~ 7.9 ~~7.3~~ −2.0 9.9 δ
11 42 +.46 .88 + .27 8.9 . +0.0 8.9 +0.8 8.1 11 58 −.58 .81 + 4.55 10.1 . +1.6 8.5 −1.0 9.5
11 44 +.64 .76 + .04 10.9 . +0.4 10.5 +1.1 9.4 12 6 −.59 .80 + 4.84 8.5 . +0.4 8.1 −1.0 9.1
11 47 −.21 .98 + 1.40 −− . +0.5
12 13 +.67 .74 + .00 9.4 . −0.2 9.6 +1.2 8.4
12 19 +.05 1.00 + .83 10.3 . +0.5 9.8 +0.1 9.7
8.73 8.72 8.48
8.48

7 511
4 192 +.68 −9.″3 +.52 −9.″3 +.05 −9.″8 −.11 −8.″8 ~~−.21~~ ″ −.46 −6.″3 −.87 −7.″3
703 +.64 −10.5 +.46 −8.9 −.38 −7.5 −.58 −8.5
+.67 −9.6 −.59 −8.1

+.66 −9.8 +.49 −9.1 +.05 −9.8 −.11 −8.8 −.38 −7.5 −.54 −7.6 −.87 −7.3
+1.3 +1.0 +.1 −.2 −.8 −1.1
′ ″ 8.5 3 8.1 2 9.7 1 9.0 1 8.3 1 8.7 3
−1 8.62 (11) ∗−.1 ∗−.5 ∗+1.1 ∗+.4 ∗−.3 ∗+.1
8.64

′ ″ +0.3
11 30 +.68 .73 − .00 −1 9.″5 . +0.5 −9.0 +1.2 7.8 11 34 −.87 .48 − 4.31 −1 5.3 . +0.7 ~~5.0~~ −2.0 7.6 δ
11 42 +.46 .88 + .27 9.0 . +0.0 9.0 +0.8 8.2 11 58 −.58 .81 + 4.55 9.6 . +1.6 5.6 8.0 −1.0 −9.0
11 44 +.64 .76 + .04 10.3 . +0.4 9.9 +1.1 8.8 12 6 −.59 .80 + 4.84 8.6 . +0.4 8.2 −1.0 9.2
11 47 −.21 .98 + 1.40 +0.5 8.6 . +0.5 8.1 −0.4 8.5
8.32 8.32 9.10
9.10

+.68 −9.0 +.46 −9.0 −.21 −8.1 −.58 −8.0 −.87 −5.0
4 128 +.64 −9.9 −.69 −8.2
2 220
348 +.66 −9.4 +.46 −9.0 −.21 −8.1 −.58 −8.1 −.87 −5.0
+1.3 +.9 −.4 −1.1
′ ″ 8.1 2 8.1 1 8.5 9.2
−1 8.53 (6) ∗−.4 ∗−.4 0 ∗+.7 2
8.58

′ ″ ′ ″
11 47 −.21 .98 + 1.40 −1 9.7 +0.5 −9.2 −0.4 −9.6 12 6 −.59 .80 + 4.84 −1 7.7 . +0.4 −7.3 −1.0 ~~−8.3~~
12 9 +.02 1.00 + .88 8.3 . +0.7 7.6 +0.0 7.6 13 12 −.72 .69 − 11.76 5.0 . ~~−0.3~~ +1 ~~5.3~~ 5.1 ~~4.9~~ −1.3 ~~8.~~ −6.9
12 13 +.67 .74 + .00 8.5 . −0.2 8.7 +1.2 7.5
13 3 +.73 .68 − .08 11.5 . +0.9 10.6 +1.3 9.3 7.35
8.50 8.50 8.30

+.67 −8.7 +.02 −7.6 −.21 −9.2 −.59 −7.3 −.72 −5.3
4 200 +.73 −10.6
1 30
230 +.70 −9.6 +.02 −7.6 −.21 −9.2 −.59 −7.3 −.72 −5.3
+1.4 +.0 −.4 −1.2 −1.4
′ ″ 8.2 7.6 9.6 8.5 6.7
−1 8.13 (6) ∗+.1 ∗−.5 ∗+1.5 ∗+.4 ∗−1.4
8.46

1873 May 28 w a r e   h = +.009 ~~−.003~~   n = −.27 e = −.08 h = +.~~107~~

| Star | | Ra h m | δ | tang. δ | sec δ | π Ra | P′–P | π Ra –(P′–P) | | hr | | Star |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | s | | | | 22.710 |
| 12.2 | +4 | 12 9 | 441 | + .88 | +1.33 | −22.38 | −.01 | −22.37 | − .24 | 00 | −.11 | 22.72 |
| 12.3 | +3 | 12 19 | 442 | + .88 | +1.30 | −22.39 | +.05 | 22.44 | − .22 | | −.10 | .76 |
| 12.38 12.4 | +2 | 12 23 | 443 | + .40 | +1.08 | −22.53 | −.08 | 22.45 | − .11 | | −.09 | .65 |
| 12.6 | | 12 35 | 172 | − .01 | +1.00 | −22.35 | −22.35 +.01 | 22.36 | .00 | | −.08 | .69 |
| 12.9 | −3 | 12 55 | 176 | + .21 | +1.02 | −22.42 | +.04 | 22.46 | − .06 | | −.08 | .60 |
| 13.00 13.1 | −5 | 13 3 | 449 | − .08 | +1.00 | −22.61 | +.00 ~~+.01~~ | 22.61 | + .02 | 00 | −.08 | .467 |
| 12.58 | | | | | | | | | | | | 22.635 |
| | | | | | | | | | | | | 22.680 |

1873 May 28 w a r e

| Star | Ra h m | δ | tang. δ | | π Ra | P′–P | π Ra –(P′–P) |
|---|---|---|---|---|---|---|---|
| | | | | | s | | s |
| | 12 6 | 168 | + 4.84 | 0 = − | 21.08 | −.08 | −21.00 |
| | 12 9 | 338 | − 4.07 | − | 23.87 | +.30 ~~+.28~~ | 24.17 |
| | 12 28 | 171 | + 2.82 | − | 21.73 | +.04 | 21.77 |
| | 12 37 | 340 | − 3.56 | − | 23.79 | +.18 | 23.97 |

| | | | I | | | II |
|---|---|---|---|---|---|---|
| 12.1 | +4.84 | −21.00 | +.01 | −20.99 | +.00 | −21.00 |
| 12.5 | +2.82 | −21.77 | +.00 | −21.77 | +.00 | −21.77 |
| 12.2 | −4.07 | −24.17 | +.00 | −24.17 | +.00 | −24.17 |
| 12.6 | −3.56 | −23.97 | +.00 | −23.97 | +.00 | −23.97 |

126 −.01 −22.56
129 +.21 −22.46
130 −.08 −22.61
12.8 +.04 −22.54 −1

121 +.88 −22.37
123 +.83 −22.44
12.2 +.86 −22.40

n = −.17 −.01

0 = +4.80 +1.55 n = −.32
+2.78 +.77   −.28
−.300

0 = +3.98 +1.40 n = −.35
+1.96 + .63   −.32
−.335

0 = ±4.11 ±1.63 n = −.40
±3.60 ±1.43   −.40
−.40

0 = −4.93 −1.77 n = −.36
−4.42 −1.57   −.36
−.360

1873 May 29 w a r e   h = +.010   n = −.27 e = −.08 h = +.~~012~~

| Star | | Ra h m | δ | tang. δ | sec δ | π Ra | P′–P | π Ra –(P′–P) | | hr | | | Star | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | | | | | | 22.438 | |
| 11.7 | +7 | 11 42 | 164 | + .27 | +1.03 | −22.16 | +.02 | −22.18 | − .07 | +.01 | | .04 | 22.33 | 22.32 |
| 11.7 | 7 | 11 44 | 165 | + .04 | +1.00 | −22.35 | +.04 | 22.39 | − .01 | +.01 | −.08 | | 48 | 47 |
| 11.8 | 6 | 11 47 | 166 | + 1.40 | +1.72 | −21.94 | −.02 | 21.92 | − .38 | +.01 | −.11 | | 44 | .43 |
| 11.85 12.2 | 2 | 12 9 | 441 | + .88 | +1.33 | −22.16 | −.01 | 22.15 | − .24 | .00 | −.11 | | .50 | .50 |
| ~~12.00~~ 12.3 | 1 | 12 19 | 442 | + .83 | +1.29 | −22.20 | +.05 | 22.25 | − .22 | 00 | −.10 | | 57 | .57 |
| 12.4 | +0 | 12 23 | 443 | + .40 | +1.08 | −22.34 | −.08 | 22.26 | − .11 | 00 | −.09 | | .46 | .46 |
| 12.6 | −2 | 12 35 | 172 | − .01 | +1.00 | −22.31 | −22.11 +.01 | 22.32 | .00 | +00 | −.08 | | 40 | .40 |
| 12.9 | 5 | 12 53 | 176 | + .21 | +1.02 | −22.17 | +.04 | −22.21 | − .06 | −.01 | −.08 | | 35 | .36 |
| 13.0 | 6 | 13 3 | 449 | − .08 | +1.00 | −22.37 | +.00 ~~+.01~~ | 22.37 | + .02 | −.01 | −.08 | | .43 | 44 |
| | | ~~13 18~~ | | − ~~.19~~ | | − ~~22.34~~ | | | | | | | | |
| 12.56 '62 13.4 | −10 | 13 24 | 453 | + 1.78 | +2.04 | −21.76 | −.04 | 21.72 | − .48 | −.01 | −.16 | | .36 | .37 |
| 12.48 | | | | | | | | | | | | | 22.~~490~~ 429 | |
| | | | | | | | | | | | | | 22.432 | 22.432 |

| Ra h m | δ | tang. δ | | π Ra | P′–P | π Ra –(P′–P) |
|---|---|---|---|---|---|---|
| | | | | s | | |
| 12 6 | 168 | + 4.84 | 0 = − | 20.85 | −.08 | −20.77 |
| 12 28 | 171 | + 2.82 | − | 21.45 | +.04 | 21.49 |
| 12 37 | 340 | − 3.56 | − | 23.56 | +.18 | 23.74 |
| 13 1 | 345 | − 5.14 | − | 24.20 | +.00 | 24.20 |
| 13 12 | 19 | − 41.76 | − | 37.61 | ~~+.55~~ +.57 −.11 | ~~38.18~~ −37.50 |

| | | | | I & II |
|---|---|---|---|---|
| 12.1 | +4.84 | −20.77 | +.00 | −20.77 |
| 12.5 | +2.82 | 21.49 | +.00 | −21.49 |
| 12.6 | −3.56 | −23.74 | +.00 | −23.74 |
| 13.0 | −5.14 | −24.20 | −.01 | −24.20 |
| 13.2 | −41.76 | ~~−38.18~~ −37.50 | −.01 | −38.19 |

11.7 +.27 −22.18
11.7 +.04 −22.39
126 −.07 −22.32
129 +.21 −22.21
130 −.08 −22.37
~~12.4~~ +.09 −22.29
12.5 +.04 22.32

11.8 +1.40 −21.92
121 +.88 −22.15
123 +.83 −22.25
13.4 +1.78 −21.72
12.4 +1.22 −22.01

n = −.25

0 = +4.75 +1.52 n = −.32
+2.73 +.80   −.29
−.305

0 = −3.65 −1.45 n = −.40
−5.23 −1.98   −.36
−41.85 −15.98 +.68   −.386
−.380 .373

0 = +3.65
+0.23
+41.85

0 = +3.62 +1.24 n = −.34
+1.60 + .52   −.32
−.330

0 = −4.98 −1.73 n = −.36
−6.36 −2.20   −.395
−42.98 −16.18 +.68   −.386
−.~~363~~ .357

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−1.00 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin z | cos z | tang. δ | R_eq−R_fe ′ ″ | ρ′−ρ | R_eq−R_fe+(ρ′−ρ) | g.e. | R eq. | RA h m | sin z | cos z | tang. δ | R_eq−R_fe ′ ″ | ρ′−ρ | R_eq−R_fe+(ρ′−ρ) | g.e. | R_eq. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 9 | +.02 | 1.00+ | .88 | −1 10.1 | +0.7 | −9.4 | +0.0 | −9.4 | 12 6 | −.59 | .80+ | 4.84 | −1 5.9 | +0.4 | −5.5 | −1.0 | −6.5 |
| 12 19 | +.05 | 1.00+ | .83 | 8.6 | +0.5 | 8.1 | +.01 | 8.0 | 12 9 | −.88 | .47− | 4.07 | 4.7 | +0.5 | ~~4.2~~ 5.2 | −1.7 | 6.9 √ |
| 12 23 | +.36 | .93+ | .40 | 7.9 | +0.0 ~~+0.1~~ | 7.9 | +0.6 | 7.3 | 12 28 | −.47 | .88+ | 2.82 | — | +0.8 | | | |
| 12 35 | +.68 | .73− | .01 | 10.6 | +0.7 | 9.9 | +1.2 | 8.7 | 12 37 | −.89 | .45− | 3.56 | — — | +1.2 | | | |
| 12 55 | +.51 | .86+ | .21 | 7.2 | −0.1 | 7.3 | +0.9 | 6.4 | | | | | | | | | |
| 13 3 | +.73 | .68− | .08 | 8.0 | +0.9 | 7.1 | +1.3 | 5.8 | | | | | | | | | |
| | | | | | | | | 7.38 /60 | | | | | | | | | 6.50<br>6.50 |

+.68 −9.″9 +.51 −7.″3 +.36 −7.″9 +.02 −9.″4 −.59 −5.″5 −.88 −4.2

5 190 +.73 −7.1 +.05 −8.1

1 150

840 +.70 −8.5 +.51 −7.3 +.36 −7.9 +.03 −8.7 −.59 −5.5 −.88 −4.2

37 +1.4 +1.0 +.7 +.1 −1.2

′ ″ 7.1 6.3 7.2 8.6 6.7

−1 ~~7.40~~ (7) −.3 −1.1 −.2 +1.2 −.7

7.57

23

| RA h m | sin z | cos z | tang. δ | R_eq−R_fe ′ ″ | ρ′−ρ | R_eq−R_fe+(ρ′−ρ) | g.e. | R eq. | RA h m | sin z | cos z | tang. δ | R_eq−R_fe ′ ″ | ρ′−ρ | R_eq−R_fe+(ρ′−ρ) | g.e. | R_eq. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 42 | +.46 | .88+ | .27 | −1 7.4 | +0.0 | −7.4 | +0.8 | −6.6 | 12 6 | −.59 | .80+ | 4.84 | −1 7.1 | +0.4 | −6.7 | −1.0 | −7.7 |
| 11 44 | +.64 | .76+ | .04 | 7.6 | +0.4 | 7.2 | +1.1 | 6.1 | 12 28 | −.47 | .88+ | 2.82 | — — | +0.8 | | ~~−7.7~~ | |
| 11 47 | −.21 | .98+ | 1.40 | 6.4 ~~4.8~~ | +0.5 | 5.9 | −0.4 | 6.3 | 12 37 | −.89 | .45− | 3.56 | 6.1 | +1.2 | 7.3 ~~4.9~~ | −1.7 | 9.0 √ |
| 12 9 | +.02 | 1.00+ | .88 | 6.8 | +0.7 | 6.1 | +0.0 | 6.1 | 13 1 | −.85 | .52− | 5.14 | 4.3 | +0.6 | 4.9 ~~3.7~~ | −1.6 | 6.5 √ |
| 12 19 | +.05 | 1.00+ | .83 | 8.9 | +0.5 | 8.4 | +0.1 | 8.3 | 13 12 | −.72 | .69− | 41.76 | 5.3 | ~~−0.3~~ +1 | 5.4 ~~5.6~~ | −1.2 | ~~6.4~~ 6.4 |
| 12 23 | +.36 | .93+ | .40 | 7.6 | +0.0 ~~+0.1~~ | 7.6 | +0.6 | 7.0 | | | | | | | | | |
| 12 35 | +.68 | .73− | .01 | 10.7 | +0.7 | 10.0 | +1.2 | 8.8 | | | | | | | | | |
| 12 55 | +.51 | .86+ | .21 | 7.8 | −0.1 | 7.9 | +0.8 | 7.1 | | | | | | | | | |
| 13 3 | +.73 | .68− | .08 | 8.1 | +0.9 | 7.2 | +1.3 | 5.9 | | | | | | | | | |
| ~~13 18~~ | ~~+.80~~ | ~~.59−~~ | ~~.19~~ | ~~7.3~~ | | | | | | | | | | | | | |
| 13 24 | −.31 | .95+ | 1.78 | 7.9 | +1.5 | 6.4 | −0.5 | 6.9 | | | | | | | | | |
| | | | | | | | | 6.70 6.91 | | | | | | | | | 7.05<br>7.05 |

9 630

2 210 +.64 −7.2 +.46 −7.4 +.36 −7.6 +.02 −6.1 −.21 −5.9 −.59 −6.7 −.89 −4.9

840 +.68 −10.0 +.51 −7.9 +.05 −8.4 −.31 −6.4 −.85 −3.7

+.73 −7.2 −.72 −5.6

+.68 −8.1 +.48 −7.6 +.36 −7.6 +.03 −7.2 −.26 −6.1 −.59 −6.7 −.82 −4.7

+1.3 +.9 +.7 +.1 −.5 −1.2

6.8 6.7 6.9 7.1 6.6 7.9

−1 6.91 (11) −.1 −.2 .0 +.2 −.3 +1.0

6.76

1873 May 31 Wark h = +012 ∸ 009 n = −.~~18~~ −.09 c = .~~00~~ −.10 h = +000

| | Star | | Ra | δ | | tang. δ | sec δ | π Ra | ρ'−ρ | π Ra −(ρ'−ρ) | | | | Star |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | h m | | | | | s | | s | | | | 21.840 |
| | 12.2 | +11 | 12 13 | 170 | + | 0.00 | +1.00 | −21.68 | +.04 | −21.72 | − | .00 | −.10 | −21.82 |
| | 12.4 | 9 | 12 23 | 443 | + | .40 | +1.08 | −21.82 | −.08 | 21.74 | − | .04 | .11 | .89 |
| | 12.9 | 4 | 12 55 | 176 | + | .21 | 1.02 | −21.71 | +.04 | 21.75 | − | .02 | .10 | .87 |
| 12.65 | 13.1 | +2 | 13 3 | 449 | − | .08 | 1.00 | −21.70 | −.01 | 21.69 | + | .01 | .10 | .78 |
| | 13.4 | −1 | 13 24 | 453 | + | 1.78 | 2.04 | −21.34 | −.04 | 21.30 | − | .16 | .20 | .66 |
| | 13.5 | 2 | 13 28 | 179 | + | .00 | 1.00 | −21.78 | +.01 | 21.79 | − | .00 | .10 | .89 |
| | 13.8 | 5 | 13 49 | 182 | + | .35 | 1.06 | −21.79 | +.03 | 21.82 | − | .03 | .11 | .96 |
| | 13.9 | 6 | 13 55 | 183 | + | .04 | 1.00 | −21.82 | +.02 | 21.84 | − | .00 | .10 | .94 |
| 13.74 | 14.1 | −8 | 14 5 | 458 | + | .48 | 1.11 | −21.65 | −.05 | 21.60 | − | .04 | −.11 | .75 |
| | 13.26 | | ~~14 44~~ | | − | .28 54 | | −21.75 | | | | | | 21.840 |
| | | | | | | | | | | | | | | 21.84x0 |

1873 May 31 Wark

| Star | Ra | δ | tang. δ | π Ra | ρ'−ρ | π Ra −(ρ'−ρ) |
|---|---|---|---|---|---|---|
| | h m | | | s | | s |
| | 12 28 | 171 | + 2.82 | 0 = −21.24 | +.04 | −21.28 |
| | 12 37 | 340 | − 3.56 | −22.39 | +.18 | 22.57 |
| | 13 1 | 345 | − 5.14 | −22.85 | +.00 | 22.85 |
| | 13 12 | −19 | −41.76 | −32.28 | +.57 ~~+.53~~ −.11 | 32.~~85~~ 17 |
| | 13 34 | 455 | + 3.06 | −21.34 | +.12 | 21.46 |
| | 14 1 | 184 | + 2.14 | −21.57 | +.01 | 21.58 |
| | 14 51 | 198 | + 3.65 | −21.18 | +.10 | 21.23 |

12.2 +00 −21.72
129 +21 −21.75
130 −08 −21.69
135 +00 −21.79
13.8 +35 −21.82
139 +04 −21.84
13.2 +.09 −21.77

134 +1.78 −21.30

n = −.20

| | | | I | | II |
|---|---|---|---|---|---|
| 12.5 | +2.82 | −21.28 | +.01 −21.27 | +.01 | −21.27 |
| 13.6 | +3.06 | −21.46 | +.00 −21.46 | +.00 | −21.46 |
| 14.0 | +2.14 | −21.58 | −.01 −21.59 | −.01 | −21.59 |
| 14.8 | +3.65 | −21.23 | −.01 −21.24 | −.02 | −21.25 |

| | | | I | | II |
|---|---|---|---|---|---|
| 12.6 | −3.56 | −22.57 | +.01 −22.56 | +.01 | −22.56 |
| 13.0 | −5.14 | −22.85 | +.00 −22.85 | +.00 | −22.85 |
| 13.2 | −41.76 | −~~32.85~~ −32.17 | +.00 −32.85 | +.00 | −32.85 |

0 = +2.73 + .50 n = −.18
+2.97 + .31 −.18
+2.05 + .18 −.09
+3.56 + .53 −.~~09~~ 15
−.132

0 = +1.04 + .03 n = ~~+~~.03
+1.28 − .16 +.12
+ .36 − .29
+1.47 + .05 −.03
−.030

0 = −3.65 − .79 n = −.22
−5.20 − 1.08 −.21
−41.85 − 11.08 −.~~28~~ 24
+68
−.~~230~~
.223

0 = −5.34 − 1.26 n = −.24
−6.92 − 1.55 −.22
−43.04 − 11.55 −.~~26~~ 24
+68
−.~~240~~
.233

1873 June 1 Wark h = + ~~.010~~ −.002 n = −.20 e = −.07 h = −.~~047~~

| | Star | | Ra | δ | | tang. δ | sec δ | π Ra | ρ'−ρ | π Ra −(ρ'−ρ) | | | hπ | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | s | | | | | | | 21.563 |
| | 11.7 | +5 | 11 42 | 164 | + | .27 | +1.03 | −21.45 | +.02 | −21.47 | − | .05 | .00 | −.07 | −21.59 |
| | 11.7 | .5 | 11 44 | 165 | + | .04 | +1.00 | −21.46 | +.04 | 21.50 | − | .01 | | −.07 | .58 |
| | 11.8 | 4 | 11 47 | 166 | + | 1.40 | +1.72 | −21.~~44~~ 14 | −.02 | 21.12 | − | .28 | | −.12 | .52 |
| 11.2 | 12.1 | 1 | 12 9 | 441 | + | .88 | +1.33 | −21.30 | −.01 | 21.29 | − | .17 | | −.09 | .55 |
| | 12.2 | +0 | 12 13 | 170 | + | .00 | 1.00 | −21.46 | +.04 | 21.50 | − | .00 | | −.07 | .57 |
| 11.97 | 12.3 | −1 | 12 19 | 442 | + | .83 | +1.30 | −21.39 | +.05 | 21.44 | − | .16 | | −.09 | .69 |
| | 12.4 | 2 | 12 23 | 443 | + | .40 | +1.08 | −21.58 | −.08 | 21.50 | − | .06 | | −.08 | .66 |
| | 12.6 | 4 | 12 35 | 172 | − | .01 | +1.00 | −21.51 | +.01 | 21.52 | + | .00 | | +.07 | .57 |
| 12.67 | 13.0 | −8 | 13 3 | 449 | − | .08 | +1.00 | −21.58 | −.01 | 21.57 | + | .02 | .00 | −.07 | .62 |
| | 12.20 | | ~~13 18~~ | | − | ~~.17~~ 54 | | ~~−21.56~~ | | | | | | 21.57 | 21.623 |
| | | | | | | | | | | | | | | | 21.597 |

| Ra | δ | tang. δ | π Ra | ρ'−ρ | π Ra −(ρ'−ρ) |
|---|---|---|---|---|---|
| | | | s | | |
| 12 6 | 168 | +4.84 | 0 = −20.41 | −.08 | −20.33 |
| 12 28 | 171 | +2.82 | −20.81 | +.04 | 20.85 |
| 12 37 | 340 | −3.56 | −22.37 | +.18 | 22.55 |
| 13 1 | 345 | −5.14 | −22.95 | +.00 | 22.95 |
| 13 12 | 19 | −41.76 | −33.66 | ~~+.55~~ +.57 −.11 | ~~34.23~~ −33.55 |

| π | tang | π−R.A. |
|---|---|---|
| 11.7 | +27 | −21.47 |
| 11.7 | +04 | −21.50 |
| 12.2 | +00 | −21.50 |
| 12.6 | −01 | −21.52 |
| 13.0 | −08 | −21.57 |
| 12.2 | +.04 | −21.51 |

| π | tang δ | π−R.A. | Corr. π−R.A. I | | II |
|---|---|---|---|---|---|
| 12.1 | +4.84 | −20.33 | +.00 −20.33 | +.00 | −20.33 |
| 12.5 | +2.82 | −20.85 | +.00 −20.85 | +.00 | −20.85 |

| | | | I | | II |
|---|---|---|---|---|---|
| 12.6 | −3.56 | −22.55 | +.00 −22.55 | −.01 | −22.56 |
| 13.0 | −5.14 | −22.95 | −.01 −22.96 | −.01 | −22.97 |
| 13.2 | −41.76 | −~~34.23~~ −33.55 | +.01 −34.24 | +00 | −34.22 3 |

0 = +4.80 + 1.18 n = −.24
+2.78 + .66 .24
−.240

0 = −3.60 − 1.04 n = −.29
−5.18 − 1.45 −.28
−41.80 − 12.73 −.~~30~~ 29
+.68
−.~~290~~
−.287

11.8 +1.40 −21.12
12.1 +.88 −21.29
12.3 +.83 −21.44
12.1 +~~.70~~ 1.04 −21.28

n = −.23

0 = +3.80 + .95 n = −.25
+1.78 + .43 .24
−.245

0 = −4.60 − 1.28 n = −.~~30~~ 28
−6.18 − 1.69 −.27
−42.80 − 12.94 −.~~30~~ 29
+.68
−.~~283~~
−.280

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin z cos z | tang δ | Rq−Rge | P'−P | Rq−Rge +(P'−P) | Rge Req. |
|---|---|---|---|---|---|---|
| 12 13 | +.67 .74 + | 0.00 | −1 6.8 | −0.2 | −7.0 +1.2 | −5.8 |
| 12 23 | +.36 .93 + | .40 | 8.0 | +0.0 | 8.0 +0.6 | 7.4 |
| 12 55 | +.51 .86 + | .21 | 8.7 | −0.1 | 8.8 +0.8 | 8.0 |
| 13 3 | +.73 .68 − | .08 | 8.6 | +0.9 | 9.5 +1.3 | 8.2 |
| 13 24 | −.31 .95 + | 1.78 | 7.9 | +1.5 | 6.4 −0.5 | 6.9 |
| 13 28 | +.67 .74 + | .00 | 7.6 | +0.0 | 7.6 +1.2 | 6.4 |
| 13 49 | +.40 .91 + | .35 | — | +0.1 | 8 | |
| 13 55 | +.65 .76 + | .04 | 9.6 | +0.4 | 9.2 +1.1 | 8.1 |
| 14 5 | +.29 .95 + | .48 | 7.3 | +0.3 | 7.0 +0.5 | 6.5 |
| ~~14 44~~ | ~~+.55 .52~~ − | ~~.28~~ | 7.0 | | | 7.16 7.16 |

| RA h m | sin z cos z | tang δ | Rq−Rge | P'−P | Rq−Rge +(P'−P) | Rge | Req. |
|---|---|---|---|---|---|---|---|
| 12 28 | −.47 .88 + | 2.82 | −1 — | +0.8 | | | |
| 12 37 | −.89 .45 − | 3.56 | 2.6 | +1.2 ~~+1.2~~ | ~~1.4~~ 38 | −1.6 | 5.4 |
| 13 1 | −.85 .52 − | 5.14 | 3.3 | +0.6 | ~~2.7~~ 39 | −1.6 | 5.6 |
| 13 12 | ~~−.72~~ .69 − | 41.76 | 6.1 | ~~−0.3~~ +1 | ~~6.0~~ 62 | −1.2 | ~~7.4~~ |
| 13 34 | −.49 .87 + | 3.06 | 8.6 | −0.1 | 8.7 | −0.8 | 9.5] |
| 14 1 | −.38 .92 + | 2.14 | — | +0.7 | | | |
| 14 51 | −.53 .84 + | 3.65 | 4.8 | +1.0 | 3.8 | −0.9 | 4.7 |
| | | | | | | | 7.13<br>5.75 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| | +.67 −7.0" | +.51 −8.8" | +.36 −8.0" | | | −.31 −6.4" | ~~−.47~~ " | −.72 −6.4" | −.89 −1.4" |
| | +.73 −9.5 | ~~+.40~~ | +.29 −7.0 | | | ~~−.28~~ | −.49 −8.7 | | −.85 −2.7 |
| 8 1728 | +.67 −7.6 | | | | | | −.53 −3.8 | | |
| 4 300 | +.65 −9.2 | | | | | | | | |
| 2028 | | | | | | | | | |
| | +.68 −8.3<br>+1.3 | +.51 −8.8<br>+1.0 | +.32 −7.5<br>+.6 | | | −.31 −6.4<br>−.6 | −.51 −6.2<br>−1.0 | −.72 −6.4<br>−1.4 | −.67 −2.0 |
| −1' 7.16"<br>6.69 | (11) 7.0 4<br>−.2 | 7.8 1<br>+.6 | 6.9 2<br>−.3 | | | 7.0 1<br>−.2 | 7.2 2<br>.0 | 7.8 1<br>+.6 | |

5.4
~~.240~~
233

| RA h m | sin z cos z | tang δ | Rq−Rge | P'−P | Rq−Rge +(P'−P) | Rge Req. |
|---|---|---|---|---|---|---|
| 11 42 | +.46 .88 + | .27 | −1' 6.5" | +0.0 | −6.5 +0.8 | −5.7 |
| 11 44 | +.64 .76 + | .04 | − — | +0.4 | | |
| 11 47 | −.21 .98 + | 1.40 | 7.3 | +0.5 | 6.8 −0.4 | 7.2 |
| 12 9 | +.02 1.00 + | .88 | 7.4 | +0.7 | 6.7 +0.0 | 6.7 |
| 12 13 | +.67 .74 + | .00 | 6.9 | −0.2 | 7.1 +1.2 | 5.9 |
| 12 19 | +.05 1.00 + | .83 | 8.5 | +0.5 | 8.0 +0.0 | 8.0 |
| 12 23 | +.36 .93 + | .40 | 7.2 | +0.0 | 7.2 +0.6 | 6.6 |
| 12 35 | +.68 .73 − | .01 | 11.5 | +0.7 | 10.8 +1.2 | 9.6 |
| 13 3 | +.73 .68 − | .08 | 7.5 | +0.9 | 6.6 +1.3 | 5.3 |
| ~~13 18 +.80~~ | .59 − | ~~.19~~ | ~~6.9~~ | −1.9 | | 6.49 6.88 |

| RA h m | sin z cos z | tang δ | Rq−Rge | P'−P | Rq−Rge +(P'−P) | Rge | Req. |
|---|---|---|---|---|---|---|---|
| 12 6 | −.59 .80 + | 4.84 | −1' 6.3" | +0.4 | −5.9 | −1.0 | −6.9 |
| 12 28 | −.47 .88 + | 2.82 | 7.5 | +0.8 | 6.7 | −0.8 | 7.5 |
| 12 37 | −.89 .45 − | 3.56 | 5.0 | +1.2 | ~~3.8~~ 62 | −1.6 | 7.8 ✓ |
| 13 1 | −.85 .52 − | 5.14 | — | +0.6 | | −1.6 | |
| 13 12 | −.72 .69 − | 41.76 | 5.9 | ~~−0.3~~ +1 | ~~6.2~~ 60 ~~5.8~~ | −1.2 | ~~7.0~~ 7.2 |
| | | | | | | | 7.13<br>7.15 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 7 343 | | | | | | | | | |
| 3 345 | ~~+.64~~ | +.46 −6.5 | +.36 −7.2 | +.02 −6.7 | | −.21 −6.8 | −.59 −5.9 | | −.89 −3.8 |
| 688 | +.67 −7.1 | | | +.05 −8.0 | | | −.47 −6.7 | | ~~−.85~~ |
| | +.68 −10.8 | | | | | | | | −.72 −6.2 |
| | +.73 −6.6 | | | | | | | | |
| 5 | +.69 −8.2<br>+1.3 | +.46 −6.5<br>+.9 | +.36 −7.2<br>+.7 | +.03 −7.3<br>+.1 | | −.21 −6.8<br>−.4 | −.53 −6.3<br>−1.0 | | −.80 −5.0<br>−1.6 |
| −1' 6.88"<br>6.88 | (12) 6.93<br>0 | 5.6 1<br>+1.3 | 6.5 1<br>−.4 | 7.2 2<br>+.3 | | 7.2 1<br>+.3 | 7.3 2<br>+.4 | | −6.6 2<br>−.3 |

1873 June 2 WAR h = +.011 .00 n = −.26 e = −.07 h = +.005

| | Star | | Ra h | m | δ | | tang. δ | sec δ | π-Ra | P'-P | π-Ra-(P'-P) | | | hτ | Star | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | s | | s | | | +00 | 21.434 | |
| | 11.7 | +1.0 | 11 | 42 | 164 | + | .27 | +1.03 | −21.24 | +.02 | −21.26 − | 07 | | −.07 | −21.40 | 21.40 |
| | 11.8 | 9 | 11 | 47 | 166 | + | 1.40 | +1.72 | −20.86 | −.02 | 20.84 − | 38 | | −.12 | .34 | 34 |
| | 12.2 | .5 | 12 | 9 | 441 | + | .88 | +1.33 | −21.18 | −.01 | 21.17 − | 24 | | −.09 | .50 | 50 |
| | 12.2 | 5 | 12 | 13 | 170 | + | .00 | +1.00 | −21.28 | +.04 | 21.32 − | 00 | | −.07 | .39 | 39 |
| | 12.3 | 4 | 12 | 19 | 442 | + | .83 | +1.30 | −21.11 | +.05 | 21.16 − | 22 | | −.09 | .47 | 47 |
| | 12.4 | 3 | 12 | 23 | 443 | + | .40 | +1.08 | −21.40 | −.08 | 21.32 − | 11 | | −.08 | .51 | 51 |
| 11.17 | 12.6 | +1 | 12 | 35 | 172 | − | .01 | +1.00 | −21.33 | −21.12 +.01 | 21.36 | 00 21.15 | | −.07 | .43 | 43 |
| | 12.9 | −2 | 12 | 55 | 176 | + | .21 | +1.02 | −21.24 | +.04 | 21.28 − | 00 | | −.07 | .41 | 41 |
| | 13.0 | 3 | 13 | 3 | 449 | − | .08 | +1.00 | −21.34 | −.01 | 21.33 + | 02 | | −.07 | .38 | 38 |
| | | | ~~13~~ | ~~18~~ | | − | ~~.19~~ 24 | | ~~−21.30~~ | | | | | | | 32 |
| | 13.4 | 7 | 13 | 24 | 453 | + | 1.78 | +2.04 | −20.76 | −.04 | 20.72 − | 46 | | −.14 | .32 | |
| | 13.5 | 8 | 13 | 28 | 179 | + | .00 | +1.00 | −21.36 | +.01 | 21.37 + | 00 | | −.07 | .44 | .44 |
| | 13.7 | 10 | 13 | 42 | 181 | + | 1.19 | +1.55 | −21.06 | +.00 | 21.06 − | 32 | 00 | −.11 | .49 | .49 |
| 13.38 | 13.8 | −1.1 | 13 | 48 | 182 | + | .35 | +1.06 | −21.31 | +.03 | 21.34 − | 09 | −01 | −.07 | .50 | .51 |

12.~~59~~ 73

21.423
21.430

1873 June 2 WAR

| Ra h | m | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) |
|---|---|---|---|---|---|---|
| | | | | s | | s |
| 12 | 6 | 168 | +4.84 | 0 = −19.77 | −.08 | −19.69 |
| 12 | 28 | 171 | +2.82 | −20.51 | +.04 | 20.55 |
| 12 | 37 | 340 | −3.56 | −22.28 | +.18 | 22.46 |
| 13 | 1 | 345 | −5.14 | −23.17 | +.00 | 23.17 |
| 13 | 12 | 19 | −41.76 | −36.12 | ~~+.55~~ ~~+.57~~ −11 | 36.69 .01 |

| | | |
|---|---|---|
| 11.7 | +.27 | −21.26 |
| 12.2 | +.00 | −21.32 |
| 12.6 | −.01 | −21.21 |
| 12.9 | +.21 | −21.28 |
| 13.0 | −.08 | −21.33 |
| 13.5 | +.00 | −21.37 |
| 12.6 | +.06 | −21.30 |
| 11.8 | +1.40 | −20.84 |
| 12.1 | +.88 | −21.17 |
| 13.4 | +1.78 | −20.72 |
| 13.7 | +1.19 | −21.06 |
| 12.7 | +1.56 | −20.95 |

I II
12.1 +4.84 −19.69 +.01 −19.68 +.01 −19.67
12.5 +2.82 −20.55 +.00 −20.55 +.00 −20.55

0 = +4.78 + 1.62 n = −.34
+2.76 + .75 .27
−.305

0 = +3.53 +1.28 n = −.36
+1.51 +.40 −.27
−.315

21.430 I II
12.6 −3.56 −22.46 +.00 −22.46 +.00 −22.46
13.0 −5.14 −23.17 +.00 −23.17 +.00 −23.17
13.2 −41.76 ~~−36.69~~ −36.01 −.01 −36.70 +.01 −36.69

0 = −3.~~56~~ 62 − 1.16 n = −.32
−5.~~08~~ 26 −1.87 −.36
−41.~~76~~ 82 −15.40 +.68 −.37 5
−.350
.343

0 = −4.87 −1.67 n = −.31
−6.45 −2.22 −.34
−43.07 −15.74 +.68 −.~~33~~ .36 34
−.~~337~~
.330

1873 June 5 WAR h = +.017 n = −.37 e = .00 h = −.053

n = −.28

| | Star | | Ra h | m | δ | | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) | | | Star | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | s | | | | | 20.210 | |
| | 13.0 | +.6 | 13 | 3 | 449 | − | .08 | 0 = −20.25 | −.01 | −20.24 + | 03 | −.03 − | 20.21 | 20.24 |
| | | | ~~13~~ | ~~18~~ | | − | ~~.19~~ 24 | −~~20.24~~ | | | | | | |
| | 13.4 | +.2 | 13 | 24 | 453 | + | 1.78 | −19.64 | −.04 | 19.60 − | 66 | −01 | .26 | .27 |
| 13.30 | 13.5 | +.1 | 13 | 28 | 179 | + | .00 | −20.15 | +.01 | 20.16 − | 00 | −01 | .16 − | .17 |
| | 13.7 | −1 | 13 | 42 | 181 | + | 1.19 | −19.80 | +.00 | 19.80 − | 44 | +01 | .24 | .23 |
| | [14.3] | | 14 | 21 | 190 | + | 1.30 | −19.90 | +.02 | 19.92 − | 48 | | 40] | [39] |
| 14.15 | 14.6 | −1.0 | 14 | 36 | 196 | − | .09 | −20.29 | +.01 | 20.30 + | 03 | +.05 | .27 | .22 |
| | 13.64 | | ~~14~~ | ~~44~~ | | − | ~~.28~~ 34 | −~~20.33~~ | | | | | | |

20.255
20.228 f

| Ra h | m | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) |
|---|---|---|---|---|---|---|
| | | | | | s | |
| 13 | 12 | 19 | −41.76 | −34.56 | +.57 −11 ~~+.58~~ | −34.45 ~~−35.13~~ |
| 14 | 26 | 38 | −3.12 ~~−2.34~~ | 0 = −21.24 | +.23 | 21.47 |
| 14 | | | | | | |

20.226

I II
13.2 −41.76 ~~−35.13~~ −34.45 +.01 −35.12 +.01 −35.12
14.4 −3.12 −21.47 −.01 −21.48 −.01 −21.48

| | | |
|---|---|---|
| 13.1 | −.08 | −20.24 |
| 13.5 | +.00 | −20.16 |
| 14.6 | −.09 | −20.30 |
| 13.7 | −.06 | −20.23 |
| 13.4 | +1.78 | −19.60 |
| 13.7 | +1.19 | −19.80 |
| [14.3 | +1.30 | −19.92] |
| ~~13.8~~ | ~~+1.42~~ | −19.77 |
| 13.6 | +1.48 | −19.70 |

n = −.31

0 = −41.70 −14.89 +.68 n = −.38 5
−3.06 −1.25 .48 1
−.385 0

0 = −43.18 −15.35 n = −.36
−4.54 −1.71 +.68 −.38 7
−.370
.365

1873 June 9 WAR h = +.019 +.005 n = −.29 e = .00 h = +.004

| | Star | | Ra h | m | δ | | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) | | | Star | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | s | | | | | 18.490 | |
| 12.90 | 12.9 | +1.7 | 12 | 55 | 176 | + | .21 | 0 = −18.39 | +.04 | −18.43 − | 06 | +01 − | 18.49 | 18.48 |
| | 14.6 | −1 | 14 | 34 | 461 | + | 1.00 | −18.19 | +.02 | 18.21 − | 29 | 00 | .50 | .50 |
| | 14.6 | 1 | 14 | 36 | 196 | − | .09 | −18.48 | +.01 | 18.49 + | 03 | | .46 | .46 |
| | 14.8 | 3 | 14 | 48 | 462 | + | 1.71 | −17.89 | +.03 | 17.92 − | 50 | | .42 | .42 |
| | 14.9 | 4 | 14 | 57 | 199 | + | .87 | −18.23 | +.04 | 18.27 − | 25 | | .52 | .52 |
| 14.78 | 15.0 | −5 | 14 | 59 | 465 | + | .52 | −18.36 | +.00 | 18.36 − | 15 | 00 | .51 | .51 |
| | 14.47 | | | | | | | | | | | | 18.482 | |
| | | | | | | | | | | | | | 18.483 | |

| Ra h | m | δ | tang. δ | π-Ra | P'-P | π-Ra-(P'-P) |
|---|---|---|---|---|---|---|
| ~~13~~ | ~~+~~ | | ~~+5.14~~ | ~~−19.49~~ | ~~+~~ 11 | 31 |
| 13 | 12 | 19 | −41.76 | 0 = −29.42 | +.55 | −29.~~99~~ |
| 14 | 26 | 38 | −3.12 | −19.13 | +.23 | 19.36 |
| 14 | 49 | 358 | −5.10 | −19.75 | +.23 | 19.98 |
| 14 | 51 | 198 | +3.65 | −17.13 | +.10 | 17.23 |
| 14 | 56 | 464 | +2.29 | −18.03 | −.17 | 17.86 |

| | | |
|---|---|---|
| 12.9 | +.31 | −18.43 |
| 14.6 | −.09 | −18.49 |
| 13.7 | +.06 | −18.46 +2 |
| 14.6 | +1.00 | −18.21 |
| 14.8 | +1.71 | −17.92 |
| 14.9 | +.87 | −18.27 |
| 14.8 | +1.19 | −18.13 |

n = −.29 +1

I II
14.8 +3.65 −17.23 −.02 −17.25 +.00 −17.23
14.9 +2.29 −17.86 −.02 −17.88 +.00 −17.86

0 = +3.59 +1.21 n = −.34
+2.23 +.58 .26
−.300

0 = +2.46 +.90 n = −.37
+1.60 +.27 −.25
−.310

18.482 I II
13.2 −41.76 ~~−29.99~~ −29.31 +.01 −29.98 +.03 −29.95
14.4 −3.12 −19.36 −.01 −19.37 −.01 −19.38
14.8 −5.10 −19.98 −.02 −20.00 −.02 −20.02

0 = −41.82 −11.52 +.68 n = −.28 7
−3.18 −.91 .29
−5.16 −1.54 .30
−.~~290~~ .287

0 = −42.95 −11.8~~2~~ 68 n = −.28 7
−4.31 −1.28 .29
−6.29 −1.89 .30
−.280 −.287

1872pde.proj.1889

z = +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100

RA sin z cos z tang δ | $R_{eq}-R_{fe}$ | P′−P +(P′−P) | $R_{eq}$ $R_{fe}$ $R_{fe}$ $R_{eq}$ || RA sin z cos z tang δ | $R_{eq}-R_{fe}$ | P′−P +(P′−P) | $R_{eq}$ $R_{fe}$ $R_{fe}$ $R_{eq}$

h m | ′ ″ | ″ || h m | ′ ″ | ″

11 42 +.46 .88 + .27 | −1 6.1 | .+0.0 −6.1 +0.8 | −5.3 || 12 6 −.59 .80 + 4.84 | −1 6.1 | .+0.4 −5.7 −1.0 | −6.7
11 47 −.21 .98 + 1.40 | — — | .+0.5 || 12 28 −.47 .88 + 2.82 | 6.4 | +0.8 5.6 −0.8 | 6.4
12 9 +.02 1.00 + .88 | 6.2 | .+0.7 5.5 +0.0 | 5.5 || 12 37 −.89 .45 − 3.56 | 2.9 3.5 | +12 ~~.+0.2~~ 4.1 ~~1.4~~ −1.1 | 5.7 √
12 13 +.67 .74 + .00 | 6.0 | .+0.2 6.2 +1.1 | 5.1 || 13 1 −.85 .52 − 5.14 | 3.8 | .+0.6 4.4 ~~3.2~~ −1.6 | 6.0 √
12 19 +.05 1.00 + .83 | 6.6 | .+0.5 6.1 +0.1 | 6.0 || 13 12 −.72 .69 − 41.76 | 4.3 | , ~~−0.3~~ +1 4.4 ~~1.6~~ 2 −1.2 | ~~5.4~~ 5.4
12 23 +.36 .93 + .40 | 6.0 | 0.0 ~~−0.6~~ 6.0 +0.6 | 5.4
12 35 +.68 .73 − .01 | 10.9 | .+0.7 10.2 +1.2 | 9.0
12 55 +.51 .86 + .21 | 6.9 | .−0.1 7.0 +0.8 | 6.2
13 3 +.73 .68 − .08 | 8.5 | .+0.9 7.6 +1.3 | 6.3
~~13 18 +.80 .59 − .19~~ | ~~6.0~~
13 24 −.31 .95 + 1.78 | 6.1 | .+1.5 4.6 −0.5 | 5 ~~4~~.1
13 28 +.67 .74 + .00 | 7.3 | .+0.0 7.3 +1.2 | 6.1
13 42 −.13 .99 + 1.19 | 8.8 ~~6.5~~ | .+0.3 8.5 −0.3 | 8.~~2~~8
13 48 +.40 .91 + .35 | 7.7 | +0.7 7.6 +0.7 | 6.9

11 66
3 51 | 6.06 6.17 || 6.17 6.17
117

+.67 −6″.2 | +.46 −6″.1 | +.36 −6″.0 | +.02 −5″.5 | −.13 −8.5 | ~~−.21~~ ″ | −.59 −5″.7 | −.72 −4″.6 | −.89 −1″.7
+.68 −10.2 | +.57 −7.0 | | +.05 −6.1 | | −.31 +4.6 | −.47 −5.6 | | −.85 −3.2
+.73 −7.6 | +.40 −7.6
+.67 −7.3

+.69 −7.8 | +.46 −6.9 | +.36 −6.0 | +.03 −5.8 | −.13 −8.5 | −.31 +4.6 | −.53 −5.6 | −.72 −4.6 | −.87 −2.4
+1.3 | +.9 | +.7 | +.1 | −.3 | −.6 | −1.0 | −1.4
6.5 | 6.0 | 5.3 | 5.7 | 8.8 | 5.2 | 6.6 | 6.0

′ ″
−1 6.26 (15) | +.2 4 | −.3 3 | −1.0 1 | −.6 2 | +2.5 1 | −1.1 1 | +.3 2 | −.3 1
6.08

13 3 +.73 .88 − .08 .08 | −1 ′ ″ — — | .+0.9 || 13 12 −.72 .69 − 41.76 .. | ′ ″ 3.9 | +1 ~~−0.3~~ 4.0 ~~4.2~~ 3.8 −1.2 | 5.2 ~~5.0~~
~~13 18 +.80 .59 − .19~~ | ~~6.4~~ || 14 26 −.91 .40 − 3.12 | −1 3.9 | .+0.3 4.2 ~~3.6~~ −1.6 | 5.8 √
13 24 −.31 .95 + 1.78 | 7.0 | .+1.5 −5.5 −0.5 | −6.0
13 28 +.67 .74 − .00 | 7.4 | .+0.0 7.4 +1.2 | 6.2
13 42 −.13 .99 + 1.19 | 6.9 ~~6.2~~ | .+0.3 6.6 −0.3 | 6.9
14 21 −.18 .98 + 1.30 | 7.3 | .+0.9 6.4 −0.4 | 6.8
14 36 +.74 .67 − .09 | 7.2 | .−0.7 7.9 +1.3 | 6.6
~~14 44 +.85 .52 − .28~~ | ~~6.3~~

6.50 6.50 || 5.70
5 7.50 || 5.20
1 5.20 +.67 −7.4 | −.13 −6.6 | −.31 −5.5 | −.72 −4.2 | −.91 −3.6
12.70 +.74 −7.9 | −.18 −6.4
~~+.69 −7.4~~

+.70 −7.6 | −.15 −6.5 | −.31 −5.5 | −.72 −4.2 | −.91 −3.6
+1.3 | −.3 | −.6 | −1.4
′ ″ 6 6.3 | 6.8 | 6.1 | 5.6
−1 6.32 (~~8~~) .8 | +.5 2 | −.2 1 | −.7 1
6.28

~~13~~ + | ~~5.14~~

12 55 +.51 .86 + .21 | −1 ′ ″ 7.2 | .+0.1 −7.3 +0.8 | −6.5 || 13 12 −.72 .69 − 41.76 | −1 ″ 4.2 ~~6.8~~ | +1 ~~−0.3~~ 4.3 ~~4.5~~ 1 −1.2 | 5.5 ~~5.3~~
14 34 −.05 1.00 + 1.00 | 6.0 | .−0.4 6.4 −0.1 | 6.5 || 14 26 −.91 .40 − 3.12 | 4.5 | .+0.3 4.8 ~~4.2~~ −1.6 | 6.4 √
14 36 +.74 .67 − .09 | 7.4 | .−0.7 8.4 +1.3 | 7.1 || 14 49 −.85 .52 − 5.10 | 0.2 + | +1.1 1.3 ~~5.1~~ −1.5 | 2.9 √
14 48 −.21 .98 + 1.71 | 5.1 | .−0.6 5.7 −0.4 | 6.1 || 14 51 −.53 .84 + 3.65 | 5.7 | .+1.0 4.7 −0.8 | 5.5
14 57 +.03 1.00 + .87 | 7.9 | .+0.6 7.3 +0.0 | 7.3 || 14 56 −.41 .91 + 2.29 | 6.0 | .−0.1 6.1 −0.7 | 6.8
14 59 +.26 .96 + .52 | 7.8 | .+0.5 7.3 +0.4 | 6.9
6.73 6.73 || 5.93 5.87

+.74 −8.4 | +.51 −7.3 | +.26 −7.3 | +.03 −7.3 | −.05 −6.4 | −.21 −5.7 | −.53 −4.7 4 | −.72 −4.5 | −.91 −4.2
−.41 −6.1 | −.85 −59.1

6 4.38
3 3.79
7.17 +.74 −8.4 | +.51 −7.3 | +.26 −7.3 | +.03 −7.3 | −.05 −6.4 | −.21 −5.7 | −.47 −5.4 | −.72 −4.5 | −.88 1.6
+1.4 | +1.0 | +.5 | +.1 | −.1 | −.4 | −.9 | −1.4
′ ″ 7.0 | 6.3 | 6.8 | 7.2 | 6.5 | 6.1 | 6.3 | 5.9
−1 6.49 (9) +.5 | −.2 | +.3 | +.7 | .0 | −.4 | −.2 2 | −.6
6.~~55~~
46

1873 June 10 WAR h = +.019 s +.008 n = −.31 h =

| | Star | | Ra h | m | δ | tang. δ | | τ Ra s | P'P | s | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | − 18.010 |
| | 12.9 | +6 | 12 | 55 | 176 | + .21 | 0 = | −17.88 | +.04 | −17.92 − | 06 | +00 − | 17.98 17.98 |
| | 13.0 | +5 | 13 | 3 | 449 | − .08 | | −18.05 | −.01 | 18.04 + | 02 | | 18.02 8.02 |
| | | | ~~13~~ | ~~18~~ | | − ~~.194~~ | | −18.12 | | | | | |
| 13.10 | 13.4 | +1 | 13 | 24 | 453 | + 1.78 | | −17.52 | −.04 | 17.48 − | 55 | | 18.03 8.03 |
| | 13.5 | +0 | 13 | 28 | 179 | .00 | | −18.00 | +.01 | 18.01 − | 00 | | 18.01 8.01 |
| | 13.7 | −2 | 13 | 42 | 181 | + 1.19 | | −17.67 | +.00 | 17.67 − | 37 | 00 | 18.04 8.04 |
| 13.83 | 14.3 | −8 | 14 | 21 | 190 | + 1.30 | | −17.72 | +.02 | 17.74 − | 40 | −01 | 18.14 8.15 |
| | 13.47 | | | | | | | | | | 1706 | | 18.063<br>18.037 |

1873 June 10 WAR

| Star | Ra h | m | δ | tang. δ | | τ Ra s | P'P | τ Ra − (P'P) s |
|---|---|---|---|---|---|---|---|---|
| | 13 | 1 | 345 | − 5.14 | 0 = | −19.49 | +.00 | −19.49 |
| | 13 | 12 | 19 | −41.76 | | −31.96 | ~~+.55~~ ~~+.67~~ −.11 | ~~32.53~~ −31.85 |

18.037

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 13.0 | −5.14 | −19.49 s | +.00 | −19.49 s | +.02 | −19.47 s |
| 13.2 | −41.76 | ~~−32.53~~ −31.85 | +.00 | ~~−32.53~~ | +.01 | −32.52 |

129 +.21 −17.92
130 −.08 −18.04
135 +.00 −18.01
13.1 +.04 −17.99

0 = −5.18 −1.50 n = −.29
−41.80 −14.54 +.68 .35 3
−.~~320~~ −.310

134 +1.78 −17.48
137 +1.19 −17.67
143 +1.30 −17.74
13.8 +1.42 −17.63

0 = −6.56 −1.84 n = −.28
−43.18 −14.89 +.68 .34 2
−.~~340~~ −.300

n = −.30

1873 June 11 WAR h = +.019 .000 n = −.34 e = .00 h = −.003

| | Star | | Ra h | m | δ | tang. δ | | τ Ra s | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | 17.603 |
| | 12.9 | +1.2 | 12 | 55 | 176 | + .21 | 0 = | −17.50 | +.04 | −17.54 − | 07 | .00 − | 17.61 |
| | 13.1 | 1.0 | 13 | 3 | ~~449~~ | − .08 | | −17.57 | −.01 | 17.56 + | 03 | | .53 |
| | | | ~~13~~ | ~~18~~ | | − ~~.1954~~ | | ~~−17.58~~ 12 | | | | | |
| | 13.4 | .7 | 13 | 24 | 453 | + 1.78 | | −17.06 | −.04 | 17.08 − | 61 | | .69 |
| | 13.5 | .6 | 13 | 29 | 454 | + .77 | | −17.27 | +.06 | 17.33 − | 26 | | .59 |
| | 13.7 | .4 | 13 | 42 | 181 | + 1.19 | | −17.15 | +.00 | 17.15 − | 40 | | .55 |
| 13.40 | 13.8 | +3 | 13 | 48 | 182 | + .35 | | −17.50 | +.03 | 17.53 − | 12 | | .65 |
| | 14.2 | −1 | 14 | 12 | 189 | + 1.28 | | −17.22 | +.00 | 17.22 − | 44 | | .66 |
| | 14.6 | 5 | 14 | 36 | 196 | − .09 | | −17.52 | +.01 | 17.53 + | 03 | | .50 |
| | 14.8 | 7 | 14 | 48 | 462 | + 1.71 | | −17.02 | +.03 | 17.05 − | 58 .63 | | .63 |
| | 14.9 | 8 | 14 | 57 | 199 | + .87 | | −17.30 | +.04 | 17.34 − | 30 .61 | | .64 |
| | 15.1 | 10 | 15 | 9 | 466 | + .09 | | −17.56 | +.02 | 17.58 − | 03 | | .61 |
| 14.80 | 15.2 | 11 | 15 | 10 | 201 | + .67 | | −17.39 | −.02 | 17.37 − | 23 | .60 00 | .60 |
| | 14.10 | | | | | | | | | | | 17.60 | 17.607<br>17.605 |

| Star | Ra h | m | δ | tang. δ | | τ Ra s | | |
|---|---|---|---|---|---|---|---|---|
| | 13 | 1 | 345 | − 5.14 | 0 = | −19.14 | +.00 | −19.14 |
| | 13 | 12 | 19 | −41.76 | | −31.28 | ~~+.67~~ ~~+.55~~ −.11 | −31.~~85~~ 17 |
| | 13 | 28 | 347 | − 3.15 | | −18.55 | +.06 | 18.61 |
| | 13 | 34 | 455 | + 3.06 | | −16.42 | +.12 | 16.54 |
| | 14 | 1 | 184 | + 2.14 | | −16.91 | +.01 | 16.92 |
| | 14 | 9 | 459 | + 4.76 | | −15.97 | −.22 | 15.75 |
| | 14 | 49 | 358 | − 5.10 | | −19.01 | +.23 | 19.24 |
| | 14 | 51 | 198 | + 3.65 | | −16.24 | +.10 | 16.34 |
| | 15 | 13 | 467 | + 2.45 | | −16.75 | −.03 | 16.72 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 13.6 | +3.06 | −16.54 | +.01 | −16.53 | +.01 | −16.53 |
| 14.0 | +2.14 | −16.92 | +.00 | −16.92 | +.00 | −16.92 |
| 14.~~9~~ 2 | +4.76 | −15.75 | −.02 | −15.77 | −.01 | −15.76 |
| 14.8 | +3.65 | −16.34 | −.02 | −16.36 | −.01 | −16.35 |
| 15.2 | +2.45 | −16.72 | −.02 | −16.74 | −.02 | −16.74 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 13.0 | −5.14 | −19.14 | +.02 | −19.12 | +.02 | −19.12 |
| 13.2 | −41.76 | ~~−31.85~~ 31.17 | +.01 | −31.84 | −.02 | −31.87 |
| 13.5 | − 3.15 | −18.61 | +.01 | −18.60 | −.01 | −18.62 |
| 14.8 | −5.10 | −19.24 | −.02 | −19.26 | −.01 | −19.25 |

