KG
11366
v.473

# General Catalogue
# Observations & Reductions

A 9 1874-5
From $18^h$ $0^m$ to $19^h$ $49^m$

G. C. 1874-5
Observations & Reductions
A 9
From $18^h 0^m$ to $19^h 49^m$

28 620

Piazzi ~~XVII~~ 359   1874   1875

B.A.C. 6127   α   0 10.04   Cor α =
h m sec   δ   28 6.01   Cor δ =
18 0 10.   dα/dt   + 3.795
− 28° 28′   dδ/dt   − 0.05   tang δ = −.54
ζ = + 70° 51′   I = 2.35 s
δ sin ζ = +.94   l sin δ 9.67820   k = −.018 s
l cos δ 9.94404   9.94404
l C .10600   .13 146
l C′ 0.05004   0.07550
l C″   0.06956

1874
Aug. 3   Aug. 4   Aug. 6   Aug. 23   Aug. 24   Aug. 26
−.515   −.500   −.480   −.422   −.400   −.326

18 0 33.4 0 30.1 0 — 0 56.0 59 35.5 59 25.4 59 49.7 59 38.4 59 50.3 59 41.8 59 50.9 59 37.0
35.9 32.2 — 58.8 37.8 28.6 52.0 40.5 52.6 44.2 53.2 39.1
38.2 33.6 — 1.2 40.2 30.5 54.4 42.9 54.9 46.4 55.6 42.0
42.7 — 44.8 59.1 59.7 0.4
45.2 — 47.3 1.4 1.9 2.7
47.7 — 49.5 3.8 4.3 5.0
50.0 1 7.7 — 51.9 0 1.7 6.1 0 22.7 6.7 0 39.0 7.3 0 31.8
52.3 9.2 52.9 48.20 54.3 4.4 8.6 24.0 9.0 41.4 9.6 34.1
57.1 11.0 57.6 20 59.1 6.4 13.1 26.0 13.6 43.2 14.4 36.5
59.4 59.9 15 1.2 15.6 16.1 16.6
1.8 2.2 10 3.6 17.8 18.5 19.0

4634   1726   4252   2816   2876   2347
60   60   120   240   240   180
523 4 0 31.86   6 0 58.66   545 2 59 28.18   41 6 59 40.60   47 6 59 44.13   54 7 59 39.36
0 ~~47.582~~ 1 8.96   48.18   59 49.564 0 4.187   0 3.782 0 24.23   0 4.327 0 41.20   0 4.973 0 34.13
47.609   0 48.17   49.546   3.764   4.309   4.955
47.591

− 38.63   − 39.24   + 19.33   + 4.88   + 4.29   + 3.64
+ .28   + .27   + .26   + .23   + .22   + .18
− 2.84 +0.955   − 2.84 +0.955   − 2.82 +0.975   − 2.65 +1.145   − 2.63 +1.165   − 2.61 +1.185
− 41.19   − 41.81   + 16.77   + 2.46   + 1.88   + 1.24
0 47.59   0 48.17   59 49.55   0 3.76   0 4.31   0 4.95

0 6.40   0 6.36   0 6.32   0 6.22   + 6.19   0 6.19
10.195   10.155   10.115   10.015   9.985   9.985

s
+ 15.72 5   − 21.38 5   − 10.47   + 21.40 .39   − 14.57 14.61   + 23.18   − 20.45   + 20.20   − 36.87   + 25.61   − 29.16
45   50   45   45   45   45
′ − 1.68   − 1.71   − 1.73   − 2.12   − 2.14   − 2.17
4 58.1 0 38.9 0 29.4   4 52.7 0 31.9 4 50.8 0 37.8 4 53.3 0 57.0 4 47.0 0 47.0
16.5 58.1 46.9   11.5 50.0 8.3 55.7 12.3 11.7 5.4 5.9
1346 970 763   1242 819 1191 935 1256 1287 1124 1129
50 5′ 7.30″ 50 8 48.50 50 8 38.15   50 5 2.10 50 2 40.95 49 4 59.55 50 4 46.75 50 5 2.80 50 4 4.35 49 4 56.20 50 0 56.45

1.19728 1.32940n 1.01995n   1.33021 1.16466n 1.36511 1.31069n 1.30535 1.56667n 1.40841 1.46479n
1.24732 1.37984n 1.06999n   1.38025 1.21469n 1.41575 1.36073n 1.35539 1.61671n 1.45845 1.51483
+ 17.64 − 23.96 − 11.75   + 24.00 − 16.39 + 26.01 − 22.95 + 22.67 − 41.37 + 28.74 − 32.72
50 24.97 50 24.54 50 26.40   50 26.10 50 24.56 50 25.56 50 23.80 50 25.41 50 22.98 50 24.94 50 23.73

− 28° 27′ 36.62″ 36.19 27 38.05   27 37.75 36.21 27 37.21 35.45 27 37.12 34.63 27 36.59 35.38
36.40   36.98   36.33   35.87   35.98
+ 70 48 0 48 41   47 56 48 57
2.21436 2.21464   2.21432 2.21472
− 392   − 683   − 289   − 599   − 328   + 12
2.21044 2.21072 2.20753   1.21147 1.21175 2.20837 2.20865 2.21104 2.21144 2.21444 2.21484
− 162.35 − 162.45 − 161.26   − 162.73 − 162.83 − 161.57 − 161.68 − 162.57 − 162.72 − 163.85 − 164.00
− 5 − 5 − 6   − 4 − 4 − 4 − 4 − 3 − 3 − 3 − 3
+ .05 +.08 + .09 + .02 +.02   + .09 +.07 + .05 + .12 +.10 + .09 + .09 +.19 + .30 + .14 +.10 + .19
+ .01 + .01 .00   .00 .00 .00 .00 .00 .00 − .10 − .02

− 2 42.29 − 2 42.35 − 2 41.24   − 2 42.64 − 2 42.78 − 2 41.45 − 2 41.59 − 2 42.48 − 2 42.42 − 2 43.81 − 2 43.83
− 28 − 2 42.34 − 2 42.40 − 2 41.30   − 2 42.68 − 2 42.82 − 2 41.49 − 2 41.63 − 2 42.51 − 2 42.45 − 2 43.84 − 2 43.86
30 18.96 18.59 30 19.35   30 20.43 19.09 30 18.70 17.08 30 19.63 17.08 30 20.43 19.24
+ 2 5.15 3.58   + 5.85 4.25   + 5.81 4.19   + 4.63 2.64   + 4.78 2.77   + 5.19 3.16
− 1.57 + 8.95   − 1.60 + 8.99   − 1.62 + 9.08   − 1.99 + 9.75   − 2.01 + 9.78   − 2.03 + 9.87
+ 9.00   + 9.04   + 9.13   + 9.80   + 9.83   + 9.92
+ 2 12.58 28 6.38   + 13.29   + 13.32 7.11   + 12.44 6.26   + 12.60 7.03   + 13.08 7.35
6.01   5.77   4.64   4.48   6.16

28 6.20 6.25   6.06   6.44   5.45   ~~6.25~~ 5.75   6.75

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1874 | | 1875 | | | | | | | |
| Sept.1 | | Sept.2 | | Aug 9 | | Aug 30 | | Aug 31 | | Sept-1 | |
| −.430 | | −.450 | | −.647 | | −.675 | | −.680 | | −.636 | |
| 59 53.3<br>55.7<br>58.0<br>2.6<br>4.9<br>7.3<br>9.7<br>12.0<br>16.7<br>19.2<br>21.4 | 59 42.1<br>44.4<br>47.4<br>23.5<br>26.4<br>28.3 | 59 53.8<br>.75 56.1<br>.80 58.4<br>.80 3.1<br>.85 5.6<br>—<br>—<br>—<br>—<br>—<br>— | 0 2.1<br>4.2<br>0 39.9<br>43.5<br>45.8 | 0 —<br>—<br>—<br>12.6<br>14.9<br>17.4<br>19.9<br>22.0<br>—<br>—<br>— | 0 21.3<br>23.4<br>25.3<br>0 47.4<br>49.7<br>51.6 | 0 16.7<br>19.0<br>21.3<br>26.0<br>28.4<br>30.6<br>33.0<br>35.3<br>40.0<br>42.4<br>44.8 | 59 58.4<br>59.7<br>1.6<br>0 51.6<br>53.7<br>55.5 | 0 17.5<br>19.9<br>22.3<br>26.9<br>29.3<br>31.5<br>34.0<br>36.3<br>41.0<br>43.4<br>45.8 | 0 0.8<br>2.7<br>5.4<br>1 4.4<br>7.2<br>9.3 | 0 18.3<br>20.8<br>23.0<br>27.8<br>30.0<br>32.4<br>34.8<br>37.0<br>41.6<br>44.0<br>46.6 | 0 1.2<br>3.7<br>5.3<br>1 1.5<br>3.0<br>5.1 |
| 2608<br>180 | | 1770<br>120 | | 868 | | 3375 | | 3479 | | 3563 | |
| 808<br>0 7.345<br>7.327 | 59 44.63<br>0 26.187 | 7.86<br>0 7.84 | 0 3.15<br>0 43.067 | 0 17.360<br>17.342 | 0 23.33<br>0 49.57 | 0 30.682<br>30.664 | 59 59.90<br>0 53.60 | 0 31.627<br>31.609 | 0 2.97<br>1 6.97 | 0 32.391<br>32.373 | 0 3.40<br>1 3.20 |
| + 6.16<br>+ .23<br>− 2.52<br>− 1.13<br>0 7.33 | +1275 | + 0.60<br>+ .24<br>− 2.51<br>− 1.67<br>0 7.84 | 1285 | − 4.44<br>+ .35<br>− 3.20<br>− 7.29<br>0 17.34 | | − 17.96<br>+ .36<br>− 2.96<br>− 20.56<br>0 30.66 | | − 18.86<br>+ .37<br>− 2.94<br>− 21.43<br>0 31.61 | | − 19.64<br>+ .34<br>− 2.93<br>− 22.23<br>0 32.57 | |
| 0 6.20<br>9.995<br>~~6.256~~ | | 0 6.17<br>6.256 | 9.965 | 0 10.05 | | 0 10.10 | | 0 10.18 | | 0 10.14 | |
| s<br>+22.71<br>45 | −18.72 3 | 50 + 4.71 | − 35.21 | 30 − 5.97 | − 32.21 | 30 + 30.78 | − 22.92 | 30 + 28.66 | − 35.34 | 30 + 28.99 | − 30.81 |
| −201 | | −223 | | −239 | | −253 | | −253 | | −254 | |
| 4 56.9<br>16.6<br>133.5<br>50 5 6.75 | 0 41.6<br>1.5<br>103.1<br>50 0 51.55 | 0 16.4<br>37.3<br>53.7<br>50 0 26.85 | 0 59.7<br>19.3<br>139.0<br>51 + 9.50 | 2 6.5<br>29.9<br>34.2<br>32 17.10 | 2 38.1<br>59.1<br>97.2<br>32 48.60 | 1 23.6<br>44.8<br>68.4<br>31 34.20 | 2 27.0<br>46.6<br>73.6<br>32 36.80 | 1 28.2<br>46.8<br>75.0<br>31 37.50 | 2 42.9<br>0.5<br>103.4<br>32 51.70 | 1 24.3<br>43.9<br>68.2<br>31 34.10 | 2 36.1<br>54.5<br>90.6<br>32 45.30 |
| 1.35622<br>1.40626<br>+25.48<br>50 32.23 | 1.27254<br>1.32258<br>−21.02<br>50 30.53 | n 0.67302<br>n 0.72306<br>+ 5.28<br>50 32.13 | 1.54667 n<br>1.59671 n<br>− 39.51<br>29.99 | 0.77597 n<br>0.8~~[illegible]~~ 4553<br>− 7.16 61<br>32 ~~10.00~~<br>10.05 | 1.50799 n<br>1.5~~8246~~ 57735<br>− ~~[illegible]~~ 34.80<br>32 ~~10.83~~<br>10.80 | n 1.48827<br>n 1.55783<br>+36.13<br>32 10.33 | 1.36021<br>1.42977 n<br>− 26.90<br>32 9.90 | n 1.45728<br>1.52684<br>+33.64<br>32 11.14 | 1.54827<br>1.61783<br>−41.48<br>32 10.22 | 1.46225<br>1.53181<br>+34.03<br>32 8.13 | 1.48869 n<br>1.55825 n<br>−36.16<br>32 9.14 |
| 27 43.88<br>43.03 | 42.18 | 43.78<br>42.71<br>48 20<br>2.21448 | 41.64<br>49 2<br>2.21476 | 9 ~~21.65~~<br>21.74<br>22.09<br>48 29<br>2.21456 | ~~21.93~~<br>21.45<br>49 1<br>2.21476 | 9 21.98<br>21.76 | 21.55 | 9 22.79<br>22.33 | 21.87 | 9 19.78<br>20.28 | 20.79 |
| −1341 | | −1331 | | −1461 | | −1612 | | −1071 | | −773 | |
| 2.20091<br>−158.82<br>− 7<br>+11 +03<br>− ~~.00~~ | 2.20131<br>−158.97<br>− 4<br>+08<br>−.02 | 2.20117<br>−158.92<br>− 7<br>+1 +.13<br>−.01 | 2.20145<br>−159.02<br>− 4<br>+28<br>−.02 | 2.19995<br>−158.47<br>− 9<br>+ 1 −.16<br>−.25 | 2.20015<br>−158.55<br>− 9<br>+22<br>−.31 | 2.19844<br>−157.92<br>− 8<br>+.20 −.08<br>−.18 | 2.19864<br>−158.00<br>− 8<br>+11<br>−.29 | 2.20385<br>−159.90<br>− 7<br>+17 −.02<br>−.18 | 2.20405<br>−159.98<br>− 7<br>+.28<br>−.32 | 2.20683<br>−161.00<br>− 6<br>+18 −.05<br>−.18 | 2.20703<br>−161.08<br>6<br>+20<br>−.30 |
| −2 38.81<br>30 22.76 8<br>+2 5.13<br>− 2.07<br>+10.08 | −2 38.91<br>21.6 8<br>3.06<br>+10.03 | −2 38.92<br>22.77 9<br>+ 6.25<br>− 2.09<br>+10.11 | −2 38.76<br>20.47 83<br>4.16<br>+10.06 | −2 38.71<br>12 0.54 80<br>−16 12.81<br>− 2.24<br>+10.32 | −2 38.64<br>1.18 73<br>15.05 | −2 37.90<br>11 54.96 8<br>−15.09<br>− 2.37<br>+11.02 | −2 38.18<br>54.81 26<br>17.46 | −2 39.91<br>12 27.7 6<br>−13.01<br>− 2.37<br>+11.05 | −2 40.01<br>1.96 09<br>15.38 | −2 41.00<br>12 0.84 6<br>− 13.16<br>− 2.38<br>+11.04 | −2 41.18<br>0.03 24<br>15.54 2. |
| +2 13.14 | 9.62<br>8.02<br>28 8.82<br>8.57 | + 14.27 | 8.50<br>6.20<br>7.35 | −16 4.73 | 5.27<br>5.91<br>28 5.59 | − 6.44 | 6.40<br>6.25<br>6.32 | − 4.33 | 7.10<br>6.29<br>6.70 | − 4.47 | 5.31<br>6.50<br>5.90 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sept-4 | | | | Sept-5 | | | | Sept-7 | | |
| | -.640 | | | | -.600 | | | | -.547 | | |
| 0 | 20.8 | 0 | 15.1 | 0 | — | 0 | 45.9 | 0 | 23.7 | 0 | 25.4 |
| | 23.0 | | 17.3 | | — | | 48.0 | | 25.9 | | 27.4 |
| | 25.4 | | 19.2 | | — | | 50.8 | | 28.3 | | 30.7 |
| | 30.0 | | | | 31.3 | | | | 33.0 | | |
| | 32.4 | | | | 33.6 | | | | 35.4 | | |
| | 34.7 | | | | 36.0 | | | | 37.8 | | |
| | 37.2 | 0 | 56.7 | | 38.4 | | | | 40.0 | 0 | 58.0 |
| | 39.5 | | 58.9 | | 40.7 | | | | 42.4 | | |
| | 44.2 | | 1.1 | | — | | | | 47.0 | | |
| | 46.6 | | | | — | | | | 49.4 | | |
| | 49.0 | | | | — | | | | 51.8 | | |
| | 3829 | | | | | | | | 4147 | | |
| | | 0 | 17.20 | | 36.00 | 0 | 48.23 | | | 0 | 27.83 |
| 0 | 34.809 | 0 | 58.90 | | | | | 0 | 37.700 | 0 | 58.00 |
| | 34.791 | | | 0 | 35.98 | | | | 37.682 | | |
| − | 22.22 | | | − | 23.28 | | | − | 25.07 | | |
| + | .33 | | | + | .32 | | | + | .31 | | |
| − | 2.88 | | | − | 2.84 | | | − | 2.83 | | |
| − | 24.77 | | | − | 25.83 | | | − | 27.59 | | |
| 0 | 34.79 | | | 0 | 35.98 | | | 0 | 37.68 | | |
| 0 | 10.02 | | | 0 | 10.15 | | | 0 | 10.09 | | |
| | | | | | | | | | 10.104 | | |
| + | 17.61 | | −24.09 | − | 12.23 | | | + | 9.87 | | −20.30 |
| 30 | | | | 30 | | | | 30 | | | |
| | −2.57 | | | | −2.58 | | | | −2.60 | | |
| 1 | 44.0 | 2 | 32.9 | 2 | 15.3 | | | 1 | 49.1 | 2 | 24.3 |
| | 3.9 | | 52.9 | | 35.2 | | | | 8.7 | | 44.4 |
| | 107.9 | | 85.8 | | 50.5 | | | | 117.8 | | 68.7 |
| 31 | 53.95 | 32 | 42.90 | 32 | 25.25 | | | 31 | 58.90 | 32 | 34.35 |
| | 1.24576 | | 1.38184 | | 1.08743n | | | | 0.99432 | | 1.30750n |
| | 1.31532 | | 1.45140 | | 1.15699n | | | | 1.06388 | | 1.37706n |
| | +20.64 | | −28.28 | | −14.35 | | | | +11.58 | | −23.83 |
| 32 | 14.62 | 32 | 14.62 | 32 | 10.90 | | | 32 | 10.48 | 32 | 10.52 |
| 9 | 26.27 | | 26.27 | 9 | 32.55 | | | 9 | 22.13 | | 22.17 |
| | 26.27 | | | | | | | | 22.15 | | |
| | | | | | | | | 48 | 11 | 48 | 46 |
| | | | | | | | | | 2.21444 | | 2.21468 |
| | −2538 | | | | −2097 | | | | −1047 | | |
| | 2.18918 | | 2.18938 | | 2.19359 | | 2.19379 | | 2.20397 | | 2.20421 |
| | −154.60 | | −154.66 | | −156.17 | | −156.24 | | −159.95 | | −160.03 |
| − | 10 | − | .10 | − | 10 | | | − | 6 | − | 6 |
| | +07 | −.16 | +.13 | | +.03 | −.23 | | + | 1 | −.29 | +.09 |
| | −21 | | −.30 | | −26 | | | | −.30 | | −.39 |
| −2 | ~~34.64~~ | −2 | ~~34.83~~ | −2 | ~~36.40~~ | | | −2 | ~~40.24~~ | −2 | ~~40.42~~ |
| | .84 | | .93 | | .50 | | | | 30 | | 39 |
| 12 | 1.11 | | 1.20 | 11 | 59.05 | | | 12 | 2.43 | | 2.56 |
| −16 | 14.38 | 16.79 | | − | 13.42 | 15.84 | | − | 14.01 | 16.45 | |
| − | 2.41 | | | − | 2.42 | | | − | 2.44 | | |
| + | 11.14 | | | + | 11.16 | | | + | 11.20 | | |
| − | 5.65 | | 6.76 | − | 4.68 | | | − | 5.25 | | 7.68 |
| | | | 6.85 | | | | | | | | 7.81 |
| | | | 6.80 | | | | 3.73 | | | | 7.74 |

θ⁴ Herculis

|  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|
| m sec. | α 37.647 | 1874 | Aug. 8 | 2ᵐ 39.80 |  | 44′ | 50.8″ |  |
| 18 2 40 | δ +44 47.36 |  | 13 | 39.73 | −.07 |  | 51.6 | +.8 |
| +28° 45′ | dα/dt +2.339 |  | 18 | 39.66 | .07 |  | 52.3 | .7 |
| +13° 38′ | dδ/dt +0.239 |  | 23 | 39.58 | .08 |  | 52.9 | .6 |
| f = +23 | l sin δ 9.68213 |  | 28 | 39.50 | .08 |  | 53.5 | .6 |
|  |  | Sept. | 2 | 39.41 | .09 |  | 53.9 | .4 |
|  |  |  | 7 | 39.32 | .09 |  | 54.3 | .4 |
|  | l cos δ 9.94286 |  | 12 | 39.22 | .10 |  | 54.5 | .2 |
|  | l C .10600 |  | 17 | 39.11 | .11 |  | 54.7 | .2 |
|  | l C′ 0.04886 |  |  |  |  |  |  |  |

corr α =
corr δ =
long = +.55 1.14
I = 2.35 s
K = −.018 s

| X 1874 −46 Aug. 3 −.515 |  | X 46 Aug. 4 −.500 |  | X −34 Aug. 6 −.480 | −06 | X −41 Aug. 19 −422 |  | X −43 Aug. 23 −.422 |  | X −40 Aug. 24 −.400 |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 3 4.82 | 2 56.1 | 3 5.3 | 2 59.6 | 2 6.7 | 1 39.0 | 2 17.6 | 2 11.9 | 2 20.7 | 2 13.9 | 2 21.4 | 2 17.2 |
| 7.0 | 58.0 | 7.7 |  | 9.1 | 1.2 | 19.8 | 14.2 | 23.1 | 16.1 | 23.7 | 19.7 |
| 9.4 | 0.8 | 10.0 |  | 11.4 | 3.2 | 22.2 | 16.1 | 25.6 | 18.1 | 26.1 | 21.8 |
| 14.2 |  | 14.7 |  | 16.0 |  | 26.9 |  | 30.1 |  | 30.7 |  |
| 16.6 |  | 17.0 |  | 18.4 |  | 29.3 |  | 32.5 |  | 33.2 |  |
| 18.9 |  | 19.3 |  | 20.8 |  | 31.5 |  | 35.0 |  | 35.5 |  |
| 21.2 | 3 33.5 | 21.7 | 3 38.4 | 23.0 | 2 41.3 | 33.9 | 2 48.4 | 37.3 | 2 53.7 | 37.8 | 2 56.5 |
| 23.5 | 35.2 | 24.0 | 41.1 | 25.5 | 43.7 | 36.4 | 50.6 | 39.7 | 57.8 | 40.2 | 59.0 |
| 28.2 | 38.2 | 28.8 | 43.0 | 30.1 | 45.8 | 41.0 | 52.8 | 44.3 | 0.2 | 45.0 | 1.3 |
| 30.7 |  | 31.2 |  | 32.5 |  | 43.4 |  | 46.7 |  | 47.2 |  |
| 33.0 |  | 33.6 |  | 34.9 |  | 45.7 |  | 49.0 |  | 49.7 |  |
| 2075 | 2 58.30 | 2133 | 2 59.60 | 228 x4 | 2 1.13 | 3477 | 2 14.00 7 | 3840 | 2 16.00 | 3905 | 2 19.58 7 |
| 3 18.864 | 3 35.63 | 3 19.391 | 3 40.83 | 2 ~~20.736~~ | 2 43.60 | 2 31.609 | 2 50.50 | 2 34.909 | 2 57.90 | 2 35.500 | 2 58.93 |
| 18.846 |  | 19.373 |  | 20.764<br>20.746 |  | 31.591 |  | 34.891 |  | 35.482 |  |
| 2 39.876 |  | 2 39.865 |  | 2 39.832 |  | 2 39.645 |  | 2 39.58 |  | 2 39.567 |  |
| +38.989 | −38.70<br>−25 | +39.582 | −39.23<br>−25 | −19.087 | +19.34<br>−19 | −8.056 | +8.34<br>−23 | −4.69 | +4.91<br>−24 | −4.089 | +4.37<br>−22 |
| −38.63 |  | −39.24 |  | +19.33 | −.07 | +8.32 |  | +4.88 |  | +4.29 |  |
| −.28 | −221 | −.27 | −220 | −.26 | −217 | −.23 | −200 | −.23 | −193 | −.22 | −192 |
| −2.21 | +0.129 3769 | −2.20 | +0.139 3769 | −2.17 | +0.169 3766<br>6 | −2.00 | +0.339 3770 | −1.93 | +0.409 3763 | −1.92 | +0.419 3771 |
| −41.12 | 22ᵐ | −41.71 |  | +16.90 |  | +6.09 |  | +2.72 |  | +2.15 |  |
| 3 18.85 |  | 3 19.37 |  | 2 20.75 |  | 2 31.59 |  | 2 34.89 |  | 2 35.48 |  |
| 2 37.73 | 42 45.94 | 2 37.66 | 44.76 | 2 37.65 | 46.06 | 6 37.68 | 48.28 | 2 37.61 | 49.51 | 2 37.63 | 48.30 |
| 40.069 | +2 5.12 | 39.999 | +2 5.94 | 39.989 | +2 5.71 | 40.019 | +2 5.38 | 39.949 | +2 4.84 | 39.969 | +2 4.84 |
|  | −.4 |  | −.4 |  | −.4 |  | −.5 |  | −.4 |  | −.5 |
|  | −250 |  | −280 |  | −310 |  | −510 |  | −550 |  | −570 |
| +28 | 44 45.16 |  | 44 47.50 |  | 44 48.27 |  | 44 48.06 |  | 44 48.45 |  | 44 46.94 |
| s<br>+20.56<br>35 | −16.77<br>35 | +19.79 | −21.44<br>35 | +19.61 3 | −22.86 4<br>35 | +17.55 4 | −18.89<br>35 | +18.91 | −22.99<br>35 | +15.94 3 | −22.43 |
| 1 −16.18 |  | −1.71 |  | −1.73 |  | −2.06 |  | −2.12 |  | −2.14 |  |
| 4 18.9 | 0 1.1 | 4 22.0 | 0 7.9 | 4 19.9 | 0 8.1 | 4 20.1 | 0 1.3 | 4 17.8 | 0 5.1 | 4 21.3 | 0 9.0 |
| 31.5 | 14.1 | 33.7 | 19.1 | 31.9 | 20.6 | 33.0 | 14.0 | 29.0 | 17.1 | 33.8 | 17.1 |
| 50.4 | 15.2 | 55.7 | 27.0 | 51.8 | 28.7 | 53.1 | 15.3 | 46.8 | 22.2 | 55.1 | 26.1 |
| 39 4 25.20 | 40 0 7.60 | 39 4 27.85 | 40 0 13.50 | 39 4 25.90 | 40 0 14.35 | 39 4 26.55 | 40 0 7.65 | 39 4 23.40 | 40 0 11.10 | 39 4 27.55 | 40 0 13.05 |
| 1.31302 | 1.22453n | 1.29645 | 1.33122n | 1.29292 | 1.35908n | 1.24403 | 1.27623n | 1.27669 | 1.36154n | 1.20222 | 1.36977n |
| 1.36188 | 1.27339n | 1.34531 | 1.38008n | 1.34178 | 1.40794n | 1.29289 | 1.32509n | 1.32555 | 1.41040n | 1.25108 | 1.41863n |
| +23.01 | −18.77 | +22.15 | −23.99 | +21.97 | −25.58 | +19.63 | −21.14 | +21.16 | −25.73 | +17.83 | −26.22 |
| 39 48.21 | 39 48.83 | 39 50.00 | 39 49.51 | 39 47.87 | 39 48.77 | 39 46.18 | 39 46.51 | 39 44.56 | 39 45.37 | 39 45.38 | 39 46.83 |
| +28° 43 0.14<br>59.83 | 42 58.52 | 42 58.35<br>58.59 | 58.84 | 43 0.48<br>0.03 | 59.58 | 43 2.17<br>2.00 | 1.84 | 43 3.79<br>3.38 | 2.98 | 43 2.47<br>2.24 | 1.52 |
| +13 37 18 | 38 1 |  |  |  |  |  |  |  |  | 37 21 | 38 6 |
| 1.14470 | 1.14510 |  |  |  |  |  |  |  |  | 1.14470 | 1.14510 |
| −380 |  | −680 |  | −287 |  | −997 |  | −592 |  | −323 |  |
| 1.14090 | 1.14130 | 1.13790 | 1.13830 | 1.14183 | 1.14223 | 1.13473 | 1.13513 | 1.13878 | 1.13918 | 1.14147 | 1.14187 |
| −13.83 | −13.84 | −13.74 | −13.75 | −13.86 | −13.88 | −13.64 | −13.65 | −13.76 | −13.78 | −13.85 | −13.86 |
| −.09 −.05 | −.06 | −.08 −.09 | −.10 | −.08 ±.09 | −.11 | −.07 −.07 | −.08 | −.08 −.10 | −.12 | −.05 −.08 | −.12 |
| +.04 | +.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| −13.88 | −13.90 | −13.82 | −13.85 | −13.94 | −13.99 | −13.71 | −13.73 | −13.84 | −13.90 | −13.90 | −13.98 |
| 42 46.26 | 45.62 | 44.53 | 44.99 | 46.54 | 45.59 | 48.46 | 48.11 | 49.95 | 49.08 | 49.07 | 47.54 |
| 44 49.9 |  | 50.2 |  | 50.5 |  | 52.5 |  | 52.9 |  | 53.1 |  |
| +2 3.6 | 4.3 | 5.7 | 5.2 | 4.0 | 4.9 | 4.0 | 4.4 | 3.0 | 3.8 | 4.0 | 5.6 |
| +2 3.9 |  | 5.5 |  | 4.5 |  | 4.2 |  | 3.4 |  | 4.8 |  |
| +2 5.15 | 44 48.53 | +5.85 | 5.46 47.19 | +5.81 | 5.42 48.86 | +5.34 | 4.87 48.23 | +4.63 | 4.15 48.60 | +4.78 | 4.29 47.66 |
| −.38 | 4.77 47.89 | −.39 | −2.56 47.65 | −.39 | −2.86 47.91 | −.47 | −4.86 47.88 | −.48 | −5.26 47.72 | −.49 | −5.46 46.13 |
| −2.50 | −2.26 | −2.80 |  | −3.10 |  | −5.10 |  | −5.50 |  | −5.70 |  |
| +2 2.27 | 44 48.21 | +2.66 | 47.42 | +2.32 | 48.38 | +1 59.77 | 48.05 | +58.65 | 48.16 | +58.59 | 46.89 |
|  | 44 48.45 |  | [illegible] |  | [illegible] |  | [illegible] |  | [illegible] |  | 47.13 |

| × -.28<br>Aug. 26<br>-.326 | -.04 | × -.46<br>Aug. 31<br>-.480 | | × -.41<br>Sept. 1<br>-.430 | | 1874<br>× -.43<br>Sept. 2<br>-.450 | | 1875 +<br>-.60<br>Aug 7<br>-.640 | | × -.62<br>Aug 9<br>-.647 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 22.0 | 2 16.6 | 2 23.9 | 2 12.5 | 2 24.4 | 2 16.0 | 2 25.0 | 2 16.0 | 2 32.5 | 2 26.5 | 2 33.1 | 2 32.0 |
| 24.3 | 18.3 | 26.3 | 15.0 | 26.8 | 18.9 | 27.4 | 18.4 | 34.8 | 28.7 | 35.6 | 34.1 |
| 26.7 | 20.1 | 28.7 | 17.2 | 29.1 | 20.4 | 29.7 | 20.3 | 37.3 | 30.5 | 37.8 | 36.2 |
| 31.3 | | 33.4 | | 33.9 | | 34.3 | | 41.9 | | 42.4 | |
| 33.7 | | 35.7 | | 36.1 | | 36.7 | | 44.3 | | 44.7 | |
| 36.1 | | 38.1 | | 38.5 | | 39.1 | | 46.5 | | 47.0 | |
| 38.4 | 3 4.1 | 40.4 | 2 56.2 | 40.8 | 3 9.4 | 41.4 | 2 51.5 | 49.0 | 3 11.8 | 49.6 | 3 15.0 |
| 40.8 | 6.8 | 42.8 | 58.3 | 43.2 | 11.6 | 43.8 | 54.3 | 51.4 | 14.2 | 51.9 | |
| 45.3 | 8.9 | 47.5 | 0.1 | 47.8 | 13.9 | 48.4 | 55.8 | 56.1 | 16.0 | 56.7 | |
| 48.0 | | 49.8 | | 50.3 | | 50.8 | | 58.3 | | 59.0 | |
| 50.2 | | 52.2 | | 52.7 | | 53.1 | | 0.8 | | 1.2 | |
| 3968 | 2 18.33 | 4188 | 2 14.90 | 4235 | 2 18.43 | 4297 | 2 18.23 | 5129 | 2 26.57 | 5190 | 2 34.10 |
| 2 36.073 | 3 6.60 | 2 38.073 | 2 58.20 | 2 38.500 | 3 11.63 | 2 39.064 | 2 53.80 | 2 46.627 | 3 14.00 | 2 47.182 | 3 15.00 |
| 36.055 | | 38.055 | | 38.482 | | 39.046 | | 46.609 | | 47.164 | |
| 2 39.534 | | 2 39.45 | | 2 39.43 | | 2 39.41 | | 2 42.421 | | 2 42.38 | |
| -3.489 | +3.76 | -1.40 | +1.69 | -0.95 | +1.19 | -0.36 | +0.64 | +4.2x0 | -3.88 | +4.78 | -4.43 |
| | -.15 | | -.25 | | -.23 | | -.24 | | -.33 | | -.34 |
| + 3.67 | -.05 | + 1.60 | | + 1.16 | | + 0.60 | | - 3.91 | | - 4.44 | |
| - .18 | -1.89 | - .26 | -1.80 | - .24 | -1.78 | - .25 | -1.76 | - .35 | -2.42 | - .35 | -2.39 |
| - 1.89 | +0.449 37.72 | - 1.80 | +0.539 37.69 | - 1.78 | +0.559 37.66 | - 1.76 | +0.579 37.69 | - 2.42 | 39.98 | - 2.39 | 40.00 |
| + 1.60 | | × - 0.46 | | - 0.86 | | - 1.41 | | - 6.68 | | - 7.18 | |
| 2 36.06 | | 2 38.05 | | 2 38.48 | | 2 39.05 | | 2 46.61 | | 2 47.16 | |
| 2 37.66 | 42 49.25 | 2 ~~38.51~~ 37.59 | 48.63 | 2 37.62 | 48.86 | 2 37.64 | 42 48.34 | 2 39.93 | 1 4.22 | 2 39.98 | 4.09 |
| 39.999 | +2 5.09 | 39.929 | +2 6.25 | 39.959 | +2 5.51 | 39.979 | +2 6.25 | | -16 12.85 | | -16 12.47 |
| | -.4 | | -.5 | | -.5 | | -.5 | | -.7 | | -.6 |
| | -5.90 | | -6.40 | | -6.40 | | -6.50 | | -2.50 | | -2.80 |
| | 44 48.04 | | 44 47.98 | | 44 47.47 | | 44 47.59 | | 44 48.17 | | 44 48.22 |
| S<br>+17.74 | -30.53 | +23.17 | -20.13 | +20.07 | -33.13 | +20.83 | -14.80 | +18.06 | -27.37 | +13.08 | -27.82 |
| 35 | | 35 | | 35 | | 35 | | 20 | | 20 | |
| -2.17 | | -2.20 | | -2.21 | | -2.23 | | -2.37 | | -2.39 | |
| 4 19.3 | 0 13.5 | 4 13.7 | 0 1.2 | 4 16.7 | 0 16.2 | 4 16.6 | 4 55.7 | 0 56.7 | 1 50.3 | 1 3.8 | 1 51.9 |
| 31.7 | 23.9 | 27.5 | 15.3 | 29.9 | 29.4 | 29.9 | 9.7 | 21.3 | 15.5 | 26.4 | 14.8 |
| 51.0 | 37.4 | 46.2 | 16.5 | 46.6 | 45.6 | 46.5 | 12.5 4 | 13.80 | 12.58 | 30.2 | 12.67 |
| 39 4 25.50 | 40 0 18.70 | 39 4 ~~23.10~~ 20.60 | 40 0 8.25 | 39 4 23.30 | 40 0 22.80 | 39 4 23.25 | 40 5 2.70 | 21 9.00 | 22 2.90 | 21 15.10 | 22 3.85 |
| 1.24895 | 1.48473n | 1.36493 | 1.30384n | 1.30255 | 1.52022n | 1.31869 | 1.17056n | 1.25672 | 1.43727n | 1.11661 | 1.44436n |
| 1.29781 | 1.53359n | 1.41379 | 1.35270n | 1.35741 | 1.56508n | 1.36755 | 1.21942n | 1.33104 | 1.51139n | 1.19098 | 1.51868n |
| +19.86 | -34.17 | +25.93 | -22.53 | +22.46 | -37.07 | 3 +23.31 | -16.57 | +21.43 | -32.48 | +15.52 | -33.01 |
| 39 45.36 | 39 44.53 | 39 ~~47.03~~ 46.53 | 39 45.72 | 39 45.76 | 39 45.43 | 39 46.56 | 39 46.13 | 21 30.45 | 21 30.42 | 21 30.62 | 21 30.34 |
| 43 2.99 | 3.82 | 42 ~~59.32~~ 1.82 | 2.63 | 43 2.59 | 2.62 | 43 1.79 | 43 2.22 | 1 17.92 | 17.93 | 1 17.73 | 18.01 |
| 3.40 | | 2.22 | | 2.60 | | 2.00 | | 17.92 | | 17.87 | |
| | | | | | | 37 16 | 37 56 | 37 21 | 38 15 | | |
| | | | | | | 1.14470 | 1.14500 | 1.14470 | 1.14520 | | |
| +19 | | -1611 | | -1333 | | -1322 | | -1739 | | -1448 | |
| 1.14489 | 1.14529 | 1.12859 | 1.12899 | 1.13137 | 1.13177 | 1.13148 | 1.13178 | 1.12731 | 1.12781 | 1.13022 | 1.13072 |
| -13.96 | -13.97 | -13.44 | -13.46 | -13.53 | -13.54 | -13.54 | -13.55 | -13.41 | -13.42 | -13.50 | -13.51 |
| -.07 -.18 | -.20 | -.12 -.14 | -.08 | -.08 -.21 | -.24 | -.09 -.12 | -.05 | -.07 -.29 | -.16 | -.03 -.27 | -.16 |
| -.09 | -.01 | -.09 | .00 | -.09 | -.01 | -.09 | .00 | -.13 | -.22 | -.13 | -.22 |
| - 14.12 | - 14.18 | - 13.65 | - 13.54 | - 13.70 | - 13.79 | - 13.72 | - 13.60 | - 13.61 | - 13.80 | - 13.66 | 13.89 |
| 48.87 | 49.64 | 48.17 | 49.09 | 48.89 | 48.83 | 48.07 | 48.62 1 | 4.31 | 4.13 | 4.07 | 4.12 |
| 53.3 | | 53.8 | | 53.8 | | 53.9 | 44 | 50.1 | | 50.4 | |
| 4.4 | 3.7 | 5.6 | 4.7 | 4.9 | 5.0 | 5.8 | 5.3 -16 | 14.2 | 14.0 | 13.7 | 13.7 |
| 4.0 | | 5.1 | | 4.9 | | 5.5 | | 19.4 | | 13.7 | |
| +2 5.19 | 4.70 47.67 | + 6.14 | 5.64 47.41 | +5.13 | 46.3 47.12 | +6.25 | 5.74 47.31 -16 | 12.98 | 13.52 48.29 | - 12.81 | 13.35 47.92 |
| - .49 | -5.66 48.44 | - .50 | -6.16 48.33 | - .50 | -6.16 47.06 | - .51 | -6.26 47.86 - | .54 | 48.11 | - .54 | 47.97 |
| - 5.90 | | - 6.40 | | - 6.40 | | - 6.50 | - | 2.50 | | - 2.80 | |
| +1 58.80 | 48.05 | +1 59.24 | 47.87 | +1 58.23 | 47.09 | + 59.24 | 47.58 -16 | 16.02 | 44 48.20 | - 16.15 | 47.94 |

| 1875 | m | s | | m | s | |
|---|---|---|---|---|---|---|
| Aug. 8 | 2 | 42.39 | | 44 | 50.2 | |
| 13 | | 42.32 | -.07 | | 51.0 | +.8 |
| 18 | | 42.25 | .07 | | 51.8 | .8 |
| 23 | | 42.17 | .08 | | 52.4 | .6 |
| 28 | | 42.09 | .08 | | 53.0 | .6 |
| Sept 2 | | 42.00 | .09 | | 53.4 | .4 |
| 7 | | 41.91 | .09 | | 53.8 | .4 |
| 12 | | 41.81 | .10 | | 54.0 | .2 |
| 17 | | 41.70 | .11 | | 54.2 | .2 |

1875

$\alpha$ 39.986s

$\delta$ +44° 47.60"

$\frac{d\alpha}{dt}$ +2.339s

$\frac{d\delta}{dt}$ +0.242"

log $\delta$ 9.94286

lc .13146

lc' 0.07432

lc'' 0.06838

| 1874.0 $\alpha$ | $\delta$ | 1875.0 $\alpha$ | $\delta$ |
|---|---|---|---|
| 37.73 | | 39.93 | |
| 66 | | 98 | |
| 65 | | 98 | |
| 68 | | 89 | |
| 61 | | 40.00 | |
| 63 | | 07 | |
| 66 | | 39.99 | |
| 59 | | | |
| 62 | | | |
| 64 | | | |
| 37.647 | | 39.977 | |
| .647 | 47.36 | .986 | 47.60 |
| .000 | | -.009 | |

| 1875 -.64 + Aug 31 -.680 | | -.62 + Sept 1 -.636 | | -.60 + Sept 4 -.610 | | -.60 + Sept 5 -.600 | | -.58 + Sept 7 -.547 | |
|---|---|---|---|---|---|---|---|---|---|
| 2 47.3 | 2 29.6 | 2 47.9 | 2 30.5 | 2 — | 2 55.8 | 2 51.6 | 2 40.0 | 2 53.0 | 2 44.5 |
| 49.5 | 31.6 | 50.3 | 32.7 | — | 57.7 | 53.9 | 42.3 | 55.6 | 46.1 |
| 51.9 | 34.4 | 52.6 | 34.6 | — | 0.4 | 56.3 | 44.3 | 57.9 | 48.7 |
| 56.6 | | 57.4 | | 59.9 .60 | | 3 0.9 | | 3 2.6 | |
| 58.8 | | 59.5 | | 3 2.2 .55 | | 3.4 | | 5.0 | |
| 3 1.2 | | 3 2.0 | | 4.5 .50 | | 5.7 | | 7.4 | |
| 3.6 | 3 42.9 | 4.2 | 3 19.4 | 6.9 .55 | 3 35.1 | 7.9 | 3 22.1 | 9.7 | 3 30.0 |
| 6.0 | 45.2 | 6.7 | 21.3 | 9.2 .50 | 37.0 | 10.4 | 24.0 | 12.0 | 32.2 |
| 10.7 | 46.9 | 11.3 | 24.1 | 13.9 .50 | 39.4 | 15.0 | 26.0 | 16.5 | 34.5 |
| 13.0 | | 13.7 | | 16.3 .55 | | 17.4 | | 19.1 | |
| 15.4 | | 16.0 | | 18.7 .60 | | 19.7 | | 21.5 | |
| 31 40 | | 32.16<br>~~31 76~~ | | | | 24 22 | | 26 05 | |
| 300 | | 300 216 | | | | 180 | | 180 | |
| 1 40 | 2 31.87 | ~~1 76~~ | 2 32.60 | | 2 57.97 | 6 2 2 | 2 42.20 | 8 0 5 | 2 46.43 |
| 3 1.273 | 3 45.00 | 3 ~~1.000~~ | 3 21.60 | 4.544 | 3 ~~27.17~~ | 3 5.655 | 3 24.03 | 3 7.318 | 3 32.23 |
| 1.255 | -18.85 | 1.964<br>1.946 | -19.59 | 3 4.526 | 37.17 | 5.637 | -23.29 | 7.300 | -25.08 |
| 2 42.04 | -.35 | 2 42.02 | -.34 | 2 41.967 | ~~-22.20~~ | 2 41.95 | -.33 | 2 41.91 | -.32 |
| +19.21 | | +19.93 | | + 22.576 | -.33 | +23.69 | | + 25.39 | |
| | -2.05 | | -2.03 | | -1.98 | | -1.96 | | -1.92 |
| - 18.86 | 40.00 | - 19.64 | 39.99 | - 22.22 | 40.02 | - 23.28 | 40.06 | - 25.07 | 39.98 |
| - .37 | | - .35 | | - .33 | | - .33 | | - .32 | |
| - 2.05 | | - 2.03 | | - 1.98 | | - 1.96 | | - 1.92 | |
| - 21.28 | | - 22.02 | | - 24.53 | | - 25.57 | | - 27.31 | |
| 3 1.26 | 1 6.30 | 3 1.95 | 5.82 | 3 4.53 | 8.43 | 3 5.64 | 7.27 | 3 7.30 | 7.37 |
| | -16 12.75 | | -16 13.20 | | -16 12.47<br>43 | | -16 13.24 | | -16 13.77 |
| 2 39.98 | -.7 | 2 39.89<br>.93 | -.7 | 2 40.00 | -.7 | 2 40.07 | -.7 | 2 39.99 | -.7 |
| | -5.70 | | -5.70 | | -6.00 | | -6.10 | | -6.20 |
| | 44 47.15 | | 44 46.22 | | 44 47.46<br>4 | | 44 47.23 | | 44 46.70 |
| | | | | | | 23.45 | | | |
| +29.40 | -43.73 | +29.36 | -19.64 | + 6.57 | - 32.63 | +23.45 | - 18.38 | +20.89 | -24.91 |
| 20 | | 20 | | 20 | | 20 | | 20 | |
| -2.53 | | -2.54 | | -2.57 | | -2.58 | | -2.60 | |
| 2 42.8 | 2 8.9 | 0 43.0 | 1 41.0 | 1 7.2 | 1 53.1 | 0 48.2 | 1 38.1 | 0 50.7 | 1 45.0 |
| 4.0 | 29.2 | 5.3 | 2.0 | 30.4 | 16.1 | 11.6 | 0.4 | 13.9 | 7.9 |
| 10 68 | 3 81 | 10 83 | 10 30 | 3 76 | 12 92 | 11 98 | 9 85 | 12 46 | 11 29 |
| 22 53.40 | 22 19.05 | 20 54.15 | 21 51.50 | 21 18.80 | 22 4.60 | 20 59.90 | 21 49.25 | 21 2.30 | 21 56.45 |
| 1.46835 | 1.64078 n | 1.46776 | 1.29314 n | 0.81757 | 1.51362 n | 1.37014 | 1.26435 | 1.31994 | 1.39637 n |
| 1.53673 | 1.70916 n | 1.53614 | 1.36152 n | 0.88595 | 1.58200 n | 1.43852 | 1.33273 | 1.38832 | 1.46475 n |
| +34.41 | - 51.19 | +34.37 | - 22.99 | +7.69 | - 38.20 | + 27.45 | - 21.56 | + 24.45 | - 29.16 |
| 21 27.81 | 21 27.86 | 21 28.52 | 21 28.54 | 21 26.49 | 26.40 | 21 27.35 | 21 27.69 | 21 26.75 | 21 27.29 |
| 1 20.54 | 20.49 | 1 19.83 | - 19.84 | 21.86 | 21.85 | 1 21.00 | 20.66 | 1 21.60 | 21.06 |
| 20.51 | | 19.83 | | 21.90 | | 20.83 | | 21.33 | |
| | | | | | | | | 37 14 | 38 8 |
| | | | | | | | | 1.14460 | 1.14520 |
| -10.63 | | -7.67 | | -25.32 | | -20.79 | | -10.37 | |
| 1.13407 | 1.13457 | 1.13703 | 1.13753 | 1.11938 | 1.11988 | 1.12391 | 1.12441 | 1.13423 | 1.13483 |
| -13.61 | -13.63 | -13.71 | -13.73 | -13.16 | -13.18 | -13.30 | -13.32 | -13.31<br>.62 | ~~-13.33~~<br>13.64 |
| -.17 -.59 | -.43 | -.19 -.29 | -.08 | -.02 -.30 | -.22 | -.12 -.25 | -.07 ~~-.26~~ | -.09 -.32 | -.13 |
| -.32 | -.25 | -.10 | -.21 | -.14 | -.23 | -.11 | -.20 | -.15 | -.28 |
| - 14.12 | 14.31 | - 14.00 | - 14.02 | - 13.32 | - 13.63 | - 13.53 | - 13.59 | - 13.55<br>86 | - ~~13.74~~<br>14.05 |
| 1 6.42 | 6.18 | 5.83 | 5.82 | 8.54 | 8.32 | 7.47 | 7.07 | 7.74 | 7.01 |
| 53.3 | | 53.3 | | 53.6 | | 53.7 | | 53.8 | |
| -16 13.1 | 12.9 | 12.5 | 12.5 | 14.9 | 14.7 | 13.8 | 13.4 | 13.9 | 13.2 |
| -16 13.0 | | 12.5 | | 14.8 | | 13.6 | | 13.5 | |
| -16 13.01 | 13.59 47.13 | - 13.16 | 13.74 46.39 | - 14.38 | 14.97 47.54 | - 13.42 | 14.01 47.36 | - 14.01 | 14.61 46.93 |
| - .58 | 46.89 | - .58 | 46.38 | - .59 | 47.35 | - .59 | 46.96 | - .60 | 46.20 |
| - 5.70 | | - 5.70 | | - 6.00 | | - 6.10 | | - 6.20 | |
| -16 19.29 | 44 47.01 | - 19.44 | 46.39 | - 20.97 | 47.46 | - 20.11 | 47.16 | - 20.81 | 46.56 |

1874 1874 NA. ρ 1875 1874 V.A.

22 ~~L.C.~~ Camelopardi

h m sec. α $\overset{s}{5}7.420$ 4 57.314 57.420 5 3.933 corr α = July 28 $\overset{m}{4}$ $\overset{s}{56.99}$ 21 35.3

18 5 4 δ +21 35.73 21 36.13 23.87 21 35.58 24.42 corr δ = Aug. 2 57.30 +31 34.4

6 dα/dt +6.620 +6.618 + 6.619 7 57.61 31 33.6

110° 38′ dδ/dt −0.544 −0.54 −0.55 tang ρ = −2.66 2.84 12 57.94 33 32.8

69° 27′ 57.516 = ρ′ I = $\overset{s}{5}.86$ 17 58.28 34 32.1

Z = −68 15 l sin δ 9.97121 +.202 ρ′ − NA 22 58.64 36 31.6

Z sin Z = −93 K = $+\overset{s}{0}.40$ 27 59.01 37 31.0

Sept. 1 59.39 .38 30.6

l cos δ 9.54702 9.54702 6 59.77 .38 30.3

l C 10600 .13146

l C′ 9.65302 n 9.67848 n

l C″ 9.67254 n

18 × 1874 × × × × ×

−46 −46 −34 −06 −46 −41 −43

Aug. 3 Aug. 4 Aug. 6 Aug. 31 Sept. 1 Sept. 2

−.515 −.500 −.480 −.480 −.430 −.450

18 5 23.2 5 10.6 5 23.8 5 20.4 4 25.6 4 5.4 4 45.2 4 10.9 4 45.8 4 50.5 4 46.2 4 33.6

26.3 27.0 28.8 11.3 48.1 13.2 48.5 57.9 49.2

29.3 29.9 31.8 15.5 51.0 24.3 51.7 40 52.2

32.0 32.8 34.5 53.9 54.6 55.1

35.0 35.8 37.4 56.8 57.8 58.1

37.8 38.6 40.5 59.8 10 09

40.7 6 0.0 41.7 5 54.7 43.2 4 44.5 2.4 5 0.2 3.4 3.7

43.6 3.5 44.7 46.2 50.1 5.5 6.2 6.6

46.7 11.4 47.6 49.1 54.7 8.4 9.4 9.8

314.6 321.9 337.1 331.1 278.1 281.8

180 240 240

5 10.60 5 20.40 4 10.73 511.1 4 16.13 518.1 57.47 521.8

5 34.956 6 4.98 5 35.767 5 54.70 4 37.456 4 49.78 4 56.789 5 0.20 4 57.567 4 ~~47.46~~ 4 57.978 4 ~~33.6~~ 33.60

34.996 35.807 37.494 56.829 57.607 58.018

4 57.33 −22.33 57.39 −21.58 57.52 20.03 59.30 2.47 59.35 −1.74 4 59.43 −1.41

− 38.63 +39.65 −38.70 − 39.24 38.42 −39.23 + 19.33 ~~38.97~~ 19.35 + 1.60 +1.69 + 1.16 +1.19 + 0.60 +0.64

+ 1.37 +1.22 + 1.33 +1.22 + 1.28 +1.70 + 1.28 +1.22 + 1.14 +1.09 + 1.20 +1.14

− 0.02 +6.60 − 0.08 +6.54 − 0.21 +6.41 +.17 − 1.97 +4.65 − 2.04 +4.58 − 2.12 +4.50

− 37.28 −0.02 − 37.89 −0.08 + 20.40 −0.21 + 0.91 −1.97 + 0.26 −2.04 − 0.32 −2.12

5 35.00 5 57.50 5 35.81 57.72 4 37.49 57.70 4 56.83 ~~55.33~~ 57.77 4 57.61 ~~55.67~~ 57.85 4 58.02 ~~55.40~~ 57.68

4 57.72 4 57.92 4 57.89 4 57.74 4 57.84 4 57.70

5 4.34 ~~4.54~~ 4.44 4.51 4.36 4.49 4.32

36 16.21 17.77 17.72 19.75 19.07 20.24

+2 5.72 +2 5.94 +2 5.71 +2 6.25 +2 5.51 +2 6.25

+ 2.0 + 2.0 + 2.0 + 2.2 + 2.2 + 2.2

− 1.70 − 2.00 − 2.50 − 5.50 − 5.50 − 5.50

110 38 21.63 38 23.71 38 22.93 38 22.70 38 21.28 38 23.19

~~19.83~~

$\overset{s}{+}$24.36 −30.08′ +15.37 −16.93 +26.73 −12.38′ +40.66 −3.41 +X 0.10 + ~~8.11~~ +24.38

45 45 45 45 45 45

−1.68 −1.71 −1.73 −2.20 −2.21 −2.23

4 2.5 3 38.0 3 55.4 3 40.5 3 2.4 3 44.4 3 59.1 3 40.6 3 43.0 3 52.9

8.3 43.0 1.8 45.3 8.6 49.1 10.3 50.0 53.1 3.0

10.8 81.0 117.2 85.8 11.0 93.5 129.4 90.6 96.1 115.9

4 49 3.40 48 3 40.50 48 3 58.60 48 3 42.90 48 3 5.50 48 3 46.75 49 4 4.70 48 3 45.30 48 3 48.05 48 3 57.95

1.38668 1.47727 n 1.18667 1.27715 n 1.42700 1.09026 n 1.60917 0.53275 n 0.00000 1.38703

1.03970 n 1.13029 0.83969 n 0.93017 1.08002 n 0.74328 1.26219 n 0.18577 8.65302 n 1.04005 n

−10.96 +13.50 −6.91 +8.51 −12.02 +5.54 −18.29 +1.53 −0.04 +10.97

48 54.44 48 54.00 48 51.69 48 51.41 48 53.48 48 52.29 48 46.41 48 46.83 48 48.01 48 46.98

110° ~~26 6.09~~ ~~5.65~~ ~~26 3.34~~ ~~3.06~~ ~~26 5.13~~ 26 ~~3.94~~ ~~25 58.06~~ ~~58.48~~ ~~25 59.66~~ ~~25 58.63~~

33 53.91 54.01 54.35 56.66 56.80 56.94 54.87 55.46 56.08 34 1.84 1.73 1.52 0.34 1.37

−68 13 2 13 27 13 2 13 22

2.15554 n 2.15568 n

−369 −677 −286 −1603 −1324 −1313

2.15185 2.15199 2.14877 1.14891 2.15268 2.15282 1.13951 1.13965 1.14230 1.14241

+141.86 +141.90 +140.86 +140.90 +142.13 +142.18 +137.88 +137.93 +138.77 +138.81

+ 3 + 3 + 4 + 4 + 3 + 3 + 5 + 5 + 4 + 4

+.10 +.17 +.17 +.04 +.05 +.06 +.12 +.07 +.02 +.29 +.07 + 0 + 0 −.08 +.10 +.02

+.04 +.04 .00 .00 .00 .00 −.08 −.07 −.08 −.08

+2 22.08 +2 22.14 +2 20.94 +2 20.98 +2 22.28 +2 22.23 +2 18.09 +2 17.86 +2 18.69 +2 18.88

+110 36 15.94 16.49 36 17.60 17.94 36 17.15 18.29 36 20.08 19.43 19.07 36 20.24

+2 5.15 6.71 +5.85 7.44 +5.81 7.41 +6.14 8.18 +2 5.13 7.18 +6.25 8.32

+ 1.56 −~~2.25~~ + 1.59 −~~2.55~~ + 1.60 −~~3.05~~ + 2.04 −~~6.00~~ + 2.05 −~~6.05~~ + 2.07 −~~6.05~~

− 1.70 −1.15 − 2.00 −1.45 − 2.50 −1.95 − 5.50 −4.95 − 5.50 −4.95 − 5.50 −4.95

+2 5.01 20.95 + 5.44 23.04 + 4.91 22.06 + 2.68 22.76 + 1.68 20.75 + 2.82 23.06

21.50 23.38 23.19 22.11

21.22 23.21 22.62 22.43 20.75 23.06

1875

| | m | s | | ° | ″ | |
|---|---|---|---|---|---|---|
| Aug 6.9 | 5 | 4.85 | | 21 | 34.2 | |
| 11 | | 5.18 | + 33 | | 33.5 | − .7 |
| 16 | | 5.52 | 34 | | 32.8 | .7 |
| 21 | | 5.88 | 36 | | 32.2 | .6 |
| 26 | | 6.24 | 36 | | 31.6 | .6 |
| Sept. 31 | | 6.62 | 38 | | 31.1 | .5 |
| 5 | | 7.00 | .38 | | 30.7 | .4 |

1875

| −.60 + Aug 7 : −.640 | −.62 Aug 9 + : −.647 | −.64 + Aug 31 −.680 | −.62 × Sept-1 −.656 | +.60 + Sept-4 −.610 | −.60 × Sept-5 −.600 |
|---|---|---|---|---|---|
| 4 4 31.4<br>55.9 36.3<br>58.6 41.4<br>5 1.5<br>4.5<br>7.4<br>10.3 5 21.7<br>13.4<br>16.3<br>19.4 | 4 4 27.8<br>56.6 33.1<br>59.5 40.0<br>5 2.6<br>5.6<br>8.5<br>11.7 5 29.0<br>14.4<br>17.0<br>20.2 | 5 4 38.8<br>12.2 43.7<br>15.3 50.3<br>18.7<br>21.0<br>24.0<br>27.0 5 37.9<br>29.8 44.0<br>33.0 47.6<br>36.0 | 5 4 46.3<br>13.4 51.6<br>16.3 56.8<br>19.3<br>22.2<br>25.3<br>28.0 5 31.6<br>30.9 35.0<br>33.8 39.0<br>36.6 | 5 4 54.9<br>16.0 57.6<br>19.2 4.5<br>22.0<br>24.9<br>28.0<br>30.8 5 47.0<br>33.7 57.1<br>36.6 57.0<br>39.4 | 5 5 5.4<br>17.2<br>20.0<br>23.0<br>26.0<br>29.0<br>31.7 5 52.9<br>34.8 56.6<br>37.4 1.8<br>40.7 |
| 1871<br>120<br>6.71 4 36.37<br>5 7.456 5 21.70<br>7.496<br>4.88 2.62 −3.87<br>− 3.91 +1.60<br>+ 1.70<br>− 0.95 −0.95<br>− 3.16 5 ~~X.30~~ 4.25<br>5 7.50 ~~24~~<br>5 4.34 | 1961<br>120<br>7.61 4 33.63<br>5 8.456 5 29.00<br>8.496<br>4.95 +3.55 −4.43<br>− 4.44 +1.65<br>+ 1.72<br>− 1.02 −1.02<br>− 3.74 4.70<br>5 8.50<br>5 4.76 | 2170<br>4 44.27<br>5 24.111 5 43.17<br>24.151<br>6.59 +17.56<br>− 18.86 +1.70<br>+ 1.81 −18.86<br>− 2.66 −2.66<br>− 19.71 4.33<br>5 24.15<br>5 4.44 | 2258<br>4 51.57<br>5 25.089 5 35.20<br>25.129<br>6.65 +18.48<br>− 19.64 +1.65<br>+ 1.69 −19.59<br>− 2.72 −2.72<br>− 20.67 4.47<br>5 25.13<br>5 4.46 | 2506<br>4 59.00<br>5 27.844 5 51.70<br>27.884<br>6.89 20.98<br>− 22.22 +1.60<br>+ 1.62 −22.21<br>− 2.96 −2.96<br>− 23.56 4.31<br>5 27.88<br>5 4.32 | 2598<br>5 5.40<br>5 28.867 5 57.10<br>28.907<br>6.96 +21.95<br>− 23.28 +1.60<br>+ 1.60 −23.29<br>− 3.03 −3.03<br>− 24.71 4.19<br>5 28.91<br>5 4.20 |
| 54 36.05<br>−16 12.85<br>+2.6<br>− 1.50<br>+1.10 38 24.30 | 36.99<br>−16 12.47<br>+2.6<br>−1.70<br>38 25.42 | 36.87<br>−16 12.75<br>+2.6<br>− 4.40<br>38 22.32 | 38.09<br>−16 13.20<br>+2.6<br>− 4.50<br>38 22.99 | 41.36<br>−16 14.27<br>+2.6<br>− 4.80<br>38 24.89 | 38.28<br>−16 13.24<br>+2.6<br>− 4.90<br>38 22.74 |
| + 31.09 − 14.24<br>30<br>−2.37<br>0 28.9 0 8.1<br>59.6 38.9<br>88.5 47.0<br>30 44.25 0 23.50 | + 34.83 − 20.54<br>30<br>−2.39<br>0 32.7 0 5.8<br>0.3 34.4<br>93.0 40.2<br>30 46.50 30 20.10 | + 39.84 − 19.06<br>30<br>−2.53<br>0 36.9 35.7<br>3.2<br>100.1<br>30 50.10 | + 33.52 − 10.11<br>30<br>−2.54<br>0 34.1 0 12.8<br>0.7 40.8<br>94.8 53.6<br>30 47.40 30 26.80 | + 28.84 − 23.86<br>30<br>−2.57<br>0 20.7 4 57.0<br>50.2 25.4<br>70.9 142.4<br>30 35.45 30 11.20 | + 23.47 − 28.23<br>30<br>−2.58<br>0 22.8 0 0.5<br>50.8 28.1<br>73.6 28.6<br>30 36.80 30 14.30 |
| 1.49262 1.15351n<br>1.16516n 0.82605n<br>−14.63 + 6.70<br>30 29.62 30.20 | 1.54195 1.31260n<br>1.~~22043~~n 0.~~99108~~<br>~~76.61~~ 39 +~~9.66~~<br>30 ~~29.89~~ 30.11 30 ~~29.90~~ 76 | 1.60032 1.28012n<br>1.27286n 0.95266<br>−18.74 +8.97<br>30 31.36 | 1.52530 1.00432n<br>1.19784n 0.67686<br>−15.77 +4.75<br>30 31.63 30 31.55 | 1.46000 1.37767n<br>1.13254n 1.04921<br>−13.57 +11.20<br>30 21.88 30 22.40 | 1.37051 1.45071<br>1.04305n 1.12320<br>−~~12.90~~ 11.09 +13.28<br>30 ~~22.90~~ 25.76 30 27.57 ? |
| 52 18.73 18.15<br>18.44<br>68 13 4 13 25<br>2,15558n 2,15568n<br>−1736 | 7 41.54 41.55<br>18.26 18.59<br>18.41<br>−1435 | 7 43.01<br>16.99<br>−1055 | 7 43.28 43.20<br>16.72 16.80<br>16.76<br>−562 | 7 ~~33.53~~ ~~34.05~~<br>26.47 25.95<br>26.21<br>−2525 | 7 ~~4.56~~ 20.77<br>22.58<br>21.68<br>13 11 13 34<br>2,15561 2.15576n<br>−2061 |
| 2.13822 2.13832<br>+137.48 +137.51<br>+ 6 + 6<br>+.18 +.04 +.03<br>−.08 −.04<br>+2 17.58 64 +2 17.58<br>54 36.37 35.73<br>−16 12.98 10.78<br>+ 2.20<br>− 1.50<br>−16 12.28 24.09<br>23.45<br>38 23.77 | 2.14123 2.14133<br>+138.43 +138.46<br>+ 5 + 5<br>+.22 +.08 +.07<br>−.09 −.03<br>+2 18.56 61 +2 18.58<br>54 36.85 37.14<br>− 12.81 10.59<br>+ 2.22<br>− 1.70<br>− 12.29 24.56<br>24.85<br>24.70 | 2.14503 2.14513<br>+139.65 +139.68<br>+ 4 + 4<br>+.28 +~~.07~~ +.06<br>−.09<br>+2 19.84 48<br>54 36.87<br>− 13.01 10.66<br>+ 2.35<br>− 4.40<br>− ~~14.76~~ 22.11<br>15.06 21.81<br>~~22.11~~ | 2.14996 2.15006<br>+141.24 +141.27<br>+ 4 + 4<br>+.19 +.04 +.02 +~~.03~~<br>−.09 −.04<br>+2 21.34 8 +2 21.25<br>54 38.10 38.09<br>− 13.16 10.80<br>+ 2.36<br>− 4.50<br>− 15.30 24.80<br>24.79<br>~~24.79~~ | 2.13033 2.13043<br>+135.00 +135.03<br>+ 6 + 6<br>+.15 +.08 +.10<br>−.07 −.02<br>+2 15.08 +2 15.11<br>54 41.61 41.12<br>− 14.38 11.99<br>+ 2.39<br>− 4.80<br>− 16.79 24.82<br>~~15.53~~<br>24.33<br>(~~15.17~~) 24.57 | 2.13500 1.13515<br>+136.46 +136.51<br>+ 5 + 5<br>+.09 +.07 +.14<br>−.07 −.02<br>+2 16.48 +2 16.63 8<br>54 39.12 53 37.45<br>− 13.42 11.03<br>+ 2.39<br>− 4.90<br>− 15.93 23.19<br>21.52<br>22.35 |

| | 1874 | | 1875 |
|---|---|---|---|
| μ Sagittarii | α | | 6 17.35 |
| h m sec. 18 6 18 | δ | | 5 23.14 |
| | dα/dt | | +3.585 |
| −21° 5′ | dδ/dt | | +0.52 |
| Z = +63° 28′ | l sin δ | 9.55597n | |
| Z sin Z = +.89 | l cos δ | 9.96991 | 9.96991 |
| | l C | 10600 | .13146 |
| | l C′ | 0.07591 | 0.10137 |
| | l C″ | | 0.09543 |

cos α =
cos δ =
tang δ = −.39
I = 2.21 (s)
K = −.017

1874

Ch f.

| | July 30 | | Aug. 2 | | Aug. 4 | | Aug. 6 | | Aug. 10 | | Aug. 20 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | −.480 | | −.488 | | −.500 | | −.480 | | | | −.475 | |
| 18 | 6 57.2 | 6 29.8 | 6 40.8 | 6 36.3 | 6 42.4 | 6 45.2 | 5 43.7 | 5 39.6 | | | 5 53.4 | 5 46.3 |
| | 39.5 | 31.4 | 42.9 | 38.5 | 44.6 | | 46.0 | 41.6 | | | 57.7 | 48.9 |
| | 41.6 | 33.1 | 45.2 | 40.5 | 46.9 | | 48.2 | 43.2 | | | 59.5 | 50.8 |
| | 46.0 | | 49.6 | | 51.3 | | 52.7 | | | | 4.3 | |
| | 48.4 | | 51.9 | | 53.4 | | 54.9 | | | | 6.5 | |
| | 50.6 | | 54.1 | | 55.6 | | 57.0 | | | | 8.7 | |
| | 52.5 | 7 1.0 | 56.3 | 7 4.4 | 57.8 | 7 22.6 | 59.2 | 6 10.7 | | | 10.8 | 6 22.5 |
| | 55.0 | 3.4 | 58.5 | 6.6 | 0.0 | 24.3 | 1.5 | 12.3 | | | 13.0 | 24.4 |
| | 59.5 | 6.9 | 3.0 | 8.3 | 4.5 | 26.4 | 5.9 | 13.2 | | | 17.5 | 26.3 |
| | 1.6 | | 6.1 | | 6.6 | | 8.2 | | | | 19.7 | |
| | 3.8 | | 7.2 | | 8.8 | | 10.2 | | | | 22.0 | |
| | 4360 | | 4146 | | 3719 | | 3875 | | | | 2754 | |
| | 120 | | 180 | | 240 | | 240 | | | | 180 | |
| | 5560 | 6 31.43 | 5946 | 6 38.10 | 6119 | 6 46.20 | 6275 | 5 41.467 | | | 954 | 5 48.687 |
| | 6 50.545 | 7 3.706 | 6 54.055 | 7 6.40 | 6 55.627 | 7 24.43 | 5 57.045 | 6 12.087 | | | 6 8.673 | 6 24.40 |
| | 50.528 | | .54038 | | 55.610 | | 57.028 | | | | 8.650 | |
| | −34.34 | | −37.76 | | −39.24 | | +19.33 | | | | +7.45 | |
| | + .19 | | + .19 | | + .19 | | + .19 | | | | + .18 | |
| | − 2.73 +0.855 | | − 2.72 +0.865 | | − 2.70 +0.885 | | − 2.69 +0.895 | | | | − 2.54 +1.015 | |
| | − 36.88 | | − 40.287 | | − 41.754 | | + 16.83 | | | | + 5.06 | |
| | 6 50.53 | | 6 54.04 | | 6 55.61 | | 5 57.03 | | | | 6 8.66 | |
| | 6 13.65 | | 6 13.787 | | 6 13.887 | | 6 13.86 | | | | 6 13.72 | |
| | 6 17.235 | | 17.355 | | 17.455 | | 17.445 | | | | 17.305 | |
| | s +19.11 | −13.223 | +15.95 | −12.35 | +10.43 | −28.80 | +15.58 | −15.02 | | | +20.010 | −15.73 |
| | 25 | | 25 | | 25 | | 25 | | 25 | | 25 | |
| | −1.57 | | −1.61 | | −1.71 | | −1.73 | | −1.86 | | −2.08 | |
| | 2 56.7 | 3 35.4 | 2 59.0 | 3 31.7 | 3 7.9 | 3 52.8 | 2 58.7 | 3 35.3 | 2 0.0 | 3 38.1 | 2 57.7 | 3 40.0 |
| | 16.1 | 55.1 | 17.5 | 52.9 | 26.3 | 11.5 | 18.7 | 54.5 | 20.1 | 56.9 | 18.9 | 58.9 |
| | 132.8 | 90.5 | 136.5 | 84.6 | 34.2 | 124.3 | 137.4 | 89.8 | 20.1 | 95.0 | 136.6 | 98.9 |
| | 28 6.40 | 28 3 45.25 | 28 3 8.25 | 28 3 42.30 | 28 3 17.10 | 29 4 2.15 | 28 3 ~~7.70~~ 8.70 | 28 3 44.90 | 27 3 10.05 | 28 3 47.50 | 28 3 8.30 | 28 3 49.45 |
| | 1.28126 | 1.12156n | 1.20276 | 1.09167 | n1.01828 | 1.45939n | 1.19254 | 1.17664n | | | 1.30103 | 1.19673 |
| | 1.35717 | 1.19747n | 1.27867 | 1.16758 | n1.09419 | 1.53530n | 1.26848 | 1.25258n | | | 1.37694 | 1.27264 |
| | +22.76 | −15.76 | +19.00 | −14.71 | +12.42 | −34.30 | +18.56 | −17.89 | | | +23.82 | −18.74 |
| | 28 29.16 | 28 29.49 | 28 27.25 | 28 27.57 | 28 29.52 | 28 27.85 | 28 27.26 | 28 27.01 | | | 28 32.12 | 28 30.71 |
| −21° | 5′ 40.81″ | 41.14 | 5 38.90 | 39.24 | 41.17 | 39.50 | 5 38.91 | 38.66 | | | 5 43.77 | 42.36 |
| | 40.97 | | 39.07 | | 40.33 | | 38.78 | | | | 43.06 | |
| +63 | 25 59 | 26 38 | | | | | 26 2 | 26 38 | | | | |
| | 2.05931 | 2.05950 | | | | | | | | | | |
| | −1231 | | −1101 | | −675 | | −285 | | | | −2045 | |
| | 2.04700 | 2.04719 | 2.04830 | 2.04849 | 2.05256 | 2.05275 | 2.05646 | 2.05665 | | | 2.03886 | 2.03905 |
| | −111.43 | −111.48 | −111.77 | −111.81 | −112.97 | −112.91 | −113.88 | −113.93 | | | −109.36 | −109.41 |
| | − 3 | − 3 | − 2 | − 2 | − 2 | − 2 | − 2 | − 2 | | | − 4 | − 4 |
| | +.06 +.08 | +.03 | +.04 +.06 | +.02 | +.02 +.08 | +.15 | +.04 +.04 | +.04 | | | +.07 +.05 | +.04 |
| | +.03 | +.04 | +.03 | +.04 | .00 | .00 | .00 | .00 | | | .00 | .00 |
| | −1 51.34 | −1 51.47 | −1 51.70 | −1 51.75 | −1 52.95 | −1 52.76 | −1 53.86 | −1 53.91 | | | −1 49.33 | −1 49.41 |
| −21 | 7 32.18 | 32.584 | 7 30.622 | 31.017 | 7 34.147 | 32.288 | 7 32.71 | 32.57 | | | 7 33.10 | 31.77 |
| | +2 5.51 | 4.12 | +5.30 | 3.87 | +3.85 | 4.33 | +5.81 | 4.28 | +5.03 | | +4.89 | 3.04 |
| | − 1.39 | +7.35 | − 1.43 | +7.38 | − 1.52 | +7.40 | − 1.53 | +7.42 | | | − 1.85 | +7.63 |
| | +6.85 | | +6.86 | | +6.88 | | +6.90 | | | | +7.11 | |
| | +2 10.95 | 5 21.23 | + 10.73 | 19.89 | + 11.21 | 22.93 | + 11.18 | 21.59 | | | + 10.15 | 22.95 |
| | | 21.63 | | 20.28 | | 21.67 | | 21.39 | | | | 21.62 |
| | | 5 21.43 | | 20.08 | | 22.00 | | 21.49 | | | | 22.23 |
| | | 5 20.91 | | 18.51 | | 21.48 | | 20.97 | | | | 21.76 |

| | | 1874. | | 1875 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept.1 | | Sept.2 | | Aug 7 | | Aug 9 | | Sept-1 | | Sept-4 | |
| −.430 | | −.456 | | −.640 | | −.647 | | −.636 | | −.610 | |
| 6 1 4 | 5 54.5 | 6 2 0 | 5 55.1 | 6 10.9 | 6 33.3 | 6 — | 6 40.7 | 6 26.2 | 6 9.4 | 6 28.8 | 6 41.1 |
| 3 7 | 57.9 | 4 4 | 57.4 | 13.0 | 35.4 | — | 42.4 | 28.4 | 11.2 | 34.0 | 43.3 |
| 6 0 | 0.2 | 6 5 | 59.1 | 15.2 | 37.7 | — | 44.6 | 30.6 | 13.0 | 33.2 | 45.0 |
| 10 3 | | 11 0 | | 19.6 | | 20.2 | | 35.0 | | 37.7 | |
| 12 6 | | 13.2 | | 21.8 | | 22.3 | | 37.3 | | 39.9 | |
| 14 8 | | 15 4 | | 24.0 | | 24.7 | | 39.4 | | 42.1 | |
| 17 0 | 6 38.7 | 17 6 | 6 33 6 | 26.2 | 6 50.8 | 26.9 | | 41.7 | 7 11.7 | 44.3 | 7 16.2 |
| 19 3 | 40.5 | 19.9 | 35.6 | 28.4 | 53.0 | 29.2 | | 44.0 | 13.4 | 46.5 | |
| 23 6 | 42.7 | 24.2 | 37.8 | 32.9 | 55.0 | — | | 48.4 | 15.9 | 50.8 | |
| 25.7 | | 26.5 | | 35.2 | | — | | 50.6 | | 53.1 | |
| 28.0 | | 28.7 8 | | 37.4 | | — | | 52.8 | | 55.3 | |
| 16 2 4 | 5 57.53 | 16 7 4 | 5 57.20 | 26 4 6 | 6 35.57 | 2.33 | 6 42.57 | 43 4 4 | 6 11.20 | 46.27 | 6 43.13 |
| 6 14.76 4 | 6 40.63 | 6 ~~15.218~~ 15.401 | 6 35.68 | 6 24.055 | 6 52.93 | 6 24.660 | | 6 39.491 | 7 13.67 | 6 42.064 | 7 16.20 |
| 14.747 | | ~~15.201~~ 15.383 | | 24.038 | | 24.643 | | 39.474 | | 42.047 | |
| + 1.16 | | + 0.60 | | − 3.91 | | − 4.44 | | − 19.64 | | − 22.22 | |
| + .17 | | + .17 | | + .25 | | + .25 | | + .25 | | + .24 | |
| − 2.42 | +1.165 | − 2.41 | +1.175 | − 3.07 | | − 3.06 | | − 2.81 | | − 2.76 | |
| − 1.09 | | − 1.64 | | − 6.73 | | − 7.25 | | − 22.20 | | − 24.74 | |
| 6 14.75 | | 6 15.~~20~~ 38 | | 6 24.04 | | 6 24.64 | | 6 39.47 | | 6 42.05 | |
| 6 13.66 | | 6 13.~~56~~ 74 | | 6 17.31 | | 6 17.39 | | 6 17.27 | | 6 17.31 | |
| 17.245 | | 13.727 17.145 32 | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S | | | | | | | | | | | |
| +17.23 | −25.87 | +18.~~02~~ 20 | −20.~~44~~ 27 | −11.52 | −28.88 | +17.91 | | +28.29 | −34.18 | −1.07 | −34.14 |
| 25 | | 25 | | 10 | | 10 | | 5 | | 10 | |
| −2.21 | | 3? −2.23 | | −2.37 | | −2.39 | | −2.54 | | −2.57 | |
| 2 59.8 | 3 49.7 | (2) 0.6 | 3 45.9 | 0 16.4 | 0 39.4 | 0 23.9 | 0 44.7 | 4 27.4 | 0 43.8 | 0 6.4 | 0 48.2 |
| 20.1 | 10.9 | 21.4 | 8.5 | 38.9 | 0.5 | 44.5 | 3.1 | 42.8 | 1.1 | 24.8 | 6.8 |
| 139.9 | 1206 | 220 | 1144 | 553 | 999 | 686 | 1078 | 762 | 1049 | 312 | 1150 |
| 3 28 9.95 | 29 4 0.30 | 27 2 11.00<br>(28) | 28 3 57.20 | 10 27.65 | 10 49.95 | 10 34.30 | 10 53.90 | 9 35.10 | 10 52.45 | 10 15.60 | 10 57.50 |
| 1.23629 | 1.41280n | 1.25 6007 | 1.37~~069~~ 0685 | 1.06145n | 1.46060n | 1.25310 n | | 1.45163 | 1.53377n | 0.02938n | 1.53326n |
| 1.31220 | 1.48871n | 1.33~~766~~ 599 | 1.38~~660~~ 287 | 1.16282n | 1.56197n | 1.35447 n | | 1.54706 | 1.62920n | 0.12481n | 1.62869n |
| +20.52 | −30.81 | +21.4~~6~~ 68 | −24.5~~8~~ 15 | −14.55 | −36.47 | −22.62 | | +35.24 | −42.58 | −1.33 | −42.53 |
| 28 30.47 | 28 29.49 | 28 32.~~46~~ .68 | 28 ~~32.84~~ 33.05 | 10 13.10 | 10 13.48 | 10 11.68 | | 10 10.34 | 10 9.87 | 10 14.27 | 10 14.97 |
| 5 42.12<br>41.63 | 41.14 | 5? 44.~~11~~ 33<br>44.3~~0~~ 52 | 5 41.~~44~~ 70 | 47 24.75<br>24.94 | 25.13 | 47 23.33 | | 47 21.99<br>21.75 | 21.52 | 25.92<br>26.27 | 26.62 |
| | | 26 4 | 26 50 | 26 40 | 27 2 | | | | | | |
| | | 2.05931 | 2.05955 | 2.05953 | 2.05962 | | | | | | |
| −1320 | | −1308 | | −1735 | | −1428 | | −759 | | −2522 | |
| 2.04611 | 2.04630 | 2.04623 | 2.04647 | 2.05218 | 2.05227 | 2.04525 | 2.04534 | 2.05194 | 2.05203 | 2.03431 | 2.03440 |
| −111.20 | −111.25 | −111.23 | −111.30 | −112.77 | −112.79 | −110.98 | −111.00 | −112.70 | −112.73 | −108.22 | −108.25 |
| − 2 | − 2 | − 2 | − 2 | − 3 | − 3 | − 3 | − 3 | − 2 | − 2 | − 3 | − 3 |
| +.05 | +.01 +.12 | +.06 | .00 +.07 | +.02 | +.01 +.15 | +.06 | .00 | +.14 | −.13 +.21 | + 0 | +.04 +.21 |
| −.06 | −.08 | −.06 | −.08 | −.05 | −.09 | −.07 | −.10 | −.51 | −.10 | −.02 | −.10 |
| −1 51.23 | −1 51.23 | −1 51.25 | −1 51.33 | −1 52.83 | −1 52.76 | −1 51.02 | | −1 53.09 | −1 52.64 | −1 48.27 | −1 48.17 |
| 7 33.35 | 32.37 | 7 35.~~36~~ 58 | 35.~~82~~ 03 | 49 17.58 | 17.89 | 49 14.35 | | 49 15.08 | 14.16 | 14.19 | 14.79 |
| +2 5.13 | 3.17 | + 6.25 | 4.27 | −16 12.98 | 15.08 | −12.81 | 14.93 | −13.16 | 15.42 | −14.38 | 16.66 |
| − 1.96 | +7.79 | − 1.98 | +7.81 | − 2.10 | | − 2.12 | | − 2.26 | | − 2.28 | |
| +7.27 | | + 7.29 | | + 7.93 | | + 7.95 | | + 8.20 | | + 8.23 | |
| +2 10.44 | 5 22.91 | + 11.56 | 24.02<br>~~24.80~~ | −16 7.15 | 24.73 | − 6.98 | | − 7.22 | 22.30 | − 8.43 | 22.62 |
| | .21 93 | | 24.~~26~~ 47 | | 25.04 | | | | 21.38 | | 23.22 |
| | 5 22.42 | | 24.~~03~~ 25 | | 5 24.88 | | 21.33 | | 21.84 | | 22.92 |
| | 5 21.90 | | 23.~~51~~ 73 | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|
|  |  | Sept-5 |  |  |  | Sept-7 |  |  |
|  |  | −60.0 |  |  |  | −.547 |  |  |
|  | 6 | — | 6 | 55.9 | 6 | 31.7 | 6 | 25.8 |
|  |  | — |  | 57.9 |  | 33.9 |  | 28.0 |
|  |  | — |  | 59.8 |  | 36.0 |  | 30.0 |
| 43.12 |  | 38.7 |  |  |  | 40.4 |  |  |
| .11 |  | 40.9 |  |  |  | 42.7 |  |  |
| .06 |  | 43.0 |  |  |  | 44.9 |  |  |
| .9 |  | 45.2 | 7 | 16.2 |  | 47.1 | 7 | 8.0 |
| .18 |  | 47.6 |  | 18.2 |  | 49.4 |  | 10.0 |
| .16 |  | 52.0 |  | 20.6 |  | 53.8 |  | 11.6 |
| .17 |  | 54.2 |  |  |  | 56.0 |  |  |
| .23 |  | 56.5 |  |  |  | 58.3 |  |  |
|  |  |  | 6 | 57.87 |  | 49.42 | 6 | 27.93 |
|  |  | 43.133 | 7 | 18.37 | 6 | 44.927 | 7 | 9.87 |
|  | 6 | 43.116 |  |  |  | 44.910 |  |  |
|  | − | 23.28 |  |  | − | 25.07 |  |  |
|  | + | .23 |  |  | + | .22 |  |  |
|  | − | 2.74 |  |  | − | 2.71 |  |  |
|  | − | 25.79 |  |  | − | 27.56 |  |  |
|  | 6 | 43.12 |  |  | 6 | 44.91 |  |  |
|  | 6 | 17.33 |  |  | 6 | 17.35 |  |  |
|  |  |  |  |  |  | 17.327 |  |  |

|  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| − | 14.74 |  | −35.24 | + | 17.00 |  | −24.94 |
| 10 |  |  |  | 5 |  |  |  |
|  | −2.58 |  |  |  | −2.60 |  |  |
| 0 | 19.9 | 0 | 46.8 | 4 | 41.1 | 0 | 32.7 |
|  | 39.2 |  | 8.6 |  | 57.9 |  | 50.1 |
| 1 | 59.1 |  | 110.4 |  | 99.0 |  | 82.8 |
| 10 | 29.55 | 10 | 55.20 | 9 | 49.50 | 10 | 41.40 |
|  | 1.16850n |  | 1.54704n |  | 1.23045 |  | 1.39690 |
|  | 1.26393n |  | 1.64247n |  | 1.32588 |  | 1.49233 |
|  | −18.36 |  | −43.90 |  | +21.18 |  | −31.07 |
| 10 | 11.19 |  | 11.30 | 10 | 10.68 | 10 | 10.33 |
|  | 22.84 |  | 22.95 | 47 | 22.33 |  | 21.98 |
|  | 24.89 |  |  |  | 22.15 |  |  |
|  | 2 |  |  | 26 | 2 | 26 | 53 |
|  |  |  |  |  | 2.05931 |  | 2.05959 |
|  | −2052 |  |  |  | −1022 |  |  |
|  | 2.03901 |  | 2.03910 |  | 2.04909 |  | 2.04937 |
|  | −109.40 |  | −109.42 |  | −111.97 |  | −112.04 |
| − | 3 | − | 3 | − | 2 | − | 2 |
|  | +.03 | +.05 | +.22 |  | +.05 | −.33 | +.11 |
|  | −.05 |  | −.10 |  | −.72 |  | −.10 |
| −1 | 49.45 | −1 | 49.33 | −1 | 52.66 | −1 | 52.05 |
|  | 12.29 |  | 12.28 | 49 | 14.99 |  | 14.03 |
| −16 | 13.42 | 15.71 |  |  | −14.01 | 16.32 |  |
| − | 2.29 |  |  | − | 2.31 |  |  |
|  | +8.24 |  |  |  | +8.26 |  |  |
| − | 7.47 |  | 19.76 | − | 8.06 |  | 23.05 |
|  |  |  | 19.75 |  |  |  | 22.09 |
|  |  |  | 19.75 |  |  |  | 22.57 |

1874  1875

η Sagittarii
h m sec
18 9 10
− 36° 48′
ζ + 79° 11′
sin ζ = +.98

α  9 10.15
δ  47 49.02
dα/dt  +4.060
dδ/dt  +0.74

l sin δ  9.77744n
l cos δ  9.90349  9.90349
l C  .10600  .13146
l C′  0.00949  0.03495
l C″  0.02901

cos a =
cos δ =
tang δ = −.75
I = 2.58 s
k = −.020 s

1874 July 30
−.480
18 9 27.7  9 29.1
30.3
32.8
38.0
40.5
43.1
45.7  10 13.2
48.3  15.0
53.5  16.7
56.2
58.7
47 48
9 29.10
9 43.164  10 14.96
43.144
− 34.34
+ .36
− 3.15  +0.910
− 37.13
9 43.14
9 6.01
10.070

Aug. 2
−.488
9 31.3  9 15.3
34.0  18.9
36.5  20.7
41.6
44.1
46.7  10 11.1
49.3  10 13.5
51.8  16.9
57.2  19.0
59.7
2.1
45 43
60
51 43  9 18.30
9 46.755  10 15.12
46.735
− 37.75
+ .37
− 3.14  +0.920
− 40.52
9 46.73
9 6.21
10.270

Aug. 6
−.480
8 34.1  8 25.0
36.9  28.5
39.4  31.4
44.3
46.9
49.6
52.2  9 9.9
54.9  13.6
0.8  15.7
2.5
5.1
36 59
180
54 59  8 28.30
8 49.627  9 13.047
49.607
+ 19.33
+ .36
− 3.11  +0.950
+ 16.58
8 49.61
9 6.19
10.250

Aug. 22
Ch. f.
9 26.1
29.0
31.2
1

1874 Sept. 1
−.430
8 51.8  8 34.8
54.5  37.0
57.0  39.5
2.3
4.8
7.4
10.0  9 30.1
12.6  32.2
17.7  34.9
20.2
22.9
26 12
180
8 12  8 37.10
9 7.382  9 32.40
7.362
+ 1.16
+ .32
− 2.79  +1.270
− 1.31
9 7.36
9 6.05  10.110
6.153

1875 Aug 7
−.640
9 1.7  8 55.7
4.2  57.9
6.9  0.4
12.0
14.7
17.3
19.7  9 47.9
22.3  49.5
27.4  51.4
29.9
32.6
18 82 7
9 17.109  8 58.00
17.155  9 49.60
17.135
− 3.91
+ .48
− 3.54
− 6.97
9 17.13
9 10.16

s
+14.06  −31.80  +28.45  −28.37  +21.33  −23.43⁴  +30.28  −25.02  +19.15  −32.45
5  5  5  5  5  45
−1.57  −1.61  −1.73  −2.10  −2.21  −2.37
2 46.5  − 31.2  2 28.0  3 25.9  2 30.9  3 16.9  2 25.7  3 21.0  2 30.7  3 27.3  4 20.5  0 15.9
5.3  50.2  46.2  43.4  48.3  34.9  43.7  40.0  48.9  45.1  43.9  41.9
111.8  81.4  74.2  69.3  79.2  51.8  69.4  61.0  79.6  72.4  64.4  57.8
27 55.90  40.70  7 2 37.10  8 3 34.65  7 2 39.60  8 3 25.90  7 2 34.70  8 3 30.50  7 2 39.80  8 3 36.20  49 32.20  50 28.90

1.14799  1.50243n  1.45408  1.45286n  1.32899  1.36996n  1.48116  1.39829n  1.28217  1.51121n
1.15748  1.57192n  1.46357  1.46235n  1.33848  1.37945n  1.49065  1.40778n  1.31716  1.54616n
+14.37  −32.50  +39.08  −29.00  +21.80  −23.96  +30.95  −25.57  +20.76  −35.17
8 10.27  8 8.20  8 6.18  8 5.65  8 1.40  8 1.94  8 10.75  8 11.63  49 52.96  49 53.73
−36°
45′ 21.92″  19.85  45 17.83  17.30  45 13.05  13.59  45 22.40  23.28  27 4.61  4.38
20.88  17.56  13.82  22.84  4.99
+79 5 49  6 34  5 33  6 29  5 44  6 41
2.46289  2.46341  2.46276  2.46335  2.46283  2.46347
−1220  −1094  −283  −1309  −1731
2.45069  2.45121  2.45195  2.45247  2.46006  2.46058  2.44967  2.45026  2.44552  2.44616
−282.29  −282.63  −283.11  −283.45  −288.45  −288.79  −281.63  −282.01  −278.95  −279.36
− .40  − .40  − .29  − .29  − .19  − .19  − .35  − .35  − .48  − .48
+.05 +.19  +.26  +.20 +.23  +.20  +.11 +.12  +.14  +.23 +.13  +.16  +.09 −.09  +.26
+.03  +.04  +.03  +.04  .00  .00  −.05  −.07  −.49  −.05
−4 42.61  −4 42.73  −4 43.17  −4 43.50  −4 48.53  −4 48.94  −4 41.80  −4 42.19  −4 39.83  −4 39.63
−36 50 4.53  2.58  50 1.00  0.80  50 1.58  2.43  50 4.20  5.55  31 44.44  45.01
+ 2 5.51  3.98  + 5.30  3.73  + 5.81  4.13  +4.42  + 5.13  3.97  −16 12.98  15.30
− 1.53  +10.62  − 1.57  +10.89  − 1.69  +11.23  − 2.16  +12.98  − 2.32
+9.88  +10.15  +10.49  +12.24  +11.51
+2 13.86  47 50.67  + 13.88  47.12  + 14.61  46.97  + 15.21  48.99  −16 3.79  48.23
48.72  46.92  47.82  50.34  48.80
47 49.69  47.02  47.29  49.66  48.52
47 48.95  46.28  46.45  49.93

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug 9 | | Aug 10 | | Aug 26 | | Sept-1 | | Sept-5 | | Sept-7 | |
| -.647 | | -.617 | | -.594 | | -.636 | | -.600 | | -.577 | |
| 9 2.3 | 8 43.2 | 9 2.4 | 8 49.8 | 9 12.5 | 9 0.4 | 9 17.3 | 8 58.2 | 9 20.7 | 9 5.2 | 9 22.6 | 9 7.2 |
| 4.8 | 45.3 | 5.0 | 52.5 | 15.1 | 2.9 | 19.8 | 0.3 | 23.4 | 9.5 | 25.0 | 9.5 |
| 7.2 | 47.3 | 7.6 | 54.4 | 17.7 | 5.2 | 22.3 | 3.0 | 26.0 | 11.7 | 27.7 | 11.5 |
| 12.6 | | 12.8 | | 22.8 | | 27.6 | | 30.8 | | 32.8 | |
| 15.1 | | 15.3 | | 25.3 | | 30.1 | | 33.7 | | 35.5 | |
| 17.6 | | 17.9 | | 28.0 | | 32.7 | | 36.0 | | 38.1 | |
| 20.2 | 9 31.7 | 20.4 | 9 49.5 | 30.6 | 9 50.0 | 35.2 | 9 57.7 | 38.6 | 10 2.6 | 40.5 | 9 58.9 |
| 22.9 | 33.4 | 23.0 | 51.2 | 33.0 | 52.5 | 37.8 | 54.8 | 41.3 | 6.4 | 43.3 | 1.5 |
| 28.1 | 37.0 | 28.0 | 53.2 | 38.4 | 55.1 | 43.0 | 57.6 | 46.6 | 8.6 | 48.4 | 4.4 |
| 30.7 | | 30.8 | | 41.0 | | 45.5 | | 49.0 | | 51.0 | |
| 33.2 | | 33.3 | | 43.5 | | 48.0 | | 51.8 | | 53.4 | |
| 1947 | | 1965 | | 3079 | | 3593 | | 3979 | | 4183 | |
| | 8 45.27 | | 8 52.23 | | 9 2.83 | | 9 0.50 | | 9 8.80 | | 9 9.40 |
| 9 17.700 | 9 84.13 | 9 17.864 | 9 51.30 | 9 27.991 | 9 52.53 | 9 32.664 | 9 54.70 | 9 36.173 | 10 5.87 | 9 38.027 | 10 1.60 |
| 17.680 | | 17.844 | | 27.971 | | 32.644 | | 36.153 | | 38.007 | |
| − 4.44 | | − 4.70 | | − 14.78 | | − 19.65 | | − 23.29 | | − 25.08 | |
| + .48 | | + .46 | | + .45 | | + .48 | | + .45 | | + .43 | |
| − 3.52 | | − 3.52 | | − 3.32 | | − 3.23 | | − 3.16 | | − 3.13 | |
| − 7.48 | | − 7.76 | | − 17.65 | | − 22.40 | | − 26.00 | | − 27.78 | |
| 9 17.68 | | 9 17.84 | | 9 27.97 | | 9 32.64 | | 9 36.15 | | 9 38.01 | |
| 9 10.20 | | 9 10.08 | | 9 10.32 | | 9 10.24 | | 9 10.15 | | 9 10.23 | |
| | | | | | | | | | | 10,197 | |
| +32.43 | − 16.43 | +25.63 | − 33.44 | +25.16 | − 24.54 | +32.16 | − 22.04 | +27.37 | − 29.70 | +28.63 | − 23.57 |
| 45 | | 45 | | 45 | | 45 | | 45 | | 45 | |
| −239 | | −240 | | −250 | | −254 | | −258 | | −260 | |
| 4 6.4 | 4 57.9 | 4 13.7 | 0 16.1 | 4 6.6 | 4 58.1 | 4 3.7 | 0 2.5 | 4 15.7 | 0 18.8 | 4 10.2 | 0 5.6 |
| 26.8 | 19.4 | 34.1 | 38.6 | 25.0 | 17.8 | 22.5 | 22.8 | 34.9 | 35.2 | 28.8 | 26.9 |
| 332 | 1378 | 478 | 547 | 316 | 1359 | 262 | 253 | 506 | 490 | 390 | 325 |
| 49 16.60 | 50 8.65 | 49 23.90 | 50 27.35 | 49 15.80 | 50 7.95 | 49 13.10 | 50 12.65 | 49 25.30 | 50 24.50 | 49 19.50 | 50 16.25 |
| 1.51095 | 1.21564n | 1.40875 | 1.52427n | 1.40071 | 1.38987n | 1.50732 | 1.34321n | 1.43727 | 1.47276n | 1.45682 | 1.37236 |
| 1.54590 | 1.25059n | 1.44370 | 1.55922n | 1.42972 | 1.41888n | 1.53633 | 1.37322n | 1.46628 | 1.50177n | 1.48583 | 1.40137 |
| +35.15 | −17.81 | +27.78 | −36.24 | +26.90 | −26.24 | +34.38 | −33.56 | +29.26 | −31.70 | +30.61 | −25.20 |
| 49 57.75 | 49 50.84 | 49 51.68 | 49 57.11 | 49 42.70 | 49 41.71 | 49 47.48 | 49 49.07 | 49 54.56 | 49 52.80 | 49 50.11 | 49 57.05 |
| 27 3.40 | 2.49 | 27 3.33 | 2.76 | 26 54.35 | 53.36 | 26 59.13 | 27 0.74 | 27 6.21 | 4.45 | 27 1.76 | 2.70 |
| 2.94 | | 3.04 | | 53.85 | | 59.93 | | 5.33 | | 2.23 | |
| | | | | | | | | | | 5 31 | 6 28 |
| | | | | | | | | | | 2.46270 | 2.46335 |
| −1412 | | −1487 | | −332 | | −752 | | −2030 | | −1009 | |
| 2.44871 | 2.44935 | 2.44796 | 2.44860 | 2.45951 | 2.46015 | 2.45531 | 2.45595 | 2.44253 | 2.44317 | 2.45261 | 2.45326 |
| −281.00 | −281.42 | −280.52 | −280.93 | −288.08 | −288.50 | −285.31 | −285.73 | −277.03 | −277.45 | −283.54 | −283.96 |
| − .44 | − .44 | − .45 | − .45 | − .26 | − .26 | − .31 | − .31 | − .44 | − .44 | − .29 | − .29 |
| +26 −.35 | +.07 | +17 −.03 | +29 | +16 −.36 | +15 ~~56~~ | +26 −.05 | +12 | +19 −.05 | +23 | +20 −.17 | +14 |
| −47 | ~~−.01~~ .56 | −.48 | −.05 | −.47 | ~~−.01~~ .56 | −.46 | −.02 | −.48 | −.04 | −.64 | −.04 |
| −4 41.65 | −4 42.35 | −4 41.28 | −.4 41.14 | −4 48.65 | −4 49.17 | −4 45.82 | −4 45.94 | −4 37.76 | −4 37.70 | −4 44.27 | −4 44.15 |
| 31 45.05 | 44.84 | 31 44.61 | 43.90 | 31 43.00 | 42.53 | 31 44.95 | 46.68 | 31 43.97 | 42.15 | 31 46.03 | 46.85 |
| −16 12.81 | 15.15 | − 12.59 | 14.94 | − 15.46 | 17.91 | − 13.16 | 15.64 | − 13.42 | 15.94 | − 14.01 | 16.55 |
| − 2.34 | | − 2.35 | | − 2.45 | | − 2.48 | | − 2.52 | | − 2.54 | |
| +11.67 | | +11.44 | | +12.82 | | +13.12 | | +13.10 30 | | +13.38 | |
| − 3.48 | 48.53 | − 3.20 | 47.81 | − 5.09 | 48.09 | − 2.52 | 47.47 | − 2.64 | 46.61 | − 3.17 | 49.20 |
| | 48.32 | | 47.10 | | 47.62 | | 49.20 | | 44.79 | | 50.02 |
| | 48.42 | | 47.45 | | 47.85 | | 48.33 | | 45.70 | | 49.61 |

δ Ursae Minoris

| h | m | sec. |
|---|---|---|
| 18 | 12 | 39 |
| + 86° | 36' | |
| φ − 44° | 13' | |

fin z = −70
86 36 35

1874 P — N A

α 12 58.719 — 58.735
δ +36 25.78" — 26.24
dα/dt − 19.412
dδ/dt + 1.155

Corr = +.24"

l sin δ 9.99923
l cos δ 8.77 ~~310~~ 186
l C .10 600
l C' 8.879 ~~10~~ 786

8.770
6.737
5.507

To P — To N A,
corr α = −.043 — −.06
corr δ = +0.70
tang δ = +16.838
I = 34.84
K = −.258 s

1874

| X −.48 July 30 −.480 | | X −.48 Aug. 2 −.458 | | X −.46 Aug. 4 −.500 | | X −.34 −.06 Aug. 6 −.480 | | X −.44 Aug. 10 −.424 | | X −.41 Aug. 19 −.422 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 12 41.6 | 12 4.8 | 12 44.0 | 12 9.0 | 12 44.2 | 11 31.8 | 11 45.1 | 10 14.4 | 11 47.2 | 10 28.8 | 11 32.2 | 9 48.8 |
| 13 0.2 | 45.0 | 13 3.0 | | 13 1.9 | | 12 1.4 | | 12 4.9 | | 12 8.6 | |
| 16.9 | 13 8.3 | 19.9 | | 13 20.0 | | 12 19.6 | | 22.4 | | 28.0 | |
| 33.7 | | 36.5 | | 13 37.2 | | 37.2 | | 40.2 | | 41.6 | |
| 53.0 | | 53.7 | | 13 53.8 | | 54.6 | | 57.1 | | 13 1.5 | |
| 14 8.8 | | 14 11.5 | | 14 11.9 | | 13 9.5 | | 13 13.7 | | 19.2 | |
| 26.5 | 14 52.6 | 30.0 | 14 2.5 | 14 30.4 | 13 38.9 | 29.2 | 13 6.1 | 32.4 | 12 30.8 | 37.0 | 14 17.8 |
| 43.9 | | 47.0 | | 14 47.0 | | 46.5 | | 45.7 | | 55.0 | |
| 15 2.0 | | 15 3.9 | | 15 4.9 | | 14 4.6 | | 14 6.6 | | 14 12.3 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12 39.37 | | 12 9.00 | | 11 31.80 | | 10 14.40 | | 10 28.80 | | 9 48.80 |
| 13 57.844 | 14 52.60 | 13 54.389 | 14 2.50 | 13 54.589 | 13 58.90 | 12 54.189 | 13 6.10 | 12 57.022 | 12 30.80 | 13 1.711 | 14. 17.80 |
| 57.586 | − 34.30 | 54131 | − 37.76 | 54.331 | − 3924 | 53931 | + 19.35 | 56764 | + 15.94 | 1,453 | + 8.34 |
| 13 8.77 | − 8.30 | 13 7.99 | − 8.30 | 13 7.44 | − 7.76 | 13 6.81 | − 5.74 | 13 5.39 | − 7.43 | 13 2.38 | − 6.92 |
| ~~+42.82~~ | ~~−10.04~~ | ~~+46.14~~ | ~~− 9~~ | ~~+46.89~~ | | ~~+47.12~~ | − 1.01 | ~~+51.37~~ | | ~~9.07~~ | |
| −17.20 | − 10.04 | +13.86 | − 9.26 | +13.11 | − 8.71 | +12.88 | − 8.08 | +8.63 | − 6.66 | − 0.93 | − 3.65 |
| −17.14 | 12 58.95 | −13.80 | 58.81 | −13.05 | 58.62 | − 12.82 | 58.45 | −8.57 | 58.61 | −0.87 | 59.22 |
| +42.86 | | +46.20 | | +46.95 | | | | | | | |
| − 34.35 | | − 37.76 | | − 39.25 | | + 19.32 | | + 15.90 | | + 8.31 | |
| − .810 | | − .824 | | − .844 | | − .810 | | − .721 | | − .712 | |
| − 10.04 | −29.45 22.91 | − 9.26 | −28.67 23.96 | − 9.01 8.71 | −28.12 24.50 | − 8.08 | −27.49 24.32 | − 6.66 | −26.07 25.72 | − 3.65 | 23.062 |
| − 52.49 | +2 5.58 | − 55.26 | +2 5.37 | − 54.40 | +2 5.94 | + 3.14 | +2 5.71 | + 2.03 | +2 5.13 | − 2.46 | ~~+2~~ |
| 13 51.59 | + 1.5 | 13 54.13 | + 1.5 | 13 54.33 | + 1.5 | 12 53.93 | + 1.5 | 12 56.76 | + 1.6 | 13 1.45 | |
| +86° | − 3.60 | | − 4.30 | | − 4.80 | | − 5.30 | | − 6.20 | | |
| 12 59.10 | 36 26.39 | 12 58.87 | 36 26.53 | 12 57.93 | 36 27.14 | 12 57.07 | 36 26.23 | 12 58.79 | 36 26.25 | 12 58.99 | |
| 12 39.688 | 9 | 39.458 | | 38.518 | | 37.658 | | 39.378 | | 39.578 | |
| | | 100.39 | | 142.79 | | | | | | | |
| +72.47 | −60.76 | +45.39 | − 8.11 | +82.79 | − 4.31 | +99.79 | −11.91 | +88.22 | +26.22 | +292.91 | 76.09 |
| 45 | | 45 | | 45 | | 45 +60. | | 45 +60 | | 45 | |
| − 1.57 | | − 1.61 | | − 1.71 | | − 1.73 | | − 1.86 | | − 2.06 | |
| 4 11.0 | 4 21.0 | 4 7.5 | 4 16.1 | 4 4.9 | 4 16.3 | 4 3.7 | 4 17.3 | 4 1.9 | 4 10.9 | 3 56.2 | |
| 17.8 | 27.7 | 14.8 | 22.3 | 11.9 | 21.5 | 10.3 | 24.2 | 9.0 | 17.9 | 4.7 | |
| 288 | 487 | 223 | 384 | 168 | 378 | 140 | 415 | 109 | 288 | 1209 | |
| 4 49 14.40 | 49 24.35 | 49 11.15 | 49 19.20 | 49 8.40 | 49 18.90 | 49 7.00 | 49 20.75 | 49 5.45 | 49 14.40 | 49 0.45 | |
| 86016 | | 2.02280 | | | | | | | | | |
| 1.~~09587~~ | 1.78362n | 1.~~65696~~ | 0.90902n | 1.91798 | 0.63448n | 1.99909 | 1.07591n | 1.94557 | 1.41863 | 2.46672 | 1.88133 |
| 9.~~97497~~ 73564 | 0.66272n | 0.~~53606~~ 90066 | 9.78812 | 0.79708 | 9.57358 | 2.87819 | 9.95501n | 0.82467 | 0.39773 | 1.34582 | 0.76043 |
| + 0.94 | − 460 | + ~~3.44~~ 7.45 | −0.61 | + 627 | −0.33 | +7.55 | − 0.90 | + 668 | +1.98 | + 22.17 | 5.76 |
| 49 ~~25.34~~ 5.47 | 49 19.75 | 49 ~~14.89~~ 19.06 | 49 18.59 | 49 ~~14.67~~ 19.20 | 49 18.57 | 49 ~~14.55~~ 19.08 | 49 19.85 | 49 ~~12.10~~ 16.66 | 49 16.38 | 49 22.62 | |
| +86° 33' ~~33.01~~ | 28.60 | 33 ~~33.76~~ | 29.76 | 33 ~~33.68~~ | 29.78 | 33 ~~33.80~~ | 28.50 | 33 ~~36.22~~ | 31.97 | 33 25.73 | |
| 28.48 28.54 | | 29.29 29.52 | | 29.15 29.46 | | 29.27 28.88 | | 31.69 31.83 | | | |
| −44 12 53 | 12 43 | | | | | | | 13 2 | 12 52 | | |
| 1.74790n | 1.74780n | | | | | | | 1.74790n | 1.74790n | | |
| − 1207 | | − 1086 | | − 666 | | − 281 | | − 1530 | | − 960 | |
| 1.73583 | 1.73573 | 1.73704 | 1.73694 | 1.74124 | 1.74114 | 1.74509 | 1.74499 | 1.73260 | 1.73260 | 1.73830 | 1.73830 |
| +54.43 | +54.42 | +54.58 | +54.57 | +55.11 | +55.10 | +55.60 | +55.59 | +54.03 | +54.03 | +54.74 | +54.74 |
| −17 −.10 | − 12 | − 36 −.14 | 00 | − 22 −.07 | 0 | − 32 −.16 | −.01 | − 25 −.14 | −.03 | − 279 −.29 | − |
| +.04 | +.04 | +.04 | +.04 | +.04 | +.04 | .00 | .00 | .00 | .00 | .00 | .00 |
| +54.40 | +54.34 | +54.26 | +54.61 | +54.93 | +55.14 | +55.28 | +55.58 | +53.78 | +54.00 | +51.95 | |
| 34 22.88 | 22.94 | 23.55 | 24.37 | 24.08 | 24.92 | 24.55 | 24.08 | 25.47 | 25.97 | 17.68 | |
| 36 29.8 | | 30.8 | | 31.0 | | 31.5 | | 32.4 | | 34.2 | |
| +2 6.9 | 6.9 | 7.0 | 6.1 | 6.9 | 6.1 | 7.0 | 7.4 | 6.9 | 6.4 | 6.5 | |
| +1 6.90 | | 6.55 | | 6.50 | | 7.20 | | 6.65 | | 6.50 | |
| +24 7.1 | 36 25.89 | 6.8 | 25.67 | 6.7 | 26.33 | 7.4 | 26.27 | 6.9 | 25.60 | 6.7 | |
| +2 5.51 | 6.61 25.95 | + 5.30 | 6.42 26.49 | + 5.85 | 7.05 27.17 | + 5.81 | 7.02 25.80 | + 5.63 | 6.33 26.10 | + 5.34 | |
| + 1.10 | −2.47 | + 1.12 | −3.17 | + 1.20 | −3.67 | + 1.21 | −4.17 | + 1.30 | −5.07 | + 1.44 | |
| − 3.60 | 36 25.92 | − 4.30 | 26.08 | − 4.80 | 26.75 | − 5.30 | 26.04 | − 6.20 | 25.85 | − 8.40 | 16.46 |
| +2 3.61 | 36 | | | | | | | | | | |

Ch. f:

X
-.46
Aug. 20
-.475
11 52.9 9 38.9
12 10.1
28.0
44.6
13 3.0
20.3
37.5 13 5.5
54.8
14 13.0

9 38.90
13 2.689 13 6.50
2.431 + 7.48
13 1.99 - 7.76
+0.44
+0.50 - 3.26
58.59
+ 7.44
- .802
- 3.26 -22.672
- 3.84 2886
13 2.43 +2 4.98
+ 1.6
12 58.59 - 8.10
39.178 36 27.34
~~+120~~ 3.79 - 2.81
45
-2.08
3 52.5 4 8.3
59.9 17.8
112.4 26.1
48 56.20 49 4 13.05
2.30903 0.44871
1.18813 9.32781
+15.42 -0.21
49 11.62 49 12.84
33 36.73 35.51
36.12
-2035
1.72755 1.72755
+53.40 +53.40
-1.33 -.66 0
.00 .00
+52.07 +53.40
28.80 28.91
34.3
5.3 5.4
5.45
5.7 27.05
+2 4.89 6.35 27.16
+ 1.46 -6.97
- 8.10 27.10
+1

---

X
-.42
Aug. 22
-.433
11 54.1 13 39.8
12 11.8
28.3
45.4
13 3.4
20.1
38.2
55.1
14 13.7

13 39.80
13 3.344
3.086 + 5.41
13 1.19 - 7.09
+1.90
+1.96 - 2.46
58.95
+ 5.36
- .731
- 2.46 -21.872
- 4.41 29.56
13 3.09 +2 4.52
+ 1.6
12 58.68 - 8.50
39.268 36 27.18
55
- 36.46
45
-2.10
3 57.8 4 12.9
6.4 20.5
124.2 33.4
49 4 2.10 49 4 16.70
1.56182 n
0.44092 n
-2.76 -2.76
48 ~~57.~~ 44 49 13.94
33 ~~49.01~~ 34.41
-595
1.74195 1.74195
+55.20 +55.20
-.05 -.05 ~~.05~~
.00 .00
+55.15
29.56
34.7
5.0
5.0
5.2
+ 4.42 5.89
+ 1.47 -7.37
- 8.50 26.95

---

X
-.43
Sept. 2
-.450
11 54.9 10 19.0
12 12.2
29.3
46.7
13 2.3
21.5
39.0 12 57.7
57.0
14.4

10 19.00
13 4.14 12 57.70
13 3.88 + 0.63
12 56.97 - 7.26
+6.91
+6.97 + 1.76
59.01
+ ~~1.16~~ 0.60
- .760
+ 1.76 -17.652
- 5.24 29.03
13 3.88 +2 6.25
+ 1.6
12 58.64 - 10.00
39.228 36 26.88
+ 165.14 + 6.44
45
-2.23
3 55.9 4 8.7
56.1 17.1
112.0 25.8
48 3 56.00 49 4 12.90
2.21785 0.80889
1.09571 9.68675
+12.47 +0.49
49 ~~8.47~~ 49 13.39
12.90
35.45 34.96
35.20
13 11 12 54
1.74800 n 1.74790 n
-1283
1.73517 1.73507
+54.35 +54.33
-.87 -.51 - 0
-.08 -.08
+53.40 +54.25
28.85 29.21
36.2
7.4 7.0
7.20
7.4 26.66
+ 6.25 7.81 27.02
+ 1.56 -8.87 26.84
- 10.00 ~~26.66~~

---

-.40
Sept. 6
-.398
11 54.9 11 51.8
12 11.4
12 28.3
12 47.3
13 4.0
21.8
39.4 12 20.5
56.4 12 49.3
14 12.9

11 51.80
13 4.044 12 34.90
3.786 - 1.92
12 55.21 - 6.75
+8.58
+ 8.64 + 3.52
58.64
- 1.94
- .672
+ 3.52 -15.892
- 5.17 31.52
13 3.79 +2 4.40
+ 1.6
12 58.62 - 10.40
39.208 36 27.12
+ 72.24 + 30.86
45
~~-2.28~~
3 ~~51.4~~ 4 4.6
~~59.9~~ 12.5
~~111.3~~ 17.1
48 3 ~~55.65~~ 49 4 8.55
~~1.85878~~ 1.48940
~~0.73788~~ 0.36857
~~+15.47~~ + 2.34
49 ~~[illegible]~~ 49 10.89
33 [illegible] 37.46
-1406
1.73394 1.73384
+54.19 +54.18
-.12 -.04
-.08
+54.06
31.52
36.6
5.1
5.10
5.3
+ 4.41 6.01
+ 1.60 -9.27
- 10.40 27.13

---

Sept. 7

A.R.