129 +.21 −17.54
130 −.08 −17.56
138 +.35 −17.53
146 −.09 −17.53
151 +.09 −17.58
13.9 +.09 −17.55
.10 +1

0 = +2.96 + 1.02 n = −.34
+2.04 + .63 .31
+4.66 + 1.78 .38
+3.55 + 1.19 .34
+2.35 + .81 .34 −.342

0 = −5.24 −1.57 n = −.30
−41.86 −14.29 +.68 −3~~4~~ 3
− 3.25 −1.05 .32
−5.20 −1.71 .33 −.~~322~~ −.320

134 +1.78 −17.08
137 +1.19 −17.15
142 +1.28 −17.22
148 +1.71 −17.05
149 +.87 −17.34
14.2 +1.37 −17.17

0 = + 1.69 + .64 n = −.38
+ 7.47 + .25 .32
+ 3.39 + 1.41 .42
+ 2.28 + .82 .36
+ 1.08 + .43 .40
−.370

0 = − 6.51 − 1.95 n = −.~~29~~ 30
−43.13 −14.70 +.68 .3~~4~~ 3
− 4.52 − 1.45 .32
− 6.47 − 2.08 .32 −.~~320~~ −.318

n = −.30 +.01

z= | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100

| RA h m | sin z | cos z | tang δ | Lo | $R_{eq}$ | $R_{pe}$ | + $\frac{R_{eq}-R_{pe}}{\rho'-\rho}$ | $R_{pe}$ | | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 55 | +.51 | .86 + | .21 | | −1 | 6.7 | −0.1 | −6.8 | +0.8 | −6.0 |
| 13 3 | +.73 | .68 − | .08 | | | 7.2 | +0.9 | 6.3 | +1.2 | 5.1 |
| ~~13 18~~ | ~~+.80~~ | ~~.59 −~~ | ~~.19~~ | | | ~~6.1~~ | | | | |
| 13 24 | −.31 | .95 + | 1.78 | | | 7.5 | +1.5 | 6.0 | −0.5 | 6.5 |
| 13 28 | +.67 | .74 | .00 | | | 7.9 | +0.0 | 7.9 | +1.1 | 6.8 |
| 13 42 | −.13 | .99 + | 1.19 | | | 6.7 | +0.3 | 6.4 | −0.2 | 6.6 |
| 14 21 | −.18 | .98 + | 1.30 | | | 7.2 | +0.9 | 6.3 | −0.4 | 6.7 |
| | | | | | | | | | | 6.28 6.28 |

| RA h m | sin z | cos z | tang δ | $R_{eq}$ | $R_{pe}$ | ρ'−ρ | $R_{eq}-R_{pe}$ +(ρ'−ρ) | $R_{pe}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 13 1 | −.85 | .52 − | 5.14 | −1 | 3.8 | +0.6 | ~~−2.2~~ 4.7 | −1.5 | 5.9 ✓ |
| 13 12 | −.72 | .69 − | 41.76 | | 5.3 | ~~−0.3~~ +1 | ~~5.6~~ 5.4 | −1.2 | − ~~6.4~~ 6.6 |
| | | | | | | | | | 6.40<br>6.60 |

6 168 +73 −6.3 +.57 −6.8 −.13 −6.4 −.31 −6.0 −72 −5.6 −.85 −3.2

1 60 +.67 −7.9 −.18 −6.3 −.72 −5.6

228

+.70 −7.1 +.51 −6.8 −.15 −6.3 −.31 −6.0 −72 −5.6 −.85 −3.2

+1.3 +1.0 −.3 −.6 −1.4 −1.5

−1 6.31 (7) 5.8 $_2$ −.5 5.8 $_1$ −.5 6.6 $_2$ +.3 6.6 $_1$ +.3 7.0 $_1$ +.7 5.9

6.33

| RA h m | sin z | cos z | tang δ | $R_{eq}$ | $R_{pe}$ | | $R_{pe}$ | | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 12 55 | +.51 | .86 + | .21 | −1 | 6.9 | −0.1 | −7.0 | +0.8 | −6.2 |
| 13 3 | +.73 | .68 − | .08 | | 7.9 | +0.9 | 7.0 | +1.2 | −5.8 |
| ~~13 18~~ | ~~+.80~~ | ~~.59 −~~ | ~~.19~~ | | ~~5.9~~ | | | | |
| 13 24 | −.31 | .95 + | 1.78 | | 6.5 | +1.5 | 5.0 | −0.5 | 5.5 |
| 13 29 | +.08 | 1.00 + | .77 | | 7.5 | +0.6 | 6.9 | +0.1 | 6.8 |
| 13 42 | −.13 | .99 + | 1.19 | | 6.5 | +0.3 | 6.2 | −0.2 | 6.4 |
| 13 48 | +.40 | .91 + | .35 | | 5.9 | +0.1 | 5.8 | +0.7 | 5.1 |
| 14 12 | −.17 | .98 + | 1.28 | | 7.3 | +0.7 | 6.6 | −0.4 | 7.0 |
| 14 36 | +.74 | .67 − | .09 | | 5.7 | −0.7 | 6.4 | +1.3 | 5.1 |
| 14 48 | −.30 | .95 + | 1.71 | | 5.1 | −0.6 | 5.7 | −0.5 | 6.2 |
| 14 57 | +.03 | 1.00 + | .87 | | 6.4 | +0.6 | 5.8 | +0.1 | 5.7 |
| 15 9 | +.60 | .80 + | .09 | | 8.2 | +0.1 | 8.1 | +1.0 | 7.1 |
| 15 10 | +.15 | .99 + | .67 | | 4.9 | −0.1 | 5.0 | +0.3 | 4.7 |
| | | | | | | | | | 5.97 5.97 |

| RA h m | sin z | cos z | tang δ | $R_{eq}$ | $R_{pe}$ | ρ'−ρ | | $R_{pe}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 13 1 | −.85 | .52 − | 5.14 | −1 | 3.0 | +0.6 | ~~−2.4~~ | −1.6 | 5.1 ✓ |
| 13 12 | −.72 | .69 − | 41.76 | | 3.3 | ~~1.1~~ +0.3 | 3.6 ~~3.6~~ | ~~−1.7~~ | ~~4.6~~ |
| 13 28 | −.91 | .40 − | 3.15 | | 3.2 | +0.7 | 3.4 3.9 ~~2.5~~ | −1.6 | 5.5 ✓ |
| 13 34 | −.49 | .87 + | 3.06 | | 5.6 | −0.1 | 5.7 | −0.8 | 6.5 |
| 14 1 | −.38 | .92 + | 2.14 | | 6.1 | +0.7 | 5.4 | −0.6 | 6.0 |
| 14 9 | −.58 | .81 + | 4.76 | | 5.8 | +0.7 | 5.1 | −0.9 | 6.0 |
| 14 49 | −.85 | .52 − | 5.10 | | 2.2 | +1.1 | 3.3 ~~1.1~~ | −1.5 | 4.8 ✓ |
| 14 51 | −.53 | .84 + | 3.65 | | 5.4 | +1.0 | 4.4 | −0.8 | 5.2 |
| 15 13 | −.43 | .90 + | 2.45 | | 4.4 | −0.2 | 4.6 | −0.7 | 5.3 |
| | | | | | | | | | 5.57<br>5.60 |

+.73 −7.0 +.51 −7.0 +.08 −6.9 −.13 −6.2 −.31 −5.0 −.49 −5.7 −.72 −3.6 −.85 −2.4

+.74 −6.4 +.40 −5.8 +.03 −5.8 −.17 −6.6 −.30 −5.7 −.58 −5.1 −.91 −2.5

12 1164 +.60 −8.1 +.15 −5.0 −.38 −5.4 −.53 −4.4 −.85 −1.1

6 360 −.43 −4.6

1524 +.69 −7.2 +.45 −6.4 +.09 −5.9 −.15 −6.4 −.33 −5.4 −.51 −4.9 −.72 −3.6 −.87 −2.0

+1.3 +.9 +.2 −.3 −.6 −1.0 −1.4

−1 5.88 (18) 5.9 $_3$ .0 5.5 $_2$ −.4 5.7 $_3$ −.2 6.7 $_2$ +.8 6.0 $_3$ +.1 5.9 $_4$ .0 5.0 $_1$ −.9

5.84

1873 June 12 Ware h = +.119 +.014 −.033 n = −.35 c = .00 h = −~~.044~~

| Star | | Ra | | δ | tang. δ | πRa | P'-P | πRa-(P'-P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h | m | | | s | | s | | | | | |
| 13.0 | +7 | 13 | 3 | 449 | − .08 | 0=−17.04 | −.01 | −17.03 | + | .03 | +01 | −17.00 | 16.99 |
| | | ~~13~~ | ~~18~~ | | − ~~.19~~ 54 | ~~−17.28~~ | | | | | | | |
| 13.4 | +3 | 13 | 24 | 453 | + 1.78 | −16.59 | −.04 | 16.55 | − | .62 | 00 | .17 | 7.17 |
| 13,48 13.5 | +2 | 13 | 28 | 179 | + .00 | −17.12 | ~~−.04~~ +01 | 17.13 | − | .00 | | .13 | .13 |
| 13.7 | +0 | 13 | 42 | 181 | + 1.19 | −16.63 | +.00 | 16.63 | − | .42 | | .05 | .05 |
| 13.8 | −1 | 13 | 49 | 182 | + .35 | −17.01 | +.03 | 17.04 | − | .12 | .00 | .16 | .16 |
| 14.1 | −4 | 14 | 5 | 458 | + .48 | −17.01 | −.05 | 16.96 | − | .17 | −01 | .13 | .14 |
| 14.2 | −.5 | 14 | 12 | 189 | + 1.28 | −16.71 | +.00 | 16.71 | − | .45 | −01 | .16 | .17 |
| 14.25 14.3 | | 14 | 21 | 190 | + 1.30 | −16.76 | +.02 | 16.78 | − | .45 | | .28 | .24 |
| 13.75 | | | | | | | | | | | | 17.146<br>17.114 | |

17.116

1873 June 12 Ware

| Star | Ra | | δ | tang. δ | πRa | P'-P | πRa-(P'-P) |
|---|---|---|---|---|---|---|---|
| 17.10a | h | m | | | | | |
| | 13 | 12 | 19 | −41.76 | −34.10 | ~~+.55~~ +.57 −11 | ~~−34.67~~ −33.99 |
| | 13 | ~~28~~ 34 | 455 | + 3.06 | 0=−16.11 | +.06 | 16.17 |
| | 14 | 1 | 184 | + 2.14 | −16.48 | +.01 | 16.49 |
| | 14 | 9 | 459 | + 4.76 | −15.49 | −.22 | 15.27 |

13.0 −.08 −17.03
13.5 +.00 −17.13
13.8 +.35 −17.04
13.4 +.09 −17.07 +1

13.4 +1.78 −16.55
13.7 +1.19 −16.63
14.2 +1.28 −16.71
14.3 +1.30 −16.78
13.9 +1.39 −16.67

n = −31 +.01

| | | | I | | II |
|---|---|---|---|---|---|
| 13.5 | +3.06 | −16.17 | +.00 −16.17 | +.01 | −16.16 |
| 14.0 | +2.14 | −16.49 | −.01 −16.50 | +.00 | −16.49 |
| 14.2 | +4.76 | −15.27 | −.02 −16.29 | −.01 | −15.28 |

0 = +2.97 + .90 n = −.30
+2.05 + .57 −.28
+4.67 +1.78 .38
−.320

0 = +1.67 + .51 n = −.30
+ .75 + .18 .24
+3.37 +1.39 .41 3

13.2 −41.76 ~~−34.67~~ −33.99 I +.00 −34.67 II +.01 −34.66

0 = −42.85 (1) −17.40 +.68 n = −.42 0

0 = −43.15 −17.99 +.68 n = −.42 0

1873 June 15 WAR h = +.019 +.016 −.038 n = −.30 c = .00 .255 h = −~~.046~~

| | | | | | | s | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ~~13~~ | ~~18~~ | | − .19 54 | 0=~~−15.88~~ | | | | | | 15.850 | |
| 13.4 | +5 | 13 | 24 | 453 | + 1.78 | −16.41 | −.04 | −15.37 | − | .53 | +.01 | −15.90 | 15.89 |
| 13.5 | 4 | 13 | 29 | 454 | + .77 | −15.51 | +.06 | 15.57 | − | .23 | +.01 | .80 | .79 |
| 13,53 13.7 | 2 | 13 | 42 | 181 | + 1.19 | −15.49 | +.00 | 15.49 | − | .36 | .00 | .85 | .85 |
| 13.8 | 1 | 13 | 49 | 182 | + .35 | −15.79 | +.03 | 15.82 | − | .10 | 00 | .92 | .92 |
| 13.9 | +0 | 13 | 55 | 183 | + .04 | −15.84 | +.02 | 15.86 | − | .01 | 00 | .87 | .87 |
| 14.1 | −2 | 14 | 5 | 458 | + .48 | −15.71 | −.05 | 15.66 | − | .14 | 00 | .80 | .80 |
| 14.2 | 3 | 14 | 12 9 | 54+189 | + 1.28 | −15.51 | +.00 | 15.51 | − | .38 | +00 | .89 | .89 |
| 14.06 14.3 | −4 | 14 | 21 | 190 | + 1.30 | −15.48 | +.02 | 15.50 | − | .39 | −01 | .89 | .90 |
| 13.86 | | | | | | | | | | | | 15874<br>15.865 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 13 | 12 | 19 | −41.76 | 0=−27.35 | ~~+.55~~ +.57 −11 | −27.~~92~~ 24 |
| 13 | 28 | 347 | − 3.15 | −16.74 | +.06 | 16.80 |
| 13 | 34 | 455 | + 3.06 | −14.84 | +.12 | 14.96 |
| 14 | 1 | 184 | + 2.14 | −15.22 | +.01 | 15.23 |
| 14 | 9 | 459 | + 4.76 | −14.45 | −.22 | 14.23 |
| 14 | 26 | 38 | − 3.12 | −16.52 | +.23 | 16.75 |

15.864

13.8 +.35 −15.82
13.9 +.04 −15.86
14.1 +.48 −15.66
13.9 +.29 −15.78

I x II
13.6 +3.06 −14.96 +.01 −14.95
14.0 +2.14 −15.23 +.00 −15.23
14.2 +4.76 −14.23 −.01 −14.24

−27.24 I x II
13.2 −41.76 ~~−27.92~~ +.01 −27.91
13.5 −3.15 −16.80 +.01 −16.79
14.4 −3.12 −16.75 −.01 −16.76

13.4 +1.78 (5) −15.37
13.7 +1.19 −15.49
14.2 +1.28 −15.51
14.3 +1.30 −15.50
13.9 +1.38 −15.47

0 = +2.77 + .83 n = −.29
+1.85 + .55 .30
+4.47 +1.54 .34
−.310

0 = +1.48 + .52 n = −.31
+ .74 + .24 −.32
+3.38 +1.23 −.36
−.330

0 = −42.05 −12.13 +.68 n = −.29 7
− 3.44 − 1.07 −.29
− 3.41 − .98 −.29
−.~~290~~ −.283

0 = −43.14 −12.44 +.68 n = −.29 7
− 4.53 − 1.32 .29
− 4.50 − 1.29 .29
−.~~290~~ −.283

n = −.28

1873 June 16 Ware h = +.021 +.021 n = −.41 c = .00

| | | | | | | s | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13.5 | +4 | 13 | 29 | 454 | + .77 | 0=−14.98 | +.06 | −15.04 | − | .32 | +.01 | −15.36 | 15.35 |
| 13.7 | +2 | 13 | 42 | 181 | + 1.19 | −14.84 | +.00 | 14.84 | − | .49 | 00 | .33 | .33 |
| 13.8 | +1 | 13 | 49 | 182 | + .35 | −15.27 | +.03 | 15.30 | − | .14 | | .44 | .44 |
| 14.2 | −3 | 14 | 12 | 189 | + 1.28 | −14.89 | +.00 | 14.89 | − | .52 | −.01 | .41 | .42 |
| 14.4 | −5 | 14 | 21 | 190 | + 1.30 | −14.88 | +.02 | 14.90 | − | .53 | −01 | .43 | .44 |
| 13.92 | | | | | | | | | | | | 15.394<br>15.394 | 15.396 |

| | | | | s | | |
|---|---|---|---|---|---|---|
| 13 | 34 | 455 | + 3.06 | 0=−14.18 | +.12 | −14.30 |
| 14 | 1 | 184 | + 2.14 | 0=−14.55 | +.01 | 14.56 |
| 14 | 9 | 459 | + 4.76 | −13.39 | −.22 | 13.17 |

13.8 +.35 −15.30
13.5 +.77 −15.04 +1
13.6 +.56 −15.17

| | | | I | | II |
|---|---|---|---|---|---|
| 13.6 | +3.06 | −14.30 | +.01 −14.29 | +.01 | −14.29 |
| 14.0 | +2.14 | −14.56 | +.00 −14.56 | +.00 | −14.56 |
| 14.2 | +4.76 | −13.17 | −.01 −13.18 | +.00 | −13.17 |

13.7 +1.19 −14.84
14.2 +1.28 −14.89
14.3 +1.30 −14.90
14.1 +1.26 −14.88

n = −.46 +.01

0 = +2.71 +1.01 n = −.37
+1.79 + .74 .41
+4.41 +2.12 .48
−.420

0 = +1.80 + .59 n = −.33
+ .88 + .32 −.36
+3.50 +1.71 −.49
−.393

z = +.60+.80 +.40+.60 +.20+.40 +.0+.20 +.0 -.20 -.20-.40 -.40-.60 -.60-.80 -.80-.100

RA sin z cos z tang δ | $\rho_{eq}-\rho_{fe}$ ρ'-ρ +(ρ'-ρ) Req-Rfe Rfe Req. | RA sin z cos z tang δ | $\rho_{eq}-\rho_{fe}$ ρ'-ρ +(ρ'-ρ) Req-Rfe Rfe. Req.

h m | ' " | " | h m | |

13 3 +.73 .68- .08 | -1 6.9 . +0.9 -6.0 +1.3 -4.7 | 13 12 -.72 .69- 41.76 | 3.1 . ~~-0.3~~ +.1 ~~3.4~~ 3.2 -1.2 ~~-4.2~~ 44

13 18 +.80 .59- .19 | 5.6 | 13 28 -.91 .40+ 3.06 | -1 4.1 . +0.7 3.4 -16 48 √

13 24 -.31 .95+ 1.78 | 5.6 . +1.5 4.1 -05 4.6 | 14 1 -.38 .92+ 2.14 | 6.0 . +0.7 5.3 -0.6 5.9

13 28 +.67 .74+ .02 | 7.8 . +0.0 7.8 +1.0 6.7 | 14 9 -.58 .81+ 4.76 | 5.9 . +0.7 5.2 -1.0 6.2

13 42 -.13 .99+ 1.19 | 5.5 . +0.3 5.2 -02 5.4

13 49 +.40 .91+ .35 | 6.2 +0.1 . 6.1 +07 5.4

14 5 +.29 .95+ .48 | 6.5 . +0.2 6.3 +05 5.8

14 12 -.17 .98+ 1.28 | 6.8 . +0.7 6.1 -04 65

14 21 -.18 .98+ 1.30 | 6.7 . +0.9 5.8 -04 6.2

5.66 5.66 | 5.43 5,50

8 ~~4~~5.28
3 150
678 +.73 -6."0 +.40 -6."1 +.29 -6."3 | -.13 -5."2 -.31 -4."1 -.58 -5."2 -.72 -3."4 -.91 -3."4
+.67 -7.8 | -.17 -6.1 -.38 -6.3
-.18 -5.8

+.70 -69 +.40 -6.1 +.29 -63 | -.16 -5.7 -.34 -47 -.58 -5.2 -.72 -3.4 -.91 -3.4
+1.3 +.8 +.6 | -.3 -.7 -1.1 -1.4
' " 5.6₂ 5.3₁ 5.7₁ | 6.0₃ 5.4₂ 6.3₁ 4.8₁
-1 5.65 (11) *-.1 *-.4 .0 | *+.3 *-.3 *+.6 *-.9
5,62

~~13 18 +.80 .59- .19~~ | -+ ~~5.6~~ ' "

13 21 -.31 .95+ 1.78 | 6.1 . +1.5 -4.6 -05 -5.1 | 13 12 -.72 .69- 41.76 | -1* 3.9 . ~~-0.3~~ +.1 ~~4.2~~ 3.8 -1.2 ~~-5.0~~ 5.2

13 29 +.08 1.00+ .77 | 5.6 . +0.0 5.6 +01 5.5 | 13 28 -.91 .40- 3.15 | 3.8 . +0.7 ~~3.1~~ 4.0 4.5 -1.6 61 √

13 42 -.13 .99+ 1.19 | 6.7 . +0.3 6.4 -02 6.6 | 13 34 -.49 .87+ 3.06 | 4.~~2~~5 . -0.1 46 -0.8 54

13 49 +.40 .91+ .35 | 4.7 +0.1 4.6 +07 3.9 | 14 1 -.38 .92+ 2.14 | 5.6 . +0.7 4.9 -0.6 5~~4~~5

13 53 +.65 .76+ .04 | 7.1 . +0.4 6.7 +1.1 56 | 14 9 -.58 .81+ 4.76 | 5.4 . +0.7 4.7 -1.0 57

14 5 +.29 .95+ .48 | 5.4 . +0.2 5.2 +05 4.7 | 14 26 -.91 .40- 3.12 | -1 3.3 . +0.3 ~~3.0~~ 3.6 -1.6 5.2 √

14 9 -.17 .98+ 1.28 | 6.7 . +0.7 6.0 -04 6.4

14 21 -.18 .98+ 1.30 | 6.8 . +0.9 5.9 -04 6.3

5.51 551 | 5.15 5,45

+.65 -6.7 +.40 -4.6 +.29 -5.2 +.08 -5.6 -.13 -6.4 -.31 -4.6 -.49 -4.6 -.72 -4.2 -.91 -3.1
8 408 | -.17 -6.0 -.38 -4.9 -.58 -4.7 | -.91 -~~3~~3.0
4 180 | -.18 -5.9
588

+.65 -6.7 +.40 -4.6 +.29 -5.2 +.08 -5.6 -.16 -6.1 -.34 -4.7 -5.3 -4.6 -.72 -4.2 -.91 -3.0
+1.2 +.8 +.6 +.2 -.3 -.7 -1.0 -1.4
5,1 | 5.5 3.8₁ 4.6₁ 5.4₁ 6.4₃ 5.4₂ 5.6₂ 5.6₁
' "
-1 5.~~45~~ (12) .0 *1.7 *-.9 *-.1 *+.9 *-.1 *+.1 -+.1
5.49

' "

13 29 +.08 1.00+ .77 | -1 6.8 . +0.0 -6.8 +01 -6.7 | ~~13 34 -.49 .87+ 3.06~~ | -1 4.0 . -0.1 -4.1 -0.8 -4.9

13 42 -.13 .99+ 1.19 | 5.7 . +0.3 5.4 -02 5.6 | 14 1 -.38 .92+ 2.14 | -1 4.7 . +0.7 4.0 -0.6 4.6

13 49 +.40 .91+ .35 | 7.8 +0.1 7.7 +07 7.0 | 14 9 -.58 .81+ 4.76 | 5.5 . +0.7 4.8 -1.0 5.8

14 12 -.17 .98+ 1.28 | 6.1 . +0.7 5.4 -04 5.8

14 21 -.18 .98+ 1.30 | 5.8 . +0.9 4.9 -04 5.3

6.08 6.08 | 5.10 5,10

5 540
3 30 | +.40 -7.7 | +.08 -6.8 -.13 -5.4 -.38 -4.0 -.49 -4.1
570 | -.17 -5.4 -.58 -4.8
-.18 -4.9

+.40 -7.7 | +.08 -6.8 -.16 -5.2 -.38 -4.0 -.53 -4.4
+.8 | +.2 -.3 -.7 -1.0
' " 6.9₁ | 6.6₁ 5.5₃ 4.7₁ 5.4₂
-1 5.69 (8) *+1.2 | *+.9 *-.2 *-1.0 *-.3
5.71

1873 June 17 WAR h = +.022 +.025 n = −.37 e = .00 h = +.028

| | Star | | Ra h | m | δ | tang. δ | τ Ra | ρ'−ρ | τ Ra −(ρ'−ρ) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | ~~13~~ | ~~18~~ | | − .19 44 | 0 = − 14.81 | | | | | 14.812 | |
| | 13.4 | +.9 | 13 | 24 | 453 | + 1.78 | − 14.25 | −.04 | −14.21 − | 66 | +03 − | 14.87 | 14.84 |
| | 13.5 | .8 | 13 | 29 | 454 | + .77 | − 14.35 | +.06 | 14.41 − | 28 | .02 | .69 | .67 |
| | 13.7 | .6 | 13 | 42 | 181 | + 1.19 | − 14.35 | +.00 | 14.35 − | 44 | .02 | .79 | .77 |
| 13.60 | 13.8 | 5 | 13 | 49 | 182 | + .35 | − 14.74 | +.03 | 14.77 − | 13 | .01 | .90 | .89 |
| | 14.2 | +1 | 14 | 12 | 189 | + 1.28 | − 14.38 | +.00 | 14.38 − | 47 | +00 | .85 | .85 |
| | 14.6 | −3 | 14 | 36 | 196 | − .09 | − 14.76 | +.01 | 14.77 + | 03 | −.01 | .74 | .75 |
| | 14.8 | .5 | 14 | 48 | 462 | + 1.71 | − 14.17 | +.03 | 14.20 − | 63 | .01 | .83 | .84 |
| | 14.9 | .6 | 14 | 57 | 199 | + .87 | − 14.40 | +.04 | 14.44 − | 32 | .02 | .76 | .78 |
| | 15.2 | .9 | 15 | 9 | 466 | + .09 | − 14.67 | +.02 | 14.69 − | 03 | .03 | .72 | .75 |
| 14.82 | 15.2 | −.9 | 15 | 10 | 201 | + .67 | − 14.54 | −.02 | 14.52 − | 25 | −.03 | .77 | .80 |
| | 14.33 | | | | | | | | | | | 14.778 | |
| | | | | | | | | | | | | 14.792 | 14.794 |

1873 June 17 WAR

| Star | Ra h | m | δ | tang. δ | τ Ra | ρ'−ρ | τ Ra −(ρ'−ρ) |
|---|---|---|---|---|---|---|---|
| | 13 | 12 | 19 | − 41.76 | 0 = − 27.29 | −.11 ~~+.57~~ ~~+.55~~ | −27.86 18 |
| | 13 | 28 | 347 | − 3.15 | − 15.68 | +.06 | 15.74 |
| | ~~13~~ | ~~34~~ | 455 | ~~+ 3.06~~ | − 13.65 | +.12 | 13.77 |
| | 14 | 1 | 184 | + 2.14 | − 13.95 | +.01 | 13.96 |
| | 14 | 9 | 459 | + 4.76 | − 13.09 | −.22 | 12.87 |
| | 14 | 49 | 358 | − 5.10 | − 16.77 | +.23 | 17.00 |
| | 14 | 51 | 198 | + 3.65 | − 13.33 | +.10 | 13.43 |
| | 15 | 13 | 467 | + 2.45 | − 13.88 | −.03 | 13.85 |

139 +35 −14.77
146 −09 −14.77
137 +09 −14.69
14.5 +.12 −14.74
−1

| | | | I | | II |
|---|---|---|---|---|---|
| 13.3 | +3.06 | −13.77 | +.02 −13.75 | +.01 | −13.76 |
| 14.0 | +2.14 | −13.96 | +.01 −13.95 | +.00 | −13.96 |
| 14.2 | +4.76 | −12.87 | +.01 −12.86 | +.00 | −12.87 |
| 14.8 | +3.65 | −13.43 | −.01 −13.44 | −.02 | −13.45 |
| 15.2 | +2.45 | −13.85 | −.02 −13.87 | −.03 | −13.88 |

| | | | I | | II |
|---|---|---|---|---|---|
| 13.2 | −41.76 | ~~−27.86~~ −27.18 | +.03 −27.83 | +.02 | −27.84 |
| 13.5 | −3.15 | −15.74 | +.02 −15.72 | +.01 | −15.73 |
| 14.8 | −5.10 | −17.00 | +.01 −16.99 | −.02 | −17.02 |

134 +1.78 −14.21
137 +1.19 −14.35
14.2 +1.28 −14.38
148 +1.71 −14.20
14.0 +1.49 −14.28

n = −.34

0 = +2.94 + .99 n = −.34
+2.02 + .79 −.40
+4.64 +1.88 −.40
+3.53 +1.30 −.37
+2.33 + .87 −.37
−.376

0 = +1.57 + .52 n = −.33
+ .65 + .32 −.49
+3.27 +1.41 −.43
+2.14 + .83 −.39
+ .94 + .40 −.42
−.383

0 = −41.88 −13.09 (+.68) n = −.31 0
−3.27 − .98 −.30
−5.22 − 2.25 −.43
−.34 3

0 = −43.25 −13.56 (+.68) n = −.31 0
−4.64 −1.45 −.31
−6.59 −2.74 −.42
−.34 3

1873 June 25 WAR h = +.119 n = −.35 e = .00 h = +.046

| | Star | | Ra h | m | δ | tang. δ | τ Ra | ρ'−ρ | τ Ra −(ρ'−ρ) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | 10.490 | |
| 14.40 | 14.2 | +.5 | 14 | 12 | 189 | + 1.28 | 0 = − 10.03 | +.00 | −10.03 − | 45 | +.02 − | 10.48 | 10.46 |
| | 14.4 | +3 | 14 | 21 | 190 | + 1.30 | 10.03 | +.02 | 10.05 − | 45 | +.01 | .50 | 49 |
| 14.40 | 14.6 | +1 | 14 | 36 | 196 | − .09 | 10.51 | +.01 | 10.52 + | 03 | 00 | .49 | .49 |
| | | | ~~14~~ | ~~44~~ | | − ~~0.28~~ 24 | | | | ~~02~~ | | | |
| 1570 | 15.7 | −1.0 | 15 | 43 | 214 | − .05 | − 10.47 | −.02 | 10.45 + | 02 | −.05 | .473 | .48 |
| | 14.72 | | | | | | | | | | | 10.430 | |
| | | | | | | | | | | | | 10.475 | 10.480 |

| Ra h | m | δ | tang. δ | τ Ra | ρ'−ρ | τ Ra −(ρ'−ρ) |
|---|---|---|---|---|---|---|
| 14 | 9 | 459 | + 4.76 | 0 = − 8.75 | −.22 | −8.53 |
| 14 | 26 | 38 | − 3.12 | − 11.43 | +.23 | 11.66 |
| 15 | 45 | 470 | + 1.96 | − 9.96 | −.06 | 9.90 |
| 15 | 49 | 217 | + 4.78 | − 8.62 | +.27 | 8.89 |

14.6 −09 −10.52
157 −05 −10.45
15.1 −.07 −10.48
−2

| | | | I | | II |
|---|---|---|---|---|---|
| 14.2 | +4.76 | −8.53 | +.02 −8.51 | +.00 | −8.53 |
| 15.8 | +1.96 | −9.90 | −.01 −9.91 | −.03 | −9.93 |
| 15.8 | +4.78 | −8.89 | −.01 −8.90 | −.03 | −8.92 |

| | | | I | | II |
|---|---|---|---|---|---|
| 14.4 | −3.12 | −11.66 | +.01 −11.65 | −.02 | −11.68 |

14.2 +1.28 −10.03
14.3 +1.30 −10.05
14.2 +1.29 −10.04

n = −.32 −.02

0 = +4.83 +1.97 n = −.41
+2.03 + .57 −.28
+4.85 +1.58 −.32
−.370

0 = −3.05 −1.17 n = −.34 8

0 = +3.47 +1.51 n = −.43
+ .67 + .11
+3.49 +1.12 −.32
−.375

0 = −4.41 −1.64 n = −.37

1873 June 26 WAR h = −.008 +.030 n = −.44 e = .00 h = +.023

| | Star | | Ra h | m | δ | tang. δ | τ Ra | ρ'−ρ | τ Ra −(ρ'−ρ) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | 10.110 | |
| | 14.2 | +.7 | 14 | 12 | 189 | + 1.28 | 0 = − 9.58 | +.00 | −9.58 − | 56 | +02 − | 10.14 | 10.12 |
| | 14.3 | +.6 | 14 | 21 | 190 | + 1.30 | − 9.56 | +.02 | 9.58 − | 57 | +.01 | .15 | .14 |
| 14.37 | 14.6 | +.3 | 14 | 36 | 196 | − .09 | − 10.07 | +.01 | 10.08 + | 04 | +.01 | .04 | .03 |
| | | | ~~14~~ | ~~44~~ | | − ~~.28~~ 04 | | | | | | | |
| | 15.7 | −8 | 15 | 40 | 213 | + .28 | − 9.98 | +.00 | 9.98 − | 12 | −.02 | .10 | .12 |
| 15.70 | 15.7 | −8 | 15 | 43 | 214 | − .05 | − 10.10 | −.02 | 10.08 + | 02 | −.02 | .06 | .08 |
| | 14.90 | | | | | | | | | | | 10.080 | |
| | | | | | | | | | | | | 10.098 | 10.098 |

| Ra h | m | δ | tang. δ | τ Ra | ρ'−ρ | τ Ra −(ρ'−ρ) |
|---|---|---|---|---|---|---|
| 14 | 9 | 459 | + 4.76 | 0 = − 8.11 | −.22 | −7.89 |
| 14 | 26 | 38 | − 3.12 | − 11.27 | +.23 | 11.50 |
| 15 | 45 | 470 | + 1.96 | − 9.38 | −.06 | 9.32 |
| 15 | 49 | 217 | + 4.78 | − 7.82 | +.27 | 8.09 |

146 −09 −10.08
157 +28 −9.98
157 −05 −10.08
15.43 +.05 −10.05
+1

| | | | I | | II |
|---|---|---|---|---|---|
| 14.2 | +4.76 | −7.89 | −.01 −7.90 | +.00 | −7.89 |
| 15.8 | +1.96 | 9.32 | +.00 −9.32 | +.01 | −9.31 |
| 15.8 | +4.78 | 8.09 | +.00 −8.09 | +.01 | −8.08 |

| | | | I | | II |
|---|---|---|---|---|---|
| 14.4 | −3.12 | −11.50 | −.01 −11.51 | +.00 | −11.50 |

0 = +4.71 +2.15 n = −.46
+1.91 + .73 .38
+4.73 +1.96 .42
−.420

0 = −3.17 −1.46 n = −.46

14.2 +1.28 −9.58
14.3 +1.30 −9.58
14.2 +1.29 −9.58

n = −.38 +.01

0 = +3.47 +1.69 n = −.49
+.67 + .27 −.40
+3.49 +1.50 −.43
−.440

0 = −4.41 −1.92 n = −.44

9
6

4
3

5
3

z = +.60+.80 +.40+.60 +.20+.40 +.0+.20 +.0−.20 −.20−.40 −.40−.60 −.60−.80 −.80−.100

RA sin z cos z tang δ Req−Rqc ρ'−ρ Req−Rqc+(ρ'−ρ) Adj. Req. RA sin z cos z tang. δ Req−Rqc ρ'−ρ Req−Rqc+(ρ'−ρ) Adj. Req.

h m ' " " h m ' " "

~~13 18 +.80 .59− .19~~ ~~−1 5.9~~ 13 12 −.72 .69− 41.76 −1 4.9 . ~~−0.3~~ +1 ~~5.2~~ 5.8 −1.2 ~~6.0~~ 6.2

13 24 −.31 .95+ 1.78 6.0 ~~3.9~~ .+15 −4.6 −0.5 −5.0 13 28 −.91 .40− 3.15. − 0.9 +0.7 ~~0.2~~ 5.0 1.6 −1.6 3.2 ✓

13 29 +.08 1.00+ .77 7. ~~6.0~~ .+06 6.4 +0.1 6.3 ~~13 34 −.49 .87+ 3.06~~ 3.9 .−0.1 4.0 −0.8 4.8

13 42 −.13 .99+ 1.19 6.4 .+03 6.1 −0.2 6.3 14 1 −.38 .92+ 2.14 5.6 .+0.7 4.9 −0.6 5.5

13 49 +.40 .91+ .35 5.0 +0.1 4.9 +0.7 4.2 14 9 −.58 .81+ 4.76 5.4 .+0.7 4.7 −1.0 5.7

14 12 −.17 .98+ 1.28 ~~6.1~~ . +0.7 5.4 −0.4 5.8 14 49 −.85 .52− 5.10 ~~7.1~~ .+1.1 ~~0.0~~ −1.6 1.6 ✓

14 36 +.74 .67− .09 — — . −0.7 14 51 −.53 .84+ 3.65 4.9 .+1.0 3.9 −0.9 4.8

14 48 −.30 .95+ 1.71 4.1 . −0.6 4.7 −0.5 5.2 15 13 −.43 .90+ 2.45 4.2 .−0.2 4.4 −0.7 5.1

14 57 +.03 1.00+ .87 6.1 . +0.6 5.5 +0.1 5.4

15 9 +.60 .80+ .09 8.8 . +0.1 8.7 +1.0 7.7

15 10 +.15 .99+ .67 4.8 . −0.1 4.9 +0.3 4.6

5.61 5.61 5.32 5.35

+.60 −8.7" +.40 −4.9" +.08 −6.4" −.13 −6.1" −.31 −4.5" −.49 −4.0" −.72 −5.2" −.91 −0.2"

9 549 +.03 −5.5 −.17 −5.4 −.30 −4.7 −.58 −4.7 −.85 −0.0

6. 210 +.15 −4.9 −.38 −4.9 −.53 −3.9

759 −.43 −4.4

5 +.60 −8.7 +.40 −4.9 +.09 −5.6 −.15 −5.7 −.33 −4.7 −.51 −4.2 −.72 −5.2 −.88 −0.1

' " +1.2 +.8 +.2 −.3 −.6 −1.0 −1.4

−1 5.44 (15) 7.5 4.1 5.4 6.0 5.3 5.2 6.6

5.60 ++2.0 *−1.4 *−.1 −+.5 *−.2 *−.3 *+1.1

' "

14 12 −.17 .98+ 1.28 −1 5.8 . +0.7 −5.1 −0.3 −5.4 14 9 −.58 .81+ 4.76 −1 4.7 .+0.7 −4.0 −1.0 −5.0

14 21 −.18 .98+ 1.30 5.5 . +0.9 4.6 −0.3 4.9 14 26 −.91 .40− 3.12 — — .+0.3 —

14 36 +.74 .67− .09 5.3 . −0.7 6.0 +1.3 4.7 15 45 −.35 .93+ 1.96 3.5 .+0.5 3.0 −0.6 2.6

~~14 44 +.85 .52− .28~~ 15 49 −.58 .81+ 4.78 3.6 .+0.2 3.4 −1.0 4.4

15 43 +.71 .70− .05 3.7 . −0.6 4.3 +1.2 3.1

4.52 4.52 4.33 4.33

4 208

3 99 +.74 −6.0 −.17 −5.1 −.35 −3.0 −.58 −4.0 −.91

307 +.71 −4.3 −.18 −4.6 −.58 −3.4

+.72 −5.1 −.17 −4.8 −.35 −3.0 −.58 −3.7

+1.4 −.3 −.7 −1.1

' " 3.7 5.1 3.7 4.8

−1 4.41 (7) *−.7 −+.7 *−.7 *+.4

4.44

' "

14 12 −.17 +1.28 −1 4.7 .+0.7 −4.0 −0.3 −4.3 14 9 −.58 .81+ 4.76 −1 3.4 .+0.7 −2.7 −1.0 −3.7

14 21 −.18 +1.30 5.6 .+0.9 4.7 −0.3 5.0 14 26 −.91 .40− 3.12 1.6 .+0.3 1.9 ~~1.3~~ −1.6 3.5 ✓

14 36 +.74 − .09 5.5 .−0.7 6.2 +1.3 4.9 15 45 −.35 .93+ 1.96 2.9 .+0.5 2.4 −0.6 3.0

~~14 44 +.85 − .28~~ 15 49 −.58 .81+ 4.78 4.0 .+0.2 3.8 −1.0 4.8

15 40 +.45 + .28 4.6 .+0.3 4.3 +0.7 3.6

15 43 +.71 − .05 3.4 .−0.6 4.0 +1.2 2.8

4.12 4.12 3.83 3.83

5 560

3 249 +.74 −6.2 +.45 −4.3 −.17 −4.0 −.35 −2.4 −.58 −2.7 −.91 −1.3

809 +.71 −4.0 −.18 −4.7 −.58 −3.8

+.72 −5.1 +.45 −4.3 −.17 −4.3 −.35 −2.4 −.58 −3.7 −.91 −1.3

+1.4 +.9 −.3 −.7 −1.1

' " 3.7 3.4 4.6 3.1 4.3

−1 3.96 (8) *−.3 *−.6 −+.6 *−.9 *+.3

4.01

1873 June 27 WAR h = +.021 +027 n = -.46

| Star | Ra | δ | tang δ | πRa | ρ'-ρ | π-Ra-(ρ'-ρ) | | |
|---|---|---|---|---|---|---|---|---|
| | h m ? | | | s | | s | | |
| 14.7 | 14 43 | | - .05 | 0 = - | | | | |
| 14.8 | 14 48 | 462 | + 1.71 | -9.29 | .+.03 | -9.32 | - .79 | -10.11 |
| 14.75 | | | | | | | | |

1873 June 27 WAR

| Star | Ra | δ | tang δ | πRa | ρ'-ρ | π-Ra-(ρ'-ρ) |
|---|---|---|---|---|---|---|

1873 June 29 WAR h = +.031 +065 n = -.49 e = .00 h = +.048

| | Star | | Ra | δ | tang δ | πRa | ρ'-ρ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | | | | | 8.460 | |
| | 14.3 | +11 | 14 21 | 190 | + 1.30 | 0 = -7.81 | .+.02 | -7.83 | - | .63 | +05 | -8.46 | 8.41 |
| | 14.6 | +.8 | 14 34 | 461 | + 1.00 | -7.94 | .+.02 | 7.96 | - | .49 | +04 | .45 | .41 |
| 14.50 - | 14.6 | +.8 | 14 36 | 196 | ∓ .09 | -8.50 | .+.01 | 8.51 | + | .04 | +.04 | .47 - | .43 |
| | | | ~~14 44~~ - | | ~~-.284~~ | | | | | | | | |
| | 15.6 | -2 | 15 33 | 469 | + .86 | -7.82 | .+.06 | 7.88 | - | .42 | -.01 | .30 | .31 |
| | 15.6 | -.2 | 15 38 | 21k | + .12 | -8.34 | .+.02 | 8.36 | - | .06 | -.01 | .42 | .43 |
| | 15.7 | -3 | 15 40 | 213 | + .28 | -8.27 | .+.00 | 8.27 | - | .14 | -.01 | .41 | .42 |
| | 15.7 | -3 | 15 43 | 214 | - .05 | -8.47 | .-.02 | 8.45 | + | .02 | -.01 | .43 | .44 |
| | 15.8 | -.4 | 15 51 | 218 | + .29 | -8.30 | .-.01 | 8.29 | - | .14 | -.02 | .43 | .45 |
| 15.74 | 15.9 | -.5 | 15 52 | 219 | + .62 | -8.19 | .-.04 | 8.15 | - | .25 | -02 | .40 | .42 |
| 15.74 | 15.9 | -.5 | 15 55 | 471 | + 1.43 | -7.50 | .+.21 | 7.71 | - | .70 | -02 | .41 | .43 |
| | 15.37 | | | | | | | | | | | 8.400 | |
| | | | | | | | | | | | | 8.418 | 8.415 |

| Ra | δ | tang δ | πRa | ρ'-ρ | |
|---|---|---|---|---|---|
| | | | s | | |
| 14 26 | 38 | - 3.12 | 0 = -9.88 | .+.23 | -10.11 |
| 15 37 | 364 | - 2.89 | -9.80 | .+.17 | 9.97 |
| 15 45 | 470 | + 1.96 | -7.55 | .-.06 | 7.49 |
| 15 49 | 217 | + 4.78 | -6.10 | .+.27 | 6.37 |

14.6 -.09 -8.51
156 +12 -8.36
157 +28 -8.27
157 -05 -8.45
159 +29 -8.29
15.5 +.11 -8.38
-2

143 +1.30 -7.83
14.6 +1.00 -7.96
~~15.5 +.86~~ -7.88
15.9 +1.43 -7.71
16.1 +1.15 -7.85
14.9 +1.24 -7.83
n = -.49 -01

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 15.8 | +1.96 | -7.49 | -.01 | -7.50 | -.02 3 | -7.51 2 |
| 15.8 | +4.78 | 6.37 | -.01 | -7.38 6 | -.02 3 | -6.39 40 |

| | | | I | | II |
|---|---|---|---|---|---|
| 14.4 | -3.12 | -10.11 | +.03 + | -10.08 | +.02 | -10.~~13~~ 09 |
| 15.6 | -2.89 | -9.97 | +.00 | -9.97 | -.02 | -9.99 |

0 = +1.85 +.88 n = -48
+4.67 +1.00 ✓ ~~.47~~ .43
-.455

0 = + .81 (.72) + .34 (.31) n = -.48 3
+3.63 (3.54) +1.46 (1.43) .40
-.415

0 = -3.23 -1.70 n = -.52
-3.00 -1.59 .53
-.525

0 = -~~3.27~~ 4.36 -2.24 6 n = -.54 2
-4.04 13 -2.14 6 .58 2
-.520

1873 June 30 WAR h = +.034 +044 n = -.58 e = .00 h =

| Star | | Ra | δ | tang δ | πRa | ρ'-ρ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | s | | | | | | | |
| | | ~~14 44~~ | | ~~- .28~~ | 0 = - | | | | | | | |
| 14.8 | + 2 | 14 48 | 462 | + 1.71 | -6.79 | .+.03 | -6.82 | - | .99 | +01 | -7.81 | 7.80 |
| 14.9 | + 1 | 14 57 | 199 | + .87 | -7.29 | .+.04 | 7.33 | - | .50 | .00 | .83 | .83 |
| 15.0 | 0 | 14 59 | 485 | + .52 | -7.49 | .+.00 | 7.49 | - | .30 | | .79 | .79 |
| 15.1 | -1 | 15 9 | 466 | + .09 | -7.66 | .+.02 | 7.68 | - | .05 | | .73 | .73 |
| 15.2 | -2 | 15 10 | 201 | + .67 | -7.39 | .-.02 | 7.37 | - | .39 | -01 | .76 | .77 |
| 15.00 | | | | | | | | | | | 7.784 | |
| | | | | | | | | | | | 7.784 | 7.784 |

| Ra | δ | tang δ | πRa | ρ'-ρ | | |
|---|---|---|---|---|---|---|
| | | | s -10.01 | | | |
| 14 51 | 198 | + 3.65 | 0 = -5.65 | .+.10 | -5.75 | |
| 15. 4 | 360 | - 4.42 | -~~5.44~~ | .+.02 | ~~5.43~~ | -1003 |
| 15 13 | 467 | + 2.45 | -6.15 | .-.03 | 6.12 | |

15.1 +.09 -7.68
-1

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 14.8 | +3.65 | -5.75 | +.01 | -5.74 | +.00 | -5.75 |
| 15.2 | +2.45 | -6.12 | +.00 | -6.12 | -.01 | -6.13 |

| | | 10.03 | | I | | II |
|---|---|---|---|---|---|---|
| 15.4 | -4.42 | -~~5.43~~ | -.01 | -~~5.44~~ -10.04 | -.02 | -~~5.45~~ 10.05 |

14.8 +1.71 -6.82
14.9 +.87 -7.33
14.8 +1.29 -7.07

n = -.51 -.01

0 = +3.56 +1.94 n = -.54
+2.36 +1.56 .66
-.600

0 = +2.36 +1.32 n = -.56
+1.16 +.94 -.81
-.560

0 = -4.51 +~~2.24~~ -2.36 n = ~~+.50~~ -.52

0 = -5.71 +~~1.62~~ -2.98 n = ~~+.28~~ -.52

9
1

-1

5
2

-1

| $\eta$ = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +0−.20 | −20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

RA sin η cos η tan η / δ | $R_{eq}-R_{fc}$ ″ | $P'-P$ | $R_{eq}-R_{fc}+(P'-P)$ ″ | $R_{fc}$ $R_{eq}$ | RA sin η cos η tan η / δ | $R_{eq}-R_{fc}$ | $P'-P$ | $R_{eq}-R_{fc}+(P'-P)$ | $R_{fc}$ $R_{eq}$

h m
14 43 — ,05
14 48 −.30 ,95 + 1,71 −1 2.4 .−0.6 −3.0 −05 ~~−35~~

′ ″
14 21 −.18 .98 + 1.30 −1 5.3 .+0.9 −4.4 −0.3 −4.7 | 14 26 −.91 .40 − 3.12 −1 1.4 .+0.3 ~~1.1~~ 1.7 −16 3.3 ✓
14 34 −.05 1.00 + 1.00 3.3 .−0.4 3.7 −01 3.8 | 15 37 −.92 .38 − 2.89 0.6 .+0.2 ~~0.4~~ 0.8 −1.6 2.4 ✓
14 36 +.74 .67 − 09 4.6 .−0.7 5.3 +1.3 4.0 | 15 45 −.35 .93 + 1.96 2.3 .+0.5 1.8 −0.6 − 2.4
~~14 44 +.85 .52 − .28~~ | 15 49 −.58 .81 + 4.78 — — .+0.2
15 33 +.03 1.00 + .86 — — .−1.0
15 38 +.58 .81 + .12 5.4 .−0.3 5.7 +1.0 4.7
15 40 +.45 .89 + .28 3.8 .+0.3 3.5 +0.8 2.7
15 43 +.71 .70 − .05 4.4 .−0.6 5.0 +1.2 3.8
15 51 +.44 .90 + .29 4.0 .−0.1 4.1 +0.7 3.4
15 52 +.26 .96 + .52 3.9 .−0.4 4.3 +0.4 3.9
15 53 −.22 .97 + 1.43 4.6 .+0.5 4.1 −0.4 4.5
3.94 3.94 2.40
2.40

9 746
1 40 +.74 −5.3 +.58 −5.7 +.26 −4.3 +.03 −.18 −4.4 −.22 −4.1 −.58 −.91 −1.1
786 +.71 −5.0 +.45 −3.5 −.05 −3.7 −.35 −1.8 −.92 −0.4
+.44 −4.1

+.72 −5.1 +.49 −4.4 +.26 −4.3 −.11 −4.0 −.28 −2.9 −.91 −0.7
+1.4 +.9 +.5 −.2 −.6
′ ″ 3.7 2 3.5 3 3.8 1 4.2 2 3.5 2
−1 3.71 (10) .6 *−.2 *+.1 *+.5 *−.2
3.79

′ ″
14 44 +.45 .89 − .28 −1 | 14 51 −.53 .84 + 3.65 −1 3.1 .+1.0 −2.1 −0.9 −3.0
14 48 −.30 .95 + 1.71 3.1 .−0.6 −3.7 −05 −4.2 | 15 4 −.87 .48 − 4.42 ~~0.9~~ .+0.7 1.6 ~~0.2~~ −16 3.2 ✓
14 57 +.03 1.00 + .87 5.2 .+0.6 4.6 +0.1 4.5 | 15 13 −.43 .90 + 2.45 2.5 .−0.2 2.7 −0.7 3.4
14 59 +.26 .96 + .52 4.9 .+0.5 4.4 +05 3.9
15 9 +.60 .80 + .09 4.8 .+0.1 4.7 +10 3.7
15 10 +.15 .99 + .67 3.5 .−0.1 3.6 +03 3.3
3.92 3.92 3.20
3.20

003

5 460
2 40 +.60 −4.7 +.26 −4.4 +.03 −4.6 −.30 −3.7 −.53 −2.1 −.87 −0.2
. 500 +.15 −3.6 −.43 −2.7

+.60 −4.7 +.26 −4.4 +.09 −4.1 −.30 −3.7 −.48 −2.4 −.87 −0.2
+1.1 +.5 +.2 −.6 −.9
′ ″ 3.6 3.9 3.9 2 4.3 3.3 2
−1 3.74 (7) *−.1 −+.2 −+.2 ++.6 *−.4
3.71

1873 July 3 Wake h = +.038 +.058 n = -.55 e = .00 h = ~~+.001~~ +.055

| | Star | | Ra h | m | | | tang. δ | | πRa s | P'–P | πRa–(P'–P) s | | | | Star 4.816 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 15.4 | +4 | 15 | 26 | 206 | + | .88 | 0 = | – 4.33 | +.05 | –4.38 | – | 18 | +02 | – 4.86 | 4.84 |
| | 15.5 | 3 | 15 | 29 | 209 | + | .51 | | – 4.55 | +.02 | 4.57 | – | 28 | .02 | .85 | .83 |
| | 15.6 | 2 | 15 | 33 | 469 | + | .86 | | – 4.31 | +.06 | 4.37 | – | 47 | .01 | .84 | .83 |
| | 15.6 | 2 | 15 | 38 | 212 | + | .12 | | – 4.65 | +.02 | 4.67 | – | 67 | .01 | .74 | .73 |
| 15.56 | 15.7 | 1 | 15 | 40 | 213 | + | .28 | | – 4.64 | +.00 | 4.64 | – | 15 | .01 | .79 | .78 |
| | 15.7 | 1 | 15 | 43 | 214 | – | .05 | | – 4.79 | –.02 | 4.77 | + | 03 | .01 | .74 | .73 |
| | 15.8 | +0 | 15 | 51 | 218 | + | .29 | | – 4.65 | –.01 | 4.64 | – | 16 | +.00 | .80 | .80 |
| | 15.9 | –1 | 15 | 52 | 219 | + | .52 | | – 4.62 | –.04 | 4.58 | – | 29 | –.01 | .87 | .88 |
| | 15.9 | 1 | 15 | 55 | 147 | + | 1.43 | | – 3.83 | +.21 | 4.04 | – | 79 | .01 | .83 | .84 |
| | 16.0 | 2 | 15 | 59 | 220 | + | 1.66 | | – 3.84 | +.15 | 3.99 | – | 91 | .01 | .90 +.12 | .79 |
| | [16.1] | 3 | 16 | 5 | 221 | + | 1.01 | | – 4.07 | +.10 | 4.17 | – | 56 | ]02 | .73] –.07 | .82 |
| | 16.1 | 3 | 16 | 8 | 222 | – | .06 | | – 4.79 | –.01 | 4.78 | + | 03 | .02 | .75 | .77 |
| 15.94 | 16.2 | –4 | 16 | 12 | 223 | – | .08 | | – 4.80 | +.04 | 4.84 | + | 04 | –.02 | .80 | .82 |
| | 15.78 | | | | | | | | | | | | | | ~~4.813~~ | |

1873 July 3 Wake

| Ra h | m | | δ | tang. δ | | πRa s | P'–P | πRa–(P'–P) s |
|---|---|---|---|---|---|---|---|---|
| 15 | 45 | 470 | + | 1.96 | 0 = | –3.81 | –.06 | –3.75 |
| 15 | 49 | 217 | + | 4.78 | | –1.89 | +.27 | 2.16 |