---

+
-.36
Sept. 9
-.400
12 56.0 12 17
12 12.5
31.0
49.8
13 6.0
23.4
40.4
58.3
14 15.7

12 1.70
13 5.90
5.64 - 4.64
12 53.95 - 6.08
+11.69
+11.75 + 4.78
59.68
- 4.64 70
- .675
+ 4.78 -14.632
- 6.64
13 5.64 ~~+2 5.49~~
+ + 1.6
12 59.00
39.588
+ 64.20

A.R.

36.8

1875 ☾ N.A

$\alpha$ 12 39.305 „ 39.317

$\delta$ + 36' 26.92 27.40

$\frac{d\alpha}{dt}$ − 19.416

$\frac{d\delta}{dt}$ + 1.127

86 36 27

l sin δ

l cos δ 8.77 ~~310~~ 214

l C .13146

l C' 8.904~~457~~ 360

l C" 8.89~~862~~ 766

1875

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −.60 + | | −.62 + | | −.62 + | | −.68 + | | −.62 + | | −.62 + | |
| Aug 7 | | Aug 9 | | Aug 10 | | Aug 25 | | Aug 26 | | Sept 1 | |
| −.640 | | −.647 | | −.614 | | −.660 | | −.597 | | −.636 | |
| 11 | 10 45.2 | 11 | 10 28.7 | 11 | 10 33.8 | 11 | 11 43.0 | 11 | 11 0.6 | 11 | 10 55.3 |
| 49.8 | 11 16.9 | 49.4 | 47.9 | 48.7 | 56.3 | 55.7 | | 54.3 | | 56.7 | |
| 12 6.9 | 40.0 | 12 5.2 | 19.0 | 12 5.8 | 11 28.7 | 12 11.6 | | 12 10.8 | | 12 13.6 | |
| 25.1 | | 23.0 | | 22.8 | | 27.6 | | 26.9 | | 32.6 | |
| 41.8 | | 41.3 | | 42.3 | | 47.4 | | 44.7 | | 50.5 | |
| 59.6 | | 59.7 | | 58.7 | | 13 5.0 | 13 36.3 | 13 3.5 | 14 4.8 | 13 6.2 | 13 52.3 |
| 13 17.8 | 12 15.9 | 13 17.0 | | 13 17.0 | 13 20.8 | 21.9 | | 21.5 | | 23.6 | |
| 34.2 | | 33.9 | | 33.5 | | 39.3 | | 38.4 | | 42.0 | |
| 52.5 | | 51.9 | | 52.6 | | 57.6 | | 56.2 | | 58.7 | |
| 14 10.9 | | 14 7.7 | | 14 9.5 | | 14 14.8 | | 14 12.8 | | 14 16.7 | |
| 2986 | | 2891 | | 3409 | | 2811 | | 2691 | | 3006 | |
| 240 | | 240 | | 180 | | 240 | | 240 | | 240 | |
| 5386 | 11 14.03 | 5291 | 10 51.87 | 5209 | 10 59.60 | 411 | 11 43.00 | 291 | 11 0.60 | 606 | 10 55.30 |
| 12 59.844 | 12 15.90 | 12 58.789 | | 12 57.878 | 13 20.80 | 13 4.567 | 13 36.30 | 13 3.233 | 14 4.80 | 13 6.733 | 13 52.30 |
| 59.586 | | 58.531 | | 57.620 | | 4.509 | | 2975 | | 6.475 | |
| 12 45.01 | − 3.87 | 12 44.40 | − 4.42 | 12 44.07 | − 4.66 | 12 38.63 | − 14.17 | 12 38.20 | − 14.75 | 12 35.83 | − 19.60 |
| + 14.58 | − 10.13 | + 14.13 | − 10.47 | + 13.55 | − 10.47 | + 25.68 | − 11.48 | + 24.78 | − 10.47 | + 30.64 | − 10.47 |
| + 14.64 | | + 14.19 | | + 13.61 | | + 25.74 | | + 24.83 | | + 30.70 | |
| | − 5.69 | | − 5.08 | | − 4.75 | | + 0.69 | | + 1.12 | | + 3.49 |
| − 3.91 | 39.90 | − 4.44 | 38.56 | − 4.70 | 37.74 | − 14.21 | ~~38.56~~ 39.35 | − 14.78 | 38.87 | − 19.65 | 39.89 |
| − 1.07 10.80 | | − 1.091 | | − 1.041 | | − 1.114 | 9.35 | − 1.008 | | − 1.073 | |
| − 5.69 | | − 5.08 | | − 4.75 | | + 0.71 | | + 1.12 | | + 3.49 | |
| − 20.40 | | − 20.43 | | − 19.86 | | − ~~24.66~~ 0.69 26.04 | | − 23.74 | | − 26.89 | |
| 12 59.59 | 52 42.92 | 12 58.53 | 43.25 | 12 57.62 | 43.10 | 13 4.31 | 49.40 | 13 2.98 | 47.44 | 13 6.47 | 46.63 |
| | −16 12.85 | | −16 12.47 | | −16 12.51 | | −16 15.72 | | −16 15.57 | | −16 13.20 |
| 12 39.19 | + 1.9 | 12 38.10 | + 1.9 | 12 37.76 | + 1.9 | 12 ~~39.65~~ 38.27 | + 1.9 | 12 39.24 | + 1.9 | 12 39.58 | + 1.9 |
| | − 4.40 | | − 4.90 | | − 5.20 | | − 8.00 | | − 8.10 | | − 8.80 |
| | 36 27.57 | | 36 27.78 | | 36 27.29 | | 36 27.58 | | 36 25.87 | | 36 26.53 |
| s<br>+ 45.81 | + 43.94 | + 126.92 | | + 118.28 | − 22.92 | + 81.57 | − 31.73 | + 122.63 | − 61.57 | + 131.43 | − 45.57 |
| 30 +60 | | 30 | | 30 | | 30 | | 30 | | 30 | |
| − 2.37 | | − 2.39 | | − 2.40 | | − 2.49 | | − 2.50 | | − 2.54 | |
| 0 37.1 | 0 42.3 | 0 36.1 | 0 44.5 | 0 37.1 | 0 49.2 | 0 36.1 | 0 45.6 | 0 34.6 | 0 50.2 | 0 33.4 | 0 48.2 |
| 4.0 | 8.7 | 0.9 | 9.1 | 1.0 | 13.3 | 59.1 | 9.4 | 56.5 | 13.3 | 57.0 | 11.9 |
| 10.11 | 11.10 | 9.70 | 11.36 | 9.81 | 12.25 | 9.52 | 11.50 | 9.11 | 12.35 | 9.04 | 12.01 |
| 30 ~~50.55~~ 50.55 | 30 55.50 | 30 48.50 | 30 56.80 | 30 49.05 | 31 ~~30~~ 1.25 | 30 47.60 | 30 57.50 | 30 45.55 | 31 1.75 | 30 45.20 | 31 0.05 |
| 1.66096 | 1.64286 | 2.10346 | | 2.07264 | 1.36021n | 1.91153 | 1.50147 | 2.08849 | 1.78937n | 2.11860 | 1.65868 |
| 0.56553 | 0.55143 | 1.00803 | | 0.98121 | 0.26478n | 0.81015 | 0.40009 | 0.98711 | 0.68799n | 1.01722 | 0.55730 |
| + 3.68 | + 3.56 | + 10.19 | | + 9.58 | − 1.84 | + 6.46 | − 2.51 | + 9.71 | − 4.86 | + 10.40 | − 3.61 |
| 30 ~~57.23~~ 59.04 | 30 59.06 | 30 58.69 | | 30 58.63 | 30 59.41 | 30 54.04 | 30 54.99 | 30 55.26 | 30 56.89 | 30 55.60 | 30 56.44 |
| 51 ~~54.12~~ 49.31 49.30 | 49.29 | 51 49.66 | | 51 49.72 49.33 | 48.94 | 51 54.29 53.83 | 53.36 | 51 53.04 52.27 | 51.46 | 51 52.75 52.33 | 51.91 |
| 12 58 | 12 53 | | | | | | | | | 13 3 | 12 48 |
| 1.74790 | 1.74790 | | | | | | | | | | |
| − 1726 | | − 1392 | | − 1473 | | − 141 | | − 318 | | − 743 | |
| 1.73064 | 1.73064 | 1.73398 | 1.73398 | 1.73317 | 1.73317 | 1.74649 | 1.74649 | 1.74472 | 1.74472 | 1.74047 | 1.74047 |
| + 53.78 | + 53.78 | + 54.20 | + 54.20 | + 54.10 | + 54.10 | + 55.78 | + 55.78 | + 55.56 | + 55.56 | + 55.01 | + 55.01 |
| −.07 −.16 | −.046 | −.52 −.61 − | | −.45 −.33 | −.032 − | −.21 −.21 − | .03 | −.48 −.40 − | .12 | −.55 −.70 − | .67 |
| −.09 | −.10 | −.09 | −.10 | −.09 | −.11 | −.09 | −.10 | −.09 | −.11 | −.08 | −.11 |
| + 53.62 | + 53.62 | + 53.59 | | + 53.56 | + 53.97 | + 55.48 | + 55.65 | + 54.99 | + 55.33 | + 54.38 | + 54.23 |
| 52 42.93 | 42.91 | 43.25 | | 43.28 | 42.91 | 49.79 | 49.01 | 48.08 | 46.79 | 47.13 | 46.14 |
| 31.8 | | 32.3 | | 32.6 | | 35.9 | | 35.5 | | 36.2 | |
| −16 11.1 | 11.1 | 10.9 | | 10.7 | 10.3 | 14.4 | 13.6 | 12.6 | 11.3 | 10.9 | 9.9 |
| −11 11.6 | | 10.% | | 10.50 | | 14.00 | | 11.95 | | 10.40 | |
| −11 10.9 | 36 27.21 | 10.7 | | 10.3 | 27.17 | 13.8 | 27.95 | 11.7 | 25.27 | 10.2 | 26.95 |
| −16 12.98 | 11.32 27.19 | − 12.81 | 11.13 | − 12.59 | 10.91 26.80 | − 15.58 | 12.84 27.17 | − 15.46 | 13.71 24.98 | − 13.16 | 11.38 25.96 |
| + 1.66 | | + 1.68 | | + 1.68 | | + 1.74 | | + 1.75 | | + 1.78 | |
| − 4.40 | 36 27.20 | − 4.90 | 27.22 | − 5.20 | 26.98 | − 8.00 | 27.56 | − 8.10 | 25.62 | − 8.80 | 26.45 |
| −16 15.72 | | 16.03 | | 16.11 | | [illegible] | | [illegible] | | [illegible] | |

| 1874.0 α | δ | 1875.0 α | δ |
|---|---|---|---|
| 59.10 | | 39.19 | |
| 58.87 | | 38.10 | |
| 57.93 | | 37.76 | |
| 57.07 | | 39.65 | |
| 58.79 | | 39.24 | |
| 58.99 | | 39.58 | |
| 58.59 | | 40.23 | |
| 58.68 | | 39.53 | |
| 58.64 | | 39.82 | |
| 58.62 | | 39.58 | |
| 59.00 | | | |
| 58.571 | | 39.268 | |
| 719 | 25.78 | .305 | 26.92 |
| −.148 | | −.037 | |

−.60 + Sept-4 −.610 | −.60 + Sept-5 −.600 | −.58 + Sept-7 −.577 | −.56 + Sept-8 −.572

11 564 12 146 308 493 13 66 248 437 14 10 185 | 10 27.9 13 51.9 | 12 1.3 15.6 32.7 49.9 13 7.5 25.0 43.0 14 0.3 18.5 | 11 1.0 13 49.7 | 11 58.4 12 16.0 34.0 51.7 13 8.6 26.0 45.2 14 1.2 20.3 | 10 54.8 13 33.2 | 11 58.6 12 17.0 33.9 52.5 13 9.0 26.1 43.0 14 1.0 19.3 | 16 54.5 13 20.7

2557 180 | 1938 120 | 2614 180 | 2604 180

737 10 27.90 | 738 11 1.00 | 814 10 54.80 | 804 10 54.50

13 8.411 13 51.90 | 13 8.200 13 49.70 | 13 9.044 13 33.20 | 13 8.933 13 20.70

8.152 | 7.942 | 8.786 | 8.875

34.71 −22.21 | 34.31 −23.29 | 33.47 −25.08 | 33.03 −25.69

+33.44 −10.13 | +33.63 −10.13 | +35.32 −9.79 | +35.64 −9.45

+33.50 | +33.69 | +35.38 | +35.70

+4.61 | +5.01 | +5.85 | +6.29

− 22.23 4042 | − 23.28 39.53 | − 25.08 39.77 | − 25.72 39.82

− 1.02 10.30 | − 1.013 | − .974 | − .966

+ 4.61 | + 5.01 | + 5.85 | + 6.29

− 27.92 | − 28.41 | − 28.97 | − 29.09

13 8.15 49.70 | 13 7.94 47.34 | 13 8.79 49.18 | 13 8.67 49.02

−16 14.27 | −16 13.24 | −16 13.77 | −16 13.63

12 40.23 + 1.9 | 12 39.53 + 1.9 | 12 39.82 + 1.9 | 12 39.58 + 1.9

− 9.20 | − 9.30 | − 9.60 | − 9.70

36 28.13 | 36 26.70 | 36 ~~28.43~~ 27.71 771 | 36 27.59

~~+1.60~~

+160.51 − 43.49 | +127.20 − 41.50 | +134.24 − 24.16 | +134.43 − 11.77

30 −2.57 | 30 −2.58 | 30 −2.60 | 30 −2.61

0 15.9 0 41.9 | 0 31.7 0 45.5 | 0 30.7 0 43.3 | 0 31.0 0 42.3

51.1 6.9 | 55.9 9.6 | 54.9 7.5 | 54.2 6.8

67.0 1088 | 876 1151 | 856 1108 | 852 1091

30 ~~[illegible]~~ 33.50 30 54.40 | 30 43.80 30 57.55 | 30 42.80 30 55.40 | 30 42.60 30 54.55

2.20548 1.63839n | 2.10449 1.61805n | 2.12776 1.38310n | 2.12840 1.07078n

1.10410 0.53701n | 1.00311 0.51667n | 1.02638 0.28172n | 1.02702 9.96940n

+12.71 −3.44 | +10.07 −3.29 | +10.63 −1.91 | +10.64 −0.93

30 ~~46.21~~ 50.95 30 50.96 | 30 53.87 30 54.26 | 30 53.43 30 53.49 | 30 53.24 30 53.62

52 2.14 57.49 | 51 54.48 54.09 | 51 54.92 54.86 | 51 55.11 54.73

~~57.40~~ 57.39 | 54.28 | 54.89 | 54.92

13 5 12 54

1.74790 1.74790

−1153

−2504 | −2003 | −995

1.72286 1.72286 | 1.72787 1.72787 | 1.73795 1.73795 | 1.73637 1.73637

+52.83 +52.83 | +53.44 +53.44 | +54.70 +54.70 | +54.50 +54.50

− .83 −.53 −.046 | − .52 −.38 −.036 | − .68 −.41 −.032 | .38 −.40 −.01

−.07 −.10 | −.08 −.10 | −.10 −.13 | −.10 −.13

+51.93 +52.67 | +52.84 +53.28 | +54.02 +54.55 | +53.82 +54.37

49.33 50.06 | 47.32 47.37 | 48.94 49.41 | 48.93 49.10

36.6 | 36.7 | 37.0 | 37.1

12.7 13.5 | 10.6 10.7 | 11.9 12.4 | 11.8 12.0

13.0 | 10.65 | 12.15 | 11.90

12.9 27.55 | 10.4 26.40 | 11.9 27.15 | 11.7 27.29

−16 14.38 12.58 28.28 | − 13.42 11.61 26.45 | − 14.01 12.19 27.62 | − 13.77 11.94 27.46

+ 1.80 | + 1.81 | + 1.82 | + 1.83

− 9.20 27.93 | − 9.30 26.42 | − 9.60 27.38 | − 9.70 27.37

2^s

η Serpentis
18^h 14^m 50^sec
−2° 56'
φ +45° 19'
+7 l sin P 8.70905n
l cos P 9.99943
l C .10600
l C' 0.10543

α 47.393^s
δ −55' 46.69"
dα/dt +3.100
dδ/dt +0.605

| 1874 | 1874 | m s | | ' " | |
|---|---|---|---|---|---|
| July | 19 | 14 49.86 | | 55 50.7 | |
| | 24 | 49.86 | −.00 | 50.3 | −.4 |
| | 29 | 49.85 | .01 | 49.9 | .4 |
| Aug. | 3 | 49.83 | .02 | 49.6 | .3 |
| | 8 | 49.81 | .02 | 49.3 | .3 |
| | 13 | 49.77 | .04 | 49.0 | .3 |
| | 18 | 49.73 | .04 | 48.7 | .3 |
| | 23 | 49.68 | .05 | 48.5 | .2 |
| | 28 | 49.62 | .06 | 48.3 | .2 |
| Sept. | 2 | 49.55 | .07 | 48.2 | .1 |
| | 7 | 49.48 | .07 | 48.1 | .1 |

corr α =
corr δ =
long δ = −.05 1.00
I = 2.07^s
k = −.015

| × 1874 −.48 July 30 f.480 | | × −.48 Aug. 2 −.488 | | × −.46 Aug. 4 −.500 | | × .34 −.06 Aug. 6 −.480 | | × −.44 Aug. 10 −.427 | | × −.41 Aug. 19 −.422 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 —<br>—<br>—<br>20.1<br>22.1<br>24.2<br>26.3<br>28.3<br>—<br>—<br>— | 15 85.8<br>87.5<br>39.4 | 15 —<br>—<br>—<br>23.5<br>25.6<br>27.7<br>29.7<br>31.8<br>—<br>—<br>— | 15 40.5<br>42.3<br>44.1<br>16 2.3<br>4.0<br>6.4<br>— | 15 —<br>—<br>25.0<br>27.0<br>29.1<br>31.2<br>33.3<br>—<br>— | 15 25.8<br>15 48.8<br>50.5<br>53.0 | 14 18.1<br>20.2<br>22.3<br>26.5<br>28.5<br>30.5<br>32.6<br>34.8<br>38.9<br>40.9<br>42.9 | 14 37.2<br>39.2<br>40.5<br>15 12.8 | 14 —<br>—<br>—<br>29.8<br>31.9<br>33.8<br>35.9<br>38.0<br>—<br>—<br>— | 14 26.5<br>28.6<br>30.2<br>15 2.1<br>4.5<br>6.2 | 14 —<br>—<br>—<br>37.3<br>39.4<br>41.4<br>43.5<br>45.6<br>—<br>—<br>— | 14 49.8<br>52.0<br>54.3 |
| 1210 | | 1383 | | 1456 | | 3362 | | 1694 | | 2072 | |
| | | | 15 42.30 | | 15 26.80 | | 14 38.987 | | 14 28.43 | | |
| 15 24.200 | 15 37.56 | 15 27.660 | 16 3.90 | 15 29.120 | 15 50.787 | 14 30.564 | 15 12.80 | 14 33.880 | 15 4.287 | 14 41.440 | 14 52.03 |
| 24.185 | −34.30 | 27.645 | −37.76 | 29.105 | −39.24 | 30.549 | +19.35 | 33.865 | +15.94 | 41.425 | +8.34 |
| 14 49.85 | +.02 | 14 49.83 | +.02 | 14 49.83 | +.02 | 14 49.82 | +.02 | 14 49.79 | +.02 | 14 49.72 | +.02 |
| +34.33 | | +37.81 | | +39.27 | | −19.27 | −.06 | −15.93 | | −8.30 | |
| | −2.46 | | −2.44 | | −2.44 | | −2.43 | | −2.40 | | −2.33 |
| −34.35 | 14 47.44 | −37.76 | 47.46 | −39.25 | 47.44 | +19.32 | 47.43 | +15.90 | 47.42 | +8.31 | 47.45 |
| + .02 | | + .02 | | + .02 | | + .02 | | + .02 | | + .02 | |
| − 2.46 | +0.640 | − 2.44 | +0.660 | − 2.44 | +0.660 | − 2.43 | +0.670 | − 2.40 | +0.700 | − 2.33 | +0.770 |
| − 36.79 | | − 40.18 | | − 41.67 | | + 16.91 | | + 13.52 | | + 6.00 | |
| 15 24.18 | 57 54.81 | 15 27.65 | 52.46 | 15 29.10 | 54.16 | 14 30.55 | 55.31 | 14 33.87 | 53.38 | 14 41.42 | 52.21 |
| | +2 5.58 | | +2 5.37 | | +2 5.94 | | +2 5.71 | | +2 5.13 | | +2 5.38 |
| 14 47.39 | −1.4 | 14 47.47 | −1.4 | 14 47.43 | −1.5 | 14 47.46 | −1.4 | 14 47.39 | −1.5 | 14 47.42 | −1.5 |
| 50.490 | +3.10 | 50.570 | +2.90 | 50.530 | +2.80 | 50.560 | +2.70 | 50.490 | +2.50 | 50.520 | +1.90 |
| −2 | 55 47.53 | | 55 45.59 | | 55 46.92 | | 55 48.30 | | 55 47.25 | | 55 46.43 |
| | s<br>−13.36 | −15.64 | −37.24 | +3.32 | −21.645 | −8.41 | −42.24 | +5.45 | −30.389 | | −10.59 |
| 15<br>−1.57 | | 15<br>−1.61 | | 15<br>−1.71 | | 15<br>−1.73 | | 15<br>−1.86 | | 15<br>−2.06 | |
| 4 55.5<br>11.9<br>12.74<br>5 20 3.70 | ∩ | 4 54.2<br>13.0<br>12.72<br>5 20 3.60 | 0 22.9<br>40.9<br>6.38<br>0 20 31.90 | 4 33.0<br>50.0<br>8.30<br>19 4 41.50 | 0 3.7<br>21.1<br>2.48<br>20 0 12.40 | 4 48.0<br>6.3<br>11.43<br>19 4 57.15 | 0 29.8<br>48.7<br>7.85<br>20 0 39.25 | 4 30.0<br>47.4<br>7.74<br>19 4 38.70 | 0 14.8<br>33.9<br>4.87<br>20 0 24.35 | 4 47.8<br>7.0<br>11.48<br>19 4 57.40 | ∩ |
| <br><br>−17.03<br>19 46.67 | 1.12581<br>1.23124<br>17.03 | 1.19424n<br>1.29967n<br>−19.94<br>19 43.66 | 1.57101n<br>1.67644n<br>−47.25<br>19 44.65 | 0.52114<br>0.62657<br>+4.23<br>19 45.73 | 1.33546n<br>1.44089n<br>−27.60<br>19 44.80 | 0.92480n<br>1.03023n<br>−10.72<br>19 46.43 | 1.62572n<br>1.73115n<br>−53.84<br>45.41 | 0.73640<br>0.84183<br>+6.95<br>19 45.65 | 1.48273n<br>1.58816n<br>−38.74<br>19 45.61 | <br><br>−13.50<br>19 43.90 | 1.02490<br>1.13033<br>−13.50 |
| ° '<br>−2 56 58.82 | −2° | 56' 55.31"<br>55.80 | 56.30 | 56 57.38<br>56.91 | 56.45 | 58.08<br>57.57 | 57.06 | 56 57.30<br>57.28 | 57.26 | 55.58<br>55.35 | 55.15 |
| +45 17 57<br>1.76430<br>−1198<br>1.75232<br>−56.54 | | 17 57<br>1.76430<br>−1080<br>1.75350<br>−56.69 | 18 25<br>1.76440<br><br>1.75360<br>−56.70 | <br><br>−663<br>1.75767<br>−57.24 | <br><br><br>1.75777<br>−57.25 | <br><br>−279<br>1.76151<br>−57.75 | <br><br><br>1.76161<br>−57.76 | <br><br>−1524<br>1.74906<br>−56.11 | <br><br><br>1.74916<br>−56.12 | <br><br>−952<br>1.75478<br>−56.86 | <br><br><br>1.75488<br>−56.87 |
| +0 +.05<br>.00 +.05<br>− 56.49<br>57 54.81<br>55 49.8<br>+2 5.0<br>+2 5.0<br>+2 5.51<br>− 1.11<br>+ 3.10<br>+2 4.50 | +.010<br><br><br><br><br><br><br>4.40<br>+3.71<br><br>55 47.21<br>55 46.71 | +.01 +.03<br>.00 +.05<br>− 56.64<br>51.95<br>49.6<br>2.3<br>2.85<br>+ 5.30<br>− 1.14<br>+ 2.90<br>+ 4.06 | +.042<br>.00<br>56.68<br>52.98<br><br>3.4<br><br>4.16 44.89<br>+3.51 45.92<br><br>45.40<br>44.80 | +0<br>.00<br>− 57.24<br>54.62<br>49.5<br>5.1<br>4.65<br>+ 5.85<br>− 1.21<br>+ 2.80<br>+ 7.44 | .00 +.020<br>.00<br>− 57.25<br>53.70<br><br>4.2<br><br>4.6 47.18<br>+3.41 46.26<br><br>46.72<br>46.12 | +0 +.01<br>.00<br>− 57.75<br>55.83<br>49.4<br>6.4<br>5.90<br>+ 5.81<br>− 1.22<br>+ 2.70<br>+ 7.29 | +.052<br>.00<br>− 57.74<br>54.80<br><br>5.4<br><br>4.59 48.54<br>+3.31 47.51<br><br>48.02<br>47.42 | +.01 0<br>.00<br>− 56.11<br>53.41<br>49.2<br>4.2<br>4.20<br>+ 5.03<br>− 1.32<br>+ 2.50<br>+ 6.21 | +.042<br>.00<br>− 56.10<br>53.36<br><br>4.2<br><br>3.71 47.20<br>+3.11 47.15<br><br>47.17<br>46.5 | + 0 .00<br>.00<br>− 56.86<br>52.41<br>48.6<br>3.8<br>3.60<br>+ 5.34<br>− 1.46<br>+ 1.90<br>+ 5.78 | +.010<br>.00<br>− 56.87<br>52.02<br><br>3.4<br><br>3.88 46.63<br>+2.51 46.24<br><br>46.43<br>45.83 |

×
-.46
Aug. 20
-.475
14 300   14 289
320   42.7
340
382
403
423
443   15 9 3
464   11 4
505   13 0
525
547
4652
35.80
14 ~~35.75~~
14 42291   15 11.23
42.276   +7.48
14 49.71   +.02
-7.43
-2.32
+ 7.44   4746
+ .02   5
- 2.32 +0.780
+ 5.14
14 42.28   5221
+2 498
14 47.42   -15
50.520   +190
55 4683
+ ~~6.54~~ 56.49   -28.94
15
-2.08
4 36.3   0 12.1
55.0   31.9
91.3   44.0
4 19 45.65   20 0 22.00
0.81224   1.46150 n
0.91767   1.56693 n
+ 887   -36.89
19 53.92?   19 45.11
56 55.1   56.76
17 39   18 15
1.76420   1.76440
-2032
1.74388   1.74408
-56.45   -55.47
+0 +.01   +.04 2 +02
.00   .00
-55.45   -55.45
52.21?
48.6
3.6
3.60
+2 4.89 3.42
- 1.47 +2.51
+ 1.90
+ 5.32   4689

---

-.42
Aug. 22
~~-.430~~ -.433
14   320
341
36.0
14 49.9
14 34.03
14   14 49.90
+5.41
14   +02
+ 5.35 6
+ .02
+2 452
-16
+14.46   -1.41
15
-2.10
4 39.4   0 23.0
57.4   42.1
96.8   65.1
19 4 48.40   20 0 32.55
1.16017   0.14922 n
1.26560   0.25465 n
+ 18.43   -1.80
20 6.83   20 30.75
+442
-1.48

---

×
-.43
Sept. 2
-.450
14 —   7
—
—
44.7
46.9
49.6
51.1   14 55.6
53.1   57.6
—   0.1
—
—
2448
14 48.960   14 57.78
48945   +0.63
14 49.55   +02
-0.61
-216
+ 0.59   4744
+ .02
- 2.16 +0.940
- 1.55 ~~+1.555~~
14 48.95
+2 625
14 47.40   -16
50.500
-8.88
15
-223
4 47.0
47.9
114.9
19 4 57.45
0.94498
~~2.00041~~
-11.23
+ 0
-.10
48.2
+ 6.25
- 1.58
+ 1.50
+ 6.17

---

×
.40
Sept. 6
-.398
14 39.2   14 38.6
41.2
43.2
47.3
49.4
51.5
53.6   15 23.9
55.7   26.3
59.8   28.3
1 8
3 9
4466
120
5666   14 38.60
14 51.509   15 26.18
51.494   -1.92
14 49.49   +02
+ 2.00
-210
- 1.94   4749
+ .02
- 2.10 +1.000
- 4.05 ~~-0.950~~
14 51.49   5150
+2 440
14 47.44   -16
50.540   +140
55 4730
+12.91   -34.65 6
15
-2.28
4 17.4   0 18.2
36.5   37.5
53.9   55.7
19 4 26.95   20 0 27.85
1.11093   1.53983 n
1.21636   1.64526 n
+1646   -44.18
19 43.41   19 43.67
56 55.06   55.32
55.19
17 20   18 21
1.76420   1.76440
-1402
1.75018   1.75038
-56.26   -56.28
+.01 -.04   +.03 2
-.09   -.01
- 56.35   - 56.27
51.41   51.59
48.1
3.3   3.5
3.40
+ 4.41   2.80 4721
- 1.61   +2.01 4739
+ 1.40
+ 4.20   4730

---

×
-.42
Sept. 7
-.430
14 398   14 340
418   369
440   39.2
47.9
50.0
52.2
54.4
56.5
0 8
2 5
4 6
3942
180
5742   14 36.70
14 52.200
52185   -2.64
14 49.48   +02
+ 2.70
-209
- 2.64   4747
+ .02
- 2.09 +1.010
- 4.74
14 52.18   5292
+2 552
14 47.44   -1.7
50.540   +140
55 4770
+15.50
15
-2.29
4 15.2
33.6
48.8
19 4 24.40
1.19033
1.29576
+19.76
19 44.16
56 55.81
-815
1.75605   1.75625
-57.02   -57.05
+.01 -.09
-.09
- 57.11
52.92
48.1
4.8
4.80
+ 5.57   3.95 47.57
- 1.62   +2.01
+ 1.40
+ 5.35   4757

---

× 1874
-.36
Sept. 9
-.460
14 41.8   14
43.9
45.9
50.0
52.0
54.1
56.2   15 7.2
58.2   9.5
2 4   11.7
4 4
6 5
4154
180
5954
14 54.127   15 9.47
54.112   -4.64
14 49.45   +02
+ 4.66
-206
- 4.64   4743
+ .02
- 2.06 +1.040
- 6.71
14 54.11   5259
+2 549
14 47.40   -1.6
50.500   +130
55 4740
- 15.34
15
-2.30
4 53.6
12.9
126.5
22 5 3.25
1.18583 n
1.29126 n
- 19.56
19 43.69
55.34
-720
1.75700   1.75720
-57.15   -57.17
+.01 -.10
.00 +0
- 57.25
52.59
48.0
4.6
4.60
+ 5.28   3.65
- 1.63   +1.91
+ 1.30
+ 4.95   4764
47.04

1875

| | | | | | | |
|---|---|---|---|---|---|---|
| Aug. | 8 | 14ᵐ 53.24ˢ | | 55′ 49.6″ | | |
| | 13 | 53.20 | -.04 | 49.3 | -.3 |
| | 18 | 53.16 | .04 | 49.0 | .3 |
| | 23 | 53.11 | .05 | 48.8 | .2 |
| | 28 | 53.05 | .06 | 48.6 | .2 |
| Sept: | 2 | 52.99 | .06 | 48.4 | .2 |
| | 7 | 52.92 | .07 | 48.3 | .1 |
| | 12 | 52.84 | .08 | 48.2 | .1 |
| | 17 | 52.76 | .08 | 48.1 | .1 |

1875.

$\alpha$ 50.493ˢ

$\delta$ -55′ 46.08″

$\frac{d\alpha}{dt}$ +3.100ˢ

$\frac{d\delta}{dt}$ +0.610″

l cos δ 9.99943

l C .13146

l C′ 0.13089

l C″ 0.12495

| | 1875<br>-60<br>Aug 7<br>-.640 | + | -.62<br>Aug 9<br>-.647 | + | -.62<br>Aug 10<br>-.617 | × | -.62<br>Aug 26<br>-.597 | + | -.62<br>Sept 1<br>-.636 | × | -.60<br>Sept 5<br>-.600 | × |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 14 44.8 | 14 37.4 | 14 45.4 | 14 31.3 | 14 45.7 | 14 36.8 | 14 55.5 | 14 51.2 | 15 0.5 | 14 56.3 | 15 3.9 | 14 52.2 |
| | 46.9 | 38.4 | 47.4 | 33.2 | 47.6 | 38.5 | 57.8 | 53.2 | 2.5 | 58.6 | 5.9 | 54.2 |
| | 48.9 | 39.1 | 49.5 | 35.3 | 49.8 | 40.2 | 59.8 | 54.8 | 4.5 | 0.9 | 8.0 | 55.7 |
| | 53.1 | | 53.6 | | 53.9 | | 15 3.9 | | 8.5 | | 12.1 | |
| | 55.1 | | 55.7 | | 55.9 | | 6.0 | | 10.7 | | 14.2 | |
| | 57.2 | | 57.7 | | 57.9 | | 8.0 | | 12.8 | | 16.3 | |
| | 59.3 | 15 1.7 | 59.8 | 15 23.0 | 15 0.0 | 15 16.3 | 10.0 | 15 24.3 | 15.0 | 15 31.9 | 18.4 | 15 37.1 |
| | 15 1.4 | | 1.8 | 24.4 | 2.1 | 18.3 | 12.0 | | 16.9 | 34.3 | 20.4 | 39.3 |
| | 5.4 | | 5.9 | 25.9 | 6.2 | 19.9 | 16.1 | | 21.0 | 36.6 | 24.6 | 41.4 |
| | 7.5 | | 8.0 | | 8.3 | | 18.3 | | 23.0 | | 26.7 | |
| | 9.6 | | 10.1 | | 10.5 | | 20.4 | | 25.0 | | 28.7 | |
| | 6292 | | 3951 | | 3379 | | 2678 | | 1404 | | 1792 | |
| | | | 240 | | 300 | | 180 | | | | | |
| | | 14 38.30 | 6351 | 14 33.27 | 6379 | 14 38.50 | 878 | 14 53.07 | | 14 58.60 | | 14 54.03 |
| 15 | 14 57.200 | 15 1.70 | 14 57.736 | 15 24.43 | 14 57.991 | 15 18.17 | 15 7.982 | 15 24.30 | 15 12.764 | 15 34.27 | 15 16.291 | 15 39.27 |
| | 57.185 | -3.87 | 57.721 | -4.42 | 57.976 | -4.66 | 7.967 | -14.75 | 12.749 | -19.60 | 16.276 | -23.29 |
| 14 | 14 53.25 | +.03 | 14 53.28 | +.03 | 14 53.233 | +.03 | 14 53.078 | +.03 | 14 53.00 | +.03 | 14 52.95 | +.03 |
| | +3.93 | | +4.49 | | +4.785 | | +14.889 | | +19.75 | | +23.33 | |
| | | -2.76 | | -2.74 | | -2.74 | | -2.59 | | -2.51 | | -2.46 |
| | -3.91 | 14 50.58 | -4.44 | 50.59 | -4.70 | 50.61 | -14.78 | 50.66 | -19.65 | 50.67 | -23.29 | 50.56 |
| | + .03 | | + .03 | | + .03 | | + .03 | | + .03 | | + .03 | |
| | - 2.76 | | - 2.74 | | - 2.74 | | - 2.59 | | - 2.51 | | - 2.46 | |
| | - 6.64 | | - 7.15 | | - 7.41 | | - 17.34 | | - 22.13 | | - 25.72 | |
| | 14 57.18 | 39 3503 | 14 57.72 | 3504 | 14 57.98 | 3578 | 15 7.97 | 3149 | 15 12.75 | 3324 | 15 16.28 | 3263 |
| | | -16 1285 | | -16 1247 | | -16 1251 | | -16 1537 | | -16 1320 | | -16 1324 |
| | 14 50.54 | -2.0 | 14 50.57 | -1.9 | 14 50.57 | -2.0 | 14 50.63 | -1.9 | 14 50.62 | -1.9 | 14 50.56 | -1.9 |
| | | +350 | | +340 | | +330 | | +260 | | +230 | | +220 |
| | -2 | 55 46.88 | | 55 46.01 | | 55 46.99 | | 55 46.16 | | 55 46.04 | | 55 45.57 |
| | s<br>+ 18.90 | -24.50 | +24.47 | -26.69 | +19.49 | -20.18 | +14.91 | -16.32 | +14.16 | -21.51 | +22.26 | -22.98 |
| 15 | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | |
| | -2.37 | | -2.39 | | -2.40 | | -2.50 | | -2.54 | | -2.58 | |
| | 0 30.2 | 1 22.2 | 0 43.2 | 1 52.8 | 0 50.8 | 1 45.2 | 0 53.6 | 1 34.5 | 0 55.9 | 1 44.3 | 0 46.3 | 1 46.1 |
| | 13.2 | 45.0 | 4.9 | 12.9 | 11.6 | 5.4 | 12.1 | 51.5 | 14.5 | 2.1 | 5.5 | 5.3 |
| | 12.34 | 6.72 | 10.81 | 12.57 | 12.24 | 11.06 | 12.57 | 8.60 | 13.04 | 10.64 | 11.18 | 11.14 |
| | 1 ~~3.20~~<br>1.70 | 1 33.60 | 0 54.05 | 2 2.85 | 1 1.20 | 1 55.30 | 1 2.85 | 1 43.00 | 1 5.20 | 1 53.20 | 0 55.90 | 1 55.70 |
| | 1.27646 | 0.65321 n | 1.38863 | 1.42635 n | 1.28981 | 1.30492 | 1.17348 | 1.21272 n | 1.15106 | 1.33264 n | 1.34753 | 1.36135 n |
| | 1.40735 | 0.78410 n | 1.51952 | 1.55724 n | 1.42070 | 1.43581 n | 1.29843 | 1.33767 n | 1.27601 | 1.45759 n | 1.47248 | 1.48630 n |
| | + 25.55 | -6.08 | + 33.08 | -36.08 | +26.35 | -27.28 | +19.88 | -21.76 | +18.88 | -28.68 | +29.68 | -30.64 |
| 19 | 1 27.25 | 1 27.52 | 1 27.13 | 1 26.77 | 1 27.55 | 1 28.02 | 1 22.73 | 1 21.24 | 1 24.08 | 1 24.52 | 1 25.58 | 1 25.06 |
| -2 | 38 38.90<br>39.03 | 39.17 | 38 38.78<br>38.60 | 38.42 | 38 39.20<br>39.43 | 39.67 | 38 34.38<br>33.63 | 32.99 | 38 35.73<br>35.95 | 36.17 | 38 37.23<br>36.97 | 36.71 |
| +4 | 17 14 | 17 46 | | | | | | | | | | |
| 1 | 1.76410 | 1.76450 | | | | | | | | | | |
| | -1724 | | -1379 | | -1463 | | -309 | | -737 | | -1985 | |
| 1 | 1.74686 | 1.74726 | 1.75031 | 1.75071 | 1.74947 | 1.74987 | 1.76101 | 1.76141 | 1.75673 | 1.75713 | 1.74425 | 1.74465 |
| | -55.83 | -55.88 | -56.27 | -56.33 | -56.17 | -56.22 | -57.68 | -57.73 | -57.11 | -57.16 | -55.50 | -55.55 |
| | +.01 -.14 | +0 | +.03 2 -.14 | +.03 2 | +.02 1 -.15 | +.02 1 | +.01 -.15 | +.01 | +.01 -.15 | +.02 1 | +.02 1 -.14 | +.03 2 |
| | -11 | -18 | -.10 | -22 | -.11 | -21 | -.11 | -19 | -.12 | -21 | -10 | -21 |
| | -55.93 | -56.06 | -56.35 | -56.53 | -56.27 | -56.42 | -57.79 | -57.92 | -57.12 | -57.36 | -55.59 | -55.84 |
| | 39 34.83 | 35.23 | 35.13 | 34.95 | 35.47 | 36.09 | 32.17 | 30.81 | 32.95 | 33.53 | 32.82 | 32.45 |
| | 55 49.6 | | 49.5 | | 49.4 | | 48.7 | | 48.4 | | 48.3 | |
| + | -16 14.8 | 14.4 | 14.4 | 14.6 | 13.9 | 13.3 | 16.5 | 17.9 | 15.5 | 14.9 | 15.5 | 15.9 |
| + | -16 14.60 | | 14.50 | | 13.60 | | 17.20 | | 15.20 | | 15.70 | |
| + | -16 12.98 | 55 45.99 | - 12.81 | 14.50 46.23 | - 12.59 | 14.29 46.46 | - 15.46 | 17.23 46.80 | - 13.76 | 14.96 45.61 | - 13.42 | 15.25 45.87 |
| - | - 1.68 | 14.66 46.39 | - 1.69 | 46.05 | - 1.70 | 47.08 | - 1.77 | 45.44 | - 1.80 | 46.19 | - 1.83 | 45.50 |
| + | + 3.50 | | + 3.40 | | + 3.30 | | + 2.60 | | + 2.30 | | + 2.20 | |
| + | -16 11.16 | 55 46.19 | - 11.10 | 46.14 | - 10.99 | 46.77 | - 14.63 | 46.12 | - 12.66 | 45.90 | - 13.05 | 45.68 |

| 1874.0 α | δ | 1875.0 α | δ |
|---|---|---|---|
| 47.39 | | 50.54 | |
| 47 | | 57 | |
| 43 | | 57 | |
| 46 | | 63 | |
| 37 | | 62 | |
| 42 | | 56 | |
| 42 | | 57 | |
| 40 | | 56 | |
| 44 | | | |
| 44 | | | |
| 40 | | | |
| 47.422 | | 50.578 | |
| .393 | 46.69 | .493 | 46.08 |
| +.029 | | +.085 | |

-.58 +
Sept-7
-.547

15 5.8 14 49.1
7.8 54.0
9.8 53.0
14.0
16.0
18.0
20.1 15 36.8
22.3 38.7
26.2 40.7
28.3
30.4

1987

-.56 ×
Sept-8
-.542

15 6.3 14 55.0
8.4 54.0
10.6 56.8
14.6
16.5
18.6
20.8 15 25.4
22.8 27.5
26.9 28.5
29.0
31.1

2055

18.064 14 51.03 | 14 56.93
15 ~~18.764~~ 15 38.73 | 15 18.682 15 27.13
18.049 -25.08 | 18.667 -25.69
14 52.92 +.03 | 14 52.901 +.03
~~+25.83~~ | +25.786
+25.13 -2.43 | -2.42
- 25.08 50.47 57 | 25.72 50.59
+ .03 5 | + .03
- 2.43 | - 2.42
- 27.48 | - 28.11
15 18.05 32.79 | 15 18.67 33.71
-16 18.77 | -16 13.63
14 50.57 -1.9 | 14 50.56 -1.9
+2.20 | +2.20
55 46.26 | 55 47.04

+27.73 -19.97 | + 22.75 - 8.45
0 | 0
-260 | -261
0 37.6 1 41.2 | 0 46.2 1 27.6
57.0 0.1 | 4.6 44.9
1 9.46 10.13 | 11.08 7.25
0 47.30 1 50.65 | 0 55.40 1 36.25

1.44295 1.30038n | 1.35698 0.92686n
1.56790 1.42533n | 1.48193 1.05186n
+36.98 -26.63 | +30.33 +11.43
1 24.28 1 24.02 | 1 25.73 1 24.82

38 35.93 35.67 | 37.38 36.47
35.80 | 36.92

17 7 | 17 48
1.76410 1.76450
-985 | -1147
1.75425 1.75465 | 1.75263 1.75303
- 56.79 - 56.84 | - 56.58 - 56.63

+.042 -.18 +.082 | +.02 -.18 0
-.12 -.27 | -.13 -.24
- 56.89 - 57.10 | - 56.70 - 56.87
32.82 32.77 | 34.08 33.34
48.3 | 48.3
15.5 15.5 | 14.2 15.0
15.50 | 14.60
-16 14.01 15.85 46.47 | - 13.77 15.62 47.50
- 1.84 46.42 | - 1.85 46.76
+ 2.20 | + 2.20
-16 13.65 46.45 | - 13.42 47.13

1874 1874

109 Herculis
h m sec.
18 18 22
+21° 43'
δ = +20 40
-sin z = +.35

α 19.718
δ +42.49.73
dα/dt +2.554
dδ/dt +1.330
l sin δ 9.56822
l cos δ 9.96803
l C .10600
l C' 0.07403

| | | m | s | | ' | " | |
|---|---|---|---|---|---|---|---|
| July | 19 | 18 | 22.06 | | 42 | 48.7 | |
| | 24 | | 22.05 | -.01 | | 49.7 | +1.0 |
| | 29 | | 22.03 | .02 | | 50.7 | 1.0 |
| Aug. | 3 | | 22.00 | .03 | | 51.6 | .9 |
| | 8 | | 21.96 | .04 | | 52.4 | .8 |
| | 13 | | 21.91 | .05 | | 53.1 | .7 |
| | 18 | | 21.86 | .05 | | 53.8 | .7 |
| | 23 | | 21.79 | .07 | | 54.4 | .6 |
| | 28 | | 21.72 | .07 | | 54.9 | .5 |
| Sept | 2 | | 21.64 | .08 | | 55.3 | .4 |
| | 7 | | 21.56 | .08 | | 55.7 | .4 |

corr α =
corr δ =
tang δ = +.40 1.08
I = 2.22 s
K = -.017

| 1874<br>July 30 | X -.48<br>Aug. 2 | | X -.46<br>Aug. 4 | | X -.44<br>Aug. 10 | | X -.41<br>Aug. 19 | | X -.46<br>Aug. 20 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | -.488 | | -.500 | | -.427 | | -.422 | | -.475 | |
| 18 | 18 46.8 | 18 38.2 | 18 48.0 | 18 43.7 | 17 52.9 | 17 41.2 | 18 0.4 | 17 52.3 | 18 1.3 | 17 54.7 |
| | 49.0 | 40.7 | 50.2 | 45.7 | 55.1 | 43.2 | 2.7 | 54.4 | 3.4 | 54.4 |
| | 51.2 | 42.2 | 52.6 | 47.5 | 57.3 | 45.5 | 4.9 | 56.4 | 5.7 | 56.0 |
| | 54.5 | | 54.0 | | 1.8 | | 9.3 | | 10.1 | |
| | 57.8 | | 59.0 | | 4.1 | | 11.5 | | 12.3 | |
| | 0.2 | | 1.3 | | 6.2 | | 13.8 | | 14.6 | |
| | 2.3 | 19 9.4 | 3.5 | 19 16.1 | 8.5 | | 15.9 | 18 30.6 | 16.8 | 18 32.4 |
| | 4.6 | 10.7 | 6.0 | 18.7 | 10.6 | | 18.2 | 33.1 | 18.9 | 34.3 |
| | 9.0 | 13.0 | 10.4 | 20.2 | 15.1 | | 22.6 | 35.2 | 23.5 | 36.4 |
| | 11.1 | | 12.6 | | 17.3 | | 25.0 | | 25.6 | |
| | 13.4 | | 14.8 | | 19.5 | | 27.0 | | 28.0 | |
| | 300.9 | | 315.4 | | 248.4 | | 151.3 | | 160.2 | |
| | 300 | | 300 | | 180 | | | | | |
| | 0.9 | 18 40.387 | 15.4 | 18 45.63 | 68.4 | 17 43.30 | 18 13.755 | 17 54.387 | 18 14.564 | 17 54.03 |
| | 19 0.082 | 19 11.03 | 19 1.400 | 19 ~~18.66~~ 18.33 | 18 6.218 | | 13.738 | 18 32.96 | 14.547 | 18 34.36 |
| | 0.156 | -37.76 | 1.383 | -39.24 | 6.201 | +15.94 | | +8.33 | | +7.48 |
| | 18 22.81 | -.19 | 18 21.99 | -.18 | 18 21.94 | -.18 | 18 21.85 | -.16 | 18 21.83 | -.18 |
| | +38.05 | | +39.39 | | -15.74 | | -8.11 | | -7.28 | |
| | | -229 | | -227 | | -222 | | -213 | | -211 |
| | -37.76 | 18 ~~38.41~~ 19.82 | -39.25 | 19.69 | +15.90 | 19.74 | +8.31 | 19.78 | +7.44 | 19.74 |
| | -.19 | | -.20 | | -.17 | | -.17 | | -.19 | |
| | -2.29 +0.264 | | -2.27 +0.284 | | -2.22 +0.334 | | -2.13 +0.424 | | -2.11 +0.444 | |
| | -40.24 | | -41.72 | | +13.51 | | +6.01 | | +5.14 | |
| | 19 0.96 | 40 46.86 | 19 1.38 | 47.03 | 18 6.20 | 49.09 | 18 13.74 | 50.71 | 18 14.55 | 49.99 |
| | | +2 5.37 | | +2 5.94 | | +2 5.13 | | +2 5.38 | | +2 4.98 |
| | 18 19.82 | -.7 | 18 19.66 | -.6 | 18 19.71 | -.7 | 18 19.75 | -.7 | 18 19.69 | -.7 |
| | 22.374 | -1.80 | 22.214 | -2.10 | 22.264 | -3.00 | 22.304 | -4.30 | 22.244 | -4.40 |
| | | +21 42 49.73 | | 42 50.27 | | 42 50.52 | | 42 51.09 | | 42 49.57 |
| | s +19.81 | -10.86 | +15.77 | -16.93 ~~-17.26~~ | +22.90 | | +19.38 ~~19.42~~ | -19.21 | +20.53 | -19.80 |
| 40 | 40 | | 40 | | 40 | | 40 | | 40 | |
| | -1.61 | | -1.71 | | -1.86 | | -2.06 | | -2.08 | |
| ' "<br>1 58.1 | 1 9.5 | 1 46.3 | 1 15.8 | 1 53.8 | 1 4.3 | 2 5.4 | 1 5.9 | 1 52.1 | 1 6.1 | 1 53.8 |
| 29.8 | 24.0 | 0.1 | 27.0 | 5.7 | 17.8 | 17.3 | 20.1 | 6.8 | 20.1 | 8.5 |
| .1479 | 33.5 | 106.4 | 42.8 | 119.5 | 22.1 | 22.7 | 26.0 | 118.9 | 26.2 | 122.3 |
| 42 13.95 | +41 16.75 | +41 53.20 | +41 21.40 | +41 59.75 | +41 11.05 | 42 11.35 | 41 13.00 | 41 59.45 | 41 13.10 | 42 1.15 |
| | 1.29688 | 1.03583n | 1.19783 | 1.22866n | 1.35984 | | 1.28735 | 1.28353n | 1.31239 | 1.29667n |
| | 1.37091 | 1.10986n | 1.27186 | 1.30269n | 1.43387 | | 1.36138 | 1.35756n | 1.38642 | 1.37070n |
| | +23.49 | -12.88 | +18.70 | -20.08 | +27.16 | | +22.98 | -22.78 | +24.35 | -23.48 |
| | 41 40.24 | 41 40.32 | 41 40.10 | 41 39.67 | 41 38.21 | | 41 35.98 | 41 36.67 | 41 37.45 | 41 37.67 |
| +21° | 41 8.11 | 8.03 | 41 8.25 | 8.68 | 10.14 | | 41 12.37 | 11.68 | 41 10.90 | 10.68 |
| | 8.07 | | 8.46 | | | | 12.02 | | 10.79 | |
| +20 | 39 10 | 39 46 | | | | | | | 39 6 | 39 54 |
| | 1.33650 | 1.33670 | | | | | | | 1.33640 | 1.33680 |
| | -1072 | | -658 | | -1516 | | -939 | | -2027 | |
| | 1.32578 | 1.32598 | 1.32992 | 1.33012 | 1.32134 | 1.32154 | 1.32711 | 1.32731 | 1.31613 | 1.31653 |
| | -21.17 | -21.18 | -21.38 | -21.39 | -20.96 | -20.97 | -21.24 | -21.25 | -20.71 | -20.73 |
| | -.07 -.03 | -.02 | -.04 -.04 | -.05 | -.09 -.09 | | -.07 -.07 | -.07 | -.08 -.07 | -.07 |
| | +.01 | +.02 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| | -21.23 | -21.18 | -21.42 | -21.44 | -21.05 | | -21.31 | -21.32 | -20.79 | -20.80 |
| 40 | 46.88 | 46.85 | 46.83 | 47.24 | 49.09 | | 51.06 | 50.36 | 50.11 | 49.88 |
| 42 | 51.5 | | 51.8 | | 52.7 | | 54.0 | | 54.1 | |
| +2 | 4.6 | 4.7 | 5.0 | 4.6 | 3.6 | | 2.9 | 3.6 | 4.0 | 4.2 |
| +2 | 4.65 | | 4.80 | | 3.60 | | 3.20 | | 4.1 | |
| +2 | 5.30 | 42 49.84 | +5.85 | 5.26 49.99 | +5.03 | 4.38 | +5.34 | 4.62 51.38 | +4.89 | 4.17 49.88 |
| - | .56 | 4.74 49.81 | -.59 | -.77 50.40 | -.65 | -1.67 | -.72 | -2.97 50.68 | -.72 | -3.07 49.65 |
| - | 1.80 | -.47 | -2.10 | | -3.00 | | -4.30 | | -4.40 | |
| +2 | 2.96 | 42 49.82 | +3.16 | 50.19 | +1.38 | 50.47 | +0.32 | 51.03 | +1 57.77 | 49.76 |
| | | 40 51.15 | | 51.52 | | 51.84 | | 52.31 | | 51.09 |

1875
s
α 22.273
δ +42 51.06
dα/dt +2.555
dδ/dt +1.334

1875

| | | h m | s | | ° ′ | ″ | |
|---|---|---|---|---|---|---|---|
| Aug. | 8 | 18 | 24.79 | | 42 | 52.8 | |
| | 13 | | 24.74 | -.05 | | 53.6 | +.8 |
| | 18 | | 24.68 | .06 | | 54.3 | .7 |
| | 23 | | 24.61 | .07 | | 54.9 | .6 |
| | 28 | | 24.54 | .07 | | 55.4 | .5 |
| Sept. | 2 | | 24.46 | .08 | | 55.8 | .4 |
| | 7 | | 24.38 | .08 | | 56.2 | .4 |
| | 12 | | 24.29 | .09 | | 56.5 | .3 |
| | 17 | | 24.20 | .09 | | 56.7 | .2 |

log cos δ 9.96803
l b .13146
l b′ 0.09949
l b″ 0.09355

X -.42 Aug. 22 ~~-.431~~ -.433 | X -.40 Sept. 6 -.398 | X -.42 Sept. 7 -.430 | X 1874 -.36 Sept. 9 -.400 | 1875 -.62 X Aug 9 -.647 | -.68 X Aug 25 -.660

18 3.3 17 33.0 | 18 10.4 18 5.8 | 18 11.0 18 7.4 | 18 13.0 18 5.0 | 18 16.1 18 11.8 | 18 25.9 18 17.0
5.5 35.0 | 12.7 | 13.3 | 15.2 7.0 | 18.3 13.9 | 28.0 19.7
7.7 37.0 | 14.9 | 15.6 | 17.3 9.0 | 20.6 15.2 | 30.2 21.7
12.2 | 19.2 | 20.0 | 21.8 | 25.1 | 34.6
14.5 | 21.5 | 22.2 | 24.0 | 27.3 | 36.7
16.6 | 23.7 | 24.3 | 26.3 | 29.6 | 39.0
18.7 18 42.8 | 26.0 18 41.1 | 26.5 18 55.8 | 28.5 | 31.7 18 53.7 | 41.1 18 51.3
21.0 44.8 | 28.1 43.0 | 28.8 58.5 | 30.8 | 33.9 56.4 | 43.4 53.0
25.5 46.5 | 32.5 45.1 | 33.2 0.8 | 35.3 | 38.4 58.0 | 47.9 54.7
27.9 | 34.7 | 35.5 | 37.4 | 40.6 | 50.3
30.0 | 37.0 | 37.7 | 39.7 | 42.8 | 52.4

18 29 | 26 07 | 26 81 | 28 93 | 32 44 | 42 95

17 55.00 | 18 5.80 | 18 7.40 | 18 7.00 | 18 13.57 | 18 19.47
18 16.627 18 44.70 | 18 23.700 18 43.06 | 18 24.373 18 58.387 | 18 26.300 | 18 29.491 18 56.03 | 18 39.045 18 53.00
16610 +5.41 | 23.683 -1.93 | 24.356 -2.64 | 26.283 -4.64 | 29.474 -4.42 | 39.028 -14.17
18 21.881 -.17 | 18 21.58 -.16 | 18 21.56 -.17 | 18 21.53 -.14 | 18 24.78 -.25 | 18 24.58 -.27
-5.1920 | +2.10 | +2.80 | +4.75 | +4.69 | +14.45
-209 | -1.86 | -1.84 | -1.81 | -2.51 | -2.318
+ 5.36 1976 | - 1.94 1973 | - 2.64 1971 | - 4.64 1969 | - 4.44 2229 | - 14.21 2228
- .17 | - .16 | - .17 | - .16 X | - .26 | - .26
- 2.09 +0.464 | - 1.86 +0.694 | - 1.84 +0.714 | - 1.81 +0.744 | - 2.51 | - 2.31
+ 3.10 | - 3.99 | - 4.68 | - 6.64 | - 7.21 | - 16.78
18 16.61 40 50.76 | 18 23.68 51.55 | 18 24.36 51.96 | 18 26.28 40 50.90 | 18 29.47 59 6.57 | 18 39.03 13.35
+2 4.52 | +2 4.40 | +2 5.52 | +2 5.49 | -16 12.47 | -16 15.72
18 19.71 -.8 | 18 19.69 -.8 | 18 19.68 -.8 | 18 19.64 -.8 | 18 22.26 -1.0 | 18 22.25 -1.0
22264 -4.60 | 22244 -5.90 | 22234 -6.00 | 22194 -6.10 | -1.90 | -4.10
42 49.88 | 42 49.25 | 42 50.68 | 42 49.49 | 43 51.20 | 42 52.51

s
+ 21.63 -28.07 | +17.90 -19.36 | +16.97 ~~-33.96~~ -34.00 | +19.30 | + 15.92 -26.54 | + 19.57 -13.96
40 | 40 | 40 | 40 | 20 | 20
-2.10 | -2.28 | -2.29 | -2.30 | -2.39 | -2.49
1 3.0 2 2.7 | 1 7.5 1 51.9 | 1 7.9 2 7.9 | 1 5.4 | 2 49.0 3 42.0 | 2 38.3 3 20.0
17.4 16.4 | 20.3 6.5 | 22.2 22.1 | 20.9 | 11.9 4.9 | 58.9 40.8
20.4 19.1 | 27.8 118.4 | ~~39.1~~ 30.0 | 26.3 | 18.9 106.9 | 97.2 60.8
41 10.20 42 9.55 | 41 13.90 41 57.20 | 41 ~~14.55~~ 15.05 42 15.00 | 41 13.15 | ~~22~~ 23 0.45 23 53.45 | 22 48.60 23 30.40

1.33506 1.44824 | 1.25285 1.28691 | 1.22968 1.53148 | 1.28536 | 1.20194 1.42390 | 1.29159 1.14489
1.40909 1.53227 | 1.32688 1.36094 | 1.30371 1.60551 | 1.35959 | 1.30143 1.52339 | 1.38514 1.23844
+25.65 -33.29 | +21.23 -22.96 | +20.12 -40.32 | +22.89 | +20.02 -33.37 | +24.27 -17.32
41 33.85 41 36.26 | 41 35.13 41 36.24 | 41 35.17 41 34.68 | 41 36.04 | 23 20.47 23 20.68 | 23 12.87 23 13.08

41 12.50 12.09 | 41 13.22 12.11 | 41 13.18 13.67 | 41 12.31 | 59 27.88 28.27 | 59 35.98 35.27
12.29 | 12.66 | 13.42 | | 28.07 | 35.37
39 8 40 8 | 39 12 40 5
1.33640 1.33680 | 1.33650 1.33680

-573 | -1396 | -807 | -710 | -1360 | -127
1.33067 1.33107 | 1.32244 1.32284 | 1.32833 1.32873 | 1.32930 | 1.32290 1.32320 | 1.33523 1.33553
-21.41 -21.43 | -21.01 -21.03 | -21.30 -21.32 | -21.35 | -21.03 -21.05 | -21.64 -21.65

-.08 -.12 -.15 | -.06 -.09 -.06 | -.05 -.15 -.20 | -.06 -.06 | -.04 -.46 -.13 | -.07 -.39 -.03
.00 .00 | -.02 -.04 | -.02 -.04 | .00 | -.33 -.43 | -.31 -.38
-21.49 -21.58 | -21.09 -21.13 | -21.37 -21.56 | -21.41 | -21.40 -21.61 | -22.02 -22.06
40 51.01 50.51 | 52.13 50.98 | 51.81 52.11 | 50.90 | 59 6.48 6.66 | 13.46 13.21
54.3 | 55.6 | 55.7 | 55.8 | 42 53.0 | 55.2
3.3 3.8 | 3.5 4.6 | 3.9 3.6 | 4.9 | -16 13.5 13.7 | 18.3 18.0
3.5 | 4.0 | 3.7 | 4.9 | 13.6 | 18.1
+2 4.42 3.69 50.10 | + 4.41 3.62 49.85 | + 5.57 4.77 50.58 | + 5.28 4.48 | -16 12.81 ~~14.98~~ 13.64 50.94 | - 15.58 16.45 52.91
- .73 3.27 49.60 | - .79 -4.57 48.70 | - .80 -4.67 50.88 | - .80 -4.77 | - .83 51.12 | - .87 52.6
- 4.60 | - 5.90 | - 6.00 | - 6.10 | - 1.90 | - 4.10
+ 59.09 49.85 | + 57.72 49.27 | + 58.77 50.73 | + 58.38 49.28 | - 16 15.54 42 51.03 | - 20.55 52.78

| α | 1874.0 δ | α | 1875.0 δ |
|---|---|---|---|
| 19.92 | | 22.26 | |
| 66 | | 25 | |
| 71 | | 29 | |
| 75 | | 22 | |
| 69 | | | |
| 71 | | | |
| 69 | | | |
| 68 | | | |
| 64 | | | |
| 19.717 | | 22.255 | |
| .718 | 49.73 | .273 | 51.06 |
| −.001 | | −.018 | |

−.62 +    −.56 ×

Aug 26    Sept 8

−.597    −.542

18 26.4 18 16.0 18 37.0 18 28.6
28.6    18.2    39.2    30.4
30.7    20.1    41.5    32.6
35.2    45.9
37.4    48.0
39.5    50.3
41.9 18 54.2    52.4 19 7.4
44.1    56.7    54.8    9.5
48.5    59.3    59.1    11.0
50.7    1.3
52.9    3.6

43.59    43.31

120

18 18.10    55.31 18 30.53
18 39.627 18 56.73 18 50.282 19 9.30
39.610    −14.75    50.265    −25.69
18 24.57    −.25 18 24.367    −.22
+15.04    +25.90

−2.30    −2.10

− 14.48    22.31 − 25.72    22.25
− .24    − .23
− 2.30    2.10
− 17.32    − 28.05
18 39.61 59 12.45 18 50.27    11.25
−16 15.37    −16 13.63
18 22.29    − 1.0 18 22.22    − 1.0
− 4.20    − 5.20
42 51.88    42 51.42

+ 21.53    − 17.10    + 19.75    − 19.02
20    20
−2.50    −2.61

2 37.9 3 25.0 2 41.1 3 29.1
56.3    45.5    07    48.9
94.2    70.5    10.78    78.0
22 47.10 23 35.25 22 50.90 23 39.00

1.33304 1.23300n 1.29557 1.27921n
1.42659 1.32655n 1.38912 1.37276n
+26.70    −21.21    +24.50    −23.57
23 13.80 23 14.04 23 15.40 23 15.41

59 34.55    34.31 59 32.95    32.94
34.43    32.94
39 8 39 51
1.33640 1.33680
−296    −1138
1.33354 1.33384 1.32502 1.32542
−21.55    −21.57    −21.14    −21.16

−.08 −.42 −.05    −.07 −.54 −.06
−.31    −.40    −.42    −.54
−21.94    −22.02    −21.63    −21.76
59 12.61    12.29    11.32    11.18
42 55.3    56.3
−16 17.3    17.0    15.0    14.9
−16 17.1    15.0
−16 15.46 16.33 52.08    − 13.77 14.68 51.94
− .87    51.76    − .91    51.30
− 4.20    − 5.20
−16 20.53 42 51.92    − 19.88    51.37

φ Draconis .37   1874   1874

h m sec
18 22 33
+ 71° 16′

ζ = − 28° 53′
ζ sin ζ = −.48

α 33.960
δ +16′ 12.68
dα/dt −0.849
dδ/dt +1.995

l sin δ 9.97636
l cos δ 9.50673
l C .10600
l C′ 9.61273

| | | | | |
|---|---|---|---|---|
| July 29 | 22m 37.07s | | 15′ 76.4″ | |
| Aug. 3 | 36.86 | −.21 | 77.7 | +1.3 |
| 8 | 36.63 | .23 | 79.0 | 1.2 |
| 13 | 36.37 | .26 | 80.1 | 1.1 |
| 18 | 36.09 | .28 | 81.2 | 1.1 |
| 23 | 35.79 | .30 | 82.1 | .9 |
| 28 | 35.48 | .31 | 83.0 | .9 |
| Sept. 2 | 35.15 | .33 | 83.8 | .8 |
| 7 | 34.81 | .34 | 84.4 | .6 |

corr α = −.261s
corr δ = +.26″
tang δ = +2.95
I = 6.43s
K = −.046s

X 1874 July 30 −48   X −48 Aug. 2   X −46 Aug. 4   leh f. Aug. 10   X −.46 Aug. 20   X −.42 Aug. 22

−.480   −.488   −.500   −.475   ~~−.436~~ −.433

18 22 59.5 22 32.2   23 2.8 22 31.8   23 4.4 22 18.9   22 16.8 21 43.8   22 18.5 21 29.2
2.8   6.3 38.0   7.6 25.0   20.0 49.7   22.0 35.7
6.1   9.4 44.1   10.9 31.0   23.3 55.8   25.0 40.1
9.0   12.7   14.1   26.4   28.1
12.6   15.9   17.4   29.8   31.4
15.7   18.9   20.4   32.7   34.4
19.1   22.2 23 23.3   23.6   36.2 22 24.7   38.1 22 31.7
22.4   25.6   26.8   39.4 31.0   41.0
25.6   28.9   30.4   42.5 36.5   44.3

1727   1427   1556   2671   2828
60
11 27 22 32.20   22 38.23   22 24.96   21 49.76   21 34.80

23 12.522   23 15.856 23 23.30   23 17.289   22 29.678 22 30.73   22 31.422 22 31.70
12476   15810   17243   29632   31376
22 37.042   22 36.94 .89   22 36.820   22 35.986   22 35.884
+35.476 −34.31   +38.982 −37.77   +40.484 −39.24   −6.353 +7.48   −4.486 +5.41
+35.72 −1.42   +39.18 −1.42   +40.70 −1.36   −6.67 −1.36   4.20 −1.24

− 34.36 −3.06   − 37.77 −2.93   − 39.25 −2.84   + 7.43 −2.00   + 5.36 −1.88
− 1.42 22 33.689   − 1.44 33.69   − 1.48 33.80   − 1.40 33.75   − 1.28 33.67
− 3.06 −3.909   − 2.93 −3.779   − 2.84 −3.689   − 2.00 −2.849   − 1.88 −2.729
− 38.84   − 42.14   − 43.57   + 4.03   + 2.20
23 12.48   23 15.81   23 17.24   22 29.63   22 31.38

14 1038   1142   1164   1637   1723
22 33.64 +2 558   22 33.67 +2 537   22 33.67 +2 594   22 33.66 +2 498   22 33.58 +2 452
32.791 +7.0   32.821 +1.0   32.821 +1.0   32.811 +1.1   32.731 +1.1
−400   −480   −530   −890   −920
+71 16 12.96   16 12.~~89~~99   16 13.28   16 13.65   16 13.65
9

s
+40.32   +37.63 −7.44   +52.33   +39.92 −1.05   +56.62 −0.28

5   5   5   5   5   5
−1.57   −1.61   −1.71   −1.86   −2.08   −2.10

3 48.5   3 48.2 4 7.1   3 42.5   3 42.0   3 46.0 4 3.0   3 41.0 3 57.5   3 34.0 3 56.4
55.9   56.0 15.3   49.7   50.8   55.4 11.6   50.4 7.9   44.8 7.4
104.4   104.2 22.4   92.2   92.8   101.4 14.6   91.4 125.4   78.8 123.8
~~58~~ 8 52.20   ~~58~~ 8 52.10 ~~54~~ 9 11.20   ~~58~~ 8 46.10   ~~58~~ 8 46.40   ~~58~~ 8 50.70 ~~54~~ 9 7.30   ~~58~~ 8 45.70 ~~54~~ 9 2.70   ~~58~~ 8 39.40 ~~54~~ 9 1.90

1.60552   1.57553 0.87157n 1.71875   1.60119 0.02119 1.75097 9.44716
1.21825   1.18826 0.48430n 1.33148   1.21392 9.63392 1.36570 9.05989
+16.53   +15.43 −3.05 +21.45   +16.36 −0.43 +23.21 −0.11
~~54~~ 9 8.73   ~~54~~ 9 7.53 ~~53~~ 9 8.15 ~~54~~ 9 7.55   ~~54~~ 9 2.06 ~~54~~ 9 2.27 ~~54~~ 9 2.61 ~~54~~ 9 1.79

~~28~~ 13 39.62   ~~28~~ 13 40.82 40.51 ~~29~~ 13 40.20 ~~28~~ 13 40.80   ~~28~~ 13 46.29 46.18 46.08 ~~28~~ 13 45.74 46.15 46.56

−28 53 15   53 15 52 56   53 28 53 5
1.50190n   1.50190n 1.50180n   1.50190n 1.50180n
−1169   −1062 −653   −2021 −558
1.49021   1.49128 1.49118 1.49537 1.49527   1.48169 1.48159 1.49632 1.49622
+30.92   +30.99 +30.99 +31.29 +31.28   +30.32 +30.31 +31.36 +31.35

−.20 −.16   −.23 −.08 .01   −.45 −.45   −.26 −.13 − 0   −.55 −.27 − 0
+.04   +.04 +.04   .00   .00   .00   .00   .00 .00   .00 .00
+30.76   +30.80 +31.02   +30.84   +30.06 +30.31   +30.81 +31.35
14 10.28   11.62 11.22   11.64   16.35 16.39   16.55 17.91
16 16.7   17.5   18.0   21.6   21.9
+2 6.3   5.9 6.3   6.4   5.3 5.2   5.4 4.0
+2 6.3   6.1   6.4   5.25   4.70
+2 6.6   6.4 12.89   6.7   5.5 13.33   5.0 12.77
+2 5.51 6.26   +5.30 6.07 12.49   +5.85 6.67   +5.03   +4.89 5.88 13.37   +4.42 5.42 14.13
+ .45 −2.01   + .77 −2.81   + .82 −3.31   +   + .99 −6.91   + 1.00 −7.21
− 4.00 16 12.64   − 4.80 12.69   − 5.30 13.01   − 8.90 13.35   − 9.20 13.46
+2 14.63   14.48   15.00   +1 56.98 15.34   + 56.22 15.44

1875
s
α 33.110
δ +16′ 14.67″
dα/dt −0.850ˢ
dδ/dt +1.994″

1875

| | | | | | | |
|---|---|---|---|---|---|---|
| Aug. 28 | 22ᵐ | 34.54ˢ | | 15′ | 84.1″ | |
| Sept 2 | | 34.21 | −.33 | | 84.9 | +.8 |
| 7 | | 33.87 | .34 | | 85.5 | .6 |
| 12 | | 33.51 | .36 | | 86.0 | .5 |
| 17 | | 33.16 | .36 | | 86.4 | .4 |

l cos δ′ 9.50673
l C 12552
l C′ 9.63225

× 1874 −.40 Sept.6 −3.98

1875+ −.68 Aug 25 −.669

−.62 Aug 26 −.597 +

−.56 Sept-8 −.572 ×

22 — 21 51.3 | 22 12.2 22 5.2 | 22 21 52.8 | 22 21 42.0
28.2 −37.83 56.2 | 18.7 10.7 | 37.8 59.6 | 48.0 47.6
— 1.2 | 25.1 | 41.4 4.1 | 51.0 52.7
— | 37.2 | 44.4 | 54.4
— | 44.3 | 47.9 | 58.0
41.0 79 | 50.4 | 51.0 | 23 1.0
44.3 8 | 56.8 23 19.3 | 54.9 22 12.6 | 3.9 22 48.7
47.5 87 | 3.5 25.9 | 57.7 18.9 | 7.0 53.0
87.06 76 | 16.4 31.7 | 1.0 25.4 | 10.5 57.0
| 22.5 | 4.3 30.2 | 13.7
| 29.2

21 55.90 | 3168 | 3399 | 2475
| 240 | 126 | 240

| 5563 22 4.60 | 4599 21 58.83 | 0.75 21 47.43
37.826 | 22 50.573 23 25.63 | 22 51.100 22 21.77 | 23 ~~0.682~~ 22 52.90
22 87.780 −1.93 | 50.527 −14.17 | 51.054 −14.76 | 0.833 −25.70
| | | 0.787
22 34.9086 −1.18 | 22 34.782 −2.01 | 22 34.695 −1.73 | 22 ~~33.82~~78 −1.65
+2.92 | +15.7781 | +16.3640 | ~~+26.97~~ 27.01
+3.18 −1.97 −0.90 | +16.07 −14.21 −1.61 | +16.66 −14.78 −1.54 | +27.27 −25.72 −0.67
− 1.17 22 33.77 | − 1.95 32.74 | − 1.76 32.92 | − 1.69 32.77
− 0.90 − 1.749 | − 1.61 | − 1.54 | − 0.67
− 4.04 | − 17.77 | − 18.08 | − 28.08
22 37.78 | 22 50.53 | 22 51.05 | 23 0.79

14 19.17 | 32 37.82 | 37.57 | 38.87
22 33.74 +2 4.40 | 22 32.76 −16 15.72 | 22 32.97 −16 15.37 | 22 32.71 −16 13.63
32.891 + 1.1 | + 1.3 | + 1.31 | + 1.3
−11.60 | −8.90 | −9.10 | −10.90
+71 16 13.07 | 16 14.50 | 16 14.40 | 16 15.64

+ 41.93 | + 45.97 − 35.06 | + 52.27 + 29.33 | + 73.40 + 7.93
5 | 50 | 50 | 45
−2.28 | −2.49 | −2.50 | −2.61

3 37.7 3 55.2 | 0 10.9 0 46.8 | 0 9.0 0 23.2 | 4 57.7 0 26.1
47.1 5.3 | 32.5 7.9 | 29.9 43.9 | 17.7 47.0
84.8 120.5 | 43.4 114.7 | 38.9 67.1 | 135.4 73.1
38 42.40 49 0.25 | 50 21.70 50 57.35 | 50 19.45 50 33.55 | 50 7.70 50 36.55

1.62252 | 1.66247 1.54481n | 1.71825 1.46731 | 1.86570 0.89927
1.23525 | 1.29472 1.17706n | 1.35050 1.09956 | 1.49795 0.53152
+17.19 | + 19.71 − 15.04 | + 22.41 + 12.58 | +31.47 +3.40
8 59.59 | 50 41.41 50 42.31 | 50 41.86 50 46.13 | 50 39.17 50 39.95

13 48.76 | 32 6.94 6.04 | 32 6.49 | 32 9.18 8.40
| 6.49 | | 8.79
| 53 26 52 51 | | 53 40 53 12
| 1.50190n 1.50180n | | 1.50200n 1.50190n
−1389 | −1.18 | −282 | −1129
1.48801 1.48791 | 1.50072 1.50062 | 1.49908 1.49898 | 1.49071 1.49061
+30.76 +30.75 | +31.68 +31.67 | +31.56 +31.55 | +30.96 +30.95

−.28 | −.35 −.34 −.19 | −.45 −.48 | −.89 −.87 −.1
−.07 −.08 | −.04 −.10 | −.03 | −.01 −.76 −.09
+30.41 | + 31.29 +31.38 | + 31.08 | +29.31 + 30.85
14 19.17 | 32 38.23 37.42 | 37.57 | 38.49 39.25
16 24.3 | 16 23.6 | 23.8 | 25.6
+2 5.1 | −16 14.6 13.8 | 13.8 | 12.9 13.6
+2 5.4 | 14.2 | 13.8 | 13.2
+2 5.7 5.50 | 13.9 14.94 | 13.5 | 12.9 15.07
+2 4.41 −9.61 | −16 15.58 14.39 14.13 | − 15.46 14.26 | − 13.77 12.52 15.83
+ 1.09 | + 1.19 | + 1.20 | + 1.25
− 11.60 16 13.07 | − 8.90 16 14.53 | − 9.10 14.21 | − 10.90 15.45
+1 53.90 16 15.4

χ Draconis

α 19.443
δ +40 39.45
dα/dt −1.078
dδ/dt +11.654

h m sec
18 23 18
+ 72° 41′
φ − 30° 18′
φ sin z = −.50 l sin δ 9.97986
l cos δ 9.47371
l C. .10600
l C′ 9.57971

| 1874 | | | | 1874 | | |
|---|---|---|---|---|---|---|
| July | 29 | 23m 22.75 | | 40′ 42.8″ | |
| Aug. | 3 | 22.52 | −.23 | 44.1 | +1.3 |
| | 8 | 22.26 | .26 | 45.4 | 1.3 |
| | 13 | 21.98 | .28 | 46.6 | 1.2 |
| | 18 | 21.68 | .30 | 47.7 | 1.1 |
| | 23 | 21.37 | .31 | 48.6 | .9 |
| | 28 | 21.03 | .34 | 49.5 | .9 |
| Sept. | 2 | 20.67 | .36 | 50.2 | .7 |
| | 7 | 20.30 | .37 | 50.8 | .6 |
| | 12 | | | | |

corr α =
corr δ =
tang δ = +3.21
I = 6.94 s
K = −.051 s

× 1874

| July 30 | | Aug. 2 | | Aug. 4 | | Aug. 10 | | Aug. 20 | | Aug. 22 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −48 | | × −48 | | × −46 | | lch f. | | × −.46 | | × −.42 | |
| .480 | | −.488 | | −.500 | | | | −.475 | | ~~−.430~~ −.433 | |
| 23 44.7 | 23 40.9 | 23 47.9 | 23 44.5 | 23 49.4 | 23 48.4 | | | 23 2.0 | 23 6.2 | 23 3.6 | 23 |
| 48.2 | | 51.9 | | 53.0 | | | | 5.5 | | 7.1 | |
| 51.7 | | 55.0 | | 56.6 | | | | 8.8 | | 10.7 | |
| 55.1 | | 58.5 | | 0.2 | | | | 12.4 | | 14.4 | |
| 58.7 | | 2.0 | | 3.4 | | | | 15.8 | | 17.6 | |
| 2.2 | | 5.7 | | 6.9 | | | | 19.3 | | 21.2 | |
| 5.6 | | 9.0 | 24 33.4 | 10.6 | 24 22.8 | | | 22.7 | 23 47.2 | 24.7 | 23 46.7 |
| 9.1 | | 12.3 | 40.2 | 13.8 | 29.8 | | | 26.2 | 52.3 | 28.0 | 53.0 |
| 12.7 | | 15.9 | 47.0 | 17.2 | 37.0 | | | 29.6 | 60 | 31.5 | 59.3 |
| 2880 | | 2582 | | 2111 | | | | 1423 | | 1588 | |
| 240 | | 240 | | 180 | | | | | | | |
| 5280 | 23 40.90 | 182 | 23 44.50 | 311 | 23 48.40 | | | | 23 6.20 | | |
| 23 58.667 | | 24 2.022 | 24 40.20 | 24 3.456 | 24 29.86 | | | 23 15.811 | 23 53.16 | 23 17.644 | 23 53.00 |
| 58.616 | | 1.971 | | 3.405 | | | | 15.760 | | 17.593 | |
| 23 22.74 .69 | | 23 22.58 6 | | 23 22.48 6 | | | | 23 21.58 4 | | 23 21.45 1 | |
| +35.9+3 | −34.31 | +39.39 41 | −37.77 | +40.93 4 | −39.24 | | | −5.82 78 | +7.48 | −3.88 2 | +5.41 |
| | −1.54 | | −1.54 | | −1.48 | | | | −1.48 | | −1.35 |
| −34.36 | | −37.77 | | −39.25 | | | | +7.43 | | +5.36 | |
| −1.54 | −3.25 | −1.57 | −3.12 | −1.61 | −3.02 | | | −1.52 | −2.10 | −1.39 | −1.97 |
| −3.25 | −4.328 1952 23m | −3.12 | −4.198 1954 | −3.02 | −4.098 1966 | | | −2.10 | −3.178 1966 | −1.97 | −3.048 1968 |
| −39.15 | | −42.46 | | −43.88 | | | | +3.81 | | +2.00 | |
| 23 58.62 | | 24 1.97 | | 24 3.40 | | | | 23 15.76 | | 23 17.59 | |
| 23 19.47 | 38 3610 | 23 19.51 | 3726 | 23 19.62 | 3759 | | | 23 19.57 | 4288 | 23 19.59 | 4308 |
| 18.392 | +2 558 | 18.432 | +2 587 | 18.442 | +2 594 | | | 18.492 | +2 498 | 18.512 | +2 452 |
| | +11 | | +11 | | +11 | | | | +11 | | +12 |
| | −370 | | −440 | | −500 | | | | −860 | | −900 |
| +72 | 40 39.08 | | 40 39.33 | | 40 39.63 | | | | 40 40.36 | | 40 39.80 |
| s +17.77 | | +17.52 | −38.18 | +15.06 | −26.40 | | | +9.61 | −37.35 | | −35.36 |
| 40 | | 40 | | 40 | | 40 | | 40 | | 40 | |
| −1.57 | | −1.61 | | −1.71 | | −1.86 | | −2.08 | | −2.10 | |
| 4 34.5 | | 4 32.6 | 4 53.9 | 4 33.1 | 4 50.8 | 4 32.0 | 4 42.5 | 4 29.5 | 4 47.0 | 4 ~~28.3~~ | 4 47.5 |
| 42.0 | | 41.3 | 3.2 | 41.9 | 58.1 | 38.9 | 55.8 | 38.5 | 55.9 | ~~38.9~~ | 55.9 |
| 765 | | 739 | 1171 | 750 | 1089 | 769 | 983 | 680 | 1029 | ~~672~~ | 1034 |
| 4 44 38.25 | | 44 36.95 | 44 58.55 | 44 37.50 | 44 54.45 | 44 35.45 | 44 49.15 | 44 34.00 | 44 51.45 | 44 ~~33.60~~ | 44 51.70 |
| 1.24969 | | 1.24353 | 1.58184 n | 1.17782 | 1.42160 n | | | 0.98272 | 1.57229 n | | 1.54851 n |
| 0.82940 | | 0.82324 | 1.16155 n | 0.75753 | 1.00131 n | | | 0.56243 | 1.15200 n | | 1.12822 n |
| +6.75 | | +6.66 | −14.51 | +5.72 | −10.03 | | | +3.65 | −14.19 | | −13.43 |
| 44 ~~41.50~~ | | 44 43.61 | 44 44.04 | 44 43.22 | 44 44.42 | | | 44 37.65 | 44 37.26 | | 44 38.27 |
| +72° 450.9 | | | | | | | | | | | |
| 38 16.85 | | 38 4.74 | 4.31 | 38 5.13 | 3.93 | | | 38 10.70 | 11.09 | | 38 10.08 |
| 3.35 | | 4.52 | | 4.53 | | | | 10.89 | | | |
| −30 17 29 | | 17 30 | 17 9 | | | | | | | | |
| 1.52670 n | | 1.52670 n | 1.52660 n | | | | | | | | |
| −1167 | | −1060 | | −652 | | | | −2020 | | −556 | |
| 1.51503 | | 1.51610 | 1.51600 | 1.52018 | 1.52008 | | | 1.50650 | 1.50640 | 1.52114 | 1.52104 |
| +32.74 | | +32.82 | +32.81 | +33.13 | +33.12 | | | +32.10 | +32.09 | +33.20 | +33.19 |
| −.04 +.01 | | −.04 −.08 | −.22 | −.03 −.06 | −.10 | | | −1 −.11 | −.21 | −.19 | −.19 |
| +.05 | | +.05 | +.05 | .00 | .00 | | | .00 | .00 | .00 | .00 |
| +32.75 | | +32.83 | +32.64 | +33.10 | +33.02 | | | +32.09 | +31.88 | | +33.00 |
| 38 36.10 | | 37.57 | 36.95 | 38.23 | 36.95 | | | 42.79 | 42.97 | | 43.08 |
| 40 43.1 | | 43.9 | | 44.4 | | | | 48.1 | | 48.4 | |
| +2 7.0 | | 6.3 | 7.0 | 6.2 | 7.5 | | | 5.3 | 5.1 | | 5.3 |
| +2 7.0 | | 6.6 | | 6.8 | | | | 5.2 | | 5.3 | |
| +2 5.51 | 6.29 | +5.30 | 6.10 39.27 | +5.85 | 6.70 39.93 | +5.03 | | +4.89 | 5.93 40.12 | +4.42 | 5.47 39.55 |
| + .78 | −2.05 | + .80 | −2.75 38.65 | + .85 | −3.35 38.65 | | | +1.04 | −6.95 40.30 | +1.05 | −7.35 |
| − 3.70 | | − 4.40 | | − 5.00 | | | | − 8.60 | | − 9.00 | |
| +2 2.59 | 40 38.69 | + 1.70 | 38.96 | + 1.70 | 39.29 | | | +1 57.33 | 40.21 | + 56.47 | 39.55 |
| | 40 40.24 | | 40.44 | | 40.84 | | | | 41.84 | | 41.21 |

1875

α 18.365s
δ +40′ 41″.10
$\frac{d\alpha}{dt}$ − 1.s078
$\frac{d\delta}{dt}$ + 1.″653

| 1875 | m | s | | ′ | ″ | |
|---|---|---|---|---|---|---|
| Aug. 28 | 23 | 19.81 | | 40 | 50.3 | |
| Sept. 2 | | 19.45 | −.36 | | 51.1 | +.8 |
| 7 | | 19.08 | .37 | | 51.7 | .6 |
| 12 | | 18.70 | .38 | | 52.2 | .5 |
| 17 | | 18.31 | .39 | | 52.6 | .4 |

l cos δ 9.47371
l C .12552
l C′ 9.59923

× 1874 1875 × × ×

−40 Sept. 6 −39.8 | −41 Sept. 13 −45.9 Lch. f. | −.68 Aug 25 −66.0 | −.62 Aug 26 −59.4 | −.56 Sept. 8 −57.2