4.795
4.800 4.805

| | | |
|---|---|---|
| 15.6 | +.12 | –4.67 |
| 15.7 | +.28 | –4.64 |
| 15.7 | –.05 | –4.77 |
| 15.9 | +.29 | –4.64 |
| 16.1 | –.06 | –4.78 |
| 16.2 | –.08 | –4.84 |
| 15.9 | +.08 | –4.72 |
| 15.4 | +.88 | –4.38 |
| 15.5 | +.86 | –4.37 |
| 15.9 | +1.43 | –4.04 |
| [16.0 | +1.66 | –3.99] |
| [16.1 | +1.01 | –4.17] |
| ~~15.8~~ | ~~+1.17~~ | ~~–4.19~~ |
| 15.76 | +1.21 | –4.19 |
| | +1.66 | |

n = –.49

15.8 +1.96 –3.75 +.00 – 3.75 (I) +.00 –3.75 (II)
15.8 +4.78 –2.16 +.00 – 2.16 +.00 –2.16

0 = +1.88 +.97 n = –.52
+4.70 +2.56 –.55 –.535

0 = +.~~79~~ 90 + .44 n = –.~~54~~ 49 6
+3.61 +2.03 –.56 –.560

1873 July 5 Wake h = +.048 +.053 n = –.50

| | Star | | Ra h | m | | | tang. δ | | πRa s | P'–P | πRa–(P'–P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 14.8 | +.1 | 14 | 48 | 462 | + | 1.71 | 0 = | –1.89 | +.03 | –1.92 | – .86 | .64 .01 | – 2.78 | 2.77 |
| 14.90 | 15.0 | –.1 | 14 | 59 | 465 | + | .52 | | – ~~1~~.30 2 | +.00 | ~~1~~.30 2 | – .26 | .01 | 2.56 | .57 |
| | 14.90 | | | | | | | | | | | | | 2.670 | |
| | | | | | | | | | | | | | | 2.670 | 2.670 |

| Ra h | m | | δ | tang. δ | | πRa s | P'–P | πRa–(P'–P) |
|---|---|---|---|---|---|---|---|---|
| 14 | 51 | 198 | + | 3.65 | 0 = | – 0.64 | +.10 | –0.74 |

15.0 +.52 –2.30 √

14.8 +3.65 –0.74 +01 –0.73 (I) +00 –.74 (II)

14.8 +1.71 –1.92

0 = +3.13 +4.57 n = –.18 .50

n = –.32 –.01 √

0 = +1.94 +1.18 n = –.61

1873 July 6 h = +.052 +.042 n = –.46 e = –.05 h = +.016

| | Star | | Ra h | m | | | tang. δ | | | πRa s | P'–P | πRa–(P'–P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | 1.657 | |
| | 14.3 | +1.1 | 14 | 21 | 190 | + | 1.30 | +1.41 | – | 0.99 | +.02 | –1.01 – | 60 | –.08 +.02 | –1.69 | 1.67 |
| | 14.6 | .8 | 14 | 34 | 461 | + | 1.00 | +1.41 | – | 1.06 | +.02 | 1.08 – | 46 | –.07 .01 | .61 | .60 |
| | 14.6 | .8 | 14 | 36 | 196 | – | .09 | +1.00 | – | 1.62 | +.01 | 1.63 + | 04 | –.05 .01 | .64 | .63 |
| | | | ~~14~~ | ~~44~~ | | – | ~~.28~~ | ~~–.41~~ | | ~~–1.71~~ | | | | | | |
| | 14.8 | .6 | 14 | 48 | 462 | + | 1.71 | +1.99 | – | 0.82 | +.03 | 0.85 – | 79 | –.10 .01 | .74 | .73 |
| | 14.9 | .5 | 14 | 57 | 199 | + | .87 | +1.32 | – | 1.15 | +.04 | 1.19 – | 40 | –.067 .01 | .66 | .65 |
| 14.70 | 15.0 | +4 | 14 | 59 | 465 | + | .52 | +1.13 | – | 1.30 | +.00 | 1.30 – | 24 | –.06 +.01 | .60 | .59 |
| | 15.5 | –1 | 15 | 29 | 209 | + | .51 | +1.12 | – | 1.32 | +.02 | 1.34 – | 23 | –.06 .00 | .63 | .63 |
| | 15.6 | 2 | 15 | 33 | 469 | + | .86 | +1.32 | – | 1.20 | +.06 | 1.26 – | 40 | –.07 .00 | .73 | .73 |
| | 15.6 | 2 | 15 | 38 | 212 | + | .12 | +1.00 | – | 1.43 | +.02 | 1.45 – | 86 | –.05 .00 | .56 | .56 |
| | 15.7 | 3 | 15 | 40 | 213 | + | .28 | +1.04 | – | 1.44 | +.00 | 1.44 – | 13 | –.05 .00 | .62 | 62 |
| | 15.7 | 3 | 15 | 44 | 214 | – | .05 | +1.00 | – | 1.57 | –.02 | 1.55 + | 02 | –.05 .00 | .58 | .58 |
| | 16.1 | .7 | 16 | 8 | 222 | – | .06 | +1.00 | – | 1.59 | –.01 | 1.58 + | 03 | –.05 –.01 | .60 | .61 |
| | 16.2 | 8 | 16 | 12 | 223 | – | .08 | +1.00 | – | 1.59 | +.01 | 1.63 + | 04 | –.05 .01 | .64 | .66 |
| | 16.3 | 9 | 16 | 19 | 473 | + | .26 | +1.03 | – | 1.27 | +.14 | 1.41 – | 12 | –.05 .01 | .68 | .69 |
| 15.90 | 16.4 | 1.0 | 16 | 22 | 475 | + | 1.46 | +1.77 | – | 1.03 | –.09 | 0.94 – | 67 | –.09 –.02 | 1.70 | .72 |
| | 15.42 | | | | | | | | | | | | | | 1.638 | |
| | | | | | | | | | | | | | | | 1.645 | 1.644 |

| Ra h | m | | δ | tang. δ | | πRa | P'–P | πRa–(P'–P) |
|---|---|---|---|---|---|---|---|---|
| 14 | 49 | 358 | – | 5.10 | – | 4.10 | +.23 | –4.33 |
| 14 | 51 | 198 | + | 3.65 | + | 0.74 | +.10 | +0.64 |
| 14 | 56 | 464 | + | 2.29 | – | 0.71 | –.17 | –0.54 |
| 15 | 13 | 467 | + | 2.45 | – | 0.29 | –.03 | –0.26 |
| 15 | 37 | 364 | – | 2.89 | – | 2.76 | +.17 | –2.93 |
| 15 | 45 | 470 | + | 1.96 | – | 0.66 | –.06 | –0.60 |
| 15 | 49 | 217 | + | 4.78 | + | 1.11 | +.27 | –~~1.38~~ 0.94 √ |
| 16 | 15 | 472 | + | 4.07 | + | 0.35 | –.04 | +0.39 |

0 = –5.15 –2.75 n = –.53
–2.94 –1.39 .47
(d) –.500

0 = –6.47 –3.36 n = –.52
–4.26 –1.99 –.47
(c) –.495

| | | |
|---|---|---|
| 14.6 | –.09 | –1.63 |
| 15.6 | +.12 | –1.45 |
| 15.7 | +.28 | –1.44 |
| 15.7 | –.05 | –1.55 |
| 16.1 | –.06 | –1.58 |
| 16.2 | –.08 | –1.63 |
| 16.3 | +.26 | –1.41 |
| 15.7 | +.05 | –1.53 –4 |

n = –.42 –.03

| | | |
|---|---|---|
| 14.3 | +1.30 | –1.01 |
| 14.6 | +1.00 | –1.08 |
| 14.8 | +1.71 | –0.85 |
| 16.4 | +1.46 | –0.94 |
| 15.0 | +1.37 | –0.97 |

| | | | | I | | |
|---|---|---|---|---|---|---|
| 14.8 | +3.65 | +0.64 | +.05 | + 0.69 | +.01 | +0.64 |
| 14.9 | +2.29 | –0.54 | +.04 | – 0.50 | +.01 | –0.53 |
| 15.2 | +2.45 | –0.26 | +.02 | – 0.24 | –.01 | –0.27 |
| 15.8 | +1.96 | –0.60 | –.01 | – 0.61 | –.04 | –0.64 |
| 15.8 | +4.78 | –~~1.38~~ .94 | –.01 | + ~~1.39~~ .93 | –.04 | + ~~1.42~~ .90 |
| 16.2 | +4.07 | +0.39 | –.03 | + 0.36 | –.06 | +0.33 |

| | | | | | I | | | II |
|---|---|---|---|---|---|---|---|---|
| 14.8 | –5.10 | –4.33 | +.05 | –4.28 | +.01 | | +.01 | –4.33 |
| 15.6 | –2.89 | –2.93 | +.01 | –2.92 | –.03 | | –.03 | –2.96 |

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin z cos z | tang δ | Req−Rfc | ρ′−ρ | Req−Rfc +(ρ′−ρ) | Rfc. | Req. |
|---|---|---|---|---|---|---|---|
| 15 26 | +.02 1.00+ | | −1 3.7 | −0.6 | −4.3 | +00 | −4.3 |
| 15 29 | +.26 .96+ | | 4.2 | −0.6 | 4.8 | +0.5 | 4.3 |
| 15 33 | +.03 1.00+ | | − − | −1.0 | | | |
| 15 38 | +.58 .81+ | | 4.8 | −0.3 | 5.1 | +10 | 4.1 |
| 15 40 | +.45 .89+ | | 4.3 | +0.3 | 4.0 | +0.8 | 3.2 |
| 15 43 | +.71 .70− | | 3.8 | −0.6 | 4.4 | +1.2 | 3.2 |
| 15 51 | +.44 .90+ | | 3.6 | −0.1 | 3.7 | +0.7 | 3.0 |
| 15 52 | +.26 .96+ | | 4.2 | −0.4 | 4.6 | +05 | 4.1 |
| 15 53 | −.22 .97+ | | 5.2 | +0.5 | 4.7 | −04 | 5.1 |
| 15 59 | −.28 .96+ | | 4.4 | +0.7 | 3.7 | −05 | 4.2 |
| 16 5 | −.05 1.00+ | | − − | +0.1 | | | |
| 16 8 | +.72 .69− | | 4.4 | +0.2 | 4.2 | +1.2 | 3.0 |
| 16 12 | +.73 .68− | | 4.7 | −0.1 | 4.8 | +1.3 | 3.5 |
| | | | | | | | 3.82 |

3.82

| RA h m | sin z cos z | tang δ | Req−Rfc | ρ′−ρ | Req−Rfc +(ρ′−ρ) | Rfc. | Req. |
|---|---|---|---|---|---|---|---|
| 15 45 | −.35 .93+ | 1.96 | −1 2.2 | +0.5 | −1.7 | −0.6 | −2.3 |
| 15 49 | −.58 .81+ | 4.78 | 2.9 | +0.2 | 2.7 | −1.0 | 3.7 |

3.00
3.00

11 902 +.71 −4.4
2 00 +.72 −4.2 +.58 −5.1 +.26 −4.8 +.02 −4.3 −.05 −.22 −4.7 −.58 −2.7
902 +.73 −4.8 +.45 −4.0 +.26 −4.6 +.03 −.28 −3.7
+.44 −3.7 −.35 −1.7

+.72 −4.4 +.49 −4.6 +.26 −4.7 +.02 −4.3 −.28 −3.4 −.58 −2.7
+1.4 +.9 +.5 +.0 −.6 −1.1
−1 3.67 3.0 3.4 4.2 4.3 4.0 3.8
3.69 (13) −.7 −.3 +.5 +.6 +.3 +.1

14 48 −.30 .95+ 1.71 −1 2.2 −06 2.8 −0.5 −3.3
14 59 +26 96+ .52 3.5 +0.5 −5.0 +05 4.5
3.90 3.90

14 51 −.53 .84+ 3.65 −1 3.6 +1.0 −2.6 −0.9 −3.5

3.52
3.50

2 180
1 ~~1~~50
230

+26 −50 −30 −2.8 −.53 −2.6
+.5 −.6 −1.0
45 3.4 3.6
−1 3.83 (3) +.7 −.4 −.2
3.77

| RA h m | sin z cos z | tang δ | Req−Rfc | ρ′−ρ | Req−Rfc +(ρ′−ρ) | Rfc. | Req. |
|---|---|---|---|---|---|---|---|
| 14 21 | −.18 .98+ | 1.30 | −1 5.1 | +0.9 | −4.2 | −0.3 | −4.5 |
| 14 34 | −.05 1.00+ | 1.00 | 3.5 | −0.4 | −3.9 | −0.1 | 4.0 |
| 14 36 | +.74 .67− | .09 | 6.5 | −0.7 | 7.2 | +1.3 | 5.9 |
| ~~14 44~~ | ~~+.85 .52−~~ | ~~.28~~ | − − | | | | |
| 14 48 | −.30 .95+ | 1.71 | 1.6 | −0.6 | 2.2 | −0.5 | 2.7 |
| 14 57 | +.03 1.00+ | .87 | 4.9 | +0.6 | 4.3 | +0.0 | 4.3 |
| 14 59 | +.26 .96+ | .52 | 5.5 | +0.5 | 5.0 | +05 | 4.5 |
| 15 29 | +.26 .96+ | .51 | 4.1 | −0.6 | 4.7 | +05 | 4.2 |
| 15 33 | +.03 1.00+ | .86 | − − | −1.0 ~~−0.1~~ | | | |
| 15 38 | +.58 .81+ | .12 | 6.6 | −0.3 | 6.9 | +40 | 5.9 |
| 15 40 | +.45 .89+ | .28 | 5.3 | +0.3 | 5.0 | +0.8 | 4.2 |
| 15 44 | +.71 .70− | .05 | 4.5 | −0.6 | ~~3.9~~ 5.1 | +1.2 | 3.9 |
| 16 8 | +.72 .69− | .06 | 4.9 | +0.2 | 4.7 | +12 | 3.5 |
| 16 12 | +.73 .68− | .08 | 6.7 | −0.1 | 6.8 | +12 | 5.6 |
| 16 19 | +.47 .88+ | .26 | 3.2 | −1.4 | 4.6 | +0.8 | 3.8 |
| 16 22 | −.23 .97+ | 1.46 | 5.7 | +1.5 | 4.2 | −04 | 4.6 |
| | | | | | | | 4.40 |

4.40

| RA h m | sin z cos z | tang δ | Req−Rfc | ρ′−ρ | Req−Rfc +(ρ′−ρ) | Rfc. | Req. |
|---|---|---|---|---|---|---|---|
| 14 49 | −.85 .52− | 5.10 | −1 0.6 | +1.1 | ~~59.5~~ 1.7 | −15 | 3.2 |
| 14 51 | −.53 .84+ | 3.65 | 3.2 | +1.0 | 2.2 | −0.9 | −3.1 |
| 14 56 | −.41 .91+ | 2.29 | 3.8 | ~~−0.1 1.1~~ | 3.9 | −0.7 | 4.6 |
| 15 13 | −.43 .90+ | 2.45 | 3.5 | −0.2 | 3.7 | −0.7 | 4.4 |
| 15 37 | −.92 .38− | 2.89 | ~~1.6~~ | ~~+0.2~~ | ~~1.4~~ 1.8 | −16 | 3.4 |
| 15 45 | −.35 .93+ | 1.96 | 3.8 | +0.5 | 3.3 | −0.6 | 3.9 |
| 15 49 | −.58 .81+ | 4.78 | 3.2 | +0.2 | 3.0 | −1.0 | 4.0 |
| 16 15 | −.56 .82+ | 4.07 | 4.2 | +0.6 | 3.6 | −0.9 | 4.5 |

4.08
4.08

14 560 +.74 −7.2 +.58 −6.9 +.26 −5.0 +.03 −4.3 −.18 −4.2 −.30 −2.2 −.53 −2.2 −.85 −59.5
6 48 +.71 ~~−3.9~~ 5.1 +.45 −5.0 +.26 −4.7 ~~+.03~~ −.05 −3.9 −.23 −4.2 −.41 −3.9 −.92 −1.4
608 +.72 +4.7 +.47 −4.6 −.35 −3.3 −.43 −3.7
+.73 −6.8 −.58 −3.0
−.56 −3.6

+.72 −5.9 +.50 −5.5 +.26 −4.8 +.03 −4.3 −.11 −4.0 −.29 −3.2 −.50 −3.3 −.88 0.4 E
+1.4 +.9 +.6 +1 −.2 −.6 −.9
−1 4.27 (20) 4.5 4.6 4.3 4.2 4.2 3.8 4.2
4.30 +.2 +.3 −.0 −.1 −.1 −.5 −.1

1873 July 7 h = +.03 +.044 n = −.48 c = −.03 h = +.

1873 July 7 W dec

Star | W ak Ra | δ | tang. δ red | π Ra | ρ'ρ | π Ra −(ρ'ρ) | ΔRa | δRa | tang. δ | π Ra | ρ'ρ | π Ra −(ρ'ρ)

h m s s | h m s s

14.8 +6 ~~14 44~~ − ~~.28~~ 0 = −0.62 | 0.650 14 49 .358 − 5.10 0 = −2.91 +.23 −3.14
14.9 5 14 57 199 + .87 +1.32 −0.13 +.04 −0.17 − 42 +.02 −.04 | 0.63 14 51 −0.57 61 198 + 3.65 +1.83 +.10 +1.73
15.0 4 14 59 465 + .52 +1.03 −0.31 +.00 0.31 − 25 +.02 −.03 | .59 15 4 .57 360 − 4.42 −2.63 + ~~0.56~~ +.02 −2.65
15.2 2 15 9 466 + .09 +1.00 −0.54 +.02 0.56 − 04 +.01 −.03 | .63 15 13 .62 457 + 2.45 +0.67 −.03 +0.70
15.02 15.2 2 15 10 201 + .67 +1.20 −0.33 −.02 0.31 − 32 +.01 −.04 | .67 ~~15 21~~ et .66 203 + ~~3.13~~ +0.82 + ~~0.55~~ −.15 +0.97
15.4 +0 15 26 206 + .88 +1.33 −0.06 +.05 0.11 − 42 00 −.04 | .57 15 37 .57 364 − 2.89 −1.71 +.17 −1.88
15.5 −1 15 29 209 + .51 +1.12 −0.26 +.02 0.28 − 24 00 −.08 | 55 15 45 .55 470 + 1.96 +0.34 −.06 +0.40
15.6 2 15 33 469 + .86 +1.32 −0.10 +.06 0.16 − 41 −.01 −.04 | .61 15 49 .62 217 + 4.78 +2.58 +.24 +2.31
15.7 3 15 40 213 + .28 +1.04 −0.39 +.00 0.39 − 13 −.01 −.03 | 55 .56
15.7 3 15 43 214 − .05 +1.00 −0.58 −.02 0.56 + 02 −.01 −.03 | 57 .58
15.8 4 15 51 218 + .29 +1.04 −0.34 −.01 0.33 − 14 −.02 −.03 | .50 .52
15.66 15.9 −5 15 52 219 + .51 +1.12 −0.35 −.04 −0.31 − 24 −.02 −.03 | .58 .60
15.39 14 48 462 + 1.71 +1.99 + ~~2.08~~ +0.18 +.03 + ~~2.00~~ +0.16 − 82 +.03 −.06 | 73 .70
0.561

0.598 0.5957

15.1 +.09 −0.56 | 14.9 +87 −0.17 | I 14.8 +3.65 +1.73 +.03 +1.76 | II +.01 +1.74 | I 14.8 −5.10 −3.14 +.03 −3.11 | II +.01 −3.13
15.7 +.28 −0.39 | 15.4 +88 −0.11 | 15.2 +2.45 +0.70 +.01 +0.71 | +.00 +0.70 | 15.1 −4.42 −2.65 +.02 −2.63 | +.00 −2.65
15.7 −.05 −0.56 | 15.5 +86 −0.16 | 15.3 +3.13 +0.97 +.01 +.98 | ~~−.02~~ −.01 +0.96 | 15.6 −2.89 −1.88 +.00 −1.88 | −.02 −1.90
15.9 +.29 −0.33 | 14.8 +1.71 +0.15 | 15.8 +1.96 +0.40 −.01 +0.39 | −.02 +0.38
15.6 +.15 −0.46 2 | 15.1 +1.08 +0.39 −0.07 | 15.8 +4.78 +2.31 −.01 +2.30 | −.02 +2.29 | 0 = −5.25 −2.65 n = −.50 | 0 = −6.18 −3.08 n = −.49

−4.57 −2.17 .47 | −5.50 −2.58 −.47
−3.04 −1.42 .47 | −3.97 −1.83 .46
−.480 | −.473

n = −.42 −.02

0 = +3.50 +2.22 n = −.63 | 0 = +2.57 +1.67 n = −.65
+2.30 +2.17 ~~.94~~ .51 | +1.37 +.63 .46
+2.98 +1.44 .48 | +2.05 +.89 .43
+1.81 +.85 .47 | +.88 +.37 .36
+4.63 +2.96 .60 | +3.70 +2.22 .60
−538 | −498

1873 July 9 h = +.025 +.044 n = −.50 c = .00 h = +.033

W ak

0.705

15.5 +4 15 29 209 + .51 0 = +0.91 +.02 +0.89 − 25 +.01 + | 0.64 15 13 0.65 467 + 2.45 0 = +1.89 −.03 +1.92
15.6 3 15 33 469 + .86 +1.19 +.06 1.13 − 42 .01 | .71 15 37 .72 364 − 2.89 −0.65 +.17 −0.82
15.6 3 15 38 212 + .12 +0.77 +.02 0.75 − 06 .01 | .69 15 45 .70 470 + 1.96 +1.58 −.06 +1.64
15.60 15.7 2 15 40 213 + .28 +0.92 +.00 0.92 − 14 .01 | .78 15 49 .79 217 + 4.78 +3.50 +.27 +3.23
15.7 2 15 43 214 − .05 +0.74 −.02 0.76 + 02 .01 | .78 16 15 .79 472 + 4.07 +2.59 −.04 +2.63
15.9 +0 15 51 218 + .29 +0.91 −.01 0.92 − 14 +00 | .78 .78
16.1 −2 16 8 222 − .06 +0.70 −.01 0.71 + 03 −01 | .74 .73
16.2 3 16 12 223 − .08 +0.65 +.04 0.61 + 04 .01 | .65 .64
16.06 16.4 5 16 22 475 + 1.46 +1.29 −.09 1.38 − 73 −.02 | .65 .63
15.86

0.7240
0.713 0.714

15.6 +.12 +0.75 | 15.5 +.86 +1.13 | I & II 15.2 +2.45 +1.92 +.02 +1.94 | I & II 15.6 −2.89 −0.82 +.00 −0.82
15.7 +.28 +0.92 | 16.4 +1.46 +1.38 | 15.8 +1.96 +1.64 +.00 +1.64
15.7 −.05 +0.76 | 15.9 +1.16 +1.25 | 15.8 +4.78 +3.23 +.00 +3.23
15.9 +.29 +0.92 | 16.3 +4.07 +2.63 −.01 +2.62
16.1 −.06 +0.71
16.2 −.08 +0.61 | 0 = +2.37 +1.16 n = −.49 | 0 = +1.29 +.69 n = −.53 4 | 0 = −2.97 −1.60 n = −.54
15.9 +.08 +0.78 | +1.88 +.86 .46 | +.80 +.39 .49
+4.70 +2.45 .52 | +3.62 +1.98 .55 | 0 = −4.05 −2.07 n = −.51
n = −.43 | +3.99 +1.84 .46 | +2.91 +1.37 .47
−.482 | −.512 5

1873 July 10 h = +.024 +.031 n = −.46 c = .00 h =

~~14 44~~ − ~~.28~~ 0 = +1.20 | 1.225 14 51 198 + 3.65 0 = +3.16 +.10 +3.06
14.9 +4 14 57 199 + .87 +1.64 +.04 +1.60 − 40 +.01 + | 1.20 14 56 +1.21 464 + 2.29 +1.94 −.17 +2.11
14.95 15.0 +3 14 59 465 + .52 0 = +1.49 +.00 1.49 − 24 +.01 | 1.25 15 4 .26 360 − 4.42 −0.37 ~~1.27~~ +.02 −0.39
15.4 0 15 26 206 + .88 +1.66 +.05 1.61 − 40 00 | 1.21 15 21 .21 203 + 3.13 +2.55 −.15 +2.70
15.5 −2 15 29 209 + .51 +1.43 +.02 1.41 − 23 −01 | 1.18 .17
15.50 15.6 −3 15 33 469 + .86 +1.66 +.06 1.60 − 40 −01 | 1.20 .19
15.28 | ~~1.295~~ 197

1.208 1.208

15.0 +.52 +1.49 | I 14.8 +3.65 +3.06 +.01 +3.07 | II +.01 +3.07 | I 15.1 −4.42 −0.39 +.00 −0.39 | II +.00 −0.39
15.5 +.51 +1.41 | 14.9 +2.29 +2.11 +.01 +2.12 | +.01 +2.12
15.2 +.51 +1.45 | 15.3 +3.13 +2.70 +.00 +2.70 | +.00 +2.70

0 = −4.93 −1.84 n = −.37

14.9 +.87 +1.60 | 0 = +3.14 +1.62 n = −.52
15.4 +.88 +1.61 | +1.78 +.67 .38
15.5 +.86 +1.60 | +2.62 +1.25 .48
15.3 +.87 +1.60 | −.460

0 = +2.78 +1.47 n = −.53 | 0 = −5.29 −1.99 n = −.38
n = −.42 | +1.42 +.52 .37
+2.26 +1.10 .49
−.463

8
4

ζ = +.60 +.80 | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 -.20 | -.20 -.40 | -.40 -.60 | -.60 -.80 | -.80 -100

1873 July 7 187 1873 July 7

RA sin n ξ cos n tang δ $\rho_{eq}-\rho_{re}$ ρ'-ρ +(ρ'-ρ) $R_{eq}-R_{re}$ $R_y$ $R_{eq}$ RA sin n ξ cos n tang δ $R_{eq}-R_{re}$ ρ'-ρ +(ρ'-ρ) $R_{eq}-R_{re}$ $R_y$ $R_{eq}$

h m ' "

~~14 44 +.85 .52 - .28~~ -1 - - " 14 49 -.85 .52 -1 3.8 -1 0.4 .+1.1 ~~-59.3~~ -1.5 -3.0

14 57 +.03 1.00 + .87 6.1 .+0.6 -5.5 +0.0 -5.5 14 51 -.53 .84 5.1 .+1.0 .5 4.0 -0.9 -5.0

14 59 +.26 .96 + .52 6.9 .+0.5 6.4 +0.5 5.9 15 4 -.87 .48 -0 58.1 ~~4.0~~ 5.1 .+0.7 58.8 ~~57.4~~ -1.6 0.9

15 9 +.60 .80 + .09 7.1 .+0.1 7.0 +1.0 6.0 15 13 -.43 .90 3.8 .-0.2 4.0 -0.7 4.7

15 10 +.15 .99 + .67 5.2 .-0.1 5.3 +0.3 5.0 15 21 -.50 .86 24 4.6 ? .+0.1 23 -0.8 3.1

15 26 +.02 1.00 + .88 3.0 .-0.6 3.6 +0.0 3.6 15 37 -.92 .38 1.0 .+0.2 12 ~~0.8~~ -1.6 2.8

15 29 +.26 .96 + .57 5.5 .-0.6 6.1 +0.5 5.6 15 45 -.35 .93 3.9 .+0.5 3.4 -0.6 4.0

15 33 +.03 1.00 + .86 - - -1.0 15 49 -.58 .81 3.6 .+0.2 3.4 -1.0 4.4

15 40 +.45 .89 + .28 5.0 .+0.3 4.7 +0.8 3.5

15 43 +.71 .70 - .05 4.9 .-0.6 5.5 +1.2 4.3

15 51 +.44 .89 + .29 6.2 .-0.1 6.3 +0.7 5.6

15 52 +.26 .96 + .51 5.8 .-0.4 6.2 +0.5 5.7

14 48 -.30 .95 + 1.71 29 -06 ~~+0.3~~ 3.5 -0.5 4.0

4.97 4.97 4.04

11 1067 4.24

5 120 +.60 -7.0" +.45 -4.7" +.26 -6.4" +.03 -5.5" -.35 -3.4" -.53 -4.0" -.85 -59.3"

1187 +.71 -5.5 +.44 -6.3 +.26 -6.1 +.15 -5.3 -30 -3.5 -.43 -4.0 -.87 -57.4

+.26 -6.2 +.02 -3.6 -.50 -2.3 -.92 -0.8

+.03 -.58 -3.4

49

47

46

73

+.65 -6.2 +.44 -5.5 +.26 -6.2 +.07 -4.8 -.35 2 -3.4 -.51 -3.5 -.88 -59.2 $E_4$

+1.2 +.8 +.5 +.2 -.6 -1.0

' "

-1 4.77 (16) 5.0 2 4.7 2 5.7 3 4.6 3 4.0 2 4.5 4

4.74 +.2 -.1 +.9 -.2 -.8 -.3

' "

15 29 +.26 + .51 -1 5.3 .-0.6 -5.9 +0.5 -5.4 15 13 -.43 .90 + 2.45 3.7 .-0.2 -3.9 -0.7 -4.6

15 33 +.03 + .86 - - -1.0 15 37 -.92 .38 - 2.89 1.8 .+0.2 20 ~~1.6~~ -1.6 3.6

15 38 +.58 + .12 7.0 .-0.3 7.3 +1.0 6.3 15 45 -.35 .93 + 1.96 4.5 .+0.5 4.0 -0.6 4.6

15 40 +.45 + .28 5.8 .+0.3 5.5 +0.8 4.7 15 49 -.58 .81 + 4.78 3.8 .+0.2 3.6 -1.0 4.6

15 43 +.71 - .05 6.2 .-0.6 6.8 +1.2 5.6 16 15 -.56 .82 + 4.07 3.8 .+0.6 3.2 -0.9 4.1

15 51 +.44 + .29 5.1 .-0.1 5.2 +0.7 4.5

16 8 +.72 - .06 6.2 .+0.2 6.0 +1.2 4.8

16 12 +.73 - .08 5.1 .-0.1 5.2 +1.3 3.9

16 20 -.23 + 1.46 5.8 .+1.5 4.3 -0.4 4.7

4.99 4.99 4.48 4.48

8 792

4 152 +.71 -6.8 +.58 -7.3 +.26 -5.9 +.08 -.23 -4.3 -.43 -3.9 -.92 -1.6

1 984 +.72 -6.0 +.45 -5.5 -.35 -4.0 -.58 -3.6

+.73 -5.2 +.44 -5.2 -.56 -3.2

+.72 -6.0 +.49 -6.0 +.26 -5.9 -.29 -4.1 -.52 -3.6 -.92 -1.6

+1.4 +.9 +.5 -.5 -1.0

' "

-1 4.79 (12) 4.6 3 5.1 3 5.4 1 4.6 2 4.6 3

-.2 +.3 +.6 -.2 -.2

4.82

' "

~~14 44 +.85 .52 - .28~~ ~~-1 -~~ 14 51 -.53 .84 + 3.65 -1 4.2 .+1.0 -3.2 - 0.9 -4.1

14 57 +.03 1.00 + .87 5.6 .+0.6 -5.0 +0.0 -5.0 14 56 -.41 .91 + 2.29 4.3 ~~-0.1~~ ~~1.1~~ 4.4 - 0.7 5.1

14 59 +.26 .96 + .52 6.1 .+0.5 5.6 +0.5 5.1 15 4 -.87 .48 - 4.42 0.8 ~~4.4~~ 2 +0.7 1.5 ~~0.1~~ -1.6 3.1

15 26 +.02 1.00 + .88 4.0 .-0.6 4.6 +0.0 4.6 15 21 -.50 .86 + 3.13 3.4 .+0.1 -3.3 - 0.8 4.1

15 29 +.26 .96 + .51 4.9 .-0.6 5.5 +0.5 5.0

15 33 +.03 1.00 + .86 - - -1.0

4.92 4.92 4.43

4.43

+.26 -5.6 +.03 -5.0 -.53 -3.2 -.87 -0.1

4 368 +.26 -5.5 +.02 -4.6 -.41 -4.4

3 129 -.50 -3.3

497 +.26 -5.5 +.03 -4.8 -.48 -3.6 -.87 -0.1

+.5 +.1 -.9

' " 5.0 2 4.7 2 4.5

-1 4.70 (7) +.3 .6 -.2 3

4.71

1873 July 12 Wa R h = +.120 +.028 n = –.42 e = .00 h = +.1?7

| | Star | Ra | δ | tang. δ | T-Ra | P'-P | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h m | | | s | | s | | | 2.364 | |
| | 15.5 | +5 15 29 | 209 | + .51 | 0=+ +2.52 | +.02 | +2.50 – | 21 | +.01 | + 2.29 | 2.30 |
| | 15.6 | 4 15 33 | 469 | + .86 | +2.73 | +.06 | 2.67 – | 36 | .01 | .31 | .32 |
| | 15.6 | 4 15 38 | 212 | + .12 | +2.41 | +.02 | 2.39 – | 05 | .01 | 34 | .35 |
| | 15.7 | 3 15 40 | 213 | + .28 | +2.47 | +.00 | 2.47 – | 12 | .01 | 35 | .36 |
| | 15.7 | 3 15 43 | 214 | – .05 | +2.42 | –.02 | 2.44 + | 02 | .01 | .46 | .47 |
| | 15.8 | 2 15 51 | 218 | + .29 | +2.53 | –.01 | 2.54 – | 12 | +.01 | 42 | .43 |
| | 15.9 | 1 15 52 | 219 | + .52 | +2.55 | –.04 | 2.59 – | 22 | 00 | 37 | 37 |
| 15.71 | 15.9 | 1 15 55 | 471 | + 1.43 | +3.18 | +.21 | 2.97 – | 60 | | 37 – | 37 |
| | 16.0 | +0 15 59 | 220 | + 1.66 | +3.20 | +.15 | 3.05 – | 70 | | 35 +12 | .47 |
| | 16.1 | –1 16 4 | 221 | + 1.01 | +3.03 | +.10 | 2.93 – | 42 | | 51 –7 | .44 |
| | 16.1 | 1 16 8 | 222 | – .06 | +2.49 | –.01 | 2.50 + | 03 | 00 | 53 | .53 |
| | 16.2 | 2 16 12 | 223 | – .08 | +2.53 | +.04 | 2.49 + | 03 | –.01 | 52 | .51 |
| | 16.3 | 3 16 16 | 225 | + .35 | +2.59 | +.02 | 2.57 – | 15 | .01 | 42 | .41 |
| | 16.3 | 3 16 19 | 473 | + .26 | +2.64 | +.14 | 2.50 – | 11 | .01 | 39 | .38 |
| | 16.4 | 4 16 22 | 475 | + 1.46 | +2.92 | –.09 | 3.01 – | 61 | .01 | 40 | .39 |
| 31 | 16.4 | 4 16 25 | 228 | + .40 | +2.55 | –.01 | 2.56 – | 17 | .01 | 39 | .38 |
| 16.26 | 16.5 | –5 16 30 | 230 | + .92 | +2.84 | +.02 | 2.82 – | 89 | –.01 | 43 | .42 |
| | 15.99 | ~~16~~ ~~22~~ | | + 1.87 | | | | | | 2.440<br>2.406 | |

2.406

1873 July 12 Wa R

| Ra | δ | tang. δ | T-Ra | P'-P | T-Ra-(P'-P) |
|---|---|---|---|---|---|
| h m | | | s | | s |
| 15 21 | 203 | + 3.13 | 0=+ 3.70 | –.15 | +3.85 |
| 15 37 | 364 | – 2.89 | + 1.43 | +.17 | 1.26 |
| 15 45 | 470 | + 1.96 | + 3.09 | –.06 | 3.15 |
| 15 49 | 217 | + 4.78 | + 4.70 | +.27 | 4.43 |
| 16 15 | 472 | + 4.07 | + 4.16 | –.04 | 4.20 |
| 16 28 | 229 | + 2.61 | + 3.49 | +.07 | 3.42 |

15.6 +12 +2.39
15.7 +28 +2.47
15.7 –05 +2.44
15.9 +29 +2.54
16.1 –.06 +2.50
16.2 –.08 +2.49
16.3 +35 +2.57
16.3 +26 +2.50
16.0 +.14 +2.49

n = –.45

15.5 +.86 +2.67
15.9 +1.43 +2.97
[16.0 +1.66 +3.05]
[16.1 +1.01 +2.93]
16.4 +1.46 +3.01
16.5 +.92 +2.82
~~16.1~~ +~~1.22~~ +~~2.91~~
16.1 +1.17 +2.87

| | | s | | I | | II |
|---|---|---|---|---|---|---|
| +15.3 | +3.13 | +3.85 | +.01 | +3.86 | +.02 | +3.87 |
| 15.8 | +1.96 | +3.15 | +.00 | +3.15 | +.01 | +3.16 |
| 15.8 | +4.78 | +4.43 | +.00 | +4.43 | +.01 | +4.44 |
| 16.2 | +4.07 | +4.20 | +.00 | +4.20 | +.00 | +4.20 |
| 16.5 | +2.61 | +3.42 | –.01 | +3.41 | –.01 | +3.41 |
| 15.6 | –2.89 | +1.26 | +.01 | +1.27 | +.01 | +1.27 |

0 = +2.99 +1.37 n = –.46
+1.82 + .66 .36
+4.64 +1.94 .42
+3.93 +1.71 .44
+2.47 + .92 .37
–.410

0 = +1.41 +.46 n = –.50
+ .74 + .25 .34
+3.56 +1.53 .43
+2.85 +1.29 .45
+1.39 + .50 .36
–.416

0 = –3.03 –1.22 n = –.40

0 = –4.11 –1.64 n = –.40

1873 July 13 Warc h = +.0?9 +.066 n = –.44 e = .00 h = +.069

| | Star | Ra | δ | tang. δ | T-Ra | P'-P | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 3.53 | | | 2.764 | |
| | 14.8 | +6 14 48 | 462 | + 1.71 | + 5.37 | +.03 | +~~5.34~~ – | 75 | +.04 | + 2.78 | 2.82 |
| | 14.9 | 5 14 57 | 199 | + .87 | 0=+ 3.17 | +.04 | 3.13 – | 38 | .03 | 75 | .78 |
| | 15.0 | 4 14 59 | 465 | + .52 | +3.01 | +.00 | 3.01 – | 23 | .03 | 78 | .81 |
| | 15.1 | 3 15 9 | 466 | + .09 | +2.91 | +.02 | 2.89 – | 04 | .02 | 85 | .87 |
| | 15.2 | 2 15 10 | 201 | + .67 | +2.97 | –.02 | 2.99 – | 29 | .01 | 70 | .71 |
| | 15.4 | +0 15 26 | 206 | + .88 | +3.15 | +.05 | 3.10 – | 39 | +.00 | 71 | .71 |
| 15.13 | 15.5 | –1 15 29 | 209 | + .51 | +3.02 | +.02 | 3.00 – | 22 | –.01 | 78 – | .77 |
| | 15.6 | 2 15 33 | 469 | + .86 | +3.14 | +.06 | 3.08 – | 38 | .01 | 70 | .69 |
| | 15.6 | 2 15 38 | 212 | + .12 | +2.88 | +.02 | 2.86 – | 05 | .01 | 81 | 80 |
| | 15.7 | 3 15 40 | 213 | + .28 | +2.95 | +.00 | 2.95 – | 12 | .02 | .83 | .81 |
| | 15.7 | 3 15 43 | 214 | – .05 | +2.81 | –.02 | 2.83 + | 02 | .02 | .85 | .83 |
| | 15.8 | 4 15 51 | 218 | + .29 | +2.97 | –.01 | 2.98 – | 13 | 03 | .85 | .82 |
| | 15.9 | 5 15 52 | 219 | + .52 | +2.97 | –.04 | 3.01 – | 23 | .03 | .78 | .75 |
| 15.74 | 15.9 | –5 15 55 | 471 | + 1.43 | +3.66 | +.21 | 3.45 – | 63 | –.03 | .82 | .79 |
| | 1544 | | | | | | | | | 2.806<br>2.786 | |

2.783

| Ra | δ | tang. δ | T-Ra | P'-P | |
|---|---|---|---|---|---|
| | | | s | | |
| 14 51 | 198 | + 3.65 | 0=+ 4.68 | +.10 | +4.58 |
| 14 56 | 464 | + 2.29 | + 3.49 | –.17 | 3.66 |
| 15 4 | 360 | – 4.42 | + 1.16 | +02 ~~+.03~~ | 1.14 |
| 15 13 | 467 | + 2.45 | + 3.84 | –.03 | 3.87 |
| 15 37 | 364 | – 2.89 | + 1.69 | +.17 | 1.52 |
| 15 45 | 470 | + 1.96 | + 3.59 | –.06 | 3.65 |
| 15 49 | 217 | + 4.78 | + 5.27 | +.27 | 5.00 |

15.1 +.09 +2.89
16.6 +.12 +2.86
15.7 +.28 +2.95
15.7 –05 +2.83
15.9 +.29 +2.98
15.8 +.15 +2.90
– 1

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 14.8 | +3.65 | +4.58 | +.02 | +4.60 | +.01 | +4.59 |
| 14.9 | +2.29 | +3.66 | +.02 | +3.68 | +.01 | +3.67 |
| 15.2 | +2.45 | +3.87 | +.01 | +3.88 | +.00 | +3.87 |
| 15.8 | +1.96 | +3.65 | +.00 | +3.65 | –.01 | +3.64 |
| 15.8 | +4.78 | +5.00 | +.00 | +5.00 | –.01 | +4.99 |
| 15.4 | –4.42 | +1.14 | +.01 | +1.15 | +.00 | +1.14 |
| 15.6 | –2.89 | +1.52 | +.00 | +1.52 | +.01 | +1.53 |

0 = +3.50 +1.70 n = –.49
+2.14 + .78 .36
+2.30 + .98 .43
+1.81 + .75 .41
+4.63 +2.10 .45
–.428

0 = –4.57 –1.75 n = –.38
–3.04 –1.38 .45
–.415

14.8 +1.71 +~~6.34~~ 3.53
14.9 +.87 +3.13
15.4 +.88 +3.10
15.5 +.86 +3.08
15.9 +1.43 +3.45
15.3 +1.15 +~~3.62~~ +3.26

n = –.36 –.01

0 = +2.50 +1.33 n = –.35 –.53
+1.14 + .41 –.04 .36
+1.30 + .61 .19 .47
+ .81 + .38 .00 .47
+3.63 + ~~1.74~~ .38 .47
–.460

0 = –5.57 –2.12 n = –.45 38
–4.04 –1.73 .52 43
–.405

Ra
P)
s
3.85
.26
3.15
.43
4.20
3.42

z= +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100

| Ra h | m | sin | cos | tan δ | Rq−Rfe ′ ″ | P′−P | Rq−Rfe+(P′−P) ″ | | Rq |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 29 | +.26 | .96+ | .51 | −1 5.9 | −0.6 | −6.5 | +05 | −6.0 |
| 15 | 33 | +.03 | 1.00+ | .86 | −1 1.9 | −1.0 | 2.9 | +00 | 2.9 |
| 15 | 38 | +.58 | .81+ | .12 | 6.6 | −0.3 | 6.9 | +10 | 5.9 |
| 15 | 40 | +.45 | .89+ | .28 | 4.8 | +0.3 | 4.5 | +08 | 3.7 |
| 15 | 43 | +.71 | .70− | .05 | 5.3 | −0.6 | 5.9 | +13 | 4.6 |
| 15 | 51 | +.44 | .90+ | .29 | 5.9 | −0.1 | 6.0 | +07 | 5.3 |
| 15 | 52 | +.26 | .96+ | .52 | 5.5 | −0.4 | 5.9 | +05 | 5.4 |
| 15 | 55 | −.22 | .97+ | 1.43 | 4.9 | +0.5 | 4.4 | −04 | 4.8 |
| 15 | 59 | −.28 | .96+ | 1.66 | 4.4 | +0.7 | 3.7 | −05 | 4.2 |
| 16 | 4 | −.05 | 1.00+ | 1.01 | 4.7 | +0.1 | 4.6 | −01 | 4.7 |
| 16 | 8 | +.72 | .69− | .06 | 5.9 | +0.2 | 5.7 | +13 | 4.4 |
| 16 | 12 | +.73 | .68− | .08 | 6.1 | −0.1 | 6.2 | +13 | 4.9 |
| 16 | 16 | +.39 | .92+ | .35 | 4.2 | +0.3 | 3.9 | +07 | 3.2 |
| 16 | 19 | +.44 | .88+ | .26 | 3.8 | −1.4 | 5.2 | +08 | 4.4 |
| 16 | 22 | −.23 | .97+ | 1.46 | 4.4 | +1.5 | 2.9 | −04 | 3.3 |
| 16 | 25 | +.35 | .93+ | .40 | 3.0 | −1.3 | 4.3 | +06 | 3.7 |
| 16 | 30 | −.01 | 1.00+ | .92 | 3.3 | −0.2 | 3.5 | +00 | 3.5 |
| 16 | | | | | | | | | 4.41 |

| Ra h | m | sin | cos | tan δ | Rq−Rfe ′ ″ | P′−P | Rq−Rfe+(P′−P) ″ | Rfe | Rq |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 21 | −.50 | .86+ | 3.13 | −1 4.4 | +0.1 | −4.3 | −0.8 | −51 |
| 15 | 37 | −.92 | .38− | 2.89 | 3.5 | +0.2 | 3.7 ~~3.3~~ | −1.6 | 5.30 |
| 15 | 45 | −.35 | .93+ | 1.94 | 4.0 | +0.5 | 3.5 | −0.6 | 4.1 |
| 15 | 49 | −.58 | .81+ | 4.78 | 3.8 | +0.2 | 3.6 | −1.0 | 4.6 |
| 16 | 15 | −.56 | .82+ | 4.07 | 4.0 | +0.6 | 3.4 | −1.0 | 4.4 |
| 16 | 28 | −.45 | .89+ | 2.61 | 4.1 | +0.6 | 3.5 | −0.8 | 4.3 |
| 4.41 | | | | | | | | | 4.50<br>4.50 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 17 697 | +.71 −5.″9 | +.58 −6.″9 | +.26 −6.″5 | +.03 −2.″9 | −.05 −4.″6 | −.22 −4.″4 | −.50 −4.″3 | | −.92 −3.″3 |
| 5 250 | +.72 −5.7 | +.45 −4.5 | +.26 −5.9 | | −.01 −3.5 | −.28 −3.7 | −.58 −3.6 | | |
| 947 | +.73 −6.2 | +.44 −6.0 | +.39 −3.9 | | | −.23 −2.9 | −.56 −3.4 | | |
| | | +.47 −5.2<br>5.6 | +.35 −4.3 | | | −.35 −3.5 | −.45 −3.5 | | |
| | +.72 −5.9 | +.49 ~~−7.5~~ | +.21 −5.1 | +.03 −2.9 | −.03 −4.0 | −.27 −3.6 | −.52 −3.7 | | −.92 −3.3 |
| | +1.4 | +.9 | +.4 | +.1 | −.1 | −.5 | −1.0 | | |
| | 4.5 | 4.8 7 4 | 4.7 4 | 2.8 1 | 4.1 2 | 4.1 4 | 4.7 4 | | |
| −1′ 4.″48<br>4.43 | (22) +.1 3 | +.3 | +.3 | 1.6 | −.3 | −.3 | +.3 | | |

| Ra h | m | sin | cos | tan δ | Rq−Rfe ′ ″ | P′−P | Rq−Rfe+(P′−P) | | Rq |
|---|---|---|---|---|---|---|---|---|---|
| 14 | 48 | −.80 | .95+ | 1.71 | 2.8 | −0.6 | −3.4 | −0.6 | −4.0 |
| 14 | 57 | +.03 | 1.00+ | .87 | −1 5.5 | +0.6 | 4.9 | +00 | 4.9 |
| 14 | 59 | +.26 | .96+ | .52 | 6.6 | +0.5 | 6.1 | +05 | 5.6 |
| 15 | 9 | +.60 | .80+ | .09 | 6.9 | +0.1 | 6.8 | +10 | 5.8 |
| 16 | 10 | +.15 | .99+ | .67 | 3.6 | −0.1 | 3.7 | +03 | 3.4 |
| 15 | 26 | +.02 | 1.00+ | .88 | 3.8 | −0.6 | 4.4 | +00 | 4.4 |
| 15 | 29 | +.26 | .96+ | .51 | 5.3 | −0.6 | 5.9 | +05 | 5.4 |
| 15 | 33 | +.03 | 1.00+ | .86 | 3.8 | −1.0 | 4.8 | +00 | 4.8 |
| 15 | 38 | +.58 | .81+ | .12 | 6.6 | −0.3 | 6.9 | +10 | 5.9 |
| 15 | 40 | +.45 | .89+ | .28 | 5.8 | +0.3 | 5.5 | +08 | 4.7 |
| 15 | 43 | +.71 | .70− | .05 | 5.3 | −0.6 | 5.9 | +13 | 4.6 |
| 15 | 51 | +.44 | .89+ | .29 | 5.4 | −0.1 | 5.5 | +07 | 4.8 |
| 15 | 52 | +.26 | .96+ | .52 | 4.9 ~~3.4~~ | −0.4 | 5.3 | +05 | 4.8 |
| 15 | 55 | −.22 | .97+ | 1.43 | 5.3 | +0.5 | 4.8 | −04 | 5.2 |
| | | | | | | | | | 488<br>4.88 |

| Ra h | m | sin | cos | tan δ | Rq−Rfe ′ ″ | P′−P | Rq−Rfe+(P′−P) ″ | Rfe | Rq |
|---|---|---|---|---|---|---|---|---|---|
| 14 | 51 | −.53 | .84+ | 3.65 | −1 4.4 | +1.0 | −3.4 | −0.9 | −4.3 |
| 14 | 56 | −.41 | .91+ | 2.29 | −1 5.3 | −.01 −1.1 | 5.4 | −0.7 | 6.1 |
| 15 | 4 | −.87 | .48− | 4.42 | 4.8 | +0.7 | 15 ~~0.1~~ | −1.6 | 3.1 |
| 15 | 13 | −.43 | .90+ | 2.45 | 3.2 | −0.2 | 3.4 | −0.7 | 4.1 |
| 15 | 37 | −.92 | .38− | 2.89 | 2.2 | +0.2 | 3.4 ~~2.0~~ | −1.6 | 4.0 |
| 15 | 45 | −.35 | .93+ | 1.94 | 3.1 | +0.5 | 2.6 | −0.6 | 3.2 |
| 15 | 49 | −.58 | .81+ | 4.78 | 4.1 | +0.2 | 3.9 | −1.0 | 4.9 |
| | | | | | | | | | 4.52<br>4.52 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 14 1232 | | | | | | | | | |
| 5 260 | | | | | | | | | |
| 1492 | +.60 −6.8 | +.58 −6.9 | +.26 −6.1 | +.03 −~~3.4~~ 4.9 | | −.22 −4.8 | −.53 −3.4 | | −.87 −0.1 |
| | +.71 −5.9 | +.45 −5.5 | +.26 −5.9 | +.15 −3.7 | | −.35 −2.6 | −.41 −5.4 | | −.92 −2.0 |
| | | +.44 −5.5 | +.26 −5.3 | +.02 −4.4 | | −.30 −3.4 | −.43 −3.4 | | |
| | | | | +.03 −4.8 | | | −.58 −3.9 | | |
| | +.65 −6.3 | +.49 −6.0 | +.26 −5.8 | +.06 −4.5 | | −.29 −3.6 | −.49 −4.0 | | −.89 −1.0 |
| | +1.2 | +.9 | +.5 | +.1 | | −.6 | −.9 | | |
| | 5.1 2 | 5.1 3 | 5.3 3 | 4.4 4 | | 4.2 3 | 4.9 4 | | |
| −1′ 4.″80<br>4.79 | (19) +.3 | +.3 | +.5 | −.4 | | −.6 | +.1 | | |

1873 July 15 Ware h = +.026 +.033 ~~n~~ = −.56 e = .00 h = +.

| | Star | | Ra h | m | | tang. δ | T-Ra | P'-P | T-Ra-(P'-P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 15.4 | +5 | 15 | 26 | 206 | + .88 | 0 = +4.49 | +.08 | +4.41 – | 49 | +.02 | +3.92 | 3.94 |
| | 15.5 | 4 | 15 | 29 | 209 | + .51 | +4.21 | +.02 | 4.19 – | 29 | 01 | .90 | .91 |
| | 15.5 | 4 | 15 | 33 | 469 | + .86 | +4.43 | +.06 | 4.37 – | 48 | 01 | .89 | .90 |
| | 15.6 | 3 | 15 | 38 | 212 | + .12 | +4.02 | +.02 | 4.00 – | 07 | 01 | .93 | .94 |
| | 15.7 | 2 | 15 | 40 | 213 | + .28 | +4.12 | +.00 | 4.12 – | 16 | 01 | .96 | .97 |
| | 15.7 | +2 | 15 | 43 | 214 | – .05 | +3.86 | –.02 | 3.88 + | 03 | +01 | .91 | .92 |
| | 15.9 | 0 | 15 | 51 | 218 | + .29 | +4.08 | –.01 | 4.09 – | 16 | 00 | .93 | .93 |
| 15.65 | 15.9 | 0 | 15 | 52 | 219 | + .52 | +4.17 | –.04 | 4.21 – | 29 | 00 | .92 | .92 |
| | 15.9 | 0 | 15 | 55 | 471 | + 1.43 | +4.93 | +.21 | 4.72 – | 80 | 00 | .92 | .92 |
| | 16.0] | –1 | 15 | 59 | 220 | + 1.66 | +5.00 | +.15 | 4.85 – | 93 | –01 | .92] +12 | 4.03 |
| | 16.1] | 2 | 16 | 4 | 221 | + 1.06 | +4.70 | +.10 | 4.60 – | 56 | 01 | 4.04] –07 | 3.96 |
| | 16.1 | 2 | 16 | 8 | 222 | – .06 | +3.95 | –.01 | 3.96 + | 03 | 01 | 3.99 | .98 |
| | 16.2 | 3 | 16 | 12 | 223 | – .08 | +3.96 | +.04 | 3.92 + | 04 | 01 | 3.96 | .95 |
| | 16.3 | 4 | 16 | 16 | 225 | + .35 | +4.19 | +.02 | 4.17 – | 20 | 01 | 3.97 | .96 |
| 16.16 | 16.3 | –4 | 16 | 19 | 473 | + .26 | +4.25 | +.14 | 4.11 – | 15 | –01 | 3.96 | .95 |
| | 16.4] | | 16 | 22] | 226 | + 1.87 | +5.11 | –.02 | 5.13 +16 – 1.65<br>~~5.29~~ – | | | 4.08<br>.24] | |
| | 15.857 | | | | | | | | | | | 3.920<br>3.960<br>3.945 | 3.945 |

| Star | Ra h | m | | δ | tang. δ | T-Ra | P'-P | T-Ra-(P'-P) |
|---|---|---|---|---|---|---|---|---|
| | 15 | 37 | 364 | | – 2.89 | 0 = +2.48 | +.17 | +2.31 |
| | 15 | 45 | 470 | | + 1.96 | +4.85 | –.06 | 4.91 |
| | 15 | 49 | 217 | | + 4.78 | +6.83 | +.27 | 6.56 |
| | 16 | 15 | 472 | | + 4.07 | +6.27 | –.04 | 6.31 |

| | | s | | | s |
|---|---|---|---|---|---|
| 15.6 | +.12 | +4.00 | 15.4 | +.88 | +4.41 |
| 15.7 | +.28 | +4.12 | 15.5 | +.86 | +4.37 |
| 15.7 | –.05 | +3.88 | 15.9 | +1.43 | +4.72 |
| 15.9 | +.29 | +4.09 | [16.0 | +1.66 | +4.85] |
| 16.1 | –.06 | +3.96 | (16.1 | +1.01 | +4.60) |
| 16.2 | –.08 | +3.92 | ~~15.8~~ | ~~+1.17~~ | ~~+4.59~~ |
| 16.3 | +.35 | +4.17 | 15.6 | +1.06 | +4.50 |
| 16.3 | +.26 | +4.11 | | | |
| 16.0 | +.14 | +4.03 | | | |

n = –.59

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 15.8 | +1.96 | +4.91 | +.01 | +4.92 | +.00 | +4.91 |
| 15.8 | +4.78 | +6.56 | +.01 | +6.57 | +.00 | +6.56 |
| 16.3 | +4.07 | +6.31 | –.01 | +6.30 | –.01 | +6.30 |

| | | | I | | II |
|---|---|---|---|---|---|
| 15.6 | –2.89 | +2.31 | +.01 | +2.32 | +.01 +2.32 |

0 = +1.82 + .89 n = –.49
+4.44 +2.54 .55
+3.93 +2.27 .58
— .540

0 = –3.03 –1.71 n = –.56

0 = + .68 + .23–3 n = –.34]
+3.50 +1.88–3 .543
+2.79 +1.62 .587
— ~~.560~~ 650

0 = –4.17 –2.36–3 n = –.5~~4~~ 57

1873 July 20 Ware h = +.020 +.031 = n = –.39 e = .00 h =

| | Star | | Ra h | m | | tang. δ | T-Ra | P'-P | T-Ra-(P'-P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | s | | | | | 7.408 | |
| | 15.7 | +6 | 15 | 43 | 214 | – .05 | 0 = +7.40 | –.02 | +7.42 + | 02 | +.02 | +7.44 | +7.46 |
| | 15.9 | +3 | 15 | 51 | 218 | + .29 | +7.51 | –.01 | 7.52 – | 12 | .01 | 40 | .41 |
| | 15.9 | +3 | 15 | 52 | 219 | + .51 | +7.54 | –.04 | 7.58 – | 20 | .01 | .38 | .39 |
| | 15.9 | +3 | 15 | 55 | 471 | + 1.43 | +8.12 | +.21 | 7.91 – | 56 | .01 | .35 | .36 |
| | 16.0] | +2 | 15 | 59 | 220 | + 1.66 | +8.11 | +.15 | 7.96 – | 65 | +.01 | .31] +.12 | .44 |
| | 16.1] | +2 | 16 | 5 | 221 | + 1.01 | +7.99 | +.10 | 7.89 – | 39 | .00 | .50] –07 | .43 |
| | 16.1 | +2 | 16 | 8 | 222 | – .06 | +7.49 | –.01 | 7.50 + | 02 | .00 | .52 | 52 |
| 15.95 | 16.2 | +0 | 16 | 12 | 223 | – .08 | +7.37 | +.04 | 7.33 + | 03 | .00 | .36 | .36 |
| | 16.3 | –1 | 16 | 16 | 225 | + .35 | +7.56 | +.02 | 7.54 – | 14 | 00 | .40 | .40 |
| | 16.3 | –1 | 16 | 19 | 473 | + .26 | +7.61 | +.14 | 7.47 – | 10 | 00 | .37 | .37 |
| | 16.4 | –2 | 16 | 22 | 475 | + 1.46 | +7.81 | –.09 | 7.90 – | 57 | –01 | .33 | .32 |
| | 16.4 | –2 | 16 | 22 | 226 | + 1.87 | +7.99 | –.02 | +168.01 – | 73 | 01 | 44 ~~28~~ | .43 |
| | 16.4 | –2 | 16 | 25 | 228 | + .40 | +7.54 | –.01 | 7.55 – | 15 | .01 | .40 | .39 |
| | 16.6 | –4 | 16 | 38 | 232 | + .81 | +7.72 | +.02 | 7.70 – | 32 | .01 | .38 | .37 |
| | 16.7 | –5 | 16 | 43 | 477 | + 1.54 | +7.90 | +.04 | 7.86 – | 60 | .02 | .26 +13 | .37 |
| 16.49 | 16.8 | –6 | 16 | 46 | 478 | + .27 | +7.54 | +.05 | 7.49 = | 11 | –.02 | +7.38 | .36 |
| | 16.263 | | | | | | | | | | | ~~7.370~~<br>7.386<br>7.400 | 7.405 |

| Ra h | m | | tang. δ | T-Ra | P'-P | T-Ra-(P'-P) |
|---|---|---|---|---|---|---|
| | | | | s | | |
| 15 | 45 | 470 | + 1.96 | 0 = +7.91 | –.06 | +7.97 |
| 15 | 49 | 217 | + 4.78 | +9.59 | +.27 | 9.32 |
| 16 | 15 | 472 | + 4.07 | +8.83 | –.04 | 8.87 |
| 16 | 32 | 369 | – 3.93 | +6.00 | +.17 | 5.83 |
| 16 | 36 | 476 | + 4.59 | +8.99 | –.20 | 9.19 |

| | | |
|---|---|---|
| 15.7 | –.05 | +7.42 |
| 15.8 | +.29 | +7.52 |
| 16.1 | –.06 | +7.50 |
| 16.2 | –.08 | +7.33 |
| 16.3 | +.35 | +7.54 |
| 16.3 | +.26 | +7.47 |
| 16.8 | +.27 | +7.49 |
| 16.2 | +.14 | +7.47 |

| | | | | I & II |
|---|---|---|---|---|
| 15.8 | +1.96 | +7.97 | +.01 | +7.98 |
| 15.8 | +4.78 | +9.32 | +.01 | +9.33 |
| 16.2 | +4.07 | +8.87 | +.00 | +8.87 |
| 16.6 | +4.59 | +9.19 | +.01 | +9.18 |

| | | | | I & II |
|---|---|---|---|---|
| 16.5 | –3.93 | +5.83 | –.01 | +5.82 |

0 = +4.45 .51 n = –.28
+6. +1.86 .40
+3.93 +1.40 .36
+4.45 +1.71 .38
— .355

0 = –4.07 –1.65 n = –.40

| | | |
|---|---|---|
| 15.9 | +1.43 | +7.91 |
| [16.0 | +1.66 | +7.96] |
| [16.1 | +1.01 | +7.89] |
| 16.4 | +1.46 | +7.90 |
| 16.2 | +1.87 | +8.17 |
| [16.7 | +1.54 | +7.86] |
| 16.2 | ~~+1.48~~ +1.59 | +7.95<br>7.89 |

n = –.35

0 = 7.47 + .06 n = –.13]
+3.29 +1.41–3
+2.58 + .95–3 .376
+3.10 +1.26–3 .410
— ~~.403~~ .393