23 9.8 23 5.8 | 23 24 1.5 | 23 23 19.5 | 23 23 29.0
23.86 13.5 | 8.8 | 23.0 25.9 | 33.0
.91 16.9 | 13.3 | 26.5 31.7 | 36.4
.84 20.3 | 30.4 | 39.9
.77 23.7 | 33.5 | 43.1
.70 27.3 | 37.0 23 57.4 | 46.5
.83 30.8 23 57.2 | 24 25.3 | 40.3 | 50.4 24 13.3
.86 — 4.3 | 36.79 47.2 32.8 | 43.6 | 53.5 19.9
— 10.2 | .72 50.6 37.6 | 47.2 | 57.1 26.5
+1 | 51.0 | 0.8
11.23

33.25 4207

23 5.80 | 36.755 24 7.87 | 23 25.70 | 23 29.00
23.799 24 3.90 | 36.755 24 31.90 | 23 36.944 23 57.40 | 23 46.744 24 19.83
23 23.748 | 23 36.704 | 36.893 | 46.693
23 20.345 | 23 20.051 | 23 19.913 | 23 19.02 18.98
+3.40 −1.93 | +16.69 −14.17 | +16.986 −14.76 | +27.671 −25.70
−1.28 | −2.18 | −1.99 | −1.80

− 1.97 | − 14.21 | − 14.78 | − 25.72
− 1.28 −0.91 | − 2.12 −1.64 | − 1.92 −1.56 | − 1.84 −0.61
− 0.91 −1.988 1963 | − 1.64 1871 | − 1.56 1858 | − 0.61 1858
− 4.16 | − 17.97 | − 18.26 | − 28.17
23 23.75 | 23 36.70 | 23 36.89 | 23 46.69

23 19.59 38 44.97 | 23 18.73 38 41.0 | 23 18.63 57 30.3 | 23 18.52 .48.6
18.512 +2 44.0 | −16 15.72 | −16 15.37 | −16 13.63
+1.2 | +1.4 | +1.4 | +1.3
−11.20 | −8.70 | −8.90 | −10.70
40 39.37 | 40 41.08 | 40 40.16 | 40 41.83

+18.00 −40.10 | −31.12 −55.15 | +11.24 −20.46 | +17.74 −33.09
40 40 | 25 | 25 | 26

−2.28 −2.33 | −2.49 | −2.50 | −2.61
4 24.7 4 46.2 4 40.8 | 1 19.6 1 29.4 | 1 4.5 1 16.9 | 0 59.0 1 19.0
33.8 54.9 51.2 | 40.1 48.7 | 22.9 37.2 | 18.3 38.9
58.5 101.1 92.0 | 59.7 78.1 | 27.4 54.1 | 13.73 57.9
44 29.25 44 50.55 44 46.00 | 26 29.85 26 39.05 | 26 13.70 26 27.05 | 26 8.65 26 28.95

1.25527 1.60314n | 1.49304n 1.74155n | 1.05077 1.31091n | 1.24895 1.50637n
0.83498 1.18285n | 1.09227n 1.34078n | 0.65000 0.91014n | 0.84818 1.10560n
+6.84 −15.23 | −12.37 −21.92 | +4.47 −8.13 | +7.05 −12.75
44 36.09 35.32 | 26 17.48 17.13 | 26 18.17 26 18.92 | 26 15.70 26 16.20
12.26 13.03 | 30.87 31.22 | 56 30.18 29.43 | 56 32.65 32.15
12.64 | 31.04 | 29.80 | 32.40

17 38 17 17 | 17 18 17 9 | 17 39 17 19
1.52670n 1.52660n | 1.52660n 1.52660n | 1.52670n 1.52660n
−1388 | −115 | −277 | −1126
1.51282 1.51272 | 1.52545 1.52545 | 1.52383 1.52383 | 1.51544 1.51534
+32.57 +32.56 | +33.53 +33.53 | +33.41 +33.41 | +32.77 +32.76

−.05 −.24 −.24 | −.15 −.47 −.46 | −.02 −.18 −.06 | −.05 −.25 −.17
−.09 −.10 | −.16 −.18 | −.13 −.15 | −.16 −.22
+32.43 +32.22 | +33.22 +32.89 | +33.26 +33.20 | +32.56 +32.37
44.69 45.25 | 4.09 4.11 57 | 3.44 2.63 | 5.21 4.52
50.7 | 49.8 | 50.0 | 51.8
6.0 5.5 | 5.7 5.7 −16 | 13.4 12.6 | 13.4 12.7
5.7 | 5.7 | 13.0 | 13.0

+4.41 5.55 39.04 +5.30 | −16 15.58 14.34 41.05 | −15.46 14.21 40.33 | −13.77 12.47 42.04
+1.14 −9.55 39.60 | + 1.24 41.07 | + 1.25 39.52 | + 1.30 41.35
−11.20 | − 8.70 | − 8.90 | − 10.70
+1 54.35 39.32 | −16 23.04 41.06 | − 23.11 39.92 | − 23.17 41.69
40.04

1874 | 1875

B. A. C. 6318.
18h 25m 58sec
+59° 28'
z = −17° 5'
p sin z = −.29

α | 25 58.925
δ | 27 58.79
dα/dt | +0.825
dδ/dt | +2.28

l sin δ 9.93517
l cos δ 9.70590 | 9.70590
l C .10600 | .13146
l C' 9.81190 | 9.83736
l C" | 9.83142

const =
const =
tang δ = +1.70
I = 4.06s
K = −.030s

1874

**July 30**

−.480
18 26 14.6
18.8
21.0
27.6
31.7
35.7
39.8
44.0
52.0
58.9
0.2

3412
60
4012
26 ~~36.473~~ 35.760
~~36.443~~ 35.73

− 34.36
− .81
− 2.53 −1.705
− 37.70
26 ~~36.44~~ 35.43
25 ~~58.74~~ 03
58.855

**Aug. 2**

−.488
26
31.1
33.2
35.2
37.2
39.2
41.2
43.1
46.1
47.1

26 6.2
9.8
13.5
26 40.7

3524
26 39.156
39.126
26 9.83
26 40.70

− 37.77
− .83
− 2.47 −1.645
− 41.07
26 39.13
25 58.06
58.885

**Aug. 4**

−.500
26
32.6
34.7
36.6
38.6
40.6
42.6
44.7
46.6
48.7

26 1.0
5.4
7.9
26 42.0

3607
26 40.633
40.603
26 4.76
26 42.00

− 39.25
− .85
− 2.42 −1.595
− 42.52
26 40.60
25 58.08
58.905

leh f.
**Aug. 10**

**Aug. 20**

−.475
25 29.2
33.2
37.2
45.4
49.4
53.5
57.6
1.6
9.8
13.9
17.9

25 23.7
27.0
30.1
26 11.2
15.5
18.4

3487
240
5887
25 53.518
53.488
25 26.93
26 15.03

+ 7.43
− .80
− 1.95 −1.125
+ 5.48 4.68
25 53.49
25 ~~58.97~~ .17
59.795
58.995

**Aug. 22**

~~−.430~~ −.433
25
47.3
49.4
51.5
53.6
55.6
57.6
59.6
1.6
3.6

25 20.5
26.0
28.6
25 56.1
0.4
2.6

3798
120
4998
25 55.533
55.503
25 25.03
25 59.70

+ 5.36
− .73
− 1.8x9 −1.065
+ 2.74
25 55.50
25 58.24
59.065
58.076"

---

**July 30**

55
−1.57"
2 54.9
3.9
118.8
2 57 59.40

+.03

+2 5.51
+
−4.03

**Aug. 2**

+29.33s −1.54
55
−1.61
1 46.6 | 2 7.4
57.1 | 17.1
103.7 | 24.5
56+ 51.85 | 57/2 12.25

1.46731 | 0.18752n
1.37931 | 9.99942n
+19.02 | −1.00
57 10.87 | 57 11.25

+59° 25' 37.48" | 37.10
37.29

−17 5 15 | 4 55
1.24800n | 1.24790n
−1055
1.23745 | 1.23735
+17.28 | +17.27

−.20 −.08 − 0
+.02 | +.02
+17.10 | +17.29
+59 25 54.58 | 54.39
+5.30 | 5.76
+.46 | −2.55
−4.83
+2 0.93 | 27 55.51
55.32
27 55.41

**Aug. 4**

+35.87 −1.37
55
−1.71
1 42.4 | 2 6.5
52.4 | 16.5
94.8 | 23.0
56+ 47.40 | 57/2 11.50

1.55473 | 0.13672
1.36663 | 9.94862
+23.26 | −0.89
57 10.66 | 57 10.61

25 37.69 | 37.74
37.71

−649
1.24151 | 1.24141
+17.44 | +17.44

−.23 −.12 − 0
.00 | 00
+17.21 | +17.44
25 54.90 | 55.18
+5.85 | 6.34
+.49 | −3.04
−5.32
+ 1.02 | 55.92
56.20
56.06

**Aug. 10**

55
1 42.8 | 2 17.2
53.1 | 25.9
95.9 | 43.1
56+ 47.95 | 57/2 21.55

**Aug. 20**

+26.59 −21.51
55
−2.08
1 41.9 | 2 13.1
53.7 | 23.9
95.6 | 37.0
56+ 47.80 | 57/2 18.50

1.42472 | 1.33264
1.23662 | 1.14454
+17.24 | −13.95
57 5.04 | 57 4.55

25 43.31 | 43.80
43.55

−2017
1.22783 | 1.22773
+16.90 | +16.89

−.17 −.13 | −.10
.00 | .00
+16.73 | +16.79
26 0.04 | 0.59
+4.89 | 5.49
+.60 | −6.69
−8.97
+1 56.52 | 56.56
57.11
56.83

**Aug. 22**

+30.50 −4.17
55
−2.10
1 38.6 | 2 1.7
50.1 | 13.3
88.7 | 15.0
56+ 44.35 | 57/2 7.50

1.48430 | 0.62014
1.29620 | 0.43204
+19.78 | −2.70
57 4.13 | 57 4.80

25 44.22 | 43.55
43.88

5 23 | 5 0
1.24810n | 1.24779n
−548
1.24262 | 1.24242
+17.48 | +17.48

−.21 −.11 −
.00 | .00
+17.27 | +17.47
26 1.49 | 1.02
+4.42 | 5.03
+.61 | −7.07
−9.35
+1 55.68 | 57.17
56.70
56.93
59.21

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| lch. f. | 1874 | 1875 | | | | | | | |
| Sept. 6 | Sept. 13<br>Ch. f. | Aug 10<br>− 617 | | − Aug 25<br>+660 | | Aug 26<br>+597 | | Sep. 5<br>− 600 | |
| | | 25 42.7 | 25 29.2 | 25 51.6 | 25 37.6 | 25 32.0 | 25 36.3 | 26 | 25 42.0 |
| | | 46.8 | 31.8 | 55.8 | 39.8 | 56.2 | 40.3 | 16.7 | 45.9 |
| | | 50.9 | | 26 0.0 | 42.8 | 0.3 | 42.9 | 18.7 | 48.3 |
| | | 59.0 | | 8.0 | | 8.7 | | 20.6 | |
| | | 26 2.9 | | 12.0 | | 12.6 | | 22.8 | |
| | | 6.9 | | 15.8 | | 16.6 | | 24.8 | |
| | | 11.1 | 26 28.0 | 20.1 | 26 33.7 | 20.5 | 26 38.2 | 26.8 | 26 38.2 |
| | | 15.1 | 31.9 | 24.2 | 37.4 | 24.6 | 41.1 | 29.0 | 43.7 |
| | | 23.2 | 34.9 | 32.5 | 39.5 | 32.8 | 46.0 | 30.8 | 47.6 |
| | | 27.6 | | 36.4 | | 36.8 | | 32.8 | |
| | | 31.5 | | 40.4 | | 40.8 | | | |
| | | 3177 | | 2968 | | 3019 | | 2230 | |
| | | 240 | | 120 | | 120 | | | |
| | | 777 | 25 30.50 | 1768 | 25 40.07 | 1819 | 25 39.83 | | 25 45.40 |
| | | 26 7.064 | 26 31.60 | 26 16.073 | 26 36.87 | 25 16.536 | 26 41.77 | 26 24.778 | 26 43.17 |
| | | 7.034 | | 16.043 | | 16.506 | | 24.748 | |
| | | − 4.71 | | − 14.21 | | − 14.78 | | − 23.30 | |
| | | − 1.04 | | − 1.12 | | − 1.01 | | − 1.01 | |
| | | − 2.34 | | − 1.86 | | − 1.83 | | − 1.44 | |
| | | − 8.09 | | − 17.19 | | − 17.62 | | − 25.75 | |
| | | 26 7.03 | | 26 16.04 | | 25 16.51 | | 26 24.75 | |
| | | 25 58.94 | | 25 58.85 | | 25 58.89 | | 26 59.00 | |
| | | + 36.56 | − 24.54 | + 36.00 | − 20.80 | + 36.71 | − 25.23 | + 39.38 | − 18.39 |
| 55 | 55 | 35 | | 35 | | 35 | | 35 | |
| | | − 2.40 | | − 2.49 | | − 2.50 | | − 2.58 | |
| 2′ 9.6″ | 1 34.7 | 3 10.9 | 3 54.4 | 3 7.4 | 3 46.0 | 3 7.7 | 3 58.6 | 3 5.0 | 3 44.5 |
| 19.6 | 44.8 | 33.0 | 15.9 | 28.1 | 8.7 | 28.6 | 11.1 | 26.5 | 6.0 |
| 29.2 | 79.5 | 43.9 | 130.3 | 35.5 | 114.7 | 36.3 | 121.7 | 31.5 | 110.5 |
| 2′ 14.60 | 1 39.75 | 38 21.95 | 39 5.15 | 38 17.75 | 38 57.35 | 38 18.15 | 39 0.85 | 38 15.75 | 38 55.25 |
| | | 1.56301 | 1.38987 | 1.55630 | 1.31806 | 1.56478 | 1.40192 | 1.59528 | 1.26458 |
| | | 1.40037 | 1.23723 | 1.38772 | 1.14948 | 1.39620 | 1.23334 | 1.42670 | 1.09600 |
| | | + 25.14 | − 17.27 | + 24.42 | − 14.11 | + 24.90 | 17.12 | + 26.71 | − 12.48 |
| | | 38 47.09 | 38 47.88 | 38 42.17 | 38 43.24 | 38 43.05 | 38 43.73 | 38 42.46 | 38 42.77 |
| | | 44 1.26 | 0.47 | 44 6.18 | 5.11 | 44 5.30 | 4.62 | 44 5.89 | 5.58 |
| | | 0.86 | | 5.64 | | 4.96 | | 5.73 | |
| | | 5 26 | 4 43 | | | | | | |
| | | 1.24810~ | 1.24780~ | | | | | | |
| | | − 1420 | | − 109 | | − 268 | | − 1904 | |
| | | 1.23390 | 1.23360 | 1.24701 | 1.24671 | 1.24542 | 1.24512 | 1.22906 | 1.22676 |
| | | + 17.14 | + 17.12 | + 17.66 | + 17.65 | + 17.60 | + 17.58 | + 16.95 | + 16.86 |
| | | − .24 − .60 | − .14 | − .24 − .56 | − .10 | − .24 − .59 | − .15 | − .28 − .57 | − .08 |
| | | − .37 | − .45 | − .36 | − .43 | − .36 | − .44 | − .36 | − .43 |
| | | + 16.53 | + 16.53 | + 17.06 | + 17.12 | + 17.00 | + 16.99 | + 16.31 | + 16.35 |
| | | 44 17.79 | 17.00 | 44 23.24 | 22.23 | 44 22.30 | 21.61 | 44 22.20 | 21.93 |
| | | − 16 12.59 | 11.90 | − 15.58 | 14.86 | − 15.46 | 14.74 | − 13.42 | 12.68 |
| | | + .69 | | + .72 | | + .72 | | + .74 | |
| | | − 5.96 | | − 9.10 | | − 9.28 | | − 10.76 | |
| | | − 16 17.86 | 27 59.93 | − 23.96 | 59.28 | − 24.02 | 58.28 | − 23.44 | 58.76 |
| | | | 59.14 | | 58.27 | | 57.59 | | 58.49 |
| | | | 27 59.53 | | 58.77 | | 57.93 | | 58.62 |

Sept-7 Sept-8

-.577 -.572

26 2,1 25 41,0 26 2316 2,8 25 56,6
6,1 43,7 3,10 6,8 59,2
10,1 47,3 2,54 10,7 3,0
18,3 3,02 18,9
22,3 2.86 22,8
26,6 3.00 27,0
30,5 26 54,0 2,94 31,0 26 43,3
34,7 57,5 2,98 35,1 47,8
42,7 20 51,1
46,9
50,9

29 12

47,3 25 44.00 25 59.60
26 26.836 26 57.83 26 23.00 26 47.40
~~26806~~ ~~22.97~~
'478 23.03
- 25.08 \- ~~25.72~~
- .98 \- .97
- 1.36 \- 1.32
- 27.42 \- 28.01
26 26.81 26 ~~27.97~~
47 27.03

25 59.19 25 ~~54.86~~
.05 59.02
58,958

+ 42.84 − 30.99 + 23.40 − 24.40
35 35
− 2.60 − 2.61
3 1.7 3 52.3 3 12.4 3 44.8
22.9 13.9 33.0 4.4
2.46 12.62 4.54 10.92
38 12.30 39 3.10 38 22.70 38 54.60

1.63185 1.49122 n 1.36922 1.38739 n
1.46327 1.32264 n 1.20664 1.21881 n
+ 29.06 − 21.02 + 15.87 − 16.55
38 41.36 38 42.08 38 38.57 38.05

44 6.99 6.27 9.78 10.30
6.63 10.04
5 .25 4 53
1.24810 n 1.24830 n
− 941 − 1120
1.23869 1.23839 1.23690 1.23710
+ 17.32 + 17.31 + 17.26 + 17.26

−.33 −.81 −.23 −.13 −.68 −.14
−.48 −.60 −.51 −.58
+ 16.51 + 16.49 + 16.72 + 16.64
44 23.50 22.76 26.40 26.84
− 16 14.01 13.26 − 13.77
+ .75 + .75
− 11.00 − 11.71
− 24.26 59.24 − 24.13 2.27
58.50 2.71
58.87 .49

N.A. 47 Aquilae

h m sec.
18 28 24
8° 20′
+ 50° 43′
sin z = +.77

1874
α 28 20.962
δ 19 47.45
dα/dt + 3.264
dδ/dt + 2.17

l sin δ 9.16116n
l cos δ 9.99539
l C .10600
l C′ 0.10139
l C″

1875
28 24.28
19 46.44
+ 3.264
+ 2.14

9.99539
.13146
0.12685
0.12091

1875 N.A.
24.226
45.28
+3.264
+2.17

corr α =
corr δ =
long δ = −.15
I. 208 s
K = −.016 s

| 1874 July 30 −48 | | Aug. 2 −48 | | Aug. 4 −46 | | Aug. 20 −46 | | Aug. 22 −42 | | 1874 Sept. 6 −40 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .480 | | −488 | | −500 | | −475 | | ~~−430~~ −433 | | −398 | |
| 18 28 45.4<br>47.4<br>49.6<br>53.7<br>55.7<br>58.0<br>6.0<br>2.0<br>6.2<br>8.3<br>10.5 | 28 41.0<br>42.7<br>44.4 | 28 48.9<br>51.0<br>53.1<br>57.2<br>59.4<br>1.5<br>3.5<br>5.6<br>9.7<br>11.7<br>13.8 | 28 43.7<br>45.9<br>47.7<br>29 19.0<br>21.1<br>23.0 | 28 30.5<br>52.5<br>54.6<br>58.7<br>0.8<br>2.8<br>5.0<br>7.2<br>11.2<br>13.4<br>15.3 | 28 49.0<br>51.0<br>52.8<br>29 15.8<br>17.4<br>19.8 | 28 3.5<br>5.6<br>7.8<br>11.9<br>14.0<br>16.0<br>18.1<br>20.2<br>24.3<br>26.5<br>28.5 | 28 8.8<br>10.6<br>12.7<br>28 50.7<br>52.7<br>54.2 | 28 5.6<br>7.6<br>9.7<br>14.0<br>16.0<br>18.1<br>20.2<br>22.2<br>26.5<br>28.6<br>30.8 | 27 59.5<br>1.8<br>3.6<br>28 31.6<br>33.1<br>34.7 | 28 12.8<br>15.0<br>17.0<br>21.1<br>23.2<br>25.3<br>27.4<br>29.4<br>33.6<br>35.7<br>37.8 | 28 3.5<br>5.4<br>7.9<br>28 45.3<br>47.3<br>49.4 |
| 3368<br>300<br>6368 | | 3154<br>300<br>154 | | 2720<br>240<br>32 0 | | 1764 | | 1993 | | 2783 | |
| 28 57.891<br>57.875 | 28 42.70<br>−34.31<br>+07 | 29 1.400<br>1.384 | 28 45.76<br>29 21.03<br>−37.77<br>+07 | 29 2.909<br>2.893 | 28 50.93<br>29 17.66<br>−39.24<br>+07 | 28 16.036<br>16.020 | 28 10.70<br>28 52.53<br>+7.48<br>+07 | 28 18.118<br>18.102 | 28 1.63<br>28 33.13<br>+5.41<br>+06 | 28 25.300<br>25.284 | 28 5.60<br>28 47.33<br>−1.93<br>+06 |
| − 34.36<br>+ .07<br>− 2.59<br>− 36.88<br>57.87<br>+ 20.99<br>24254<br>−8 | −259<br>+0.6742104<br>21 5638<br>+2 558<br>−16<br>+ 3.30<br>~~366~~<br>19 49.10 | − 37.77<br>+ .07<br>− 2.58<br>− 40.28<br>1.38<br>21.10<br>24364 | −258<br>+0.6842110<br>5653<br>+2 537<br>−15<br>+3.10<br>19 49.56 | − 39.25<br>+ .07<br>− 2.57<br>− 41.75<br>2.89<br>21.124<br>24.~~384~~<br>404 | −257<br>+0.6942115<br>5603<br>+2 594<br>−16<br>+ 3.10<br>19 48.59 | + 7.43<br>+ .07<br>− 2.47<br>+ 5.03<br>16.02<br>~~20.99~~<br>~~24.254~~ | −247<br>+0.7942110<br>21.05<br>24.314 5549<br>+2 498<br>−16<br>+ 2.40<br>19 49.71 | + 5.36<br>+ .06<br>− 2.40<br>+ 2.97<br>18.10<br>21.07<br>24334 | −245<br>+0.8142112<br>5261<br>+2 452<br>−17<br>+ 2.30<br>19 47.49 | − 1.97<br>+ .06<br>− 2.26<br>− 4.17<br>25.28<br>21.11<br>21.063 | −226<br>+1.0042115<br>24.374 21 5378<br>+2 440<br>−78<br>+ 2.10<br>19 49.08 |
| s<br>+ 15.19<br>40<br>− 1.57 | | +15.64<br>40<br>−1.61 | − 19.63 | +11.98<br>40<br>−1.71 | − 14.75 | + 5.34<br>40<br>−2.08 | − 36.49 | +16.49<br>40<br>−2.10 | − 15.01 | +19.70<br>40<br>−2.28 | − 22.03 |
| 3 9.2<br>25.2<br>34.4<br>43 17.20 | | 3 7.2<br>26.3<br>33.5<br>43 16.75 | 3 51.5<br>10.6<br>122.1<br>44 1.05 | 3 10.3<br>28.7<br>39.0<br>43 19.50 | 3 44.9<br>3.9<br>108.8<br>43 54.40 | 3 20.5<br>40.4<br>60.9<br>43 36.45 | 4 12.4<br>32.7<br>45.1<br>44 22.55 | 2 1.2<br>21.5<br>22.7<br>42 11.35 | 3 39.4<br>0.6<br>100.0<br>43 50.00 | 2 0.3<br>19.1<br>19.4<br>42 (43) 9.70 | 3 51.0<br>11.7<br>122.7<br>44 1.35 |
| 1.18156<br>1.28295<br>+19.18<br>43 36.38 | | 1.19424<br>1.29563<br>+19.75<br>43 36.50 | 1.29292<br>1.39431n<br>−24.79<br>43 36.26 | 1.07846<br>1.17985<br>+15.13<br>43 34.63 | 1.16879n<br>1.27018n<br>−18.63<br>43 35.77 | 0.72754<br>0.82893<br>+6.74<br>43 37.19 | 1.56217<br>1.66356n<br>−46.08<br>43 36.47 | 1.21722<br>1.31861<br>+20.83<br>43 32.18 | 1.17638n<br>1.27777n<br>−18.96<br>43 31.04 | 1.29447<br>1.39586<br>+24.88<br>43 34.58 | 1.34301n<br>1.44440n<br>−27.82<br>43 33.53 |
| −8°<br>20 48.03 | | 20 48.15<br>48.03 | 47.91 | 20 46.28<br>46.83 | 47.42 | 20 48.84<br>48.48 | 48.12 | 20 43.83<br>43.76 | 42.69 | 20 46.23<br>45.70 | 45.18 |
| +50 41 10<br>1.84640<br>−1150<br>1.83490<br>−68.38<br>− 1<br>+.01<br>+03 | +.04 | 41 10<br>1.84640<br>−1049<br>1.83591<br>−68.54<br>0<br>+.01<br>+03 | 41 54<br>1.84660<br>1.83611<br>−68.57<br>0<br>+.05<br>+02<br>+04 | −645<br>1.83995<br>−69.17<br>0<br>+.01<br>.00 | 1.84015<br>−69.21<br>0<br>+.02<br>+.01<br>.00 | −2013<br>1.82627<br>−67.03<br>− 1<br>+ 0<br>.00 | 1.82647<br>−67.06<br>− 1<br>+.04<br>+.09<br>.00 | −539<br>1.84101<br>−69.35<br>0<br>+.01<br>.00 | 1.84121<br>−69.38<br>0<br>+.01<br>+.01<br>.00 | 40 3<br>1.84630<br>−1381<br>1.83249<br>−68.00<br>− 1<br>+.02<br>−.06 | 41 54<br>1.84660<br>1.83279<br>−68.04<br>− 1<br>−.04<br>+.03<br>−.08 |
| −1 8.35<br>21 56.38<br>+2 5.51<br>− 1.20<br>+ 3.30<br>+2 7.61 | 4.31<br>+5.44<br>19 48.77<br>19 48.77 | −1 8.50<br>21 56.65<br>+ 5.30<br>− 1.22<br>+ 3.10<br>+ 7.18 | −1 8.51<br>56.42<br>4.08<br>+5.24<br>49.44<br>49.24<br>49.35 | −1 9.16<br>21 55.44<br>+5.85<br>− 1.31<br>+ 3.10<br>+ 7.64 | −1 9.20<br>56.62<br>4.54<br>+5.24<br>47.80<br>48.98<br>48.39 | −1 7.04<br>21 55.88<br>+4.89<br>− 1.60<br>+ 2.40<br>+ 5.69 | −1 6.98<br>55.10<br>3.29<br>+4.54<br>50.19<br>49.41<br>49.80 | −1 9.34<br>21 53.17<br>+4.42<br>− 1.61<br>+ 2.30<br>+ 5.11 | −1 9.37<br>52.06<br>2.81<br>+4.44<br>48.06<br>46.95<br>47.50 | −1 8.05<br>21 54.28<br>+4.41<br>− 1.75<br>+ 2.10<br>+ 4.76 | −1 8.10<br>53.28<br>2.66<br>+4.24<br>49.52<br>48.52<br>49.02<br>46.88 |

1874

| | | | | | | |
|---|---|---|---|---|---|---|
| | m | s | | ° | " | |
| July 29 | 28 | 23.55 | | 19 | 50.7 | |
| Aug 3 | | 23.54 | -.01 | | 50.5 | -.2 |
| 8 | | 23.52 | 2 | | 50.3 | .2 |
| 13 | | 23.49 | 3 | | 50.1 | .2 |
| 18 | | 23.45 | 4 | | 49.9 | .2 |
| 23 | | 23.40 | 5 | | 49.7 | .2 |
| 28 | | 23.35 | 5 | | 49.6 | .1 |
| Sept. 2 | | 23.28 | 7 | | 49.5 | .1 |
| 7 | | 23.21 | 7 | | 49.5 | .0 |

1875

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | ° | " | |
| Aug 7 | 28 | 27.14 | | 19 | 48.9 | |
| 12 | | 27.11 | -.03 | | 48.7 | -.2 |
| 17 | | 27.07 | 4 | | 48.5 | .2 |
| 22 | | 27.03 | 4 | | 48.4 | .1 |
| 27 | | 26.98 | 5 | | 48.3 | .1 |
| Sept. 1 | | 26.92 | 6 | | 48.2 | .1 |
| 6 | | 26.85 | 7 | | 48.1 | .1 |

1875

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -.62 | | -.68 | | -.62 | | -.68 | | -.64 | | -.60 | |
| Aug 10 | | Aug 25 | | Aug 26 | | Aug 30 | | Aug 31 | | Sept 1-5 | |
| -.617 | | -.660 | | -.597 | | -.675 | | -.680 | | -.600 | |
| 28 19.3 | 28 24.0 | 28 28.7 | 28 31.3 | 28 29.2 | 28 12.4 | 28 32.6 | 28 7.7 | 28 33.3 | 28 13.6 | 28 37.8 | 28 32.4 |
| 21.5 | 25.3 | 30.9 | 33.2 | 31.5 | 14.2 | 34.6 | 9.3 | 35.5 | 16.9 | 39.8 | 34.0 |
| 23.6 | 26.7 | 32.8 | 34.6 | 33.5 | 16.0 | 36.6 | 11.0 | 37.5 | 17.8 | 41.8 | 36.0 |
| 27.8 | | 37.0 | | 37.7 | | 40.8 | | 41.7 | | 46.0 | |
| 29.7 | | 39.1 | | 39.7 | | 43.0 | | 43.8 | | 48.1 | |
| 31.8 | | 41.3 | | 41.7 | | 45.0 | | 45.9 | | 50.2 | |
| 33.9 | 28 49.6 | 43.3 | 29 5.7 | 43.9 | 29 0.2 | 47.0 | 29 8.9 | 48.0 | 29 17.1 | 52.4 | 29 8.2 |
| 36.0 | 51.1 | 45.4 | 7.7 | 46.0 | | 49.0 | 11.0 | 50.0 | 19.4 | 54.4 | 10.2 |
| 40.1 | 52.3 | 49.5 | 9.2 | 50.3 | | 53.3 | 12.8 | 54.0 | 21.3 | 58.5 | 13.0 |
| 42.3 | | 51.6 | | 52.3 | | 55.4 | | 56.2 | | 0.6 | |
| 44.3 | | 53.7 | | 54.4 | | 57.5 | | 58.3 | | 2.7 | |
| 3503 | | 4533 | | 4602 | | 4948 | | 5042 | | 5523 | |
| | 28 25.33 | | 28 33.03 | | 28 14.20 | | 28 9.33 | | 28 16.10 | | 28 34.13 |
| 28 31.845 | 28 51.00 | 28 41.209 | 29 7.53 | 28 41.836 | 29 0.20 | 28 44.982 | 29 10.90 | 28 45.836 | 29 ~~19.60~~ | 28 50.209 | 29 10.47 |
| 31.829 | -4.66 | 41.193 | -14.17 | 41.820 | -14.76 | 44.966 | -17.96 | 45.820 | 19.27 | 50.193 | |
| | +.09 | | +.10 | | +.09 | | +.10 | | +.10 | | +.09 |
| - 4.71 | | - 14.21 | | - 14.78 | | - 17.97 | | - 18.87 | -18.87 | - 23.30 | -28.29 |
| + .09 | -2.89 | + .10 | -2.77 | + .09 | -2.76 | + .10 | -2.71 | + .10 | -2.70 | + .09 | -2.63 |
| -2.89 | 24.37 | -2.77 | 24.35 | -2.76 | 24.39 | -2.71 | 24.40 | -2.70 | 24.35 | -2.63 | 24.36 |
| -7.51 | | -16.88 | | -17.45 | | - 20.58 | | - 21.47 | | - 25.84 | |
| 31.83 | | 41.19 | | 41.82 | | 44.97 | | 45.82 | | 50.19 | |
| 24.32 | | 24.31 | | 24.37 | | 24.39 | | 24.35 | | 24.35 | |
| | 3 36.11 | | 36.39 | | 32.52 | | 34.60 | | 35.25 | | 34.44 |
| | -16 12.51 | | -16 15.72 | | -16 15.37 | | -16 14.89 | | -16 12.75 | 24.348 | -16.1324 |
| | - 2.2 | | - 2.1 | | - 2.2 | | - 2.1 | | - 2.1 | | - 2.1 |
| | + 3.50 | | + 3.10 | | + 3.00 | | + 3.00 | | + 2.90 | | + 2.80 |
| | 19 47.32 | | 19 45.11 | | 19 47.09 | | 19 48.59 | | 19 47.20 | | 19 46.98 |
| + 6.51 | - 19.16 | + 8.18 | - 26.32 | + 27.64 | - 18.36 | + 35.65 | - 25.92 | + 29.74 | - 33.43 | + 16.08 | - 20.26 |
| 20 | | 20 | | 20 | | 20 | | 20 | | 20 | |
| - 2.40 | | - 2.49 | | - 2.50 | | - 2.53 | | - 2.53 | | - 2.58 | |
| 4 59.1 | 0 33.7 | 4 49.8 | 0 34.7 | 4 27.0 | 0 27.2 | 4 20.7 | 0 40.9 | 4 27.2 | 0 51.5 | 4 46.2 | 0 33.5 |
| 15.9 | 50.9 | 5.9 | 51.1 | 42.0 | 42.5 | 35.9 | 56.5 | 42.7 | 7.1 | 2.2 | 50.2 |
| 1350 | 846 | 1157 | 858 | 690 | 697 | 566 | 974 | 699 | 1186 | 1084 | 837 |
| 25 7.50 | 25 42.30 | 24 57.85 | 25 42.90 | 24 31.50 | 25 34.85 | 24 28.30 | 25 48.70 | 24 34.95 | 25 59.30 | 24 54.20 | 25 41.85 |
| 0.81358 | 1.28240n | 0.91275 | 1.42029n | 1.44154 | 1.26387n | 1.55206 | 1.41363n | 1.47334 | 1.52414n | 1.20629 | 1.30664n |
| 0.94043 | 1.40925n | 1.03366 | 1.54120n | 1.56245 | 1.38478n | 1.67297 | 1.53454n | 1.59426 | 1.64505n | 1.32720 | 1.42755n |
| + 8.72 | - 25.66 | + 10.81 | - 34.77 | + 36.51 | - 24.25 | + 47.09 | - 34.24 | + 39.29 | - 44.16 | + 21.24 | - 26.77 |
| 25 16.22 | 25 16.64 | 25 8.66 | 25 8.13 | 25 11.01 | 25 10.60 | 25 15.39 | 25 14.46 | 25 14.24 | 25 15.14 | 25 15.44 | 25 15.08 |
| 2 27.87 | 28.29 | 2 20.31 | 19.80 | 2 22.66 | 22.25 | 2 27.04 | 26.11 | 2 25.89 | 26.79 | 2 27.09 | 26.73 |
| 28.08 | | 20.04 | 78 | 22.45 | | 26.57 | | 26.34 | | 26.91 | |
| 41 19 | 41 54 | | | | | | | | | 41 6 | 41 54 |
| 1.84640 | 1.84660 | | | | | | | | | 1.84630 | 1.84660 |
| - 1410 | | - 163 | | - 259 | | - 1523 | | - 976 | | - 1885 | |
| 1.83230 | 1.83250 | 1.84537 | 1.84557 | 1.84381 | 1.84401 | 1.83117 | 1.83137 | 1.83664 | 1.83684 | 1.82745 | 1.82775 |
| - 67.97 | - 68.00 | - 70.04 | - 70.08 | - 69.79 | - 69.83 | - 67.79 | - 67.82 | - 68.65 | - 68.68 | - 67.21 | - 67.26 |
| - 1 | - 1 | 0 | 0 | 0 | 0 | - 1 | - 1 | - 1 | - 1 | - 1 | - 1 |
| + [illegible] -.03 | + .02 | + .03 -.29 | + .04 | + .05 -.25 | + .02 | + .11 -.21 | + .04 | + .06 -.24 | + .08 | + .01 -.29 | + .03 |
| - .01 | - .08 | - .54 | - .08 | - .51 | - .07 | - .49 | - .09 | - .51 | - .11 | - .54 | - .08 |
| -1 7.99 | - 1 8.07 | - 1 10.58 | - 1 10.12 | - 1 10.25 | - 1 9.88 | - 1 8.18 | - 1 7.88 | - 1 9.11 | - 1 8.72 | - 1 7.75 | - 1 7.32 |
| 3 35.86 | 36.316 | 3 30.89 | 29.90 | 3 33.91 | 32.13 | 3 35.22 | 33.99 | 3 35.00 | 35.51 | 3 34.84 | 34.05 |
| -16 12.59 | 14.43 | - 15.58 | 17.49 | - 15.46 | 17.38 | - 15.09 | 17.03 | - 13.01 | 14.95 | - 13.42 | 15.40 |
| - 1.84 | | - 1.91 | | - 1.92 | | - 1.94 | | - 1.94 | | - 1.98 | |
| + 3.50 | 1 | + 3.10 | | + 3.00 | | + 3.00 | | + 2.90 | | + 2.80 | |
| -16 10.83 | 19 46.89 | - 14.39 | 45.28 | - 14.38 | 47.29 | - 14.03 | 49.25 | - 12.05 | 47.05 | - 12.60 | 47.44 |
| 9 | 47.49 | | 44.29 | | 46.51 | | 48.02 | | 47.56 | | 46.65 |
| | 19 ~~46.94~~ | | 44.79 | | 46.90 | | 48.63 | | 47.30 | | 47.04 |

54

1874 1874

α Lyrae. a 40.344
h m sec δ+4b_s 3.13
18 32 42 dα/dt +2.031
+38° 40' dδ/dt +3.138
+3° 43'
μ = +.06 l sin δ 9.79573
l cos δ 9.89254
l C .10600
l C' 9.99854
l C'' 9.99714

| | | m s | | ' " | |
|---|---|---|---|---|---|
| July | 19 | 32 42.73 | | 39 63.5 | +1.3 |
| | 24 | 42.70 | -.03 | 64.8 | 1.3 |
| | 29 | 42.67 | .03 | 66.1 | 1.2 |
| Aug. | 3 | 42.62 | .05 | 67.3 | 1.1 |
| | 8 | 42.57 | .05 | 68.4 | 1.1 |
| | 13 | 42.50 | .07 | 69.4 | 1.0 |
| | 18 | 42.43 | .07 | 70.4 | 1.0 |
| | 23 | 42.34 | .09 | 71.3 | .9 |
| | 28 | 42.25 | .09 | 72.1 | .8 |
| Sept. | 2 | 42.15 | .10 | 72.7 | .6 |
| | 7 | 42.04 | .11 | 73.3 | .6 |
| | 12 | 41.92 | .12 | 73.7 | .4 |
| | 17 | 41.79 | .13 | 74.1 | .4 |

cos α =
cos δ =
tang δ = +.80 1.28
I = 2.65
K = -.020

| X 1874 -.48 July 20 | | X -.48 Aug. 2 | | X -.46 Aug. 4 | | X -.44 Aug. 10 | | X -.46 Aug. 20 | | X -.42 Aug. 22 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| +.480 | | -.488 | | -.500 | | -.427 | | -.475 | | ~~-.436~~ -.433 | |
| 18 33 1.6 | 32 45.7 | 33 4.9 | 32 56.9 | 33 6.4 | 33 2.2 | 32 11.1 | 32 7.0 | 32 19.5 | 32 7.7 | 32 21.6 | 32 11.3 |
| 4.1 | 48.5 | 7.5 | 0.2 | 9.0 | 4.9 | 13.8 | 9.2 | 22.2 | 10.1 | 24.1 | 14.0 |
| 6.8 | 51.0 | 10.3 | 1.8 | 11.7 | 6.8 | 16.3 | 11.6 | 24.8 | 12.9 | 26.9 | 16.7 |
| 12.1 | | 15.5 | | 16.9 | | 21.8 | | 30.0 | | 32.1 | |
| 14.7 | | 18.1 | | 19.6 | | 24.3 | | 32.6 | | 34.7 | |
| 17.4 | | 20.9 | | 22.3 | | 27.0 | | 35.3 | | 37.3 | |
| 20.0 | | 23.3 | 33 34.8 | 25.0 | 33 34.8 | 29.6 | 32 46.2 | 37.9 | 32 57.0 | 39.9 | 33 6.2 |
| 22.6 | | 26.1 | 37.1 | 27.6 | 37.4 | 32.3 | 48.7 | 40.7 | 59.3 | 42.7 | 9.1 |
| 28.0 | | 31.3 | 39.8 | 33.0 | 39.7 | 37.6 | 51.7 | 45.9 | 1.9 | 47.8 | 12.0 |
| 30.6 | | 34.0 | | 35.4 | | 40.2 | | 48.5 | | 50.6 | |
| 33.2 | | 36.8 | | 38.1 | | 42.9 | | 51.2 | | 53.3 | |
| 1911 | | 2287 | | 2450 | | 2969 | | 3886 | | 4110 | |
| | 32 48.40 | | 32 59.63 | | 33 4.63 | | 32 9.26 | | 32 10.23 | | 32 14.00 |
| 33 17.373 | | 33 20.791 | 33 37.23 | 33 22.273 | 33 37.30 | 32 26.991 | 32 48.86 | 32 35.327 | 32 59.40 | 32 37.364 | 33 9.10 |
| 17353 | -34.32 | 20771 | -37.77 | 22253 | -39.24 | 26971 | +15.94 | 35307 | +7.47 | 37344 | +5.40 |
| 32 42.66 | -.38 | 32 42.63 | -.38 | 32 42.61 | -.37 | 32 42.54 | -.35 | 32 42.39 | -.37 | 32 42.385 | -.34 |
| +34.69 | | +38.14 | | +39.64 | | -15.57 | | -7.08 | | -5.021 | |
| | -2.32 | | -2.29 | | -2.27 | | -2.20 | | -2.05 | | -2.01 |
| + 34.36 | 32 40.33 | - 37.77 | 40.33 | - 39.25 | 40.37 | + 15.89 | 40.36 | + 7.48 | 40.36 | + 5.35 | 40.39 |
| - .38 | | - .39 | | - .40 | | - .34 | | - .38 | | - .35 | |
| - 2.32 | -0.289 | - 2.29 | -0.259 | - 2.27 | -0.239 | - 2.20 | -0.169 | - 2.05 | -0.019 | - 2.01 | +0.021 |
| - 37.06 | | - 40.45 | | - 41.92 | | + 13.35 | | + 5.00 | | + 2.99 | |
| 33 17.35 | 38 0.92 | 33 20.77 | 1.56 | 33 22.25 | 0.85 | 32 26.97 | 3.56 | 32 35.31 | 5.14 | 32 37.34 | 7.78 |
| | +2 5.58 | | +2 5.37 | | +2 5.94 | | +2 5.13 | | +2 4.98 | | +2 4.52 |
| 32 40.29 | -.1 | 32 40.32 | -.1 | 32 40.33 | -.1 | 32 40.32 | -.1 | 32 40.31 | -.1 | 32 40.33 | -.1 |
| 42321 | -330 | 42351 | -400 | 42361 | -450 | 42351 | -580 | 42341 | -770 | 42361 | -810 |
| +38 | 40 31.0 | | 40 2.83 | | 40 2.19 | | 40 2.79 | | 40 2.32 | | 40 4.10 |
| s +28.97 | | +21.16 | -16.44 | +17.64 | -15.03 | +17.73 | -21.87 | +25.10 | -24.07 | +23.36 | -31.74 |
| 40 | | 40 | | 40 | | 40 | | 40 | | 40 | |
| -1.57 | | -1.61 | | -1.71 | | -1.86 | | -2.08 | | -2.10 | |
| 4 10.1 | | 4 15.0 | 4 53.3 | 4 19.0 | 4 53.2 | 4 17.7 | 4 57.0 | 4 7.7 | 4 57.1 | 4 6.1 | 0 1.9 |
| 19.4 | | 27.9 | 6.8 | 31.7 | 5.9 | 29.0 | 8.9 | 20.2 | 10.9 | 19.5 | 15.9 |
| 29.5 | | 42.9 | 120.1 | 50.7 | 119.1 | 46.7 | 125.9 | 27.9 | 128.0 | 25.6 | 17.8 |
| 44 14.75 | | 44 21.45 | 45 0.05 | 44 25.35 | 44 59.55 | 44 23.35 | 45 2.95 | 44 13.95 | 45 4.00 | 44 12.80 | 45 8.90 |
| 1.46195 | | 1.32552 | 1.21590n | 1.24660 | 1.17696n | 1.24871 | 1.33985n | 1.39967 | 1.38148n | 1.36847 | 1.50161 |
| 1.46049 | | 1.32406 | 1.21444n | 1.24504 | 1.17550n | 1.24725 | 1.33839n | 1.39821 | 1.38002n | 1.36701 | 1.50015n |
| +28.87 | | +21.09 | -16.39 | +17.58 | -14.98 | +17.64 | -21.80 | +25.02 | -23.97 | +23.29 | -31.63 |
| 44 43.62 | | 44 42.54 | 44 43.66 | 44 42.93 | 44 44.57 | 44 41.62 | 44 41.15 | 44 38.97 | 44 40.01 | 44 36.09 | 44 37.27 |
| +38° 38 4.73 | | 38 5.81 | 4.69 | 38 5.42 | 3.78 | 38 7.33 | 7.20 | 38 9.38 | 8.34 | 38 17.26 | 11.08 |
| ~~6.71~~ | | 5.25 | | 4.60 | | 7.26 | | 8.86 | | 11.67 | |
| +3 42 8 | | 42 14 | 42 53 | | | | | | | | |
| 0.57120 | | 0.57140 | 0.57280 | | | | | | | | |
| 1134 | | -1039 | | -640 | | -1485 | | -2007 | | -524 | |
| 0.55986 | | 0.56001 | 0.56241 | 0.56500 | 0.56640 | 0.55655 | 0.55795 | 0.55133 | 0.55273 | 0.56616 | 0.56756 |
| -3.63 | | -3.63 | -3.65 | -3.67 | -3.68 | -3.60 | -3.61 | -3.56 | -3.57 | -3.68 | -3.69 |
| -.22 -.18 | | -.12 -.05 | -.07 | -.08 -.07 | -.06 | -.08 -.10 | -.12 | -.16 -.15 | -.15 | -.14 -.20 | -.26 |
| +.04 | | +.04 | +.05 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| -3.81 | | -3.71 | -3.67 | -3.75 | -3.74 | -3.68 | -3.73 | -3.72 | -3.72 | -3.82 | -3.95 |
| 38 0.92 | | 38 2.10 | 1.02 | 1.67 | 0.04 | 3.65 | 3.47 | 5.66 | 4.62 | 8.44 | 7.13 |
| 40 6.4 | | 7.1 | | 7.6 | | 8.9 | | 10.8 | | 11.2 | |
| +2 5.5 | | 5.0 | 6.1 | 5.9 | 7.6 | 5.3 | 5.4 | 5.1 | 6.2 | 3.8 | 4.1 |
| +2 5.5 | | 5.5 | | 6.7 | | 5.4 | | 5.6 | | 4.0 | |
| +2 5.51 | 5.42 | + 5.30 | 5.20 3.30 | + 5.85 | 5.75 2.92 | + 5.03 | 4.92 2.77 | + 4.89 | 4.77 2.43 | + 4.42 | 4.25 4.63 |
| - .09 | -.16 | - .10 | -.86 2.22 | - .10 | -1.36 1.29 | - .11 | -2.66 2.59 | - .12 | -4.56 1.69 | - .13 | -4.96 3.32 |
| - 3.30 | | - 4.00 | | - 4.50 | | - 5.80 | | - 7.70 | | - 8.10 | |
| +2 2.12 | 40 3.04 | + 1.20 | 2.76 | + 1.25 | 2.10 | +1 59.12 | 2.68 | + 57.07 | 2.21 | + 56.19 | 3.97 |
| | 40 | | | | | | | | | | 7.11 |

1875

α 42.375
δ +40 6.27
dα/dt +2.031
dδ/dt +3.140

l cos δ 9.89254
l C .13146
l C' 0.02400

l C" 0.01806

1875

| | | m s | | ′ ″ | |
|---|---|---|---|---|---|
| Aug. | 8 | 32 44.81 | | 39 70.8 | |
| | 13 | 44.74 | -.07 | 71.9 | +1.1 |
| | 18 | 44.67 | .07 | 72.9 | 1.0 |
| | 23 | 44.58 | .09 | 73.7 | .8 |
| | 28 | 44.49 | .09 | 74.5 | .8 |
| Sept. | 2 | 44.39 | .10 | 75.2 | .7 |
| | 7 | 44.28 | .11 | 75.8 | .6 |
| | 12 | 44.16 | .12 | 76.2 | .4 |
| | 17 | 44.04 | .12 | 76.6 | .4 |

| | | 1874 | | 1875 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| × -40 | | × -45 -10 | | -62 × | | -68 × | | -62 × | | -55 × | |
| Sept. 6 | | Sept. 12 | | Aug 10 | | Aug 25 | | Aug 26 | | Aug 28 | |
| -.398 | | -1.45 | | -.617 | | -.660 | | -.598 | | -.570 | |
| 32 28.6 | 32 15.2 | 32 34.0 | 32 31.8 | 32 34.3 | 32 32.2 | 32 43.5 | 32 33.7 | 32 43.8 | 32 32.2 | 33 — | |
| 31.2 | 17.9 | 36.6 | 34.3 | 36.8 | 34.7 | 46.1 | 36.4 | 46.5 | 35.1 | — | |
| 33.8 | 19.9 | 39.1 | 37.0 | 39.4 | 37.2 | 48.7 | 39.2 | 49.1 | 37.5 | — | |
| 39.1 | | 44.4 | | 44.7 | | 54.0 | | 54.5 | | — | |
| 41.7 | | 47.0 | | 47.3 | | 56.7 | | 57.0 | | — | |
| 44.4 | | 49.7 | | 50.0 | | 59.4 | | 59.8 | | — | |
| 46.7 | 33 13.8 | 52.4 | 33 12.5 | 52.7 | 32 58.8 | 33 1.9 | 33 29.5 | 2.3 | 33 21.4 | 1.20 1.2 | 33 12.7 |
| 49.7 | 16.5 | 55.0 | 15.7 | 55.2 | | 4.6 | 33.6 | 5.1 | 25.2 | .05 3.7 | 15.6 |
| 54.9 | 19.0 | 0.4 | 17.9 | 0.5 | | 9.8 | 36.3 | 10.3 | 27.5 | .30 6.6 | 18.2 |
| 57.5 | | 2.9 | | 3.2 | | 12.6 | | 12.8 | | .10 11.7 | |
| 0.2 | | 5.3 | | 5.9 | | 15.2 | | 15.5 | | .05 14.3 | |
| | | | | | | | | | | .10 17.0 | |
| 4278 | | 3670 | | 3700 | | 3525 | | 3567 | | | |
| 60 | | 180 | | 180 | | 300 | | 300 | | | |
| 487 8 | 32 17.66 | 547 0 | 32 34.36 | 550 0 | 32 34.70 | 6525 | 32 36.43 | 6567 | 32 34.93 | | |
| 32 44.345 | 33 16.43 | 32 49.727 | 33 15.36 | 32 50.000 | 32 58.80 | 32 59.318 | 33 33.13 | 32 59.700 | 33 24.70 | 1.133 | 33 15.50 |
| 44.325 | -1.94 | 49.707 | -7.28 | 49.980 | -4.66 | 59.298 | -14.17 | 59.680 | -14.76 | 33 1.113 | -16.20 |
| 32 42.075 | -.32 | 32 41.921 | -.36 | 32 44.78 | -.50 | 32 44.54 | -.54 | 32 44.532 | -.50 | 32 44.49 | -.44 |
| +2.287 | | +7.780 | -.13 | +5.20 | | +14.76 | | +15.156 | | + 16.62 | |
| | -1.71 | | -1.57 | | -2.41 | | -2.17 | | -2.15 | | -2.12 |
| - 1.94 | 4035 | - 7.50 | 4037 | - 4.71 | 4241 | - 14.21 | 4242 | - 14.78 | 4227 | - 16.22 | 4237 5 |
| - .32 | | - .38 | | - .49 | | - .53 | | - .48 | | - .46 | |
| - 1.71 | +0.321 | - 1.57 | +0.461 | - 2.91 | | - 2.17 | | - 2.15 | | - 2.12 | |
| - 4.00 | | - 9.45 | | - 7.61 | | - 16.91 | | - 17.41 | | - 18.80 | |
| 32 44.32 | 8.39 | 32 49.71 | 38 6.50 | 32 49.98 | 56 24.34 | 32 59.30 | 32.26 | 32 59.68 | 30.67 | 33 1.11 | 29.30 |
| | +2 4.40 | | +2 7.29 | | -16 12.51 | | -16 15.72 | | -16 15.37 | | -16 14.99 |
| 32 40.32 | -.1 | 32 40.26 | -.1 | 32 42.37 | -.2 | 32 42.39 | -.2 | 32 42.27 | -.2 | 32 42.31 | -.2 |
| 42.351 | -10.10 | 42.291 | -10.60 | | -5.00 | | -7.80 | | -7.90 | | -8.20 |
| | 40 2.59 | | 40 3.09 | | 40 6.63 | | 40 5.54 | | 40 7.20 | | 40 6.91 |
| s<br>+26.68 | -32.09 | +15.37 | -25.63 | +15.30 | - 8.80 | +22.89 | -33.81 | +24.77 | - 25.00 | - 14.37 | |
| 40 | | 40 | | 25 | | 25 | | 26 | | 23 | |
| -2.08 | | -2.33 | | -2.40 | | -2.49 | | -2.50 | | -2.51 | |
| 4 4.0 | 0 0.7 | 4 14.6 | 4 55.9 | 0 53.5 | 1 17.9 | 0 38.7 | 1 35.8 | 0 37.9 | 1 29.5 | 1 19.8 | 2 1.9 |
| 15.4 | 15.0 | 30.1 | 11.9 | 14.8 | 40.7 | 59.8 | 56.5 | 51.9 | 49.9 | 40.5 | 21.7 |
| 19.4 | 15.7 | 44.7 | 127.8 | 128.3 | 58.6 | 98.5 | 92.3 | 95.8 | 49.4 | 60.3 | 27 33.6 |
| 44 9.70 | 45 7.85 | 44 22.35 | 45 3.90 | 26 4.15 | 26 29.30 | 25 49.25 | 26 46.15 | 25 47.90 | 26 39.70 | 26 30.15 | 25 16.80 |
| 1.42619 | 1.50637n | 1.18667 | 1.40875n | 1.18469 | 0.94448n | 1.35965 | 1.52905n | 1.39393 | 1.39794n | 1.15746n | |
| 1.42473 | 1.50491n | 1.18521 | 1.40729n | 1.20869 | 0.96848n | 1.37771 | 1.54711n | 1.41199 | 1.41600n | 1.17552n | |
| +26.59 | -31.98 | +15.32 | -25.54 | +16.17 | -9.30 | +23.86 | -35.25 | +25.82 | -26.07 | -14.98 | |
| 44 36.29 | 44 35.87 | 44 37.67 | 44 38.36 | 26 20.32 | 26 20.00 | 26 13.11 | 26 10.90 | 26 13.72 | 26 13.63 | 26 15.17 | |
| 38 12.06 | 12.48 | 38 10.68 | 9.99 | 56 28.03 | 28.35 | 56 35.24 | 37.45 | 56 34.63 | 34.75 | 8.31 | |
| 12.27 | | 10.33 | | 28.19 | | 36.34 | | 34.69 | | | |
| | | 42 15 | 42 57 | 42 16 | 42 41 | | | 42 0 | 42 52 | | |
| | | 0.57140 | 0.57280 | 0.57160 | 0.57240 | | | 0.57100 | 0.57280 | | |
| -1374 | | -187 | | -1394 | | -92 | | -243 | | -814 | |
| 0.55766 | 0.55906 | 0.56953 | 0.57093 | 1.55766 | 1.55846 | 0.57068 | 0.57148 | 0.56857 | 0.57037 | 0.56486 | 0.56466 |
| -3.61 | -3.62 | -3.71 | -3.72 | -3.61 | -3.62 | -3.72 | -3.73 | -3.70 | -3.72 | -3.67 | -3.67 |
| -.18 -.26 | -.27 | -.06 -.12 | -.17 | -.06 -.23 | -.13 | -.13 -.36 | -.30 | -.16 -.30 | -.17 | -.05 | |
| -.08 | .00 | .00 | .00 | -.12 | -.16 | -.09 | -.20 | -.09 | -.19 | -.16 | -.25 |
| - 3.87 | - 3.89 | - 3.77 | - 3.89 | - 3.79 | - 3.91 | - 3.94 | - 4.23 | - 3.95 | - 4.08 | - 3.88 | |
| 8.19 | 8.59 | 6.91 | 6.10 56 | 24.24 | 24.44 | 31.30 | 33.42 | 30.68 | 30.67 | 29.30 | |
| 13.2 | | 13.7 | 40 | 11.3 | | 14.1 | | 14.2 | | 14.5 | |
| 5.0 | 4.6 | 6.8 | 7.6 -16 | 12.9 | 13.1 | 17.2 | 19.3 | 16.5 | 16.5 | 14.8 5 | |
| 4.8 | | 7.2 | | 13.0 | | 11.2 | | 11.5 | | 14.8 | |
| +2 4.41 | 4.27 2.36 | + 7.16 | 7.02 3.33 -16 | 12.59 | 12.73 6.51 | - 15.58 | 15.73 7.77 | - 15.46 | 15.61 7.17 | - 15.13 | 15.28 |
| - .14 | -6.96 2.76 | - .14 | -7.46 2.52 - | .14 | 6.71 | - .15 | 9.69 | - .15 | 7.16 | - .15 | |
| - 10.10 | | - 10.60 | | 5.00 | | - 7.80 | | - 4.90 | | - 8.20 | |
| +1 54.17 | 2.56+ | 56.42 | 2.92 -16 | 17.73 40 | 6.61 | - 23.53 | 8.73 | - 23.51 | 7.16 | - 23.48 | 5.72 |

| 1874.0 α | δ | 1875.0 α | δ |
|---|---|---|---|
| 40.29 | | 42.37 | |
| 32 | | 39 | |
| 33 | | 27 | |
| 32 | | 31 | |
| 31 | | 25 | |
| 33 | | 33 | |
| 32 | | 40 | |
| 26 | | 33 | |
| | | 36 | |
| | | 35 | |
| 40.310 | | 42.336 | |
| .344 | 3.13 | .375 | 6.27 |
| −.034 | | −.039 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −.57 | + | −.68 | + | −.64 | + | −.62 | + | −.60 | + | −.60 | + |
| Aug 29 | | Aug 30 | | Aug 31 | | Sept 1 | | Sept 4 | | Sept 5 | |
| −.574 | | −.675 | | −.680 | | −.636 | | −.610 | | −.600 | |
| 33 — | 33 20.8 | 32 47.0 | 32 33.1 | 32 48.0 | 32 18.6 | 32 48.1 | 32 39.2 | 32 51.2 | 32 42.8 | 32 52.2 | 32 40.6 |
| — | 23.3 | 49.8 | 35.3 | 50.7 | 20.8 | 51.3 | 41.9 | 53.9 | 45.1 | 54.9 | 43.3 |
| — | 25.5 | 52.4 | 38.4 | 53.4 | 23.0 | 54.0 | 44.5 | 56.6 | 47.6 | 57.6 | 45.4 |
| — | | 57.6 | | 56.7 | | 59.3 | | 33 1.8 | | 33 3.0 | |
| — | | 33 0.3 | | 33 1.4 | | 33 2.0 | | 4.4 | | 5.5 | |
| — | | 3.0 | | 3.8 | | 4.6 | | 7.0 | | 8.0 | |
| 1.95 4.6 | | 5.6 | 33 15.3 | 6.5 | 33 39.2 | 7.1 | 33 24.6 | 9.7 | 33 34.2 | 10.8 | 33 38.2 |
| 2.00 7.3 | | 8.3 | 17.7 | 9.2 | 41.3 | 9.8 | 26.8 | 12.4 | 36.0 | 13.4 | 40.2 |
| 1.90 12.5 | | 13.6 | 20.5 | 14.5 | 43.5 | 18.2 | 29.4 | 17.6 | 38.6 | 18.5 | 42.3 |
| 2.05 15.3 | | 16.2 | | 17.0 | | 17.8 | | 20.3 | | 21.3 | |
| 2.00 17.9 | | 18.9 | | 19.7 | | 20.4 | | 23.0 | | 23.9 | |
| | | 27.25 | | 28.29 | | 29.01 | | 25.79 | | 26.91 | |
| | | 24.0 | | 24.0 | | 24.0 | | 18.0 | | 18.0 | |
| | 33 23.20 | 3.25 | 32 35.60 | 4.29 | 32 20.80 | 5.01 | 32 41.87 | 7.79 | 32 45.17 | 8.91 | 32 43.18 |
| 33 1.980 | | 33 2.955 | 33 17.83 | 33 3.900 | 33 41.33 | 33 4.555 | 33 26.93 | 33 7.082 | 33 36.27 | 33 8.100 | 33 40.23 |
| 1.960 | −17.12 | 2.935 | −17.96 | 3.880 | −18.87 | 4.535 | −19.61 | 7.062 | −22.22 | 8.080 | −23.29 |
| 32 44.47 | −.46 | 32 44.45 | −.54 | 32 44.43 | −.51 | 32 44.41 | −.50 | 32 44.384 | −.48 | 32 44.332 | −.48 |
| +17.49 | | +18.48 | | +19.45 | | +20.12 | | +22.702 | | +23.756 | |
| | −2.10 | | −2.08 | | −2.06 | | −2.04 | | −1.97 | | −1.95 |
| − 17.15 | 42.28 | − 17.98 | 42.35 | − 18.88 | 42.44 | − 19.66 | 42.38 | − 22.24 | 42.39 | − 23.30 | 42.36 |
| − .46 | | − .54 | | − .54 | | − .51 | | − .49 | | − .48 | |
| − 2.10 | | − 2.08 | | − 2.06 | | − 2.04 | | − 1.97 | | − 1.95 | |
| = 19.71 | | − 20.60 | | − 21.48 | | − 22.21 | | − 24.70 | | − 25.73 | |
| 33 1.96 | 56 29.03 | 33 2.93 | 29.97 | 33 3.88 | 28.04 | 33 4.54 | 28.75 | 33 7.06 | 31.03 | 33 8.08 | 29.80 |
| | −16 14.55 | | −16 14.89 | | −16 12.75 | | −16 13.20 | | −16 14.27 | | −16 13.24 |
| 32 42.25 | − .2 | 32 42.33 | − .2 | 32 42.40 | − .2 | 32 42.33 | − .2 | 32 42.36 | − .2 | 32 42.35 | − .2 |
| | − 8.40 | | − 8.50 | | − 8.60 | | − 8.80 | | − 9.20 | | − 9.30 |
| | 40 5.88 | | 40 6.38 | | 40 6.49 | | 40 6.55 | | 40 7.36 | | 40 ~~7.46~~ 7.06 |
| − 21.22 | | + 27.35 | − 14.88 | + 43.10 | − 37.43 | + 22.68 | − 22.38 | + 21.91 | − 29.19 | + 25.00 | − 32.13 |
| 25 | | 25 | | 25 | | 25 | | 25 | | 25 | |
| − 2.52 | | − 2.53 | | − 2.53 | | − 2.54 | | − 2.57 | | − 2.58 | |
| 1 27.2 | 1 54.9 | 0 34.5 | 1 20.3 | 0 20.5 | 1 45.0 | 0 41.8 | 1 27.5 | 0 40.7 | 1 33.0 | 0 38.0 | 1 37.3 |
| 47.9 | 15.1 | 56.0 | 41.3 | 41.7 | 54 | 2.9 | 49.8 | 1.4 | 54.0 | 59.9 | 58.1 |
| 73.1 | 130.0 | 90.5 | 61.6 | 62.2 | 110.4 | 101.7 | 77.3 | 102.1 | 87.0 | 97.9 | 95.4 |
| 26 37.55 | 27 5.00 | 25 45.25 | 26 30.80 | 25 31.10 | 26 55.20 | 25 52.85 | 26 38.65 | 25 51.05 | 26 43.50 | 25 48.95 | 26 47.70 |
| 1.32675n | | 1.43696 | 1.17260 n | 1.63448 | 1.57322 n | 1.35564 | 1.34986 n | 1.34064 | 1.46523 n | 1.39794 | 1.50691 |
| 1.34481n | | 1.45502 | 1.19066 n | 1.65254 | 1.59128 n | 1.37370 | 1.36792 n | 1.35870 | 1.48329 n | 1.41600 | 1.52497 n |
| − 22.12 | | +28.51 | −15.51 | +44.93 | −39.02 | +23.64 | −23.33 | +22.84 | −30.43 | +26.06 | −33.49 |
| 26 15.43 | | 26 13.76 | 26 15.29 | 26 16.03 | 26 16.18 | 26 15.99 | 26 15.32 | 26 13.89 | 26 13.07 | 26 15.01 | 26 14.21 |
| 56 32.52 | | 56 34.59 | 33.06 | 56 32.32 | 32.17 | 56 32.36 | 33.03 | 56 34.46 | 35.28 | 56 33.34 | 34.14 |
| | | 30.82 | | 32.24 | | 32.69 | | 34.87 | | 33.74 | |
| | | | | | | | | | | 42 1 | 43 0 |
| | | | | | | | | | | 0.57100 | 0.57300 |
| − 1620 | | − 1509 | | − 962 | | − 695 | | − 2452 | | − 1854 | ~~5346~~ |
| 0.55480 | 0.55660 | 0.55591 | 0.55771 | 0.56138 | 0.56318 | 0.56405 | 0.56585 | 0.54648 | 054828 | 0.55246 | 0.55446 |
| − 3.59 | − 3.60 | − 3.60 | − 3.61 | − 3.64 | − 3.66 | − 3.66 | − 3.68 | − 3.52 | − 3.53 | − 3.57 | − 3.58 |
| −.12 | | −.20 −.25 | −.06 | −.49 −.55 | −.36 | −.13 −.27 | −.13 | −.12 −.31 | −.23 | −.17 −.36 | −.27 |
| −.18 | −.23 | −.08 | −.16 | −.05 | −.21 | −.10 | −.18 | −.09 | −.19 | −.09 | −.20 |
| − 3.89 | | − 3.88 | − 3.83 | − 4.18 | − 4.23 | − 3.89 | − 3.99 | − 3.73 | − 3.95 | − 3.83 | − 4.05 |
| 56 29.03 | | 30.71 | 29.23 | 28.14 | 27.94 | 28.47 | 29.04 | 30.73 | 31.33 | 29.57 | 30.09 |
| 14.7 | | 14.8 | | 14.9 | | 15.1 | | 15.5 | | 15.6 | |
| −16 14.0 | | 15.9 | 14.4 | 13.2 | 13.0 | 13.4 | 13.9 | 15.2 | 15.8 | 13.9 | 14.5 |
| −16 14.3 | | 15.1 | | 13.1 | | 13.6 | | 15.5 | | 14.2 | |
| −16 14.81 | 14.96 | −15.09 | 15.24 6.99 | − 13.01 | 13.16 6.38 | − 13.16 | 13.31 6.36 | − 14.38 | 14.53 7.00 | − 13.42 | 13.57 6.64 |
| − .15 | | − .15 | 5.49 | − .15 | 6.18 | − .15 | 6.93 | − .15 | 7.60 | − .15 | 7.22 |
| − 8.40 | | − 8.50 | | − 8.60 | | − 8.80 | | − 9.20 | | − 9.30 | |
| −16 23.36 | 40 5.67 | 23.74 | 6.23 | − 21.76 | 6.28 | − 22.11 | 6.64 | − 23.73 | 7.30 | − 22.87 | 6.93 |

6

Groom. 2655
h m sec.
18 35 47
+77° 27'
l = −35° 4'
sin l = −.57

| | 1874 | 1874 | | | | |
|---|---|---|---|---|---|---|
| α 49.741 | Aug. 8 | 35m 53.01 | | 26' 54.4 | |
| δ +26 48.76 | 13 | 52.62 | −.39 | 55.6 | +1.2 |
| dα/dt −2.850 | 18 | 52.21 | .41 | 56.8 | 1.2 |
| dδ/dt +3.107 | 23 | 51.77 | .44 | 57.8 | 1.0 |
| | 28 | 51.30 | .47 | 58.8 | 1.0 |
| | Sept 2 | 50.81 | .49 | 59.6 | .8 |
| l sin δ 9.98950 | 7 | 50.30 | .51 | 60.4 | .8 |
| | 12 | 49.77 | .53 | 61.0 | .6 |
| l cos δ 9.33704 | 17 | 49.23 | .54 | 61.4 | .4 |

l c .10600
l c' 9.44304
l c'' 9.44164

9.326
6.737
6.063

corr α = −.391 s
corr δ = +.22"
tang δ = ~~4.51~~ 4.49 4.59
I = 9.53 s
K = −.071 s

× 1874 Aug. 10 −.44 −.427 × Aug. 20 −.46 −.475 × Aug. 22 −.42 ~~−.430~~ −.433 × Sept. 6 −.40 −.398 × 1874 Sept. 12 −.45 −.10 −.476 1875 × Aug 25 −.68 −.660

35 19.9 34 22.2 35 27.2 34 49.1 35 29.1 34 15.0 35 35.0 34 46.5 35 39.5 34 55.8 35 46.4 35 48.7
24.4 30.2 32.2 56.2 33.6 23.3 39.6 54.1 45.0 5.9 51.1 57.7
29.2 36.6 36.8 5.6 38.6 31.0 44.5 59.1 50.1 12.2 55.7 6.3
34.4 41.6 43.2 49.0 54.2 36 0.6
38.6 46.2 48.1 53.6 59.0 5.3
43.2 50.9 53.0 58.7 3.7 10.4
48.5 35 35.8 55.6 35 53.7 57.4 36 25.0 8.2 35 47.4 8.9 36 33.6 15.2
52.8 0.7 3.3 2.1 34.0 8.1 59.9 14.2 19.0
57.5 5.6 13.1 7.3 42.6 12.7 5.7 18.3 24.4

3485 2968 3124 3044 2929 2281
120 120 180 240 180
34 29.66 4168 34 56.96 4324 34 23.10 4844 34 53.28 5329 35 4.63 481 35 57.57
35 38.722 35 35.80 35 46.311 36 3.36 35 48.044 36 33.86 35 53.822 35 57.66 35 59.211 36 33.60 36 5.344
38.651 46.240 47.973 53.751 59.140 5.273
35 52.873 35 52.051 35 51.884 35 50.~~42~~38 35 49.80 74 35 48.44
−14.22 18 +15.94 −5.81 77 +7.47 −3.91 87 +5.40 +3.337 −1.94 +9.34 40 −7.29 +16.83 −14.17
−13.79 ~~−2.20~~ −1.98 −5.38 ~~−2.30~~ −2.07 −3.48 ~~−2.11~~ −1.89 +3.76 ~~−2.00~~ −1.80 +9.79 ~~−2.25~~ −2.02 −46 +17.22 ~~−3.37~~ −3.05

+ 15.89 −3.09 + 4.43 −2.27 + 5.35 −2.10 − 1.948 −0.64 − 7.50 +0.00 − 14.21 −1.55
− 1.92 35 49.52 − 2.13 49.37 − 1.94 49.38 − 1.79 49.37 − 2.13 49.37 − 2.96 48.50
− 3.09 −5.940 − 2.27 −5.120 − 2.10 −4.950 − 0.64 −3.490 + 0.00 −2.850 − 1.55 6
+ 10.88 + 3.03 + 1.31 − 4.41 − 9.64 − 18.72
35 38.65 35 46.24 35 47.97 35 53.75 35 ~~48.74~~ 59.14 ~~35 48.44~~ 36 5.27

24 49.09 52.35 52.77 55.42 24 53.22 43 14.32
35 49.53 +2 5.13 35 49.27 +2 4.98 35 49.28 +2 4.52 35 49.34 +2 4.40 35 ~~40.10~~ 49.50 +2 7.29 ~~35 29.72~~ −16 15.72
46.680 +1.3 46.420 +1.3 46.430 +1.4 46.490 +1.3 46.650 +1.4 ~~8.70~~ 46.55 +1.6
−6.10 −8.50 −8.80 −11.50 −12.20 −8.70
+77 26 49.42 26 50.13 26 49.89 26 49.62 26 49.71 26 51.50

s
+69.06 + 2.92 +49.35 −17.05 + ~~14.94~~ 8 −45.82 +60.59 −3.84 +54.58 −34.39 + 7.77
55 55 55 55 55 36 −
−1.86 −2.08 −2.10 −2.28 −2.33 −2.49

3 14.8 3 33.8 3 16.3 3 34.2 3 7.0 3 43.7 3 11.0 3 28.5 3 15.9 3 39.2 4 41.0 0 1.1
22.8 40.7 25.4 43.8 15.4 51.6 18.9 37.2 25.3 48.9 1.4 22.0
37.6 74.5 41.7 78.0 22.4 95.3 29.9 65.7 41.2 88.1 102.4 23.1
58 3 18.80 58 3 37.25 58 3 20.85 58 3 39.00 58 3 11.20 58 47.65 58 3 14.95 58 3 32.85 58 3 20.60 58 3 44.05 39 51.20 40 11.55

1.83923 0.46638 1.69329 1.23172n ~~1.39690~~ 92911 1.66106n 1.78240 0.58433n 1.73703 1.53643n 0.89042
1.28227 9.90842 1.13638 0.67476n ~~0.83294~~ 1.37215 1.10410n 1.22544 0.02737n 1.17867 0.97807n 0.35298
+19.15 +0.81 +13.69 −4.73 ~~+6.92~~ 23.56 +12.71 +16.81 −1.06 +15.09 −9.51 +2.20 +2.25
58 37.95 58 38.06 58 34.54 58 34.27 58 ~~18.72~~ 34.76 58 34.94 58 31.76 58 31.79 58 35.69 58 34.54 39 ~~53.45~~ 40 13.80

24 10.40 10.29 24 13.81 14.08 24 13.59 13.41 24 16.59 16.56 24 12.66 13.81 ~~42 54.90~~ 42 34.55
10.34 13.94 13.50 16.57 13.23
−35 3 48 3 30 3 46 3 23 3 37
1.60630n 1.60620n 1.60630n 1.60620n 1.60630n
−1477 −2002 −511 −1368 −173 −84
1.59153 1.59143 1.58628 1.58618 1.60119 1.60109 0.59262 1.59252 1.60457 1.60447 1.60546 ~~1.60546~~
+39.04 +39.03 +38.57 +38.56 +39.92 +39.91 +39.14 +39.13 +40.23 +40.22 +40.31

−.58 −.29 − 0 −.29 −.16 −.03 −1.04 −.64 −.24 −.45 −.29 − 0 −.35 −.24 −.13 − 1.28 .54 −
.00 .00 .00 .00 .00 .00 −.06 −.07 .00 .00 −.53 −.02
+ 38.46 +39.03 + 38.28 +38.53 + 38.88 +39.67 + 38.63 +39.06 + 39.88 +40.09 + 39.77
24 48.86 49.32 52.09 52.61 52.47 53.08 55.22 55.62 52.54 53.90 43 14.32
26 54.9 57.3 57.6 60.3 61.0 27 0.6
+2 6.0 5.6 5.2 4.7 5.1 4.5 5.1 4.7 8.5 7.1 −16 13.7
+2 5.8 4.9 4.8 4.9 7.8 −16 13.7
+2 6.0 48.85 5.1 49.66 5.0 49.28 5.1 49.42 8.0 48.82 −16 13.5
+2 5.03 6.09 49.31 +4.89 6.07 50.18 +4.42 5.61 49.89 +4.41 5.70 49.82 +7.16 8.48 50.18 −16 15.58 14.17
+ 1.06 −3.00 +1.18 −5.40 +1.19 −5.70 +1.29 −8.40 +1.32 −9.10 + 1.41
− 6.10 26 49.08 −8.50 49.92 −8.80 49.58 −11.50 49.62 −12.20 49.50 − 8.70 26 57.45
+1 22.87

1875 1875

| | | m s | | ′ ″ | |
|---|---|---|---|---|---|
| s | Aug. 28 | 35 48.12 | | 26 61.2 | |
| 46.891 | Sept. 2 | 47.62 | .50 | 62.1 | +.9 |
| +26′ 51.86 | 7 | 47.12 | .50 | 62.8 | .7 |
| −2.851 | 12 | 46.59 | .53 | 63.4 | .6 |
| +3.103 | 17 | 46.05 | .54 | 63.9 | .5 |

l cos δ 9.33704
l c .12552
l c′ 9.46256

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | + | | + | | + | | × | | × | | × |
| | −.62 | | −.55 | | −.57 | | −.68 | | −.64 | | −.62 | |
| | Aug 26 | | Aug 28 | | Aug 29 | | Aug 30 | | Aug 31 | | Sept 1 | |
| | −.597 | | −.570 | | −.540 | | −.675 | | −.680 | | −.636 | |
| 3 | 35 | 34 35.0 | 35 | 35 0.2 | 35 | 34 43.4 | 35 | 34 37.9 | 35 | 34 22.1 | 35 | 34 4.9 |
| | 46.5 | 44.5 | 47.8 | 7.1 | 48.4 | 50.0 | 49.3 | 44.4 | 50.2 | 29.4 | 50.5 | 10.5 |
| | 51.2 | 50.2 | 62.5 | 17.6 | 53.3 | 57.6 | 54.1 | 52.0 | 55.0 | 35.3 | 55.0 | 18.0 |
| | 56.0 | | 57.5 | | 58.0 | | 58.7 | | 59.8 | | 59.9 | |
| | 36 0.5 | | 36 1.5 | | 36 2.6 | | 36 3.7 | | 36 4.4 | | 36 4.6 | |
| | 5.6 | | 6.0 | | 7.5 | | 8.3 | | 9.5 | | 9.9 | |
| 1. | 10.2 | 35 58.5 | 10.0 | 36 22.7 | 12.1 | 36 15.4 | 12.8 | 36 0.9 | 14.0 | 36 16.8 | 14.6 | 36 22.3 |
| 2. | 15.3 | 7.0 | 14.7 | 28.1 | 16.8 | 24.8 | 17.7 | 10.3 | 18.8 | 25.2 | 19.5 | |
| 1. | 19.7 | 15.9 | 20.8 | 38.0 | 21.6 | 33.3 | 22.8 | 16.1 | 23.6 | 33.7 | 24.0 | |
| 2. | 24.7 | | 25.5 | | 26.2 | | 27.3 | | 28.7 | | 28.5 | |
| 2. | 2297 | | 2363 | | 2465 | | 2547 | | 2640 | | 2665 | |
| | 180 | | 180 | | 180 | | 180 | | 180 | | 180 | |
| | 497 | 34 43.23 | 363 | 35 7.13 | 665 | 34 50.33 | 747 | 34 44.77 | 840 | 34 28.93 | 865 | 34 11.13 |
| | 36 5.522 | 36 7.13 | 36 6.256 | 36 29.60 | 36 7.384 | 36 24.60 | 36 8.300 | 36 9.10 | 36 9.333 | 36 25.23 | 36 9.611 | 36 22.30 |
| 3. | 5.451 | | 6.185 | | 7.318 | | 8.229 | | 9.262 | | 9.540 | |
| | 35 48.340 | −14.77 | 35 48.141 | −16.20 | 35 48.041 | −17.12 | 35 47.940 | −17.97 | 35 47.840 | −18.87 | 35 47.74 69 | −19.62 |
| 3 | +17.77 15 | ~~−3.09~~ | +18.047 | ~~−2.74~~ | +19.28 31 | ~~−2.84~~ | +20.29 33 | ~~−3.39~~ | +21.426 | ~~−3.19~~ | +21.8 5 | ~~−3.09~~ |
| | +17.54 | −2.78 | +18.46 | −2.47 | +19.70 | −2.56 | +20.72 | −3.05 | +21.85 | −2.87 | +22.24 | −2.78 |
| | −14.79 | −1.41 | −16.22 | −1.22 | −17.10 | −1.12 | −17.98 | −1.01 | −18.88 | −.091 | −19.66 | −0.80 |
| | −2.68 | 35 46.49 | −2.56 | 46.29 | −2.58 | 46.52 | −3.03 | 46.20 | −3.05 | 46.61 | −2.85 | 46.34 |
| | −1.41 | | −1.22 | | −1.12 | | −1.01 | | −0.91 | | −0.80 | |
| | −18.88 | | −20.00 | | −20.85 | | −22.02 | | −22.84 | | −23.31 | |
| | 36 5.45 | | 36 6.18 | | 36 7.32 | | 36 8.23 | | 36 9.26 | | 36 9.54 | |
| | | 43 1489 | | 1437 | | 1550 | | 1557 | | 1302 | | 1414 |
| | 35 46.57 | −16 1537 | 35 46.18 | −16 1499 | 35 46.47 | −16 1455 | 35 46.21 | −16 1489 | 35 46.42 | −16 1275 | 35 46.23 | −16 1320 |
| | | +1.5 | | +1.6 | | +1.5 | | +1.6 | | +1.5 | | +1.6 |
| | | −8.90 | | −9.30 | | −9.50 | | −9.70 | | −9.90 | | −10.10 |
| | +77 | ~~16~~ 26 52.12 | | ~~16~~ 26 57.68 | | ~~16~~ 26 52.95 | | ~~16~~ 26 52.58 | | ~~16~~ 26 51.87 | | ~~16~~ 26 52.44 |
| | +82.29 | −1.61 | +59.13 | −23.34 | +77.06 | −17.21 | +83.53 | −0.80 | +100.40 | −15.90 | +118.48 | −12.69 |
| 2 | 35 −2.50 | | 35 −2.51 | | 35 −2.52 | | 35 −2.53 | | 35 −2.53 | | 35 −2.54 | |
| | 4 39.8 | 0 3.7 | 4 46.2 | 0 9.2 | 4 39.0 | 0 6.6 | 4 37.0 | 0 1.1 | 4 34.0 | 0 8.9 | 4 27.9 | 0 6.7 |
| | 58.1 | 23.5 | 6.5 | 29.7 | 57.3 | 26.9 | 56.5 | 21.9 | 53.7 | 30.3 | 48.2 | 27.4 |
| | 97.9 | 27.2 | 112.7 | 38.9 | 96.3 | 33.5 | 93.5 | 23.0 | 87.7 | 39.2 | 76.1 | 34.1 |
| | 39 48.95 | 40 13.60 | 39 56.35 | 40 19.45 | 39 48.15 | 40 16.75 | 39 46.75 | 40 11.50 | 39 43.85 | 40 19.60 | 39 38.05 | 40 17.05 |
| 1. | 1.91535 | 0.20683 | 1.77181 | 1.36810 n | 1.88683 | 1.23578 n | 1.92184 | 0.90309 n | 2.00173 | 1.20140 n | 2.07387 | 1.10346 |
| 1. | 1.37791 | 9.66939 | 1.23437 | 0.83066 n | 1.34939 | 0.69834 n | 1.38440 | 9.36565 n | 1.46429 | 0.66396 n | 1.53598 | 0.56602 |
| | +23.87 | −0.47 | +17.16 | −6.77 | +22.36 | −4.99 | +24.23 | −0.23 | +29.13 | −4.61 | +34.35 | −3.68 |
| | 40 12.42 | 40 13.13 | 40 13.51 | 40 12.68 | 40 10.51 | 40 11.74 | 40 10.98 | 40 11.27 | 40 12.98 | 14.99 | 40 12.40 | 40 13.37 |
| | 42 35.53 | 35.22 | 42 34.84 | 35.67 | 42 37.84 | 36.59 | 42 37.37 | 37.08 | 35.37 | 33.36 | 42 35.95 | 34.98 |
| | 35.37 | | 35.25 | | 37.21 | | 37.22 | | 34.36 | | 35.46 | |
| | 3 59 | 3 34 | | | | | | | | | 4 10 | 3 31 |
| | 1.60640 n | 1.60630 n | | | | | | | | | 1.60640 n | 1.60630 n |
| | −230 | | −800 | | −1604 | | −1498 | | −950 | | −686 | |
| | 1.60410 | 1.60400 | 1.59840 | 1.59830 | 1.59036 | 1.59026 | 1.59142 | 1.59132 | 1.59690 | 0.59680 | 1.59954 | 1.59944 |
| | +40.19 | +40.18 | +39.66 | +39.66 | +38.94 | +38.93 | +39.03 | +39.02 | +39.53 | +39.52 | +39.77 | +39.76 |
| | −.78 −.66 | −0 | −.45 −.54 | −.06 | −.71 −.65 | −.03 | −.81 −.68 | −.0 | −1.16 −.86 | −.02 | −1.62 −1.08 | −.01 |
| | −.53 | −.02 | −.54 | −.03 | −.53 | −.03 | −.53 | −.02 | −.52 | −.03 | −.51 | −.03 |
| | +38.88 | +40.16 | +38.67 | +39.57 | +37.70 | +38.87 | +37.69 | +39.00 | +37.86 | +39.47 | +37.64 | +39.72 |
| | 43 14.41 | 15.38 | 13.51 | 15.24 | 15.54 | 15.46 | 15.06 | 16.08 | 13.22 | 12.83 | 13.59 | 14.70 |
| | 27 0.8 | | 1.2 | | 1.4 | | 1.6 | | 1.8 | | 2.0 | |
| − | −16 13.6 | 14.6 | 12.3 | 14.0 | 14.1 | 14.1 | 13.5 | 14.5 | 11.4 | 11.0 | 11.6 | 12.7 |
| − | −16 14.1 | | 13.1 | | 14.1 | | 14.4 | | 11.2 | | 12.1 | |
| − | −16 13.7 | 26 51.47 | 12.9 | 50.51 | 13.9 | 52.66 | 13.8 | 51.71 | 11.0 | 51.75 | 11.9 | 51.71 |
| − | −16 15.46 | 14.04 52.44 | −15.13 | 13.70 52.24 | −14.81 | 13.38 52.58 | −15.09 | 13.65 52.73 | −13.01 | 11.57 51.36 | −13.16 | 11.72 52.88 |
| − | + 1.42 | | + 1.43 | | + 1.43 | | + 1.44 | | + 1.44 | | + 1.44 | |
| − | 8.90 | 26 51.95 | −9.30 | 51.37 | −9.50 | 52.62 | −9.70 | 52.22 | −9.90 | 51.55 | −10.10 | 52.32 |
| − | −16 22.94 | | | | | | | | | | | |

67

110 Herculis 1874 Aug. 8 40ᵐ 16.75ˢ 25′ 40.2″ 1875 Aug. 28 40ᵐ 19.45ˢ 25′ 45.4″
h m sec.
18 40 17, 13 16.70 -.05 41.0 7.8 Sept. 2 19.37 -.08 45.9 +.5
18 16.65 .05 41.8 .8 7 19.29 .08 46.4 .5
+20° 26′ 23 16.59 .06 42.4 .6 12 19.21 .08 46.7 .3
28 16.53 .06 43.0 .6 17 19.12 .09 47.0 .3
z = + 21° 53′ sin z = +.37 Sept. 2 16.46 .07 43.5 .5 22 19.03 .09 47.2 .2
l sin δ 9.54297 7 16.38 .08 43.9 .4 27 18.94 .09 47.3 .1
12 16.29 .09 44.2 .3 Oct. 2 18.84 .10 47.3 .0
l cos δ 9.97178 9.97178 17 16.20 .09 44.5 .3 7 18.74 .10 47.3 .0
l b 10600 12552 1874 1875
l b′ 0.07778 0.09730 α 14.434 α 17.017 cons α =
δ +25′ 37.39″ δ +25′ 40.53″ cons δ =
l b″ 0.0638 dα/dt +2.583 dα/dt +2.583ˢ tang δ = +.37 1.07
dδ/dt +3.143 dδ/dt +3.147″ t = 2.20ˢ
K = -.016

× 1874 × 1874 1875 × × ×
-.42 ~~-.45~~ -.10 -.62 -.60 -.58 -.35
Aug. 22 Sept. 12 Aug 26 Sept-5- Sept-7 Sept-25-
~~-.430~~ -.433 -.475 -.597 -.600 -.574 -.306

18 39 58.1 39 49.0 40 — 40 0.4 40 — 40 9.0 40 29.6 40 17.7 40 31.4 40 17.3 40 — 40 51.4
0.3 57.0 — 3.0 — 11.2 31.7 19.4 33.4 19.3 — 53.7
2.6 53.3 — 4.9 — 13.3 34.0 21.3 35.9 21.5 — 55.7
7.0 19.4 29.9 38.3 40.1 52.1
9.1 21.7 32.1 40.4 42.4 54.3
11.3 23.8 34.1 42.7 44.4 56.5
13.4 26.0 36.3 45.0 41 2.3 46.8 41 7.6 58.7
15.7 28.3 38.8 47.1 49.0 9.3 09
20.1 — — 51.5 53.3 11.0 —
22.3 — — 53.7 55.6 —
24.6 — — 55.9 57.6 —

18 4 5 1192 1712 4699 4900 2825
60
1 24 5 39 51.10 40 2.76 40 11.17 40 19.47 40 19.37 40 53.60
40 11.318 40 23.840 40 34.240 40 42.718 41 2.30 40 44.545 41 9.30 40 56.500
11.302 +5.40 23.824 -7.29 34.224 -14.77 42702 -23.29 44.529 -25.09 56.484 -37.49
40 16.60 -.16 40 16.29 -.17 40 19.48 -.23 40 19.32 -.22 40 19.29 -.21 40 18.987 -.13
-5.30 +7.53 -.11 +14.74 +23.38 +25.24 37.581
-2.17 -1.86 -2.46 -2.30 -2.27 -1.95
+ 5.36 40 14.37 - 7.58 14.39 - 14.79 16.76 - 23.31 16.89 - 25.09 16.96 - 37.50 16.91
- .16 - .17 - .22 - .22 - .21 - .11
- 2.17 +0.413 - 1.86 +0.723 - 2.46 - 2.30 - 2.27 - 1.95
+ 3.02 - 9.54 - 17.47 - 25.83 - 27.57 - 39.56
40 11.30 23 39.29 40 23.82 23 39.71 40 34.22 42 34.2 40 42.70 0.83 40 44.53 42 0.41 40 56.48 1.28
+2 4.52 +2 7.29 -16 13.37 -16 13.24 -16 13.77 -16 12.62
40 14.32 -.8 14.28 -1.9 40 16.75 -1.1 40 16.87 -1.0 40 16.96 -1.1 40 16.92 -1.1
16.903 -4.90 16.863 -6.80 -4.70 -5.70 -5.90 -6.80
+20 25 38.11 25 39.30 25 42.25 25 40.89 25 39.64 25 40.76

s
+20.22 +21.08 +23.07 +23.25 -19.58 +25.17 -24.76 +2.90
55 55 36- 35- 35- 40
-2.10 -2.33 -2.50 -2.58 -2.60 -2.73
3 13.9 3 12.4 4 43.9 4 47.0 0 38.9 4 43.2 0 45.0 0 12.0
27.9 28.3 0.9 5.7 58.8 4.1 5.5 29.0
36.8 40.7 10.48 11.27 9.77 10.73 11.05 4.10
58 2′ ~~20″~~ 20.90 58 2 20.35 39 52.40 39 56.35 40 48.85 39 53.65 40 55.25 40 20.50

1.30578 1.32387 1.36305 1.36642 1.29181ₙ 1.40088 1.39376ₙ 0.46240
1.38356 1.40035 1.46035 1.46372 1.38911ₙ 1.49818 1.49105ₙ 0.55970
+24.19 +25.13 +28.86 +29.09 -24.50 +31.49 -30.98 +3.63
58 45.69 58 45.48 40 21.26 40 26.44 40 24.35 40 25.14 40 24.27 40 24.13

+20° 24′ 5.76″ 24 2.87 42 27.09 42 22.91 24.00 42 23.21 42 24.08 24.22
3.26 23.45 23.64
+21 56 11 56 13 56 4 56 8 57 1 56 6 57 7
1.36530 1.36530 1.36520 1.36520 1.36560 1.36520 1.36560
-496 -157 -215 -1795 -881 -539
1.36034 1.36373 1.36305 1.34725 1.34765 1.35639 1.35679 1.35981 1.36021
-22.93 -23.11 -23.07 -22.25 -22.27 -22.72 -22.74 -22.90 ~~-22.92~~

-.04 -.04 -.05 -.05 -.06 -.60 -.06 -.36 -.04 -.07 -.50 -.06 0 -.04
.00 .00 -.54 -.54 -.09 -.74 -.13 -.04
- 22.97 - 23.16 - 23.67 - 22.85 - 22.40 - 23.53 - 22.93 - 22.94
23 ~~42.79~~ 39.25 23 39.71 42 3.42 0.06 1.60 59.68 1.15 1.28
25 42.3 44.2 45.2 46.2 46.4 47.3
+1 59.5 +2 4.5 -16 18.2 13.8 15.4 13.3 14.7 14.0
+1 59.5 4.5 -16 18.2 14.6 14.0 14.0
+2 4.42 25 41.53 + 7.16 -16 15.46 16.38 - 13.42 14.37 39.99 - 14.01 14.97 38.81 - 13.62 14.63
- .78 3.64 - .86 6.30 - .92 -1.55 - .95 41.53 - .96 40.28 - 1.01
- 4.90 -1.75 - 6.80 -3.65 - 4.70 - 5.70 - 5.90 - 6.80
+1 58.74 25 41.52 + 59.50 39.21 -16 21.08 25 42.34 - 20.87 40.76 - 20.87 39.54 - 21.43 39.85

H.