0 = –5.42 –2.10–3 n = –~~.39~~ 40

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin z | cos z | tang δ | Req−Rpe ′ ″ | ρ′−ρ | Req−Rpe+(ρ′−ρ) ″ | Rpe. | Req. | RA h m | sin z | cos z | tang δ | Req−Rpe ′ ″ | ρ′−ρ | Req−Rpe+(ρ′−ρ) ″ | Rpe. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 26 | +.02 | 1.00+ | 0.88 | −1 3.4 | −0.3 | −3.7 | +0.0 | −3.7 | 15 37 | −.92 | .38− | 2.89 | −1 1.4 | +0.2 | ~~1.2~~ 1.6 | −1.6 | −3.2δ |
| 15 29 | +.26 | .96+ | .51 | 3.3 | −0.6 | 3.9 | +0.5 | 3.4 | 15 45 | −.35 | .93+ | 1.96 | 2.3 | +0.5 | 1.8 | −0.6 | −2.4 |
| 15 33 | +.03 | 1.00+ | .86 | 2.5 | −1.0 | 3.5 | +0.0 | 3.5 | 15 49 | −.58 | .81+ | 4.78 | ~~2.5~~ | +0.2 | 2.3 | −1.0 | 3.3 |
| 15 38 | +.58 | .81+ | .12 | 4.8 | −0.3 | 5.1 | +1.0 | 4.1 | 16 15 | −.56 | .82+ | 4.07 | 2.9 | +0.6 | 2.3 | −1.0 | 3.3 |
| 15 40 | +.45 | .89+ | .28 | 3.8 | +0.3 | 3.5 | +0.8 | 2.7 | | | | | | | | | |
| 15 43 | +.71 | .70− | .05 | 2.6 | −0.6 | 3.2 | +1.3 | 1.9 | | | | | | | | | |
| 15 51 | +.44 | .90+ | .29 | 3.1 | −0.1 | 3.2 | +0.8 | 2.4 | | | | | | | | | |
| 15 52 | +.26 | .96+ | .52 | 3.4 | −0.4 | 3.8 | +0.5 | 3.3 | | | | | | | | | |
| 15 55 | −.22 | .97+ | 1.43 | 4.4 | +0.5 | 3.9 | −0.4 | 4.3 | | | | | | | | | |
| 15 59 | −.28 | .96+ | 1.66 | 2.8 | +0.7 | 2.1 | −0.5 | 2.6 | | | | | | | | | |
| 16 4 | −.05 | 1.00+ | 1.01 | 2.2 | +0.1 | 2.1 | −0.1 | 2.2 | | | | | | | | | |
| 16 8 | +.72 | .69− | .06 | 5.2 | +0.2 | 5.0 | +1.3 | 3.7 | | | | | | | | | |
| 16 12 | +.73 | .68− | .08 | 4.1 | −0.1 | 4.2 | +1.3 | 2.9 | | | | | | | | | |
| 16 16 | +.39 | .92+ | .35 | 3.3 | +0.3 | 3.0 | +0.7 | 2.3 | | | | | | | | | |
| 16 19 | +.47 | .88+ | .26 | 2.2 | −1.4 | 3.6 | +0.8 | 2.8 | | | | | | | | | |
| 16 22 | −.33 | .97+ | 1.87 | —— | −0.4 | | | 3.05 305 | | | | | | | | | 3.00<br>3.00 |

II
32

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | +.71 | −3.″2 | +.58 | −5.″1 | +.26 | −3.″9 | +.02 | −3.″7 | −.05 | −2.″1 | −.22 | −3.″9 | −.58 | −2.″3 | | −.92 | −1.″2 |
| 15 | 75 | +.72 | −5.0 | +.45 | −3.5 | +.26 | −3.8 | +.03 | −3.5 | | | −.28 | −2.1 | −.56 | −2.3 | | | |
| 3 | 00 | +.73 | −4.2 | +.44 | −3.2 | +.39 | −3.0 | | | | | −.35 | −1.8 | | | | | |
| | 75 | | | +.47 | −3.6 | | | | | | | | | | | | | |
| | | +.72 | −4.1 | +.48 | −3.8 | +.30 | −3.6 | +.02 | −3.6 | −.05 | −2.1 | −.28 | −2.6 | −.57 | −2.3 | | −.92 | −1.2 |
| | | | +1.4 | | +.9 | | −.6 | | +.0 | | −.0 | | −.6 | | −1.1 | | | |
| −1′ | 3.″22<br>3.04 | (18) | 2.7 3<br>*−.5 | | 2.9 4<br>*−.3 | | 4.2 3<br>*+1.0 | | 3.6 2<br>*+.4 | | 2.1 1<br>*−1.1 | | 3.2 3<br>.0 | | 3.4 2<br>*+.2 | | | |

| RA h m | sin z | cos z | tang δ | Req−Rpe ′ ″ | ρ′−ρ | Req−Rpe+(ρ′−ρ) | Rpe. | Req. | RA h m | sin z | cos z | tang δ | Req−Rpe ′ ″ | ρ′−ρ | Req−Rpe+(ρ′−ρ) | Rpe. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 43 | +.71 | .70− | .05 | −1 —— | −0.6 | | | | 15 45 | −.35 | .93+ | 1.96 | −1 4.3 | +0.5 | −3.8 | −0.6 | −4.4 |
| 15 51 | +.44 | .89+ | .29 | 4.9 | −0.1 | −5.0 | +0.8 | −4.2 | 15 49 | −.58 | .81+ | 4.78 | 4.9 | +0.2 | 4.7 | −1.0 | 5.7 |
| 15 52 | +.26 | .96+ | .51 | 5.3 | −0.4 | 5.7 | +0.5 | 5.2 | 16 15 | −.56 | .82+ | 4.07 | 4.5 | +0.6 | 3.9 | −1.0 | 4.9 |
| 15 55 | −.22 | .97+ | 1.43 | 6.0 | +0.5 | 5.5 | −0.5 | 6.0 | 16 32 | −.88 | .46− | 3.93 | 3.7 | +0.1 | 3.8 ~~3.6~~ | −1.6 | 5.4δ |
| 15 59 | −.28 | .96+ | 1.66 | 5.3 | +0.7 | 4.6 | −0.6 | 5.2 | 16 36 | −.58 | .81+ | 4.59 | 4.7 | +0.3 | 4.4 | −1.0 | 5.4 |
| 16 5 | −.05 | 1.00+ | 1.01 | 4.5 | +0.1 | 4.4 | −0.1 | 4.5 | | | | | | | | | |
| 16 8 | +.72 | .69− | .06 | 5.9 | +0.2 | 5.7 | +1.3 | 4.4 | | | | | | | | | |
| 16 12 | +.73 | .68− | .08 | 4.7 | −0.1 | 4.8 | +1.3 | 3.5 | | | | | | | | | |
| 16 16 | +.39 | .92+ | .35 | 4.2 | +0.3 | 3.9 | +0.7 | 3.2 | | | | | | | | | |
| 16 19 | +.47 | .88+ | .26 | 2.8 | −1.4 | 4.2 | +0.8 | 3.4 | | | | | | | | | |
| 16 22 | −.23 | .97+ | 1.46 | 6.9 | +1.5 ~~0.4~~ | 5.4 | −0.5 | 5.9 | | | | | | | | | |
| 16 22 | −.33 | .94+ | 1.87 | 4.1 | −0.4 | 4.5 | −0.6 | 5.1 | | | | | | | | | |
| 16 25 | +.35 | .93+ | .40 | 3.6 | −1.3 | 4.9 | +0.6 | 4.3 | | | | | | | | | |
| 16 38 | +.06 | 1.00+ | .81 | 4.7 | +0.2 | 4.5 | +0.1 | 4.4 | | | | | | | | | |
| 16 43 | −.25 | .97+ | 1.54 | 6.2 | +0.5 | 5.7 | −0.6 | 6.3 | | | | | | | | | |
| 16 46 | +.46 | .88+ | .27 | 4.9 | +0.4 | 4.5 | +0.8 | 3.7<br>4.62 462 | | | | | | | | | 510<br>5.10 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 930 | | | | | | | | | | | | | | | | | |
| 4 | 240 | +.72 | −5.″7 | +.44 | −5.″0 | +.26 | −5.″7 | +.06 | −4.″5 | −.05 | −4.″4 | −.22 | −5.″5 | −.58 | −4.″7 | | −.88 | −3.″6 |
| | 1070 | +.73 | −4.8 | +.47 | −4.2 | +.39 | −3.9 | | | | | −.28 | −4.6 | −.56 | −3.9 | | | |
| | | | | +.46 | −4.5 | +.35 | −4.9 | | | | | −.23 | −5.4 | −.58 | −4.4 | | | |
| | | | | | | | | | | | | −.33 | −4.5 | | | | | |
| | | | | | | | | | | | | −.25 | −5.7 | | | | | |
| | | | | | | | | | | | | −.35 | −3.8 | | | | | |
| | | +.72 | −5.2 | +.46 | −4.6 | +.33 | −4.8 | +.06 | −4.5 | −.05 | −4.4 | −.28 | −4.9 | −.57 | −4.3 | | −.88 | −3.6 |
| | | | +1.4 | | +.9 | | +.7 | | +.1 | | −.1 | | −.6 | | −1.1 | | | |
| −1′ | 4.″6~~8~~9<br>4.5~~6~~<br>72 | (19) | 3.8 2<br>*−.9 | | 3.7 3<br>*−1.0 | | 4.1 3<br>*−.6 | | 4.4 1<br>*−.3 | | 4.5 1<br>*−.2 | | 5.5 6<br>*+.8 | | 5.4 3<br>*+.7 | | | |

1873 July 21 Ware h = +.021  n = −.41 c = .00 h = +.039

| | Star | | Ra | δ | tang δ | T. Ra | ρ'−ρ | T. Ra −(ρ'−ρ) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | h m | | | s | | s | | | 7.905 | |
| | 15.4 | +4 | 15 26 | 206. | + .88 | 0=+8.33 | +.08 | +8.25 | − 36 | +02 | +7.89 | 7.91 |
| | 15.6 | 2 | 15 33 | 409. | + .86 | +8.29 | +.06 | 8.23 | − 35 | +.01 | .88 | .89 |
| | 15.6 | 2 | 15 38 | 212. | + .12 | 0=+7.99 | +.02 | 7.97 | − 05 | +.01 | .92 | .93 |
| | 15.7 | 1 | 15 40 | 213 | + .28 | +8.04 | +.00 | 8.04 | − 11 | .00 | .93 | .93 |
| | 15.7 | 1 | 15 43 | 214 | − .05 | +7.85 | −.02 | 7.87 | + 02 | 00 | .89 | .89 |
| 15.63 | 15.8 | +0 | 15 51 | 218 | + .29 | +8.03 | −.01 | 8.04 | − 12 | .00 | .92 | .92 |
| | 15.9 | −1 | 15 52 | 219 | + .51 | +8.16 | −.04 | 8.20 | − 21 | 00 | .99 | .99 |
| | 15.9 | 1 | 15 55 | 471 | + 1.43 | +8.65 | +.21 | 8.44 | − 59 | 00 | .85 | .85 |
| | 16.0] | 2 | 15 59 | 220 | + 1.66 | +8.70 | +.15 | 8.55 | − 68 | −01 | .87] +12 | .98 |
| | 16.1] | 3 | 16 5 | 221 | + 1.01 | +8.49 | +.10 | 8.39 | − 41 | −.01 | .98 −07 | .90 |
| | 16.2 | 4 | 16 12 | 223 | − .08 | +7.93 | +.04 | 7.89 | + 03 | −.02 | .92 | .90 |
| 16.07 | 16.3 | −5 | 16 16 | 225 | + .35 | +8.09 | +.02 | 8.07 | − 14 | −.02 | .93 | .91 |
| | 15.81 | | | | | | | | | | 7.922 | |
| | | | | | | | | | | | 7.918 | |

1873 July 21 Ware

| Star | Ra | δ | tang δ | T. Ra | ρ'−ρ | T. Ra −(ρ'−ρ) |
|---|---|---|---|---|---|---|
| | h m | | | s | | s |
| | 15 51 | 203 | + 3.13 | 0=+9.08 | −.15 | +9.23 |
| | 15 37 | 364 | − 2.89 | +6.99 | +.17 | 6.82 |
| | 15 45 | 470 | + 1.96 | +8.55 | −.06 | 8.61 |
| | 15 49 | 217 | + 4.78 | +10.08 | +.27 | 9.81 |
| | 16 15 | 472 | + 4.07 | +9.55 | −.04 | 9.59 |

7.917

| | | | | I | | | II | | |
|---|---|---|---|---|---|---|---|---|---|
| 15.6 | +.12 | +7.97 | 15.3 | +3.13 | +9.23 | +.01 | +9.24 | +.01 | +9.24 |
| 15.7 | +.28 | +8.04 | 15.8 | +1.96 | +8.61 | +.00 | +8.61 | +.00 | +8.61 |
| 15.7 | −.05 | +7.87 | 15.8 | +4.78 | +9.81 | +.00 | +9.81 | +.00 | +9.81 |
| 15.9 | +.29 | +8.04 | 16.3 | +4.07 | +9.59 | −.01 | +9.58 | −.01 | +9.58 |
| 16.2 | −.08 | +7.89 | | | | | | | |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 15.6 | −2.89 | +6.82 | +.01 | +6.83 | +.00 | +6.82 |

8
3

16.0 +.35 +8.07
15.9 +.15 +8.00 7.98

15.4 +.88 +8.25
15.5 +.86 +8.23

0 = +2.98 + 1.26 n = −.42
+1.81 + .63 .35
+4.63 + 1.83 .40
+3.92 + 1.60 .41
−.395

0 = −3.04 − 1.16 n = −.38

−1

15.9 +1.43 +8.44
[16.0 +1.66 +8.55]
[16.1 +1.01 +8.39] n = −.38
~~15.8 +1.17~~ 15.6 +1.06 + 8.31

0 = +1.96 + .87 n = −.445
+ .79 + .24 .30
+3.61 + 1.44 .40
+2.90 + 1.21 .42

0 = −4.06 −1.55 n = −.40

1873 July 22 Ware h = +.021  n = −.42 c = .00 392 h = −.009

| | Star | | Ra | δ | tang δ | T. Ra | ρ'−ρ | T. Ra −(ρ'−ρ) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | s | | | | | 8.406 |
| | 15.6 | +3 | 15 38 | 212 | + .12 | 0=+8.47 | +.02 | +8.45 | − 05 | 8.400 | +8.40 |
| | 15.7 | 2 | 15 40 | 213. | + .28 | +8.55 | +.00 | 8.55 | − 12 | | .43 |
| | 15.7 | 2 | 15 43 | 214 | − .05 | +8.39 | −.02 | 8.41 | + 02 | | .43 |
| | 15.8 | 1 | 15 51 | 218. | + .29 | +8.51 | −.01 | 8.52 | − 12 | | .40 |
| 15.74 | 15.9 | 0 | 15 52 | 219 | + .51 | +8.54 | −.04 | 8.58 | − 21 | | .37 |
| | 15.9 | +0 | 15 55 | 471 | + 1.43 | +9.17 | +.21 | 8.96 | − 60 | | .36 |
| | 16.0] | −1 | 15 59 | 220 | + 1.66 | +9.13 | +.15 | 8.98 | − 70 | | .28] +12 |
| | 16.1] | 2 | 16 5 | 221 | + 1.01 | +9.00 | +.10 | 8.90 | − 42 | | .48] −07 |
| | 16.1 | 2 | 16 8 | 222 | − .06 | +8.36 | −.01 | 8.37 | + 03 | | .40 |
| | 16.3 | 4 | 16 16 | 225 | + .35 | +8.60 | +.02 | 8.58 | − 15 | | .43 |
| 16.18 | 16.4 | −5 | 16 25 | 228 | + .40 | +8.58 | −.01 | 8.59 | − 17 | .00 | .42 |
| | 15.93 | | | | | | | | | | 8.402 |
| | | | | | | | | | | | 8.405 |

| Ra | δ | tang δ | T. Ra | ρ'−ρ | T. Ra −(ρ'−ρ) |
|---|---|---|---|---|---|
| | | | s | | |
| 15 37 | 364 | − 2.89 | 0=+7.39 | +.17 | +7.22 |
| 15 45 | 470 | + 1.96 | +9.10 | −.06 | +9.16 |
| 15 49 | 217 | + 4.78 | +10.73 | +.27 | 10.46 |
| 16 15 | 472 | + 4.07 | +10.03 | −.04 | 10.07 |
| 16 28 | 229 | + 2.61 | +9.65 | +.07 | 9.58 |

| | s | | | | I | | II |
|---|---|---|---|---|---|---|---|
| 15.6 | +.12 | +8.45 | 15.8 | +1.96 | +9.16 | +.00 | +9.16 |
| 15.7 | +.28 | +8.55 | 15.8 | +4.78 | +10.46 | +.00 | +10.46 |
| 15.7 | −.05 | +8.41 | 16.2 | +4.07 | +10.07 | −.01 | +10.06 |
| 15.9 | +.29 | +8.52 | 16.5 | +2.61 | +9.58 | −.01 | +9.57 |
| 16.1 | −.06 | +8.37 | | | | | |
| 15.8 | +.12 | +8.46 | | | | | |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 15.6 | −2.89 | +7.22 | +.00 | +7.22 | +.01 | +7.23 |

10
4

0 = + 1.84 + .70 n = −.38
+ 4.66 + 2.00 .43
+ 3.95 + 1.60 .40
+ 2.49 + 1.11 .45
−.415

0 = −3.01 − 1.24 n = −.41

−1

15.9 +1.43 +8.96
[16.0 +1.66 +8.98]
[16.1 +1.01 +8.90]
~~16.0 +1.37 +8.95~~

n = −.39

cut
0 = + .59 + .21 n = −.35]
+3.41 +1.51 .44
+2.70 +1.12 .41
+1.24 + .62 .50]
−.425

0 = −4.26 −1.72 n = −.40

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin z | cos n | tang δ | Req−Rfe ′ ″ | ρ′−ρ | Req−Rfe+(ρ′−ρ) ″ | Req. | RA h m | sin z | cos n | tang δ | Req−Rfe ′ ″ | +ρ′−ρ | Req−Rfe+(ρ′−ρ) ″ | Req. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 26 | +.02 | 1.00+ | .88 | −1 — — | −0.3 | | | 15 21 | −.50 | .86+ | 3.13 | −1 — — | +0.1 | | |
| 15 33 | +.03 | 1.00+ | .86 | — — | −1.0 | | | 15 37 | −.92 | .38− | 2.89 | — — | +0.2 | | |
| 15 38 | +.58 | .81+ | .12 | — — | −0.3 | | | 15 45 | −.35 | .93+ | 1.96 | 3.5 | +0.5 | −3.0 −0.6 | −3.6 |
| 15 40 | +.45 | .89+ | .28 | 5.1 | +0.3 | −4.8 +0.8 | −4.0 | 15 49 | −.58 | .81+ | 4.78 | 4.4 | +0.2 | 4.2 −1.0 | 5.2 |
| 15 43 | +.71 | .70− | .05 | — — | −0.6 | | | 16 15 | −.56 | .82+ | 4.07 | −1 3.9 | +0.6 | 3.3 −1.0 | 4.3 |
| 15 57 | +.44 | .90+ | .29 | 4.8 | −0.1 | 4.9 +0.8 | 4.1 | | | | | | | | |
| 15 52 | +.26 | .96+ | .51 | 5.5 | −0.4 | 5.9 +0.5 | 5.4 | | | | | | | | |
| 15 55 | −.22 | .97+ | 1.43 | 6.2 | +0.5 | 5.7 −0.4 | 6.1 | | | | | | | | |
| 15 59 | −.28 | .96+ | 1.66 | 4.8 | +0.7 | 4.1 −0.6 | 4.7 | | | | | | | | |
| 16 5 | −.05 | 1.00+ | 1.0~~1~~1 | ~~4.3~~ | +0.1 | 4.2 −0.1 | 4.3 | | | | | | | | |
| 16 12 | +.73 | .68− | .08 | 6.2 | −0.1 | 6.3 +1.3 | 5.0 | | | | | | | | |
| 16 16 | +.39 | .92+ | .35 | 5.3 | +0.3 | 5.0 +0.7 | 4.3 | | | | | | | | |
| | | | | | | | 4.74 474 | | | | | | | | 437<br>4.37 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 |
|---|---|---|---|---|---|---|---|
| 8 592 | +.73 −6.3″ | +.45 −4.8″ | +.26 −5.9″ | | −.05 −4.2″ | −.22 −5.7″ | −.58 −4.2″ |
| 3 111 | | +.44 −4.9 | +.39 −5.0 | | | −.28 −4.1 | −.56 −3.3 |
| 703 | | | | | | −.35 −3.0 | |
| | +.73 −6.3 | +.44 −4.8 | +.32 −5.4 | | −.05 −4.2 | −.28 ~~−6.4~~ 4.3 | −.57 −3.7 |
| ′ ″ | +1.4 | +.8 | +.6 | | −.1 | −.6 | −1.1 |
| −1 4.65<br>4.64 | (11) $4.9_1$<br>*+.2 | $4.0_2$<br>*−.7 | $4.8_2$<br>*+.1 | | 4.3<br>*−.41 | 4.9<br>*+.2³ | $4.8_2$<br>*+.1 |

| RA h m | sin z | cos n | tang δ | Req−Rfe ′ ″ | ρ′−ρ | Req−Rfe+(ρ′−ρ) | Req. | RA h m | sin z | cos n | tang δ | Req−Rfe ′ ″ | +ρ′−ρ | Req−Rfe+(ρ′−ρ) | Req. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 38 | +.58 | .81+ | .12 | −1 5.7 | −0.3 | −6.0 +1.0 | −5.0 | 15 37 | −.92 | .74− | 2.89 | −1 3.1 | +0.2 | ~~2.9~~ 3.3 −1.5 | −4.8 |
| 15 40 | +.45 | .89+ | .28 | 4.8 | +0.3 | 4.5 +0.8 | 3.7 | 15 45 | −.35 | .93+ | 1.96 | 3.1 | +0.5 | 2.6 −0.6 | −3.2 |
| 15 43 | +.71 | .70− | .05 | — — | −0.6 | | | 15 49 | −.58 | .81+ | 4.78 | 4.3 | +0.2 | 4.1 −1.0 | 5.1 |
| 15 51 | +.44 | .90+ | .29 | 4.6 | −0.1 | 4.7 +0.8 | 3.9 | 16 15 | −.56 | .82+ | 4.07 | 4.0 | +0.6 | 3.4 −1.0 | 4.4 |
| 15 52 | +.26 | .96+ | .51 | 4.3 | −0.4 | 4.7 +0.6 | 4.2 | 16 28 | −.45 | .89+ | 2.61 | 4.1 | +0.6 | 3.5 −0.8 | 4.3 |
| 15 53 | −.22 | .97+ | 1.43 | 5.5 | +0.5 | 5.0 −0.5 | 5.5 | | | | | | | | |
| 15 59 | −.28 | .96+ | 1.66 | 4.9 | +0.7 | 4.2 −0.6 | 4.8 | | | | | | | | |
| 16 5 | −.05 | 1.00+ | 1.01 | ~~4.0~~ | +0.1 | 3.9 −0.1 | 4.0 | | | | | | | | |
| 16 8 | +.72 | .69− | .06 | 6.3 | +0.2 | 6.1 +1.3 | 4.8 | | | | | | | | |
| 16 16 | +.39 | .92+ | .35 | 4.3 | +0.3 | 4.0 +0.7 | 3.3 | | | | | | | | |
| 16 25 | +.35 | .93+ | .40 | 2.7 | −1.3 | 4.0 +0.6 | 3.4 | | | | | | | | |
| | | | | | | | 4.26 4.26 | | | | | | | | 425<br>4.25 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−100 |
|---|---|---|---|---|---|---|---|---|---|
| 10 260 | +.72 −6.1 | +.58 −6.0 | +.26 −4.7 | | −.05 −3.9 | −.22 −5.0 | −.58 −4.1 | | −.92 −2.9 |
| 4 100 | | +.45 −4.5 | +.39 −4.0 | | | −.28 −4.2 | −.56 −3.4 | | |
| 360 | | +.44 −4.7 | +.35 −4.0 | | | −.35 −2.6 | −.45 −3.5 | | |
| | +.72 −6.1 | +.49 −5.1 | +.33 −4.2 | | −.05 −3.9 | −.28 −3.9 | −.53 −3.7 | | −.92 −2.9 |
| | +1.4 | +.9 | +.7 | | −.1 | −.6 | −1.0 | | |
| −1′ 4.24″<br>4.26 | (14) $4.7_1$<br>*+.5 | $4.2_3$<br>0 | $3.5_3$<br>*−.7 | | $4.0_1$<br>*−.2 | $4.5_3$<br>*+.3 | $4.7_3$<br>*+.5 | | |

1873 July 23 W.A.R. h = +.026 +.031 n = -.49 c = .00

| Star | | RA h | RA m | | δ | tang. δ | | τRa | P'-P | τRa-(P'-P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [16.0 | +5 | 15 | 59 | ]220 | | + 1.66 | 0 = + | 10.46 | +.15 | +10.31 | – | .81 | +.02 | + 9.50] +12 | |
| [16.1 | +4 | 16 | 5 | 221 | | + 1.01 | + | 9.62 | +.10 | 9.52 | – | .49 | +.01 | .03] -.07 | 8.97 |
| 16.1 | +4 | 16 | 8 | 222 | | – .06 | + | 8.97 | -.01 | 8.98 | + | .03 | +.01 | .01 | 9.02 |
| 16.2 | +3 | 16 | 12 | 223 | | – .08 | + | 8.96 | +.04 | 8.92 | + | .04 | +.01 | 8.96 | 8.97 |
| 16.3 | +2 | 16 | 19 | 473 | | + .26 | + | 9.12 | +.14 | 8.98 | – | .13 | +.01 | .85 | 8.86 |
| 16.4 | +1 | 16 | 22 | 226 | | + 1.87 | + | 9.72 | -.02 | +16 9.74 | ∓16 | .92 | .00 | .98 ✓ | 8.98 |
| 16.4 | +1 | 16 | 25 | 228 | | + .40 | + | 9.18 | -.01 | 9.19 | – | .20 | .00 | .99 | 8.99 |
| 16.6 | -1 | 16 | 38 | 232 | | + .81 | + | 9.31 | +.02 | 9.29 | – | .40 | .00 | .89 | 8.89 |
| 16.9 | -4 | 16 | 52 | 233 | | + .17 | + | 9.16 | +.06 | 9.10 | – | .08 | -.01 | 9.02 | 9.01 |
| 16.9 | -4 | 16 | 55 | 234 | | + .60 | + | 9.26 | +.01 | 9.25 | – | .29 | -.01 | 8.96 | 8.95 |
| 16.48 | | | | | | | | | | | | | | ~~899~~ 8.958 | |
| | | | | | | | | | | | | | | ~~9.024~~ | 8.960 |
| | | | | | | | | | | | | | | 8.961 | |

1873 July 23 W.A.R.

| Star | RA h | RA m | | δ | tang. δ | | τRa | P'-P | τRa-(P'-P) |
|---|---|---|---|---|---|---|---|---|---|
| | 16 | 28 | 229 | | + 2.61 | 0 = + | 10.26 | +.07 | +10.19 |
| | 16 | 36 | 476 | | + 4.59 | + | 11.00 | -.20 | 11.20 |
| | 16 | 59 | 235 | | + 7.34 | + | 12.59 | ~~+.04~~ -.09 | 12.~~55~~ .68 |

16.1 -.06 +8.98
16.2 -.08 +8.92
16.3 +.26 +8.98
16.9 +.17 +9.10
16.4 +.07 +9.00

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 16.5 | +2.61 | +10.19 | +.00 | +10.19 | -.01 | +10.18 |
| 16.6 | +4.59 | +11.20 | +.01 | +11.21 | -.01 | +11.19 |
| 17.0 | +7.34 | +12.~~55~~ 68 | +.02 | +12.~~57~~ 70 | -.02 | +12.~~53~~ 66 |

0 = + 2.54 + 1.19 n = -.47
+ 4.52 + 2.21 .49
+ 7.27 + 3.57 ~~.49~~ .51
+.13 -.450 +10

[16.0 +1.66 +10.31]
[16.1 +1.01 +9.52]
16.4 1.87 9.90
~~16.3 +1.44 9.71~~ n = ~~-.63~~ .52

0 = + 1.10 + 1.17 -.47 n = -.40
+ 3.08 + 3.15 1.48 .44
+ 5.83 + 5.90 2.95 .50
.447 / h = +.033

1873 July 24 W.A.R. h = +.033 +.031 n = -.50 c = .00

| Star | | RA h | RA m | | δ | tang. δ | | τRa | P'-P | τRa-(P'-P) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | 9.699<br>~~9.709~~ | |
| [16.0 | +6 | 15 | 59 | ]220 | | + 1.66 | 0 = + | 10.46 | +.15 | +10.31 | – | .83 | +.02 | + 9.48] +12 | .62 |
| 16.1 | .5 | 16 | 5 | 221 | | + 1.01 | + | 10.37 | +.10 | 10.27 | – | .50 | .02 | .77 -.07 | .72 |
| 16.1 | .5 | 16 | 8 | 222 | | – .06 | + | 9.66 | -.01 | 9.67 | + | .03 | .02 | .70 | 72 |
| 16.2 | .4 | 16 | 12 | 223 | | – .08 | + | 9.69 | +.04 | 9.65 | + | .04 | .01 | .69 | 70 |
| 16.3 | 3 | 16 | 16 | 225 | | + .35 | + | 9.89 | +.02 | 9.87 | – | .17 | .01 | .70 | 71 |
| 16.3 | 3 | 16 | 19 | 473 | | + .26 | + | 9.96 | +.14 | 9.82 | – | .13 | .01 | .69 | 70 |
| 1 16.4 | 2 | 16 | 22 | 226 | | + 1.87 | + | 10.45 | -.02 | 10.47 | ∓16 | .93 | .01 | .70 | 71 |
| 16.26 16.4 | 2 | 16 | 25 | 228 | | + .40 | + | 9.89 | -.01 | 9.90 | – | .19 | .01 | .71 | 72 |
| 16.5 | 1 | 16 | 30 | 230 | | + .92 | + | 10.21 | +.02 | 10.19 | – | .46 | .00 | .73 | .73 |
| 16.6 | +0 | 16 | 38 | 232 | | + .81 | + | 10.08 | +.02 | 10.06 | – | .40 | .00 | .66 | .66 |
| [16.7 | -1 | 16 | 42 | ]477 | | + 1.54 | + | 10.26 | +.04 | 10.22 | – | .77 | + .00 | 10.45] +13 | .58 |
| 16.8 | 2 | 16 | 46 | 478 | | + .27 | + | 9.89 | +.05 | 9.84 | – | .14 | -.01 | 9.70 | .69 |
| 16.9 | 3 | 16 | 52 | 233 | | + .17 | + | 9.91 | +.06 | 9.85 | – | .08 | .01 | .77 | .76 |
| 16.9 | 3 | 16 | 55 | 234 | | + .60 | + | 10.03 | +.01 | 10.02 | – | .29 | .01 | .73 | .72 |
| 17.1 | 5 | 17 | 4 | 480 | | + .86 | + | 10.38 | +.24 | 10.14 | – | .43 | .02 | .71 | .69 |
| 16.90 17.5 | -9 | 17 | 28 | 240 | | + 1.30 | + | 10.45 | +.06 | 10.39 | – | .65 | -.03 | .74 | .71 |
| 16.58 | | | | | | | | | | | | | | 9.720 | |
| | | | | | | | | | | | | | | 9.694 | 9.696 |

| RA h | RA m | | δ | tang. δ | | τRa | P'-P | τRa-(P'-P) |
|---|---|---|---|---|---|---|---|---|
| 16 | 15 | 472 | | + 4.07 | 0 = + | 11.67 | -.04 | + 11.71 |
| 16 | 28 | 229 | | + 2.61 | + | 11.04 | +.07 | 10.97 |
| 16 | 32 | 369 | | – 3.93 | + | 7.74 | +.17 | 7.57 |
| 16 | 36 | 476 | | + 4.59 | + | 11.97 | -.20 | 12.17 |
| 16 | 59 | 235 | | + 7.34 | + | 13.23 | ~~+.04~~ -.09 | 13.~~19~~ 32 |
| 17 | 1 | 373 | | – 5.18 | + | 7.52 | +.22 | 7.30 |
| 17 | 22 | 92 | | – 3.72 | + | 8.02 | +.00 | 8.02 |

16.1 -.06 +9.67
16.2 -.08 +9.65
16.3 +.35 +9.87
16.3 +.26 +9.82
16.8 +.27 +9.84
16.9 +.17 +9.85
16.4 +.15 +9.78

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 16.3 | +4.07 | +11.71 | +.00 | + 11.71 | +.01 | +11.72 |
| 16.5 | +2.61 | +10.97 | +.00 | + 10.97 | +.00 | +10.97 |
| 16.6 | +4.59 | +12.17 | -.01 | +12.16 | +.00 | +12.17 |
| 17.0 | +7.34 | ~~+13.19~~ +13.32 | -.02 | + 13.17 | -.02 | +13.17 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 16.5 | -3.93 | +7.57 | +.00 | + 7.57 | +.00 | +7.57 |
| 17.0 | -5.18 | +7.30 | -.02 | + 7.28 | -.02 | +7.28 |
| 17.4 | -3.72 | +8.02 | -.03 | + 7.99 | -.03 | +7.99 |

0 = + 3.92 + 1.93 n = -.49
+ 2.46 + 1.19 .48
+ 4.44 + 2.38 .54
+ 7.19 + 3.39 ~~.47~~ .49
+.13 -.495 -.500

[16.0 +1.66 +10.31]
[16.1 +1.01 +10.27]
~~16.4 +1.87 +10.47~~ +16
16.5 +.92 +10.19
[16.7 +1.54 +10.22]
17.5 +1.30 +10.39
~~16.5 +1.38 +10.31~~
17.0 +1.17 +10.29

0 = + 2.69 + 1.41 -3 n = -.521
+ 1.23 + .66 -3 .541
+ 3.21 + 1.86 -3 .587
+ 5.96 + 2.86 -3 .49 ~~.48~~ .487
+.13 -~~.530~~
~~.515~~ -.520

n = -.486

0 = - 4.08 - 2.21 n = -.54
- 5.33 - 2.50 -.47
- 3.87 - 1.79 -.46
-.490

0 = - 5.31 - 2.74 -3 n = -.52
- 6.56 - 3.03 -3 -.47
- 5.10 - 2.32 -3 .45
-.480

9
3

-1

15
5

-1

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin n | cos n | tang δ | | Req−Rfc ′ ″ | ρ′−ρ | Req−Rfc ρ′−ρ ″ | Rfl. | Req. | RA h m | sin n | cos n | tang δ | | Req−Rfc ′ ″ | ρ′−ρ | Req−Rfc (ρ′−ρ) ″ | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 59 | −.28 | .96 + | 1.66 | −1 | 2.2 | +0.7 | −1.5 | −0.6 | −2.1 | 16 28 | −.45 | .89 + | 2.61 | −1 | 3.1 | +0.6 | −2.5 | −0.8 | −3.3 |
| 16 5 | −.05 | 1.00 + | 1.01 | | ~~3.1~~ | +0.1 | 3.0 | −0.1 | 3.1 | 16 36 | −.58 | .81 + | 4.59 | | 2.6 | +0.3 | 2.3 | −1.0 | 3.3 |
| 16 8 | +.72 | .69 − | .06 | | 5.1 | +0.2 | 4.9 | +1.3 | 3.6 | 16 59 | −.64 | .76 + | 7.34 | | 3.8 | ~~+0.4~~ −.1 | ~~3.4~~ 9 | −1.2 | 5.1 |
| 16 12 | +.73 | .68 − | .08 | | 4.0 | −0.1 | 4.1 | +1.3 | 2.8 | | | | | | | | | | |
| 16 19 | +.47 | .88 + | .26 | | 1.6 | −1.4 | 3.0 | +0.8 | 2.2 | | | | | | | | | | |
| 16 22 | −.33 | .94 + | 1.87 | | 3.4 | −0.4 | 3.8 | −0.6 | 4.4 | | | | | | | | | | |
| 16 25 | +.35 | .93 + | .40 | | 1.6 | −1.3 | 2.9 | +0.6 | 2.3 | | | | | | | | | | |
| 16 38 | +.06 | 1.00 + | .81 | | 4.2 | +0.2 | 4.0 | +0.1 | 3.9 | | | | | | | | | | |
| 16 52 | +.54 | .84 + | .17 | | 2.2 | −0.1 | 2.3 | +1.0 | 1.3 | | | | | | | | | | |
| 16 55 | +.20 | .98 + | .60 | | 4.3 | +0.2 | 4.1 | +0.3 | 3.8 | | | | | | | | | | |
| | | | | | | | | | 3.13 2.95 | | | | | | | | | | 3.90<br>3.90 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 9 117 | | | | | | | | | |
| 3 270 | +.72 −4.″9 | +.47 −3.″0 | +.35 −2.″9 | +.06 −4.″0 | −.05 −3.″0 | −.28 −1.″5 | −.45 −2.″5 | −.64 −3.″4 | |
| 387 | +.73 −4.1 | +.54 −2.3 | +.20 −4.1 | | | −.33 −3.8 | −.58 −2.3 | | |
| | +.72 −4.5 | +.50 −2.6 | +.27 −3.5 | +.06 −4.0 | −.05 −3.0 | −.30 −2.6 | −.51 −2.4 | −.64 −3.4 | |
| | +1.4 | +.9 | +.5 | +.1 | −.1 | −.6 | −1.0 | −1.2 | |
| −1′ 3.11″ | (13) $3.1_2$ | $1.7_2$ | $3.0_2$ | $3.9_1$ | $3.1_1$ | $3.2_2$ | $3.4_2$ | $4.6_1$ | |
| 3.32 | .0 | −1.4 | −.1 | +.8 | .0 | +.1 | +.3 | +1.5 | |

| RA h m | sin n | cos n | tang δ | | Req−Rfc ′ ″ | ρ′−ρ | Req−Rfc ρ′−ρ | Rfl. | Req. | RA h m | sin n | cos n | tang δ | | Req−Rfc ′ ″ | ρ′−ρ | Req−Rfc (ρ′−ρ) | Rfl. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 59 | −.28 | .96 + | 1.66 | −1 | 2.2 | +0.7 | −1.5 | −0.6 | −2.1 | 16 15 | −.56 | .82 + | 4.07 | −1 | 2.3 | +0.6 | −1.7 | −1.0 | −2.7 |
| 16 5 | −.05 | 1.00 + | 1.01 | | 2.9 | +0.1 | 2.8 | −0.1 | 2.9 | 16 28 | −.45 | .89 + | 2.61 | | 3.4 | +0.6 | 2.8 | −0.8 | 3.6 |
| 16 8 | +.72 | .69 − | .06 | | 4.5 | +0.2 | 4.3 | +1.3 | 3.0 | 16 32 | −.88 | .47 − | 3.93 | −1 | 1.9 | +0.1 | 2.0 ~~1.8~~ | −1.5 | 3.5 |
| 16 12 | +.73 | .68 − | .08 | | 6.9 | −0.1 | 7.0 | +1.3 | 5.7 | 16 36 | −.58 | .81 + | 4.59 | | 3.7 | +0.3 | 3.4 | −1.0 | ~~4.4~~ |
| 16 16 | +.39 | .92 + | .35 | | 3.7 | +0.3 | 3.4 | +0.7 | 2.7 | 16 59 | −.64 | .76 + | 7.34 | | 4.0 | ~~+0.4~~ 1 | ~~3.6~~ 4.1 | −1.2 | 5.3 |
| 16 19 | +.47 | .88 + | .26 | | 2.0 | −1.4 | 3.4 | +0.8 | 2.6 | 17 1 | −.60 | .80 − | 5.18 | | 1.4 | +0.6 | 2.0 ~~0.8~~ | −1.1 | ~~1.9~~ 3.1 |
| 16 22 | −.33 | .94 + | 1.87 | | 1.9 | −0.4 | 2.3 | −0.6 | 2.9 | 17 22 | −.89 | .45 − | 3.72 | | 3.1 | +0.1 | 3.2 ~~3.0~~ | −1.5 | 4.7 |
| 16 25 | +.35 | .93 + | .40 | | 2.3 | −1.3 | 3.6 | +0.6 | 3.0 | | | | | | | | | | |
| 16 30 | −.01 | 1.00 + | .92 | | 3.1 | −0.2 | 3.3 | +0.0 | 3.3 | | | | | | | | | | |
| 16 38 | +.06 | 1.00 + | .81 | | 4.1 | +0.2 | 3.9 | +0.1 | 3.8 | | | | | | | | | | |
| 16 42 | −.25 | .97 + | 1.54 | | 4.2 | +0.5 | 3.7 | −0.6 | 4.3 | | | | | | | | | | |
| 16 46 | +.46 | .88 + | .27 | | 4.1 | +0.4 | 3.7 | +0.8 | 2.9 | | | | | | | | | | |
| 16 52 | +.54 | .84 + | .17 | | 4.4 | −0.1 | 4.5 | +1.0 | 3.5 | | | | | | | | | | |
| 16 55 | +.20 | .98 + | .60 | | 3.5 | +0.2 | 3.3 | +0.3 | 3.0 | | | | | | | | | | |
| 17 4 | +.03 | 1.00 + | .86 | | 3.2 | −0.7 | 3.9 | +0.1 | 3.8 | | | | | | | | | | |
| 17 28 | −.17 | .98 + | 1.30 | | 4.7 | +0.6 | 4.1 | −0.4 | 4.5 | | | | | | | | | | |
| | | | | | | | | | 3.22 3.38 | | | | | | | | | | 3.58<br>3.82 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 15 330 | +.72 −4.3 | +.47 −3.4 | +.39 −3.4 | +.06 −3.9 | −.05 −2.8 | −.28 −1.5 | −.56 −1.7 | −.64 −3.6 | −.88 −1.8 |
| 5 410 | +.73 −7.0 | +.46 −3.7 | +.35 −3.6 | +.03 −3.9 | −.01 −3.3 | −.33 −2.3 | −.45 −2.8 | | −.89 −3.0 |
| 740 | | +.54 −4.5 | +.20 −3.3 | | −.17 −4.1 | −.25 −3.7 | −.58 −3.4 | | |
| | | | | | | | −.60 −0.8 | | |
| | +.72 −5.6 | +.49 −3.9 | +.31 −3.4 | +.04 −3.9 | −.08 −3.4 | −.29 −2.5 | −.55 −2.2 | −.64 −3.6 | −.88 −2.4 |
| | +1.4 | +.9 | +.6 | +.1 | −.2 | −.6 | −1.1 | −1.2 | |
| −1′ 3.40″ | (21) $4.2_2$ | $3.0_3$ | $2.8_3$ | $3.8_2$ | $3.6_3$ | $3.1_3$ | $3.3_4$ | $4.8_1$ | |
| 3.37 | +.8 | −.4 | −.6 | +.4 | +.2 | −.3 | −.1 | +1.4 | |

1873 July 26 Wark h = +.040 +.045 n = -.50 c = .00 h = -.~~049~~

| | Star | | Ra h | m | δ | tang. δ | | πRa s | P′-P | πRa-(P′-P) s | | | | 11.393 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 16.6 | +4 | 16 | 38 | 232 | + .81 | 0 = | +11.81 | .+.02 | +11.79 | − .40 | +02 | +11.39 | 11.41 |
| | [16.7 | .3 | 16 | 42] | 477 | + 1.54 | | +12.12 | .+.04 | 12.08 | − .77 | +.01 | .31] +13 | .45 |
| | 16.8 | 2 | 16 | 46 | 478 | + .27 | | +11.55 | .+.05 | 11.50 | − .14 | +.01 | 36 | .37 |
| 16.77 | 16.9 | 1 | 16 | 52 | 233 | + .17 | | +11.62 57 | .+.06 | 11.57 | − .08 | 00 | 43 | .43 |
| | 16.9 | +1 | 16 | 55 | 234 | + .60 | | +11.62 | .+.01 | 11.61 | − .30 | | .31 | .31 |
| | 17.1 | −1 | 17 | 4 | 480 | + .86 | 11 | +12.98 | .+.24 | 11.74 | − .43 | | .31 | .31 |
| | 17.1 | 1 | 17 | 9 | 237 | + .26 | | +11.57 | .+.01 | 11.56 | − .13 | 00 | 43 | .43 |
| | 17.2 | 2 | 17 | 11 | 239 | + .75 | | +11.76 | .−.05 | 11.81 | − .38 | −.01 | 43 | .42 |
| 17.16 | 17.5 | −5 | 17 | 28 | 240 | + 1.30 | | +12.10 | .+.06 | 12.04 | − .65 | −.02 | 39 | .37 |
| | 17.081 | | | | | | | | | | | | 11.374<br>11.388 | |

1873 July 26 Wark

| Ra h | m | δ | tang. δ | | πRa s | P′-P | πRa-(P′-P) s |
|---|---|---|---|---|---|---|---|
| 16 | 59 | 235 | + 7.34 | 0 = | +15.12 | .~~+.04~~ −.09 | +15.~~08~~ 21 |
| 17 | 1 | 373 | − 5.18 | | +9.17 | .+.22 | 8.95 |
| 17 | 22 | 92 | − 3.72 | | +9.53 | .+.00 | 9.53 |

11.389

| | | | | | | s | | I | | II |
|---|---|---|---|---|---|---|---|---|---|---|
| 16.8 | +.27 | +11.50 | | 17.0 | +7.34 | ~~+15.08~~ +15.21 | +.00 | +15.08 | +.00 | +15.08 |
| 16.9 | +.17 | +11.571 | | | | | | | | |
| 17.1 | +.26 | +11.56 | | | | | | | | |
| 16.9 | +.23 | +11.54 2 +.4 | | | | | | | | |
| 16.7 | +1.54 | +12.08] | | | | | | | | |
| 17.1 | +.86 | +11.74 | | | | | | | | |
| 17.5 | +1.30 | +12.04 | | | | | | | | |
| 17.7 3 | ~~+.23~~ +1.08 | ~~+11.95~~ +11.89 | n = -.43 -.01 | | | | | | | |

| | s | | I | | II |
|---|---|---|---|---|---|
| 17.0 | −5.18 +8.95 | +.00 | +8.95 | +.00 | +8.95 |
| 17.4 | −3.72 +9.53 | −.02 | +9.51 | −.01 | +9.52 |

0 = +7.11 + 3.56 +.13 n = -.582

0 = +6.11 + 3.13 +.13 n = -.5~~8~~3

0 = −5.41 − 2.57 n = -.48
−3.95 − 2.01 .51
−.495

0 = −6.41 − 3.00 n = -.47
−4.95 − 2.43 .49
−.480

8
1

—1

1873 July 30 Wark h = +.030 +.033 n = -.54 c = .00 h = +.~~108~~

| | Star | | Ra h | m | δ | tang. δ | | πRa s | P′-P | πRa-(P′-P) | | | | 15.820 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 16.1 | +4 | 16 | 8 | 222 | − .06 | 0 = | +15.80 | .−.01 | +15.81 | + .03 | +.01 | +15.84 | 15.85 |
| | 16.2 | +3 | 16 | 12 | 223 | − .08 | | +15.80 | .+.04 | 15.76 | + .04 | +.01 | .80 | .81 |
| 16.20 | 16.3 | +.2 | 16 | 16 | 225 | + .35 | | +16.03 | .+.02 | 16.01 | − .19 | +.01 | 82 | .83 |
| | 16.3 | +.2 | 16 | 19 | 473 | + .26 | | +16.03 | .+.14 | 15.89 | − .14 | +.01 | .75 | .76 |
| | 16.4 | +.1 | 16 | 22 | 226 | + 1.87 | | +16.76 | .−.02 | 16.78 | −1.16 1.01 | +00 | .93 | .93 |
| 16.73 | 17.5 | −0 | 17 | 28 | 240 | + 1.30 | | +15.71 6 | .+.06 | 15.65 6 | − .70 | −.03 | .95 | .92 |
| | 16.47 | | | | | | | | | | | | 15.877<br>15.848 | 15.850 |

| Ra h | m | δ | tang. δ | | πRa s | P′-P | πRa-(P′-P) |
|---|---|---|---|---|---|---|---|
| 16 | 15 | 472 | + 4.07 | 0 = + | 17.98 | .−.04 | +18.02 |
| 16 | 36 | 476 | + 4.59 | + | 18.22 | .−.20 | 18.42 |

| | | | | | | | I | | II |
|---|---|---|---|---|---|---|---|---|---|
| 16.1 | −.06 | +15.81 | 16.2 | +4.07 | +18.02 | +.00 | +18.02 | +.02 4 | +18.04 6 |
| 16.2 | −.08 | +15.76 | 16.6 | +4.59 | +18.42 | −.01 | +18.41 | +.08 3 | +18.48 5 |
| 16.3 | +.35 | +16.01 | | | | | | | |
| 16.3 | +.26 | +15.89 | | | | | | | |
| 16.2 | +.12 | +15.87 +.2 | | | | | | | |
| 16.4 | + 1.87 | +16.94 | | | | | | | |
| 17.5 | + 1.30 | +16.65 | | | | | | | |
| 16.9 | +1.58 | +16.79 | | | | | | | |

0 = +2.95 +2.15 n = -.54
+4.47 +2.54 .57
−.555

n = -.62

0 = +2.49 +1.~~85~~ 27 n = -.~~73~~ 512
+3.01 + ~~2.22~~ 1.66 .~~74~~ 55
−.536

6
2

—1

1873 Aug. 4 Wark h = +.018 n = -~~.55~~ -.47 c = -.08 h = -.031

| | Star | | Ra h | m | δ | tang. δ | | πRa | P′-P | πRa-(P′-P) | | | | 18.685 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 16.3 | +7 | 16 | 16 | 225 | + .35 | 0 = | +18.89 | .+.02 | +18.87 | − .60 | −.02 | +18.71 | 18.69 | −.57 |
| | 16.4 | .6 | 16 | 25 | 228 | + .40 | | +18.84 | .−.01 | 18.85 | − .19 | .02 | .66 | .64 | −.35 |
| | 16.5 | 5 | 16 | 30 | 230 | + .92 | | +19.10 | .+.02 | 19.08 | − .43 | .02 | .65 | .63 | −.53 |
| | 16.6 | .4 | 16 | 38 | 232 | + .81 | | +19.09 | .+.02 | 19.07 | − .38 | .01 | .66 | .68 | −.52 |
| | [16.7] | 3 | 16 | 42] | 477 | + 1.54 | | +19.41 | .+.04 | 19.37 | − .72 | .01 | .65] +13 | .77 | −.50 |
| | 16.8 | 2 | 16 | 46 | 478 | + .27 | | +18.81 | .+.05 | 18.76 | − .13 | −.01 | .63 | .62 | −.5 |
| 16.58 | 16.9 | 1 | 16 | 52 | 233 | + .17 | | +18.91 | .+.06 | 18.85 | − .08 | .00 | .77 | .77 | −.46 |
| | 16.9 | +1 | 16 | 55 | 234 | + .60 | | +19.01 | .+.01 | 19.00 | − .28 | .00 | .72 | .72 | −.52 |
| | 17.1 | −1 | 17 | 4 | 480 | + .86 | | +19.29 | .+.24 | 19.05 | − .40 | .00 | .65 | .65 | −.61 |
| | 17.1 | 1 | 17 | 9 | 237 | + .26 | | +18.77 | .+.01 | 18.76 | − .12 | .00 | .64 | .64 | − |
| | 17.2 | 2 | 17 | 11 | 239 | + .75 | | +18.97 | .−.05 | 19.02 | − .35 | +.01 | .67 | .68 | −.58 |
| | 17.5 | 5 | 17 | 28 | 240 | + 1.30 | | +19.24 | .+.06 | 19.18 | − .61 | .02 | .57 | .59 | −.54 |
| | 17.6 | 6 | 17 | 36 | 244 | + 1.04 | | + 18.94 | .−.21 | 19.15 | − .49 | .02 | .66 | .68 | −.513 |
| | 17.7 | 7 | 17 | 41 | 246 | + 0.53 | | +18.99 | .+.04 | 18.95 | − .25 | .02 | .70 | .72 | |
| 17.38 | 17.9 | −.9 | 17 | 53 | 252 | + 1.26 | | +19.24 | .−.02 | 19.26 | − .59 | + .03 | .67 | .70 | −.48 |
| | 17.04 | | | | | | | | | | | | 18.660<br>18.678 | II 18.679 | −.55 |

| Ra h | m | δ | tang. δ | | πRa s | P′-P | πRa-(P′-P) |
|---|---|---|---|---|---|---|---|
| 16 | 15 | 472 | + 4.07 | 0 = + | 20.92 | .−.04 | +20.96 |
| 16 | 22 | 226 | + 1.87 | + | 19.34 | .−.02 | 19.36 |
| 16 | 28 | 229 | + 2.61 | + | 20.11 | .+.07 | 20.04 |
| 16 | 32 | 369 | − 3.93 | + | 16.48 | .+.17 | 16.31 |
| 16 | 36 | 476 | + 4.59 | + | 20.85 | .−.20 | 21.05 |
| 16 | 59 | 235 | + 7.34 | + | 22.37 | .~~+.04~~ 09 | 22.~~33~~ 46 |
| 17 | 1 | 373 | − 5.18 | + | 15.91 | .+.22 | 15.69 |
| 17 | 22 | 92 | − 3.72 | + | 16.22 | .+.00 | 16.22 |
| 17 | 32 | ~~520~~ (8) 482 | + 2.50 | + | 19.13 | .+.17 +.09 | 18.96 +.08 |
| 17 | 38 | 483 | + 2.58 | + | 19.98 | .+.08 | 19.90 |
| 17 | 44 | 484 | + 3.12 | + | 20.39 | .+.09 | 20.30 |