## 51 Cephei S. P.

| | 1874 P | N.A. | 1875 P | N.A. | To P. | To N.A. |
|---|---|---|---|---|---|---|
| | $^{h}$ $^{m}$ $^{s}$ | | $^{m}$ $^{s}$ | | | |
| α | 40 45.353 | 44.182 | 41 15.628 | 14.430 | corr α = −.111 | +0.06 |
| δ | +14′ 7″.07 | 8.04 | +14′ 3″.42 | 4.43 | corr δ = +1.50″ | |
| dα/dt | +30.285 | 45 51.96 | +30.264 | 55.57 | tang δ = −20.69 | |
| dδ/dt | −3.898 | | −3.671 | | I = 42.67 | |
| δ | 87° 13′ 59″ | | 87 13 56 | | K = +.317 | |
| l sin δ | 9.99949 | | | | | |
| l cos δ | 8.68357 71 n | | 8.68864 79 n | | | |
| l C′ | .10600 | | .12552 | | | |
| l C | 8.78967 n | | 8.80919 n 31 | | | |
| | 8.78827 Er. | | | | | |
| l C″ | ~~8.80914 n~~ | 8.683 8.737 5.420 | | | | |

| h | m | sec. |
|---|---|---|
| 18 | 41 | 14 |
| 92 | 46 | |
| ζ − 50° | 23′ | |

ζ sin ζ = −.77

x 1874

| Aug. 10 | Aug. 20 (lch. f.) | Aug. 22 | Sept. 6 | Sept. 12 |
|---|---|---|---|---|
| −.44 | | X .42 | X −.40 | X 1874 −.45 −.10 |
| −.427 | | ~~−.430~~ −.433 | −.398 | −.475 |

38 48.0 39 1 7 — 41 3.0 — 39 18.5 38 53.7 — 40 57.3
39 11.0 — 40.3
39 30.4 — 40 1 8
53.5 — 22.8
40 14.2 — 45.0 — 40 52.4 52.4
35.6 — 40 28.0 28.0 — 41 5.8 — 41 12.9 16
58.6 40 47.3 — 50.0 87 — 28.5 41 35.2 — 33.6 10 42 2 6
41 19.1 — 41 10.2 76 — 50.0 — 35.0 11
37.3 — 32.8 89 — 42 11.5 — 42 16.5 13
55.1 99

3077 — 2242
180 — 180
1277 — 4042
40 14.189 — 40 44.911

14.506 39 1.70 — 40 28.62 41 3.00 — 45.228 38 53.70 — 51.48 40 57.30
40 ~~14.83~~ 40 47.30 — 40 28.94 — ~~50.39~~ 41 36.20 — 40 51.80 42 2.60
40 36.26 +15.94 — 40 43.19 +5.40 — 50.39 −1.94 — 53.34 −7.30
−23.43 75 +9.10 — −14.25 +8.69 — −5.16 +8.28 — −1.54 +9.31
−23.49 81 — −14.31 — −6.10 — −1.60 +2.07
+5.92 — +0.99 — −6.21 — −9.16

+ 16.88 40 45.47 — + 5.35 44.02 — − 1.98 45.36 — − 7.51 ~~48.00~~ 46.72
+ 8.83 — + 8.96 — + 8.23 — + 9.83 672
+ 5.92 ~~+36.205~~ — + 0.99 ~~+31.275~~ — − 6.21 ~~+24.075~~ — − 9.16 ~~+21.125~~
+ 30.63 +36.17 — + 15.30 +31.24 — + 0.04 +24.04 — − 6.84 +21.09

40 14.51 43 49.88 — 40 28.94 51.98 — 40. 45.23 55.92 — 40. 51.80 52.44
+2 5.13 — +2 4.52 — +2 4.40 — +2 7.29
40 45.14 + 1.7 — 40 44.24 + 1.8 — 40 45.27 + 1.8 — 40 44.96 + 1.9
41 ~~15.425~~ − 4.90 — ~~14.525~~ − 7.50 — ~~15.555~~ − 10.00 — ~~15.245~~ − 10.50
15.39 45 51.81 — 14.49 45 50.80 — 15.52 45 52.12 — 15.21 45 51.13
+92

+72.49 − 33.11 — − 34.38 — +111.21 − 50.29 — − 5.82 − 70.80
40 40 — 35 — 40 — 35
−1.66 −2.08 — −2.10 — −2.28 — −2.33

0 5.4 0 0.2 0 59.8 4 53.6 4 57.8 — 0 2.0 4 52.5 4 59.0 4 56.1
13.5 8.4 9.2 2.8 8.0 — 10.7 1.7 9.9 6.1
189 86 1280 1164 1258 — 127 1142 1289 1222
40 8′ 9.45 40 8 4.30 41 + 4.00 39 4 58.20 40 5 2.90 — 40 8 6.35 39 4 57.10 40 5 4.45 ~~40~~ 1.10

1.86028 1.51996 n — 1.53631 n — 2.04610 1.70148 n — 0.76492 n 1.85003 n
0.64995 n 0.50963 n — 0.32602 — 0.83577 n 0.49115 n — 9.55269 0.63830
−4.47 +2.04 — +2.12 — −6.85 +3.10 — +0.36 +4.35
40 4.98 40 2.34 — 40 5.02 — 39 59.50 40 0.20 — 40 4.81 40 5.45

17 ~~16.63~~ 17.99 — 43.33 — 17 ~~11.15~~ ~~11.85~~ — 43.54 42.50
42 43.38 42.01 — 48.86 48.15 — 43.22
42.69 — 48.50
−50 21 38 22 3 — 22 3 22 6
1.84140 n 1.84140 n — 1.84140 n 1.84140 n
−1464 — −492 — −1359 — −152
1.82676 1.82676 — 1.83648 1.83648 — 1.82781 1.82781 — 1.83988 1.83988
+67.11 +67.11 — +68.62 +68.62 — +67.27 +67.27 — +69.16 +69.16

+ .14 +.08 + .03 — + .03 +.03 — + .32 — + .07 +.14 — + .04 +.06 + .13
.00 .00 — .00 — .00 −.10 — .00 .00
+67.25 +67.14 — +68.65 — +67.59 +67.24 — + 69.16 +69.29
43 50.62 49.15 — 51.98 — 43 56.44 55.39 — 52.70 52.19
44 3.1 — 0.5 — 13 58.0 — 57.6
45 56.9 — 59.5 — 46 2.0 — 2.5
+2 6.3 7.8 — 7.6 — +2 5.6 6.6 — 9.8 10.3
+2 7.0 45 52.20 — 7.6 — 6.1 52.62 — 10.0 51.17
6.5 58.73 — 7.1 6.05 — 5.6 51.57 — 9.5 8.99 50.66
+2 5.03 − 1.78 1.28 6.48 +4.89 — +4.42 ~~3.85~~ +3.88 — +4.41 6.18 6.38 — +7.16 −6.88
+ 1.45 45 51.46 — + 1.63 50.53 — + 1.77 52.10 — + 1.81 50.92
− 4.90 55

1874 Use these.

N. A. $\frac{d\alpha}{dt}$ $\frac{d\alpha}{dt}$

1874 +30.257 = +30.246
75 +30.236

$\frac{d\delta}{dt}$ $\frac{d\delta}{dt}$

1874 −3.59 = −3.62
75 −3.64

1875

−.68 Aug 25 | −.62 Aug 26 | −.55 Aug 28 | −.57 Aug 29 | −.62 Sept 1 | −.60 Sept 4

−.660 | −.597 | −.570 | −.574 | −.636 | −.610

40 40 50.0 41 41 9.7 39 37 47.2 39 39 40.9 40 38 10.0 40 37 17.2
52.6 57.4 39 58.4 59.4 2.2 7.0
13.9 40 19.5 40 19.1 23.0 28.3
35.0 41.0 41.6 46.2 50.6
56.7 22.12 0.9 41 3.0 41 3.4 41 7.0 41 12.9 40 13.0
41 17.4 41 21.3 30 23.0 42 28.9 24.5 23.8 28.8 33.9
39.9 58.0 07 42.0 44.7 47.4 48.4 40 27.8 55.0
42 0.6 42 21 4.7 42 7.0 42 8.2 42 9.4 42 16.5
22.9 17 25.6 29.7 29.2 31.6 38.0
44.0 19 46.2 52.0 51.3 54.4 58.7

2830 2788 2834 2510 3009
1630 60 60

18.111 ~~40 50.00~~ 21.78 41 9.70 21.88 37 47.20 22.34 39 40.90 38 10.00 37 17.20
41 18.43 41 39.65 22.10 42 28.90 41 24.311 37 58.40 41 24.822 41 27.889 40 27.80 41 33.433 40 13.00
41 ~~18.11~~ 41 ~~18.63~~ ~~14.67~~ 24.628 25.139 28.206 33.750
18.11 −14.18 18.63 −14.77 19.67 −16.21 20.16 −17.13 21.52 −19.62 22.82 −22.23
+0.32 +14.07 +3.47 +12.83 +4.96 +11.38 +4.98 +11.79 6.69 +12.83 +10.93 +12.41
+0.26 +3.41 +4.90 +4.92 +6.63 +10.87
−3.68 −4.20 −5.24 −5.73 −7.09 −8.39
−14.21 41 14.64 −14.79 15.96 −16.22 14.56 −17.16 14.07 −19.66 14.33 −22.25 15.54
+13.65 +12.35 +11.79 +11.88 +13.16 +12.62
−3.68 −4.20 −5.24 −5.73 −7.09 −8.39
−4.24 −6.64 −9.67 −11.01 −13.59 −18.02
41 18.43 2 13.83 41 22.10 15.06 41 24.63 15.62 41 25.14 15.58 41 28.21 13.22 41 33.75 16.90
−16 15.72 −16 15.37 −16 14.99 −16 14.55 −16 13.20 −16 14.27
41 14.19 + 2.1 41 15.46 + 2.2 41 14.96 + 2.1 41 14.13 + 2.2 41 14.62 + 2.1 41 15.73 + 2.0
− 7.40 − 7.60 − 7.90 − 8.20 − 8.30 − 9.00
115 62.81 45 54.29 45 54.83 45 55.03 45 53.82 45 55.63

+28.11 −21.54 +12.08 −67.12 +217.11 +85.91 +103.92 +197.89 +60.09 +256.23 +80.43
20 20 20 20 20 20

−2.49 −2.50 −2.51 −2.52 −2.54 −2.57
1 41.1 1 30.0 1 31.3 1 26.9 1 44.9 1 35.7 1 47.6 1 35.0 1 45.1 1 34.9 1 42.0 1 29.8
3.9 54.5 54.7 49.1 6.6 57.4 16.9 57.9 8.7 58.4 6.1 54.7
10.53 84.5 86.0 76.0 111.5 93.1 118.85 92.9 113.8 93.3 108.1 84.5
21 ~~32.65~~ 21 42.25 21 43.00 21 38.00 21 55.75 21 46.55 21 ~~59.30~~ 59.25 21 46.45 21 56.90 21 46.65 21 54.05 21 42.25

1.44886 1.33325n 1.08207 1.82685n 2.33666 1.93404 2.01662 2.29626 1.77880 2.40860 1.90542
0.25817n 0.14256 9.89138n 0.63616 1.11458n 0.74323n 0.82581n 1.10545n 0.58799 1.21779n 0.71461n
−1.81 +1.39 −0.78 +4.33 −13.99 −3.54 −6.70 6.70 −12.75 −3.87 −16.51 −5.18
21 50.84 21 43.64 21 42.22 21 42.33 21 41.76 21 41.01 21 ~~53.55~~ 39.75 21 44.15 21 43.88 21 37.54 21 37.07

41 4.81 6.13 6.07 6.02 58 53.41 6.55 6.96 52.66 7.34 59 ~~4.20~~ 8.60 58 ~~55.80~~ 4.29 4.83 54.53 5.47 58 ~~49.19~~ 10.81 ~~10.54~~ 11.04 ~~48.72~~ 11.28

21 55 22 6 21 51 22 1

1.84140n 1.84140n

−71 −210 −779 −1581 −673 −2428
1.84069 1.84069 1.83930 1.83930 1.83361 1.83361 1.82559 1.82559 1.83467 1.83467 1.81712 1.81712
+69.29 +69.29 +69.07 +69.07 +68.17 +68.17 +66.92 +66.92 +68.34 +68.34 +65.63 +65.63

+3 −.17 +2 +.1 −.09 +18 +1.23 +.50 +.19 +28 +.39 +.04 +.06 .10 +.66 +.22 +18
−21 −19 −19 −18 −21 −20 −22 −.20 −21 −20 −21 −19
+69.11 +69.12 +68.89 +69.07 +69.15 +68.16 +66.98 +68.52 +68.24 +66.08 +65.62
42 13.83 15.02 15.09 15.74 15.50 15.58 12.72 13.71 16.89 16.90
13 ~~42.0~~ 57.0 ~~41.9~~ 56.8 ~~41.5~~ 56.5 ~~41.4~~ 56.2 ~~40.8~~ 57.1 ~~40.2~~ 55.4
46 ~~18.0~~ 3.46 13.0 ~~18.1~~ 3.2 ~~18.0~~ 3.5 ~~18.6~~ 3.8 19.23.9 ~~19.8~~ 4.6
−16 ~~24.0~~ −16 10.8 11.2 11.9 12.2 12.0 11.8 9.8 9.8 12.8 12.3
−16 10.3 10.7 11.4 11.7 11.5 11.3 8.3 9.3 11.8 11.5
−16 10.3 11.0 53.91 11.6 54.66 11.3 8.1 53.24 11.8 55.51
−16 15.58 16 18.64 10.8 11.5 13.51 53.98 12.1 13.18 54.42 14.8 12.85 9.3 11.18 54.23 12.2 12.38 55.52
+ 1.94 ∓ 15.46 ∓ 15.13 − 14.81 − 13.16 ∓ 14.38 55.51
− 7.40 53.79 1.85 53.95 1.95 54.54 1.96 54.59 1.98 53.73 2.00

| 1874.0 α | δ | 1875.0 α | δ |
|---|---|---|---|
| 45.14 | | 14.19 | |
| 44.24 | | 15.46 | |
| 45.27 | | 14.96 | |
| 44.96 | | 14.13 | |
| | | 14.62 | |
| | | 15.73 | |
| | | 14.43 | |
| | | 14.42 | |
| 44.903 | | 14.743 | |
| 45.353 | 7.07 | 15.628 | 3.42 |
| −.450 | | −.885 | |

Sept-8 Sept-13 Sept-23 Sept-25 −35

−468 −306

40 39 56.2 40 38 10.8 41 41 45.9
215 385
443 41 2.8
41 5.2 19.9
264 41.4 43.649
484 41 37.0 42 1.8 42 5.0 50
42 8.8 23.6 26.4 51 42 51.3
31.0 45.1 47.8 52
530 43 7.0 43 7.5 36
43 13.8 28.8 30.6 54

2994 2095
12.0 18.0
4194 39 56.20 295 38 10.80 41 45.90
41 46.600 41 37.00 42 3.278 4.87 42 51.30
46.917 3.595 42 5.19
41 27.56 41 32.86 41 34.03 −37.50
+19.36 +30.73 +31.16 +7.24

− 29.04 − 37.50 − 19.60
+ 9.68 + 6.33 15.33
− 13.13 − 18.43 − 19.60 ~~[illegible]~~
− 32.49 − 50.77
41 46.92 42 3.59 42 5.19
~~59~~ 2 17.93
41 14.43 41 14.42 −16 12.62
+ 1.9
− 11.20
~~58~~ 56.01
45

+ 110.40 + 9.60 + 232.48 + 18.97 −46.43
20 20 20 20
−261 −265 −2.73
1 42.8 1 25.9 1 35.9 1 29.4 1 45.2 1 28.3 1 25.3
6.9 48.3 56.4 51.1 6.2 50.4 47.6
10.97 74.2 92.3 80.5 11.14 78.7 72.9
21 54.85 21 37.10 21 46.15 21 40.25 21 55.75 21 39.35 21 36.45

2.04297 0.98227 2.36628 1.27807 1.66680n
0.85216n 9.79146n 1.17547n 0.08738n 0.47611
−7.11 −0.62 −14.08 −1.22 +2.99
21 39.04 21 39.63 21 40.67 21 38.13 21 39.44

~~58 50.69 58 51.28 58 52.32~~ 10.23 8.51
1 9.31 8.72 7.68 9.56
9.01 22 9 22 12
1.84140n 1.84150n
−298 −528
1.83842 1.83842 1.83612 1.83622
+ 68.93 + 68.93 + 68.57 +68.57

+32 −.09 + 1 + 2 −.20 + 6
−27 −25 −.28 −25 −24
+ 68.88 + ~~68.44~~ 68.69 − 68.80 34 − 68.75 39
59 18.23 17.41 18.56 17.40 3
~~341~~ 54.2 ~~310~~ 53.2 ~~379~~ 53.2
~~20.1~~ 5.8 ~~22.0~~ 6.8 6.8
−16 12.4 11.6 11.8 10.5
−16 12.0 54.55 11.1 55.74
−16 12.5 53.75 11.6 54.58
−16 13.77 − 15.50 13.46 − 13.62 17.52
+ 2.04 54.15 + 2.10 55.21
10.20 11.20

1874 1875

B.A.C. 6419.

h m sec
18 43 54

+52° 51'

Z = −10° 28'

Z sin Z = −18

| | 1874 | 1875 |
|---|---|---|
| α | | 43 55.43 |
| δ | | 51 4.33 |
| dα/dt | | +1.339 |
| dδ/dt | | +3.76 |
| l sin δ | 9.90149 | |
| l cos δ | 9.78097 | 9.78097 |
| l C | .10600 | .12552 |
| l C' | 9.88697 | 9.90649 |
| l C" | 9.88557 | |

cont =
cont =

lang δ = +1.32

τ = 3.42 s

k = −.025 s

| | 1874 Aug. 10 | | Aug. 20 | | Aug. 22 | | Sept 12 | | 1875 Aug 26 | | Sept 8 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | −.427 | | −.475 | | ~~−.430~~ −.433 | | −.475 | | −.597 | | −.542 | |
| | 43 20.5 | 43 2 9 | 43 28.8 | 43 14 3 | 43 30.7 | 43 22.8 | 43 43.2 | 43 23 1 | 43 52.7 | 43 40.3 | 44 — | 43 58 0 |
| | 23.8 | 6 4 | 32.2 | 18 1 | 34.3 | 26.8 | 46.6 | 26 4 | 56.0 | 43.8 | — | 0.3 |
| | 27.3 | 9.5 | 35.7 | 20.6 | 37.6 | 28.8 | 50.1 | 28.2 | 59.5 | 46.5 | — | 3.1 |
| | 34.2 | | 42.5 | | 44.4 | | 56.5 | | 44 6.3 | | 16.8 | |
| | 37.6 | | 46 0 | | 47.9 | | 0 1 | | 9.6 | | 20.3 | |
| | 41 0 | | 49.4 | | 51.4 | | 3 5 | | 12.9 | | 23.6 | |
| | 44.5 | 43 44 0 | 52.9 | 43 53.5 | 54.8 | 44 10.3 | 7.1 | 43 55 0 | 16.4 | 44 36.8 | 27.0 | 44 40.8 |
| | 48.0 | 45 0 | 56.2 | 56.8 | 58.1 | 14.8 | 10.5 | 59 0 | 20.0 | 40.3 | 30.5 | |
| | 54.7 | | 3 0 | 59.5 | 5.0 | 17.4 | 17.1 | 1 7 | 26.6 | 42.1 | — | |
| | 58 0 | | 6 4 | | 8.4 | | 20.7 | | 30.0 | | — | |
| | 1 5 | | 9 8 | | 11.9 | | 24.3 | | 33.5 | | — | |
| | 3911 | | 3629 | | 3845 | | 2797 | | 3235 | | 1182 | |
| | 60 | | 180 | | 180 | | 240 | | 180 | | | |
| | 451 1 | 43 6.26 | 5429 | 43 17.66 | 5645 | 43 25.86 | 397 | 43 25.90 | 1435 | 43 43.53 | | 44 0.47 |
| | 43 41.009 | 43 44.50 | 43 49.355 | 43 56.60 | 43 51.318 | 44 14.16 | 44 3.609 | 43 58.56 | 44 13.045 | 44 39.93 | 44 23.640 | 44 40.80 |
| | 40.984 | | 49.330 | | 51.293 | | 3.584 | | 13.020 | | 23.615 | |
| | + 16.88 | | + 7.42 | | + 5.35 | | − 7.51 | | − 14.79 | | − 25.43 | |
| | − .56 | | − .63 | | − .57 | | − .63 | | − .79 | | − .75 | |
| | − 2.26 | −0.921 | − 2.03 | −0.694 | − 1.98 | −0.641 | − 1.36 | −0.021 | − 2.01 | | − 1.62 | |
| | ± 13.06 | | + 4.76 | | + 2.80 | | − 9.56 | | − 17.59 | | − 28.10 | |
| | 43 40.98 | | 43 49.33 | | 43 51.29 | | 44 3.58 | | 44 13.02 | | 44 23.61 | |
| | 43 54.04 | | 43 54.09 | | 43 54.09 | | 43 54.08 | | 43 55.43 | | 43 55.57 | |
| | 55.379 | | 55.429 | | 55.429 | | 54.075 | 55.419 | | | | |
| | s | | | | | | | | | | | |
| | 30 +34.75 | − 3.49 | 30 +31.69 | − 7.25 | 30 +25.46 | − 22.84 | 30 +37.71 | + 5.05 | 10 + 29.51 | − 26.89 | 10 + 23.17 | − 17.16 |
| | −1.86 | | −2.08 | | −2.10 | | −2.33 | | −2.50 | | −2.61 | |
| | 3 23.2 | 3 52.7 | 3 22.7 | 3 53.0 | 3 28.3 | 4 5.1 | 3 14.6 | 3 41.7 | 4 55.5 | 0 40.8 | 4 58.4 | 0 30.1 |
| | 35.9 | 4.8 | 34.9 | 5.8 | 41.3 | 17.9 | 28.8 | 54.2 | 16.0 | 1.5 | 20.7 | 57.0 |
| | 59 1 | 117 5 | 57 6 | 118 8 | 69 6 | 23 0 | 43 4 | 95 9 | 131 5 | 102 3 | 139 1 | 81 1 |
| | 8 33 29.55 | 33 3 58.75 | 33 2 28.80 | 33 3 59.40 | 33 2 34.80 | 34 4 11.50 | 33 3 21.70 | 33 3 47.95 | 15 5.75 | 15 51.15 | 15 9.55 | 15 40.55 |
| | 1.54095 | 0.54283 n | 1.50092 | 0.86034 n | 1.40586 | 1.35870 n | 1.57646 | 0.70329 | 1.46997 | 1.42959 n | 1.36493 | 1.23452 n |
| | 1.42792 | 0.42980 n | 1.38789 | 0.74731 n | 1.29283 | 1.24567 n | 1.46263 | 0.58886 | 1.37646 | 1.33608 n | 1.27142 | 1.14101 n |
| | +26.79 | −2.69 | +24.43 | −5.59 | +19.63 | −17.61 | +28.98 | +3.88 | +23.79 | −21.68 | +18.68 | −13.84 |
| | 33 56.34 | 33 56.06 | 33 52.23 | 33 53.81 | 33 54.43 | 33 53.59 | 33 50.68 | 33 51.83 | 15 29.54 | 15 29.47 | 15 28.23 | 15 26.71 |
| +52° | 48' 52.01" | 52.29 | 48 56.12 | 54.54 | 48 53.92 | 54.46 | 48 57.67 | 56.52 | 7 18.81 | 18.88 | 7 20.12 | 21.64 |
| | 52.15 | | 55.33 | | 54.19 | | 57.09 | | 18.84 | | 20.88 | |
| −10 | 28 38 | 28 8 | | | | | 28 45 | 28 19 | 28 42 | 27 57 | | |
| | 1.02730 n | 1.02690 n | | | | | 1.02740 n | 1.02700 n | 1.02740 n | 1.02680 n | | |
| | −1459 | | −1991 | | −484 | | −143 | | −201 | | −1175 | |
| | 1.01271 | 1.01231 | 1.00739 | 1.00699 | 1.02246 | 1.02206 | 1.02599 | 1.02557 | 1.02539 | 1.02479 | 1.01565 | 1.01505 |
| | +10.30 | +10.29 | +10.17 | +10.16 | +10.53 | +10.52 | +10.62 | +10.60 | +10.60 | +10.59 | +10.37 | +10.35 |
| | −.31 −.15 | − 0 | −.26 −.13 | − 1 | −.17 −.15 | −.13 | −.36 −.18 | − 1 | −.23 −.25 | −.18 | −.14 −.17 | −.08 |
| | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | −.01 | −.09 | −.03 | −.10 |
| | + 9.99 | +10.29 | + 9.91 | +10.15 | +10.36 | +10.39 | +10.26 | +10.59 | +10.36 | +10.32 | +10.20 | +10.17 |
| +52 | 49 2.00 | 2.58 | 49 6.03 | 4.69 | 49 4.28 | 9.85 | 49 7.93 | 7.11 | 7 29.17 | 29.20 | 7 30.32 | 31.81 |
| + 2 | 5.03 | 5.36 | + 4.89 | 5.26 | +4.42 | 4.79 | +7.16 | 7.57 | −16 15.46 | 15.02 | −13.77 | 13.31 |
| + | .33 | − 2.69 | + .37 | − 4.98 | + .37 | − 5.39 | + .41 | − 8.66 | + .44 | | + .46 | |
| | −6.45 | | − 8.74 | | − 9.15 | | −12.42 | | − 9.33 | | −11.39 | |
| + 1 | ~~58.88~~ 91 | 51 ~~0.88~~ 91 | + 56.52 | 2.55 | + 55.64 | 59.92 | + 55.15 | 3.08 | −16 24.32 | 4.85 | − 24.70 | 5.62 |
| | | 1.49 | | 1.21 | | 0.49 | | 2.26 | | 4.88 | | 7.11 |
| | | 51 1.76 | | 1.88 | | 0.70 | | 2.67 | | 51 4.87 | | 6.36 |

| Sept-19 | | Sept-23 | | Sept-25 | |
|---|---|---|---|---|---|
| -468 | | | | -306 | |
| 44 6,0 | 43 55,7 | 44 13,5 | 44 11,8 | 44 14,1 | 43 55,7 |
| 9,7 | 58,3 | 16,9 | 14,7 | 17,5 | 59,9 |
| 12,9 | 0,9 | 20,1 | 16,0 | 20,9 | 2,2 |
| 19,8 | | 26,9 | | 27,8 | |
| 23,2 | | 30,2 | | 31,0 | |
| 26,6 | | 33,6 | | 34,6 | |
| 29,9 | 44 49,4 | 37,1 | | 38,0 | 45 0,9 |
| 33,4 | 52,0 | 40,6 | | 41,4 | |
| 40,3 | 54,9 | 47,3 | | 48,3 | |
| 43,6 | | 50,6 | | 51,7 | |
| 47,2 | | 54,1 | | 55,0 | |
| 2926 | | 3709 | | 3803 | |
| | 43 58.30 | | 44 14.17 | | 43 59.27 |
| 44 26.600 | 44 52.10 | 44 33.718 | | 44 34.573 | 45 0.90 |
| 26.575 | | 33.693 | | 34.548 | |
| − 29.04 | | | | − 37.50 | |
| − .62 | | | | − .40 | |
| − 1.46 | | − 1.12 | | − 1.05 | |
| − 31.12 | | | | − 38.95 | |
| 44 26.57 | | | | 44 34.55 | |
| 43 55.45 | | | | 43 55.60 | |
| | | | | 65.498 | |

| | | | | | |
|---|---|---|---|---|---|
| +28.30 | −25.50 | +19.55 | | +35.30 | −26.33 |
| 10 | | 15 | | 10 | |
| −2.65 | | | | −273 | |
| 4 55,0 | 0 36,3 | 0 2,3 | | 4 48,9 | 0 38,7 |
| 13,1 | 56,0 | 19,6 | | 9,2 | 57,8 |
| 12,81 | 923 | 219 | | 1181 | 965 |
| 15 4.05 | 15 46.15 | 15 10.95 | | 14 59.05 | 15 48.25 |
| 1.45179 | 1.40654n | 1.29115 | | 1.54777 | 1.42045n |
| 1.35828 | 1.31303n | 1.19764 | | 1.45426 | 1.32694n |
| +22.82 | −20.56 | +15.76 | | +28.46 | −21.28 |
| 15 26.87 | 15 25.59 | 15 26.71 | | 15 27.57 | 15 27.03 |
| 7 2148 | 2276 | 7 21,64 | | 7 2084 | 21,33 |
| 22.12 | | | | 21.08 | |
| | | | | 28 49 | 28 0 |
| | | | | 1.02740n | 1.02680n |
| −293 | | | | −507 | |
| 1.02447 | 1.02387 | | | 1.02233 | 1.02173 |
| +10.38 | +10.57 | | | +10.53 | +10.51 |
| −.21 −.25 | −.17 | −.10 | | −.32 −.68 | −.18 |
| −.01 | −.12 | −.03 | | −.75 | −.12 |
| +10.36 | +10.28 | | | +9.46 | +10.21 |
| 7 3184 | 3364 | | | 7 3030 | 3154 |
| −16 15.50 | 15.03 | | | − 13.62 | 13.13 |
| + .44 | | | | + 49 | |
| −11.97 | | −12.79 | | −12.89 | |
| −16 27.00 | 4.84 | | | − 26.02 | 4.28 |
| | 6.04 | | | | 5.52 |
| | 51 5.44 | | | | 4.90 |

76

β Lyrae 1874
h m sec. α 25.635
18 45 28 δ +13.336
+33° 13' dα/dt +2.211
dδ/dt +3.940
φ = + 9° 10 l sin δ 9.73863
ζ sin ζ = 4.16
l cos δ 9.92252
l C .10600
l C' " 0.02852

l C" 0.02712

| 1874 | | | | | | |
|---|---|---|---|---|---|---|
| Aug. | 8 | 45 | 27.90 | | 12' 68.0 | + 1.0 |
| | 13 | | 27.84 | -.06 | 69.0 | 1.0 |
| | 18 | | 27.78 | .06 | 70.0 | .8 |
| | 23 | | 27.71 | .07 | 70.8 | .8 |
| | 28 | | 27.63 | .08 | 71.6 | .8 |
| Sept. | 2 | | 27.54 | .09 | 72.2 | .6 |
| | 7 | | 27.45 | .09 | 72.8 | .6 |
| | 12 | | 27.34 | .11 | 73.3 | .5 |
| | 17 | | 27.23 | .11 | 73.7 | .4 |

cor α = —
cor δ = -0.60"
tang δ = +1.65 1.20
I = 2.47 s
K = -.019 s

| × 1874 Aug. 10 -44 | | × Aug. 20 -46 | | × Aug. 22 -42 | | × Sept. 10 -45 | | × Sept. 12 -45 -.10 | | × 1874 Sept. 14 -38 -10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -.427 | | -.475 | | ~~-.430~~ -.433 | | -.463 | | -.475 | | -.465 | |
| 44 57.4 | 44 45.0 | 45 5.9 | 45 13.4 | 45 7.8 | 45 4.9 | 45 18.4 | 45 12.6 | 45 20.3 | 45 13.3 | 45 21.0 | 45 9.6 |
| 6.0 | 47.3 | 8.3 | 15.2 | 10.3 | 7.1 | 20.9 | 14.6 | 22.8 | 15.8 | 23.5 | 12.1 |
| 2.5 | 49.2 | 10.9 | 17.3 | 12.7 | 9.2 | 23.3 | 16.4 | 25.2 | 18.2 | 26.0 | 13.9 |
| 7.3 | | 15.5 | | 17.7 | | 28.4 | | 30.2 | | 30.9 | |
| 9.8 | | 18.2 | | 20.1 | | 30.8 | | 32.8 | | 33.3 | |
| 12.3 | | 20.6 | | 22.6 | | 33.3 | | 35.2 | | 35.9 | |
| 14.7 | 45 26.0 | 23.2 | 46 3.8 | 25.0 | 45 47.4 | 35.8 | 45 38.2 | 37.5 | 45 36.8 | 38.3 | 45 41.9 |
| 17.3 | 28.2 | 25.6 | 6.0 | 27.6 | 50.6 | 38.2 | 0.4 | 40.0 | | 40.8 | 44.4 |
| 22.3 | 30.3 | 30.5 | 8.3 | 32.6 | 53.0 | 43.1 | 2.2 | 44.9 | | 45.7 | 46.0 |
| 24.8 | | 33.0 | | 35.0 | | 45.5 | | 47.5 | | 48.0 | |
| 27.2 | | 35.5 | | 37.5 | | 48.0 | | 50.0 | | 50.6 | |
| 19.56<br>60 | | 22.72 | | 24.89 | | 36.57 | | 6<br>38.84 | | 39.40 | |
| 13.56 | 44 47.16 | | 45 16.30 | | 45 7.06 | | 45 14.53 | | 45 16.76 | | 45 11.86 |
| 45 12.327 | 45 28.16 | 45 20.655 | 46 6.08 | 45 22.627 | 45 50.33 | 45 33.245 | 46 0.26 | 45 35.309 | 45 36.80 | 45 35.818 | 45 44.26 |
| 12.308 | +15.94 | 20.636 | +7.47 | 22.608 | +5.40 | 33.226 | -5.54 | 35.127<br>35.108 | -7.30 | 35.799 | -8.05 |
| 45 27.887 | -29 | 45 27.75 | -30 | 45 27.72 | -27 | 45 27.398 | -29 | 45 27.383 | -29 | 45 27.329 | -25 |
| -15.576 | | -7.11 | | -5.11 | | +5.845 | | +7.758 | -.12 | +8.49 61 | ÷12 |
| | -223 | | -211 | | -208 | | -174 | | -169 | | -165 |
| + 15.88 | 45 25.73 | + 7.42 | 25.70 | + 5.35 | 25.66 | - 5.59 | 25.66 | - 7.51 | 25.71 | - 8.90 20 | 25.73 |
| - .28 | | - .31 | | - .28 | | - .30 | | - .31 | | - .30 | |
| - 2.23 | -0.019 | - 2.11 | +0.101 | - 2.08 | +0.131 | - 1.74 | +0.471 | - 1.69 | +0.521 | - 1.65 | +0.561 |
| + 13.37 | | + 5.00 | | + 2.99 | | - 7.63 | | - 9.51 | | - 10.15 | |
| 45 12.31 | 11 3.31 | 45 20.64 | 11 4.47 | 45 22.61 | 11 5.76 | 45 33.23 | 11 6.17 | 45 35.11 | 11 5.19 | 45 35.80 | 11 5.85 |
| | +2 5.13 | | +2 4.98 | | +2 4.52 | | +2 6.85 | | +2 7.29 | | +2 6.48 |
| 45 25.68 | -.3 | 45 25.64 | -.3 | 45 25.60 | -.3 | 45 25.60 | -.4 | 45 25.60 | -.4 | 45 25.65 | -.4 |
| 27.891 | -500 | 27.851 | -700 | 27.811 | -730 | 27.811 | -960 | 27.811 | -990 | 27.861 | -1010 |
| +33 | -13 3.14 | | 13 2.15 | | 13 2.67 | | 13 3.02 | | 13 2.18 | | 13 1.83 |
| s<br>+ 25.17 | -15.83 | + 5.35 | -45.38 | +15.37 | -27.70 | +18.71 | -27.02 | +19.55 | -1.49 | +23.96 | -8.44 |
| 10 | | 10 | | 10 | | 10 | | 10 | | 10 | |
| -1.86 | | -2.08 | | -2.10 | | -2.31 | | -2.33 | | -2.34 | |
| 0 3.0 | 1 46.1 | 1 21.4 | 2 16.1 | 1 8.9 | 1 55.1 | 1 4.9 | 1 52.8 | 1 4.1 | 1 27.3 | 0 59.3 | 1 34.3 |
| 16.0 | 58.8 | 37.7 | 29.3 | 25.1 | 10.0 | 21.9 | 10.9 | 20.5 | 45.1 | 15.9 | 50.3 |
| 190 | 1049 | 591 | 454 | 340 | 1251 | 268 | 1237 | 246 | 724 | 1352 | 846 |
| δ 11 9.50 | 11× 52.45 | 11× 29.55 | 12 22.70 | 11× 17.00 | 12 2.55 | 11+ 13.40 | 12 1.85 | 11+ 12.30 | 11+ 36.20 | 11+ 7.60 | 11+ 42.30 |
| 1.40088 | 1.19948n | 0.72835 | 1.65686n | 1.19229 | 1.44248n | 1.27307 | 1.43169n | 1.29115 | 0.17319n | 1.37949 | 0.92634 |
| 1.42940 | 1.22800n | 0.75687 | 1.68538n | 1.22081 | 1.47100n | 1.30059 | 1.46021n | 1.31827 | 0.20031n | 1.40661 | 0.95346 |
| +26.88 | -16.91 | +5.71 | -48.46 | +16.63 | -29.58 | +19.98 | -28.85 | +20.81 | -1.59 | +25.50 | -8.98 |
| 11 36.38 | 11 35.59 | 11 35.26 | 11 34.24 | 11 33.63 | 11 32.97 | 11 33.38 | 11 33.00 | 11 33.11 | 11 34.61 | 11 33.10 | 11 33.32 |
| 12 11.97 | 11 12.81 | 11 13.09 | 14.11 | 11 14.72 | 15.38 | 11 14.97 | 15.35 | 11 15.24 | 13.74 | 11 15.25 | 15.03 |
| 12.39 | | 13.60 | | 15.05 | | 15.16 | | 14.49 | | 15.14 | |
| +9 9 2 | 9 45 | | | | | | | | | 9 1 | 9 35 |
| 0.96730 | 0.96790 | | | | | | | | | 0.96730 | 0.96780 |
| -1455 | | -1989 | | -477 | | -2049 | | -136 | | -359 | |
| 0.95275 | 0.95335 | 0.94741 | 0.94801 | 0.96253 | 0.96313 | 0.94681 | 0.94741 | 0.96594 | 0.96654 | 0.96371 | 0.96421 |
| -8.97 | -8.98 | -8.86 | -8.87 | -9.17 | -9.19 | -8.85 | -8.86 | -9.25 | -9.26 | -9.20 | -9.21 |
| -.15 -.10 | -.06 | - .1 -.26 | -.57 | -.06 -.12 | -.18 | -.08 -.13 | -.18 | -.08 -.04 | - 0 | -.14 -.08 | -.2 |
| .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| - 9.12 | - 9.04 | - 8.87 | - 9.38 | - 9.23 | - 9.37 | - 8.93 | - 9.04 | - 9.33 | - 9.26 | - 9.34 | - 9.23 |
| 12 2.85 | 11 3.77 | 4.22 | 4.73 | 5.49 | 6.01 | 6.04 | 6.31 | 5.91 | 4.48 | 5.91 | 5.80 |
| 13 8.4 | | 10.4 | | 10.7 | | 13.0 | | 13.3 | | 13.5 | |
| 12 5.6 +2 | 4.6 | 6.2 | 5.7 | 5.2 | 4.7 | 7.0 | 6.7 | 7.4 | 8.8 | 7.6 | 7.7 |
| +2 5.1 | | 5.9 | | 4.9 | | 6.8 | | 8.1 | | 7.6 | |
| +2 4.5 | 2.59 | 5.3 | 1.78 | 2.3 | 2.28 | 6.2 | 2.64 | 7.5 | 2.80 | 7.0 | 1.92 |
| +2 5.03 | 4.74 3.51 | + 4.89 | 4.56 2.29 | + 4.42 | 4.09 2.80 | + 6.56 | 6.20 2.91 | + 7.16 | 6.79 1.37 | + 6.48 | 6.11 1.81 |
| - .29 | -1.06 | - .33 | -3.06 | - .33 | -3.36 | - .36 | -5.66 | - .37 | -5.96 | - .37 | -6.16 |
| - 5.00 | 13 3.05 | - 7.00 | 2.03 | - 7.30 | 2.54 | - 9.60 | 2.77 | - 9.90 | 2.08 | - 10.10 | 1.86 |
| + | | | | | | | | | | + 56.01 | 5.80 |

1875.5
α 27.846
δ + 13 7.30
dα/dt + 2.211
dδ/dt + 3.944

log cos δ 9.92252
l φ .12552
l φ' 0.04804

| 1875 | m | s | | ' | " | |
|---|---|---|---|---|---|---|
| Aug 28 | 45 | 30.07 | | 12 | 74.9 | |
| Sept 2 | | 29.98 | −.09 | | 75.6 | +.7 |
| 7 | | 29.88 | .10 | | 76.2 | .6 |
| 12 | | 29.78 | .10 | | 76.7 | .5 |
| 17 | | 29.68 | .10 | | 77.1 | .4 |
| 22 | | 29.57 | .11 | | 77.4 | .3 |
| 28 | | 29.46 | .11 | | 77.6 | .2 |

| 1874.0 α | δ | 1875.0 α | δ |
|---|---|---|---|
| 25.68 | | 27.88 | |
| 64 | | 87 | |
| 60 | | 92 | |
| 60 | | | |
| 60 | | | |
| 65 | | | |
| 25.628 | | 27.890 | |
| .635 | 3.36 | .846 | 7.30 |
| −.007 | | +.044 | |

1875
−.62 + −.357 +
Aug 26 Sept 13 Sept 25
−.594 −.468 −.306

45 30.5 45 27.8 45 44.3 45 38.3 45 52.5 45 55.6
33.0 29.6 46.8 40.4 55.0 58.0
35.5 31.8 49.3 42.7 57.5 59.7
40.4 54.2 46 2.4
42.9 56.7 4.8
45.4 59.0 7.3
47.8 46 7.0 1.6 46 22.2 9.8 46 33.7
50.2 9.6 4.1 12.1 35.8
55.1 12.7 9.0 17.1 38.4
57.7 11.4 19.6
0.1 13.9 22.1

4386 3503 2602
60 300 180
4986 45 29.73 6503 45 40.47 802 45 57.787
45 45.327 46 9.77 45 59.118 46 22.20 46 7.291 46 35.97
45308 −14.77 59.099 7.272 −37.50
45 30.1×0 −40 45 29.7×4 45 29.5×0 −23
+15.2×1 +29.3×6 +37.7×7
−225 −165
− 14.49 27.89 − 29.04 − 37.50 27.89
− .39 − .30 − .20
− 2.25 − 1.89 − 1.65
− 17.43 − 31.23 − 39.35
45 45.31 29 30.37 45 59.10 32.27 46 7.27 29 31.40
−16 15.37 −16 12.62
45 27.88 −.5 45 27.87 −.5 45 27.92 −.5
−7.30 −9.50 −10.20
~~23~~ 13 7.20 ~~23~~ 13 8.08

+15.60 −24.44 +18.65 −23.08 + 9.52 −28.68
50 50 50
−2.50 −2.65 −2.73
2 41.5 3 25.9 2 36.9 3 23.2 2 47.7 3 30.9
07 44.8 54.0 41.9 4.7 48.2
10.22 7.07 9.09 6.41 11.24 7.91
52 51.10 53 35.35 52 45.45 53 32.05 52 56.20 53 39.55

1.19312 1.38810n 1.27068 1.36324 0.97864n 1.45758n
1.24116 1.43614n 1.31872 1.41128n 1.02668 1.50562n
+17.42 −27.30 +20.83 −25.78 +10.63 −32.04
53 8.52 53 8.05 53 6.28 53 6.27 53 6.83 53 7.51

29 39.83 40.30 29 42.07 42.08 29 41.52 40.84
40.06 42.07 41.58
9 3 9 47 9 8 9 51
0.96730 1.96790 0.96740 1.96800
−195 −289 −491
0.96535 1.96595 0.96441 1.96501 0.96249 0.96309
−9.23 −9.25 −9.21 −9.23 −9.17 −9.18

−.06 −.45 −.14 −.08 −.58 −.14 −.56 − 2 −.60 −.19 −.32
−.31 −.40 −.42 −.53 −.44 −.55
−9.60 −9.79 −9.71 −9.90 −9.63 −9.92
29 30.23 30.57 32.36 32.18 31.89 30.92
13 14.6 16.8 17.5
−16 15.6 15.9 15.6 15.4 14.4 13.4
15.7 15.5 13.9
−11 16.3 13 7.07 16.1 6.94 14.5 7.64
−16 15.46 15.86 7.35 −15.50 15.92 6.76 −13.62 14.05 6.67
− .40 − .42 − .43
− 7.30 13 7.21 − 9.50 6.85 − 10.20 7.15
−16 23.16 25.42 24.25

8    1874    1875    1875 N.A.    1874

o Sagittarii    α 47 27.116    47 30.80    30.839    cos α =

18h 47m 30sec.    δ 27 1.93    26 58.92    57.87    cos δ =

dα/dt +3.723    +3.720    +3.723

dδ/dt +4.06    +4.02    +4.07    tang δ = −.50

−26° 28′

ζ = ∓68° 51′    I = 2.30 s

ζ sin ζ = +.93    l sin δ 9.64902n    K = −.017 s

l cos δ 9.95192    9.95192

l C .10600    .12552

l C′ 0.05792    0.07744

l C″ 0.05652

|  |  | m s |  |  | ″ |  |
|---|---|---|---|---|---|---|
| Aug 8 | 47 | 30.11 |  | 27 | 7.2 |  |
| 13 |  | 30.08 | −.03 |  | 7.4 | +.2 |
| 18 |  | 30.05 | 3 |  | 7.6 | .2 |
| 23 |  | 30.00 | 5 |  | 7.8 | .2 |
| 28 |  | 29.95 | 5 |  | 8.1 | .3 |
| Sept 2 |  | 29.89 | 6 |  | 8.3 | .2 |
| 7 |  | 29.82 | 7 |  | 8.5 | .2 |
| 12 |  | 29.74 | 8 |  | 8.7 | .2 |
| 17 |  | 29.66 | 8 |  | 8.8 | .1 |

1874    1874    1875

Aug. 10 −.44    Aug. 22 −.42    Sept. 10 −.45    Sept. 13 −.41    Aug 26 −.62

−.424    ~~−.430~~ −.433    −.463    −.450    −.597

47 0.2  46 52.4  47 10.8  47 2.4  47 21.3  47 12.6  47 23.6  47    47 34.8  47 25.3
2.4  54.6  13.0  5.5  23.6  14.1  25.9    37.1  27.4
4.7  57.2  15.2  8.1  26.0  16.1  28.2    39.4  29.7
9.4  47  19.8  30.5  32.9    44.1
11.5  22.2  32.8  35.0    46.4
14.0  24.5  35.1  37.5    48.7
16.3  47 24.0  26.8  47 40.3  37.4  47 47.8  39.7  47 50.5    51.0  48 5.0
18.6  26.6  29.1  39.8  50.1  42.1  53.2    53.2  7.3
23.1  28.8  33.8  44.4  51.8  46.7  55.5    57.9  9.6
25.4  36.0  46.7  49.0    0.2
28.0  38.3  49.1  51.3    2.6

15.36  46 54.73    26.95  47 5.33    38.67  47 14.26    41.19    53.54  47 27.47
47 13.964  47 26.46    47 24.500  47 40.30    47 35.155  47 49.90    47 37.445  47 53.06    47 48.673  48 7.30
13.947    24.483    35.038    37.428    48.656

+ 15.89  +15.94    + 5.35  +5.40    − 5.59  −5.55    − 7.90  −7.85    − 14.79  −14.78
+ .00 .21  + .22    + .00 .22  +.21    + .00 .23  +.23    + .00 .22  +.21    + .00 .30  +.31
−2.98 +0.74    − 2.90 +0.8 20    −2.61 +1.070    −2.60 +1.120    −3.27 ~~+0.450~~
+13.12  −298    + 2.67  −290    −8.01  −265    −10.28  −260    − 17.76  −327
13.95  47 27.13    24.48  27.19    35.04  27.07    37.43  27.19    48.66  30.92
27.07    27.15    27.08    27.15    30.90
30.790    30.870    30.753    30.870
27.10

29 11.02    10.62    29 8.91    10.92    10 46.64
+2 5.13    +2 4.52    +2 6.85    +2 5.55    −16 15.37
−2.0    −2.1    −2.1    −2.2    −2.6
+ 5.40    + 5.80    + 6.70    + 6.80    + 6.60
−26 27 2.49    27 2.40    ~~27~~ 26 57.46    ~~26~~ 27 0.77    26 58.01

s
+ 19.23    −12.50    +19.17    −15.80    +20.89    −14.75    −15.62    + 21.20    − 18.63
45    45    45    45    30
−1.86    −2.10    −2.31    −2.33    −2.50
4 6.1  4 41.1  4 2.1  4 41.5  4 57.4  4 36.9  4 40.2    0 33.9  1 21.4
24.5  0.7  21.1  0.9  28.8  9.8  0.3    57.9  39.9
30.6  101.8  23.2  102.4  36.2  106.7  100.5    85.8  61.3
49 15.30  49 4 50.90  49 4 11.60  49 4 51.20  49 4 18.10  49 4 53.35  49 4 56.25    30 42.90  31 30.65

1.28398  1.09691n  1.28262  1.19866n  1.31994  1.16879    1.19368n    1.32634  1.27021n
1.34190  1.15483n  1.34054  1.25658n  1.37786  1.22671    1.25020n    1.40378  1.34765n
+21.97  −14.29  +21.91  −18.05  +23.87  −16.85    − 17.79    +25.34  −22.26
49 37.27  49 36.61  49 33.51  49 33.15  49 41.97  49 36.50    49 32.46    31 8.24  31 8.89
36.

−26° 26′ 48.92″  48.26  26 45.16  44.80  26 48.62  48.15    44.11    8 19.89  20.04
48.59    45.98    48.38    19.96
+68 47 8  47 44    47 6  47 46    46 55  47 43
2.16799  2.16821    2.16799  2.16825    2.16791  2.16821
−1451    −471    −2037    −143    −188
2.15348  2.15370  2.16328  2.16350  2.14762  2.14788  2.16656  2.16682    2.16603  2.16633
−142.39  −142.46  −145.64  −145.72  −140.48  −140.57  −146.75  −146.83    −146.56  −146.67
− 6  − 6  − 3  − 3  − 7  − 7  − 3  − 3    − 3  − 3
+.08 +.05  +.03  +.08 +.07  +.05  +.09 +.07  +.05  +.05 +.05    +.09  +.08
.00  .00  .00  .00  .00  .00  .00    −.08  −.16
−2 22.37  −2 22.49  −2 25.59  −2 25.70  −2 20.46  −2 20.59    −2 26.81    −2 26.58  −2 26.78
−26 29 11.29  10.75  29 10.75  10.50  29 9.08  8.74    10.92    10 46.47  46.82
+2 5.03  3.31  +4.42  2.47  +6.56  4.42    +5.30  3.14    −16 15.46  17.78
− 1.72  +9.42  − 1.95  +9.82  − 2.14  +10.72    − 2.16  +10.82    − 2.32
+ 5.40    + 5.80    + 6.70    + 6.80    + 6.60
+2 8.71  ~~3.21~~ 2.58  + 8.27  2.98  + 11.12  58.96  + 8.94  1.98    −16 11.18  57.65
2.04    2.23    57.62    58.00
27 2.62 .31    2.35    57.79    1.98    57.82

1875

| | | m | s | | ′ | ″ | |
|---|---|---|---|---|---|---|---|
| Aug | 17 | 47 | 34.19 | | 27 | 4.1 | |
| | 22 | | 34.15 | − .04 | | 4.3 | − .2 |
| | 27 | | 34.10 | 5 | | 4.5 | .2 |
| Sept | 1 | | 34.04 | 6 | | 4.7 | .2 |
| | 6 | | 33.97 | 7 | | 4.9 | .2 |
| | 11 | | 33.89 | 8 | | 5.1 | .2 |
| | 16 | | 33.81 | 8 | | 5.2 | .1 |

−56
Sept 8      Sept 13      Sept 28
−542      −468      Ch f.

47 45.6 47 33.6 47 49.9 47 46.5
47.9 35.4 51.2 48.4
50.2 37.4 53.3 50.6
54.8 58.0
57.1 48 0.3
59.3 2.6
48 1.7 48 19.9 4.9 48 32.3
4.0 22.0 7.3 34.0
8.6 24.3 11.8 37.0
11.0 14.2
13.2 16.4

3534 2699
300 240
6534 47 35.47 2.99 47 48.50
47 59.400 48 22.07 48 2.78 48 34.43
59.383 −25.71 2.701
+.28
− 25.73 − 29.04
+ .00.29 −310 + .00.23
− 3.10 3085 − 3.01
− 28.54 − 31.82
59.38 2.70
30.84 30.88
10 4836 30.873 4849
−16 1363 − .1
− 2.5 − 2.5
+ 7.10 + 7.20
26 57.39

+ 23.93 − 22.67 + 14.22 − 31.71
30 30
−264 −265
0 35.8 1 32.1 0 45.7 1 39.7
5.31 4.98 2.1 5.59
8.81 8.19 10.78 9.86
30 44.05 31 40.95 30 53.90 31 47.80

1.37894 1.35545n 1.15290 1.50120n
1.45638 1.43289n 1.23034 1.57864n
+ 28.60 − 27.09 + 17.00 − 37.90
31 12.6581 13.86 31 10.90 31 9.90

8 24.30 25.51 8 22.55 21.55
24.36 22.07
47 6 48 0
2.16799 2.16832
−1166 −285
2.15625 2.15655 2.16514 2.16547
−143.30 −143.40 −146.27 −146.38
− 5 5 +.06 4 − 4 +.08
+.12 −.06 +.11 +.04 −.07 +.21
−.10 −.25 −.13 −.27
−2 23.33 −2 23.59 −2 26.40 −2 26.48
10 47.63 49.10 10 48.95 48.03
−16 13.77 16.19 −15.50 17.96
− 2.42 − 2.46
+ 7.10 + 17.20
−16 9.09 56.72 − 10.76 59.71
58.19 58.79

57.45 59.25

# δ' Lyrae

h m sec.
18 49 21
+36° 48'
ζ = + 5° 35'
ζ sin ζ = +10

| | 1874 | 1875 | |
|---|---|---|---|
| α | | 49 21.55 | corr α = |
| δ | | 48 59.32 | corr δ = |
| dα/dt | | + 2.094 | l |
| dδ/dt | | + 4.27 | long δ = +.75 |
| | | | I = s 2.58 |
| l sin δ | 9.77744 | | K = s −.020 |
| l cos δ | 9.90349 | 9.90349 | |
| l C | .10600 | 12552 | |
| l C' | 0.00949 | 0.02901 | |

| | 1874 | | | | | | 1874 | | 1875 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Aug. 10 | | Aug. 20 | | Aug. 22 | | Sept. 10 | | Aug 26 | | Sept-13 | |
| | −.427 | | −.475 | | ~~−.430~~ −.433 | | −.463 | | −.597 | | −.468 | |
| | 48 50.7 | 48 42.6 | 48 59.2 | 48 36.3 | 49 1.1 | 48 52.7 | 49 11.7 | 49 7.5 | 49 23.8 | 49 9.9 | 49 37.5 | 49 23.8 |
| | 53.3 | 45.3 | 1.7 | 58.3 | 3.7 | 54.3 | 14.2 | 10.0 | 26.1 | 11.7 | 40.0 | 26.5 |
| | 56.0 | 47.4 | 4.3 | 0.7 | 6.3 | 56.3 | 16.9 | 12.0 | 28.9 | 14.5 | 42.5 | 27.8 |
| | 1.0 | | 9.4 | | 11.5 | | 21.9 | | 34.0 | | 47.7 | |
| | 3.6 | | 12.0 | | 14.0 | | 24.5 | | 36.4 | | 50.2 | |
| | 6.1 | | 14.6 | | 16.6 | | 27.1 | | 39.0 | | 52.8 | |
| | 8.8 | 49 22.6 | 17.1 | 49 42.7 | 19.1 | 49 37.0 | 29.7 | | 41.4 | | 55.4 | |
| | 11.3 | 24.6 | 19.7 | 45.8 | 21.7 | 39.2 | 32.3 | | 44.1 | | 58.0 | |
| | 16.3 | 27.4 | 24.9 | 48.2 | 26.9 | 41.2 | 37.4 | | 49.2 | | 3.0 | |
| | 19.0 | | 27.5 | | 29.4 | | 40.0 | | 51.7 | | 5.7 | |
| | 21.6 | | 29.9 | | 32.0 | | 42.6 | | 54.4 | | 8.4 | |
| | 2477 | | 2203 | | 1823 | | 2983 | | 4290 | | 4012 | |
| | 180 | | 60 | | | | | | | | 180 | |
| | 67.7 | 48 45.10 | 160.3 | 48 58.48 | | 48 54.43 | | 49 9.83 | | 49 12.03 | 58.12 | 49 25.77 |
| | 49 6.155 | 49 24.86 | 49 14.573 | 49 45.66 | 49 16.573 | 49 39.13 | 49 27.118 | | 49 39.000 | | 49 52.836 | |
| | 6.135 | | 14.553 | | 16.553 | | 27.097 | | 38.980 | | 52.816 | |
| | + 15.88 | | + 7.42 | | + 5.35 | | − 5.589 | | − 14.79 | | − 29.04 | |
| | − .32 | | − .36 | | − .32 | | − .35 | | − .45 | | − .35 | |
| | − 2.24 | −0.146 | − 2.11 | −0.016 | − 2.08 | +0.014 | − 1.71 | +0.384 | − 2.23 | | − 1.85 | |
| | + 13.32 | | + 4.95 | | + 2.95 | | − 7.65 | | − 17.47 | | − 31.24 | |
| | 49 6.13 | | 49 14.55 | | 49 16.55 | | 49 27.10 | | 49 38.98 | | 49 52.82 | |
| | 49 19.45 | | 49 19.50 | | 49 19.50 | | 49 19.45 | | 49 21.51 | | 49 21.58 | |
| | 21.544 | | 21.594 | | 21.594 | | 19.475 | 21.544 | | | | |
| | s +21.05 | −18.71 | +16.14 | −30.99 | +22.14 | −22.56 | +17.29 | | +26.97 | | +27.07 | |
| | 35 | | 35 | | 35 | | 35 | | 15 | | 15 | |
| | −1.66 | | −2.08 | | −2.10 | | −2.31 | | −2.56 | | −2.65 | |
| | 0 18.2 | 0 59.5 | 0 21.3 | 1 9.9 | 0 14.8 | 0 0.7 | 0 17.0 | | 1 40.9 | | 1 40.6 | |
| | 31.7 | 11.1 | 35.7 | 24.1 | 29.4 | 14.7 | 33.8 | | 0.2 | | 59.8 | |
| | 49.9 | 130.6 | 57.0 | 34.0 | 44.2 | 15.4 | 50.8 | | 101.1 | | 98.4 | |
| | α 35 24.95 | 36× 5.30 | 35α 28.50 | 36× 17.00 | 35α 22.10 | 35α (36) 7.70 | 35α 25.40 | | 16 50.55 | | 16 49.20 | |
| | 1.32325 | 1.27207n | 1.20790 | 1.49122n | 1.34518 | 1.35334 | 1.23779 | | 1.43088 | | 1.43249 | |
| | 1.33274 | 1.28156n | 1.21739 | 1.50071n | 1.35467 | 1.36283 | 1.24728 | | 1.45989 | | 1.46150 | |
| | +21.52 | −19.14 | +16.50 | −31.68 | +22.63 | −23.06 | +17.67 | | +28.83 | | +28.94 | |
| | 35 46.47 | 35 46.16 | 35 45.00 | 35 45.32 | 35 44.73 | 35 44.64 | 35 43.07 | | 17 19.38 | | 17 18.14 | |
| +36° | 47 1.88 | 2.19 | 47 3.35 | 3.03 | 47 3.62 | 3.71 | 47 5.28 | | 5 28.97 | | 5 30.21 | |
| | 2.03 | | 3.19 | | 3.66 | | | | | | | |
| +5 | 33 18 | 33 58 | | | 33 15 | 34 1 | | | 33 2 | | | |
| | 0.74820 | 0.74920 | | | 0.74820 | 0.74920 | | | 0.74780 | | | |
| | −1447 | | −1983 | | −465 | | −2025 | | −182 | | −282 | |
| | 0.73373 | 0.73478 | 0.72837 | 0.72937 | 0.74355 | 0.74455 | 0.72895 | | 0.74598 | | 0.74498 | |
| | −5.42 | −5.43 | −5.35 | −5.36 | −5.54 | −5.55 | −5.36 | | −5.57 | | −5.56 | |
| | −.11 −.10 | −.09 | −.07 −.15 | −.24 | −.12 −.12 | −.12 | −.07 −.07 | | −.18 −.38 | | −.19 −.46 | |
| | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | −.20 | | −.27 | |
| | −5.53 | −5.52 | −5.42 | −5.60 | −5.66 | −5.67 | −5.43 | | −5.95 | | −6.02 | |
| +36 | 46 56.35 | 56.67 | 47 57.92 | 57.43 | 46 57.96 | 58.04 | 46 59.85 | | 5 23.02 | | 5 24.19 | |
| | +2 5.03 | 4.84 | +4.89 | 4.68 | +4.42 | 4.21 | +6.56 | 6.33 | −16 15.46 | 1.571 | −15.50 | 1.576 |
| | − .19 | ~~−9.75~~ | − .21 | ~~−11.75~~ | − .21 | ~~−12.11~~ | − .23 | ~~−14.79~~ | − .25 | | − .26 | |
| | −5.48 | −1.21 | −7.48 | −3.21 | −7.84 | −3.57 | −10.52 | −6.25 | −7.96 | | −10.33 | |
| | +1 59.36 | 55.71 | + 57.20 | 55.13 | + 56.37 | 54.33 | + 55.81 | | −16 23.67 | | − 26.09 | |
| | | 56.03 | | 54.63 | | 54.41 | | | | | | |
| | 48 55.87 | | | 54.88 | | 54.37 | | 55.66 | 48 59.35 | | | 58.10 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Sept-14 | | | | Sept 25 | | |
| | -.503 | | | | -.306 | | |
| 49 | — | 50 | 10,9 | 49 | 45,7 | 49 | 38,1 |
| | — | | 13,4 | | 48,2 | | 41,2 |
| | — | | 15,3 | | 50,7 | | 43,2 |
| | 48,2 | | | | 55,8 | | |
| | 50,8 | | | | 58,5 | | |
| | 53,5 | | | 50 | 0,9 | | |
| | 56,0 | | | | 3,5 | | |
| | 58,6 | | | | 6,1 | | |
| | — | | | | 11,2 | | |
| | — | | | | 13,8 | | |
| | — | | | | 16,5 | | |
| | | | | | 3109 | | |
| | | 50 | 13.20 | | 300 | 49 | 40.83 |
| | | | | | 109 | | |
| 49 | 53.42 | | | 50 | 0.991 | | |
| | 53.40 | | | | 0.971 | | |
| − | 29.58 | | | − | 37.50 | | |
| − | .38 | | | − | .23 | | |
| − | 1.83 | | | − | 1.58 | | |
| − | 31.79 | | | − | 39.31 | | |
| 49 | 53.40 | | | 50 | 0.97 | | |
| 49 | 21.61 | | | 49 | 21.66 | | |
| | | | | | 21.590 | | |
| − | 19.78 | | | + | 20.16 | | |
| 15 | | | | 15 | | | |
| | −2.66 | | | | −2.73 | | |
| 2 | 29.7 | | | 1 | 48.5 | | |
| | 47.6 | | | | 6.0 | | |
| | 7.73 | | | | 11.45 | | |
| 17 | 38.65 | | | 16 | 57.25 | | |
| | 1.29623n | | | | 1.30449 | | |
| | 1.32524n | | | | 1.33350 | | |
| | −21.15 | | | | +21.55 | | |
| 17 | 17.50 | | | 17 | 18.80 | | |
| 5 | 30.85 | | | 5 | 29.55 | | |
| 33 | 51 | | | 33 | 9 | | |
| | 0.74910 | | | | 0.74790 | | |
| | −288 | | | | −458 | | |
| | 0.74622 | | | | 0.74332 | | |
| | −5.57 | | | | −5.54 | | |
| | −.10 | −.49 | | | −.10 | −.38 | |
| | −.39 | | | | −.28 | | |
| | −6.06 | | | | −5.92 | | |
| 5 | 24.79 | | | 5 | 23.63 | | |
| −16 | 14.30 | 14.57 | | | −13.62 | 13.89 | |
| − | .27 | | | − | .27 | | |
| | −10.42 | | | | −11.15 | | |
| −16 | 24.99 | | | | 25.04 | | |
| 48 | 59.80 | | | | 58.59 | | |

84

50 Draconis ~~LC~~

h m sec.
18 50 24
+75° 17'

ζ = −32° 54'
ζ sin ζ = −.54

| | 1874 | 1875 N.A | 1875 |
|---|---|---|---|
| α | 50 25.520 | 23.620 | 50 23.90 |
| δ | 17 2.05 | 6.49 | 17 6.91 |
| dα/dt | −1.900 | −1.900 | −1.904 |
| dδ/dt | + 4.44 | +4.43 | +4.46 |

ℓ sin δ 9.98551

ℓ cos δ 9.40490 9.40490
ℓ C .10600 .12552
ℓ C' 9.51090 9.53042

ℓ C″ 9.50950

corr =
corr' =

tg δ = +3.81
± = 8.13 s
K = −.060 s

1874

| | m | s | | | | |
|---|---|---|---|---|---|---|
| Aug 18 | 50 | 27.97 | | 16 | 70.2 | |
| 23 | | 27.61 | −.36 | | 71.4 | +1.2 |
| 28 | | 27.23 | .38 | | 72.4 | 1.0 |
| Sept 2 | | 26.83 | .40 | | 73.3 | .9 |
| 7 | | 26.41 | .42 | | 74.1 | .8 |
| 12 | | 25.97 | .44 | | 74.8 | .7 |
| 17 | | 25.52 | .45 | | 75.4 | .6 |
| 1875 | | | | | | |
| Aug 27 | 50 | 25.17 | | | 76.0 | |
| Sept 1 | | 24.77 | −.40 | | 77.0 | +1.0 |
| 6 | | 24.36 | .41 | | 77.9 | .9 |
| 11 | | 23.93 | .43 | | 78.7 | .8 |
| 16 | | 23.48 | .45 | | 79.3 | .6 |

1874 1874 1875

−.46 Aug. 20 −.475 | −.45 Sept 10 −.463 | −.41 Sept. 13 −.450 | −.62 Aug 26 −.594 | −.56 Sept-8 −.572 | Sept-13 −.468

50 — 50 32.5 | 50 17.4 50 4.2 | 50 19.3 49 20.3 | 50 26.6 50 8.5 | 50 36.3 50 20.4 | 50 38.3 50 57.0
— 40.5 | 21.4 8.7 | 23.0 26.6 | 30.9 12.5 | 40.2 27.3 | 42.3 3.7
— 46.1 | 25.6 14.4 | 28.0 35.3 | 34.6 19.2 | 44.3 34.8 | 46.3 12.4
— | 29.4 | 31.5 | 38.5 | 48.1 | 52.6
22.00 22.0 | 33.7 | 35.7 | 43.1 | 52.2 | 54.6
.34 26.4 | 37.7 | 39.5 | 47.0 | 56.4 | 58.9
.38 30.5 51 16.4 | 41.7 | 43.6 | 50.6 | 0.4 | 2.7
.62 34.9 21.9 | 46.1 | 47.3 | 54.5 | 4.5 | 7.0
.31 38.5 28.8 | 50.0 | 52.0 | 58.6 | 8.8 | 11.2

50 39.70 | 30.30 50 9.10 | 31.99 49 27.40 | 38.44 50 13.40 | 47.12 50 27.50 | 49.19 51 4.37
22.33 51 22.38 | 50 33.667 | 50 35.544 | 50 42.711 | 50 52.356 | 50 54.656
50 22.27 | 33.607 | 35.484 | 42.651 | 52.296 | 54.596

+ 7.42 | − 5.58 | − 7.90 | − 14.49 | − 25.73 | − 29.04
− 1.81 | − 1.76 | − 1.71 | − 2.27 | − 2.18 | − 1.78
− 2.31 −4.214 | − 0.63 −2.534 | − 0.36 −2.264 | − 1.72 | − 0.57 | − 0.12
+ 3.30 −1.75 | − 7.98 −1.71 | − 9.97 −1.56 | − 18.78 −14.78 | − 28.48 −25.71 | − 30.94
22.27 +7.47 | 33.61 −5.55 | 35.48 −7.85 | 42.65 −2.36 | 52.30 −2.13 | 54.60
25.58 −2.31 | 25.63 −0.63 | 25.51 −0.36 | 23.87 −1.72 | 23.82 −0.57 | 23.66
23.666 25.65 | 23.726 25.72 | 23.606 25.71 | 23.79 | 23.89 | 23.783
25.570

15 6.20 | 9.10 | 15 9.69 | 33 30.87 | 32.34 | 32.39
+2 4.98 | +2 6.85 | +2 5.55 | −16 15.37 | −16 13.63 |
+ 1.2 | + 1.3 | + 1.3 | + 1.5 | + 1.3 | + 1.3
− 8.80 | − 12.50 | − 12.90 | − 9.30 | − 11.80 | −12.50
+75 17 3.58 | 17 4.75 | 17 3.64 | 17 7.70 | 17 8.21 |

− 17.37 − 60.04 | + 24.57 s | +68.14 | + 29.31 | + 24.86 | − 9.71
5 | 5 | 5 | 45 | 45 | 45
−2.08 | −2.31 | −2.33 | −2.50 | −2.61 | −2.65
3 18.3 3 31.4 | 3 0.4 | 2 49.3 | 4 35.7 | 4 33.9 | 4 46.1
28.4 41.9 | 13.1 | 58.2 | 53.0 | 52.2 | 4.9
46.7 73.3 | 13.5 | 107.5 | 88.0 | 86.1 | 111.0
88 23.35 88 36.65 | 88 6.75 | 72 53.75 | 49 44.00 | 49 43.05 | 49 55.50

1.23980n 1.77844n | 1.39041 | ~~0.91062~~ 1.83340 | 1.46702 | 1.39550 | 0.98722
0.75070n 1.28934n | 0.90130 | ~~0.42012~~ 1.34290 | 0.99744 | 0.92592 | 0.51764
− 5.63 − 19.47 | + 7.97 | ~~+ 2.63~~ + 22.02 | +9.94 | +8.43 | −3.29
8 17.72 8 17.18 | 8 14.72 | 7 ~~56.38~~ 8 15.77 | 49 53.94 | 49 51.48 | 49 52.21

35 14 30.63 30.95 ~~+75°~~ 31.17 | 14 33.63 | ~~14 51.97~~ 14 32.58 | 32 54.41 | 32 56.87 | 32 56.14
−32 53 44 53 30 | 54 0 | 54 13 | 54 4 | 54 5 | 53 53
1.57090n 1.57080n | 1.57100n | 1.57100n | 1.57100n | 1.57100n | 1.57100n
−1982 | −2017 | −143 | −177 | −1158 | −279
1.55108 1.55098 | 1.55083 | 1.56957 | 1.56923 | 1.55942 | 1.56821
+35.57 +35.56 | +35.55 | + 37.12 | +37.09 | +36.26 | + 37.00

−.04 −.26 −.48 | −.08 −.08 | − 1 −.01 | −.11 −.63 | −.08 −.79 | − 1 −.75
.00 .00 | .00 | .00 | −.52 | −.71 | −.74
+35.53 + ~~36.04~~ 35.08 | + 35.47 | + 37.11 | + 36.46 | + 35.47 | + 36.25
+75 15 6.16 6.25 | 15 9.10 | 15 ~~29.08~~ 9.69 | 33 30.87 | 33 32.34 | 33 32.39
+2 4.89 6.01 | + 6.56 7.80 | + 5.30 6.53 | −16 15.46 14.12 | − 13.77 12.37 | − 15.50 14.07
+ 1.12 − 4.34 | + 1.24 − 8.04 | + 1.25 − 8.44 | + 1.34 | + 1.40 | + 1.43
− 8.80 | − 12.50 | − 12.90 | − 9.30 | − 11.80 | − 12.50
+1 57.21 17 3.37 | +1 55.30 | +1 53.65 ~~22.73~~ | − 23.42 7.45 | − 24.17 8.17 | − 26.57 5.82
3.46 | 4.40 | 3.34

17 3.41 | 17 4.40 | 7.76 | 7.45 | 8.17 | 5.82

13 R. Lyrae 86

h m sec
18 31 32
+43° 47′
− 1° 24′
ℓ sin δ 9.84086
ℓ cos δ 9.85851 9.85851
ℓ C 10600 12552
ℓ C′ 9.96451 9.98403

1874 α 30.046
δ +46′ 51.40
dα/dt +1.826
dδ/dt +4.545
sin z = −.02

1875 α 31.872
δ +46′ 55.95
dα/dt +1.826
dδ/dt +4.548

| 1874 | m | s | | ′ | ″ | |
|---|---|---|---|---|---|---|
| Aug. 8 | 51 | 32.32 | | 46 | 56.9 | |
| 13 | | 32.25 | −.07 | | 58.1 | +1.2 |
| 18 | | 32.17 | .08 | | 59.2 | 1.1 |
| 23 | | 32.08 | .09 | | 60.2 | 1.0 |
| 28 | | 31.98 | .10 | | 61.1 | .9 |
| Sept 3 | | 31.87 | .11 | | 61.9 | .8 |
| 7 | | 31.75 | .12 | | 62.6 | .7 |
| 12 | | 31.62 | .13 | | 63.2 | .6 |
| 17 | | 31.49 | .13 | | 63.7 | .5 |

| 1875 | m | s | | ′ | ″ | |
|---|---|---|---|---|---|---|
| Aug. 28 | 51 | 33.99 | | 46 | 65.1 | |
| Sept. 2 | | 33.88 | −.11 | | 65.9 | +.8 |
| 7 | | 33.76 | .12 | | 66.7 | .8 |
| 12 | | 33.64 | .12 | | 67.3 | .6 |
| 17 | | 33.51 | .13 | | 67.8 | .5 |
| 22 | | 33.38 | .13 | | 68.1 | .3 |
| 27 | | 33.24 | .14 | | 68.4 | .3 |
| Oct. 2 | | 33.10 | .14 | | 68.5 | .1 |
| 7 | | 32.96 | .14 | | 68.6 | .1 |

corr. = −.041 s
corr. = −.03″
long. +.96
I = 2.85 s
k = −.021 s

| × 1874 −.42 Aug. 22 | ~~.430~~ −.433 | × −.45 Sept. 10 −.463 | | 1875 −.62 Aug 26 −.597 | × | −.56 Sept 8 −.572 | × | Sept 13 −.468 | | −.49 Sept 14 −.503 | × |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 51 10.1 | 50 58.6 | 51 20.6 | 51 17.3 | 51 32.3 | 51 25.5 | 51 43.0 | 51 31.5 | 51 45.9 | 51 49.8 | 51 46.6 | 51 48.4 |
| 12.9 | 1.5 | 23.5 | 19.7 | 35.3 | 27.9 | 45.8 | 34.2 | 48.9 | 52.5 | 49.3 | 50.9 |
| 15.8 | 4.0 | 26.2 | 22.6 | 38.1 | 30.1 | 48.6 | 36.4 | 51.8 | 55.0 | 52.3 | 54.2 |
| 21.4 | | 32.0 | | 43.8 | | 54.3 | | 57.4 | | 54.9 | |
| 24.2 | | 34.8 | | 46.7 | | 57.2 | | 52 0.2 | | 52 0.1 | |
| 27.1 | | 37.6 | | 49.4 | | 0.0 | | 3.0 | | 3.7 | |
| 30.0 | 51 45.3 | 40.5 | 51 35.1 | 52.4 | 52 11.2 | 2.9 | 52 25.6 | 5.9 | 52 26.9 | 6.6 | 52 25.4 |
| 33.0 | 47.5 | 43.5 | 37.5 | 55.3 | 13.4 | 5.8 | 28.0 | 8.8 | 29.9 | 9.4 | |
| 38.7 | 50.0 | 49.1 | 39.9 | 1.1 | 16.6 | 11.4 | 30.8 | 14.5 | 32.7 | 15.0 | |
| 41.5 | | 51.0 | | 3.8 | | 14.4 | | 17.2 | | 17.9 | |
| 44.3 | | 54.8 | | 6.7 | | 17.2 | | 20.1 | | 20.6 | |
| 299.0 51 | 1.33 | 414.6 | 51 19.86 | 544.9 | 51 27.77 | 06 | 51 34.03 | 337 | 51 52.43 | 402 | 51 51.17 |
| 51 27.182 | 51 47.60 | 51 37.691 | 51 57.50 | 51 49.536 | 52 13.73 | 52 0.055 | 52 28.13 | 52 3.064 | 52 29.83 | 52 3.655 | 52 25.40 |
| 27.161 | | 37.670 | | 49.515 | | 0.034 | | 3.043 | | 3.634 | |
| 51 32.18 09 | | 51 31.687 | | 51 34.04 8 3 | | 51 33.78 3 | | 51 33.62 1 | | 51 33.60 58 | |
| −4.97 3 | +5.40 | +~~5.99~~ 600 | −5.55 | +15.47 8 | −14.78 | +26.28 30 | −25.71 | +29.48 3 | | +30.03 5 | −29.54 |
| −4.89 | −.40 | +6.04 | −.43 | +15.52 | −.60 | +26.34 | −.54 | +29.47 | | +30.09 | −.47 |
| + 5.34 | −2.09 | − 5.60 | −1.62 | − 11.79 | −2.16 | − 25.73 | −1.86 | − 29.04 | | − 29.58 | −1.71 |
| − .41 | 51 30.07 | − .44 | 30.07 | − .57 | 31.97 | − .55 | 31.92 | − .45 | | − .48 | 31.91 |
| − 2.09 | −0.264 | − 1.62 | +0.206 | − 2.16 | | − 1.86 | | − 1.74 | | − 1.71 | |
| + 2.84 | | − 7.66 | | − 17.52 | | − 28.14 | | − 31.23 | | − 31.77 | |
| 51 27.16 | | 51 37.67 | | 51 49.51 | | 52 0.83 | | 52 3.04 | | 52 3.63 | |
| | 44 55.05 | | 44 56.63 | | 3 20.69 | | 21.33 | | 23.61 | | 22.46 |
| 51 30.00 | +2 4.52 | 51 30.01 | +2 6.85 | 51 31.99 | −16 15.37 | 51 31.89 | −16 13.63 | 51 31.81 | | 51 31.86 | −16 14.18 |
| 31.826 | + .1 | 31.836 | + .1 | ~~31.816~~ | + .1 | | + .1 | | + .1 | | + .1 |
| | − 8.60 | | −11.60 | | − 8.90 | | −10.90 | | −11.50 | | −11.50 |
| +43 46 51.~~07~~.57 (57) | | | 46 51.88 | | 46 56.52 | | 46 56.90 | | | | 46 56.88 |
| s +25.85 | −20.42 | +17.83 | −19.81 | +21.77 | −24.19 | +26.02 | −28.08 | +10.63 | −26.77 | +12.48 | −21.75 |
| 35 | | 35 | | 15 | | 15 | | 15 | | 15 | |
| −2.410 | | −2.31 | | −2.50 | | −2.61 | | −2.65 | | −2.66 | |
| 2 23.4 | 3 7.4 | 2 29.1 | 3 3.3 | 3 58.1 | 4 42.5 | 3 52.8 | 4 44.8 | 4 6.1 | 4 43.0 | 4 6.8 | 4 37.9 |
| 37.4 | 20.0 | 44.1 | 19.0 | 16.6 | 1.2 | 11.8 | 4.7 | 23.7 | 59.7 | 24.0 | 55.3 |
| 60.8 | 27.4 | 73.2 | 22.3 | 134.7 | 103.7 | 124.6 | 109.5 | 29.8 | 102.7 | 30.8 | 93.2 |
| 37 30.40 | 38 13.70 | 37 36.60 | 38 11.15 | 19 7.35 | 19 51.85 | 19 2.30 | 19 54.75 | 19 14.90 | 19 51.35 | 19 15.40 | 19 46.60 |
| 1.41246 | 1.31006 | 1.25115 | 1.29688 | 1.33786 | 1.38364 | 1.41531 | 1.44840 | 1.02653 | 1.42765 | 1.09621 | 1.33746 |
| 1.37697 | 1.27457 | 1.21566 | 1.26139 | 1.32789 | 1.36767 | 1.39934 | 1.43243 | 1.01056 | 1.41168 | 1.08024 | 1.32149 |
| +23.82 | −18.82 | +16.43 | −18.26 | +20.98 | −23.32 | +25.08 | −27.07 | +10.25 | −25.80 | +12.03 | −20.96 |
| 37 54.22 | 37 54.88 | 37 53.03 | 37 52.89 | 19 28.33 | 19 28.53 | 19 27.38 | 19 27.68 | 19 25.15 | 19 25.55 | 19 27.43 | 19 25.64 |
| +43° 44′ 54.13 | 53.47 | 44 55.32 | 55.46 | 3 20.02 | 19.82 | 3 20.97 | 20.67 | 3 23.20 | 22.80 | 3 20.92 | 22.71 |
| 53.80 | | 55.39 | | 19.92 | | 20.82 | | 23.00 | | 21.81 | |
| −1 24 37 | 23 53 | | | 24 41 | 23 58 | | | | | 24 33 | 24 1. |
| 0.15250n | 0.14790n | | | 0.15200n | 0.14840n | | | | | 0.15250n | 0.14840n |
| −456 | | −2010 | | −173 | | −1155 | | −277 | | −283 | |
| 0.14794 | 0.14334 | 0.13240 | 0.12780 | 0.15027 | 0.14667 | 0.14045 | 0.13685 | 0.14923 | 0.14563 | 0.14967 | 0.14557 |
| +1.41 | +1.39 | +1.36 | +1.34 | +1.41 | +1.40 | +1.38 | +1.37 | +1.41 | +1.40 | +1.41 | +1.40 |
| −.18 −.14 | −.11 | −.09 −.10 | −.12 | −.13 −.63 | −.15 | −.18 −.86 | −.21 | −.03 −.79 | −.19 | −.04 −.76 | −.13 |
| .00 | .00 | .00 | .00 | −.45 | −.54 | −.60 | −.74 | −.63 | −.74 | −.63 | −.72 |
| + 1.23 | + 1.28 | + 1.27 | + 1.22 | + 0.83 | + 0.71 | + 0.60 | + 0.42 | + 0.75 | + 0.47 | + 0.74 | + 0.65 |
| 44 55.36 | 54.75 | 56.59 | 56.68 | 3 20.85 | 20.53 | 21.57 | 21.09 | 23.95 | 23.27 | 21.66 | 23.26 |
| 47 0.0 | | 3.0 | | 47 4.8 | | 6.9 | | 7.4 | | 7.5 | |
| +2 4.6 | 5.3 | 6.4 | 6.3 | −16 16.0 | 15.7 | 14.7 | 14.2 | 16.5 | 15.9 | 14.2 | 15.8 |
| +2 4.9 | | 6.3 | | −16 15.9 | | 14.4 | | 14.2 | | 14.0 | |
| +2 4.42 | 46 51.22 | +6.56 | 6.61 51.60 | −16 15.46 | 15.41 56.54 | − 13.77 | 13.72 56.95 | − 15.50 | 15.45 57.00 | − 14.30 | 14.25 56.91 |
| + .04 | 4.46 −4.03 50.61 | + .05 | −7.05 51.69 | + .05 | 13.35 56.22 | + .05 | 56.47 | + .05 | 56.32 | + .05 | 57.51 |
| − 8.60 | | − 11.60 | | − 8.90 | | − 10.90 | | − 11.50 | | − 11.50 | |
| +1 55.86 | 46 50.92 | + 55.01 | 51.65 | −16 24.31 | 46 56.38 | − 24.62 | 56.71 | − 26.95 | 56.66 | − 25.75 | 56.71 |
| 46 55.44 | | | 56.30 | | | | | | | | |

s<br>.041

-.03"

4.96

s<br>2.85

s<br>-.021

9

# ε Aquilae.

h m sec.<br>18 53 57

+14° 54'

ζ = +27° 29'

ζ sin z = +46

| 1874 | m s | | ' " | | 1875 | m s | | ' " | |
|---|---|---|---|---|---|---|---|---|---|
| Aug. 8 | 53 56.61 | | 53 57.5 | | Aug. 28 | 53 59.44 | | 53 64.1 | |
| 13 | 56.58 | -.03 | 58.2 | +.7 | Sept. 2 | 59.37 | -.07 | 64.6 | +.5 |
| 18 | 56.55 | .03 | 58.9 | .7 | 7 | 59.30 | .07 | 65.0 | .4 |
| 23 | 56.50 | .05 | 59.5 | .6 | 12 | 59.23 | .07 | 65.3 | .3 |
| 28 | 56.44 | .06 | 60.0 | .5 | 17 | 59.15 | .08 | 65.6 | .3 |
| Sept. 2 | 56.37 | .07 | 60.4 | .4 | 22 | 59.07 | .08 | 65.8 | .2 |
| 7 | 56.30 | .07 | 60.8 | .4 | 27 | 58.98 | .09 | 65.9 | .1 |
| 12 | 56.22 | .08 | 61.1 | .3 | Oct. 2 | 58.89 | .09 | 66.0 | .1 |
| 17 | 56.14 | .08 | 61.4 | .3 | 7 | 58.79 | .10 | 66.0 | .0 |
| 22 | 56.06 | .08 | 61.6 | .2 | | | | | |
| 27 | 55.97 | .09 | 61.7 | .1 | | | | | |
| Oct 2 | 55.88 | .09 | 61.7 | .0 | | | | | |
| 7 | 55.78 | .10 | 61.7 | .0 | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| × 1874<br>-.42<br>Aug. 22<br>~~-.430~~ -.433 | | ×<br>-.45<br>Sept. 10<br>-.463 | | ×<br>-.41<br>Sept. 13<br>-.450 | | 1874<br>~~-.22~~ ~~-.06~~<br>Oct. 5 -.18 -.07<br>-.240 | | -.62 1875 ×<br>Aug 26<br>-.597 | | × -.56<br>Sept 8<br>-.572 | |
| 18 53 38.4 | 53 31.4 | 53 49.2 | 53 41.6 | 53 51.4 | 53 47.0 | 54 — | | 54 1.6 | 53 53.7 | 54 12.3 | 54 4.8 |
| 40.5 | 33.1 | 51.4 | 43.8 | 53.5 | 48.7 | — | | 3.7 | 56.3 | 14.5 | 7.1 |
| 42.7 | 35.2 | 53.4 | 45.5 | 55.7 | 50.4 | — | | 5.9 | 58.0 | 16.7 | 8.8 |
| 44.0 | | 57.6 | | 57.9 | | 5.0 | | 10.1 | | 20.9 | |
| 49.2 | | 59.9 | | 2.0 | | 7.1 | | 12.2 | | 23.0 | |
| 51.2 | | 2.0 | | 4.2 | | 9.3 | | 14.4 | | 25.2 | |
| 53.4 | 54 8.2 | 4.1 | 54 14.0 | 6.4 | 54 14.4 | 11.4 | 54 17.4 | 16.5 | 54 34.6 | 27.4 | 54 51.3 |
| 55.6 | 9.7 | 6.3 | 16.0 | 8.4 | 16.1 | 13.5 | 19.1 | 18.7 | 37.1 | 29.4 | 53.3 |
| 57.8 | 12.0 | 10.4 | 17.4 | 12.7 | 17.8 | — | 21.6 | 22.8 | 39.7 | 33.7 | 55.1 |
| 1.9 | | 12.7 | | 14.8 | | — | | 25.0 | | 35.8 | |
| 4.0 | | 14.8 | | 17.0 | | — | | 27.2 | | 38.0 | |
| 4437 | | 3218 | | 2860 | | 463 | | 1581 | | 2769 | |
| 120 | | 300 | | 240 | | | | | | | |
| 5637 | 53 33.23 | 218 | 53 43.63 | 460 | 53 48.70 | | | | 53 56.00 | | 54 6.90 |
| 53 51.245 | 54 9.96 | 54 1.982 | 54 15.80 | 54 4.182 | 54 16.10 | 54 9.260 | 54 19.33 | 54 14.373 | 54 37.13 | 54 25.173 | 54 53.23 |
| 51.229 | +5.40 | 1.966 | -5.55 | 4.166 | -7.86 | 9.244 | -13.29 | 14.357 | -14.78 | 25.157 | -25.71 |
| 53 56.51 | -.11 | 53 56.25 | -.12 | 53 56.20 | -.11 | 53 55.82 | -.05 | 53 59.47 | -.17 | 53 59.31 28 | -.15 |
| -5.28 | | +5.72 | | +7.97 | | +13.42 | -.07 | +14.89 | | +25.~~85~~ 88 | |
| | -2.28 | | -2.02 | | -1.97 | | -1.59 | | -2.52 | | -2.33 |
| + 5.34 | 53 54.24 | - 5.60 | 54.28 | - 7.90 | 54.23 | - 13.38 | 54.24 | - 14.80 | 56.89 | - 25.74 | 56.97 |
| — .12 | | — .12 | | — .12 | | — .06 | | — .16 | | — .15 | |
| - 2.28 | +0.441 | - 2.02 | +0.701 | - 1.97 | +0.751 | - 1.59 | +1.131 | - 2.52 | ~~[illegible]~~ | - 2.33 | |
| + 2.94 | | - 7.74 | | - 9.99 | | - 15.043 | | - 17.48 | | - 28.22 | |
| 53 51.23 | 51 57.04 | 54 1.97 | 55.73 | 54 4.17 | 57.48 | 54 9.24 | 51 56.72 | 54 14.36 | 10 21.97 | 54 25.16 | 21.19 |
| | +2 4.52 | | +2 6.85 | | +2 5.55 | | +2 5.93 | | -16 15.37 | | -16 13.63 |
| 53 54.17 | -.10 | 53 54.23 | -.11 | 53 54.18 | -.11 | 53 54.28 | -.12 | 53 56.88 | -.13 | 53 56.94 | -.13 |
| 56.891 | -4.50 | 56.951 | -6.10 | 56.901 | -6.30 | 56.931 | -6.80 | | -4.40 | | -5.60 |
| +14 | 53 56.06 | | 53 55.38 | | 53 55.63 | | 53 54.65 | | 58.4 0.90 | | 54 0.66<br>3 |
| s<br>+18.01 | -18.72 | +18.35 | -13.82 | +15.48 | -11.92 | | -10.07 | +18.37 | -22.76 | + 18.27 | -28.06 |
| 25 | | 25 | | 25 | | 30 | | 10 | | 10 | |
| -2.10 | | -2.31 | | -2.33 | | -2.42 | | -2.50 | | -2.61 | |
| 4 50.4 | 0 35.0 | 4 52.0 | 0 30.5 | 4 52.1 | 0 25.4 | 0 26.9 | | 1 23.8 | 2 18.1 | 1 25.4 | 2 25.8 |
| 8.9 | 54.0 | 12.0 | 50.3 | 12.0 | 45.8 | 40.2 | | 40.9 | 33.7 | 42.8 | 41.7 |
| 119.3 | 89.0 | 124.0 | 80.8 | 124.1 | 71.2 | 67.1 | | 64.7 | 51.8 | 68.2 | 67.6 |
| 4 29 59.65 | 30 8 44.50 | 30 5 200 | 30 8 40.40 | 30 5 2.05 | 30 0 35.60 | 30 8 33.55 | | 11 32.35 | 12 25.90 | 11 34.10 | 12 33.80 |
| 1.35557 | 1.27231n | 1.26364 | 1.14051n | 1.18977 | 1.07628n | | 1.00303n | 1.26411 | 1.35717n | 1.26174 | 1.44809n |
| 1.34666 | 1.36346n | 1.35479 | 1.23166n | 1.27952 | 1.16603n | | 1.09278n | 1.37478 | 1.46784n | 1.37241 | 1.55876 |
| +22.21 | -23.09 | +22.64 | -17.05 | +19.03 | -14.66 | | -12.38 | +23.70 | -29.37 | +23.57 | -36.20 |
| 30 21.86 | 30 21.41 | 30 24.64 | 30 23.35 | 30 21.08 | 30 20.94 | 30 21.17 | | 11 56.05 | 11 56.33 | 11 57.67 | 11 57.60 |
| 52 26.49 | 26.94 | 52 23.71 | 25.00 | 52 27.27 | 27.41 | 27.14 | | 10 52.30 | 51.82 | 10 50.68 | 50.75 |
| 26.71 | | 24.35 | | 27.34 | | | | 52.06 | | 50.71 | |
| +27 27 53 | 28 37 | | | 27 55 | 28 29 | | | 27 41 | 28 38 | | |
| 1.47610 | 1.47630 | | | 1.47610 | 1.47630 | | | 1.47600 | 1.47630 | | |
| -447 | | -1994 | | -143 | | +641 | | -164 | | -1149 | |
| 1.47163 | 1.47183 | 1.45616 | 1.45636 | 1.47467 | 1.47487 | 1.48251 | 1.48271 | 1.47436 | 1.47466 | 1.46451 | 1.46481 |
| -29.62 | -29.64 | -28.59 | -28.60 | -29.83 | -29.84 | -30.38 | -30.39 | -29.81 | -29.83 | -29.14 | -29.16 |
| -.04 -.04 | -.05 | -.04 -.03 | -.02 | -.03 -.02 | -.02 | -.0 -.04 | -.01 | -.04 -.26 | -.07 | -.04 -.37 | -.07 |
| .00 | .00 | .00 | .00 | .00 | .00 | -.02 | | -.16 | -.26 | -.24 | -.39 |
| -29.66 | -29.69 | -28.63 | -28.62 | -29.86 | -29.86 | -30.42 | | -30.01 | -30.16 | -29.42 | -29.62 |
| 51 56.83 | 57.25 | 55.08 | 56.38 | 57.41 | 57.55 | 56.72 | | 10 22.29 | 21.66 | 21.26 | 21.13 |
| 53 59.4 | | 54 1.0 | | 1.2 | | 1.7 | | 54 3.9 | | 5.1 | |
| +2 2.6 | 2.2 | 5.9 | 4.6 | 3.8 | 3.7 | 6.0 | | 16 18.4 | 17.8 | 16.2 | 16.0 |
| +2 2.4 | | 5.2 | | 3.8 | | 5.0 | | 18.1 | | 16.1 | |
| +2 4.42 | 3.46 55.79 | + 6.56 | 5.50 54.48 | + 6.30 | 4.23 55.34 | + 5.93 | 4.82 | -16 15.46 | 16.60 1.29 | - 13.77 | 14.97 0.69 |
| - .96 | +0.09 56.21 | - 1.06 | -1.51 55.78 | - 1.07 | -1.71 55.48 | - 1.11 | -2.21 | - 1.14 | 0.66 | - 1.20 | 0.56 |
| - 4.50 | | - 6.10 | | - 6.30 | | - 6.80 | | - 4.40 | | - 5.60 | |
| +1 58.96 | 56.00 | + 59.40 | 55.13 | + 57.93 | 55.41 | + 58.02 | 54.74 | -16 21.00 | 54 0.97 | - 20.57 | 0.62 |

| | 1874 | 1875 |
|---|---|---|
| α | 54.231 s | 56.952 s |
| δ | +53' 54.93" | +53' 59.52" |
| $\frac{dt}{dt}$ | +2.721 s | +2.721 s |
| $\frac{d\delta}{dt}$ | +4.585" | +4.559 s |

cos α =
cos δ =
tang δ = 7.27 1.03
I = 2.13 s
K = −.016 s

| 1874 | | | 1875 | | |
|---|---|---|---|---|---|
| .64 | 56.89 | 60.6 | .65 | 56.88 | 61.0 |
| .69 | .95 | 59.7 | .69 | .94 | 60.6 |
| .70 | .90 | 60.0 | .70 | .86 | 60.4 |
| .76 | .93 | 59.3 | .74 | .93 | 57.9 |
| .70 | 56.918 | 57.90 | .69 | 56.902 | 57.98 |
| | (4) | | | (4) | |

l sin δ 9.41016
l cos δ 9.98515 9.98515
l c 10600 .12552
l c' 0.09115 0.11367
l c'' 0.08975

−.49 + Sept-14 −.503
−35 + Sept-25 −306

54 16.0 54 34.9 54 — 54 46.7
18.1 36.9 — 48.5
20.4 38.5 —
24.6 32.3
26.7 34.4
28.9 36.6
31.0 55 3.1 38.8
33.1 5.1 40.9
37.4 7.5 —
39.5 —
41.5 —

3172 1830

54 36.77 54 48.57
54 28.836 55 5.43 54 36.600
28.820 −29.55 36.584 −37.50
53 59.2419 −.13 53 59.021 −09
+29.683 +37.587
−2.24 −2.06
− 29.59 56.90 − 34.51 56.93
− .13 − .08
− 2.24 − 2.06
− 31.96 − 39.65
54 28.82 10 21.80 54 36.58 19.19
−16 14.18 −16 12.62
53 56.86 −1.3 53 56.93 −1.3
−5.90 −6.40
54 0.43 53 58.87

− 7.93 − 36.59 − 11.97
10 16
1 −2.66 −2.73
1 59.6 2 35.7 2 8.5
14.8 50.2 21.7
1 13.44 8.59 2.92
12 7.20 12 42.95 12 14.60

0.89927n 1.56336n 1.07809n
1.00994n 1.67403n 1.18876n
−10.23 −47.21 −15.44
11 56.97 11 55.74 11 59.16

20 57.38 52.61 20 49.19
51.99
28 19 28 55
1.47620 1.47640
−278 −415
1.47342 1.47362 1.47205
−29.75 −29.76 −29.65

− 1 −.43 −.15 −.02 −.35
−31 −40 −33
− 30.07 − 30.31 − 30.00
(?) 20 21.31 22.30 19.19
54 5.4 5.9
−16 15.9 16.9 13.3
16 16.4 13.3
−16 14.30 15.52 59.89 − 13.62 14.87
− 1.22 0.88 − 1.25
− 5.90 − 6.40
−16 21.42 54 0.38 − 21.27 57.92

1874 1874

ζ Aquilae
h m sec.
18 59 40
+13° 41′
z = +28° 42′
sin z = +.48

α 37.673
δ +40′ 39.53
dα/dt +2.754
dδ/dt +5.051

l sin δ 9.37393
l cos δ 9.98750
l C 10600
l C′ 0.09350
l C″ 0.09210

| | | m | s | | ′ | ″ | |
|---|---|---|---|---|---|---|---|
| Aug. | 8 | 59 | 39.49 | | 40 | 42.2 | |
| | 13 | | 39.46 | -.03 | | 42.9 | +.7 |
| | 18 | | 39.42 | .04 | | 43.5 | .6 |
| | 23 | | 39.37 | .05 | | 44.1 | .6 |
| | 28 | | 39.32 | .05 | | 44.6 | .5 |
| Sept. | 2 | | 39.25 | .07 | | 45.1 | .5 |
| | 7 | | 39.18 | .07 | | 45.5 | .4 |
| | 12 | | 39.10 | .08 | | 45.8 | .3 |
| | 17 | | 39.02 | .08 | | 46.1 | .3 |
| | 22 | | 38.94 | .08 | | 46.3 | .2 |
| | 27 | | 38.85 | .09 | | 46.4 | .1 |
| Oct. | 2 | | 38.76 | .09 | | 46.4 | .0 |
| | 7 | | 38.67 | .09 | | 46.4 | .0 |

corr α =
corr δ =
tang δ = +.24 1.03
τ = 2.12
k = -.016

× 1874 -.46 Aug. 20 -.475 | × -.42 Aug. 22 ~~-.430~~ -.433 | × -.41 Sept. 13 -.450 | × 1874 -.18 -.07 Oct. 5 -.240 | 1875 -.62 × Aug 26 -.594 | -.60 × Sept-5 -.606

| Aug. 20 | | Aug. 22 | | Sept. 13 | | Oct. 5 | | Aug 26 | | Sept 5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 59 19.5 | 59 10.3 | 59 21.5 | 59 15.7 | 59 34.4 | 59 23.6 | 59 39.4 | 59 35.9 | 59 44.8 | 59 36.8 | 59 53.0 | 59 39.4 |
| 21.6 | 12.2 | 23.6 | 17.7 | 36.5 | 26.0 | 41.6 | 37.7 | 46.8 | 39.0 | 55.0 | 41.2 |
| 23.7 | 14.1 | 25.7 | 19.7 | 38.7 | 28.5 | 43.8 | 39.8 | 49.1 | 41.1 | 57.2 | 45.0 |
| 27.7 | | 30.0 | | 43.0 | | 48.0 | | 53.3 | | 0 1.6 | |
| 30.0 | | 32.1 | | 45.0 | | 50.2 | | 55.4 | | 3.6 | |
| 32.1 | | 34.2 | | 47.1 | | 52.1 | | 57.5 | | 5.7 | |
| 34.2 | 59 53.4 | 36.4 | 59 53.8 | 49.2 | 0 1.0 | 54.4 | 0 5.5 | 59.6 | 0 10.9 | 7.8 | 0 32.8 |
| 36.4 | 55.4 | 38.5 | | 51.4 | 3.4 | 56.5 | 0 | 0 1.8 | 12.4 | 10.0 | 35.0 |
| 40.7 | 57.1 | 42.6 | | 55.6 | 5.6 | 0.7 | | 5.9 | 14.1 | 14.2 | 36.7 |
| 42.8 | | 44.7 | | 57.8 | | 2.8 | | 8.1 | | 16.3 | |
| 45.0 | | 46.8 | | 0.0 | | 5.0 | | 10.4 | | 18.5 | |
| 3537 | | 3761 | | 4587 | | 3945 | | 3927 | | 2429 | |
| | | | | 60 | | 180 | | 240 | | 180 | |

59 32.155 59 12.20 59 55.30 | 59 34.191 59 17.70 59 53.8 | 5187 59 47.155 59 26.03 0 3.33 | 5745 59 52.227 59 37.80 0 5.60 | 6327 59 57.518 59 38.97 0 12.47 | 629 0 5.718 59 44.20 0 34.83
32139 +7.46 | 34.175 +5.39 | 47.139 -7.86 | 52.211 -13.29 | 57.502 -14.78 | 5.702 -23.29
59 39.40 -11 | 59 39.38 -10 | 59 39.08 -10 | 59 38.7?0 -04 | 59 42.37 -.15 | 59 42.25 -.14
-7.26 | -5.21 | +8.06 | +13.5?1 -.07 | +15.13 | +23.45
-2.33 | -2.31 | -2.01 | -1.63 | -2.54 | -2.42

+ 7.41 59 37.16 | + 5.34 37.15 | - 7.90 37.17 | - 13.38 37.18 | - 14.80 4003 | - 23.32 3985
— .11 | — .10 8 | — .11 | — .06 | — .14 | — .14
— 2.33 +0.424 | — 2.31 +0.444 | — 2.01 +0.744 | — 1.63 +1.124 | — 2.54 | — 2.42
+ 4.97 | + 2.93 | — 10.02 | — 15.07 | — 17.48 | — 26.88

59 32.14 38 39.30 | 59 34.18 40.24 | 59 47.14 41.28 | 59 52.21 38 42.92 | 59 57.50 57 7.14 | 0 5.70 5.42
+2 4.98 | +2 4.52 | +2 5.35 | +2 5.93 | -16 15.37 | -16 13.24
59 37.11 -1.0 | 59 37.11 -7.0 | 59 37.12 -1.1 | 59 37.14 -12 | 59 40.02 -1.3 | 59 39.82 -1.3
39.864 -430 | 39.864 -450 | 39.874 -640 | 39.894 -690 | ~~7.74~~ -440 | -540
+13 40 38.98 | 40 39.26 | 40 39.33 | 40 40.75 | 40 46.07 | 40 45.48

s
+19.95 -23.15 40 | +16.49 -19.61 40 | +21.12 -16.18 40 | +14.47 -13.23 40 | + 18.55 - 14.95 20 | + 24.52 - 29.11 20
-2.08 | -2.10 | -2.33 | -2.42 | -2.50 | -2.58

3 5.1 3 58.6 | 3 6.9 3 52.7 | 2 0.0 3 45.9 | 3 10.0 | 4 37.8 0 20.9 | 4 32.3 0 41.4
22.9 16.9 | 25.5 10.2 | 18.9 5.5 | 20.9 | 54.1 38.1 | 49.9 59.2
28.0 13.55 | 32.4 12.29 | 18.9 11.14 | 30.9 | 91.9 59.0 | 80.2 100.6
3′43 14.00″ 44 7.75 | 43 16.20 44 1.45 | 42 (43) 9.45 43 55.70 | 43 15.45 | 24 45.95 25 29.50 | 24 40.10 25 50.30

1.29994 1.36455n 1.21722 1.29248n 1.32469 1.20898n 1.16047 1.12156 1.26834 1.17464n 1.38952 1.46404n
1.39344 1.45805n 1.31072 1.38598n 1.41679 1.30108n 1.25257 1.21366 1.36044 1.28766n 1.50254 1.57706n
+24.74 -28.71 +20.45 -24.32 +26.11 -20.00 +17.89 -16.35 +22.93 -19.39 +31.81 -37.76
43 38.74 43 39.04 43 36.65 43 37.13 43 35.56 43 35.70 43 33.34 25 8.88 25 10.11 25 11.91 25 12.54

+13° 39 09.61 9.46 9.31 | 39 11.70 11.46 11.22 | 39 12.79 12.72 12.65 | 39 15.01 | 57 39.47 38.85 38.24 | 57 36.44 36.12 35.81
+28 41 42 1 | | 41 2 41 49 | | 40 58 41 41
1.49820 1.49850 | | 1.49820 1.49840 | | 1.49820 1.49840
-1969 | -427 | -143 | +641 | -143 | -1649
1.47851 1.47881 | 1.49393 1.49423 | 1.49677 1.49697 | 1.50461 1.50481 | 1.49677 1.49697 | 1.48171 1.48191
-30.10 -30.12 | -31.18 -31.21 | -31.39 -31.40 | -31.96 -31.98 | -31.39 -31.40 | -30.32 -30.33

-.04 -.05 -.06 | -.02 -.03 -.04 | -.05 -.04 -.03 | -.03 -.13 -.01 | -.03 -.31 -.02 | -.06 -.38 -.09
.00 .00 | .00 .00 | .00 .00 | -.10 | -.53 -.05 | -.52 -.09
- 30.14 - 30.18 | - 31.20 - 31.25 | - 31.44 - 31.43 | - 32.09 | - 31.95 - 31.47 | - 30.90 - 30.51

38 39.47 39.13 | 40.50 39.97 | 41.25 41.22 | 42.92 | 57 7.52 6.77 | 5.54 5.30
40 43.8 | 44.0 | 45.9 | 46.4 | 40 49.0 | 50.0
+2 4.3 4.7 | 3.5 4.0 | 4.6 4.7 | 3.5 | -16 18.5 17.8 | 15.5 15.3
+2 4.5 | 3.7 | 4.6 | 3.5 40.79 | -16 18.1 | 15.4

+2 4.89 40 39.07 | + 4.42 3.42 39.42 | + 5.30 41.9 39.14 | + 5.93 4.77 | - 16 15.46 40 46.47 | - 13.42 14.65 45.49
— .99 3.90 38.73 | — 1.00 +.55 38.89 | — 1.11 -1.35 39.01 | — 1.16 -1.85 | — 1.19 16.65 45.72 | — 1.23 45.25
— 4.30 +.75 | — 4.50 | — 6.40 | — 6.90 40.79 | — 4.40 | — 5.40
+1 59.60 40 38.90 | + 58.92 39.15 | + 57.79 39.07 | + 57.87 45.54 | — 16 21.05 40 46.10 | — 20.05 45.36

1875 1875

|  |  | m | s |  | ′ | ″ |  |  |
|---|---|---|---|---|---|---|---|---|
| Aug. | 28 | 57 | 42.35 |  | 40 | 49.2 |  | α 39.827 |
| Sept. | 2 |  | 42.29 | -.06 |  | 49.7 | +.5 | δ +40′ 44.58 |
|  | 7 |  | 42.22 | .07 |  | 50.2 | .5 | dα/dt +2.754 |
|  | 12 |  | 42.15 | .07 |  | 50.5 | .3 | dδ/dt +5.055 |
|  | 17 |  | 42.07 | .08 |  | 50.8 | .3 |  |
|  | 22 |  | 41.99 | .08 |  | 51.0 | .2 |  |
|  | 27 |  | 41.90 | .09 |  | 51.1 | .1 |  |
| Oct. | 2 |  | 41.81 | .09 |  | 51.1 | .0 |  |
|  | 7 |  | 41.72 | .09 |  | 51.1 | .0 |  |

l cos δ 9.98750
l C .12552
l C 0.11302

-.58 + Sept-17 -.547 | -.49 + Sept-14 -.503 | -.35 + Sept-25 -.306

59 54.8 59 45.2 59 59.3 59 53.5 0 6.9 59 54.4
56.8 46.6 0 1.3 55.5 9.0 56.3
59.0 48.7 3.4 57.0 11.1 58.4
0 3.3 7.7 15.3
5.2 9.9 17.4
7.5 12.0 19.6
9.7 0 24.1 13.9 21.7 0 39.2
11.8 25.8 16.1 23.9 41.4
16.0 27.8 20.3 28.0 43.1
18.2 22.4 30.2
20.3 24.7 32.4