−.548 (a)

| | | | | | | | | | I | | II |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16.3 | +.35 | +18.87 | 16.5 | +.92 | +19.08 | 16.3 | +4.07 | +20.96 | +.01 | +20.97 | +.00 +20.97 |
| 16.4 | +.40 | +18.85 | [16.7 | +1.54 | +19.37] | 16.4 | +1.87 | +19.36 | +.01 | +19.37 | +.00 +19.37 |
| 16.8 | +.27 | +18.76 | 17.1 | + .86 | +19.05 | 16.5 | +2.61 | +20.04 | +.00 | +20.04 | +.01 +20.03 |
| 16.9 | +.17 | + 18.85 | 17.5 | +1.30 | +19.18 | 16.6 | +4.59 | +21.05 | +.00 | +21.05 | +.00 +21.05 |
| 17.1 | +.26 | +18.76 | 17.6 | +1.04 | +19.15 | 17.0 | +7.34 | +22.~~33~~ 46 | −.01 | + 22.32 | −.01 +22.32 |
| 16.7 | +.29 | +18.82 +1 | 17.9 | +1.26 | +19.26 | 17.5 | +2.50 | ~~+18.96~~ +19.04 | −.01 | +18.95 | −.02 +18.94 |
| | | | 18.2 | +1.15 | +19.18 | 17.6 | +2.58 | +19.90 | −.02 | +19.88 | −.03 +19.87 |
| | | | 17.3 | +1.08 | +19.14 | 17.7 | +3.12 | +20.30 | −.02 | +20.28 | −.03 +20.27 |

| | | I | | II |
|---|---|---|---|---|
| 16.5 | −3.93 +16.31 | +.00 | +16.31 | +.00 +16.31 |
| 17.0 | −5.18 +15.69 | −.01 | +15.68 | −.01 +15.68 |
| 17.4 | −3.72 +16.22 | −.01 | +16.21 | +.00 +16.22 |

0 = −4.22 −2.51 n = -.59
−5.47 −3.14 .57
−4.01 −2.61 .65
−.603 (d)

n = -.42 +.01

0 = −5.08 −2.87 n = -.56
−6.33 −3.50 .55
−4.87 −2.96 .61
−.573 (c)

15
7

—1

η = +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−100

| RA h m | sin α | cos α | tang δ | Req−Rfe ′ | ″ | P′−P | Req−Rfe+(P′−P) | Rfe Req | RA h m | sin α | cos α | tang δ | Req− | Rfe ′ ″ | P′−P | Req−Rfe+(P′−P) | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 38 | +.06 | 1.00+ | 0.81 | −1 | 3.7 | .+0.2 | −3.5+0.1 | −3.4 | 16 59 | −.64 | .76+ | 7.34 | −1 | 3.4 | .+~~0.4~~ 1 | −3.~~8~~5 | −1.2 | −4.7 |
| 16 42 | −.25 | .97+ | 1.54 | | 3.8 | .+0.5 | 3.3−0.5 | 3.8 | 17 1 | −.85 | .52− | 5.18 | | 1.6 | .+0.6 | 2.2 ~~1.0~~ | −1.5 | 3.7 √ |
| 16 46 | +.46 | .88+ | .27 | | 7.3 | .+0.4 | 6.9+0.8 | 6.1 | 17 22 | −.89 | .45− | 3.72 | | 1.5 | .+0.1 | 1.6 ~~1.4~~ | −1.5 | 3.1 √ |
| 16 52 | +.54 | .84+ | .17 | | 4.4 | .−0.1 | 4.5+1.0 | 3.5 | | | | | | | | | | |
| 16 53 | +.20 | .98+ | .60 | | − − | .+0.2 | | | | | | | | | | | | |
| 17 4 | +.03 | 1.00+ | .86 | | 2.3 | .−0.7 | 3.0+0.1 | 2.9 | | | | | | | | | | |
| 17 9 | +.47 | .88+ | .26 | | 3.8 | .−0.4 | 4.2+0.8 | 3.4 | | | | | | | | | | |
| 17 11 | +.09 | 1.00+ | .75 | | 3.5 | .−1.0 | 4.5+0.7 | 4.3 | | | | | | | | | | |
| 17 28 | −.17 | .98+ | 1.30 | | 4.8 | .+0.6 | 4.2−0.3 | 4.5 | | | | | | | | | | |
| | | | | | | | | 399 3.61 | | | | | | | | | | 4.70<br>4.70 |

8 792
1 170 +.46 −6.9″ +.29 | +.06 −3.5″ | −.17 −4.2 | −.25 −3.3″ | −.64 −3.0″ | −.85 −1.0″
962 +.54 −4.5 | +.03 −3.0 | −.89 −1.4
+.47 −4.2 | +.09 −4.5

+.49 −5.4 | +.06 −3.7 | −.17 −4.2 | −.25 −3.3 | −.64 −3.0 | −.87 −1.2
+.9 | +.1 | −.3 | −.5 | −1.2
−1′ 4.02″ (9) 4.3 3 | 3.6 3 | 4.5 1 | 3.8 1 | 4.2 1
4.07 +.3 | −.4 | +.5 | −.2 | +.2

| RA h m | sin α | cos α | tang δ | Req−Rfe ′ | ″ | P′−P | Req−Rfe+(P′−P) | Rfe Req | RA h m | sin α | cos α | tang δ | Req− | Rfe ′ ″ | P′−P | Req−Rfe+(P′−P) | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 8 | +.72 | .69− | .06 | −1 | 4.6 | .+0.2 | −4.4+1.3 | −3.1 | 16 15 | −.56 | .82+ | 4.07 | −1 | 3.1 | .+0.6 | −2.5 | −1.0 | −3.5 |
| 16 12 | +.73 | .68− | .08 | | 4.5 | .−0.1 | 4.6+1.3 | 3.3 | 16 36 | −.58 | .81+ | 4.59 | | 3.8 | .+0.3 | 3.5 | −1.0 | 4.5 |
| 16 16 | +.39 | .92+ | .35 | | 3.5 | .+0.3 | 3.2+0.7 | 2.5 | | | | | | | | | | |
| 16 19 | +.47 | .88+ | .26 | 2.3 | ~~3.2~~ | .−1.4 | 3.7+0.8 | 2.9 | | | | | | | | | | |
| 16 22 | −.33 | .94+ | 1.87 | | 2.6 | .−0.4 | 3.0−0.6 | 3.6 | | | | | | | | | | |
| 17 28 | −.17 | .98+ | 1.30 | | 3.3 | .+0.6 | 2.7−0.3 | 3.0 | | | | | | | | | | |
| | | | | | | | | 3.07 3.07 | | | | | | | | | | 4.00<br>4.00 |

6 842
2 100 +.72 −4.4 | +.47 −3.7 | +.39 −3.2 | −.17 −2.7 | −.33 −3.0 | −.56 −2.5
142 +.73 −4.6 | −.58 −3.5

+.72 −4.5 | +.47 −3.7 | +.39 −3.2 | −.17 −2.7 | −.33 −3.0 | −.57 −3.0
+1.4 | +.9 | +.8 | −.3 | −.7 | −1.1
−1′ 3.29″ (8) 3.1 2 | 2.8 1 | 2.4 1 | 3.0 1 | 3.7 1 | 4.1 2
3.18 −.2 | −.5 | −.9 | −.3 | +.4 | +.8

| RA h m | sin α | cos α | tang δ | Req−Rfe ′ | ″ | P′−P | Req−Rfe+(P′−P) | Rfe Req | RA h m | sin α | cos α | tang δ | Req− | Rfe ′ ″ | P′−P | Req−Rfe+(P′−P) | Rfe. | Req. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 16 | +.39 | .92+ | .35 | −1 | 6.0 | .+0.3 | −5.7+0.7 | −5.0 | 16 15 | −.56 | .82+ | 4.07 | −1 | 4.2 | .+0.6 | −3.6 | −1.0 | −4.6 |
| 16 25 | +.35 | .93+ | .40 | | 4.6 | .−1.3 | 5.9+0.6 | 5.3 | 16 22 | −.33 | .94+ | 1.87 | | 3.7 | .−0.4 | 4.1 | −0.6 | 4.7 |
| 16 30 | −.01 | 1.00+ | .92 | | 4.4 | .−0.2 | 4.6+0.0 | 4.6 | 16 28 | −.45 | .89+ | 2.61 | | 4.5 | .+0.6 | 3.9 | −0.8 | 4.7 |
| 16 38 | +.06 | 1.00+ | .81 | | 4.6 | .+0.2 | 4.4+0.2 | 4.2 | 16 32 | −.88 | .46− | 3.93 | | 1.8 | .+0.1 | 1.9 ~~1.7~~ | −1.8 | 3.7 √ |
| 16 42 | −.25 | .97+ | 1.54 | | 4.2 | .+0.5 | 3.7−0.5 | 4.2 | 16 36 | −.58 | .81+ | 4.59 | | − − | .+0.3 | | | |
| 16 46 | +.46 | .88+ | .27 | | 6.7 | .+0.4 | 6.3+0.8 | 5.5 | 16 59 | −.64 | .76+ | 7.34 | | 3.6 | .+~~0.4~~ 1 | 3.~~2~~8 | −1.2 | 4.9 |
| 16 52 | +.54 | .84+ | .17 | | 5.8 | .−0.1 | 5.9+1.0 | 4.9 | 17 1 | −.85 | .52− | 5.18 | | 0.8 | .+0.6 | 1.4 ~~0.0~~ | −1.7 | 3.1 √ |
| 16 53 | +.20 | .98+ | .60 | | 5.9 | .+0.2 | 5.7+0.4 | 5.3 | 17 22 | −.89 | .45− | 3.72 | | 1.8 | .+0.1 | 1.9 ~~1.7~~ | −1.8 | 3.7 √ |
| 17 4 | +.03 | 1.00+ | .86 | | 3.3 | .−0.7 | 4.0+0.1 | 3.9 | 17 32 | −.44 | .90+ | 2.50 | | 3.4 | .+0.5 | 2.9 | −0.8 | 3.7 |
| 17 9 | +.47 | .88+ | .26 | | 3.7 | .−0.4 | 4.1+0.8 | 3.3 | 17 38 | −.44 | .90+ | 2.56 | | 4.1 | .+0.8 | 3.3 | −0.8 | 4.1 |
| 17 11 | +.09 | 1.00+ | .75 | | 3.~~4~~9 | .−1.0 | 4.9+0.2 | 4.7 | 17 44 | −.50 | .87+ | 3.12 | | 3.4 | .+0.4 | 3.0 | −0.9 | 3.9 |
| 17 28 | −.17 | .98+ | 1.30 | | 4.9 | .+0.6 | 4.3−0.3 | 4.6 | | | | | | | | | | |
| 17 36 | −.06 | 1.00+ | 1.04 | | 4.6 | .+1.0 | 3 5.6−0.2 | 3.8 | | | | | | | | | | |
| 17 41 | +.25 | .97+ | 0.53 | | 5.6 | .−0.3 | 5.9+0.5 | 5.4 | | | | | | | | | | |
| 17 53 | −.16 | .99+ | 1.26 | | 5.0 | .+0.5 | 4.5−0.3 | 4.8 | | | | | | | | | | |
| | | | | | | | | 4.63 4.63 | | | | | | | | | | 4.36<br>4.37 |

15 945
7 259
1204 | +.46 −6.3 | +.39 −5.7 | +.06 −4.4 | −.01 −4.6 | −.25 −3.7 | −.56 −3.6 | −.64 −3.2 | −.88 −1.7
+.54 −5.9 | +.35 −5.9 | +.03 −4.0 | −.17 −4.3 | −.33 −4.1 | −.45 −3.9 | −.85 −0.2
+.47 −4.1 | +.20 −5.7 | +.09 −4.9 | −.06 3 5.6 | −.44 −2.9 | −.89 −1.7
+.46 −6.3 | +.25 −5.9 | −.16 −4.5 | −.44 −3.3
−.50 −3.0

+.49 −5.4 | +.40 −5.8 | +.06 −4.~~8~~4 | −.~~10~~07 −4.2 | −.29 −3.9 | −.48 −3.3 | −.64 −3.2 | −.87 −1.2
+.9 | +.8 | +.1 | −.2 | −.6 | −.9 | −1.2
−1′ 4.4~~0~~7″ (22) 4.5 3 | 5.0 4 | 4.3 3 | 4.~~0~~4 4 | 4.5 2 | 4.2 5 | 4.4 1
4.55 .0 | +.5 | −.2 | −.4 | .0 | −.3 | −.1

1873 Aug.5 Wake h = +.013 +.016 n = −.43 e = .00 h = +.3

| | Star | | Ra h | m | | δ | tang. δ | τ Ra | P'−P | s | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 17.5 | +4 | 17 | 28 | 240 | | + 1.30 | + 19.50 | +.06 | + 19.44 | − .56 | +.01 | + 18.88 | 18.89 |
| | 17.6 | 3 | 17 | 36 | 244 | | + 1.04 | + 19.13 | −.21 | 19.34 | − .45 | .00 | .89 | 89 |
| | 17.7 | 2 | 17 | 41 | 246 | | + .53 | 19.16 | +.04 | 19.12 | − .23 | | .89 | .89 |
| 17.67 | 17.9 | 0 | 17 | 51 | 248 | | + 1.53 | + 19.59 | +.07 | 19.52 | − .66 | | .86 +.11 | .97 |
| | 17.9 | +0 | 17 | 53 | 252 | | + 1.26 | + 19.47 | −.02 | 19.49 | − .54 | | .95 | .95 |
| | 18.0 | −1 | 18 | 1 | 254 | | + .17 | + 19.06 | +.01 | 19.05 | − .07 | | .98 | .98 |
| | 18.1 | 2 | 18 | 3 | 255 | | + .55 | + 19.25 | +.04 | 19.21 | − .24 | | .97 | 8.97 |
| | 18.2 | 3 | 18 | 12 | 486 | | + .90 | + 19.67 | +.24 | 19.43 | − .39 | 00 | 19.04 | 9.04 |
| 18.10 | 18.3 | −4 | 18 | 18 | 258 | | + .40 | + 19.17 | +.04 | 19.13 | − .16 | −.01 | 18.97 | 8.96 |
| | 17.91 | | | | | | | | | | | | 18.982<br>18.949 | 18.949 |

1890 ~~18.880~~

1873 Aug.5 Wake

| Star | Ra h | m | | δ | tang. δ | τ Ra | P'−P | τ Ra −(P'−P) |
|---|---|---|---|---|---|---|---|---|
| | 16 | 36 | 476 | | + 4.59 | 0 = + 20.65 | −.20 | + 20.85 |
| | 17 | 32 | 482 | | + 2.50 | + ~~19.19~~ 20 | + .17 09 | 19.02 +.08 |
| | 17 | 36 | 483 | | + 2.58 | + 20.03 | +.08 | 19.95 |
| | 17 | 44 | 484 | | + 3.12 | + 20.42 | +.09 | 20.33 |
| | 17 | 55 | 485 | | + 4.32 | + 20.91 | +.23 | 20.68 |
| | 18 | 14 | 256 | | + 16.88 | + 26.98 | −.04 5 | 27.02 3 |

| | | s |
|---|---|---|
| 18.0 | +.17 | +19.05 |
| 18.3 | +.40 | +19.13 |
| 18.1 | +.28 | +19.09 |
| 17.5 | +1.30 | +19.44 |
| 17.6 | +1.04 | +19.34 |
| [17.9 | +1.53 | +19.52] |
| 17.9 | +1.26 | +19.49 |
| 17.7 | +1.29 | +19.45 2 |
| | +1.20 | |

n = −.36

| | | s | | I | | II |
|---|---|---|---|---|---|---|
| 16.6 | +4.59 | +20.85 | +.02 | +20.87 | +.01 | +20.86 |
| 17.5 | +2.50 | +~~19.02~~ 20.10 | +.01 | +~~19.03~~ 20 | +.00 | +~~19.02~~ 20 |
| 17.6 | +2.58 | +19.95 | +.01 | +19.96 | +.00 | +19.95 |
| 17.7 | +3.12 | +20.33 | +.00 | +20.33 | +.00 | +20.33 |
| 17.9 | +4.32 | +20.68 | +.00 | +20.68 | +.00 | +20.68 |
| 18.2 | +16.88 | +27.02 3 | +.00 | +27.02 | −.01 | +27.01 |

0 = +4.31 +1.78 n = −.41
+2.22 + ~~.08~~ .94 +.08 .46
+2.30 + .87 −.38
+2.84 +1.24 .44
+4.04 +1.59 .39
+16.60 +7.93 .48
−.427

0 = +3.31 +1.41 n = −.43
+1.22 + ~~.43~~ .50 +.08 .53
+1.30 + .50 −.38
+1.84 + .88 .48
+3.04 +1.23 .40
+15.60 +7.56 .48
−.450

1873 Aug 6 Wake h = +.014 +.018 n = −.42 e = .00 h = +.094

| | Star | | Ra h | m | | δ | tang. δ | τ Ra | P'−P | s | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 16.9 | +4 | 16 | 55 | 234 | | + .60 | 0 = + 19.56 | +.01 | + 19.55 | − .24 | +.01 | + 19.31 | 19.32 |
| | 17.1 | 2 | 17 | 4 | 480 | | + .86 | + 19.75 | +.21 | 19.51 | − .36 | 00 | .15 | .15 |
| 17.07 | 17.2 | +1 | 17 | 11 | 239 | | + .75 | + 19.51 | −.05 | 19.56 | − .32 | | .24 | .24 |
| | 17.5 | −1 | 17 | 28 | 240 | | + 1.30 | + 19.91 | +.06 | 19.85 | − .55 | | .30 | .30 |
| | 17.6 | 3 | 17 | 36 | 244 | | + 1.04 | + 19.51 | −.21 | 19.72 | − .44 | 00 | .28 | .28 |
| 17.60 | 17.7 | −4 | 17 | 41 | 246 | | + 0.53 | + 19.53 | +.04 | 19.49 | − .22 | −.01 | .27 | .26 |
| | 17.33 | | | | | | | | | | | | 19.233<br>19.283<br>19.258 | 19.258 |

| Ra h | m | | δ | tang. δ | τ Ra | P'−P | s |
|---|---|---|---|---|---|---|---|
| 16 | 36 | 476 | | + 4.59 | 0 = + 20.96 | −.20 | + 21.16 |
| 16 | 59 | 235 | | + 7.34 | + 22.41 | −.09 +.04 | 22.37 50 |
| 17 | 1 | 373 | | − 5.18 | + 17.60 | +.22 | 17.38 |
| 17 | 32 | 482 | | + 2.50 | + 20.44 | + .17 09 | 20.27 +.08 |
| 17 | 38 | 483 | | + 2.58 | + 20.49 | +.08 | 20.41 |

| | | |
|---|---|---|
| 16.9 | +.60 | +19.55 |
| 17.7 | +.53 | +19.49 |
| 17.3 | +.56 | +19.52 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 16.6 | +4.59 | +21.16 | +.01 | +21.17 | +.01 | +21.17 |
| 17.0 | +7.34 | +22.37 50 | +.00 | +22.37 | +.01 | +22.38 |
| 17.5 | +2.50 | +20.27 35 | +.00 | +20.27 | +.00 | +20.27 |
| 17.6 | +2.58 | +20.41 | +.00 | +20.41 | +.00 | +20.41 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 17.0 | −5.18 | +17.38 | +.00 | +17.38 | +.01 | +17.39 |

| | | |
|---|---|---|
| 17.5 | +1.30 | +19.85 |
| 17.6 | +1.04 | +19.72 |
| 17.5 | +1.17 | +19.78 |

m = −.43

0 = +4.03 +1.65 n = −.41
+6.78 +2.85 +.13 −.48 4
+1.94 + .75 +.06 ~~.36~~ .42
+2.02 + .89 .44
−.437

0 = −5.74 −2.14 n = −.38

1873 Aug.9 Wake h = +.017 n = −.48 e = .00 h = +.046

0 = +3.42 +1.39 n = −.41
+6.17 +2.60 +.13 .48 4
+1.33 + .49 +.06 ~~.39~~ .41
+1.41 + .63 .45
.437

0 = −6.35 −2.39 n = −.38

| | Star | | Ra h | m | | δ | tang. δ | τ Ra | P'−P | s | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 16.6 | +9 | 16 | 38 | 232 | | + .81 | 0 = + 20.79 | +.02 | + 20.77 | − .39 | +.04 | + 20.38 | 20.42 |
| | 16.8 | 7 | 16 | 46 | 478 | | + .27 | + 20.61 | +.05 | 20.56 | − .13 | .03 | .33 | .46 |
| | 16.9 | 6 | 16 | 52 | 233 | | + .17 | + 20.60 | +.06 | 20.54 | − .08 | .03 | .46 | .49 |
| 16.83 | 16.9 | 6 | 16 | 55 | 234 | | + .60 | + 20.69 | +.01 | 20.68 | − .29 | .03 | .39 | .42 |
| 16.83 | 17.1 | +4 | 17 | 4 | 480 | | + .86 | + 21.06 | +.24 | 20.84 | − .41 | +.02 | .43 | .45 |
| | 18.0 | −5 | 18 | 1 | 254 | | + .17 | + 20.58 | +.01 | 20.57 | − .08 | −.02 | .49 | .47 |
| | 18.1 | 6 | 18 | 3 | 255 | | + .55 | + 20.78 | +.04 | 20.74 | − .26 | .03 | .48 | .45 |
| | 18.2 | 7 | 18 | 12 | 486 | | + .90 | + 21.19 | +.24 | 20.95 | − .43 | .03 | .52 | .49 |
| | 18.3 | 8 | 18 | 18 | 258 | | + .40 | + 20.64 | +.04 | 20.60 | − .18 | .04 | .42 | .38 |
| 18.22 | 18.5 | 10 | 18 | 33 | 260 | | + .80 | + 20.80 | +.02 | 20.78 | − .37 | −.05 | .41 | .36 |
| | 16.7 | +8 | 16 | 43 | 477 | | + 1.54 | + 21.09 | +.04 | 21.05 | − .74 | +.04 | .31 | .35 |
| | 17.46 | | | | | | | | | | | | 20.400<br>20.464<br>20.429 | 20.431 |

| Ra h | m | | δ | tang. δ | τ Ra | P'−P | s |
|---|---|---|---|---|---|---|---|
| 16 | 36 | 476 | | + 4.59 | 0 = + 22.41 | −.20 | + 22.61 |
| 16 | 59 | 235 | | + 7.34 | + 23.88 | −.09 +.04 | 23.84 97 |
| 17 | 1 | 373 | | − 5.18 | + 18.14 | +.22 | 17.92 |
| 18 | 14 | 256 | | + 16.88 | + 28.88 | −.04 5 | 28.92 3 |
| 18 | 23 | 489 | | + 2.95 | + 21.61 | −.20 | 21.81 |
| 18 | 39 | 111 | | − 20.70 | + 11.15 | +.20 −.27 | ~~11.42~~ 11.25 |
| 18 | 41 | 393 | | − 4.38 84 | + 18.32 | −.09 | 18.41 |

| | | s |
|---|---|---|
| 16.8 | +.27 | +20.56 |
| 16.9 | +.17 | +20.54 |
| 18.0 | +.17 | +20.57 |
| 18.3 | +.40 | +20.60 |
| 17.5 | +.25 | +20.57 |
| 16.6 | +.81 | +20.77 |
| 17.1 | +.86 | +20.84 |
| 18.2 | +.90 | +20.95 |
| [16.7 | +1.54 | +21.05] |
| 17.1 3 | ~~+1.03~~ +.86 | ~~+20.90~~ +20.85 |

n = −.42 −.02

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 16.6 | +4.59 | +22.61 | +.02 | +22.63 | +.01 | +22.64 |
| 17.0 | +7.34 | +23.84 97 | +.01 | +23.85 | +.00 | +23.85 |
| 18.2 | +16.88 | +28.92 3 | −.01 | +28.91 | −.02 | +28.89 |
| 18.4 | +2.95 | +21.81 | −.02 | +21.79 | −.02 | +21.77 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 17.0 | −5.18 | +17.92 | +.01 | +17.93 | +.00 | +17.92 |
| 18.6 | −20.70 | ~~+11.42~~ +11.425 | −.02 | +11.40 | −.03 | +11.39 |
| 18.7 | −4.38 | +18.41 | −.02 | +18.39 | −.03 | +18.38 |

0 = +4.34 +2.06 n = −.47
+7.09 +3.28 +.13 .48
+16.63 +8.34 .50
+2.70 +1.22 .45
−.478 5

0 = +3.56 +1.74 n = −.49
+6.31 +2.95 +.13 .49
+16.85 +7.99 .50
+1.92 + .87 .45
−.47 −.482

0 = −5.48 −2.64 n = −.49
−20.95 −9.17 −1.16 .48 9
−4.63 −2.18 .47
~~.463~~ −.483

0 = −6.21 −2.98 n = −.48
−21.73 −9.51 −1.16 ~~.44~~ .50
−5.41 −2.52 .47 ~~.463~~ −.483

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| R A h m | sin z | cos z | tang δ | | $R_{eq}-R_{fc}$ ′ ″ | P′−P | $R_{eq}-R_{fc}+(P'-P)$ ″ | $R_{fc}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 17 28 | −.17 | .98+ | 1.30 | −1 | 6.9 | .+0.6 | −6.3 | −0.3 | −6.6 |
| 17 36 | −.06 | 1.00+ | 1.04 | | 6.4 | .+1.0 | 5.4 | −0.2 | 5.6 |
| 17 41 | +.25 | .97+ | .53 | | 6.8 | .−0.3 | 7.1 | +0.5 | 6.6 |
| 17 51 | −.25 | .97+ | 1.53 | | 7.5 | .−0.1 | 7.6 | −0.5 | 8.1 |
| 17 53 | −.16 | .99+ | 1.26 | | 6.4 | .+0.5 | 5.9 | −0.3 | 6.2 |
| 18 .1 | +.54 | .84+ | .17 | | 7.9 | .+0.6 | 7.3 | +1.0 | 6.3 |
| 18 3 | +.24 | .97+ | .55 | | 6.4 | .+0.2 | 6.2 | +0.4 | 5.8 |
| 18 12 | +.01 | 1.00+ | .90 | | 5.8 | .+0.6 | 5.2 | +0.0 | 6.2 |
| 18 18 | +.35 | .93+ | .40 | | 6.0 | .+0.3 | 5.7 | +0.6 | 5.1 |
| | | | | | | | | | 5.93 6.17 |

| R A h m | sin z | cos z | tang δ | | $R_{eq}-R_{fc}$ ′ ″ | P′−P | $R_{eq}-R_{fc}+(P'-P)$ ″ | $R_{fc}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 16 36 | −.58 | .81+ | 4.59 | −1 | 4.8 | .+0.3 | −4.5 | −1.1 | −5.6 |
| 17 32 | −.44 | .90+ | 2.50 | | 5.2 | .+0.5 | 4.7 | −0.8 | 5.5 |
| 17 36 | −.44 | .90+ | 2.58 | | 6.2 | .+0.8 | 5.4 | −0.8 | 6.2 |
| 17 44 | −.50 | .86+ | 3.12 | | 4.7 | .+0.4 | 4.3 | −0.9 | 5.2 |
| 17 53 | −.57 | .82+ | 4.32 | | 7.3 | .+0.2 | 7.1 | −1.1 | 8.2 |
| 18 14 | −.70 | .71+ | 16.88 | | 3.4 | .+0.~~8~~ 3 | ~~2.6~~ 3.1 | −1.3 | 4.4 |
| | | | | | | | | | 5.85<br>5.85 |

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 8 744 | | | | | | | | | |
| 6 510 | | +.54 −7.3″ | +.25 −7.1″ | +.01 −5.2″ | −.17 −6.3″ | −.25 −7.6″ | −.58 −4.5″ | −.70 −2.6″ | |
| 1254 | | | +.24 −6.2 | | −.06 −5.4 | | −.44 −4.7 | | |
| | | | +.35 −5.7 | | −.16 −6.9 | | −.44 −5.4 | | |
| | | | | | | | −.50 −4.3 | | |
| | | +.54 −7.3 | +.28 −6.3 | +.01 −5.2 | −.13 −5.9 | −.25 −7.6 | −.57 −7.1 | | |
| | | +1.0 | +.6 | +.0 | −.3 | −.5 | −.51 −5.2 | −.70 −2.6 | |
| | | 6.3 1 | 5.7 | 5.2 1 | 6.2 | 8.1 1 | −.9<br>6.1 | −1.3<br>3.9 1 | |
| −1′ 5.98″ | | 15 ~~(10)~~ +.3 | −.3 3 | −.8 | +.2 3 | +2.1 | +.1 5 | −2.1 | |
| 5.90 | | | | | | | | | |

| R A h m | sin z | cos z | tang δ | | $R_{eq}-R_{fc}$ ′ ″ | P′−P | $R_{eq}-R_{fc}+(P'-P)$ | $R_{fc}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 16 55 | +.20 | .98+ | .60 | −1 | 5.5 | .+0.2 | −5.3 | +0.4 | −4.9 |
| 17 4 | +.03 | 1.00+ | .86 | | 4.0 | .−0.7 | 4.7 | +0.1 | 4.6 |
| 17 11 | +.09 | 1.00+ | .75 | | 4.3 | .−1.0 | 5.3 | +0.2 | 5.1 |
| 17 28 | −.17 | .98+ | 1.30 | | 4.2 | .+0.6 | 3.6 | −0.3 | 3.9 |
| 17 36 | −.06 | 1.00+ | 1.04 | | 5.1 | .+1.0 | 4.1 | −0.2 | 4.3 |
| 17 41 | +.25 | .97+ | .53 | | 5.1 | .−0.3 | 5.4 | +0.5 | 4.9 |
| | | | | | | | | | 4.62 4.62 |

| R A h m | sin z | cos z | tang δ | | $R_{eq}-R_{fc}$ ′ ″ | P′−P | $R_{eq}-R_{fc}+(P'-P)$ | $R_{fc}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 16 36 | −.58 | .81+ | 4.59 | −1 | 5.6 | .+0.3 | −5.3 | −1.1 | −6.4 |
| 16 59 | −.64 | .76+ | 7.34 | | 4.5 | .~~+0.4~~ 7 | 4.~~1~~ 6 | −1.2 | 5.8 |
| 17 1 | −.85 | .52− | 5.18 | | 1.4 | .+0.6 | 2.0 ~~0.8~~ | −1.9 | 3.9 ✓ |
| 17 32 | −.44 | .90+ | 2.50 | | 4.0 | .+0.5 | 3.5 | −0.8 | 4.3 |
| 17 38 | −.44 | .90+ | 2.58 | | 5.3 | .+0.8 | 4.5 | −0.8 | 5.3 |
| | | | | | | | | | 5.45<br>5.25 |

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| | | | +.20 −5.3 | +.03 −4.7 | −.17 −3.6 | | −.58 −5.3 | −.64 −4.1 | −.85 −0.8 |
| 6 372 | | | +.25 −5.4 | +.09 −5.3 | −.06 −4.1 | | −.44 −3.5 | | |
| 4 580 | | | | | | | −.44 −4.5 | | |
| 952 | | | | | | | | | |
| | | | +.22 −5.3 | +.06 −5.0 | −.11 −3.8 | | −.49 −4.4 | −.64 −4.1 | −.85 −0.8 |
| | | | +.4 | +.1 | +.2 | | −.9 | −1.2 | |
| −1′ 4.88″ | | | (10) 4.9 2 | 4.9 2 | 4.0 2 | | 5.3 3 | 5.3 1 | |
| 4.95 | | | .0 | .0 | −.9 | | +.4 | +.4 | |

| R A h m | sin z | cos z | tang δ | | $R_{eq}-R_{fc}$ ′ ″ | P′−P | $R_{eq}-R_{fc}+(P'-P)$ | $R_{fc}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 16 38 | +.06 | 1.00+ | .81 | −1 | 3.4 | .+0.2 | −3.2 | +0.2 | −3.0 |
| 16 46 | +.46 | .88+ | .27 | | 4.8 | .+0.4 | 4.4 | +0.8 | 3.6 |
| 16 52 | +.54 | .84+ | .17 | | 5.1 | .−0.1 | 5.2 | +1.0 | 4.2 |
| 16 55 | +.20 | .98+ | .60 | | 5.2 | .+0.2 | 5.0 | +0.4 | 4.6 |
| 17 4 | +.03 | 1.00+ | .86 | | 3.3 | .−0.7 | 4.0 | +0.1 | 3.9 |
| 18 1 | +.54 | .84+ | .17 | | 8.4 | .+0.6 | 7.8 | +1.0 | 6.8 |
| 18 3 | +.24 | .97+ | .55 | | 6.0 | .+0.2 | 5.8 | +0.4 | 5.4 |
| 18 12 | +.01 | 1.00+ | .90 | | 4.5 | .+0.6 | 3.9 | +0.0 | 3.9 |
| 18 18 | +.35 | .93+ | .40 | | 5.3 | .+0.3 | 5.0 | +0.6 | 4.4 |
| 18 33 | +.06 | 1.00+ | .80 | | − − | .+0.1 | | | |
| 16 43 | −.25 | .97+ | 1.54 | | 4.5 | .+0.5 | 4.0 | −0.5 | 4.5 |
| | | | | | | | | | 4.43 4.43 |

| R A h m | sin z | cos z | tang δ | | $R_{eq}-R_{fc}$ ′ ″ | P′−P | $R_{eq}-R_{fc}+(P'-P)$ | $R_{fc}$ | $R_{eq}$ |
|---|---|---|---|---|---|---|---|---|---|
| 16 36 | −.58 | .81+ | 4.59 | −1 | 5.7 | .+0.3 | −5.4 | −1.1 | −6.5 |
| 16 59 | −.64 | .76+ | 7.34 | | 3.5 | .~~+0.4~~ 1 | 3.~~4~~ 6 | −1.2 | 4.8 |
| 17 1 | −.85 | .52− | 5.18 | | 0.1 | .+0.6 | 0.7 ~~5.5~~ | −1.9 | 2.6 ✓ |
| 18 14 | −.70 | .71+ | 16.88 | | 2.3 | .~~+0.8~~ 3 | ~~1.5~~ 2.0 | −1.3 | 3.3 |
| 18 23 | −.48 | .87+ | 2.95 | | 2.9 | ~~+0.4~~ | 2.5 | −0.8 | 3.3 |
| ~~18 39~~ | ~~−.77~~ | ~~.63~~ | ~~20.70~~ | | | ~~+1.1~~ +2 | | ~~−1.5~~ | |
| ~~18 41~~ | ~~−.87~~ | ~~.48~~ | ~~4.38~~ | | ~~4.2~~ | ~~.+0.5~~ | ~~4.0~~ 4.3 2 | ~~−1.8~~ | ~~4.5~~ 0 |
| | | | | | | | | | 4.48<br>4.48 |

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|
| 10 430 | | | | | | | | | |
| 4 192 | | | | | | | | | |
| 622 | +.46 −4.4 | +.46 −4.4 | +.20 −5.0 | +.06 −3.2 | | −.25 −4.0 | −.58 −5.4 | −.64 −3.1 | −.85 −59.5 |
| | +.54 −5.2 | +.54 −5.2 | +.24 −5.8 | +.03 −4.0 | | | −.48 −2.5 | −.70 −1.5 | −.87 −42.3 |
| | +.54 −7.8 | +.54 −7.8 | +.35 −5.0 | +.01 −3.9 | | | | | |
| | | | | +.16 | | | | | |
| | | +.57 −5.8 | +.26 −5.3 | +.03 −3.7 | | −.25 −4.0 | −.53 −3.9 | −.67 −2.3 | −.86 |
| | | +.9 | +.5 | +.1 | | −.5 | −1.0 | −1.3 | |
| −1′ 4.39″ | | (14) 4.9 3 | 4.8 3 | 3.6 3 | | 4.5 1 | 4.9 | 3.6 | |
| 4.44 | | +.5 | +.4 | −.8 | | +.1 | +.5 2 | −.8 2 | |

E4

1873 Aug.10 Ware h = +.019 +.022 n = -.46 c = .00

| Star | | Ra h | m | | δ | tang. δ | T Ra s | P'-P | T Ra - P'-P s | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17.1 | +2 | 17 | 9 | 237 | + | .26 | 0 = +21.07 | +.01 | +21.06 = | .12 | .00 | +20.94 | 20.94 |
| 17.2 | +1 | 17 | 11 | 239 | + | .75 | +21.21 | -.05 | 21.26 = | .34 | .00 | .92 | .92 |
| 17.6 | -3 | 17 | 36 | 244 | + | 1.04 | +21.03 | -.21 | 21.24 = | .48 | -.01 | .76 | .75 |
| 17.30 | | | | | | | | | | | | 20873 | |

20,873

17.1 +.24 +21.06 +1

17.5 +2.50 ~~+21.91~~ 21.99 -.01 + 21.90 (I) +.00 +21.91 (II)

0 = + 2.24 + .84 +.08 n = -~~.37~~ .41

17.6 +1.04 +21.24

0 = +1.46 + .67 +.08 n = -~~.46~~ .52

n = -.23 +.01

1873 Aug.10 Ware

| Star | Ra h | m | | δ | tang. δ | T Ra s | P'-P | T Ra (P'-P) s |
|---|---|---|---|---|---|---|---|---|
| | 17 | 22 | 92 | - | 3.72 | 0 = +18.96 | +.02 | +18.96 |
| | 17 | 32 | 482 | + | 2.50 | +22.08 | +.15 .09 | 21.91 +.08 |

20,870

17.4 -3.72 +18.96 -.01 +18.95 (I) -.01 +.00 +18.96 (II)

0 = -3.98 -2.11 n = -.53

0 = -4.76 -2.28 n = -.48

1873 Aug 11 Ware h = +.017 +.019 n = -.44 c = .00

| Star | | Ra h | m | | | tang. δ | T Ra | P'-P | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16.7 | +3 | 16 | 43 | 477 | + | 1.54 | +21.31 83 | +.04 | +21.27 79 = | .68 | +.01 | +21.11 | +.13 | 21.25 |
| 16.8 | +2 | 16 | 46 | 478 | + | .27 | 0 = +21.46 | +.05 | 21.41 = | .12 | .00 | .29 | | .29 |
| 16.9 | +1 | 16 | 52 | 233 | + | .17 | +21.44 | +.06 | 21.38 = | .07 | | .31 | | .31 |
| 17.1 | -1 | 17 | 4 | 480 | + | .86 | +21.97 | +.24 | 21.73 = | .38 | | .35 | | .35 |
| 17.1 | -1 | 17 | 9 | 237 | + | .26 | +21.50 | +.01 | 21.49 = | .11 | .00 | .38 | | .38 |
| 16.98 | | | | | | | | | | | | ~~21.333~~ | | |

21.314

21.314

16.8 +.27 +21.41
16.9 +.17 +21.38
17.1 +.26 +21.49
16.9 +.23 +21.43

17.0 +7.34 ~~+24.51~~ +24.64 +.00 +24.51 (I & II)

0 = + 7.11 + 3.08 +.13 n = -.43 5

0 = 6.58 +2.78 n = -.42

[16.7 +1.54 +21.27 79]
17.1 + .86 +21.73
n = -.48
-.07

1873 Aug 11 Ware

| | Ra h | m | | δ | tang. δ | T Ra s | P'-P | |
|---|---|---|---|---|---|---|---|---|
| 21.314 | 16 | 59 | 235 | + | 7.34 | 0 = +24.55 | ~~+.04~~ -.09 | +24.51 64 |
| | 17 | 1 | 373 | - | 5.18 | +19.38 | +.22 | 19.16 |

17.0 -5.18 +19.16 +.00 +19.16 (I & II)

0 = -5.41 -2.27 n = -.42

0 = -6.04 -2.57 n = .42

1873 Aug.12 Ware. h = +.015 n = -.42 c = ~~.00~~ -.06 h = +.011

| Star | | Ra h | m | | | tang. δ | | T Ra s | P'-P | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16.9 | +4 | 16 | 52 | 233 | + | .17 | +~~.01~~ | +21.88 | +.06 | +21.82 = | .07 | -.06 | 21.647 +21.69 | |
| 17.1 | 2 | 17 | 4 | 480 | + | .86 | 1.32 | +22.28 | +.24 | 22.04 = | .36 | -.08 | .60 | |
| 17.03 17.1 | 2 | 17 | 9 | 237 | + | .26 | 1.03 | +21.83 | +.01 | 21.82 = | .11 | -.06 | .65 | |
| 17.2 | +1 | 17 | 11 | 239 | + | .75 | 1.25 | +22.07 | -.05 | 22.12 = | .32 | -.08 | .72 | |
| 17.5 | -2 | 17 | 28 | 240 | + | 1.30 | 1.64 | +22.31 | +.06 | 22.25 = | .55 | -.10 | .60 | |
| 17.6 | .3 | 17 | 36 | 244 | + | 1.04 | 1.43 | +21.94 | -.21 | 22.15 = | .44 | -.09 | .62 | |
| 17.50 17.7 | -.4 | 17 | 41 | 246 | + | .51 | 1.11 | +21.99 | +.04 | 21.95 = | .21 | -.07 | .67 | |
| 17.30 | | | | | | | | | | | | | 21.652 | |

21.650

16.9 +.17 +21.82
17.1 +.26 +21.82
17.0 +.21 +21.82 +1

17.0 +7.34 ~~+24.99~~ +25.12 +.00 +24.99 (I) +.01 +25.00 (II)
17.5 +2.50 ~~+22.92~~ +23.00 -.01 +22.91 (I) +.00 +22.91 (II)
17.6 +2.58 +23.04 -.01 +23.03 (I) +.00 +23.03 (II) 3

17.1 +.86 +22.04
17.5 +1.30 +22.25
17.6 +1.04 +22.15
17.4 +1.07 +22.15

0 = +7.13 +3.17 +.13 n = -.46
+2.29 +1.09 +.08 -.37
+2.37 +1.21 -.51
-.493 ε+

0 = +6.27 +2.85 +.13 n = -.47
+1.43 + .76 +.08 -.57
+1.51 +~~1.12~~ .86 -.59
-.547 ε+

n = -.38 +.01

| | Ra h | m | | δ | tang. δ | T Ra s | P'-P | |
|---|---|---|---|---|---|---|---|---|
| | 16 | 59 | 235 | + | 7.34 | 0 = +25.03 | +.04 -.09 | + ~~24.99~~ +25.12 |
| | 17 | 1 | 373 | - | 5.18 | +19.71 | +.22 | 19.49 |
| | 17 | 22 | 92 | - | 3.72 | +19.97 | +.00 | 19.47 9 |
| | 17 | 32 | 482 | + | 2.50 | +23.29 | +.15 .09 | 22.92 +.08 |
| | 17 | 38 | 483 | + | 2.58 | +23.12 | +.08 | 23.04 |

17.0 -5.18 +19.49 +.00 +19.49 (I) +.01 +19.50 (II)
17.4 -3.72 +19.47 9 -.01 +19.46 9 (I) +.00 +19.46 9 (II)

0 = -5.39 -2.33 n = -.43
-3.93 -~~2.36~~ 1.86 -~~.60~~ .47 -.450

0 = -6.25 -2.65 n = -.42
-4.79 -2.69 19 ~~.56~~ .45 -.435

ζ = +.60+.80 +.40+.60 +.20+.40 +.0+.20 +.0−.20 −.20−.40 −.40−.60 −.60−.80 −.80−.100

RA sin ζ cos ζ tan δ R_eq−R_ec P′−P +(P′−P) R_ec. R_eq. RA sin ζ cos ζ tan δ R_eq−R_ec P′−P +(P′−P) R_ec. R_eq.

h m ′ ″ ″ h m ″

17 9 +.47 .88+ 0.26 −1 4.9 .−0.4 −5.3 +0.8 −4.5 17 22 −.89 .45− 3.72 −1 2.6 .+0.1 ~~2.5~~ 2.7 −1.9 − 4.6 √

17 11 +.09 1.00+ .75 4.2 .−1.0 5.2 +0.2 5.0 17 32 −.44 .90+ 2.50 −1 4.3 .+0.5 3.8 −0.8 −4.6

17 36 −.06 1.00+ 1.04 4.2 .+1.0 3.2 −0.2 3.4

3 90 4.30 4.30 4.60

1 60 +.47 −5.3″ +.09 −5.2″ −.06 −3.2″ −.44 −3.8″ −.89 −2.5″ 4.60

150 +.9 +.2 −.1 −.8

′ ″

−1 4.32 (4) 4.4 5.0 3.3 4.6

4.38 +.1 +.7 −1.6 +.3

16 43 −25 .97+ 1.54 5.3 .+0.5 −4.8 −0.5 −5.3

″

16 46 +.46 .88+ .27 −1 5.6 .+0.4 5.2 +0.8 4.4 16 59 −.64 .76+ 7.34 −1 4.3 .~~+0.4~~ −1 −~~3.9~~ 4.4 −1.2 −5.6

16 52 +.54 .84+ .17 4.4 .−0.1 4.5 +1.0 3.5 17 1 −.85 .52− 5.18 1.3 .+0.6 ~~0.7~~ 1.9 −1.8 3.7 √

17 4 +.03 1.00+ .86 3.5 .−0.7 4.2 +0.1 4.1

17 9 +.47 .88+ .26 5.0 .−0.4 5.4 +0.8 4.6

4.38 4.38 5.60

5 190 5.60

1 160 +.46 −5.2 +.03 −4.2 −25 −48 −.64 −3.9 −.85 −0.7

350 +.54 −4.5

+.47 −5.4

+.49 −5.0 +.03 −4.2 −25 −4.8 −.64 −3.9 −.85 −0.7

′ ″ +.9 +.1 −.5 −1.2

−1 447 (6) 4.1 4.1 5.3 5.1

4.58 −.4 −.4 +.8 +.6

′ ″

16 52 +.54 .84+ .17 −1 5.8 .−0.1 −5.9 +1.0 −4.9 16 59 −.64 .76+ 7.34 −1 4.3 .~~+0.4~~ −1 −~~3.9~~ 4.4 −1.2 −5.6

17 4 +.03 1.00+ .86 3.4 .−0.7 4.1 +0.1 4.0 17 1 −.85 .52− 5.18 0.9 .+0.6 ~~0.3~~ 1.5 −1.7 3.3 √

17 9 +.47 .88+ .26 5.4 .−0.4 5.8 +0.8 5.0 17 22 −.89 .45− 3.72 2.4 .+0.1 ~~2.3~~ 2.5 −1.8 4.3 √

17 11 +.09 1.00+ .75 3.8 .−1.0 4.8 +0.2 4.6 17 32 −.44 .90+ 2.50 5.0 .+0.5 4.5 −0.8 5.3

17 28 −.14 .98+ 1.30 4.2 .+0.6 3.6 −0.3 3.9 17 38 −.44 .90+ 2.58 4.8 .+0.8 4.0 −0.8 4.8

17 36 −.06 1.00+ 1.04 4.6 .+1.0 3.6 −0.2 3.8

17 41 +.25 .97+ .51 5.4 .−0.3 5.7 +0.5 5.2

4.49 4.48 5.23

5.23

+ +.54 −5.9 +.25 −5.7 +.03 −4.1 −.17 −3.6 −.44 −4.5 −.64 −3.9 −.85 −0.3

7 343 +.47 −5.8 +.09 −4.8 −.06 −3.6 −.44 −4.0 −.89 −2.3

3 369

712 +.50 −5.9 +.25 −5.7 +.06 −4.4 −.11 −3.6 −.44 −4.2 −.64 −3.9 −.87 −1.3

+.9 +.5 +.1 −.2 −.8 −1.2

′ ″ 5.0 5.2 4.3 3.8 5.0 5.1

−1 465 (10) +.3 +.5 −.4 −.4 +.3 +.4

4.71

1873 Aug 28 Ware h = + ~~.018~~ +.066 n = −.35 c = −.04 h = ~~+.059~~ +.030

| Star | | Ra h | m | | δ | tang. δ | sec δ | T−Ra | P′−P | T−Ra −(P′−P) | | h 27.127 ~~27.101~~ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17.8 | +8 | 17 | 51 | 248 | + | 1.53 | +1.88 | 0=+27.71 | +.07 | +27.64 − | 54 +02 −.07 | +27.03 +.11 | 27.16 |
| 17.9 | 7 | 17 | 53 | 252 | + | 1.26 | +1.61 | +27.56 | −.02 | 27.58 − | 44 +02 −.06 | .08 | .10 |
| 18.0 | 6 | 18 | 1 | 254 | + | .17 | +1.01 | +27.22 | +.01 | 27.21 − | 06 +02 −.04 | .11 | .13 |
| 18.1 | 5 | 18 | 3 | 255 | + | .55 | +1.14 | +27.33 | +.04 | 27.29 − | 19 +01 −.05 | .05 | .06 |
| 18.2 | 4 | 18 | 12 | 486 | + | .90 | +1.34 | +27.75 | +.24 | 27.51 − | 31 +01 −.05 | .15 | .16 |
| 18.3 | 3 | 18 | 18 | 258 | + | .40 | +1.08 | +27.36 | +.04 | 27.32 − | 14 +01 −.04 | .14 | .15 |
| 18.11 — 18.5 | +1 | 18 | 33 | 260 | + | .80 | +1.28 | +27.50 | +.02 | 27.48 − | 28 +00 −.05 | .15 | .15 |
| 18.7 | −1 | 18 | 45 | 264 | + | .65 | +1.19 | +27.51 | +.08 | 27.43 − | 23 +00 −.05 | .15 | .16 |
| 18.8 | 2 | 18 | 49 | 265 | + | 1.68 | +1.96 | +27.94 | +.12 | 27.82 − | 59 −01 −.08 | .05 | .14 |
| 18.9 | 3 | 18 | 51 | 492 | + | .96 | +1.38 | +27.53 | +.03 | 27.52 − | 34 −01 −.06 | .12 | .11 |
| 19.0 | 4 | 18 | 59 | 269 | − | .09 | +1.00 | +27.13 | −.00 | 27.13 + | 03 −01 −.04 | .12 | .11 |
| 19.1 | 5 | 19 | 3 | 494 | + | .72 | +1.23 | +27.47 | +.02 | 27.45 − | 25 −01 −.05 | .15 | .14 |
| 19.2 | 6 | 19 | 12 | 495 | + | .20 | +1.02 | +27.37 | +.04 | 27.33 − | 07 −02 −.04 | .22 | .20 |
| 19.2 | 6 | 19 | 14 | 272 | + | 1.33 | +1.66 | +27.78 | +.12 | 27.66 − | 47 −02 −.07 | .12 | .10 |
| 19.02 19.3 | −7 | 19 | 19 | 274 | + | .05 | +1.00 | +~~32.70~~ 27.30 | +.03 | ~~32.67~~ 27.27 − | 02 −02 −.04 | .25 | .19 |
| 18.60 | | | | | | | | | | | | 27.~~55~~ 1.55 27.137 | |

| Star | Ra h | m | | δ | tang. δ | T−Ra | P′−P | T−Ra −(P′−P) |
|---|---|---|---|---|---|---|---|---|
| 27.137 | 17 | 53 | 485 | + | 4.32 | 0=+28.95 | +.23 | +28.72 |
| | 18 | 14 | 256 | + | 16.88 | +34.21 | −.0~~4~~5 | 34.2~~5~~6 |
| | 18 | 23 | 489 | + | 2.95 | +28.05 | −.20 | 28.25 |
| | 18 | 23 | 259 | + | 3.21 | +28.56 | +.18 | 28.38 |
| | 18 | 24 | 387 | − | 5.50 | +24.87 | +.07 | 24.80 |
| | 18 | 36 | 491 | + | 2.18 | +28.31 | +.30 | 28.01 |
| | 18 | 40 | 111 | − | 20.70 | +20.50 | ~~−.27~~ +.90 | ~~20.77~~ 19.60 |
| | 18 | 41 | 393 | − | 4.38 | +25.24 | −.09 | 25.33 |
| | 18 | 55 | 493 | + | 2.92 | +28.44 | +.10 | 28.34 |
| | 19 | 18 | 273 | + | 3.29 | +28.46 | +.09 | 28.37 |

180 +17 +27.21
183 +.40 +27.32
190 −09 +27.13
192 +20 +27.33
193 +05 +~~32.67~~ 64
18.8 +.15 ~~+27.27~~ +27.25

I II
17.9 +4.32 +28.72 +.02 +28.72 +.01 +28.73
18.2 +16.88 +34.25 6 +.01 +34.26 +.01 +34.27
18.4 +2.95 +28.25 +.01 +28.26 +.00 +28.26
18.4 +3.21 +28.38 +.01 +28.39 +.00 +28.39
18.6 +2.18 +28.01 +.00 +28.01 +.00 +28.01
18.9 +2.92 +28.34 +.00 +28.34 −.01 +28.33
19.3 +3.29 +28.37 −.01 +28.36 −.01 +28.35

I II
18.4 −5.50 +24.80 +.01 +24.81 +.00 +24.80
18.7 −20.70 ~~+20.77~~ +19.60 +.00 +20.77 +.00 +20.77
18.7 −4.38 +25.33 +.00 +25.33 +.00 +25.33

0 = −5.65 −2.46 n = −.43
−20.85 −6.49 −1.16 −.37
−4.53 −1.93 −.43
~~−390~~ −.410

17.9 +1.53 +27.64
17.9 +1.26 +27.58
18.8 +1.68 +27.82
18.9 +.96 +27.52 n = −.32 −.01
19.2 +1.33 +27.66
18.5 7 +1.35 1 +27.64

0 = +4.17 +1.46 n = −.35
+16.73 +7.00 −.42
+2.80 +1.00 −.36
+3.06 +1.13 −.37
+2.03 +.75 −.37
+2.77 +1.08 −.39
+3.14 +1.10 −.35
−.373

h = +.044
+.092

0 = +2.97 +1.09 n = −.37
+15.53 +6.63 −.43
+1.60 +.62 −.39
+1.86 +.75 −.40
+.83 +.37 −.45
+1.57 +.69 −.44
+1.94 +.71 −.37
−.407

0 = −6.85 −2.84 n = −.41
−22.05 −6.87 −1.16 −.37
−5.73 −2.31 −.40
~~−.373~~
−.393

1873 Sept 1 n = −.38 c = −.06 5 h = +.060

| Star | | Ra h | m | | δ | tang. δ | sec δ | T−Ra | P′−P | T−Ra −(P′−P) | | h 28.843 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19.2 | +.5 | 19 | 11 | 495 | + | .20 | +1.02 | 0=+29.02 | +.04 | +28.98 − | 08 +03 −.06 | +28.84 | 28.87 |
| 19.2 | 5 | 19 | 14 | 272 | + | 1.33 | +1.66 | +29.48 | +.12 | 29.36 − | 51 +03 −.10 | .75 | .78 |
| 19.3 | 4 | 19 | 16 | 274 | + | .05 | +1.00 | +28.93 | +.03 | 28.90 − | 02 +02 −.06 | .82 | .84 |
| 19.5 | +2 | 19 | 33 | 498 | + | 1.19 | +1.55 | +29.43 | +.07 | 29.36 − | 45 +01 −.09 | .82 | .83 |
| 19.7 | 0 | 19 | 39 | 499 | + | .75 | +1.25 | +29.29 | +.05 | 29.24 − | 28 00 −.08 | .88 | .88 |
| 19.43 — 19.7 | 0 | 19 | 41 | 278 | + | .99 | +1.40 | +29.49 | +.08 | 29.41 − | 38 00 −.08 | .95 | .95 |
| 19.7 | 0 | 19 | 44 | 280 | + | .15 | +1.01 | +29.02 | +.00 | 29.02 − | 06 00 −.06 | .90 | .90 |
| 20.1 | −4 | 20 | 4 | 287 | − | .02 | +1.00 28.96 | +~~29.86~~ | +.01 | 28.95 + | 01 −02 −.06 | .90 | .88 |
| 20.1 | 4 | 20 | 9 | 288 | + | 1.05 | +1.45 | +29.35 | +.04 | 29.31 − | 40 −02 −.09 | .82 | .80 |
| 20.2 | 5 | 20 | 11 | 501 | + | .45 | +1.10 | +29.13 | −.01 | 29.14 − | 17 −03 −.07 | .90 | .87 |
| 20.08 20.3 | −6 | 20 | 17 | 289 | + | .83 | +1.30 | +29.33 | +.04 | 29.29 − | 32 −04 −.08 | .89 | .85 |
| 19.783 | | | | | | | | | | | | 28.882<br>28.861 | 28.859 |

| Ra h | m | | δ | tang. δ | T−Ra | P′−P | T−Ra −(P′−P) |
|---|---|---|---|---|---|---|---|
| 19 | 18 | 273 | + | 3.29 | 0=+30.30 | +.09 | +30.21 |
| 19 | 29 | 497 | + | 5.32 | +31.34 | +.09 | 31.25 |
| 19 | 44 | 401 | − | 3.55 | — — | +.37 | |
| 19 | 48 | 282 | + | 2.75 | +30.18 | +.05 | 30.13 |
| 19 | ~~52~~ | | + | ~~53.44~~ | +52.94 | ~~+.66~~ −.95 | ~~51.28~~ 54.60 5389 |
| 20 | 3 | 406 | − | 4.05 | +26.86 | −.16 | 27.02 |
| 20 | 13 | 502 | + | 4.45 | +30.97 | +.15 | 30.82 |
| 20 | 25 | 410 | − | 3.50 | +27.37 | −.09 | 27.46 |