2626 1910 2155
180 60
826 59 46.83 131.0 59 55.33 59 56.37
0 7.509 0 25.90 0 11.909 0 19.591 0 41.23
7.493 -25.09 11.893 -29.55 19.575 -37.51
59 42.22 -.14 59 42.121 -.12 59 41.943 -.08
+25.27 +29.788 +37.624
-2.39 -2.28 -2.10
- 25.10 39.87 - 29.59 39.94 - 37.51 39.88
- .14 - .12 + .07
- 2.39 - 2.28 - 2.10
- 27.63 - 31.99 - 39.68
0 7.49 57 511 0 11.89 740 0 19.57 497
-16 1377 -16 1418 -16 1262
59 39.86 -1.3 59 39.90 -1.3 59 39.89 -1.3
-5.60 -6.10 -6.50
40 4444 40 45.82 40 44.55

+ 20.68 - 18.39 + 15.58 + 23.22 - 21.64
20 20 20
-2.60 -2.66 -2.73
4 36.1 0 26.7 4 41.1 4 34.3 0 32.3
53.9 44.9 56.3 48.5 47.5
9.00 7.16 9.74 8.28 7.98
24 45.00 25 35.80 24 48.70 24 41.40 25 39.90

1.31555 1.26458n 1.19257 1.36586 1.33526n
1.42857 1.37760n 1.30559 1.47888 1.44828n
+ 26.83 - 23.86 +20.21 +30.12 -28.07
25 11.83 25 11.94 25 8.91 25 11.52 25 11.83

57 36.52 36.41 57 39.44 57 36.83 36.52
36.46 36.67
40 53 41 52
1.49820 1.49850
-803 -266 -365
1.49017 1.49037 1.49554 1.49455 1.49485
- 30.91 - 30.93 - 31.30 -31.23 - 31.25

-.04 -.43 -.03 -.02 -.37 -.06 -.46 -.05
.74
- .71 -.09 -.72 -.71 -.10
- 31.66 - 31.05 - 32.04 - 32.00 - 31.40
57 4.86 5.36 7.40 4.83 5.12
40 50.2 50.7 51.1
-16 14.7 15.2 16.7 13.7 14.0
-16 14.9 16.7 13.9
-16 14.01 15.25 44.01 - 14.30 15.57 - 13.62 14.93 43.40
- 1.24 44.51 - 1.27 - 1.31 43.69
- 5.60 - 6.10 - 6.50
- 20.85 40 44.26 - 21.67 45.73 - 21.43 43.54

1874 1875

# π Sagittarii

h m sec
19 2 19
δ

1875:
2 ~~20.77~~ 19
13 14.14
+3.5″10
+5.34

corr =
corr =
large = −.39
I = 2.21 s
K = −.017 s

−21° 14′
ζ = + 63° 37′
sin z = +90

l sin δ 9.55891 n
l cos δ 9.96947 9.96947
l C, .10600 .12552
l C′ 0.07547 0.09499
l C″ 0.07407

## 1874 Aug. 20

−.445
1 58.3 1 32.8
0.4 54.7
2.7 56.8
7.0
9.2
11.5
13.7 2 38.2
16.0 40.4
20.3 42.8
22.5
24.8
1864
.60
1264 1 54.76
2 11.491 2 40.46
11.474

+ 7.41
+ .18
− 2.86 +0.710
+ 4.73
2 11.47

2 16.20
19.770

+16.73 s −28.97
35
−2.08
0 53.5 1 47.2
16.0 9.5
1295 1167
36 4.75 36 58.35
1.22350 1.46195 n
1.29897 1.53742 n
+19.90 −34.47
36 24.65 36 23.88
−21° 13′ 36.30″ 35.53
35.91
+63 33 58 34 51
2.06181 2.06206
−1965
2.04216 2.04241
−110.20 −110.26
− 3 − 3
+.05 +.10 +.15
.00 .00
−1 50.18 −1 50.14
−21 15 26.48 25.67
+2 4.89 3.02
− 1.87 +8.66
+ 3.32
+2 6.34 13 20.14
19.33
13 19.73

## Aug. 22

~~−.430~~ −.433
2 0.2 1 53.7
2.3 55.2
4.6 58.0
9.0
11.2
13.6
15.7 2 33.0
18.0 35.2
22.3 37.1
24.6
26.8
1483
1 55.63
2 13.482 2 35.10
13.465

+ 5.34
+ .17
− 2.85 +0.720
+ 2.66
2 13.46

2 16.12
19.690

+17.85 −21.62
35
−2.10
0 46.0 1 33.7
6.7 54.9
1127 886
35 56.35 36 44.30
1.25164 n 1.33486 n
1.32711 n 1.41033 n
+21.24 −25.72
36 17.59 36 18.58
13 29.24 30.23
29.73
−417
2.05764 2.05789
−114.20 −114.26
− 2 − 2
+.06 +.07 +.08
.00 .00
−1 54.16 −1 54.20
15 23.40 24.43
+ 4.42 2.53
− 1.89 +8.71
+ 3.37
+ 5.90 17.50
18.53
18.02

## Sept. 10

−.463
2 11.0 2 3.1
13.2 5.1
15.4 6.8
19.8
22.0
24.2
26.6 2 44.9
28.7 47.2
33.0 49.3
35.2
37.5
2666
2 5.00
2 24.236 2 47.13
24.219

− 5.60
+ .18
− 2.63 +0.940
− 8.05
2 24.22

2 16.17
19.740

+19.24 −22.89
35
−2.31
0 51.0 1 42.7
15.2 5.9
1262 1086
36 3.10 36 54.30
1.28421 1.35965 n
1.35968 1.43512 n
+22.89 −27.23
36 25.99 36 27.07
13 37.64 38.72
38.18
−1938
2.04243 2.04268
−110.26 −110.33
− 3 − 3
+.06 +.07 +.09
.00 .00
−1 50.23 −1 50.27
15 27.87 28.99
+ 6.56 4.48
− 2.08 +9.23
+ 3.89
+ 8.37 19.50
20.62
20.06

## Sept. 13

−.460
2 13.2 2 3.0
15.4 5.5
17.6 7.7
22.1
24.3
26.5
28.8 2 31.5
31.0
35.4
37.6
39.9
2918
3 5.40
2 26.527 2 31.50
26.510

− 7.90
+ .17
− 2.59 +0.980
− 10.32
2 26.51

2 16.19
19.760

+21.13 −4.97
35
−2.33
0 41.2 1 12.9
5.1 36.1
1063 490
35 53.15 36 24.50
1.32490 n 0.69636 n
1.39897 0.77043 n
+25.06 −5.89
36 18.21 36 18.61
13 29.86 ~~30.26~~
29.56 29.26
33 46 34 17
2.06175 2.06190
−143
2.06032 2.06047
−114.90 −114.94
− 2 − 2
+.08 +.04 + 1
.00 .00
−1 54.84 −1 54.95
15 24.70 24.21
+5.30 3.20
− 2.10 +9.32
+3.98
+ 4.18 17.52
17.03
17.27

## 1874 Oct. 5

−240
—
—
—
—
—
—
2 31.7 34.0 2 49.2
.8 36.3
.86 40.7
.95 43.0
.74 45.0
2 31.844 2 49.20
31.827

− 13.38
+ .09
− 2.23 +1.340
− 15.52
2 31.83

2 16.31 (1/4) 19.880
16.178

−9.40
35
−2.42
1 29.6
46.8
764
36 39.20
0.97313 n
1.04720 n
−11.15
36 27.05
+641
2.06816 2.06831
−117.00 −117.03
0 0
−.05 −.03 + 2
−.05
57.06
+ 5.93
− 2.18
+ 3.12
+ 6.87

## 1875 Aug 26

−.597
2 24.4 2 15.5
26.1 18.7
28.8 20.9
33.2
35.5
37.7
39.9 3 40.9
41.9 42.9
46.5 45.5
48.6
50.8
4139
2 18.37
2 37.627 3 43.10
37.610

− 14.80
+ .23
− 3.20
− 17.77
2 37.61

2 19.84

+19.26 −5.47
16
−2.50
2 21.2 2 5.31
37.4 8.6
586 1217
17 29.30 18 0.85
1.28466 ~~1.81604~~ 73799 n
1.37965 ~~1.91109~~ 83258 n
+23.97 ~~−8.48~~ 6.61
17 53.27 17 ~~59.31~~ 54.04
55 4.92 5.69
5.30
33 41 34 13
2.06171 2.06187
−132
2.06039 2.06055
−114.92 −114.96
− 2 − 2
+.06 −.26 + 1
−.27 −.33
−1 55.15 −1 55.37
57 0.07 0.99
−16 15.46 17.71
− 2.25
+3.84
−16 13.84 13.91
14.83
13 14.37

| | Aug 28 | | | | Sept-13 | | |
|---|---|---|---|---|---|---|---|
| | -.549 | | | | -.468 | | |
| 2 | 25,1 | 2 | 16,7 | 2 | 38,4 | 2 | 28,6 |
| | 28,0 | | 19,0 | | 40,6 | | 30,7 |
| | 30,1 | | 21,8 | | 42,8 | | 32,9 |
| | 34,5 | | | | 47,2 | | |
| | 36,8 | | | | 49,3 | | |
| | 39,0 | | | | 51,7 | | |
| | 41,2 | 2 | 53,3 | | 53,9 | 3 | 16,6 |
| | 43,4 | | 54,9 | | 56,0 | | 18,3 |
| | 48,0 | | 57,7 | | 0,5 | | 20,3 |
| | 50,2 | | | | 2,6 | | |
| | 52,4 | | | | 4,9 | | |
| | 4293 | | | | 3879 | | |
| | | | | | 180 | | |
| | | 2 | 19.17 | | 5679 | 2 | 30.73 |
| 2 | 39027 | 2 | 5530 | 2 | 51.627 | 3 | 18.40 |
| | 39.010 | | | | 51.610 | | |
| − | 16.23 | | | − | 29.05 | | |
| + | 22 | | | + | .18 | | |
| − | 3.18 | | | − | 2.98 | | |
| − | 19.19 | | | − | 31.85 | | |
| 2 | 39.01 | | | 2 | 51.61 | | |
| 2 | 19.82 | | | 2 | 19.76 | | |
| | | | | | 19,807 | | |
| + | 19.86 | − | 16.27 | + | 20.90 | − | 26.77 |
| 15 | | | | 15 | | | |
| | −2,51 | | | | −265 | | |
| 2 | 21,7 | 3 | 6,4 | 2 | 21,8 | 3 | 21,1 |
| | 38,8 | | 22,1 | | 36,1 | | 35,3 |
| | 6.05 | | 2.85 | | 5.79 | | 5.64 |
| 17 | 30.25 | 18 | 14.25 | 17 | 28.95 | 18 | 26.20 |
| | 1.29798 | | 1.21139 n | | 1.32015 | | 1.42765 n |
| | 1.39297 | | 1.30638 n | | 1.41514 | | 1.52264 n |
| + | 24.71 | − | 2025 | + | 26.01 | − | 3332 |
| 17 | 54.96 | 17 | 54.00 | 17 | 54.96 | 17 | 54.88 |
| 55 | 6.61 | | 5.65 | 55 | 6.61 | | 6.53 |
| | 6.13 | | | | 6.57 | | |
| | | | | 33 | 41 | 34 | 40 |
| | | | | | 2.06171 | | 2.06203 |
| | −699 | | | | −254 | | |
| | 2.05472 | | 2.05488 | | 2.05917 | | 2.05949 |
| | −113.43 | | −113.47 | | −114.60 | | −114.68 |
| − | 2 | − | 2 | − | 2 | − | 2 |
| | +.07 | −.25 | +.04 | | +.08 | −.34 | +.13 |
| | −.27 | | −.35 | | −.37 | | −.53 |
| −1 | 53.65 | −1 | 53.80 | −1 | 54.91 | −1 | 55.10 |
| 57 | .026 | | 59.45 | 57 | 1.52 | | 1.63 |
| −16 | 15.13 | 17.39 | | | −15.50 | 17.88 | |
| − | 2.26 | | | | −2.38 | | |
| | +3.91 | | | | +4.59 | | |
| −16 | 13.48 | | 13.74 | − | 13.29 | | 14.81 |
| | | | 12.93 | | | | 14.92 |
| | | 13 | 13.33 | | | | 14.86 |

Piazzi XIX 4. 1874 1875

B. A. C. 6561. α 4 59.90 cos α =

$19^h\ 4^m\ 59^{sec}$ δ 51 50.71 cos δ =

$\frac{d\alpha}{dt}$ +3.590

$\frac{d\delta}{dt}$ +7.00 tang δ = −.40

−21° 53′

∓64° 16′ $I = 2.21^s$

Z = sin z = +.90 l sin δ 9.57138n $K = -.017^s$

l cos δ 9.96752 9.96752

l C .10600 .12552

l C′ 0.07352 0.09304

l C″ 0.07212

| 1874 Aug. 20 | | Aug. 22 | | Sept. 10 | | Sept. 13 | | 1874 Oct. 5 | |
|---|---|---|---|---|---|---|---|---|---|
| −.475 | | ~~−.430~~ −.433 | | −.463 | | −.450 | | −.240 | |
| 4 38.2 | 4 30.3 | 4 40.2 | 4 32.5 | 4 51.1 | 4 38.3 | 4 53.4 | 4 42.6 | 4 58.5 | 4 56.1 |
| 40.5 | 32.3 | 42.4 | 35.0 | 53.3 | 41.0 | 55.5 | 45.0 | 0.7 | 58.0 |
| 42.7 | 34.2 | 44.7 | 37.0 | 55.5 | 42.9 | 57.7 | 47.2 | 3.0 | 59.4 |
| 47.2 | | 49.2 | | 0.0 | | 2.3 | | 7.4 | |
| 49.3 | | 51.4 | | 2.1 | | 4.5 | | 9.6 | |
| 51.6 | | 53.7 | | 4.3 | | 6.7 | | 11.9 | |
| 53.8 | 5 13.9 | 55.8 | 5 3.9 | 6.4 | 5 21.0 | 8.7 | 5 17.0 | 14.0 | |
| 56.0 | 16.2 | 58.1 | 5.7 | 8.8 | 23.0 | 11.1 | 19.0 | 16.3 | |
| 0.4 | 18.4 | 2.5 | 7.5 | 13.3 | 24.9 | 15.7 | 21.0 | 20.6 | |
| 2.7 | | 4.8 | | 15.4 | | 17.8 | | 22.9 | |
| 5.0 | | 6.9 | | 17.6 | | 20.1 | | 25.2 | |
| 3874 | | 4097 | | 2278 | | 2535 | | 1901 | |
| 180 | | 180 | | 180 | | 180 | | 60 | |
| 5674 | 4 32.26 | 5897 | 4 34.83 | 478 | 4 40.73 | 735 | 4 44.93 | 1301 | 4 57.83 |
| 4 51.582 | 5 16.16 | 4 53.609 | 5 3.70 | 5 4.345 | 5 22.96 | 5 6.682 | 5 19.00 | 5 11.827 | |
| 51.565 | | 53.592 | | 4.328 | | 6.665 | | 11.810 | |
| + 7.41 | | + 5.34 | | − 5.60 | | − 7.90 | | − 13.38 | |
| + .19 | | + .17 | | + .18 | | + .18 | | + .10 | |
| − 2.89 | +0.700 | − 2.88 | +0.710 | − 2.66 | +0.930 | − 2.62 | +0.970 | − 2.26 | +1.330 |
| + 4.71 | | + 2.63 | | − 8.08 | | − 10.34 | | − 15.54 | |
| 4 51.56 | | 4 53.59 | | 5 4.33 | | 5 6.66 | | 5 11.81 | |
| 4 56.27 | | 4 56.22 | | 4 56.25 | | 4 56.32 | | 4 56.27 | |
| 59.860 | | 59.810 | | 59.840 | | 59.910 | | 59.860 | |
| | | | | | | | | 56.266 | |

s

+19.32 −24.58 +18.78 −12.09 +23.61 −18.62 +21.75 −12.32 +14.00

10 10 10 10 10

−2.08 −2.10 −2.31 −2.33 −2.42

4 22.7 0 19.5 4 17.5 4 53.0 4 19.5 0 7.9 4 13.5 4 54.0 4 24.0

42.4 36.9 38.1 15.0 42.0 32.9 35.1 16.6 39.6

65.1 56.4 55.6 128.0 61.5 40.8 48.6 130.6 63.6

14 22.55 15 23.20 14 27.80 15 4.00 14 30.75 15 20.40 14 24.30 15 5.30 14 31.80

1.28601 1.39058n 1.27370 1.08243n 1.37310 1.26998n 1.33746 1.09061 1.14613

1.35958 1.46410n 1.34722 1.15595n 1.44662 1.34350n 1.40958 1.16273 1.21825

+22.88 −29.12 +22.24 −14.32 +27.97 −22.05 +25.68 −14.55 +16.53

14 55.43 14 54.08 14 50.04 14 49.68 14 58.72 14 58.35 14 49.98 14 50.75 14 48.33

−21° 52′ 7.08″ 5.73 52 1.69 1.33 52 10.37 10.00 52 1.63 2.40 51 59.98

6.40 1.51 10.18 2.01

+64 12 26 13 16 12 17 12 58

2.07397 2.07426 2.07394 2.07416

−1962 −408 −1922 −143 +641

2.05435 2.05464 2.06989 2.07018 2.05475 2.05504 2.07251 2.07273 2.08035

−113.33 −113.41 −117.46 −117.54 −113.44 −113.51 −118.17 −118.23 −120.32

− 3 − 3 − 2 − 2 − 3 − 3 − 2 − 2 0

+.04 +.09 +.11 +.06 +.04 +.02 +.10 +.08 +.06 +.08 +.05 +.02 +.03 −.10

.00 .00 .00 .00 .00 .00 .00 .00 −.13

−1 53.29 −1 53.33 −1 57.42 −1 57.54 −1 53.37 −1 53.48 −1 58.11 −1 58.23 −2 0.42

−21 54 0.37 59.06 53 59.11 58.87 54 3.74 3.48 54 59.74 0.63 54 0.40

+2 4.89 3.02 +4.42 2.53 +6.56 4.48 +5.30 3.20 +5.93 3.75

− 1.87 +10.26 − 1.89 +10.32 − 2.08 +10.91 − 2.10 +11.01 − 2.18 +11.61

+3.26 +3.32 +3.91 +4.01 +4.61

+2 6.28 51 54.09 + 5.85 53.26 + 8.39 55.35 + 7.21 52.53 + 8.36

52.78 53.02 55.09 53.42

51 52.43 52.14 55.22 52.97 52.04

51 44.43 46.14 48.22 ~~46.22~~ 45.97 45.04

1875

| Aug 26 | | Aug 30 | | Aug 31 | | Sept 13 | |
|---|---|---|---|---|---|---|---|
| -594 | | -.645 | | -.680 | | -468 | |
| 5 4.4 | 4 54.8 | 5 7.6 | 4 53.6 | 5 8.5 | 4 47.0 | 5 18.6 | 5 14.0 |
| 6.7 | 56.7 | 9.8 | 55.4 | 10.8 | 49.0 | 20.6 | 16.9 |
| 8.8 | 58.3 | 11.9 | 57.3 | 12.9 | 50.5 | 23.0 | 19.0 |
| 13.3 | | 16.5 | | 17.3 | | 27.3 | |
| 15.5 | | 18.7 | | 19.7 | | 29.5 | |
| 17.6 | | 20.9 | | 21.8 | | 31.8 | |
| 19.9 | 5 30.7 | 23.0 | 5 37.1 | 24.0 | 5 31.3 | 34.0 | 6 0.2 |
| 22.2 | 32.9 | 25.2 | 39.2 | 26.0 | 32.6 | 36.2 | 2.0 |
| 26.6 | 35.0 | 29.8 | 41.4 | 30.8 | 34.0 | 40.6 | 3.8 |
| 28.9 | | 32.0 | | 33.0 | | 42.9 | |
| 31.1 | | 34.2 | | 35.0 | | 45.0 | |
| 1950 | | 2296 | | 2398 | | 3495 | |
| | 4 56.60 | | 1<br>4 55.43 | | 4 48.83 | | 5 16.63 |
| 5 17.727 | 5 32.87 | 5 20.873 | 5 39.23 | 5 21.800 | 5 32.63 | 5 31.773 | 6 2.00 |
| 17.710 | | 20.856 | | 21.783 | | 31.756 | |
| - 14.80 | | - 18.00 | | - 18.89 | | - 29.05 | |
| + .24 | | + .27 | | + .27 | | + .19 | |
| - 3.23 | | - 3.19 | | - 3.18 | | - 3.02 | |
| - 17.79 | | - 20.92 | | - 21.80 | | - 31.88 | |
| 5 17.71 | | 5 20.86 | | 5 21.78 | | 5 31.76 | |
| 4 59.92 | | 4 59.94 | | 4 59.98 | | 4 59.88 | |
| | | | | | | 59.930 | |
| +21.13 | - 15.14 | +25.44 | - 18.36 | +32.97 | - 10.83 | +15.14 | - 30.23 |
| 55 | | 55 | | 55 | | 55 | |
| -2.50 | | -2.53 | | -2.53 | | -2.65 | |
| 0 50.5 | 1 35.6 | 0 54.1 | 1 42.0 | 0 41.7 | 1 33.7 | 1 0.7 | 1 57.7 |
| 8.1 | 51.4 | 7.4 | 0.0 | 50.8 | 51.0 | 16.3 | 13.7 |
| 1186 | 870 | 1215 | 1020 | 995 | 847 | 170 | 1314 |
| 55 59.30 | 56 43.50 | 56 0.75 | 56 51.00 | 55 49.75 | 56 42.35 | 56 8.50 | 57 5.70 |
| 1.32490 | 1.18013 n | 1.40552 | 1.26387 n | 1.51812 | 1.03463 n | 1.18013 | 1.48044 n |
| 1.41794 | 1.27317 n | 1.49856 | 1.35691 n | 1.61116 | 1.12767 n | 1.27317 | 1.57348 n |
| +26.18 | -18.76 | +31.52 | 22.75 | +40.85 | -13.42 | +18.77 | -37.45 |
| 56 25.48 | 56 24.74 | 56 32.27 | 56 28.25 | 56 30.60 | 56 28.93 | 56 27.27 | 56 28.25 |
| 33 37.08 | 36.39 | 33 43.88 | 39.80 | 33 42.25 | 40.58 | 33 38.92 | 39.90 |
| 36.73 | | 41.89 | | 41.41 | | 39.41 | |
| 12 11 | 12 54 | | | | | 12 20 | 13 18 |
| 2.07390 | 2.07413 | | | | | 2.07394 | 2.07426 |
| -123 | | -1408 | | -853 | | -249 | |
| 2.07267 | 2.07290 | 2.05982 | 2.06005 | 2.06537 | 2.06560 | 2.07145 | 2.07177 |
| -118.22 | -118.28 | -114.77 | -114.83 | -116.24 | -116.31 | -117.88 | -117.97 |
| - 2 | - 2 | - 3 | - 3 | - 2 | - 2 | - 2 | - 2 |
| +.08 | -.09 +.04 | +.12 | -.06 +.06 | +.20 | -.03 +.02 | +.04 | -.13 +.17 |
| -.11 | -.19 | -.11 | -.20 | -.09 | -.19 | -.16 | -.31 |
| -1 58.27 | -1 58.45 | -1 54.79 | -1 55.00 | -1 56.15 | -1 56.30 | -1 58.02 | -1 58.13 |
| 35 35.35 | 34.84 | 35 38.67 | 34.90 | 35 38.40 | 37.08 | 35 36.94 | 38.03 |
| -16 15.46 | 17.71 | -15.09 | 17.37 | -13.01 | 15.29 | -15.50 | 17.88 |
| - 2.25 | | - 2.28 | | - 2.28 | | - 2.38 | |
| +3.80 | | +3.92 | | +3.95 | | +4.30 | |
| -16 13.91 | 51 49.26 | - 13.45 | 52.12 | - 11.34 | 49.74 | - 13.58 | 50.52 |
| | 48.75 | | 48.35 | | 48.42 | | 51.61 |
| | 51 49.00 | | 50.23 | | 49.08 | | 51.06 |

1874 1875

ψ Sagittarii α 7 5252 corr α =
δ 28 12.39 corr δ =
h m sec. $\frac{d\alpha}{dt}$ + 3.682
19 7 52 $\frac{d\delta}{dt}$ + 5.81 lang δ = − .48

−25° 29′
z = + 67° 52′ I = 2.28
j sin z = +.93 l sin δ 9.63372n ψ = −.017

l cos δ 9.95555 9.95555
l C .10600 .12552
l C′ 0.06155 0.08107

l C″ 0.06015

1874

| Aug. 20 | | Aug. 22 | | Sept. 10 | | Sept. 13 | | Oct. 5 | |
|---|---|---|---|---|---|---|---|---|---|
| −.475 | | −.433 | | −.463 | | −.400 | | −.240 | |
| 7 30.6 | 7 28.2 | 7 32.6 | 7 23.0 | 7 43.2 | 7 30.5 | 7 45.5 | 7 38.2 | 7 50.8 | 7 41.3 |
| 32.9 | | 34.9 | 25.0 | 45.5 | 33.0 | 47.9 | 40.0 | 53.0 | 43.1 |
| 35.2 | | 37.0 | 26.6 | 47.8 | 34.8 | 50.1 | 42.1 | 55.4 | 45.6 |
| 39.8 | | 41.6 | | 52.4 | | 54.7 | | 0.1 | |
| 41.9 | | 44.1 | | 54.7 | | 56.9 | | 2.1 | |
| 44.2 | | 46.3 | | 57.0 | | 59.2 | | 4.5 | |
| 46.4 | 8 13.7 | 48.5 | 8 5.6 | 59.2 | 8 25.0 | 1.6 | 8 3.2 | 6.7 | |
| 48.8 | 16.7 | 50.8 | 7.5 | 1.5 | 27.0 | 3.8 | 5.4 | 9.1 | |
| 53.3 | 18.2 | 53.3 | 10.0 | 6.2 | 29.0 | 8.3 | 7.1 | 13.5 | |
| 55.7 | | 57.6 | | 8.3 | | 10.6 | | 15.9 | |
| 58.0 | | 0.1 | | 10.7 | | 12.9 | | 18.2 | |
| 4868 | | 4488 | | 3865 | | 3514 | | 2293 | |
| | | 60 | | 240 | | 300 | | 180 | |
| | 7 28.20 | 5088 | 7 24.86 | 6265 | 7 32.76 | 6514 | 7 40.10 | 493 | 7 43.33 |
| 7 44.255 | 8 16.20 | 7 46.255 | 8 7.70 | 7 56.955 | 8 27.00 | 7 59.218 | 8 6.23 | 8 4.482 | |
| 44.238 | | 46.238 | | 56.938 | | 59.201 | | 4.465 | |
| + 7.41 | | + 5.34 | | − 5.60 | | − 7.90 | | − 13.38 | |
| + .23 | | + .21 | | + .22 | | + .22 | | + .11 | |
| − 2.99 | +0.692 | − 2.98 | +0.702 | − 2.76 | +0.922 | − 2.72 | +0.962 | − 2.35 | +1.332 |
| + 4.65 | | + 2.57 | | − 8.14 | | − 10.40 | | − 15.62 | |
| 7 44.24 | | 7 46.24 | | 7 56.94 | | 7 59.20 | | 8 4.46 | |
| 7 48.89 | | 7 48.81 | | 7 48.80 | | 7 48.80 | | 7 48.84 | |
| 52.572 | | 52.492 | | 52.482 | | 52.482 | | 48.828 | 52.522 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| s<br>+ 16.05 | − 31.95 | + 21.39 | − 21.45 | + 24.19 | − 30.05 | + 19.12 | − 6.01 | + 21.15 |
| 50 | | 50 | | 50 | | 50 | | 50 |
| −2.08 | | −2.10 | | −2.31 | | −2.33 | | −2.42 |
| 0 31.1 | 1 26.0 | 0 16.8 | 1 5.6 | 0 23.9 | 1 24.8 | 0 19.9 | 0 50.1 | 0 19.8 |
| 50.9 | 47.3 | 38.8 | 25.9 | 45.3 | 47.1 | 42.8 | 12.1 | 36.5 |
| 82.0 | 73.3 | 55.6 | 31.5 | 69.2 | 71.9 | 62.7 | 122.2 | 56.3 |
| 50a 41.00 | 51x 36.65 | 50a 27.80 | 51x 15.75 | 50a 34.60 | 51x 35.95 | 50a 31.35 | 51x 1.10 | 50a 28.15 |
| 1.20548 | 1.50447 | 1.33021 | 1.33143 | 1.38364 | 1.47784 | 1.28149 | 0.77887 | 1.32531 |
| 1.26703 | 1.56602 | 1.39176 | 1.39298 | 1.44519 | 1.53939 | 1.34164 | 0.83902 | 1.38546 |
| + 18.50 | − 36.82 | + 24.65 | − 24.72 | + 27.87 | − 34.62 | + 21.96 | − 6.90 | + 24.29 |
| 50 59.50 | 50 59.83 | 50 52.45 | 50 51.03 | 51 2.47 | 51 1.33 | 50 53.31 | 50 54.20 | 50 52.44 |
| −25° 28′ 11″.15 | 11.48 | 28 04.10 | 02.68 | 28 14.12 | 12.98 | 28 4.96 | 5.85 | 28 4.09 |
| 11.31 | | 3.39 | | 13.55 | | 5.40 | | |
| +67 48 34 | 49 30 | | | | | 48 24 | 48 54 | |
| 2.14679 | 2.14711 | | | | | 2.14671 | 2.14689 | |
| −1957 | | −398 | | −1902 | | −143 | | +641 |
| 2.12722 | 2.12754 | 2.14281 | 2.14313 | 2.12777 | 2.12809 | 2.14528 | 2.14546 | 2.15312 |
| − 134.03 | − 134.14 | − 138.94 | − 139.04 | − 134.21 | − 134.31 | − 139.73 | − 139.79 | − 142.27 |
| − 6 | 6 | − 3 | 3 | − 6 | 6 | − 3 | 3 | 0 |
| + .05 +.13 | + .21 | + .09 +.09 | + .09 | + .12 +.15 | + .19 | + .08 +.04 + | 1 | + .09 +.08 |
| .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | − .01 |
| − 2 14.04 | − 2 13.99 | − 2 18.88 | − 2 18.98 | − 2 14.15 | − 2 14.18 | − 2 19.68 | − 2 19.81 | − 2 22.19 |
| −25 30 25.19 | 25.47 | 30 22.98 | 21.66 | 30 28.27 | 27.16 | 30 24.64 | 25.66 | 30 26.28 |
| + 2 4.89 | 2.96 | + 4.42 | 2.47 | + 6.56 | 4.42 | + 5.30 | 3.14 | + 5.93 3.68 |
| − 1.93 | + 9.74 | − 1.95 | + 9.83 | − 2.14 | + 10.65 | − 2.16 | + 10.78 | − 2.25 + 11.51 |
| + 3.93 | | + 4.02 | | + 4.84 | | + 4.97 | | + 5.70 |
| + 2 6.89 | 28 18.30 | + 6.49 | 16.49 | + 9.26 | 19.01 | + 8.11 | 16.53 | + 9.38 |
| | 18.58 | | 15.17 | | 17.90 | | 17.55 | |
| | 28 18.44 | | 15.83 | | 18.45 | | 17.04 | 16.90 |

1875

1874

| Aug 26 | | Aug 28 | | Aug 29 | | Aug 30 | | Aug 31 | | Sept 1-28 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -.597 | | -.570 | | -.574 | | -.675 | | -.680 | | -.492 | |
| 7 56.7 | 8 3.2 | 7 58.0 | 7 46.8 | 7 39.0 | 7 45.9 | 7 59.8 | 7 55.3 | 8 0.9 | 7 38.7 | 8 21.2 | 8 47.1 |
| 58.9 | 6.2 | 0.6 | 48.7 | 8 1.4 | 48.2 | 8 2.2 | 57.3 | 3.0 | 40.5 | 23.5 | 50.0 |
| 8 1.5 | 8.8 | 8 2.8 | 51.3 | 3.6 | 50.1 | 4.5 | 59.1 | 5.4 | 42.7 | 25.8 | 52.0 |
| 5.8 | | 7.3 | | 8.2 | | 9.0 | | 10.0 | | 30.4 | |
| 8.3 | | 9.6 | | 10.5 | | 11.2 | | 12.2 | | 32.6 | |
| 10.5 | | 11.9 | | 12.8 | | 13.7 | | 14.5 | | 34.9 | |
| 12.8 | 8 28.3 | 14.2 | 8 29.0 | 15.0 | 8 44.8 | 15.9 | 8 30.4 | 16.8 | 8 52.4 | [illegible] | 9 14.9 |
| 15.0 | | 16.4 | 31.5 | 17.3 | 47.1 | 18.2 | 32.0 | 19.0 | 54.0 | [illegible] | |
| 19.7 | | 21.0 | 33.8 | 21.8 | 49.0 | 22.7 | 34.3 | 23.6 | 56.3 | [illegible] | |
| 21.8 | | 23.3 | | 24.2 | | 25.0 | | 25.9 | | 46.4 | |
| 24.1 | | 25.6 | | 26.5 | | 27.3 | | 28.2 | | 48.7 | |
| 2351 | | 1907 | | 2003 | | 2095 | | 1595 | | 3840 | |
| 120 | | 60 | | 60 | | 60 | | | | | |
| 1151 | 8 6.07 | 1307 | 7 48.93 | 1403 | 7 48.07 | 1495 | 7 57.23 | | 7 40.63 | | 8 49.70 |
| 8 10.464 | 8 28.30 | 8 11.882 | 8 31.43 | 8 12.755 | 8 46.97 | 8 13.591 | 8 32.23 | 8 14.500 | 8 54.23 | 8 34.909 | 9 14.90 |
| 10.447 | | 11.865 | | 12.738 | | 13.574 | | 14.483 | | 34.892 | |
| − 14.80 | | − 16.23 | | − 17.14 | | − 18.00 | | − 18.89 | | − 43.48 | |
| + .29 | | + .27 | | + .27 | | + .32 | | + .33 | | + .29 | |
| − 3.35 | | − 3.33 | | − 3.32 | | − 3.31 | | − 3.30 | | − 2.88 | |
| − 17.86 | | − 19.29 | | − 20.22 | | − 20.99 | | − 21.86 | | − 46.12 | |
| 8 10.45 | | 8 11.86 | | 8 12.74 | | 8 13.57 | | 8 14.48 | | 34.89 | |
| 7 52.59 | | 7 52.57 | | 7 52.52 | | 7 52.58 | | 7 52.62 | | 877 | |
| | | | | | | | | 52.576 | | | |
| 30 + 4.39 | − 17.84 | 30 + 22.95 | − 19.55 | 30 + 24.68 | − 34.22 | 30 + 16.36 | − 18.64 | 30 + 33.87 | − 39.73 | 30 − 14.79 | − 39.99 |
| −2.50 | | −2.51 | | −2.52 | | −2.53 | | −2.53 | | | |
| 2 13.9 | 2 40.0 | 1 51.7 | 2 44.9 | 1 54.1 | 3 5.1 | 2 3.5 | 2 46.2 | 1 42.0 | 3 11.5 | 2 40.1 | 3 10.8 |
| 29.1 | 55.1 | 8.7 | 0.9 | 10.9 | 21.7 | 20.9 | 2.8 | 58.8 | 27.1 | 05.8 | 25.8 |
| 43.0 | 95.1 | 120.4 | 105.8 | 123.0 | 26.8 | 24.4 | 109.0 | 100.8 | 38.6 | 95.9 | 36.6 |
| 32 21.50 | 32 47.55 | 32 0.20 | 32 52.90 | 32 2.50 | 33 13.40 | 32 12.20 | 32 54.50 | 31 50.40 | 33 19.30 | 32 47.95 | 33 18.30 |
| 0.64246 | 1.25139 | 1.36078 | 1.29115 | 1.39235 | 1.53428 | 1.21378 | 1.27045 | 1.52982 | 1.59912 | 1.16997n | 1.60141n |
| 0.72353 | 1.33346 | 1.44185 | 1.37322 | 1.47342 | 1.61535 | 1.29485 | 1.35152 | 1.61089 | 1.68019 | 1.25104n | 1.68248n |
| +5.29 | −21.50 | +27.66 | 23.56 | +29.75 | −41.24 | +19.72 | −22.47 | +40.82 | −47.88 | −17.82 | −48.14 |
| 32 26.79 | 32 26.00 | 32 37.86 | 32 29.34 | 32 32.26 | 32 32.16 | 32 31.92 | 32 32.03 | 32 31.22 | 32 31.42 | 32 30.13 | 32 30.16 |
| 9 38.44 | 37.65 | 9 39.51 | 40.99 | 9 43.90 | 43.81 | 9 43.57 | 43.68 | 9 42.87 | 43.07 | | |
| 38.04 | | 40.25 | | 43.85 | | 43.62 | | 42.97 | | | |
| 48 33 | 49 0 | | | | | | | | | 49 0 | 50 30 |
| 2.14679 | 2.14693 | | | | | | | | | ~~2.14693~~ | ~~2.14735~~ |
| −111 | | −678 | | −1465 | | −1398 | | −843 | | | |
| 2.14568 | 2.14582 | 2.14001 | 2.14015 | 2.13214 | 2.13228 | 2.13281 | 2.13295 | 2.13836 | 2.13850 | | |
| −139.86 | −139.90 | −138.04 | −138.09 | −135.56 | −135.61 | −135.77 | −135.82 | −137.52 | −137.56 | | |
| − 4 | − 4 | − 4 | − 4 | − 6 | − 6 | − 5 | − 5 | − 4 | − 4 | | |
| + 1 −.25 | +.06 | +.11 −.17 | +.08 | +.13 −.09 | +.25 | +.05 −.21 | +.08 | +.24 .00 | +.32 | +.05 | +.33 |
| −.26 | −.31 | −.22 | −.32 | −.22 | −.35 | −.24 | −.32 | −.20 | −.36 | | |
| − 2 20.15 | − 2 20.14 | − 2 18.19 | − 2 18.37 | − 2 15.71 | − 2 15.77 | − 2 16.01 | − 2 16.11 | − 2 17.52 | − 2 17.64 | | |
| 11 58.54 | 57.84 | 11 57.70 | 59.36 | 11 59.61 | 59.58 | 11 59.58 | 59.79 | 12 0.39 | 0.71 | | |
| − 16 15.46 | 17.78 | −15.13 | 17.46 | −14.81 | 17.15 | −15.09 | 17.44 | −13.01 | 15.36 | | |
| − 2.32 | | − 2.33 | | − 2.34 | | − 2.35 | | − 2.35 | | | |
| + 4.32 | | + 4.61 | | + 4.65 | | + 4.69 | | + 4.73 | | + 5.45 | |
| −16 15.26 | 28 11.85 | − 12.85 | 10.55 | − 12.50 | 12.11 | − 12.75 | 12.33 | − 10.63 | 11.02 | | |
| | 11.10 | | 12.21 | | 12.08 | | 12.54 | | 11.34 | | |
| | | | 11.38 | | | | | | | | |
| | 28 11.47 | | | | 12.10 | | 12.44 | | 11.18 | | |

17

| | 1874 | 1875 | | 1875 N.A. |
|---|---|---|---|---|
| d Sagittarii | α 10m 15.693s | 10 19.26 | corr α = | 10 19.206 |
| h m sec. 19 10 20 | δ 10 26.69 | 10 24.97 | corr δ = | 10 20.60 |
| | $\frac{d\alpha}{dt}$ +3.513 | +3.513 | | +3.513 |
| −19° 11′ | $\frac{d\delta}{dt}$ + 6.09 | +6.03 | log δ = −.35 1.06 | +6.10 |
| Z = + 61° 34′ | | | I = 2.18 s | |
| Z sin z = +.88 | l sin δ 9.51666n | | K = −.016 s | |
| | l cos δ 9.97519 | 9.97519 | | |
| | l C .10600 | .12552 | | |
| | l C′ 0.08119 | 0.10071 | | |
| | l C″ 0.07979 | | | |

1874

| | m | s | | ° | ″ | |
|---|---|---|---|---|---|---|
| Aug 18 | 10 | 18.56 | | 10 | 28.9 | |
| 23 | | 18.52 | −.04 | | 28.9 | +.0 |
| 28 | | 18.48 | 4 | | 29.0 | .1 |
| Sept. 2 | | 18.42 | 6 | | 29.1 | .1 |
| 7 | | 18.36 | 6 | | 29.3 | .2 |
| 12 | | 18.29 | 7 | | 29.4 | .1 |
| 17 | | 18.22 | 7 | | 29.5 | .1 |
| 22 | | 18.15 | 7 | | 29.6 | .1 |
| 27 | | 18.07 | 8 | | 29.8 | .2 |
| Oct. 2 | | 17.99 | 8 | | 29.9 | .1 |
| 7 | | 17.90 | 9 | | 30.0 | .1 |

1874

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −.46 Aug. 20 | | −.42 Aug. 22 | | −.40 Aug. 24 | | −.36 Aug. 27 | | −.46 Aug. 31 | | −.45 Sept. 10 | |
| −.475 | | ~~−.430~~ | −.433 | −.400 | | −.342 | | −.480 | | −.463 | |
| 9 58.2 | 9 56.7 | 9 59.9 | 9 47.2 | 10 1.0 | 9 57.3 | 10 2.0 | 9 55.4 | 10 3.7 | 9 56.7 | 10 10.8 | 10 2.0 |
| 0.1 | 58.8 | 2.2 | 49.1 | 3.3 | 53.7 | 4.1 | 58.4 | 5.5 | 58.7 | 13.0 | 3.5 |
| 2.3 | 1.1 | 4.4 | 51.2 | 5.4 | 55.8 | 6.4 | .0.7 | 8.1 | 0.2 | 15.1 | 5.0 |
| 6.6 | | 8.7 | | 9.7 | | 10.7 | | 12.5 | | 19.5 | |
| 8.9 | | 11.6 | | 12.0 | | 12.8 | | 14.7 | | 21.6 | |
| 11.1 | | 13.1 | | 14.2 | | 15.0 | | 16.8 | | 23.9 | |
| 13.2 | 10 46.5 | 15.3 | 10 31.1 | 16.4 | 10 33.6 | 17.2 | 10 38.6 | 19.0 | 10 33.5 | 26.1 | 10 38.5 |
| 15.4 | 48.7 | 17.5 | | 18.6 | 38.1 | 19.4 | 40.6 | 21.1 | 35.5 | 28.2 | 40.5 |
| 19.8 | 50.0 | 21.8 | | 22.9 | 40.4 | 23.6 | 42.5 | 25.5 | 37.5 | 32.6 | 42.4 |
| 22.0 | | 24.1 | | 25.1 | | 26.0 | | 27.8 | | 34.8 | |
| 24.2 | | 26.3 | | 27.3 | | 28.1 | | 29.9 | | 37.0 | |
| 1818 | | 2043 | | 1559 | | 1653 | | 1849 | | 2626 | |
| 60 | | 60 | | | | | | | | | |
| 121 8 | 9 55.86 | 144 3 | 9 49.16 | | 9 53.60 | | 9 58.16 | | 9 58.60 | | 10 3.50 |
| 10 11.073 | 10 48.40 | 10 13.118 | 10 31.10 | 10 14.173 | 10 38.10 | 10 15.027 | 10 40.50 | 10 16.809 | 10 35.50 | 10 23.873 | 10 40.46 |
| 11.057 | +7.46 | 13.102 | +5.39 | 14.157 | +4.32 | 15.011 | +3.82 | 16.793 | +1.61 | 23.857 | −5.56 |
| | +16 | | +15 | | +14 | | +13 | | +16 | | +16 |
| + 7.40 | | + 5.34 | | + 4.27 | | + 3.31 | | + 1.58 | | − 5.61 | |
| + .17 | −288 | + .15 | −284 | + .14 | −282 | + .12 | −280 | + .17 | −276 | + .16 | −263 |
| − 2.88 | +0.633 1580 | − 2.84 | +0.673 1580 | − 2.82 | +0.693 1580 | − 2.80 | +0.713 1566 | − 2.76 | +0.753 1580 | − 2.63 | +0.883 1588 |
| + 4.69 | | +2.65 | | + 1.59 | | + 0.63 | | − 1.01 | | − 8.08 | |
| 11.06 | | 13.10 | | 14.16 | | 15.01 | | 16.79 | | 23.86 | |
| 1575 | 12 46.08 | 1575 | 35.40 | 1575 | 34.50 | 1564 | 35.89 | 15.78 | 36.54 | 1578 | 39.07 |
| 19.263 | +2 4.98 | 19.263 | +2 4.52 | 19.263 | +2 4.84 | 19.153 | +2 6.35 | 19.293 | +2 6.25 | 19.293 | +2 6.85 |
| | −1.9 | | − 2.0 | | − 2.0 | | − 2.0 | | − 2.0 | | − 2.0 |
| | + 2.20 | | + 2.20 | | + 2.20 | | + 2.30 | | + 2.40 | | + 2.60 |
| −19 | 10 40.80 | | 10 30.68 | | 10 29.46 | | 10 29.24 | | 10 29.89 | | 10 31.62 |
| + 12.21 | − 37.33 | + 23.96 | − 17.98 | + 20.57 | − 23.93 | + 16.87 | − 25.47 | + 18.21 | − 18.69 | + 20.37 | − 16.59 |
| 30 | | 30 | | 30 | | 30 | | 30 | | 30 | |
| −2.08 | | −2.10 | | −2.14 | | −2.18 | | −2.20 | | −2.31 | |
| 3 19.3 | − ~~19.2~~ | 2 59.4 | 3 51.4 | 3 2.8 | 3 56.9 | 3 8.7 | 3 0.8 | 3 10.1 | 3 54.7 | 3 10.9 | 3 55.1 |
| 39.8 | 39.9 | 20.0 | 10.7 | 22.7 | 15.9 | 27.3 | 18.4 | 30.4 | 15.5 | 32.7 | 16.9 |
| 59.1 | 59.1 | 139.4 | 122.1 | 25.5 | 22.8 | 36.0 | 19.2 | 40.5 | 10.2 | 43.6 | 13.20 |
| 33 29.55 | 34 29.55 | 33 9.70 | 34 1.05 | 33 12.75 | 33 11.40 | 33 18.00 | 33 9.60 | 33 20.25 | 33 5.10 | 33 21.80 | 34 6.00 |
| 1.08672 | 1.57206 | 1.37949 | 1.25479 | n1.31323 | 1.37894 | n1.22712 | 1.40603 | n1.26031 | 1.27161 | n1.30899 | 1.21985n |
| 1.16791 | 1.65325 | 1.46068 | 1.33598 | 1.39442 | 1.46013 | n1.30831 | 1.48722 | n1.34150 | 1.35280 | n1.39018 | 1.30104n |
| +14.72 | −45.00 | +28.88 | −21.68 | +24.80 | −28.85 | +20.34 | −30.71 | +21.96 | −22.54 | +24.56 | −20.00 |
| 33 44.27 | 33 44.55 | 33 38.58 | 33 39.37 | 33 37.55 | 33 42.55 37 | 33 38.34 | 33 38.89 | 33 42.21 | 32 52.56 | 33 46.36 | 33 46.00 |
| −19° 10′ 55.92″ | 56.20 | 10 50.23 | 51.02 | 10 49.20 | 49.20 | 10 49.99 | 50.34 | 10 53.86 | ~~49.21~~ 54.21 | 10 58.01 | 57.65 |
| 56.06 | | 50.62 | | 49.20 | | 50.26 | | 54.03 | | 57.83 | |
| +61 31 22 | 32 23 | | | | | | | | | 31 15 | 31 59 |
| 2.02427 | 2.02456 | | | | | | | | | 2.02424 | 2.02444 |
| −1954 | | −389 | | −170 | | −70 | | −1379 | | −1887 | |
| 2.00473 | 2.00502 | 2.02038 | 2.02067 | 2.02257 | 2.02286 | 2.02357 | 2.02386 | 2.01048 | 2.01077 | 2.00537 | 2.00557 |
| −110.10 | −110.16 | −104.80 | −104.88 | −105.33 | −105.40 | −105.58 | −105.65 | −102.44 | −102.51 | −101.24 | −101.29 |
| − 2 | − 2 | − 1 | − 1 | − 1 | − 1 | − 1 | − 1 | − 2 | − 2 | − 2 | − 2 |
| +.02 | +.12 +.33 | +.09 | +.07 +.05 | +.06 | +.07 +.08 | +.04 | .00 +.09 | +.05 | −.01 +.05 | +.06 | +.04 +.03 |
| .00 | .00 | .00 | .00 | .00 | .00 | −.07 | −.06 | −.07 | −.06 | .00 | .00 |
| −1 50.10 | −1 49.95 | −1 44.72 | −1 44.84 | −1 45.28 | −1 45.33 | −1 45.62 | −1 45.63 | −1 42.48 | −1 42.54 | −1 41.20 | −1 41.28 |
| −19 12 46.02 | 46.15 | 12 34.95 | 35.86 | 12 34.48 | 34.53 | 12 35.61 | 36.17 | 12 36.34 | 36.05 | 12 39.21 | 38.93 |
| +2 4.89 | 3.06 | + 4.42 | 2.38 | + 4.78 | 2.96 | + 6.23 | 4.32 | + 6.14 | 4.21 | + 6.56 | 4.53 |
| − 1.83 | +8.23 | − 1.84 | +8.23 | − 1.88 | +8.23 | − 1.91 | +8.33 | − 1.93 | +8.43 | − 2.03 | +8.63 |
| + 2.20 | 10 40.76 | + 2.20 | | + 2.20 | | + 2.30 | | + 2.40 | | + 2.60 | |
| +2 5.26 | 40.89 | + 4.78 | 30.17 | + 5.10 | 29.38 | + 6.62 | 28.99 | + 6.61 | 29.73 | + 7.13 | 32.08 |
| | | | 31.08 | | 29.43 | | 29.55 | | 30.14 | | 31.86 |
| | 10 40.82 | 10 | 30.62 | | 29.40 | | 29.27 | | 29.93 | | 31.94 |
| | (10 34.79) | | 24.59 | | 23.37 | | 23.24 | | 23.90 | | 25.95 |

1875

| | | m | s | | ' | " | |
|---|---|---|---|---|---|---|---|
| Aug. | 27 | 10 | 22.39 | | 10 | 23.2 | |
| Sept | 1 | | 22.34 | -.05 | | 23.3 | +.1 |
| | 6 | | 22.28 | 6 | | 23.4 | .1 |
| | 11 | | 22.21 | 7 | | 23.5 | .1 |
| | 16 | | 22.14 | 7 | | 23.7 | .2 |

1874 1875
-.18 -.07 -.55 -.57 -.68
Oct. 5 Aug 28 Aug 29 Aug 30 Sept 13 Sept 28
-.240 -.570 -.544 -.645 -468 -.1492
10 18.1 10 25.4 10 16.3 10 26.4 10 4.4 10 27.2 10 28.2 10 38.1 10 31.0 10 48.4 10 37.7
20.3 27.6 17.8 28.6 6.3 29.4 30.3 40.3 518 20 32.7 50.6 39.4
22.5 29.7 19.8 30.7 8.4 31.6 32.3 42.4 16 35.3 52.8 41.0
26.9 34.2 35.0 36.0 46.8 16 54.2
29.2 36.4 37.2 38.2 59.7
31.4 38.5 39.4 40.2 11 1.5
33.4 40.8 10 56.5 41.5 11 19.6 42.4 11 12.0 3.6 11 24.0
35.6 42.9 43.8 21.7 44.6 5.8 26.1
40.1 47.3 48.0 23.5 49.0 10.3 27.8
42.2 49.5 50.3 51.2 12.8
44.5 51.6 52.5 53.4 14.9
31.72
34 4 2 42.39 10 17.97 43.34 10 6.37 44.32 10 30.27 5 10 33.00 1.42 10 39.37
10 31.291 10 38.536 10 56.50 10 39.400 11 21.60 10 40.291 11 12.00 10 51.175 11 1.564 11 25.97
31.275 38.520 39.384 40.275 10 51.159 1.548

- 13.38 -13.29 - 16.24 -16.23 - 17.18 -17.14 - 18.01 -18.02 - 29.04 b - 43.48
+ .08 +.06 + .20 +.19 + .20 +.20 + .24 +.24 + .16 + .17
-2.24 +1.273 -.07 - 3.17 - 3.16 - 3.11 - 2.97 - 2.7
- 15.54 -2.24 - 19.21 -3.17 - 20.14 -3.16 - 20.92 -3.15 - 31.87 46.05
31.27 15.73 38.52 19.31 39.38 19.28 40.27 19.34 51.76 1.55
15.73 19.31 19.24 19.36 19.29 1.550
19.243
15.740 19.298
+2 5.93 54 7.98 10.38 9.46 12.10
-2.2 -16 14.99 -16 14.55 -16 14.89 ~~-2.3~~
-34 -2.45 -2.45 -2.4
+ 2.60 + 2.60 + 2.70 +3.00
10 22.77 10 24.83 10 24.15
7

+ 20.57 - 17.96 + 33.03 - 42.20 + 10.02 - 31.71 + 18.17 + 22.19 - 24.41
10 10 10 10 10

A. R.

-2.51 -2.52 -2.53 -2.65
4 38.1 0 26.9 4 27.3 1 2.5 4 55.1 47.1 4 45.3 4 38.1 0 38.5
53.1 43.1 41.7 17.1 11.0 3.2 58.1 52.9 53.8
91.2 70.0 69.0 19.6 126.1 10.3 103.4 91.0 92.3
14 45.60 15 35.00 14 34.50 16 9.80 15 3.05 55.15 14 51.70 14 45.50 15 46.15

1.31323 1.25431n 1.51891 1.62531n 1.00087 1.50120 1.25935 1.34616 1.38767n
1.41394 1.35502n 1.61962 1.72602n 1.10158 1.60191 1.36006 1.44687 1.48828n
+25.94 -22.65 +41.65 -53.22 +12.63 -39.89 +22.91 +27.98 -30.78
15 11.54 15 12.35 15 16.15 15 16.58 15 15.68 15 15.16 15 14.61 15 13.48 15 15.37

52 23.19 24.00 52 27.80 28.23 52 27.33 26.81 52 26.26
23.59 28.01 27.07
30 58 31 47 57
2.02415 2.02438 30 57 31 58
2.02415 2.02444
-669 -1455 -1391 -238
2.01746 2.01769 2.00960 2.00983 2.01024 2.01047 2.02177 2.02200
-104.10 -104.16 -102.24 -102.29 -102.39 -102.44 -105.14 ~~-105.20~~
- 1 - 1 - 2 - 2 - 2 - 2 - 1 - +
+.06 -.24 +.05 +.18 -.08 +.29 +.02 +.04 +.16 +.05 -.69 +.07 +.09
-.53 -.07 -.51 -.13 .08 -.10 -.74
-1 44.58 -1 44.19 -1 42.59 -1 42.15 -1 42.39 -1 42.40 -1 45.84
54 7.77 8.19 54 10.39 10.38 54 9.72 9.21 54 12.10
-16 15.13 17.33 -14.81 17.02 -15.09 17.31 -15.50 17.83
- 2.20 -2.21 - 2.22 - 2.33
+ 2.60 + 2.60 + 2.70 + 3.00
-16 14.73 10 22.50 - 14.42 24.81 - 14.61 24.33 - 14.83 26.93
22.92 24.80 23.82

10 22.71 24.81 24.07 26.93

2

1874 1874

ω Aquilae. α 54.112 Aug. 8 11m 56.56 21' 73.4 cons. = -.020s
$19^h$ $11^m$ 57 acc. δ +22' 10.62" 13 56.54 -.02 74.1 +.7 cons. δ = +.04"
dt/dt +2.815 18 56.51 -.03 74.7 .6
dδ/dt +6.198" 23 56.47 .04 75.3 .6 long. δ = +.20 1.02
+11° 22' 28 56.43 .04 75.8 .5
z = + 31° 1' Sept. 2 56.37 .06 76.3 .5 I = 2.10s
J sin z = +.51 l sin δ 9.29466 7 56.31 .06 76.7 .4
12 56.23 .08 77.0 .3 K = -.016s
l cos δ 9.99140 17 56.15 .08 77.3 .3
l C .10600
l C' 0.09740

× 1874

× -.46 Aug. 20 | × .42 Aug. 22 | Aug. 23 | × -.40 Aug. 24 | × -.28 -.04 Aug. 26 | × -.36 Aug. 27

f -.475 | f ~~-.436~~ -.433 | Chf. | f +.400 | f -.326 | f -3.12

11 — 11 | 11 38.6 11 32.7 | | 11 39.7 11 32.6 | 11 40.2 11 37.0 | 11 40.7 11 31.0
— | 40.7 34.6 | | 41.9 34.4 | 42.3 39.6 | 42.7 33.7
— | 43.0 36.0 | | 44.0 36.2 | 44.5 41.8 | 44.8 35.8
45.0 | 47.0 | | 48.0 | 48.7 | 49.0
47.1 | 49.1 | | 50.2 | 50.8 | 51.2
49.1 | 51.3 | | 52.3 | 52.9 | 53.3
51.3 11 59.8 | 53.3 12 7.6 | | 54.3 | 54.9 12 8.0 | 55.3
53.4 2.3 | 55.1 10.0 | | 56.5 | 57.1 9.6 | 57.4
— 4.0 | 59.7 11.6 | | 0.7 | 1.3 11.8 | 1.6
— | 1.6 | | 2.8 | 3.4 | 3.6
— | 3.9 | | 4.9 | 5.6 | 5.8

24 59 | 443 6 | | 39 53 | 40 17 | 40 54
| 120 | | 180 | 180 | 180
| 563 6 11 34.43 | | 575 3 11 34.40 | 581 7 11 37.46 | 585 4 11 33.60

11 49.180 12 2.03 | 11 51.236 12 9.73 | | 11 52.300 | 11 52.882 12 9.80 | 11 53.218
49.164 +7.45 | 51.220 +5.39 | | 52.284 +4.32 | 52866 +3.70 | 53.202 +3.32
11 56.49 -09 | 11 56.48 -08 | | 11 56.46 -.08 | 11 56.45 -.06 | 11 56.44 -07
-7.33 | -5.26 | | -4.18 | -3.58 -.04 | -3.24
-7.31 -2.38 | -5.24 -2.37 | | - 4.16 -2.35 | -3.56 -2.34 | -3.22 -2.33
11 54.14 | 54.16 | | 54.17 | 54.13 | 54.12
+ 7.40 | + 5.35 | | + 4.27 | + 3.66 | + 3.31
- .09 | - .09 | | - .08 | - .06 | - .07
- 2.38 +0.435 | - 2.37 +0.445 | | - 2.35 +0.465 | - 2.34 +0.475 | - 2.33 +0.485
+ 4.93 20 9.96 | + 2.89 11.84 | | + 1.84 11.77 | + 1.26 10.91 | + 0.91 11.17
11 49.16 +2 4.98 | 11 51.22 +2 4.52 | | 11 52.28 +2 4.84 | 11 52.87 +2 5.09 | 11 53.20 +2 6.35
-1.1 | -1.1 | | -1.1 | -1.2 | -1.1
11 54.09 -4.40 | 11 54.11 -4.60 | | 11 54.12 -4.80 | 11 54.13 -5.00 | 11 54.11 -5.10
56.905 11 22 9.44 | 56.925 22 10.66 | | 56.935 22 10.71 | 56.945 22 9.80 | 56.925 22 17.32

s
- 12.85 - 12.85 | +16.81 -18.49 | | +17.90 | +13.42 -16.92 | +19.72
0 | 0 | 0 | 0 | 0 0 |
-2.08 | -2.10 | -2.12 | -2.14 | -2.17 | -2.18
2 12.9 | 1 32.0 2 17.0 | 1 26.5 2 12.7 | 1 31.1 | 1 38.7 2 15.7 | 1 29.8
29.8 ∩ | 50.7 33.3 | 42.2 29.9 | 48.3 | 53.9 30.9 | 46.0
42.7 | 82.7 50.3 | 68.7 42.6 | 79.4 | 92.6 46.6 | 75.8
2 21.35 | 1 41.35 2 25.15 | 1 34.35 2 21.30 | 1 39.70 | 1 46.30 2 23.30 | 1 37.90

1.10890 n | 1.22557 1.26694 n | | 1.25285 | 1.12775 1.22840 n | 1.29491
1.20630 n | 1.32297 1.36434 n | | 1.35025 | 1.22515 1.32580 n | 1.39231
-16.08 | +21.04 -23.14 | | +22.40 | +16.79 -21.17 | +24.68
2 5.27 | 2 2.39 2 2.01 | | 2 2.10 | 2 3.09 2 2.13 | 2 2.58

+11 20 43.08 | 45.96 46.34 | | 46.25 | 45.26 46.22 | 45.77
| 46.15 | | | 45.74 |
+31 0 14 | 59 34 0 18 | | 59 33 | 59 39 0 16 | 59 38
1.53900 | 1.53880 1.53900 | | 1.53880 | 1.53880 1.53900 | 1.53880
-1951 | -383 | | -166 | +217 | -64
1.51949 | 1.53497 1.53517 | | 1.53714 | 1.54097 1.54117 | 1.53816
-33.07 | -34.27 -34.29 | | -34.45 | -34.75 -34.77 | -34.53

-.05 -.03 -.01 | -.02 -.02 -.03 | | -.03 -.03 | -.01 -.06 -.03 | -.04 -.07
.00 .00 | .00 .00 | | .00 | -.04 -.05 | -.03
-33.12 | -34.29 -34.32 | | -34.48 | -34.80 -34.85 | -34.60
20 9.96 | 11.67 12.02 | | 11.77 | 10.46 11.37 | 11.17
22 15.0 | 15.2 | | 15.4 | 15.6 | 15.7
+2 5.0 | 3.5 3.2 | | 3.6 | 5.1 4.2 | 4.5
+2 5.0 | 3.3 | | 3.6 | 4.6 | 4.5
+2 4.89 3.83 | +4.42 3.35 10.42 | +4.63 | +4.78 3.69 | +5.19 4.09 9.55 | +6.23 5.12
- 1.06 +1.80 | - 1.07 +1.60 10.77 | | - 1.09 +1.40 | - 1.10 +1.20 10.46 | - 1.11 +1.10
- 4.40 | - 4.60 | | - 4.80 | - 5.00 | - 5.10
+1 59.43 22 9.39 | + 58.75 10.60 | | + 58.89 10.66 | + 59.09 15.00 | + 0.02 14.19
15.5 | 16.80 | | 16.81 | 16.20 | 17.39

1875
s
α 56.927
δ +22′ 16.82″
$\frac{d\alpha}{dt}$ +2.815
$\frac{d\delta}{dt}$ +6.202

l cos δ 9.99140
l C .12552
l C′ 0.11692

1875

| | | h m s | | ′ ″ | |
|---|---|---|---|---|---|
| Aug | 28 | 11 59.54 | | 21 81.6 | |
| Sept | 2 | 59.48 | −.06 | 82.1 | +.5 |
| | 7 | 59.41 | .07 | 82.6 | .5 |
| | 12 | 59.34 | .07 | 82.9 | .3 |
| | 17 | 59.27 | .07 | 83.2 | .3 |
| | 22 | 59.19 | .08 | 83.4 | .2 |
| | 27 | 59.11 | .08 | 83.5 | .1 |
| Oct | 2 | 59.02 | .09 | 83.5 | .0 |
| | 7 | 58.93 | .09 | 83.5 | .0 |

X −.46
Aug. 31
−.480
11 42.4 11 36.2
44.5 38.3
46.5 40.3
50.7
52.8
55.0
57.0
59.1
3.3
5.4
7.6

42.43
180
60.43 11 38.26
11 54.936
54.920 +1.61
11 56.39 −.09
−1.47
−1.45 −2.28
11 54.16
+ 1.58
− .10
− 2.28 +0.535
− 0.80 20 11.37
11 54.92 +2 6.25
−7.2
11 54.12 −5.50
56.935 22 10.92
+11°
s
+16.68
0
′ −2.20
1 34.0
51.1
8.51
1 42.55

1.22220
1.31960
+20.87
2 3.42

20 44.93

59 35
1.53880
−1373
1.52507
−33.50

−.03 −.06
−.03
− 33.56
20 11.37
16.1
+2 4.6
+2 4.6
+2 6.14 5.02
− 1.12 + .70
− 5.50
+1 59.52 10.89
17.09

X 1874
−.45
Sept. 10
−.463
11 49.4 11 42.4
51.4 44.9
53.5 46.3
57.8
59.9
2.0
4.1
6.2
10.3
12.4
14.6

32.16
300
2.16 11 ~~45.80~~ 44.53
12 1.964
1.948 −5.56
11 56.26 −.09
+5.69
+5.71 −2.15
54.15
− 5.60
− .09
− 2.15 +0.665
− 7.85 20 9.65
12 1.95 +2 6.85
−7.2
11 54.10 −6.30
56.915 22 9.00
+17.43
~~+16.63~~
0
−2.31
1 34.6
52.9
8.75
1 43.75

1.24130
1.33870
+21.81
2 5.56

20 42.79

59 37
1.53880
−1875
1.52005
− 33.11

−.03 −.03
.00
− 33.14
9.65
16.9
7.3
6.3
+ 6.56 5.39
− 1.17 −0.10
− 6.30
+ 59.09 8.74
14.94

1875
−.55 +
Aug 28
−.570
12 3.3 11 53.9
5.4 56.0
7.7 57.9
11.6
13.8
16.0
18.0 12 32.0
20.2
24.3
26.5
28.5

17.53
11 55.93
12 15.936 12 32.00
15.920 −16.23
11 57.54 −.11
+16.38
+16.40 −2.61
11 56.97
− 16.24
− .10
− 2.61
− 18.96 38 38.57
12 15.92 −16 14.99
−7.4
11 56.96 −4.80
+11 22 ~~47.36~~
17.38
+ 20.01 − 16.06
40
−2.51
3 1.2
17.1
1.83
43 9.15

1.30125 1.20575
1.41817 1.32267
+26.19
43 35.34

39 13.01

59 21
1.53870
− 662
1.53208
− 34.05

−.04 −.39 −.02
−.35
− 34.44
38 38.57
22 21.6
−16 17.0
16 17.0
−16 15.13 15.41
− 1.28
− 4.80
−16 21.21 22 17.36

−.57 +
Aug 29
−.574
12 4.3 12 20.6
6.4 23.0
8.6 24.8
12.7
14.8
16.8
18.9
21.0
25.3
27.4
29.5

18.57
12 22.80
12 16.882
16.866 −17.14
11 59.53 −.11
+17.34
+17.36 −2.60
57.02
− 17.18
− .11
− 2.60
− 19.89 36.82
12 16.87 −16 14.55
−7.4
11 56.98 −4.90
22 15.97
− 5.92
40
−2.52
3 36.9
53.9
9.08
43 45.40

0.77232
0.88924
−7.75
43 37.65

39 10.70

59 57
1.53890
−1447
1.52443
− 33.45

− 1 −.43
−.42
−33.88
36.82
21.7
15.1
15.1
− 14.81 16.09
− 1.28
− 4.90
− 20.99 15.83

−.68 X
Aug 30
−.675
12 5.4 12 4.7
7.4 6.5
9.5 8.2
13.5
15.6
17.8
19.8
22.0
26.2
28.2
30.3

19.57
12 6.47
12 17.791
17.775 −18.02
11 59.521 −.14
+18.256
+ 18.28 −2.38
57.03
− 18.01
− .13
− 2.58
− 20.72 37.86
12 17.77 −16 14.89
−7.4
11 57.05 −5.00
22 16.57
+ 11.32
40
−2.53
3 13.5
30.1
4.36
43 21.80

1.05385
1.17077
+14.82
43 36.62

39 11.73

59 34
1.53880
−1385
1.52495
− 33.49

−.01 −.38
−.37
−33.87
37.86
21.8
16.1
16.1
− 15.09 16.38
− 1.29
− 5.00
− 21.38 16.48

x

-.64
Aug 31 Sept-28
-.680 Ch f.

12 6.0 11 59.0
8.0 1.2
10.2 2.9
14.4
16.5
18.7
20.8
22.9
27.0
29.0
31.3

2048

12 1.03
12 18.618
18602 -18.89
11 59.50 -13
+19.10
+19.12 -2.57
57.01

- 18.90
- .14
- 2.57
- 21.61 3658
12 18.60 -1.6 12.75
-1.4
11 56.99 -5.10
22 17.33

+ 17.59
40 40
-2.53
3 5.7 3 10.1
23.2 26.5
28.9 36.6
43 14.45 43 18.30

1.24527
1.36219
+23.02
43 37.47

39 10.88

59 26
1.53870
-828
1.53042
-33.92

-.03 -.38
-.35
- 34.30
36.58
2.19
14.7
14.7
-16 13.01 14.30
- 1.29
- 5.10
- 19.40 17.18

1874 1874

δ Draconis α 31.214 Aug. 28 12m 33.15 26' 33.4"

h m sec. δ +26 22.82 Sept. 2 32.91 −.24 34.5 +1.1 cons =

19 12 31 dα/dt +0.033 7 32.66 .25 35.5 1.0 cos δ =

dδ/dt +6.298 12 32.40 26 36.3 .8 tang δ = +2.40 2.60

+67° 26' 17 32.13 .27 37.1 .8

7 = −25° 3' 22 31.85 .28 37.7 .6 t = 5.36

sin z = −.42 l sin δ 9.96541 27 31.56 .29 38.2 .5

Oct 2 31.26 .30 38.5 .3 K = −.038

l cos δ 9.58406 7 30.96 .30 38.8 .3

l C .10600

l C' 9.69006

l C" 9.68866

l cos δ 9.58 l C .12 l C' 9.92

X 1874 −.40 X −.28 −.04 X −.36 X −.46 X −.45 X −.18 −.07

Aug. 24 −.400 Aug. 26 Aug. 27 Aug. 31 Sept. 10 Oct. 5

19.2 −.326 −.342 −.480 −.463 −.240

19 12 21.9 12 33.6 — 13 1.0 12 19.9 12 58.1 12 21.9 12 12 — 12 12 34.5 12 21.5

24.7 — 7.4 22.6 3.9 24.6 — 37.2 27.1

27.6 — 11.3 25.3 8.3 27.2 — 39.4 31.1

30.2 — 28.0 30.0 35.28 36.6 42.2

32.9 — 30.7 32.8 .30 39.3 45.1

35.4 13 4.2 — 33.4 35.4 1 .12 41.8 47.6

38.0 10.0 — 36.2 13 31.0? 38.0 13 3 8 52 .34 44.7 12 56.0 50.4

40.8 13.8 — 39.0 40.7 5 9 .26 47.3 1 8 53.1

12 52.1 30.66 41.6 43.5 14.1 .28 50.0 6.7 55.9

57.5 70

13 12.7 54

27.07 27.67 29.42 40.54

12 33.60 13 6.56 13 3.76 12 26.56

12 30.089 13 9.38 12 30.633 12 30.744 13 31.00 12 32.689 13 9.08 12 39.263 13 1.50 12 45.044

30.051 +4.32 30.595 +3.70 30.706 +3.32 32.651 1 +1.61 39.225 −5.56 45.006 −13.29

12 33.383 −.96 12 33.283 −.67 12 33.21 19 −.86 12 ~~33.02~~ 32.99 −1.10 12 32.51 49 −1.08 12 31.09 07 −.43

−3.3328 − 2.674 −.10 −2.5 48 −0.374 + 6.7x3 +13.924 −.18

−2.12 −2.02 −1.98 −1.78 −1.28 +0.14

+ 4.27 12 31.29 + 3.66 31.50 + 3.31 31.19 + 1.58 31.38 − 5.61 31.30 − 13.38 ~~32.27~~ 31.25

− .96 − .78 − .82 − 1.15 − 1.11 − .57 1.25

− 2.12 −2.087 − 2.02 −1.987 − 1.98 −1.947 − 1.78 −1.747 − 1.28 −1.247 + 0.14 +0.173

+ 1.19 + 0.86 + 0.51 − 1.~~25~~35 − 8.00 − 13.81

12 30.05 24 26.54 12 30.59 27.80 12 30.71 26.00 12 32.65 26.89 12 39.23 29.77 12 45.01 24 32.91

+2 4.84 +2 5.09 +2 6.35 +2 6.25 +2 6.85 +2 5.93

12 31.24 + 7.0 12 31.45 +1.0 12 31.2~~x~~7 +1.0 12 31.~~40~~30 +1.0 12 31.23 + 1.0 12 31.20 +1.0

31.273 − 9.70 31.483 −10.20 31.2~~42~~53 −10.40 31.~~433~~ .333 −11.30 31.263 −13.30 31.233 −15.90

+67 26 22.68 26 23.69 26 22.95 26 22.84 26 24.32 26 23.94

− 3.51 − 39.24 − 35.93 − 33.02 − 60.26 − 36.39 − 22.24 + 18.48

55 55 55 55 55 55

−2.14 −2.17 −2.18 −2.20 −2.31 −2.42

3 46.7 3 2.0 3 1.0 3 0.9 3 0.8 3 48.5 3 30.5

53.9 13.2 8.8 9.3 9.3 1.8 36.6

100.6 15.2 9.8 10.2 10.1 110.3 67.1

58 50.30 58 7.60 58 4.90 58 5.10 58 5.05 58 55.15 58 33.55

0.54531n 1.59373n 1.55546n 1.51878n 1.78003n 1.56098n 1.34713n 1.26670

0.23537n 1.28379n 1.24552n 1.20884n 1.47009n 1.25104n 1.03719n 0.95536

− 1.72 − 19.22 − 17.60 − 16.17 − 29.51 − 17.82 − 10.89 + 9.02

58 48.58 57 48.38 57 47.30 57 48.93 57 47.23 58 44.26 58 42.57

23 59.77 59.97 1.05 59.42 1.12 4.09 5.98

59.87

−25 3 17 3 59 3 12 3 34

1.43000n 1.43020n 1.43000n 1.43010n

− 165 + 219 − 62 − 1371 − 1871 + 641

1.42835 1.42855 1.43219 1.43239 1.42938 1.42958 1.41629 1.41649 1.41129 1.43651

+26.81 +26.83 +27.05 +27.06 +26.88 +26.89 +26.08 +26.09 +25.78 +27.32

− .11 −.15 −.30 −.24 −.30 −.24 −.30 −.25 −.31 −.10 −.10 −.08 −.19

.00 .00 −.06 −.06 −.06 .00 −.11

+ 26.81 + 26.53 + 26.75 + 26.58 + 25.7~~8~~7 + 25.68 + 27.13

24 26.58 26.50 27.80 26.00 26.89 29.77 32.91

26 32.5 33.0 33.2 34.1 36.1 38.7

+2 5.9 6.0 5.2 7.2 7.2 6.3 5.8

+2 6.0 5.2 7.2 7.2 6.3 5.8

+2 4.78 26 22.55 + 5.19 6.10 + 6.23 7.14 + 6.14 7.06 + 6.56 7.53 + 5.93 6.94

+ .89 5.67 22.47 + .91 −3.90 + .91 −4.10 + .92 −5.00 + .97 −7.00 + 1.01 −9.60

− 9.70 −3.40 − 10.20 − 10.40 − 11.30 − 13.30 − 15.90

+1 55.97 26 22.51 + 55.90 23.70 + 56.74 22.74 + 55.76 22.65 + 54.23 24.00 + 51.04 23.95

26 28.81 30.25

1875 1875

| | | | h | s | | m | s | |
|---|---|---|---|---|---|---|---|---|
| α 31.247 | Aug. | 28 | 12 | 33.14 | | 26 | 39.4 | |
| δ +26 29.12 | Sept. | 2 | | 32.91 | -.23 | | 40.6 | +1.2 |
| +0.033 | | 7 | | 32.66 | .25 | | 41.6 | 1.0 |
| +6.298 | | 12 | | 32.40 | .26 | | 42.5 | .9 |
| | | 17 | | 32.13 | .27 | | 43.3 | .8 |
| | | 22 | | 31.85 | .28 | | 43.9 | .6 |
| | | 27 | | 31.57 | 28 | | 44.4 | .5 |
| | Oct. | 2 | | 31.27 | .30 | | 44.7 | .3 |
| 9.58406 | | 7 | | 30.96 | .31 | | 44.9 | .2 |
| .12552 | | | | | | | | |
| 9.70958 | | | | | | | | |

1875 + -.55 Aug 28 -.570
-.57 + Aug 29 -.574
-.68 + Aug 30 -.645
-.64 + Aug 31 -.680
1874 Sept-28

12 | 12 59.9 | 12 | 13 5.0 | 12 | 13. 9.4 | 12 | 13 2.8 | 13 | 13 19.2
40.4 | | — | 10.4 | — | 13.8 | — | 6.5 | — | 23.8
43.1 | | — | 14.3 | — | 18.6 | — | 10.1 | — | 28.2
45.8 | | — | | — | | — | | — |
48.3 | | — | | 52.58 51.3 | | 53.12 50.8 | | — |
51.0 | | — | | .80 52.8 | | 40.53.4 | | 12.00 12.0 |
53.9 | 13 38.5 | 51.62 54.3 | 13 52.5 | .62 55.3 | 13 58.8 | .65 56.3 | 14 10.9 | 12.22 14.9 | 13 53.1
56.4 | 44.5 | .84 57.2 | 58.3 | .64 58.0 | 4.3 | 54 58.9 | 16.4 | 11.84 17.2 | 56.0
58.9 | 50.0 | .56 59.6 | 4.2 | .76 0.8 | 8.8 | .96 2.0 | 20.0 | 12.46 20.5 | 2.8
1.5 | | .58 2.3 | | .86 3.6 | | .78 4.5 | | 11.84 22.6 |

3993
60

459.3 | 12 59.90 | | 13 9.90 | | 13 13.93 | | 13 6.47 | | 13 23.73
12 51.053 | 13 44.33 | 51.65 | 13 58.33 | 52.78 | 14 3.97 | 53.575 | 14 16.53 | 12.08 | 13 51.97
50.995 | -16.23 | 12 51.61 | -17.14 | 12 52.74 | -18.02 | 12 53.537 | -18.89 | 13 12.04 |
12 33.153 | -1.32 | 12 33.10 08 | -1.37 | 12 33.08 4 | -1.63 | 12 33.01 32.99 | -1.54 | 12 31.52 0 |
+17.876 | | + 18.5 3 | | + 19.68 70 | | + 20.55 | | + 40.5 4 |
| -1.88 | | -1.83 | | -1.79 | | -1.74 | |
- 16.24 | 31.56 | - 17.18 | 31.27 | - 18.01 | 31.30 | - 18.90 | 31.37 | |
- 1.36 | | - 1.37 | | - 1.61 | | - 1.62 | | |
- 1.88 | | - 1.83 | | 1.79 | | - 1.74 | | - 0.25 |
- 19.48 | | - 20.38 | | - 21.41 | | - 22.26 | | |
12 51.00 | 42 54.74 | 12 51.61 | 54.45 | 12 52.74 | 55.19 | 12 53.54 | 52.70 | 12 31.50 |
| -16 14.99 | | -16 14.55 | | -16 14.79 | | -16 12.75 | |
12 31.52 | + 1.2 | 12 31.23 | + 1.2 | 12 31.33 | + 1.1 | 12 31.26 | + 1.1 | |
| -10.40 | | -10.60 | | -10.80 | | -11.00 | |
| 26 30.55 | | 26 30.50 | | 26 30.60 | | 26 30.05 | |

- 8.87 | - 53.30 | - 18.25 | - 66.68 | - 21.15 | - 71.19 | - 12.90 | - 82.96 | - 11.65 | - 45.89
40 | | 40 | | 40 | | 40 | | 40 |
-2.51 | | -2.52 | | -2.53 | | -2.53 | | |
0 13.7 | 0 36.0 | 0 17.6 | 0 41.8 | 0 18.9 | 0 43.2 | 0 16.4 | 0 52.0 | 0 13.6 | 0 31.3
35.4 | 52.7 | 40.8 | 44 | 41.5 | 55 | 40.5 | 14.5 | 36.4 | 52.7
49.1 | 88.7 | 58.4 | 106.2 | 60.4 | 108.7 | 56.9 | 126.5 | 50.0 | 84.0
40 24.55 | 40 ~~44.35~~ 46.85 | 40 29.20 | 40 53.10 | 40 30.20 | 40 54.35 | 40 28.45 | 41 3.25 | 40 25.00 | 40 42.00

0.94792n | 1.72673n | 1.26126n | 1.82400n | 1.32531n | 1.85242n | 1.11059n | 1.91887n | 1.06633n | 1.66172n
0.65750n | 1.43631n | 0.97084n | 1.53358n | 1.03489n | 1.56200n | 0.82017n | 1.62845n | 0.77591n | 1.37130n
- 4.55 | - 27.31 | - 9.35 | - 34.16 | - 10.84 | - 36.48 | - 6.61 | - 42.51 | - 5.97 | - 23.51
40 20.00 | ~~17.04~~ 19.54 | 40 19.85 | 18.94 | 40 19.36 | 17.87 | 40 21.84 | 20.74 | 40 19.03 | 18.49

42 28.36 | 28.81 | 28.50 | 29.41 | 28.99 | 30.48 | 26.51 | 27.61
42 28.58 | | 28.95 | | 29.73 | | 27.06 |

3 24 | 3 2 | | | | | | | 3 23 | 3 6
1.43000 | 1.42990 | | | | | | | 1.43000 | 1.42990
- 660 | | -1444 | | -1383 | | -826 | |
1.42340 | 1.42330 | 1.41556 | 1.41546 | 1.41617 | 1.41607 | 1.42174 | 1.42164
+26.51 | +26.50 | +26.04 | +26.03 | +26.07 | +26.07 | +26.41 | +26.40
-1.34 | -.55 | -.07 -.54 | -.86 | -.09 -.61 | -.99 | -.03 -.76 | -1.33 | -.03 | -.40
-.04 | -.09 | -.05 | -.10 | -.05 | -.10 | -.05 | -.11 | -.01 | -.02
42 + 26.46 | +25.86 | +25.92 | +25.07 | 25.93 | 24.98 | 26.33 | 24.96
21 54.81 | 54.67 | 54.42 | - 54.48 | 54.92 | 55.46 | 52.84 | 52.57
(9) 26 39.5 | | 39.7 | | 39.9 | | 40.1 |
15.3 | 15.2 | 14.7 | 14.8 | 15.0 | 15.6 | 12.7 | 12.5
15.2 14.08 | | 14.7 | | 15.3 | | 12.6 |
-16 15.13 | | - 14.81 13.76 | | - 15.09 14.03 | | - 13.01 11.95 |
+ 1.05 | 26 30.33 | + 1.05 | 30.06 | + 1.06 | 30.09 | + 1.06 | 29.89
- 10.40 | 30.19 | - 10.60 | 30.12 | - 10.80 | 30.63 | - 11.00 | 29.62
-16 24.48 | | - 24.36 | | - 24.83 | | - 22.95 |
| 26 ~~32.26~~ 31.21 | | 30.09 | | 30.36 | | ~~30.50~~ 29.71

24

1874 1874 1875

κ Cygni α 11.319 · h m sec. δ +8′ 11.33 · 19 14 13 · dα/dt +1.385 · dδ/dt +6.478 · +53° 8′ · −10° 45′

| | | | | | |
|---|---|---|---|---|---|
| Aug. 28 | 14 m 13.29 s | | 7′ | 81.9″ | |
| Sept. 2 | 13.15 | −.14 | | 82.9 | +1.0 |
| 7 | 13.01 | .14 | | 83.8 | .9 |
| 12 | 12.86 | .14 | | 84.6 | .8 |
| 17 | 12.71 | .15 | | 85.3 | .7 |
| 22 | 12.55 | .16 | | 85.8 | .5 |
| 27 | 12.38 | .17 | | 86.3 | .5 |
| Oct. 2 | 12.20 | .18 | | 86.6 | .3 |
| 7 | 12.02 | .18 | | 86.9 | .3 |

corr α =
corr δ =
tang δ = 1.33 1.67
I = 3.43 s
K = −.025 s

tan z = −19 l sin δ 9.90311
l cos δ 9.77812
l C .10650
l C′ 9.88412
l C″ 9.88272

1875: α 12.704 s · δ +8 17.81 · dα/dt +1.385 s · dδ/dt +6.480″
l cos δ 9.77812
l C .12552
l C′ 9.90364

× 1874

× Aug. 24 −.40 · × Aug. 26 −.28 −.04 · Aug. 27 −.36 · × Aug 31 −.46 · × Sept. 10 −.45 · × 1874 Oct. 5 −.18 −.07

+1.00 · .326 · −.342 · +.480 · −.463 · −.240

19 13 49.1 | 13 38.8 | 13 49.7 | 13 45.0 | cld. | 13 51.7 | 13 42.8 | 13 38.6 | 13 52.7 | 14
52.6 | 41.7 | 53.0 | 47.6 | 55.2 | 46.0 | 2.0 | 55.9
55.8 | 43.9 | 56.6 | 57.0 | 58.6 | 49.4 | 5.5 | 37.0
2.7 | 3.4 | 5.5 | 12.4 | 25.90 25.9
6.2 | 6.8 | 8.9 | 15.7 | .79 27.5
9.6 | 10.1 | 12.3 | 19.2 | .77 29.2
13.1 | 14 28.6 | 13.6 | 14 31.4 | 15.8 | 14 35.0 | 22.7 | 14 33.9 | .86 31.0 | 14 37.9
16.5 | 32.3 | 17.3 | 34.4 | 19.3 | 38.2 | 26.4 | 38.0 | .84 32.7 | 40.9
23.3 | 35.6 | 23.9 | 38.0 | 26.2 | 41.0 | 33.0 | 40.5 | 45.2
27.0 | 27.3 | 29.6 | 36.5
30.2 | 31.0 | 32.9 | 39.8

15

2861 | 2927 | 3160 | 27~~20~~ | ~~1463~~
180 | 180 | 180 | 60.15
1061 13 41.46 | 1127 13 48.20 | 136 0 13 46.06 | 21~~20~~ 13 55.86 | 25.832
14 9.645 14 32.06 | 14 10.245 14 34.60 | 14 12.364 14 38.06 | 14 ~~19.273~~ 14 37.46 | 14 ~~29.260~~ 14 41.33
9.620 +4.32 | 10.220 +3.69 | 12.339 +1.61 | 19.227 19.202 −5.57 | ~~29.235~~ 25.807 −13.29
14 13.410 −.53 | 14 13.384 −.37 | 14 13.220 −.61 | 14 12.942 −.60 | 14 12.108 −.24
−3.788 | −3.142 −.07 | −0.886 | +6.268 | ~~+17.185~~ 13.72 −.12
−2.08 | −2.02 | −1.88 | −1.60 | −.076

+ 4.27 14 11.33 | + 3.66 11.45 | + 1.58 11.46 | − 5.68 11.43 | − 13.38 11.40
− .53 | − .43 | − .64 | − .61 | − .32
− 2.08 −0.695 | − 2.02 −0.635 | − 1.88 −0.495 | − 1.60 −0.215 | − 0.76 +0.625
+ 1.66 | + 1.21 | − 0.94 | − 7.82 | − 14.46
14 9.62 6 16.17 | 14 10.22 17.01 | 14 12.34 16.70 | 14 19.20 16.59 | 14 ~~29.23~~ 25.81 6 20.20
+2 4.84 | +2 5.09 | +2 6.25 | +2 6.85 | +2 5.93
14 11.28 + .5 | 14 11.43 + .5 | 14 11.40 + .5 | 14 11.38 + .5 | 14 ~~14.77~~ + .5
12.665 −9.80 | 12.815 −10.20 | 12.785 −11.20 | 12.765 −13.00 | ~~3.43~~ ~~11.34~~ −15.50
+.53 8 11.71 | 8 12.40 | 8 12.25 | 8 10.94 | ~~12.725~~ 8 11.13

s
+28.18 | −22.42 | +22.04 | −24.36 | +26.30 | −25.70 | +23.41 | −18.23 ~~−18.19~~ | −15.50 ~~−12.07~~

15 | 15 | 15 | 15 | 15 | 15

−2.74 | −2.17 | −2.20 | −2.31 | −2.42

1 15.2 | 1 53.7 | 1 19.2 | 1 55.4 | 1 16.4 | 1 52.3 | 1 15.7 | 1 55.7 | 1 19.0 | 1 51.5 ~~46.5~~ | 1 44.8
28.0 | 5.9 | 30.9 | 6.7 | 26.7 | 2.4 | 27.8 | 8.0 | 29.6 | 50.5 | 57.2
43.2 | 11.96 | 50.1 | 12.31 | 43.1 | 11.47 | 43.5 | 12.37 | 48.6 | 10.70 | 10.20
×16 21.60 | 16× 59.80 | 16× 25.05 | 17 1.05 | 16+ 21.55 | 16+ 57.35 | 16+ 21.75 | 17 1.85 | 16+ 24.30 | 16+ 53.50 56.00 | 16+ 51.00

1.44994 | 1.35064n | 1.34321 | 1.38668n | 1.41996 | 1.40993n | 1.36940 | 1.26079n | 1.19033n | ~~1.08171n~~
1.33406 | 1.23476 | 1.22733 | 1.27080n | 1.30408 | 1.29405n | 1.25352 | 1.14491n | 1.07305 | ~~0.96443n~~
+21.58 | −17.17 | +16.88 | −18.66 | +20.14 | −19.68 | +17.93 | −13.96 | − 11.83 | − ~~9.21~~
16 43.18 | 16 42.63 | 16 41.93 | 16 42.39 | 16 41.89 | 16 42.17 | 16 42.23 | 16 ~~39.54~~ 42.04 | 16 39.17 | 17

+53°
6′ 5.17 | 5.72 | 6 6.42 | 5.96 | 6 6.46 | 6.18 | 6 6.12 | 8.81 | 9.18
5.44 | 6.19 | 6.32 | 6.21 | 6.31

−10 45 45 | 45 7 | 45 43 | 45 11
1.03920n | 1.03880n | 1.03920n | 1.03880n
−161 | +224 | −1365 | −1859 | +641
1.03759 | 1.03719 | 1.04144 | 1.04104 | 1.02555 | 1.02515 | 1.02061 | 1.02021 | 1.04561 | 1.04521
+10.90 | +10.89 | +11.00 | +10.99 | +10.60 | +10.59 | +10.49 | +10.48 | +11.11 | +11.10

−.21 −.17 | −.13 | −.13 −.17 | −.15 | −.18 −.21 | −.17 | −.14 −.11 | −.08 | − .4 −.09
.00 | .00 | −.03 | −.04 | −.03 | −.04 | .00 | .00 | −.05
+10.69 | +10.76 | +10.84 | +10.80 | +10.39 | +10.38 | +10.35 | +10.40 | +11.02
6 15.86 | 16.48 | 17.26 | 16.76 | 16.85 | 16.56 | 16.47 | 16.71 | ~~20.0~~ 8 20.20
8 21.1 | 21.5 | 22.5 | 24.3 | 26.8
+2 5.2 | 4.6 | 4.2 | 4.7 | 3.7 | 5.9 | 7.8 | 7.6 | 6.7
+2 4.9 | 4.5 | 5.8 | 7.7 | 6.7
+2 4.78 8 11.24 | + 5.19 5.60 12.66 | + 6.14 6.55 12.20 | + 6.56 6.99 10.46 | + 5.93 6.38
+ .40 5.18 11.86 | + .41 −3.72 12.16 | + .41 −4.72 11.91 | + .43 −6.52 10.70 | + .45 −9.02
− 9.80 −3.32 | − 10.20 | − 11.20 | − 13.00 | − 15.50 11.08
+1 55.38 8 11.55 | + 55.40 12.41 | + 55.35 12.06 | + 53.99 10.58 | + 50.88 17.56
8 18

| 1875 | | m | s | | ′ | ″ | |
|---|---|---|---|---|---|---|---|
| Aug. | 28 | 14 | 14.80 | | 7 | 88.1 | |
| Sept. | 2 | | 14.66 | −.14 | | 89.1 | +1.0 |
| | 7 | | 14.52 | .14 | | 90.0 | .9 |
| | 12 | | 14.37 | .15 | | 90.8 | .8 |
| | 17 | | 14.22 | .15 | | 91.5 | .7 |
| | 22 | | 14.06 | .16 | | 92.1 | .6 |
| | 27 | | 13.89 | .17 | | 92.6 | .5 |
| Oct. | 2 | | 13.71 | .18 | | 92.9 | .3 |
| | 7 | | 13.53 | .18 | | 93.2 | .3 |

| α 1874.0 | δ | α 1875.0 | δ |
|---|---|---|---|
| 11.28<br>43<br>40<br>38<br>34<br>11.366<br>.319<br>+.047 | 11.33 | 12.85<br>82<br>93]<br>65<br>12.813 773<br>.704<br>+.109<br>.069 | 17.81 |

1875 ×

| −.55 Aug 28 −.570 | | −.57 × Aug 29 −.574 | | −.68 + Aug 30 −.675 | | −.64 + Aug 31 −.680 | |
|---|---|---|---|---|---|---|---|
| 14<br>—<br>—<br>—<br>25.3<br>28.4<br>32.0<br>35.5<br>38.6<br>—<br>—<br>15.98 | 14 32.7<br>36.0<br>39.0<br>15 9.2<br>13.3<br>16.6 | 14<br>26.0<br>27.6<br>29.2<br>31.1<br>32.9<br>34.6<br>36.4<br>38.0<br>39.8<br>29.56 | 14 28.1<br>15 1.0<br>4.2<br>7.7 | 14<br>—<br>—<br>—<br>33.91 32.2<br>4.00 34.0<br>3.79 35.5<br>3.88 37.3<br>3.87 39.0<br>3.96 40.8 | 14 44.5<br>47.6<br>49.7<br>15 22.1<br>25.3<br>29.0 | 14<br>27.0<br>29.0<br>31.0<br>32.9<br>34.7<br>36.4<br>38.0<br>39.8<br>41.6<br>31.04 | 14 39.0<br>42.9<br>46.0<br>15 26.4<br>29.9<br>33.3 |
| 14 31.960<br>31.935<br>14 14.8179<br>+17.184<br>— 16.24<br>— .76<br>— 2.09<br>— 19.09<br>14 31.94<br>14 12.85 | 14 35.90<br>15 13.03<br>−16.24<br>−.73<br>−2.09<br>12.87<br>24 45.08<br>−16 14.99<br>+ 5<br>−10.30<br>8 20.29 | 14 32.844<br>32.819<br>14 14.786<br>+18.046<br>— 17.18<br>— .76<br>— 2.06<br>— 20.00<br>14 32.82<br>14 12.82 | 14 28.10<br>15 4.30<br>−17.14<br>−.76<br>−2.06<br>12.86<br>43.97<br>−16 14.55<br>+ 4<br>−10.50<br>8 19.32 | 33.902<br>14 33.877<br>14 14.764<br>+ 19.134<br>— 18.01<br>— .90<br>— 2.04<br>— 20.95<br>14 33.88<br>14 12.93] | 14 47.27<br>15 25.80<br>−18.02<br>−.90<br>−2.04<br>12.92<br>44.25<br>−16 14.89<br>+.5<br>−10.70<br>8 19.16 | 14 34.489<br>34.464<br>14 14.731<br>+19.735<br>— 18.90<br>— .90<br>— 2.01<br>— 21.81<br>14 34.46<br>14 12.65 | 14 42.63<br>15 29.87<br>−18.90<br>−.85<br>−2.01<br>12.70<br>42.04<br>−16 12.75<br>+ 5<br>−10.90<br>8 18.89 |
| — 3.94<br>55<br>−2.51<br>3 6.9<br>27.2<br>34.1<br>58 17.05 | — 41.07<br>3 35.9<br>55.8<br>91.7<br>58 45.85 | + 4.74<br>55<br>−2.52<br>3 0.6<br>21.3<br>21.9<br>58 10.95 | — 31.46<br>3 28.8<br>49.9<br>78.7<br>58 39.35 | — 13.37<br>55<br>−2.53<br>3 14.5<br>35.9<br>50.4<br>58 25.20 | — 51.90<br>3 43.8<br>6.1<br>10.99<br>58 54.95 | — 8.14<br>55<br>−2.53<br>3 12.6<br>34.1<br>46.7<br>58 23.35 | — 55.38<br>3 49.2<br>10.8<br>12.00<br>59 0.00 |
| 0.59550n<br>0.49914n<br>−3.16<br>58 13.89 | 1.61352n<br>1.51716n<br>−32.90<br>58 12.95 | 1.67578<br>0.57942<br>380<br>+~~37.94~~ 7.77<br>58 ~~48.72~~<br>14.85 | 1.49776n<br>1.40140n<br>−25.20<br>58 14.15 | 1.12613n<br>1.02977n<br>— 10.71<br>58 14.49 | 1.71517n<br>1.61881n<br>— 41.57<br>58 13.38 | 0.91062n<br>0.81426n<br>−6.52<br>58 16.83 | 1.74335<br>1.64699<br>−44.36<br>58 15.64 |
| 24 34.46<br>34.43<br>45 31<br>1.03910n<br>−653<br>1.03257<br>+10.78 | 35.40<br>45 2<br>1.03870n<br>1.03217<br>+10.77 | 23 ~~54.43~~<br>33.60<br>33.90<br>−1437<br>1.02473<br>+10.59 | 34.20<br>1.02433<br>+10.58 | 33.86<br>34.41<br>−1377<br>1.02533<br>+10.60 | 34.97<br>+10.60 | 24 31.52<br>32.11<br>45 25<br>1.03900n<br>−820<br>1.03080<br>+10.73 | 32.71<br>44 48<br>1.03860<br>1.03040<br>+10.73 |
| — 1 −.62<br>−.36<br>+ 10.41<br>24 44.87<br>8 28.1<br>−16 16.8<br>−16 17.0 | −.46<br>−.42<br>+ 9.90<br>45.30<br>17.2 | — 1 −.51<br>−.35<br>+ 10.23<br>43.83<br>28.3<br>15.5<br>15.6 | −.25<br>−.41<br>+ 9.92<br>44.12<br>15.8 | −.04 −.76<br>−.37<br>+ 10.19<br>44.05<br>28.5<br>15.5<br>15.8 | −.68<br>−.43<br>+9.49<br>44.46 | — 2 −.80<br>−.57<br>+ 10.34<br>41.86<br>28.7<br>13.2<br>13.3 | — .78<br>−.44<br>+ 9.51<br>42.22<br>13.5 |
| −16 15.13<br>+ .47<br>— 10.30<br>−16 24.96 | 14.66 19.91<br>20.34<br>8 20.12 | — 14.81<br>+ .47<br>— 10.50<br>— 24.84 | 14.34 18.99<br>19.28<br>19.12 | — 15.09<br>+ .48<br>— 10.70<br>— 25.31 | 14.61 18.74<br>19.15<br>18.94 | — 13.01<br>+ .48<br>— 10.90<br>— 23.43 | 12.53 18.43<br>18.79<br>18.61 |