192 +.20 +28.98
193 +.05 +28.90
197 +.15 +29.02
201 −02 +28.95
19.6 +.09 +~~29.21~~ 28.96

I & II
19.3 +3.29 +30.21 +.01 +30.22
19.5 +5.32 +31.25 +.00 +31.25
19.8 +2.75 +30.13 −.01 +30.12
19.9 +53.44 ~~+51.28~~ +53.89 −.01 +51.27
20.2 +4.45 +30.82 −.03 +30.79

~~19.7 3.55~~ ~~+.00~~ I & II
20.1 −4.05 +27.02 −.02 +27.00
20.4 −3.50 +27.46 −.04 +27.42

192 +1.33 +29.36
195 +1.19 +29.36
197 +.99 +29.41
201 +1.05 +29.31
19.8 +1.14 +29.38 & 
5 1.19 n = −.38

h = +.044 +.022

0 = +3.20 +1.26 n = −.39
+5.23 +2.29 .44
+2.46 +1.16 .44
+53.35 + ~~22.31~~ 24.92 .47
+4.36 +1.83 .42
~~−.422~~
−.432

n n = −.39 c = .00

0 = +2.15 +.86 n = −.40
+4.18 +1.89 .45
+1.61 +.76 .47
+52.30 +~~.41~~ 24.52 .47
+3.31 +1.43 .43
~~−.434~~
−.444

0 = −4.14 −1.96 n = −.47
−3.59 −1.54 .43
−.450

0 = −5.19 −2.36 n = −.45
−4.64 −1.94 .42
−.435

1873 Sept 3

| Star | | Ra h | m | | δ | tang. δ | T−Ra | P′−P | T−Ra −(P′−P) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ~~18.3~~ | +3 18.3 | 18 | 18 | 258 | + | .40 | 0=+31.20 | +.04 | +31.16 − | 16 31.00 +01 | +31.00 | 31.01 |
| 18.5 | +1 18.5 | 18 | 33 | ~~260~~ | + | .80 | +31.41 | +.02 | 31.39 − | 32 .07 00 | .07 | .07 |
| 19.0 | −4 19.0 | 19 | 3 | 494 | + | .72 | +31.44 | +.02 | 31.42 − | 28 .13 −01 | .14 | .13 |
| 18.60 | | | | | | | | | | | 31.070<br>31.070 | 31.070 |

| Ra h | m | | δ | tang. δ | T−Ra | P′−P | T−Ra −(P′−P) |
|---|---|---|---|---|---|---|---|
| 18 | 14 | 256 | + | 16.88 | 0=+37.04 | −.0~~4~~5 | +37.0~~8~~9 |
| 18 | 23 | 489 | + | 2.95 | +31.98 | −.20 | 32.18 |
| 18 | 23 | 259 | + | 3.21 | +32.56 | +.18 | 32.38 |
| 18 | 40 | 111 | − | 20.70 | +23.41 | ~~−.27~~ +.90 | ~~23.68~~ +22.51 |
| 18 | 56 | 493 | + | 2.92 | +32.35 | +.10 | 32.35 2 |

18.3 +.40 +31.16 −.2

I II
18.2 +16.88 +37.08 9 +.00 +37.08 +.03 +37.11
18.4 +2.95 +32.18 +.00 +32.18 +.02 +32.20
18.4 +3.21 +32.38 +.00 +32.38 +.02 +32.40
18.9 +2.92 +32.35 2 −.03 +32.32 2 +.00 +32.35 2

I II
18.7 −20.70 +~~23.68~~ +22.51 −.02 +23.66 +.00 +23.68

18.5 +80 +31.39
19.1 +72 +31.42
18.8 +.76 +31.40

n = −.67 −.05

0 = +16.48 +5.92 n = −.36
+2.55 +1.02 .40
+2.87 +1.22 .43
+2.52 +1.06 .46 .402

0 = +16.12 +5.71 n = −.35
+2.19 +.80 .37
+2.45 +1.00 .41
+2.16 +.85 .44 .39 .392 −.380

0 = −21.10 −7.50 −1.16 n = −.~~35~~ 41
0 = −21.46 −7.72 −1.16 n = −.~~36~~ 42

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h | m | sin δ | cos | tan δ | Req−Rpe ′ ″ | ρ′−ρ | Req−Rpe+(ρ′−ρ)Rpe ″ | Req. |
|---|---|---|---|---|---|---|---|---|
| 17 | 51 | −.25 | .97+ | 1.53 | −1 −− | .−0.1 | | |
| 17 | 53 | −.16 | .99+ | 1.26 | −− | .+0.5 | | |
| 18 | 1 | +.54 | .84+ | .17 | −− | .+0.6 | | |
| 18 | 3 | +.24 | .97+ | .55 | 7.3 | .+0.2 | −7.1 +05 | −6.3 |
| 18 | 12 | +.01 | 1.00+ | .90 | 6.9 | .+0.6 | 6.3+0.0 | 6.3 |
| 18 | 18 | +.35 | .93+ | .40 | 7.7 | .+0.3 | 7.4+07 | 6.7 |
| 18 | 33 | +.06 | 1.00+ | .80 | 6.4 | .+0.1 | 6.3+01 | 6.2 |
| 18 | 45 | +.16 | .99+ | .65 | 7.9 | .+0.1 | 7.8+03 | 7.5 |
| 18 | 49 | −.29 | .96+ | 1.68 | 6.9 | +0.3 | 6.6−06 | 7.2 |
| 18 | 57 | −.02 | 1.00+ | .96 | −− | .+0.5 | | |
| 18 | 59 | +.74 | .67− | .09 | 7.5 | .−0.2 | 7.7+14 | 6.3 |
| 19 | 3 | +.11 | .99+ | .72 | 7.5 | .+0.8 | 6.7+02 | 6.5 |
| 19 | 12 | +.51 | .86+ | .20 | 7.7 | .+0.3 | 7.4+10 | 6.4 |
| 19 | 14 | −.19 | .98+ | 1.33 | 7.6 | .+0.8 | 6.8−04 | 7.2 |
| 19 | 19 | +.64 | .76+ | .05 | 8.6 | .−0.5 | 9.1+12 | 7.9 |
| | | | | | | | | 6.80 6.79 |

| RA h | m | sin δ | cos | tan δ | Req−Rpe ′ ″ | ρ′−ρ | Req−Rpe+(ρ′−ρ) ″ | Rpe | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 17 | 55 | −.57 | .82+ | 4.32 | −1 −− | +0.7 ~~+1.6~~ | | | |
| 18 | 14 | −.70 | .71+ | 16.88 | 4.6 | .+0.8 3 | ~~3.8~~ 4.3 | −1.4 | −5.7 |
| 18 | 23 | −.48 | .87+ | 2.95 | 6.2 | .+0.4 | 5.8 | −0.9 | 6.7 |
| 18 | 23 | −.50 | .86+ | 3.21 | 4.6 | .−0.1 | 4.7 | −0.9 | 5.6 |
| 18 | 24 | −.85 | .52− | 5.58 | 2.6 | .+0.9 | 3.5 ~~4.7~~ | −1.8 | 5.3 |
| 18 | 36 | −.39 | .92+ | 2.18 | 5.6 | +2.5 | 3.1 | −0.8 | −3.9 |
| 18 | 40 | −.77 | .63− | 20.70 | 4.0 8 | +1.1 +2 42 | ~~2.9~~ 3.8 | ~~1.6~~ 16 | ~~5.4~~ 5.8 |
| ~~18~~ | ~~41~~ | ~~−.87~~ | ~~.48−~~ | ~~4.38~~ | ~~4.6~~] | ~~+0.5~~ | 4.73 [6.3] | ~~−1.9~~ | |
| 18 | 55 | −.48 | .87+ | 2.92 | 6.4 | .−0.0 | 6.4 | −0.9 | 7.3 |
| 19 | 18 | −.51 | .86+ | 3.29 | 7.0 | .+0.2 | 6.8 | −1.0 | 7.8 |
| | | | | | | | | | 6.06. 6.01 |

| | | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | +.74 −7.7″ | +.51 −7.4″ | +.24 −7.1″ | +.01 −6.3″ | −.19 −6.8″ | −.29 −6.6″ | −.48 −5.8″ | −.70 −3.8″ | −.85 −1.7″ | |
| | | +.64 −9.1 | | +.35 −7.4 | +.06 −6.3 | | −.34 −3.1] | −.50 −4.7 | −.77 −2.9 | −.87 −46.3] | |
| 11 | 880 | | | | +.16 −7.8 | | | −.48 −6.4 | | | |
| 8 | 8 | | | | +.11 −6.7 | | | −.51 −6.8 | | | |
| | 888 | | | | | | −29 −6.6 | | | | |
| | | +.69 −8.4 | +.51 −7.4 | +.29 −7.2 | +.09 −6.8 | −.19 −6.8 | (−.34 −4.8) | −.49 −5.9 | −.73 −3.3 | −.86 | E4 |
| | | +1.3 | +1.0 | +.6 | +.2 | −.4 | −.7 | −.9 | −1.4 | | |
| −1′ | 6.79″ ~~6.54~~ 6.47 | 15 (17) 7.1 2 +.3 | 6.4 1 −.4 | 6.6 2 −.2 | 6.6 4 −.2 | 7.2 1 +.4 | 7.3 1 +.5 | 6.8 4 .0 | [4.7 2] | | |

| RA h | m | sin δ | cos | tan δ | Req−Rpe ′ ″ | ρ′−ρ | Req−Rpe+(ρ′−ρ)Rpe ″ | Req. |
|---|---|---|---|---|---|---|---|---|
| 19 | 11 | +.51 | .86+ | .20 | −1 8.8 | .+0.3 | −8.5+10 | −7.5 |
| 19 | 14 | −.19 | .98+ | 1.33 | 8.7 | .+0.8 | 7.9−04 | 8.3 |
| 19 | 19 | +.64 | .76+ | .05 | 8.6 | .−0.5 | 9.1+1.3 | 7.8 |
| 19 | 33 | −.13 | .99+ | 1.19 | 8.7 | .+1.3 | 7.4−03 | 7.7 |
| 19 | 39 | +.09 | 1.00+ | .45 | 7.7 | .+0.2 | 7.5+02 | 7.3 |
| 19 | 41 | −.04 | 1.00+ | .99 | 7.5 | .+0.4 | 7.1−01 | 7.2 |
| 19 | 44 | +.56 | .82+ | .15 | 9.4 | .−0.0 | 9.4+1.1 | 8.3 |
| 20 | 4 | +.69 | .72− | .02 | 8.6 | .−0.2 | 8.8+1.4 | 7.4 |
| 20 | 9 | −.07 | 1.00+ | 1.05 | 7.6 | .+0.5 | 7.1−02 | 7.3 |
| 20 | 11 | +.31 | .95+ | .45 | 6.6 | .−0.8 | 7.4+06 | 6.8 |
| 20 | 17 | +.04 | 1.00+ | .83 | 7.2 | .−0.2 | 7.4+01 | 7.3 |
| | | | | | | | | 7.54 7.52 |

| RA h | m | sin δ | cos | tan δ | Req−Rpe ′ ″ | ρ′−ρ | Req−Rpe+(ρ′−ρ) ″ | Rpe | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 19 | 18 | −.51 | .86+ | 3.29 | −1 9.0 | .+0.2 | −8.8 | −1.0 | −9.8 |
| 19 | 29 | −.60 | .80+ | 5.32 | 7.7 | .−0.5 | 8.2 | −1.2 | 9.4 |
| ~~19~~ | ~~44~~ | ~~−.89~~ | ~~.45−~~ | ~~3.55~~ | ~~−−~~ | ~~+0.6~~ | | ~~2.0~~ | |
| 19 | 48 | −.46 | .88+ | 2.75 | 7.6 | .+0.8 | 6.8 | −0.9 | 7.7 |
| 19 | 52 | −.73 | .68+ | ~~3.44~~ | 7.8 | .−0.4 | +6 ~~7.7~~ 6.7 | −1.5 | 8.2 |
| 20 | 3 | −.88 | .46− | 4.05 | 5.3 | +1.4 | ~~3.9~~ 6.7 | −1.9 | 8.6 |
| 20 | 13 | −.57 | .82+ | 4.45 | 8.5 ~~4.7~~ | +0.5 | 7.8 | −1.1 | 8.9 |
| 20 | 25 | −.89 | .45− | 3.50 | 7.5 | .+0.9 | ~~6.6~~ 8.4 | −2.0 | 10.40 |
| | | | | | | | | | 8.80 8.80 |

| | | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 594 | | | | | | | | | |
| 5 | 900 | +.64 −9.1 | +.51 −8.5 | +.31 −7.4 | +.09 −7.5 | −.19 −7.9 | | −.57 −8.8 | | −.78 −7.7 |
| | 1494 | +.69 −8.8 | +.56 −9.4 | | +.04 −7.4 | −.13 −7.4 | | −.60 −8.2 | | −.88 −3.9 |
| | | | | | | −.04 −7.1 | | −.46 −6.8 | | −.89 −6.6 |
| | | | | | | −.07 −7.7 | | −.57 −7.8 | | |
| | | +.66 −8.9 | +.53 −8.9 | +.31 −7.4 | +.06 −7.4 | −.11 −7.4 | | −.54 −7.9 | | −.84 −6.1 |
| | | +1.3 | +1.0 | +.6 | +.1 | −.2 | | −1.1 | | |
| −1′ | 7.92″ 7.93 | (15) 7.6 2 +.3 | 7.9 2 0 | 6.8 1 7.1 | 7.3 2 −.6 | 7.6 4 −.3 | | 9.0 4 +1.1 | | |

| RA h | m | sin δ | cos | tan δ | Req−Rpe ′ ″ | ρ′−ρ | Req−Rpe+(ρ′−ρ)Rpe ″ | Req. |
|---|---|---|---|---|---|---|---|---|
| 18 | 18 | +.35 | .93+ | .40 | −1 8.0 | .+0.3 | −7.7 +07 | −7.0 |
| 18 | 33 | +.06 | 1.00+ | .80 | 8.1 | .+0.1 | 8.0 +01 | 7.9 |
| 19 | 3 | +.11 | .99+ | .72 | 9.3 | .+0.8 | 8.5 +02 | 8.3 |
| | | | | | | | | 7.73 7.73 |

| RA h | m | sin δ | cos | tan δ | Req−Rpe ′ ″ | ρ′−ρ | Req−Rpe+(ρ′−ρ) ″ | Rpe | Req. |
|---|---|---|---|---|---|---|---|---|---|
| 18 | 14 | −.70 | .71+ | 16.88 | −1 2.1 | .+0.8 3 | −1.8 | −1.4 | −3.2] |
| 18 | 23 | −.48 | .87+ | 2.95 | 6.9 | +0.4 | 6.5 | −1.0 | 7.5 |
| 18 | 23 | −.50 | .86+ | 3.21 | 6.5 | −0.1 | 6.6 | −1.0 | 7.6 |
| 18 | 40 | −.77 | .63− | 20.71 | 6.1 | +1.1 +2 | 6.3 ~~5.0~~ 8 | −1.6 | ~~7.5~~ 7.4 |
| 18 | 56 | −.48 | .87+ | 2.92 | 7.4 | .−0.0 | 7.4 | −1.0 | |
| | | | | | | | | | 7.75 7.85 |

| | | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 219 | | | | | | | | |
| 4 | 340 | | | +.35 −7.7 | +.06 −8.0 | | | −.48 −6.5 | −.70 −1.3 |
| | 559 | | | | +.11 −8.5 | | | −.50 −6.6 | −.77 −5.0 |
| | | | | | | | | −.48 −7.4 | |
| | | | | +.35 −7.7 | +.08 −8.2 | | | −.48 −6.8 | −.73 −3.1 |
| | | | | +.7 | +.2 | | | −1.0 | −1.4 |
| −1′ | 7.73″ ~~6.92~~ ~~6.72~~ 7.80 .80 E4 | | | 6 (8) 7.0 1 −.7 | 8.0 2 +.3 | | | 7.8 3 +.1 | [4.5 2] |

1873 Sept. 6 Ware h = +.000 −.007 n = −.41 c = .00 h = −.014

| | Star | | Ra h | Ra m | δ | tang δ | T Ra | P'-P | T Ra −(P'−P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | s | | s | | | 0.405 | |
| | 17.8 | +8 | 17 | 51 | 248 | + 1.53 | 0=+ 1.05 | .+.07 | +0.98 | − .63 | −.01 | +0.35 | 0.34 |
| 17.85 | 17.9 | +7 | 17 | 53 | 252 | + 1.26 | + 0.96 | .−.02 | .98 | − .52 | −.01 | .46 | .45 |
| | 19.0 | −4 | 19 | 3 | 494 | + .72 | + 0.70) | .+.02 | 68) | − .30 | +.01 | 38 | .39 |
| 19.30 | 19.6 | −1.0 | 19 | 33 | 498 | + 1.19 | + 0.95 | .+.07 | 88 | − .49 | +.01 | .39 | .40 |
| | 18.58 | | | | | | | | | | | 0.385 | |
| | | | | | | | | | | | | 0.395 | 0.395 |

1873 Sept. 6 Ware

| Star | Ra h | Ra m | δ | tang δ | T Ra | P'-P | T Ra −(P'−P) |
|---|---|---|---|---|---|---|---|
| | | | | | s | | s |
| | 17 | 44 | 484 | + 3.12 | 0=+ 1.65 | .+.09 | +1.56 |
| | 17 | 55 | 485 | + 4.32 | + 2.44 | .+.23 | +2.21 |
| | 18 | 14 | 256 | + 16.88 | + 7.90 | −.04 5 | + 7.94 5 |

191 +.7 = +0.68]

I & II

17.7 +3.12 +1.56 .00 + 1.56
17.9 +4.32 +2.21 .00 + 2.21
18.2 +16.88 +7.94 5 .00 + 7.94

[17.8 +1.53 +0.98]
17.9 +1.26 +0.98
19.5 +1.19 +0.88
18.3 +1.33 +0.95
18.7 +1.22 +0.93
n = −.44

0 = +2.40 +.88 n = −.37
+3.60 +1.53 .42
+16.16 +7.24 .45
−.413

0 = +1.79 + .61 n = −.34
+2.99 +1.26 −.42
+15.55 +6.99 −.45

1873 Sept. 9 Ware h = .001 −.001 n = −.30 c = .00 .403

| | Star | | Ra h | Ra m | δ | tang δ | T Ra | P'-P | T Ra −(P'−P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 17.6 | +2 | 17 | 36 | 244 | + 1.04 | 0=+ 0.82 | .−.21 | +1.03 | − .30 | 0.72 | .00 | + 0.73 |
| | 17.7 | +1 | 17 | 41 | 246 | + 0.53 | + 0.91 | .+.04 | +0.87 | − .16 | .71 | | .71 |
| | 17.8 | −0 | 17 | 51 | 248 | + 1.53 | + 1.17 | .+.07 | +1.10 | − .46 | .64 | | .64 |
| | 17.9 | −1 | 17 | 53 | 252 | + 1.26 | + 1.18 | .−.02 | 1.20 | − .38 | .82 | | .82 |
| | 18.0 | −2 | 18 | 1 | 254 | + 0.17 | + 0.86 | .+.01 | 0.85 | − .05 | .80 | | .80 |
| | 18.0 | −2 | 18 | 3 | 255 | + 0.55 | + 0.92 | .+.04 | 0.88 | − .16 | .72 | .00 | .72 |
| | 17.83 | | | | | | | | | | | | 0.737 |
| | | | | | | | | | | | | | 0.737 |

| Ra h | Ra m | δ | tang δ | T Ra | P'-P | T Ra −(P'−P) |
|---|---|---|---|---|---|---|
| 17 | 38 | 483 | + 2.58 | 0=+ 1.59 | .+.08 | +1.51 |
| 17 | 44 | 484 | + 3.12 | + 1.76 | .+.09 | 1.67 |

17.7 +.53 +0.87
18.0 +.17 +0.85
18.1 +.55 +0.88
17.9 +.42 +0.87

I II

17.6 +2.58 +1.51 .00 + 1.51 +.00 +1.51
17.7 +3.12 +1.67 .00 + 1.67 +.00 +1.67

0 = +2.16 +.64 n = −.30
+2.70 +.80 .30
−.300

17.6 +1.04 +1.03
17.9 +1.53 +1.10
17.9 +1.26 +1.20
17.8 +1.28 +1.11

0 = +1.30 +.40 n = −.31
+1.84 +.56 −.30
−.305

n = −.28

1873 Oct. 5 Ware h = +.026 .000 n = −.19 c = .00 h = +.005

| | Star | | Ra h | Ra m | δ | tang δ | T Ra | P'-P | T Ra −(P'−P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | s | | | | | 9.904 | |
| | 19.7 | +13 | 19 | 44 | 280 | + 0.15 | 0=+ 9.95 | .+.00 | +9.95 | − .03 | +.01 | + 9.92 | 9.93 |
| | 20.1 | 9 | 20 | 4 | 287 | − .02 | + 9.93 | .+.01 | +9.92 | + .00 | .00 | .92 | 92 |
| | 20.1 | 9 | 20 | 9 | 288 | + 1.05 | + 10.20 | .+.04 | +10.16 | − .20 | | .96 | 96 |
| | 20.2 | 8 | 20 | 11 | 501 | + .45 | + 9.99 | .−.01 | +10.00 | − .09 | | .91 | 91 |
| | 20.3 | 7 | 20 | 17 | 289 | + .83 | + 10.11 | .+.04 | +10.07 | − .16 | | .91 | 91 |
| | 20.6 | 4 | 20 | 37 | 294 | + 1.00 | + 10.01 | .+.05 | 9.96 | − .19 | | .77 | 77 |
| | 20.7 | 3 | 20 | 40 | 296 | + .28 | + 10.13 | .+.14 | 9.99 | − .05 | | .94 | 94 |
| 20.31 | 20.8 | +2 | 20 | 49 | 507 | + .52 | + 10.05 | .+.05 | 10.00 | − .10 | 00 | .90 | .90 |
| | | | ~~21~~ | ~~1~~ | ~~302~~ | + .78 | | +.04 | | | | | |
| | 22.3 | +13 | 22 | 15 | 523 | + .20 | + 10.00 | .+.04 | 9.96 | − .04 | −.01 | .92 | .91 |
| | 22.3 | 13 | 22 | 18 | 524 | + 1.26 | + 10.20 | .+.04 | 10.16 | − .24 | −.01 | .92 | .91 |
| | 22.4 | 14 | 22 | 26 | 319 | + 1.18 | + 10.29 | .+.15 | 10.14 | − .22 | −.01 | .92 | .91 |
| 22.40 | 22.6 | −16 | 22 | 37 | 322 | + .57 | + 10.02 | .+.01 | 10.01 | − .11 | −.01 | .90 | .89 |
| | 21.01 | | | | | | | | | | | 9.915 | |
| | | | | | | | | | | | | 9.908 | 9.905 |

| Ra h | Ra m | δ | tang δ | T Ra | P'-P | T Ra −(P'−P) |
|---|---|---|---|---|---|---|
| | | | | s | | |
| 19 | 48 | 282 | + 2.75 | 0=+ 10.54 | .+.05 | + 10.49 |
| 19 | 52 | 284 | + 53.44 | + 21.44 | ~~+1.62~~ −1.67 | ~~23.11~~ 22.39 |
| 20 | 13 | 502 | + 4.45 | + 11.00 −.95 | .+.15 | 10.85 |
| 20 | 25 | 410 | − 3.50 | + 9.18 | .−.09 | 9.27 |
| 20 | 33 | 504 | + 3.61 | + 10.67 | .+.10 | 10.57 |
| 20 | 53 | 509 | + 5.72 | + 10.97 | .+.06 | 10.91 |
| 22 | 32 | 525 | + 3.27 | + 10.61 | .+.15 | 10.46 |

19.7 +.15 +9.95
20.1 −.02 +9.92
20.7 +.28 +9.99
22.2 +.20 +9.96
20.7 +.15 +9.95
+.02

I II

19.8 +2.75 +10.49 +.02 +10.51 +.06 +10.55
19.9 +53.44 ~~+23.11~~ +22.39 +.02 +23.13 +.06 +23.17
20.2 +4.45 +10.85 +.01 +10.86 +.06 +10.91
20.6 +3.61 +10.57 +.01 +10.58 +.04 +10.61
20.9 +5.72 +10.91 −.01 +10.90 +.05 +10.96
22.5 +3.27 +10.46 −.05 +10.41 +.01 +10.45

I II

20.4 −3.50 +9.27 +.01 +9.28 +.05 +9.32

0 = −3.65 −.67 n = −.18

0 = −4.62 58 −.78 83 n = −.18

20.7 +1.05 +10.16
[20.6 +1.00 +9.96]
22.3 +1.26 +10.16
22.4 +1.18 +10.14
22.3 +.72 +10.10 15
14 ~~+.08~~
21.6 1.16
n = −.20

0 = +2.40 + .56 n = −.21
+53.29 +13.18 −.72 .25 3
+4.30 + .91 .21
+3.46 + .63 .18
+5.57 + .95 .17
+3.12 + .46 .15

0 = +1.63 + .45 n = −.24
+52.32 +13.07 .72 −.23
+3.33 + .81 −.23
+2.49 + .51 −.18
+4.44 + .86 −.18
+2.15 + .36 −.18 .207

2

−1

12
5

−1

z = +.60 +.80 | +.40 +.60 | +.20 +.40 | +.0 +.20 | +0 −.20 | −.20 −.40 | −.40 −.60 | −.60 −.80 | −.80 −1.00

RA sin δ cos δ tan δ | Req − Rpe ρ' − ρ +(ρ' − ρ) Req − Rpe ... R eq. | RA sin δ cos δ tan δ | Req − Rpe ρ' − ρ +(ρ' − ρ) Req Rpe ... R eq.

h m
17 51 −.25 .97+ 1.53 | −1 — — . −0.1 | 17 44 −.50 .86+ 3.12 | −1 — — . +0.4
17 53 −.16 .99+ 1.26 | — — . +0.5 | 17 55 −.57 .82+ 4.32 | — — . +0.2
19 3 +.11 .99+ .72 | 7.2 . +0.8 −6.4 +0.2 −6.2 8 | 14 −.70 .71+ 16.88 | 2.9 . +0.8 (3) −2 x 6 −1.4 −4.0]
19 33 −.13 .99+ 1.19 | 8.2 . +1.3 6.9 −0.3 7.2

2 140 | 6.70 6.70

+.11 −6.4 −.13 −6.9 −.25 | −.70 −2.1
+.2 −.3 | −1.4
6.2 7.2 | [3.5]
(2/3) − .5 + .5

6.70
−1 ~~5.63~~
6.70

17 36 −.06 1.00+ 1.04 | — — . | 17 38 −.44 .90+ 2.58 | −1 — — . +0.8
17 41 +.25 .97+ .53 | — — : | 17 44 −.50 .86+ 3.12 | — — . +0.4
17 51 −.25 .97+ 1.53 | — — .
17 53 −.16 .99+ 1.26 | — — . +0.5
18 1 +.54 .84+ .17 | — — . +0.6
18 3 +.24 .97+ .55 | — — . +0.2

19 44 +.56 .82+ 0.15 | −1 9.7 . −0.0 −9.7 +0.8 −8.9 | 19 48 −.46 .88+ 2.75 | −1 7.6 . +0.8 −6.8 −1.1 −7.9
20 4 +.69 .72− .02 | 10.5 . −0.2 10.7 +1.6 9.1 | 19 52 −.73 .68+ 53.44 | 9.6 . ~~−0.4~~ +.6 ~~10.0~~ 9.0 −1.7 10.7]
20 9 −.07 1.00+ 1.05 | 7.7 . +0.5 7.2 −0.2 7.4 | 20 13 −.57 .82+ 4.45 | 9.0 . +0.5 8.5 −1.3 9.8
20 11 +.31 .95+ .45 | 7.9 . −0.8 8.7 +0.7 8.0 | 20 25 −.89 .45− 3.50 | 7.2 . +0.9 ~~6.3~~ 8.1 −2.2 −10.3 √
20 17 +.04 1.00+ .83 | 8.8 . −0.2 9.0 +0.1 8.9 | 20 33 −.53 .84+ 3.61 | 57.9 . +0.6 51.3 −1.2 9.9
20 37 −.04 1.00+ 1.00 | 8.1 . +0.0 8.1 −0.1 8.2 | 20 53 −.61 .79+ 5.72 | 7.4 . +0.4 7.0 −1.4 8.4
20 40 +.45 .89+ .28 | 9.4 . −0.2 9.6 +1.0 8.6 | 22 32 −.51 .86+ 3.27 | 7.7 . +0.8 6.9 −1.2 8.1
20 49 +.26 .96+ .52 | 8.6 . +0.1 8.5 +0.6 7.9
21 1 +.07 1.00+ .78 | +0.1
22 15 +.51 .86+ .20 | 10.3 . +0.2 10.1 +1.2 8.9
22 18 −.16 .99+ 1.26 | 7.6 . +0.2 7.4 −0.4 7.8
22 26 −.13 .99+ 1.18 | 9.0 . +0.6 8.4 −0.3 8.7
22 37 +.22 .97+ .57 | 8.9 . −0.2 9.1 +0.5 8.6
8.42 8.41 | 9.13
8.82

12 504
5 410 | +.69 −10.7 | +.56 −9.7 | +.31 −8.7 | +.04 −9.0 | −.07 −7.2 | −.46 −6.8 | −.73 −10.0 | −.89 −6.3
914 | +.45 −9.6 | +.26 −8.5 | ~~+.07~~ | −.04 −8.1 | −.57 −8.5 | −.61 −7.0
+.51 −10.1 | +.22 −9.1 | −.16 −7.4 | −.53 −5.3
−.13 −8.4 | −.51 −6.9

+.69 −10.7 | +.51 −9.8 | +.26 −8.8 | +.04 −9.0 | −.10 −7.8 | −.52 −7.7 | −.67 −8.5 | −.89 −6.3
+1.5 | +1.1 | +.6 | +.1 | −.3 | −1.2 | −1.5
9.2 | 8.7 | 8.2 | 8.9 | 8.1 | 8.9 | 10.0
−1 8.71 (18) | + .5 | .0 | − .5 | + .2 | − .6 | + .2 | + 1.3
8.54

1873 Oct 8 wAve h = +0.026 +.019 n = −.18 c = .00 l = +.020 1873 Oct 8 wAR

| | Star | | Ra h | m | | δ | tang. δ | ♈Ra | P'−P | ♈Ra −(P'−P) | | | | Star | Ra h | m | | δ | tang. δ | ♈Ra | P'−P | ♈Ra −(P'−P) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | h | m | | | | s | | s | | | | 11.812 | h | m | | | | s | | s |
| | 19.4 | +1.8 | 19 | 25 | 275 | + | .53 | 0 = +11.90 | +.01 | +11.89 | − .10 | +04 | +11.79 | 11.83 | 19 | 29 | 497 | + | 5.32 | 0 = +12.83 | +.09 | +12.74 |
| | 19.4 | 1.8 | 19 | 26 | 276 | + | 1.25 | +12.06 | +.07 | 11.99 | − .22 | 04 | .77 | .81 | 22 | 32 | 526 | + | 3.27 | +12.62 | +.15 | +12.47 |
| | 19.6 | 1.6 | 19 | 33 | 498 | + | 1.19 | +12.08 | +.07 | 12.01 | − .21 | 03 | .80 | .83 | 22 | 45 | 325 | + | 2.20 | +12.35 | +.08 | +12.27 |
| | 19.7 | 1.5 | 19 | 40 | 278 | + | .99 | +12.01 | +.08 | 11.93 | − .18 | .03 | .75 | .78 | 19 | 45 | | − | 3.55 | | | |
| 19.56 | 19.7 | +1.5 | 19 | 44 | 280 | + | .15 | +11.98 | +.00 | 11.98 | − .03 | +.03 | .95 | .98 | 19 | 48 | | + | 2.75 | | | |
| | 22.6 | −1.4 | 22 | 37 | 322 | + | .57 | +11.99 | +.01 | 11.98 | − .10 | −.03 | .88 | .85 | 19 | 53 | | + | 53.44 | | | |
| | 22.6 | 1.4 | 22 | 38 | 528 | + | .87 | +12.10 | +.03 | 12.07 | − .16 | 03 | .91 | .88 | 20 | 3 | | − | 4.05 | | | |
| | 22.7 | 1.5 | 22 | 40 | 323 | + | .42 | +12.00 | +.05 | 11.95 | − .08 | 03 | .87 | .84 | 21 | 8 | | + | 4.55 | | | |
| | 22.9 | 1.7 | 22 | 56 | 327 | + | 0.89 | +12.05 | +.04 | 12.01 | − .16 | 03 | .85 | .82 | | | | | | | | |
| 22.76 | 23.0 | −1.8 | 22 | 58 | 329 | + | .26 | +11.92 | +.00 | 11.92 | − .05 | −.04 | .87 | .83 | | | | | | | | |
| | 21.16 | | | | | | | | | | | | 11.876<br>11.844 | | 11.845 | | | | | | | |

I II

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 19.7 | +.15 | +11.98 | 19.4 | +1.25 | +11.99 | +.06 | 19.5 | +5.32 | +12.74 | +.06 +12.80 | .00 +12.74 |
| 22.7 | +.42 | +11.95 | 19.6 | +1.19 | +12.01 | | 22.5 | +3.27 | +12.47 | −.02 +12.45 | −.08 +12.39 |
| 22.9 | +.06 | +11.92 | 19.7 | +.99 | +11.93 | | 22.8 | +2.20 | +12.27 | −.03 +12.24 | −.08 +12.19 |
| 21.8 | +.28 | +11.95 | 19.6 | +1.14 | +11.98 | | | | | | |
| | | −6 | | | | | | | | | |

0 = +5.04 +.85 n = −.14
+2.99 +.50 .17
+1.92 +.29 .15
−.163

n = −.03 −.07

0 = +4.18 +.76 n = −.18
+2.13 +.41 −.19
+1.06 +.21 −.20 −.185

1873 Oct 9 wAre h = +.023 +.023 n = −.17 c = .00 l = +.018 .087

| | Star | | Ra h | m | | δ | tang. δ | ♈Ra | P'−P | ♈Ra −(P'−P) | | | | | Ra h | m | | δ | tang. δ | ♈Ra | P'−P | ♈Ra −(P'−P) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | s | | | | | 12.38 | | | | | | | s | | |
| | 18.8 | +.9 | 18 | 51 | 492 | + | .96 | 0 = +12.57 | +.03 | +12.54 | − .16 | +.02 | +12.38 | 12.40 | 18 | 55 | 493 | + | 2.92 | 0 = +13.08 | +.10 | +12.98 |
| | 19.2 | 5 | 19 | 11 | 495 | + | .20 | +12.50 | +.04 | 12.46 | − .03 | +.01 | 43 | .44 | 19 | 15 | 273 | + | 3.29 | +13.16 | +.09 | 13.07 |
| | 19.2 | 5 | 19 | 14 | 272 | + | 1.33 | +12.72 | +.12 | 12.60 | − .23 | +01 | 37 | .38 | 19 | 29 | 497 | + | 5.32 | +13.47 | +.09 | 13.38 |
| | 19.6 | 1 | 19 | 33 | 498 | + | 1.19 | +12.68 | +.07 | 12.61 | − .20 | 00 | 41 | .41 | 19 | 45 | 401 | − | 3.55 | +12.77 | +.37 | 12.40 |
| 19.28 | 19.6 | +1 | 19 | 39 | 499 | + | .75 | +12.58 | +.05 | 12.53 | − .13 | 00 | 40 | .40 | 19 | 48 | 282 | + | 2.75 | +13.00 | +.05 | 12.95 |
| | 19.7 | 0 | 19 | 40 | 278 | + | .99 | +12.75 | +.08 | 12.67 | − .17 | 00 | 50 | 50 | 19 | 52 | | + | ~~53.44~~ | +19.74 | ~~1.62~~ | ~~21.41~~ +20.69 |
| | 19.7 | 0 | 19 | 44 | 280 | + | .15 | +12.45 | +.00 | 12.45 | − .03 | 00 | 42 | .42 | 20 | 3 | 406 | − | 4.05 | +11.78 | −.16 | 11.94 |
| | 20.1 | −4 | 20 | 4 | 287 | − | .02 | +12.37 | +.01 | 12.36 | + .00 | −01 | 36 | .35 | 21 | 8 | 510 | + | 4.55 | +12.84 | −.14 | 12.98 |
| | 20.2 | 5 | 20 | 9 | 288 | + | 1.05 | +12.64 | +.04 | 12.60 | − .18 | −01 | 42 | .41 | | | | | | | | |
| 2046 | 21.1 | 1.4 | 21 | 9 | 510 | + | .77 | +12.55 | +.05 | 12.50 | − .13 | −.03 | 37 | .34 | | | | | | | | |
| | 21.2 | −7.5 | 21 | 15 | 306 | + | 1.89 | +12.53 | +.01 | 12.52 | − .32 | −.33 | 20 | 17 | | | | | | | | |
| | 19.72 | | | | | | | | | | | | 12.444<br>12.406 | | 12.405 | | | | | | | |

I II 12.41 I II

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19.2 | +.20 | +12.46 | 18.9 | +2.92 | +12.98 | +.02 | +13.00 | +.03 +13.01 | 19.8 | −3.55 +12.40 | −.00 +12.40 +.01 | +.01 +12.41 |
| 19.7 | +.15 | +12.45 | 19.3 | +3.29 | +13.07 | +.01 | +13.08 | +.02 +13.09 | 20.1 | −4.05 +11.94 | −.01 +11.93 +. | +.00 +11.94 |
| 20.1 | −.02 | +12.36 | 19.5 | +5.32 | +13.38 | +.00 | +13.38 | +.01 +13.39 | | | | |
| 19.7 | +.16 | +12.42 +1 | 19.8 | +2.75 | +13.95 | +.01 | +13.94 | +.01 +13.96 | | | | |
| | | | 19.9 | +53.44 | ~~+21.41~~ +20.69 | +.00 | +21.41 | +.00 +21.41 | | | | |
| 19.2 | +1.33 | +12.60 | 21.1 | +4.55 | +12.98 | +.04 | +13.02 | +.02 +13.00 | | | | |
| 19.7 | +.99 | +12.67 | | | | | | | | | | |
| 20.1 | +1.05 | +12.60 | | | | | | | | | | |
| 21.3 | +1.89 | +12.52 | | | | | | | | | | |
| ~~20.1~~ | ~~+1.31~~ | ~~+12.60~~ | | | | | | | | | | |

n = −15 +.01 −.016

0 = +2.91 + .58 n = −.21
+3.18 + .44 .21
+5.21 + .96 .18
+2.64 + .52 .18
+53.33 +8.99 −.72 .16
+4.44 + .60 .14 −.188

0 = +1.61 +.41 n = −.25
+1.98 +.49 .205
+4.01 +.79 .20
+1.44 +.34 .25
+52.13 +8.81 .16

0 = −3.46 − .02 n = −.00 ✓
−4.16 − .49 −.12 −.120

0 = −4.86 − .19 n = −.04 ✓
−5.36 − .46 −.12 −.120

19.7 1873 +1.12 +12.62 Oct 43 wAR h = +.021 n = −.18 −.28 c = +.10 h = −.019

| | Star | | Ra h | m | | δ | tang. δ | | ♈Ra | P'−P | ♈Ra −(P'−P) | | | | | | Ra h | m | | δ | tang. δ | ♈Ra | P'−P | ♈Ra −(P'−P) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | −02 | 14.450 | | | | | | | | | | |
| | 19.6 | +.8 | 19 | 33 | 478 | + | 1.19 | +1.55 | +14.70 | +.07 | +14.63 | − .33 | +.15 | +14.45 | 14.43 | 19 | 44 | 401 | − | 3.55 | +14.34 | +.37 | +13.97 |
| | 19.6 | 8 | 19 | 39 | 499 | + | .75 | +1.25 | +14.58 | +.05 | 14.53 | − .40 | +.12 02 | .44 | 42 | 19 | 48 | 282 | + | 2.75 | +14.47 | +.05 | 14.42 |
| | 19.7 | 7 | 19 | 40 | 278 | + | .99 | +1.40 | +14.71 | +.08 | 14.63 | − .28 | +.14 01 | .49 | .489 | 19 | 52 | 284 | + | 53.43 | +23.46 | ~~1.62~~ −.95 | ~~25.13~~ 24.41 |
| | 19.7 | 7 | 19 | 44 | 280 | + | .15 | +1.01 | +14.45 | +.00 | 14.45 | − .04 | +.01 01 | .42 | .41 | 20 | 3 | 406 | − | 4.05 | +13.59 | −.16 | 13.75 |
| 19.74 | 20.1 | 3 | 20 | 4 | 287 | − | .02 | +1.00 | +14.35 | +.01 | 14.34 | + .01 | +.10 01 | .45 | .44 | 21 | 15 | 306 | + | 1.89 | +14.84 | +.01 | 14.83 |
| | 20.1 | 3 | 20 | 09 | 288 | + | 1.05 | +1.45 | +14.59 | +.04 | 14.55 | − .29 | +.14 +01 | .40 | .39 | 21 | 23 | 418 | − | 2.81 | +14.00 | −.01 | 14.01 |
| | 20.2 | +2 | 20 | 11 | 501 | + | .45 | +1.10 | +14.39 | −.01 | 14.40 | − .13 | +.11 00 | .38 | .38 | 21 | 27 | 308 | + | 2.75 | +15.05 | +.08 | 14.97 |
| | 21.1 | −7 | 21 | 9 | 305 | + | .77 | +1.26 | +14.52 | +.05 | 14.47 | − .22 | +.13 +01 | .36 | .39 | 21 | 40 | 516 | + | 2.86 | +15.01 | −.03 | 15.04 |
| | 21.5 | 11 | 21 | 31 | 514 | + | .83 | +1.30 | +14.61 | +.06 | 14.55 | − .23 | +.13 02 | .45 | .479 | | | | | | | | |
| | 21.6 | 12 | 21 | 35 | 515 | + | 1.53 | +1.82 | +14.72 | −.08 | 14.80 | − .43 | +.18 02 | .55 | .57 | | | | | | | | |
| 21.03 | 21.7 | −1.3 | 21 | 42 | 517 | + | 1.14 | +1.52 | +14.60 | +.04 | 14.56 | − .32 | +.15 +02 | .39 | .41 | | | | | | | | |
| | 20.45 | | | | | | | | | | | | | 14.425<br>14.436 | +.14435 | | | | | | | | |

I II I II

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19.7 | +.15 | +14.45 | 19.8 | +2.75 | +14.42 | +.00 | +14.42 | +.01 +14.43 | 19.7 | −3.55 +13.97 | +.01 +13.98 + | +.02 +13.99 |
| 20.1 | −.02 | +14.34 | 19.9 | +53.43 | ~~+25.13~~ +24.41 | +.00 | +25.13 | +.01 +25.14 | 20.1 | −4.05 +13.75 | +.00 +13.75 | +.01 +13.76 |
| 20.2 | +.45 | +14.40 | 21.3 | +1.89 | +14.83 | −.03 | +14.80 | −.02 +14.78 | 21.4 | −2.81 +14.01 | −.03 +13.98 | −.02 +13.99 |
| 20.0 | +.19 | +14.40 +1 | 21.4 | +2.75 | +14.97 | −.03 | +14.94 | −.02 +14.92 | | | | |
| | | | 21.7 | +2.86 | +15.04 | −.04 | +15.00 | −.03 +14.97 | | | | |
| 19.5 | +1.19 | +14.63 | 20.5 +1.18 +14.63 | | | | | | | | | |
| 19.7 | +.99 | +14.63 | | | | | | | | | | |
| 20.1 | +1.05 | +14.55 | | | | | | | | | | |
| 21.6 | +1.53 | +14.80 | | | | | | | | | | |
| 21.7 | +1.14 | +14.56 | | | | | | | | | | |

n = −.23 +.01

0 = −3.74 −.42 n = −.11
−4.24 −.65 −.15
−3.00 −.42 −.14 −.133

0 = −4.73 −.64 n = −.14
−5.23 −.87 .17
−3.99 −.44 .16 −.157

8
3

−1

6
4

−1

8
5

−1

ζ = +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−100

RA sinζ cosα tanδ | R.q−R.fc P′−P Req−Rfc+(P′−P) R.fc R.eq | RA sinζ cosα tanδ | Req−Rfc P′−P Req−Rfc+(P′−P) Rfc Req
h m | ′ ″ | ″ | h m | ′ ″ | ″

19 25 +.25 .97+ 0,53 | −1 −− −0.5 | 19 29 −.60 .80+ 5,32 | −1 7.6 −0.5 −8.1 −1.4 − 9.5
19 26 −.16 .99+ 1.25 | −− +0.6 | 22 32 −.51 .86+ 3,27 | 7.5 +0.8 6.7 −1.2 7.9
19 33 −.13 .99+ 1.19 | 9.8 +1.3 −8.5 −0.4 −8.9 | 22 45 −.39 .92+ 2,20 | 8.3 +0.9 7.4 −0.9 8.3
19 40 −.04 1.00+ .99 | 8.7 +0.4 8.3 −01 8.4
19 44 +.56 .82+ .15 | 9.9 −0.0 9.9 +1.3 8.6
22 37 +.22 .97+ .57 | 9.0 ~~19.7~~ −0.2 9.2 +05 8.7
22 38 +.02 1.00+ .87 | 7.6 −0.8 8.4 +0.1 8.3
22 40 +.33 .94+ .42 | 8.9 +0.0 8.9 +08 8.1
22 56 +.01 1.00+ .89 | 8.3 +0.5 7.8 +01 7.7
22 58 +.47 .88+ .26 | 8.8 −0.6 9.4 +11 8.3
8,38 8.38 | 8.57 8,57

8 304
3 171 | +.56 −9″.9 | +.22 −9″.2 | +.02 −8″.4 | −.13 −8″.5 | −.39 −7″.4 | −.60 −8″.1
475 | +.47 −9.4 | +.33 −8.9 | +.01 −7.8 | −.04 −8.3 | | −.51 −6.7

+.51 −9.6 | +.27 −9.0 | +.01 −8.1 | −.08 −8.4 | −.39 −7.4 | −.55 −7.4
+1.1 | +.6 | +.0 | −.2 | −.9 | −1.2
8.5 | 8.4 | 8.1 | 8.6 | 8.3 | 8.6
′ ″
−1 8.43 (11) +.2 | .6 | −.3 | +.2 | −.1 | +.3
8.43

′ ″
18 57 −.02 1.00+ .96 | −1 8.8 +0.5 −8.3 +0.0 −8.3 | 18 55 −.48 .87+ 2.92 | −1 7.5 +0.0 −7.5 −1.1 −8.6
19 11 +.51 .86+ .20 | −− +0.3 | 19 18 −.51 .86+ 3.29 | 9.8 +0.2 9.6 −1.2 10.8
19 14 −.19 .98+ 1,33 | 8.7 +0.8 7.9 −05 8.4 | 19 29 −.60 .80+ 5.32 | 7.1 −0.5 7.6 −14 9.0
19 33 −.13 .99+ 1,19 | 9.4 +1.3 8.1 −0.4 8.5 | 19 45 −.89 .45+ 3.55 | 5.4 +0.6 60 ~~7.8~~ −2.3 8.3 √
19 39 +.09 1.00+ .75 | −− +0.2 | 19 48 −.46 .88+ 2.75 | 7.5 +0.8 6.7 −1.1 7.8
19 40 −.03 1.00+ .99 | 5.8 +0.4 5.4 −0.1 [55] | 19 52 −.73 .68+ ~~53.44~~ | 6.3 −0.4 +6 ~~6.7~~ 5.7 −1.7 7.4
19 44 +.56 .82+ .15 | −− −0.0 | 20 3 −.88 .46− 4.05 | 3.9 ~~5.4~~ ~~3.8~~ +1.4 5.3 ~~2.5~~ −22 7.5 √
20 4 +.69 .72− .02 | 9.5 −0.2 9.7 +16 8.1 | 21 8 −.58 .81+ 4.55 | −− +0.9
20 9 −.07 1.00+ 1.05 | 8.0 +0.5 7.5 −0.2 7.7
21 9 +.09 1.00+ .77 | 8.8 +0.7 8.1 +0.3 7.8
21 15 −34 .94+ 1.89 | −− +1.1
8,13 8.13 | 8.45 8,20

6 78 | +.69 −9.7 ~~+.56~~ | +.09 −8.1 | −.02 −8.3 | −.48 −7.5 | −.73 −6.7 | −.89 −4.8
4 80 | +1.5 | −.19 −7.9 | −.51 −9.6 | −.88 −2.5
158 | −.13 −8.1 | −.60 −7.6
−.03 −5.4 | −.46 −6.7
−.07 −7.5

+.69 −9.7 | +.09 −8.1 | −.09 −8.4 | −57 −7.8 | −.73 −6.7 | −.89 −3.6
+1.5 | +.2 | −.2 | −1.1 | −1.6
8.2 | 7.9 | 7.6 | 8.9 | 8.3
′ ″
−1 8.17 (12) .6 | −.3 | −.6 | +.4 | +.1
8.16

′ ″
19 33 −.13 .99+ 1.19 | −1 9.5 +1.3 −8.2 −0.4 −8.6 | 19 44 −.89 .45− 3.55 | −1 −− +0.6
19 39 +.09 1.00+ .75 | −− +0.2 | 19 48 −.46 .88+ 2.75 | 8.5 +0.8 −7.7 −1.1 −8.8
19 40 −.04 1.00+ .99 | 8.5 +0.4 8.1 −0.1 8.2 | 19 52 −.73 .68+ 53.43 | 2.7 8.2 ~~−0.4~~ +6 ~~8.6~~ 7.6 −1.7 9.3
19 44 +.56 .82+ .15 | −− −0.0 | 20 3 −.88 .45− 4.05 | 4.2 ~~2.6~~ +1.4 4.1 −2.2 6.3
20 4 +.69 .72− .02 | 10.3 −0.2 10.5 +16 8.9 | 21 15 −.34 .94+ 1.89 | 8.8 +1.1 7.7 −0.8 8.5
20 9 −.07 1.00+ 1.05 | 8.1 +0.5 7.6 −0.2 7.8 | 21 23 −.92 .38− 2.81 | 5.1 +0.2 5.3 ~~4.9~~ −2.3 7.6
20 11 +.31 .95+ .45 | −− −0.8 | 21 27 −.46 .88+ 2.75 | 8.4 +1.1 7.3 −1.1 8.4
21 9 +.09 1.00+ .77 | 10.8 +0.7 10.1 +0.3 9.8 | 21 40 −.48 .87+ 2.86 | 8.1 +0.8 7.3 −1.1 8.4
21 31 +.04 1.00+ .83 | 9.2 −0.6 9.8 +0.2 9.6
21 35 −.25 .97+ 1.53 | 9.4 +0.8 8.6 −0.6 9.2
21 42 −.11 .99+ 1.14 | 9.8 +1.0 8.8 −0.3 9.1
8,90 8.90 | 8.60 8,68

8 720 | +.69 −10.5 | ~~+.31~~ | +.09 −10.1 | −.13 −8.2 | −.25 −8.6 | −.46 −7.7 | −.73 −8.6 | −.88 −1.3
5 340 | +.04 −9.8 | −.04 −8.1 | −.34 −7.7 | −.46 −7.3 | −.92 −4.9
1060 | −.07 −7.6 | −.48 −7.3
−.11 −8.8

+.69 −10.5 | +.06 −9.9 | −.09 −8.2 | −.29 −8.1 | −.47 −7.4 | −.73 −8.6 | −.90 −3.1
+1.6 | +.2 | −.2 | −.7 | −1.1 | −1.7
8.9 | 9.7 | 8.4 | 8.8 | 8.5 | 10.3
′ ″
−1 8.85 (13) .6 | +.8 | −.5 | −.1 | −.4 | +1.4
8.82

1873 Oct. 14 wake h = +.018 +.012 n = -.15 e = .00 h = ~~+.000~~

| | Star | | Ra h | m | | tang. δ | τRa | P'P | τRa-(P'P) s | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 21.1 | +6 | 21 | 9 | 305 | + .77 | 0 = +14.93 | +.05 | +14.88 | - .12 | +.01 | +14.76 | 14.77 |
| | 21.6 | +1 | 21 | 31 | 514 | + .83 | +15.10 | +.06 | 15.04 | - .12 | .00 | .92 | .92 |
| 21.47 | 21.7 | +0 | 21 | 42 | 517 | +1.14 | +15.16 | +.04 | 15.12 | - .17 | | .95 | .95 |
| | 21.9 | -2 | 21 | 55 | 519 | + .22 | +14.97 | +.00 | 14.97 | - .03 | | .94 | .94 |
| 21.95 | 22.0 | -3 | 21 | 59 | 311 | - .02 | +14.93 | +.02 | 14.91 | - .00 | .00 | .91 | .91 |
| | 21.66 | | ~~22~~ | 4 | | + .64 | - ~~.29~~ | +.04 | | | | 14.925 | |

14.877

14.896

14.898

1873 Oct 14 wake

| Star | Ra h | m | | δ | tang. δ | τRa s | P'P | τRa-(P'P) s |
|---|---|---|---|---|---|---|---|---|
| | 21 | 27 | 30 | | +2.75 | 0 = +15.30 | +.08 | +15.22 |
| | 21 | 40 | 516 | | +2.86 | +15.42 | -.03 | 15.45 |
| | 21 | 46 | 421 | | -3.37 | +14.65 | +.17 | 14.48 |
| | 22 | 1 | 520 | | +1.89 | +15.51 | +.17 | 15.34 |

| | | s |
|---|---|---|
| 21.9 | +.22 | +14.97 |
| 22.0 | -.02 | +14.91 |
| 21.9 | +.10 | +14.94 |
| | | -1 |

| | | | | I s | | II s |
|---|---|---|---|---|---|---|
| 21.4 | +2.75 | +15.22 | +.01 | +15.23 | +.00 | +15.22 |
| 21.7 | +2.86 | +15.45 | +.00 | +15.45 | +.00 | +15.45 |
| 22.0 | +1.89 | +15.34 | +.00 | +15.34 | +.01 | +15.33 |

| | | | | I s | | II s |
|---|---|---|---|---|---|---|
| 21.8 | -3.37 | +14.48 | +.00 | +14.48 | +.00 | +14.48 |

0 = +2.65 + .29 u = -.11
+2.86 + .51 -.18
+1.79 + .40 -.22
-.08 .170

0 = -3.47 - .46 u = -.13

| | | |
|---|---|---|
| 21.5 | +.83 | +15.04 |
| 21.7 | +1.14 | +15.12 |
| 21.6 | +0.98 | +15.08 |

0 = -4.35 - .60 u = -.14

0 = +1.77 + .14 u = -.16
+1.88 + .37 .20
+ .91 + .25 .27
.2
- .140

n = -.16 -.01

1873 Oct 15

6
2
-1

1873 Oct 18 h = +.016 +.014 n = ~~-.17~~ -.20 e = .00

| | Ra | δ | tang. δ | | | | | |
|---|---|---|---|---|---|---|---|---|
| 23.7 | 23 45 538 | | + .330 = | +16.45 s | +.02 | +16.43 | -.07 | +16.36 |

| Ra | | tang. δ | | | |
|---|---|---|---|---|---|
| 23 34 | 334 | +4.31 | 0 = +17.52 s | +.13 | +17.39 |
| 23 41 | 537 | +2.37 | +16.88 | +.11 | 16.77 |

| z = | +.60 +.80 | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.60 .−.80 | −.80 −.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin z | cos z | tan δ | Req − Rge | ρ′ − ρ | Req Rge + (ρ′−ρ) | | Req | RA h m | sin z | cos z | tan δ | Req − Rge | ρ′ − ρ + (ρ′−ρ) | | Rge | Req |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 9 | +.09 | 1.00+ | .77 | −1 7.6 | +0.7 | −6.9 | +0.3 | −6.6 | 21 27 | −.46 | .88+ | 2.75 | −1 10.0 | +1.1 | −8.9 | −11 | −10.0 |
| 21 31 | +.04 | 1.00+ | .83 | 8.3 | −0.6 | 8.9 | +0.2 | 8.7 | 21 40 | −.48 | .87+ | 2.86 | 7.7 | +0.8 | 6.9 | −11 | 8.0 |
| 21 42 | −.11 | .99+ | 1.14 | 9.1 | +1.0 | 8.1 | −0.3 | 8.4 | 21 46 | −.90 | .42− | 3.37 | 7.0 | +0.6 | 7.6 ~~6.4~~ | −24 | 10.0 |
| 21 54 | +.50 | .86+ | .22 | 9.6 | −0.4 | 10.0 | +1.2 | 8.8 | 22 1 | −.34 | .94+ | 1.89 | 7.4 | +1.5 | 5.9 | −08 | 6.7 |
| 21 59 | +.69 | .72− | .02 | 9.0 | −0.1 | 9.1 | +1.7 | 7.4 | | | | | | | | | |
| 22 4 | +17 | .98+ | .64 | 7.5 | +0.1 ~~−2.9~~ | 7.4 | +0.4 | 7.0 | | | | | | | | | |
| | | | | | | | | 7.82 | 7.82 | | | | | | | | 8.23<br>7.35 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | +.69 −9.″1 | +.50 −10.″0 | | +.09 −6.″9 | −.11 −8.″1 | −.34 −5.″9 | −.46 −8.″9 | | −.90 −6.″4 |
| 6 492 | | | | +.04 −8.9 | | | −.48 −6.9 | | |
| 2 70 | | | | +17 −7.4 | | | | | |
| 562 | +69 −9.1 | +.50 −10.0 | | +.06 10 −7.7 | −.11 −8.1 | −.34 −5.9 | −.47 −7.9 | | −.90 −6.4 |
| | +1.6 | +1.1 | | +.3 | −.3 | −.8 | −1.1 | | |
| | 7.5 | 8.9 | | 7.4 | 8.4 | 6.7 | 9.0 | | |
| −1 7.97 | (9) * −.5 | +.9 | | * −.6 | +.4 | * −1.3 | +1.6 | | |
| 7.70 | | | | | | | | | |

23 45 +.41 . .91+ .33 — — — −0.2

~~+.41~~

23 34 +.57 .82+ 4.31 — — . +0.3
23 41 −.42 .90+ 2.37 — — — . +0.4

1873 Oct. 21 Ware h = +0.018 +0.030 n = .19 c = .00 h = +.029

| Star | | Ra h | m | δ | tang. δ | | T-Ra | ρ'−ρ | T-Ra −(ρ'−ρ) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19.7 | +1.0 | 19 | 44 | 280 | + .15 | O = | +17.71 | +.00 | +17.71 | − .03 | +.03 | +17.68 | 17.71 |
| 20.1 | .6 | 20 | 4 | 287 | − .02 | | +17.74 | +.01 | 17.73 | + .00 | .02 | .73 | .75 |
| 20.1 | 6 | 20 | 9 | 288 | + 1.05 | | +17.91 | +.04 | 17.87 | − .20 | .02 | .67 | .69 |
| 20.3 | 4 | 20 | 17 | 289 | + .83 | | +17.90 | +.04 | 17.86 | − .16 | .01 | .70 | .71 |
| 20.5 | 2 | 20 | 27 | 290 | + .19 | | +17.75 | +.05 | 17.70 | − .04 | +.01 | .66 | .67 |
| 20.2 2 20.6 | +.1 | 20 | 37 | 294 | + 1.00 | | +17.91 | +.05 | 17.86 | − .19 | .00 | .67 | .67 |
| 20.7 | 0 | 20 | 40 | 296 | + .28 | | +17.87 | +.14 | 17.73 | − .05 | .00 | .68 | .68 |
| 20.7 | 0 | 20 | 42 | 505 | + 1.55 | | +18.15 | +.16 | 17.99 | − .29 | .00 | .70 | .70 |
| 20.8 | −1 | 20 | 49 | 507 | + .52 | | +17.80 | +.05 | 17.75 | − ~~.29~~ 10 | .00 | .65 | .65 |
| 21.1 | 4 | 21 | 9 | 306 | + .77 | | +17.90 | +.05 | 17.85 | − ~~.34~~ 15 | −.01 | .70 | .69 |
| 21.9 | 1.2 | 21 | 54 | 519 | + .22 | | +17.80 | +.00 | 17.80 | − .04 | .03 | .76 | .73 |
| 21.20 22.0 | −1.3 | 21 | 59 | 311 | − .02 | | +17.81 | +.02 | 17.79 | + .00 | −.04 | .79 | .75 |
| 2×71 0 | | | | | | | | | | | | 17.713 17.699 | 17.700 |

17.685

| Ra h | m | δ | tang. δ | | T-Ra | ρ'−ρ | T-Ra −(ρ'−ρ) |
|---|---|---|---|---|---|---|---|
| 19 | 48 | 282 | + 2.75 | O = | +18.41 | +.05 | +18.36 |
| 19 | 52 | | + ~~53.56~~ | | +28.37 | ~~+1.62~~ −1.67 −.95 | ~~30.07~~ +29.32 |
| 20 | 3 | 406 | − 4.05 | | +17.11 | −.16 | 17.27 |
| 20 | 13 | 502 | + 4.45 | | +18.77 | +.15 | 18.62 |
| 20 | 25 | 410 | − 3.50 | | +16.84 | −.09 | 16.93 |
| 20 | 53 | 509 | + 5.72 | | +18.80 | +.06 | 18.74 |
| 21 | 8 | 510 | + 4.55 | | +18.38 | −.14 | 18.52 |
| 21 | 15 | 306 | + 1.89 | | +18.05 | +.01 | 18.04 |
| 22 | 7 | 521 | + 3.02 | | +18.26 | +.00 | 18.26 |

| | | s | | | | | I | | II |
|---|---|---|---|---|---|---|---|---|---|
| 197 | +.15 | +17.71 | 19.8 | +2.75 | +18.36 | +.00 | +18.36 | +.01 | +18.37 |
| 201 | −.02 | +17.73 | 19.9 | +53.58 | ~~+30.04~~ +29.32 | +.02 | +30.06 | +.01 | +30.05 |
| 205 | +.19 | +17.70 | 20.2 | +4.45 | +18.62 | +.01 | +18.63 | +.01 | +18.63 |
| 207 | +.28 | +17.73 | 20.9 | +5.72 | +18.74 | −.00 | +18.74 | −.01 | +18.73 |
| 219 | +.22 | +17.80 | 21.1 | +4.55 | +18.52 | −.01 | +18.51 | −.01 | +18.51 |
| 220 | −.02 | +17.79 | 21.2 | +1.89 | +18.04 | −.01 | +18.03 | −.01 | +18.03 |
| 20.8 | +.13 | +17.74 | 22.1 | +3.02 | +18.26 | −.01 | +18.25 | −.03 | +18.23 |

| | | | I s | | II s |
|---|---|---|---|---|---|
| 20.1 | −4.05 | +17.27 | +.01 +17.28 | | +.01 +17.28 |
| 20.4 | −3.50 | +16.93 | +.01 +16.94 | | +.00 +16.93 |

O = −4.18 −.46 n = −.11
−3.63 −.80 −.22 −.165

O = −5.25 −.63 n = −.12
−4.70 −.98 .21 −165

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| O = | +2.62 | +.62 | n = −.24 | O = | +1.55 | + .46 | n = −.30 |
| | +53.45 | +12.32 −.72 | .232 | | +52.38 | +12.14 −.72 | .232 |
| | +4.32 | +.89 | .21 | | +3.25 | + .72 | .22 |
| | +5.59 | +1.00 | .18 | | +4.52 | + .82 | .18 |
| | +4.42 | +.77 | .17 | | +3.35 | + .60 | .18 |
| | +1.76 | +.27 | .16 | | +.69 | + .12 | .17 |
| | +2.89 | +.51 | .18 | | +1.82 | + .32 | 18.7318 |

| | | |
|---|---|---|
| 20.8 | +1.05 | +17.87 |
| 20.6 | +1.00 | +17.86 |
| 20.7 | +1.55 | +17.99 |
| 20.5 | +1.20 | +17.91 n = −16 −.01 |

1873 Oct 22 Ware h = +0.024 +0.017 n = −.18 c = .00 h = +.016 .196 .194

| Star | | Ra h | m | δ | tang. δ | | T-Ra | ρ'−ρ | T-Ra −(ρ'−ρ) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | 18.185 | −.193 .192 |
| 19.3 | +23 | 19 | 19 | 274 | + .05 | O = | +18.20 | +.03 | +18.17 | | +.04 | +18.16 | 18.20 |
| 19.4 | 22 | 19 | 25 | 275 | + .53 | | +18.26 | +.01 | 18.25 | − .10 | .04 | .15 | .19 |
| 19.4 | 22 | 19 | 26 | 276 | + 1.25 | | +18.41 | +.07 | 18.34 | − .22 | .04 | .12 | .16 |
| 19.6 | 2.0 | 19 | 39 | 499 | + .75 | | +18.40 | +.05 | 18.35 | − .14 | .03 | .21 | .24 |
| 20.8 | 0.8 | 20 | 49 | 507 | + .52 | | +18.40 | +.05 | +18.35 | − .09 | .01 | .26 | .27 |
| [21.0] | 8 | 21 | 1 | 302 | + .78 | | −18.47 | +.04 | −18.51 | − .14 | | .37] | |
| 19.93 21.1 | +.5 | 21 | 9 | 305 | + .77 | | +18.40 | +.05 | +18.35 | − .14 | +.01 | .21 | .22 |
| 22.4 | −8 | 22 | 26 | 319 | + 1.18 | | +18.50 | +.15 | 18.35 | − .21 | −.01 | .14 | .13 |
| 22.6 | 1.0 | 22 | 37 | 322 | + .57 | | +18.34 | +.01 | 18.33 | − .10 | .02 | .23 | .21 |
| 22.6 | 1.0 | 22 | 38 | 528 | + .87 | | +18.44 | +.03 | 18.41 | − .16 | .02 | .25 | .23 |
| 22.7 | 1.1 | 22 | 40 | 323 | + .42 | | +18.35 | +.05 | 18.30 | − .08 | .02 | .22 | .20 |
| 22.9 | 1.3 | 22 | 56 | 327 | + .89 | | +18.42 | +.04 | 18.38 | − .16 | .02 | .22 | .20 |
| 23.0 | 1.4 | 22 | 58 | 329 | + .26 | | +18.33 | +.00 | 18.33 | − .05 | .02 | .28 | .26 |
| 23.1 | 1.5 | 23 | 7 | 530 | + 1.51 | | +18.51 | +.07 | 18.44 | − .27 | .02 | .17 | .15 |
| 22.81 23.2 | −16 | 23 | 10 | 330 | + .05 | | +18.39 | +.03 | 18.36 | − .01 | −.03 | 18.35 | .32 |
| 21.61 58 | | | | | | | | | | | | 18.232 18.212 | 18.213 |

| Ra h | m | δ | tang. δ | | T-Ra | ρ'−ρ | T-Ra −(ρ'−ρ) |
|---|---|---|---|---|---|---|---|
| 19 | 18 | 273 | + 3.29 | | +18.35 | +.09 | +18.26 |
| 19 | 39 | 497 | + 5.32 | O = | +19.14 | +.09 | 19.05 |
| 19 | 48 | 282 | + 2.75 | | +18.90 | +.05 | 18.85 |
| 19 | 52 | | + ~~53.56~~ | | +26.18 | ~~−1.67 −.95 1.62~~ | ~~24.85~~ 13 |
| 20 | 53 | 509 | + 5.72 | | +19.41 | +.06 | 19.35 |
| 21 | 8 | 510 | + 4.55 | | +19.07 | −.14 | 19.21 |
| 21 | 15 | 306 | + 1.89 | | +18.61 | +.01 | 18.60 |
| 22 | 32 | 525 | + 3.27 | | +18.76 | +.15 | 18.61 |
| 22 | 45 | 325 | + 2.20 | | +18.73 | +.08 | 18.65 |
| 22 | 49 | 433 | − 4.89 | | +17.29 | −.22 | 17.51 |
| 23 | 3 | 529 | + 3.66 | | +18.90 | +.01 | 18.89 |

| | | | | | | I | | II |
|---|---|---|---|---|---|---|---|---|
| 193 | +.05 | +18.17 | 19.3 | +3.29 | +18.26 | +.06 +18.32 | +.06 | +18.32 |
| 208 | +.52 | +18.35 | 19.6 | +5.32 | +19.05 | +.06 +19.11 | +.05 | +19.10 |
| 226 | +.57 | +18.33 | 19.8 | +2.75 | +18.85 | +.05 +18.90 | +.04 | +18.89 |
| 227 | +.42 | +18.30 | 19.9 | +53.58 | +27.85 | +.05 +27.90 | +.04 | +27.89 |
| 229 | +.26 | +18.33 | 20.9 | +5.72 | +19.35 | +.02 +19.37 | +.02 | +19.37 |
| 23.2 | +.05 | +18.36 | 21.1 | +4.55 | +19.21 | +.02 +19.23 | +.01 | +19.22 |
| 21.9 | +.31 | +18.31 | 21.2 | +1.89 | +18.60 | +.02 +18.62 | +.01 | +18.61 |
| | | | 22.5 | +3.27 | +18.61 | −.01 +18.60 | −.02 | +18.59 |
| | | | 22.8 | +2.20 | +18.65 | −.02 +18.63 | −.03 | +18.62 |
| | | | 23.1 | +3.66 | +18.89 | −.03 +18.86 | −.04 | +18.85 |

| | | I | | II |
|---|---|---|---|---|
| 22.8 | −4.89 +17.51 | −.02 +17.49 | | −.03 +17.48 |

O = −5.20 − .82 n = −.16

O = −6.20 − ~~1.56~~ 0.97 n = −.16 ~~−.25~~

| | | |
|---|---|---|
| 194 | +1.25 | +18.34 |
| 224 | +1.18 | +18.35 |
| 23.1 | +1.51 | + ~~20.44~~ 18.65 |
| 21.6 | +1.31 | + ~~19.04~~ +18.45 |

n = −.14 −.01

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| O = | +2.98 | +.01 | n = −.00 | O = | +1.98 | −.78 | n = +.07 |
| | +5.01 | +.80 | −.16 | | +4.01 | +.65 | −.16 |
| | +2.44 | +.59 | −.24 | | +1.44 | +.44 | −.31 |
| | +53.27 | +9.59 −.72 | .187 | | +52.27 | +9.44 −.72 | −.187 |
| | +5.41 | +1.06 | .19 | | +4.41 | +.92 | −.21 |
| | +4.24 | +.92 | .21 | | +3.24 | +.77 | −.24 |
| | +1.58 | +.31 | .20 | | +.58 | +.16 | −.28 |
| | +2.96 | +.29 | .10 | | +1.96 | +.14 | −.07 |
| | +1.89 | +.32 | .17 | | +.89 | +.17 | −.19 |
| | +3.35 | +.55 | .16 | | +2.35 | +.40 | −.17 |
| | | | −.16×0 | | | | −.17×3 |

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h m | sin z cos n | | tan δ | | Rq-Rfc ' " | ρ'-ρ | Rq-Rfc+(ρ'-ρ) " | Rfc. Rq. |
|---|---|---|---|---|---|---|---|---|
| 19 44 | +.56 | .82+ | .15 | -1 | -- | +0.0 | | |
| 20 4 | +.69 | .72- | .02 | | 21.8 | -0.2 | -22.0+17 | 20.3 |
| 20 9 | -.07 | 1.00+ | 1.05 | | 18.6 | +0.5 | 18.1-0.3 | 18.4 |
| 20 17 | +.04 | 1.00+ | .83 | | 19.9 | -0.2 | 20.1+0.2 | 19.9 |
| 20 27 | +.52 | .85+ | .19 | | ~~16.4~~ | +0.2 | | |
| 20 37 | -.04 | 1.00+ | 1.00 | -2 | 18.3 | +0.0 | 18.3-0.1 | 18.4 |
| 20 40 | +.45 | .89+ | .28 | | 22.5 | -0.2 | 22.7+1.1 | 21.6 |
| 20 42 | -.25 | .97+ | 1.55 | | 19.3 | +0.2 | 19.1-0.6 | 19.7 |
| 20 49 | +.26 | .96+ | .52 | | 19.4 | +0.1 | 19.6+0.6 | 19.0 |
| 21 9 | +.09 | 1.00+ | .77 | | 21.5 | +0.7 | 20.8+0.3 | 20.5 |
| 21 54 | +.50 | .86+ | .22 | | 21.4 | -0.4 | 21.8+1.2 | 20.6 |
| 21 59 | +.69 | .72- | .02 | | 21.5 | -0.1 | 21.6+1.7 | 19.9 |
| | | | | | | | | 19.63 19.83 |

| RA h m | sin z cos n | | tan δ | | Rq-Rfc ' " | ρ'-ρ+(ρ'-ρ) " | Rq-Rfc | Rfc. Req. |
|---|---|---|---|---|---|---|---|---|
| 19 48 | -.46 | .88+ | 2.75 | -2 | -- | +0.8 | | |
| 19 52 | -.73 | .68+ | 5.58 | | -- | ~~-0.4~~ +.6 | | |
| 20 3 | -.88 | .46- | 4.05 | | 15.7 | +1.4 | 16.1 ~~14.3~~ -2.3 | 17.4 √ |
| 20 13 | -.57 | .82+ | 4.45 | | 18.6 | +0.5 | 18.1-1.4 | 19.5 |
| 20 25 | -.89 | .45- | 3.50 | | 16.4 | +0.9 | 17.3 ~~15.5~~ -2.4 | 19.7 √ |
| 20 53 | -.61 | .79+ | 5.72 | | 18.3 | +0.4 | 17.9-1.5 | 19.4 |
| 21 8 | -.58 | .81+ | 4.55 | | 18.7 | +0.9 | 17.8-1.4 | 19.2 |
| 21 15 | -.34 | .94+ | 1.89 | | 19.6 | +1.1 | 18.5-0.8 | 19.3 |
| 22 7 | -.49 | .87+ | 3.02 | | 18.2 | +0.9 | 17.3-1.2 | 18.5 |
| | | | | | | | | 19.18<br>19.18 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-.100 |
|---|---|---|---|---|---|---|---|---|---|
| 9 567 | +.69 -22.0 | +.50 -21.8 | +.26 -19.6 | +.04 -20.1 | -.07 -18.1 | -.25 -19.1 | -.49 -17.3 | -.61 -17.9 | -.88 -14.3 |
| 5 90 | +.69 -21.6 | +.45 -22.7 | | +.09 -20.8 | -.04 -18.3 | -.34 -18.5 | -.57 -18.1 | | -.89 -15.5 |
| 657 | | | | | | | -.58 -17.8 | | |
| | +69 -21.8 | +.47 -22.2 | +26 -19.6 | +06 -20.4 | -.06 -18.2 | -.29 -18.8 | -.55 -17.7 | -.61 -17.9 | -.88 -14.9 |
| | +1.6 | +1.1 | +.6 | +.2 | -.1 | -.7 | -1.3 | -1.4 | |
| ' " | 20.2 | 21.1 | 19.0 | 20.2 | 18.3 | 19.5 | 19.0 | 19.3 | |
| -1 19.59 (15) | +.8 $^{2}$ | +1.5 $^{2}$ | -.6 $^{1}$ | +.6 $^{2}$ | 1.3 $^{2}$ | -.1 $^{7}$ | -.6 $^{3}$ | -.3 $^{1}$ | |
| 19.47 | | | | | | | | | |

| RA h m | sin z cos n | | tan δ | | Rq-Rfc ' " | | ρ'-ρ | Rq-Rfc+(ρ'-ρ) | Rfc. Rq. |
|---|---|---|---|---|---|---|---|---|---|
| 19 19 | +.64 | .76+ | .05 | -1 | -- | | -0.5 | | |
| 19 25 | +.25 | .97+ | .53 | | -- | | -0.5 | | |
| 19 26 | -.16 | .99+ | 1.25 | | -- | | +0.6 | | |
| 19 39 | +.09 | 1.00+ | .75 | | -- | | +0.2 | | |
| 20 49 | +.26 | .96+ | .52 | | -- | | +0.1 | | |
| 21 1 | +.07 | 1.00+ | .78 | | -- | | +0.1 | | |
| 21 9 | +.09 | 1.00+ | .77 | | 20.4 | | +0.7 | -19.7+0.3 | -19.4 |
| 22 26 | -.13 | .99+ | 1.18 | | 21.0 | | +0.6 | -20.4-0.4 | 20.8 |
| 22 37 | +.22 | .97+ | .57 | | 19.6 | | -0.2 | 19.8+0.6 | 19.2 |
| 22 38 | +.02 | 1.00+ | .87 | | 19.7 | | -0.8 | 20.5+0.1 | 20.4 |
| 22 40 | +.33 | .94+ | .42 | | 20.1 | | +0.0 | 20.1+0.8 | 19.3 |
| 22 56 | +.01 | 1.00+ | .89 | | 20.6 | | +0.5 | 20.1+0.1 | 20.0 |
| 22 58 | +.47 | .88+ | .26 | | 19.4 | | -0.6 | 20.0+1.2 | 18.8 |
| 23 7 | -.24 | .97+ | 1.51 | | 22.5 7 | | +0.9 | 21.8-0.6 | 22.4 5+ |
| 23 10 | +.64 | .76+ | .05 | | 21.4 | | -0.2 | 21.6+1.6 | 20.0 |
| | | | | | | | | | 19.74 20.03 |

| RA h m | sin z cos n | | tan δ | | Rq-Rfc | ρ'-ρ | Rq-Rfc+(ρ'-ρ) | Rfc. Req. |
|---|---|---|---|---|---|---|---|---|
| 19 18 | -.51 | 86+ | 3.29 | + | -4- | +0.2 | | |
| 19 29 | -.60 | .80+ | 5.32 | 1= | -- | -0.5 | | |
| 19 48 | -.46 | .88+ | 2.75 | | -- | +0.8 | | |
| 19 52 | -.73 | .68+ | ~~5.57~~ | | -- | ~~-0.4~~ +.6 | | |
| 20 53 | -.61 | .79+ | 5.72 | | -- | +0.4 | | |
| 21 8 | -.58 | .81+ | 4.55 | 2 | 18.4 | +0.9 | -17.5-1.4 | -18.9 |
| 21 15 | -.34 | .94+ | 1.89 | | 20.4 | +1.1 | 19.3-0.8 | 20.1 |
| 22 32 | -.57 | .86+ | 3.24 | | 17.8 | +0.8 | 17.0-1.3 | 18.3 |
| 22 45 | -.39 | .92+ | 2.20 | | 19.6 | +0.9 | 18.7-1.0 | 19.7 |
| 22 49 | -.86 | .50- | 4.80 | | 16.9 | +0.7 | 17.6 ~~16.2~~ -2.3 | 19.9 √ |
| 23 3 | -.53 | .84+ | 3.66 | | 16.8 | +0.6 | 16.2-1.3 | 17.5 |
| | | | | | | | | 18.90<br>18.90 |

| | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-.100 |
|---|---|---|---|---|---|---|---|---|---|
| | +.64 -21.6 | +.47 -20.0 | +.22 -19.8 | +.09 -19.7 | -.13 -20.4 | -.24 -21.8 | -.58 -17.5 | -.5 | -.86 -16.2 |
| | | | +.33 -20.1 | +.02 -20.5 | ~~-.24~~ | -.34 -19.3 | -.51 -17.0 | | |
| 8 $92 | | | | +.01 -20.1 | | -.39 -18.7 | -.53 -16.2 | | |
| 5 450 | | | | | | | | | |
| 542 | +64 -21.6 | +47 -20.0 | +27 -19.9 | +04 -20.1 | -13 -20.4 | -32 -19.9 | -54 -16.9 | | -86 -16.2 |
| | +1.5 | +1.1 | +.6 | +.1 | -.3 | -.8 | -1.3 | | |
| 64 ' " | 20.1 | 18.9 | 19.3 | 20.0 | 20.7 | 20.7 | 18.2 | | |
| -1 ~~19.71~~ (14) | +.5 $^{1}$ | -.7 $^{1}$ | -.3 $^{2}$ | +.4 $^{3}$ | +1.1 $^{1}$ | +1.1 $^{3}$ | -1.4 $^{3}$ | | |
| 19.42 | | | | | | | | | |

1873 Oct.23 ware √ h = +.026 +.025 +.000 n = -.07 c = -.10 h = ~~-.010~~

| Star |  | Ra h | m |  |  | tang. δ | sec δ | πRa s | ρ'ρ | πRa-(ρ'ρ) s |  |  |  | 18.813 |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19.6 | +4 | 19 | 39 | 499 | + | .75 | +1.25 | +18.99 | +.05 | +18.94 | -.05 | +01 | -.12 | +18.77 | 18.78 |
| 19.7 | 3 | 19 | 40 | 278 | + | .99 | +1.40 | +19.08 | +.08 | 19.00 | -.07 | +01 | -.14 | .79 | .80 |
| 19.67 19.7 | +3 | 19 | 44 | 280 | + | .15 | +1.01 | +18.99 | +.00 | 18.99 | -.01 | +01 | -.10 | .88 | .89 |
| 20.1 | -1 | 20 | 2 | 287 | - | .02 | +1.00 | +18.88 | +.01 | 18.87 | +.00 | 00 | -.10 | .77 | .77 |
| 20.1 | 1 | 20 | 9 | 288 | + | 1.05 | +1.45 | +19.01 | +.04 | 18.97 | -.10 | 00 | -.14 | .73 | .73 |
| 20.3 | 3 | 20 | 17 | 289 | + | .83 | +1.30 | +18.97 | +.04 | 18.93 | -.06 | -01 | -.13 | .74 | .73 |
| 20.25 20.5 | -5 | 20 | 27 | 290 | + | .19 | +1.02 | +18.94 | +.05 | 18.89 | -.01 | -01 | -.10 | .78 | .77 |
| 20.0 |  |  |  |  |  |  |  |  |  |  |  |  |  | 18.755<br>18.780 |  |

1873 Oct.23 ware

| Star Ra h | m |  | δ tang. | πRa s | ρ'ρ | πRa-(ρ'ρ) s |
|---|---|---|---|---|---|---|
| 19 | 44 | 401 | -3.55 | 0 = +18.81 | +.37 | +18.44 |
| 19 | 48 | 282 | +2.75 | +19.36 | +.05 | 19.31 |
| 19 | 52 | 284 | +53.58 | +26.47 | ~~-1.62~~ -.14 | ~~26.44~~ 27.41 |
| 20 | 3 | 406 | -4.05 | +17.99 | -.16 | 18.15 |
| 20 | 13 | 502 | +4.45 | +19.62 | +.15 | 19.47 |
| 20 | 25 | 410 | -3.50 | +18.19 | -.09 | 18.28 |
| 20 | 33 | 504 | +3.61 | +19.73 | +.10 | 19.63 |

18.781

19.7 +.15 +18.99
20.1 -.02 +18.87
20.5 +.19 +18.89
20.1 +.11 +18.92 -1

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 19.8 | +2.75 | +19.31 | +.01 | +19.32 | +.00 | +19.31 |
| 19.9 | +53.58 | ~~+28.14~~ +27.41 | +.01 | +28.15 | +.00 | +28.14 |
| 20.2 | +4.45 | +19.47 | -.02 | +19.45 | -.01 | +19.46 |
| 20.6 | +3.61 | +19.63 | -.01 | +19.62 | -.02 | +19.61 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 19.7 | -3.55 | +18.44 | +.01 | +18.45 | +.01 | +18.45 |
| 20.1 | -4.05 | +18.15 | +.00 | +18.15 | -.01 | +18.14 |
| 20.4 | -3.50 | +18.28 | -.01 | +18.27 | -.01 | +18.27 |

19.7 +.99 +19.00
20.1 +1.05 +18.97
19.9 +1.02 +18.98

0 = +2.64 +.40 n = -.15
+53.47 +9.23 -.73 -.176
+4.34 +.53 -.12
+3.50 +.70 -.20
-.160 58

0 = -3.46 -.47 n = -.13
-4.16 -.77 .19
-3.61 -.65 .18
-.164

n = -.07 -.01

0 = +1.73 +.33 n = -.19
+52.56 +9.16 -.73 .176
+3.43 +.48 .14
+2.59 +.63 .24
.185 2

0 = -4.57 -.53 n = -.12
-5.07 -.84 .16
-4.52 -.71 .16
-.147

1873 Oct.28 ware √ h = +.021 +.038 n = -.02 c = -.10 h = ~~+.071~~ +.027

| Star |  | Ra h | m |  |  | tang. δ | sec δ | πRa s | ρ'ρ | πRa-(ρ'ρ) |  |  |  | 21.655 |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20.8 | +1.5 | 20 | 49 | 507 | + | 0.52 | +1.12 | +21.79 | +.05 | +21.74 | -.08 | +.04 | -.11 | +21.62 | 21.66 |
| 21.1 | 1.2 | 21 | 9 | 305 | + | .77 | +1.26 | +21.85 | +.05 | 21.80 | -.02 | .03 | -.13 | .65 | .68 |
| 21.5 | .8 | 21 | 31 | 514 | + | .83 | +1.30 | +21.89 | +.06 | 21.83 | -.02 | .02 | -.13 | .68 | .70 |
| 21.25 21.6 | +7 | 21 | 35 | 515 | + | 1.53 | +1.82 | +21.80 | -.08 | 21.88 | -.03 | +.02 | -.18 | .67 | .69 |
| 22.4 | -1 | 22 | 26 | 319 | + | 1.18 | +1.55 | +22.03 | +.15 | 21.88 | -.02 | .00 | -.16 | .70 | .70 |
| 22.6 | 3 | 22 | 37 | 322 | + | .57 | +1.15 | +21.85 | +.01 | 21.84 | -.01 | -.01 | -.12 | .71 | .70 |
| 22.7 | 4 | 22 | 40 | 323 | + | .42 | +1.09 | +21.90 | +.05 | 21.85 | -.01 | .01 | -.11 | .73 | .72 |
| 22.9 | 6 | 22 | 56 | 327 | + | .89 | +1.33 | +21.89 | +.04 | 21.85 | -.02 | .02 | -.13 | .70 | .68 |
| 23.0 | 7 | 22 | 58 | 329 | + | .26 | +1.03 | +21.82 | +.00 | 21.82 | -.01 | .02 | -.10 | .71 | .69 |
| 23.1 | 8 | 23 | 7 | 530 | + | 1.51 | +1.81 | +21.89 | +.07 | 21.82 | -.03 | .02 | -.18 | .61 | .59 |
| 22.84 23.2 | -9 | 23 | 10 | 330 | + | .05 | +1.00 | +21.85 | +.03 | 21.82 | -.00 | -.02 | -.10 | .72 | .70 |
| 22.35 |  |  |  |  |  |  |  |  |  |  |  |  |  | 21.697<br>21.682 |  |

| Ra h | m |  | δ tang. | πRa s | ρ'ρ | πRa-(ρ'ρ) |
|---|---|---|---|---|---|---|
| 20 | 53 | 509 | +5.72 | 0 = +22.28 | +.06 | +22.22 |
| 21 | 8 | 510 | +4.55 | +22.06 | -.14 | 22.20 |
| 21 | 23 | 418 | -2.81 | +21.39 | -.01 | 21.40 |
| 21 | 27 | 308 | +2.75 | +22.04 | +.08 | 21.96 |
| 22 | 24 | 150 | -4.13 | +21.11 | -.15 | 21.26 |
| 22 | 32 | 525 | +3.27 | +22.31 | +.15 | 22.16 |
| 22 | 45 | 325 | +2.20 | +22.12 | +.08 | 22.04 |
| 22 | 49 | 433 | -4.89 | +20.84 | -.22 | 21.06 |
| 23 | 3 | 529 | +3.66 | +22.24 | +.01 | 22.23 |

21.683

20.6 +.52 +21.74
22.6 +.57 +21.84
22.7 +.42 +21.85
22.9 +.26 +21.82
23.2 +.05 +21.82
22.4 +.36 +21.81

| | | | | I & II |
|---|---|---|---|---|
| 20.9 | +5.72 | +22.22 | +.02 | +22.24 |
| 21.1 | +4.55 | +22.20 | +.03 | +22.23 |
| 21.4 | +2.75 | +21.96 | +.02 | +21.98 |
| 22.5 | +3.27 | +22.16 | +.00 | +22.16 |
| 22.8 | +2.20 | +22.04 | -.01 | +22.03 |
| 23.1 | +3.66 | +22.23 | -.01 | +22.22 |

| | | | | I & II |
|---|---|---|---|---|
| 21.4 | -2.81 | +21.40 | +.02 | +21.42 |
| 22.4 | -4.13 | +21.26 | +.00 | +21.26 |
| 22.8 | -4.89 | +21.06 | -.01 | +21.05 |

21.6 +1.53 +21.88
22.4 +1.18 +21.88
23.1 +1.51 +21.82 n = -.05
22.4 +1.41 +21.86

0 = +5.36 +.43 n = -.08
+4.19 +.42 -.10
+2.39 +.17 -.07
+2.91 +.35 -.12
+1.84 +.22 -.12
+3.30 +.41 -.12
.102

0 = +4.31 +.38 n = -.09
+3.14 +.37 .12
+1.34 +.12 .09
+1.86 +.30 .16
+.79 +.17 .21
+2.25 +.36 .16
-.124

0 = -3.17 -.39 n = -.12
-4.49 -.55 .102
-5.25 -.74 .14
-.127

0 = -4.22 -.44 n = -.10
-5.54 -.60 .11
-6.30 -.81 .13
-.113

1873 Oct.29 ware h = +.009 +.020 n = -.04 c = .00 h = +~~.044~~

| Star |  | Ra h | m |  |  | tang. δ | πRa s | ρ'ρ | πRa-(ρ'ρ) |  |  | 22.200 |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22.7 | +5 | 22 | 40 | 323 | + | .42 | 0 = +22.26 | +.05 | +22.21 | -.02 | +01 | +22.19 | 22.20 |
| 22.9 | +3 | 22 | 56 | 327 | + | .89 | +22.26 | +.04 | 22.22 | -.04 | +01 | .18 | .19 |
| 22.87 23.0 | +2 | 22 | 58 | 329 | + | .26 | +22.24 | +.00 | 22.24 | -.01 | 00 | .23 | .23 |
| 23.1 | +1 | 23 | 7 | 530 | + | 1.51 | +22.32 | +.07 | 22.25 | -.06 |  | .19 | .19 |
| 23.2 | 0 | 23 | 10 | 330 | + | .05 | +22.29 | +.03 | 22.26 | -.00 |  | .26 | .26 |
| 23.3 | -1 | 23 | 19 | 532 | + | .42 | +22.21 | +.00 | 22.21 | -.02 | 00 | .19 | .19 |
| 23.37 23.9 | -7 | 23 | 52 | 336 | + | .11 | +22.30 | +.05 | 22.25 | -.00 | -.01 | .25 | .24 |
| 23.16 |  |  |  |  |  |  |  |  |  |  |  | 22.222<br>22.213 |  |

| Ra h | m |  | δ tang. | πRa s | ρ'ρ | πRa-(ρ'ρ) |
|---|---|---|---|---|---|---|
| 19 | 48 | 282 | +2.75 | 0 = +22.44 | +.05 | +22.39 |
| 22 | 45 | 325 | +2.20 | +22.38 | +.08 | 22.30 |
| 22 | 49 | 433 | -4.89 | +22.16 | -.22 | 22.38 |
| 23 | 3 | 529 | +3.66 | +22.46 | +.01 | 22.45 |
| 23 | 23 | 162 | -2.75 | +22.20 | +.13 | 22.07 |
| 23 | 34 | 334 | +4.31 | +22.41 | +.13 | 22.28 |
| 23 | 41 | 537 | +2.37 | +22.48 | +.11 | 22.37 |

22.214

22.7 +.42 +22.21
22.9 +.26 +22.24
23.2 +.05 +22.26
23.9 +.11 +22.25
23.2 +.21 +22.24

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 19.8 | +2.75 | +22.39 | +.02 | +22.41 | +.03 | +22.42 |
| 22.8 | +2.20 | +22.30 | +.00 | +22.30 | +.00 | +22.30 |
| 23.1 | +3.66 | +22.45 | +.00 | +22.45 | +.00 | +22.45 |
| 23.6 | +4.31 | +22.28 | +.00 | +22.28 | +.00 | +22.28 |
| 23.7 | +2.37 | +22.37 | +.00 | +22.37 | -.01 | +22.36 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 22.8 | -4.89 | +22.38 | +.00 | +22.38 | +.00 | +22.38 |
| 23.4 | -2.75 | +22.07 | +.00 | +22.07 | +.00 | +22.07 |

0 = -5.10 +.14 n = +.27 .03
-2.96 -.17 -.06
-.015

22.9 +.89 +22.22
23.1 +1.51 +22.25
23.0 +1.20 +22.23

n = +.01

0 = +2.54 +.17 n = -.07
+1.99 +.06 .03
+3.45 +.21 .06
+4.10 +.04 .01
+2.16 +.13 .06
-.046

0 = +1.55 +.19 n = -.12
+1.00 +.07 .07
+2.46 +.22 .08 9
+3.11 +.05 .02
+1.17 +.13 .11
-~~.082~~ .055

0 = -6.09 +.15 n = +.02
-3.95 -.16 -.04
-.010

| η = | +.60 +.80 | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.60 −.80 | −.80 −.100 |
|---|---|---|---|---|---|---|---|---|---|

| RA h | m | sin z cos | | tang δ | Rq − Rpe | '' | ρ'−ρ+(ρ'−ρ) |
|---|---|---|---|---|---|---|---|
| 19 | 39 | +.09 | 1.00+ | .75 | −1 | −− | +0.2 |
| 19 | 40 | −.04 | 1.00+ | .99 | | −− | +0.4 |
| 19 | 44 | +.56 | .82+ | .15 | | −− | −0.0 |
| 20 | 4 | +.69 | .72− | .02 | | −− | −0.2 |
| 20 | 9 | −.07 | 1.00+ | 1.05 | | −− | +0.5 |
| 20 | 17 | +.04 | 1.00+ | .83 | | −− | −0.2 |
| 20 | 27 | +.52 | .85+ | .19 | | −− | +0.2 |

| RA h | m | sin z cos | | tang δ | Rq − Rpe | '' | ρ'−ρ+(ρ'−ρ) |
|---|---|---|---|---|---|---|---|
| 19 | 44 | −.89 | .45− | 3.55 | −1 | −− | +0.6 |
| 19 | 48 | −.46 | .88+ | 2.75 | | −− | +0.8 +6 |
| 19 | 52 | −.73 | .68+ | 53.58 | | −− | −0.4 |
| 20 | 3 | −.88 | .46− | 4.65 | | −− | +1.4 |
| 20 | 13 | −.57 | .82+ | 4.45 | | −− | +0.5 |
| 20 | 25 | −.89 | .45− | 3.50 | | −− | +0.9 |
| 20 | 33 | −.53 | .84+ | 3.61 | | −− | +0.6 |

+.09

| RA h | m | sin z cos | | tang δ | | Rq − Rpe | Rpe | ρ'−ρ | Rq | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 49 | +.26 | .96+ | 0.52 | −2 | −2 | −− | +0.1 | | |
| 21 | 9 | +.09 | 1.00+ | .77 | | | −− | +0.7 | | |
| 21 | 31 | +.04 | 1.00+ | .83 | | | 20.7 | −0.6 | −21.3 +0.2 | −21.1 |
| 21 | 35 | −.25 | .97+ | 1.53 | | | 20.3 | +0.8 | 19.5 −0.6 | 20.1 |
| 22 | 26 | −.13 | .99+ | 1.18 | | | 21.2 | +0.6 | 21.0 −0.4 | 21.4 |
| 22 | 37 | +.22 | .97+ | .57 | | | 20.6 | −0.2 | 20.8 +0.6 | 20.2 |
| 22 | 40 | +.33 | .94+ | .42 | | | 20.5 | +0.0 | 20.5 +0.8 | 19.7 |
| 22 | 56 | +.01 | 1.00+ | .89 | | | 21.3 | +0.5 | 20.8 +0.1 | 20.7 |
| 22 | 58 | +.47 | .88+ | .26 | | | 20.9 | −0.6 | 21.5 +1.2 | 20.3 |
| 23 | 7 | −.24 | .97+ | 1.51 | 21.1 | | 21.3 | +0.9 | 20.4 −0.6 | 21.0 |
| 23 | 10 | +.64 | .76+ | .05 | | | 21.5 | −0.2 | 21.7 +1.6 | 20.1 |
| | | | | | | | | | | 20.51 20.51 |

| RA h | m | sin z cos | | tang δ | Rq − Rpe | Rpe | ρ'−ρ | Rq | | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 53 | −.61 | .79+ | 5.72 | −− | −− | +0.4 | | | |
| 21 | 8 | −.58 | .81+ | 4.55 | | −−− | +0.9 | | | |
| 21 | 23 | −.92 | .38− | 2.81 | | −− | +0.2 | | | |
| 21 | 27 | −.46 | .88+ | 2.75 | | −− | +1.1 | | | |
| 22 | 24 | −.88 | .46− | 4.13 | | 17.0 | +0.7 | 17.7 ~~16.3~~ | | |
| 22 | 32 | −.51 | .86+ | 3.27 | | 19.5 | +0.8 | 18.7 | −1.3 | −20.0 |
| 22 | 45 | −.39 | .92+ | 2.20 | | 20.3 | +0.9 | 19.4 | −1.0 | 20.4 |
| 22 | 49 | −.86 | .50− | 4.89 | | 17.7 | +0.7 | 18.4 ~~17.0~~ | −2.2 | 20.6 ✓ |
| 23 | 3 | −.53 | .84+ | 3.66 | 17.2 | 18.0 | +0.6 | 17.4 | −1.3 | 18.7 |
| | | | | | | | | | | 19.70<br>19.70 |

| | | +.60 +.80 | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.60 −.80 | −.80 −.100 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | +.64 −21.7 | +.47 −21.5 | +.22 −20.8 | +.04 −21.3 | −.13 −21.0 | −.25 −19.5 | −.51 −18.7 | | −.88 −16.3 |
| 9 | 459 | | | +.33 −20.5 | +.01 −20.8 | | −.24 −20.4 | −.53 −17.4 | | −.86 −17.0 |
| 3 | 210 | | | | | | −.39 −19.4 | | | |
| | 369 | +64 −21.7 | +47 −21.5 | +27 −20.6 | +02 −21.0 | −13 −21.0 | −29 −19.8 | −.52 −18.0 | | −.87 −16.6 |
| | | +1.0 | +1.1 | +.7 | +.1 | −.3 | −.7 | −1.2 | | |
| | | 20.7 | 20.4 | 19.9 | 20.9 | 21.3 | 20.5 | 19.2 | | |
| −2' | 20.32''<br>20.31 | (12) +.4 | +.1 | −.4 | +.6 | +1.0 | +.2 | −1.1 | | |

113

| RA h | m | sin z cos | | tang δ | | Rq − Rpe | Rpe | ρ'−ρ | Rq | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 40 | +.33 | .94+ | .42 | −2 | −2 | 21.3 | +0.0 | −21.3 +0.8 | −20.5 |
| 22 | 56 | +.01 | 1.00+ | .89 | | | 21.0 | +0.5 | 20.5 +0.1 | 20.4 |
| 22 | 58 | +.47 | .88+ | .26 | | | 20.5 | −0.6 | 21.1 +1.2 | 19.9 |
| 23 | 7 | −.24 | .97+ | 1.51 | 20.6 | | 20.8 | +0.9 | 19.9 −0.6 | 20.5 |
| 23 | 10 | +.64 | .76+ | .05 | | | 21.5 | −0.2 | 21.7 +1.6 | 20.1 |
| 23 | 19 | +.34 | .94+ | .42 | | | 20.9 | +0.2 | 20.7 +0.8 | 19.9 |
| 23 | 52 | +.59 | .80+ | .11 | 21.6 | | 21.6 | +0.2 | 21.4 +1.5 | 19.9 |
| | | | | | | | | | | 20.17 20.17 |

| RA h | m | sin z cos | | tang δ | Rq − Rpe | Rpe | ρ'−ρ | Rq | | Req |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 48 | −.46 | .88+ | 2.75 | −1 | −− | +0.8 | | | |
| 22 | 45 | −.39 | .92+ | 2.20 | | 20.0 | +0.9 | 19.1 | −1.0 | −20.1 |
| 22 | 49 | −.86 | .50− | 4.89 | | 18.0 | +0.7 | 18.7 ~~17.3~~ | −2.1 | −20.8 ✓ |
| 23 | 3 | −.53 | .84+ | 3.66 | 17.2 | ~~16.4~~ | +0.6 | 16.6 | −1.3 | 17.9 |
| 23 | 23 | −.92 | .38− | 2.75 | | 16.6 | +0.8 | 17.4 ~~15.8~~ | −2.2 | 19.6 ✓ |
| 23 | 34 | −.07 | 1.00+ | 4.31 | | 18.6 | +0.3 | 18.3 | −0.2 | 18.5 |
| 23 | 41 | −.42 | .94+ | 2.37 | | 19.0 4 | +0.4 | 19.0 | −1.0 | 20.0 |
| | | | | | | | | | | 19.12<br>19.12 |

| | | +.60 +.80 | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.60 −.80 | −.80 −.100 |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 819 | | | | | | | | | |
| 4 | 48 | +.64 −21.7 | +.47 −21.1 | +.33 −21.3 | +.01 −20.5 | −.07 −18.3 | −.24 −19.9 | −.53 −16.6 | | −.86 −17.3 |
| | 867 | | +59 −21.4 | +.34 −20.7 | | | −.39 −19.1 | −.42 −19.0 | | −.92 −15.8 |
| | | +64 −21.7 | +53 −21.2 | +33 −21.0 | +01 −20.5 | −07 −18.3 | −31 −19.5 | −47 −17.8 | | −.89 −16.5 |
| | | +1.5 | +1.3 | +.8 | +.0 | −.2 | −.7 | −1.1 | | |
| | | 20.2 | 19.9 | 20.2 | 20.5 | 18.5 | 20.2 | 18.9 | | |
| −2' | 19.78''<br>19.79 | (11) +.4 | +.1 | +.4 | +.7 | −1.3 | +.4 | −.9 | | |

1872phae.proj.1689.

1873 Nov. 1 Ware h = +.000 −.005 n = −.03 c = .00 h = +.006

| | Star | | Ra h m | δ | tang. δ | π Ra s | P'−P | π Ra −(P'−P) s | | 22.077 ~~21.078~~ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 20.1 | +1.3 | 20 4 | 287 | − .02 | 0 = +21.99 | +.01 | +21.98 | + .00 +.01 | +21.98 | 21.99 |
| | 20.1 | 1.3 | 20 9 | 288 | + 1.05 | +22.18 | +.04 | 22.14 | − 03 +01 | 22.11 | 2.12 |
| | 20.2 | 12 | 20 11 | 501 | + .45 | +22.09 | −.01 | 22.10 | − 01 +01 | .09 | .10 |
| | 20.3 | 1.1 | 20 17 | 289 | + .83 | +22.06 | +.04 | 22.02 | − 02 +01 | 00 | .01 |
| | 20.5 | 9 | 20 27 | 290 | + .19 | +22.18 | +.05 | 22.13 | − 07 + 01 | 12 | .13 |
| | 20.6 | 8 | 20 37 | 294 | + 1.00 | +22.24 | +.05 | 22.19 | − 03 00 | 16 | .16 |
| | 20.7 | 7 | 20 40 | 296 | + .28 | +22.25 | +.14 | 22.11 | − 01 | 10 | .10 |
| | 20.7 | 7 | 20 42 | 505 | + 1.55 | +22.32 | +.16 | 22.16 | − 05 | 11 | .11 |
| 2044 | 20.8 | 6 | 20 49 | 507 | + .52 | +22.10 | +.05 | 22.05 | − 02 | 03 | .03 |
| | 21.0 | +4 | 21 1 | 302 | + .78 | +22.14 | +.04 | 22.10 | − 02 | 08 | .08 |
| | 21.9 | −5 | 21 54 | 519 | + .22 | +22.10 | +.00 | 22.10 | − 01 | 09 | .09 |
| | 22.0 | 6 | 21 59 | 311 | − .02 | +22.11 | +.02 | 22.09 | + 00 00 | 09 | .09 |
| | 23.1 | 1.7 | 23 7 | 530 | + 1.51 | +22.17 | +.07 | 22.10 | − 04 −01 | 06 | .05 |
| | 23.2 | 18 | 23 10 | 330 | + .05 | +22.13 | +.03 | 22.10 | − 00 −01 | 10 | .09 |
| | 23.3 | 19 | 23 19 | 532 | + .42 | +22.10 | +.00 | 22.10 | − 01 −01 | 09 | .08 |
| 22,57 | 23.5 | 2.1 | 23 31 | 331 | + 1.03 | +22.06 | −.01 | 22.07 | − 03 −01 | 04 +.08 | .11 |
| | 21.38 | | | | | | | | | 22.079 | |

1873 Nov. 1 Ware

| Star | Ra h m | δ | tang. δ | π Ra s | P'−P | π Ra −(P'−P) s |
|---|---|---|---|---|---|---|
| | 20 3 | 406 | − 4.05 | 0 = +21.86 | −.16 | +22.02 |
| | 20 13 | 502 | + 4.45 | +22.39 | +.15 | 22.24 |
| | 20 33 | 504 | + 3.61 | +22.43 | +.10 | 22.33 |
| | 20 53 | 509 | + 5.72 | +22.12 | +.06 | 22.06 |
| | 23 3 | 529 | + 3.66 | +22.24 | +.01 | 22.23 |
| | 23 23 | 162 | − 2.75 | +22.18 | +.13 | 22.05 |
| | 23 34 | 334 | + 4.31 | +22.45 | +.13 | 22.32 |

22.090
22.089³
22.084

20.1 −.02 +21.98
20.4 +.19 +22.13
20.7 +.28 +22.11
21.9 +.22 +22.10
22.0 −.02 +22.09
23.2 +.05 +22.10
21.4 +.12 +22.08

I & II
20.2 +4.45 +22.24 +.00 +22.24
20.5 +3.61 +22.33 +.00 +22.33
20.9 +5.72 +22.06 +.00 +22.06
23.1 +3.66 +22.23 +.00 +22.23
23.6 +4.31 +22.32 +.00 +22.32

I & II
20.1 −4.05 +22.02 +.00 +22.02
23.4 −2.75 +22.05 +.00 +22.05

0 = −4.17 −.06 n = −.01
−2.87 −.03 −.01
−.010

0 = +4.33 +.16 n = −.04
+3.49 +.25 −.07
+5.60 −.02 +.00
+3.54 +.15 −.06⁴
+4.19 +.24 −.06
−.042

0 = +3.22 +.11 n = −.03
+2.38 +.20 −.08
+4.49 −.07 +.02
+2.43 +.10 −.04
+3.08 +.19 −.06
−.038

0 = −5.28 −.11 n = −.02
−3.98 −.08 .02
−.020

20.1 +1.05 +22.14
20.6 +1.00 +22.19
20.7 +1.55 +22.16
23.1 +1.51 +22.10 n = −.04
23.5 +1.03 +22.07
21.6 +1.23 +22.13

h = −.002 −.012 n = +.03 c = .00 h = −.006

1873 Nov. 2 Ware

| | Star | | Ra h m | δ | tang. δ | π Ra s | P'−P | π Ra −(P'−P) | | +22.073 ~~+22.733~~ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ware | +1.7 | 19 25 | 275 | + .53 | 0 = +22.10 | +.01 | +22.09 | + 02 −.01 | 22.11 | 22.10 |
| | 19.4 | 1.7 | 19 26 | 276 | + 1.25 | +22.10 | +.07 | 22.03 | + 04 −.01 | .07 | .06 |
| | 19.4 | 1.5 | 19 33 | 498 | + 1.19 | +22.14 | +.07 | 22.07 | + 04 −.01 | .11 | .10 |
| | 19.6 | 15 | 19 36 | 499 | + .75 | +22.13 | +.05 | 22.08 | + 02 −.01 | .10 | .09 |
| | 19.7 | 14 | 19 40 | 278 | + .99 | +22.19 | +.08 | 22.11 | + 03 −.01 | .11 | .10 |
| | 19.7 | 1.4 | 19 44 | 280 | + .15 | +22.08 | +.00 | 22.08 | + 00 −.01 | .08 | .07 |
| | 20.1 | 1.0 | 20 4 | 287 | − .02 | +22.12 | +.01 | 22.11 | − 00 −.01 | .11 | .10 |
| | 20.2 | 9 | 20 11 | 501 | + .45 | +22.05 | −.01 | 22.06 | + 01 −.01 | .07 | .06 |
| | 20.3 | 8 | 20 17 | 289 | + .83 | +22.04 | +.04 | 22.00 | + 02 00 | .02 | .02 |
| | 20.5 | 6 | 20 27 | 290 | + .19 | +22.09 | +.05 | 22.04 | + 01 | .05 | .05 |
| | 20.6 | 5 | 20 37 | 294 | + 1.00 | +22.12 | +.05 | 22.07 | + 03 | .10 | .10 |
| | 20.7 | 4 | 20 40 | 296 | + .28 | +22.17 | +.14 | 22.03 | + 01 | .04 | .04 |
| | 20.7 | 4 | 20 42 | 505 | + 1.55 | +22.12 | +.16 | 21.96 | + 05 | .01 | .01 |
| | 20.8 | 3 | 20 49 | 507 | + .52 | +22.05 | +.05 | 22.00 | + 02 | .02 | .02 |
| 20,15 | 21.0 | +1 | 21 1 | 302 | + .78 | +22.12 | +.04 | 22.08 | + 02 | .10 | .10 |
| | 21.5 | −4 | 21 31 | 514 | + .83 | +22.10 | +.06 | 22.04 | + 02 | .06 | .06 |
| | 21.6 | 5 | 21 35 | 515 | + 1.53 | +21.93 | −.08 | 22.01 | + 05 | .06 | .06 |
| | 21.7 | 6 | 21 42 | 517 | + 1.14 | +22.05 | +.04 | 22.01 | + 03 | .04 | .04 |
| | 21.9 | 8 | 21 54 | 519 | + .22 | +22.02 | +.00 | 22.02 | + 01 00 | .03 | .03 |
| | 22.0 | 9 | 21 59 | 311 | − .02 | +22.09 | +.02 | 22.07 | − 00 +.01 | .07 | .08 |
| | 23.1 | 2.0 | 23 7 | 530 | + 1.51 | +22.05 | +.07 | 21.98 | + 05 +.01 | .03 | .09 |
| | 23.2 | 2.1 | 23 10 | 330 | + .05 | +22.11 | +.03 | 22.08 | + 00 +.01 | .08 | .09 |
| | 23.3 | 2.2 | 23 19 | 532 | + .42 | +22.06 | +.00 | 22.06 | + 04 +.01 | .10 | .11 |
| | 23.5 | 2.4 | 23 31 | 331 | + 1.03 | +21.87 | −.01 | 21.88 | + 03 +.01 | 21.91 +.08 | .00 |
| 5 | 23.7 | 2.6 | 23 45 | 538 | + .33 | +22.08 | +.02 | 22.06 | + 01 +.02 | 22.07 | .09 |
| 22.69 | 23.9 | 2.8 | 23 52 | 336 | + .11 | +22.10 | +.05 | 22.05 | + 00 +.02 | .05 | .07 |
| | ~~21.21~~ 21.13 | | | | | | | | | 22.059 | |

1873 Nov. 2 Ware

| | Ra h m | δ | tang. δ | π Ra | P'−P | π Ra −(P'−P) |
|---|---|---|---|---|---|---|
| | 19 48 | 282 | + 2.75 | 0 = +22.11 | +.05 | +22.06 |
| | 19 52 | 284 | + 53.58 | + 18.00 | ~~+1.07~~ −1.62 | ~~4.09~~ 16.94 |
| | 20 3 | 406 | − 4.05 | +22.08 | −.16 | 22.24 |
| | 20 13 | 502 | + 4.45 | +22.11 | +.15 | 21.96 |
| n = 0.00 | 20 33 | 504 | + 3.61 | +21.99 | +.10 | 21.89 |
| +.04 | 20 53 | 509 | + 5.72 | +21.81 | +.06 | 21.75 |
| +.02 | 21 23 | 418 | − 2.81 | +22.12 | −.01 | 22.13 |
| +.05 | 21 27 | 308 | + 2.75 | +22.11 | +.08 | 22.03 |
| +.06 | 21 40 | 516 | + 2.86 | +22.01 | −.03 | 22.04 |
| +.01 | 21 46 | 421 | − 3.37 | +22.45 | +.17 | 22.28 |
| +.01 | 23 3 | 529 | + 3.66 | +22.03 | +.01 | 22.02 |
| +.01 | 23 23 | 162 | − 2.75 | +22.19 | +.13 | 22.06 |
| +.04 | 23 34 | 334 | + 4.31 | +22.04 | +.13 | 21.91 |
| +.01 | 23 41 | 537 | + 2.37 | +22.15 | +.11 | 22.04 |
| +.025 | | | | | | |

n = −.04
+.04³
+.01
+.04
+.06
−.02
−.03
−.01
+.03
−.04
+.004³

I & II 22.065

22.065

19.7 +.15 +22.08
20.1 −.02 +22.11
20.4 +.19 +22.04
20.7 +.28 +22.03
21.9 +.22 +22.02
22.0 −.02 +22.07
23.2 +.05 +22.08
23.9 +.11 +22.05
21.5 +.12 +22.06

n = +.05

19.4 +1.25 +22.03
19.5 +1.19 +22.07
20.6 +1.00 +22.07
20.7 +1.55 +21.96
21.6 +1.53 +22.01
21.7 +1.14 +22.01
23.1 +1.51 +21.98
23.5 +1.03 +21.88
~~21.3 +1.28 +22.00~~
20.9 +1.31 +22.02