3 Draconis.

| h | m | sec. |
|---|---|---|
| 19 | 17 | 57 |
| +73° | 7′ | |
| −30° | 44′ | |

ζinz = −51

1874

α 57.754 s
δ +7′ 15.29
dα/dt −1.114 s
dδ/dt +6.792″

l sin δ 9.98087
l cos δ 9.46303
l C .10600
l C′ 9.56903
l C″ 9.56763

| 1874 | h m s | | ′ ″ | |
|---|---|---|---|---|
| Aug 28 | 17 59.72 | | 6 85.7 | |
| Sept. 2 | 59.40 | −.32 | 86.8 | +1.1 |
| 7 | 59.06 | .34 | 87.8 | 1.0 |
| 12 | 58.71 | .35 | 88.8 | 1.0 |
| 17 | 58.34 | .37 | 89.6 | .8 |
| 22 | 57.96 | .38 | 90.3 | .7 |
| 27 | 57.56 | .40 | 90.8 | .5 |
| Oct. 2 | 57.16 | .40 | 91.2 | .4 |
| 7 | 56.75 | .41 | 91.6 | .4 |

corr =
corr =

lat δ +3.29 3.44
I = 7.09 s
K = −.052 s

| x 1874 −43<br>Aug. 23<br>−.422 | x −.40<br>Aug. 24<br>−.400 | x −.35<br>Aug 25<br>−.375 | x −.28 −.04<br>Aug 26<br>−.326 | x −.36<br>Aug. 27<br>−.342 | x −.46<br>Aug. 31<br>−.480 |
|---|---|---|---|---|---|
| 19 17 42.5<br>46.4<br>49.9<br>53.1<br>57.0<br>0.3<br>3.7<br>7.8<br>11.3 | 17 42.8<br>46.0<br>49.8<br>53.1<br>57.1<br>04<br>4.0<br>7.6<br>11.4 | 17 43.3<br>46.6<br>50.0<br>53.5<br>57.5<br>0.8<br>4.6<br>8.0<br>11.4 | 17 43.0<br>46.9<br>50.4<br>53.9<br>57.7<br>1.2<br>4.6<br>8.0<br>11.6 | 17 43.5<br>47.3<br>51.1<br>54.5<br>57.8<br>1.4<br>5.0<br>8.5<br>12.3 | 17 45.4<br>49.0<br>52.2<br>56.0<br>59.6<br>3.0<br>6.8<br>10.4<br>13.7 |
| 17 25.1<br>31.3<br>34.2<br>18 34.0<br>43.0<br>49.7 | 17 10.5<br>17.0<br>23.2<br>18 19.0<br>26.8<br>32.4 | 17 32.9<br>39.1<br>44.3<br>18 21.2<br>26.4<br>34.4 | 17 14.2<br>22.3<br>28.6<br>18 10.0<br>18.1<br>23.1 | 17 1.0<br>8.6<br>15.7<br>18 8.0<br>13.6<br>20.2 | 17 8.7<br>15.0<br>20.2<br>18 27.5<br>35.0<br>42.2 |
| 2720<br>240<br>5130 17 30.20<br>17 56.889 18 42.23<br>56837<br>18 0.041<br>−3.23 17 +4.93<br>−1.41 | 27~~1~~2<br>240<br>51~~1~~22 17 16.90<br>17 ~~56.840~~ 18 26.06<br>56.911<br>56859<br>18 17 ~~0.00~~ 59.94<br>−3.~~14~~08 +4.32<br>−1.32 | 2757<br>240<br>5157 17 38.76<br>17 57.300 18 27.33<br>57.248<br>17 59.~~93~~89<br>−2.684 +3.93<br>−1.15 | 27~~8~~3 7<br>240<br>51~~8~~73 17 21.70<br>17 ~~57.700~~ 18 17.06<br>57.478<br>57.426<br>17 59.~~84~~83<br>−2.440 +3.69<br>−.92<br>−.14 | 2814<br>240<br>5214 17 8.48<br>17 57.933 18 13.93<br>57.881<br>17 59.80 77<br>−1.~~92~~89 +3.31<br>−1.18 | 2961<br>240<br>5361 17 14.63<br>17 59.567 18 34.90<br>59.515<br>17 59.551<br>−0.050 +1.60<br>−1.51 |
| + 4.85<br>− 1.39 −2.26<br>− 2.26 −3.374 5810<br>+ 1.20 17m<br>17 56.84 | + 4.26<br>− 1.32 −2.19<br>− 2.19 −3.304 5767<br>+ 0.75<br>17 56.86 | + 3.93<br>− 1.23 −2.14<br>− 2.14 −3.254 5789<br>+ 0.56<br>17 57.25 | + 3.66<br>− 1.07 −2.08<br>− 2.08 −3.194 5798<br>+ 0.51<br>17 57.43 | + 3.31<br>− 1.12 −2.02<br>− 2.02 −3.134 5799<br>+ 0.17<br>17 57.88 | + 1.54<br>− 1.58 −1.76<br>− 1.76 −2.874 5784<br>− 1.77<br>17 59.51 |
| 17 58.04 5 1775<br>56.926 +2 484<br>+12<br>−930<br>+73 7 1449 | 17 57.6~~2~~ 1′ 1840<br>56.~~4~~96 +2 484<br>+12<br>−950<br>7 1494 | 17 ~~56.69~~ 57.81 1789<br>~~55.96~~ 56.696 +2 433<br>+12<br>−970<br>7 1372 | 17 57.94 1794<br>56.826 +2 509<br>+12<br>−1000<br>7 1423 | 17 58.05 1701<br>56.936 +2 635<br>+12<br>−1020<br>7 1436 | 17 57.74 1853<br>56.626 +2 625<br>+12<br>−1110<br>7 1458 |
| s<br>+26.69 −45.34<br>15<br>−2.12 | +39.90 −29.26<br>15<br>−2.14 | +18.54 −30.03<br>15<br>−2.15 | +35.78 −19.58<br>~~+36.00~~ ~~−19.36~~<br>15<br>−2.17 | +49.50 −16.00<br>15<br>−2.18 | +44.94 −35.33<br>15<br>−2.20 |
| 2 50.4 3 17.1<br>58.5 25.1<br>108.9 422<br>2 17 54.45 18 3 21.10 | 2 45.2 3 11.0<br>52.9 18.5<br>981 295<br>17 2 49.05 18 3 14.75 | 2 52.9 3 10.7<br>3.3 20.6<br>116 2 313<br>17 2 58.10 18 3 15.65 | 2 46.9 3 8.0<br>55.7 15.9<br>1026 239<br>17 2 51.30 18 3 11.95 | 2 42.3 3 7.0<br>50.9 16.0<br>93.2 230<br>17 2 46.60 18 3 11.50 | 2 41.1 3 10.9<br>50.5 21.1<br>916 320<br>17 2 45.80 18 3 16.00 |
| 1.42635 1.65648n<br>0.99538 1.22551n<br>+9.89 −16.81<br>18 4.34 18 4.29 | 1.60097 1.46627n<br>1.17000 1.03530n<br>+14.79 −10.85<br>18 3.84 18 3.90 | 1.26811 1.47756n<br>0.83714 1.04659n<br>+6.87 −11.13<br>18 4.97 18 4.52 | 1.55364 1.29181<br>1.12267 0.86084<br>+13.27 −7.26<br>18 4.57 18 4.69 | 1.69461 1.20412<br>1.26364 0.77315<br>+18.35 −5.93<br>18 4.95 18 5.57 | 1.65263 1.54814n<br>1.22166 1.11717n<br>+16.66 −13.10<br>18 2.46 18 2.90 |
| +73°<br>4 44.01″ 44.06<br>44.03<br>−30 44 13 43 46<br>1.53440n 1.53420n<br>−383<br>1.53057 1.53037<br>+33.93 +33.91 | 4. 44.51 44.45<br>44.48<br>−153<br>1.53287 1.53267<br>+34.11 +34.09 | 4 43.~~4~~8 43.83<br>43.60<br>+206<br>1.53646 1.53626<br>+34.39 +34.38 | 4 43.78 43.66<br>43.72<br>+234<br>1.53674 1.53654<br>+34.41 +34.40 | 4 43.40 42.78<br>43.09<br>−46<br>1.53394 1.53374<br>+34.19 +34.18 | 4 45.89 45.45<br>45.67<br>−1353<br>1.52087 1.52067<br>+33.18 +33.16 |
| −.10 −.20 −.30<br>.00 .00<br>+33.83 +33.61<br>5 17.84 17.67<br>7 24.6<br>+3 6.8 6.9<br>+2 6.8 | −.23 −.18 −.13<br>.00 .00<br>+33.88 +33.96<br>18.39 18.41<br>24.8<br>6.4 6.4<br>6.4 | − .15 −.09 −.14<br>.00 .00<br>+34.34 +34.24<br>17.72 18.07<br>25.0<br>7.3 6.9<br>7.1 | −.19 −.18 −.6<br>−.06 −.06<br>+34.16 +34.28<br>17.94 17.94<br>25.3<br>7.4 7.4<br>7.4 | −.36 −.26 −.4<br>−.06 −.06<br>+33.77 +34.08<br>17.17 16.86<br>25.5<br>8.3 8.6<br>8.4 | −.29 −.30 −.19<br>−.06 −.07<br>+32.83 +32.90<br>18.72 18.35<br>26.4<br>7.7 8.1<br>7.9 |
| +2 4.63 7 14.25<br>+ 1.08 5.71 14.08<br>− 9.30 −2.51<br>+1 56.41 7 14.16 | + 4.78 5.87 14.76<br>+ 1.09 −2.71 14.48<br>− 9.50<br>+ 56.37 14.77 | + 4.39 5.48 13.50<br>+ 1.09 −2.91 13.85<br>− 9.70<br>+ 55.78 13.68 | + 5.19 6.29 14.23<br>+ 1.10 −3.21 14.23<br>− 10.00<br>+ 56.29 14.23 | + 6.23 7.34 14.31<br>+ 1.11 −3.41 14.00<br>− 10.20<br>+ 57.14 14.15 | + 6.14 7.26 14.88<br>+ 1.12 −4.31 14.51<br>− 11.10<br>+ 56.16 14.69<br>21.48 |

1875

α 56.639
δ +7° 22.08
dα/dt −1.115
dδ/dt +6.790

l cos δ 9.46303
l.C. .12552
l.C.′ 9.58855

1875

| | | | | | | |
|---|---|---|---|---|---|---|
| Aug. 28 | 17m | 58.42 | | 6′ | 92.2 | |
| Sept. 2 | | 58.10 | −.32 | | 93.3 | +1.1 |
| 7 | | 57.77 | .33 | | 94.4 | 1.1 |
| 12 | | 57.42 | .35 | | 95.3 | .9 |
| 17 | | 57.05 | .37 | | 96.1 | .8 |
| 22 | | 56.67 | .38 | | 96.8 | .7 |
| 27 | | 56.28 | .39 | | 97.4 | .6 |

X 1874 · 1875 + + X X

−.45 Sept. 10 | −.18 −.07 Oct. 5 | −.55 Aug 28 | −.57 Aug 29 | −.68 Aug 30 | −.64 Aug 31

−.463 −.240 −.570 −.574 −.675 −.686

17 52.2 17 8.9 17 37.0 17 29.1 18 2.4 17 52.0 18 3.1 18 3.6 18 4.3 18 5.0 18 5.0 17 51.0
35.2 12.6 0.5 34.7 6.0 57.0 6.9 7.7 7.8 12.8 8.7 57.0
58.9 17.0 4.2 43.0 9.3 4.2 10.3 14.7 11.4 12.3 3.4
2.2 7.4 12.9 14.0 14.9 15.8
5.9 11.1 16.0 17.3 18.2 19.4
9.5 14.7 19.9 18 29.0 20.9 22.5 22.6
13.0 18 14.9 18.2 23.9 24.5 25.6 26.0
16.7 21.7 27.4 28.1 29.3 30.0
20.1 25.3 30.8 31.7 33.3 33.7

2337 1601 1486 1566 1673 1785
180 60
537 17 11.16 1001 17 35.60 17 57.73 18 8.67 18 8.90 17 57.13
18 5.967 18 14.90 18 11.122 18 16.511 18 29.00 18 17.400 18 18.589 18 19.278
5915 11.070 16459 17348 18537 19226
17 5887 3 17 56.93 89 17 5844 0 17 5838 4 17 58.37 27 17 58.25 1
+7.078 −5.57 +14.178 −13.29 +18.024 −16.24 ~~+18.97~~ 1901 −17.14 +20.237 −18.03 ~~+20.98~~ 21.02
−1.48 −.59 −1.81 −1.88 −2.24 −2.11
− 5.61 − 13.38 −.24 − 16.24 − 17.18 − 18.01 − 18.90 −18.90
− 1.52 −1.08 − .79 +0.86 − 1.87 −1.76 − 1.89 −1.70 − 2.22 −1.63 − 2.24 −1.57
− 1.08 −2194 57.78 + 0.86 −0254 57.81 − 1.76 5665 − 1.70 5663 − 1.63 5664 − 1.57 5665
− 8.21 − 13.31 − 19.87 − 20.77 − 21.86 − 22.71
18 592 18 1107 18 16.46 18 17.35 18 1854 18 19.23

17 57.71 2084 17 57.76 5 2484 17 56.59 23 4604 17 56.58 4562 17 56.68 4448 17 56.52 4341
56.596 +2 685 56.646 +2 5.93 −16 14.99 −16 14.55 −16 14.79 −16 12.75
+12 +7.3 +14 +1.4 +1.3 +1.3
−1310 −1620 −1020 −1040 −1060 −1080
7 15.79 7 15.87 7 22.25 7 22.07 7 20.29 7 21.16

s
+54.81 − 8.93 +35.52 +18.78 − 12.49 + 8.73 + 9.69 + 22.15
15 15 55 55 55 55
−2.31 −2.42 −2.51 −2.52 −2.53 −2.53
2 33.3 2 37.0 2 42.5 4 19.0 4 31.3 3 40.6 4 22.5 3 40.1 4 23.4 3 41.1 4 19.1
45.9 10.1 47.2 38.1 48.7 59.4 41.6 59.1 42.3 1.0 39.2
79.2 127.1 89.7 57.1 80.0 100.0 64.1 99.2 65.7 102.7 58.9
27 39.60 18 3.55 27 44.85 59 28.55 59 40.00 58 50.00 59 32.05 58 49.60 59 32.85 58 51.35 59 29.15

1.73886 0.95085 1.55047 1.27370 1.09656n 0.94101 0.98632 1.34537
1.30789 0.51988 1.11810 0.86225 0.68511n 0.52956 0.57487 0.93392
+20.32 −3.31 +13.13 +7.28 −4.84 +3.38 +3.38 +3.76 +3.76 +8.59 +8.59
17 59.92 18 0.24 17 57.98 59 35.83 59 35.16 58 53.38 59 35.43 58 53.36 59 36.61 58 59.94 59 37.74

4 48.43 48.11 4 50.37 23 12.52 13.19 ~~23 54.97~~ 23 12.92 ~~23 54.99~~ 23 11.74 ~~23 48.41~~ 23 10.61
48.27 12.85
44 27 44 4 44 20 44 8
1.53440n 1.53430n 1.53440n 1.53430n
−1835 +641 −639 −1421 −1366 −808
1.51605 1.51595 1.54081 1.54071 1.52801 1.52791 1.52019 ~~1.52009~~ 1.52074 ~~1.52064~~ 1.52632 ~~1.52622~~
+32.81 +32.81 +34.74 +34.73 +33.73 +33.72 +33.13 ~~+33.12~~ +33.17 ~~+33.16~~ +33.60 ~~+33.59~~

−.46 .23 −.1 −.19 −.27 −.05 −.54 −.02 −.1 −.43 −.1 −.43 −.04 −.50
.00 .00 −.08 −.49 −.52 −.42 ~~−.49~~ −.42 ~~−.49~~ −.43 ~~−.49~~
+32.35 +32.80 +34.47 +33.19 +33.18 +32.70 +32.74 +33.10
20.78 20.91 24.84 23 45.71 46.37 ~~27.67~~ 45.62 ~~27.73~~ 44.98 ~~21.57~~ 43.41
28.4 31.5 7 32.3 32.5 32.7 32.9
7.6 7.5 6.7 −16 13.4 14.1 16 13.1 11.8 10.5
7.5 6.7 13.7
+2 6.56 7.73 15.41 +5.93 7.16 −16 15.13 13.85 21.66 − 14.81 13.53 −15.09 13.80 −13.01 11.72
+ 1.17 −6.31 15.54 +1.23 −9.41 + 1.28 22.32 + 1.28 + 1.29 + 1.29
− 13.10 − 16.20 − 10.20 − 10.40 − 10.60 − 10.80
+1 54.63 15.48 + 50.96 15.80 −16 24.05 7 21.99 − 23.93 7 21.69 − 24.40 7 20.08 − 22.52 7 21.19

1874
Sept-28

18 17 12,1
23,3 18,3
26,5 23,1
30,3
33,5
37,4
41,1 40,1
44,4 46,0
47,9 52,2
51,8

336,2

17 17,83
18 37,356 17 46,10
37,304 37.30
17 ~~56.12~~ 18 57.46
+41,08 12 39.84

+ 0.46

+ 77,53 + 51,26
55
' "
3 55,8 4 28,0
12,1 46,8
' 12,79 7,48
59 3,95 59 37,40

1.90055 1.70978
1.48908 1.29833
+30.84 +19.88
59 34,79 59 37.28

23 13,56 11,07

44 44 44 11
1,53450m 1,53440m

-,39

32 1874 1874

δ Aquilae

h m sec.
19 19 12

+2° 52'
ζ = +39° 31'
sin ζ = +.64

α 8.694
δ +51' 54.93
dα/dt +3.025
dδ/dt +6.878

l sin δ 8.69907
l cos δ 9.99946
l b .10600
l b 0.10546

| 1874 | m | s |  | ' | " |  |
|---|---|---|---|---|---|---|
| Aug. 28 | 19 | 11.16 |  | 51 | 58.7 |  |
| Sept. 2 |  | 11.10 | −.06 |  | 59.0 | +.3 |
| 7 |  | 11.04 | .06 |  | 59.2 | .2 |
| 12 |  | 10.98 | .06 |  | 59.4 | .2 |
| 17 |  | 10.91 | .07 |  | 59.6 | .2 |
| 22 |  | 10.84 | .07 |  | 59.7 | .1 |
| 27 |  | 10.76 | .08 |  | 59.8 | .1 |
| Oct. 2 |  | 10.68 | .08 |  | 59.8 | .0 |
| 7 |  | 10.60 | .08 |  | 59.8 | .0 |

corr =
corr =

Long δ = +.05 1.00
t = 2.07
K = −.015

|  | X 1874 −40<br>Aug. 24<br>−.400 |  | X −.35<br>Aug. 25<br>−.345 |  | X −.28 −.04<br>Aug. 26<br>−.326 |  | X −.36<br>Aug. 27<br>−.342 |  | X −.46<br>Aug. 31<br>−.480 |  | X −.45<br>Sept. 10<br>−.463 |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 18 54.7 | 18 57.2 | 18 54.9 | 19 7.0 | 18 55.2 | 18 49.4 | 18 55.4 | 18 57.9 | 18 | 19 0.5 | 19 4.4 | 18 55.8 |
|  | 56.9 | 59.6 | 57.0 |  | 57.3 | 51.7 | 57.5 | 59.0 |  | 2.6 | 6.4 | 57.5 |
|  | 58.9 | 1.7 | 59.0 |  | 59.4 | 53.7 | 59.6 | 1.3 |  | 4.6 | 8.4 | 59.1 |
|  | 3.0 |  | 3.2 |  | 3.5 |  | 3.8 |  | 5.5 |  | 12.5 |  |
|  | 5.0 |  | 5.3 |  | 5.5 |  | 6.0 |  | 7.5 |  | 14.6 |  |
|  | 7.0 |  | 7.4 |  | 7.7 |  | 8.0 |  | 9.6 |  | 16.7 |  |
|  | 9.1 | 19 26.8 | 9.2 | 19 31.0 | 9.8 | 19 24.4 | 10.0 | 19 20.8 | 11.7 | 19 31.1 | 18.8 | 19 34.0 |
|  | 11.1 | 29.8 | 11.4 | 33.6 | 11.8 | 26.6 | 12.0 | 23.2 | 13.8 |  | 20.9 | 36.5 |
|  | 15.3 | 31.8 | 15.6 | 35.5 | 15.9 | 28.0 | 16.1 | 25.6 |  |  | 24.9 | 38.4 |
|  | 17.2 |  | 17.7 |  | 18.0 |  | 18.2 |  |  |  | 27.0 |  |
|  | 19.3 |  | 19.8 |  | 20.0 |  | 20.3 |  |  |  | 29.1 |  |
|  | 2575 |  | 2605 |  | 2641 |  | 2669 |  |  |  | 1837 |  |
|  | 180 |  | 180 |  | 180 |  | 180 |  |  |  |  |  |
|  | 77.5 | 18 59.50 | 80.5 | 19 7.00 | 84.1 | 18 51.60 | 86.9 | 18 59.40 |  | 19 2.56 |  | 18 57.46 |
|  | 19 7.045 | 19 29.46 | 19 7.318 | 19 33.36 | 19 7.645 | 19 26.33 | 19 7.900 | 19 23.20 | 19 9.62 | 19 31.10 | 19 16.700 | 19 36.30 |
|  | 7.030 | +4.32 | 7.303 | +3.93 | 7.630 | +3.69 | 7.885 | +3.31 | 9.60 | +1.60 | 16.685 | −5.57 |
|  | 19 11.21 | −.02 | 19 11.20 | −.02 | 19 11.18 | −.01 | 19 11.17 | −.02 | 19 11.12 | −.02 | 19 ~~11.00~~ 10.99 | −.02 |
|  | −4.18 |  | −3.90 |  | −3.55 | −.04 | −3.29 |  | −1.52 |  | +5.689 |  |
|  |  | −252 |  | −251 |  | −249 |  | −248 |  | −243 |  | −230 |
|  | + 4.26 | 19 8.81 | + 3.93 | 8.70 | + 3.66 | 8.78 | + 3.31 | 8.69 | + 1.58 | 8.75 | − 5.61 | 8.79 |
|  | − .02 |  | − .02 |  | − .02 |  | − .02 |  | − .02 |  | − .02 |  |
|  | − 2.52 +0.505 |  | − 2.51 +0.515 |  | − 2.49 +0.535 |  | − 2.48 +0.545 |  | − 2.43 +0.595 |  | − 2.30 +0.725 |  |
|  | + 1.72 |  | + 1.40 |  | + 1.15 |  | + 0.81 |  | − 0.88 |  | − 7.93 |  |
|  | 19 7.03 | 49 55.36 | 19 7.30 | 56.85 | 19 7.63 | 56.43 | 19 7.88 | 54.43 | 19 9.60 | 53.99 | 19 16.68 | 55.61 |
|  |  | +2 4.84 |  | +2 4.33 |  | +2 5.09 |  | +2 6.35 |  | +2 6.25 |  | +2 6.85 |
|  | 19 8.75 | −7.4 | 19 8.70 | −7.4 | 19 8.78 | −1.4 | 19 8.69 | −74 | 19 8.72 | −74 | 19 8.75 | −1.5 |
|  | 11.775 | −350 | 11.725 | −360 | 11.805 | −370 | 11.715 | −380 | 11.745 | −400 | 11.775 | −440 |
|  | +2 | 51 55.30 |  | 51 56.18 |  | 51 56.42 |  | 51 55.58 |  | 51 ~~55.84~~ 54.84<br>4 |  | 51 56.56 |
| 30 | + 7.54 | − 22.42 | 30 + 0.32 | − 26.04 | 30 + 16.04 | − 18.69 | 30 + 8.50 | − 15.30 | 30 + 7.58 | − 20.96 | 30 + 19.24 | − 19.60 |
|  | −2.14 |  | −2.15 |  | −2.17 |  | −2.18 |  | −2.20 |  | −2.31 |  |
|  | 1 47.7 | 2 25.9 | 1 55.7 | 2 29.5 | 1 36.7 | 2 19.9 | 1 43.7 | 2 17.1 | 1 50.1 | 2 26.9 | 1 33.2 | 2 23.1 |
|  | 4.7 | 42.5 | 12.1 | 43.6 | 51.7 | 35.2 | 59.0 | 33.5 | 7.0 | 43.4 | 51.7 | 41.9 |
|  | 1124 | 684 | 1278 | 731 | 884 | 551 | 1027 | 506 | 1171 | 703 | 849 | 650 |
|  | x 31 56.20 | 32 2 34.20 | 32 2 3.90 | 32 2 36.55 | 31 + 44.20 | 32 2 27.55 | 31 + ~~51.35~~ 56.35 | 32 2 25.30 | 31 + 58.55 | 32 2 35.15 | 31 + 42.45 | 32 2 32.50 |
|  | 0.87737 | 1.35064 n | 9.50515 | 1.41564 n | 1.20520 | 1.27161 n | 0.92942 | 1.18469 n | 0.87967 | 1.32139 n | 1.28421 | 1.29236 n |
|  | 0.98283 | 1.45610 n | 9.61061 | 1.52110 n | 1.31066 | 1.37707 n | 1.03488 | 1.29014 n | 0.98513 | 1.42685 n | 1.38967 | 1.39772 n |
|  | + 9.61 | − 28.58 | + 0.41 | − 33.20 | + 20.45 | − 23.83 | + 10.83 | − 19.51 | + 9.66 | − 26.72 | + 24.53 | − 24.99 |
|  | 32 5.81 | 32 5.62 | 32 4.31 | 3.35 | 32 4.65 | 32 3.72 | 32 3.18<br>7 | 32 5.79 | 32 8.21 | 32 8.43 | 32 6.98 | 32 7.51 |
| +2° | 50 42.54<br>42.63 | 42.73 | 44.04<br>44.52 | 45.00 | 50 43.70<br>44.16 | 44.63 | 50 46.17<br>1.7<br>41.86 | 42.56 | 50 40.14<br>40.03 | 39.92 | 50 41.37<br>41.10 | 40.84 |
| +39 | 29 49 | 30 27 |  |  |  |  |  |  |  |  | 29 35 | 30 25 |
|  | 1.67600 | 1.67620 |  |  |  |  |  |  |  |  | 1.67600 | 1.67620 |
|  | −150 |  | +208 |  | +237 |  | −42 |  | −1349 |  | −1827 |  |
|  | 1.67450 | 1.67470 | 1.67808 | 1.67828 | 1.67837 | 1.67857 | 1.67358 | 1.67578 | 1.66251 | 1.66271 | 1.65773 | 1.65793 |
|  | −47.26 | −47.28 | −47.65 | −47.67 | −47.68 | −47.70 | −47.38 | −47.40 | −45.97 | −46.00 | −45.47 | −45.49 |
|  | − 0 −.00 | −.02 | − 0 −.00 | −.03 | −.02 −.04 | −.02 | − 0 −.04 | −.01 | − 0 −.05 | −.02 | −.02 −.01 | −.02 |
|  | .00 | .00 | .00 | .00 | −.03 | −.05 | −.04 | −.05 | −.04 | −.05 | .00 | .00 |
|  | −47.26 | −47.29 | −47.65 | −47.68 | −47.71 | −47.76 | −47.42 | −47.45 | −46.01 | −46.06 | −45.48 | −45.50 |
| 49 | 55.28 | 55.44 | 56.39 | 57.32 | 55.99 | 56.87 | 58.75 | 55.11 | 54.13 | 53.86 | 55.89 | 53.34 |
| 51 | 58.4 |  | 58.5 |  | 58.6 |  | 58.7 |  | 58.9 |  | 59.3 |  |
| +2 | 3.1 | 3.0 | 2.1 | 1.2 | 2.6 | 1.7 | 4.0<br>2.5 | 3.6 | 4.8 | 5.0 | 3.4 | 4.0 |
| +2 | 3.0 |  | 1.6 |  | 2.1 |  | 3.0 |  | 4.9 |  | 3.7 |  |
| +2 | 4.78 | 51 55.20 | + 4.39 | 3.02 55.81 | + 5.79 | 3.81 56.10 | + 6.23 | 4.84 54.79 | + 6.14 | 4.73 54.86 | + 6.56 | 5.09 56.58 |
| − | 1.36 | 3.42 55.26 | − 1.37 | +3.28 56.74 | − 1.38 | +3.18 56.98 | − 1.39 | +3.08 56.15 | − 1.41 | 3.88 54.59 | − 1.47 | +2.48 56.03 |
| − | 3.50 | +3.38 | − 3.60 |  | − 3.70 |  | − 3.80 | 55.42 | − 4.00 |  | − 4.40 |  |
| +1 | 59.92 | 51 55.28 | + 59.42 | 56.27 +2 | 0.11 | 56.54 | + 1.04 | ~~57.47~~ | + 0.73 | 54.72 + | 0.69 | 56.20<br>3.18 |

1875

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Aug. | 28 | $19^m$ | $14.30^s$ | | 51 | 65.3″ | |
| Sept. | 2 | | 14.45 | −.05 | | 65.7 | +.4 |
| | 7 | | 14.39 | .06 | | 66.0 | .3 |
| | 12 | | 14.33 | .06 | | 66.2 | .2 |
| | 17 | | 14.26 | .07 | | 66.4 | .2 |
| | 22 | | 14.19 | .07 | | 66.5 | .1 |
| | 27 | | 14.11 | .08 | | 66.6 | .1 |
| Oct. | 2 | | 14.05 | .08 | | 66.6 | .0 |
| | 7 | | 13.95 | .08 | | 66.6 | .0 |

1875.5
α 11.719
δ +52′ 18″.1
$\frac{d\alpha}{dt}$ +3.825
$\frac{d\delta}{dt}$ +6″.882

log cos δ 9.99946
log c .12552
log c′ 0.12498

1875

| | −.55<br>Aug 28<br>−.5700 | + | | | −.57<br>Aug 29<br>−.5140 | + | | | −.68<br>Aug 30<br>−.6750 | + | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 18.4 | 19 | 19.6 | 19 | 19.4 | 19 | 1.0 | 19 | 20.2 | 18 | 59.5 |
| | 20.5 | | | | 21.5 | | 2.9 | | 22.2 | | 0.7 |
| | 22.6 | | | | 23.4 | | 5.1 | | 24.3 | | 2.2 |
| | 26.7 | | | | 27.6 | | | | 28.5 | | |
| | 28.9 | | | | 29.8 | | | | 30.4 | | |
| | 30.9 | | | | 31.8 | | | | 32.5 | | |
| | 32.9 | 20 | 4.5 | | 33.8 | 20 | 6.5 | | 34.6 | 20 | 6.4 |
| | 35.0 | | 6.0 | | 36.0 | | 9.3 | | 36.8 | | 8.6 |
| | 39.0 | | 7.9 | | 39.9 | | 11.2 | | 40.8 | | 11.0 |
| | 41.0 | | | | 42.0 | | | | 42.9 | | |
| | 43.1 | | | | 44.1 | | | | 44.9 | | |
| | 3388 | | | | 3493 | | | | 3581 | | |
| | | 19 | 19.60 | | | 19 | 3.00 | | | 19<br>~~18~~ | 0.80 |
| 19 | 30.800 | 20 | 6.13 | 19 | 31.755 | 20 | 9.00 | 19 | 32.555 | 20 | 8.67 |
| | 30785 | | −16.24 | | 31.740 | | −17.14 | | 32540 | | −18.03 |
| 19 | 14.50 | | −.03 | 19 | 14.49 | | −.03 | 19 | 14.48 | | −.03 |
| | +16.28 | | | | +17.25 | | | | +18.06 | | |
| | | | −2.78 | | | | −2.77 | | | | −2.76 |
| − | 16.24 | 19 | 11.73 | − | 17.18 | | 11.80 | − | 18.01 | | 11.72 |
| − | .03 | | | − | .03 | | | − | .03 | | |
| − | 2.78 | | | − | 2.77 | | | − | 2.76 | | |
| − | 19.05 | | | − | 19.98 | | | − | 20.80 | | |
| 19 | 30.78 | 8 | 22.26 | 19 | 31.74 | | 22.10 | 19 | 32.54 | | 22.17 |
| | | −16 | 14.99 | | | −16 | 14.55 | | | −16 | 14.89 |
| 19 | 11.73 | | −1.7 | 19 | 11.76 | | −1.7 | 19 | 11.74 | | −1.7 |
| | | | −3.50 | | | | −3.60 | | | | −3.70 |
| +2 | | 52 | 2.07 | | | 52 | ~~2.51~~ 2.5<br>25 | | | 52 | 1.88 |
| + | 11.20 | − | 35.33 | + | 28.75 | − | 37.25 | + | 31.75 | − | 36.12 |
| 10 | | | | 10 | | | | 10 | | | |
| | −2.51 | | | | −2.52 | | | | −2.53 | | |
| 3 | 15.4 | 4 | 16.2 | 2 | 52.6 | 4 | 20.2 | 2 | 48.3 | 4 | 18.9 |
| | 33.5 | | 34.9 | | 10.8 | | 38.7 | | 6.7 | | 36.9 |
| | 489 | | 511 | | 1234 | | 589 | | 1150 | | 558 |
| 13 | 24.45 | 14 | 25.55 | 13 | 1.70 | 14 | 29.45 | 12 | 57.50 | 14 | 27.90 |
| | 1.04922 | | 1.54812 | | 1.45864 | | 1.57113 | | 1.50174 | | 1.55775 |
| | 1.17420 | | 1.67310 | | 1.58362 | | 1.69611 | | 1.62672 | | 1.68273 |
| | +14.93 | | −47.11 | | +38.34 | | −49.67 | | +42.34 | | −48.17 |
| 13 | 39.38 | 13 | 38.44 | 13 | 40.07 | 13 | 39.78 | 13 | 39.84 | 13 | 39.73 |
| 9 | 8.97 | | 9.91 | 9. | 8.31 | | 8.57 | 9 | 8.51 | | 08.62 |
| | 9.44 | | | | 8.44 | | | | 8.56 | | |
| 29 | 36 | 30 | 37 | | | | | | | | |
| | 1.67600 | | 1.67620 | | | | | | | | |
| | −634 | | | | −1416 | | | | −1362 | | |
| | 1.66966 | | 1.66986 | | 1.66184 | | 1.66204 | | 1.66238 | | 1.66258 |
| | −46.74 | | −46.76 | | −*45.90 | | −*45.92 | | −45.96 | | −45.98 |
| | −.04 −.43 | | −.03 1 | | −.04 2 −.43 | | −.04 2 | | −.04 2 −.42 | | −.03 1 |
| | −.37 | | −.48 | | −.33 | | −.49 | | −.32 | | −.49 |
| | −47.11 | | −47.25 | | −46.25 | | −46.43 | | −46.30 | | −46.48 |
| 8 | 21.86 | | 22.66 | | 22.06 | | 22.14 | | 22.21 | | 22.14 |
| 52 | 5.3 | | | | 5.4 | | | | 5.5 | | |
| −16 | 16.6 | | 17.4 | | 16.7 | | 16.7 | | 16.7 | | 16.6 |
| −16 | 17.0 | | | | 16.7 | | | | 16.6 | | |
| −16 | 15.13 | 52 | 1.63 | − | 14.81 | 16.42 | 2.04 | − | 15.09 | 16.70 | 1.81 |
| − | 1.60 | 16.73 | 2.43 | − | 1.61 | | 2.12 | − | 1.61 | | 1.74 |
| − | 3.50 | | | − | 3.60 | | | − | 3.70 | | |
| −16 | 20.23 | 52 | 2.03 | − | 20.02 | | 2.08 | − | 20.40 | | 1.77 |

| | −.64<br>Aug 31<br>−.680 | + | | | −.62<br>Sept 1<br>−.636 | + | | | −.60<br>Sept 4<br>−.640 | + | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 21.2 | 19 | 8.4 | 19 | 22.0 | 19 | 3.6 | 19 | 24.4 | 19 | 14.2 |
| | 23.2 | | 10.3 | | 24.0 | | 5.8 | | 26.4 | | 16.0 |
| | 25.3 | | 11.8 | | 26.0 | | 7.9 | | 28.5 | | 18.0 |
| | 29.4 | | | | 30.0 | | | | 32.6 | | |
| | 31.4 | | | | 32.1 | | | | 34.7 | | |
| | 33.5 | | | | 34.3 | | | | 36.7 | | |
| | 35.6 | 20 | 4.9 | | 36.4 | 19 | 51.6 | | 38.8 | 19 | 54.9 |
| | 37.7 | | 6.3 | | 38.5 | | 53.6 | | 40.9 | | 57.2 |
| | 41.7 | | 7.8 | | 42.5 | | 55.4 | | 45.0 | | 59.0 |
| | 43.7 | | | | 44.6 | | | | 47.0 | | |
| | 45.8 | | | | 46.7 | | | | 49.2 | | |
| | 3685 | | | | 3771 | | | | 4042 | | |
| | | 19 | 10.17 | | | 19 | 5.77 | | | 19 | 16.07 |
| 19 | 33.500 | 20 | ~~6.67~~ | 19 | 34.282 | 19 | 53.53 | 19 | 36.745 | 19 | 57.03 |
| | 33485 | | 6.33 | | 34267 | | −19.66 | | 36730 | | −22.25 |
| 19 | 14.47 | | −.03 | 19 | 14.46 | | −.03 | 19 | 14.43 | | −.03 |
| | +19.01 | | −18.90 | | +19.81 | | | | +22.30 | | |
| | | | −2.75 | | | | −2.78 | | | | −2.71 |
| − | 18.90 | | 11.80 | − | 19.68 | | 11.84 4 | − | 22.27 | | 11.74 |
| − | .03 | | | − | .03 | | | − | .03 | | |
| − | 2.75 | | | − | 2.74 | | | − | 2.71 | | |
| − | 21.68 | | | − | 22.45 | | | − | 25.01 | | |
| 19 | 33.49 | | 20.94 | 19 | 34.27 | | 21.90 | 19 | 36.73 | | 21.26 |
| | | −16 | 12.75 | | | −16 | 13.20 | | | −16 | 14.27 |
| 19 | 11.81 | | −1.7 | 19 | 11.82 | | −1.7 | 19 | 11.72 | | −1.7 |
| | | | −3.80 | | | | −3.80 | | | | −4.10 |
| | | 52 | 2.69 | | | 52 | 3.20 | | | 52 | 1.19 |
| + | 23.33 | − | 32.8~~8~~3 | + | 28.51 | − | 19.25 | + | 20.67 | − | 20.29 |
| 10 | | | | 10 | | | | 10 | | | |
| | −2.53 | | | | −2.54 | | | | −2.57 | | |
| 3 | 0.3 | 4 | 15.3 | 2 | 52.3 | 3 | 55.8 | 3 | 4.9 | 3 | 59.9 |
| | 18.6 | | 32.8 | | 10.8 | | 13.9 | | 23.2 | | 17.9 |
| | 189 | | 481 | | 1231 | | 1292 | | 281 | | 1378 |
| 13 | 9.45 | 14 | 24.05 | 13 | 1.55 | 14 | 4.60 | 13 | 14.05 | 14 | 8.90 |
| | 1.36791 | | 1.51627 | | 1.45500 | | 1.28443 | | 1.31534 | | 1.30728 |
| | 1.49289 | | 1.64125 | | 1.57998 | | 1.40941 | | 1.44032 | | 1.43226 |
| | +31.11 | | −43.78 | | +38.01 | | −25.67 | | +27.56 | | −27.06 |
| 13 | 40.56 | 13 | 40.27 | 13 | 39.56 | 13 | 38.93 | 13 | 41.61 | 13 | 41.84 |
| 9 | 7.79 | | 8.08 | 9 | 8.79 | | 9.42 | 9 | 6.74 | | 6.51 |
| | 7.93 | | | | 9.10 | | | | 6.62 | | |
| | | | | | | | | 29 | 26 | 30 | 21 |
| | | | | | | | | | 1.67590 | | 1.67620 |
| | −804 | | | | −582 | | | | −2328 | | |
| | 1.66796 | | 1.66816 | | 1.67018 | | 1.67038 | | 1.65262 | | 1.65292 |
| | −46.55 | | −46.58 | | −46.79 | | −46.81 | | −44.94 | | −44.97 |
| | −.03 1 −.43 | | −.05 2 | | −.04 −.40 | | −.02 1 | | −.02 1 −.41 | | −.02 1 |
| | −.35 | | −.48 | | −.33 | | −.45 | | −.35 | | −.45 |
| | −46.91 | | −47.08 | | −47.14 | | −47.27 | | −45.30 | | −45.43 |
| | 20.88 | | 21.00 | | 21.65 | | 22.15 | | 21.44 | | 21.08 |
| | 5.6 | | | | 5.6 | | | | 5.9 | | |
| | 15.3 | | 15.4 | | 16.0 | | 16.5 | | 15.5 | | 15.2 |
| | 15.3 | | | | 16.2 | | | | 15.3 | | |
| − | 13.01 | 14.62 | 2.46 | − | 13.16 | 14.78 | 3.07 | − | 14.38 | 16.02 | 1.32 |
| − | 1.61 | | 2.58 | − | 1.62 | | 3.57 | − | 1.64 | | 0.96 |
| − | 3.88 | | | − | 3.80 | | | − | 4.10 | | |
| − | 18.42 | | 2.52 | − | 18.58 | | 3.32 | − | 20.12 | | 1.14 |

4 Cygni.
h m sec.
19 21 41
+ 36° 4′
z = + 6° 19′
z sin z = +.11

| | | 1874 | 1875 |
|---|---|---|---|
| α | | | 21 39.01 |
| δ | | | 4 4.90 |
| dα/dt | | | +2.159 |
| dδ/dt | | | + 7.00 |
| l sin δ | | 9.76991 | |
| l cos δ | | 9.90759 | 9.90759 |
| l C | | .10600 | .12552 |
| l C′ | | 0.01359 | 0.03311 |
| l C″ | | 0.01219 | |

corr α =
corr δ =
tang δ = +.73
I = .256 s
K = −.019 s

1874

| Aug. 23 | | Aug. 24 | | Aug. 25 | | Aug. 26 | | Aug. 27 | | Aug. 31 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −.422 | | −.400 | | −.345 | | −.326 | | −.342 | | −.480 | |
| 19 21 19.2 | 21 8.8 | 21 19.6 | 21 12.4 | 21 20.0 | 21 14.4 | 21 20.3 | 21 17.0 | 21 20.5 | 21 11.5 | 21 22.3 | 21 11.8 |
| 21.8 | 10.7 | 22.2 | 15.0 | 22.6 | 17.6 | 22.8 | 19.1 | 23.1 | | 24.8 | 14.4 |
| 24.4 | 12.8 | 24.8 | 17.5 | 25.2 | 19.3 | 25.3 | 20.8 | 25.6 | | 27.4 | 17.1 |
| 29.6 | | 29.9 | | 30.3 | | 30.5 | | 30.7 | | 31.5 | |
| 32.0 | | 32.6 | | 32.7 | | 33.0 | | 33.3 | | 35.1 | |
| 34.6 | | 35.0 | | 35.1 | | 35.6 | | 35.8 | | 37.7 | |
| 37.0 | 21 53.4 | 37.6 | 21 50.0 | 37.8 | 21 47.5 | 37.9 | 21 43.4 | 38.4 | 21 57.1 | 40.3 | 21 38.6 |
| 39.8 | 55.3 | 40.2 | 52.1 | 40.5 | 50.0 | 40.7 | 46.0 | 40.9 | 57.6 | 42.8 | 41.1 |
| 44.7 | 56.8 | 45.3 | 54.6 | 45.5 | 52.4 | 45.8 | 47.9 | 46.1 | 2.8 | 47.9 | 43.5 |
| 47.1 | | 47.8 | | 48.1 | | 48.5 | | 48.6 | | 51.3 | |
| 49.9 | | 50.4 | | 50.6 | | 51.0 | | 51.3 | | 52.7 | |
| 37.98 | 21 10.76 | 38.54 | 21 14.96 | 38.84 | 21 17.10 | 39.14 | 21 18.96 | 39.43 | 21 11.50 | 41.39 | 21 14.43 |
| 21 34.527 | 21 55.16 | 21 35.035 | 21 52.23 | 21 35.309 | 21 49.96 | 21 35.582 | 21 45.76 | 21 35.845 | 21 59.83 | 21 37.627 | 21 41.16 |
| 34.508 | | 35.016 | | 35.290 | | 35.563 | | 35.826 | | 37.608 | |
| + 4.85 | | + 4.26 | | + 3.93 | | + 3.66 | | + 3.30 | | + 1.54 | |
| − .31 | | − .29 | | − .27 | | − .24 | | − .25 | | − .35 | |
| − 2.18 −0.021 | | − 2.14 −0.011 | | − 2.15 +0.009 | | − 2.14 +0.019 | | − 2.12 +0.039 | | − 2.06 +0.099 | |
| + 2.36 | | + 1.80 | | + 1.51 | | + 1.3~~6~~ 28 | | + 0.93 | | − 0.84 | |
| 21 34.51 | | 21 35.02 | | 21 35.29 | | 21 35.56 | | 21 35.83 | | 21 37.61 | |
| 21 36.87 | | 21 36.82 | | 21 ~~33.78~~ 36.80 | | 21 36.~~92~~ 84 | | 21 36.76 | | 21 36.77 | |
| 39.029 | | 38.979 | | 38.959 | | ~~39.049~~ 38.999 | | 38.919 | | 38.929 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| s +23.77 | −20.63 | +20.07 | −17.20 | +18.21 | −14.65 | +16.62 | −10.18 | +24.34 | −23.99 | +23.20 | −3.53 |
| 20 −2.12 | | 20 −2.14 | | 20 −2.15 | | 20 −2.17 | | 20 −2.18 | | 20 −2.20 | |
| 0 8.7 | 0 55.0 | 0 12.3 | 0 51.3 | 0 13.2 | 0 47.8 | 0 15.9 | 0 43.2 | 0 6.8 | 0 59.2 | 0 8.7 | 0 36.0 |
| 22.7 | 8.7 | 26.4 | 4.9 | 27.0 | 2.1 | 29.6 | 56.0 | 20.4 | 12.5 | 23.5 | 51.1 |
| 31.4 | 123.7 | 38.7 | 116.3 | 40.2 | 109.9 | 45.5 | 99.2 | 27.2 | 131.7 | 32.2 | 87.1 |
| 0 20 15.70 | 21 1.85 | 20 0 19.35 | 20 0 58.10 | 20 0 20.10 | 20 0 54.95 | 20 0 22.75 | 20 0 49.60 | 20 0 13.60 | 21 5.85 | 20 0 16.10 | 20 0 43.55 |
| 1.37603 | 1.31450n | 1.30255 | 1.23553n | 1.26031 | 1.16584n | 1.22063 | 1.00775n | 1.38632 | 1.38003n | 1.36549 | 0.54797n |
| 1.38963 | 1.32809n | 1.31614 | 1.24912n | 1.27390 | 1.17943n | 1.23422 | 1.02134n | 1.39991 | 1.39362n | 1.37908 | 0.56136n |
| +24.53 | −21.29 | +20.71 | −17.75 | +18.79 | −15.12 | +17.15 | −10.51 | +25.11 | −24.75 | +23.94 | −3.64 |
| 20 40.23 | 20 40.56 | 20 40.06 | 20 40.35 | 20 38.89 | 20 39.83 | 20 39.96 | 20 39.09 | 20 38.71 | 20 41.10 | 20 40.04 | 20 39.9 |
| +36 2 8.12 | 7.79 | 2 8.29 | 8.00 | 2 9.46 | 8.52 | 2 8.45 | 9.26 | 2 9.64 | 7.25 | 2 8.31 | 8.44 |
| 7.95 | | 8.14 | | 8.99 | | 8.85 | | 8.44 | | 8.37 | |
| +6 18 9 | 18 55 | | | | | | | | | 18 9 | 18 36 |
| 0.80350 | 0.80440 | | | | | | | | | 0.80350 | 0.80400 |
| −373 | | −145 | | +213 | | +244 | | −35 | | −1340 | |
| 0.79977 | 0.80067 | 0.80205 | 0.80295 | 0.80563 | 0.80653 | 0.80594 | 0.80684 | 0.80315 | 0.80405 | 0.79010 | 0.79060 |
| −6.31 | −6.32 | −6.34 | −6.35 | −6.39 | −6.40 | −6.40 | −6.41 | −6.36 | −6.37 | −6.17 | −6.17 |
| −.15 −.13 | −.11 | −.10 −.08 | −.07 | −.08 −.06 | −.05 | −.07 −.06 | −.03 | −.15 −.16 | −.15 | −.14 ~~−.13~~ .08 | |
| .00 | .08 | .08 | .00 | .00 | .00 | −.01 | −.02 | .00 | −.02 | −.01 | −.01 |
| −6.46 | −6.43 | −6.44 | −6.42 | −6.47 | −6.45 | −6.48 | −6.46 | −6.51 | −6.54 | −6.32 | −6.18 |
| 2 1.66 | 1.36 | 2 1.85 | 1.58 | 2 2.99 | 2.07 | 2 1.97 | 2.80 | 2 3.13 | 0.71 | 2 1.99 | 2.26 |
| +2 + 4.63 | 4.40 | + 4.78 | 4.55 | + 4.39 | 4.15 | +5.19 | 4.95 | +6.23 | 5.99 | +6.14 | 5.90 |
| − .23 | −1.44 | − .23 | −1.64 | − .24 | −1.84 | − .24 | −2.03 | − .24 | −2.22 | − .24 | −2.94 |
| −8.44 | | −8.64 | | −8.84 | | −9.03 | | −9.22 | | −9.94 | |
| +1 55.96 | 3 57.62 | + 55.91 | 57.76 | + 55.31 | 58.30 | + 55.92 | 57.89 | + 56.77 | 59.90 | + 55.98 | 57.97 |
| | 57.32 | | 57.49 | | 57.38 | | 58.72 | | 57.48 | | 58.24 |
| | 3 57.47 | | 57.62 | | 57.84 | | 58.30 | | 58.69 | | 58.10 |

| | | 1874 | | 1875 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept. 10 | | Oct. 5 | | Aug 28 | | Aug 29 | | Aug 30 | | Aug 31 | |
| -463 | | -240 | | -570 | | -574 | | -675 | | -680 | |
| 21 — | 21 | 21 36.3 | 21 27.6 | 21 42.9 | 21 33.2 | 21 43.6 | 21 27.4 | 21 44.7 | 21 38.0 | 21 45.5 | 21 19.9 |
| — | | 39.0 | 31.0 | 45.2 | 35.3 | 46.2 | 30.3 | 47.2 | 40.9 | 47.9 | 17.3 |
| — | | 41.5 | 33.0 | 47.8 | 37.3 | 48.7 | 32.0 | 49.7 | 43.5 | 50.6 | 18.8 |
| 39.6 | | 46.5 | | 52.9 | | 53.6 | | 54.7 | | 55.6 | |
| 42.0 | | 49.1 | | 55.4 | | 56.2 | | 57.4 | | 58.2 | |
| 44.7 | | 51.6 | | 58.2 | | 58.8 | | 59.9 | | 06 | |
| 47.2 | 22 8.0 | 54.2 | | 0.6 | 22 20.5 | 1.5 | 22 28.6 | 22 2.3 | 22 43.0 | 3.1 | 22 36.6 |
| 49.0 | 10.5 | 56.8 | | 3.1 | 22.3 | 4.0 | 31.2 | 5.0 | 45.0 | 5.8 | 39.0 |
| — | 12.9 | 1.8 | | 8.2 | 24.3 | 9.1 | 33.0 | 10.0 | 47.3 | 11.0 | 41.6 |
| — | | 4.4 | | 10.8 | | 11.7 | | 12.6 | | 13.4 | |
| — | | 7.0 | | 13.3 | | 14.2 | | 15.1 | | 16.0 | |
| 2233 3 | | 3884 2 | | 3382 | | 3476 | | 3586 | | 3077 | |
| | | 180 | 30.53 | 300 | | 300 | | 300 | | 300 | |
| | | 5684 2 | 21 ~~31.05~~ | 6382 | 21 35.27 | 6476 | 21 29.90 | 6586 | 21 40.80 | 7.7 | 21 17.00 |
| 21 44.660 | 22 10.46 | 21 ~~51.673~~ | | 21 58.018 | 22 22.37 | 21 58.873 | 22 30.93 | 21 59.873 | 22 45.10 | 22 0.700 | 22 39.07 |
| 44.641 | | 51.645 | | 57.999 | | 58.854 | | 59.854 | | 0.681 | |
| | | 51.626 | | | | | | | | | |
| - 5.61 | | - 13.38 | | - 16.24 | | - 17.18 | | - 18.01 | | - 18.90 | |
| - .34 | | - .17 | | - .42 | | - .42 | | - .49 | | - .50 | |
| - 1.88 | +0.279 | - 1.32 | +0.839 | - 2.32 | | - 2.31 | | - 2.29 | | - 2.28 | |
| - 7.83 | | - 14.87 | | - 18.98 | | - 19.91 | | - 20.79 | | - 21.68 | |
| 21 44.64 | | 21 51.63 | | 21 58.00 | | 21 58.85 | | 21 59.85 | | 22 0.68 | |
| 21 36.81 | | 21 36.76 | | 21 39.02 | | 21 38.94 | | 21 39.06 | | 21 39.00 | |
| 38.969 | | | 38.919 | | | | | | | | |
| | | 36.781 | | | | | | | | | |
| | S | +21.11 | | | | | | | | | |
| | -25.80 | ~~+20.62~~ | | + 22.75 | - 24.35 | + 28.97 | - 32.06 | + 19.07 | - 45.23 | + 43.70 | - 38.37 |
| 20 | | 20 | | 0 | | 0 | | 0 | | 0 | |
| -2.31 | | -2.42 | | -2.51 | | -2.52 | | -2.53 | | -2.53 | |
| 0 57.0 | ∩ | 0 8.2 | | 1 37.8 | 2 27.7 | 1 30.9 | 2 36.3 | 1 41.9 | 2 51.2 | 1 13.2 | 2 44.9 |
| 13.7 | | 17.4 | | 57.0 | 47.5 | 50.9 | 56.5 | 1.5 | 10.5 | 36.2 | 5.0 |
| 130.7 | | 25.6 | | 94.8 | 75.2 | 81.8 | 92.8 | 103.4 | 121.7 | 51.4 | 109.9 |
| x21 5.35 | | 20 8 12.80 | | 1 47.40 | 2 37.60 | 1 40.90 | 2 46.40 | 1 51.70 | 3 0.85 | 1 25.70 | 2 54.95 |
| | 1.41162n | 1.32449 | | 1.35698 | 1.38650n | 1.46195 | 1.50596 | 1.28035 | 1.65543 | 1.64048 | 1.58399n |
| | 1.42521n | 1.33668 | | 1.39009 | 1.41961n | 1.49306 | 1.53907 | 1.31346 | 1.68854 | 1.67359 | 1.61710n |
| | -26.62 | +21.71 | | +24.55 | -26.28 | +31.27 | -34.60 | +20.58 | -48.81 | +47.16 | -41.41 |
| 20 38.73? | | 20 34.51 | | 2 11.95 | 2 11.32 | 2 12.17 | 2 11.80 | 2 12.28 | 2 12.04 | 2 12.86 | 2 13.54 |
| 2 9.62 | | 2. 13.84 | | 20 36.40 | 20 37.03 | 20 36.18 | 36.55 | 20 36.07 | 36.31 | 20 35.49 | 34.81 |
| | | | | 36.71 | | 36.86 | | 36.19 | | 35.15 | |
| 18 58 | | 18 6 | | 17 59 | 18 50 | | | | | | |
| 0.80450 | | 0.80340 | | 0.80330 | 0.80430 | | | | | | |
| -1811 | | +641 | | -625 | | -1405 | | -1355 | | -796 | |
| 0.78639 | | 0.80981 | | 0.79705 | 0.80805 | 0.78925 | 0.79025 | 0.78975 | 0.79075 | 0.79534 | 0.79634 |
| -6.11 | | -6.45 | | -6.27 | -6.43 | -6.15 | -6.17 | -6.16 | -6.18 | -6.24 | -6.26 |
| -.17 -.17 | -.17 | -.11 -.12 | | -.13 -.38 | -.15 | -.21 -.48 | -.26 | -.09 -.58 | -.53 | -.48 -.66 | -.38 |
| .00 | .00 | -.01 | | -.20 | -.29 | -.19 | -.31 | -.21 | -.33 | -.15 | -.32 |
| - 6.28 | | - 6.57 | | - 6.60 | - 6.87 | - 6.55 | - 6.74 | - 6.46 | - 7.04 | - 6.87 | - 6.96 |
| 2 3.34 | | 2 7.27 | | 20 29.80 | 30.16 | 20 29.63 | 29.81 | 20 29.61 | 29.27 | 20 28.62 | 27.85 |
| +2 6.56 | 6.31 | +5.93 | 5.67 | -16 15.13 | 15.41 | - 14.81 | 15.09 | - 15.09 | 15.37 | - 13.01 | 13.29 |
| - .25 | -4.48 | - .26 | -6.51 | - .28 | | - .28 | | - .28 | | - .28 | |
| -11.48 | | -13.51 | | -9.16 | | -9.34 | | -9.53 | | -9.70 | |
| +1 54.83 | | + 52.16 | | -16 24.57 | 4 5.23 | - 24.43 | 5.20 | - 24.90 | 4.71 | - 22.99 | 5.63 |
| | | | | | 5.59 | | 5.38 | | 4.37 | | 4.86 |
| 3 58.17 | | 59.43 | | | 4 5.41 | | 5.29 | | 4.54 | | 5.24 |
| 4 5.17 | | | | | | | | | | | |

Sept-1 Sept-28 1874

-6.56

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 21 | 46.1 | 21 | 30.0 | 22 | 5.4 | 22 | 2.0 |
| | 48.6 | | 31.8 | | 8.0 | | 4.7 |
| | 51.3 | | 33.8 | | 10.4 | | 6.9 |
| | 56.4 | | | | 15.5 | | |
| | 58.9 | | | | 18.1 | | |
| 22 | 1.4 | | | | 20.6 | | |
| | 3.9 | 22 | 28.0 | | 23.2 | 22 | 38.9 |
| | 6.4 | | 29.9 | | 25.7 | | |
| | 11.8 | | 31.4 | | 30.8 | | |
| | 14.3 | | | | 33.3 | | |
| | 16.7 | | | | 35.8 | | |
| | 3158 | | | | 2267 | | |
| | 300 | | | | | | |
| | 6158 | 21 | 31.87 | | | 22 | 4.53 |
| 22 | 1.436 | 22 | 29.77 | 22 | 20.609 | 22 | 38.90 |
| | 1.417 | | | | 20.590 | | |

− 19.68

= .46

− 2.26

− 22.40

22 1.42

21 39.02

39.008

− 1.71

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 | + 27.57 | | − 28.33 | 0 | + 16.08 | | − 18.29 |
| | − 2.54 | | | | | | |
| 1 | 30.2 | 2 | 32.2 | 1 | 44.2 | 2 | 22.0 |
| | 56.2 | | 52.1 | | 4.4 | | 42.1 |
| | 80.4 | | 84.3 | | 10.86 | | 64.1 |
| 1 | 40.20 | 2 | 42.15 | 1 | 64.30 | 2 | 32.05 |
| | 1.47085 | | 1.45225 n | | 1.20629 | | 1.26221 n |
| | 1.50396 | | 1.48536 n | | 1.23940 | | 1.29532 n |
| | + 31.91 | | − 30.57 | | + 17.35 | | − 19.74 |
| 2 | 12.11 | 2 | 11.58 | 2 | 11.65 | 2 | 12.31 |
| 20 | 36.24 | | 36.77 | 20 | 36.70 | | 36.04 |
| | 26.50 | | | | | | |
| | | | | 18 | 6 | 18 | 44 |
| | | | | | 0.80340 | | 0.80410 |

− 576

0.79754 0.79854

− 6.27 − 6.29

−.23 −.46 −.20 −.07 −.08

−.19 −.30

− 6.69 − 6.84

20 29.55 29.98 .79

− 16 13.16 13.44

.28

− 9.88 − 13.09

− 16 · 23.32

6.23

6.66

6.45

43 1874 1874

β Cygni ~~pr~~

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| h m sec. | α 38.418 | Aug. 28 | 25 40.61 | | 41 55.5 | | corr. |
| 19 25 41 | δ +41 47.12 | Sept. 2 | 40.54 | −.07 | 56.3 | +.8 | corr δ = |
| +27° 42′ | dα/dt +2.419 | 7 | 40.47 | .07 | 57.0 | .7 | |
| η = +14 41 | dδ/dt +7.332 | 12 | 40.39 | .08 | 57.6 | .6 | tang δ = +.53 1.13 |
| = +.25 | | 17 | 40.30 | .09 | 58.1 | .5 | I = 2.33 s |
| | l sin δ 9.66731 | 22 | 40.21 | .09 | 58.5 | .4 | |
| | | 27 | 40.11 | .10 | 58.8 | .3 | K = −.018 s |
| | | Oct. 2 | 40.01 | .10 | 59.0 | .2 | |
| | l cos δ 9.94714 | 7 | 39.90 | .11 | 59.2 | .2 | |
| | l C .10600 | | | | | | |
| | l C′ 0.05314 | | | | | | |
| | l C″ 0.05174 | | | | | | |

X 1874

| X −.43 Aug. 23 −.422 | | X −.40 Aug. 24 −.400 | | X −.35 Aug. 25 −.375 | | X −.28 −.04 Aug. 26 −.326 | | X −.46 Aug. 31 −.480 | | X −.43 Sept. 2 −.450 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 25 22.1 | 25 13.8 | 25 22.7 | 25 12.5 | 25 22.9 | 25 14.0 | 25 23.0 | 25 11.7 | 25 25.4 | 25 13.0 | 25 26.1 | 25 18.8 |
| 24.4 | 16.4 | 24.9 | 14.8 | 25.3 | 16.6 | 25.5 | 15.0 | 27.6 | 15.7 | 28.5 | 20.6 |
| 26.7 | 18.5 | 27.3 | 17.0 | 27.6 | 18.7 | 27.8 | 17.3 | 29.9 | 17.8 | 30.9 | 22.9 |
| 31.3 | | 31.9 | | 32.2 | | 32.4 | | 34.5 | | 35.6 | |
| 33.6 | | 34.2 | | 34.6 | | 34.9 | | 36.9 | | 37.9 | |
| 36.0 | | 36.6 | | 36.8 | | 37.2 | | 39.2 | | 40.2 | |
| 38.4 | 25 49.5 | 38.8 | 25 43.7 | 39.1 | 25 52.8 | 39.5 | 26 2.5 | 41.5 | 25 52.6 | 42.5 | 25 58.0 |
| 40.6 | 51.5 | 41.3 | 45.6 | 41.6 | 54.8 | 41.8 | 4.7 | 43.9 | 54.7 | 44.8 | 0.6 |
| 45.3 | 54.0 | 46.0 | 47.5 | 46.3 | 56.6 | 46.4 | 6.7 | 48.5 | 56.0 | 48.5 | 2.8 |
| 47.7 | | 48.1 | | 48.6 | | 48.8 | | 50.9 | | 51.8 | |
| 50.1 | | 50.6 | | 50.8 | | 51.1 | | 53.2 | | 54.2 | |
| 3962 | | 4024 | | 4058 | | 4084 | | 4315 | | 4411 | |
| | 25 16.23 | | 25 14.76 | | 25 16.43 | | 25 14.66 | | 25 15.60 | | 25 20.76 |
| 25 36.018 | 25 51.66 | 25 36.582 | 25 45.60 | 25 36.891 | 25 54.73 | 25 37.127 | 26 4.63 | 25 39.227 | 25 54.60 | 25 40.100 | 26 0.46 |
| 36.000 | +4.93 | 36.564 | +4.31 | 36.873 | +3.93 | 37.109 | +3.68 | 39.209 | +1.59 | 40.082 | +0.58 |
| 25 40.68 | −.23 | 25 40.676 | −.21 | 25 40.65 | −.19 | 25 40.64 | −.15 | 25 40.57 | −.24 | 25 40.54 | −.23 |
| −4.68 | | −4.110 | | −3.78 | | −3.53 | −.05 | −1.36 | | −0.46 | |
| | −226 | | −224 | | −223 | | −222 | | −215 | | −212 |
| + 4.85 | 25 38.44 | + 4.26 | 38.42 | + 3.92 | 38.38 | + 3.65 | 38.37 | + 1.57 | 38.41 | + 0.57 | 38.31 |
| − .22 | | − .21 | | − .20 | | − .17 | | − .25 | | − .24 | |
| − 2.26 +0.159 | | − 2.24 +0.179 | | − 2.23 +0.189 | | − 2.22 +0.199 | | − 2.15 +0.269 | | − 2.12 +0.299 | ~~9.20~~ |
| + 2.37 | | + 1.81 | | + 1.49 | | + 1.26 | | − 0.83 | | − 1.79 | |
| 25 36.60 | 39 48.86 | 25 36.56 | 48.70 | 25 36.87 | 50.73 | 25 37.11 | 50.30 | 25 39.21 | 49.21 | 25 40.08 | 49.99 |
| | +2 4.84 | | +2 4.84 | | +2 4.33 | | +2 5.09 | | +2 6.25 | | +2 6.25 |
| 25 38.37 | −.5 | 25 38.37 | −.5 | 25 38.36 | −.5 | 25 38.37 | −.6 | 25 38.38 | −.5 | 25 38.29 | −.6 |
| 40.789 | −7.50 | 40.789 | −7.70 | 40.779 | −7.90 | 40.789 | −8.10 | 40.799 | −8.90 | 40.789 | −9.20 |
| +27 | 41 45.70 | | 41 45.3~~2~~4 4 | | 41 46.66 | | 41 46.69 | | 41 46.06 | | 41 46.44 |
| s +19.79 | −15.64 | +21.82 | −9.02 | +20.46 | −17.84 | +22.47 | −27.50 | +23.73 | −15.37 | +19.34 | −20.36 |
| 2 40 | 40 | | 40 | | 40 | | 40 | | 40 | | |
| −2.42 | | −2.14 | | −2.15 | | −2.17 | | −2.20 | | −2.23 | |
| 2 15.8 | 2 56.0 | 2 13.3 | 2 48.9 | 2 13.1 | 2 56.4 | 2 11.9 | 3 7.9 | 2 11.1 | 2 54.9 | 2 14.8 | 2 0.0 |
| 27.5 | 9.2 | 26.2 | 0.9 | 25.4 | 8.9 | 22.9 | 19.4 | 24.5 | 8.1 | 27.6 | 13.9 |
| 43.3 | 125.2 | ~~39.5~~ | 109.8 | 38.5 | 125.3 | 34.8 | 27.3 | 35.6 | 123.0 | 42.4 | 13.9 |
| 2 42 21.65 | 43 2 2.60 | 42 2 ~~21.25~~ 19.75 | 43 2 54.90 | 42 2 19.25 | 43 2 2.65 | 42 2 17.40 | 43 3 13.65 | 42 2 17.80 | 43 3 1.50 | 42 2 21.20 | ~~43 2~~ 6.95 |
| 1.29645 | 1.19424n | 1.33885 | 0.95521n | 1.31091 | 1.25139n | 1.35160 | 1.43933n | 1.37530 | 1.18667n | 1.28646 | 1.30878n |
| 1.34959 | 1.24738n | 1.39199 | 1.00835n | 1.36405 | 1.30453n | 1.40474 | 1.49247n | 1.42844 | 1.23981n | 1.33960 | 1.36192n |
| 4 + 22.36 | − 17.68 | + 24.66 | − 10.20 | + 23.13 | − 20.16 | + 25.39 | − 31.08 | + 26.82 | − 17.37 | + 21.86 | − 23.01 |
| 42 44.01 | 42 44.92 | 42 44.41 | 42 44.70 | 42 42.38 | 42 42.39 | 42 42.79 | 42 42.57 | 42 44.62 | 42 44.13 | 42 43.06 | 42 43.94 |
| +27° 40 4.34 | 3.43 | 40 3.94 | 40 3.65 | 40 5.97 | 5.96 | 40 5.56 | 5.78 | 40 3.73 | 4.22 | 40 5.29 | 4.41 |
| 3.88 | | 3.79 | | 5.96 | | 5.67 | | 3.97 | | 4.85 | |
| +14 40 15 | 40 56 | | | | | | | | | | |
| 1.17830 | 1.17860 | | | | | | | | | | |
| −36.1 | | −135 | | +221 | | +256 | | −1326 | | −998 | |
| 1.17469 | 1.17499 | 1.17695 | 1.17725 | 1.18051 | 1.18081 | 1.18086 | 1.18116 | 1.16504 | 1.16534 | 1.16832 | 1.16862 |
| −14.95 | −14.96 | −15.03 | −15.04 | −15.15 | −15.16 | −15.17 | −15.18 | −14.62 | −14.63 | −14.73 | −14.74 |
| −.08 −.06 | −.05 | −.10 −.06 | −.2 | −.08 −.07 | −.04 | −.11 −.19 | −.16 | −.12 −.14 | −.05 | −.08 −.12 | −.08 |
| .00 | .00 | .00 | .00 | .00 | .00 | −.05 | −.06 | −.05 | −.06 | −.05 | −.04 |
| −15.03 | −15.01 | −15.13 | −15.06 | −15.23 | −15.23 | −15.33 | −15.40 | −14.79 | −14.74 | −14.86 | −14.86 |
| 39 49.31 | 48.42 | 48.81 | 48.59 | 50.74 | 50.73 | 50.23 | 50.38 | 48.94 | 49.48 | 50.43 | 59.55 4 |
| 41 54.6 | | 54.8 | | 55.0 | | 55.2 | | 56.0 | | 56.2 | |
| +2 5.3 | 6.2 | 6.0 | 6.2 | 4.3 | 4.3 | 5.0 | 4.8 | 7.1 | 6.6 | 5.9 | 6.8 |
| +2 5.7 | 41 45.91 | 6.1 | 45.36 | 4.3 | 46.70 | 4.9 | 46.78 | 6.8 | 45.64 | 6.4 | 46.92 |
| +2 4.63 | 4.10 45.02 | + 4.78 | 4.25 45.14 | + 4.39 | 3.86 46.69 | + 5.19 | 4.65 46.93 | + 6.14 | 5.60 46.18 | + 6.25 | 5.69 46.64 |
| − .53 | −.16 | − .53 | −.36 | − .53 | −.56 | − .54 | −.76 | − .54 | −1.56 | − .56 | −1.86 |
| − 7.50 | 41 45.47 | − 7.70 | 45.25 | − 7.90 | 46.69 | − 8.10 | 46.85 | − 8.90 | 45.41 | − 9.20 | 46.48 |
| +1 56.60 | 41 | | | | | | | | | | 53.81 |

1875

α 40.837
δ +41' 54.46
dα/dt +2.419
dδ/dt +7.337

l cos δ 9.94714
l C .12552
l C' 0.07266

1875

| | | m | s | | | " | |
|---|---|---|---|---|---|---|---|
| Aug. | 28 | 25 | 43.28 | | 41 | 62.7 | |
| Sept. | 2 | | 43.21 | -.07 | | 63.5 | +.8 |
| | 7 | | 43.14 | .07 | | 64.2 | .7 |
| | 12 | | 43.06 | .08 | | 64.8 | .6 |
| | 17 | | 42.97 | .09 | | 65.3 | .5 |
| | 22 | | 42.88 | .09 | | 65.7 | .4 |
| | 27 | | 42.79 | .09 | | 66.1 | .4 |
| Oct. | 2 | | 42.69 | .10 | | 66.3 | .2 |
| | 7 | | 42.58 | .11 | | 66.5 | .2 |

X X X X 1874 1875 X X

-.42 Sept. 7 -.430 | -.36 Sept. 9 -.400 | -.45 Sept. 10 -.463 | -.18 -.07 Oct. 5 -.240 | -.55 Aug 28 -.570 | -.57 Aug 29 -.544

25 29.4 · 25 35.8 25 31.3 25 24.3 25 32.3 25 28.5 25 25 45.9 25 31.0 25 46.8 25 26.6
31.7 33.7 26.6 34.6 30.9 48.8 48.1 33.3 49.1 29.6
34.1 36.0 28.6 36.9 32.9 49.9 50.6 35.8 51.4 31.8
38.7 40.6 41.5 51.0 55.1 56.0
41.1 43.0 43.9 52.2 57.5 58.3
43.4 45.2 46.2 53.4 59.8 26 0.7
45.7 26 16.7 47.6 26 2.1 48.6 26 3.8 54.6 26 1.5 26 2.0 26 15.7 3.0 26 39.6
48.1 19.0 50.0 4.3 50.8 5.8 55.7 3.7 4.5 17.5 5.4 41.5
52.7 21.3 54.6 6.2 55.5 7.8 56.9 6.1 9.2 19.3 10.0 43.1
55.6 56.9 57.9 58.0 11.4 12.4
57.4 59.4 0 2 13.8 14.7

4773 4983 4484 4805 3579 3078
60 300 300
5084 6579 78

25 35.80 25 26.50 25 30.76 25 33.37 25 29.23
25 43.391 26 19.00 25 45.300 26 4.20 25 46.218 26 5.80 25 53.389 26 3.76 25 59.809 26 17.50 26 0.709 26 41.40
43.373 -2.69 45.282 -4.70 46.200 -5.58 53.371 -13.29 59.791 -16.25 0.691 -17.14
25 40.47 -.22 25 40.443 -.19 25 40.42 -.24 25 39.94 -.10 25 43.28 -.29 25 43.276 -.30
+2.90 +4.845 +5.78 +13.43 -.08 +16.51 +17.423

-2.05 -2.01 -2.00 -1.52 -2.44 -2.42
- 2.40 38.41 - 4.72 38.38 - 5.61 38.38 - 13.38 38.38 - 16.24 40.81 - 17.18 40.83
- .23 - .21 - .24 - .13 - .30 - .30
- 2.05 +0.369 - 2.01 +0.409 - 2.00 +0.419 - 1.52 +0.899 - 2.44 - 2.42
- 4.98 - 6.94 - 7.85 - 15.03 - 18.98 - 19.90
25 43.37 39 53.14 25 45.28 52.42 25 46.20 50.89 25 53.37 39 54.38 25 59.79 58 18.43 26 0.69 16.77
+2 5.52 +2 ~~6.85~~ 5.49 +2 ~~7.29~~ 6.85 +2 5.93 -16 14.99 -16 14.55
25 38.39 -.5 25 38.34 -.6 25 38.35 -.5 25 38.34 -.7 25 40.81 -.8 25 40.79 -.7
40.809 -9.90 40.759 -10.20 40.769 -10.30 40.759 -12.00 -8.20 -8.40
41 48.26 41 47.11 41 ~~47.44~~ 46.94 41 47.61 41 54.44 41 53.12
694

+ 7.59 - 35.61 + 18.80 - 18.90 + 15.46 - 19.58 - 10.37 + 26.44 - 17.69 + 31.48 - 40.69
40 40 40 40 20 20

-2.29 -2.30 -2.31 -2.42 -2.51 -2.52
2 25.6 3 14.0 2 13.0 2 54.9 2 17.0 2 57.7 2 46.2 3 33.6 4 25.9 3 28.8 4 53.8
37.6 26.7 26.8 9.3 34.1 12.2 54.3 52.5 45.8 49.0 13.0
63.2 40.7 39.8 124.2 51.1 129.9 100.5 86.1 71.2 77.8 126.8
2 42 31.60 43 2 20.35 42 2 19.90 43 2 2.10 43 2 25.55 43 2 4.95 42 2 50.25 23 43.05 24 35.60 23 38.90 25 3.40

0.88024 1.55157n 1.27416 1.27646n 1.18921 1.29181 1.01578 1.42226 1.24773n 1.49803 1.60949
0.93338 1.60471n 1.32730 1.32960n 1.24235 1.34495n 1.06752 1.49492 1.32039 1.57064 1.68215
+8.58 - 40.25 +21.25 - 21.36 +17.47 - 22.13 - 11.68 + 31.26 - 20.91 + 37.21 - 48.10
42 40.18 40.10 42 41.15 42 40.74 42 43.62 42 42.82 42 38.57 24 14.31 24 14.69 24 16.11 24 16.30

8.17 8.25 40 7.20 7.61 40 5.33 5.53 9.78 58 34.04 33.69 58 32.24 32.05
8.21 7.40 5.43 33.86 32.14
40 18 40 58 39 55 40 48
1.17830 1.17860 1.17810 1.17850

-656 -526 -1783 +641 -609 -1387
1.17174 1.17204 1.17304 1.17334 1.16047 1.16077 1.18471 1.18501 1.17201 1.17241 1.16423 1.16403
-14.85 -14.86 -14.90 -14.91 -14.47 -14.48 -15.30 -15.31 -14.86 -14.87 -14.60 -14.61

-.21 -.28 -.08 -.08 -.08 -.05 -.06 -.08 -.10 -.02 -.15 -.57 -.07 -.21 -.76 -.36
-.05 -.07 .00 .00 .00 .00 -.08 -.41 -.51 -.40 .00
- 14.92 - 15.21 - 14.98 - 14.99 - 14.52 - 14.56 - 15.40 - 15.42 - 15.45 - 15.21 - 15.53
53.25 53.04 52.22 52.62 50.81 50.97 54.38 58 18.62 18.24 17.03 16.52
57.0 57.3 57.4 59.1 42 2.7 2.9
3.8 4.0 5.1 4.7 6.6 6.4 4.7 +16 15.9 15.5 14.1 13.6
3.9 48.35 4.9 46.73 6.5 46.49 4.7 -16 15.7 41 54.66 13.8 53.14
+2 5.57 5.00 48.14 + 5.28 4.71 47.13 + 6.56 5.98 46.65 + 5.93 5.33 -16 15.13 15.76 54.28 -14.81 15.44 52.68
- .57 -2.56 - .57 -2.86 - .58 -2.96 - .60 -4.66 .63 - .63
- 9.90 48.25 - 10.20 46.93 - 10.30 46.57 - 12.00 41.71 8.20 41 54.47 - 8.40 52.93
23.96 23.84

1874.0 α δ

38.37
37
36
37
38
29
39
32
35
34
38.356
.418 47.12
-.062

1875.0 α δ

40.81
79
79
85
76
40.800
.837 54.46
-.037

-.68 + Aug 30 -.6758
-.64 + Aug 31 -.680
-.62 + Sept-1 -.636
1874 Sept-28

25 47.7 25 29.2 25 48.7 25 27.9 25 — 26 26.2 26 8.6 26 0.2
50.0 31.6 50.9 30.2 — 28.3 10.9 2.4
52.2 34.0 53.1 32.0 — 30.9 13.2 4.9
56.9 57.7 58.5 17.8
59.2 26 0.2 26 1.0 20.2
26 1.5 2.5 3.2 22.4
3.9 26 38.4 4.9 26 44.1 5.4 26 48.7 24.9 26 49.5
6.3 40.6 7.2 46.1 7.8 27.1 51.5
11.0 42.3 11.8 48.0 — 31.6 53.5
13.2 14.2 — 34.2
15.6 16.6 — 36.4

3175 2678 759 2473
300 240 6

175 25 31.60 278 25 30.03 159 26 28.47 26 2.50
26 1.591 26 40.43 26 2.527 26 46.07 26 3.180 26 48.70 26 22482 26 51.50
1.573 -18.04 2.509 -18.90 3.062 -19.66 22.464 22.46
25 43.25 -.86 25 43.24 -.34 25 45.22 -.33 25 ~~42.77~~ 40.10
+18.32 +19.27 +19.84 +39.69 42.36
-241 -240 -238
- 18.01 40.76 - 18.90 40.87 - 19.68 40.79
- .36 - .36 - .34
- 2.41 - 2.40 - 2.38 - 1.93
- 20.78 - 21.66 - 22.40
26 1.57 58 17.97 26 2.51 16.48 26 3.16 17.91 26 22.46
-16 14.89 -16 12.75 -16 13.20
25 40.79 -.8 25 40.85 -.7 25 40.76 -.8
-8.60 -8.70 -8.90
41 53.68 41 54.33 41 55.01

+ 29.99 - 38.84 + 32.50 - 43.54 - 25.29 - 45.52 + 19.98 - 29.02
20 20 20 20
-2.53 -2.53 -2.54

3 28.9 4 51.5 3 27.3 4 57.5 4 35.1 4 57.8 3 41.9 4 38.9
49.5 11.1 48.1 18.2 54.4 18.4 0.5 56.1
78.4 12.26 75.4 13.57 89.8 13.65 10.24 95.0
23 39.20 25 1.30 23 37.70 25 7.85 24 44.90 25 8.25 23 51.20 24 47.50

1.47698 1.58928n 1.51188 1.63889n 1.40295n 1.65820n 1.30060 1.46270
1.54964 1.66194n 1.58454 1.71155n 1.47561n 1.73086n 1.37326 1.53536
+35.45 -45.91 +38.42 -51.47 -29.90 -53.81 +23.62 -34.31
24 14.65 24 15.39 24 16.12 24 16.38 24 13.00 24 14.44 24 14.82 24 13.14

58 33.70 32.96 58 32.23 31.97 58 33.35 33.91 58 33.53 35.21
33.33 32.10 33.63

40 3 40 59
1.17810 1.17860

-1341 -782 -566
1.16469 1.16509 1.17028 1.17068 1.17244 1.17284
-14.61 -14.62 -14.80 -14.81 -14.87 -14.89

-.20 -.74 -.33 -.23 -.81 -.43 -.14 -.84 -.46 -.09 -.19
-.40 .00 -.40 -.01 -.52 -.41
-15.21 -.55 -15.43 -.56 -15.53 -.56
58 18.49 -15.50 16.80 -15.80 17.82 -15.91
17.46 16.17 18.00
3.1 3.2 3.4
-16 15.4 14.4 13.6 13.0 14.4 14.6
-16 14.9 13.3 14.5
-16 15.09 41 54.17 - 13.01 54.46 - 13.16 13.80 55.12
- .63 15.72 53.14 - .63 13.64 53.83 - .64 55.30
- 8.60 - 8.70 - 8.90
-16 24.32 41 53.65 - 22.34 54.14 - 22.70 55.21

2

## h Sagittarii

| | | 1874 | 1875 | |
|---|---|---|---|---|
| h m sec. | α | | 29 5.93 | corr.= |
| 19 29 5 | δ | | 9 27.68 | corr.= |
| | dα/dt | | + 3.657 | 2a tg δ = −.47 s |
| −25° 9′ | dδ/dt | | + 7.56 | I = .231 |
| ζ = +67° 32′ | l sin δ | 9.62838n | | k = −.017 s |
| β sin ζ = +.92 | l cos δ | 9.95674 | 9.95674 | |
| | l C | .16600 | .12552 | |
| | l C′ | 0.06274 | 0.08226 | |

1874

| | Aug. 23 | Aug. 25 | Aug. 31 | Sept. 1 | Sept. 2 | Sept. 9 |
|---|---|---|---|---|---|---|
| | | .375 | −.480 | −.430 | −.450 | −.400 |
| 19 Chr. | 28 6.1<br>8.1<br>10.3 | 28 7.8<br>10.2<br>12.3<br>17.0<br>19.3<br>21.6<br>23.8<br>26.1<br>30.7<br>33.0<br>35.2<br>37 57.5<br>59.9<br>1.9 | 28 10.1<br>12.4<br>14.7<br>19.2<br>21.4<br>23.7<br>26.6<br>28.3<br>33.0<br>35.2<br>37.5<br>28 1.0<br>3.0<br>5.3<br>28 39.8<br>41.0<br>42.7 | 28 10.7<br>12.8<br>15.0<br>19.7<br>21.9<br>24.2<br>26.5<br>27.8<br>33.4<br>35.7<br>38.0<br>27 55.4 | 28 11.2<br>13.4<br>15.7<br>20.2<br>22.5<br>24.8<br>27.0<br>29.4<br>33.9<br>36.2<br>38.5<br>28 2.2<br>6.6<br>8.7 | 28 16.3<br>18.6<br>21.0<br>23.5<br>27.7<br>30.0<br>32.3<br>34.5<br>39.2<br>41.4<br>43.7<br>28 9.1<br>11.4<br>13.4 |
| | | 2370<br>27 59.76<br>28 21.545<br>21.528 | 2615<br>28 3.10<br>28 23.773<br>28 41.16<br>23.756 | 2667<br>27 55.40<br>28 24.245<br>24.228 | 2728<br>28 5.83<br>28 24.800<br>24.783 | 3302<br>28 11.30<br>28 30.018<br>30.001 |
| | | + 3.92<br>+ .18<br>− 3.04 +0.617<br>+ 1.06<br>28 21.53 | + 1.54<br>+ .23<br>− 2.99 +0.667<br>− 1.19<br>28 23.76 | + 1.13<br>+ .20<br>− 2.98 +0.677<br>− 1.65<br>28 24.23 | + 0.54<br>+ .21<br>− 2.94 +0.687<br>− 2.21 19<br>28 24.78 | − 4.72<br>+ .19<br>− 2.89 +0.767<br>− 7.42<br>28 30.00 |
| | | 28 22.59<br>26.247 | 28 22.57<br>26.227 | 28 22.58<br>26.237 | 28 22.5~~8~~9<br>26.2~~4~~7 | 28 22.58<br>26.237<br>~~22.578~~ |
| | | s<br>+ 21.78 | + 20.67 | −17.39<br>+ 28.84 | + 18.97 | + 18.72 |
| | 20<br>−2.12<br>1 48.0<br>8.2<br>116.2<br>1 21 58.10<br>2 39.9<br>0.3<br>100.2<br>22 50.10 | 20<br>−2.15<br>1 34.9<br>54.4<br>89.3<br>21 + 44.65 | 20<br>−2.20<br>1 43.6<br>6.1<br>109.7<br>21 + 54.85 | 20<br>−2.21<br>1 33.7<br>54.8<br>88.5<br>21 + 44.25 | 20<br>−2.23<br>1 45.2<br>6.9<br>112.1<br>21 + 56.05 | 20<br>−2.30<br>1 40.8<br>4.9<br>105.7<br>21 + 52.85 |
| | | 1.33806<br>1.40080<br>+25.17<br>22 9.82 | 1.31534<br>1.37808<br>+23.88<br>22 18.73<br>1.24030<br>1.30304<br>20.10 | 1.46000<br>1.52274<br>+33.32<br>23 17.57 | 1.27807<br>1.34081<br>+21.92<br>22 17.97 | 1.27231<br>1.33505<br>+21.68<br>22 14.48 |
| | −24 | 59 21.47 | 59 30.38 | 59 29.22 | 59 29.62 | 59 26.13 |
| | +67 | 19 38<br>2.13653<br>+227<br>2.13880<br>−134.52<br>− 1<br>+10 +.10<br>00 | −1316<br>2.12337<br>−132.85<br>− 5<br>+09 +.05<br>−.04<br>+07 | −1027<br>2.12626<br>−130.70<br>− 4<br>+17 +14<br>−.03 | −987<br>2.12766<br>−131.12<br>− 4<br>+.08 +.04<br>−.04 | −518<br>2.13135<br>−135.42<br>− 3<br>+.08 +.08<br>.00 |
| | +2 4.63<br>+2.35 | −2 14.43<br>−25 1 35.90<br>+2 4.39 2.42<br>− 1.97 +9.91<br>+2.35<br>+2 4.77 59 31.13 | −2 12.8~~9~~5<br>1 43.2~~7~~3<br>+6.14 4.12<br>−2.02 +10.21<br>+2.65<br>+ 6.77 36.~~00~~46 | −2 10.60<br>1 39.82<br>+5.13 3.10<br>−2.03 +10.25<br>+2.7~~9~~69<br>+ 5.79 34.03 | −2 11.12<br>1 40.74<br>+6.25 4.20<br>−2.05 +10.30<br>+2.74<br>+ 6.94 33.80 | −2 15.37<br>1 41.50<br>+5.28 3.17<br>−2.11 +10.64<br>+ 3.08<br>+ 6.25 35.75 |
| | | 59 23.57 | ~~28.74~~ | 26.47 | 26.24 | 27.69 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1874 | 1875 | | | | | |
| Sept.10 | | Aug 30 | | Aug 31 | | Sept-1 | |
| -463 | | -675 | | -680 | | -636 | |
| 28 36.9 | 28 57.9 | 29 13.5 | 28 50.2 | 29 14.4 | 29 0.3 | 29 15.2 | 29 14.7 |
| 59.1 | 33.6 | 15.8 | 52.8 | 16.8 | 2.9 | 17.5 | 16.6 |
| 1.5 | 35.6 | 18.0 | 55.3 | 19.0 | 5.6 | 19.8 | 18.3 |
| 6.0 | | 22.7 | | 23.5 | | 24.4 | |
| 8.3 | | 24.9 | | 25.8 | | 26.6 | |
| 10.6 | | 27.1 | | 28.2 | | 28.8 | |
| 12.9 | | 29.5 | 30 5.4 | 30.3 | 30 3.3 | 31.0 | |
| 15.1 | | 31.6 | 7.0 | 32.6 | 6.3 | 33.3 | |
| 19.7 | | 36.2 | 8.8 | 37.2 | 8.2 | 37.9 | |
| 22.0 | | 38.6 | | 39.5 | | 40.2 | |
| 24.3 | | 40.7 | | 41.8 | | 42.4 | |
| 2364 | | 2986 | | 3091 | | 3169 | |
| 120 | | | | | | | |
| 1164 | 28 53.70 | | 28 52.77 | | 29 2.93 | | 29 16.53 |
| 29 10.582 | | 29 27.145 | 30 7.07 | 29 28.100 | 30 5.93 | 29 28.809 | |
| 10.565 | | 27.128 | | 28.083 | | 28.792 | |
| - 5.62 | | - 18.02 | | - 18.91 | | - 19.69 | |
| + .22 | | + .32 | | + .32 | | + .30 | |
| - 2.88 | +0.777 | - 3.40 | | - 3.39 | | - 3.38 | |
| - 8.28 | | - 21.10 | | - 21.98 | | - 22.77 | |
| 29 10.56 | | 29 27.13 | | 29 28.08 | | 29 28.79 | |
| 29 2.28 | | 29 6.03 | | 29 6.10 | | 29 6.02 | |
| 5.937 | | | | | | 6.050 | |
| 22.529 | | | | | | | |
| 8<br>+16.88 | | + 34.37 | - 39.93 | + 25.17 | - 37.83 | + 12.28 | |
| 30 | | 10 | | 10 | | 10 | |
| -2.31 | | -2.53 | | -2.53 | | -2.54 | |
| 1 47.3 | | 2 56.8 | 4 27.0 | 3 8.5 | 4 24.1 | 3 20.7 | |
| 10.8 | | 13.7 | 43.9 | 23.9 | 40.4 | 37.4 | |
| 11.81 | | 13.05 | 78.9 | 32.4 | 64.5 | 58.1 | |
| 31 59.05 | | 13 5.25 | 14 35.45 | 13 16.20 | 14 82.25 | 13 29.05 | |
| 1.22737 | | 1.53618 | 1.60130 | 1.40088 | 1.57784 | 1.08920 | |
| 1.29011 | | 1.61844 | 1.68356 | 1.48314 | 1.66010 | 1.17146 | |
| +19.50 | | +41.54 | -48.26 | +30.42 | -45.72 | +14.84 | |
| 32 18.55 | | 13 46.79 | 13 47.19 | 13 46.62 | 13 46.53 | 13 43.89 | |
| 9 30.20 | | 50 58.44 | 58.84 | 50 58.27 | 58.18 | 50 55.54 | |
| | | 58.64 | | 58.22 | | | |
| ~~31 41.85~~<br>+67 29 52 | | +67 29 17 | 30 47 | 29 28 | 30 44 | 29 41 | |
| 2.14014 | | 2.13995 | 2.14047 | 2.14002 | 2.14044 | 2.14008 | |
| -1764 | | -1332 | | -772 | | -559 | |
| 2.12250 | | 2.12663 | 2.12715 | 2.13230 | 2.13272 | 2.13449 | |
| -132.58 | | -133.85 | -134.02 | -135.61 | -135.75 | -136.30 | |
| - 6 | | - 5 | - 5 | - 4 | - 4 | - 4 | |
| +.06 | | +.26 | -.12 +.36 | +.14 | -.19 +.32 | +.03 | -.35 |
| .00 | | -.34 | -.51 | -.36 | -.49 | -.38 | |
| -2 12.58 | | -2 ~~14.08~~ 13.98 | -2 14.22 | -2 15.87 | -2 15.96 | -2 16.69 | |
| 11 42.73 | | 53 12.2 | 13.06 | 53 14.14 | 14.14 | 53 12.23 | |
| +2 6.56 | 4.44 | -16 15.09 | 17.41 | - 13.01 | 15.33 | - 13.16 | 15.49 |
| - 2.12 | +10.69 | - 2.32 | | - 2.32 | | - 2.33 | |
| +3.13 | | +2.70 | | +2.74 | | +2.79 | |
| +2 7.57 | | -16 14.71 | 9 27.13 | - 12.59 | 26.79 | - 12.70 | |
| | 9 35.25 | | 27.77 | | 26.73 | | |
| | 9 27.65 | | 9 27.45 | | 26.72 | | 24.93 |

Groom 5
Gr. 2900
h m sec.
9 29 13
+79° 21'
P −36° 58'
= −60 l sin δ 9.99245
l cos δ 9.26672
l C .10600
l C' 9.37272
l C'' 9.37132

1874
+s.091
α 16.338
δ +20' 54.00"
dα/dt −3.502
dδ/dt +7.584

| 1874 | | m s | | ' " | |
|---|---|---|---|---|---|
| Aug. 28 | 29 | 18.61 | | 20 63.8 | |
| Sept. 2 | | 18.10 | −.51 | 65.0 | +1.2 |
| 7 | | 17.57 | .53 | 66.1 | 1.1 |
| 12 | | 17.01 | .56 | 67.1 | 1.0 |
| 17 | | 16.42 | .59 | 68.0 | .9 |
| 22 | | 15.81 | .61 | 68.8 | .8 |
| 27 | | 15.19 | .62 | 69.5 | .7 |
| Oct. 2 | | 14.55 | .64 | 70.0 | .5 |
| 7 | | 13.89 | .66 | 70.5 | .5 |

| 1875 | | m s | | ' " | |
|---|---|---|---|---|---|
| Sept. 27 | 29 | 11.20 | | 20 77.0 | |
| Oct. 2 | | 10.55 | −.65 | 77.6 | +.6 |
| 7 | | 9.90 | .65 | 78.0 | .4 |
| 12 | | 9.24 | .66 | 78.3 | .3 |
| 17 | | 8.58 | .66 | 78.5 | .2 |

l cos δ
l C
l C'

× 1874 −.46 Aug. 31 −.480
28 56.8
29 2.4  29 39.2
8.0
14.1
19.7
24.5
30.6
36.2
41.8
23.44
60
174.4  29 39.20
29 19.378
19.296  +1.59
29 18.33 28  −2.45
+~~0.97~~ 1.02
+0.92  −1.94
29 16.50
+ 1.57
− 2.55
− 1.94 −5.442
− 2.92  18 5761
29 19.30  +2 6.25
+1.4
29 16.38  −10.60
12.878 79 20 54.66
−19.82
0
−2.20
4 33.6
41.0
74.6
4 37.30
1.29710n
0.66982n
− 4.68
4 32.62
18 15.03
−36 57 30
1.63650n
−1314
1.62336
+42.01
−.04 −.13
−.09
+41.88
18 57.61
21 46
+2 7.0
+2 7.0
+2 6.6
+2 6.14  7.46
+ 1.32  −3.02
− 10.60  20 54.47
+1 56.86  21 2

× ~~Date~~ −.41 Sept 1 −.430
28 57.8
3.0
8.5
14.3
19.6
25.4
30.8  29 40.2
37.0  61.2
42.0  0.9
23.84
60
178.4
29 ~~26.484~~ ~~19.822~~ ~~26.407~~ ~~19.40~~  29 50.76
1974+1.12
29 18.23 18  1823−2.18
+ ~~8.18~~ 23  1.51
+ 8.13  −1.84
~~16.72~~ 16.84
+ 1.13
− 2.28
− 1.84 −5.342
− 2.99  5616
29 ~~21.41~~ ~~19.74~~  +2 5.51
+1.4
29 16.75  −10.80
13.248 20 52.27
7 −24.27s
0
−2.21
4 36.8
43.3
80.1
4 40.05
4 34.33
14.02
57 27
1.63650n
−1025
1.62625
+42.29
−.06 −.15  ~~−.06~~
−.09
+42.14
56.16
4.8
8.6
8.6
8.2
+ 5.13  6.46
+ 1.33  −3.22
−10.80  51.82
1.88507n
0.75749n
−5.72

× −.43 Sept. 2 −.450
28 58.1
3.8
9.3
14.5
20.2
26.0
31.8  29 37.8
37.0  45.7
42.4  56.5
24.2 56
60
182 56
29 ~~20.278~~  29 46.66
20.289  +0.58
20.207
29 18.13 08  −2.29
+2.08 13
+ 2.03  −1.74
16.76
~~7.0~~ + 0.57
− 2.39
− 1.79 −5.74
— 3.56  5775
29 20.21  +2 6.25
+1.4
29 16.65  −11.10
13.148 20 54.30
−26.38 7
0
−2.23
4 35.7
42.3
78.0
4 39.00
−6.22  4 ~~23.37~~ 32.78
1.42111n
1.78383n
~~−15.63~~
15.57
57 28
1.63650n
− 984
1.62666
+ 42.33
−.06 −.7 15  ~~−.06~~
−.09
+42.18
57.75
5.1
7.4
7.4
7.0
+6.25  7.59
+1.34  −3.52
−11.10  54.24

× −.45 Sept. 10 −.463
—
—
—
—
—
—
—
—
30 10.4  25.52
20.8  .10
32.3  1.48
29 25.50  29 16.26
25.42  53.13  −5.58
29 17.28 1  −2.39
+ 8.16 21
+ 8.11  −0.87
16.58
− 5.62
− 2.46
− 0.87 −4.372
− 8.95  4631
25.42  +2 6.85
+7.4
29 16.47  −12.80
12.968 20 41.76 ] Rej
+ 9.24  − 27.63
0
−2.31
4 36.6  4 44.6
46.9  54.9
83.5  99.5
4 41.75  4 49.75
0.96567  1.44138n
0.33839  0.81410n
+ 2.18  −6.52
4 43.93  43.23
9.42  5.12
4.77
57 25  57 17
1.63650n  1.63650
−1760
1.61890  1.61890
+41.58  +41.58
−1 −.04  −.07
.00  .00
+ 41.57  +41.51
45.99  46.63
6.8  6.8
20.8  20.2
20.5
+6.56  7.95  41.14 41.78
+1.39  −5.22
−12.80  41.46 ]

30 6.2
29 17.0
25.6
30/29 43.6
53.0
2.8

× 1874 −.18 −.07 Oct. 5 −.240
29 6.0  29 17.8
12.6
17.3
23.7
29.2
34.6
39.8
46.1
57.5
26.08
29 28.978  29 17.80
28.896  −13.29
29 14.18 2  −.96
+14.78 8  −.38
+14.68  +2.22
16.~~4~~
~~+~~4.49
− 13.38
− 1.27
+ 2.22 −12.82
− 12.43  5582
29 28.90  +2 5.93
+1.5
29 16.47  −16.30
12.968 20 46.985 ] Rej
+11.18
0
−2.42
4 32.2
35.2
67.4
4 33.70
1.04844
0.41976
+ 2.63
4 36.33
18 12.02
57 33
1.63650
+641
1.64291
+43.95
−.01 −.15
−.14
+ 43.80
55.82
10.3
14.5
14.1 ]
+5.93  7.38
+1.45  −8.72
−16.30  46.95 ]

1873-4 ~~Sept~~ Sept-28
29 31.4  29 7.5
36.8
42.7
48.1
53.1
59.2
46  ×30 5.2
10.4
15.4
30.23
18.0
48.23  29 7.50
29 53.589  30 5.20
53.507  53.51
29 ~~11.10~~ 04  15.04
+42 ~~…~~47  38.47
+42.37
+ 1.89
29 53.51
+ 40.09  − 11.61
45
0 41.6  0 56.7
3.1  17.8
10.47  13.45
45 52.35  46 7.25
1.66361  1.06485n
1.05585  0.44707n
+11.87  −2.86
46 3.72  46 4.39
36 44.63  36 43.96
57 56  57 41
1.63660  1.63650
−.21  −.01

1875

$\alpha$ $12^{s}.835$ Corr $\alpha = +.103^{s}$

$\delta$ $+21' \, 1''.58$ Corr $\delta = -.37''$

$\frac{d\alpha}{dt}$ $-3^{s}.504$

$\frac{d\delta}{dt}$ $+7''.579$ $\log \tan \delta = +$ ~~5.29~~ 5.32

$I = 11^{s}.12$

$K = -.082^{s}$

9.26672
.12557
~~.10660~~
9.37242
9.39224

1874phae.proj.1477.