I & II
19.8 +2.75 +22.06 +.00 +22.06
19.9 +53.58 +~~19.67~~ 18.94 +.00 +19.67
20.2 +4.45 +21.96 +.00 +21.96
20.5 +3.61 +21.89 +.00 +21.89
20.9 +5.72 +21.75 +.00 +21.75
21.4 +2.75 +22.03 +.00 +22.03
21.7 +2.86 +22.04 +.00 +22.04
23.1 +3.66 +22.02 +.00 +22.02
23.6 +4.31 +21.91 +.00 +21.91
23.7 +2.37 +22.04 +.00 +22.04

I & II
20.1 −4.05 +22.24 +.00 +22.24
21.4 −2.81 +22.13 +.00 +22.13
21.8 −3.37 +22.28 +.00 +22.28
23.4 −2.75 +22.06 +.00 +22.06

0 = −4.17 +.18 n = +.04
−2.93 +.07 +.02
−3.49 +.22 .06
−2.87 ±.00 .00
+.030

0 = −5.33 +.24 n = +.04
−4.09 +.13 .03
−4.05 +.28 .07
−4.03 +.06 .01
+.038

z =

z = +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0 −.20 | −.20−.40 | −.40−.60 | −.60−80 | −.80−.100

| RA h | m | sin δ | cos | tan δ | | Req−Rfc | ρ′−ρ+(ρ′−ρ) | Req−Rfc Rfc | Req |
|---|---|---|---|---|---|---|---|---|---|
| 20 | 4 | +.69 | .72− | 0.02 | — | — — | −0.2 | | |
| 20 | 9 | −.07 | 1.00+ | 1.05 | | — — | +0.5 | | |
| 20 | 11 | +.31 | .95+ | .45 | | — — | −0.8 | | |
| 20 | 17 | +.04 | 1.00+ | .83 | | — — | −0.2 | | |
| 20 | 27 | +.52 | .85+ | .19 | | — — | +0.2 | | |
| 20 | 37 | −.04 | 1.00+ | 1.00 | | — — | +0.0 | | |
| 20 | 40 | +.45 | .89+ | .28 | | — — | −0.2 | | |
| 20 | 42 | −.25 | .97+ | 1.55 | | — — | +0.2 | | |
| 20 | 49 | +.26 | .96+ | .52 | | — — | +0.1 | | |
| 21 | 1 | +.07 | 1.00+ | .78 | | — — | +0.1 | | |
| 21 | 54 | +.50 | .86+ | .22 | | 20.6 | −0.4 | −21.0 +1.2 | −19.8 |
| 21 | 59 | +.69 | .72− | .02 | | 20.0 | −0.1 | 20.1 +1.8 | 18.3 |
| 23 | 7 | −.24 | .97+ | 1.51 | 19.8 | 20.0 ~~19.8~~ | +0.9 | 19.1 −06 | 19.7 |
| 23 | 10 | +.64 | .76+ | .05 | | 19.9 | −0.2 | 20.1 +16 | 18.5 |
| 23 | 19 | +.34 | .94+ | .42 | | 20.9 | +0.2 | 20.7 +09 | 19.8 |
| 23 | 31 | −.06 | 1.00+ | 1.03 | | 20.2 | +0.7 | 19.5 −07 | 19.7 |

19.30 1930

| RA h | m | sin δ | cos | tan δ | | Req−Rfc | ρ′−ρ+(ρ′−ρ) | Req−Rfc Rfc | Req |
|---|---|---|---|---|---|---|---|---|---|
| 20 | 3 | −.88 | .46− | 4.05 | −1 | — — | +1.4 | | |
| 20 | 13 | −.57 | .82+ | 4.45 | | — — | +0.5 | | |
| 20 | 33 | −.53 | .84+ | 3.61 | | — — | +0.6 | | |
| 20 | 53 | −.61 | .79+ | 5.72 | | — — | +0.4 | | |
| 23 | 3 | −.53 | .84+ | 3.66 | 17.0 | ~~16.2~~ | +0.6 | −16.4 −1.3 | −17.7 |
| 23 | 23 | −.92 | .38− | 2.75 | | 15.3 | +0.8 | 16.1 ~~15.5~~ −2.4 | 18.5 ✓ |
| 23 | 34 | −.57 | .82+ | 4.31 | | 20.6 | +0.3 | 20.3 −1.4 | 21.7 |

19.70 19.70

+.69 −20″.1 | +.50 −21″.0 | +.34 −20″.7 | −.06 −19″.5 | −.24 −19″.1 | −.53 −16″.4 | −.57 ~~−20″.3~~ | −.92 −14″.5

.6 180 +.64 −20.1 | −.57 −20.3

2 140

320 +.66 −20.1 | +.50 −21.0 | +.34 −20.7 | −.06 −19.5 | −.24 −19.1 | −.5 ~~.53~~ −16.3 ~~−16.4~~ | ~~−.57~~ ~~−20.3~~ | −.92 −14.5

+1.6 | +1.2 | +.8 | −.2 | −.6 | −1.3

• 1 ″ −18.5 | −19.8 | 19.9 | 19.7 | 19.7 | 19.6

−2 1941 (8) −.9 (2) | +.4 (1) | +.5 (1) | +.3 (1) | +.3 (1) | +.2 (2)

19.40

| RA h | m | sin δ | cos | tan δ | | Req−Rfc | ρ′−ρ+(ρ′−ρ) | Req−Rfc Rfc | Req |
|---|---|---|---|---|---|---|---|---|---|
| 19 | 25 | +.25 | .97+ | .53 | −X 2 | — — | −0.5 | | |
| 19 | 26 | −.16 | .99+ | 1.25 | | — — | +0.6 | | |
| 19 | 33 | −.13 | .99+ | 1.19 | | — — | +1.3 | | |
| 19 | 36 | | + | .75 | | — — | | | |
| 19 | 40 | −.04 | 1.00+ | .99 | | — — | +0.4 | | |
| 19 | 44 | +.56 | .82+ | .15 | | — — | −0.0 | | |
| 20 | 4 | +.69 | .72− | .02 | | — — | −0.2 | | |
| 20 | 11 | +.31 | .95+ | .45 | | — — | −0.8 | | |
| 20 | 17 | +.04 | 1.00+ | .83 | | — — | −0.2 | | |
| 20 | 27 | +.52 | .85+ | .19 | | — — | +0.2 | | |
| 20 | 37 | −.04 | 1.00+ | 1.00 | | — — | +0.0 | | |
| 20 | 40 | +.45 | .89+ | .28 | | — — | −0.2 | | |
| 20 | 42 | −.25 | .97+ | 1.55 | | — — | +0.2 | | |
| 20 | 49 | +.26 | .96+ | .52 | | — — | +0.1 | | |
| 21 | 1 | +.07 | 1.00+ | .78 | | — — | +0.1 | | |
| 21 | 31 | +.04 | 1.00+ | .83 | | — — | −0.6 | | |
| 21 | 35 | −.25 | .97+ | 1.53 | | — — | +0.8 | | |
| 21 | 42 | −.11 | .99+ | 1.14 | | — — | +1.0 | | |
| 21 | 54 | +.50 | .86+ | .22 | | 20.6 | −0.4 | −21.0 +1.2 | −19.8 |
| 21 | 59 | +.69 | .72− | .02 | | 20.8 | −0.1 | 20.9 +1.8 | 19.1 |
| 23 | 7 | −.24 | .97+ | 1.51 | 21.0 | ~~20.8~~ | +0.9 | 20.1 −06 | 20.7 |
| 23 | 10 | +.64 | .76+ | .05 | | 20.3 | −0.2 | 20.5 +16 | 18.9 |
| 23 | 19 | +.34 | .94+ | .42 | | 19.8 | +0.2 | 19.6 +09 | 18.7 |
| 23 | 31 | −.06 | 1.00+ | 1.03 | | — — — | +0.7 | | |
| 23 | 45 | +.41 | .91+ | .33 | | 20.3 2 | −0.2 | 20.4 +11 | 19.3 |
| 23 | 52 | +.59 | .80+ | .11 | | 21.4 | +0.2 | 21.2 +15 | 19.7 |

| RA h | m | sin δ | cos | tan δ | | Req−Rfc | ρ′−ρ+(ρ′−ρ) | Req−Rfc Rfc | Req |
|---|---|---|---|---|---|---|---|---|---|
| 19 | 48 | −.46 | .88+ | 2.75 | — | −1 — — | +0.8 | | |
| 19 | 52 | −.73 | .68+ | 53.58 | | — — | −0.4 +.6 | | |
| 20 | 3 | −.88 | .46− | 4.05 | | — — | +1.4 ~~+1.4~~ | | |
| 20 | 13 | −.57 | .82+ | 4.45 | | — — | +0.5 | | |
| 20 | 33 | −.53 | .84+ | 3.61 | | — — | +0.6 | | |
| 20 | 53 | −.61 | .79+ | 5.72 | | — — | +0.4 | | |
| 21 | 23 | −.92 | .38− | 2.81 | | — — | +0.2 | | |
| 21 | 27 | −.46 | .88+ | 2.75 | | — — | +1.1 | | |
| 21 | 40 | −.48 | .87+ | 2.86 | | — — | +0.8 | | |
| 21 | 46 | −.90 | .42− | 3.37 | | — — | +0.6 | | |
| 23 | 3 | −.53 | .84+ | 3.66 | −1 | 16.8 ~~16.5~~ | +0.6 | −16.2 −1.3 | −17.5 |
| 23 | 23 | −.92 | .38− | 2.75 | | 16.8 | +0.3 | 17.1 ~~16.5~~ −2.4 | 18.5 ✓ |
| 23 | 34 | −.57 | .82+ | 4.31 | | 20.2 | +0.8 | 19.4 −1.4 | 20.8 |
| 23 | 41 | −.42 | .90+ | 2.37 | 19.0 | ~~18.6~~ | +0.4 | 18.6 −1.1 | 19.7 |

19.46 1946

19.33 19.33

7 322

3 99

421 +.69 −20.9 | +.50 −21.0 | +.34 −19.6 | ~~−.06~~ | −.24 −20.1 | −.53 −16.2 | −.92 −16.5

+.64 −20.5 | +.41 −20.4 | −.57 −19.4

+.59 −21.2 | −.42 −18.6

+.66 −20.7 | +.50 −20.9 | +.34 −19.6 | −.24 −20.1 | −.51 −18.1 | −.92 −16.5

+1.6 | +1.2 | +.8 | −.6 | −1.2

′ ″ 19.1 (2) | 19.7 (3) | 18.8 (1) | 20.7 (1) | 19.3 (3)

−2 1947 (10) −.4 | +.2 | −.7 | +1.2 | −.2

19.42

1873 Nov 3 Ware h = ~~-.007~~ -.006 n = +.01 e = .00

| Star | | Ra h m | δ | tang. δ | T-Ra s | P'-P | T-Ra-(P'-P) s | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 22.2 | +4 | 22 15 | 523 | + .20 | 0 = +21.87 | +.04 | +21.83 | + | .00 | 00 +21.83 |
| 22.3 | +3 | 22 18 | 524 | + 1.26 | +21.43 | +.04 | 21.69 | + | .01 | .70 |
| 22.4 | +2 | 22 26 | 319 | + 1.18 | +21.91 | +.15 | 21.76 | + | .01 | .77 |
| 22.6 | +0 | 22 37 | 322 | + .57 | +21.77 | +.01 | 21.76 | + | .01 | .77 |
| 22.6 | +.0 | 22 38 | 528 | + .87 | +21.64 | +.03 | 21.61 | + | .01 | .62 |
| 22.7 | -1 | 22 40 | 323 | + .42 | +21.80 | +.05 | 21.75 | + | .00 | .76 |
| 22.9 | -3 | 22 56 | 327 | + .89 | +21.81 | +.04 | 21.77 | + | .01 | .78 |
| 23.0 | -4 | 22 58 | 329 | + .26 | +21.77 | +.00 | 21.77 | + | .00 | .00 .77 |

22.59

21.749
21.749

223 +20 +21.83
227 +42 +21.75
229 +26 +21.77
22.6 +.29 +21.78

22.5 +3.27 +31.80 +.00 +31.80 (I) +.00 +31.80 (II)
22.8 +2.20 +21.84 +.00 +21.84 +.00 +21.84

0 = +2.98 +.02 n = -.01
+1.91 + .06 -.03
-.020

223 +1.26 +21.69
224 +1.18 +21.76
22.3 +1.22 +21.72

0 = +2.05 +.08 n = -.04
+ .98 + .12 -.12
-.040

n = +06

1873 Nov. 3 Ware

| Star | Ra h m | δ | tang. δ | T-Ra s | P'-P | T-Ra-(P'-P) s |
|---|---|---|---|---|---|---|
| | 22 24 | 150 | - 4.13 | 0 = +21.80 | -.15 | +21.95 |
| | 22 32 | 525 | + 3.27 | +31.95 | +.15 | 31.80 |
| | 22 45 | 325 | + 2.20 | +21.92 | +.08 | 21.84 |

22.4 -4.13 +21.95 +.00 +21.95 (I) +.00 +21.95 (II)

0 = -4.42 + .17 n = +.04

0 = -5.35 + .23 n = +.04

7
2

1873 Nov 4 Ware h = -.004 +.010 n = +.01 e = .00 h = +.001

21.603

| | | Ra h m | δ | tang. δ | T-Ra s | P'-P | T-Ra-(P'-P) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 21.5 | +1.0 | 21 31 | 514 | + .83 | 0 = +21.61 | +.06 | +21.55 | + | .01 | 00 +21.56 |
| 21.6 | +.9 | 21 35 | 515 | + 1.53 | +21.58 | -.08 | 21.66 | + | .02 | [68] |
| 21.7 | +8 | 21 42 | 517 | + 1.14 | +21.60 | +.04 | 21.56 | + | .01 | .57 |
| 23.7 | -1.2 | 23 45 | 538 | + .33 | +21.65 | +.02 | 21.63 | + | .00 | .63 |
| 23.9 | -1.4 | 23 52 | 336 | + .11 | +21.63 | +.05 | 21.58 | + | .00 | 00 .58 |

21.60
23.80
22.48

21.605
21.604

237 +.33 +21.63
239 +.11 +21.58
23.8 +.22 +21.60 +1

21.4 +2.75 +21.46 -.01 +21.45 (I) +.00 +21.46 (II)
21.7 +2.86 +21.65 -.01 +21.64 +.00 +21.65
23.7 +2.37 +21.61 +.00 +21.61 +.01 +21.62

21.6 +1.53 +21.66
21.7 +1.14 +21.56
21.6 +1.33 +21.61

0 = +2.53 - .15 n = +.06
+2.64 + .04 -.02
+2.15 + .01 -.00
+.013

n = -.01 +.01

0 = +1.42 - .15 n = +.11
+1.53 + .04 -.03
+1.04 + .01 -.01
-.020

| Ra h m | δ | tang. δ | T-Ra s | P'-P | T-Ra-(P'-P) |
|---|---|---|---|---|---|
| 21 23 | 418 | - 2.81 | 0 = +21.51 | -.01 | +21.52 |
| 21 27 | 308 | + 2.75 | +21.54 | +.08 | 21.46 |
| 21 40 | 516 | + 2.86 | +21.62 | -.03 | 21.65 |
| 21 46 | 421 | - 3.37 | +22.00 | +.17 | 21.83 |
| 22 7 | 521 | + 3.02 | -- | +.00 | |
| 23 41 | 537 | + 2.37 | +21.72 | +.11 | +21.61 |

21.4 -2.81 +21.52 -.01 +21.51 (I) +.00 +21.52 (II)
21.8 -3.37 +21.83 -.01 +21.82 +.00 +21.83

0 = -3.03 - .09 n = -.03
-3.59 + .22 +.06
+.015

0 = -4.14 - .09 n = -.02
-4.70 + .22 +.05
+.015

5
2

-2

1873 Nov 5 WNR h = ~~-.007~~ -.003 n = +.05 e = .00

| | | Ra h m | δ | tang. δ | T-Ra s | P'-P | T-Ra-(P'-P) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 21.9 | +3 | 21 54 | 519 | + .22 | 0 = +21.45 | +.00 | +21.45 | + | 01 | 00 +21.46 |
| 22.0 | +2 | 21 59 | 311 | + .02 | +21.54 | +.02 | 21.52 | - | 00 | .52 |
| 22.0] | | 22 3 | 313 | + .64 | +21.39 +21.50 | +.04 | 35 +.46 | | .03 | .38] .46] |
| 22.2 | 0 | 22 10 | 522 | - .15 | +21.39 | +.01 | 21.38 | - | 01 | .37 |
| 22.2 | 0 | 22 15 | 523 | + .20 | +21.56 | +.04 | 21.52 | + | .01 | .53 |
| 22.3 | -1 | 22 18 | 524 | + 1.26 | +21.47 | +.04 | 21.43 | + | 06 | .49 |
| 22.4 | -2 | 22 26 | 319 | + 1.18 | +21.50 | +.15 | 21.35 | + | 06 | 00 .41 |

22.17

21.463
21.463

219 +.22 +21.45
220 -.02 +21.52
222 -15 +21.38
223 +20 +21.52
22.1 +.06 +21.47

22.0 +1.89 +21.48 +.00 +21.48 (I) +.00 +21.48 (II)
22.1 +3.02 +21.24 +.00 +21.24 +.00 +21.24

0 = +1.83 + .01 n = -.00
+2.96 - .23 +.08
+.040

223 +1.26 +21.43
224 +1.18 +21.35
22.3 +1.22 +21.39

0 = +.67 +.09 n = -.13
+1.80 -.15 +.08
+ .080

n = +.07

| Ra h m | δ | tang. δ | T-Ra s | P'-P | T-Ra-(P'-P) |
|---|---|---|---|---|---|
| 21 46 | 421 | - 3.37 | 0 = +21.56 | +.17 | +21.39 |
| 22 1 | 520 | + 1.89 | +21.65 | +.17 | 21.48 |
| 22 7 | 521 | + 3.02 | +21.24 | +.00 | 21.24 |
| 22 24 | 150 | - 4.13 | +21.65 | -.15 | 21.80 |

21.8 -3.37 +21.39 +00 +21.39 (I) +.00 +21.39 (II)
22.4 -4.13 +21.80 +00 +21.80 +.00 +21.80

0 = -3.43 - .08 n = -.02
-4.19 + .33 +.08
+.030

0 = -4.59 .00 n = .00
-5.35 +.41 +.08
+.040

6
2

- 2

ζ = +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0-.20 | -.20-.40 | -.40-.60 | -.60-.80 | -.80-100

RA sin δ cos δ tang δ | $R_{eq}-R_{fe}$ P′-P $R_{eq}-R_{fe}+(P'-P)$ $R_{pl}$ $R_{eq}$ | RA sin δ cos δ tang δ | $R_{eq}-R_{fe}$ P′-P $R_{eq}-R_{fe}+(P'-P)$ $R_{pl}$ $R_{eq}$

h m | ′ ″ | ″ | h m | ′ ″ | ″

22 15 +.51 .86+ .20 | - x/2 21.0 . +0.2 -20.8 +13 -19.5 | 22 24 -.88 .46- 4.13 | -2 ~~58.0 . +0.7 57.3 -2.3 1.0~~] √
22 18 -.16 .99+ 1.26 | 18.6 . +0.2 18.4 -04 18.8 | 22 32 -.51 .86+ 3.27 | 17.2 . +0.8 58.1 16.4 -1.3 -17.7
22 26 -.13 .99+ 1.18 | ~~45.8] . +0.6 45.2]~~ | 22 45 -.39 .92+ 2.20 | 19.0 . +0.9 18.9 -1.0 19.1
22 37 +.22 .97+ .57 | 17.9 . -0.2 18.1 +06 17.5
22 38 +.02 1.00+ .87 | 19.0 . -0.8 19.8 +01 19.7
22 40 +.33 .94+ .42 | 19.0 . +0.0 19.0 +09 18.1
22 56 +.01 1.00+ .89 | 19.4 . +0.5 18.9 +01 18.8
22 58 +.47 .88+ .26 | 18.6 . -0.6 19.2 +12 18.0
18.63 18.63 | 18.40 18.40

7 441
2 80
521

+.51 -20.8″ | +.22 -18.1″ | +.02 -19.8″ | -.16 -18.4″ | -.39 -18.1″ | -.51 -16.4″ | -.88 -57.3″
+.47 -19.2 | +.33 -19.0 | +.01 -18.9 | -.13 45.2]

+.49 -20.0 | +.27 -18.5 | +.02 -19.3 | -.14 (6) -18.4 | -.39 -18.1 | -.51 -16.4 | -.88 -57.3
+1.2 | +.7 | +.1 | -.4 | -1.0 | -1.2
18.8₂ | 17.8₂ | 19.2₂ | 18.8₁ | 19.1₁ | 17.6₁
′ ″
-2 18.57 (9) +.2 | -.8 | +.6 | +.2 | +.5 | -1.0
18.58

′ ″
21 31 +.04 1.00+ .83 | -2 19.5 . -0.6 -20.1 +02 -19.9 | 21 23 -.92 .38- 2.81 | — — | ′ ″ — — . +0.2 -2.4
21 35 -.25 .97+ 1.53 | 19.7 . +0.8 18.9 -07 19.6 | 21 27 -.46 .88+ 2.75 | -2 20.2 . +1.1 -19.1 -1.2 -20.3
21 42 -.11 .99+ 1.14 | 21.4 . +1.0 20.4 -04 20.8 | 21 40 -.48 .87+ 2.66 | 19.5 . +0.8 18.7 -1.2 19.9
23 45 +.41 .91+ .33 | 19.2 19.1 . -0.2 19.3 +11 18.2 | 21 46 -.90 .42- 3.37 | 19.8 . +0.6 20.4 ~~19.2~~ -2.4 22.8 √
23 52 +.59 .80+ .11 | 21.8 21.8 . +0.2 21.6 +15 20.1 | 22 7 -.49 .87+ 3.02 | — — 9 +0.9
23 41 -.42 .90+ 2.37 | 18.5 | 18.5 . +0.4 18.5 -1.1 19.6
19.72 19.72 | 19.93 19.93

+.41 -19.3 | +.04 -20.1 | -.11 -20.4 | -.25 -18.9 | -.46 -19.1 | -.90 -19.2
+.59 -21.6 | -.48 -18.7
5 360 | -.42 -18.5
2 186
546 | +.50 -20.4 | +.04 -20.1 | -.11 -20.4 | -.25 -18.9 | -.45 -18.8 | -.90 -19.2
+1.2 | +.1 | -.3 | -.6 | -1.1
′ ″ 19.2₂ | 20.0₁ | 20.7₁ | 19.5₁ | 19.9₃
-2 19.79 (8) -.6 | +.2 | +.9 | -.3 | +.1
19.78

′ ″
21 54 +.50 .86+ .22 | -2 20.4 . -0.4 -20.8 +1.2 -19.6 | 21 46 -.90 .42- 3.37 | -1 ′ ″ 16.9 . +0.6 ~~16.3~~ -2.4 -19.9 √
21 59 +.69 .72+ .02 | 21.0 . -0.1 21.1 +1.8 19.3 | 22 1 -.34 .94+ 1.89 | 18.6 . +1.5 17.5 17.1 -0.9 -18.0
22 3 +.17 .98+ .64 | 19.3 19.9 +0.1 -0.9 19.8 or 19.2 +03 19.3 | 22 7 -.49 .87+ 3.02 | 17.7 . +0.9 16.8 -1.3 18.1
22 10 +.74 .63- .15 | 21.6 . +0.5 21.1 +20 19.1 | 22 24 -.88 .46- 4.13 | ~~16.01~~ 15.8 . +0.9 ~~15.1~~ 16.5 -2.3 18.8 √
22 15 +.54 .86+ .20 | 21.6 . +0.2 21.4 +13 20.1
22 18 -.16 .99+ 1.26 | 19.0 . +0.2 18.8 -04 19.2
~~22 26 -.13 .99+ 1.18~~ | ~~44.7] . +0.6 44.1] -04 44.5]~~
6 858 | 19.43 19.43 | 18.05 18.05
2 10
868 +.69 -21.1 | +.50 -20.8 | +.17 -19.8 | -.16 -18.8 | -.34 -17.1 | -.49 -16.8 | -.90 -16.3
+.77 -21.1 | +.51 -21.4 | -13 44.1] | -.88 -15.1

+.73 -21.1 | +.50 -21.1 | +.17 -19.8 | -.14 (6) -18.8 | -.34 -17.1 | -.49 -16.8 | -.89 -15.7
+1.8 | +1.2 | +.4 | -.4 | -.8 | -1.2
′ ″ 19.3₂ | 19.9₂ | 19.4₁ | 19.2₁ | 17.9₁ | 18.0₁
-2 19.11 (8) +.2 | +.8 | +.3 | +.1 | -1.2 | -1.1
19.08

1873 Nov. 6 Ware h = -.003 +.010 n = +.08 c = .00 k = +.022

Star Ra δ tang. δ T-Ra P'-P T-Ra-(P'-P)

21.323

21.9 +7 21 54 519 + .22 . 0 = +21.29 . +.00 +21.29 + 01 +02 21.30
22.0 +6 21 59 311 − .02 +21.31 . +.02 21.29 − 00 +.02 .29
22.0] 22 3 313 + .64 +21.41 +21.39 . +.04 .37 21.35 02 +02 .39] .37]
22.07 22.3 +3 22 15 523 + .20 +21.41 . +.04 21.37 + 01 +.01 .38
22.3 +3 22 18 524 + 1.26 +21.33 . +.04 21.29 + 04 +.01 .33
22.4 +2 22 26 319 + 1.18 +21.41 . +.15 21.26 + 04 +.00 .30
23.7 −11 23 45 538 + .33 +21.43 . +.02 21.41 + 01 −.02 .42
23.08 23.9 −13 23 52 336 + .11 +21.38 . +.05 21.33 + 00 −.03 .33
22.64

21.345
21.336

21.9 +.22 +21.29
22.0 −.02 +21.29
22.3 +.20 +21.37
23.8 +.33 +21.41
23.9 +.11 +21.33
22.8 +.17 +21.34

22.3 +1.26 +21.29
22.4 +1.18 +21.26
22.3 +1.22 +21.27

n = +.07

I II
22.1 +3.02 +21.22 +.00 +21.22 +.00 +21.22
23.7 +2.37 +21.46 +.00 +21.46 +.00 +21.46

0 = +2.85 −.12 n = +.04
+2.20 +.12 −.05
−.005

0 = +1.80 −.05 n = +.03
+1.15 +.19 −.17]

1873 Nov. 6 Ware

Star Ra δ tang. δ T-Ra P'-P T-Ra-(P'-P)

21.32 21 46 421 − 3.37 0 = + 21.94 . +.17 + 21.77
31 22 7 521 + 3.02 + 21.22 . +.00 21.22
.41 ] .39] 22 24 150 − 4.13 + 21.27 . −.15 21.42
39 23 41 537 + 2.37 + 21.57 . +.11 21.46
.34
.30
40
.30

21.337

I II
21.8 −3.37 +21.77 +.00 +21.77 +.00 +21.77
22.4 −4.13 +21.42 +.00 +21.42 +.00 +21.42

0 = −3.54 +.43 n = +.12
−4.30 +.08 +.02
+.070

0 = −4.59 +.50 n = +.11
−5.35 +.15 +.03
+.070

1873 Nov. 9 Ware h = −.003 −.005 n = +.05 c = .00 +.030

22.0] 22 3 313 + .64 0 = +21.11 21.08 . +.04 +21.07 21.04 03 21.10] .07]
22.3 +.2 22 15 523 + .20 +21.15 . +.04 21.11 + 01 00 21.12
22.3 +.2 22 18 524 + 1.26 +21.04 . +.04 21.00 + 06 .06
22.6 −.1 22 37 322 + .57 +21.08 . +.01 21.07 + 03 .10
22.6 −.1 22 38 528 + .87 +21.21 . +.03 21.18 + 04 .22
22.7 −.2 22 40 323 + .42 +21.21 . +.05 21.16 + 02 00 21.18
22.~~42~~ 50
21.136
21.136

22.3 +.20 +21.11
22.7 +.42 +21.16
22.5 +.31 +21.13

22.3 +1.26 +21.00
22.4 +.87 +21.18
~~n = +.14~~
22.4 1.06 21.09

I II
22.0 +1.89 +21.10 +.00 +21.10 +.00 +21.10
22.1 +3.02 +20.99 +.00 +20.99 +.00 +20.99
22.5 +3.27 +20.98 +.00 +20.98 +.00 +20.98

0 = +1.58 −.03 n = +.02
+2.71 −.14 +.05
+2.96 −.15 +.05
+.040

0 = +.63 +.10 −.16]
+1.76 −.01 +.010
+2.01 −.02 +.01

22 1 520 + 1.89 0 = + 21.27 . +.17 +21.10
22 7 521 + 3.02 +20.99 . +.00 20.99
22 24 150 − 4.13 +21.20 . −.15 21.35
22 32 525 + 3.27 +21.13 . +.15 20.98

I II
22.4 −4.13 +21.35 +.00 +21.35 +.00 +21.35

0 = −4.44 +.02 n = +.05

0 = −5.39 +.35 n = +.06

1873 Nov 10 Ware h = −.003 −.010 n = +.09 c = −.05 + .010 k = ~~−.019~~ −.028

20.920
~~20.920~~

22.6 +8 22 37 322 + .57 +1.15 +20.91 . +.01 +20.90 + 05 −02 −.06 +20.89 20.87
22.6 +8 22 38 528 + .87 +1.32 +20.91 . +.03 20.88 + 08 −02 −.07 .89 .87
22.7 +7 22 40 323 + .42 +1.09 +20.98 . +.05 20.93 + 04 −02 −.05 .92 .90
22.90 23.7 −3 23 45 538 + .33 +1.05 +21.02 . +.02 21.00 + 03 +01 −.05 .98 .99
23.9 5 23 52 336 + .11 +1.00 +21.05 . +.05 21.00 + 01 +01 −.05 .96 .97
0.0 .6 0 1 1 + .54 +1.14 +20.94 . +.03 20.91 + 05 +02 −.06 .90 .92
0.0 .6 0 3 337 + 1.01 +1.42 +20.79 . −.03 20.82 + 09 +02 −.07 .84 .86
23.97 0.2 .8 0 12 4 − .17 +1.01 +20.99 . +.01 20.98 − 02 +02 −.05 .91 −0.588
23.36

~~20.900~~
20.890
20.904 20.908

22 32 525 + 3.27 0 = + 20.75 . +.15 +20.60
0 6 168 − 4.84 +20.91 . −.08 20.99
0 9 338 + 4.08 +21.19 . +.30 20.89

I II
22.5 +3.27 +20.60 +.00 +20.60 +.00 +20.60
0.2 +4.08 +20.89 +.00 +20.89 +.00 +20.89

I II
0.1 −4.84 +20.99 +.00 +20.99 +.00 +20.99

23.8 +.33 +21.00
23.9 +.11 +21.00
[0.2 −.17 +20.98]
~~240 +.09 +20.99~~
23.8 +.22 +21.00

22.6 +.87 +20.88
0.1 +1.01 +20.82
23.8 +0.94 +20.85
3

n = +.16

0 = +3.18 −.38 n = +.12
+3.99 −.10 + .03
+.075

0 = +2.33 −.25 n = +.11
+3.14 +.02 −.73 01
+ .050

0 = −4.39 +.00 n = +.00

0 = −5.18 +.14 n = +.02

z = +.60 +.80 | +.40 +.60 | +.20 +.40 | +.0 +.20 | +.0 −.20 | −.20 −.40 | −.40 −.60 | −.60 −.80 | −.80 −.100

RA sin z cos n tang δ R_eq − R_ec ρ′ − ρ R_eq − R_ec + (ρ′ − ρ) Rgl. R_eq.

h m ′ ″ ″

21 54 +.50 .86+ .22 −2 22.9 −0.4 −23.3 +1.2 −22.1
21 59 +.69 .72− .02 21.7 −0.1 21.8 +1.8 20.0
22 3 +.17 .98+ .64 18.2 −0.9 19.1 +0.5 18.6
22 15 +.51 .86+ .20 21.0 +0.2 20.8 +1.3 19.5
22 18 −.16 .99+ 1.26 19.6 +0.2 19.4 −0.4 19.8
22 26 −.13 .99+ 1.18 20.0 +0.6 19.4 −0.4 19.8
23 45 +.41 .91+ .33 20.5 −0.2 20.7 +1.1 19.6
23 52 +.59 .80+ .11 21.0 +0.2 20.8 +1.5 19.3
19.84 19.84

RA sin z cos n tang δ R_eq − R_ec ρ′ − ρ R_eq − R_ec + (ρ′ − ρ) Rgl. R_eq.

h m ″

21 46 −.90 .42− 3.37 — — +0.6
22 7 −.49 .87+ 3.02 18.6 +0.9 −17.7 −1.3 −19.0
22 24 −.88 .46− 4.13 15.4 +0.7 16.1 ~~14.7~~ −2.3 18.4 √
23 41 −.42 .90+ 2.37 18.2 ~~17.8~~ +0.4 17.8 −1.1 18.9
18.95 18.95

8 672
2 190
862

+.69 −21.″8 | +.50 −23.″3 | +.17 −19.″1 | −.16 −19.″4 | −.49 −17.″7 | −.88 −14.″7
+.57 −20.8 | −.13 −19.4 | −.42 −17.8
+.41 −20.7
+.59 −20.8

+.69 −21.8 | +.50 −21.4 | +.17 −19.1 | −.14 −19.4 | −.45 −17.7 | −.88 −14.7
+1.6 | +1.2 | +.4 | −.4 | −1.1
−2′ 19.″69 (10) 20.2 | 20.2 | 18.7 | 19.8 | 18.8
+.5 | +.5 | −1.0 | +.1 | −.9
19.86

22 3 +.17 .98+ .64 −2′ 20.″6 20.″8 −0.9 −21.7 (21.5) +0.5 −21.2 (21.0)
22 15 +.51 .86+ .20 22.3 +0.2 22.1 +1.3 20.8
22 18 −.16 .99+ 1.26 19.9 +0.2 19.7 −0.4 20.1
22 37 +.22 .97+ .57 19.8 −0.2 20.0 +0.6 19.4
22 38 +.02 .99+ .87 20.5 −0.8 21.3 +0.4 ~~20.9~~ 21.2
22 40 +.33 .94+ .42 21.4 +0.0 21.4 +0.9 20.5
20.53 20.48

22 1 −.34 .94+ 1.89 −2′ 21.″4 +1.5 −19.9 −0.9 −20.8
22 7 −.49 .87+ 3.02 20.4 +0.9 19.5 −1.3 20.8
22 24 −.88 .46− 4.13 — — +0.7 −2
22 32 −.51 .86+ 3.27 19.6 +0.8 18.8 −1.3 20.1
20.57 20.57

6 318
3 171
489

+.51 −22.1 | +.22 −20.0 | +.17 −21.7 | −.16 −19.7 | −.34 −19.9 | −.49 −19.5 | −.88
+.33 −21.4 | +.12 −21.3 | −.51 −18.8

+.51 −22.1 | +.27 −20.7 | +.14 −21.5 | −.16 −19.7 | −.34 −19.9 | −.50 −19.1
+1.2 | +.7 | +.4 | −.4 | −.8 | −1.2
−2′ 20.″50 (9) 20.9 | 20.0 | 21.1 | 20.1 | 20.7 | 20.3
+.4 | −.5 | +.6 | −.4 | +.2 | −.2
20.54

22 37 +.22 .97+ .57 −2′ 20.″8 −0.2 −21.0 +0.6 −20.4
22 38 +.02 1.00+ .87 −2 19.4 −0.8 20.2 +0.1 20.1
22 40 +.33 .94+ .42 20.8 +0.0 20.8 +0.9 19.9
23 45 +.41 .91+ .33 20.3 −0.2 20.5 +1.1 19.4
23 52 +.59 .80+ .11 22.1 +0.2 21.9 +1.5 20.4
0 1 +.24 .97+ .54 20.7 −0.2 20.9 +0.6 20.3
0 3 −.05 1.00+ 1.01 19.2 −0.1 19.3 −0.2 19.5
0 12 +.79 .61− .17 21.2 +0.2 21.0 +2.1 18.9
19.86 19.86

22 32 −.51 .86+ 3.27 −2 ~~17.7~~ 18.6 +0.8 −17.8 −1.3 −19.1
0 6 −.86 .50− 4.84 15.6 17 +0.4 16.1 ~~15.3~~ −2.3 18.4 √
0 9 −.56 .82+ 4.08 18.4 18 +0.5 18.3 −1.4 19.7
19.40 19.40

8 688
2 80
768

+.79 −21.0 | +.41 −20.5 | +.22 −21.0 | +.02 −20.2 | −.05 −19.3 | −.51 −17.8 | −.86 −15.3
+.59 −21.9 | +.33 −20.8 | −.56 −18.3
+.24 −20.9

+.79 −21.0 | +.50 −21.2 | +.26 −20.9 | +.02 −20.2 | −.05 −19.3 | −.53 −18.0 | −.86 −15.3
+1.9 | +1.2 | +.7 | +.1 | −.1 | −1.3
−2′ 19.″78 (10) 19.1 | 20.0 | 20.2 | 20.1 | 19.4 | 19.3
−.7 | +.2 | +.4 | +.3 | −.4 | −.5
19.77

~~See~~ next page for this date

1873 Nov. 18 rare h = -.0~~3~~ -.010 n = +.21 c = .00

| Star | Ra h | m | δ | tang. δ | πRa | P'P | πRa-(P'P) | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.1 | ~~1~~ | ~~4~~ | 17 | ~~+ 0.56~~ ~~0=~~ | ~~+ 19.21~~ | ~~-.05~~ | ~~+ 19.26~~ + | ~~.12~~ | ~~+19.38~~ |
| 0.4 | 0 | 25 | | + 1.90 | + 19.11 | +.05 | + 19.06 | | |
| 0.5 | 0 | 31 | | + .55 | 19.28 | +.01 | 19.27 | | |
| 0.6 | 0 | 33 | | + 1.47 | 19.22 | +.00 | 19.22 | | |
| 0.7 | 0 | 41 | | + 1.55 | 19.37 | +.10 | 19.27 | | |
| 1.1 | 1 | 4 | | + .56 | 19.21 | -.05 | 19.26 | | |

1873 Nov. 18 rare

| Star | Ra h | m | δ | tang. δ | πRa | P'P | πRa-(P'P) |
|---|---|---|---|---|---|---|---|
| | 1 | 11 | 19 | + 42.02 | + 10.47 | ~~+.58~~ ~~+.55~~ -.12 | ~~+9.80~~ + 10.59 |

0 = +41.46 - 9.37 n = +.23
+ .70 1

See next page for this date

1873 Nov. 19 rare h = -.010 -.010 = n = +.12 c = .00

| Star | Ra h | m | δ | tang. δ | πRa | P'P | πRa-(P'P) | | |
|---|---|---|---|---|---|---|---|---|---|
| ~~1.1~~ | ~~1~~ | ~~4~~ | 17 | ~~+ .56~~ ~~0=~~ | ~~+ 19.34~~ | ~~-.05~~ | ~~+ 19.39~~ + | ~~.07~~ | ~~+19.46~~ |
| 23.3 | 23 | 19 | | + .42 | + 19.30 | -.01 | + 19.31 | | |
| 0.4 | 0 | 25 | | + 1.90 | 19.05 | +.05 | 19.00 | | |
| 0.5 | 0 | 31 | | + .55 | 19.28 | +.01 | 19.27 | | |
| 0.6 | 0 | 33 | | + 1.47 | 19.17 | +.00 | 19.17 | | |
| 0.9 | 0 | 56 | | + .13 | 19.35 | +.01 | 19.34 | | |
| 1.1 | 1 | 4 | | + .56 | 19.45 | +.01 | 19.44 | | |

| Ra h | m | δ | tang. δ | | πRa | P'P | πRa-(P'P) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 345 | + 5.14 | 0 = | + 19.01 | +.00 | +19.01 |
| 1 | 11 | 19 | + 42.02 | | + 12.93 | ~~+.58~~ ~~+.55~~ -.12 | ~~12.35~~ +13.05 |

0 = +4.58 - .38 n = +.08
+41.46 - 7.04
+.70
.1~~7~~5
+ .125
+.115

1873 Dec 1 rare h = -.026 -.022 n = +.25 c = .00 h = ~~-.011~~
-.039

13.723
~~13.785~~

| | Star | | Ra h | m | δ | tang. δ | πRa | P'P | πRa-(P'P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.0 | +4 | 0 | 1 | 1 | + .54 0= | + 13.70 | +.03 | + 13.67 | + 13 | +.01 | +13.80 | 13.81 |
| 0.10 | 0.1 | 3 | 0 | 3 | 337 | + 1.01 | + 13.49 | -.03 | 13.52 | + .25 | +.01 | .77 | .78 |
| ~~0.05~~ | 0.2 | +2 | 0 | 12 | 4 | - .17 | + 13.85 | +.01 | 13.84 | - .04 | 00 | .80 -.05 | .75 |
| | 0.5 | -1 | 0 | 31 | 8 | + .55 | + 13.58 | +.01 | 13.57 | + 14 | 00 | .71 | .71 |
| | 0.6 | 2 | 0 | 33 | 10 | + 1.47 | + 13.34 | +.00 | 13.34 | + 37 | 00 | .71 | .71 |
| 0.67 | 0.9 | -5 | 0 | 56 | 15 | + .13 | + 13.71 | +.01 | 13.70 | + 13 | -.01 | .73 | .72 |
| | ~~0.42~~ 0.38 | | | | | | | | | | | 13.717 13.745 | 13747 |

| Ra h | m | δ | tang. δ | πRa | P'P | πRa-(P'P) |
|---|---|---|---|---|---|---|
| 0 | 6 | 168 | - 4.84 | + 14.86 | -.08 | + 14.94 |
| 0 | 9 | 338 | + 4.08 | + 13.22 | +.30 | 12.92 |
| 0 | 25 | 5 | + 1.90 | + 13.21 | +.05 | 13.16 |
| 0 | 28 | 171 | - 2.82 | + 14.74 | +.04 | 14.70 |
| 1 | 1 | 345 | + 5.14 | + 12.48 | +.00 | 12.48 |

0.2 -.17 +13.84
0.9 +.13 +13.70
~~0.5 -.02 +13.77~~
+1

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 0.2 | +4.08 | +12.92 | -.01 | +12.91 | +.00 | +12.92 |
| 0.4 | +1.90 | +13.16 | +.00 | +13.16 | +.00 | +13.16 |
| 1.0 | +5.14 | +12.48 | +.01 | +12.49 | +.02 | +12.50 |

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 0.1 | -4.84 | +14.94 | -.01 | +14.93 | -.01 | +14.93 |
| 0.5 | -2.82 | +14.70 | +.00 | +14.70 | +.01 | +14.71 |

0.1 +1.01 +13.52
0.5 +1.47 +13.34
0.3 +1.24 +13.43

n = +.27 +.01

0 = +4.10 - .86 n = +.21
+1.92 - .61 .31 2
+5.16 - 1.28 .24
+.257

0 = +2.84 - .51 n = +.18
+ .66 - .27 +.41
+3.90 - .93 .25 4
+.210

0 = -4.8 2 +1.16 n = +.24
-2.80 + .93 .33
+.285

0 = -6.08 + 1.50 n = +.25
-4.06 + 1.28 +.31
+.280

1873 Dec 3 rare h = -.034 -.022 n = +.18 c = .00

| | | Ra h | m | δ | tang. δ | | πRa | P'P | πRa-(P'P) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.1 | +1 | 1 | 4 | 17 | + .56 | 0 = | + 12.07 | -.05 | + 12.12 | + 10 | + 12.22 | +12.22 00 | 12.22 |
| 1.4 | -2 | 1 | 24 | 22 | + .26 | | + 12.19 | +.06 | 12.13 | + 05 | .18 + | .18 00 | .18 |
| 1.25 | | | | | | | | | | | | 12.20 12.200 | 12.200 |

| Ra h | m | δ | tang. δ | | πRa | P'P | πRa-(P'P) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 345 | + 5.14 | 0 = | + 11.31 | +.00 | +11.31 |
| 1 | 11 | 19 | + 42.03 | | + 1.42 | ~~+.58~~ ~~+.55~~ -.12 | ~~0.84~~ +1.54 |
| 1 | 28 | 347 | + 3.15 | | + 11.85 | +.06 | 11.79 |

1.4 +.26 +12.13
+1
1.1 +.56 +12.12

n = +.03 +.03

| | | | | I | | II |
|---|---|---|---|---|---|---|
| 1.0 | +5.14 | +11.31 | -.01 | +11.30 | +.00 | +11.31 |
| 1.2 | +42.03 | ~~+0.84~~ 1.54 | -.01 | + 0.83 | +.00 | +0.84 |
| 1.5 | +3.15 | +11.79 | +.00 | +11.79 | +.01 | +11.80 |

0 = +4.88 - .83 n = +.17
+41.77 - 11.30 +.70 .2~~1~~5
+2.89 - .34 .12 0
+.18~~7~~

0 = +4.58 - .81 n = +.18
+41.47 - 11.28 +.70 .2~~7~~5 +.183
+2.59 - .32 .12 + ~~.190~~

0 =

| z = | +.60+.80 | +.40+.60 | +.20+.40 | +.0+.20 | +.0−.20 | −.20−.40 | −.40−.60 | −.60−.80 | −.80−.100 |
|---|---|---|---|---|---|---|---|---|---|

RA sin η cos η tang δ Req−Rgc P′−P +(P′−P) Req−Rgc Rgc. Req.
h m ″ ″
1 4 +.22 .97+ 0.56 −2 20.5 . +0.2 −20.3 +0.6 −19.7
1 70
1 30
+ 100 +.22 −20.
+.22 −20.″3
+.6
19.7
(2) .6
19.70 19.70
−2′ 19.″65
19.50

RA sin η cos η tang δ Req−Rgc P′−P +(P′−P) Req−Rgc Rgc. Req.
h m ″
1 11 −.72 .69+ 42.02 −2 17.5 . ~~−0.3~~ +.0 −17.5 −1.8 −19.3
19.30 19.30
−.72 −17.″8
−1.8
19.6
* .1

1 4 +.22 .97+ .56 −2 21.′″2 . +0.2 −21.0 +0.6 −20.4
1 40
2 160
200
+.22 −21.0
+.6
20.4
(3) * − .3
20.40 2040
−2′ 20.″73
20.67

1 1 −.60 .80+ 5.14 204 −2 ~~19.6~~ . +0.6 −19.8 −1.6 −21.4
1 11 −.72 .69+ 42.02 18.4 . ~~−0.3~~ 0 18.7 4 −1.8 20.2
20.80 2080
−.60 −19.8 −.72 −18.7
−1.5 −1.8
21.3 20.5
* +.6 * −.2

0 1 +.24 .97+ .54 −2 20.′″7 . −0.2 −20.9 +0.7 −20.2
0 3 −.05 1.00+ 1.01 20.5 ! . −0.1 20.2 −0.2 20.4
0 12 +.79 .61− .17 22.0 . +0.2 21.8 +2.1 19.7
0 31 +.24 .97+ .55 19.6 . −0.2 19.8 +0.7 19.1
0 33 −.23 .97+ 1.47 19.1 . +0.6 18.5 −0.7 19.2
0 56 +.58 .81+ .13 20.9 . +0.4 20.5 +1.5 19.0
19.60 19.60
6 360 +.79 −21.8 +.58 −20.5 +.24 −20.9 −.05 −20.2 −.23 −18.5 −.56 −18.7
3 369 +.24 −19.8 −.34 −18.4 −.60 −19.6
729
+.79 −21.8 +.58 −20.5 +.24 −20.3 −.05 −20.2 −.28 −18.4 −.58 −19.1
+1.9 +1.4 +.6 −.1 −.7 −1.4
19.9 19.1 19.7 20.3 19.1 20.5
−2′ 19.″77 (9) * +.1 * −.7 * −.1 2 * +.5 * −.7 2 * +.7 2
19.81

0 6 −.86 .50− 4.84 −2 16.′″4 . +0.4 ~~16.8~~ 0 −2.2 19.0 √
0 9 −.56 .82+ 4.08 19.2 ~~15.8~~ . +0.5 18.7 −1.5 −20.2
0 25 −.34 .94+ 1.90 18.0 . −0.4 18.4 −0.9 19.8
0 28 −.92 .38− 2.82 15.1 . +0.8 15.9 ~~14.3~~ −2.3 18.2 √
1 1 −.60 .80+ 5.14 20.2 ~~19.4~~ . +0.6 19.6 −1.6 21.2
20.23 20.23
−.86 −16.0
−.92 −14.3
−.88 −15.1

+.25
+.31
+.280

54

1 4 +.22 .97+ .56 −2 18.′″2 . +0.2 −18.0 +0.6 −17.4
1 24 +.46 .88+ .26 17.9 . −0.3 18.2 +1.2 17.0
2 40
3 240
280
17.20 17.20
+.46 −18.2 +.22 −18.0
+.46 −18.2 +.22 −18.0
+1.1 +.6
17.1 17.4
(5) * −.4 * −.1
−2′ 17.″54
17.56

1 1 −.60 .80+ 5.14 17.1 −2 ~~16.3~~ ″ . +0.6 −16.5 −1.6 18.1
1 11 −.72 .69+ 42.03 16.0 . ~~−0.3~~ 0 16.~~3~~ 0 1.9 17.9
1 28 −.50 .86+ 3.15 16.6 8 . +0.7 16.1 −1.3 17.4
17.80 17.80
−.60 −16.5 −.72 −16.3
−.50 −16.1
−.55 −16.3 −.72 −16.3
−1.3 −1.7
17.6 18.0
* +.5 * +.5

1873 Nov 18 h = -.010 n = +.21 h' = -.007

|  | R.A. h | m | tan δ | T-R.A s | ρ'-ρ | T-R.A-ρ'-ρ |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| 0.4 | 0 | 25 | +1.90 | +19.11 | +.05 | +19.06 | +.40 | +19.46 | -.00 |
| 0.5 | 0 | 31 | +.55 | .28 | +.01 | .27 | +.11 | .38 |  |
| 0.6 | 0 | 33 | +1.47 | .22 | +.00 | .22 | +.31 | .53 |  |
| 0.7 | 0 | 41 | +1.55 | .37 | +.10 | .27 | +.33 | .60 |  |
| 1.1 | 1 | 4 | +.56 | .21 | -.05 | .26 | +.12 | .37 | +.00 |

0.66

+19.468 +19.468

0.7 +1.21 +19.22

0.6 +3.56 +18.70 +.00 18.70
1.2 +42.02 +10.59 +.00 10.59

0 = +2.35 - .52 n = +.22
+40.81 - 8.63 +.21

+.215

1873 Nov 18

| R.A |  | tan δ | T-R.A. | ρ'-ρ | T-R.A -ρ'-ρ |
|---|---|---|---|---|---|
| 23 | 24 | -2.75 | +20.09 | +.13 | +19.96 |
| 0 | 28 | -2.82 | 20.16 | +.04 | 20.12 |
| 0 | 37 | +3.56 | 18.88 | +.18 | 18.70 |
| 1 | 11 | +42.02 | 10.47 | -.12 | 10.59 |

23.4 - 2.75 + 19.96 ±.01 + 19.95
0.5 - 2.82 + 20.12 +.00 + 20.12

0 = - 3.96 + .73 n = +.19
- 4.03 + .90 +.22

+.205

1873 Nov 19 h = -.010 n = +.13 h' = -.012

|  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|
| 23.3 | 23 | 19 | +.42 | +19.30 | -.01 | +19.31 | +.05 | +19.36 | -.01 | +19.35 |
| 0.4 | 0 | 25 | +1.90 | .05 | +.05 | .00 | +.25 | .25 | -.00 | 25 |
| 0.5 | 0 | 31 | +.55 | .28 | +.01 | .27 | +.07 | .34 | -.00 | 34 |
| 0.6 | 0 | 33 | +1.47 | .17 | +.00 | .17 | +.19 | .36 | +.00 | 36 |
| 0.9 | 0 | 56 | +.13 | .35 | +.01 | .34 | +.02 | .36 | +.00 | .36 |
| 1.1 | 1 | 4 | +.56 | .45 | +.01 | .44 | +.07 | .51 | +.01 | .52 |

0.47

+19.363 +19.363

0.5 +.84 +19.26

0.6 +3.56 +18.83 +.00 +18.83
1.0 +5.14 +19.01 +.00 19.01
1.2 +42.02 +13.05 +.01 13.06

0 = +2.72 - .43 n = +.16
+4.30 - .25 +.06
+41.18 - 6.20 +.15

+.123

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| 23 | 24 | -2.75 | +20.02 | +.13 | +19.89 |
| 0 | 28 | -2.82 | 19.76 | +.04 | 19.72 |
| 0 | 37 | +3.56 | 19.01 | +.18 | 18.83 |
| 1 | 1 | +5.14 | 19.01 | +.00 | 19.01 |
| 1 | 11 | +42.02 | 12.93 | -.12 | 13.05 |

23.4 - 2.75 + 19.89 -.01 + 19.88
0.5 - 2.82 19.72 .00 19.72

0 = - 3.59 + .62 n = +.17
- 3.66 + .46 +.13

+.150

1873 Nov 18

| R.A |  | sin z | tan δ | $R_{44}-R_{fl}$ |  | ρ'-ρ | $R_{44}-R_{fl}+ρ'-ρ$ |  | $R_{fl}$ | $R_{44}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 25 | -.34 | +1.90 | -2' | 18.0" | -.4 | -2' | 18.4" | -.9 | 19.3 |
| 0 | 31 | +.24 | +.55 |  | 20.5 | -.2 |  | 20.3 | +.6 | 19.7 |
| 0 | 33 | -.23 | +1.47 |  | 20.1 | +.6 |  | 19.5 | -.6 | 20.1 |
| 0 | 41 | -.25 | +1.55 |  | 19.6 | +.8 |  | 18.8 | -.7 | 19.5 |
| 1 | 4 | +.22 | +.56 |  | 20.5 | +.2 |  | 20.3 | +.6 | 19.7 |

19.66

-2' 19.82"

| R.A |  | sin z | tan δ | $R_{44}-R_{fl}$ |  | ρ'-ρ | $R_{44}-R_{fl}+ρ'-ρ$ | $R_{fl}$ | $R_{44}$ |
|---|---|---|---|---|---|---|---|---|---|
| 23 | 24 | -.92 | -2.75 | -2 | 17.2 | +.8 | 18.0 | -2.5 | 20.5 |
| 0 | 29 | -.92 | -2.82 |  | 17.5 | +.8 | 18.3 | -2.5 | 20.8 |
| 0 | 37 | -.53 | +3.56 |  | 19.3 | +1.2 | 18.1 | -1.4 | 19.5 |
| 1 | 11 | -.72 | +42.02 |  | 17.5 | +.0 | 17.5 | -1.8 | 19.3 |

20.02

Nov 19

| R.A |  | sin z | tan δ | $R_{44}-R_{fl}$ |  | ρ'-ρ | $R_{44}-R_{fl}+ρ'-ρ$ |  | $R_{fl}$ | $R_{44}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 19 | +.34 |  | -2 | 21.8 | +.2 | -2 | 21.6 | +.9 | 20.7 |
| 0 | 25 | -.34 |  |  | 17.9 | -.4 |  | 17.5 | -.9 | 18.4 |
| 0 | 31 | +.24 |  |  | 22.0 | -.2 |  | 22.2 | +.6 | 21.6 |
| 0 | 33 | -.23 |  |  | 20.7 | +.6 |  | 20.1 | -.6 | 20.7 |
| 0 | 56 | +.58 |  |  | 22.8 | +.4 |  | 22.4 | +1.5 | 20.9 |
| 1 | 4 | +.22 |  |  | 21.2 | +.2 |  | 21.0 | +.6 | 20.4 |

20.45

-2' 20.36"

| R.A |  | sin z | tan δ | $R_{44}-R_{fl}$ |  | ρ'-ρ | $R_{44}-R_{fl}+ρ'-ρ$ | $R_{fl}$ | $R_{44}$ |
|---|---|---|---|---|---|---|---|---|---|
| 23 | 24 | -.92 | -2.75 | -2 | 16.2 | +.8 | 17.0 | -2.5 | 19.5 |
| 0 | 29 | -.92 | -2.82 |  | 17.4 | +.8 | 18.2 | -2.5 | 20.7 |
| 0 | 37 | -.53 | +3.56 |  | 31.7 | +1.2 | [30.5] | -1.4 |  |
| 1 | 1 | -.60 | +5.14 |  | 19.6 | +.7 | 18.9 | -1.6 | 20.5 |
| 1 | 11 | -.72 | +42.04 |  | 18.4 | +.0 | 18.4 | -1.8 | 20.2 |

20.22

Rav
20.5
20.8
19.5
19.3
20.02

19.5
20.7
20.5
20.2
20.22