N.A. 1874 1875 1875

κ Aquilae. α 30 6.693 N.A. 9.923 30 10.01 corr α = Aug 18 m s 30 9.40 18 17.2
h m sec. δ 18 18.86 11.16 18 13.88 corr δ = 23 9.37 −.03 14.0 −.2
19 30 10 dα/dt +3.230 +3.230 +3.230 28 9.33 4 16.9 .1
−7° 18′ dδ/dt +7.70 +7.71 +7.67 tan γ δ = −.13 Sept. 2 9.29 4 16.8 .1
s 7 9.24 5 16.7 .1
I = 208 12 9.18 6 16.6 .1
z = + 49° 41′ l sin δ 9.10402n 17 9.11 7 16.6 .0
sin z = +.76 s
K = −.016
l cos δ 9.99647 9.99647
l C .10600 .12552
l C′ 0.10247 0.12199

1874 1874

−.43 −.35 −.46 −.42 −.36
Aug. 23 Aug. 25 Aug. 31 Sept. 7 Sept. 9
−.422 −.375 −.480 −.430 −.400

19 29 52.3 29 50.7 29 53.0 29 57.6 30 — 29 59.5 29 47.7 30 1.6 29 49.0
54.3 52.6 55.0 0.0 — 1.5 49.8 3.7 51.0
56.3 54.6 57.2 1.7 — 3.7 51.5 5.6 52.7
0.5 1.4 — 7.8 9.9
2.5 3.4 — 9.8 12.0
4.8 5.6 7.7 7.70 12.0 14.0
6.7 30 26.8 7.5 30 29.9 9.6 .52 30 18.9 14.0 30 32.3 16.0
8.9 28.3 9.6 32.5 11.9 .74 21.5 16.1 18.1
12.9 30.4 13.7 33.8 16.0 .68 23.2 20.3 22.2
15.0 15.9 18.2 .80 22.4 24.2
17.1 17.9 20.2 .72 24.5 26.3

231.3 240.2 191.6 153.6
180 180 60
51.3 29 52.63 60.2 29 59.76 131.6 29 49.66 29 50.90
30 4.664 30 28.50 30 5.473 30 32.06 7.693 30 21.20 30 11.964 30 32.30 30 13.964
4.648 +4.93 5.457 +3.93 30 7.677 +1.59 11.948 −2.69 13.948 −4.70
+.06 +.05 +.06 +.05 +.05

+ 4.85 + 3.92 + 1.59 − 2.61 − 4.42
+ .05 −2.68 + .05 −2.66 + .06 −2.61 + .06 −2.55 + .05 −2.53
− 2.68 +0.550 6.96 − 2.66 +0.570 6.78 − 2.61 +0.620 6.72 − 2.55 +0.680 6.76 − 2.53 +0.700 6.77
+2.22 + 1.31 − 0.98 − 5.20 − 7.20
4.65 5.46 7.68 11.95 − 13.95

6.87 20 22.95 6.78 21.93 6.70 24.57 6.75 22.81 6.75 23.05
~~10.170~~ +2 4.84 10.000 + 2 4.33 9.930 +2 6.25 9.980 +2 5.52 6.768 9980 +2 5.49
10.100 −.17 −.17 −.17 −.18 −.18
− 1.90 − 1.90 −2.10 − 2.20 − 2.30
−7 18 21.71 18 21.20 18 22.12 18 ~~21.27~~ 21.29 18 21.66
~~70.27~~

s
+12.03 −23.84 + 5.71 −26.59 − 13.51 +22.30 −20.34 +23.06
40 40 40 40 40
−2.72 −2.15 −2.20 −2.29 −2.30
1 39.9 2 25.0 1 46.1 2 26.0 2 14.1 1 26.6 1 24.8
57.7 43.9 4.8 44.9 34.4 45.9 45.9
97.6 68.9 110.9 70.9 48.5 72.5 70.7
41 48.80 42 34.45 41 55.45 42 35.45 42 24.25 41 36.25 41 35.35

1.08027 1.37731n 0.75664 1.42479n 1.13066n 1.34830 1.30835n 1.36286
1.18274 1.47978n 0.85911 1.52726n 1.23313n 1.45077 1.41082n 1.46533
+10.23 −30.18 +7.23 −33.67 − 17.10 +28.23 −25.76 +29.20
42 4.03 42 4.27 42 2.68 42 1.78 42 7.15? 42 4.48 42 4.55

−7° 19 15.68 15.92 19 14.33 13.43 18.80 19 16.13 19 16.20
15.80 13.88
+49 39 42 40 27 39 48 40 28 40 17 39 29 39 28
1.83060 1.83080 1.83060 1.83080 1.83080 1.83050 1.83050
−350 +229 −1312 −647 −575
1.82710 1.82730 1.83289 1.83309 1.81768 1.82403 1.82535
−67.16 −67.19 −68.06 −68.09 −65.72 −66.68 −66.89
0 0 0 0 − 1 0 0
+.01 +.02 +.04 + 0 −.02 +.04 +.01 −.04 +.03 −.00 +.03 +.04 .04
.00 .00 .00 .00 −.05 −.03 .00
− 1 7.15 − 1 7.15 − 1 8.06 − 1 8.05 1 5.77 − 1 6.68 − 1 6.85
−7 20 22.83 23.07 20 22.39 21.48 20 24.57 20 22.81 20 23.05
+2 4.63 +3.02 +4.39 2.76 +6.14 4.47 +5.57 3.83 + 5.28 +3.53
− 1.61 +5.81 − 1.63 +3.81 − 1.67 +5.61 − 1.74 +5.51 − 1.75 +5.41
− 1.90 − 1.90 − 2.10 − 2.20 − 2.30
+2 1.12 21.72 + 0.86 21.53 + 2.37 22.20 + 1.63 21.18 + 1.23 21.82
21.95 20.62

21.83 ~~22.33~~ 21.07 22.20 21.18 21.82

1875

|  |  | m | s |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Aug. | 27 | 30 | 12.92 |  | 18 | 9.3 |  |
| Sept- | 1 |  | 12.87 | −.05 |  | 9.2 | −.1 |
|  | 6 |  | 12.82 | 5 |  | 9.1 | .1 |
|  | 11 |  | 12.76 | 6 |  | 9.0 | .1 |
|  | 16 |  | 12.70 | 6 |  | 9.0 | 0 |

1875-
.62 −.60
Sept-1 Sept-4
−.6361 −.610

30 20.0 30 14.3 30 22.7 30 15.2
22.3 16.3 24.8 16.9
24.4 18.0 26.8 18.4
28.5 31.0
30.6 33.0
32.7 35.1
34.8 30 46.6 37.2 30 49.7
36.9 48.3 39.2 51.6
41.0 50.3 43.4 54.5
43.0 45.5
45.3 47.7

3595 3864

30 16.20 30 16.83
30 32.682 30 48.40 30 35127 30 51.93
32.666 −19.67 35111 −22.26
+.08 +.08
− 19.69 − 22.28
+ .08 −2.95 + .08 −2.92
− 2.95 10.13 − 2.92 10.01
− 22.56 − 25.12
32.67 35.11

10.11 1 5522 9.99 5675
−16 1320 9.99 −16 1427
−2.1 10.050 −20
− 2.00 − 2.10
18 1262 18 1512

+ 1648 − 1572 + 1830 − 1680
20 20
−254 −257
3 6.6 3 49.1 3 9.1 3 54.1
22.8 4.9 24.1 10.7
29.4 11 40 33.2 12 48
23 14.70 23 57.00 23 16.60 24 2.40

1.21696 1.19645 1.26245 1.22531
1.33895 1.31844 1.38444 1.34730
+21.83 −20.82 + 24.24 − 22.25
23 36.53 23 36.18 23 40.84 23 40.15

0 48.18 47.83 0 52.49 51.80
48.00 52.14
39 27 40 9 39 29 40 14
1.83050 1.83070 1.83050 1.83070
−556 −2299
1.82494 1.82514 1.80751 1.80771
− 66.82 − 66.86 − 64.20 − 64.23
0 0 − 1 − 1
+.01 −.38 +.01 +.02 −.38 +.01
−.35 −.43 −.36 −.44
−1 7.16 −1 7.28 −1 4.55 −1 4.67
1 55.34 55.11 0 57.04 56.47
−16 13.16 15.09 −14.38 16.33
− 1.93 − 1.95
− 2.00 − 2.10
−16 17.09 1243 − 18.43 1547
1220 1490

1231 1518

ε Sagittae.

| | 1874 | 1875 |
|---|---|---|
| | α | 31 37.89 |
| | δ | 10 57.27 |
| | $\frac{d\alpha}{dt}$ | +2.715 |
| | $\frac{d\delta}{dt}$ | +7.80 |
| l sin δ | 9.44516 | |
| l cos δ | 9.98244 | 9.98244 |
| l C | 10600 | .12522 |
| l C′ | 0.08844 | 0.10766 |
| l C″ | 0.08704 | |

h m sec
19 31 38
+16° 11′
Z = + 26° 12
sin Z = +.44

corr α =
corr δ =
tang δ = +.29
I = 2.14 s
K = -.016 s

1874

| Aug. 23 | | Aug. 25 | | Aug. 31 | | Sept. 1 | | Sept. 2 | | Sept. 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -.422 | | -.375 | | -.480 | 22.1 | -.430 | | -.450 | | -.430 | |
| 19 31 20.0 | 31 14.3 | 31 26.8 | 31 20.2 | 31 23.2 | 31 24.4 | 31 23.7 | 31 21.3 | 31 24.1 | 31 17.4 | 31 27.4 | 31 18.7 |
| 22.1 | 16.2 | 23.0 | | 25.3 | 25.8 | 25.8 | 23.3 | 26.3 | 19.8 | 29.6 | 21.2 |
| 24.3 | 17.6 | 25.3 | | 27.4 | | 28.0 | 25.0 | 28.5 | 21.5 | 31.6 | 22.6 |
| 28.5 | | 29.5 | | 31.7 | | 32.2 | | 32.8 | | 35.9 | |
| 30.7 | | 31.5 | | 33.9 | | 34.4 | | 34.9 | | 38.1 | |
| 32.9 | | 33.8 | | 36.0 | | 36.5 | | 37.0 | | 40.3 | |
| 35.0 | 31 57.4 | 35.8 | 31 38.1 | 38.2 | 31 38.9 | 38.7 | 31 52.7 | 39.2 | 31 53.3 | 42.4 | 31 57.0 |
| 37.1 | 58.1 | 38.0 | | 40.4 | 1.9 | 40.8 | 55.3 | 41.3 | 55.5 | 44.5 | 59.6 |
| 41.4 | 54.6 | 42.2 | | 44.6 | 3.6 | 45.3 | 57.1 | 45.5 | 57.1 | 48.8 | 1.4 |
| 43.6 | | 44.6 | | 46.8 | | 47.3 | | 47.7 | | 51.0 | |
| 45.8 | | 46.8 | | 49.0 | | 49.3 | | 50.0 | | 53.2 | |
| 3614 | 31 16.03 | 3713 | 31 20.20 | 3965 | 31 24.10 | 4020 | 31 23.20 | 4073 | 31 19.56 | 4428 | 31 20.83 |
| 31 32.855 | 31 53.03 | 31 33.755 | 31 58.10 | 31 36.045 | 32 1.46 | 31 36.545 | 31 55.03 | 31 37.027 | 31 55.30 | 31 40.255 | 31 59.33 |
| 32.839 | | 33.739 | | 36.029 | 1.47 | 36.529 | | 37.011 | | 40.239 | |
| + 4.85 | | + 3.92 | | + 1.64 | | + 1.13 | | + 0.54 | | - 2.71 | |
| - .12 | | - .11 | | - .14 | | - .12 | | - .13 | | - .12 | |
| - 2.34 | +0.345 | - 2.35 | +0.365 | - 2.29 | +0.425 | - 2.28 | +0.435 | - 2.27 | +0.445 | - 2.21 | +0.505 |
| + 2.36 | | + 1.46 | | - 0.86 | | - 1.27 | | - 1.83 | | - 5.04 | |
| 31 32.84 | | 31 33.74 | | 31 36.03 | | 31 36.53 | | 31 37.01 | | 31 40.24 | |
| 31 35.20 | | 31 35.20 | | 31 35.17 | | 31 35.26 | | 31 35.18 | | 31 35.20 | |
| 37.915 | | 37.915 | | 37.885 | | 27.975 | | 37.895 | | 37.915 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 +16.82 s | -20.18 | 10 +13.55 | -24.35 | 10 +11.94 | -25.42 | 10 +13.34 | -18.49 | 10 +17.47 | -18.27 | 10 +19.42 | -19.08 |
| -2.12 | | -2.15 | | -2.20 | | -2.21 | | -2.23 | | -2.29 | |
| 2 56.9 | 3 42.5 | 3 3.0 | 3 47.0 | 3 3.3 | 3 49.0 | 2 0.6 | 3 40.2 | 2 57.1 | 3 40.7 | 2 51.9 | 3 39.7 |
| 12.8 | 59.0 | 18.1 | 2.9 | 20.2 | 6.7 | 17.1 | 57.4 | 14.5 | 57.8 | 9.4 | 55.5 |
| 129.7 | 101.5 | 211 | 1099 | 235 | 1157 | 177 | 976 | 1316 | 985 | 1213 | 952 |
| 13 3 4.85 | 13 3 50.75 | 13 3 10.55 | 13 3 54.95 | 13 3 11.75 | 13 3 57.85 | 12 2 8.85 | 13 3 48.80 | 13 3 5.80 | 13 3 49.25 | 13 3 0.65 | 13 3 47.60 |
| 1.22583 | 1.30492n | 1.13194 | 1.38650n | 1.07700 | 1.40518n | 1.12516 | 1.26694n | 1.24329 | 1.26174n | 1.28825 | 1.28058 |
| 1.31427 | 1.39336 | 1.22038 | 1.47494n | 1.16544 | 1.49362n | 1.21360 | 1.35538n | 1.33073 | 1.35018n | 1.37669 | 1.36902 |
| +20.62 | -24.74 | +16.61 | -29.85 | +14.64 | -31.16 | +16.35 | -22.67 | +21.42 | -22.40 | +23.81 | -23.39 |
| 13 25.47 | 13 26.01 | 13 27.16 | 13 25.10 | 13 26.39 | 13 26.69 | 13 25.20 | 13 26.13 | 13 27.22 | 13 26.85 | 13 24.46 | 13 24.21 |
| 9 22.88 | 22.34 | 9 21.19 | 23.25 | 9 21.96 | 21.66 | 9 23.15 | 22.22 | 9 21.13 | 21.50 | 9 23.89 | 24.14 |
| 22.61 | | 22.22 | | 21.81 | | 21.68 | | 21.31 | | 24.01 | |
| +26 10 58 | 11 44 | | | | | | | | | | |
| 1.45190 | 1.45210 | | | | | | | | | | |
| -345 | | +233 | | -1806 | | -1017 | | -975 | | -643 | |
| 1.44845 | 1.44865 | 1.45423 | 1.45443 | 1.43884 | 1.43904 | 1.44173 | 1.44193 | 1.44215 | 1.44235 | 1.44547 | 1.44567 |
| -28.08 | -28.10 | -28.46 | -28.48 | -27.47 | -27.48 | -27.65 | -27.67 | -27.68 | -27.69 | -27.89 | -27.90 |
| -.04 -.04 | -.06 | -.02 -.05 | -.08 | -.02 -.12 | -.08 | -.02 -.09 | -.04 | -.04 -.11 | -.04 | -.05 -.12 | -.05 |
| .00 | .00 | .00 | .00 | -.06 | -.08 | -.04 | -.08 | -.06 | -.08 | -.06 | -.08 |
| -28.12 | -28.15 | -28.48 | -28.56 | -27.55 | -27.64 | -27.71 | -27.79 | -27.78 | -27.81 | -28.00 | -28.03 |
| +16 8 54.76 | 54.19 | 8 52.71 | 54.69 | 8 54.41 | 54.02 | 8 55.44 | 54.43 | 8 53.35 | 53.69 | 8 55.89 | 56.11 |
| +2 4.63 | 3.70 | +4.39 | 3.45 | +6.14 | 5.18 | +5.13 | 4.16 | +6.25 | 5.27 | +5.67 | +4.57 |
| - .93 | +1.60 | - .94 | +1.34 | - .96 | +.58 | - .97 | +.46 | - .98 | +.35 | -1.00 | -.16 |
| -6.20 | | -6.46 | | -7.22 | | -7.55 34 | | -7.45 | | -7.96 | |
| +1 57.50 | 10 52.26 | + 56.99 | 49.70 | + 57.96 | 52.37 | + 56.82 | 52.26 | + 57.82 | 57.17 | + 56.61 | 52.50 |
| | 51.69 | | 51.68 | | 51.98 | | 51.25 | | 51.51 | | 52.72 |
| | 10 51.97 | | 50.67 | | 52.17 | | 51.15 | | 51.34 | | 52.61 |

1874

Sept. 9
−.400
31 293
345
335
379
400
422
442
464
507
530
551
31 236
252
269
31 543
564
581
4638
31 42.164
42.148
31 25.03
31 ~~37.88~~
56.27
− 4.72
− .12
− 2.18 +0.535
− 7.02
31 42.15
31 35.13
37.845
S
+17.13
10
−14.11
~~−16.67~~
−230
2 54.9
12.9
127.8
13′ 3.90
3 33.5
50.0
83.5
13 41.75
1.23376
1.33220
+21.49
13 25.39
1.14953 n
1.23797 n
−17.29
13 24.46
9 2296
23.42
2389
10 57
1.45190
−510
1.44680
−27.98
11 35
1.45210
1.44700
−27.99
−.04 −.03
.00
−28.02
8 54.94
+2 5.28
− 1.00
−8.16
+1 56.12
−.03
.00
−28.02
55.87
4.28
+6.80
−0.36
10 51.96 +
51.99
10 57.52

Oct. 5
−.240
31 375
396
417
460
482
503
525
545
570
1.0
3.2
31 38.3
4335
120
553 5
31 50.318
50.302
31 38.30
− 13.38
− .07
− 1.73 +0.958
− 15.21
31 50.30
31 35.09
37805
35.179
+12.02
10
−2.42
3 0.2
11.9
121
13 6.05
1.07990
1.16694
+14.69
13 20.74
9. 27.61
+641
1.45831
−28.73
−.02 −.11
−.09
−28.84
8 58.77
+5.93
−1.06
−9.60
55.37
4.87
−1.70
54.14

1875

Aug 30
−.645
31 45.8
48.0
50.1
54.4
56.5
58.6
32 0.7
3.0
7.3
9.4
11.5
31 42.0
32 23.2
3453
300
6453
31 58.664
58.648
31 42.00
32 23.20
− 18.02
− .19
− 2.59
− 20.80
31 58.65
31 37.85
+ 16.66
50
−2.53
4 28.5
45.1
73.6
54 36.80
− 24.54
0 20.0
38.0
58.0
55 29.00
1.22167
1.32933
+21.35
54 58.15
1.38987 n
1.49753 n
−31.44
54 57.56
27 50.20
50.49
50.79
10 49
1.45180
−1322
1.43858
−27.45
11 41
1.45210
1.43888
−27.47
−.03 −.33
−.51
−27.99
27 22.21
−16 +15.09
− 1.11
−6.98
−16 23.18
−.08
−.05
−27.60
23.19
16.20
10 59.03
0.01
10 59.52

Aug 31
−.680
31 46.8
48.9
51.0
55.4
57.4
59.6
32 1.8
3.9
8.3
10.4
12.6
31 26.9
29.0
31.4
32 37.0
38.8
40.0
3561
300
6561
31 ~~59.555~~
59.645
59.629
31 29.10
32 38.60
− 18.91
− .20
− 2.58
− 21.69
31 59.634
31 37.97
5
+ 30.54
50
−2.53
4 11.8
27.2
39.0
54 19.50
− 38.96
0 40.8
51.0
97.8
55 48.90
1.48487 n
1.59253 n
+39.13
54 58.63
1.59062
1.69828 n
−49.92
54 58.98
27 49.72
49.54
49.37
−762
1.44418
−27.81
1.44448
−27.83
−.13 −.45
−.47
−28.41
27 21.31
−13.01
− 1.11
−7.10
− 21.22
−.22
−.09
−28.14
21.23
14.12
0.09
0.01
0.05

Sept 1
−.636
31 47.7
49.7
51.9
56.0
58.4
32 0.5
2.6
4.7
9.0
11.1
13.4
31 34.3
35.7
37.4
32 20.7
23.0
24.8
3050
300
50
32 0.455
0.439
31 35.80
32 22.83
− 19.69
− .18
− 2.57
− 22.44
32 0.44
31 38.00
+ 24.65
50
−2.54
4 17.0
32.8
49.8
54 24.90
− 22.38
0 18.1
35.8
53.9
55 26.95
1.39182
1.49948
+31.58
54 56.48
1.34986 n
1.45752 n
−28.68
54 58.27
27 51.77
50.92
50.08
−552
1.44628
−27.94
1.44658
−27.96
−.08 −.33
−.48
−28.50
27 23.27
−13.16
− 1.11
−7.22
− 21.49
−.07
−.04
−28.07
22.01
14.27
1.78
0.52
1.15

Sept 4
−.610
31 50.0
52.1
54.3
58.6
32 0.7
2.8
5.0
7.1
11.4
13.5
15.8
31 37.7
39.2
41.1
32 19.3
2713
240
313
32 2.845
2.829
39.33
31 ~~29.33~~
32 19.30
− 22.28
− .18
− 2.53
− 24.99
32 2.83
31 37.84
~~37.908~~
+ 23.51
50
−2.57
4 19.9
36.1
56.0
54 28.00
− 16.46
0 11.5
28.9
48.04
55 ~~15.20~~
20.20
1.37125
1.47891
+30.12
54 58.12
1.21643 n
1.32409 n
−21.09
54 59.11
27 50.23
49.73
49.24
−2294
1.42886
−26.84
1.42916
−26.86
−.07 −.31
−.49
−27.40
27 22.83
−14.38
− 1.13
−7.56
− 23.07
−.04
−.03
−26.93
22.31
15.51
59.76
59.24
59.50

1874

Sept 5 — Sept 7 — Sept 28

-1600 — -.577

31 50.9 31 46.9 32 — 32 12.5 32 6.8 32 11.5
53.3 49.0 — 14.2 9.0 13.2
55.4 50.6 — 16.8 11.1 14.8
59.6 1.4 15.4
32 1.8 3.4 17.5
3.8 5.6 19.4
6.0 32 25.0 7.8 21.8 32 41.6
8.2 26.6 10.0 23.9 43.5
12.6 28.7 — 28.4 45.1
14.7 — 30.4
16.8 — 32.5

2831 282 2164
240
231 31 48.83 32 14.50 32 13.17
32 ~~3827~~ 32 26.77 32 5.640 32 19.673 32 43.47
3.918 5.624 19.657
3.902

- 23.34 - 26.12
- .17 - .17
- 2.52 - 2.49 -2.17
- 26.03 - 27.78
32 3.90 32 5.62

31 37.87 31 37.84

37.890

+ 15.09 - 22.85 - 8.86 + 6.50 - 23.80
50 50 50
-2.58 -2.60
4 30.9 0 19.0 4 0.3 4 41.9 0 19.7
46.2 36.0 16.9 55.7 35.4
7.71 5 5 0 27.2 9.76 5 5 1
54 38.55 55 27.60 54 13.60 54 48.80 55 27.55

1.17869 1.35889 0.94743n 0.81291 1.57658n
1.28635 1.46655 1.05509n 0.92057 1.48424n
+ 19.33 -29.28 -11.36 + 5.33 -30.50
54 57.88 54 58.22 58 8.24 54 57.13 54 57.05
57.

27 50.47 50.13 27 ~~46.11~~ 27 51.22 51.30
50.30 54.1.

11 1 11 39
1.45190 1.45210

-1406 -6.70
1.43774 1.43804 1.44510 ~~1.44540~~
-27.40 -27.42 -27.87

-03 -.33 -07 - 1 - 65 -08
-.51 -.05 -.62 11
-27.94 -27.54 -28.52
27 22.53 22.59 22.59
-16 -13.42 14.55 -14.01 15.15
-1.13 -1.14
-7.64 -7.87 -9.31
- 22.22 0.31 - 23.02
0.37

034 57.57

1874 1875

B.A.C. 6737 α 33 26.40 corr α =

h m sec. δ 9 22.95 corr δ =

19 33 27 $\frac{d\alpha}{dt}$ +0.641

+63° 9' $\frac{d\delta}{dt}$ +7.93

tang δ = +1.98

I = 4.56 s

φ −20° 46' l sin δ 9.95046

sin z = −.35

k = −.034 s

l cos δ 9.65481 9.65481

l C 10600 .12552

l C' 9.76081 9.78033

l C'' 9.75941

Ch. f.

1874

| Aug. 23 | | Aug. 25 | | Aug. 31 | | Sept. 1 | | Sept. 2 | | Sept. 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −.422 | | ~~−.375~~ | | −.480 | | | | −.450 | | −.430 | |
| 19 33 14.9 | 32 52.8 | 33 15.5 | 33 1.6 | 33 — | 32 54.3 | | | 33 — | 32 56.8 | 33 — | 33 5.8 |
| 17.0 | 56.9 | 20.2 | 7.1 | — | 59.3 | | | — | 1.0 | — | 9.8 |
| 19.5 | 0.6 | 24.8 | 10.8 | — | 1.5 | | | — | 4.2 | — | 13.1 |
| 21.8 | | 29.4 | | 18.1 | | | | 18.6 | | 21.9 | |
| 24.0 | | 34.0 | | 22.5 | | | | 21.0 | | 26.4 | |
| 26.2 | | — | | 27.0 | | | | 23.2 | | 31.0 | |
| 28.5 | 33 41.5 | — | 33 44.8 | 31.8 | 33 41.5 | | | 25.5 | | 35.4 | 33 42.1 |
| 30.8 | 45.2 | — | | 36.2 | 45.9 | | | 28.0 | | 40.1 | 46.4 |
| 33.1 | 48.0 | | | — | 51.0 | | | — | | — | 50.7 |
| | | | | — | | | | — | | — | |
| | | | | — | | | | — | | — | |
| 215.8 | 32 56.76 | 123.9 | 33 6.50 | 135.6 | 32 58.03 | | | 116.3 | 33 0.66 | 154.8 | 33 9.56 |
| 33 23.978 | 33 44.90 | 33 24.780 | 33 44.80 | 33 27.120 | 33 46.13 | | | 33 ~~23.260~~ | 27.82 | 33 30.960 | 33 46.30 |
| 23.944 | | 24.746 | | 27.086 | | | | ~~23.226~~ | 27. | 30.926 | |
| + 4.85 | | + 3.92 | | + 1.59 | | | | + 0.54 | | − 2.41 | |
| − .83 | | − .74 | | − .95 | | | | − .89 | | − .85 | |
| − 2.20 | −1.559 | − 2.14 | −1.499 | − 1.93 | −1.289 | | | − 1.86 | −1.219 | − 1.64 | −1.029 |
| + 1.82 | | + 1.04 | | − 1.31 | | | | − 2.18 | | − 5.23 | |
| 33 23.94 | | 33 24.75 | | 33 27.09 | | | | 33 ~~28.23~~ 27.79 | | 33 30.93 | |
| 33 25.76 | | 33 25.79 | | 33 25.78 | | | | 33 ~~21.05~~ 25.61 | | 33 25.70 | |
| 26.401 | | 26.431 | | 26.421 | | | | 26.251 | | 26.341 | |

| Aug. 23 | | Aug. 25 | | Aug. 31 | | Sept. 1 | | Sept. 2 | | Sept. 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| s +27.22 | −20.92 | +18.28 | −20.02 | +29.09 | −19.01 | | | + ~~22.60~~ +27.16 Ch. f. | | +21.40 | −15.34 |
| 15 | | 15 | | 15 | | 15 | | 15 | | 15 | |
| −2.12 | | −2.15 | | −2.20 | | | | −2.23 | | −2.28 | |
| 0 31.0 | 0 58.5 | 0 35.8 | 0 57.8 | 0 27.2 | 0 55.6 | 0 38.1 | 1 4.9 | 0 28.0 | 0 49.8 | 0 31.0 | 0 52.0 |
| 41.3 | 7.5 | 45.9 | 7.2 | 39.4 | 6.1 | 49.5 | 15.2 | 39.8 | 59.8 | 42.8 | 3.3 |
| 72.3 | 126.0 | 81.7 | 125.0 | 66.6 | 121.7 | 87.6 | 20.1 | 67.8 | 109.6 | 73.8 | 115.3 |
| 15 36.15 | ×16 3.00 | 15a 40.85 | 16× 2.50 | 15a 33.30 | 16× 0.85 | 15a 43.80 | 16× 10.05 | 15 33.90 | 15a 54.80 | 15 36.90 | 15a 57.65 |
| 1.43489 | 1.32056n | 1.26198 | 1.30146n | 1.46374 | 1.27898n | | | 1.35411 | 1.43393 | 1.23041 | 1.18583n |
| 1.19570 | 1.08137n | 1.02279 | 1.06227n | 1.22455 | 1.03979n | | | 1.11492 | 1.19374 | 1.09121 | 0.94664n |
| +15.69 | −12.06 | +10.54 | −11.54 | +16.77 | −10.96 | | | +13.03 | +15.62 | +12.34 | −8.84 |
| 15 52.84 | 50.94 | 15 51.39 | 50.96 | 15 50.07 | 49.89 | | | 15 ~~46.93~~ 49.52 | | 15 49.24 | 48.81 |
| 6 55.51 | 57.41 | 56.96 | 57.39 | 58.28 | 58.46 | | | 6 ~~14.2~~ 58.83 | | 6 59.11 | 59.54 |
| 56.46 | | 57.17 | | 58.37 | | | | | | 59.32 | |
| −20 46 31 | 46 4 | | | | | | | | | | |
| 1.33930n | 1.33910n | | | | | | | | | | |
| −340 | | +236 | | −1299 | | | | −968 | | −639 | |
| 1.33590 | 1.33570 | 1.34166 | 1.34146 | 1.32631 | 1.32611 | | | 1.32962 | 1.32942 | 1.33291 | 1.33271 |
| +21.67 | +21.66 | +21.96 | +21.95 | +21.20 | +21.19 | | | +21.36 | ~~+21.35~~ | +21.52 | +21.51 |
| −.16 −.12 | −.09 | −.07 −.07 | −.08 | −.19 −.15 | −.08 | | | −.11 | ~~−.06~~ .12 | −.09 −.08 | −.05 |
| .00 | .00 | .08 | .00 | −.01 | −.02 | | | −.01 | ~~−.03~~ | −.01 | −.02 |
| +21.51 | +21.57 | +21.89 | +21.87 | +21.00 | +21.09 | | | +21.24 | | +21.42 | +21.44 |
| +63 7 17.02 | 18.98 | 7 18.85 | 19.26 | 7 19.28 | 19.55 | | | 7 ~~22.66~~ 20.07 | | 7 20.53 | 20.98 |
| + 2 4.63 | 5.37 | + 4.39 | 5.14 | + 6.14 | 6.90 | | | + 6.25 | 7.03 | + 5.57 | 6.36 |
| + .54 | −1.61 | + .75 | −2.03 | + .76 | −3.50 | | | + .78 | −3.96 | + .79 | −5.05 |
| −9.44 | | −9.96 | | −11.48 | | | | −11.89 | | −12.98 | |
| +1 55.93 | 9 12.95 | + 55.18 | 14.03 | 55.47 | 14.75 | | | + 55.14 | | + 53.38 | 13.91 |
| | 14.91 | | 14.44 | | 15.02 | | | | | | 14.36 |
| | | | | | | | | | 15.21 | | |
| | 9 13.93 | | 14.23 | | 14.88 | | | ~~17.80~~ | 23.14 | | 14.13 |
| | 9 21.[illegible] | | [illegible] | | [illegible] | | | | | | 22.06 |

1875

| Sept. 9 | | Sept. 10 | | Oct. 5 | | Aug 31 | | Sept-1 | | Sept-4 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −.460 | | −.463 | | −.240 | | −.680 | | −.636 | | −.610 | |
| 33 23.8 | 33 8.7 | 33 24.7 | 33 10.2 | 33 30.6 | 33 56.9 | 33 39.3 | 33 28.0 | 33 40.0 | 33 11.7 | 33 42.6 | 33 16.5 |
| 26.1 | 13.0 | 27.7 | 14.8 | 33.0 | 2.2 | 41.6 | | 42.3 | 15.9 | 44.9 | 19.2 |
| 28.2 | 16.5 | 29.3 | 19.0 | 35.3 | 4.7 | 43.8 | | 44.8 | 19.9 | 47.1 | 23.6 |
| 30.5 | | 31.6 | | 37.6 | | 46.3 | | 47.0 | | 49.4 | |
| 33.0 | | 33.9 | | 40.0 | | 48.8 | | 49.3 | | 51.8 | |
| 35.2 | | 36.1 | | 42.4 | | 51.0 | 34 11.6 | 51.6 | | 53.9 | |
| 37.5 | 33 45.7 | 38.5 | 33 39.6 | 44.7 | | 53.3 | 16.3 | 53.9 | 34 7.1 | 56.3 | 34 7.0 |
| 39.6 | 51.0 | 40.8 | | 47.0 | | 55.4 | 20.3 | 56.1 | 11.1 | 58.5 | 11.8 |
| 42.0 | 54.2 | 42.8 | | 49.2 | | 57.7 | | 58.5 | 15.0 | 0.9 | 16.0 |
| 2959 | 33 12.73 | 3048 | 33 14.66 | 3598 | 34 1.26 | 4372 | 33 27.00 | 4435 | 33 15.83 | 4654 | 33 19.77 |
| 33 32.878 | 33 50.30 | 33 32867 | 33 39.60 | 33 39.978 | | 33 48.578 | 34 16.07 | 33 49.278 | 34 11.07 | 33 51.711 | 34 11.60 |
| 32844 | | 33833 | | 39944 | | 48.544 | | 49.244 | | 51.677 | |
| − 4.42 | | − 5.62 | | − 13.38 | | − 18.91 | | − 19.69 | | − 22.28 | |
| − .79 | | − .92 | | − .47 | | − 1.35 | | − 1.26 | | − 1.21 | |
| − 1.59 −0.949 | | − 1.55 −0.909 | | − 0.30 +0.349 | | − 1.96 | | − 1.93 | | − 1.81 | |
| − 7.10 | | − 8.09 | | − 14.15 | | − 22.22 | | − 22.88 | | − 25.30 | |
| 33 32.84 | | 33 33.83 | | 33 39.94 | | 33 48.54 | | 33 49.24 | | 33 51.68 | |
| 33 25.74 | | 33 25.74 | | 33 25.79 | | 33 26.32 | | 33 26.36 | | 33 26.38 | |
| 26.381 | | 26.381 | | | 26431 | | | | | | |
| | | | | 25.757 | | | | | | | |
| S<br>+ 20.15 | − 17.42 | + 19.21 | − 5.73 | − 21.28 | | + 21.58 | − 27.49 | + 33.45 | − 21.79 | + 31.94 | − 19.89 |
| 15 | | 15 | | 15 | | 55 | | 55 | | 55 | |
| − 2.30 | | − 2.31 | | − 2.42 | | − 2.53 | | − 2.54 | | − 2.57 | |
| 0 31.1 | 0 52.6 | 0 29.7 | 0 43.6 | 0 52.9 | | 2 1.2 | 2 30.5 | 1 53.2 | 2 26.0 | 1 51.2 | 2 21.6 |
| 43.4 | 4.0 | 43.1 | 56.8 | 59.0 | | 21.8 | 51.0 | 13.4 | 47.0 | 11.9 | 43.2 |
| 745 | 1166 | 728 | 1004 | 1119 | | 230 | 815 | 1269 | 730 | 1231 | 648 |
| 15 37.25 | 15 58.30 | 15 36.40 | 15 50.20 | 15 55.95 | | 57 11.50 | 57 40.75 | 57 3.45 | 57 36.50 | 57 1.55 | 57 32.40 |
| 1.30428 | $1.24105_n$ | 1.28353 | $0.75815_n$ | $1.32797_n$ | | 1.33405 | $1.43917_n$ | 1.52440 | $1.33826_n$ | 1.50433 | $1.29863_n$ |
| 1.06509 | $1.00186_n$ | 1.04294 | $0.51756_n$ | $1.08738_n$ | | 1.11438 | $1.21950_n$ | 1.30473 | $1.11859_n$ | 1.28466 | $1.07896_n$ |
| + 11.62 | − 10.04 | + 11.04 | − 3.29 | − 12.23 | | + 13.01 | − 16.58 | + 20.17 | − 13.14 | + 19.26 | − 11.99 |
| 15 48.87 | 48.26 | 15 47.44 | 46.91 | 15 43.72 | | 57 24.51 | 24.17 | 57 23.62 | 23.36 | 57 20.81 | 20.41 |
| 6 57.48 | 0.09 | 7 0.91 | 1.94 | 7 4.63 | | 25 23.84 | 24.18 | 25 24.78 | 24.99 | 25 27.54 | 27.54 |
| 59.78 | | 1.17 | | | | 24.01 | | 24.86 | | 27.74 | |
| | | 46 31 | 46 17 | | | 46 37 | 46 7 | | | | |
| | | $1.33930_n$ | $1.33920_n$ | | | $1.33930_n$ | $1.33910_n$ | | | | |
| − 505 | | − 1432 | | + 641 | | − 756 | | − 547 | | − 2289 | |
| 1.33425 | 1.33405 | 1.32198 | 1.32188 | 1.34571 | .1 | 1.33174 | 1.33154 | 1.33383 | 1.33363 | 1.31641 | 1.31621 |
| + 21.59 | + 21.58 | + 20.99 | + 20.98 | + 22.17 | | + 21.47 | + 21.45 | + 21.57 | + 21.56 | + 20.72 | + 20.71 |
| −.08 −.07 | −.06 | −.08 −.04 | −.1 | −.09 | −.12 | −.10 −.40 | −.16 | −.24 −.42 | −.10 | −.21 −.39 | −.08 |
| .00 | .00 | .00 | .00 | −.03 | | −.24 | −.36 | −.22 | −.29 | −.22 | −.27 |
| + 21.51 | + 21.52 | + 20.91 | + 20.97 | + 22.05 | | + 21.13 | + 20.99 | + 21.11 | + 21.17 | + 20.29 | + 20.36 |
| 7 20.99 | 21.61 | 7 21.82 | 22.41 | 7 26.68 | | 25 44.97 | 45.17 | 25 45.84 | 46.16 | 25 47.83 | 48.30 |
| + 5.28 | 6.08 | + 6.56 | 7.36 | + 5.93 | 6.77 | − 16 13.01 | 12.13 | − 13.16 | 12.28 | − 14.38 | 13.49 |
| + .80 | − 5.47 | + .80 | − 5.68 | + .84 | − 9.01 | + .88 | | + .88 | | + .89 | |
| − 13.40 | | − 13.61 | | − 16.98 | | − 11.31 | | − 11.54 | | − 12.24 | |
| + 52.68 | 13.67 | + 53.75 | 15.57 | + 49.83 | | − 16 23.44 | 21.53 | − 23.82 | 22.02 | − 25.73 | 22.10 |
| | 14.29 | | 16.16 | | | | 21.73 | | 22.34 | | 22.57 |
| | 13.98 | | 15.86 | | 16.51 | | 21.63 | | 22.18 | | 22.33 |

Sept-5 Sept-7

-.600 -.577

33 33 21.7 33 33 528

435 25.4 452

457 28.7 476

48.0 49.8

50.2 52.3

52.5 54.3

55.0 34 8.8 56.6 34 18.1

57.4 12.0 59.0

59.5 16.3 1.1

1.8 3.3

4736 3692

120

33 25.27 4892 33 32.80

33 52.622 34 12.37 33 54.356 34 18.10

52.588 54.322

- 23.34 - 25.12

- 1.19 - 1.14

- 1.78 - 1.70

- 26.31 - 27.96

33 52.59 33 54.32

33 26.28 33 26.36

26.340

+ 27.25 - 19.75 + 1.56 - 23.74

55 55

-.258 -260

1 55.0 2 23.9 2 8.2 2 24.1

15.4 43.8 28.9 46.2

13.04 67.7 37.1 70.3

57 5.20 57 33.85 57 18.55 57 35.15

1.43696 1.29557 0.19312 1.37548

1.21729 1.07590 9.97345 1.15581

+16.49 -11.91 +0.94 -14.32

57 21.69 57 21.94 57 19.49 57 20.83

25 26.66 26.41 25 28.86 27.52

26.53 28.19

~~26.6~~ 46 30 46 13

1.33930 1.33920

- 1392 - 662

1.32538 1.32518 1.33268 1.33258

+21.15 +21.14 +21.51 +21.51

-.16 -.38 -.08 - 1 -.42 -.12

-.23 -.29 -.34 -.39

+ 20.76 +20.77 +21.17 +21.00

25 47.42 47.18 25 50.03 48.52

-16 13.42 12.53 - 14.01 13.10

90 91

+ -12.45 + -12.48

+16 24.97 22.75 - 25.88 24.15

22.21 22.64

22.33 23.39

β Sagittae

19h 35m 26 sec.
+17° 11′

$\zeta$ = + ~~31~~ 25° 12′ l sin δ 9.47045
sin ζ = +.43 l cos δ 9.98017
l C .10600
l C′ 0.08617

| | 1874 | 1875 |
|---|---|---|
| α | | 35 26.08 |
| δ | | 11 15.44 |
| dα/dt | | +2.694 |
| dδ/dt | | +8.07 |
| l cos δ | 9.98017 | 9.98017 |
| l C | .10600 | .12552 |
| l C′ | 0.08617 | 0.10569 |

corr =
corr δ =
laˢ d = +.31
I = 2.16ˢ
K = −.016ˢ

1874

| Aug. 23 | | Aug. 25 | | Aug. 31 | | lch f. Sept. 1 | | Sept. 2 | | Sept. 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −.422 | | −.375 | | −.480 | | | | −.450 | | −.430 | |
| 19 35 8.1<br>10.3<br>12.5<br>16.7<br>18.9<br>21.0<br>23.1<br>25.3<br>27.4<br>31.8<br>34.0 | 34 55.6<br>57.6<br>58.9<br>35 40.0<br>41.6<br>43.4 | 35 9.0<br>11.3<br>13.4<br>17.7<br>19.9<br>22.0<br>24.2<br>26.3<br>30.6<br>32.8<br>35.0 | 35 0.3<br>2.6<br>4.3<br>35 38.8<br>40.8<br>43.1 | 35 11.3<br>13.5<br>15.7<br>19.6<br>22.0<br>24.3<br>26.4<br>28.6<br>32.9<br>35.0<br>37.2 | 35 2.0<br>4.0<br>6.1<br>35 39.8<br>41.9<br>43.6 | | | 35 12.2<br>14.6<br>16.6<br>20.9<br>23.1<br>25.5<br>27.6<br>29.6<br>33.9<br>36.0<br>38.2 | 35 2.7<br>5.2<br>7.0<br>35 36.4 | 35 15.6<br>17.7<br>19.8<br>24.1<br>26.3<br>28.4<br>30.6<br>32.9<br>37.1<br>39.3<br>41.4 | 35 14.1<br>15.9<br>17.2<br>35 49.2<br>51.7<br>54.0 |
| 2314<br>35 21.036<br>21.020 | 34 57.337<br>35 41.66 | 2422<br>35 22.018<br>22.002 | 35 2.40<br>35 40.90 | 2668<br>35 24.255<br>24.239 | 35 4.03<br>35 41.76 | | | 2781<br>35 25.282<br>25.266 | 35 4.96<br>35 36.40 | 3132<br>35 28.473<br>28.457 | 35 15.78<br>35 51.68 |
| + 4.85<br>− .13<br>− 2.38 +0.314<br>+ 2.34<br>35 21.02 | | + 3.92<br>− .12<br>− 2.36 +0.334<br>+ 1.44<br>35 22.80 | | + 1.54<br>− .15<br>− 2.30 +0.394<br>− 0.88<br>35 24.24 | | | | + 0.54<br>− .14<br>− 2.27 +0.424<br>− 1.84<br>35 25.27 | | − 2.71<br>− .13<br>− 2.21 +0.484<br>− 5.05<br>35 28.46 | |
| 35 23.36<br>26.054 | | 35 23.44<br>26.134 | | 35 23.36<br>26.054 | | | | 35 23.43<br>26.124 | | 35 23.41<br>26.104 | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | s 67<br>+23.71 | −20.62 | +19.62 | −18.88 | +20.22 | −17.51 | | | +20.32 | −11.12 | +12.74 | −23.16 |
| | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | |
| | −2.12 | | −2.15 | | −2.20 | | | | −2.23 | | −2.29 | |
| | 2 35.7<br>50.9<br>86.6<br>2 12 43.30 | 3 27.5<br>43.7<br>71.2<br>13 3 35.60 | 2 37.7<br>54.7<br>92.4<br>12 2 46.20 | 3 25.0<br>40.9<br>65.9<br>13 2 32.95 | 2 38.8<br>55.8<br>94.6<br>12 2 47.30 | 3 25.1<br>41.8<br>66.9<br>13 3 33.45 | 2 37.0<br>54.9<br>91.9<br>12 2 45.95 | 3 27.9<br>44.2<br>72.1<br>13 3 36.05 | 2 39.8<br>56.5<br>96.3<br>12 2 48.15 | 3 18.1<br>36.2<br>54.3<br>13 3 27.15 | 2 46.4<br>3.5<br>109.9<br>12 2 54.95 | 3 28.5<br>46.8<br>75.3<br>13 3 37.65 |
| | 1.37420<br>1.46037<br>+28.86<br>13 12.16 | 1.31429n<br>1.40046n<br>−25.15<br>13 10.45 | 1.29270<br>1.37887<br>+23.93<br>13 10.13 | 1.27600n<br>1.36217n<br>−23.03<br>13 9.90 | 1.30578<br>1.39195<br>+24.66<br>13 11.96 | 1.24329n<br>1.32946n<br>−21.35<br>13 12.10 | | | 1.30792<br>1.39409<br>+24.78<br>13 12.93 | 1.04610<br>1.13227<br>−13.56<br>13 13.54 | 1.10517<br>1.19134<br>+16.54<br>13 10.49 | 1.36474n<br>1.45091n<br>−28.24<br>13 9.41 |
| +17°<br><br>25<br>+ ~~31~~ | 9′ 36.19″<br>37.04<br>10 36<br>~~1.54200~~<br>1.43240 | 37.90<br><br>11 29<br>~~1.54220~~<br>1.43260 | 9 38.22<br>38.32 | 38.43 | 9 36.39<br>36.32 | 36.25 | | | 9 35.42<br>35.09<br>10 41<br>~~1.54200~~ | 34.76<br><br>11 20<br>~~1.54220~~ | 9 37.86<br>38.40 | 38.94 |
| | −335<br>1.42905<br>−26.86 | 1.42925<br>−26.87 | +240<br>1.43480<br>−27.22 | 1.43500<br>−27.23 | −1293<br>1.41947<br>−26.27 | 1.41967<br>−26.28 | | | −961<br>1.42279<br>−26.47 | 1.42299<br>−26.48 | −634<br>1.42606<br>−26.67 | 1.42626<br>−26.68 |
| +17 | −.08 −.07<br>.00<br>−26.94<br>9 9.25<br>+2 4.63<br>−6.49<br>− .91<br>+1 57.23 | −.06<br>.00<br>26.93<br>10.97<br>3.72<br>+1.58<br>″ 6.48<br>8.20<br>″ 7.24 | −.05 −.05<br>.00<br>−27.27<br>9 10.95<br>+ 4.39<br>−6.77<br>− .92<br>+ 56.70 | −.05<br>.00<br>−27.28<br>11.15<br>3.47<br>+1.30<br>7.65<br>7.85<br>7.75 | −.06 −.12<br>−.06<br>−26.39<br>9 10.00<br>+ 6.14<br>−7.55<br>− .94<br>+ 57.65 | −.04<br>−.07<br>−26.39<br>9.86<br>.520<br>+0.52<br>7.65<br>7.51<br>7.58 | | | −.06 −.10<br>−.06<br>−26.59<br>9 8.83<br>+ 6.25<br>−7.79<br>− .95<br>+ 57.51 | −.02<br>−.07<br>−26.57<br>8.19<br>.530<br>+0.28<br>6.34<br>5.70<br>6.02 | −.02 −.12<br>−.06<br>−26.75<br>9 11.11<br>+ 5.57<br>−8.38<br>− .98<br>+ 56.26 | −.08<br>−.07<br>−26.83<br>12.11<br>4.59<br>−2.6<br>7.37<br>8.37<br>7.81<br>15.94 ~~15.44~~ |

1874 1875

| Sept.9 | | Sept.10 | | Aug 31 | | Sept-1 | | Sept 4 | | Sept-5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −.400 | | −.463 | | −.680 | | −.636 | | −.610 | | −.600 | |
| 35 174 | 35 7.9 | 35 18 4 | 35 14 | 35 34.9 | 35 15.5 | 35 35.8 | 35 146 | 35 38.1 | 35 24.5 | 35 39.3 | 35 22.4 |
| 19.6 | 10.1 | 20.5 | 3 2 | 37.0 | 17.6 | 37.9 | 16.3 | 40.3 | 27.1 | 41.3 | 23.9 |
| 21.9 | 11 8 | 22.7 | 5 3 | 39.3 | 19.6 | 40.1 | 18.4 | 42.5 | 28.9 | 43.5 | 25.4 |
| 262 | | 27.0 | | 43.6 | | 44.2 | | 46.7 | | 47.9 | |
| 28.3 | | 29.2 | | 45.8 | | 46.5 | | 48.9 | | 50.0 | |
| 31.4 | | 31.4 | | 48.0 | | 488 | | 51.0 | | 52.1 | |
| 32.6 | 35 37.2 | 33.5 | 35 34.5 | 50.0 | 36 26.9 | 50.8 | 36 3.4 | 53.1 | 36 13.9 | 54.3 | 36 16.6 |
| 34.8 | 38.0 | 35.6 | 36.7 | 52.3 | 28.4 | 53.0 | 5.4 | 55.4 | 16.4 | 56.4 | 18.5 |
| 39 1 | 40.1 | 40.0 | 38.3 | 56.6 | 30.0 | 57.4 | 7.7 | 59.7 | 18.3 | 0.8 | 20.9 |
| 41.2 | 42.1 | 42 2 | | 58.6 | | 59.3 | | 1.9 | | 2.9 | |
| 40.3 | | 44.3 | | 0.7 | | 1.6 | | 4.0 | | 5.0 | |
| 3348 | 35 9.93 | 3448 | 35 3.36 | 5268 | 35 17.57 | 5354 | 35 16.43 | 5616 | 35 26.83 | 5735 | 35 23.90 |
| 35 30.436 | 35 ~~38.85~~ 39.35 | 35 31.345 | 35 56.66 | 35 47.891 | 36 28.43 | 35 48.673 | 36 5.50 | 35 51.055 | 36 16.20 | 35 52.136 | 36 18.67 |
| 30.420 | | 31.329 | | 47.875 | | 48.657 | | 51.039 | | 52.120 | |
| − 4.42 | | − 5.62 | | − 18.91 | | − 19.69 | | − 22.28 | | − 23.34 | |
| − .12 | | − .14 | | − .24 | | − .23 0 | | − .19 | | − .19 | |
| − 2.19 | +0.504 | − 2.17 | +0.524 | − 2.58 | | − 2.57 | | − 2.33 | | − 2.32 | |
| − 7.03 | | − 7.93 | | − 21.70 | | − 22.46 | | − 25.00 | | − 26.05 | |
| 35 30.42 | | 35 31.33 | | 35 47.87 | | 35 48.66 | | 35 51.04 | | 35 52.12 | |
| 35 23.39 | | 35 23.40 | | 35 26.17 | | 35 26.20 | | 3 26.04 | | 35 26.07 | |
| | 26.084 | 26.094 | | | | | | | | | |
| 23.399 | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S<br>+ 20.51 | − 8.91<br>− ~~8.41~~ | + 28.04 | − 25.16 | + 30.32 | − 40.54 | + 32.24 | − 16.83 | + 24.22 | − 25.15 | + 28.24 | − 26.53 |
| 10 | | 10 | | 50 | | 50 | | 50 | | 50 | |
| − 2.30 | | − 2.31 | | − 2.53 | | − 2.54 | | − 2.57 | | − 2.58 | |
| 2 35.9 | 3 12.0 | 2 27.7 | 3 33.0 | 3 57.3 | 0 26.9 | 3 52.0 | 4 56.3 | 4 3.1 | 0 6.8 | 3 58.5 | 0 8.9 |
| 53.6 | 30.1 | 47.0 | 51.1 | 14.2 | 44.4 | 9.0 | 14.5 | 21.2 | 24.9 | 15.9 | 25.8 |
| 89.5 | 421 | 747 | 841. | 1315 | 713 | 1210 | 1308 | 243 | 317 | 1344 | 347 |
| 2 12 44.75 | 13 3 21.05 | 12 2 37.35 | 13 3 42.05 | 54 5.75 | 55 35.65 | 54 0.50 | 55 5.40 | 54 12.15 | 55 15.85 | 54 7.20 | 54 17.35 |
| 1.31197 | 0.94988n | 1.44778 | 1.40071n | 1.48173 | 1.60788n | 1.50840 | 1.22608 | 1.38417 | 1.40064n | 1.45086 | 1.42374n |
| 1.39814 | 1.03605n | 1.53395 | 1.48688n | 1.58742 | 1.71357n | 1.61409 | 1.33177 | 1.48986 | 1.50623n | 1.55655 | 1.52943n |
| + 25.01 | − 10.87 | + 34.19 | − 30.68 | + 38.68 | − 37.71 | + 41.12 | − 21.47 | + 30.89 | − 32.08 | + 36.02 | − 33.84 |
| 13 9.76 | 13 10.18 | 13 11.54 | 13 11.37 | 54 44.43 | 54 43.94 | 54 41.62 | 54 43.93 | 54 43.64 | 54 43.77 | 54 43.22 | 54 43.51 |
| 9 38.59 | 38.17 | 9 36.81 | 36.88 | 28 3.92 | 4.41 | 28 6.73 | 4.42 | 28 5.31 | 4.58 | 28 5.13 | 4.84 |
| 38.38 | | 36.84 | | 4.16 | | 5.57 | | 4.94 | | 4.98 | |
| | | 10 30 | 11 35 | 10 18 | 11 48 | | | | | | |
| | | ~~1.54200~~<br>1.43.240 | ~~1.54220~~<br>1.43260 | ~~1.54190~~ | ~~1.54230~~ | | | | | | |
| −500 | | −1716 | | −750 | | −543 | | −2285 | | −1378 | |
| 1.42740 | 1.42760 | 1.41524 | 1.41544 | 1.42490 | 1.42510 | 1.42697 | 1.42717 | 1.40955 | 1.40975 | 1.41862 | 1.41882 |
| −26.76 | −26.77 | −26.02 | −26.03 | −26.60 | −26.61 | −26.73 | −26.74 | −25.68 | −25.69 | −26.22 | −26.23 |
| −.06 −.03 | −.01 | −.12 −.10 | −.09 | −.14 −.45 | −.25 | −.16 −.59 | −.03 ~~.56~~ | −.08 −.32 | −.09 | −.12 −.57 | −.10 |
| .00 | .00 | .00 | .00 | −.45 | −.07 | −.44 | −.61<br>−.56 | −.46 | −.02 | −.45 | −.47 |
| −26.82 | −26.78 | −26.14 | −26.12 | −27.19 | −26.93 | −27.33 | −27.33 | −26.22 | −25.80 | −26.79 | −26.80 |
| 9 11.77 | 11.39 | 9 10.67 | 10.76 | 27 36.73 | 37.48 | 27 39.40 | 37.09 | 28 39.09 | 38.98 | 27 38.34 | 38.04 |
| +2 5.28 | 4.30 | + 6.56 | 5.57 | −16 13.01 | 14.09 | − 13.16 | 14.25 | − 14.38 | 15.48 | − 13.42 | 14.52 |
| − .98 | − .47 | − .99 | − .58 | − 1.08 | | − 1.09 | | − 1.10 | | − 1.10 | |
| −8.54 | | −8.65 | | −7.49 | | −7.62 | | −7.99 | | −8.08 | |
| +1 55.76 | 7.53 | + 56.92 | 7.59 | −16 21.58 | 11 15.15 | − 21.87 | 17.53 | − 23.45 | 15.64 | − 22.60 | 15.74 |
| | 7.15 | | 7.68 | | 15.90 | | 15.22 | | 15.33 | | 15.44 |
| | 7.34<br>~~7.53~~ | | 7.63 | | 11 15.53 | | 16.37 | | 15.48 | | 15.59 |
| 1541 11 | | | | | | | | | | | |

Sept 7
-577
35 41.0 35 25.6
43.1 27.4
45.2 29.8
49.7
51.8
53.9
55.9 36 20.8
58.3 22.8
2.5 24.7
4.7
6.8

59.29 35 27.60
35 53.900 36 22.77
53.884

- 25.12
- .18
- 2.49
- 27.79
35 53.88

35 26.09

26.114

+ 26.30 — 28.87
50
- 3.60
4 0.8 0 9.9
17.0 27.9
12.87 37.8
54 ~~9.57~~ 55 18.90
19.35
1.41996 1.46045 m
1.52665 1.56614 m
+ 33.55 — 36.83
54 42.90 54 42.07

28 5.45 6.28
5.86
10 21 11 31
~~1.54190 1.54220~~
-654
1.42586 1.42706
- 26.66 — 26.73

-.10 -.44 -.12
-.63 -.04
- 27.39 -26.89
27 38.06 39.39
14.01 15.12
1.11
- 8.30
- 23.42 14.64
15.47

15.30

Piazzi XIX 243 1874 1875

B.A.C. 6755

h m sec.
19 38 2
−32° 12′

z +74° 35′
sin z = +.96

| | | 1874 | 1875 |
|---|---|---|---|
| | α | | 38 2.56 |
| | δ | | 12 28.69 |
| | $\frac{d\alpha}{dt}$ | | + 3.835 |
| | $\frac{d\delta}{dt}$ | | + 8.24 |
| | l sin δ | 9.72663n | |
| | l cos δ | 9.92747 | 9.92747 |
| | l C | .10600 | .12552 |
| | l C′ | 0.03347 | 0.05299 |
| | l C″ | 0.03207 | |

corr α =
corr δ =
long δ = −.63
I = 2.44 s
K = −.019 s

1874

| Aug. 23 | | Aug. 25 | | Aug. 31 | | Sept. 2 | | Sept. 7 | | Sept. 9 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −.422 | | −.375 | | −.480 | | −.450 | | −.430 | | −.400 | |
| 19 37 42.5 | 37 27.9 | 37 43.0 | 37 37.1 | 37 45.6 | 37 40.6 | 37 46.7 | 37 41.6 | 37 49.8 | 37 36.3 | 37 51.8 | 37 45.1 |
| 44.7 | 30.0 | 45.7 | 39.3 | 48.0 | 43.2 | 49.0 | 43.4 | 52.2 | 39.7 | 54.3 | 47.4 |
| 47.3 | 32.1 | 48.3 | 42.2 | 50.4 | 46.0 | 51.6 | 45.2 | 54.7 | 42.0 | 56.7 | 49.3 |
| 52.1 | | 53.0 | | 55.1 | | 56.4 | | 59.5 | | 1.6 | |
| 54.6 | | 55.3 | | 57.7 | | 58.9 | | 2.0 | | 4.0 | |
| 56.9 | | 57.7 | | 0.2 | | 1.3 | | 4.5 | | 6.4 | |
| 59.3 | 38 18.4 | 0.3 | 38 15.6 | 2.5 | 38 35.7 | 3.6 | 38 24.8 | 6.8 | 38 15.0 | 8.9 | 38 27.3 |
| 1.8 | 20.5 | 2.6 | 17.6 | 5.0 | 37.5 | 6.1 | 26.9 | 9.3 | 17.2 | 11.3 | 24.3 |
| 6.9 | 23.8 | 7.5 | 19.9 | 9.8 | 40.5 | 11.0 | 29.0 | 14.4 | 18.7 | 16.2 | 31.8 |
| 9.5 | | 10.0 | | 12.3 | | 13.8 | | 16.6 | | 18.6 | |
| 11.8 | | 12.6 | | 14.7 | | 15.8 | | 19.2 | | 21.0 | |
| 3874 | | 3360 | | 3013 | | 3137 | | 2890 | | 2508 | |
| 240 | | 300 | | 300 | | 300 | | 240 | | 180 | |
| 627 4 | 37 30.00 | 636 0 | 37 39.53 | 1 3 | 37 43.26 | 137 | 37 43.40 | 49 0 | 37 39.33 | 70 8 | 37 47.26 |
| 37 57.036 | 38 20.90 | 37 57.818 | 38 17.70 | 38 0.118 | 38 37.90 | 38 1.245 | 38 26.90 | 38 4.455 | 38 16.96 | 38 6.436 | 38 29.46 |
| 57.017 | | 57.799 | | 0.099 | | 1.226 | | 4.436 | | 6.417 | |
| + 4.85 | | + 3.92 | | + 1.54 | | + 0.54 | | − 2.71 | | − 4.42 | |
| + .26 | | + .24 | | + .30 | | + .28 | | + .27 | | + .25 | |
| − 3.31 | +0.525 | − 3.29 | +0.545 | − 3.24 | +0.595 | − 3.22 | +0.615 | − 3.16 | +0.675 | − 3.14 | +0.695 |
| + 1.80 | | + 0.87 | | − 1.37 | | − 2.37 | | − 5.60 | | − 7.61 | |
| 37 57.02 | | 37 57.80 | | 38 0.10 | | 38 1.23 | | 38 4.44 | | 38 6.42 | |
| 37 58.82 | | 37 58.67 | | 37 58.73 | | 37 58.86 | | 37 58.84 | | 37 58.81 | |
| 38 2.655 | | 2.505 | | 2.565 | | 2.695 | | 2.675 | | 2.645 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| s +27.04 | −23.86 | +18.29 | −19.88 | +16.86 | −37.78 | +17.84 | −25.66 | +25.12 | −12.51 | +19.18 | −23.02 |
| 30 | | 30 | | 30 | | 30 | | 30 | | 30 | |
| −2.12 | | −2.14 | | −2.20 | | −2.23 | | −2.29 | | −2.30 | |
| 3 27.8 | 4 23.5 | 3 35.0 | 4 16.0 | 3 46.6 | 4 44.7 | 3 43.3 | 4 30.8 | 3 33.1 | 4 13.4 | 3 37.1 | 4 22.8 |
| 43.7 | 40.0 | 50.9 | 31.4 | 3.9 | 1.8 | 1.0 | 48.1 | 51.0 | 30.7 | 55.3 | 41.6 |
| 71.5 | 63.5 | 85.9 | 47.4 | 110.5 | 106.5 | 104.3 | 78.9 | 84.1 | 44.1 | 92.4 | 64.4 |
| 33′ 35.75″ | 34 31.75 | 33 42.95 | 34 23.70 | 33 55.25 | 34 53.25 | 33 52.15 | 34 39.45 | 33 42.05 | 34 22.05 | 33 46.20 | 34 32.20 |
| 1.43201 | 1.37767n | 1.26221 | 1.29842n | 1.22686 | 1.57726n | 1.25139 | 1.40926n | 1.40002 | 1.09726n | 1.28285 | 1.36211n |
| 1.46548 | 1.41114n | 1.29568 | 1.33189n | 1.26033 | 1.61073n | 1.28486 | 1.44273n | 1.43349 | 1.13073n | 1.31632 | 1.39558n |
| +29.21 | −25.77 | +19.75 | −21.47 | +18.21 | −40.81 | +19.27 | −27.72 | +27.13 | −13.51 | +20.72 | −24.86 |
| 34 4.96 | 34 5.98 | 34 2.70 | 34 2.23 | 34 13.46 | 34 12.44 | 34 11.42 | 34 11.73 | 34 9.18 | 34 8.54 | 34 6.92 | 34 7.34 |
| −32° 11′ 16.61″ | 17.63 | 11 14.35 | 13.88 | 11 25.11 | 24.09 | 11 23.07 | 23.38 | 11 20.83 | 20.19 | 11 18.57 | 18.99 |
| 17.12 | | 14.11 | | 24.60 | | 23.22 | | 20.51 | | 18.78 | |
| +74 31 29 | 32 25 | | | | | | | | | | |
| 2.31170 | 2.31213 | | | | | | | | | | |
| 328 | | +244 | | −1285 | | −952 | | −629 | | −493 | |
| 2.30842 | 2.30885 | 2.31414 | 2.31457 | 2.29885 | 2.29928 | 2.30218 | 2.30261 | 2.30541 | 2.30584 | 2.30677 | 2.30720 |
| −203.43 | −203.63 | −206.13 | −206.33 | −199.00 | −199.20 | −200.53 | −200.73 | −202.03 | −202.23 | −202.66 | −202.86 |
| − 7 | − 7 | − 4 | − 4 | − .15 | − .15 | − 13 | − 13 | − 10 | − 10 | − .10 | − .10 |
| +.18 +.16 | +.14 | +.08 +.08 | +.09 | +.07 +.12 | +.34 | +.08 +.03 | +.16 | +.15 +.01 | +.03 | +.08 +.10 | +.13 |
| .00 | .00 | .00 | .00 | −.08 | −.10 | −.08 | −.09 | −.07 | −.09 | .00 | .00 |
| −3 23.32 | −3 23.56 | −3 26.09 | −3 26.28 | −3 19.16 | −3 19.11 | −3 20.66 | −3 20.67 | −3 22.05 | −3 22.39 | −3 22.68 | 22.83 |
| −32 14 39.93 | 41.19 | 14 40.44 | 40.16 | 14 44.27 | 43.20 | 14 43.73 | 44.17 79 | 14 42.88 | 42.58 | 14 41.25 | 41.82 |
| +2 4.63 | 2.60 | + 4.39 | 2.34 | + 6.14 | 4.03 | + 6.25 | 4.12 | + 5.57 | 3.38 | + 5.28 | 3.08 |
| − 2.03 | +11.33 | − 2.05 | +11.50 | − 2.11 | +11.98 | − 2.13 | +12.14 | − 2.19 | +12.53 | − 2.20 | +12.68 |
| +3.09 | | +3.26 | | +3.74 | | +3.90 | | +4.29 | | +4.44 | |
| +2 5.67 | 12 34.24 | + 5.60 | 34.84 | + 7.77 | 36.50 | + 8.02 | 35.71 | + 7.67 | 35.21 | + 7.52 | 33.73 |
| | 35.50 | | 34.56 | | 35.43 | | 36.15 | | 34.91 | | 34.30 |
| | 12 34.87 | | 34.70 | | 35.96 | | 35.93 | | 35.06 | | 34.02 |
| | 12 2[illegible] | | [illegible] | | [illegible] | | [illegible] | | [illegible] | | 25.78 |

1874 1875

Sept. 10 Oct. 5 Aug 31 Sept-1 Sept-4 Sept-5

-.463 -.240 -.680 -.636 -.610 -.600

37 32.6 37 41.9 38 0.0 37 56.2 38 10.4 37 45.5 38 10.9 38 1.4 38 13.5 38 1.2 38 14.6 37 55.8
55.1 44.4 2.4 12.8 47.2 13.6 3.0 16.0 3.0 17.1 58.0
57.6 46.4 4.9 15.2 50.0 16.0 5.9 18.5 5.7 19.4 01
2 4 7.7 20.0 20.8 23.4 24.4
49 12.2 22.4 23.3 25.6 26.9
73 14.6 24.9 25.7 28.0 29.3
9.8 38 28.2 17.1 27.4 38 57.4 28.0 38 45.8 30.6 5.0 31.7 38 44.5
12.2 29.5 19.6 30.0 59.2 30.5 47.6 33.0 39 7.2 34.3 46.7
17.1 31.3 24.4 34.7 1.3 35.4 50.5 37.9 4.7 39.0 48.7
19.4 27.0 37.0 37.8 40.9 41.4
21.9 29.4 39.5 40.2 42.8 43.7

26 03 16 13 27 43 28 22 30 97 32 18
180
80 3 37 44.23 37 56.20 37 47.57 38 3.43 38 3.30 37 57.97
38 7.300 38 29.66 38 14.664 38 24.936 38 59.30 38 25.655 38 47.97 38 28.155 39 7.30 38 29.255 38 46.63
7.281 14.645 24.917 25.636 28.136 29.236

- 5.62 - 13.38 - 18.91 - 19.69 - 22.28 - 23.34
+ .29 + .15 + .43 + .40 + .38 + .38
- 3.13 +0.705 - 2.71 +1.125 - 3.64 - 3.66 - 3.63 - 3.61
- 8.46 - 15.94 - 22.15 - 22.95 - 25.53 - 26.57
38 7.28 38 14.64 38 24.92 38 25.64 38 28.14 38 29.24

37 58.82 37 58.70 2.535 38 2.77 38 2.69 38 2.61 38 2.67
2.655
58.781

S
+23.07 -22.36 +18.46? +37.37 - 34.36 + 22.22 - 22.32 + 24.85 - 39.15 + 31.28 - 17.38
30 30 10 15 15 15
-2.31 -2.42 -2.53 -2.54 -2.57 -2.58
3 42.7 4 32.0 3 37.3 4 51.5 1 10.4 0 5.5 0 56.5 0 10.1 1 22.8 0 0.5 - 57.5
1.6 51.1 50.6 12.2 29.7 25.7 16.8 31.3 42.9 20.9 13.7
, 104.3 , 83.1 87.9 123.7 40.1 31.2 133 41.4 65.7 21.4 126.5
33 52.15 34 41.55 33 43.95 15 1.85 16 20.05 15 15.60 16 6.65 15 20.70 16 32.85 15 10.70 2.75

1.363 05 1.349 47 1.266 23 1.572 52 1.536 05 1.346 74 1.348 69 1.395 33 1.592 73 1.495 27 1.24 005
1.396 52 1.382 94 1.298 30 1.625 57 1.589 04 1.399 73 1.401 68 1.448 32 1.645 72 1.548 26 1.27 304
+24.92 -24.15 +19.88 +42.22 -38.82 +25.10 -25.22 +28.08 -44.23 +35.84 -10.64
34 17.07 34 17.40 34 3.83 15 44.07 15 41.33 15 40.70 15 41.43 15 48.78 15 48.62 15 46.04 4.31

11 28.72 29.05 11 15.48 52 55.72 53.18 52 52.35 53.08 53 0.43 53 0.27 52 57.69
28.88 54.45 52.71 0.35

31 45 32 35 31 14 32 32
2.311 80 2.312 23 2.311 56 2.312 18
-17 05 -7 42 -5 37 -22 78 -13 60
2.294 75 2.295 18 2.304 14 2.304 76 2.306 19 2.306 81 2.288 78 2.289 40 2.297 96
-197.13 -197.32 -201.44 -201.73 -202.39 -202.68 -194.44 -194.72 -198.60
- .18 - .18 - .13 - .13 - 12 - 12 - .19 - .19 - .17
+.13 +.12 +.12 +.08 +.34 +.24 +.28 +.11 +.04 +.11 +.15 +.17 +.38 +.24 +.22
.00 .00 .00 -.14 -.02 -.12 -.03 -.16 -.02
- 3 17.18 - 3 17.38 - 3 21.28 - 3 21.72 - 3 22.42 - 3 22.81 - 3 14.51 - 3 14.69 - 3 18.55
14 45.90 46.43 56 16.95 14.90 56 14.77 15.89 56 14.94 56 14.96 16.24
+2 6.56 4.35 -16 13.01 15.43 - 13.16 15.59 - 14.38 16.84 - 13.42 15.89
- 2.21 +12.76 - 2.42 - 2.43 - 2.46 - 2.47
+4.52 +6.06 +3.74 +3.82 +4.04 +4.12
+ 8.87 37.03 -16 11.69 28.64 - 11.77 26.54 - 12.80 27.74 - 11.77
37.56 26.59 27.46 27.76
37.29 12 27.62 27.10 27.75 28.01

|  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
|  | Sept-7 |  |  |  | Sept-8 |  |  |
|  | -547 |  |  |  | -542 |  |  |
| 38 | 16.3 | 38 | 10.5 | 38 | 17.0 | 38 | 13.7 |
|  | 18.9 |  | 12.4 |  | 19.4 |  | 16.0 |
|  | 21.2 |  | 14.4 |  | 21.6 |  | 18.5 |
|  | 26.2 |  |  |  | 26.6 |  |  |
|  | 28.6 |  |  |  | 29.2 |  |  |
|  | 31.0 |  |  |  | 31.9 |  |  |
|  | 33.5 | 38 | 49.3 |  | 33.9 | 38 | 57.0 |
|  | 35.8 |  | 51.6 |  | 36.4 |  | 59.6 |
|  | 40.8 |  | 54.0 |  | 41.3 |  | 2.0 |
|  | 43.2 |  |  |  | 43.9 |  |  |
|  | 45.7 |  |  |  | 46.1 |  |  |
|  | 3412 |  |  |  | 3471 |  |  |
|  |  | 38 | 12.43 |  |  | 35 | 16.07 |
| 38 | 31.018 | 38 | 51.63 | 38 | 31.555 | 38 | 59.53 |
|  | 31.099 |  |  |  | 31.536 |  |  |
| - | 25.12 |  |  | - | 25.76 |  |  |
| + | 36 |  |  | + | 36 |  |  |
| - | 3.58 |  |  | - | 3.57 |  |  |
| - | 28.34 |  |  | - | 28.97 |  |  |
| 38 | 31.10 |  |  | 38 | 31.54 |  |  |
| 38 | 2.76 |  |  | 38 | 2.57 |  |  |
|  |  |  |  |  | 2.678 |  |  |
| + | 18.59 | - | 20.61 | + | 14.48 | - | 27.98 |
| 15 |  |  |  | 15 |  |  |  |
|  | -2.60 |  |  |  | -2.61 |  |  |
| 0 | 10.7 | 0 | 54.9 | 0 | 16.1 | 1 | 5.1 |
|  | 31.5 |  | 13.8 |  | 36.8 |  | 25.0 |
|  | 42.2 |  | 128.7 |  | 52.9 |  | 30.1 |
| 15 | 21.10 | 16 | 4.35 | 15 | 26.45 | 16 | 15.05 |
|  | 1.26928 |  | 1.31408 |  | 1.16044 |  | 1.44685 |
|  | 1.32227 |  | 1.36707 |  | 1.21376 |  | 1.49984 |
|  | +21.00 |  | -23.29 |  | +16.36 |  | -31.61 |
| 15 | 42.10 | 15 | 41.06 | 15 | 42.81 | 15 | 43.44 |
| 52 | 53.75 |  | 52.71 | 52 | 54.46 |  | 55.09 |
|  | 53.23 |  |  |  | ~~55.27~~ 54.77 |  |  |
|  |  |  |  | 31 | 38 | 32 | 27 |
|  |  |  |  |  | 2.31175 |  | 2.31218 |
|  | -645 |  |  |  | -940 |  |  |
|  | 2.30511 |  | 2.30573 |  | 2.30235 |  | 2.30278 |
|  | -201.89 |  | -202.18 |  | -200.61 |  | -200.81 |
| - | .11 | - | 11 | - | .13 | - | .13 |
|  | +.08 | -.01 | +10 |  | +.05 | .08 | +19 |
|  | -.04 |  | -.16 |  | -.06 |  | -.18 |
| -3 | 21.96 | -3 | 22.35 | -3 | 20.75 | -3 | 20.93 |
| 56 | 15.71 |  | 15.06 | 56 | 15.21 |  | 16.02 |
| -16 | 14.01 | 16.50 |  | - | 13.77 | 16.27 |  |
| - | 2.49 |  |  | - | 2.50 |  |  |
|  | +4.27 |  |  |  | +4.34 |  |  |
| -16 | 12.23 |  | 27.94 | - | 11.93 |  | 27.14 |
|  |  |  | 27.29 |  |  |  | 27.95 |
|  |  | 12 | 27.61 |  |  |  | 27.55 |

67 1874 1874

γ Aquilae α 16.159 Aug. 28 40m 18s59 18' 33"6 corr =
h m sec δ +18' 27"48 Sept. 2 18.54 −.05 34.1 +.5 corr δ =
19 40 19 $\frac{d\alpha}{dt}$ +2.853 7 18.49 .05 34.6 .5
1 $\frac{d\delta}{dt}$ +8.501 12 18.43 .06 35.0 .4 corr δ = +.18 1.02
+10° 19 17 18.36 .07 35.3 .3 s
z = +32 4 sin z = +.53 22 18.29 .07 35.5 .2 t = 20.9
l sin δ 9.23307 27 18.21 .08 35.7 .2 s
Oct. 2 18.13 .08 35.8 .1 k = −.016
l cos δ 9.99292 7 18.04 .09 35.7 .1
l C .10600
l C' 0.09852
l C" 0.09752

1874

| × −43 Aug. 23 −.422 | × −35 Aug. 25 −.375 | × −46 Aug. 31 −.480 | × −43 Sept. 2 −.450 | × −42 Sept. 7 −.430 | × −36 Sept. 9 −.400 |
|---|---|---|---|---|---|
| 19 40 1.3 39 49.9 | 40 2.2 39 48.3 | 40 4.5 39 52.5 | 40 5.5 39 58.4 | 40 8.8 39 59.2 | 40 10.7 40 2.0 |
| 3.4 52.8 | 4.4 50.8 | 6.6 34.4 | 7.6 0.5 | 10.8 1.7 | 12.8 3.8 |
| 5.4 54.7 | 6.5 53.0 | 8.7 56.4 | 9.8 2.1 | 12.9 3.5 | 14.9 5.7 |
| 9.7 | 10.7 | 12.8 | 13.8 | 17.0 | 19.2 |
| 11.8 | 12.7 | 15.0 | 16.0 | 19.2 | 21.2 |
| 13.8 | 14.8 | 17.0 | 18.2 | 21.2 | 23.2 |
| 16.0 40 28.7 | 16.9 40 26.2 | 19.2 40 36.9 | 22.22 20.2 40 40.1 | 23.3 40 38.6 | 25.4 40 28.5 |
| 18.1 30.4 | 19.0 28.4 | 21.3 38.7 | 26.5 42.8 | 25.4 40.4 | 27.5 30.5 |
| 22.3 32.4 | 23.1 29.7 | 25.4 40.8 | 28.6 44.8 | 29.5 42.6 | 31.6 32.2 |
| 24.4 | 25.4 | 27.5 | 30.7 | 31.6 | 33.7 |
| 26.6 | 27.4 | 29.6 | | 33.9 | 35.8 |
| 15.28 39 52.46 | 16.31 39 50.70 | 18.76 39 54.43 | 19.91 40 0.33 | 23.36 40 1.46 | 25.60 40 3.88 |
| 40 13.891 40 30.50 | 40 14.827 40 28.10 | 40 17.055 40 38.80 | 40 18.100 40 42.56 | 40 21.236 40 40.58 | 40 23.273 40 30.40 |
| 13.875 | 14.811 | 17.039 | 18.084 | 21.220 | 23.257 |
| 40 18.64 | 40 18.62 | 40 18.56 | 40 18.54 | 40 18.49 | 40 18.476 |
| −4.77 +4.94 −.08 | −3.81 +3.92 −.06 | −1.52 +1.58 −.08 | −0.46 +0.57 −.08 | +2.73 −2.70 −.08 | +4.4780 −4.71 −.06 |
| + 4.85 | + 3.92 | + 1.57 | + 0.56 | − 2.72 | − 4.73 |
| − .07 −248 | − .07 −246 | − .09 −240 | − .08 −288 | − .08 −283 | − .07 −230 |
| − 2.48 +0.373 1625 | − 2.46 +0.393 1621 | − 2.50 +0.453 1614 | − 2.38 +0.473 1619 | − 2.33 +0.523 1611 | − 2.30 +0.553 1619 |
| + 2.30 48m | + 1.39 | − 0.92 | − 1.90 | − 5.13 | − 7.10 |
| 40 13.87 | 40 14.81 | 40 17.04 | 40 18.08 | 40 21.22 | 40 23.26 |
| 40 16.17 16 2961 | 40 16.20 3002 | 40 16.12 2897 | 40 16.18 2932 | 40 16.09 3053 | 40 16.16 3125 |
| 19.023 +2 484 | 19.053 +2 433 | 18.973 +2 625 | 19.023 +2 625 | 18.943 +2 552 | 19.013 +2 549 |
| −12 | −1.1 | −1.2 | −1.2 | −1.2 | −12 |
| −550 | −580 | −640 | −660 | −710 | −730 |
| +10 18 27.75 | 18 27.45 | 18 27.62 | 18 27.77 | 18 27.75 | 18 ~~28.24~~ 28.24 28.24 |
| +21.43 −16.61 | +24.13 −13.27 | +22.62 −21.75 | +17.77 −24.46 | +19.78 −19.29 | +19.44 −7.13 |
| 5 −2.12 | 5 −2.15 | 5 −2.20 | 5 −2.23 | 5 −2.29 | 5 −2.30 |
| 0 7.2 0 55.7 | 0 4.0 0 50.0 | 0 7.5 1 4.1 | 0 11.9 1 5.5 | 0 8.7 0 57.9 | 0 8.0 0 41.7 |
| 24.7 12.0 | 20.0 6.9 | 25.4 21.1 | 30.2 24.0 | 26.0 15.1 | 25.0 0.1 |
| 31.9 127.7 | 24.0 116.9 | 29.9 25.2 | 42.1 29.5 | 34.7 133.0 | 33.0 101.8 |
| 5 15.95 ×6 3.85 | 5 12.00 5 58.45 | 5 14.95 6× 12.60 | 5 21.05 6× 14.75 | 5 17.35 6× 6.50 | 5 16.50 5 50.90 |
| 1.33102 1.22037n | 1.38256 1.12287n | 1.35449 1.33746n | 1.24969 1.38846n | 1.29623 1.28533n | 1.28870 0.85309n |
| 1.42994 1.31929n | 1.48148 1.22179n | 1.45341 1.43638n | 1.34861 1.48738n | 1.39515 1.38425n | 1.38762 0.95201n |
| +26.91 −20.86 | +30.30 −16.66 | +28.41 −27.31 | +22.32 −30.72 | +24.84 −24.23 | +24.41 −8.95 |
| 5 42.86 5 42.99 | 5 42.30 5 41.79 | 5 43.36 5 45.29 | 5 43.37 5 44.03 | 5 42.19 5 42.27 | 5 40.91 5 41.95 |
| 17 5.49 5.42 17 5.36 | 17 6.05 6.30 6.56 | 17 4.99 4.02 3.06 | 17 4.98 4.65 4.32 | 17 6.16 6.12 6.08 | 17 7.44 6.92 17 6.91 |
| +32 3 9 3 57 | | | | | |
| 1.55680 1.55700 | | | | | |
| −321 | +249 | −1287 | −942 | −624 | −487 |
| 1.55359 1.55379 | 1.55929 1.55949 | 1.54393 1.54413 | 1.54738 1.54758 | 1.55056 1.55076 | 1.55193 1.55213 |
| −35.77 −35.79 | −36.25 −36.26 | −34.99 −35.01 | −35.27 −35.28 | −35.53 −35.54 | −35.64 −35.66 |
| −.04 −.03 −.02 | −.05 −.03 −.01 | −.04 −.05 −.04 | −.03 −.05 −.05 | −.04 −.05 −.03 | −.03 −.02 −.01 |
| .00 .00 | .00 .00 | −.00 −.02 | −.01 −.02 | −.01 −.02 | .00 .00 |
| − 35.81 −35.81 | −36.30 −36.27 | −35.03 −35.07 | −35.31 −35.35 | −35.58 −35.59 | −35.67 −35.67 |
| 16 29.68 29.55 | 29.75 30.29 | 29.96 27.99 | 29.67 28.97 | 30.58 30.49 | 31.77 30.73 |
| 18 33.0 | 33.3 | 33.9 | 34.1 | 34.6 | 34.8 |
| +2 3.3 3.5 | 3.6 3.0 | 3.9 5.9 | 4.4 5.1 | 4.0 4.1 | 3.0 4.1 |
| +2 3.4 | 3.8 | 4.9 | 4.7 | 4.0 | 3.5 |
| +2 4.63 3.51 27.69 + | 4.39 3.26 27.21 + | 6.74 4.98 28.54 + | 6.25 5.07 28.14 + | 5.57 4.36 27.84 + | 5.28 4.06 28.53 |
| − 1.12 +3.00 27.56 − | 1.13 +2.70 27.75 − | 1.16 +2.10 26.57 − | 1.18 +1.90 27.44 − | 1.21 +1.40 27.75 − | 1.22 +1.20 27.49 |
| 5.50 − | 5.80 − | 6.40 − | 6.60 − | 7.10 − | 7.30 |
| +1 58.01 18 27.62 + | 57.46 27.48 + | 58.58 27.55 + | 58.44 27.79 + | 57.20 27.79 + | 56.76 28.0 |
| | | 36.45 | 36.22 | 36.29 | 36.57 |

1875

α 19.012
δ +18' 35.98
$\frac{d\alpha}{dt}$ +2.853
$\frac{d\delta}{dt}$ +8.505

1875

|  |  | m | s |  | ' | " |  |
|---|---|---|---|---|---|---|---|
| Aug. | 28 | 40 | 21.74 |  | 18 | 42.1 |  |
| Sept. | 2 |  | 21.69 | -.05 |  | 42.6 | +.5 |
|  | 7 |  | 21.64 | .05 |  | 43.1 | .5 |
|  | 12 |  | 21.58 | .06 |  | 43.5 | .4 |
|  | 17 |  | 21.51 | .07 |  | 43.8 | .3 |
|  | 22 |  | 21.44 | .07 |  | 44.1 | .3 |
|  | 27 |  | 21.37 | .07 |  | 44.3 | .2 |
| Oct | 2 |  | 21.29 | .08 |  | 44.4 | .1 |
|  | 7 |  | 21.20 | .09 |  | 44.5 | .1 |

l cos δ 9.99292
l C .12552
l C' 0.11844

1874 1875

× -.45 Sept 10 -.463 | Oct. 5 -.18 -.07 -.240 | -.64 + Aug 31 -.680 | -.62 × Sept 1 -.636 | -.60 + Sept 4 -.610 | -.60 + Sept 5 -.600

40 11.6 40 3.6 40 19.0 40 19.8 40 28.2 40 10.8 40 28.9 40 12.6 40 31.5 40 19.6 40 32.6 40 23.5 40
13.8 5.8 21.0 21.6 30.2 12.8 31.0 14.4 33.6 21.3 34.6 25.2
15.9 7.5 23.0 23.6 32.3 15.2 33.1 16.5 35.7 23.0 36.8 27.0
20.0 25.2 36.5 37.3 39.9 40.9
22.0 29.3 38.6 39.4 42.0 43.0
24.1 31.4 40.8 41.6 44.1 45.0
26.2 40 40.8 33.6 42.9 41 15.4 43.6 41 8.4 46.2 41 7.7 47.2 40 58.9
28.3 42.8 35.7 45.0 16.7 45.8 10.4 48.3 9.6 49.3 0.9
32.5 44.6 37.9 49.2 18.2 49.9 11.9 52.5 11.5 53.5 2.6
34.7 42.0 51.2 52.0 54.5 55.5
36.8 44.0 53.4 54.0 56.6 57.8

26.59 40 5.63 32.61 40 21.66 44.83 40 12.93 45.66 40 14.50 48.49 40 21.30 49.62 40 25.23
40 24.173 40 42.73 40 31.464 40 40.735 41 16.77 40 41.509 41 10.23 40 44.082 41 9.60 40 45.109 40 0.80 40
24.157 31.448 40.739 41.493 44.066 45.093
40 18.45 40 18.087 40 21.71 40 21.70 40 21.67 40 21.66 40
+5.71 -5.59 +13.378 -13.30 +19.03 -18.91 +19.79 -19.67 +22.40 -22.27 +23.43 -23.29
-.08 -.03 -.12 -.11 -.11 -.11
- 5.63 - 13.38 -.07 - 18.92 - 19.70 - 22.29 - 23.35 -
- .08 -2.29 - .04 -1.91 - .09 .12 -2.70 - .11 -2.69 - .11 -2.66 - .11 -2.65 -
- 2.29 +0.563 16.20 - 1.91 +0.943 16.14 - 2.70 19.01 - 2.69 19.02 - 2.66 19.03 - 2.65 19.04 -
- 8.00 40m - 15.33 - 21.74 40 - 22.50 - 25.06 - 26.11
40 24.16 40 31.45 40 40.74 40 41.49 40 44.07 40 45.09 40

40 16.16 16 28.43 40 16.12 40 19.00 34 57.33 40 18.99 59.19 40 19.01 58.08 40 18.98 58.44 40
19.013 +2 6.85 18.973 +2 5.93 -16 12.75 -16 13.20 -16 14.27 16 13.24
- 12 -13 - 1.5 - 1.4 - 1.5 - 1.4
- 7.40 - 6.30 - 6.50 - 6.80 - 6.90
+10 18 26.68 18 36.78 18 38.09 18 35.51 18 36.90

s
+18.54 -18.56 +9.80 + 27.82 - 36.02 + 27.01 - 28.72 + 22.78 - 25.52 + 19.88 - 15.69 +
5 45 45 45 45 45
-2.21 - 2.53 - 2.54 - 2.57 - 2.58
0 11.5 0 58.8 A. R. 1 29.9 2 53.0 1 28.8 2 41.8 1 36.9 2 40.1 1 39.0 2 27.0
32.4 18.2 48.0 11.5 46.9 59.9 55.0 58.3 56.9 44.8
43.9 137.0 77.9 124.5 75.7 101.7 91.7 98.4 95.9 71.8
0 5 21.95 6 + 8.50 46 38.95 48 2.25 46 37.85 47 50.85 46 45.85 47 49.20 46 47.95 47 35.90 46

1.26811 1.26858 n 0.99123 1.44436 1.55654 n 1.43152 1.45818 n 1.35755 1.40688 n 1.29842 1.19562 n 1.29
1.36703 1.36750 n 1.08875 1.56280 1.67498 n 1.54996 1.57662 n 1.47599 1.52532 n 1.41686 1.31406 n 1.4
+23.29 -23.31 12.27 +36.55 -47.31 +35.48 -37.73 +29.92 -33.53 +26.11 -20.61 +
5 45.24 5 45.19 47 15.50 47 14.94 47 13.33 47 13.12 47 16.77 47 15.67 47 14.06 47 15.29 47

17 3.11 3.16 35 32.85 33.41 35 35.02 35.23 35 32.58 32.68 35 34.29 33.06 35
3.13 33.13 35.12 32.63 33.67
3 15 4 1 2 51 4 14
1.55680 1.55700 1.55680 1.55710
-1689 +6.41 - 734 - 531 - 2272 - 1342
1.53991 1.54011 1.56321 1.54946 1.54976 1.55149 1.55179 1.53488 1.53438 1.54332 1.54368 1.
-34.67 -34.68 -36.58 -35.44 -35.46 -35.60 -35.63 -34.25 -34.23 -34.94 -34.97

-.03 -.03 -.03 -.07 -.35 -.12 -.07 -.32 -.08 -.05 -.31 -.06 -.04 .27 -.02
.00 .00 -.18 -.33 -.18 -.31 -.20 -.31 -.20 -.29
-34.70 -34.71 -35.69 -35.91 -35.85 -36.02 -34.50 -34.60 -35.18 -35.28
16 28.41 28.45 34 57.16 57.50 59.17 59.21 58.08 58.08 34 59.11 35 57.78 34
18 34.9 18 42.7 42.5 42.8 42.9
+2 6.5 6.5 -16 14.9 15.2 16.7 16.7 15.3 15.3 16.2 14.9
+7 6.5 16 15.1 16.7 15.3 15.3
+2 6.56 5.34 26.35 -16 13.01 18 36.51 - 13.16 14.50 38.17 - 14.38 15.74 35.54 - 13.42 14.78 37.43 -
- 1.22 +1.10 26.39 - 1.34 14.35 36.85 - 1.34 38.21 - 1.36 35.54 - 1.36 36.10 -
- +1.10 - 6.30 - 6.50 - 6.80 - 6.90 -
+1 57.94 26.37 -16 24.65 18 36.68 - 25.00 38.19 - 22.54 35.54 - 21.68 36.76 -
34

1874.0 α δ
16.17
20
12
18
09
16
16
12
16.150
.159
−.009
27.48

1875.0 α δ
19.00
18.99
19.01
18.98
18.97
18.99
19.00
19.00₂
18980
19.012
−.020
35.98

−.58 +
Sept-7
−.577

40 34.2 40 25.3
36.3 27.0
38.4 29.2
42.6
44.8
46.7
49.6 41 9.6
51.0 11.5
55.3 13.8
57.4
59.5
5152 40 27.17
40 46836 41 11.63
46820
40 21.64
+25.18 −25.10
−.10
− 25.12
− .10 −263
− 2.63 18.99
− 27.85
40 46.82
40 18.97 59.09
−16 13.77
−1.4
−7.10
18 36.82
+ 19.67 − 24.79
45
−.260
1 38.6 2 37.1
56.7 54.4
95.3 91.5
46 47.65 47 45.75
1.29380 1.39428n
1.41224 1.51272n
+25.84 −32.57
47 13.49 47 13.18
35 34.86 35.17
35.01
−635
1.55045 1.55075
−35.52 −35.54
−.04 −.39 −.06
−.27 −.42
−35.83 −36.02
34 59.03 59.15
43.1
15.9 16.0
15.9
− 14.07 1.538 36.55 −
− 1.37 36.67 −
− 7.10
− 22.48 36.61 −

−.56 +
Sept-8
−.572

40 34.9 40 26.3
37.0 28.0
39.1 30.0
43.3
45.4
47.5
49.6 41 5.5
51.7 7.7
53.9 9.9
58.0
0.0
5224 40 28.10
40 47491 41 7.70
47475
40 21.63
+25.84 −25.74
−.10
− 25.76
− .10 −262
− 2.62 19.01
− 28.48
40 47.47
40 18.99 34 57.98
−16 13.63
−1.4
−7.20
18 35.75
+ 19.39 − 20.21
45
−.261
1 40.1 2 33.1
56.7 51.1
96.8 84.2
46 48.40 47 42.10
1.28758 1.30557n
1.40602 1.42401n
+25.47 −26.55
47 13.87 47 15.55
35 34.48 32.80
33.64
−934
1.54746 1.54776
−35.27 −35.30
−.03 −.37 −.04
−.27 −.40
−35.57 −35.74
58.91 57.06
43.2
15.7 13.9
14.8
13.77 1.515 36.56 −
1.38 34.71 −
7.20
22.35 35.63 −

−.49 +
Sept-14
−.503

40 38.7 40 28.6
40.8 30.3
42.8 31.9
47.0
49.3
51.3
53.3 41 8.6
55.4 10.5
59.6 12.2
1.7
3.9
5638 40 30.27
40 51255 41 10.43
51239
40 21.55
+29.69 −29.59
−.09
−29.61
− .09 −254
− 2.54 19.02
− 32.24
40 51.24
40 19.00 35 0.92
−16 14.18
−1.4
−7.70
18 37.64
+ 20.98 − 19.18
45
−.266
1 36.0 2 27.8
51.9 44.2
87.9 72.0
46 48.95 47 36.00
1.32181 1.28285n
1.44025 1.40129n
+27.56 −25.19
47 11.51 47 10.81
35 36.84 37.54
37.19
−174
1.55506 1.55536
−35.90 −35.92
−.04 −.35 −.03
−.25 −.39
−36.19 −36.34
35 0.65 1.20
43.7
16.9 17.5
17.2
14.30 1.570 37.22
1.40 37.77
7.70
23.43 37.50

1874
Sept-28

40 47.9 40 41.9
50.4 44.9
52.5 46.3
56.6
58.8
41 0.9
3.0 41 27.2
5.0 29.3
9.2 31.0
11.4
13.4
91 40 44.07
41 0.827 41 29.17
0.811 0.81
40 ~~21.35~~ 18.19
+~~39.46~~ 42.62
− 2.34
41 0.81
+ 14.76 − 28.34
45
1 45.0 2 43.0
1.0 59.4
10.60 10.24
46 53.00 47 51.20
1.22427 1.45240n
1.34271 1.57084n
+22.02 −37.43
47 13.02 47 13.97
35 33.33 34.38
3 5 4 3
1.55680 1.55700
−.02 −.07
−.28 −.42

−.42 1875 ×
Oct-4
−.418

40 52.2 40 41.3
54.4 43.4
56.4 45.2
41 0.7
2.8
4.9
6.9 41 12.6
8.9 14.7
13.2 16.6
15.4
17.4
5.32 40 43.30
41 4.836 41 14.63
4.820
40 21.25
+42.57 −43.51
3 −.08
− 43.51
− .07 −2.24
− 2.24 18.99
− 45.82
41 4.82
40 19.00 58.98
−16 13.39
−1.4
−8.40
−8.40
18 35.79
+ 21.54 − 9.79
45
−2.80
1 37.2 2 18.3
53.2 34.0
90.4 52.3
46 45.20 47 26.15
1.33325 0.99078n
1.45169 1.10932n
+28.29 −12.86
47 13.49 47 13.29
35 34.86 35 35.06
34.96
2 57 3 38
1.55680 1.55690
~~1.55202~~ −478
1.55202 1.55212
−35.65 −35.65
−.04 −.33 −1
−.25 −.36
−35.94 −36.02
58.92 59.04
44.4
14.5 14.6
14.5
− 13.42 14.89 35.63
− 1.47 35.75
− 8.40
− 23.29 35.69

7 1874

δ Sagittae.

h m s
19 41 49 sec α 46.256
+18° 14′ δ +13 29.85
+24° 9′ dα/dt +2.679
dδ/dt +8.648
l sin δ 9.49539
l cos δ 9.97763
l C .10600
l C′ 0.08363
l C″ 0.08223

| 1874 | | m s | | ′ ″ | |
|---|---|---|---|---|---|
| Aug. | 28 | 41 48.60 | | 13 37.4 | |
| Sept. | 2 | 48.55 | -.05 | 38.1 | +.7 |
| | 7 | 48.49 | .06 | 38.7 | .6 |
| | 12 | 48.42 | .07 | 39.2 | .5 |
| | 17 | 48.35 | .07 | 39.6 | .4 |
| | 22 | 48.27 | .08 | 39.9 | .3 |
| | 27 | 48.19 | .08 | 40.2 | .3 |
| Oct. | 2 | 48.10 | .09 | 40.4 | .2 |
| | 7 | 48.01 | .09 | 40.5 | .1 |

Corr α =
Corr δ =
lα-yδ = +.33 1.05
I = 2.17
K = -.016

1875
α 48.936
δ +13′ 38.50
dα/dt +2.679
dδ/dt +8.651
l cos δ 9.97763
l C .12552
l C′ 0.10315

| × 1874 -.35 Aug. 25 | | × -.46 Aug. 31 | | × -.43 Sept. 2 | | × -.42 Sept. 7 | | × -.36 Sept. 9 | | × 1874 -.18 -.07 Oct. 5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -.345 | | -.480 | | -.450 | | -.430 | | -.400 | | -.240 | |
| 19 41 31.7 | 41 22.3 | 41 34.1 | 41 27.7 | 41 35.0 | 41 30.5 | 41 38.3 | 41 26.4 | 41 40.2 | 41 32.4 | 41 48.4 | 41 43.0 |
| 34.0 | 24.7 | 36.1 | 30.3 | 37.2 | 32.5 | 40.4 | 28.3 | 42.4 | 34.9 | 50.4 | 44.8 |
| 36.0 | 27.0 | 38.4 | 32.1 | 39.4 | 34.2 | 42.6 | 38.3 | 44.6 | 36.6 | 52.7 | 46.2 |
| 40.4 | | 42.7 | | 43.7 | | 47.0 | | 48.8 | | 57.2 | |
| 42.7 | | 44.9 | | 45.9 | | 49.1 | | 51.0 | | 59.3 | |
| 44.7 | | 47.0 | | 48.1 | | 51.2 | | 53.1 | | 1.5 | |
| 46.9 | 41 58.8 | 49.2 | 42 3.0 | 50.2 | 42 6.0 | 53.4 | 42 12.1 | 55.3 | 42 8.1 | 3.7 | |
| 49.1 | 0.7 | 51.4 | 5.3 | 52.4 | 8.6 | 55.6 | 13.8 | 57.5 | 10.6 | 5.9 | |
| 53.5 | 2.9 | 55.7 | 7.5 | 56.7 | 10.4 | 59.8 | 15.6 | 1.8 | 12.6 | 10.1 | |
| 55.6 | | 57.9 | | 58.8 | | 2.1 | | 4.0 | | 12.3 | |
| 57.7 | | 0.1 | | 1.0 | | 4.3 | | 6.2 | | 14.5 | |
| 4923 | | 4575 | | 4684 | | 4438 | | 4049 | | 3162 | |
| | | 60 | 3003 | 60 | | 120 | | 180 | | 300 | |
| | 41 24.66 | 5175 | 41 ~~33.33~~ | 5284 | 41 22.40 | 5638 | 41 28.33 | 5849 | 41 34.63 | 162 | 41 44.66 |
| 41 44.755 | 42 0.80 | 41 47.045 | 42 5.26 | 41 48.036 | 42 8.33 | 41 51.255 | 42 13.83 | 41 53.173 | 42 10.48 | 42 1.473 | |
| 44739 | +3.92 | 47029 | +1.57 | 48020 | +0.57 | 51,239 | -2.70 | 53057 | -4.71 | 1,457 | -18.30 |
| 41 48.63 | -.12 | 41 48.57 | -.15 | 41 48.55 | -.14 | 41 48.49 | -.14 | 41 48.46 | -.12 | 41 48.054 | -.06 |
| -3.89 | | -1.54 | | -0.53 | | +2.75 | | +4.70 | | +13.42 | -.07 |
| | -2.34 | | -2.31 | | -2.29 | | -2.23 | | -2.20 | | -1.78 |
| + 3.92 | 41 4617 | + 1.54 | 4614 | + 0.56 | 4616 | - 2.72 | 4617 | - 4.73 | 4613 | - 13.38 | 4625 |
| - .12 | | - .16 | | - .15 | | - .14 | | - .13 | | - .08 | |
| - 2.37 | +0.309 | - 2.31 | +0.369 | - 2.29 | +0.389 | - 2.23 | +0.449 | - 2.20 | +0.479 | - 1.78 | +0.899 |
| + 1.43 | | - 0.90 | | - 1.88 | | - 5.09 | | - 7.06 | | - 15.24 | |
| 41 44.74 | 11 3268 | 41 47.03 | 3082 | 41 48.02 | 3108 | 41 51.24 | 3258 | 41 53.16 | 3302 | 42 1.46 | 11 3361 |
| | +2 4.83 | | +2 6.25 | | +2 6.25 | | +2 5.52 | | +2 5.49 | | +2 5.93 |
| 41 46.17 | -.9 | 41 46.13 | -.9 | 41 46.14 | -.9 | 41 46.15 | -1.0 | 41 46.10 | -.9 | 41 46.22 | -1.1 |
| 48.849 | -720 | 48.809 | -790 | 48.819 | -830 | 48.829 | -880 | 48.779 | -920 | 48.899 | -1060 |
| +18 | 13 2891 | | 13 2827 | | 13 2813 | | 13 2830 | | 13 2841 | | 13 2754 |
| s +20.09 | -16.05 | +1701 ~~+16.71~~ | -18.22 | +15.64 | -20.29 | +22.92 | -22.58 | +18.54 | -17.26 | +16.81 | |
| 10 | | 10 | | 10 | | 10 | | 10 | | 10 | |
| -2.15 | | -2.20 | | -2.23 | | -2.29 | | -2.30 | | -2.42 | |
| 0 16.2 | 0 1.8 | 0 22.9 | 1 6.2 | 0 24.4 | 1 8.1 | 0 14.0 | 1 8.4 | 0 18.2 | 0 1.2 | 0 20.9 | |
| 32.9 | 18.0 | 40.6 | 22.9 | 41.8 | 24.8 | 31.5 | 26.3 | 36.9 | 19.7 | 33.5 | |
| 49.1 | 19.8 | 63.5 | 29.1 | 66.2 | 32.9 | 45.5 | 34.7 | 55.1 | 20.9 | 54.4 | |
| α 10 24.55 | 11 α 9.90 | 10 α 31.75 | 11 + 14.55 | 10 α 33.10 | 11 + 16.45 | 10 α 22.75 | 11 + 17.35 | 10 α 27.55 | 10 α 10.45 | 10 α 27.20 | |
| 1.30298 | 1.20548n | 1.23070 | 1.26055n | 1.19424 | 1.30728 | 1.36021 | 1.35872n | 1.26811 | 1.23704n | 1.22557 | |
| 1.38661 | 1.28911n | 1.31433 | 1.34418n | 1.27787 | 1.39091 | 1.44384 | 1.43735n | 1.35174 | 1.32067n | 1.30780 | |
| +24.36 | -19.46 | +20.62 | -22.09 | +18.96 | -24.60 | +27.79 | -27.38 | +22.48 | -20.93 | +21.31 | |
| 10 48.91 | 10 50.44 | 10 52.37 | 10 52.46 | 10 52.06 | 10 51.85 | 10 50.54 | 10 49.97 | 10 50.03 | 10 49.52 | 10 48.51 | |
| +18° | | | | | | | | | | | |
| 11 59.44 | 57.91 | 11 55.98 | 55.89 | 11 56.29 | 56.50 | 11 57.81 | 58.38 | 11 58.32 | 58.83 | 11 59.84 | |
| 58.67 | | 55.93 | | 56.39 | | 58.09 | | 58.57 | | | |
| +24 8 17 | 8 3 | | | | | | | 8 20 | 8 3 | | |
| 1.41160 | 1.41150 | | | | | | | 1.41160 | 1.41150 | | |
| +252 | | -1271 | | -935 | | -620 | | -482 | | +641 | |
| 1.41412 | 1.41402 | 1.39889 | 1.39879 | 1.40225 | 1.40215 | 1.40540 | 1.40530 | 1.40678 | 1.40668 | 1.41801 | |
| -25.95 | -25.94 | -25.05 | -25.05 | -25.25 | -25.24 | -25.43 | -25.43 | -25.51 | -25.51 | -26.18 | |
| -.06 -.04 | -.03 | -.04 -.06 | -.05 | -.03 -.06 | -.06 | -.07 -.08 | -.06 | -.05 -.04 | -.04 | -.04 -.05 | |
| .00 | .00 | -.01 | -.02 | -.01 | -.03 | -.01 | -.03 | .00 | .00 | -.01 | |
| -26.01 | -25.97 | -25.10 | -25.12 | -25.29 | -25.33 | -25.51 | -25.52 | -25.56 | -25.53 | -26.23 | |
| 11 33.43 | 31.94 | 30.88 | 30.77 | 31.00 | 31.17 | 32.30 | 32.86 | 32.76 | 33.28 | 33.61 | |
| 13 37.0 | | 37.8 | | 38.1 | | 38.7 | | 39.0 | | 40.5 | |
| +2 3.6 | 5.1 | 6.9 | 7.0 | 7.1 | 6.9 | 6.4 | 5.8 | 6.3 | 5.7 | 6.9 | |
| +2 4.3 | | 6.9 | | 7.0 | | 6.1 | | 6.0 | | 6.9 | |
| +2 4.39 | 13 29.74 + | 6.14 | 5.25 28.23 + | 6.25 | 5.34 28.04 + | 5.57 | 4.64 28.14 + | 5.28 | 4.34 27.90 + | 5.93 | 4.94 |
| - .88 | 3.57 28.25 - | .89 | +0.75 28.12 - | .91 | +.35 28.21 - | .93 | -.15 28.70 - | .94 | -.55 28.42 - | .99 | -1.95 |
| - 7.20 | +1.45 | 7.90 | - | 8.30 | - | 8.80 | - | 9.20 | - | 10.60 | |
| +1 56.31 | 13 29.50 + | 57.35 | 28.17 + | 57.04 | 28.12 + | 55.84 | 28.42 + | 55.14 | 28.16 + | 54.34 | 27.95 |
| 13 3 | | | | | | | | | | | 36.60 |

1875.

| | | m s | | ' " | |
|---|---|---|---|---|---|
| Aug | 28 | 41 51.56 | | 13 46.0 | |
| Sept. | 2 | 51.51 | -.05 | 46.7 | +.7 |
| | 7 | 51.45 | .06 | 47.3 | .6 |
| | 12 | 51.38 | .07 | 47.8 | .5 |
| | 17 | 51.31 | .07 | 48.3 | .5 |
| | 22 | 51.23 | .08 | 48.7 | .4 |
| | 27 | 51.15 | .08 | 49.0 | .3 |
| Oct. | 2 | 51.06 | .09 | 49.2 | .2 |
| | 7 | 50.97 | .09 | 49.3 | .1 |

1875

| 1875<br>-.62<br>Sept-1<br>-.636 | + | -.60<br>Sept-4<br>-.610 | + | -.60<br>Sept-5<br>-.600 | + | -.58<br>Sept-7<br>-.577 | + | -.56<br>Sept-8<br>-.572 | × | -.49<br>Sept-14<br>-.503 | + |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 58.3<br>42 0.5<br>2.6<br>7.0<br>9.0<br>11.4<br>13.5<br>15.7<br>20.0<br>22.1<br>24.4<br>1845<br>60<br>124.5 | 41 45.9<br>48.3<br>50.6<br>42 27.3<br>29.8<br>31.5 | 42 0.8<br>3.0<br>5.2<br>9.6<br>11.7<br>13.9<br>16.0<br>18.2<br>22.5<br>24.7<br>26.8<br>1524 | 41 51.3<br>53.2<br>55.0<br>42 35.0<br>37.0<br>38.7 | 42 1.8<br>4.0<br>6.3<br>10.5<br>12.7<br>14.9<br>17.0<br>19.2<br>23.6<br>25.8<br>27.9<br>1637 | 41 52.9<br>55.2<br>56.8<br>42 33.9<br>35.5<br>37.1 | 42 3.6<br>5.8<br>8.1<br>12.4<br>14.6<br>16.8<br>18.8<br>20.9<br>25.3<br>27.5<br>29.8<br>1836 | 41 53.3<br>55.6<br>57.3<br>42 32.9<br>34.9<br>37.0 | 42 4.3<br>6.5<br>8.7<br>12.9<br>15.0<br>17.2<br>19.5<br>21.6<br>26.0<br>28.1<br>30.3<br>1901 | 41 57.4<br>59.3<br>1.2<br>42 ~~29~~ 33.3<br>35.3<br>37.3 | 42 8.1<br>10.2<br>12.3<br>16.8<br>19.0<br>21.0<br>23.2<br>25.4<br>29.8<br>32.0<br>34.0<br>2318 | 41 56.7<br>59.0<br>1.9<br>42 47.2<br>49.0<br>51.3 |
| 42 11.318<br>11.302<br>41 51.52<br>+19.78<br>-19.70<br>-.21<br>-2.58<br>-22.49<br>42 11.30<br>41 48.81 | 41 48.27<br>42 29.513<br>37<br>-.20<br>-19.68<br>-2.58<br>4884<br>30 003<br>-16 1320<br>-1.2<br>-8.10<br>13 37.53 | 42 13.855<br>13.839<br>41 51.498<br>+22.356<br>-22.29<br>-.20<br>-2.54<br>-26.83<br>42 13.84<br>41 ~~47.01~~ 48.81 | 41 58.17<br>42 36.90<br>-22.27<br>-.20<br>-2.54<br>4883<br>25.03<br>29 59.65<br>-16 1427<br>-1.1<br>-8.50<br>13 35.78 | 42 14.882<br>14.866<br>41 51.47<br>+23.40<br>-23.35<br>-.20<br>-2.53<br>-26.08<br>42 14.87<br>41 48.79 | 41 54.97<br>42 35.50<br>-23.29<br>-.20<br>-2.53<br>4885<br>30 050<br>-16 1324<br>-1.2<br>-8.60<br>13 37.46 | 42 16.691<br>16.675<br>41 51.45<br>+25.22<br>-25.12<br>-.19<br>-2.51<br>-27.82<br>42 16.67<br>41 48.85 | 41 55.40<br>42 34.93<br>-25.10<br>-.19<br>-2.51<br>4887<br>000<br>-16 1377<br>-1.1<br>-8.80<br>13 36.33 | 42 17.282<br>17.266<br>41 51.443<br>+25.834<br>-25.76<br>-.19<br>-2.49<br>-28.44<br>42 17.27<br>41 48.83 | 41 59.30<br>~~29~~ 42 35.30<br>-25.74<br>-.18<br>-2.49<br>4886<br>057<br>-16 1363<br>-1.2<br>-8.90<br>1.3 36.84 | 42 21.073<br>21.057<br>41 51.35<br>+29.71<br>-29.61<br>-.16<br>-2.41<br>-32.18<br>42 21.06<br>41 48.88 | 41 59.20<br>42 49.17<br>-29.59<br>-.16<br>-2.41<br>4890<br>193<br>-16 1418<br>-1.2<br>-9.50<br>13 37.05 |
| + 23.05<br>50<br>-2.54 | - 18.21 | + 20.68<br>50<br>-2.57 | - 23.05 | + 19.91<br>50<br>-2.58 | - 20.62 | + 21.29<br>50<br>-2.60 | - 17.24 | + 17.98<br>50<br>-2.61 | - 18.02 | + 21.87<br>50<br>-2.66 | - 28.10 |
| 1 44.8<br>1.7<br>106.5<br>51 53.25 | 2 37.1<br>54.1<br>91.2<br>52 45.60 | 1 48.1<br>7.5<br>115.6<br>51 57.80 | 2 43.9<br>2.1<br>106.0<br>52 53.00 | 1 48.7<br>6.0<br>114.7<br>51 57.35 | 2 40.0<br>54.1<br>97.1<br>52 48.55 | 1 45.5<br>3.9<br>109.4<br>51 54.70 | 2 37.0<br>53.4<br>90.4<br>52 45.20 | 1 51.1<br>8.1<br>119.2<br>51 59.60 | 2 36.3<br>53.1<br>89.4<br>52 44.70 | 1 44.1<br>6.5<br>104.6<br>51 52.30 | 2 47.6<br>4.6<br>112.2<br>52 56.10 |
| 1.36267<br>1.46582<br>+ 29.23<br>52 22.48 | 1.26031<br>1.36346<br>- 23.09<br>52 22.51 | n 1.31555<br>n 1.41870<br>+26.22<br>52 24.02 | 1.36267 n<br>1.46582 n<br>- 29.23<br>23.77 | 1.29907<br>1.40222<br>+25.25<br>52 22.60 | 1.31429<br>1.41744<br>- 26.15<br>52 22.40 | n 1.32818<br>1.43133<br>+27.00<br>52 21.70 | 1.23654 n<br>1.33969<br>- 21.86<br>52 23.34 | n 1.25479<br>1.35794<br>+22.80<br>52 22.40 | 1.25575 n<br>1.35890<br>- 22.85<br>52 21.85 | 1.33985<br>1.44300<br>+ 27.74<br>52 20.04 | 1.44871 n<br>1.55186 n<br>- 35.63<br>52 20.47 |
| 30 25.87<br>25.85<br>8 5<br>1.41150<br>-527<br>1.40623<br>-25.48 | 25.84<br>8 58<br>1.41190<br>1.40663<br>-25.51 | 24.33<br>24.45<br>-2267<br>1.38883<br>-24.48 | 24.58<br>1.38823<br>-24.45 | 30 25.75<br>25.85<br>-1328<br>1.39822<br>-25.02 | 25.95<br>1.39862<br>-25.04 | 30 26.65<br>25.83<br>-628<br>1.40522<br>-25.42 | 25.01<br>1.40562<br>-25.45 | 30 25.95<br>26.22<br>-929<br>1.40221<br>-25.25 | 26.50<br>1.40261<br>-25.17 | 30 28.31<br>28.09<br>8 4<br>1.41150<br>-170<br>1.40980<br>-25.69 | 27.88<br>9 8<br>1.41190<br>1.41020<br>-25.72 |
| -.08 -.32<br>-.21<br>-25.77<br>30 0.10<br>13 46.6<br>-16 13.5<br>13.4 | -.05<br>-.31<br>-25.87<br>59.97<br>13.4 | -.06 -.33<br>-.21<br>-24.75<br>59.58<br>47.0<br>12.6<br>12.6 | -.08<br>-.32<br>-24.85<br>59.73<br>12.7 | -.05 -.31<br>-.21<br>-25.28<br>0.47<br>47.1<br>13.4<br>13.4 | -.06<br>-.31<br>-25.41<br>0.54<br>13.4 | -.07 -.39<br>-.28<br>-25.77<br>0.88<br>47.3<br>13.6<br>12.6 | -.04<br>-.40<br>-25.89<br>59.12<br>11.8 | -.04 -.39<br>-.30<br>-25.59<br>0.36<br>47.4<br>13.0<br>13.2 | -.05<br>-.40<br>-25.72<br>0.78<br>13.4 | -.07 -.45<br>-.28<br>-26.04<br>2.27<br>48.0<br>14.3<br>13.9 | -.12<br>-.44<br>-26.28<br>1.60<br>13.6 |
| -16 13.16<br>- 10.4<br>8.10<br>-16 22.30 | 13 37.80 -<br>14.20 37.67 -<br>-<br>13 37.74 - | 14.38<br>1.05<br>8.50<br>23.93 | 15.43 35.65 -<br>35.80 -<br>-<br>35.72 - | 13.42<br>1.05<br>8.60<br>23.07 | 14.47 37.30 -<br>37.47 -<br>-<br>37.38 - | 14.01<br>1.06<br>8.80<br>23.87 | 15.07 34.01 -<br>35.25 -<br>-<br>36.13 - | 13.77<br>1.07<br>8.90<br>23.74 | 14.84 36.62 -<br>37.04 -<br>-<br>36.83 - | 14.30<br>1.09<br>9.50<br>24.89 | 15.39 37.38<br>36.71<br>37.04 |

| | 1874 | 1875 |
|---|---|---|
| $\alpha$ | | 43 25.71 |
| $\delta$ | | 49 46.84 |
| $\frac{d\alpha}{dt}$ | | + 2.664 |
| $\frac{d\delta}{dt}$ | | + 8.76 |

ζ Sagittae.

19^h 43^m 36^sec

+18° 50′

ζ = +23° 33′

sin ζ = +.40

corr α =

corr δ =

tang δ = +.34

I = 2.18^s

K = −.016^s

| | 1874 | 1875 |
|---|---|---|
| l sin δ | 9.50896 | |
| l cos δ | 9.97610 | 9.97610 |
| l C | .10600 | .12552 |
| l C′ | 0.08210 | 0.10162 |
| l C″ | 0.08070 | |

1874

| Aug. 25 | | Aug. 31 | | Sept. 1 | | Sept. 2 | | Sept. 7 | | Sept. 9 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| −.375 | | −.480 | | −.430 | | −.450 | | −.430 | | −.400 | |
| 19 43 8.6 | 43 6.3 | 43 10.9 | 43 4.4 | 43 11.2 | 43 2.7 | 43 11.9 | 42 59.7 | 43 15.0 | 43 5.4 | 43 17.0 | 43 5.3 |
| 10.8 | 2.8 | 13.0 | 6.9 | 13.6 | 4.8 | 14.2 | 2.9 | 17.3 | | 19.2 | 7.4 |
| 13.0 | 4.9 | 15.2 | 8.5 | 15.7 | 6.5 | 16.2 | 4.3 | 19.4 | | 21.3 | 9.2 |
| 17.3 | | 19.6 | | 20.0 | | 20.6 | | 23.7 | | 25.8 | |
| 19.6 | | 21.8 | | 22.2 | | 22.8 | | 26.0 | | 28.0 | |
| 21.6 | | 24.0 | | 24.4 | | 24.9 | | 28.1 | | 30.2 | |
| 23.7 | | 26.1 | 43 34.0 | 26.5 | 43 36.0 | 27.1 | | 30.3 | 43 48.6 | 32.3 | |
| 26.0 | | 28.4 | 36.3 | 28.8 | | 29.3 | | 32.5 | 51.0 | 34.5 | |
| 30.3 | | 32.7 | 38.3 | 33.2 | | 33.7 | | 36.8 | 52.5 | 38.9 | |
| ~~32.5~~ | | 34.9 | | 35.3 | | 35.9 | | 39.0 | | 41.0 | |
| 34.8 | | 37.0 | | 37.5 | | 38.1 | | 41.2 | | 43.1 | |
| 23.82 | 43 2.66 | 26.36 | 43 6.60 | 26.84 | 43 4.66 | 27.47 | 43 2.30 | 30.93 | 43 5.40 | 33.13 | 43 7.30 |
| 43 21.655 | | 43 23.964 | 43 36.20 | 43 24.400 | 43 36.00 | 43 ~~25.518~~ 24.973 | | 43 28.118 | 43 50.70 | 43 30.118 | |
| 21.639 | | 23.948 | | 24.384 | | ~~25.502~~ 24.96 | | 28.102 | | 30.102 | |
| + 3.92 | | + 1.54 | | + 1.13 | | + 0.56 | | − 2.72 | | − 4.73 | |
| − .13 | | − .16 | | − .15 | | − .15 | | − .15 | | − .14 | |
| − 2.37 | +0.294 | − 2.30 | +0.364 | − 2.29 | +0.374 | − 2.28 | +0.384 | − 2.25 | +0.414 | − 2.23 | +0.434 |
| + 1.42 | | − 0.89 | | − 1.31 | | − 1.87 | | − 5.12 | | − 7.10 | |
| 43 21.64 | | 43 23.95 | | 43 24.38 | | 43 ~~25.50~~ 24.96 | | 43 28.10 | | 43 30.10 | |
| 43 23.06 | | 43 23.06 | | 43 23.07 | | 43 ~~23.62~~ 23.09 | | 43 22.98 | | 43 23.00 | |
| ~~25.704~~ 25.724 | | 25.724 | | 25.734 | | 25.754 | | 25.644 | | 25.664 | |
| + 18.99 | | + 17.36^s | − 12.24 | + 19.74 | − 11.60 Ep | + 23.22 Ep. | | + 22.72 | − 22.58 | + 22.82 | |
| 30 | | 30 | | 30 | | 30 | | 30 | | 30 | |
| − 2.15 | | − 2.20 | | − 2.21 | | − 2.23 | | − 2.29 | | − 2.30 | |
| 4 11.3 | | 4 14.1 | 4 49.7 | 4 10.0 | − ~~50.7~~ | 4 7.2 | | 4 6.1 | 4 59.7 | 4 5.0 | |
| 25.4 | | 28.9 | 7.7 | 25.9 | 5.7 | 22.7 | | 21.9 | 15.9 | 21.4 | |
| 36.7 | | 43.0 | 17.4 | 35.9 | 16.4 | 29.9 | | 28.0 | 13.6 | 26.4 | |
| 34 18.35 | | 34 21.50 | 34 ~~58.85~~ 58.70 | 34 17.95 | 58.70 | 34 14.95 | | 34 14.00 | 35 7.80 | 34 13.20 | |
| 1.27852 | | 1.23955 | 1.08778 | 1.29535 | 1.06446n | 1.36586 | | 1.35641 | 1.35372n | 1.35832 | |
| 1.36062 | | 1.32165 | 1.16988 | 1.37745 | 1.14656n | 1.44796 | | 1.43851 | 1.43582n | 1.44042 | |
| + 22.94 | | + 20.97 | − 14.79 | + 23.85 | − 14.01 | + 28.05 | | + 27.45 | − 27.28 | + 27.57 | |
| 34 41.29 | | 34 42.47 | 34 43.91 | 34 41.80 | 40.19 | 34 43.00 | | 34 41.45 | 34 40.52 | 34 40.77 | |
| 48 7.06 | ~~+18°~~ | 48′ 5.88″<br>5.16 | 4.44 | 48 6.55 | | 48 5.35 | | 48 6.90<br>7.36 | 7.83 | 48 7.58 | |
| 423 32 11 | | 32 14 | 32 52 | | | | | 32 7 | 33 1 | | |
| 1.39930 | | 1.39930 | 1.39950 | | | | | 1.39920 | 1.39950 | | |
| + 256 | | − 1265 | | − 975 | | − 928 | | − 616 | | − 477 | |
| 1.40186 | | 1.38665 | 1.38685 | 1.38955 | 1.38975 | 1.39002 | | 2 1.39304 | 1.39334 | 1.39443 | |
| − 25.23 | | − 24.36 | − 24.37 | − 24.52 | − 24.53 | − 24.55 | | − 24.72 | − 24.74 | − 24.80 | |
| − .06 − .06 | | − .05 − .18 | − .12 | − .06 − .15 | − .02 | − .19 − .27 | | − .08 − .17 | − .08 | − .08 − .08 | |
| .00 | | − .09 | − .10 | − .09 | | − .08 | | − .08 | .00 +0<br>− .10 | .00 | |
| +18 − 25.29 | | − 24.50 | − 24.59 | − 24.67 | | − 24.82 | | − 24.88 | − 24.92 | − 24.88 | |
| 47 41.77 | | 47 41.38 | 34.85 | 47 41.88 | | 47 40.53 | | 47 42.02 | 42.61 | 47 42.70 | |
| + 2 4.39 | 3.53 | + 6.14 | 5.26 | + 5.13 | 4.25 | + 6.25 | 5.36 | + 5.67 | 4.65 | + 1 5.28 | 4.36 |
| − .86 | + 1.47 | − .88 | + .62 | − .88 | + .49 | − .89 | + .36 | − .92 | − .22 | − .92 | − .45 |
| − 7.29 | | − 8.14 | | − 8.27 | | − 8.40 | | − 8.98 | | − 9.21 | |
| + 1 56.24 | | + 57.12 | 38.50<br>36.97 | + 55.98 | | + 56.95 | | + 55.67 | 37.69<br>38.58 | + 55.15 | |
| | 49 38.01<br>49 46.47 | | 37.73 | | 37.86 | | 37.48 | | 38.13 | | 37.85<br>46.61 |

1874

| Oct. 5 | | | |
|---|---|---|---|
| | -.240 | | |
| 43 | 251 | 43 | 32.4 |
| | 273 | | |
| | 296 | | |
| | 339 | | |
| | 362 | | |
| | 384 | | |
| | 407 | | |
| | 428 | | |
| | 472 | | |
| | 494 | | |
| | 51.5 | | |
| | 42.21 | 43 | 32.40 |
| 43 | 38.373 | | |
| | 38.357 | | |
| - | 13.38 | | |
| - | .08 | | |
| - | 1.77 | +0.894 | |
| - | 15.23 | | |
| 43 | 38.36 | | |
| 43 | 23.13 | | |
| | | 25794 | |
| | 23.056 | | |
| | + 5.97 | | |
| 30 | | | |
| ' | -2.42 | | |
| 4 | 25.0 | | |
| | 36.8 | | |
| , | 61.8 | | |
| 34 | 30.90 | | |
| | 0.77597 | | |
| | 0.85667 | | |
| | +7.19 | | |
| 34 | 38.69 | | |
| 48 | 10.26 | | |
| | +641 | | |
| | 1.40561 | | |
| | -25.45 | | |
| - | 1 -.14 | | |
| | -.13 | | |
| | -25.59 | | |
| 47 | 44.67 | | |
| + | 5.93 | 4.96 | |
| - | .97 | -2.14 | |
| | -10.90 | | |
| + | 54.06 | | |
| | | 38.73 | |
| | | 47.49 | |

1875

| Sept 1 | | | |
|---|---|---|---|
| | -636 | | |
| 43 | 35.0 | 43 | 27.6 |
| | 37.4 | | 31.2 |
| | 39.7 | | 33.3 |
| | 44.0 | | |
| | 46.0 | | |
| | 48.2 | | |
| | 50.3 | 44 | 0.6 |
| | 52.5 | | 2.7 |
| | 56.6 | | 4.8 |
| | 59.1 | | |
| | 1.3 | | |
| | 53.01 | 43 | 30.70 |
| 43 | 48.191 | 44 | 2.70 |
| | 48.175 | | |
| - | 19.70 | | |
| - | .22 | | |
| - | 2.57 | | |
| - | 22.49 | | |
| 43 | 48.57 | | |
| 43 | 25.68 | | |
| + | 17.49 | - | 14.51 |
| 15 | | | |
| - | 254 | | |
| 0 | 41.5 | 1 | 23.7 |
| | 0.9 | | 41.9 |
| | 102.4 | | 65.6 |
| 15 | 51.20 | 16 | 32.80 |
| | 1.24279 | | 1.16167n |
| | 1.34441 | | 1.26329n |
| | +22.10 | | -18.33 |
| 16 | 13.30 | 16 | 14.47 |
| 6 | 35.05 | | 33.88 |
| | 34.46 | | |
| 32 | 3 | 32 | 45 |
| | 1.39920 | | 1.39940 |
| | -523 | | |
| | 1.39397 | | 1.39417 |
| | -24.77 | | -24.78 |
| | -.05 -.17 | | -.03 |
| | -.10 | | -.16 |
| | -24.92 | | -24.97 |
| 5 6 | 10.13 | | 8.91 |
| -16 | 13.16 | 14.18 | |
| - | 1.02 | | |
| | -8.29 | | |
| -16 | 22.47 | 49 | 47.66 |
| | | | 46.44 |
| | | 49 | ~~44.55~~ |

| Sept 4 | | | |
|---|---|---|---|
| | -.610 | | |
| 43 | 37.8 | 43 | 33.9 |
| | 39.9 | | 35.6 |
| | 42.0 | | 37.2 |
| | 46.4 | | |
| | 48.6 | | |
| | 50.8 | | |
| | 53.0 | 44 | 19.4 |
| | 55.2 | | 21.8 |
| | 59.5 | | 24.3 |
| | 1.7 | | |
| | 3.9 | | |
| | 55.88 | 43 | 35.57 |
| 43 | 50.800 | 44 | 21.83 |
| | 50.784 | | |
| - | 22.29 | | |
| - | .21 | | |
| - | 2.54 | | |
| - | 25.04 | | |
| 43 | 50.78 | | |
| 43 | 25.74 | | |
| + | 15.23 | - | 31.03 |
| 15 | | | |
| - | 257 | | |
| 0 | 45.8 | 1 | 42.8 |
| | 4.5 | | 2.2 |
| | 110.3 | | 105.0 |
| 15 | 55.15 | 16 | 52.50 |
| | 1.18270 | | 1.49178 |
| | 1.28432 | | 1.59340n |
| | +19.25 | | -39.21 |
| 16 | 14.40 | 16 | 13.29 |
| 6 | 33.95 | | 35.06 |
| | 34.50 | | |
| | -2262 | | |
| | 1.37658 | | 1.37678 |
| | -23.80 | | -23.81 |
| | -.04 | .26 | -.17 |
| | -.10 | | -.21 |
| | -23.94 | | -24.19 |
| 5 6 | 10.01 | | 10.87 |
| - | 14.38 | 15.41 | |
| - | 1.03 | | |
| | -8.66 | | |
| - | 24.07 | | 45.94 |
| | | | 46.8 |
| | | | 46.37 |

| Sept 5 | | | |
|---|---|---|---|
| | -600 | | |
| 43 | 38.8 | 43 | 28.8 |
| | 40.9 | | 31.0 |
| | 43.1 | | 32.9 |
| | 47.4 | | |
| | 49.7 | | |
| | 51.8 | | |
| | 54.0 | 44 | 2.4 |
| | 56.1 | | 6.2 |
| | 0.5 | | |
| | 2.7 | | |
| | 4.5 | | |
| | 56.95 | 43 | 30.90 |
| 43 | 51.773 | 44 | 4.30 |
| | 51.757 | | |
| - | 23.35 | | |
| - | .20 | | |
| - | 2.53 | | |
| - | 26.08 | | |
| 43 | 51.76 | | |
| 43 | 25.68 | | |
| + | 20.87 | - | 12.53 |
| 15 | | | |
| - | 258 | | |
| 0 | 37.3 | 1 | 20.8 |
| | 55.8 | | 39.2 |
| | 93.1 | | 60.0 |
| 15 | 46.55 | 16 | 30.00 |
| | 1.31952 | | 1.09795n |
| | 1.42114 | | 1.19957n |
| | +26.37 | | -15.83 |
| 16 | 12.92 | 16 | 14.17 |
| 6 | 35.43 | | 34.18 |
| | 34.80 | | |
| | -1315 | | |
| | 1.38605 | | 1.38625 |
| | -24.33 | | -24.34 |
| | -.07 -.17 | | -.02 |
| | -.09 | | -.16 |
| | -24.49 | | -24.52 |
| 5 6 | 10.94 | | 9.66 |
| - | 13.42 | 14.45 | |
| - | 1.03 | | |
| | -8.79 | | |
| - | 23.24 | | 47.70 |
| | | | 46.92 |
| | | | 47.06 |

| Sept 7 | | | |
|---|---|---|---|
| | -.547 | | |
| 43 | 40.6 | 43 | 30.3 |
| | 42.8 | | 32.4 |
| | 44.8 | | 34.2 |
| | 49.1 | | |
| | 51.4 | | |
| | 53.6 | | |
| | 55.8 | 44 | 14.8 |
| | 57.9 | | 17.1 |
| | 2.3 | | 19.3 |
| | 4.4 | | |
| | 6.7 | | |
| | 58.94 | 43 | 32.30 |
| 43 | 53.582 | 44 | 17.07 |
| | 53.566 | | |
| - | 25.12 | | |
| - | .20 | | |
| - | 2.50 | | |
| - | 27.82 | | |
| 43 | 53.57 | | |
| 43 | 25.75 | | |
| + | 21.28 | - | 23.49 |
| 15 | | | |
| - | 260 | | |
| 0 | 35.1 | 1 | 33.2 |
| | 54.6 | | 51.8 |
| | 89.7 | | 85.0 |
| 15 | 44.85 | 16 | 42.50 |
| | 1.32797 | | 1.37088n |
| | 1.42939 | | 1.47250n |
| | +26.89 | | -29.68 |
| 16 | 11.74 | 16 | 12.82 |
| 6 | 36.61 | | 35.53 |
| | 36.07 | | |
| | -620 | | |
| | 1.39300 | | 1.39320 |
| | -24.72 | | -24.73 |
| | -.08 -.26 | | -.09 |
| | -.10 | | -.25 |
| | -24.90 | | -25.17 |
| 6 | 11.71 | | 10.46 |
| - | 14.01 | 15.05 | |
| - | 1.04 | | |
| | -9.03 | | |
| - | 24.08 | | 47.63 |
| | | | 46.38 |
| | | | 47.00 |

| Sept 8 | | | |
|---|---|---|---|
| | -.572 | | |
| 43 | 41.2 | 43 | 37.0 |
| | 43.4 | | 39.4 |
| | 45.4 | | 40.9 |
| | 49.8 | | |
| | 52.0 | | |
| | 54.1 | | |
| | 56.3 | 44 | 16.2 |
| | 58.6 | | 18.4 |
| | 2.8 | | 20.0 |
| | 5.0 | | |
| | 7.2 | | |
| | 59.58 | 43 | 39.10 |
| 43 | 54.164 | 44 | 18.20 |
| | 54.148 | | |
| - | 25.76 | | |
| - | .19 | | |
| - | 2.49 | | |
| - | 28.44 | | |
| 43 | 54.15 | | |
| 43 | 25.71 | | |
| | 25.712 | | |
| + | 15.06 | - | 24.04 |
| 15 | | | |
| | -261 | | |
| 0 | 44.8 | 1 | 34.0 |
| | 2.1 | | 51.5 |
| | 106.9 | | 85.5 |
| 15 | 53.45 | 16 | 42.75 |
| | 1.19782n | | 1.38093n |
| | 1.27944 | | 1.48255 |
| | +19.03 | | -30.38 |
| 16 | 12.48 | 16 | 12.37 |
| 6 | 35.87 | | 35.98 |
| | 35.92 | | |
| 32 | 5 | 32 | 55 |
| | 1.39920 | | 1.39950 |
| | -925 | | |
| | 1.38995 | | 1.39025 |
| | - ~~20.89~~ -24.54 | | -24.56 |
| | -.04 -.25 | | -.09 |
| | -.13 | | -.25 |
| | -24.71 | | -24.90 |
| 6 | 11.16 | | 11.08 |
| - | 13.77 | 14.81 | |
| - | 1.04 | | |
| | -9.15 | | |
| - | 23.96 | | 47.20 |
| | | | 47.12 |
| | | | 47.16 |

1874 1874 74 1875

α Aquilae
α 38.131 s
δ +32′ 13″.34
dα/dt +2.930
dδ/dt +9.223

h m sec.
19 44 41
+8° 32′
γ +33° 51′
γ ζ = +56 l sin δ 9.17139
l cos δ 9.99517
l C .10600
l C′ 0.10117

| | | m s | | ′ ″ | |
|---|---|---|---|---|---|
| Aug. | 28 | 44 40.61 | | 32′ 19.6 | |
| Sept. | 2 | 40.56 | -.05 | 20.1 | +.5 |
| | 7 | 40.51 | .05 | 20.5 | .4 |
| | 12 | 40.45 | .06 | 20.9 | .4 |
| | 17 | 40.39 | .06 | 21.2 | .3 |
| | 22 | 40.32 | .07 | 21.4 | .2 |
| | 27 | 40.25 | .07 | 21.6 | .2 |
| Oct. | 2 | 40.17 | .08 | 21.7 | .1 |
| | 7 | 40.08 | .09 | 21.7 | .0 |

corr α =
corr δ =
lang δ = +.15
t = 2.08 s
k = -.016 s

α 41.060 s
δ +32′ 22.57″
dα/dt +2.929 s
dδ/dt +9.227
l cos δ 9.99517
l C .12552
l C′ 0.12069

| × 1874 -.35 Aug. 25 -.345 | | × -.46 Aug. 31 -.480 | | × -.43 Sept. 2 -.450 | | × -.42 Sept. 7 -.430 | | × 1874 -.36 Sept. 9 -.406 | | 1875 -.621 Sept-1 × -.636 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 44 24.3 | 44 16.2 | 44 26.6 | 44 25.6 | 44 27.5 | 44 17.9 | 44 30.8 | 44 36.4 | 44 32.8 | 44 26.3 | 44 51.3 | 44 47.9 |
| 26.3 | 18.3 | 28.6 | 27.4 | 29.6 | 20.2 | 32.8 | | 34.9 | 28.8 | 53.3 | 49.9 |
| 28.5 | 20.4 | 30.8 | 29.1 | 31.8 | 22.1 | 35.0 | | 37.0 | 30.7 | 55.0 | 52.4 |
| 32.6 | | 34.9 | | 35.9 | | 39.2 | | 41.0 | | 59.6 | |
| 34.6 | | 37.0 | | 38.0 | | 41.2 | | 43.3 | | 1.8 | |
| 36.7 | | 39.1 | | 40.2 | | 43.3 | | 45.3 | | 3.5 | |
| 38.9 | 44 46.4 | 41.2 | 44 57.3 | 42.2 | 44 42.9 | 45.5 | 45 19.4 | 47.4 | 45 2.3 | 5.7 | 45 35.3 |
| 41.0 | 48.7 | 43.3 | 59.5 | 44.3 | 44.7 | 47.4 | | 49.5 | 4.9 | 7.7 | 37.3 |
| 45.3 | 50.7 | 47.4 | 6.8 | 48.4 | 46.5 | 51.7 | | 53.6 | 6.8 | 11.8 | 39.6 |
| 47.3 | | 49.5 | | 50.5 | | 53.9 | | 55.8 | | 13.9 | |
| 49.4 | | 51.6 | | 52.6 | | 56.0 | | 57.9 | | 16.0 | |
| 4049 | 44 18.30 | 4300 | 44 27.38 7 | 4410 | 44 20.06 | 4768 | 44 36.40 | 4985 | 44 28.60 | 2793 | |
| | 44 48.60 | | 44 59.20 | | 44 44.70 | | 45 19.40 | | 45 4.56 | 210 | |
| | | | | | | | | | | 393 | 44 50.07 |
| 44 36.809 | | 44 39.091 | | 44 40.091 | | 44 43.345 | | 44 45.316 | | 45 3.573 | 45 37.40 |
| 36.793 | +3.92 | 39.075 | +1.57 | 40.075 | +0.57 | 43.329 | -2.70 | 45.302 | -4.71 | 3.557 | -19.68 |
| 44 40.64 | -.05 | 44 40.58 | -.07 | 44 40.56 | -.06 | 44 40.51 | -.06 | 44 40.498 | -.05 | 44 43.81 | -.09 |
| -3.85 | | -1.51 | | -0.49 | | +2.82 | | +4.842 | | +19.75 | |
| | -251 | | -245 | | -243 | | -238 | | -235 | | -2.75 |
| + 3.92 | 44 38.15 | + 1.57 | 38.~~1~~13 | + 0.56 | 38.15 | - 2.72 | 38.19 | - 4.73 | 38.19 | - 19.70 | 41.04 |
| - .06 | | - .07 | | - .07 | | - .06 | | - .06 | | - .09 | |
| 2.51 | +0.420 | - 2.45 | +0.480 | - 2.43 | +0.500 | - 2.38 | +0.550 | - 2.35 | +0.580 | - 2.75 | |
| + 1.35 | | - 0.95 | | - 1.94 | | - 5.16 | | - 7.14 | | - 22.54 | |
| 44 36.79 | 30 17.71 | 44 39.07 | 15.72 | 44 40.08 | 15.11 | 44 43.33 | 16.31 | 44 45.30 | 30 17.72 | 45 3.56 | 48 45.60 |
| | +2 4.33 | | +2 6.25 | | +2 6.25 | | +2 5.52 | | +2 5.49 | | -16 13.20 |
| 44 38.14 | -1.2 | 44 38.12 | -1.3 | 44 38.14 | -1.3 | 44 38.17 | -1.3 | 44 38.16 | -1.3 | 44 41.02 | -1.5 |
| 41.070 | -600 | 40.050 | -660 | 41.070 | -680 | 41.100 | -720 | 41.090 | -740 | ~~41.030~~ | -670 |
| +8 | 32 14.84 | | 32 14.07 | | 32 13.26 | | 32 13.33 | | 32 14.51 | | 32 24.20 |
| s +17.81 | -12.49 | +11.76 2 | -20.11 | +20.03 | -4.61 | +6.94 | -36.06 | +16.72 | -19.24 | + 13.50 | ~~45~~ 33.83 |
| 50 | | 50 | | 50 | | 50 | | 50 | | 30 | |
| - 2.15 | | - 2.20 | | - 2.23 | | - 2.29 | | - 2.30 | | - 2.54 | |
| 1 20.9 | 1 0.0 | 1 32.0 | 2 12.4 | 1 21.0 | 1 53.0 | 1 37.5 | 2 29.8 | 1 22.9 | 2 7.7 | 2 58.1 | 3 58.9 |
| 37.1 | 15.9 | 49.1 | 28.1 | 39.9 | 8.9 | 54.7 | 47.2 | 40.5 | 25.1 | 16.4 | 14.1 |
| 58.0 | 15.9 | 81.1 | 40.5 | 60.9 | 121.9 | 92.2 | 77.0 | 63.4 | 32.8 | 134.5 | 136.0 |
| 51′ 29.00 | 51 (52) 7.95 | 51′ 40.55 | 52 20.25 | 51′ 30.45 | 52 0.95 | 51′ 46.10 | 52 38.50 | 51′ 31.70 | 52 16.40 | 33 7.25 | 34 8.00 |
| 1.25066 | 1.09656n | 1.06893 | 1.30341 | 1.30168 | 0.66371n | 0.84136 | 1.55703n | 1.22324 | 1.28421n | 1.13033 | 1.52930n |
| 1.35183 | 1.19773n | 1.17810 | 1.40458n | 1.40285 | 0.76487n | 0.94253 | 1.65820n | 1.32441 | 1.38538n | 1.25102 | 1.64999n |
| +22.48 | -15.77 | +14.79 | -25.39 | +25.29 | -5.82 | +8.76 | -45.52 | +21.11 | -24.29 | +17.83 | -44.66 |
| 51 51.48 | 51 52.18 | 51 55.34 | 51 54.86 | 51 55.74 | 51 55.13 | 51 54.86 | 51 52.98 | 51 52.81 | 51 52.11 | 33 25.08 | 33 23.34 |
| +8° ″ | | | | | | | | | | | |
| 30 56.87 | 56.17 | 30 53.01 | 53.49 | 30 52.61 | 53.22 | 30 53.49 | 55.37 | 30 55.54 | 56.24 | 49 23.27 | 25.01 |
| 56.52 | | 53.25 | | 52.91 | | 54.43 | | 55.89 | | 24.14 | |
| +33 49 22 | 50 1 | | | | | | | 49 25 | 50 9 | 49 19 | 50 20 |
| 1.58620 | 1.58630 | | | | | | | 1.58620 | 1.58630 | 1.58620 | 1.58640 |
| +258 | | -1260 | | -924 | | -614 | | -474 | | -521 | |
| 1.58878 | 1.58888 | 1.57360 | 1.57370 | 1.57696 | 1.57706 | 1.58006 | 1.58016 | 1.58146 | 1.58156 | 1.58099 | 1.58119 |
| -38.79 | -38.80 | -37.46 | -37.47 | -37.75 | -37.76 | -38.02 | -38.03 | -38.15 | -38.16 | -38.10 | -38.12 |
| -.02 -.01 | -.01 | -.01 -.06 | -.03 | -.03 -.05 | 0 | - 0 -.09 | -.10 | -.01 -.01 | -.02 | -.01 -.43 | -.06 |
| .00 | .00 | -.03 | -.05 | -.03 | -.04 | -.04 | -.05 | .00 | .00 | -.34 | -.45 |
| -38.81 | -38.81 | -37.50 | -37.55 | -37.81 | -37.80 | -38.06 | -38.18 | -38.16 | -38.18 | -38.45 | -38.63 |
| 30 18.06 | 17.36 | 15.51 | 15.94 | 14.80 | 15.42 | 15.43 | 17.19 | 17.38 | 18.06 | 48 44.82 | 46.38 |
| 32 19.3 | | 19.9 | | 20.1 | | 20.5 | | 20.7 | | 32 29.3 | |
| +2 1.2 | 1.9 | 4.4 | 4.0 | 5.5 | 5.7 | 5.1 | 3.3 | 3.3 | 2.6 | -16 15.5 | 17.1 |
| +2 1.6 | | 4.2 | | 5.5 | | 4.2 | | 3.0 | | -16 16.3 | |
| +2 4.39 | 32 15.25 + | 6.14 | 4.92 13.83 + | 6.25 | 5.01 13.01 + | 5.57 | 4.29 12.52 + | 5.28 | 3.99 13.97 -16 | 13.16 | 32 23.54 |
| - 1.20 | 3.19 14.55 - | 1.22 | +2.63 14.26 - | 1.24 | +2.43 13.63 - | 1.28 | +3.03 14.28 - | 1.29 | +1.83 14.65 - | 1.42 | 14.58 25.10 |
| - 6.00 | +3.23 | 6.60 | | 6.80 | | 7.20 | | 7.40 | | 6.70 | |
| +1 57.19 | 32 14.90 + | 58.32 | 14.04 + | 58.21 | 13.32 + | 57.09 | 13.40 + | 56.59 | 14.31 -16 | 21.28 | 32 24.32 |

17
52
9

1875

| | | m | s | | ′ | ″ | |
|---|---|---|---|---|---|---|---|
| Aug. | 28 | 44 | 43.85 | | 32 | 28.9 | |
| Sept. | 2 | | 43.80 | -.05 | | 29.4 | +4 |
| | 7 | | 43.75 | .05 | | 29.8 | .4 |
| | 12 | | 43.69 | .06 | | 30.2 | .4 |
| | 17 | | 43.63 | .06 | | 30.5 | .3 |
| | 22 | | 43.56 | .07 | | 30.7 | .2 |
| | 27 | | 43.49 | .07 | | 30.9 | .2 |
| Oct. | 2 | | 43.41 | .08 | | 31.0 | .1 |
| | 7 | | 43.32 | .09 | | 31.1 | .1 |

| 1874.0 α | δ | 1875.0 α | δ |
|---|---|---|---|
| 38.14 | | 41.02 | |
| 12 | | 14 | |
| 14 | | 01 | |
| 17 | | 00 | |
| 14 | | 04 | |
| .16 | | 09 | |
| 38.150 | | 41.050 | |
| .131 | 13.34 | .060 | 22.57 |
| 7.019 | | -.010 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -60 | + | -60 | + | -58 | + | -56 | + | -49 | + | | 1874 |
| Sept-4 | | Sept-5 | | Sept-7 | | Sept-8 | | Sept-14 | | Sept-28 | |
| -610 | | -600 | | -577 | | -572 | | -505 | | | |
| 44 53.6 | 44 55.1 | 44 54.6 | 44 42.2 | 44 56.5 | 44 50.7 | 44 57.0 | 44 50.0 | 45 0.9 | 44 53.3 | 45 10.6 | 45 5.7 |
| 55.8 | 57.0 | 56.8 | 44.4 | 58.6 | 52.9 | 59.2 | 51.9 | 3.0 | 55.5 | 12.9 | 7.8 |
| 57.8 | 59.0 | 58.8 | 46.2 | 45 0.6 | 55.6 | 45 1.3 | 53.7 | 5.0 | 57.2 | 14.8 | 9.8 |
| 45 2.1 | | 45 3.0 | | 4.8 | | 5.4 | | 9.2 | | 17.0 | |
| 4.1 | | 5.0 | | 6.8 | | 7.4 | | 11.4 | | 20.0 | |
| 6.2 | | 7.2 | | 8.9 | | 9.5 | | 13.4 | | 23.0 | |
| 8.2 | 45 25.1 | 9.3 | 45 23.5 | 11.0 | 45 28.2 | 11.7 | | 15.4 | 45 35.3 | 25.0 | 45 44.6 |
| 10.3 | 26.6 | 11.3 | 26.0 | 13.0 | 30.7 | 13.8 | | 17.6 | 37.3 | 29.0 | 46.6 |
| 14.5 | 28.7 | 15.5 | 27.9 | 17.1 | 33.8 | 17.9 | | 21.8 | 38.3 | 31.8 | 51.5 |
| 16.5 | | 17.6 | | 19.4 | | 20.0 | | 23.7 | | 33.5 | |
| 18.7 | | 19.8 | | 21.4 | | 22.1 | | 25.8 | | 35.5 | |
| 2477 | | 2589 | | 2181 | | 2253 | | 1482 | | 2534 | |
| 180 | | 180 | | 120 | | 120 | | | | | |
| 677 | 44 57.03 | 789 | 44 44.27 | 981 | 44 53.07 | 1053 | 44 51.87 | | 44 55.33 | | 45 7.77 |
| 45 6.155 | 45 2680 | 45 7.173 | 45 2580 | 45 8.918 | 45 3090 | 45 9.573 | | 45 ~~13473~~ | 45 3697 | 45 23.036 | 45 4857 |
| 6.139 | -2224 | 7.157 | -2329 | 8.902 | -2510 | 9.557 | -2574 | 13382<br>13366 | -2960 | 23.020 | 23.02 |
| 44 43.78 | -.09 | 44 43.77 | -.09 | 44 43.75 | -.09 | 44 43.74 | -.08 | 44 43.676 | -.07 | 44 ~~43.47~~ | 40.23 |
| +22.36 | | +23.39 | | +25.15 | | +25.82 | | +29.781 | | ~~+39.55~~ | 42.79 |
| | -272 | | -271 | | -269 | | -268 | | -260 | | |
| -22.29 | 4106 | -23.35 | 4107 | -25.12 | 4103 | -25.76 | 4106 | -29.61 | 4110 | -43.09 | |
| -.09 | | -.09 | | -.09 | | -.08 | | -.07 | | -.07 | |
| -2.92 | | -2.71 | | -2.69 | | -2.68 | | -2.60 | | -2.35<br>41 | |
| -25.30 | | -26.15 | | -27.90 | | -28.52 | | -32.28 | | -45.57 | |
| 45 6.14 | 4561 | 45 7.16 | 4510 | 45 8.90 | 4533 | 45 9.56 | 4611 | 45 13.37 | 4635 | 45 23.02 | |
| | -16 1427 | | -16 1324 | | -16 1377 | | -16 1363 | | -16 1418 | | |
| 44 41.~~14~~<br>.04 | -1.37 | 44 41.01 | -1.5 | 44 41.00 | -1.5 | 44 41.04 | -1.5 | 44 41.09 | -1.5 | 37.05 | |
| | -700 | | -710 | | -720 | | -730 | | -780 | | |
| | 32 2284 | | 32 2326 | | 32 2286 | | 32 2368 | | 32 2287 | | |
| +9.12 | -20.65 | +22.90 | -18.63 | +15.85 | -21.98 | +17.70 | | +18.05 | -23.59 | +15.27 | -25.53 |
| 30 | | 30 | | 30 | | 30 | | 30 | | 30 | |
| +2.57 | | -2.58 | | -2.60 | | -2.61 | | -2.66 | | | |
| 3 42 | 3 44.5 | 2 46.2 | 3 41.5 | 2 54.8 | 3 43.5 | 2 51.8 | | 2 50.7 | 3 45.5 | 2 55.8 | 3 48.0 |
| 22.8 | 1.8 | 4.4 | 58.3 | 13.9 | 1.8 | 9.5 | | 8.5 | 1.9 | 11.9 | 4.5 |
| 27.0 | 1063 | 1106 | 998 | 1287 | 1053 | 1213 | | 1192 | 1074 | 1277 | 1125 |
| 33 13.50 | 33 53.15 | 32 55.30 | 33 49.90 | 33 4.35 | 33 52.65 | 33 0.65 | | 32 59.60 | 33 53.70 | 33 3.85 | 33 56.25 |
| 0.95999 | 1.31492 n | 1.35984 | 1.27021 n | 1.20003 | 1.34203 n | 1.24794 | | 1.25648 | 1.37273 n | 1.18384 | 1.40705 |
| 1.08068 | 1.43561 n | 1.48053 | 1.39090 n | 1.32072 | 1.46272 n | 1.36863 | | 1.37717 | 1.49342 n | 1.30453 | 1.52774 n |
| +12.04 | -27.27 | +30.24 | -24.60 | +20.93 | -29.02 | +23.37 | | +23.83 | -31.08 | +20.16 | -33.71 |
| 33 25.54 | 33 25.88 | 33 25.54 | 33 25.30 | 33 25.28 | 33 23.63 | 33 24.02 | | 33 23.43 | 33 22.62 | 33 24.01 | 33 22.54 |
| 49 22.81 | 22.47 | 49 22.81 | 23.05 | 49 23.07 | 24.72 | 49 24.33 | | 49 24.92 | 25.73 | 49 24.34 | 25.81 |
| 22.64 | | 22.93 | | 23.89 | | | | 25.32 | | | |
| | | | | | | | | | | 49 16 | 50 8 |
| | | | | | | | | | | 1.58620 | 1.58630 |
| -2261 | | -1310 | | -617 | | -923 | | -165 | | | |
| 1.56359 | 1.56379 | 1.57310 | 1.57330 | 1.58003 | 1.58023 | 1.57697 | 1.57717 | 1.58455 | 1.58475 | | |
| -36.61 | -36.62 | -37.42 | -37.44 | -38.02 | -38.04 | -37.75 | -37.77 | -38.42 | -38.44 | | |
| -1 -.41 | -.03 | -.03 -.39 | -.02 | -.01 -.53 | -.03 | -.02 -.47 | | -.02 -.54 | -.04 | -.01 | -.04 |
| -.35 | -.43 | -.32 | -.42 | -.45 | -.58 | -.45 | | -.45 | -.58 | | |
| -36.97 | -37.08 | -37.77 | -37.88 | -38.48 | -38.65 | -38.22 | | -38.89 | -39.06 | | |
| 45.84 | 45.39 | 45.04 | 45.17 | 44.59 | 46.07 | 46.11 | | 46.03 | 46.67 | | |
| 29.6 | | 29.7 | | 29.8 | | 29.9 | | 30.4 | | | |
| 16.2 | 15.8 | 15.3 | 15.5 | 14.8 | 16.3 | 16.2 | | 15.6 | 16.3 | | |
| 16.0 | | 15.4 | | 15.3 | | 16.2 | | 15.9 | | | |
| - 14.38 | 15.81 23.03 - | 13.42 | 14.86 23.08 - | 14.01 | 15.46 21.93 - | 13.77 | 15.23 | - 14.30 | 15.78 22.45 | | |
| - 1.43 | 22.58 - | 1.44 | 23.21 - | 1.45 | 23.41 - | 1.46 | | - 1.48 | 23.09 | | |
| - 7.00 | - | 7.10 | - | 7.20 | - | 7.30 | | - 7.80 | | | |
| - 22.81 | 22.80 - | 21.96 | 23.14 - | 22.66 | 22.67 - | 22.53 | 23.58 | - 23.58 | 22.77 | | |

77 1874 1874

η Aquilae
h m sec.
19 46 6
+0° 41′
+41° 42′
z = +66

α 3.227
δ +41 0.89
dα/dt +3.038
dδ/dt +8.918
l sin δ 8.07650
l cos δ 9.99997
l C .10600
l C′ 0.10597
l C″ 0.10457

| | | m | s | | ′ | ″ | |
|---|---|---|---|---|---|---|---|
| Aug. | 28 | 46 | 5.80 | | 40 | 65.5 | |
| Sept. | 2 | | 5.76 | −.04 | | 65.8 | +.3 |
| | 7 | | 5.71 | .05 | | 66.0 | .2 |
| | 12 | | 5.65 | .06 | | 66.2 | .2 |
| | 17 | | 5.59 | .06 | | 66.4 | .2 |
| | 22 | | 5.53 | .06 | | 66.5 | .1 |
| | 27 | | 5.46 | .07 | | 66.6 | .1 |
| Oct. | 2 | | 5.38 | .08 | | 66.6 | .0 |
| | 7 | | 5.30 | .08 | | 66.6 | .0 |

corr α =
corr δ =
Long δ = +.01 1.00
I = 2.06 s
K = −.015 s

| × 1874 −46 Aug. 31 −.480 | | × −41 Sept. 1 −.430 | | × −43 Sept. 2 −.450 | | × −36 Sept. 9 −.400 | | × 1874 −.18 −.07 Oct. 5 −.240 | | 1875 −.60 × Sept. 4 −.610 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 51.8 | 45 47.0 | 45 52.4 | 45 53.6 | 45 50 | 45 43.8 | 45 58.0 | 45 49.4 | 46 — | | 46 19.1 | 46 9.6 |
| 53.8 | 49.0 | 54.3 | 55.7 | 55.0 | 46.8 | 0.2 | 51.4 | — | | 21.1 | 11.7 |
| 56.0 | 51.5 | 56.5 | 58.1 | 57.0 | 48.5 | 2.2 | 53.4 | — | | 23.3 | 13.8 |
| 0.1 | | 0.6 | | 1.1 | | 6.3 | | .62 14.5 | | 27.3 | |
| 2.2 | | 2.7 | | 3.1 | | 8.4 | | .66 16.6 | | 29.4 | |
| 4.2 | | 4.7 | | 5.3 | | 10.6 | | .70 18.7 | | 31.4 | |
| 6.3 | 46 21.7 | 6.7 | 46 32.4 | 7.3 | 46 18.1 | 12.5 | 46 23.8 | .84 20.9 | 46 29.4 | 33.5 | 46 46.1 |
| 8.8 | 24.1 | 8.8 | 34.2 | 9.3 | 19.7 | 14.5 | 25.9 | .88 23.0 | 30.7 | 35.7 | 47.7 |
| 12.4 | 25.6 | 13.0 | 36.0 | 13.5 | 21.6 | 16.7 | 28.0 | .86 27.1 | 32.6 | 39.8 | 49.9 |
| 14.5 | | 15.0 | | 15.6 | | 20.8 | | .70 29.0 | | 41.7 | |
| 16.5 | | 17.0 | | 17.8 | | 23.0 | | .74 31.1 | | 43.8 | |
| 2261 | | 2317 | | 2380 | | 1752 | | | | 3460 | |
| 180 | | 180 | | 180 | | 60 | | | | | |
| 461 | 45 48.53 | 517 | 45 55.80 | 580 | 45 46.36 | 115.2 | 45 51.40 | | | | 46 11.70 |
| 46 4.191 | 46 25.80 | 46 4.700 | 46 34.20 | 46 5.273 | 46 19.80 | 46 10.473 | 46 25.90 | 46 11.750 | 46 30.90 | 46 31.455 | 46 47.90 |
| 4.176 | +1.57 | 4.685 | +1.11 | 5.258 | +0.56 | 10.458 | −4.72 | 46 18.73 | −13.30 | 31.440 | −22.24 |
| 46 5.787 | +.00 | 46 5.77 | −.00 | 46 5.76 | +.00 | 46 5.698 | .00 | 46 5.33 | −.00 | 46 9.13 | −.01 |
| −1.~~60~~ 59 | | −1.08 | | −0.50 | | +4.788 | | + 13.40 | −.07 | +22.31 | |
| | −254 | | −254 | | −253 | | −245 | | −210 | | −285 |
| + 1.56 | 46 3.21 | + 1.12 | 3.26 | + 0.57 6 | 3.29 | − 4.73 | 3.29 | − 13.38 | 3.26 | − 22.89 | 6.31 |
| − .00 | | − .00 | | − .00 | | − .00 | | − .00 | | − .00 | |
| − 2.54 | +0.518 | − 2.54 | +0.518 | − 2.53 | +0.528 | − 2.45 | +0.608 | − 2.10 | +0.958 | − 2.85 | |
| − 0.98 | | − 1.42 | | − 1.97 | | − 7.18 | | − 15.48 | 4.72 | − 25.14 | |
| 46 4.18 | 39 2.03 | 46 4.69 | 3.24 | 46 5.26 | 1.84 | 46 10.46 | 3.73 | 46 18.73 | 39 ~~6.13~~ | 46 31.44 | 57 29.38 |
| | +2 6.25 | | +2 5.51 | | +2 6.25 | | +2 5.49 | | +2 5.93 | | −16 14.27 |
| 46 3.20 | −7.5 | 46 3.27 | −7.5 | 46 3.29 | −7.5 | 46 3.28 | −1.57 | 46 3.25 | −1.6 | 46 6.30 | −1.8 |
| 6.258 | −4.80 | 6.328 | −4.90 | 6.348 | −4.90 | 6.338 | −5.20 | 6.308 | −5.70 | | −5.00 |
| +0 | 41 1.98 | | 41 2.35 | | 41 7.69 | | 41 2.52 | | 40 ~~58.76~~ | | 41 8.31 |
| | | | | | | | | | 3.35 | | |
| s + 15.36 | − 19.61 | + 8.90 | − 29.50 | + 18.91 | − 14.53 | + 19.07 | − 15.43 | − 12.15 | − 8.54 | + 19.75 | − 16.45 |
| 40 | | 40 | | 40 | | 40 | | 40 | | 20 | |
| − 2.20 | | − 2.21 | | − 2.23 | | − 2.30 | | − 2.42 | | − 2.57 | |
| 2 28.6 | 3 13.0 | 2 35.0 | 3 23.9 | 2 23.0 | 3 6.2 | 2 19.5 | 3 4.5 | ~~2~~ 3 0.0 | | 3 5.45 | 4 42.3 |
| 45.2 | 30.0 | 52.9 | 41.1 | 40.9 | 23.9 | 39.7 | 22.8 | 14.1 | | 12.3 | 0.5 |
| 73.8 | 43.0 | 87.9 | 65.0 | 63.9 | 30.1 | 59.2 | 27.3 | 14.1 | ∩ | 126.8 | 102.8 |
| 42 36.90 | 43~~8~~ 21.50 | 42~~2~~ 43.95 | 43~~3~~ 32.50 | 42~~2~~ 31.95 | 43~~3~~ 15.05 | 42~~2~~ 29.60 | 43~~3~~ 13.65 | 4~~22~~ 3 7.05 | | 24 3.40 | 24 51.40 |
| 1.18689 | 1.29248 n | 0.94939 | 1.46982 n | 1.27669 | 1.16227 n | 1.28035 | 1.18837 n | 1.08458 n | ~~0.93146~~ n | 1.29557 | 1.21617 n |
| 1.29236 | 1.39845 n | 1.04536 | 1.51579 n | 1.38266 | 1.26824 n | 1.38632 | 1.29434 n | 1.18915 n | ~~1.03603~~ n | 1.42106 | 1.33166 n |
| + 17.60 | − 25.03 | + 11.10 | − 37.65 | + 24.14 | − 18.55 | + 24.34 | − 19.69 | − 15.46 | ~~− 10.87~~ | + 26.87 | − 21.46 |
| 42 ~~53.98~~ 56.50 | 42 56.47 | 42 55.05 | 42 54.85 | 42 56.09 | 42 56.50 | 42 53.94 | 42 53.96 | 41 ~~56.18~~ 2 51.59 | | 24 29.77 | 24 29.94 |
| 39 54.37 51.815 51.86 | 51.88 | 39 53.30 53.40 | 53.50 | 39 52.26 52.05 | 51.85 | 39 54.41 54.40 | 54.39 | ~~52.17~~ 51.76 | | 58 18.58 18.49 | 18.41 |
| +41 40 30 | 41 14 | | | | | 40 23 | 41 7 | | | 40 15 | 41 3 |
| 1.70940 | 1.70960 | | | | | 1.70940 | 1.70950 | | | 1.70940 | 1.70950 |
| −1256 | | −966 | | −919 | | −471 | | +641 | | −2256 | |
| 1.69684 | 1.69704 | 1.69974 | 1.69994 | 1.70021 | 1.70041 | 1.70469 | 1.70479 | 1.71581 | 1.71591 | 1.68684 | 1.68694 |
| −49.76 | −49.78 | −50.09 | −50.11 | −50.14 | −50.17 | −50.66 | −50.67 | −51.98 | −51.99 | −48.62 | −48.63 |
| ~~−.06~~ −.06 | ~~−.08~~ 0 | 00 −.06 | ~~−.04~~ | ~~−.01~~ 0 −.05 | ~~−.01~~ 0 | −.02 0.00 | ~~−.0~~ | | | ~~−.02~~ −.49 | ~~−.04~~ |
| −.05 | −.07 | −.05 | −.07 | −.05 | −.06 | .00 | .00 | −.06 | | −.44 | −.54 |
| − 49.81 | −49.85 | −50.14 | −50.18 | −50.19 | −50.23 | −50.66 | −50.67 | −52.04 | | −49.06 | −49.17 |
| 39 2.04 | 2.03 | 3.16 | 3.32 | 2.07 | 1.62 | 3.75 | 3.72 | ~~0.13~~ 4.72 | | 57 29.52 | 29.24 |
| 41 5.7 | | 5.8 | | 5.8 | | 6.1 | | 6.6 | | 41 14.8 | |
| +2 3.7 | 3.7 | 2.6 | 2.5 | 3.7 | 4.2 | 2.4 | 2.4 | 6.5 | | −16 14.7 | 14.4 |
| +2 2 | | 2.5 | | 2.40 | | 2.4 | | 6.5 | | −16 14.5 | |
| + 2 6.14 | 41 1.94 | + 5.13 | 3.68 1.94 | + 6.25 | 4.78 1.95 | + 5.28 | 3.77 2.32 | + 5.93 | 4.34 58.47 | −16 14.38 | 41 8.45 |
| − 1.44 | 4.70 1.93 | − 1.45 | +4.02 2.10 | − 1.47 | +4.02 1.50 | − 1.51 | +3.72 2.29 | − 1.59 | +3.22 | − 1.69 | 16.07 8.17 |
| − 4.80 | +4.12 | − 4.90 | | − 4.90 | | − 5.20 | | − 5.70 | | − 5.00 | |
| +1 59.90 | 41 1.93 | + 58.78 | 2.02 | + 57.88 | 1.72 | + 58.57 | 2.31 | + 58.64 | | −16 2.07 | 41 8.31 |
| | 41 10.85 | | 10.84 | | 10.44 | | | | | | |

| 1875 | 1875 | | | | | | |
|---|---|---|---|---|---|---|---|
| s | Aug. 28 | $46^m$ | $9.19^s$ | | $41'$ | $14.4''$ | |
| 6.285 | Sept. 2 | | 9.15 | -.04 | | 14.7 | +.3 |
| +41' 9.81 | 7 | | 9.10 | .05 | | 15.0 | .3 |
| +3.058 | 12 | | 9.04 | .06 | | 15.2 | .2 |
| +8.922 | 17 | | 8.98 | .06 | | 15.4 | .2 |
| | 22 | | 8.92 | .06 | | 15.5 | .1 |
| | 27 | | 8.85 | .07 | | 15.6 | .1 |
| | Oct. 2 | | 8.77 | .08 | | 15.7 | .0 |
| 9.99997 | 7 | | 8.69 | .08 | | 15.7 | .0 |
| 12532 | | | | | | | |
| 0.12549 | | | | | | | |

-.60 + Sept-5 -.58 + Sept-7 -.56 + Sept-8 -.49 1875 Sept-14 + 1874 Sept 28 × -.42 1875 Oct-4

-600 -577 -572 -603 -418

46 20.0 46 6.1 46 21.9 46 13.0 46 22.6 46 14.2 46 26.4 46 22.8 46 36.0 46 31.5 46 39.9 46 34.0

22.1 8.8 23.9 15.3 24.7 16.0 28.4 24.7 38.0 33.3 41.9 35.8

24.3 10.4 25.9 16.7 26.7 18.4 30.5 26.4 40.0 35.3 44.0 37.8

28.3 30.2 30.7 34.5 44.2 48.2

30.4 32.2 32.7 36.7 46.3 50.2

32.4 34.3 34.7 38.9 48.4 52.2

34.4 46 52.7 36.3 37.0 46 57.9 40.7 47 57.1 50.4 47 6.2 54.4 47 8.0

36.6 54.3 38.4 38.9 53.8 42.9 59.2 52.5 56.4 10.2

40.7 56.3 42.4 43.0 55.7 47.0 .09 56.6 .05 11.9

42.9 44.6 45.1 49.0 58.7 .26

44.8 46.9 47.1 51.0 .07 .47

3569 3768 38~~23~~32 4258 4720 8950

60 180

32.445 46 8.43 46 15.00 46 16.20 46 24.73 5320 46 33.37 5750 46 35.87

46 33.355 46 54.43 46 34.255 46 ~~34.755~~ 46 53.80 46 38.709 47 59.07 46 48.364 47 6.20 46 52.273 47 10.03

33.340 32.430 23.29 34240 -25.10 34.836 34821 -25.74 38.694 -29.60 48.349 48.35 52258 -43.57

46 9.12 -.01 46 9.10 -.01 46 9.09 -.01 46 9.081 .00 46 ~~8.83~~ 5.44 46 8.743 .60

+ ~~24.22~~ +23.31 + 25.14 + 25.73 + 29.678 + 39.52 42.91 + 43.523

-284 -282 -281 -273 -245

- 23.35 6.29 - 25.12 6.31 - 25.76 6.26 - 29.61 6.36 - 43.51 6.30

- .00 - .00 - .00 - .00 - .00 - .00

- 2.84 - 2.82 - 2.81 - 2.73 - 2.55 - 2.45

- 26.19 - 27.94 3 - 28.57 - 32.34 - 45.96

46 32.43 28.98 46 34.24 21.85 46 34.82 29.59 46 38.69 30.79 46 48.35 46 52.26 30.17

-16 13.24 -16 13.77 -16 13.63 -16 14.18 -16 13.39

46 6.24 -1.8 46 6.30 -1.8 46 6.25 -1.8 46 6.35 -7.7 46 6.30 -1.4

-510 -520 -520 -550 -590

41 8.84 41 11.08 41 8.96 41 9.41 41 9.18

+ 24.92 - 21.08 + 19.25 + 18.64 - 18.96 + 13.98 - 80.36 20.36 + 14.99 - 17.84 + 16.40 - 17.76

20 20 20 20 20 20

-2.58 -2.60 -2.61 -2.66 -2.80

3 46.9 4 48.8 3 51.7 4 39.7 3 54.0 4 45.5 3 59.7 4 46.1 3 58.3 4 42.6 3 57.8 4 43.1

4.1 6.6 7.4 55.9 10.8 2.3 14.3 60.3 14.0 57.9 12.8 57.3

11.10 11.54 11.94 9.56 12.48 10.78 13.40 10.64 18.23 10.05 13.06 10.04

23 55.50 24 57.70 23 59.70 24 47.80 24 2.40 24 53.90 24 7.00 24 53.20 24 6.15 24 50.25 24 5.30 24 50.20

30878

1.30655 1.32387 1.28443 1.27045 1.27784 1.14551 ~~1.90504~~ 1.17580 1.25139 1.21484 1.24944

1.52204 1.44936 1.40972 1.39594 1.40333 1.27100 2.03 43427 1.30129 1.37688 1.34035 1.37495

+33.27 -28.14 +25.70 +24.88 -25.31 +18.67 -27.18 +20.01 -23.82 +21.89 -23.71

24 28.77 24 29.56 24 25.40 24 27.28 24 28.59 24 25.67 26.02 24 26.16 24 26.43 24 27.19 24 26.49

58 19.58 18.79 58 22.95 58 21.07 19.76 58 22.68 22.33 58 22.19 21.92 58 21.16 21.86

19.18 20.41 22.50 21.51

40 17 41 2

1.70940 1.70950

-470

-1297 -609 -919 -161

1.69643 1.69633 1.70331 1.70341 1.70021 1.70031 1.70779 1.70789 1.70470 1.70480

-49.71 -49.72 -~~49.35~~ -50.50 -50.52 -50.14 -50.16 -51.02 -51.04 -50.66 -50.68

~~-.03~~ -.48 ~~-.02~~ ~~-.02~~ -.60 ~~-.01~~ -.67 ~~-.02~~ ~~-.01~~ -.68 ~~-.02~~ -.01 -.01 ~~-.01~~ -.67 ~~-.01~~

-.43 -.54 -.60 -.72 -.60 -.74 -.62 -.74 -.62 -.72

-50.14 -50.26 -51.10 -51.24 -50.74 -50.90 -51.64 -51.78 -51.28 -51.40

29.44 28.53 31.85 30.33 28.86 31.04 30.55 29.88 30.46

14.9 15.0 15.0 15.3 15.7

14.5 13.6 16.8 15.3 13.9 15.7 15.2 15.7

14.0 16.8 14.6 15.5

- 13.42 15.12 9.22 - 14.01 15.72 10.93 - 13.77 15.49 9.64 - 14.30 16.05 9.49 - 13.42 15.26 8.72

- 1.70 8.31 - 1.71 - 1.72 8.17 - 1.75 9.11 - 1.84 9.30

- 5.10 - 5.20 - 5.20 - 5.50 - 5.90

- 20.22 8.76 - 20.92 10.93 - 20.69 8.90 - 21.55 9.24 - 21.16 9.01

4 1874 1874

Draconis α 35.358
m sec δ +56′ 48.30
19 48 35 dt/dt −0.172
dδ/dt +9.146
+69° 57′
−27° 34′
Inz = ~~−46~~ l sin δ 9.97285
−.46
l cos δ 9.53509
l C .10600
l C′ 9.64109
l C″ 9.63969

| | | | | | |
|---|---|---|---|---|---|
| Aug. | 28 | 48 37.56 | | 56 58.7 | +1.3 |
| Sept. | 2 | 37.32 | −.24 | 60.0 | 1.2 |
| | 7 | 37.07 | .25 | 61.2 | 1.1 |
| | 12 | 36.80 | .27 | 62.3 | 1.0 |
| | 17 | 36.53 | .27 | 63.3 | .9 |
| | 22 | 36.24 | .29 | 64.2 | .8 |
| | 27 | 35.93 | .31 | 65.0 | .6 |
| Oct. | 2 | 35.61 | .32 | 65.6 | .6 |
| | 7 | 35.28 | .33 | 66.2 | |

corr α =
corr δ =
lang δ = +2.73 H 2.92
I = 5.99 s
k = −0.041 s

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X 1874 −.35 Aug. 25 −.345 | | X −.46 Aug. 31 −.480 | | X −.41 Sept. 1 −.430 | | X −.43 Sept. 2 −.450 | | X −.42 Sept. 7 −.430 | | X −.36 Sept. 9 −.400 | |
| 19 48 23.0 | 47 49.2 | 48 25.0 | 47 46.0 | 48 25.4 | 47 39.5 | 48 26.1 | 48 33.6 | 48 29.0 | 48 3.0 | 48 30.7 | 47 52.3 |
| 25.7 | 54.9 | 28.2 | 42.8 | 28.5 | 46.1 | 28.9 | 40.0 | 32.3 | 8.9 | 33.7 | 57.5 |
| 28.8 | 59.4 | 31.3 | 58.0 | 31.8 | 49.8 | 32.0 | 45.8 | 35.2 | 14.5 | 36.4 | 1.7 |
| 31.7 | | 34.3 | | 34.6 | | 34.9 | | 38.2 | | 39.4 | |
| 35.0 | | 37.1 | | 37.6 | | 38.0 | | 41.0 | | 42.6 | |
| 38.0 | | 40.3 | | 40.6 | | 41.2 | | 44.1 | | 45.6 | |
| 40.6 | 48 45.8 | 43.3 | 48 16.9 | 43.2 | | 44.1 | | 46.9 | | 48.6 | |
| 43.9 | | 46.2 | 28.7 | 46.4 | | 47.2 | | 50.0 | | 51.6 | |
| 46.6 | | 49.3 | | 49.5 | | 50.4 | | 53.0 | | 54.6 | |
| 3133 | | 3350 | | 3376 | | 3428 | | 3697 | | 3832 | |
| | 47 54.50 | | 47 52.26 | | 47 45.13 | | 48 39.80 | | 48 8.80 | | 47 57.16 |
| 48 34.811 | 48 45.80 | 48 37.222 | 48 22.80 | 48 37.511 | | 48 38.089 | | 48 41.078 | | 48 42.578 | |
| 34.770 | | 37.181 | | 37.470 | | 38.048 | | 41.037 | | 42.537 | |
| 48 37.7169 | | 48 37.431 | | 48 37.387 | | 48 37.331 | | 48 37.086 | | 48 36.975 | |
| −2.942 | +3.92<br>−.96 | −0.253 | +1.57<br>−1.26 | +0.0410 | +1.11<br>−1.12 | +0.723 | +0.56<br>−1.18 | +3.968 | −2.71<br>−1.15 | +5.549 | −4.72<br>−.99 |
| + 3.92 | | + 1.56 | | + 1.132 | | + 0.596 | | − 2.72 | | − 4.73 | |
| − 1.03 | −2.33 | − 1.31 | −2.05 | − 1.18 | −2.01 | − 1.23 | −1.95 | − 1.18 | −1.70 | − 1.10 | −1.59 |
| − 2.33 | −2.502 3540 | − 2.05 | −2.222 3544 | − 2.01 | −2.182 3545 | − 1.95 | −2.122 3548 | − 1.70 | −1.872 3548 | − 1.59 | −1.762 3524 |
| + 0.56 | 48 | − 1.80 | | − 2.07 | | − 2.62 | | − 5.60 | | − 7.42 | |
| 48 34.77 | | 48 37.18 | | 48 37.47 | | 48 38.05 | | 48 41.04 | | 48 42.54 | |
| 48 35.33<br>35.158 | 54 52.44<br>+2 4.33<br>+1.1<br>−9.60 | 48 35.38<br>35.208 | 53.88<br>+2 6.25<br>+1.1<br>−11.20 | 48 35.40<br>35.228 | 53.59<br>+2 5.51<br>+1.1<br>−11.50 | 48 35.43<br>35.258 | 53.27<br>+2 6.25<br>+1.1<br>−11.80 | 48 35.54<br>35.268 | 54.26<br>+2 5.52<br>+1.1<br>−13.00 | 48 35.12<br>34.948 | 55.59<br>+2 5.49<br>+1.1<br>−13.40 |
| +49 | 56 48.27 | | 56 50.03<br>~~48.93~~ | | 56 48.70 | | 56 48.82 | | 56 47.88 | | 56 48.78 |
| s<br>+40.31 | −10.99 | +34.96 | +14.42 | +52.38 | | −1.71 | | +32.28 | | +43.92 | |
| 25<br>−2.15 | | 25<br>−2.20 | | 25<br>−2.21 | | 25<br>−2.23 | | 25<br>−2.29 | | 25<br>−2.30 | |
| 3 4.0 | 3 25.3 | 2 59.6 | 3 14.4 | 2 55.5 | | 2 55.3 | 3 19.9 | 3 4.7 | | 2 47.6 | |
| 13.0 | 36.0 | 10.7 | 25.9 | 5.9 | | 7.1 | 30.5 | 14.0 | | 18.3 | |
| 17.0 | 61.3 | 130.3 | 40.3 | 121.4 | | 122.4 | 50.4 | 18.7 | | 165.9 | |
| 328 8.50 | 328 30.65 | 328 ~~15~~ 10.15 | 328 20.15 | 283 0.70 | | 283 1.20 | 282 25.20 | 283 9.35 | | ~~278 57.95~~<br>28 2.95 | |
| 1.60541 | 1.04100n | 1.54357 | 1.15897 | 1.71917 | | 10.23300 | | 1.50893 | | 1.64266 | |
| 1.24650 | 0.68209n | 1.18466 | 0.80006 | 1.36026 | | 9.87400 | | 1.15002 | | 1.28375 | |
| +17.64 | −4.81 | +15.34 | +6.31 | +22.92 | | −0.75 | −0.75 | +14.13 | | +19.22 | |
| 28 26.14 | 28 25.84 | 28 20.49<br>25. | 28 26.46 | 28 23.62 | | 28 ~~0.45~~ | 24.45 | 28 23.48 | | 28 ~~17.17~~<br>22.17 | |
| +69°<br>54 22.21<br>22.36 | 22.51 | 54 ~~27.86~~<br>22.86<br>22.37 | 21.89 | 54 24.73 | | 54 47.90 | 23.90 | 54 24.87 | | 54 ~~31.18~~<br>26.18 | |
| −27 33 59 | 33 36 | | | | | | | | | | |
| 1.47790n | 1.47780n | | | | | | | | | | |
| +265 | | −1248 | | −958 | | −910 | | −606 | | −464 | |
| 1.48055 | 1.48045 | 1.46542 | 1.46532 | 1.46832 | | 1.46880 | | 1.47184 | | 1.47326 | |
| +30.24 | +30.23 | +29.20 | +29.20 | +29.40 | | +29.43 | | +29.64 | | +29.74 | |
| −.28 −.15 | −.02 | −.22 −.19 | −.03 | −.48 −.54 | | −0 −.06 | | −.19 −.25 | | −.33 −.33 | |
| .00 | .00 | −.06 | −.07 | .06 | | −.06 | −.07 | −.06 | | .00 | |
| +29.96 | +30.21 | +28.92 | +29.10 | +28.86 | | +29.37 | | +29.39 | | +29.41 | |
| 54 52.17 | 52.72 | ✕(56.78) | 50.99 | 53.59 | | 53.27 | 53.24 | 54.26 | | 55 ~~0.59~~ 55.59 | |
| 56 57.9 | | 59.5 | | 59.8 | | 60.1 | | 61.3 | | 61.7 | |
| +2 5.7 | 5.2 | 2.7 | 8.0 | 6.2 | | 6.8 | 6.8 | 7.0 | | ~~7.1~~ 6! | |
| +2 5.5 | | 6.9 | | 6.2 | | 6.8 | | 7.0 | | | |
| +2 4.39 | 56 47.74 + | 6.14 | 7.14 47.72 + | 5.13 | 6.14 + | 6.25 | 7.27 + | 5.57 | 6.62 + | 5.28 | 6.34 ~~53.53~~ |
| + .98 | 5.37 48.49 + | 1.00 | −2.06 46.93 + | 1.01 | −2.36 + | 1.02 | −2.66 + | 1.05 | −3.86 + | 1.06 | −4.26 48.53 |
| − 9.60 | −.46 | − 11.20 | | − 11.50 | | − 11.80 | | − 13.00 | | − 13.40 | |
| +1 55.77 | 56 48.22 + | 55.94 | 47.32 + | 54.64 | 48.23 | 55.47 | 48.74 + | 53.62 | 47.88 + | 52.94 | ~~53~~ 57.68 |

1875

s

α 35.186
δ +56' 57.45"
dα/dt −0.172
dδ/dt +9.145

l cos δ 9.53509
l C .12552
l C' 9.66061

1875

| | | m | s | | ' | " | |
|---|---|---|---|---|---|---|---|
| Aug. | 28 | 48 | 37.30 | | 56 | 67.8 | |
| Sept | 2 | | 37.06 | .24 | | 69.2 | +1.4 |
| | 7 | | 36.81 | .25 | | 70.4 | 1.2 |
| | 12 | | 36.55 | .26 | | 71.5 | 1.1 |
| | 17 | | 36.27 | .28 | | 72.5 | 1.0 |
| | 22 | | 35.98 | .29 | | 73.4 | .9 |
| | 27 | | 35.68 | .30 | | 74.2 | .8 |
| Oct. | 2 | | 35.36 | .32 | | 74.9 | .7 |
| | 7 | | 35.03 | .33 | | 75.5 | .6 |

X 1874 −.18 −.07 — 1875 −.60 + — −.60 + — −.57 X — −.56 X — −.49 X

Oct. 5 — Sept 4 — Sept 5 — Sept 7 — Sept 8 — Sept 14

−.240 — −.610 — −.600 — −.577 — −.572 — −.503

48 87.4 48 56.5 48 49.0 47 53.6 48 50.0 47 33.3 48 51.2 48 40.1 48 52.0 48 1.2 48 55.6 47 55.1
40.5 57.9 52.0 57.3 53.0 38.3 54.9 44.7 55.3 6.5 58.4 2.0
48.5 4.4 55.0 3.0 55.8 43.8 57.4 48.4 58.4 12.1 49 1.4 4.6
46.7 58.0 58.9 49 0.1 49 1.2 4.6
49.4 49 1.0 49 1.9 3.6 4.0 7.6
52.3 4.2 4.9 6.5 7.0 10.9
53.4 49 33.7 7.2 49 22.0 8.0 48 9.2 9.5 10.2 48 47.6 13.1 48 33.8
58.5 38.3 10.0 11.0 14.2 12.5 13.0 53.4 16.5 34.1
1.5 42.3 13.0 13.8 20.0 16.0 16.2 59.1 19.8 43.2

3854 — 2494 — 2573 — 2121 — 2173 — 1885
60 — 240 — 240 — 180 — 180 — 120
4454 49 1.43 — 9 4 47 57.97 — 17 3 47 38.47 — 3 2 1 48 44.57 — 3 7 3 48 6.60 — 6 8 5 48 0.57
48 49.489 49 38.10 — 49 1.044 49 22.60 — 49 1.922 48 14.47 — 49 3.567 — 49 4.144 48 53.37 — 49 7.611 48 38.03
49.448 — 1.003 — 1.881 — 3.526 — 4.103 — 7.570
48 35.431 — 48 36.975 — 48 36.920 — 48 36.82 80 — 48 36.775 — 48 36.453
+14.024 −13.30 — +24.035 −22.24 — +24.968 −23.29 — +26.743 −25.10 — +27.335 −25.74 — +31.024 −29.60
−.49 — −1.64 — −1.64 — −1.59 — −1.53 — −1.84
− 13.38 −.20 — − 23.29 — − 23.35 — − 25.12 — − 25.76 — − 29.61
− .66 −0.05 — − 1.67 −1.76 — − 1.64 −1.71 — − 1.58 −1.61 — − 1.57 −1.56 — − 1.38 −1.24
− 0.05 −0.2 22 35.41 — − 1.76 35.33 — − 1.71 35.24 — − 1.61 35.23 — − 1.56 35.27 — − 1.24 35.39
− 14.09 — − 25.72 — − 26.70 — − 28.31 — − 28.89 — − 32.23
48 49.45 — 49 1.60 — 49 1.88 — 49 3.53 — 49 4.10 — 49 7.57

6 5
48 35.33 54 0.20 — 48 35.28 13 24.18 — 48 35.18 24.13 — 48 35.22 24.12 — 48 35.21 24.53 — 48 35.34 25.37
35.188 +2 5.93 — −16 14.27 — −16 13.24 — −16 13.77 — −16 13.63 — −16 14.18
+1.2 — +1.2 — +1.2 — +1.2 — +1.2 — +1.2
−17.70 — −12.40 — −12.50 — −13.10 — −13.20 — −14.60
56 49.63 — 56 58.71 — 56 59.59 — 56 58.45 — 56 58.90 — 56 57.79

−10.54
~~+19.86~~ −4.861 + 63.07 − 21.56 + 83.45 + 47.45 + 19.00 + 57.54 + 10.71 + 67.04 + 29.58
25 — 5 — 5 — 5 — 5 — 5
−2.42 — − 2.57 — − 2.58 — − 2.60 — − 2.61 — − 2.66

3 19.9 3 35.7 — 4 14.0 4 52.0 — 4 4.4 4 21.1 — 4 8.6 4 34.9 — 4 16.6 4 38.9 — 4 11.6 4 29.9
26.6 42.7 — 33.2 13.5 — 23.2 39.9 — 28.0 53.9 — 35.0 56.0 — 29.1 48.1
46.5 78.4 — 47.2 125.5 — 27.6 61.0 — 36.6 88.8 — 51.6 94.9 — 40.7 78.0
28 23.25 28 39.20 — 9 23.60 10 2.75 — 9 13.80 9 30.50 — 9 18.30 9 44.40 — 9 25.80 9 47.45 — 9 20.35 9 39.00

1.62284 1.68673n 1.79982 1.33365n 1.92143 1.67624 1.27875 — 1.75997 1.03222n 1.88233 1.47100n
0.66233 1.32642n 1.46043 0.99426n 1.58204 1.33685 0.93936 — 1.42058 0.69283n 1.48694 1.13161n
−4.60 −21.21 +28.87 −9.87 +38.20 +21.72 +8.70 8.70 +26.34 +4.93 +30.69 +13.54
28 18.65 28 17.99 9 52.47 9 52.88 9 52.00 9 52.22 9 27.00 9 53.10 9 52.14 9 52.38 9 51.04 9 52.54

54 29.70 30.36 — 12 55.88 55.47 — 12 56.35 56.13 — 12 21.35 55.25 — 12 56.21 55.97 — 12 57.31 55.81
30.03 — 55.67 — 56.24 — 56.09 — 56.56

33 44 33 28 34 24 33 45 — 34 28 34 9
1.47780n 1.47780n 1.47790n 1.47780n — 1.47780n 1.47780n
+641 — −912 — −1279 — −599 — −912 — −156
1.48421 1.48421 1.46878 1.46868 1.46511 1.46501 1.47191 1.47189 1.46878 1.46868 1.47644 1.47644
+30.49 +30.49 +29.43 +29.42 +29.18 +29.18 +29.64 +29.64 +29.43 +29.42 +29.95 +29.95

−.02 −.32 −.41 — −.72 −.64 −.08 — −.72 −.123 −.40 — −.06 −.77 −.06 — −.57 −.98 −.02 — −.78 −.113 −.16
−.10 −.11 — −.48 .91 .08 .55 — −.46 −.49 — −.64 −.71 — −.66 −.72 — −.64 −.69
+30.37 +29.97 — +28.03 +28.49 — +27.50 +28.29 — +28.94 +28.87 — +28.20 +28.68 — +28.53 +29.10
0.07 0.33 — 13 24.71 24.26 — 13 23.85 24.42 — 24.12 — 24.41 24.65 — 25.84 24.91
66.0 — 57 9.8 — 10.0 — 10.5 — 10.7 — 12.0
5.9 5.7 — −16 14.3 14.5 — 13.8 14.4 — 13.6 — 13.7 13.9 — 13.8 12.9
5.8 — −6 14.4 — 14.1 — 13.6 — 13.8 — 13.4
+2 5.93 7.04 44.41 — −16 14.38 56 58.51 — 13.42 12.24 59.11 — 14.01 12.82 — 13.77 12.57 58.64 — 14.30 13.08 58.16
+ 1.11 −8.56 44.67 + — 1.18 13.20 58.66 + — 1.18 59.68 + — 1.19 + — 1.20 58.88 + — 1.22 57.23
− 17.70 — 12.40 — 12.50 — 13.10 — 13.20 — 14.60
+1 49.34 49.54 — −16 25.60 56 58.58 — 24.74 59.40 — 25.92 58.20 — 25.77 58.76 — 24.68 57.70

82 1874 1875

β Aquilae α 7.425
sec δ +5' 37.04
19 49 10 dα/dt +2.947
dδ/dt +8.711
+6° 6'
+36° 17
ang=+59 l sin δ 9.02639

l cos δ 9.99753
l C .10600
l C' 0.10353

l C'' 0.10213

| 1874 | | m s | | ' " | |
|---|---|---|---|---|---|
| Aug. | 28 | 49 9.93 | | 5 42.5 | |
| Sept. | 2 | 9.89 | −.04 | 42.9 | +.4 |
| | 7 | 9.84 | .05 | 43.3 | .4 |
| | 12 | 9.78 | .06 | 43.6 | .3 |
| | 17 | 9.72 | .06 | 43.9 | .3 |
| | 22 | 9.65 | .07 | 44.1 | .2 |
| | 27 | 9.58 | .07 | 44.2 | .1 |
| Oct. | 2 | 9.50 | .08 | 44.3 | .1 |
| | 7 | 9.42 | .08 | 44.3 | .0 |

corr α =
corr δ =

lang δ = +.11 1.01
I = 2.07
K = −.016

1875
α 10.372
δ +5' 45.75
dα/dt +2.947
dδ/dt +8.715

l cos δ 9.99753
l C .12552
l C' 0.12305

X 1874 −46
Aug. 31
−.480
49 —
—
—
43
64
84
105 49 20.8
126 230
— 25.3
—
—
422

49 8.440 49 23.03
8.424 +1.57
49 9.9[illegible]0 −.05
−1.4[illegible]8
−248
+ 1.56 49 7.46
− .05
− 2.48 +0.467
− 0.97
49 8.42 3 39.00
+2 6.25
49 7.45 −1.4
10.397 −5.80
+6 5 38.05

−14.59
15
−2.20
3 38.3
55.2
93.5
318 46.75

1.16406
1.26759
−18.52
18 28.23
4 20.13

+36 16 40
1.62570
1246
1.61324
−41.04

−1 −.09 −.01
−.08
−41.13
3 39.00
5 42.8
+2 3.8
+2 3.8
+2 6.14 4.85
− 1.29 +2.91
− 5.80
+1 59.05 5 38.05
5 44.76

X −41
Sept 1
−.430
49 —
—
47
68
−8.8 49 16.5
10.9 18.6
13.0 21.0
—
—
476

49 8.84 49 18.70
8.82 +1.11
49 9.90 −.05
− 1.08
−248
+ 1.12 7.40
− .05
− 2.98 +0.467
− 1.41
49 8.82 39.11
+2 5.51
49 7.41 −1.3
10.357 −5.80
5 37.52

− 9.86
15
− 2.21
3 30.9
49.8
80.7
183 40.35

0.99388n
1.09741n
− 12.51
18 27.84
20.51

16 33
1.62570
−956
1.61614
−41.32

− 1 −.08
−07
−41.40
39.11
428
3.7
3.7
+ 5.73 3.83
− 1.30 +2.91
− 5.80
+ 58.03 37.14
45.85

X −43
Sept 2
−.450
49 — 49
—
—
.44 5.3
.37 7.3
.30 9.3
.53 11.6 49 11.9
.4 13.6 13.9
.42 17.7 16.0
.45 19.8
.48 21.9

9.431 49 13.93
49 9.415 +0.56
49 9.89 −.05
− 0.47
−247
+ 0.59 6 7.45
− .05
− 2.47 +0.471
− 1.96
49 9.42 39.18
+2 6.25
49 7.46 −1.4
10.407 −5.90
5 38.13

− 4.50
15
−2.23
3 25.1
41.8
66.9
183 33.45

0.65321n
0.75674n
−5.71
18 27.74
20.61

16 26
1.62560
−907
1.61653
−41.36

− .0 −.07
−.07
−41.43
39.18
42.9
3.7
3.7
+ 6.25 4.94
− 1.31 +2.81
− 5.90
+ 59.04 38.22
46.93

X −.42 ~~.36~~
Sept. 7
−.430
49 0.1 49
2.2
4.3
8.5
10.7
12.9
14.8 49 21.4
16.7 49 23.4
21.0 24.8
23.0
25.0
1392

49 12.655 49 23.20
12.659 −2.71
49 9.84 −.05
+ 2.80
−242
− 2.72 7.46
− .05
− 2.42 +0.527
− 5.19
49 12.64 40.41
+2 5.52
49 7.45 −1.3
10.397 −6.30
5 38.33

−10.55
15
−2.29
3 31.1
48.1
79.2
183 39.60

1.02325m
1.12678m
−13.39
18 26.21
22.14

16 33
1.62570
−604
1.61966
−41.65

−.01 −.08
−.07
−41.73
40.41
43.3
2.9
2.9
+ 5.57 4.22
− 1.35 +2.41
− 6.30
+ 57.92 38.33
47.04

X −.36
Sept. 9
−.400
49 2.1 49 10.9
4.2
6.3
10.6
12.6
14.7
16.4
18.8
22.8
25.0
27.0
1608

49 10.90
49 14.618
14.602 −4.72
49 9.821 −.04
+ 4.789
−239
− 4.43 7.45
− .04
− 2.39 +0.557
− 7.16
49 14.60 39.80
+2 5.49
49 7.44 −1.4
10.387 −6.50
5 37.39

+ 3.72
15
−2.30
3 13.0
31.1
44.1
183 22.05

0.57054
0.67407
+4.72
18 26.77
21.58

16 15
1.62560
−463
1.62097
−41.78

− 0 .00
.00
−41.78
39.80
43.5
3.7
3.7
+ 5.28 3.92
− 1.36 +2.21
− 6.50
+ 57.42 37.22
45.92

X −.22 −.06
Oct. 3
−.276
49 10.3 49 0.3
12.3
14.4
18.7
20.7
22.7
24.8 49 49.0
26.8
31.0
33.0
35.2
2499

49 0.30
49 22.718 49 49.00
22.702 −13.11
49 9.48 −.02
+13.22 −.06
−2.06
− 13.23 7.45
− .03
− 2.06 +0.887
− 15.32
49 22.70 3 40.77
+2 5.81
49 7.38 −1.4
10.327 −7.30
5 37.88

+22.42 −26.28
15
− 2.41
2 49.1
4.1
113.2
172 56.60

1.35064 1.41963n
1.45277 1.52176n
+28.36 −33.25
18 24.96
23.38
4 23.39

15 50
1.62550
+301
1.62851
−42.51

−.02 −.05 −.03
−.09
− 42.62
40.77
44.3
3.5
3.5
+ 5.75 4.33
− 1.42 +1.41
− 7.30
+ 57.03 37.83
46.51

1875

| | | m | s | | ' | " | |
|---|---|---|---|---|---|---|---|
| Aug. | 28 | 49 | 13.19 | | 5 | 51.3 | |
| Sept. | 2 | | 13.15 | −.04 | | 51.7 | +.4 |
| | 7 | | 13.10 | .05 | | 52.1 | .4 |
| | 12 | | 13.04 | .06 | | 52.4 | .3 |
| | 17 | | 12.98 | .06 | | 52.7 | .3 |
| | 22 | | 12.91 | .07 | | 52.9 | .2 |
| | 27 | | 12.84 | .07 | | 53.1 | .2 |
| Oct. | 2 | | 12.76 | .08 | | 53.2 | .1 |
| | 7 | | 12.68 | .08 | | 53.2 | .0 |

| 1874.0 α | δ | 1875.0 α | δ |
|---|---|---|---|
| 7.45 | | 10.40 | |
| .41 | | .38 | |
| .46 | | .37 | |
| .45 | | .37 | |
| .44 | | | |
| .48 | | .40 | |
| 7.448 | | 10.384 | |
| .425 | | .372 | |
| +.023 | | +.012 | |

| 1875 −.60 + Sept 5 −.600 | −.58 + Sept 7 −.577 | −.56 + Sept 8 −.572 | −.49 + Sept 14 −.503 | 1874 ~~Sept 28~~ | 1875 .42 −.27 Oct 4 −.418 Y |
|---|---|---|---|---|---|
| 49 24.1   49 36.3<br>26.2   38.3<br>28.3   40.8<br>32.4<br>34.4<br>36.6<br>38.6<br>41.2<br>44.8<br>46.9<br>49.0<br>4025 | 49 25.7   49 44.2<br>28.0   46.3<br>30.1   48.1<br>34.1<br>36.3<br>38.4<br>40.4<br>42.4<br>46.3<br>48.7<br>50.8<br>4214 | 49 26.5   49 36.2<br>28.6   38.3<br>30.7   40.4<br>34.8<br>36.9<br>38.9<br>41.0<br>43.0<br>47.2<br>49.3<br>51.3<br>4282 | 49 30.3   49 38.0<br>32.4<br>34.4<br>38.5<br>40.7<br>42.7<br>44.8<br>46.8<br>50.9<br>53.0<br>55.1<br>4696 | ~~49 40.0   49 37.3<br>42.0   38.7<br>44.0   40.6<br>48.3<br>50.4<br>52.5<br>54.6<br>56.4<br>58.8<br>2.8<br>4.8<br>3966<br>180<br>5766~~ | 49 44.0   49 43.0<br>46.0   45.0<br>48.0   46.9<br>52.1<br>54.2<br>56.3<br>58.3<br>05<br>46<br>6.7<br>8.8<br>3795<br>240<br>6195 |
| 49 38.47<br>49 36.591<br>36.545   −28.29<br>49 13.121   −.07<br>+23.45<br>−2.75<br>− 23.35   1046<br>− .07<br>− 2.75<br>− 26.17<br>49 36.57   22 6.59<br>−16 13.24<br>49 10.40   − 1.6<br>− 6.20<br>5 45.55 | 49 46.20<br>49 38.309<br>38.293   −25.10<br>49 13.10   −.06<br>+25.19<br>−2.73<br>− 25.12   1040<br>− .06<br>− 2.73<br>− 27.91<br>49 38.29   764<br>−16 13.77<br>49 10.38   − 7.6<br>− 6.30<br>5 45.97 | 49 38.30<br>49 38.927<br>38.911   −25.74<br>49 13.09   −.06<br>+25.82<br>−2.72<br>− 25.76   1039<br>− .06<br>− 2.72<br>− 28.54<br>49 38.91   631<br>−16 13.63<br>49 10.37   − 7.5<br>− 6.50<br>5 44.68 | 49 38.00<br>49 42.691<br>42.6745   −29.60<br>49 13.021   −.05<br>+29.656<br>−2.64<br>− 29.61   1038<br>− .05<br>− 2.64<br>− 32.30<br>49 42.67   746<br>−16 14.18<br>49 10.37   − 7.6<br>− 6.70<br>5 44.98 | ~~49 38.87<br>49 52.418<br>52.402   52.40<br>49 12.92   9.56<br>+39.58   42.84<br>− 2.45<br>49 52.40~~ | 49 44.97<br>49 56.318<br>56.302   −43.51<br>49 12.732   −.05<br>+43.548<br>−2.35<br>− 43.51   1039<br>− .04<br>− 2.35<br>− 45.90<br>49 56.30   866<br>−16 13.39<br>49 10.40   − 7.5<br>− 7.50<br>5 43.27<br>4 |
| − 1.88<br>55<br>1 − 2.58<br>4 54.5<br>10.9<br>12.54<br>0 2.70 | − 7.89<br>55<br>− 2.60<br>4 59.8<br>18.1<br>13.79<br>0 8.95 | + 0.63<br>55<br>− 2.61<br>4 50.2<br>8.4<br>11.86<br>59 59.30 | + 4.69<br>55<br>− 2.66<br>4 44.5<br>59.6<br>10.41<br>59 52.05 | ~~+ 13.55<br>55<br>4 33.0<br>48.1<br>8.11<br>59 40.55~~ | + 11.35<br>55<br>− 2.80<br>4 34.4<br>50.2<br>8.46<br>59 42.30 |
| 0.27416n<br>0.39721n<br>− 2.50<br>0 0.20 | 0.89708n<br>1.02013n<br>− 10.47<br>59 58.48 | 9.79934<br>9.92239<br>+0.84<br>0 0.14 | 0.67117<br>0.79422<br>+6.23<br>59 58.28 | ~~1.13194<br>1.25499<br>+ 17.99<br>57 58.54~~ | 1.055000<br>1.17805<br>+ 15.07<br>57 57.37 |
| 22 48.15 | 49.87 | 48.21 | 50.07 | ~~22 49.81~~ | 22 50.96 |
| 16 15<br>1.62560<br>− 1274<br>1.61286<br>− 41.01 | 16 21<br>1.62570<br>− 596<br>1.61974<br>− 41.66 | 16 11<br>1.62560<br>− 911<br>1.61649<br>− 41.35 | 16 4<br>1.62550<br>− 154<br>1.62396<br>− 42.07 | ~~15 52<br>1.62550~~ | 15 54<br>1.62550<br>− 467<br>1.62083<br>− 41.77 |
| − 0 .55<br>.08<br>− 41.56<br>22 6.59<br>5 52.0<br>−16 14.7<br>−16 14.5<br>−16 13.42   14.94<br>− 1.52<br>− 6.20<br>−16 21.14   5 45.45 | − 1 −.57<br>− .01<br>42.23<br>7.64<br>52.1<br>15.5<br>11.6<br>− 14.01   15.54<br>− 1.53<br>− 6.30<br>− 21.84   45.80 | − 0 −.55<br>− .55<br>− 41.90<br>6.31<br>52.2<br>14.1<br>14.1<br>− 13.77   15.30<br>− 1.53<br>− 6.50<br>− 21.80   44.51 | − 0 −.54<br>− .54<br>− 42.61<br>7.46<br>52.5<br>15.0<br>11.7<br>− 14.30   15.86<br>− 1.56<br>− 6.40<br>− 22.56   44.90 | ~~−.91~~ | − 02 −.53<br>− .51<br>− 42.30<br>8.66<br>53.2<br>15.5<br>13.5<br>− 13.42   15.06<br>− 1.64<br>− 7.50<br>− 22.56   46.10 |

1874phae.proj.147T